


S Y N T H E S I S[®]



*SYNTHESIS
SDP-40
DIGITAL SURROUND
PROCESSOR/CONTROLLER
USER GUIDE*

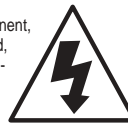
IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus, (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12.  Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

This triangle, which appears on your component, alerts you to the presence of uninsulated, dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This triangle, which appears on your component, alerts you to important operating and maintenance instructions in this accompanying literature.

- Refer to the manufacturer's operating instructions for power requirements. Be advised that different operating voltages may require the use of a different line cord and/or attachment plug.
- Do not install the unit in an unventilated rack, or directly above heat producing equipment such as power amplifiers. Observe the maximum ambient operating temperature listed in the product specification.
- Never attach audio power amplifier outputs directly to any of the unit's connectors.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and radiates radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on. The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.



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DOCUMENTATION CONVENTIONS

This document contains general safety, installation, and operating instructions for the SDP-40 Digital Surround Processor/ Controller. It is important to read this user guide before attempting to use this product. Pay particular attention to safety instructions.

The following symbols are used in this document:



Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in injury or death.



Calls attention to a procedure, practice, condition or the like that, if not correctly performed or adhered to, could result in damage or destruction to part or all of the product.

Note:

Calls attention to information that is essential to highlight.



Represents a menu path. The selections in grey boxes must be made to reach the option or parameter in the black box. In the example above, the SETUP, INPUTS, and DVD1 selections must be made to reach the NAME option. DVD1 is used as an example throughout these release notes. Whenever it appears in a menu path, any other input (e.g. DVD2) may be substituted.

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ENGLISH
IMPORTANT SAFETY INSTRUCTIONS



Save these instructions for later use.

- Follow all instructions and warnings marked on the unit.
- Always use with the correct line voltage. Refer to the manufacturer's operating instructions for the power requirements. Be advised that different operating voltages require the use of a different line cord and/or attachment plug.
- Do not install this unit in an unventilated rack, nor directly above items that generate heat, such as power amplifiers. Observe the maximum ambient operating temperature listed in the product specification.
- The openings on the case are provided for ventilation; to ensure reliable operation and prevent it from overheating, these openings must not be blocked or covered. Never push objects of any kind through any of the ventilation slots. Never spill any liquids on the unit.
- Never attach audio power amplifier outputs directly to any of the unit's connectors.
- To prevent shock or fire hazard, do not expose the unit to rain or moisture, or operate it where it will be exposed to moisture. Do not attempt to operate the unit if it has been dropped, damaged, exposed to liquids, or if it exhibits a distinct change in performance indicating the need for service. This unit should only be opened by qualified service personnel. Removing covers will expose you to hazardous voltages.



This triangle, which appears on your component, alerts you to the presence of uninsulated, dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.



This triangle, which appears on your component, alerts you to important operating and maintenance instructions in this accompanying literature.



DEUTSCH
WICHTIGE SICHERHEITSANWEISUNGEN



Heben Sie sich diese Sicherheitsanweisungen auch für später auf.

- Befolgen Sie alle auf der Vorrichtung stehenden Anweisungen und Warnungen.
- Immer nur mit der richtigen Spannung verwenden! Die Gebrauchsanweisungen des Herstellers informieren Sie über die elektrischen Anforderungen. Vergessen Sie nicht daß bei verschiedenen Betriebsspannungen ggf. auch verschiedene Leitungskabel und/oder Verbindungsstecker zu verwenden sind.
- Stellen Sie die Vorrichtung nicht in ein unbelüftetes Gestell oder unmittelbar über wärmeerzeugende Geräte wie z.B. Tonverstärker. Halten Sie die in den Produktspezifikationen angegebene maximale Umgebungstemperatur bei Betrieb ein.
- Schlitze und Öffnungen im Gehäuse dienen der Belüftung; um verläßlichen Betrieb sicherzustellen und Überheizen zu vermeiden dürfen diese Öffnungen nicht verstopft oder abgedeckt werden. Stecken Sie nie irgend einen Gegenstand durch die Belüftungsschlitze. Vergießen Sie keine Flüssigkeiten auf den Apparat.
- Dieses Produkt ist mit einem 3-drahtigen Erdungsstecker ausgerüstet. Diese Sicherheitsmaßnahme darf nicht unwirksam gemacht werden.
- Schließen Sie nie Tonverstärker unmittelbar an einen Anschluß des Apparates an.
- Um elektrischen Schlag oder Feuer zu vermeiden, setzen Sie den Apparat weder Regen noch Feuchtigkeit aus und betreiben Sie ihn nicht dort wo Wasser eindringen könnte.
- Versuchen Sie nicht den Apparat zu betreiben falls er fallen gelassen, beschädigt, oder Flüssigkeiten ausgesetzt wurde, oder falls sich seine Arbeitsweise derart ändert daß daraus ein Bedarf nach Reparatur zu schließen ist.
- Dieser Apparat sollte nur von qualifizierten Fachleuten geöffnet werden. Das Abnehmen von Abdeckungen setzt Sie gefährlichen Spannungen aus.



Dieses Dreieck auf Ihrem Apparat warnt Sie vor nicht-isolierter, gefährlicher Spannung im Gehäuse – stark genug um eine Berührungsfahr darzustellen.



Dieses Dreieck auf Ihrem Apparat bedeutet daß wichtige Betriebs – und Wartungsanweisungen in der mitgelieferten Dokumentation zu finden sind.

ES

ESPAÑOL

ES

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Guarde estas instrucciones para uso posterior.

- Utilice siempre el voltaje correcto. Diríjase a las instrucciones de operación del fabricante para obtener las especificaciones de potencia. Esté al tanto de que voltajes de operación distintos requieren el uso de cables y/o enchufes distintos.
- No instale esta unidad en un estante sin ventilación, ni tampoco directamente encima de equipos que generen calor tales como amplificadores de potencia. Fíjese en las temperaturas ambientales máximas de operación que se mencionan en las especificaciones del producto.
- Las aperturas y ranuras del chasis sirven para proveer la ventilación necesaria para operar la unidad con seguridad y para prevenir sobrecalentamiento, y por lo tanto no pueden ser obstruidas o cubiertas. No introduzca objetos de ningún tipo a través de las ranuras de ventilación, y nunca deje caer ningún líquido sobre la unidad.
- Este producto está equipado con un enchufe de 3 clavijas con conexión a tierra. Éste es un elemento de seguridad que no debe ser eliminado.
- Nunca conecte ningún tipo de salida de amplificadores de sonido directamente a los conectores de la unidad.
- Para prevenir descargas eléctricas o incendios, mantenga la unidad alejada de la lluvia, humedad o cualquier lugar en el que pueda entrar en contacto con agua.
- No trate de hacer funcionar la unidad si se ha caído, está dañada, ha entrado en contacto con líquidos, o si nota cualquier cambio brusco en su funcionamiento que indique la necesidad de hacerle un servicio de mantenimiento.
- Esta unidad deberá ser abierta únicamente por personal calificado. Si usted quita las coberturas se expondrá a voltajes peligrosos.



Este triángulo que aparece en su componente le advierte sobre la existencia dentro del chasis de voltajes peligrosos sin aislantes – voltajes que son lo suficientemente grandes como para causar electrocución.



Este triángulo que aparece en su componente lo alerta sobre las instrucciones de operación y mantenimiento importantes que están en los materiales de lectura que se incluyen.

FR

FRANÇAIS

FR

INSTRUCTIONS DE SÛRETÉ IMPORTANTES

Gardez ces instructions pour référence future.

- Observez toutes les instructions et tous les avertissements marqués sur l'appareil.
- Branchez uniquement sur un réseau de tension indiquée. Consultez le manuel d'instruction du fabricant pour les spécifications de courant. N'oubliez pas que différentes tensions peuvent nécessiter l'utilisation de cables et/ou de fiches de connexion différents.
- N'installez pas l'appareil en un compartiment non-aéré ou directement au-dessus d'équipements générateurs de chaleur, tels qu'amplificateurs de courants, etc. Ne dépassez pas la température ambiante maximale de fonctionnement indiquée dans les spécifications du produit.
- Des fentes et ouvertures sont prévues dans le boîtier pour l'aération; Pour assurer le bon fonctionnement et pour prévenir l'échauffement, ces ouvertures ne doivent pas être couvertes ou bloquées. N'insérez pas d'objets dans les fentes d'aération. Empêchez tout liquide de se répandre sur l'appareil.
- Ce produit est muni d'une fiche à trois fils pour la mise à terre. Ceci est une mesure de sécurité et ne doit pas être contrariée.
- Ne connectez jamais d'amplificateurs audio directement aux connecteurs de l'appareil.
- Pour empêcher les chocs électriques et le danger d'incendie, évitez d'exposer l'appareil à la pluie ou à l'humidité, et ne le mettez pas en marche en un endroit où il serait exposé aux éclaboussures d'eau.
- N'essayez pas de faire fonctionner l'appareil s'il est tombé à terre, a été endommagé, exposé à un liquide, ou si vous observez des différences nettes dans son fonctionnement, indiquant la nécessité de réparations.
- Cet appareil ne doit être ouvert que par un personnel de service qualifié. En enlevant les couvercles vous vous exposez à des tensions électriques dangereuses.



Ce triangle, sur votre appareil vous avertit de la présence de tension dangereuse, non-isolée à l'intérieur du boîtier – une tension suffisante pour représenter un danger d'électrocution.



Ce triangle sur sur votre appareil vous invite de suivre d'importantes instructions d'utilisation et d'entretien dans la documentation livrée avec le produit.

IT

ITALIANO

IMPORTANTI NORME DI SICUREZZA

IT

Conservare le presenti norme per l'utilizzo futuro.

- Osservare tutte le istruzioni e le avvertenze apposte sull'unità.
- Utilizzare esclusivamente con la tensione di rete corretta. Consultare le istruzioni operative fornite dal fabbricante per i dati riguardanti la tensione e l'assorbimento di corrente. Potrebbe essere necessario l'uso di cavi di rete e/o di spine diverse a seconda della tensione utilizzata.
- Non installare l'unità in uno scaffale privo di ventilazione oppure direttamente sopra una fonte di calore, come, ad esempio, un amplificatore. Non superare la temperatura ambientale massima di funzionamento riportata nei dati tecnici del prodotto.
- Le fessure e le altre aperture nella scatola servono alla ventilazione. Per un funzionamento affidabile, e per evitare un eventuale surriscaldamento, queste aperture non vanno ostruite o coperte in nessun modo. Evitare in tutti i casi di inserire oggetti di qualsiasi genere attraverso le fessure di ventilazione. Non versare mai del liquido di nessun tipo sull'unità.
- Questo prodotto viene fornito con una spina a 3 fili con massa. Tale dispositivo di sicurezza non va eliminato.
- Evitare sempre di collegare le uscite dell'amplificatore audio direttamente ai connettori dell'unità.
- Per prevenire il pericolo di folgorazione e di incendio non esporre l'unità alla pioggia o ad un'umidità eccessiva; evitare di adoperare l'unità dove potrebbe entrare in contatto con acqua.
- Evitare di adoperare l'unità se la stessa è stata urtata violentemente, se ha subito un danno, se è stata esposta ad un liquido o in caso di un evidente cambiamento delle prestazioni che indichi la necessità di un intervento di assistenza tecnica.
- Ogni intervento sull'unità va eseguito esclusivamente da personale qualificato. La rimozione della copertura comporta l'esposizione al pericolo di folgorazione.



Il presente triangolo impresso sul componente avverte della presenza di tensioni pericolose non isolate all'interno della copertura – tali tensioni rappresentano un pericolo di folgorazione.



Il presente triangolo impresso sul componente avverte l'utente della presenza nella documentazione allegata di importanti istruzioni relative al funzionamento ed alla manutenzione.

PT

PORTUGUESE

INSTRUÇÕES DE SEGURANÇA IMPORTANTES

PT

Economize estas instruções para uso posterior.

- Siga todas as instruções e advertências marcadas na unidade.
- Sempre use com a voltagem de linha correta. Se refira ao fabricante está operando instruções para as exigências de poder. Seja aconselhado que voltagens operacionais diferentes requeiram para o uso uma corda de linha diferente ou tomada de anexo.
- Não instale esta unidade em uma prateleira de unventilated, nem diretamente sobre artigos que geram calor, como amplificadores de poder. Observe o máximo que temperatura operacional ambiente listou na especificação de produto.
- São providas as aberturas no caso para ventilação; assegurar operação segura e impedir isto de aquecer demais, não devem ser bloqueadas estas aberturas ou devem ser cobertas. Nunca empurre objetos de qualquer amável por quaisquer das aberturas de ventilação. Nunca derrame qualquer líquido na unidade.
- Nunca prenda amplificador de poder auditivo produz diretamente a quaisquer dos conectores da unidade.
- Prevenir choque ou perigo de incêndio, não exponha a unidade para chover ou umidade, ou opera isto onde será exposto a umidade. Não tente operar a unidade se foi derrubado, estragado, exposto a líquidos, ou se exibe uma mudança distinta em desempenho que indica a necessidade por serviço. Esta unidade só deveria ser aberta através de pessoal de serviço qualificado. Removendo coberturas o exporão a voltagens perigosas.



Este triângulo que se aparece em seu componente o alerta à presença de uninsulated, voltagem perigosa dentro do enclosure - voltage que pode ser suficiente para constituir um risco de choque.



Este triângulo que se aparece em seu componente o alerta a operando importantes e instruções de manutenção nesta literatura acompanhante.



DANSK



VIGTIG INFORMATION OM SIKKERHED

Gem denne vejledning til senere brug.

- Følg alle anvisninger og advarsler på apparatet.
- Apparatet skal altid tilsluttes den korrekte spænding. Der henvises til brugsanvisningen, der indeholder specifikationer for strømforsyning. Der gøres opmærksom på, at ved varierende driftsspændinger kan det blive nødvendigt at bruge andre lednings- og/eller stiktyper.
- Apparatet må ikke monteres i et kabinet uden ventilation eller lige over andet udstyr, der udvikler varme, f.eks. forstærkere. Den maksimale omgivelsestemperatur ved drift, der står opført i specifikationerne, skal overholdes.
- Der er ventilationsåbninger i kabinettet. For at sikre apparatets drift og hindre overophedning må disse åbninger ikke blokeres eller tildækkes. Stik aldrig noget ind igennem ventilationsåbningerne, og pas på aldrig at spilde nogen form for væske på apparatet.
- Dette apparat er forsynet med et stik med jordforbindelse. Denne sikkerhedsforanstaltning må aldrig omgås.
- Udgangsstik fra audioforstærkere må aldrig sættes direkte i apparatet.
- Apparatet må ikke udsættes for regn eller fugt og må ikke bruges i nærheden af vand for at undgå risiko for elektrisk stød og brand.
- Apparatet må aldrig bruges, hvis det er blevet stødt, beskadiget eller vådt, eller hvis ændringer i ydelsen tyder på, at det trænger til eftersyn.
- Dette apparat må kun åbnes af fagfolk. Hvis dækslet tages af, udsættes man for livsfarlig højspænding.



Denne mærkat på komponenten advarer om uisoleret, farlig spænding i apparatet – høj nok til at give elektrisk stød.



Denne mærkat på komponenten advarer om vigtig driftsog vedligeholdelsesinformation i den tilhørende litteratur.



SUOMI



TÄRKEITÄ TURVALLISUUSOHJEITA

Säilytä nämä ohjeet tulevaa käyttöä varten.

- Seuraa kaikkia yksikköön merkittyjä ohjeita ja varoituksia.
- Käytä aina oikeaa verkkojännitettä. Tehovaatimukset selviävät valmistajan käyttöohjeista. Huomaa, että eri käyttöjännitteet saattavat vaatia toisenlaisen verkkojohdon ja/tai – pistokkeen käytön.
- Älä asenna yksikköä telineeseen jossa ei ole tuuletusta, tai välittömästi lämpöä tuottavien laitteiden, esim. tehovahvistimien, yläpuolelle. Ympäristön lämpötila käytössä ei saa ylittää tuotespesifikaation maksimilämpötilaa.
- Kotelo on varustettu tuuletusreiillä ja -aukoilla. Luotettavan toiminnan varmistamiseksi ja ylläpölyä välttämiseksi näitä aukkoja ei saa sulkea tai peittää. Mitään esineitä ei saa työntää tuuletusaukoihin. Mitään nesteitä ei saa kaataa yksikköön.
- Tuote on varustettu 3-johimisella maadoitetulla verkkopistokkeella. Tämä on turvallisuustoiminne eikä sitä saa poistaa.
- Älä kytke audiotehovahvistimen lähtöjä suoraan mihinkään yksikön liittimeen.
- Sähköiskun ja palovaaran välttämiseksi yksikkö ei saa olla sateessa tai kosteassa, eikä sitä saa käyttää märässä ympäristössä.
- Älä käytä yksikköä jos se on pudonnut, vaurioitunut, kostunut, tai jos sen suorituskyky on huomattavasti muuttunut, mikä vaatii huoltoa.
- Yksikön saa avata vain laitteeseen perehtynyt huoltohenkilö. Kansien poisto allistaa sinut vaarallisille jännitteille.



Tämä kolmio, joka esiintyy komponentissasi, varoittaa sinua eristämättömän vaarallisen jännitteen esiintymisestä yksikön sisällä. Tämä jännite saattaa olla riittävän korkea aiheuttamaan sähköiskuvaaran.



Tämä kolmio, joka esiintyy komponentissasi, kertoo sinulle, että tässä tuotedokumentoinnissa esiintyy tärkeitä käyttö- ja ylläpito-ohjeita.



NORSK VIKTIG INFORMASJON OM SIKKERHET



Ta vare på denne veiledningen for senere bruk.

- Følg alle anvisningene og advarslene som er angitt på apparatet.
- Apparatet skal alltid anvendes med korrekt spenning. Produktbeskrivelsen inneholder spesifikasjoner for strømkrav. Vær oppmerksom på at det ved ulike driftsspenninger kan være nødvendig å bruke en annen ledning- og/eller støpseltype.
- Apparatet skal ikke monteres i skap uten ventilasjon, eller direkte over varmeproduserende utstyr, som for eksempel kraftforstærkere. Den maksimale romtemperaturen som står oppgitt i produktbeskrivelsen, skal overholdes.
- Apparatet er utstyrt med ventilasjonsåpninger. For at apparatet skal være pålitelig i bruk og ikke overopphetes, må disse åpningene ikke blokkeres eller tildekkes. Stikk aldri noe inn i ventilasjonsåpningene, og pass på at det aldri søles noen form for væske på apparatet.
- Dette apparatet er utstyrt med et jordet støpsel. Dette er en sikkerhetsforanstaltning som ikke må forandres.
- Utgangsplugger fra audioforstærkere skal aldri koples direkte til apparatet.
- Unngå brannfare og elektrisk støt ved å sørge for at apparatet ikke utsettes for regn eller fuktighet og ikke anvendes i nærheten av vann.
- Apparatet skal ikke brukes hvis det har blitt utsatt for støt, er skadet eller blitt vått, eller hvis endringer i ytelsen tyder på at det trenger service.
- Dette apparatet skal kun åpnes av fagfolk. Hvis dekselet fjernes, utsettes man for livsfarlig høyspenning.



Komponenten er merket med denne trekanten, som er en advarsel om at det finnes isolert, farlig spenning inne i kabinettet - høy nok til å utgjøre en fare for elektrisk støt.



Komponenten er merket med denne trekanten, som betyr at den tilhørende litteraturen inneholder viktige opplysninger om drift og ved



SVENSKA VIKTIGA SÄKERHETSFORESKRIFTER



Spara dessa föreskrifter för framtida bruk.

- Följ alla anvisningar och varningar som anges på enheten.
- Använd alltid rätt nätspänning. Se tillverkarens bruksanvisningar för information om effektkrav. Märkväl, att andra matningsspänningar eventuellt kräver att en annan typs nätsladd och/eller kontakt används.
- Installera inte enheten i ett oventilerat stativ, eller direkt ovanför utrustningar som avger värme, t ex effektförstärkare. Se till att omgivningens temperatur vid drift inte överskrider det angivna värdet i produktspecifikationen.
- Behållaren är försedd med hål och öppningar för ventilering. För att garantera tillförlitlig funktion och förhindra överhettning får dessa öppningar inte blockeras eller täckas. Inga föremål får skuffas in genom ventilationshålen. Inga vätskor får spillas på enheten.
- Produkten är försedd med en jordad 3-trådskontakt. Detta är en säkerhetsfunktion som inte får tas ur bruk.
- Anslut aldrig audioeffektförstärkarutgångar direkt till någon av enhetens kontakter.
- För att undvika elstöt eller brandfara får enheten inte utsättas för regn eller fukt, eller användas på ställen där den blir våt.
- Använd inte enheten om den har fallit i golvet, skadats, blivit våt, eller om dess prestanda förändrats märkbart, vilket kräver service.
- Enheten får öppnas endast av behörig servicepersonal. Farliga spänningar blir tillgängliga när locken tas bort.



Denna triangel, som visas på din komponent, varnar dig om en isolerad farlig spänning inne i enheten. Denna spänning är eventuellt så hög att fara för elstöt föreligger.



Denna triangel, som visas på din komponent, anger att viktiga bruksanvisningar och serviceanvisningar ingår i dokumentationen i fråga.

US *Unpacking and Inspection*

After unpacking the unit, save all packing materials in case the unit ever needs to be shipped. Thoroughly inspect the modules and packing materials for signs of damage. Report any damage to the carrier at once; report equipment malfunction to the dealer.

DE *Auspacken und Überprüfung*

Bewahren Sie nach dem Auspacken des Geräts das Verpackungsmaterial für den Fall auf, dass Sie das Gerät wieder versenden müssen. Überprüfen Sie die Module und die Verpackung sorgfältig auf Anzeichen von Beschädigung. Etwaige Schäden sind dem Transporteur unverzüglich anzuzeigen; Funktionsstörungen sind dem zuständigen Händler zu melden.

ES *Desembalaje e inspección*

Después de desembalar la unidad, guarde todos los materiales de embalaje por si alguna vez transportar la unidad. Inspeccione con atención los módulos y los materiales de embalaje para comprobar que no muestren desperfectos. Informe inmediatamente de cualquier desperfecto al transportista; informe de cualquier problema de funcionamiento del equipo a su distribuidor.

FR *Contenu de l'emballage et inspection*

Après avoir ouvert l'emballage, conservez-le pour tout retour. Inspectez avec soin les modules et les matériaux d'emballage pour tout signe de dommage. Veuillez rapporter immédiatement les dommages auprès du transporteur. Les dysfonctionnements du matériel doivent être signalés à votre revendeur.

IT *Disimballaggio ed ispezione*

Dopo aver disimballato l'unità, salvi tutto il materiale d'imballaggio, in caso Lei abbia bisogno di spedire l'unità. Ispezioni attentamente i moduli ed il materiale d'imballaggio per vedere se riportano segni di danno. Riporti subito ogni segno di danno al corriere; riferisca il malfunzionamento dell'attrezzatura al suo rivenditore.

PT *Retirando a embalagem e Inspeccionando*

Depois de desembalar a unidade, guarde a embalagem caso precise enviar a unidade para manutenção. Inspeccione cuidadosamente o módulo e a embalagem procurando sinais de dano. Avise à loja qualquer tipo de dano ou mal funcionamento do equipamento.

1

Getting Started

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ABOUT THE SDP-40

Thank you for purchasing the SDP-40 Digital Controller, a reference-quality, 12-channel audio and video control center with independent zone monitoring to provide control of input source selection in three zones at the same time. As flexible as it is powerful, the SDP-40 includes 12 configurable inputs, each of which can be assigned to its 13 digital audio, 8 analog audio, 5 composite video, 8 S-video, or 4 component video input connectors. The analog audio input connectors can be configured for stereo or 5.1-channel sources.

Beyond the standard 5.1-channel analog audio output connectors, the rear panel includes stereo rear and stereo subwoofer connectors, as well as stereo auxiliary connectors to provide even more audio channels. All Main Zone audio output connectors include 24-bit/96kHz D/A converters operating in dual differential mode. In addition, the SDP-40 Balanced includes balanced analog audio output connectors for all Main Zone and Zone 2 channels.

Inside and out, the SDP-40 is designed to remain viable in a future of emerging technologies. Two RS-232 connectors are provided for serial control, one to perform flash-memory software upgrades and configuration downloads and another to support future expansion. A removable access panel is provided to accommodate new connectors. Inside, two expansion slots are available for future hardware upgrades, making it possible to more than quadruple the SDP-40's tremendous processing power.

More than just an audio and video control center, the SDP-40 features the latest version of the critically acclaimed LOGIC7® decoding, which derives 7.1-channel output from stereo, 5.1-, and 6.1-channel sources. Unlike other decoders, LOGIC7 is compatible with all input sources and requires no special encoding. Because the improvement it provides is clearly audible, LOGIC7 decoding is widely regarded as the finest available.

In addition to LOGIC7, the SDP-40 is also equipped with Dolby Digital Surround EX, Dolby Pro Logic II, Dolby Pro Logic, dts 96/24, dts NEO:6, dts-ES, THX Ultra2, and THX Surround EX decoding. THX Ultra2 Certification guarantees that the SDP-40 meets the highest THX specifications.

With four 32-bit floating-point SHARC™ digital signal processing (DSP) engines, the SDP-40 offers unparalleled processing power. These DSP engines perform custom processing such as LOGIC7 decoding, bass enhancement, dialog enhancement, auto azimuth, 5-speaker enhancement, bass management, high-precision digital crossovers, and audio controls (tone controls). This processing is available at sample rates up to 96kHz, with 24-bit resolution to retain top performance from all input sources and listening modes. A fifth DSP engine is dedicated to decoding multi-channel compressed audio sources.

High-precision 24-bit/96kHz A/D converters can be used to convert stereo analog audio input signals to digital signals, allowing the SDP-40 to provide the benefits of precise digital signal processing without sacrificing signal integrity. Alternatively, stereo analog signals can bypass A/D conversion and internal processing, following a pure signal path directly to the output connectors.

Digital audio input signals are processed through a two-stage phase lock loop for extremely low intrinsic jitter and high rejection. Auto azimuth technology corrects timing and level imbalances in stereo sources, ensuring exceptionally accurate playback of surround-encoded sources. A digital audio pass-through option is available for recording digital input signals with a CD recorder or a similar component.

Complementing its pristine audio performance, the SDP-40 includes two broadcast-quality video switchers. An ultra-wide bandwidth component video switcher accepts analog component or RGB video signals, while a composite and S-video switcher accepts high-quality NTSC, PAL, or SECAM video signals. The component video switcher can pass High-Definition TV (HDTV) and Standard-Definition TV signals. Both switchers are designed to pass video signals without alteration or degradation.

An unparalleled audio and video control center, the SDP-40 represents a solid investment with awesome power, limitless possibilities, and leading-edge technological sophistication. Even the most demanding enthusiasts will be impressed with its exceptional performance. Add to this extensive expansion capabilities, and the SDP-40 is a must-have addition for any high-quality home theater.

HIGHLIGHTS

- 12 channels
- 12 configurable inputs
- 3 independent zones
- 13 digital audio input connectors, including 6 S/PDIF coaxial, 6 S/PDIF optical, and 1 AES/EBU
- 5.1-channel analog audio input connector
- Analog bypass option for stereo and 5.1-channel analog audio input connectors
- Auto switching between digital and analog audio input connectors
- 24-bit/192kHz D/A converters for all Main Zone audio channels
- Stereo subwoofer and LFE output connectors
- Manual calibration of speaker distances and output levels
- 4 component video input connectors with full HDTV compatibility
- BNC component video input and output connectors
- 8 S-video input connectors
- 5 composite video input connectors
- Broadcast-quality video switching
- Four 32-bit DSP engines
- Separate DSP engine for decoding compressed audio sources
- LOGIC7 decoding
- Dolby Digital Surround EX, Dolby Pro Logic II, and Dolby Pro Logic decoding
- dts 96/24, dts NEO:6, and dts-ES (discrete and matrix) decoding
- THX Ultra2 and THX Surround EX decoding
- THX Ultra2 Certification
- RS-232 connector for flash memory software upgrades and configuration downloads
- 2 internal expansion slots
- 2 digital audio output connectors
- 3 trigger output connectors
- Rear panel IR input connector
- 4 microphone input connectors
- Optional 19-inch rack-mount kit
- Balanced audio output connectors for all Main Zone and Zone 2 channels (SDP-40 Balanced only)

INSTALLATION CONSIDERATIONS

The SDP-40 requires special care during installation to ensure optimal performance. Pay particular attention to the bulleted items that begin below and to other precautions that appear throughout this user guide.

DO

- Install the SDP-40 on a solid, flat, level surface such as a table, shelf, or in a standard 19-inch equipment rack using the enclosed rack-mount kit.
- Select a dry, well-ventilated location out of direct sunlight.

DO NOT

- Expose the SDP-40 to high temperatures, humidity, steam, smoke, dampness, or excessive dust. Avoid installing the SDP-40 near radiators and other heat-producing appliances.
- Install the SDP-40 near unshielded TV or FM antennas, cable TV decoders, and other RF-emitting devices that might cause interference.

DO NOT *(continued)*

- Place the SDP-40 on a thick rug or carpet or cover the SDP-40 with a cloth, as this might prevent proper cooling.
- Place the SDP-40 on a windowsill or in another location in which it will be exposed to direct sunlight.
- Obstruct the front panel IR receiver. When the SDP-40 is not using the rear panel IR IN connector, the remote control must be in line-of-sight with the IR receiver for proper operation.

CAUTION

Before moving the SDP-40, make sure it is powered off with the rear panel power switch. Then, make sure the power cord is unplugged from the wall outlet.

REMOTE CONTROL BATTERY INSTALLATION

The remote control requires two AA batteries that should be replaced as needed. It is recommended to use Alkaline batteries, which last longer without leaking. When the batteries are low on power, the remote control enters a low-voltage condition that prevents it from operating the SDP-40. When this occurs, follow the instructions below to replace the batteries. Normal operation will resume when new batteries are installed.

To replace the remote control batteries:

1. Locate the battery compartment on the back of the remote control. Then, remove the battery compartment cover as shown in Figure 1-A (bottom-left). To do this, press the tab attached to the cover. When the tab is pressed, pull the cover away from the remote control.
2. Remove old batteries inserted in the battery compartment (if applicable).
3. Insert two AA batteries in the compartment as shown in Figure 1-B (bottom-center). Make sure the batteries are correctly inserted observing the proper polarity.
4. When new batteries have been installed, close the battery compartment cover as shown in Figure 1-C (bottom-right). To do this, align the cover with the guide on the back of the remote control. When the cover is aligned, press the cover until it "snaps" into place.
5. Dispose of the old batteries (if applicable).

Figure 1-A



Figure 1-B



Figure 1-C

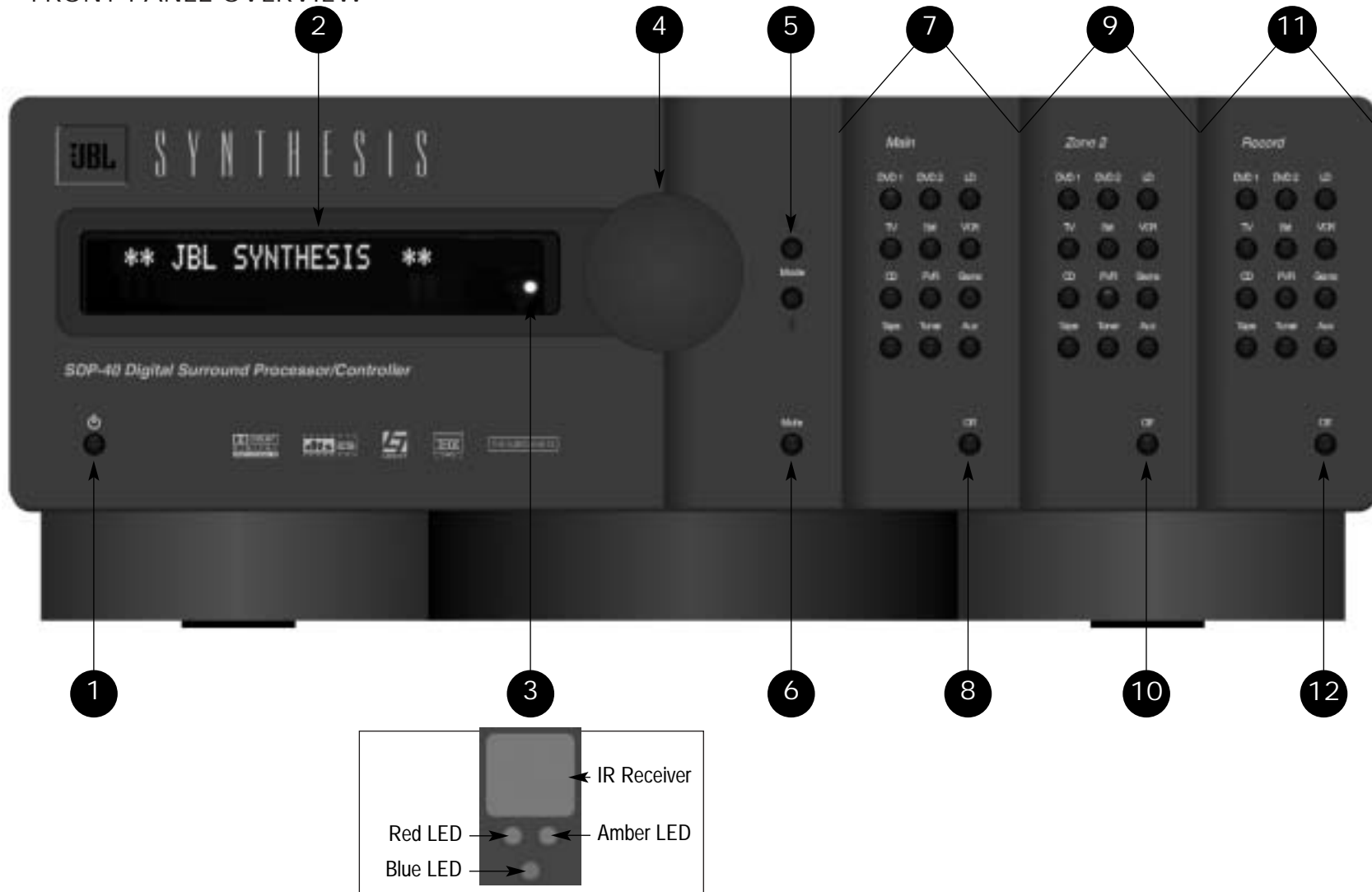


2

Basic Operation

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FRONT PANEL OVERVIEW



1. Standby Button

Activates and deactivates standby mode when the SDP-40 is powered on with the rear panel power switch. The standby button performs no function when the SDP-40 is powered off with the rear panel power switch.

When standby mode is activated, pressing the standby button deactivates standby mode and activates the SDP-40 including all zones that were activated during the previous operating session. When standby mode is deactivated, pressing the standby button activates standby mode and deactivates the SDP-40. The red standby button LED lights to indicate that standby mode is activated.

Note:

Power is still supplied to the SDP-40 when standby mode is activated.

2. Front Panel Display

Indicates the current input, listening mode, input source, and volume level. This 2 x 20 character display can also be used to view messages and menus, one line at a time.

3. IR Receiver

Receives infrared commands from the SDP-40 remote control. There are three LEDs located in this area as shown below. An amber LED blinks when a remote control command is received. A red LED lights when the A/D converters are overloading. And, a blue LED lights when the SDP-40 is powered on and activated – even if the FRONT PANEL DISPLAY menu STATUS parameter is set to ALWAYS OFF.





4. Volume Knob

Adjusts volume level in all zones.

Note:

When SDP-40 output levels have been properly calibrated, the +0dB volume level setting corresponds to THX reference levels (75dB).

5. Mode & Buttons

Scroll to the previous and next available listening mode, auditioning listening modes with the current Main Zone input source. Scrolling occurs in the order shown on the MODE ADJUST menu. Pressing the Mode  button scrolls upward through available listening modes, and pressing the Mode  button scrolls downward through available listening modes. For example, if a 2-channel source is present, the Mode  and  buttons scroll through available 2-channel listening modes. The selected listening mode appears in the bottom-left corner of the Main Zone two-line status. The SDP-40 automatically activates the selected listening mode when scrolling stops.

6. Mute Button

Mutes Main Zone volume level and restores Main Zone volume to its original level. Pressing the Mute button once lowers Main Zone volume level. The message "MUTE ON" appears on the on-screen and front panel displays. Pressing the Mute button again restores Main Zone volume to its original level. The VOLUME CONTROL SETUP menu MUTE LEVEL parameter can be used to set mute levels.

... Front Panel Overview continues on page 2-4

Front Panel Overview (continued from page 2-3)

The amber Mute button LED lights whenever mute is activated, whether activated automatically or manually. For instance, the SDP-40 briefly activates mute when changing input sources or listening modes.

To use the volume knob to adjust Main Zone volume level:

1. Rotate the volume knob clockwise to increase or counterclockwise to decrease volume level in 1dB increments. The horizontal graph shown here appears on the on-screen and front panel displays. This graph illustrates the position at which the current Main Zone volume level falls within the –80 to +6dB volume range.

**To use the volume knob to adjust Zone 2 or Record Zone volume level:**

1. Press and hold the front panel Zone 2 or Record Zone input selection button that corresponds with the current input source. For instance, if the current input source is using the DVD1 input, press and hold the DVD1 input selection button.
2. While holding the selected Zone 2 or Record Zone input selection button, rotate the volume knob clockwise to increase or counterclockwise to decrease volume level in 1dB increments. The corresponding horizontal graph shown



above appears on the on-screen and front panel displays. These graphs illustrate the position at which the current Zone 2 or Record Zone volume level falls within the –80 to +12dB volume range.

3. Release the selected Zone 2 or Record Zone input selection button when Zone 2 or Record Zone volume level has been set.

Note:

Remote control input selection buttons cannot be used to select Zone 2 or Record Zone volume level adjustment, even if the Zone 2 or RecordZone command bank is activated.

7. Main Zone Input Selection Buttons

Selects the input in the Main Zone. When an input is selected, a blue LED lights on the corresponding input selection button. When the Main Zone is deactivated, pressing a Main Zone input selection button activates the Main Zone and selects the corresponding input. Zone 2 and the Record Zone remain deactivated until a Zone 2 or Record Zone input is selected.

8. Main Zone Off Button

Deactivates the Main Zone.

9. Zone 2 Input Selection Buttons

Selects the input in Zone 2. When an input is selected, an amber LED lights on the corresponding input selection button. When Zone 2 is deactivated, pressing a Zone 2 input selection button activates Zone 2 and selects the corresponding input. The Main and Record Zones remain deactivated until a Main or Record Zone input is selected.

10. Zone 2 Off Button

Deactivates Zone 2.

11. Record Zone Input Selection Buttons

Selects the input in the Record Zone. When an input is selected, a red LED lights on the corresponding input selection button. When the Record Zone is deactivated, pressing a Record Zone input selection button activates the Record Zone and selects the corresponding input. The Main Zone and Zone 2 remain deactivated until a Main Zone or Zone 2 input is selected.

12. Record Zone Off Button

Deactivates the Record Zone.

REAR PANEL OVERVIEW

1. Power Switch

Connects power to the AC input connector and disconnects power from the AC input connector. The \circ represents the "off" position and the $|$ represents the "on" position. When the SDP-40 is powered on, the standby button can be used to activate and deactivate standby mode. When the SDP-40 is powered off, standby mode is not available.

2. AC Input Connector

Provides power to the SDP-40 through the supplied power cord (3 wire, 10 amp, IEC 320).

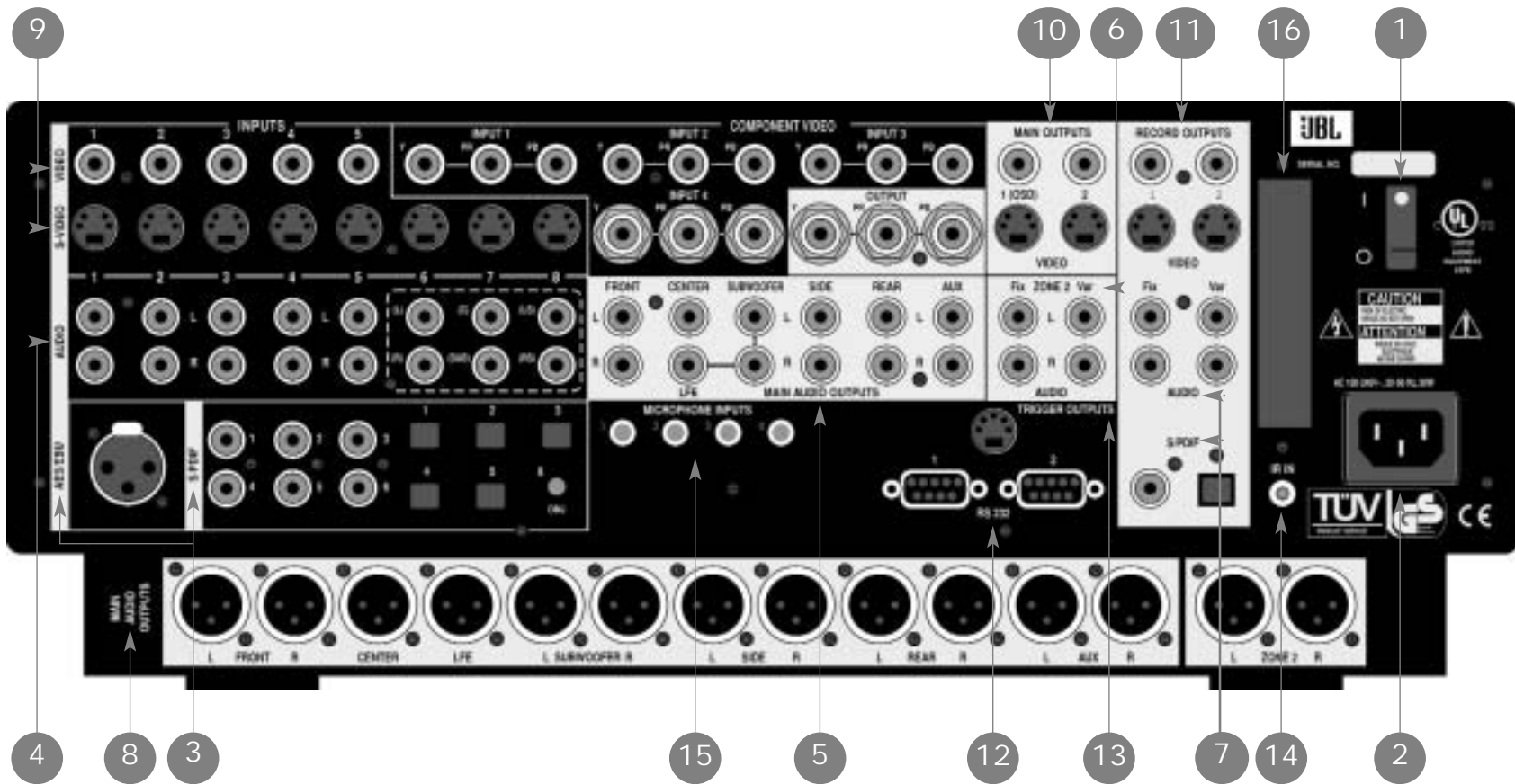
3. Digital Audio Input Connectors (S/PDIF & AES/EBU)

Provide digital audio input in all zones. Six S/PDIF coaxial, six S/PDIF optical (Toslink), and one AES/EBU (XLR) input connectors are available. These connectors are compatible with PCM (44.1, 48, 88.2, and 96kHz), Dolby Digital, and dts(-ES) sources. These connectors are not compatible with MPEG or MP3 sources.

4. Analog Audio Input Connectors

Provide analog audio input in all zones. Eight stereo analog audio input connectors labeled 1 to 8 are available. The connectors labeled 6, 7, and 8 can be configured as a 5.1-channel connector.

When a 5.1-channel analog audio source is present in the Main Zone, input signals are sent to the Main Zone audio output connectors as indicated in the table on page 2-7.



When a 5.1-channel analog source is present in the Main Zone and the INPUT SETUP menu ZONE2 IN or RECORD IN parameter is set to DMIX, only the (L) and (R) input signals are sent to the Zone 2 or Record Zone audio output connectors.

| Input Connector(s) | Output Connector(s) |
|--------------------|---------------------|
| (L) & (R) | Front L/R |
| (C) | Center |
| (SUB) | Subwoofer L/R & LFE |
| (LS) & (RS) | Side L/R & Rear L/R |

5. Main Zone Audio Output Connectors

Provide analog audio output in the Main Zone. Ten connectors labeled Front L/R, Center, LFE, Subwoofer L/R, Side L/R, and Rear L/R are available. Two connectors labeled Aux L/R are provided for future expansion.

6. Zone 2 Audio Output Connectors

Provide analog audio output in Zone 2. Two stereo connectors labeled Audio L/R are available. The connector labeled Fix passes audio at fixed output levels. The connector labeled Var passes audio at variable output levels and includes a built-in volume control.

7. Record Zone Audio Output Connectors

Provide analog and digital audio output in the Record Zone. Two stereo connectors labeled Audio L/R are available for analog audio output. The connector labeled Fix passes audio at fixed output levels. The connector labeled Var passes audio at variable output levels and includes a built-in volume control. Two S/PDIF connectors (one coaxial and one optical) are available for digital audio output.

Alternatively, these connectors can be used to connect a recording device. When the Record Zone audio output connector labeled Var is sent to a recording device, it is recommended to set the VOLUME CONTROL SETUP menu REC PWR ON parameter to +0dB to achieve appropriate recording levels. The Record Zone audio output connector labeled Var passes audio at variable output levels. Adjusting Record Zone volume level will affect the recording.

8. Audio Output Connectors

Provide analog audio output in the Main Zone and Zone 2. Ten connectors labeled Front L/R, Center, LFE, Subwoofer L/R, Side L/R, and Rear L/R are available in the Main Zone. The connectors labeled Aux L/R are provided for future expansion. Two connectors labeled Zone 2 L/R are available in Zone 2.

9. Video Input Connectors

Provide video input in all zones. Five composite video connectors labeled Video 1 to 5, eight S-video connectors labeled S-Video 1 to 8, and four component video connectors (three RCA and one BNC) labeled INPUT 1 to 4 are available. The component video connectors are not available for the Record Zone.

... Rear Panel Overview continues on page 2-8

Rear Panel Overview (continued from page 2-7)**10. Main Zone Video Output Connectors**

Provide video output in the Main Zone. Two composite video connectors, two S-video connectors, and one component video connector (BNC) are available. The composite and S-video connectors labeled 1 (OSD) incorporate the on-screen display.

Note:

- *Composite video output connectors are available when a composite or S-video source is present.*
 - *S-video output connectors are available when an S-video source is present.*
 - *Component video output connectors are available when a component video source is present.*
-

11. Record Zone Video Output Connectors

Provide video output in the Record Zone. Two composite video connectors and two S-video connectors are available. Alternatively, these connectors can be used to connect a video recording device.

12. RS-232 Connectors

Provide serial control. The RS-232 connector labeled 1 is provided to perform flash memory software upgrades and configuration downloads. The RS-232 connector labeled 2 is provided to support future expansion.

13. Trigger Output Connectors

Provide 12V DC output to control connected components. Three trigger output connectors are available on a removable terminal block. The connector labeled PWR – the power trigger output connector – is not configurable. It is activated when the SDP-40 is activated, and deactivated when the SDP-40 is deactivated. The trigger output connectors labeled 1 and 2 can be configured for remote or program operation.

14. IR IN Connector

Accepts input of IR signals from infrared distribution equipment. One 3.5mm jack that accepts a stereo plug (Tip/Ring connection) or mono plug (Tip/Sleeve connection) is available.

15. Microphone Input Connectors

Provided for future expansion. Four 3.5mm T/R/S or balanced inputs are available.

16. Removable Access Panel

Accommodates connectors for emerging technologies.

REMOTE CONTROL OVERVIEW

The SDP-40 remote control provides full operation of the SDP-40, performing commands such as menu navigation that are not available from the front panel. The command matrix that begins on page 2-14 indicates the commands remote control buttons perform when each command bank is activated. The numbered items in the matrix correspond with the remote control illustrations on pages 2-14 to 2-18.

OPERATION CONSIDERATIONS

The bulleted items that begin below describe factors that can improve or impede remote control operation. It is recommended to observe these items as well as the battery installation instructions on page 1-5 before operating the remote control.

Please note the following before operating the SDP-40 remote control:

- When the SDP-40 is not using the rear panel IR IN connector, the remote control must be in line-of-sight with the front panel IR receiver for proper operation. Eliminate obstructions between the remote control and the IR receiver. The remote control might become unreliable if strong sunlight or fluorescent light is shining on the IR receiver.
- For optimal performance, position the remote control at a 30 degree angle no more than 17 feet (5m) from the SDP-40. If the SDP-40 is placed inside a glass cabinet, smoked glass will reduce the remote control range.
- Remote controllers for different components can interfere with one another. It is recommended to avoid using remote controls for different components at the same time.
- The remote control batteries should be replaced as needed.






MAIN MENU

The MAIN MENU represents the beginning of the menu structure. It can be used to open the three main menu branches: MODE ADJUST, AUDIO CONTROLS, and SETUP.



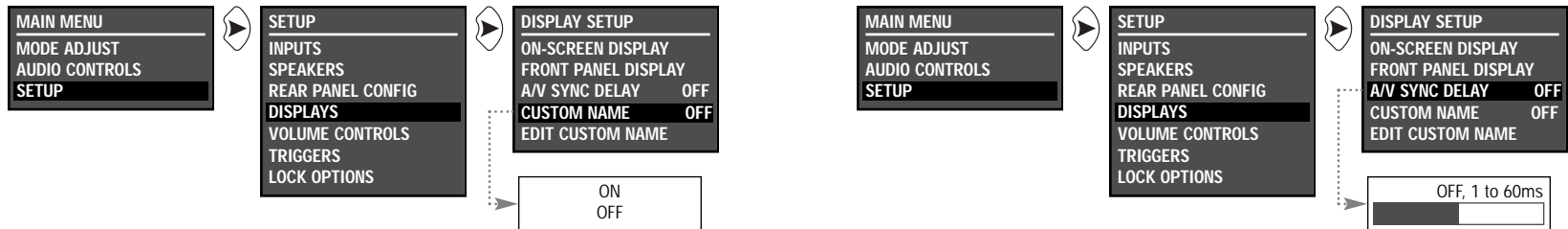
MENU NAVIGATION

The remote control MENU and arrow buttons must be used to navigate the extensive menu structure shown in the Appendix. The table below indicates the navigation commands remote control buttons perform when the Main Zone command bank is activated.

| Button | Navigation Command(s) |
|--|--|
|  | <ul style="list-style-type: none"> When a menu is open, pressing the MENU button closes the menu structure. When no menus are open, pressing the MENU button opens the MAIN MENU. |
|  | <ul style="list-style-type: none"> When a menu is open, pressing the ► arrow button selects the highlighted menu item, which selects the highlighted parameter setting or opens a menu, drop-down menu, or horizontal graph. When no menus are open, pressing the ► arrow button opens the MAIN MENU. |
|  | <ul style="list-style-type: none"> When a menu is open, pressing the ◀ arrow button closes the menu and, in most cases, returns to the previous menu. Subsequent presses continue to close the current menu and return to the previous menu until the MAIN MENU is closed. When the MAIN MENU is closed, the menu structure is also closed. When no menus are open, pressing the ◀ arrow button performs no function. When a drop-down menu is open, pressing the ◀ arrow button selects the current setting and closes the drop-down menu. |
|   | <ul style="list-style-type: none"> When a menu is open, pressing the ▲ and ▼ arrow buttons scrolls upward and downward through the complete list of menu items. The highlighted menu item appears on the front panel display. All menu items appear on the on-screen display. A scroll bar appears on the right side of the on-screen display when menu items exceed the on-screen display top and bottom margins. The cursor automatically wraps to the next menu item when the first or last menu item is passed. |

MENU ITEM SELECTION

The remote control arrow buttons must be used to select menu items.



To select a menu item on the open menu:

1. Press the ▲ and ▼ arrow buttons to highlight the desired menu item.
2. When the desired menu item is highlighted, press the ► arrow button to select the highlighted item. If an option is selected, another menu will open. If a parameter is selected, a parameter drop-down menu or horizontal graph will open.

Options

Selecting a menu option opens another menu within the menu structure. For instance, selecting the MAIN MENU SETUP option opens the SETUP menu as shown above.

Parameters

Selecting a menu parameter opens a drop-down menu or horizontal graph that can be used to select the desired setting. A drop-down menu contains a list of available settings. For instance, selecting the

DISPLAY SETUP menu CUSTOM NAME parameter opens the drop-down menu shown above (left), which can be used to select the ON or OFF setting.

To select the desired setting on a parameter drop-down menu:

1. When the drop-down menu opens, press the ▲ and ▼ arrow buttons to scroll upward and downward through the complete list of available settings. The current setting appears beneath the parameter name on the on-screen and front panel displays.
2. When the desired setting appears beneath the parameter name, press the ◀ arrow button to select the setting and close the drop-down menu.

A horizontal graph indicates the position at which the current parameter setting falls within the entire parameter range. For instance, selecting the DISPLAY SETUP menu A/V SYNC DELAY parameter opens the horizontal graph shown above (right), which can be used to adjust the amount of audio delay.

To select a parameter setting with a horizontal graph:

1. When the horizontal graph appears, press the ▲ and ▼ arrow buttons to increase and decrease the setting in designated increments. The current setting appears at the right of the parameter name on the on-screen and front panel displays.
2. When the desired adjustments have been made, press the ◀ arrow button to select the setting and close the horizontal graph.

COMMAND BANK ACTIVATION

Remote control buttons perform different commands depending on whether the Main Zone, Zone 2, Record Zone, or Shift command bank is activated. Pressing and releasing a remote control command bank selection button – MAIN, ZONE, REC, or SHIFT – activates the corresponding command bank. The selected command bank remains activated until another command bank is activated.

The command bank selection buttons themselves do not send commands to the SDP-40. When pressed and released, these buttons activate the corresponding command bank.

Note:

Remote control command bank selection buttons should not be pressed and held.

To activate a command bank:

1. Press and release a command bank selection button to activate the desired command bank.
2. Press a remote control button to send the associated command to the SDP-40. The command matrix that begins on the next page indicates the commands remote control buttons perform when each command bank is activated.

The ON-SCREEN DISPLAY menu REMOTE STATE parameter controls the remote control command bank indicator that appears on the on-screen display. When the REMOTE STATE parameter is set to ON, a command bank indicator appears in the top-right corner of the on-screen display to indicate the last command bank from which the SDP-40 received a command. When the REMOTE STATE parameter is set to OFF, no command bank indicator appears on the on-screen display.

A "Z" appears when a command from the Zone 2 command bank was received last. An "R" appears when a command from the Record Zone command bank was received last. An "S" appears when a command from the Shift command bank was received last. No letter appears when a command from the Main Zone command bank was received last.

COMMAND MATRIX

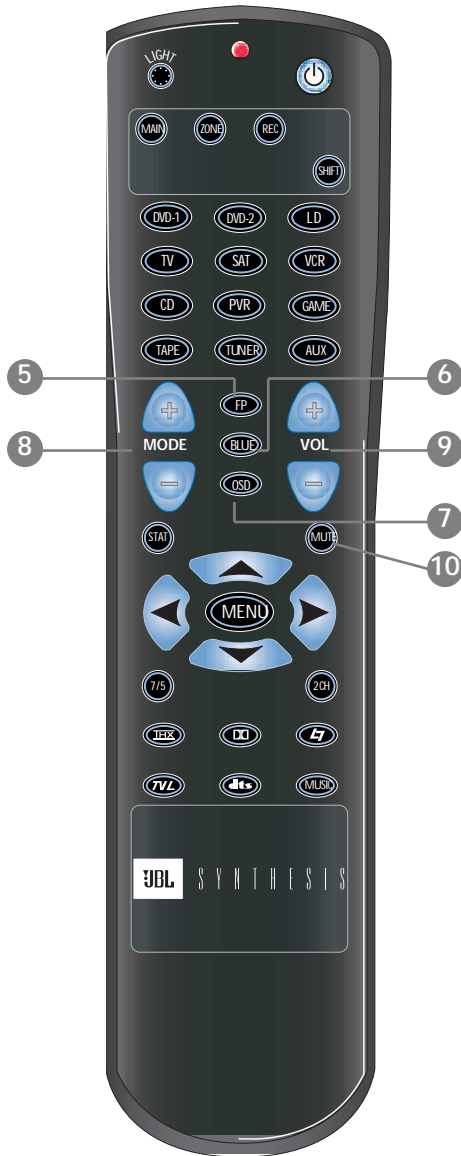
The command matrix that begins on the next page indicates the commands remote control buttons perform when each command bank is activated. The numbers in the SDP-40 remote control illustrations that also begin on the next page correspond with the numbered items in the matrix.









| Button | Main Zone | Zone 2 | Record Zone | Shift |
|----------------------------------|--|------------------------------------|---|--|
| 1 | Activates and deactivates standby mode when the SDP-40 is powered on with the rear panel power switch. The standby button performs no function when the SDP-40 is powered off with the rear panel power switch. When standby mode is activated, pressing the standby button deactivates standby mode and activates the SDP-40, including all zones that were activated during the previous operating session. When standby mode is deactivated, pressing the standby button activates standby mode and deactivates the SDP-40. The red front panel standby button LED lights to indicate that standby mode is activated. Note: Power is still supplied to the SDP-40 when standby mode is activated. | | | |
| 2 | Activates the remote control back-light, illuminating remote control buttons to make them more visible in the dark. The back-light also activates whenever a remote control button is pressed. No matter how the back-light is activated, it automatically fades about 5 seconds after the last remote control command is received. | | | |
| 3 | Activates the Main Zone command bank, which includes commands that control the Main Zone. Activates the Zone 2 command bank, which includes commands that control Zone 2 and the Main Zone. Activates the Record Zone command bank, which includes commands that control the Record and Main Zones. Activates the Shift command bank, which includes commands that control the Main Zone. | | | |
| 4 | Selects the DVD1 input for the Main Zone. | Selects the DVD1 input for Zone 2. | Selects the DVD1 input for the Record Zone. | Deactivates the Main Zone. |
| | Selects the DVD2 input for the Main Zone. | Selects the DVD2 input for Zone 2. | Selects the DVD2 input for the Record Zone. | Deactivates Zone 2. |
| | Selects the LD input for the Main Zone. | Selects the LD input for Zone 2. | Selects the LD input for the Record Zone. | Deactivates the Record Zone. |
| | Selects the TV input for the Main Zone. | Selects the TV input for Zone 2. | Selects the TV input for the Record Zone. | Sets the AUDIO CONTROLS menu LOUDNESS parameter to ON. |











| Button | Main Zone | Zone 2 | Record Zone | Shift |
|--------------|--|-------------------------------------|--|--|
| 4 SAT | Selects the SAT input for the Main Zone. | Selects the SAT input for Zone 2. | Selects the SAT input for the Record Zone. | Sets the AUDIO CONTROLS menu LOUDNESS parameter to OFF. |
| VCR | Selects the VCR input for the Main Zone. | Selects the VCR input for Zone 2. | Selects the VCR input for the Record Zone. | Reserved for future expansion. |
| CD | Selects the CD input for the Main Zone. | Selects the CD input for Zone 2. | Selects the CD input for the Record Zone. | Increases the AUDIO CONTROLS menu BASS parameter in 0.5dB increments. |
| PVR | Selects the PVR input for the Main Zone. | Selects the PVR input for Zone 2. | Selects the PVR input for the Record Zone. | Increases the AUDIO CONTROLS menu TREBLE parameter in 0.5dB increments. |
| GAME | Selects the GAME input for the Main Zone. | Selects the GAME input for Zone 2. | Selects the GAME input for the Record Zone. | Increases the AUDIO CONTROLS menu TILT EQ parameter in 0.2dB increments. |
| TAPE | Selects the TAPE input for the Main Zone. | Selects the TAPE input for Zone 2. | Selects the TAPE input for the Record Zone. | Decreases the AUDIO CONTROLS menu BASS parameter in 0.5dB increments. |
| TUNER | Selects the TUNER input for the Main Zone. | Selects the TUNER input for Zone 2. | Selects the TUNER input for the Record Zone. | Decreases the AUDIO CONTROLS menu TREBLE parameter in 0.5dB increments. |
| AUX | Selects the AUX input for the Main Zone. | Selects the AUX input for Zone 2. | Selects the AUX input for the Record Zone. | Decreases the AUDIO CONTROLS menu TILT EQ parameter in 0.2dB increments. |









| Button | Main Zone | Zone 2 | Record Zone | Shift |
|--|---|---|--|--|
| 5  | Toggles the FRONT PANEL DISPLAY menu STATUS parameter between ALWAYS OFF and its current setting. | Sets Zone 2 volume level to -15dB. | Sets Record Zone volume level to -15dB. | Sets Main Zone volume level to -15dB. |
| 6  | Toggles the ON-SCREEN DISPLAY menu BACKGROUND parameter between ON and OFF. | Sets Zone 2 volume level to -30dB. | Sets Record Zone volume level to -30dB. | Sets Main Zone volume level to -30dB. |
| 7  | Toggles the ON-SCREEN DISPLAY menu STATUS parameter between ALWAYS OFF and its current setting. | Reserved for future expansion. | Reserved for future expansion. | Sets the AUDIO CONTROLS menu BASS, TREBLE, and TILT EQ parameters to +0.0dB |
| 8  | Scroll to the previous and next available listening mode, auditioning listening modes with the current Main Zone input source. Scrolling occurs in the order shown on the MODE ADJUST menu. | Activates (+) and deactivates (-) the trigger output connector labeled 1 when the connector is configured for remote operation. | Activates(+) and deactivates (-) the trigger output connector labeled 2 when the connector is configured for remote operation. | Activates (+) and deactivates (-) standby mode when the SDP-40 is powered on with the rear panel power switch. This button performs no function when the SDP-40 is powered off with the rear panel power switch. |
| 9  | Increases and decreases Main Zone volume level in 1dB increments. | Increases and decreases Zone 2 volume level in 1dB increments. | Increases and decreases Record Zone volume level in 1dB increments. | Increases and decreases Main Zone volume level in 3dB increments. |
| 10  | Toggles between lowering Main Zone volume level and restoring Main Zone volume to its original level. | Toggles between fully muting Zone 2 volume level and restoring Zone 2 volume to its original level. | Toggles between fully muting Record Zone volume level and restoring Record Zone volume to its original level. | Toggles between fully muting Main Zone volume level and restoring Main Zone volume to its original level. |



| Button | Main Zone | Zone 2 | Record Zone | Shift |
|---|--|--|---|---|
| 11  | Displays the Main Zone two-line status for 2 seconds. | Displays the Zone 2 two-line status for 2 seconds. | Displays the Record Zone two-line status for 2 seconds. | Opens and closes the status menu for the current input source. |
| 12  | When a menu is open, pressing the MENU button closes the menu structure. When no menus are open, pressing the MENU button opens the MAIN MENU. | Centers the AUDIO CONTROLS menu ZONE2 BALANCE parameter. | Centers the AUDIO CONTROLS menu RECORD BALANCE parameter. | Centers the AUDIO CONTROLS menu Main Zone BALANCE and FADER parameters. |
| 13   | Closes the current menu (◀) or opens the menu structure and selects the highlighted menu item (▶). | Adjust the AUDIO CONTROLS menu ZONE2 BALANCE parameter left and right. | Adjust the AUDIO CONTROLS menu RECORD BALANCE parameter left and right. | Adjust the AUDIO CONTROLS menu Main Zone BALANCE parameter left and right. |
| 13   | Scroll upward and downward through menu items. | Increase and decrease subwoofer output levels applied to the current listening mode. | Reserved for future expansion. | Adjust the AUDIO CONTROLS menu Main Zone FADER parameter forward (▲) and backward (▼). |
| 14  | Toggles between 7- and 5-channel playback. Refer to page 3-31 for more information. | Reserved for future expansion. | Reserved for future expansion. | Adjusts the MAIN ADV menu INPUT SELECT parameter, cycling through the ANALOG, DIGITAL, and AUTO settings. |
| 15  | Toggles between the current listening mode and the 2-CHANNEL listening mode. | Reserved for future expansion. | Reserved for future expansion. | Toggles the MAIN ADV menu ANALOG BYPASS parameter between ON and OFF. |



| Button | Main Zone | Zone 2 | Record Zone | Shift |
|--|--|--------------------------------|--------------------------------|---|
| 16  | Selects the THX mode family for the current input source. | Reserved for future expansion. | Reserved for future expansion. | Activates the 5.1 THX , 5.1 THX ULTRA2 , or 5.1 THX SurEX listening mode when a 5.1-channel Dolby Digital source is present. |
|  | Selects the Dolby mode family for the current input source. | Reserved for future expansion. | Reserved for future expansion. | Activates the DOLBY DIGITAL EX or DOLBY DIGITAL listening mode when a 5.1-channel Dolby Digital source is present. |
|  | Selects the LOGIC7 Film mode family for the current input source. | Reserved for future expansion. | Reserved for future expansion. | Activates the PANORAMA listening mode. |
|  | Selects the LOGIC7 TV mode family for the current input source. | Reserved for future expansion. | Reserved for future expansion. | Activates the MONO LOGIC listening mode for 2-channel sources and the 5.1 MONO LOGIC listening mode for 5.1-channel sources. |
|  | Selects the dts mode family for the current input source. | Reserved for future expansion. | Reserved for future expansion. | When a dts(-ES) source is present, pressing the dts button toggles the DECODING parameter, cycling through the AUTO, ON, and OFF settings. |
|  | Selects the LOGIC7 Music mode family for the current input source. | Reserved for future expansion. | Reserved for future expansion. | Activates the MUSIC SURR listening mode. |

UNDERSTANDING THE ZONES

The SDP-40 features three zones of operation, called the Main Zone, Zone 2, and the Record Zone. The Main Zone controls audio and video sources in the primary listening space. Zone 2 controls audio and video sources in the secondary listening space. And, the Record Zone controls audio and video sources sent to recording devices or to a third listening space.

These zones have separate digital audio receivers and dedicated analog source selectors that allow for independent input selection in each zone. The SDP-40 can process input sources in three zones at the same time. For instance, the SDP-40 can play a DVD in the Main Zone, while playing a CD in Zone 2, while sending satellite receiver signals to a VCR in the Record Zone.

The following are exceptions to independent zone operation:

1. When a Dolby Digital or dts(-ES) source is present in the Main Zone, the same Dolby Digital or dts(-ES) source can also be present in Zone 2 or the Record Zone. However, a different Dolby Digital or dts(-ES) source cannot be present in Zone 2 or the Record Zone.
2. Main Zone multi-channel audio can be downmixed in Zone 2 or the Record Zone when all of the following conditions are met:
 - A Dolby Digital or dts(-ES) source is present in the Main Zone.
 - The Main Zone input is also selected in Zone 2 or the Record Zone. For instance, if the DVD1 input is selected in the Main Zone, the DVD1 input must also be selected in Zone 2 or the Record Zone.
 - The INPUT SETUP menu ZONE2 IN or RECORD IN parameter is set to DMIX.

3. When the INPUT SETUP menu ZONE2 IN or RECORD IN parameter is set to ANLG, the Zone 2 or Record Zone audio output connectors are not available when the 5.1a BYPASS listening mode is activated. However, it is possible to have a 5.1-channel analog audio source present in the Main Zone and a digital audio source present in Zone 2 or the Record Zone.

TWO-LINE STATUS

The two-line status opens on the on-screen and front panel displays whenever the SDP-40 detects a status change such as a new input source or listening mode. The information included on the two-line status differs depending on the zone in which the SDP-40 last detected a status change. For instance, the Main Zone two-line status opens when a Main Zone status change is detected.

Main Zone Two-Line Status

Opens on the on-screen and front panel displays whenever the SDP-40 detects a Main Zone status change. The Main Zone two-line status indicates the current input, listening mode, input source, and volume level selected in the Main Zone.



Zone 2 Two-Line Status

Opens on the on-screen and front panel displays whenever the SDP-40 detects a Zone 2 status change. The Zone 2 two-line status indicates the current input, input source, and volume level selected in Zone 2.



... Two-Line Status continues on page 2-20

Record Zone Two-Line Status

Opens on the on-screen and front panel displays whenever the SDP-40 detects a Record Zone status change. The Record Zone two-line status indicates the current input, input source, and volume level selected in the Record Zone.



The ON-SCREEN DISPLAY menu STATUS parameter can be used to control the length of time for which the two-line status appears on the on-screen and front panel displays. The ON-SCREEN DISPLAY menu POSITION parameter can be used to control the vertical alignment of the two-line status on the display device screen.

Note:

On-screen display menus – including the two-line status – will not appear on the display device screen when the display device is connected to a component video output connector and the MAIN ADV menu COMPONENT OSD parameter is set to OFF.

STATUS MENUS

When the Shift command bank is activated, pressing the remote control STAT button opens the status menu for the current input source. Status menus are available for 2-channel, Dolby Digital, dts(-ES), analog, and digital sources. All status menus are shown at the top of the next page.

Status menu parameters provide information about the current input source and listening mode. Some status menus also include level meters that indicate fluctuating audio input levels. Refer to page 2-24 for status menu parameter descriptions.

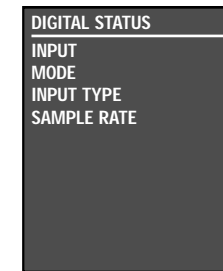
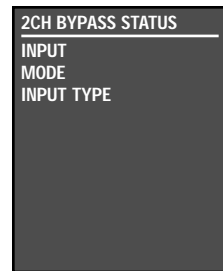
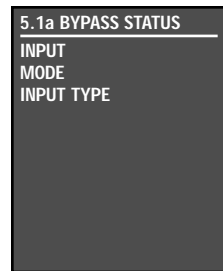
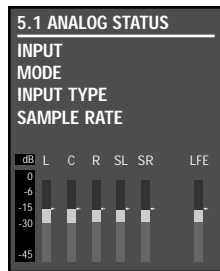
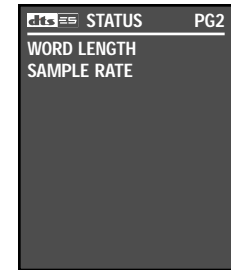
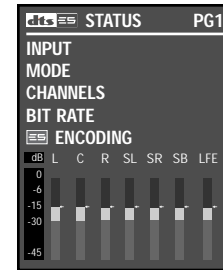
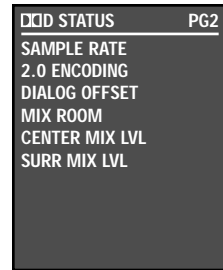
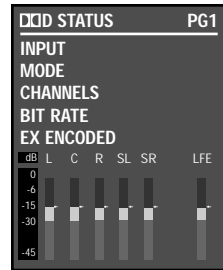
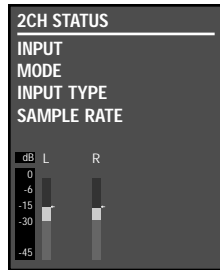
Note:

Status menu parameters provide information about the current input source and listening mode. These parameters cannot be adjusted.

Unlike most other menus, status menus cannot be opened through the selection of menu options. Rather, the remote control command sequence outlined below must be used.

To open and navigate the status menu for the current input source:

1. Press and release the remote control SHIFT button to activate the Shift command bank.
2. Press and release the remote control STAT button. The first page of the status menu for the current input source will open on the on-screen and front panel displays. If the status menu includes a second page, the PG1 indicator appears in the top-right corner of the menu. Press the STAT button again to open the second page. If the status menu does not include a second



page, pressing the STAT button again will close the menu. If this occurs, begin again with step 1.

3. When the desired status menu page has been opened, press the remote control ▲ and ▼ arrow buttons to scroll upward and downward through all status menu parameters included on the open page.
4. Press the STAT button to close the status menu. In some cases, the STAT button must be pressed twice in succession to close the status menu.

2CH STATUS

- Provides information about 2-channel sources.
- Includes L and R level meters.

| Parameter | Possible Settings |
|-------------|--------------------------------|
| INPUT | The current input |
| MODE | The current listening mode |
| INPUT TYPE | ANLG, PCM |
| SAMPLE RATE | 44.1kHz, 48kHz, 88.2kHz, 96kHz |

Refer to page 2-24 for status menu parameter descriptions.

DD STATUS

- Provides information about Dolby Digital sources.
- Includes L, C, R, SL, SR, and LFE level meters.

| Parameter | Possible Settings |
|----------------|-------------------------------------|
| INPUT | The current input |
| MODE | The current listening mode |
| CHANNELS | 3/2.1, 3/2, 3/1, 2/2, 2/1, 2/0, 1/0 |
| BIT RATE | 32 to 640kbps |
| EX ENCODING | ON, OFF |
| SAMPLE RATE | 48kHz |
| 2.0 ENCODING | MATRIX, NONE |
| DIALOG OFFSET | -27 to +4dB |
| MIX ROOM | SMALL, LARGE |
| CENTER MIX LVL | -3.0dB, -4.5dB, -6.0dB |
| SURR MIX LVL | +0.0dB, -3.0dB, -6.0dB |

Refer to page 2-24 for status menu parameter descriptions.

 & STATUS

- Provides information about dts(-ES) sources.
- Includes L, C, R, SL, SR, SB, and LFE level meters.

| Parameter | Possible Settings |
|-------------|--------------------------------|
| INPUT | The current input |
| MODE | The current listening mode |
| CHANNELS | 3/3.1, 3/2.1 |
| BIT RATE | 754.5 to 1509.7kbps |
| ES ENCODING | DISCRETE, MATRIX, OFF |
| WORD LENGTH | 16bits, 20bits, 24bits |
| SAMPLE RATE | 44.1kHz, 48kHz, 88.2kHz, 96kHz |

Refer to page 2-24 for status menu parameter descriptions.

5.1 ANALOG STATUS

- Provides information about 5.1-channel analog sources.
- Includes L, C, R, SL, SR, and LFE level meters.

| Parameter | Possible Settings |
|-------------|--------------------------------|
| INPUT | The current input |
| MODE | The current listening mode |
| INPUT TYPE | ANLG |
| SAMPLE RATE | 44.1kHz, 48kHz, 88.2kHz, 96kHz |

Refer to page 2-24 for status menu parameter descriptions.

5.1a BYPASS STATUS

- Provides information about 5.1-channel analog sources when the MAIN ADV menu ANALOG BYPASS parameter is set to ON.

| Parameter | Possible Settings |
|------------|-------------------|
| INPUT | The current input |
| MODE | 5.1a BYPASS |
| INPUT TYPE | BYPASS |

Refer to page 2-24 for status menu parameter descriptions.

2CH BYPASS STATUS

- Provides information about 2-channel analog sources when the MAIN ADV menu ANALOG BYPASS parameter is set to ON.

| Parameter | Possible Settings |
|------------|-------------------|
| INPUT | The current input |
| MODE | 2CH BYPASS |
| INPUT TYPE | BYPASS |

Refer to page 2-24 for status menu parameter descriptions.

DIGITAL STATUS

- Provides information about digital sources for which a sample rate is detected, but no audio is present in the input signal.

| Parameter | Possible Settings |
|-------------|--------------------------------|
| INPUT | The current input |
| MODE | The current listening mode |
| INPUT TYPE | --- |
| SAMPLE RATE | 44.1kHz, 48kHz, 88.2kHz, 96kHz |

Refer to page 2-24 for status menu parameter descriptions.

STATUS MENU PARAMETER DESCRIPTIONS

2.0 ENCODING

MATRIX, NONE

Indicates whether or not a matrix-encoded source is detected. When the parameter setting is MATRIX, a matrix-encoded source is detected. When the parameter setting is NONE, a matrix-encoded source is not detected. The SDP-40 cannot automatically detect matrix encoding in non-flagged input sources.

BIT RATE

32 to 640 kbps or 754 to 1509.7kbps

Indicates the rate at which the input signal is encoded. A higher bit rate indicates that less compression was used during the encoding process. Possible settings for Dolby Digital sources range from 32 to 640 kbps. Possible settings for dts(-ES) sources range from 754 to 1509.7kbps.

CENTER MIX LVL

-3.0dB, -4.5dB, -6.0dB

Indicates the relative level of the center channel that was used during the mixing process.

CHANNELS

3/3.1, 3/2.1, 3/2, 3/1, 2/2, 2/1, 2/0, 1/0

Indicates the number of channels present in the input source. The first digit indicates the number of front channels present. The digit after the slash indicates the number of surround channels present. The digit after the decimal point indicates the presence of LFE (low-frequency effects) information. For instance, if the parameter setting is 3/2.1, an input source with three front channels, two surround channels, and LFE information is present.

Possible settings for Dolby Digital sources include 3/2.1, 3/2, 3/1, 2/2, 2/1, 2/0, and 1/0. Current settings for dts(-ES) sources include 3/3.1 and 3/2.1.

DIALOG OFFSET

-27 to +4dB

Indicates the dialog normalization value applied to the input signal. Dolby Digital sources reproduce dialog at 27 decibels below full-scale (-27dBFS). When the dialog normalization value of the incoming signal is higher or lower, the DIALOG OFFSET parameter indicates the amount of adjustment the SDP-40 makes to normalize dialog to -27dBFS.

ES ENCODING

DISCRETE, MATRIX, OFF

Indicates whether or not a dts-ES-encoded source is detected. When the parameter setting is DISCRETE, a discrete 6.1-channel dts-ES source is detected. When the parameter setting is MATRIX, a 5.1-channel dts-ES source with a surround-encoded back channel is detected. When the parameter setting is NONE, a standard dts source with no dts-ES encoding is detected.

EX ENCODING

MATRIX, NONE

Indicates whether or not a Dolby Digital Surround EX-encoded source is detected. When the parameter setting is MATRIX, a 5.1-channel Dolby Digital source recorded with Dolby Digital Surround EX-encoding is detected. When the parameter setting is NONE, a standard 5.1-channel Dolby Digital source recorded without Dolby Digital Surround EX-encoding is detected. The SDP-40 cannot automatically detect Dolby Digital Surround EX encoding in non-flagged input sources.

INPUT

Indicates the current input (i.e. DVD1).

INPUT TYPE

ANLG, BYP, PCM, ---

Indicates the input source that is present. When the parameter setting is ANLG, an analog audio source is present and the MAIN ADV menu ANALOG BYPASS parameter is set to OFF. When the parameter setting is BYP, an analog audio source is present and the ANALOG BYPASS parameter is set to ON. When the parameter setting is PCM, a 2-channel digital audio source is present. When the parameter setting is ---, a sample rate is detected, but no audio is detected in the digital audio input signal.

MIX ROOM

SMALL, LARGE

Indicates the size of the mixing room that was used during the mixing process. When the parameter setting is LARGE, it is recommended to set the RE-EQUALIZATION parameter to ON for THX listening modes.

MODE

Indicates the current (activated) listening mode (i.e. L7 FILM).

SAMPLE RATE

44.1kHz, 48kHz, 88.2kHz, 96kHz

Indicates the sample rate of the input source that is present.

SURR MIX LVL

+0.0dB, -3.0dB, -6.0dB

Indicates the relative surround channel level that was used during the mixing process.

WORD LENGTH

16bits, 20bits, 24bits

Indicates the word length of the audio data present in the input signal.

Status Menu Level Meters

Most status menus contain level meters that indicate fluctuating input levels in the front left (L), center (C), front right (R), surround left (SL), surround right (SR), surround back (SB), and LFE (LFE) channels. These level meters indicate input levels for both analog and digital audio sources. For instance, the level meters indicate digital audio input levels when a digital audio source is present.

Different combinations of level meters appear on each status menu, depending on the input source that is present. The SB level meter appears when a 6.1-channel source is present, or when a 5.1-channel source is present and the ES DECODING parameter is set to ON.

Level meters appear in combinations of green, yellow, and red when the on-screen display is configured for a blue-screen background. Green indicates low input levels, yellow indicates normal input levels, and red indicates high input levels and the onset of overload. Level meters appear in white when the on-screen display is not configured for a blue-screen background.

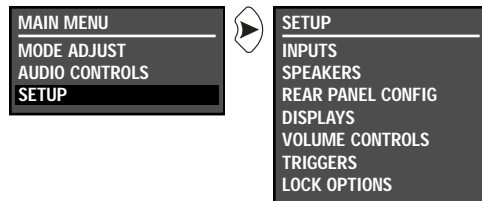
3

SETUP

| | |
|--|------|
| SETUP | 3-2 |
| INPUT SETUP | 3-3 |
| <i>Changing Input Names • Assigning Audio & Video Input Connectors • Selecting Preferred Listening Modes • Configuring Advanced Input Settings</i> | |
| SPEAKER SETUP | 3-21 |
| <i>Setting Crossover Points • Calibrating Speaker Distances & Output Levels • Manual Calibration • Setting Bass Peak Limiters</i> | |
| REAR PANEL CONFIG | 3-41 |
| DISPLAY SETUP | 3-42 |
| <i>On-Screen Display • Front Panel Display • A/V Sync Delay • Custom Name • Edit Custom Name</i> | |
| VOLUME CONTROL SETUP | 3-47 |
| TRIGGER SETUP | 3-48 |
| LOCK OPTIONS | 3-50 |

SETUP

Selecting the MAIN MENU SETUP option opens the SETUP menu shown below, which can be used to configure the SDP-40.



INPUTS

SETUP ► INPUTS

Prompts the selection of the desired input (i.e. DVD1). Selecting an input opens the corresponding INPUT SETUP menu, which can be used to change input names, assign audio and video input connectors, select preferred listening modes, and configure advanced Main Zone, Zone 2, and Record Zone input settings. Refer to the next page for more information.

SPEAKERS

SETUP ► SPEAKERS

Opens the SPEAKER SETUP menu, which can be used to configure the Main Zone audio output connectors for the desired speaker setup. Refer to page 3-21 for more information.

REAR PANEL CONFIG

SETUP ► REAR PANEL CONFIG

Opens the REAR PANEL CONFIG menu, which can be used to configure the analog audio input connectors as eight stereo connectors or as five stereo and one 5.1-channel connectors. Refer to page 3-41 for more information.

DISPLAYS

SETUP ► DISPLAYS

Opens the DISPLAY SETUP menu, which can be used to customize the on-screen and front panel displays, restore audio/video synchronization, and create and activate a custom unit name. Refer to page 3-42 for more information.

VOLUME CONTROLS

SETUP ► VOLUME CONTROLS

Opens the VOLUME CONTROL SETUP menu, which can be used to configure Main Zone, Zone 2, and Record Zone volume levels. Refer to page 3-47 for more information.

TRIGGERS

SETUP ► TRIGGERS

Prompts the selection of the desired trigger output connector (1 or 2). Selecting a connector opens the corresponding TRIGGER SETUP menu, which can be used to configure the selected connector for remote or program operation. Refer to page 3-48 for more information.

LOCK OPTIONS

SETUP ► LOCK OPTIONS

Opens the LOCK OPTIONS menu, which can be used to protect MODE ADJUST, AUDIO CONTROLS, and SETUP menu branch parameter settings from accidental changes. Refer to page 3-50 for more information.

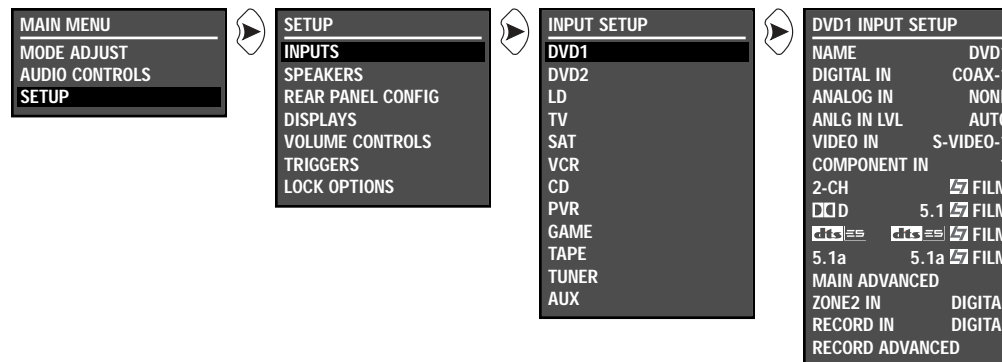
INPUT SETUP

SETUP ► INPUTS ► DVD1 ► DVD1 INPUT SETUP

Selecting the SETUP menu INPUTS option prompts the selection of the desired input (i.e. DVD1). Selecting an input opens the corresponding INPUT SETUP menu, which can be used to change input names, assign audio and video input connectors, select preferred listening modes, and configure advanced Main Zone, Zone 2, and Record Zone input settings.

The DVD1 INPUT SETUP menu is shown below as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

All INPUT SETUP menus are shown in the Appendix on page A-6. The parameters on the left side of the INPUT SETUP menus are identical regardless of which input is selected. The parameter settings on the right side are adjustable. The INPUT SETUP menus shown in the Appendix indicate factory-default parameter settings for each input.

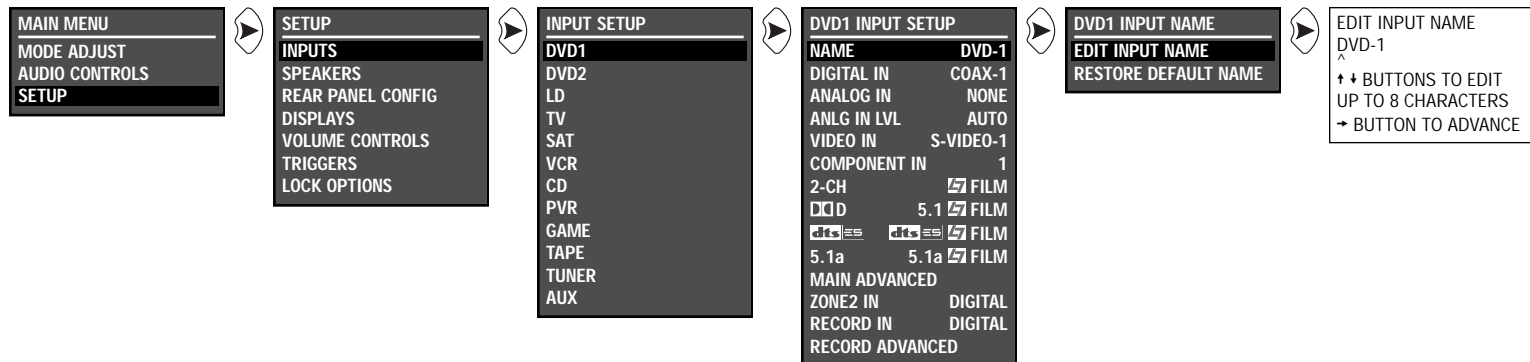


The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

CHANGING INPUT NAMES

SETUP ▶ INPUTS ▶ DVD1 ▶ NAME

Selecting the INPUT SETUP menu NAME option opens the INPUT NAME menu shown below, which can be used to customize or restore the factory-default name of the selected input. Factory-default input names correspond to front panel and remote control input selection button labels.



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

EDIT INPUT NAME

SETUP ▶ INPUTS ▶ DVD1 ▶ NAME ▶ EDIT INPUT NAME

Opens the EDIT INPUT NAME drop-down menu shown above, which can be used to customize the name of the selected input. Custom input names can include up to eight characters.

To customize the name of the selected input:

1. Follow the EDIT INPUT NAME menu path shown above to open the EDIT INPUT NAME drop-down menu.
2. When the EDIT INPUT NAME drop-down menu opens, locate the current input name on the second line of the drop-down menu. The cursor automatically appears beneath the first character in the current input name.
3. When the current input name is located, use the following remote control commands to enter the desired input name:
 - Press the ▲ and ▼ arrow buttons to change the character above the cursor.
 - Press the ▶ arrow button to advance to the next character space. The cursor will automatically wrap to the first character space when the last (eighth) character space is passed.

- Press the ◀ arrow button to return to the previous character space. When the cursor is positioned in the first character space, pressing the ◀ arrow button will close the EDIT INPUT NAME drop-down menu.
4. When the desired input name has been entered, press the ◀ arrow button until the EDIT INPUT NAME drop-down menu closes.

The custom input name appears on the on-screen and front panel displays. Both the custom and factory-default input names appear on the menu that prompts the selection of the desired input. The custom input name appears against the left margin of the on-screen display, and the factory-default input name appears in parentheses against the right margin of the on-screen display.

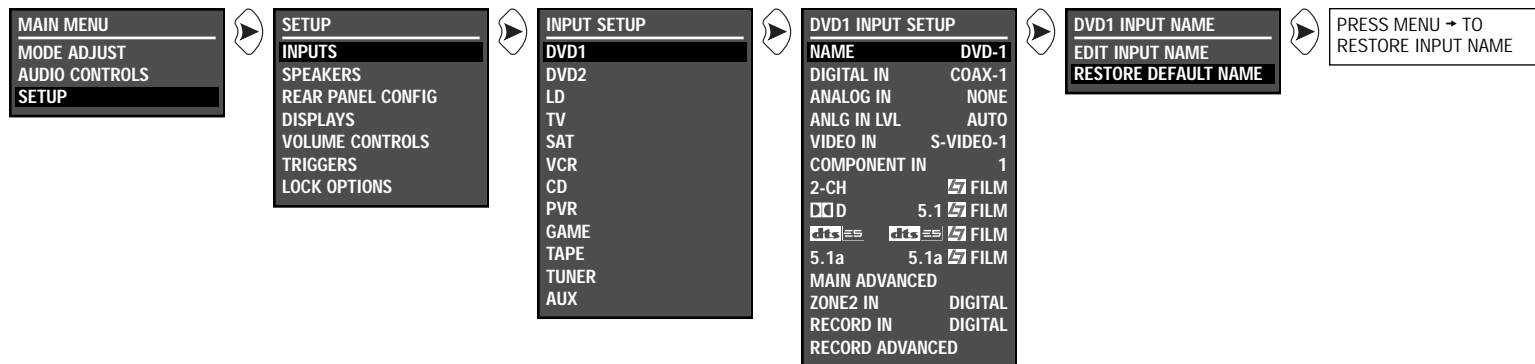
RESTORE DEFAULT NAME

SETUP ▶ INPUTS ▶ DVD1 ▶ NAME ▶ RESTORE DEFAULT NAME

Restores the factory-default name of the selected input. Factory-default input names correspond to front panel and remote control input selection button labels.

To restore the factory-default name of the selected input:

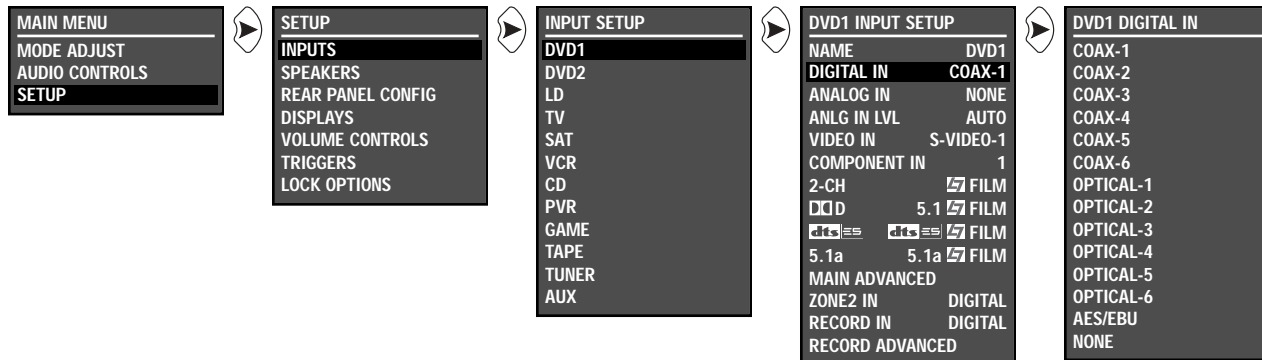
1. Follow the RESTORE DEFAULT NAME menu path shown above to select the RESTORE DEFAULT NAME option. When the RESTORE DEFAULT NAME option is selected, the message “PRESS MENU → TO RESTORE INPUT NAME” appears on the on-screen and front panel displays as shown below.
2. When this message appears, press the ▶ arrow button to restore the factory-default name of the selected input. (Press the ◀ arrow button to close the message without restoring the factory-default name of the selected input.)



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

ASSIGNING AUDIO & VIDEO INPUT CONNECTORS

The SDP-40 has 12 configurable inputs, each of which can be assigned to its 13 digital audio, 8 analog audio, 5 composite video, 8 S-video, or 4 component video input connectors.



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

The table below indicates the INPUT SETUP menu parameters that can be used to assign audio and video input connectors. The ANLG IN LVL parameter can be used to adjust 2-channel analog audio input levels for the selected input.

| Parameter | Possible Settings |
|--------------|--|
| DIGITAL IN | COAX-1 to 6, OPTICAL-1 to 6, AES/EBU, NONE |
| ANALOG IN | ANALOG-1 to 8, 5.1 ANLG (6-8), NONE |
| ANLG IN LVL | AUTO, -18 to +12dB |
| VIDEO IN | COMPOSITE-1 to 5, S-VIDEO-1 to 8, NONE |
| COMPONENT IN | COMPONENT-1 to 4, NONE |

DIGITAL IN COAX-1 to 6, OPTICAL-1 to 6, AES/EBU, NONE

SETUP → INPUTS → DVD1 → DIGITAL IN

Opens the DIGITAL IN menu shown above, which can be used to assign a digital audio input connector for the selected input. A digital audio input connector must be assigned if no analog audio input connector is assigned.

Note:

The digital audio input connectors are compatible with PCM (44.1, 48, 88.2, and 96kHz), Dolby Digital, and dts(-ES) sources. The digital audio input connectors are not compatible with MPEG or MP3 sources.

When no digital audio input connector is assigned, the SDP-40 automatically sets the:

- MAIN ADV menu INPUT SELECT parameter to ANALOG
- INPUT SETUP menu ZONE2 IN parameter to ANLG
- INPUT SETUP menu RECORD IN parameter to ANLG

ANALOG IN ANALOG-1 to 8, 5.1 ANLG (6-8), NONE

SETUP ▶ INPUTS ▶ DVD1 ▶ ANALOG IN

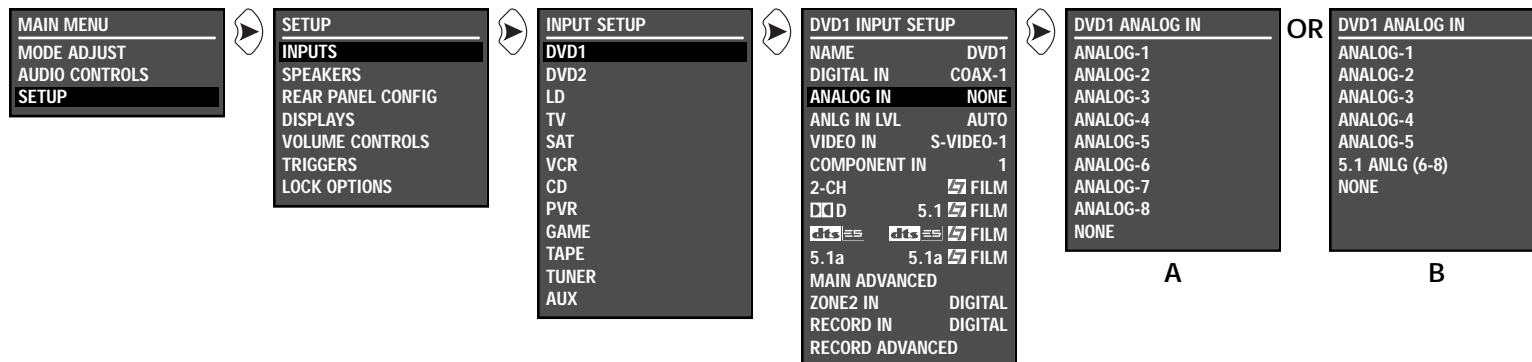
Opens the ANALOG IN menu shown below, which can be used to assign an analog audio input connector for the selected input. An analog audio input connector must be assigned if no digital audio input connector is assigned.

The configuration of the analog audio input connectors determines available ANALOG IN parameter settings. The settings shown on menu A (below) are available when the analog audio input connectors are configured as eight stereo connectors. The settings shown on menu B (below) are available when the analog audio input connectors are configured as five stereo and one 5.1-channel connectors.

When no analog audio input connector is assigned, the SDP-40 automatically sets the:

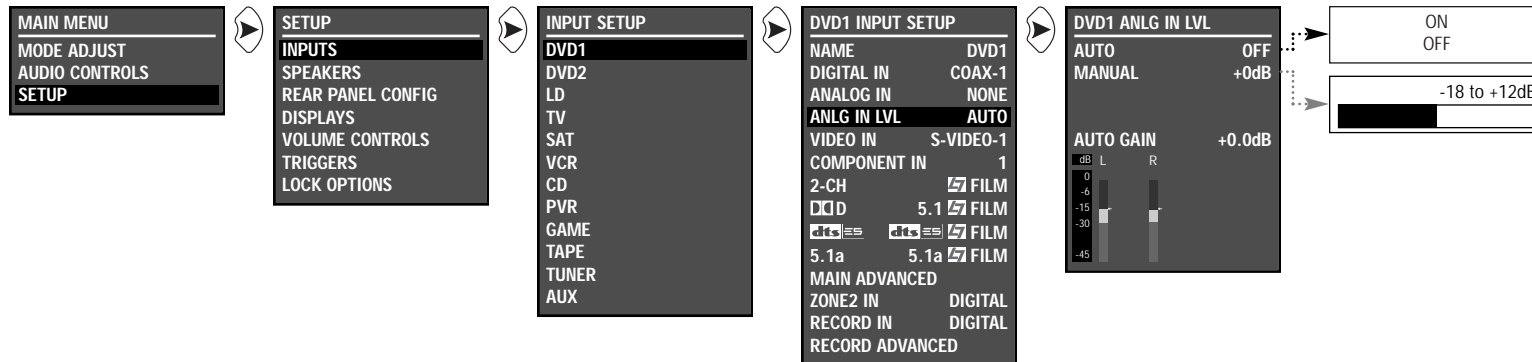
- MAIN ADV menu INPUT SELECT parameter to DIGITAL
- INPUT SETUP menu ZONE2 IN parameter to DIGITAL
- INPUT SETUP menu RECORD IN parameter to DIGITAL

... Assigning Audio & Video Input Connectors continues on page 3-8



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

Assigning Audio & Video Input Connectors (continued from page 3-7)



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

ANLG IN LVL

AUTO, -18 to +12dB



Opens the ANLG IN LVL menu shown above, which can be used to adjust 2-channel analog audio input levels for the selected input. Despite attempts at standardization, analog sources still have a wide range of input levels. To compensate for this, the SDP-40 allows independent input level adjustment for each of its stereo analog audio input connectors. Input level adjustment is not available for the 5.1-channel analog audio input connector.

| Parameter | Possible Settings |
|------------|-------------------|
| AUTO | ON, OFF |
| MANUAL | -18 to +12dB |
| AUTO GAIN* | -18 to +12dB |

* This parameter cannot be adjusted.

Note:

ANLG IN LVL menu adjustments are applied to the stereo analog audio input connector assigned for the selected input. When another stereo analog audio input connector is assigned, these adjustments are automatically applied to the new connector.

AUTO

ON, OFF

SETUP ► INPUTS ► DVD1 ► ANLG IN LVL ► **AUTO**

Activates automatic adjustment of 2-channel analog audio input levels. When ON is selected, the SDP-40 automatically monitors and optimizes 2-channel analog audio input levels. When the input signal is too high, the SDP-40 quickly decreases input levels to avoid overload. When the input signal is too low, the SDP-40 slowly increases input levels to maximize signal-to-noise ratio and dynamic range.

When OFF is selected, the SDP-40 does not automatically monitor and optimize 2-channel analog audio input levels. The MANUAL parameter is available for manual input level adjustment.

MANUAL

-18 to +12dB

SETUP ► INPUTS ► DVD1 ► ANLG IN LVL ► **MANUAL**

Allows manual adjustment of 2-channel analog audio input levels. When the MANUAL parameter setting is adjusted, the SDP-40 automatically sets the AUTO parameter to OFF, deactivating automatic input level adjustment. When the AUTO parameter is set to ON, manual input level adjustments are retained (though not applied).

Note:

When the AUTO parameter is set to ON, the SDP-40 will not make automatic input level adjustments that exceed the MANUAL parameter setting.

AUTO GAIN

SETUP ► INPUTS ► DVD1 ► ANLG IN LVL ► **AUTO GAIN**

Indicates the current amount of input level adjustment for the assigned stereo analog audio input connector. When the AUTO parameter is set to ON, the AUTO GAIN parameter indicates the amount of adjustment being applied until automatic adjustments are made. Then, the AUTO GAIN parameter indicates the amount of automatic input level adjustment being applied.

When the AUTO parameter is set to OFF, the AUTO GAIN parameter indicates the amount of manual adjustment being applied. (In other words, the AUTO GAIN parameter reflects the MANUAL parameter setting.)

LEVEL METERS

Indicate fluctuating input levels in the front left (L) and front right (R) channels for the selected input. Like status menu level meters, ANLG IN LVL menu level meters indicate input levels for both digital and analog audio sources. However, ANLG IN LVL menu input level adjustment only affects 2-channel analog audio sources.

When the on-screen display is configured for a blue-screen background, level meters appear in combinations of green, yellow, and red. Green indicates low input levels, yellow indicates normal input levels, and red indicates high input levels and the onset of overload. When the on-screen display is not configured for a blue-screen background, level meters appear in white.

. . . Assigning Audio & Video Input Connectors continues on page 3-10

Assigning Audio & Video Input Connectors (continued from page 3-9)

VIDEO IN COMPOSITE-1 to 5, S-VIDEO-1 to 8, NONE

SETUP ▶ INPUTS ▶ DVD1 ▶ VIDEO IN

Opens the VIDEO IN menu shown below, which can be used to assign a composite or S-video input connector for the selected input.

Note:

- Composite video output connectors are available when a composite or S-video source is present.
- S-video output connectors are available when an S-video source is present.

COMPONENT IN

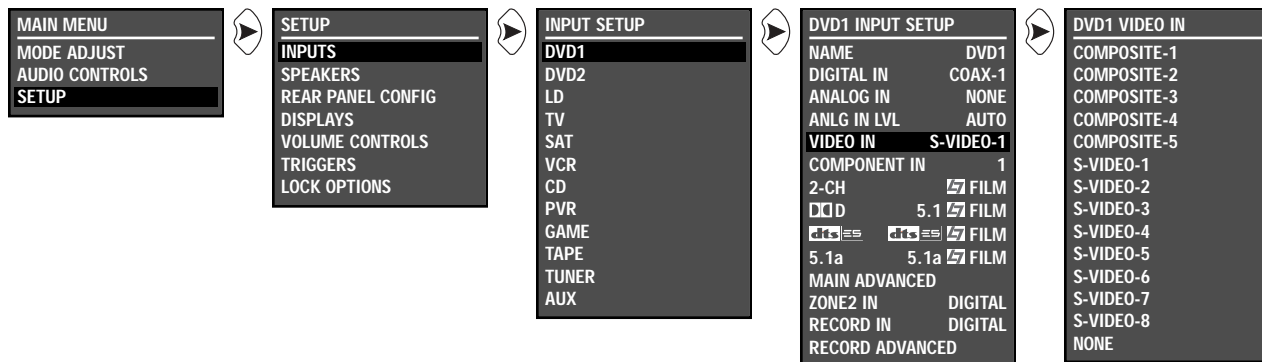
COMPONENT-1 to 4

SETUP ▶ INPUTS ▶ DVD1 ▶ COMPONENT IN

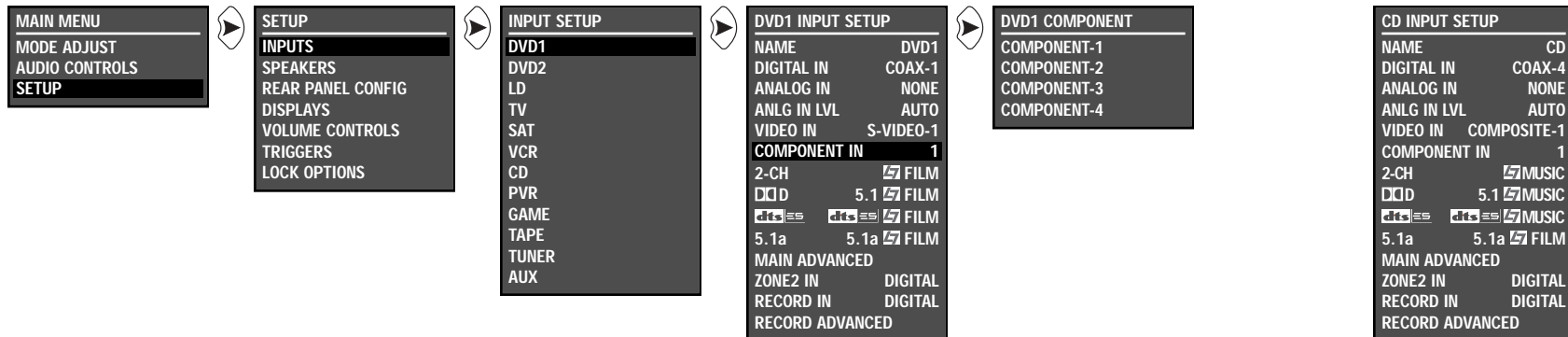
Opens the COMPONENT menu shown at the top of the next page, which can be used to assign a component video input connector for the selected input.

Note:

- Component video output connectors are only available when a component video source is present.



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

SELECTING PREFERRED LISTENING MODES

The SDP-40 allows the selection of four preferred listening modes for each Main Zone input, including one listening mode each for 2-channel, Dolby Digital, dts(-ES), and 5.1-channel analog sources. The table below indicates the INPUT SETUP menu parameters that can be used to select preferred listening modes.

Preferred Listening Mode Selection Parameters

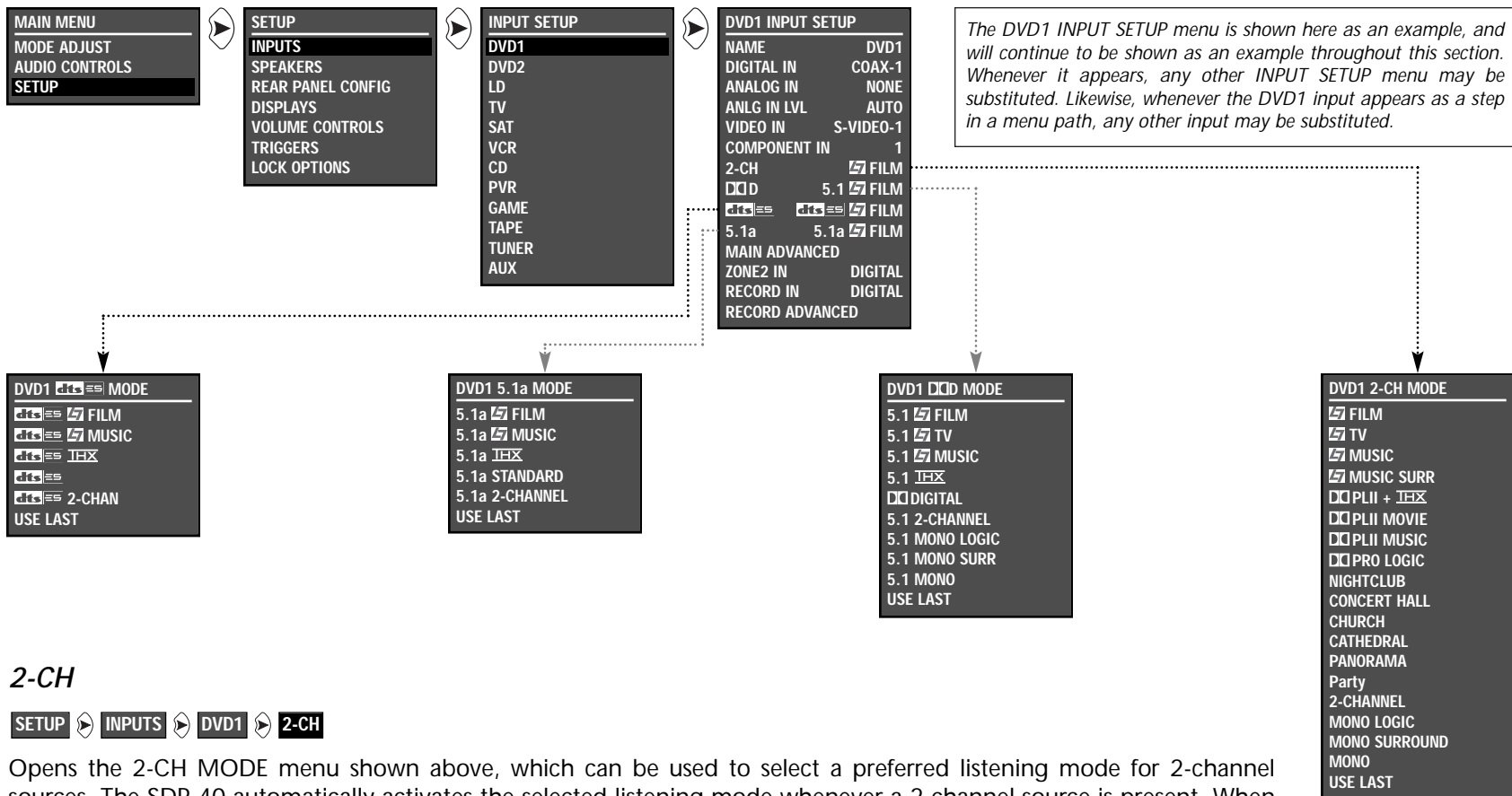
| | |
|----------|---|
| 2-CH | Selects a preferred listening mode for 2-channel sources |
| DDD | Selects a preferred listening mode for Dolby Digital sources |
| dts(-ES) | Selects a preferred listening mode for dts(-ES) sources |
| 5.1a | Selects a preferred listening mode for 5.1-channel analog sources |

When a preferred listening mode is selected, the SDP-40 automatically activates that listening mode whenever a new input is selected or an appropriate input source is present. For instance, the DVD1 and CD INPUT SETUP menu preferred listening mode selection parameters are set as shown above.

- If the DVD1 input is selected while a 2-channel source is present, the SDP-40 will automatically activate the **FILM** listening mode. If a 5.1-channel analog source becomes present, the SDP-40 will automatically activate the 5.1a **FILM** listening mode.
- If the CD input is selected while a Dolby Digital source is present, the SDP-40 will automatically activate the 5.1 **MUSIC** listening mode. If the DVD1 input is then selected while a dts(-ES) source is present, the SDP-40 will automatically activate the **dts(-ES) FILM** listening mode.

... Selecting Preferred Listening Modes continues on page 3-12

Selecting Preferred Listening Modes (continued from page 3-11)





2-CH

SETUP ► INPUTS ► DVD1 ► 2-CH

Opens the 2-CH MODE menu shown above, which can be used to select a preferred listening mode for 2-channel sources. The SDP-40 automatically activates the selected listening mode whenever a 2-channel source is present. When the USE LAST setting is selected, the SDP-40 automatically activates the 2-channel listening mode that was activated the last time a 2-channel source was present.


The listening modes cannot be selected as the preferred listening mode for 2-channel sources. However, when the 2-CH parameter is set to USE LAST, the SDP-40 will activate a listening mode if a listening mode




was activated the last time a 2-channel source was present. The SDP-40 will not activate a  listening mode unless a 44.1 or 48kHz PCM digital source is present. The  listening modes are not compatible with 88.2 or 96kHz, Dolby Digital, or analog sources.

Note:


When the 2-CH parameter is set to USE LAST, the SDP-40 will not activate the 2-CHANNEL listening mode if the 2CH button was used to activate the 2-CHANNEL listening mode the last time a 2-channel source was present. Instead, the SDP-40 will activate the listening mode that was activated prior to the 2-CHANNEL listening mode.






   

Opens the  MODE menu shown on the previous page, which can be used to select a preferred listening mode for Dolby Digital sources. The SDP-40 automatically activates the selected listening mode whenever a Dolby Digital source is present. When the USE LAST setting is selected, the SDP-40 automatically activates the Dolby Digital listening mode that was activated the last time a Dolby Digital source was present.

The 5.1  MUSIC listening mode cannot be selected as the preferred listening mode for Dolby Digital sources. However, when the  parameter is set to USE LAST, the SDP-40 will activate the 5.1  MUSIC listening mode if this listening mode was activated the last time a Dolby Digital source was present.



Opens the  MODE menu shown on the previous page, which can be used to select a preferred listening mode for dts(-ES) sources. The SDP-40 automatically activates the selected listening mode whenever a dts(-ES) source is present. When the USE LAST setting is selected, the SDP-40 automatically activates the dts(-ES) listening mode that was activated the last time a dts(-ES) source was present.

The   MUSIC listening mode cannot be selected as the preferred listening mode for dts(-ES) sources. However, when the  parameter is set to USE LAST, the SDP-40 will activate the   MUSIC listening mode if this listening mode was activated the last time a dts(-ES) source was present.

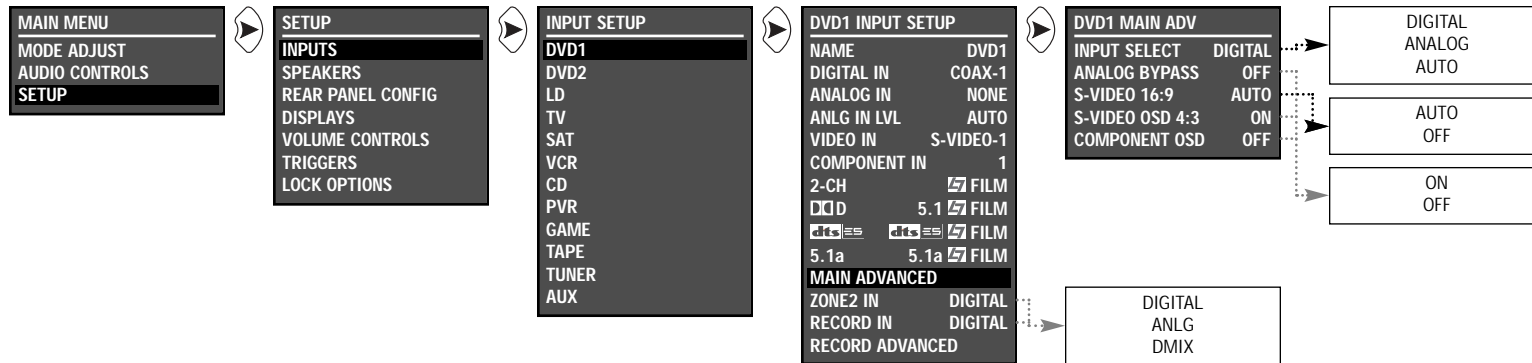
5.1a

Opens the 5.1a MODE menu shown on the previous page, which can be used to select a preferred listening mode for 5.1-channel analog sources. The SDP-40 automatically activates the selected listening mode whenever a 5.1-channel analog source is present. When the USE LAST setting is selected, the SDP-40 automatically activates the 5.1-channel analog listening mode that was activated the last time a 5.1-channel analog source was present.

The 5.1a  MUSIC listening mode cannot be selected as the preferred listening mode for 5.1-channel analog sources. However, when the 5.1a parameter is set to USE LAST, the SDP-40 will activate the 5.1a  MUSIC listening mode if this listening mode was activated the last time a 5.1-channel analog source was present.

CONFIGURING ADVANCED INPUT SETTINGS



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

The SDP-40 allows the assignment of one digital and one analog audio input connector for each input. The table below indicates the INPUT SETUP menu parameters that can be used to control the interaction of these connectors, as well as other advanced Main Zone, Zone 2, and Record Zone input settings.

| Parameter | Possible Settings |
|-----------------|--------------------------|
| MAIN ADVANCED | Refer to the next column |
| ZONE2 IN | DIGITAL, ANLG, DMIX |
| RECORD IN | DIGITAL, ANLG, DMIX |
| RECORD ADVANCED | Refer to page 3-19 |

MAIN ADVANCED



Selecting the INPUT SETUP menu MAIN ADVANCED option opens the MAIN ADV menu shown above, which can be used to control the interaction of the digital and analog audio input connectors assigned for the selected Main Zone input as well as configure other advanced Main Zone input settings.

All MAIN ADV menus are shown in the Appendix on page A-8. The parameters on the left side of the MAIN ADV menus are identical regardless of which input is selected. The parameter settings on the right side are adjustable. The MAIN ADV menus shown in the Appendix indicate factory-default parameter settings for each input.

| Parameter | Possible Settings |
|-----------------|-----------------------|
| INPUT SELECT | DIGITAL, ANALOG, AUTO |
| ANALOG BYPASS | ON, OFF |
| S-VIDEO 16:9 | AUTO, OFF |
| S-VIDEO OSD 4:3 | ON, OFF |
| COMPONENT OSD | ON, OFF |

INPUT SELECT

DIGITAL, ANALOG, AUTO

SETUP ► INPUTS ► DVD1 ► MAIN ADVANCED ► INPUT SELECT

Controls the interaction of the digital and analog audio input connectors assigned for the selected Main Zone input. The table on the next page describes INPUT SELECT parameter settings.

Note:

When the Shift command bank is activated, the 7/5 button can be used to adjust the INPUT SELECT parameter, cycling through the DIGITAL, ANALOG, and AUTO settings.

ANALOG BYPASS

ON, OFF

SETUP ► INPUTS ► DVD1 ► MAIN ADVANCED ► ANALOG BYPASS

Allows analog sources to bypass A/D conversion and internal processing. When ON is selected, the SDP-40 passes analog input signals directly to the Main Zone audio output connectors.

- When a 2-channel analog source is present, the SDP-40 passes analog input signals directly to the Front L/R output connectors.

- When a 5.1-channel analog source is present, the SDP-40 passes analog input signals to the Main Zone audio output connectors as indicated in the table on pages 2-7 and 3-41.

When OFF is selected, the SDP-40 sends analog input signals through A/D conversion and internal processing before passing them to the Main Zone audio output connectors. This allows analog sources to use bass management, speaker crossovers, speaker distance calibration, and audio controls (tone controls).

Note:

When the Shift command bank is activated, pressing the 2CH button toggles the ANALOG BYPASS parameter between the ON and OFF settings.

S-VIDEO 16:9

AUTO, OFF

SETUP ► INPUTS ► DVD1 ► MAIN ADVANCED ► S-VIDEO 16:9

Controls the passage of anamorphic trigger signals present in some video sources. When AUTO is selected, the SDP-40 passes anamorphic video input signals through the S-video switcher, enabling compatible display devices to automatically switch between anamorphic and non-anamorphic display modes.

When OFF is selected, the SDP-40 does not pass anamorphic video input signals through the S-video switcher, preventing compatible display devices from automatically switching between anamorphic and non-anamorphic display modes.

... Configuring Advanced Input Settings continues on page 3-16

Configuring Advanced Input Settings (continued from page 3-15)

| INPUT SELECT Parameter Settings | | |
|---|--|--|
| DIGITAL | ANALOG | AUTO |
| <p>The SDP-40 sends the assigned digital audio input connector to the Main Zone audio output connectors. The SDP-40 ignores the assigned analog audio input connector.</p> <p>Note the following:</p> <ul style="list-style-type: none"> When an incompatible digital source is present, the SDP-40 automatically selects the assigned analog audio input connector. The digital audio input connectors are compatible with PCM (44.1, 48, 88.2, and 96kHz), Dolby Digital, and dts(-ES) sources. The digital audio input connectors are not compatible with MPEG or MP3 sources. The SDP-40 automatically sets the INPUT SELECT parameter to DIGITAL when no analog audio input connector is assigned. The INPUT SETUP menu DIGITAL IN parameter can be used to assign a digital audio input connector for the selected input. | <p>The SDP-40 sends the assigned analog audio input connector to the Main Zone audio output connectors. The SDP-40 ignores the assigned digital audio input connector.</p> <p>Note the following:</p> <ul style="list-style-type: none"> The SDP-40 automatically sets the INPUT SELECT parameter to ANALOG when no digital audio input connector is assigned. The INPUT SETUP menu ANALOG IN parameter can be used to assign an analog audio input connector for the selected input. | <p>The SDP-40 toggles between sending the assigned digital and analog audio input connectors to the Main Zone audio output connectors based on the input source that is present.</p> <p>For example:</p> <ul style="list-style-type: none"> The SDP-40 selects the assigned digital audio input connector when a compatible digital source is present. The SDP-40 will not select the assigned analog audio input connector when a compatible digital source is present. The SDP-40 selects the assigned analog audio input connector when an incompatible digital source is present. The SDP-40 selects the assigned analog audio input connector when an analog source, such as an SACD, is present. <p>Note the following:</p> <ul style="list-style-type: none"> The SDP-40 automatically sets the INPUT SELECT parameter to AUTO when both digital and analog audio input connectors are assigned. The AUTO setting is recommended for components that generate both digital and analog input signals, such as DVD/SACD players. |

S-VIDEO OSD 4:3

ON, OFF

SETUP ► INPUTS ► DVD1 ► MAIN ADVANCED ► S-VIDEO OSD 4:3

Controls the on-screen display aspect ratio when the display device is connected to a Main Zone S-video output connector. Aspect ratio refers to the size of the picture or the display device screen. A 4:3 aspect ratio is almost square. A 16:9 aspect ratio, often referred to as widescreen, is almost twice as wide as high.

When ON is selected, the on-screen display appears in a 4:3 aspect ratio regardless of the incoming video input signal. When OFF is selected, the on-screen display appears in the same aspect ratio as the incoming video input signal.

Note:

When a 16:9 (widescreen) display device is connected to a Main Zone S-video output connector, the on-screen display will appear horizontally stretched across the display device screen if the S-VIDEO OSD 4:3 parameter is set to OFF and an anamorphic video input signal is present.

COMPONENT OSD

ON, OFF

SETUP ► INPUTS ► DVD1 ► MAIN ADVANCED ► COMPONENT OSD

Controls the appearance of the on-screen display when the display device is connected to the Main Zone component video output connector. When ON is selected, the on-screen display appears as a 480i video input signal on a full blue-screen background. To minimize viewing distractions, the two-line status does not appear on the on-screen display. When OFF is selected, the on-screen display – including the two-line status – is not available.

Note:

When the display device is connected to the Main Zone component video output connector, the on-screen display automatically deactivates when the ON-SCREEN DISPLAY menu BACKGROUND parameter is set to OFF.

ZONE2 & RECORD IN

DIGITAL, ANLG, DMIX

SETUP ► INPUTS ► DVD1 ► ZONE2 IN OR RECORD IN

Control the interaction of the digital and analog audio input connectors assigned for the selected Zone 2 and Record Zone inputs. The table on the next page describes ZONE2 and RECORD IN parameter setting.

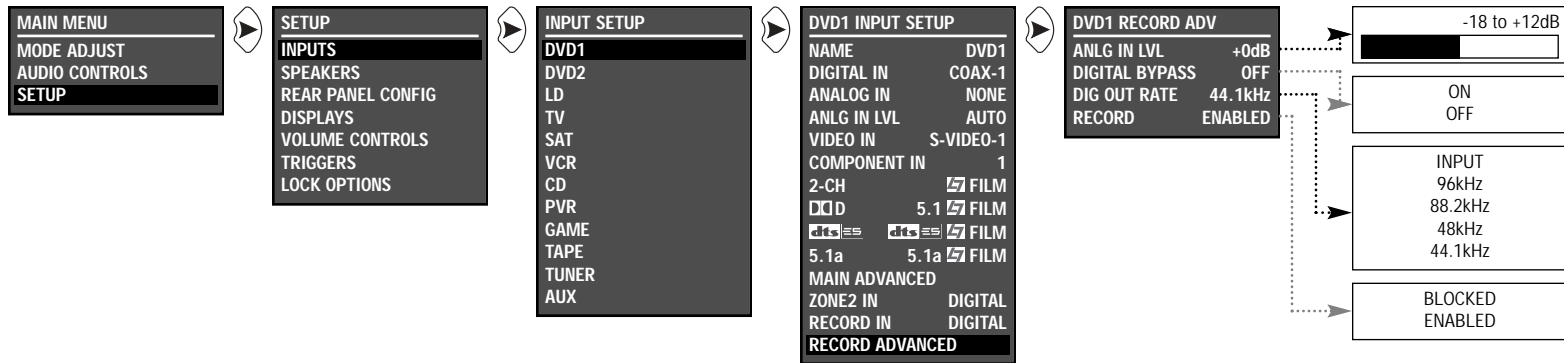
CAUTION

When the ZONE2 or RECORD IN parameter is set to DIGITAL or ANLG, the SDP-40 recognizes some dts-encoded sources as audio signals (not data signals) and outputs loud digital noise from the Zone 2 or Record Zone audio output connectors.

... Configuring Advanced Input Settings continues on page 3-18

Configuring Advanced Input Settings (continued from page 3-17)

| ZONE2 & RECORD IN Parameter Settings | | |
|---|---|--|
| DIGITAL | ANLG (Analog) | DMIX (Downmix) |
| <p>The SDP-40 sends the assigned digital audio input connector to the Zone 2 or Record Zone audio output connectors. The SDP-40 ignores the assigned analog audio input connector. Independent zone monitoring is available.</p> <p>Note the following:</p> <ul style="list-style-type: none"> • The SDP-40 passes digital sources to all Zone 2 or Record Zone audio output connectors. • The SDP-40 passes digital input signals directly to the Record Zone digital audio output connectors. The SDP-40 sends digital input signals through D/A conversion before passing them to the Zone 2 or Record Zone analog audio output connectors. • The SDP-40 automatically sets the ZONE2 or RECORD IN parameter to DIGITAL when no analog audio input connector is assigned. • The INPUT SETUP menu DIGITAL IN parameter can be used to assign a digital audio input connector for the selected input. | <p>The SDP-40 sends the assigned analog audio input connector to the Zone 2 or Record Zone audio output connectors. The SDP-40 ignores the assigned digital audio input connector. Independent zone monitoring is available.</p> <p>Note the following:</p> <ul style="list-style-type: none"> • The SDP-40 passes analog sources to all Zone 2 or Record Zone audio output connectors. • The SDP-40 passes analog input signals directly to the Zone 2 or Record Zone analog audio output connectors. The SDP-40 sends analog input signals through A/D conversion before passing them to the Record Zone digital audio output connectors. • The SDP-40 automatically sets the ZONE2 or RECORD IN parameter to ANLG when no digital audio input connector is assigned. • The INPUT SETUP menu ANALOG IN parameter can be used to assign an analog audio input connector for the selected input. | <p>The SDP-40 sends a downmixed version of Main Zone audio to the Zone 2 or Record Zone audio output connectors. Independent zone monitoring is not available. Downmixing is available when all of the following conditions are met:</p> <ul style="list-style-type: none"> • The same input must be selected in the Main Zone and Zone 2 or in the Main Zone and the Record Zone. Otherwise, the Zone 2 or Record Zone audio output connectors will mute. • A Dolby Digital or dts(-ES) source must be present. • The 5.1a BYPASS listening mode must not be activated. <p>Note the following:</p> <ul style="list-style-type: none"> • In the 5.1 analog mode, output signals from the Main Zone audio output connectors labeled Front L/R are sent to Zone 2. Signals from other Main Zone audio output connectors are ignored. • Main Zone listening mode activation affects the Zone 2 and Record Zone audio output connectors. For instance, when the MONO listening mode is activated, the Zone 2 and Record Zone audio output connectors will generate mono output signals. • It is recommended to set the ZONE2 and RECORD IN parameters to DMIX when recording from a DVD player without built-in Dolby Digital or dts-ES decoding to a VCR or PVR (i.e. Tivo® or Replay TV®). • The SDP-40 automatically uses LOGIC7 encoding to downmix multi-channel sources (except 5.1-channel analog sources) to LOGIC7-encoded stereo output signals for listening and recording. LOGIC7-encoded downmixes are compatible with matrix decoders, but will sound best when played back through a LOGIC7 listening mode. |



The DVD1 INPUT SETUP menu is shown here as an example, and will continue to be shown as an example throughout this section. Whenever it appears, any other INPUT SETUP menu may be substituted. Likewise, whenever the DVD1 input appears as a step in a menu path, any other input may be substituted.

RECORD ADVANCED

SETUP ► INPUTS ► DVD1 ► RECORD ADVANCED

Selecting the INPUT SETUP menu RECORD ADVANCED option opens the RECORD ADV menu shown above, which can be used to configure advanced Record Zone input settings.

All RECORD ADV menus are shown in the Appendix on page A-8. The parameters on the left side of the RECORD ADV menus are identical regardless of which input is selected. The parameter settings on the right side are adjustable. The RECORD ADV menus shown in the Appendix indicate factory-default parameter settings for each input.

| Parameter | Possible Settings |
|----------------|---------------------------------------|
| ANLG IN LVL | -18 to +12dB |
| DIGITAL BYPASS | ON, OFF |
| DIG OUT RATE | INPUT, 96kHz, 88.2kHz, 48kHz, 44.1kHz |
| RECORD | BLOCKED, ENABLED |

... Configuring Advanced Input Settings continues on page 3-20

Configuring Advanced Input Settings (continued from page 3-19)

ANLG IN LVL -18 to +12dB

SETUP ► INPUTS ► DVD1 ► RECORD ADVANCED ► ANLG IN LVL

Allows adjustment of analog audio input levels for input signals sent to the Record Zone digital audio output connectors. The SDP-40 applies these adjustments to input signals before passing them to the Record Zone digital audio output connectors. This parameter can be adjusted when an input source is present to prevent the internal A/D converter from overloading.

DIGITAL BYPASS ON, OFF

SETUP ► INPUTS ► DVD1 ► RECORD ADVANCED ► DIGITAL BYPASS

Allows digital sources to bypass sample rate conversion for direct digital recording. When ON is selected, the SDP-40 passes digital input signals directly to the Record Zone digital audio output connectors, preserving the original sample rate of the input signal. When OFF is selected, the SDP-40 sends digital input signals through sample rate conversion before passing them to the Record Zone digital audio output connectors, allowing the sample rate of the output signal to match the sample rate of the recording device.

Note:

DIG OUT RATE parameter settings have no effect when the DIGITAL BYPASS parameter is set to ON.

DIG OUT RATE INPUT, 44.1kHz, 48kHz, 88.2kHz, 96kHz

SETUP ► INPUTS ► DVD1 ► RECORD ADVANCED ► DIG OUT RATE

Controls the sample rate of digital and analog input signals sent to the Record Zone digital audio output connectors. When INPUT is selected, the SDP-40 does not send input signals through sample rate conversion before passing them to the Record Zone digital audio output connectors, preserving the original sample rate of the input signal.

When a value is selected, the SDP-40 passes input signals through sample rate conversion before passing them to the Record Zone digital audio output connectors, converting the sample rate of the input signal to the selected value. It is recommended to set the DIG OUT RATE parameter to the appropriate value when using a recording format that operates on a single sample rate, such as CD-R format (44.1kHz).

RECORD BLOCKED, ENABLED

SETUP ► INPUTS ► DVD1 ► RECORD ADVANCED ► RECORD

Prevents recording device feedback loops. When BLOCKED is selected, the SDP-40 blocks the Record Zone audio output connectors to prevent feedback loops. However, the SDP-40 still passes video input signals to the Record Zone video output connectors. When ENABLED is selected, the SDP-40 passes audio and video input signals to the Record Zone audio and video output connectors.

SPEAKER SETUP

SETUP ▶ **SPEAKERS**

Selecting the SETUP menu SPEAKERS option opens the SPEAKER SETUP menu shown below, which can be used to configure the Main Zone audio output connectors for the desired speaker setup. The Main Zone includes 10 unbalanced audio output connectors labeled Front L/R, Center, LFE, Subwoofer L/R, Side L/R, and Rear L/R. Two additional audio output connectors labeled Aux L/R are provided for future expansion.

Note:

The SDP-40 Balanced also includes 10 balanced Main Zone audio output connectors labeled Front L/R, Center, LFE, Subwoofer L/R, Side L/R, and Rear L/R. Two additional audio output connectors labeled Aux L/R are provided for future expansion.



SETTING CROSSOVER POINTS

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS**

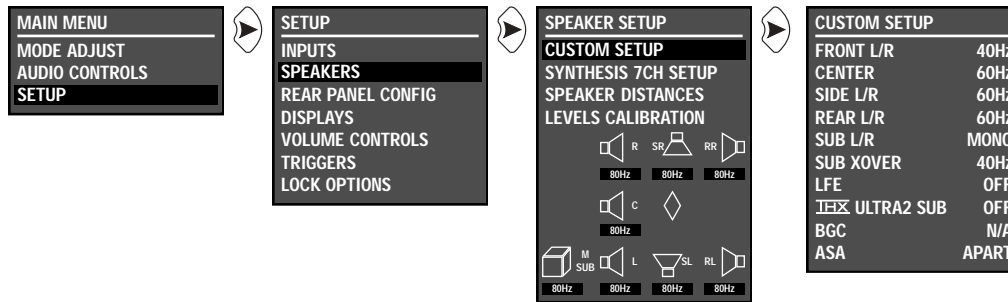
Selecting the SPEAKER SETUP menu SET CROSSOVERS option opens the CROSSOVER SETUP menu shown above, which can be used to configure a custom or SYNTHESIS 7CH speaker setup.

Note:

It is important to set crossover points before calibrating output levels. Otherwise, setting crossover points afterwards might invalidate calibrated output levels.

... Setting Crossover Points continues on page 3-22

Setting Crossover Points (continued from page 3-21)



Custom Speaker Setups

SETUP > SPEAKERS > SET CROSSOVERS > CUSTOM SETUP

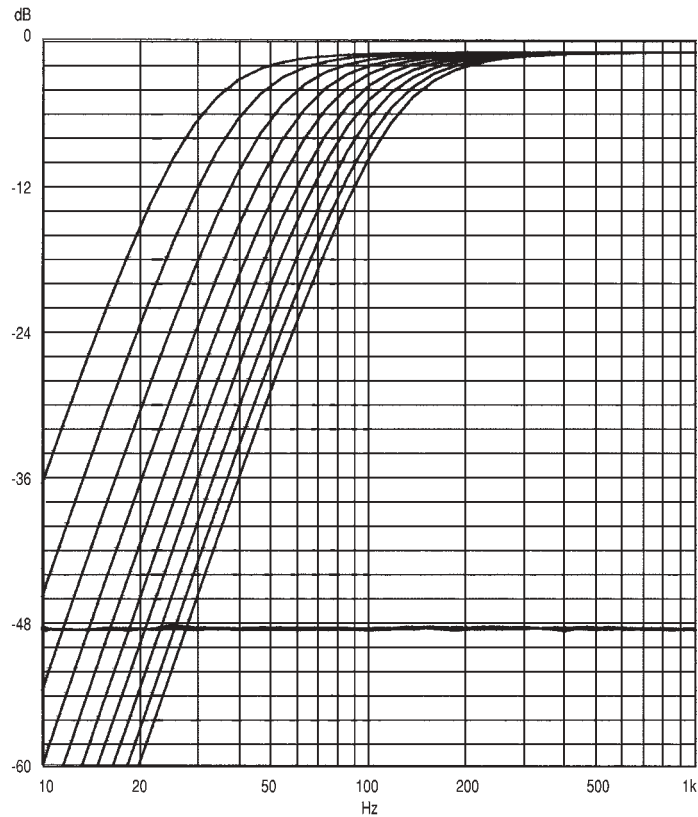
Selecting the CROSSOVER SETUP menu CUSTOM SETUP option opens the CUSTOM SETUP menu shown above, which can be used to assign independent crossover points for each Main Zone audio output connector. Crossover points can be selected in 10Hz increments within a 30 to 120Hz range. With the exception of THX 80Hz, all crossover points activate a 24dB-per-octave filter. The graphs shown on the next page indicate the frequency response of each crossover point.

To configure a custom speaker setup:

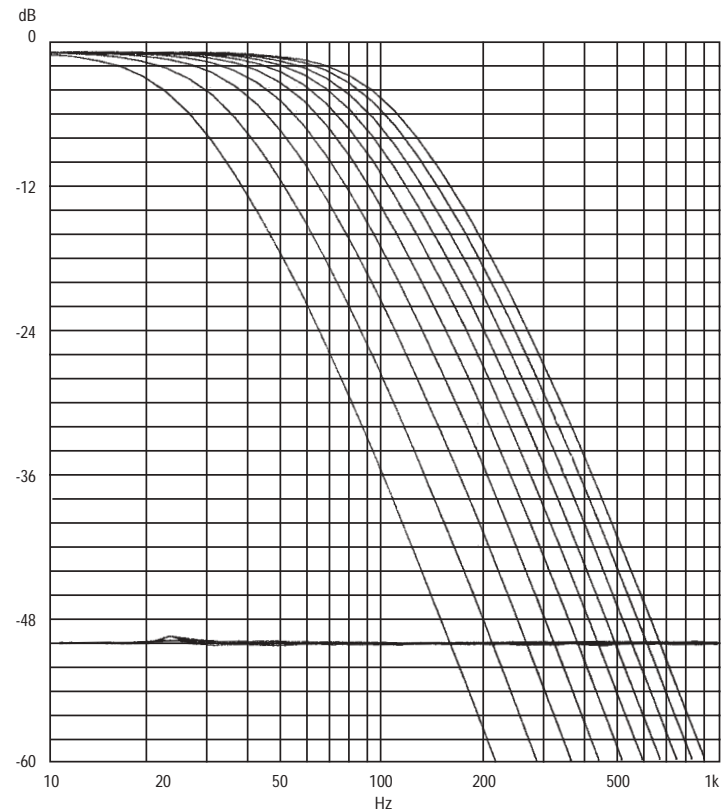
- Select the crossover point closest to the low-frequency rating of the associated speakers. For instance, set to FRONT L/R parameter to the crossover point closest to the low-frequency rating of the front speakers.

- Select the subwoofer crossover point equal to the lowest crossover point of the other speakers. For instance, if CUSTOM SETUP menu parameters are set as shown above, set the SUB XOVER parameter to 40Hz – the lowest crossover point of the other speakers.

In general, low frequencies will be redirected from the speakers with the highest crossover points to the speakers with the lowest crossover points. Low-frequency signals lower than the lowest crossover point will be redirected to the subwoofer. If the lowest crossover point is FULL, low-frequency signals, excluding LFE information, will not be redirected to the subwoofer.

Highpass Filter

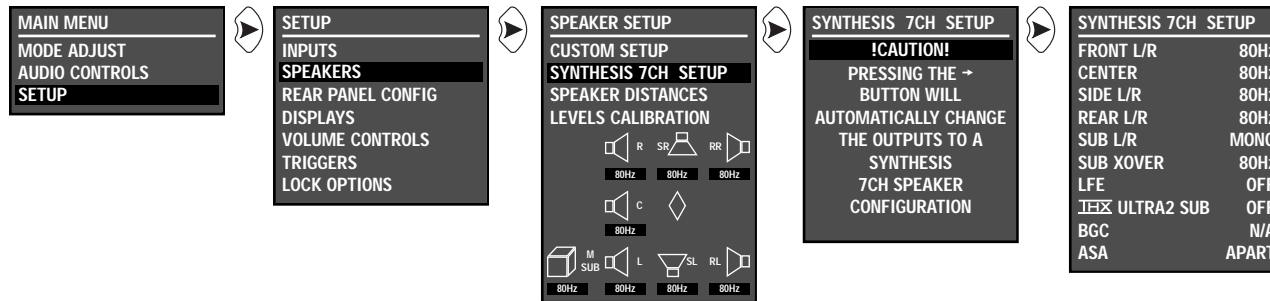
Highpass filters attenuate low-frequency signals at 24dB per octave. The curves in the graph above indicate the frequency response of each crossover point. From left to right, the curves represent crossover points from 30 to 120Hz. This graph does not include the THX 80Hz crossover point, which attenuates low-frequency signals at 12dB per octave.

Lowpass Filter

Lowpass filters attenuate high-frequency signals at 24dB per octave. The curves in the graph above indicate the frequency response of each crossover point. From left to right, the curves represent crossover points from 30 to 120Hz.

... Setting Crossover Points continues on page 3-24

Setting Crossover Points (continued from page 3-23)



SYNTHESIS 7CH Speaker Setups

SETUP ► SPEAKERS ► SET CROSSOVERS ► ► SYNTHESIS 7CH SETUP

Selecting the CROSSOVER SETUP menu SYNTHESIS 7CH SETUP option opens the SYNTHESIS 7CH SPEAKER SETUP screen shown above, which indicates that pressing the ► arrow button will automatically configure the Main Zone audio output connectors for a SYNTHESIS 7CH speakers setup.

When the Synthesis 7 Channel SPEAKER SETUP screen opens:

- Press the ► arrow button to configure the Main Zone audio output connectors for a SYNTHESIS 7CH speaker setup. The SYNTHESIS 7CH SETUP menu shown above will open on the on-screen display.
- Press the ◀ arrow button to close the message without configuring the Main Zone audio output connectors for a SYNTHESIS 7CH speaker setup.

When a SYNTHESIS 7CH speaker setup is selected, the SDP-40 applies a 80Hz crossover point with a 24dB-per-octave filter to the Front L/R, Side L/R, and Rear L/R output connectors. The

SDP-40 applies a 80Hz crossover point with a 24dB-per-octave filter to the Subwoofer L/R output connectors.

Speaker Setup Parameters

SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ CUSTOM SETUP ▶ OR SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ SYNTHESIS 7CH SETUP

The table below indicates the speaker setup parameters that can be used to configure the Main Zone audio output connectors for the desired speaker setup. These parameters appear on the CUSTOM and SYNTHESIS 7CH SETUP menus.

Speaker setup parameters perform the same function regardless of which speaker setup is selected. When a parameter setting is adjusted on one menu, the corresponding parameter setting is automatically adjusted on the other menu. For instance, when a SYNTHESIS 7CH speaker setup is selected, the speaker setup parameters on the CUSTOM SETUP menu are also set to 80Hz.

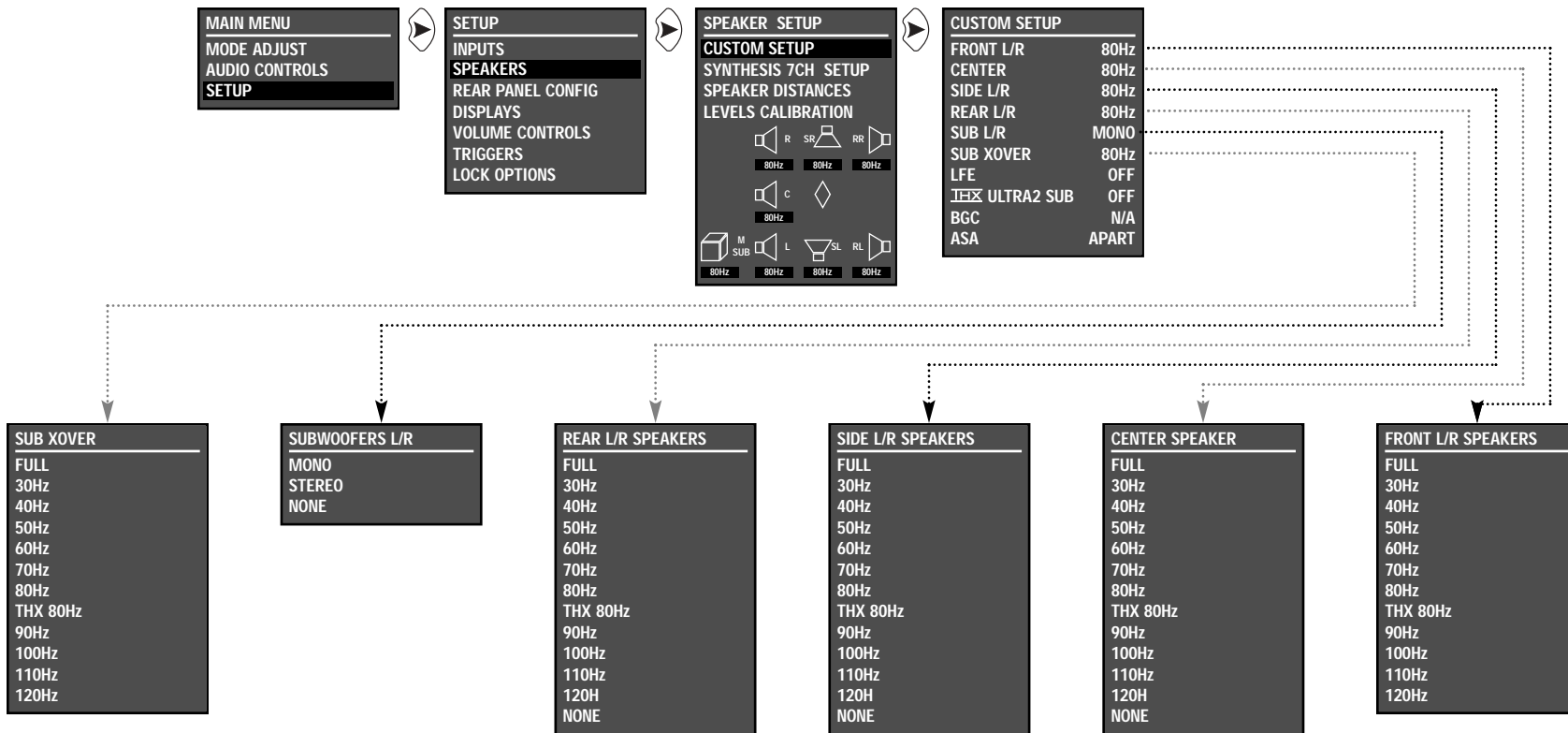
| Parameter | CUSTOM SETUP Menu | | SYNTHESIS 7CH SETUP Menu | |
|---------------------------|-------------------|-----------------------------------|--------------------------|------------------------|
| | Default Setting | Possible Settings | Default Setting | Possible Settings |
| FRONT L/R* | 80Hz | FULL, 30 to 120Hz, THX 80Hz | 80Hz | 80Hz |
| CENTER* | 80Hz | FULL, 30 to 120Hz, THX 80Hz, NONE | 80Hz | 80Hz |
| SIDE L/R* | 80Hz | FULL, 30 to 120Hz, THX 80Hz, NONE | 80Hz | 80Hz |
| REAR L/R | 80Hz | FULL, 30 to 120Hz, THX 80Hz, NONE | 80Hz | 80Hz, NONE |
| SUB L/R* | 80Hz | MONO, STEREO, NONE | 80Hz | 80 Hz |
| SUB XOVER* | 80Hz | FULL, 30 to 120Hz, THX 80Hz | 80Hz | 80Hz |
| LFE* | ON | ON, OFF | ON | ON, OFF |
| THX ULTRA2 SUB | OFF | ON, OFF | OFF | ON, OFF |
| BGC | N/A† | ON, OFF | N/A† | ON, OFF |
| ASA | APART | APART, CLOSE, TOGETHER | APART | APART, CLOSE, TOGETHER |

* These parameters cannot be adjusted on the SYNTHESIS 7CH SETUP menu.

† When the ~~THX~~ ULTRA2 SUB parameter is set to OFF, the BGC parameter is not available (N/A).

... Setting Crossover Points continues on page 3-26

Setting Crossover Points (continued from page 3-25)



FRONT L/R

FULL, 30 to 120Hz, THX 80Hz

Assigns a crossover point for the Main Zone audio output connectors labeled Front L/R.

SETUP ► SPEAKERS ► SET CROSSOVERS ► CUSTOM SETUP ► FRONT L/R

When a custom speaker setup is selected, the FRONT L/R parameter opens the FRONT L/R SPEAKERS menu shown above, which can be used to select a crossover point for the Front L/R output connectors. Select FULL to send a full-range signal to the front speakers. Otherwise, select the crossover point closest to the low-frequency rating of the front speakers.

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **SYNTHESIS 7CH SETUP**

When a SYNTHESIS 7CH speaker setup is selected, the FRONT L/R parameter cannot be adjusted. The SDP-40 automatically applies a 80Hz crossover point to the Front L/R output connectors.

CENTER FULL, 30 to 120Hz, THX 80Hz, NONE
Assigns a crossover point for the Main Zone audio output connector labeled Center.

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **CUSTOM SETUP** ▶ **CENTER**

When a custom speaker setup is selected, the CENTER parameter opens the CENTER SPEAKER menu shown on the previous page, which can be used to select a crossover point for the Center output connector.

- Select FULL to send a full-range signal to the center speaker. Otherwise, select the crossover point closest to the low-frequency rating of the center speaker.
- Select NONE if the speaker setup does not include a center speaker. The SDP-40 will redirect center channel signals to the Front L/R output connectors – unless the 5.1a BYPASS listening mode is activated. In this instance, configure the speaker setup with the associated DVD-A/SACD player to redirect center channel signals.

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **SYNTHESIS 7CH SETUP**

When a SYNTHESIS 7CH speaker setup is selected, the CENTER parameter cannot be adjusted. The SDP-40 automatically applies an 80Hz crossover point to the Center output connector.

SIDE L/R FULL, 30 to 120Hz, THX 80Hz, NONE

Assigns a crossover point for the Main Zone audio output connectors labeled Side L/R.

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **CUSTOM SETUP** ▶ **SIDE L/R**

When a custom speaker setup is selected, the SIDE L/R parameter opens the SIDE L/R SPEAKERS menu shown on the previous page, which can be used to select a crossover point for the Side L/R output connectors.

- Select FULL to send a full-range signal to the side speakers. Otherwise, select the crossover point closest to the low-frequency rating of the side speakers.
- Select NONE if the speaker setup does not include side speakers. The SDP-40 will redirect side channel signals to the Rear L/R output connectors. If the REAR L/R parameter is also set to NONE, the SDP-40 will redirect surround channel signals to the Front L/R output connectors.

Note:

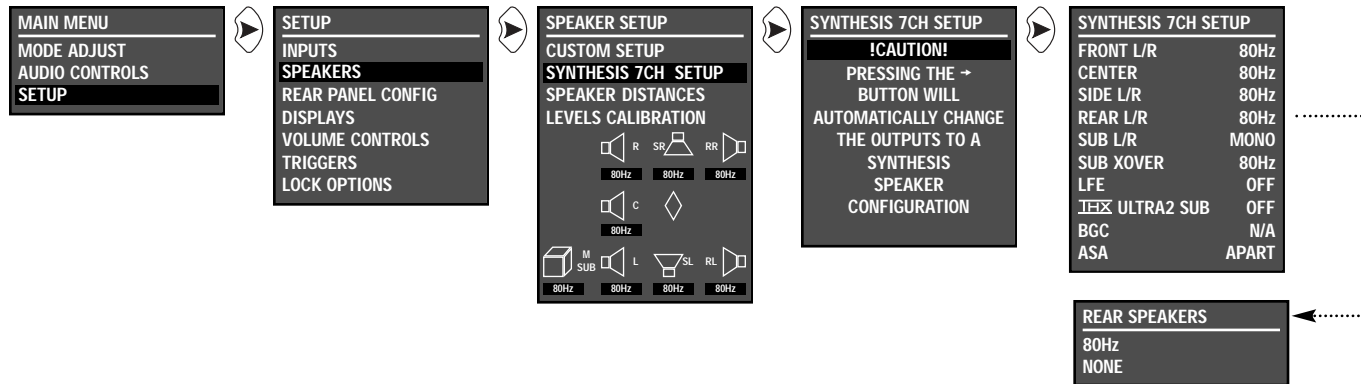
When the SIDE L/R parameter is set to NONE, Dolby Digital Surround EX, THX Ultra2, THX Surround EX, and dts-ES decoding are not available. The ASA parameter is also not available.

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **SYNTHESIS 7CH SETUP**

When a SYNTHESIS 7CH speaker setup is selected, the SIDE L/R parameter cannot be adjusted. The SDP-40 automatically applies a 80Hz crossover point to the Side L/R output connectors.

. . . Setting Crossover Points continues on page 3-28

Setting Crossover Points (continued from page 3-27)



REAR L/R FULL, 30 to 120Hz, THX 80Hz, NONE

Assigns a crossover point for the Main Zone audio output connectors labeled Rear L/R.



When a custom speaker setup is selected, the REAR L/R parameter opens the REAR L/R SPEAKERS menu shown on page 3-26, which can be used to select a crossover point for the Rear L/R output connectors.

- Select FULL to send a full-range signal to the rear speakers. Otherwise, select the crossover point closest to the low-frequency rating of the rear speakers.
- Select NONE if the speaker setup does not include rear speakers. The SDP-40 will redirect rear channel signals to the Side L/R output connectors. If the SIDE L/R parameter is also set to NONE, the SDP-40 will redirect surround channel signals to the Front L/R output connectors.



REAR L/R

When a SYNTHESIS 7CH speaker setup is selected, the REAR L/R parameter opens the REAR SPEAKERS menu shown above, which can be used to activate and deactivate the Rear L/R output connectors.

- Select 80Hz to activate the Rear L/R output connectors, configuring the Main Zone audio output connectors for a 7.1-channel THX speaker setup.
- Select NONE to deactivate the Rear L/R output connectors, configuring the Main Zone audio output connectors for a 5.1-channel THX speaker setup.

Note:

When the REAR L/R parameter is set to NONE, Dolby Digital Surround EX, THX Ultra2, THX Surround EX, and dts-ES decoding are not available. The ASA parameter is also not available.

SUB L/R

MONO, STEREO, NONE

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **CUSTOM SETUP** ▶ **SUB L/R**

Configures the Main Zone audio output connector labeled Subwoofer L/R for a speaker setup that includes one, two, or no subwoofer(s).

When a custom speaker setup is selected, the SUB L/R parameter opens the SUBWOOFERS L/R menu shown on page 3-26, which can be used to select the desired configuration for the Subwoofer L/R output connectors.

- Select MONO if the speaker setup includes one subwoofer. The SDP-40 sends low-frequency front, center, and surround channel signals to the Subwoofer L/R output connectors.
- Select STEREO if the speaker setup includes two subwoofers. The SDP-40 sends low-frequency front left, center, and surround left channel signals to the Subwoofer L output connector and low-frequency front right, center, and surround right channel signals to the Subwoofer R output connector.
- Select NONE if the speaker setup does not include a subwoofer. The SDP-40 redirects low-frequency signals to the speakers with the lowest crossover points – unless the 5.1a BYPASS listening mode is activated. In this instance, configure the speaker setup with the associated DVD-A/SACD player to redirect low-frequency signals.

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **SYNTHESIS 7CH SETUP**

When a SYNTHESIS 7CH speaker setup is selected, the SUB L/R parameter cannot be adjusted. The SDP-40 automatically configures the Subwoofer L/R output connectors for a speaker setup that includes one subwoofer.

SUB XOVER

FULL, 30 to 120Hz, THX 80Hz, NONE

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **CUSTOM SETUP** ▶ **SUB XOVER**

Assigns a crossover point for the Main Zone audio output connectors labeled Subwoofer L/R.

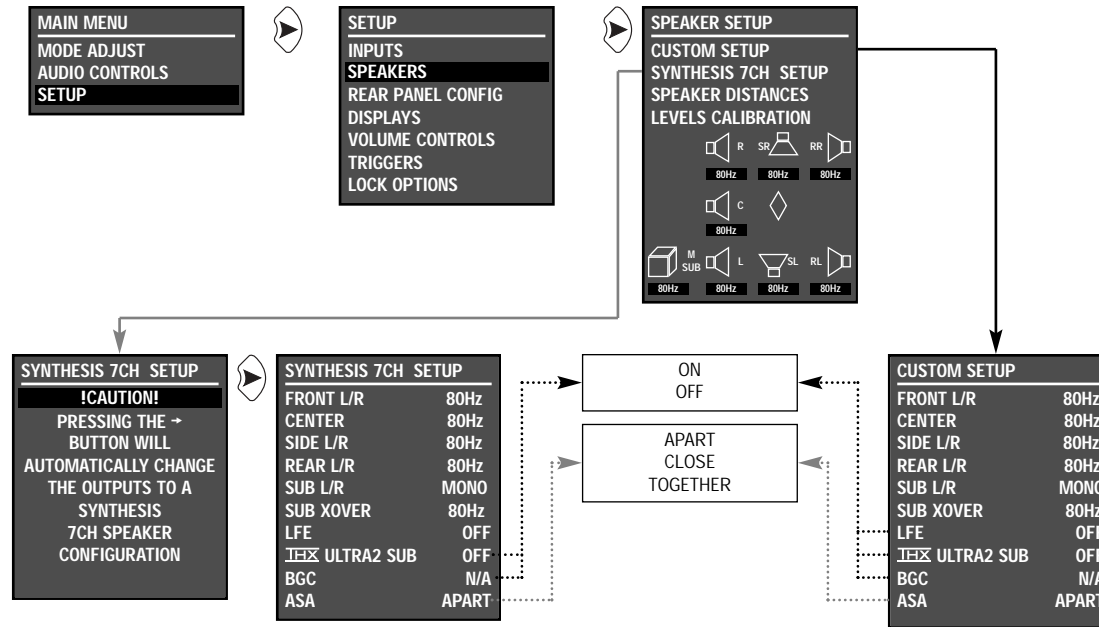
When a custom speaker setup is selected, the SUB XOVER parameter opens the SUB XOVER menu shown on page 3-26, which can be used to select a crossover point for the Subwoofer L/R output connectors. Select FULL to send a full-range signal to the subwoofer. Otherwise, select the crossover point equal to the lowest crossover point of the other speakers.

SETUP ▶ **SPEAKERS** ▶ **SET CROSSOVERS** ▶ **SYNTHESIS 7CH SETUP**

When a SYNTHESIS 7CH speaker setup is selected, the SUB XOVER parameter cannot be adjusted. The SDP-40 automatically applies a 80Hz crossover point to the Subwoofer L/R output connectors.

... *Setting Crossover Points continues on page 3-30*

Setting Crossover Points (continued from page 3-29)



LFE ON, OFF

Activates and deactivates the Main Zone audio output connector labeled LFE.

SETUP ► SPEAKERS ► SET CROSSOVERS ► CUSTOM SETUP ► LFE

When a custom speaker setup is selected:

- Select ON to activate the LFE output connector, configuring the Main Zone audio output connectors for a 7.1-channel speaker setup. The SDP-40 sends LFE information to the LFE output connector.

- Select OFF to deactivate the LFE output connector, configuring the Main Zone audio output connectors for a 5.1-channel speaker setup. The SDP-40 redirects LFE information to the Subwoofer L/R output connectors. If the SUB L/R parameter is set to OFF, the SDP-40 redirects LFE information to the speakers with the lowest crossover point.

SETUP ► SPEAKERS ► SET CROSSOVERS ► SYNTHESIS 7CH SETUP ►

When a SYNTHESIS 7CH speaker setup is selected, the LFE parameter cannot be adjusted. The SDP-40 automatically deactivates the LFE output connector and redirects LFE information to the SubwooferL/R output connectors.

THX ULTRA2 SUB

ON, OFF

SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ CUSTOM SETUP ▶ THX ULTRA2 SUB
 OR SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ THX SETUP ▶ THX ULTRA2 SUB

Select ON if the subwoofer using the Main Zone audio output connectors labeled Subwoofer L/R is THX Ultra2-certified. When ON is selected, the BGC parameter can be used to adjust boundary gain compensation. Select OFF if the subwoofer using the Main Zone audio output connectors labeled Subwoofer L/R is not THX Ultra2-certified. When OFF is selected, the BGC parameter is not available (N/A).

BGC (Boundary Gain Compensation)

ON, OFF

SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ CUSTOM SETUP ▶ BGC OR
 SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ THX SETUP ▶ BGC

Adjusts boundary gain compensation when the THX ULTRA2 SUB parameter is set to ON. When ON is selected, a highpass 55Hz filter is applied to all Main Zone audio output connectors and listening modes. When OFF is selected, no filter is applied to the Main Zone audio output connectors and listening modes.

Note:

The BGC parameter compensates for increased bass energy caused by the proximity of the speakers to the listening room walls.

ASA (Advanced Speaker Array)

ON, OFF

SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ CUSTOM SETUP ▶ ASA OR
 SETUP ▶ SPEAKERS ▶ SET CROSSOVERS ▶ THX SETUP ▶ ASA

A proprietary THX technology that processes rear channel signals to optimize the listening experience for THX Ultra2 listening modes. The ASA parameter is not available unless side and rear speakers are present and the 5.1 THX ULTRA2, 5.1 THX MUSIC, **4.1** THX ULTRA2, **4.1** THX MUSIC, 5.1a THX ULTRA2, or 5.1a THX MUSIC listening mode is activated.

To maximize the effectiveness of ASA processing, it is recommended to configure a 7-channel speaker setup in which the rear speakers are placed close together facing the center of the listening space.

- Select APART if the distance between the rear speakers is greater than 4 feet (1.2m).
- Select CLOSE if the distance between the rear speakers is greater than 1 foot (0.3m), but less than 4 feet (1.2m).
- Select TOGETHER if the distance between the rear speakers is less than 1 foot (0.3m).

Note:

When the 7/5 button is used to toggle between 7- and 5-channel playback, the SDP-40 automatically:

- Activates ASA processing during 7-channel playback and deactivates ASA processing during 5-channel playback.
- Switches between the 5.1 THX ULTRA2 and 5.1 THX, **4.1** THX ULTRA2 and **4.1** THX, or 5.1a THX ULTRA2 and 5.1a THX listening modes.

CALIBRATING SPEAKER DISTANCES & OUTPUT LEVELS

The SDP-40 offers manual calibration of speaker distances and output levels. Calibration helps to ensure accurate output signal arrival time and level at the primary listening position. However, it is not a substitute for proper speaker placement.

Before calibrating speaker distances and output levels:

- Set crossover points for the Main Zone audio output connectors. Otherwise, setting crossover points afterwards might invalidate calibrated output levels. (The CUSTOM or THX SETUP menu can be used to set crossover points.)
- Eliminate extraneous noises in the listening space, including conversations, air conditioners, and sounds that filter in through open doors and windows.
- Remove objects – including people – blocking the line-of-sight path between the microphones or SPL meter and the speakers.

Speaker Calibration Parameters

The table on the next page indicates the speaker calibration parameters that can be used to set speaker distances and output levels for the speakers connected to the corresponding Main Zone audio output connectors. These parameters are available on the speaker distance and output level menus shown throughout this section.

Speaker Distance Parameters +0.0 to 30.0ft or 12.0m

Determine the distance between the primary listening position and the speaker connected to the corresponding Main Zone audio output connector.

Output Level Parameters -18.0dB to +12.0dB

Determine the output level of signals sent to the speaker connected to the corresponding Main Zone audio output connector.

UNITS FEET, METERS

SETUP ▶
 SPEAKERS ▶
 MANUAL ▶
 SPEAKER DISTANCES ▶
 UNITS

Determines the unit of measurement in which speaker distances are calculated on ALL speaker distance menus. When FEET is selected, the SDP-40 calculates speaker distances in feet. When METERS is selected, the SDP-40 calculates speaker distances in meters. When the UNITS parameter setting is adjusted, the SDP-40 automatically adjusts speaker distances to the closest available value in the selected unit of measurement.

| Parameter | Speaker Distance Settings | | Output Level Settings | |
|-------------|---------------------------|-------------------------|-----------------------|-------------------|
| | Default Setting | Possible Settings | Default Setting | Possible Settings |
| FRONT LEFT | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| CENTER | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| FRONT RIGHT | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| SIDE LEFT | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| REAR LEFT | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| REAR RIGHT | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| SIDE RIGHT | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| MONO SUB* | +0.0ft | +0.0 to 30.0ft or 12.0m | +0.0dB | -18.0 to +12.0dB |
| SUB RIGHT | N/A† | +0.0 to 30.0ft or 12.0m | N/A† | -18.0 to +12.0dB |
| LFE | N/A† | +0.0 to 30.0ft or 12.0m | N/A† | -18.0 to +12.0dB |
| UNITS | FEET | FEET, METERS | | |

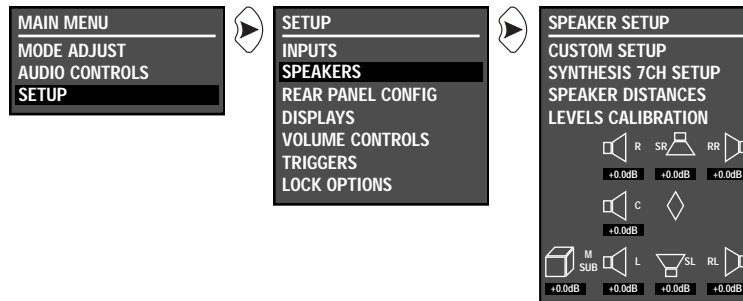
* When one subwoofer is included in the speaker setup, this parameter is labeled MONO SUB. When two subwoofers are included in the speaker setup, this parameter is labeled SUB LEFT.

† When a speaker is not included in the speaker setup, the corresponding speaker distance or output level parameter is not available (N/A).

MANUAL CALIBRATION

SETUP ► SPEAKERS ► MANUAL

Selecting the SPEAKER SETUP menu MANUAL option opens the MANUAL SPEAKER SETUP menu shown below, which can be used to manually calibrate speaker distances and output levels. The table below indicates available manual calibration options.

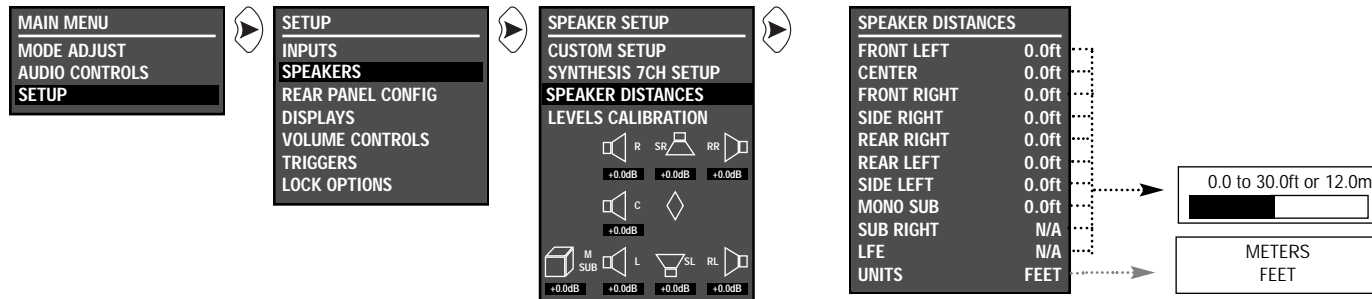


| Manual Options | Details |
|----------------------------|---|
| SPEAKER DISTANCES | <ul style="list-style-type: none"> Provides manual calibration and individual adjustment of speaker distances. |
| INTERNAL NOISE TEST | <ul style="list-style-type: none"> Provides manual calibration and individual adjustment of output levels. Automatically sends an internal calibration noise signal to each Main Zone audio output connector, allowing for simultaneous output level adjustment. |
| EXTERNAL NOISE TEST | <ul style="list-style-type: none"> Provides manual calibration and individual adjustment of output levels. Requires an external calibration source such as an audio calibration disc. Activates an appropriate listening mode based on the current Main Zone input source. |
| BASS PEAK LIMITERS | <ul style="list-style-type: none"> Provides amplitude limits for low-frequency signals sent to the Main Zone audio output connectors labeled Subwoofer L/R and LFE as well as low-frequency signals redirected to other Main Zone audio output connectors. Protects speakers against input sources that produce low-frequency signal peaks. |

Performing Manual Speaker Distance Calibration

SETUP ▶ SPEAKERS ▶ MANUAL ▶ SPEAKER DISTANCES

Selecting the MANUAL SPEAKER SETUP menu SPEAKER DISTANCES option opens the SPEAKER DISTANCES menu shown below, which can be used to manually calibrate speaker distances.



To manually calibrate speaker distances:

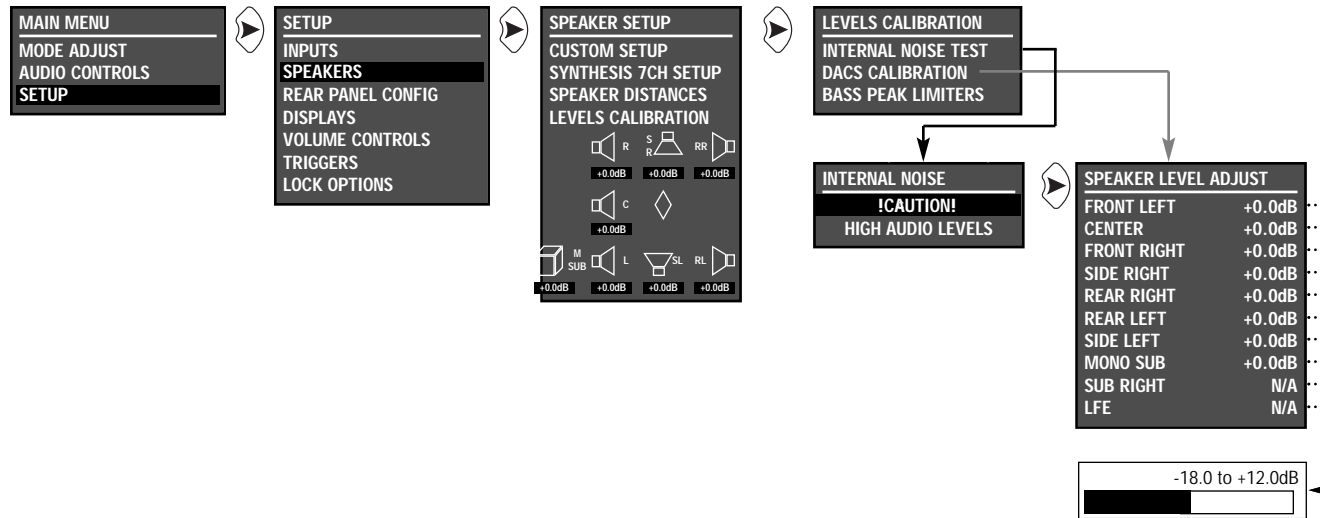
1. Follow the menu path shown above to select the MANUAL SPEAKER SETUP menu SPEAKER DISTANCES option. The SPEAKER DISTANCES menu shown above will open on the on-screen display.
2. Press the ▲ and ▼ arrow buttons to highlight the desired speaker distance parameter. Then, press the ▶ arrow button to select the highlighted speaker distance parameter.
3. To determine the appropriate speaker distance, measure the distance between the primary listening position and the front baffle of the speaker. For instance, if the FRONT LEFT parameter is selected, measure the distance between the primary listening position and the front baffle of the speaker connected to the Main Zone audio output connector labeled Front L.

4. When the speaker distance has been measured, press the ▲ and ▼ arrow buttons to set the parameter to the closest available value.

Performing Manual Output Level Calibration

SETUP ▶ SPEAKERS ▶ MANUAL ▶ LEVELS CALIBRATION

Selecting the MANUAL SPEAKER SETUP menu LEVELS CALIBRATION option opens the LEVELS CALIBRATION menu shown below, which can be used to manually calibrate output levels.



Note the following:

- It is recommended to use a Sound Pressure Level (SPL) meter to manually calibrate output levels. An SPL meter is a device that measures the relative loudness of the speakers to ensure accurate output level calibration. SPL meters are available at Radio Shack (catalog no. 33-2050).
- Output levels should be calibrated from the primary listening position, placing the SPL meter at the approximate location of the listener's head during listening.

- Output levels for speakers that are not included in the speaker setup cannot be adjusted during the internal noise test. These output levels can be adjusted during the external noise test, but there is no need to do so.

... Performing Manual Output Level Calibration continues on page 3-36

Performing Manual Output Level Calibration

(continued from page 3-36)

INTERNAL NOISE TEST

SETUP ▶ SPEAKERS ▶ MANUAL ▶ LEVELS CALIBRATION ▶ INTERNAL NOISE TEST

Opens the INTERNAL NOISE message shown on the previous page, which indicates that the internal noise test generates loud calibration noise signals.

When the INTERNAL NOISE message opens:

- Press the ▶ arrow button to open the SPEAKER LEVEL ADJUST menu shown on the previous page. When the SPEAKER LEVEL ADJUST menu opens, the internal noise test automatically begins.
- Press the ◀ arrow button to close the message without activating the internal noise test.

During the internal noise test, the SDP-40 sends calibration noise signals to each speaker in the order shown on the SPEAKER LEVEL ADJUST menu. The cursor automatically scrolls through output level parameters, highlighting each parameter as the SDP-40 sends the calibration noise signal to the corresponding speaker. The calibration noise signal is sent to each speaker for about 4 seconds.

Note:

When the internal noise test begins, the SDP-40 automatically sets volume level to +0dB. Avoid adjusting the master volume level while the test is in progress to achieve THX reference levels (75dB).

To manually calibrate output levels during the internal noise test:

1. Set the SPL meter to “C” weighting and “SLOW” response.
2. Press the ▲ and ▼ arrow buttons to highlight the desired output level parameter. Then, quickly press the ▶ arrow button to select this output level parameter. The horizontal bar graph shown on the previous page will open on the on-screen display and automatic scrolling will stop.

Note:

During the internal noise test, it is possible to select an output level parameter just as the cursor is about to automatically scroll to the next parameter, causing the SDP-40 to send the calibration noise signal to both speakers. If this occurs, reselect the desired speaker.

3. When the horizontal bar graph opens, press the ▲ and ▼ arrow buttons to select the output level that achieves a 75dB SPL meter reading from the primary listening position.
4. When the desired output level has been selected, press the ◀ arrow button to close the parameter. The internal noise test will continue and automatic scrolling will resume.
5. Repeat steps 2, 3, and 4 until all desired output levels have been set.

Note:

The internal noise and DACS CALIBRATION modes will turn on TRIGGER1.

DACS CALIBRATION

SETUP ► SPEAKERS ► MANUAL ► LEVELS CALIBRATION ► DACS CALIBRATION

Selecting DACS CALIBRATION accesses the SPEAKER LEVEL ADJUST menu (pictured on page 3-36).

DACS CALIBRATION requires an external noise source. In JBL Synthesis systems, this source is the JBL Digital Acoustical Calibration System (DACS®). However, an alternate source such as an audio calibration disc can also be used. As the noise test is conducted, the SDP-40 loads the DOLBY Pro Logic II, Dolby Digital, or dts(-ES) utilizing the signal from the DACS® calibration system or audio calibration disc.

For example, if an analog or PCM input type is coming into the unit

| Input Source | Listening Mode |
|--------------------|----------------|
| 2-Channel | DOLBY II MOVIE |
| Dolby Digital | DOLBY DIGITAL* |
| dts(-ES) | dts ES* |
| 5.1-Channel Analog | 5.1a STANDARD |

* These listening mode names differ depending on the current input source, speaker setup, and parameter settings. Refer to the Listening Mode Descriptions section that begins on page 5-5 for more information.

when DACS CALIBRATION is conducted, the unit will activate the DOLBY Pro Logic II listening mode. If a Dolby Digital input type is coming in, the unit will activate the DOLBY DIGITAL listening mode. And if a dts(-ES) input type is coming in, the unit will activate the dts(-ES) listening mode. When DACS CALIBRATION is selected, these listening modes will retain their factory-default settings. The unit will temporarily disregard customized listening mode settings.

For system optimization using DACS® and a JBL Synthesis Digital Equalizer, connect the left and right RCA outputs of the DACS® signal generator (EVP-1) to the #1 analog input (which is active in the TAPE input) and set the front panel volume level to 0dB. This will provide the correct signal path and reference output level.

Before making adjustments, set the SPL meter according to the DACS® Installers Manual or audio calibration disc instructions. If no setting is recommended, set the SPL meter to "C" weighting and "SLOW" response. Use the up and down MENU arrows to manually scroll through menu items. Press the right MENU arrow to select an output for adjustment, then use the up and down MENU arrows to increase and decrease the level of the selected output in 0.5dB increments within a range of -18 to +12dB. Adjust all output levels to achieve the appropriate reading on the SPL meter from the primary listening position. Press the left MENU arrow to exit the selected output and return to the SPEAKER LEVEL ADJUST menu.

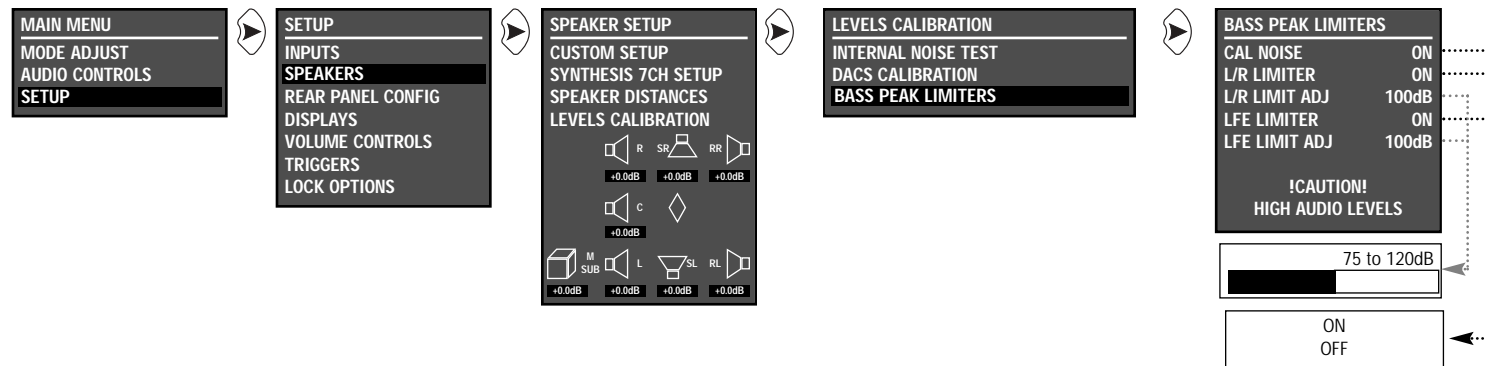
Note:

SDP-40 Balanced output levels must be recalibrated when output connections are changed from unbalanced to balanced or vice versa. The balanced outputs are approximately 6dB louder than the unbalanced outputs.

SETTING BASS PEAK LIMITERS

SETUP ▶ **SPEAKERS** ▶ **MANUAL** ▶ **LEVELS CALIBRATION** ▶ **BASS PEAK LIMITERS**

Selecting the LEVELS CALIBRATION menu BASS PEAK LIMITERS option opens the BASS PEAK LIMITERS menu shown below, which can be used to set amplitude limits for low-frequency signals sent to the Main Zone audio output connectors labeled Subwoofer L/R and LFE as well as low-frequency signals redirected to other Main Zone audio output connectors. The SDP-40 is equipped with an internal limiter that prevents low-frequency signals from exceeding a designated output level, which is essential for Dolby Digital and dts(-ES) sources that produce low-frequency signals peaks at much higher output levels than 2-channel sources. In home theaters, the subwoofers and their associated amplifiers might not be able to reproduce these signals without overloading.



| Parameter | Default Setting | Possible Settings |
|---------------|-----------------|-------------------|
| CAL NOISE | ON | ON, OFF |
| L/R LIMITER | ON | ON, OFF |
| L/R LIMIT ADJ | 100dB | 75 to 120dB |
| LFE LIMITER | ON | ON, OFF |
| LFE LIMIT ADJ | 100dB | 75 to 120dB |

CAL NOISE

ON, OFF

SETUP ▶ SPEAKERS ▶ MANUAL ▶ LEVELS CALIBRATION ▶ BASS PEAK LIMITERS ▶
CAL NOISE

Determines whether bass peak limiters are set with an internal or external calibration source. When ON is selected, the SDP-40 activates an internal calibration noise signal to set bass peak limiters. When OFF is selected, the SDP-40 deactivates the internal calibration noise signal. Setting bass peak limiters requires an external calibration source such as an audio calibration disc.

L/R LIMITER

ON, OFF

SETUP ▶ SPEAKERS ▶ MANUAL ▶ LEVELS CALIBRATION ▶ BASS PEAK LIMITERS ▶
L/R LIMITER

Limits low-frequency signals sent to the subwoofer or redirected to other speakers. When ON is selected, the SDP-40 restricts the output level of these signals according to the L/R LIMIT ADJ parameter setting. When OFF is selected, the SDP-40 does not restrict the output level of these signals, regardless of the L/R LIMIT ADJ parameter setting.

L/R LIMIT ADJ

75 to 120dB

SETUP ▶ SPEAKERS ▶ MANUAL ▶ LEVELS CALIBRATION ▶ BASS PEAK LIMITERS ▶
L/R LIMIT ADJ

Specifies the output level restriction the SDP-40 applies to the Subwoofer L/R output connectors as well as to other Main Zone audio output connectors to which low-frequency signals are redirected. When the L/R LIMIT ADJ parameter is selected, it is automatically set to 75dB. The SDP-40 applies the selected output level restriction when the L/R LIMITER parameter is set to ON.

LFE LIMITER

ON, OFF

SETUP ▶ SPEAKERS ▶ MANUAL ▶ LEVELS CALIBRATION ▶ BASS PEAK LIMITERS ▶
LFE LIMITER

Limits low-frequency signals sent to the LFE subwoofer or redirected to other speakers. When ON is selected, the SDP-40 restricts the output level of these signals according to the LFE LIMIT ADJ parameter setting. When OFF is selected, the SDP-40 does not restrict the output level of these signals, regardless of the LFE LIMIT ADJ parameter setting.

LFE LIMIT ADJ

75 to 120dB

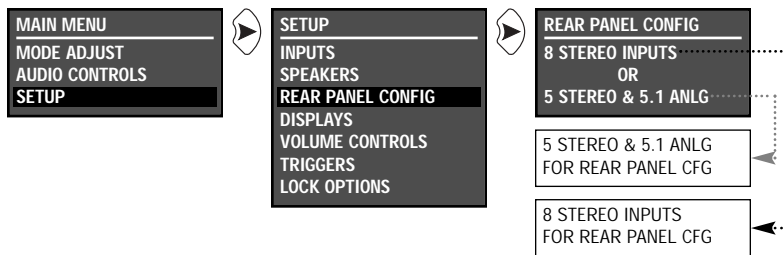
SETUP ▶ SPEAKERS ▶ MANUAL ▶ LEVELS CALIBRATION ▶ BASS PEAK LIMITERS ▶
LFE LIMIT ADJ

Specifies the output level restriction the SDP-40 applies to the LFE output connector as well as to other Main Zone audio output connectors to which low-frequency signals are redirected. When the LFE LIMIT ADJ parameter is selected, it is automatically set to 75dB. The SDP-40 applies the selected output level restriction when the LFE LIMITER parameter is set to ON.

REAR PANEL CONFIG

SETUP ► REAR PANEL CONFIG

Selecting the SETUP menu REAR PANEL CONFIG option opens the REAR PANEL CONFIG menu shown below, which can be used to configure the analog audio input connectors as eight stereo connectors or as five stereo and one 5.1-channel connectors.



8 STEREO INPUTS

SETUP ► REAR PANEL CONFIG ► 8 STEREO INPUTS

Select the 8 STEREO INPUTS option to configure the analog audio input connectors as eight stereo connectors.

When 8 STEREO INPUTS is selected:

- All analog audio input connectors are configured as stereo connectors.
- The 5.1-channel connector is not available.
- Input sources that were assigned to the 5.1-channel connector are reassigned to the stereo connectors labeled 6, 7, and 8.

5 STEREO & 5.1 ANLG

SETUP ► REAR PANEL CONFIG ► 5 STEREO & 5.1 ANLG

Select the 5 STEREO & 5.1 ANLG option to configure the analog audio input connectors as five stereo and one 5.1-channel connectors.

When 5 STEREO & 5.1 ANLG is selected:

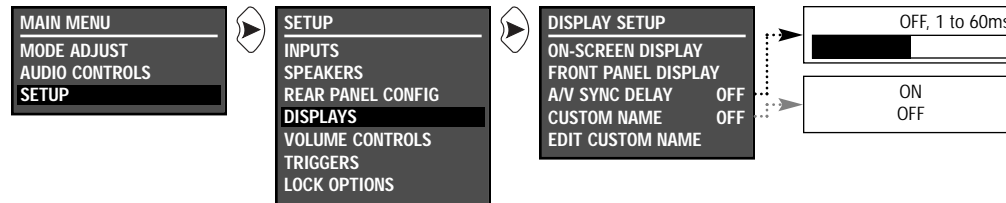
- The analog audio input connectors labeled 1, 2, 3, 4, and 5 are configured as stereo connectors.
- The analog audio input connectors labeled 6, 7, and 8 are configured as a 5.1-channel connector.
- Input sources that were assigned to the stereo connectors labeled 6, 7, and 8 are reassigned to the 5.1-channel connector labeled 6, 7, and 8.
- The 5.1-channel connector is sent to the Main Zone audio output connectors as indicated in the table below.
- The 5.1-channel connector should only be used with 5.1-channel analog sources such as DVD-As and SACDs.

| Input Connector(s) | Output Connector(s) |
|--------------------|---------------------|
| (L) & (R) | Front L/R |
| (C) | Center |
| (SUB) | Subwoofer L/R & LFE |
| (LS) & (RS) | Side L/R & Rear L/R |

DISPLAY SETUP

SETUP ▶ **DISPLAYS**

Selecting the SETUP menu DISPLAYS option opens the DISPLAY SETUP menu shown below, which can be used to customize the on-screen and front panel displays, restore audio/video synchronization, and create and activate a custom unit name.



| Parameter | Default Setting | Possible Settings |
|---------------------|------------------------|-------------------|
| ON-SCREEN DISPLAY | Refer to page 3-44 | |
| FRONT PANEL DISPLAY | Refer to page 3-46 | |
| A/V SYNC DELAY | OFF | OFF, 1 to 60ms |
| CUSTOM NAME | OFF | ON, OFF |
| EDIT CUSTOM NAME | Refer to the next page | |

CUSTOM NAME

ON, OFF

SETUP ▶ **DISPLAYS** ▶ **CUSTOM**

Activates the display of the custom unit name, which can be created with the EDIT CUSTOM NAME drop-down menu. When ON is selected, the custom unit name scrolls across the on-screen and front panel displays whenever the SDP-40 is activated. When OFF is selected, the custom unit name does not scroll across the on-screen and front panel displays when the SDP-40 is activated.

... DISPLAY SETUP continues on page 3-42

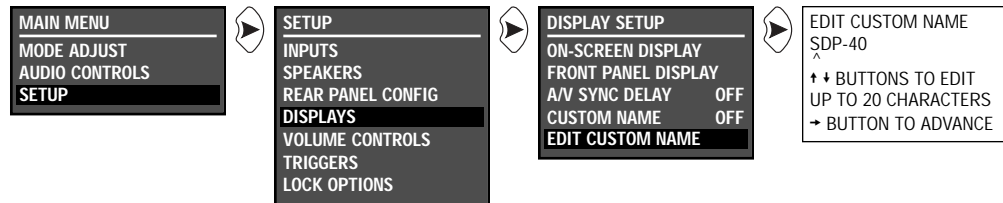
A/V SYNC DELAY

OFF, 1 to 60ms

SETUP ▶ **DISPLAYS** ▶ **A/V SYNC DELAY**

Restores audio/video synchronization when the SDP-40 is connected to components such as video processors that introduce video signal delays. Select a value between 1 and 60ms to activate an audio signal delay to compensate for the video signal delay.

Display Setup (continued from page 3-42)



EDIT CUSTOM NAME

SETUP ► DISPLAYS ► EDIT CUSTOM NAME

Opens the EDIT CUSTOM NAME drop-down menu shown above, which can be used to create a custom unit name. The factory-default unit name is SDP-40.

To create a custom unit name:

1. Follow the EDIT CUSTOM NAME menu path shown above to open the EDIT CUSTOM NAME drop-down menu.
2. When the EDIT CUSTOM NAME drop-down menu opens, locate the current unit name on the second line of the drop-down menu. The cursor automatically appears beneath the first character in the current unit name.
3. When the current unit name is located, use the following remote control commands to enter the desired unit name:
 - Press the ▲ and ▼ arrow buttons to change the character above the cursor.
 - Press the ► arrow button to advance to the next character space. The cursor will automatically wrap to the first character space when the last (twentieth) character space is passed.

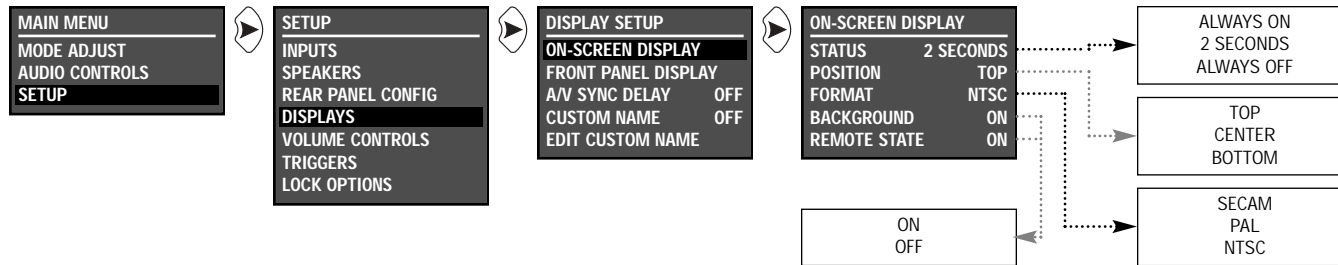
- Press the ◀ arrow button to return to the previous character space. When the cursor is positioned in the first character space, pressing the ◀ arrow button will close the EDIT CUSTOM NAME drop-down menu.
4. When the desired custom unit name has been entered, press the ◀ arrow button until the EDIT CUSTOM NAME drop-down menu closes.

When the CUSTOM NAME parameter is set to ON, the custom unit name scrolls across the on-screen and front panel displays whenever the SDP-40 is activated.

ON-SCREEN DISPLAY

SETUP ► DISPLAYS ► ON-SCREEN DISPLAY

Selecting the DISPLAY SETUP menu ON-SCREEN DISPLAY option opens the ON-SCREEN DISPLAY menu shown below, which can be used to customize the on-screen display.



| Parameter | Default Setting | Possible Settings |
|--------------|-----------------|----------------------------------|
| STATUS | 2 SECONDS | ALWAYS ON, 2 SECONDS, ALWAYS OFF |
| POSITION | TOP | TOP, CENTER, BOTTOM |
| FORMAT | NTSC | SECAM, PAL, NTSC |
| BACKGROUND | ON | ON, OFF |
| REMOTE STATE | ON | ON, OFF |

STATUS ALWAYS ON, 2 SECONDS, ALWAYS OFF

SETUP ► DISPLAYS ► ON-SCREEN DISPLAY ► STATUS

Controls the activation of the on-screen display when the display device is connected to a Main Zone video output connector. When ALWAYS ON is selected, the on-screen display remains activated at

all times. When 2 SECONDS is selected, the on-screen display activates for two seconds whenever a new input source is present or a new command is received. When ALWAYS OFF is selected, the on-screen display remains deactivated at all times, and will not reactivate until the STATUS parameter is reset to ALWAYS ON or 2 SECONDS.

Note:

When the ON-SCREEN DISPLAY menu STATUS parameter is set to ALWAYS OFF, the on-screen display immediately deactivates. Press the OSD button or use the front panel display as a guide to reset the ON-SCREEN DISPLAY menu STATUS parameter to ALWAYS ON or 2 SECONDS.

... On-Screen Display continues on page 3-45

On-Screen Display (continued from page 3-44)

POSITION TOP, CENTER, BOTTOM

SETUP ► DISPLAYS ► ON-SCREEN DISPLAY ► POSITION

Controls the vertical alignment of the two-line status on the display device screen. When TOP is selected, the two-line status appears near the top of the display device screen. When CENTER is selected, the two-line status appears centered on the display device screen. When BOTTOM is selected, the two-line status appears near the bottom of the display device screen.

FORMAT SECAM, PAL, NTSC

SETUP ► DISPLAYS ► ON-SCREEN DISPLAY ► FORMAT

Controls the compatibility between the composite and S-video output connectors, the video switcher, and the display device. Select the setting that is compatible with the source components and the display device.

Note:

The *FORMAT* parameter has no effect on the component video output connector.

BACKGROUND ON, OFF

SETUP ► DISPLAYS ► ON-SCREEN DISPLAY ► BACKGROUND

Determines the on-screen display background. When ON is selected, the on-screen display appears over a solid blue or gray background (depending on the display device). When OFF is selected, the on-screen display appears over the video input signal.

Note:

When the *BACKGROUND* parameter is set to OFF, the on-screen display automatically deactivates when the display device is connected to the Main Zone component video output connector.

REMOTE STATE ON, OFF

SETUP ► DISPLAYS ► ON-SCREEN DISPLAY ► REMOTE STATE

Activates the remote control command bank indicator, a letter that appears in the top-right corner of the on-screen display to indicate the command bank from which the SDP-40 last received a command. The table below indicates the letter that represents each command bank.

When ON is selected, the command bank indicator appears in the top-right corner of the on-screen display whenever the SDP-40 receives a remote control command. When OFF is selected, the command bank indicator does not appear on the on-screen display when the SDP-40 receives a remote control command.

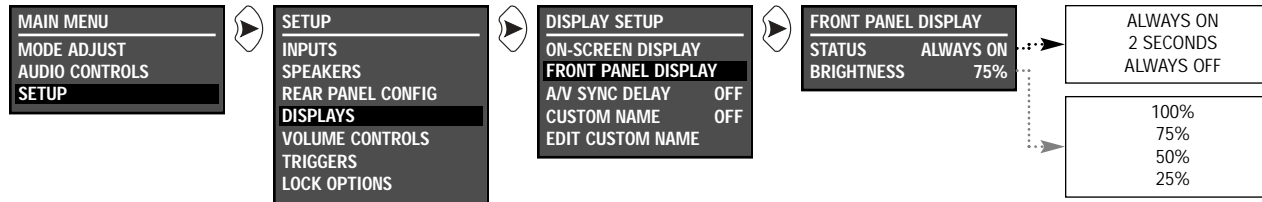
| Letter Indicator | Command Bank |
|------------------|--------------|
| None* | Main Zone |
| Z | Zone 2 |
| R | Record Zone |
| S | Shift |

* No letter appears when the SDP-40 receives a command from the Main Zone command bank, even if the *REMOTE STATE* parameter is set to ON.

FRONT PANEL DISPLAY

SETUP > DISPLAYS > FRONT PANEL DISPLAY

Opens the FRONT PANEL DISPLAY menu shown below, which can be used to customize the front panel display.



| Parameter | Default Setting | Possible Settings |
|------------|-----------------|----------------------------------|
| STATUS | ALWAYS ON | ALWAYS ON, 2 SECONDS, ALWAYS OFF |
| BRIGHTNESS | 75% | 100%, 75%, 50%, 25% |

BRIGHTNESS

100%, 75%, 50%, 25%

SETUP > DISPLAYS > FRONT PANEL DISPLAY > BRIGHTNESS

Controls the illumination of front panel display characters. When a setting is selected, front panel display characters automatically adjust to the selected illumination percentage.

STATUS

ALWAYS ON, 2 SECONDS, ALWAYS OFF

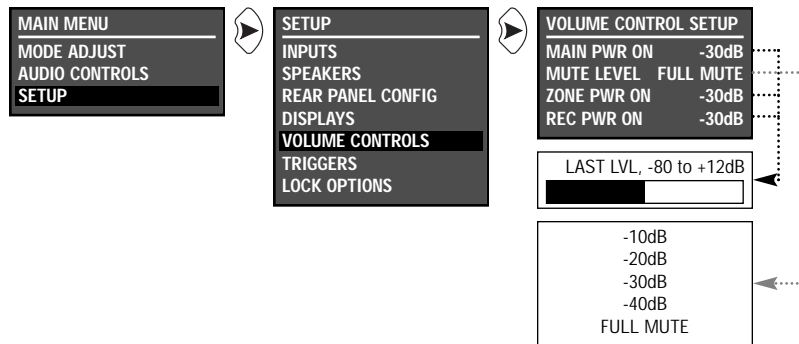
SETUP > DISPLAYS > FRONT PANEL DISPLAY > STATUS

Controls the activation of the front panel display. When ALWAYS ON is selected, the front panel display remains activated at all times. When 2 SECONDS is selected, the front panel display activates for two seconds whenever a new input source is present or a new command is received. When ALWAYS OFF is selected, the front panel display remains deactivated at all times, and will not reactivate until the STATUS parameter is reset to ALWAYS ON or 2 SECONDS.

VOLUME CONTROL SETUP

SETUP > VOLUME CONTROLS

Selecting the SETUP menu VOLUME CONTROLS option opens the VOLUME CONTROL SETUP menu shown below, which can be used to configure Main Zone, Zone 2, and Record Zone volume levels.



| Parameter | Default Setting | Possible Settings |
|-------------|-----------------|---------------------------------------|
| MAIN PWR ON | -30dB | LAST LVL, -80 to +6dB |
| MUTE LEVEL | FULL MUTE | -10dB, -20dB, -30dB, -40dB, FULL MUTE |
| ZONE PWR ON | -30dB | LAST LVL, -80 to +6dB |
| REC PWR ON | -30dB | LAST LVL, -80 to +6dB |

MAIN PWR ON

LAST LVL, -80 to +6dB

SETUP > VOLUME CONTROLS > MAIN PWR ON

Selects the volume level at which the Main Zone activates. When a value is selected, the SDP-40 automatically sets Main Zone volume level to the selected value when the Main Zone is activated. When LAST LVL is selected, the SDP-40 sets Main Zone volume level to the last volume level that was selected in the Main Zone during the previous operating session.

MUTE LEVEL

-10dB, -20dB, -30dB, -40dB, FULL MUTE

SETUP > VOLUME CONTROLS > MUTE LEVEL

Determines the amount of attenuation that occurs in the Main Zone when the Mute button is pressed. When a value is selected, Main Zone volume level is attenuated to the selected value when the Mute button is pressed. When FULL MUTE is selected, Main Zone volume level is fully attenuated when the Mute button is pressed.

ZONE PWR ON

LAST LVL, -80 to +6dB

SETUP > VOLUME CONTROLS > ZONE PWR ON

Selects the volume level at which Zone 2 activates. When a value is selected, the SDP-40 automatically sets Zone 2 volume level to the selected value when Zone 2 is activated. When LAST LVL is selected, the SDP-40 sets Zone 2 volume level to the last volume level that was selected in Zone 2 during the previous operating session.

REC PWR ON LAST LVL, -80 to +6dB

SETUP > VOLUME CONTROLS > REC PWR ON

Selects the volume level at which the Record Zone activates. When a value is selected, the SDP-40 automatically sets Record Zone volume level to the selected value when the Record Zone is activated. When LAST LVL is selected, the SDP-40 sets Record Zone volume level to the last volume level that was selected in the Record Zone during the previous operating session.

MAIN MENU
MODE ADJUST
AUDIO CONTROLS
SETUP

SETUP
INPUTS
SPEAKERS
REAR PANEL CONFIG
DISPLAYS
VOLUME CONTROLS
TRIGGERS
LOCK OPTIONS

TRIGGER SETUP
TRIGGER 1 REMOTE
TRIGGER 2 REMOTE

TRIGGER SETUP

SETUP > TRIGGERS

Selecting the SETUP menu TRIGGERS option prompts the selection of the desired trigger output connector – 1 or 2. The SDP-40 includes three 12V DC trigger output connectors labeled PWR (power), 1, and 2. The power connector is not configurable. It is activated when the SDP-40 is activated and deactivated when the SDP-40 is deactivated. The other connectors can be configured for remote or program operation.

Selecting TRIGGER 1 or TRIGGER 2 opens the corresponding TRIGGER SETUP menu, which can be used to configure the selected trigger output connector. The TRIGGER SETUP menu shown at the right is used as an example. The parameters on the left side of the TRIGGER SETUP menus are identical regardless of which connector is selected. The parameter settings on the right side are adjustable. The TRIGGER SETUP menu shown at the right indicates factory-default parameter settings for TRIGGER 1. The menu shown on the next page indicates default parameter settings for TRIGGER 2.

| Parameter | Default Setting | Possible Settings |
|-------------------|-----------------|-------------------|
| REMOTE ONLY | ON | ON, OFF |
| Program Operation | OFF | ON, OFF |

All TRIGGER SETUP menu parameters – except the REMOTE ONLY parameter – are considered program operation parameters.

| TRIGGER 1 SETUP | |
|-----------------|-----|
| REMOTE ONLY | OFF |
| DVD1 | OFF |
| DVD2 | OFF |
| LD | OFF |
| TV | OFF |
| SAT | OFF |
| VCR | OFF |
| CD | OFF |
| PVR | OFF |
| GAME | OFF |
| TAPE | OFF |
| TUNER | OFF |
| AUX | OFF |
| ZONE2 INPUTS | OFF |
| RECORD INPUTS | OFF |
| FILM | ON |
| TV | ON |
| MUSIC | ON |
| MUSIC SURR | ON |
| PLII + IEX | ON |
| PLII MOVIE | ON |
| PLII MUSIC | ON |
| PRO LOGIC | ON |
| FILM | ON |
| MUSIC | OFF |
| NIGHTCLUB | ON |
| CONCERT HALL | ON |
| CHURCH | ON |
| CATHEDRAL | ON |
| PANORAMA | OFF |
| PARTY | OFF |
| 2-CHANNEL | OFF |
| MONO LOGIC | ON |
| MONO SURROUND | ON |
| MONO | ON |
| 5.1 FILM | ON |
| 5.1 TV | ON |
| 5.1 MUSIC | ON |
| 5.1 SurEX | ON |
| 5.1 IEX MUSIC | ON |
| DIGITAL EX | ON |
| 5.1 2-CHANNEL | OFF |
| 5.1 MONO LOGIC | ON |
| 5.1 MONO SURR | ON |
| 5.1 MONO | ON |
| FILM | ON |
| MUSIC | ON |
| IEX | ON |
| IEX MUSIC | ON |
| 2-CHAN | OFF |
| 5.1a FILM | ON |
| 5.1a MUSIC | ON |
| 5.1a SurEX | ON |
| 5.1a IEX MUSIC | OFF |
| 5.1a STANDARD | OFF |
| 5.1a 2-CHANNEL | OFF |
| 5.1a BYPASS | OFF |
| 2CH BYPASS | OFF |

ON
OFF

... TRIGGER SETUP continues on page 3-49

| TRIGGER SETUP | |
|---------------|--------|
| TRIGGER 1 | REMOTE |
| TRIGGER 2 | REMOTE |

| TRIGGER 2 SETUP | |
|-----------------|-----|
| REMOTE ONLY | OFF |
| DVD1 | OFF |
| DVD2 | OFF |
| LD | OFF |
| TV | OFF |
| SAT | OFF |
| VCR | OFF |
| CD | OFF |
| PVR | OFF |
| GAME | OFF |
| TAPE | OFF |
| TUNER | OFF |
| AUX | OFF |
| ZONE2 INPUTS | OFF |
| RECORD INPUTS | OFF |
| FILM | OFF |
| TV | OFF |
| MUSIC | ON |
| MUSIC SURR | ON |
| PLII + IEX | OFF |
| PLII MOVIE | OFF |
| PLII MUSIC | ON |
| PRO LOGIC | OFF |
| FILM | OFF |
| MUSIC | OFF |
| NIGHTCLUB | OFF |
| CONCERT HALL | OFF |
| CHURCH | OFF |
| CATHEDRAL | OFF |
| PANORAMA | OFF |
| PARTY | ON |
| 2-CHANNEL | OFF |
| MONO LOGIC | OFF |
| MONO SURROUND | OFF |
| MONO | OFF |
| 5.1 FILM | OFF |
| 5.1 TV | OFF |
| 5.1 MUSIC | ON |
| 5.1 SurEX | OFF |
| 5.1 IEX MUSIC | OFF |
| DIGITAL EX | OFF |
| 5.1 2-CHANNEL | OFF |
| 5.1 MONO LOGIC | OFF |
| 5.1 MONO SURR | OFF |
| 5.1 MONO | OFF |
| FILM | OFF |
| MUSIC | ON |
| IEX | OFF |
| IEX MUSIC | OFF |
| 2-CHAN | OFF |
| 5.1a FILM | OFF |
| 5.1a MUSIC | OFF |
| 5.1a SurEX | OFF |
| 5.1a IEX MUSIC | OFF |
| 5.1a STANDARD | OFF |
| 5.1a 2-CHANNEL | OFF |
| 5.1a BYPASS | OFF |
| 2CH BYPASS | OFF |

Trigger Setup (continued from page 3-48)

REMOTE ONLY ON, OFF

SETUP TRIGGERS TRIGGER 1 OR TRIGGER 2 REMOTE ONLY

Configures the selected trigger output connector for remote operation. Select the ON setting to configure the selected connector for remote operation. Select the OFF setting to configure the selected connector for program operation. Refer to the Program Operation Parameter description below for more information.

When configured for remote operation, the connector labeled 1 can be activated and deactivated with the MODE + and – buttons when the Zone 2 command bank is activated, and the connector labeled 2 can be activated and deactivated with the MODE + and – buttons when the Record Zone command bank is activated.

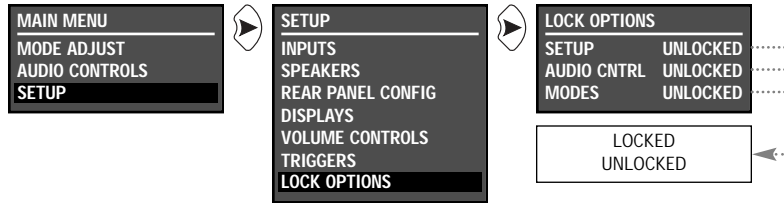
Note:

When the REMOTE ONLY parameter is set to ON, all TRIGGER SETUP menu program operation parameter settings are ignored.

Program Operation Parameters ON, OFF

SETUP TRIGGERS TRIGGER 1 OR TRIGGER 2 Program Operation Parameter

Configure the selected trigger output connector for program operation when the REMOTE ONLY parameter is set to OFF. Select the ON setting to associate the selected connector with the corresponding input(s) or listening mode.



When configured for program operation, the connector activates when the associated inputs or listening modes are activated and deactivates when the associated inputs or listening modes are deactivated.

Note the following:

- Connectors can be associated with individual Main Zone inputs and listening modes, as well as the Zone 2 and Record Zone inputs.
- Connectors cannot be associated with individual Zone 2 and Record Zone inputs.
- Connectors can be associated with multiple inputs and listening modes at the same time.

Note:

When the CUSTOM menu RESET MODE option is selected to restore the factory-default version of the selected listening mode, the corresponding TRIGGER SETUP menu program operation parameter is automatically set to OFF.

LOCK OPTIONS

SETUP > LOCK OPTIONS

Selecting the SETUP menu LOCK OPTIONS option opens the LOCK OPTIONS menu shown on the next page, which can be used to protect MODE ADJUST, AUDIO CONTROLS, and SETUP menu branch parameter settings from accidental changes.

| Parameter | Default Setting | Possible Settings |
|-------------|-----------------|-------------------|
| MODES | UNLOCKED | LOCKED, UNLOCKED |
| AUDIO CNTRL | UNLOCKED | LOCKED, UNLOCKED |
| SETUP | UNLOCKED | LOCKED, UNLOCKED |

MODES

LOCKED, UNLOCKED

SETUP > LOCK OPTIONS > MODES

Protects MODE ADJUST menu branch settings from accidental changes. When LOCKED is selected, MODE ADJUST menu branch settings – including all listening mode menu settings – cannot be adjusted. When UNLOCKED is selected, all MODE ADJUST menu branch settings can be adjusted.

AUDIO CNTRL

LOCKED, UNLOCKED

SETUP > LOCK OPTIONS > AUDIO CNTRL

Protects AUDIO CONTROLS menu branch settings from accidental changes. When LOCKED is selected, AUDIO CONTROLS menu branch settings cannot be adjusted. When UNLOCKED is selected, AUDIO CONTROLS menu branch settings can be adjusted.

SETUP

LOCKED, UNLOCKED

SETUP ▶ **LOCK OPTIONS** ▶ **SETUP**

Protects SETUP menu branch settings from accidental changes. When LOCKED is selected, SETUP menu branch settings cannot be adjusted. When UNLOCKED is selected, SETUP menu branch settings can be adjusted.

Note the following:

- When the MODES parameter is set to LOCKED, the up and down arrows can still be used to adjust subwoofer output levels applied to the selected listening mode when the Shift command bank is activated.
- When the SETUP parameter is set to LOCKED, the 2CH button can still be used to adjust the MAIN ADV menu ANALOG BYPASS parameter setting when the Shift command bank is activated.
- When the SETUP parameter is set to LOCKED, the 7/5 button can still be used to adjust the MAIN ADV menu INPUT SELECT parameter setting when the Shift command bank is activated.

4



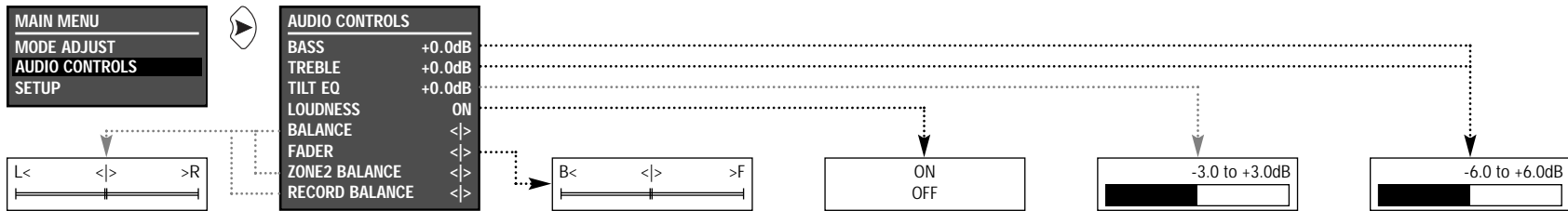
AUDIO CONTROLS

AUDIO CONTROLS 4-2

*Bass • Treble • Tilt EQ • Loudness • Balance • Fader • Zone2 Balance •
Record Balance*

AUDIO CONTROLS

Selecting the MAIN MENU AUDIO CONTROLS option opens the AUDIO CONTROLS menu shown below, which can be used to customize the Main Zone, Zone 2, and Record Zone audio output connectors.



- The BASS, TREBLE, TILT EQ, LOUDNESS, BALANCE, and FADER parameters affect the Main Zone audio output connectors. This includes all Main Zone inputs and listening modes, except the 5.1a BYPASS and 2CH BYPASS listening modes.
- The ZONE2 BALANCE parameter affects the Zone 2 audio output connectors, including all Zone 2 inputs.
- The REC BALANCE parameter affects the Record Zone audio output connectors, including all Record Zone inputs.

| Parameter | Default Setting | Possible Settings |
|---------------|-----------------|-------------------|
| BASS | +0.0dB | -6.0 to +6.0dB |
| TREBLE | +0.0dB | -6.0 to +6.0dB |
| TILT EQ | +0.0dB | -3.0 to +3.0dB |
| LOUDNESS | ON | ON, OFF |
| BALANCE | < > | L< to < > >R |
| FADER | < > | B< to < > >F |
| ZONE2 BALANCE | < > | L< to < > >R |
| REC BALANCE | < > | L< to < > >R |

AUDIO CONTROLS menu parameter descriptions begin on the next page.

BASS

-6.0 to +6.0

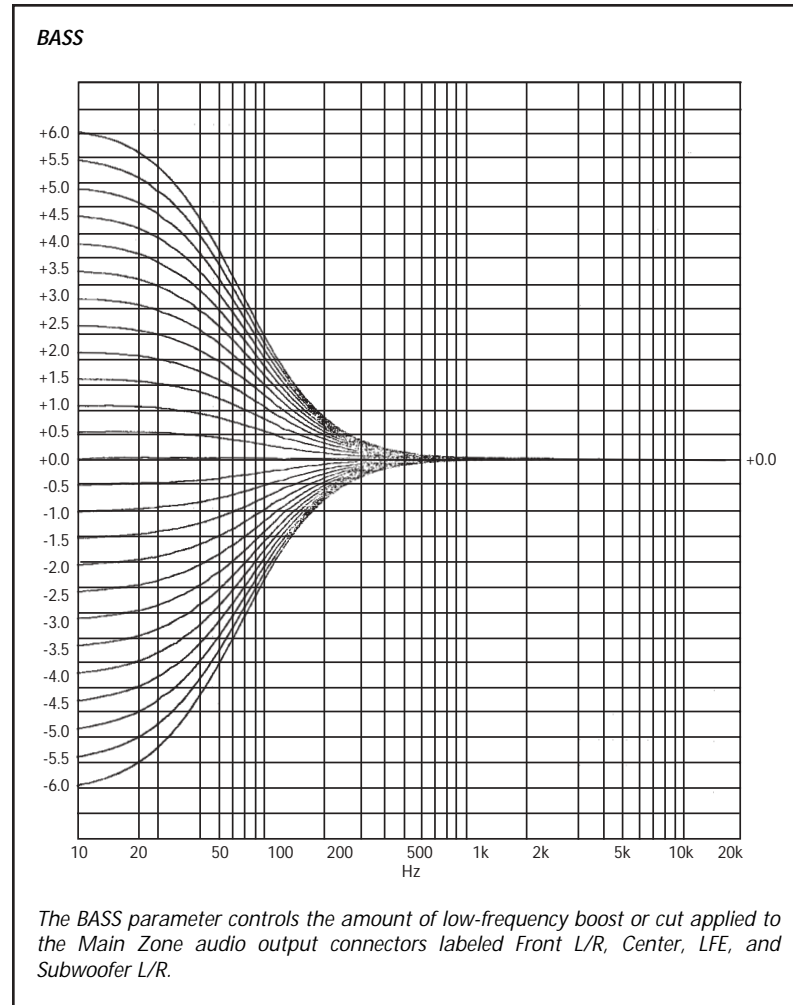
AUDIO CONTROLS  **BASS**

Controls the amount of low-frequency boost or cut applied to the Main Zone audio output connectors labeled Front L/R, Center, LFE, and Subwoofer L/R. The graph shown at the right indicates the frequency response of all BASS parameter settings.

Note:

When the Shift command bank is activated:

- Pressing the CD button increases the BASS parameter setting in 0.5dB increments.
- Pressing the TAPE button decreases the BASS parameter setting in 0.5dB increments.
- Pressing the OSD button sets the BASS, TREBLE, and TILT EQ parameters to +0.0dB.



TREBLE

-6.0 to +6.0

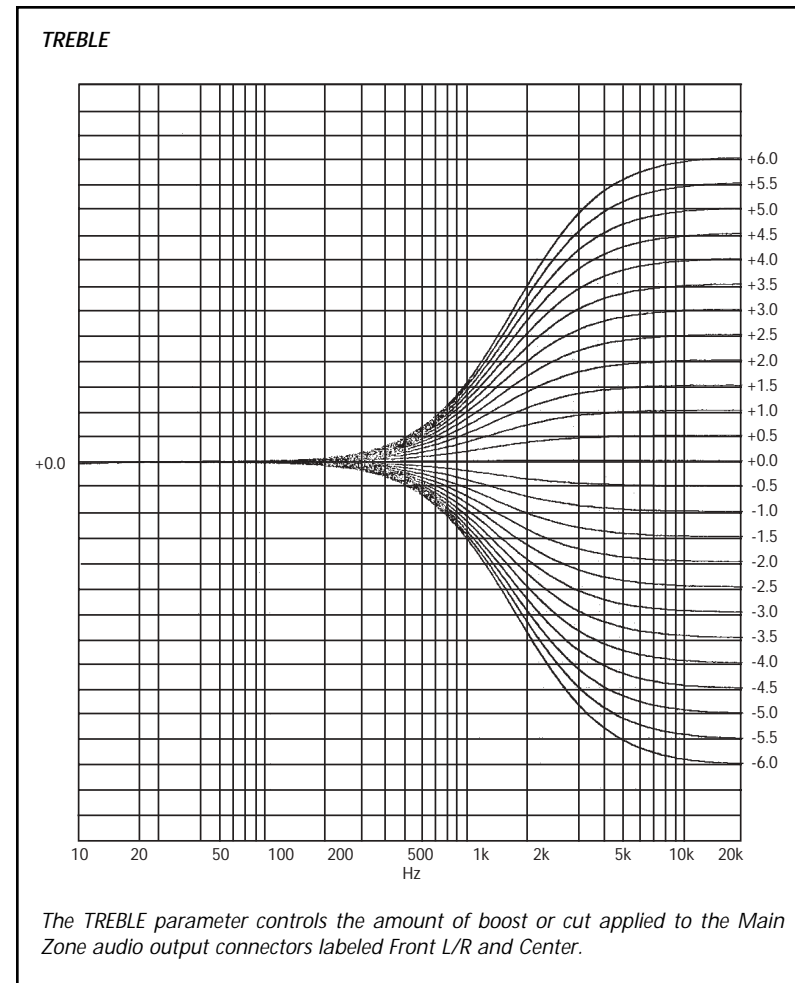
AUDIO CONTROLS  **TREBLE**

Controls the amount of boost or cut applied to the Main Zone audio output connectors labeled Front L/R and Center. The graph shown at the right indicates the frequency response of all TREBLE parameter settings.

Note:

When the Shift command bank is activated:

- Pressing the PVR button increases the TREBLE parameter setting in 0.5dB increments.
- Pressing the TUNER button decreases the TREBLE parameter setting in 0.5dB increments.
- Pressing the OSD button sets the BASS, TREBLE, and TILT EQ parameters to +0.0dB.



TILT EQ

-3.0 to +3.0

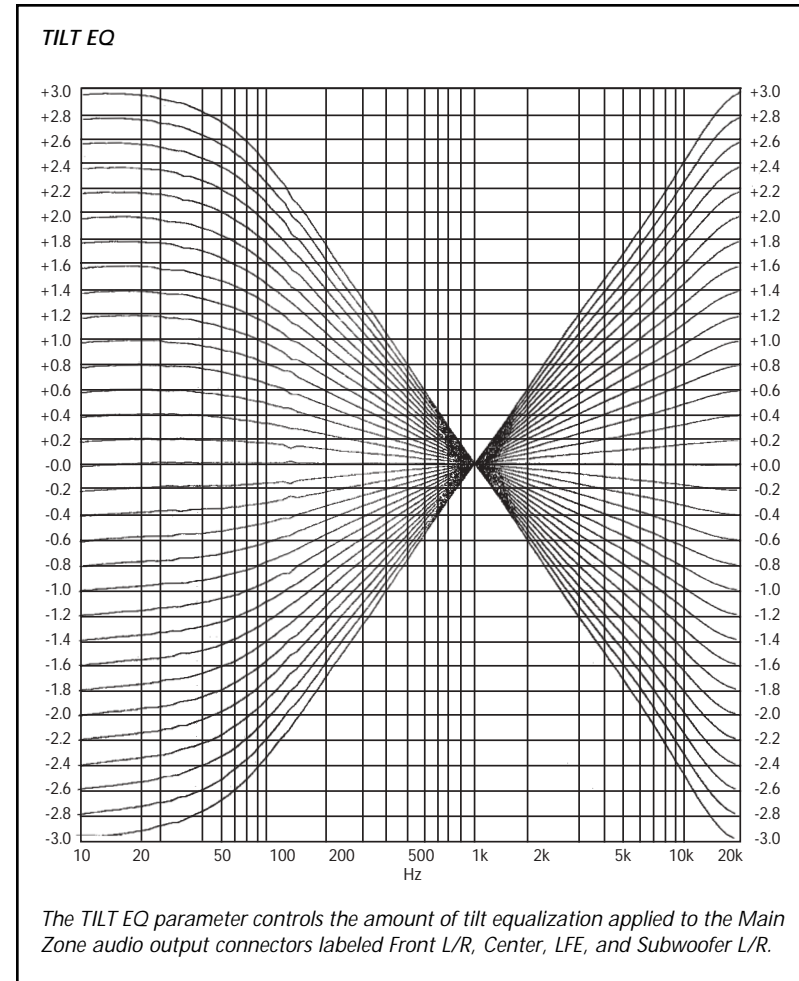
AUDIO CONTROLS ▶ **TILT EQ**

Controls the amount of tilt equalization applied to the Main Zone audio output connectors labeled Front L/R, Center, LFE, and Subwoofer L/R. This parameter setting affects the entire frequency spectrum with a hinge point at 1kHz. As the setting increases, frequencies higher than 1kHz are boosted while frequencies lower than 1kHz are simultaneously cut. As the setting decreases, frequencies higher than 1kHz are cut while frequencies lower than 1kHz are simultaneously boosted. The graph shown at the right indicates the frequency response of all TILT EQ parameter settings.

Note:

When the Shift command bank is activated:

- Pressing the GAME button increases the TILT EQ parameter setting in 0.2dB increments.
- Pressing the AUX button decreases the TILT EQ parameter setting 0.2dB increments.
- Pressing the OSD button sets the BASS, TREBLE, and TILT EQ parameters to +0.0dB.



LOUDNESS

ON, OFF

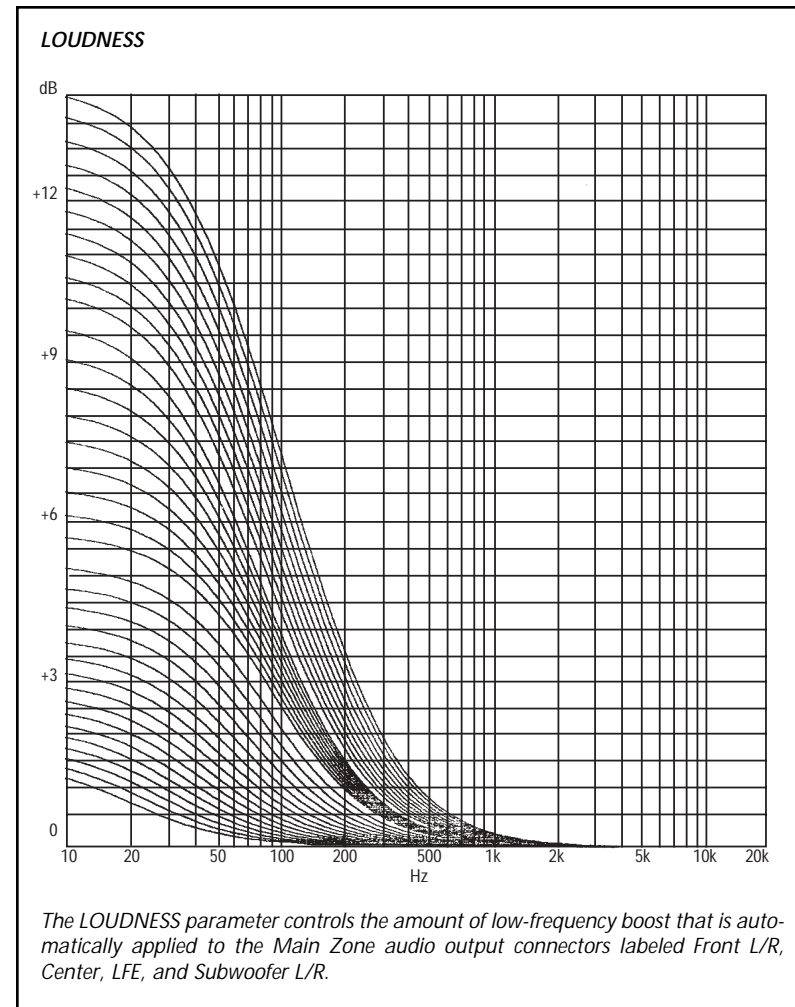
AUDIO CONTROLS  **LOUDNESS**

Controls the amount of low-frequency boost that is automatically applied to the Main Zone audio output connectors labeled Front L/R, Center, LFE, and Subwoofer L/R. When ON is selected, loudness compensation is automatically applied based on volume level. As volume level increases, the amount of low-frequency boost automatically decreases. The loudness contour is optimized for input sources calibrated to THX reference levels. When OFF is selected, no loudness compensation is applied.

The graph shown at the right indicates the frequency response that is automatically applied when the LOUDNESS parameter is set to ON and Main Zone volume level is adjusted.

Note:

When the Shift command bank is activated, pressing the TV button sets the LOUDNESS parameter to ON and pressing the SAT button sets the LOUDNESS parameter to OFF.



BALANCE

L< to <|> to >R

AUDIO CONTROLS  **BALANCE**

Controls the left-to-right balance of the Main Zone audio output connectors labeled Front L/R.

Note:

When the Shift command bank is activated:

- Pressing the MENU button centers the Main Zone BALANCE parameter.
- Pressing the ◀ and ▶ arrow buttons adjusts the Main Zone BALANCE parameter left and right.

FADER

B< to <|> to >F

AUDIO CONTROLS  **FADER**

Controls the front-to-back balance of the Main Zone audio output connectors labeled Front L/R.

Note:

When the Shift command bank is activated:

- Pressing the MENU button centers the Main Zone FADER parameter.
- Pressing the ▲ and ▼ arrow buttons adjusts the Main Zone FADER parameter backward and forward.

ZONE2 BALANCE

L< to <|> to >R

AUDIO CONTROLS  **ZONE2 BALANCE**

Controls the left-to-right balance of the Zone 2 audio output connectors.

Note:

When the Zone 2 command bank is activated:

- Pressing the MENU button centers the ZONE2 BALANCE parameter.
- Pressing the ◀ and ▶ arrow buttons adjusts the ZONE2 BALANCE parameter left and right.

RECORD BALANCE

L< to <|> to >R

AUDIO CONTROLS  **RECORD BALANCE**

Controls the left-to-right balance of the Record Zone audio output connectors.

Note:

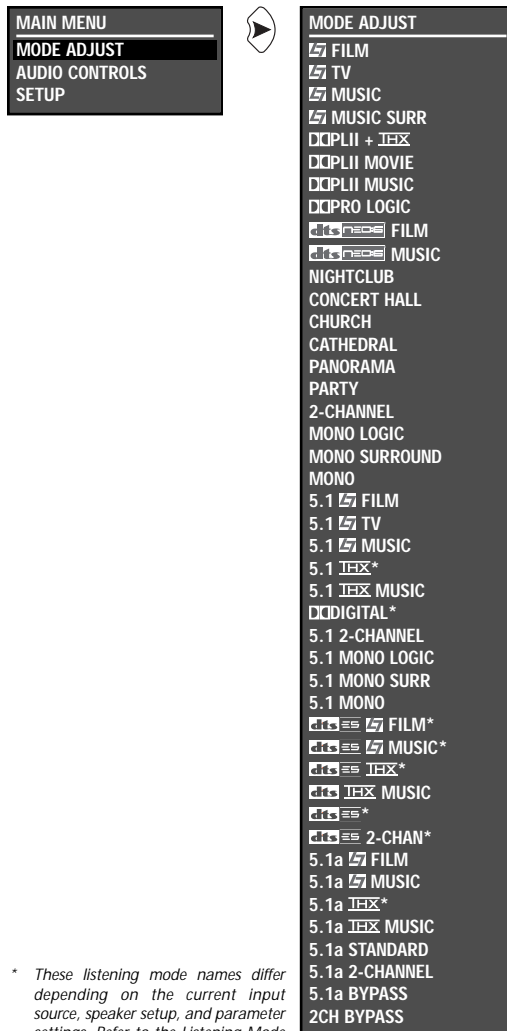
When the Record Zone command bank is activated:

- Pressing the MENU button centers the RECORD BALANCE parameter.
- Pressing the ◀ and ▶ arrow buttons adjusts the RECORD BALANCE parameter left and right.

5

MODE ADJUST

| | |
|--|------|
| MODE ADJUST | 5-2 |
| Listening Mode Activation | 5-2 |
| <i>Preferred Listening Mode Selection Parameters • Mode Buttons • Mode Family Selection Buttons</i> | |
| Listening Mode Descriptions | 5-5 |
| <i>5.1 FILM • 5.1 TV • 5.1 MUSIC • 5.1 MUSIC SURR • DOLBY + THX • DOLBY MOVIE • DOLBY MUSIC • DOLBY LOGIC • DTS-HD FILM & DTS-HD MUSIC • NIGHTCLUB • CONCERT HALL • CHURCH • CATHEDRAL • PANORAMA • PARTY • 2-CHANNEL • MONO LOGIC • MONO SURROUND • MONO • 5.1 5.1 FILM • 5.1 5.1 TV • 5.1 5.1 MUSIC • 5.1 THX ULTRA2, 5.1 THX SurEX, & 5.1 THX • 5.1 THX MUSIC • DD DIGITAL EX & DD DIGITAL • 5.1 2-CHANNEL • 5.1 MONO LOGIC • 5.1 MONO SURR • 5.1 MONO • DTS Decoding • DTS & DTS 5.1 FILM • DTS & DTS 5.1 MUSIC • DTS THX ULTRA2 & DTS THX • DTS THX MUSIC • DTS & DTS • DTS & DTS 2-CHAN • 5.1a 5.1 FILM • 5.1a 5.1 MUSIC • 5.1a THX ULTRA2, 5.1a THX SurEX, & 5.1a THX • 5.1a THX MUSIC • 5.1a STANDARD • 5.1a 2-CHANNEL • 5.1a BYPASS • 2CH BYPASS • OUTPUT LEVELS • CUSTOM</i> | |
| Listening Mode Menu Parameter Descriptions | 5-34 |



* These listening mode names differ depending on the current input source, speaker setup, and parameter settings. Refer to the Listening Mode Descriptions section that begins on page 5-5 for more information.

MODE ADJUST

Selecting the MAIN MENU MODE ADJUST option opens the MODE ADJUST menu shown at the left, which prompts the selection of the desired listening mode. Selecting a listening mode opens the corresponding listening mode menu, which can be used to customize the selected listening mode. These adjustments are applied the next time the listening mode is activated.








All listening mode menus are shown in the Appendix beginning on page A-14. The parameters on the left side of the listening mode menus differ from listening mode to listening mode. The parameter settings on the right side are adjustable. The listening mode menus shown in the Appendix indicate factory-default parameter settings for each listening mode.

When the MODE ADJUST menu opens, the activated listening mode is highlighted. Selecting another listening mode does not activate that listening mode. Rather, listening modes must be activated with one of the methods described in the Listening Mode Activation section that begins below.

LISTENING MODE ACTIVATION

The SDP-40 allows listening mode activation in the Main Zone. Listening modes are available for 2-channel, Dolby Digital, dts(-ES), and analog sources. In some cases, the SDP-40 automatically activates a listening mode in response to certain commands. For this reason, it is important to understand the three methods through which listening mode activation occurs.



Listening mode activation occurs through:

- the INPUT SETUP menu preferred listening mode selection parameters (2-CH, DDD, , and 5.1a)
- the front panel or remote control Mode buttons
- the remote control mode family selection buttons (, , , , , and )






PREFERRED LISTENING MODE SELECTION PARAMETERS








The SDP-40 allows the selection of four preferred listening modes for each Main Zone input, including one listening mode each for 2-channel, Dolby Digital, dts(-ES), and 5.1-channel analog sources. The table below indicates the INPUT SETUP menu parameters that can be used to select preferred listening modes.







Preferred Listening Mode Selection Parameters

| | |
|---|---|
| 2-CH | Selects a preferred listening mode for 2-channel sources |
|  | Selects a preferred listening mode for Dolby Digital sources |
|  | Selects a preferred listening mode for dts(-ES) sources |
| 5.1a | Selects a preferred listening mode for 5.1-channel analog sources |

When a preferred listening mode is selected, the SDP-40 automatically activates that listening mode whenever a new input is selected or an appropriate input source is present. For instance, the DVD1 and CD INPUT SETUP menu preferred listening mode selection parameters are set as shown at the top of the next column.

| DVD1 INPUT SETUP | |
|---|---|
| NAME | DVD1 |
| DIGITAL IN | COAX-1 |
| ANALOG IN | NONE |
| ANLG IN LVL | AUTO |
| VIDEO IN | S-VIDEO-1 |
| COMPONENT IN | 1 |
| 2-CH |  FILM |
|  5.1 |  FILM |
|   |  FILM |
| 5.1a | 5.1a  FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

| CD INPUT SETUP | |
|---|---|
| NAME | CD |
| DIGITAL IN | COAX-4 |
| ANALOG IN | NONE |
| ANLG IN LVL | AUTO |
| VIDEO IN | COMPOSITE-1 |
| COMPONENT IN | 1 |
| 2-CH |  MUSIC |
|  5.1 |  MUSIC |
|   |  MUSIC |
| 5.1a | 5.1a  FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

- If the DVD1 input is selected while a 2-channel source is present, the SDP-40 will automatically activate the  FILM listening mode. If a 5.1-channel analog source becomes present, the SDP-40 will automatically activate the 5.1a  FILM listening mode.
- If the CD input is selected while a Dolby Digital source is present, the SDP-40 will automatically activate the 5.1  MUSIC listening mode. If the DVD1 input is then selected while a dts(-ES) source is present, the SDP-40 will automatically activate the  or   FILM listening mode.

Note:

Refer to the *Selecting Preferred Listening Modes* section that begins on page 3-11 for more information.

MODE BUTTONS

The front panel and remote control Mode buttons can be used to audition listening modes with the current Main Zone input source. Pressing the Mode ▲ or + button scrolls upward through listening modes available for the current Main Zone input source. Pressing the Mode ▼ or – button scrolls downward through listening modes available for the current Main Zone input source. For instance, if a 2-channel source is present in the Main Zone, the Mode buttons can be used to audition 2-channel listening modes.

Scrolling occurs in the order shown on the MODE ADJUST menu. The selected listening mode appears in the bottom-left corner of the Main Zone two-line status. The selected listening mode is automatically activated when scrolling stops.

MODE FAMILY SELECTION BUTTONS



The remote control mode family selection buttons can be used to select a listening mode within the corresponding mode family. Pressing a mode family selection button activates the most appropriate listening mode for the current Main Zone input source. For instance, pressing the L7 button while a 2-channel source is present in the Main Zone activates the L7 FILM listening mode.

The table below indicates the listening modes associated with each mode family selection button.

| Button \ Input Source | 2-Channel | Dolby Digital | dts(-ES) | 5.1-Channel Analog |
|-----------------------|--------------|---------------|----------|--------------------|
| | DDPLII + THX | 5.1 THX* | | 5.1a THX* |
| | DDPLII MOVIE | DDDIGITAL* | N/A† | N/A† |
| | L7 FILM | 5.1 L7 FILM | | 5.1a L7 FILM |
| | L7 TV | 5.1 L7 TV | N/A† | N/A† |
| | FILM | N/A† | | N/A† |
| | L7 MUSIC | 5.1 L7 MUSIC | | 5.1a L7 MUSIC |

* These listening mode names differ depending on the current input source, speaker setup, and parameter settings. Refer to the Listening Mode Descriptions section that begins on the next page for more information.

† The MODE SELECTION NOT AVAILABLE message appears on the on-screen and front panel displays when the selected listening mode family does not offer a listening mode for the current Main Zone input source.

LISTENING MODE DESCRIPTIONS

The SDP-40 offers an assortment of listening modes for 2-channel, Dolby Digital, dts(-ES), and analog sources. Listening mode descriptions begin below and continue in the order shown on the MODE ADJUST menu. The table included with each description indicates the corresponding listening mode menu parameters, as well as their factory-default and possible parameter settings. All listening mode menus are shown in the Appendix beginning on page A-14. Listening mode menu parameter descriptions begin on page 5-34.

FILM

MODE ADJUST FILM

- A proprietary listening mode.
- Designed for enhanced playback of 2-channel stereo or matrix-encoded film sources.
- Derives seven channels from 2-channel sources, as well as full-frequency stereo surround channels that realistically increase the perceived width, length, and sense of envelopment of the listening space.
- Provides remarkable improvement compared to other decoders.
- Recommended for 2-channel stereo or matrix-encoded film sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|------------------------|
| AUTO AZIMUTH | ON | ON, OFF |
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| RE-EQUALIZER | ON | ON, OFF |
| SOUND STAGE | REAR | FRONT, NEUTRAL, REAR |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| SURR ROLLOFF | 15.3kHz | 500Hz to 20.0kHz, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

JBL TV

MODE ADJUST  **JBL TV**

- A proprietary listening mode.
- Similar to the **JBL FILM** listening mode, but specifically tailored for broadcast sources.
- Designed for enhanced playback of 2-channel stereo or matrix-encoded broadcast sources.
- Recommended for 2-channel stereo or matrix-encoded broadcast sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|-------------------------|
| AUTO AZIMUTH | ON | ON, OFF |
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| FRONT STEERING | FILM | OFF, MSURR, MUSIC, FILM |
| RE-EQUALIZER | OFF | ON, OFF |
| SOUND STAGE | REAR | FRONT, NEUTRAL, REAR |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| SURR ROLLOFF | 15.3kHz | 500Hz to 20.0kHz, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

JBL MUSIC

MODE ADJUST  **JBL MUSIC**

- A proprietary listening mode.
- Similar to the **JBL FILM** listening mode, but specifically tailored for music sources.
- Designed for enhanced playback of 2-channel stereo or matrix-encoded music sources.
- Recommended for 2-channel stereo or matrix-encoded music sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|-------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| FRONT STEERING | MUSIC | OFF, MSURR, MUSIC, FILM |
| SOUND STAGE | NEUTRAL | FRONT, NEUTRAL, REAR |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| SURR ROLLOFF | 15.3kHz | 500Hz to 20.0kHz, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

MUSIC SURR

MODE ADJUST MUSIC SURR

- A proprietary listening mode.
- Similar to the MUSIC SURROUND listening mode available in other JBL products.
- Designed for enhanced playback of 2-channel stereo music sources recorded in real spaces and for playback of recordings that contain added reverb.
- Extracts ambient sounds from the input source, then sends these sounds to all speakers. Ambient sounds are heard from all directions, creating a realistic playback presentation that simulates what listeners experience in real spaces.
- Recommended for classical music sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|-------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| FRONT STEERING | MSURR | OFF, MSURR, MUSIC, FILM |
| SOUND STAGE | NEUTRAL | FRONT, NEUTRAL, REAR |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| SURR ROLLOFF | 15.3kHz | 500Hz to 20.0kHz, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

+

MODE ADJUST +

- Designed for playback of Dolby Surround-encoded sources.
- Uses Dolby Pro Logic II decoding to derive five channels from Dolby Surround-encoded sources.
- Applies THX re-equalization to simulate high-frequency rolloffs that occur in movie theaters. Most films are mixed for movie theaters, and might sound too bright when played back in home theaters without re-equalization.
- Applies THX timbre matching to minimize timbre differences between the front and surround channels, which results in smoother sound movements between them.
- Recommended for home theaters with THX-certified speakers.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|-------------------|
| RE-EQUALIZER | ON | ON, OFF |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

DOLBY DIGITAL II MOVIE

MODE ADJUST  DOLBY DIGITAL II MOVIE

- Similar to the DOLBY DIGITAL PRO LOGIC listening mode, but uses full-frequency stereo surround channels to realistically increase the perceived width of the listening space.
- Designed for playback of Dolby Surround-encoded sources.
- Decodes five channels from Dolby Surround-encoded sources.
- Provides impressive enhancement compared to Dolby Pro Logic decoding.
- Appropriate for Dolby Surround-encoded film sources.

Parameter

| | |
|---------------|--------------------|
| OUTPUT LEVELS | Refer to page 5-32 |
| CUSTOM | Refer to page 5-33 |

Listening mode menu parameter descriptions begin on page 5-34.

DOLBY DIGITAL II MUSIC

MODE ADJUST  DOLBY DIGITAL II MUSIC



- Similar to the DOLBY DIGITAL II MOVIE listening mode.
- Designed for playback of stereo music sources.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|----------------------|
| PANORAMA | OFF | ON, OFF |
| CTR WIDTH | 3 | MIN, 1 to 6, MAX |
| DIMENSION | NEUTRAL | FRONT, NEUTRAL, REAR |
| SURROUND DLY | 10ms | 0 to 15ms |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

DOLBY PRO LOGIC

MODE ADJUST  **DOLBY PRO LOGIC**

- Designed for playback of Dolby Surround-encoded sources.
- Decodes four channels from Dolby Surround-encoded sources.
- Uses a mono surround channel with a high-frequency rolloff above 7kHz.
- Available for comparison purposes, particularly with the  FILM, DOLBY DIGITAL MOVIE, and  FILM listening modes.

Parameter

OUTPUT LEVELS Refer to page 5-32

CUSTOM Refer to page 5-33

Listening mode menu parameter descriptions begin on page 5-34.

FILM & MUSIC

MODE ADJUST  ** FILM** OR ** MUSIC**

- Designed for playback of matrix-encoded digital stereo film or music sources.
- Derive six channels when both side and rear speakers are present (rear channels will be in parallel). Derives five channels when only side or rear speakers are present. The LFE channel, also referred to as the .1 channel, is generated through bass management in the SDP-40.








Parameter

OUTPUT LEVELS Refer to page 5-32

CUSTOM Refer to page 5-33

Listening mode menu parameter descriptions begin on page 5-34.

Note the following:

- The  listening modes cannot be selected as the preferred listening mode for 2-channel sources. However, when the INPUT SETUP menu 2-CH parameter is set to USE LAST, the SDP-40 will activate a  listening mode if a  listening mode was activated the last time a 2-channel source was present.
- The SDP-40 will not activate a  listening mode unless a 44.1 or 48kHz PCM digital source is present. The  listening modes are not compatible with 88.2 or 96kHz, Dolby Digital, or analog sources.
- The  listening modes can be activated with the front panel or remote control Mode buttons. In addition, the  FILM listening mode can be activated with the remote control dts button when a 2-channel source is present.

NIGHTCLUB

MODE ADJUST  NIGHTCLUB

- Designed for playback of “dry” music sources that benefit from the addition of room reflections, especially music sources that lack ambience in the recording.
- Generates early reflections to simulate small, intimate listening spaces.
- Sends early reflections to the front, side, and rear channels.
- Unlike other room simulation listening modes, this mode uses a proprietary reverb algorithm, which are relied upon by a majority of recording engineers to add ambience to recordings.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|---------------------|
| CENTER DEPTH | 11 | 0 to 18 |
| SPEECH DETECT | ON | ON, OFF |
| SIZE | 5m | 4 to 20m |
| LIVENESS | 196ms | 30ms to 20.2s |
| PRE-DELAY | 5ms | OFF, 1 to 100ms |
| ROLLOFF | 9.0kHz | 500Hz to 20kHz, OFF |
| EFFECT LVL | +3dB | -12 to +6dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

CONCERT HALL

MODE ADJUST  CONCERT HALL

- Generates early reflections to simulate large listening spaces.
- Sends early reflections to the front, side, and rear channels.
- Unlike other room simulation listening modes, this mode uses a proprietary reverb algorithm that is relied upon by a majority of recording engineers to add ambience to recordings.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|---------------------|
| CENTER DEPTH | 12 | 0 to 18 |
| SPEECH DETECT | ON | ON, OFF |
| SIZE | 20m | 4 to 20m |
| LIVENESS | 1.72s | 30ms to 20.2s |
| PRE-DELAY | OFF | OFF, 1 to 100ms |
| ROLLOFF | 2.4kHz | 500Hz to 20kHz, OFF |
| EFFECT LVL | -2dB | -12 to +6dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

CHURCH

MODE ADJUST ► CHURCH

- Uses a reverb algorithm to emphasize the rich, smooth, reverberant decay characteristic of small and medium listening spaces with long reverberation time relative to their size, such as churches and chambers.
- Unlike other room simulation listening modes, this mode uses a proprietary reverb algorithm that is relied upon by a majority of recording engineers to add ambience to recordings.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|---------------------|
| CENTER DEPTH | 5 | 0 to 18 |
| SPEECH DETECT | ON | ON, OFF |
| SIZE* | 20m | 4 to 30m |
| MID RT* | 1.56s | 24ms to 24.3s |
| BASS RT* | 1.87s | 5ms to 48.6s |
| PRE-DELAY | 24ms | OFF, 1 to 100ms |
| ROLLOFF | 2.4kHz | 500Hz to 20kHz, OFF |
| EFFECT LVL | -3dB | -12 to +6dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

* BASS RT, MID RT, and SIZE parameter settings are interdependent, meaning that the full parameter range might not be available depending on the other parameter settings.

Listening mode menu parameter descriptions begin on page 5-34.

CATHEDRAL

MODE ADJUST ► CATHEDRAL

- Similar to the CHURCH listening mode.
- Uses a reverb algorithm to emphasize the rich, smooth, reverberant decay characteristic of large listening spaces with long reverberation time relative to their size, such as cathedrals.
- Unlike other room simulation listening modes, this mode uses a proprietary reverb algorithm that is relied upon by a majority of recording engineers to add ambience to recordings.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|---------------------|
| CENTER DEPTH | 12 | 0 to 18 |
| SPEECH DETECT | ON | ON, OFF |
| SIZE* | 30m | 4 to 30m |
| MID RT* | 3.72s | 24ms to 24.3s |
| BASS RT* | 4.47s | 5ms to 48.6s |
| PRE-DELAY | 23ms | OFF, 1 to 100ms |
| ROLLOFF | 3.1kHz | 500Hz to 20kHz, OFF |
| EFFECT LVL | -8dB | -12 to +6dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

* BASS RT, MID RT, and SIZE parameter settings are interdependent, meaning that the full parameter range might not be available depending on the other parameter settings.

Listening mode menu parameter descriptions begin on page 5-34.

PANORAMA

MODE ADJUST ▶ PANORAMA

- Designed for playback of stereo and matrix-encoded sources.
- Uses proprietary algorithms to move the stereo image outward from the front speakers, producing a wider stereo field with greater depth.
- Depends on proper location of the primary listening position and front speakers. When the front speakers are positioned close to either side of the display device, the effect is produced over a wider area than when the front speakers are positioned at a large angle from the display device.

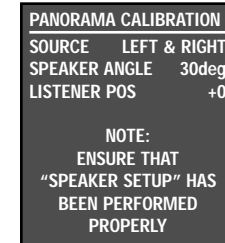
| Parameter | Default Setting | Possible Settings |
|-----------------|----------------------|-----------------------|
| EFFECT LVL | +4dB | -12 to +6dB |
| BASS CONTENT | STEREO | BINAURL, MONO, STEREO |
| LOW FREQ WIDTH | +0 | -25 to +25 |
| SURR ROLLOFF | 3.1kHz | 500Hz to 20kHz, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| INPUT BALANCE | < > | L< to < > to >R |
| CALIBRATION | Refer to next column | |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

CALIBRATION

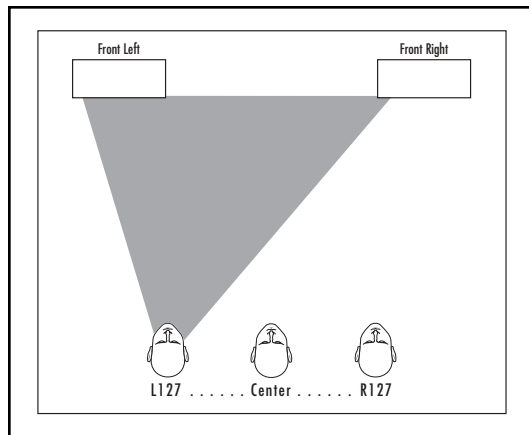
MODE ADJUST ▶ PANORAMA ▶ CALIBRATION

- Selecting the PANORAMA listening mode menu CALIBRATION option opens the PANORAMA CALIBRATION menu shown at the right, which can be used to calibrate the PANORAMA listening mode. **This listening mode must be calibrated to take full advantage of its effects.**
- For best results, it is recommended to center the primary listening position between the front left and right speakers as shown in illustration 5-B at the top of the next page (center). Otherwise, the PANORAMA listening mode will be calibrated with various results.
- An external calibration source is required to calibrate the PANORAMA listening mode. It is recommended to select a familiar stereo source.

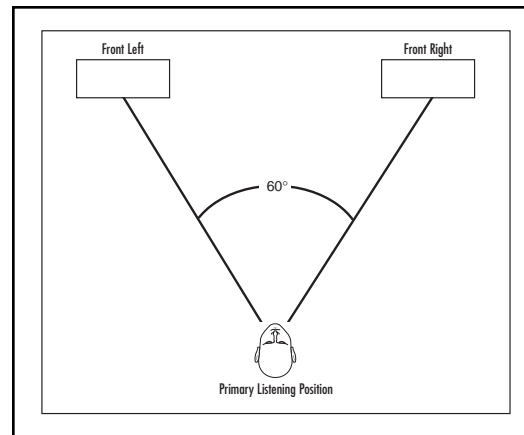


| Parameter | Default Setting | Possible Settings |
|---------------|-----------------|---------------------------|
| SOURCE | LEFT & RIGHT | RIGHT, LEFT & RIGHT, LEFT |
| SPEAKER ANGLE | 30deg | 10 to 90deg |
| LISTENER POS | +0 | -127 to +127 |

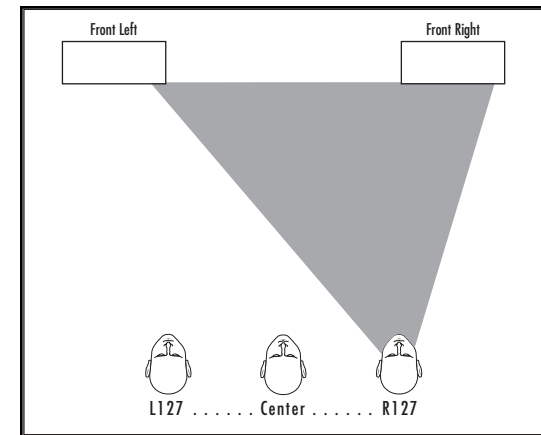
Listening mode menu parameter descriptions begin on page 5-34.



5-A



5-B



5-C

To calibrate the PANORAMA listening mode:

1. Remove all obstructions between the primary listening position and the speakers.
2. Make sure the distances between the primary listening position and the speakers are properly measured. To do this, select one of the following options:
 - Select the AUTO SPEAKER SETUP menu DISTANCES option to have the SDP-40 automatically calibrate speaker distances.
 - Measure the distance between the primary listening position and the front baffle of each speaker. Then, set the corresponding SPEAKER DISTANCES menu parameters to the closest available value.
3. Sit in the primary listening position. If the primary listening position is not centered between the front left and right speakers as shown in illustration 5-B (above), set the LISTENER POS parameter to compensate for the difference. Each increment within the -127 to +127 parameter range represents about one-third of an inch. Refer to the illustrations above for more information.
4. Set the SOURCE parameter to RIGHT.
5. Begin playback of the external calibration source.
6. When playback of the external calibration source is in progress, set the SPEAKER ANGLE parameter so the sound is not heard in the right ear.
7. To confirm the LISTENER POS and SPEAKER ANGLE parameter settings, set the SOURCE parameter to LEFT & RIGHT. If the PANORAMA listening mode has been properly calibrated, the sound should be perceived to come from all around the primary listening position. If this does not occur, begin again with step 1.

PARTY

MODE ADJUST  PARTY

- Designed for playback of stereo sources.
- Sends stereo sources to all channels.
- Recommended for background music.

Parameter

| | |
|---------------|--------------------|
| OUTPUT LEVELS | Refer to page 5-32 |
| CUSTOM | Refer to page 5-33 |

Listening mode menu parameter descriptions begin on page 5-34.

2-CHANNEL

MODE ADJUST  2-CHANNEL

- Designed for playback of stereo sources.
- Sends stereo sources to the front and subwoofer channels.
- Recommended for audio purists and comparison purposes with other listening modes.

| Parameter | Default Setting | Possible Settings |
|-------------|--------------------|-------------------|
| SUB L/R LVL | +0dB | OFF, -30 to +12dB |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

MONO LOGIC

MODE ADJUST  MONO LOGIC

- Designed for playback of mono sources.
- Uses proprietary reverb algorithms to realistically expand mono sources to use all channels, dramatically increasing the perceived width and sense of envelopment of the listening space.

| Parameter | Default Setting | Possible Settings |
|----------------|--------------------|-----------------------|
| EFFECT LVL | -9dB | -12 to +6dB |
| ACADEMY FILTER | ON | ON, OFF |
| SURR ROLLOFF | 3.1kHz | 500Hz to 20.0kHz, OFF |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

Note:

When the Shift command bank is activated, pressing the remote control TVL button activates the MONO LOGIC listening mode for 2-channel sources.

MONO SURROUND

MODE ADJUST  MONO SURROUND

- Designed for playback of mono sources.
- Sends mono sources to all channels.

Parameter

OUTPUT LEVELS Refer to page 5-32

CUSTOM Refer to page 5-33

Listening mode menu parameter descriptions begin on page 5-34.

MONO

MODE ADJUST  MONO


- Designed for playback of mono sources.
- Sends mono sources to the center channel.

| Parameter | Default Setting | Possible Settings |
|-------------|--------------------|-------------------|
| SUB L/R LVL | +0dB | OFF, -30 to +12dB |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1 FILM

MODE ADJUST  5.1  FILM


- A proprietary listening mode.
- Designed for enhanced playback of 5.1-channel Dolby Digital film sources.
- Derives seven channels from 5.1-channel sources. When both side and rear speakers are present, the 5.1  FILM listening mode also increases the perceived length and sense of envelopment of the listening space.
- Provides remarkable improvement compared to other decoders.
- Recommended for 5.1-channel Dolby Digital film sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| RE-EQUALIZER | ON | ON, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| COMPRESSION | OFF | AUTO, ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1  TV

MODE ADJUST  5.1  TV


- A proprietary listening mode.
- Similar to the 5.1  FILM listening mode, but specifically tailored for broadcast sources.
- Designed for enhanced playback of 5.1-channel Dolby Digital broadcast sources.
- Recommended for 5.1-channel Dolby Digital broadcast sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| RE-EQUALIZER | OFF | ON, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| COMPRESSION | OFF | AUTO, ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1  MUSIC

MODE ADJUST  5.1  MUSIC

- A proprietary listening mode.
- Similar to the 5.1  FILM listening mode, but specifically tailored for music sources.
- Designed for enhanced playback of 5.1-channel Dolby Digital music sources.
- Recommended for 5.1-channel Dolby Digital music sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| RE-EQUALIZER | OFF | ON, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| COMPRESSION | OFF | AUTO, ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1 **THX** ULTRA2, 5.1 **THX** SurEX, & 5.1 **THX**

MODE ADJUST  5.1 **THX** ULTRA2 OR 5.1 **THX** SurEX OR 5.1 **THX**

Listening mode name differs depending on the encoding present in the input source, the SURROUND EX parameter setting, and the speaker setup. The table below indicates the conditions in which THX Ultra2 and THX Surround EX decoding are engaged.

- The 5.1 **THX** ULTRA2 listening mode is available when THX Ultra2 decoding is engaged.
- THX Ultra2 decoding is engaged when the SURROUND EX parameter is set to OFF or when the SURROUND EX parameter is set to AUTO and a non-flagged 5.1-channel Dolby Digital source with or without THX Surround EX encoding is detected.
- The 5.1 **THX** SurEX listening mode is available when THX Surround EX decoding is engaged.
- THX Surround EX decoding is engaged when the SURROUND EX parameter is set to ON or when the SURROUND EX parameter is set to AUTO and a flagged 5.1-channel Dolby Digital source with THX Surround EX encoding is detected.

- The 5.1 **THX** Ultra2 and 5.1 **THX** SurEX listening modes are not available unless both side and rear speakers are present.
- The 5.1 **THX** listening mode is available when neither THX Ultra2 nor THX Surround EX decoding is engaged.

Note:

The SDP-40 cannot automatically detect THX Surround EX encoding in non-flagged 5.1-channel Dolby Digital sources. A non-flagged input source does not include information in the input signal that identifies THX Surround EX encoding.

| Input Source Parameter Setting | 5.1-Channel Dolby Digital | 5.1-Channel THX Surround EX Dolby Digital (Flagged) | 5.1-Channel THX Surround EX Dolby Digital (Non-Flagged) |
|-----------------------------------|------------------------------|---|---|
| SURROUND EX: AUTO | 5.1 THX ULTRA2 | 5.1 THX SurEX | 5.1 THX ULTRA2 |
| SURROUND EX: ON | 5.1 THX SurEX | 5.1 THX SurEX | 5.1 THX SurEX |
| SURROUND EX: OFF | 5.1 THX ULTRA2 | 5.1 THX ULTRA2 | 5.1 THX ULTRA2 |

... 5.1 **THX** ULTRA2, 5.1 **THX** SurEX, & 5.1 **THX** continues on page 5-18

5.1 THX ULTRA2, 5.1 THX SurEX, & 5.1 THX

(continued from page 5-17)

MODE ADJUST  **5.1 THX ULTRA2** OR **5.1 THX SurEX** OR **5.1 THX**

- Designed for playback of 5.1-channel Dolby Digital film sources.
- Allows 7-channel playback of 5.1-channel Dolby Digital sources without THX Surround EX encoding.
- Applies THX re-equalization to simulate high-frequency rolloffs that occur in movie theaters. Most films are mixed for movie theaters, and might sound too bright when played back in home theaters without re-equalization.
- Applies THX timbre matching to minimize timbre differences between the front and surround channels, which results in smoother sound movements between them.
- Recommended for home theaters with THX-certified speakers.

When THX Ultra2 decoding is engaged:

- Applies adaptive de-correlation to increase the perceived width of the listening space. De-correlation of the mono surround channel increases the perceived width of the surround field in home theaters.
- Applies ASA processing to signals sent to the rear speakers. Refer to the ASA parameter description on page 3-31 for more information.

When THX Surround EX decoding is engaged:

- Applies matrix decoding to derive three surround channels from 5.1-channel Dolby Digital sources.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|-------------------|
| RE-EQUALIZER | ON | ON, OFF |
| SURROUND EX | AUTO | AUTO, ON, OFF |
| COMPRESSION | OFF | AUTO, ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1 **THX** MUSIC

MODE ADJUST 5.1 **THX** MUSIC

- Designed for playback of 5.1-channel Dolby Digital music sources.
- The 5.1 **THX** MUSIC listening mode is not available unless both side and rear speakers are present.
- Applies ASA processing to signals sent to the rear speakers. Refer to the ASA parameter description on page 3-31 for more information.
- Recommended for home theaters.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|-------------------|
| COMPRESSION | OFF | AUTO, ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

Note:

*The 5.1 **THX** MUSIC listening mode can only be activated with the front panel or remote control Mode buttons.*

DDIGITAL EX & **D**DIGITAL

MODE ADJUST **D**DIGITAL EX OR **D**DIGITAL

Listening mode name differs depending on the encoding present in the input source, the EX DECODING parameter setting, and the speaker setup. The table at the bottom of the next page indicates the conditions in which Dolby Digital Surround EX decoding is engaged.

- The **D**DIGITAL EX listening mode is available when Dolby Digital Surround EX decoding is engaged.
- Dolby Digital Surround EX decoding is engaged when the EX DECODING parameter is set to ON or when the EX DECODING parameter is set to AUTO and a flagged 5.1-channel Dolby Digital source recorded with Dolby Digital Surround EX encoding is detected.
- The **D**DIGITAL EX listening mode is not available unless both side and rear speakers are present.
- The **D**DIGITAL listening mode is available when Dolby Digital Surround EX decoding is not engaged.
- Dolby Digital Surround EX decoding is not engaged when the EX DECODING parameter is set to OFF or when the EX DECODING parameter is set to AUTO and a non-flagged 5.1-channel Dolby Digital source recorded with or without Dolby Digital Surround EX encoding is detected.

... **D**DIGITAL EX & **D**DIGITAL continues on page 5-20

DOLBY DIGITAL EX & DOLBY DIGITAL (continued from page 5-19)



Note:

The SDP-40 cannot automatically detect Dolby Digital Surround EX encoding in non-flagged 5.1-channel Dolby Digital sources. A non-flagged input source does not include information in the input signal that identifies Dolby Digital Surround EX encoding.

- Designed for playback of 5.1-channel Dolby Digital sources. The DOLBY DIGITAL EX listening mode is recommended for Dolby Digital sources recorded with Dolby Digital Surround EX encoding. This listening mode can also be used with 5.1-channel Dolby Digital sources with mixed results.
- Decodes 5.1 discrete channels from 5.1-channel Dolby Digital sources. The five main channels are full frequency. The .1 channel, often referred to as LFE information, has a limited frequency range of 120Hz.

When Dolby Digital Surround EX decoding is engaged:

- Applies matrix decoding to derive a surround back channel from the other surround channels.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|-------------------|
| EX DECODING | AUTO | AUTO, ON, OFF |
| COMPRESSION | OFF | AUTO, ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

| Input Source / Parameter Setting | 5.1-Channel Dolby Digital | 5.1-Channel Dolby Digital Surround EX (Flagged) | 5.1-Channel Dolby Digital Surround EX (Non-Flagged) |
|----------------------------------|---------------------------|---|---|
| EX DECODING: AUTO | DOLBY DIGITAL | DOLBY DIGITAL EX | DOLBY DIGITAL |
| EX DECODING: ON | DOLBY DIGITAL EX | DOLBY DIGITAL EX | DOLBY DIGITAL EX |
| EX DECODING: OFF | DOLBY DIGITAL | DOLBY DIGITAL | DOLBY DIGITAL |

5.1 2-CHANNEL

MODE ADJUST 5.1 2-CHANNEL

- Designed for converting 5.1-channel Dolby Digital input signals into 2-channel LOGIC7-encoded output signals.
- Sends downmixed 5.1-channel Dolby Digital input signals to the front speakers and the subwoofer.
- Recommended for recording purposes.

| Parameter | Default Setting | Possible Settings |
|------------------|--------------------|-------------------|
| CENTER MIX | +0dB | -25 to +5dB |
| SURROUND MIX | +0dB | -5 to +5dB |
| CNTR DLY SAMPLES | +0 | -127 to +127 |
| MASTER LEVEL | +0dB | -5 to +5dB |
| COMPRESSION | OFF | AUTO, ON, OFF |
| LFE MIX | +0.0dB | -20.0 to +0.0dB |
| SUB L/R LVL | +0dB | OFF, -30 to +12dB |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1 MONO LOGIC

MODE ADJUST 5.1 MONO LOGIC

- Designed for playback of Dolby Digital mono sources.
- Uses proprietary reverb algorithms to realistically expand mono sources to use all channels, dramatically increasing the perceived width and sense of envelopment of the listening space.

| Parameter | Default Setting | Possible Settings |
|----------------|--------------------|-----------------------|
| EFFECT LVL | -9dB | -12 to +6dB |
| ACADEMY FILTER | ON | ON, OFF |
| SURR ROLLOFF | 3.1kHz | 500Hz to 20.0kHz, OFF |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

Note:

- *When a 1.0 Dolby Digital source is present, the SDP-40 automatically activates the 5.1 MONO LOGIC listening mode.*
- *When the Shift command bank is activated, pressing the TVL button activates the 5.1 MONO LOGIC listening mode for 5.1-channel sources.*

5.1 MONO SURR

MODE ADJUST  **5.1 MONO SURR**

- Designed for playback of Dolby Digital mono sources.
- Sends mono sources to all channels.

Parameter

| | |
|---------------|--------------------|
| OUTPUT LEVELS | Refer to page 5-32 |
| CUSTOM | Refer to page 5-33 |

Listening mode menu parameter descriptions begin on page 5-34.

5.1 MONO




MODE ADJUST  **5.1 MONO**








- Designed for playback of Dolby Digital mono sources.
- Sends mono sources to the center channel.

| Parameter | Default Setting | Possible Settings |
|-------------|--------------------|-------------------|
| SUB L/R LVL | +0dB | OFF, -30 to +12dB |
| CUSTOM | Refer to page 5-33 | |




Listening mode menu parameter descriptions begin on page 5-34.













DECODING

 and  listening mode names differ depending on the encoding present in the input source, the  DECODING parameter setting, and the speaker setup. The table at the top of the next page indicates the conditions in which dts-ES decoding is engaged.

-  listening modes are available when dts-ES decoding is not engaged.
- dts-ES decoding is not engaged when the  DECODING parameter is set to OFF or when the  DECODING parameter is set to AUTO and a 5.1-channel dts source is detected.
-  listening modes are available when dts-ES decoding is engaged.
- dts-ES decoding is engaged when the  DECODING parameter is set to ON or when the  DECODING parameter is set to AUTO and a 5.1-channel matrix-encoded or a 6.1-channel discrete-encoded dts-ES source is detected.
-  listening modes are not available unless both side and rear speakers are present.




Note:


*The table at the top of the next page is not applicable to the  **THX**,  **THX ULTRA2**, and  **THX MUSIC** listening modes.*

| Input Source Parameter Setting | 5.1-Channel dts | 5.1-Channel Matrix-Encoded dts-ES | 6.1-Channel Discrete-Encoded dts-ES |
|--|---|---|---|
|  DECODING: AUTO |  |  |  |
|  DECODING: ON |  |  |  |
|  DECODING: OFF |  |  |  |

FILM & FILM

MODE ADJUST    FILM OR   FILM

- Listening mode name differs depending on the encoding present in the input source, the  DECODING parameter setting, and the speaker setup. Refer to the previous page for more information.
- A proprietary listening mode.
- Designed for enhanced playback of 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, or 6.1-channel discrete-encoded dts-ES film sources.
- Uses an advanced matrix to derive seven channels from 5.1- and 6.1-channel sources. When both side and rear speakers are present, the   FILM listening mode also increases the perceived length and sense of envelopment of the listening space.
- Provides remarkable improvement compared to other decoders.
- Recommended for 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, or 6.1-channel discrete-encoded dts-ES film sources.

| Parameter | Default Setting | Possible Settings |
|--|--------------------|------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| RE-EQUALIZER | ON | ON, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
|  DECODING | OFF | AUTO, ON, OFF |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

dts **MUSIC** & **dts** **MUSIC**

MODE ADJUST MUSIC OR MUSIC

- Listening mode name differs depending on the encoding present in the input source, the DECODING parameter setting, and the speaker setup. Refer to page 5-22 for more information.
- A proprietary listening mode.
- Designed for enhanced playback of 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, or 6.1-channel discrete-encoded dts-ES music sources.
- Similar to the **FILM** listening mode, but specifically tailored for music sources.
- Recommended for 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, or 6.1-channel discrete-encoded dts-ES music sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| DECODING | OFF | AUTO, ON, OFF |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

dts **THX ULTRA2** & **dts** **THX**

MODE ADJUST **THX ULTRA2** OR **THX**


Listening mode name differs depending on the encoding present in the input source, the DECODING parameter setting, and the speaker setup. The table at the bottom of the next page indicates the conditions in which THX ULTRA2 and dts-ES decoding are engaged.

- The **THX ULTRA2** listening mode is available when THX Ultra2 decoding is engaged.
- THX Ultra2 decoding is engaged when the DECODING parameter is set to OFF or when the DECODING parameter is set to AUTO and a 5.1-channel dts source is detected.
- The **THX** listening mode is available when dts-ES decoding is engaged.
- dts-ES decoding is engaged when the DECODING parameter is set to ON or when the DECODING parameter is set to AUTO and a 5.1-channel matrix-encoded or 6.1-channel discrete-encoded dts-ES source is detected.
- The **THX ULTRA2** and **THX** listening modes are not available unless both side and rear speakers are present.
- Designed for playback of 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, or 6.1-channel dts-ES discrete-encoded film sources.
- Allows 7-channel playback of 5.1-channel dts sources without dts-ES encoding.
- Applies THX re-equalization to simulate high-frequency rolloffs that occur in movie theaters. Most films are mixed for movie theaters, and might sound too bright when played back in home theaters without re-equalization.



























- Applies THX timbre matching to minimize timbre differences between the front and surround channels, which results in smoother sound movements between them.
- Recommended for home theaters with THX-certified speakers.

When THX Ultra2 decoding is engaged:

- Applies adaptive de-correlation to increase the perceived width of the listening space. De-correlation of the mono surround channel increases the perceived width of the surround field in home theaters.
- Applies ASA processing to signals sent to the rear speakers. Refer to the ASA parameter description on page 3-31 for more information.

| Parameter | Default Setting | Possible Settings |
|--|--------------------|-------------------|
| RE-EQUALIZER | ON | ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
|  DECODING | AUTO | AUTO, ON, OFF |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

| Input Source Parameter Setting | 5.1-Channel dts | 5.1-Channel Matrix-Encoded dts-ES | 6.1-Channel Discrete-Encoded dts-ES |
|--|---|---|---|
|  DECODING: AUTO |   ULTRA2 |    |    |
|  DECODING: ON |    |    |    |
|  DECODING: OFF |   ULTRA2 |   ULTRA2 |   ULTRA2 |

dts **THX** MUSIC

MODE ADJUST  **dts** **THX** MUSIC

- Designed for playback of 5.1-channel dts music sources.
- The **dts** **THX** MUSIC listening mode is not available unless both side and rear speakers are present.
- Applies ASA processing to signals sent to the rear speakers. Refer to the ASA parameter description on page 3-31 for more information.
- Recommended for home theaters.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|-------------------|
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |


Listening mode menu parameter descriptions begin on page 5-34.


Note:

The **dts** **THX** MUSIC listening mode can only be activated with the front panel or remote control Mode buttons.

dts  & **dts**

MODE ADJUST  **dts** 

- Listening mode name differs depending on the encoding present in the input source, the  DECODING parameter setting, and the speaker setup. Refer to page 5-22 for more information.
- Designed for playback of 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, and 6.1-channel discrete-encoded dts-ES sources.
- Decodes 5.1 matrix or 6.1 discrete channels from dts(-ES) sources. The six main channels are full frequency. The .1 channel, often referred to as LFE information, has a limited frequency range of 120Hz.
- Appropriate for 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, and 6.1-channel discrete-encoded dts-ES sources.

| Parameter | Default Setting | Possible Settings |
|--|--------------------|-------------------|
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
|  DECODING | AUTO | AUTO, ON, OFF |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

dts & **dts** 2-CHAN**MODE ADJUST** **dts** 2-CHAN

- Designed for converting 5.1- or 6.1-channel dts(-ES) input signals into 2-channel LOGIC7-encoded output signals.
- Sends downmixed 5.1- or 6.1-channel dts(-ES) input signals to the front speakers and the subwoofer.
- Recommended for recording purposes.

| Parameter | Default Setting | Possible Settings |
|--------------------|--------------------|-------------------|
| CENTER MIX | +0dB | -25 to +5dB |
| SURROUND MIX | +0dB | -5 to +5dB |
| CNTR DLY SAMPLES | +0 | -127 to +127 |
| MASTER LEVEL | +0dB | -5 to +5dB |
| LFE MIX | +0.0dB | -20.0 to +0.0dB |
| DE DECODING | AUTO | AUTO, ON, OFF |
| SUB L/R LVL | +0dB | OFF, -30 to +12dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1a **FILM****MODE ADJUST** **5.1a** **FILM**

- A proprietary listening mode.
- Designed for enhanced playback of 5.1-channel analog film sources.
- Derives seven channels from 5.1-channel analog sources.
- Converts 5.1-channel analog input signals into digital audio for internal LOGIC7 decoding.
- Allows 5.1-channel analog sources to use bass management, speaker crossovers, speaker distance calibration, and audio controls (tone controls).
- Recommended for 5.1-channel analog film sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| RE-EQUALIZER | ON | ON, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1a **MUSIC**

MODE ADJUST ▶ 5.1a **MUSIC**

- A proprietary listening mode.
- Similar to the 5.1a **FILM** listening mode, but specifically tailored for music sources.
- Designed for enhanced playback of 5.1-channel analog music sources.
- Recommended for 5.1-channel analog music sources.

| Parameter | Default Setting | Possible Settings |
|-----------------|--------------------|------------------------|
| VOCAL ENHANCE | +0.0dB | +6.0dB, +3.0dB, +0.0dB |
| 5 SPKR ENHANCE | ON | ON, OFF |
| BASS ENHANCE | OFF | ON, OFF |
| RE-EQUALIZER | OFF | ON, OFF |
| REAR DLY OFFSET | 15ms | OFF, 1 to 30ms |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1a **ULTRA2**, 5.1a **SurEX**, & 5.1a **THX**

MODE ADJUST ▶ 5.1a **ULTRA2** OR 5.1a **SurEX** OR 5.1a **THX**

Listening mode name differs depending on the encoding present in the input source, the SURROUND EX parameter setting, and the speaker setup. The table at the top of the next page indicates the conditions in which THX Ultra2 and THX Surround EX decoding are engaged.

- The 5.1a **ULTRA2** listening mode is available when THX Ultra2 decoding is engaged.
- THX Ultra2 decoding is engaged when the SURROUND EX parameter is set to OFF.
- The 5.1a **SurEX** listening mode is available when THX Surround EX decoding is engaged.
- THX Surround EX decoding is engaged when the SURROUND EX parameter is set to ON.
- The 5.1a **Ultra2** and 5.1a **SurEX** listening modes are not available unless both side and rear speakers are present.
- The 5.1a **THX** listening mode is available when neither THX Ultra2 nor THX Surround EX decoding is engaged.

Note:

The SDP-40 cannot automatically detect THX Surround EX encoding in non-flagged 5.1-channel analog sources. A non-flagged input source does not include information in the input signal that identifies THX Surround EX encoding.

| Input Source Parameter Setting | 5.1-Channel Analog | 5.1-Channel THX Surround EX Analog (Flagged) | 5.1-Channel THX Surround EX Analog (Non-Flagged) |
|-----------------------------------|----------------------------|--|--|
| SURROUND EX: ON | 5.1a THX SurEX | 5.1a THX SurEX | 5.1a THX SurEX |
| SURROUND EX: OFF | 5.1a THX ULTRA2 | 5.1a THX ULTRA2 | 5.1a THX ULTRA2 |

- Designed for playback of 5.1-channel analog film sources.
- Allows 7-channel playback of 5.1-channel analog sources without THX Surround EX encoding.
- Applies THX re-equalization to simulate high-frequency rolloffs that occur in movie theaters. Most films are mixed for movie theaters, and might sound too bright when played back in home theaters without re-equalization.
- Applies THX timbre matching to minimize timbre differences between the front and surround channels, which results in smoother sound movements between them.
- Converts 5.1-channel analog input signals into digital audio for internal THX processing.
- Allows 5.1-channel analog sources to use bass management, speaker crossovers, speaker distance calibration, and audio controls (tone controls).

When THX Ultra2 decoding is engaged:

- Applies adaptive de-correlation to increase the perceived width of the listening space. De-correlation of the mono surround channel increases the perceived width of the surround field in home theaters.

- Applies ASA processing to signals sent to the rear speakers. Refer to the ASA parameter description on page 3-31 for more information.

When THX Surround EX decoding is engaged:

- Applies matrix decoding to derive three surround channels from 5.1-channel analog sources.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|-------------------|
| RE-EQUALIZER | ON | ON, OFF |
| SURROUND EX | OFF | ON, OFF |
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1a **THX** MUSIC

MODE ADJUST  5.1a **THX** MUSIC

- Designed for playback of 5.1-channel analog music sources.
- The 5.1a **THX** MUSIC listening mode is not available unless both side and rear speakers are present.
- Applies ASA processing to signals sent to the rear speakers. Refer to the ASA parameter description on page 3-31 for more information.

| Parameter | Default Setting | Possible Settings |
|---------------|--------------------|-------------------|
| LFE MIX | +0.0dB | -10.0 to +0.0dB |
| OUTPUT LEVELS | Refer to page 5-32 | |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

Note:

*The 5.1a **THX** MUSIC listening mode can only be activated with the front panel or remote control Mode buttons.*

5.1a STANDARD

MODE ADJUST  5.1a STANDARD

- Designed for playback of 5.1-channel analog sources.
- Converts 5.1-channel analog input signals into digital audio for internal processing.
- Allows 5.1-channel analog sources to use bass management, speaker crossovers, speaker distance calibration, and audio controls (tone controls). When these features are not used, the 5.1a STANDARD listening mode is similar to the 5.1a BYPASS listening mode.
- Sends identical signals (with appropriate time delays) to the Main Zone audio output connectors labeled Side L and Rear L as well as Side R and Rear R.

Parameter

| | |
|---------------|--------------------|
| OUTPUT LEVELS | Refer to page 5-32 |
| CUSTOM | Refer to page 5-33 |

Listening mode menu parameter descriptions begin on page 5-34.

5.1a 2-CHANNEL

MODE ADJUST ▶ 5.1a 2-CHANNEL

- Designed for converting 5.1-channel analog input signals into 2-channel LOGIC7-encoded output signals.
- Sends downmixed 5.1-channel analog input signals to the front speakers and the subwoofer.
- Recommended for recording purposes, particularly for recording from a DVD-A or multi-channel SACD player to a CD-R or another 2-channel recording format.

| Parameter | Default Setting | Possible Settings |
|------------------|--------------------|-------------------|
| CENTER MIX | +0dB | -25 to +5dB |
| SURROUND MIX | +0dB | -5 to +5dB |
| CNTR DLY SAMPLES | +0 | -127 to +127 |
| MASTER LEVEL | +0dB | -5 to +5dB |
| LFE MIX | +0.0dB | -20.0 to +0.0dB |
| SUB L/R LVL | +0dB | OFF, -30 to +12dB |
| CUSTOM | Refer to page 5-33 | |

Listening mode menu parameter descriptions begin on page 5-34.

5.1a BYPASS

MODE ADJUST ▶ 5.1a BYPASS

- Designed for playback of 5.1-channel analog sources, such as DVD-A or SACD players.
- Sends the 5.1-channel analog audio input connector directly to the Main Zone volume control and audio output connectors as shown on pages 2-7 and 3-58. These signals receive no internal processing.
- When both side and rear speakers are present, surround channel signals are sent in parallel to the side and rear speakers. To configure a 5-channel speaker setup, set the OUTPUT LEVELS menu SIDE L/R or REAR L/R parameter to OFF to deactivate the associated surround speakers.
- The 5.1a BYPASS listening mode is automatically activated whenever the 5.1-channel analog audio input connector is assigned to the selected input. The 5.1a BYPASS listening mode is only available for 5.1-channel analog sources.

Parameter

| | |
|---------------|--------------------|
| OUTPUT LEVELS | Refer to page 5-32 |
| CUSTOM | Refer to page 5-33 |

Listening mode menu parameter descriptions begin on page 5-34.

Note:

Speaker crossover settings, speaker distances, and audio controls (tone controls) are not available when the 5.1a BYPASS listening mode is activated.

2CH BYPASS

MODE ADJUST ▶ 2CH BYPASS

- Designed for playback of 2-channel analog sources.
- Sends analog audio input signals to the Main Zone audio output connectors labeled Front L/R. These signals receive no internal processing.
- The 2CH BYPASS listening mode is automatically activated whenever a 2-channel analog source is present and the MAIN ADV menu ANALOG BYPASS parameter is set to ON.
- The 2CH BYPASS listening mode is not available when a digital source is present and the MAIN ADV menu INPUT SELECT parameter is set to AUTO.

Note:

Speaker crossover settings, speaker distances, and audio controls (tone controls) are not available when the 2CH BYPASS listening mode is activated.

OUTPUT LEVELS

MODE ADJUST ▶ Listening Mode ▶ OUTPUT LEVELS

Opens the OUTPUT LEVELS menu shown at the right, which can be used to adjust output levels for the Main Zone audio output connectors labeled Center, Subwoofer L/R, LFE, Side L/R, and Rear L/R.

| OUTPUT LEVELS | |
|---------------|------|
| CENTER | +0dB |
| SIDE L/R | +0dB |
| REAR L/R | +0dB |
| SUB L/R | +0dB |
| LFE | +0dB |

The OUTPUT LEVELS option does not appear on listening mode menus when the selected listening mode does not accommodate multi-channel output signals. Instead, an output-specific parameter appears. For instance, the MONO listening mode menu includes a SUB L/R LVL parameter.

| Parameter | Default Setting | Possible Settings |
|-----------|-----------------|-------------------|
| CENTER | +0dB | OFF, -30 to +12dB |
| SIDE L/R | +0dB | OFF, -30 to +12dB |
| REAR L/R | +0dB | OFF, -30 to +12dB |
| SUB L/R | +0dB | OFF, -30 to +12dB |
| LFE | +0dB | OFF, -30 to +12dB |

Listening mode menu parameter descriptions begin on page 5-34.

Note:

The OUTPUT LEVELS menu does not include the LFE parameter unless an LFE subwoofer is present.

CUSTOM

MODE ADJUST ▶ Listening Mode ▶ CUSTOM

Opens the CUSTOM menu shown below, which can be used to compare custom and factory-default versions of the selected listening mode and to restore the factory-default version of the selected listening mode.

CUSTOM VS PRESET

MODE ADJUST ▶ Listening Mode ▶ CUSTOM ▶ CUSTOM VS PRESET

Allows comparison listening between the custom and factory-default versions of the selected listening mode. When PRESET is selected, the listening mode is heard in its factory-default condition, as if all listening mode menu parameters were set to their factory-default settings.

When CUSTOM is selected, the listening mode is heard in its custom condition, including all current listening mode menu parameter settings. The PRESET and CUSTOM versions of the selected listening mode will sound identical when all listening mode menu parameters are set to their factory-default settings.

Note:

The CUSTOM VS PRESET option does not affect current listening mode menu parameter settings.



To toggle between the custom and factory-default versions of the selected listening mode:

1. Follow the CUSTOM VS PRESET menu path shown in the previous column to open the CUSTOM VS PRESET drop-down menu shown at the bottom of the previous column.
2. When the CUSTOM VS PRESET option drop-down menu is open, press the remote control ▲ and ▼ arrow buttons to toggle between the PRESET (factory-default) and CUSTOM versions of the selected listening mode.
3. When finished, press the ◀ arrow button to close the CUSTOM VS PRESET drop down menu.

RESET MODE

MODE ADJUST ▶ Listening Mode ▶ CUSTOM ▶ RESET MODE

Restores the factory-default version of the selected listening mode, restoring all listening mode menu parameters to their factory-default settings.

To restore the factory-default version of the selected listening mode:

1. Follow the RESET MODE menu path to select the RESET MODE option. The PRESS RIGHT → TO RESTORE MODE message shown below will appear on the on-screen display.



... Reset Mode continues on page 5-34

RESET MODE (continued from page 5-33)

MODE ADJUST ▶ Listening Mode ▶ CUSTOM ▶ RESET MODE

- When RESET MODE message appears, press the ▶ arrow button to restore the factory-default version of the selected listening mode. Press the ◀ arrow button to close the message without restoring the factory-default version of the selected listening mode.

Note:

When the CUSTOM menu RESET MODE option is selected to restore the factory-default version of the selected listening mode, the corresponding TRIGGER SETUP menu listening mode parameter is automatically set to OFF.

LISTENING MODE MENU PARAMETER DESCRIPTIONS

5 SPKR ENHANCE

ON, OFF

Simulates 7-channel playback in 5-channel speaker setups. When ON is selected, the SDP-40 provides an increased sense of spaciousness and envelopment through the surround speakers. This enhancement is most noticeable when the surround speakers are positioned to the sides of the primary listening position or when the primary listening position is located against the rear wall. The effectiveness of this parameter varies within the listening space. For best results, it is recommended to position the surround speakers to the left and right sides of the primary listening position.

ACADEMY FILTER

ON, OFF

Selecting the ON setting restores the proper tonal balance of older mono film sources that have much narrower frequency responses than more recent mono film sources.

AUTO AZIMUTH

ON, OFF

Maximizes matrix steering accuracy. When ON is selected, the SDP-40 continually monitors 2-channel input signals and automatically adjusts the relative level and time offset of the input channels to ensure that signals are sent to the appropriate channels with maximum separation. When OFF is selected, the accuracy of the selected listening mode varies among input sources. It is recommended to set this parameter to ON for film and broadcast sources and to OFF for music sources.

BASS CONTENT

BINAURAL, MONO, STEREO

Adjusts the bass content of binaural, mono, and stereo recordings. When set to BINAURAL, the SDP-40 activates low-frequency compensation. Select this setting for true binaural sources recorded with dummy head microphones. Select the MONO setting for input sources recorded with mono bass. Select the STEREO setting for input sources recorded with stereo bass.

BASS ENHANCE

ON, OFF

Selecting the ON setting enhances stereo bass, which results in low-frequency reproduction that is less localizable and more realistic in the listening space. The effectiveness of the BASS ENHANCE parameter varies depending on room acoustics and the ability of the surround speakers to reproduce low frequencies. It is recommended to use front, side, or rear speakers that are capable of reproducing frequencies of 40Hz or lower.

Note:

When the BASS ENHANCE parameter is set to ON, most listening spaces have a 2 to 3dB reduction in low-frequency energy. Set the AUDIO CONTROLS menu BASS parameter to compensate for this reduction.

BASS RT

5ms to 48.6s

Works with the MID RT and SIZE parameters to adjust the amount of time required for low-frequency information to decay below 60dB in level. The BASS RT parameter setting should match the MID RT parameter setting for more natural effects in smaller listening spaces. The full parameter range might not be available depending on the MID RT and SIZE parameter settings.

CAUTION

Setting the BASS RT, MID RT, or SIZE parameters to a high value may produce undesirable or damaging audio.

CALIBRATION

Opens the PANORAMA CALIBRATION menu, which can be used to calibrate the PANORAMA listening mode. Refer to page 5-12 for more information.

CENTER

OFF, -30 to +12dB

Controls the output level of the Main Zone audio output connector labeled Center.

CENTER DEPTH

0 to 18

Adjusts the amount of processing applied to the center channel, changing the perceived distance of the center speaker. Higher settings increase and lower settings decrease the perceived distance of the center speaker from the primary listening position.

CENTER MIX

-25 to +5dB

Indicates the relative center channel level for downmixing. It is recommended to set this parameter to +0dB for film sources and -5dB for music sources.

CNTR DLY SAMPLES

-127 to +127

Controls the relative time offset of the center channel. It is recommended to set this parameter to +0 unless the center channel is not properly timed and the value of the error is known.

COMPRESSION

AUTO, ON, OFF

Reduces wide volume level changes and increases dialog intelligibility at lower listening levels for Dolby Digital sources. When ON is selected, full compression is applied regardless of volume level. When OFF is selected, compression is not applied. It is recommended to set this parameter to AUTO or ON for Dolby Digital sources that are listened to at lower volume levels, especially for nighttime viewing to avoid disturbing others.

... Listening Mode Menu Parameter Descriptions continues on page 5-36

Listening Mode Menu Parameter Descriptions*(continued from page 5-35)***CTR WIDTH**

MIN, 1 to 6, MAX

Adjusts the center image. When MIN is selected, the center image is heard from just the center speaker. When MAX is selected, the center image is heard from just the front left and right speakers as a “phantom” center image. When a value between 1 and 6 is selected, the center image is heard in various combinations of the front and center speakers.

CUSTOM

Opens the CUSTOM menu, which can be used to compare custom and factory-default versions of the selected listening mode and to restore the factory default version of the selected listening mode. Refer to page 5-33 for more information.

CUSTOM VS PRESET

Allows comparison listening between the custom and factory-default versions of the selected listening mode. Refer to page 5-33 for information.

DIMENSION

FRONT, NEUTRAL, REAR

Controls the relative balance of the sound field, which enables certain recordings to achieve a more suitable balance among all speakers. When FRONT is selected, the sound field is balanced toward the front of the listening space. When NEUTRAL is selected, the sound field is balanced at the center of the listening space. When REAR is selected, the sound field is balanced toward the rear of the listening space.

EFFECT LVL

-12 to +6dB




Adjusts the amount of effect applied to the listening mode.

 DECODING


AUTO, ON, OFF

Controls the dts-ES decoding feature, which can be used to extract a rear channel from 5.1-channel dts, 5.1-channel matrix-encoded dts-ES, and 6.1-channel discrete-encoded dts-ES sources. When ON is selected, dts-ES decoding is engaged for all dts(-ES) sources. When OFF is selected, dts-ES decoding is not engaged for all dts(-ES) sources.

When AUTO is selected, dts-ES decoding is engaged when a 5.1-channel matrix-encoded or a 6.1-channel discrete-encoded dts-ES source is detected. dts-ES decoding is not engaged when a 5.1-channel dts source is detected.

 listening modes are available when dts-ES decoding is engaged.  listening modes are available when dts-ES decoding is not engaged. Refer to the  Decoding section that begins on page 5-22 for more information.

Note the following:

- dts-ES decoding cannot be engaged unless both side and rear speakers are present.
- When the Shift command bank is activated, pressing the remote control dts button while a dts(-ES) source is present adjusts the  DECODING parameter, cycling through the AUTO, ON, and OFF settings.

- The **DTS** STATUS menu includes an SB level meter when the **DECODING** parameter is set to ON and a 5.1-channel dts source is present or when the **DECODING** parameter is set to AUTO and a 5.1-channel matrix-encoded or 6.1-channel discrete-encoded dts-ES source is present.

EX DECODING

AUTO, ON, OFF

Controls the Dolby Digital Surround EX decoding feature, which can be used to extract a rear channel from 5.1-channel Dolby Digital sources recorded with or without Dolby Digital Surround EX. When ON is selected, Dolby Digital Surround EX decoding is engaged for all 5.1-channel Dolby Digital sources. When OFF is selected, Dolby Digital Surround EX decoding is not engaged for all 5.1-channel Dolby Digital sources.

When AUTO is selected, Dolby Digital Surround EX decoding is engaged when a flagged 5.1-channel Dolby Digital source recorded with Dolby Digital Surround EX encoding is detected. Dolby Digital Surround EX decoding is not engaged when a non-flagged 5.1-channel Dolby Digital source recorded with or without Dolby Digital Surround EX encoding is detected.

Note:

The SDP-40 cannot automatically detect Dolby Digital Surround EX encoding in non-flagged 5.1-channel Dolby Digital sources. A non-flagged input source does not include information in the input signal that identifies Dolby Digital Surround EX encoding.

The **DIGITAL EX** listening mode is available when Dolby Digital Surround EX decoding is engaged. The **DIGITAL** listening mode

is available when Dolby Digital Surround EX decoding is not engaged. Refer to the **DIGITAL EX** & **DIGITAL** listening mode descriptions that begin on page 5-19 for more information.

Note the following:

- Dolby Digital Surround EX decoding cannot be engaged unless both side and rear speakers are present.
- When the Shift command bank is activated, pressing the remote control DOLBY button while a 5.1-channel Dolby Digital source is present activates the **DIGITAL EX** or **DIGITAL** listening mode. Subsequent presses adjust the EX DECODING parameter, cycling through the AUTO, ON, and OFF settings.

FRONT STEERING

OFF, MSURR, MUSIC, FILM

Adjusts front steering between the front left, front right, and center speakers. When FILM is selected, maximum front steering is applied to the center channel. When MUSIC is selected, moderate front steering is applied. When MSURR is selected, minimum front steering is applied. When OFF is selected, no front steering is applied. It is recommended to set this parameter to FILM for film and broadcast sources and to MUSIC, MSURR, or OFF for music sources.

INPUT BALANCE

L< to <|> to >R

Controls the balance of the selected stereo analog audio input connectors, compensating for input sources with audible channel imbalance.

... Listening Mode Menu Parameter Descriptions continues on page 5-38

Listening Mode Menu Parameter Descriptions*(continued from page 5-37)***LFE** OFF, -30 to +12dB

Controls the output level of the Main Zone audio output connector labeled LFE. The OUTPUT LEVELS menu does not include the LFE parameter unless an LFE subwoofer is present.

LFE MIX -20.0 or -10.0 to +0.0dB

Controls the output level of LFE information – the .1 channel in a 5.1- or 6.1-channel source – that is sent to the Main Zone audio output connectors labeled Subwoofer L/R and LFE. Low frequencies from up to seven other channels might be combined with the LFE information to create the subwoofer output signal, which significantly increases subwoofer output levels.

Careful adjustment of this parameter allows achievement of proper tonal balance and reduces the risk of subwoofer overload. When the speaker setup does not include a subwoofer, LFE information is mixed into speakers for which the corresponding CUSTOM SETUP menu parameter is set to FULL or to the lowest crossover points.

LISTENER POS -127 to +127

Compensates for primary listening positions that are not centered between the front left and right speakers. Each increment within the -127 to +127 parameter range represents about one-third of an inch. Refer to the Calibration section that begins on page 5-12 for more information about the LISTENER POS parameter.

Note:

The LISTENER POS parameter range might extend past the location of the front left and right speakers.

LIVENESS 30ms to 20.2s

Depends on the SIZE parameter setting. The LIVENESS parameter adjusts the amount of effect recirculation. Higher settings mimic more reflective surfaces and increase decay time.

LOW FREQ WIDTH -25 to +25dB

Applies low-frequency spatial correction to un-correlated input signals below 60Hz.

MASTER LEVEL -5 to +5dB

Adjusts the output level of 2-channel LOGIC7-encoded sources.

MID RT 24ms to 24.3s

Works with the BASS RT and SIZE parameters to adjust the amount of time required for mid-frequency information to decay below 60dB in level. The full parameter range might not be available depending on the BASS RT and SIZE parameter settings.

CAUTION

Setting the BASS RT, MID RT, or SIZE parameters to a high value may produce undesirable or damaging audio.

OUTPUT LEVELS

Opens the OUTPUT LEVELS menu, which can be used to adjust output levels for the Main Zone audio output connectors labeled Center, Subwoofer L/R, LFE, Side L/R, and Rear L/R. Refer to page 5-32 for more information.

PANORAMA

ON, OFF

Selecting the ON setting extends the front stereo image to include surround channel signals, which creates a “wraparound” effect with side wall imaging.

Note:

The **DOLBY** **MUSIC** listening mode **PANORAMA** parameter should not be confused with the separate **PANORAMA** listening mode.

PRE-DELAY

OFF, 1 to 100ms

Adjusts delay time between the direct sound and the onset of reverberation. Higher settings make the simulated space sound larger. Because some pre-delay is inherent in all source material, it is recommended to begin with the parameter set to OFF, then make adjustments accordingly.

RE-EQUALIZER

ON, OFF

Simulates high-frequency rolloffs that occur in movie theaters. When ON is selected, the SDP-40 applies a high-frequency filter. When OFF is selected, the SDP-40 does not apply a high-frequency filter. It is recommended to set this parameter to ON for film sources, as many films are mixed for movie theaters and might sound too bright when played back in home theaters without re-equalization.

REAR DLY OFFSET

OFF, 1 to 30ms

Increases the perceived depth of the listening space by delaying the arrival time of rear speaker signals. It is recommended to increase the setting when using side and rear speakers that are located close together or when a greater sense of depth is desired in the listening space.

REAR L/R

OFF, -30 to +12dB

Controls the output level of the Main Zone audio output connectors labeled Rear L/R.

RESET MODE

Restores the factory-default version of the selected listening mode, restoring all listening mode menu parameters to their factory-default settings.

ROLLOFF

500Hz to 20.0kHz, OFF

Simulates the absorption of high frequencies in real spaces. It is recommended to begin with a low setting to simulate high-frequency absorptive spaces.

SIDE L/R

OFF, -30 to +12dB

Controls the output level of the Main Zone audio output connectors labeled Side L/R.

... Listening Mode Menu Parameter Descriptions continues on page 5-40

Listening Mode Menu Parameter Descriptions*(continued from page 5-39)***SIZE** 4 to 20 or 30m

Adjusts listening space length within a 4 to 20 or 30m range (depending on the listening mode). Increase the size of the space to increase the reverb effect. The full parameter range might not be available depending on the BASS RT and MID RT parameter settings.

CAUTION

Setting the BASS RT, MID RT, or SIZE parameters to a high value may produce undesirable or damaging audio.

SOUND STAGE FRONT, NEUTRAL, REAR

Dynamically controls the relative balance of the Main Zone audio output connectors labeled Side L/R and Rear L/R. When FRONT is selected, Side L/R and Rear L/R output levels are attenuated by 6dB, shifting the perceived balance of the sound field to the front of the listening space. When NEUTRAL is selected, Side L/R and Rear L/R output levels are slightly attenuated by 3dB, shifting the perceived balance of the sound field to the center of the listening space. When REAR is selected, Side L/R and Rear L/R output levels are not attenuated, preserving the intended balance of the sound field.

SOURCE RIGHT, LEFT & RIGHT, LEFT

Controls the perceived direction of the PANORAMA listening mode external calibration source signal. When RIGHT is selected, the sound is perceived to come from the right of the primary listening position. When LEFT is selected, the sound is perceived to come from the left of the primary listening position. When LEFT & RIGHT is selected, the sound is perceived to come from all around the primary listening position. Refer to the Calibration section that begins on page 5-12 for more information about the SOURCE parameter.

Note:

The SOURCE parameter controls the perceived direction of the sound, although both the front left and right speakers generate the external calibration source signal.

SPEAKER ANGLE 10 to 90deg

Compensates for a wide or narrow speaker angle relative to the primary listening position. Select the setting closest to the angle between the front left and right speakers and the primary listening position. Refer to the Calibration section that begins on page 5-12 for more information about the SPEAKER ANGLE parameter.

SPEECH DETECT ON, OFF

Distinguishes monaural speech from other input sources. When ON is selected, effects are lowered to minimize interference and unnatural echo in monaural speech. When stereo sources are present, the front left and right channels are independently used as inputs for ambience synthesis. When strong monaural speech is present in the input source, the monaural component of the ambience effect is reduced and the stereo component of the effect is increased. When OFF is selected, the amount of ambience synthesis is dynamically controlled.

SUB L/R & SUB L/R LVL OFF, -30 to +12dB

Controls the output level of the Main Zone audio output connectors labeled Subwoofer L/R. The SUB L/R parameter appears on the listening mode OUTPUT LEVELS menu. The SUB L/R LVL parameter appears on listening mode menus when the listening mode does not accommodate multi-channel output signals.

SURR ROLLOFF 500Hz to 20.0kHz, OFF

Applies high-frequency attenuation control to the Main Zone audio output connectors labeled Side L/R and Rear L/R. This filter is only applied to output signals generated by the SDP-40.

SURROUND DLY 0 to 15ms

Increases the perceived depth of the listening space by delaying the arrival time of signals from the side and rear speakers. It is recommended to increase the setting when a greater sense of depth is desired in the listening space.

SURROUND EX AUTO, ON, OFF

Controls the THX Surround EX decoding feature, which can be used to extract a rear channel from 5.1-channel Dolby Digital sources. When ON is selected, THX Surround EX decoding is engaged for all 5.1-channel Dolby Digital sources. When OFF is selected, THX Surround EX decoding is not engaged for all 5.1-channel Dolby Digital sources.

When AUTO is selected, THX Surround EX decoding is engaged when a flagged 5.1-channel Dolby Digital source with THX Surround EX encoding is detected. THX Surround EX decoding is not engaged when a non-flagged 5.1-channel Dolby Digital source with or without THX Surround EX encoding is detected.

Note:

The SDP-40 cannot automatically detect THX Surround EX encoding in non-flagged 5.1-channel Dolby Digital sources. A non-flagged input source does not include information in the input signal that identifies THX Surround EX encoding.

THX Surround EX listening modes are available when Dolby Digital Surround EX decoding is engaged. THX or THX Ultra2 listening modes are available when THX Surround EX decoding is not engaged. Refer to the 5.1 **THX** ULTRA2, 5.1 **THX** SurEX, & 5.1 **THX** listening mode descriptions that begin on page 5-17, the **THX** ULTRA2 & **THX** listening mode descriptions that begin on page 5-24, or the 5.1a **THX** ULTRA2, 5.1a **THX** SurEX, & 5.1a **THX** listening mode descriptions that begin on page 5-28 for more information.

Note the following:

- The SURROUND EX parameter AUTO setting is not available for the 5.1a THX listening modes.
- Toggling the SURROUND EX parameter setting produces low-level clicks in the front speakers.
- THX Surround EX decoding cannot be engaged unless both side and rear speakers are present.
- When the Shift command bank is activated, pressing the remote control THX button while a 5.1-channel Dolby Digital source is present activates the 5.1 **THX** ULTRA2, 5.1 **THX** SurEX, or 5.1 **THX** listening mode. Subsequent presses adjust the SURROUND EX parameter, cycling through the AUTO, ON, and OFF settings.
- When the Shift command bank is activated, pressing the remote control THX button while a 5.1-channel analog source is present activates the 5.1a **THX** ULTRA2, 5.1a **THX** SurEX, or 5.1a **THX** listening mode. Subsequent presses toggle the SURROUND EX parameter between the ON and OFF settings.

... Listening Mode Menu Parameter Descriptions continues on page 5-42

Listening Mode Menu Parameter Descriptions

(continued from page 5-41)

SURROUND MIX -5 to +5dB

Controls the relative level of surround channel information sent to the Main Zone audio output connectors labeled Front L/R. It is recommended to set this parameter to +2 or +3dB for all input sources.

VOCAL ENHANCE +6.0dB, +3.0dB, +0.0dB

Controls the level of dialog boost in the Main Zone audio output connector labeled Center. Increase this setting to improve dialog intelligibility, particularly at lower volume levels.

6



Troubleshooting & Maintenance

| | |
|--|-----|
| Troubleshooting | 6-2 |
| Routine Maintenance | 6-4 |
| Restoring Factory-Default Settings | 6-4 |

TROUBLESHOOTING

The SDP-40 does not power on.

1. Make sure the rear panel power switch is set to the | (“on”) position.
2. Attempt to deactivate standby mode with both the front panel and remote control standby buttons.
3. Examine the power cord to ensure a solid connection between the AC input connector and the wall outlet.
4. Examine the electrical circuit and breaker.

The remote control does not work.

1. Eliminate obstructions between the remote control and the front panel IR receiver. When the SDP-40 is not using the rear panel IR IN connector, the remote control must be in line-of-sight with the front panel IR receiver for proper operation. The remote control might also become unreliable if strong sunlight or fluorescent light is shining on the IR receiver.
2. Make sure the remote control batteries are correctly inserted with the proper polarity.
3. Replace the remote control batteries. When the batteries are low on power, the remote control enters a low-voltage condition that prevents it from operating the SDP-40.

The SDP-40 is powered on, but there is no audio.

1. Examine the audio cables to ensure a solid connection between the SDP-40 and all associated power amplifiers.
2. Make sure volume is set to an audible level. Volume level can be increased with the front panel volume knob or the remote control VOL + and – buttons.
3. Make sure audio has not been muted. The message “MUTE ON” or “FULL MUTE ON” will appear on the on-screen and front panel displays when audio has been muted. To deactivate mute, press the Mute button or adjust volume level.
4. Check the INPUT SETUP menu DIGITAL IN and ANALOG IN parameters to make sure the appropriate audio connector is assigned to the selected input.
5. Make sure the SDP-40 is receiving an audio signal. To do this, follow the instructions that begin on page 2-20 to open the status menu for the current input source.
6. Make sure all associated power amplifiers are powered on.

Dialog sounds muffled.

1. If the speaker setup does not include a center speaker, make sure a custom – as opposed to a THX – speaker setup is selected. Then, make sure the CUSTOM SETUP menu CENTER parameter is set to NONE.

A humming sound is present in the audio.

1. If a cable TV connection is present, disconnect the cable from the wall outlet. If this eliminates the humming sound, a ground loop isolation device is required. Contact an authorized Lexicon dealer or the cable provider for assistance.
2. Disconnect components one at a time to isolate the problem. Once the problem is identified, make sure the associated component is properly grounded and connected to the same electrical circuit as the SDP-40.

The SDP-40 is powered on, but there is no video.

1. Examine the video cables – particularly the S-video cables – to ensure a solid connection between the SDP-40 and the associated component.
2. Check the INPUT SETUP menu VIDEO IN and COMPONENT IN parameters to make sure the appropriate video connector is assigned to the selected input.

RF interference is present in the audio or video signal.

1. Make sure the SDP-40 is not positioned near unshielded TV or FM antennas, cable TV decoders, and other RF-emitting devices.
2. Replace unshielded cables with shielded cables whenever possible.

The SDP-40 is exhibiting erratic behavior.

1. Set the rear panel power switch to the ○ (“off”) position. Wait 10 seconds. Then, set the rear panel power switch to the | (“on”) position.
2. Use the SDP-40 configuration tool to download the current SDP-40 configuration to a personal computer (PC) or document all user-defined settings on the installation worksheet that begins on page A-19. Then, follow the instructions on the next page to restore factory-default settings.

If all else fails . . .

1. Set the rear panel power switch to the ○ (“off”) position. Wait 10 seconds. Then, set the rear panel power switch to the | (“on”) position.
2. Use the SDP-40 configuration tool to download the current SDP-40 configuration to a personal computer (PC) or document all user-defined settings on the installation worksheet that begins on page A-19. Then, follow the instructions on the next page to restore factory-default settings.
3. Contact an authorized JBL dealer.
4. Contact JBL customer service at 818-830-8757.

Note:

Visit <http://www.jblsynthesis.com/> for additional troubleshooting information.

ROUTINE MAINTENANCE

The following routine maintenance should be performed on a periodic basis:

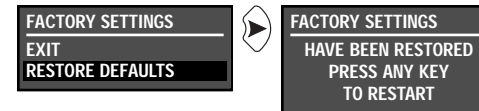
- Clean the SDP-40 exterior surface with a soft, lint-free cloth. Do not use alcohol, benzene, acetone-based cleaners, or strong commercial cleaners. Do not use a cloth made with steel wool or metal polish. If the SDP-40 is exposed to a dusty environment, a low-pressure blower can be used to remove dust from its exterior surface.
- Replace the remote control batteries as needed. The remote control requires two AA batteries. It is recommended to use Alkaline batteries, which last longer without leaking. Refer to page 1-5 for remote control battery installation instructions.

Note:

When the batteries are low on power, the remote control enters a low-voltage condition that prevents it from operating the SDP-40. Normal operation will resume when new batteries are installed.

RESTORING FACTORY-DEFAULT SETTINGS

When factory-default settings are restored, all parameters and user-defined values are restored to their factory-default settings. Before restoring factory-default settings, it is recommended to record user-defined settings.



To restore factory-default settings:

1. Select one of the following options to record user defined settings:
 - Use the Configuration Tool to download current SDP-40 settings to a personal computer (PC). The configuration tool is available at www.jblsynthesis.com.
 - Record user-defined settings on the installation worksheet that begins on page A-16.
2. If applicable, press the standby button to activate standby mode.
3. When standby mode is activated, press the standby button to deactivate standby mode.
4. After the standby button is pressed, quickly press and hold the Mute button until the FACTORY SETTINGS menu shown above opens on the on-screen and front panel displays.

Note:

The Mute button must be pressed within 2 seconds of deactivating standby mode. Otherwise, the "MUTE ON" message will appear on the on-screen and front panel displays. If this occurs, too much time has passed. Begin again with step 2.

5. Press the ▲ and ▼ arrow buttons to highlight the desired option.
 - Highlight the RESTORE DEFAULTS option to restore factory-default settings.
 - Highlight the EXIT option to close the FACTORY SETTINGS menu without restoring factory-default settings.

6. When the desired option is highlighted, press the ► arrow button to select this option.
 - If the RESTORE DEFAULTS option was selected, the FACTORY SETTINGS message shown on the previous page will appear on the on-screen and front panel displays. When this message appears, press a front panel or remote control button to restart the SDP-40.
 - If the EXIT option is selected, the FACTORY SETTINGS menu will close and the two-line status will open on the on-screen and front panel displays.

A

Appendix

| | |
|-------------------------------------|------|
| Specifications | A-2 |
| Declaration of Conformity | A-4 |
| Menu Trees | A-5 |
| Installation Worksheet | A-16 |

SPECIFICATIONS

| Audio Input & Output Connectors | |
|---------------------------------|---|
| Analog Audio Inputs | <ul style="list-style-type: none"> 8 stereo (RCA) or 5 stereo and one 5.1-channel connectors |
| Digital Audio Inputs | <ul style="list-style-type: none"> 6 S/PDIF coaxial (RCA), 6 S/PDIF optical (5 TosLink and 1 optical mini jack), and 1 AES/EBU (XLR) connectors Coaxial and optical input connectors conform to IEC-958, S/PDIF standards Accepts 44.1, 48, 88.2, and 96kHz sample rates Accepts 16-24 bits PCM audio, Dolby Digital, dts, and dts-ES discrete data formats |
| Main Zone Audio Outputs | <ul style="list-style-type: none"> 12 unbalanced (RCA) and 12 balanced (XLR, SDP-40 Balanced only) connectors for Front L/R, Center, LFE, Subwoofer L/R, Side L/R, Rear L/R, and Auxiliary L/R |
| Zone 2 Audio Outputs | <ul style="list-style-type: none"> 2 unbalanced (RCA, 1 fixed and 1 variable output level) stereo connectors and 1 balanced stereo connector (XLR, variable output level, SDP-40 Balanced only) |
| Record Zone Audio Outputs | <ul style="list-style-type: none"> 2 unbalanced (RCA, 1 fixed and 1 variable output level) stereo connectors 1 S/PDIF coaxial (RCA) and 1 S/PDIF optical (TosLink) connector (in parallel) |

| Main Zone Audio Performance | |
|-----------------------------|---|
| A/D Conversion | <ul style="list-style-type: none"> 24-bit, 96kHz, dual-bit $\Delta\Sigma$ architecture |
| D/A Conversion | <ul style="list-style-type: none"> 24-bit, 44.1 to 192kHz, multi-bit $\Delta\Sigma$ architecture, operating in dual-mono mode |
| Frequency Response | <ul style="list-style-type: none"> 10Hz to 20kHz, +0.1dB/-0.25dB, -0.75dB at 40kHz, reference 1kHz |

| Main Zone Audio Performance (continued) | |
|---|---|
| THD + Noise | <ul style="list-style-type: none"> Below 0.003% at 1kHz, maximum output level |
| Dynamic Range | <ul style="list-style-type: none"> 108dB minimum, 111dB typical, 22kHz bandwidth |
| Signal-to-Noise Ratio | <ul style="list-style-type: none"> 108dB minimum, 111dB typical, 22kHz bandwidth |
| Input Sensitivity | <ul style="list-style-type: none"> 200mVrms (2Vrms for maximum output level) at 0dB input gain |
| Input Impedance | <ul style="list-style-type: none"> 100kΩ in parallel with 150pF |
| Output Level | <ul style="list-style-type: none"> 150mVrms typical, 6Vrms maximum (RCA connectors) 300mVrms typical, 12Vrms maximum (XLR connectors, SDP-40 Balanced only) Maximum value with full-scale input signal and volume at +12dB |
| Output Impedance | <ul style="list-style-type: none"> 100Ω in parallel with 150pF (RCA connectors) 50Ω in parallel with 150pF (XLR connectors, SDP-40 Balanced only) |

| Zone 2 & Record Zone Audio Performance | |
|--|---|
| A/D Conversion | <ul style="list-style-type: none"> 24-bit, 44.1 to 96kHz, dual-bit $\Delta\Sigma$ architecture (Record Zone only) |
| D/A Conversion | <ul style="list-style-type: none"> 24-bit, 44.1 to 192kHz, multi-bit $\Delta\Sigma$ architecture |
| Frequency Response | <ul style="list-style-type: none"> 10Hz to 20kHz, +0.1dB/-0.25dB, -0.75dB at 40kHz, reference 1kHz |
| THD + Noise | <ul style="list-style-type: none"> Below 0.005% at 1kHz, maximum output level |
| Dynamic Range | <ul style="list-style-type: none"> 105dB minimum, 108dB typical, 22kHz bandwidth |

Specifications are subject to change without notice.

| Zone 2 & Record Zone Audio Performance <i>(continued)</i> | |
|---|---|
| Signal-to-Noise Ratio | • 105dB minimum, 108dB typical, 22kHz bandwidth |
| Input Sensitivity | • 200mVrms (4Vrms for maximum output level) |
| Input Impedance | • 100k Ω in parallel with 150pF |
| Output Level | <ul style="list-style-type: none"> • 200mVrms typical, 4Vrms maximum (RCA connectors) • 400mVrms typical, 8Vrms maximum (XLR connectors, Zone 2 only, SDP-40 Balanced only) • Maximum value with full-scale input signal and volume at 0dB |
| Output Impedance | <ul style="list-style-type: none"> • 100Ω in parallel with 150pF (RCA connectors) • 50Ω in parallel with 150pF (XLR connectors, Zone 2 only, SDP-40 Balanced only) |

| Video Input & Output Connectors | |
|---------------------------------|--|
| Video Inputs | • 5 composite (RCA), 8 S-video, and 4 component video (3 RCA and 1 BNC) |
| Video Outputs | • 4 composite (RCA, 2 monitor and 2 Record Zone), 2 S-video (2 monitor and 2 Record Zone), and 1 component (BNC) |

| Composite & S-video Performance | |
|---------------------------------|------------------------|
| Compatibility | • NTSC, PAL, and SECAM |
| Switching | • Active |
| Output Level | • 1.0V peak-to-peak |
| Impedance | • 75 Ω |

| Composite & S-video Performance <i>(continued)</i> | |
|--|------------------------------|
| Input Return Loss | • >40dB |
| Differential Gain | • <0.5% |
| Differential Phase | • <0.5° |
| Bandwidth | • >25MHz |
| K Factor | • <0.3% |
| Gain | • \pm 0.15dB |
| Signal-to-Noise Ratio | • >70dB |
| Frequency Response | • 10Hz to 10MHz + 0.1/-0.3dB |

| Component Video Performance | |
|-----------------------------|---|
| Compatibility | • 3-channel (Y, Pr, Pb), format-independent |
| Switching | • Passive |
| Impedance | • 75 Ω |
| Insertion Loss | • <3dB |
| Bandwidth | • >300MHz |

| Microphone Input Connectors | |
|-----------------------------|---|
| Inputs | • 4 3.5mm miniature phone jacks |
| Input Sensitivity | • 10mVrms (400mV maximum input level) |
| Input Impedance | • 20k Ω (accepts balanced or unbalanced input signals) |

... Specifications continues on page A-4

Specifications are subject to change without notice.

Specifications (continued from page A-3)

| Other | |
|-------------------------------------|---|
| Trigger Outputs | <ul style="list-style-type: none"> • 1 power on/off and 2 programmable connectors on detachable screw terminals (+12 VDC, 0.5 amps each) |
| RS-232 Serial Input/Output | <ul style="list-style-type: none"> • 2 9-pin D-sub connectors |
| Power Requirements | <ul style="list-style-type: none"> • 90-250 VAC, 50-60Hz, 90W (universal line input), detachable power cord |
| SDP-40 Dimensions & Weight | <ul style="list-style-type: none"> • Height (with feet): 5.2 inches (132mm) • Width: 17.3 inches (440mm) • Depth: 14.85 inches (377mm) • Weight: 36lbs (16.4kg) |
| SDP-40 Balanced Dimensions & Weight | <ul style="list-style-type: none"> • Height (with feet): 6.63 inches (169mm) • Width: 17.3 inches (440mm) • Depth: 14.85 inches (377mm) • Weight: 45lbs (20.5kg) |
| Rack Mounting | <ul style="list-style-type: none"> • Optional brackets are available for installation in a standard 19" equipment rack (2 rack units required for SDP-40). |
| Environment | <ul style="list-style-type: none"> • Operating Temperature: 0° to 35°C (32° to 95°F) • Storage Temperature: -30° to 75°C (-22° to 167°F) • Relative Humidity: 95% maximum without condensation |
| Remote Control | <ul style="list-style-type: none"> • Hand-held, backlit infrared remote control unit • Requires 2 AA batteries (Alkaline batteries recommended) |

Specifications are subject to change without notice.

DECLARATION OF CONFORMITY

Application of Council Directive(s):

89/336/EEC and 93/68/EEC

Standard(s) to which Conformity is Declared:

EN55022:1998, EN55024:1998, EN61000-3-2: 2000, EN61000-3-3:2000, and EN60065: 1998

Manufacturer:

Lexicon, Inc.
3 Oak Park
Bedford, MA 01730-1413 USA

The equipment identified here conforms to the Directive(s) and Standard(s) specified above.

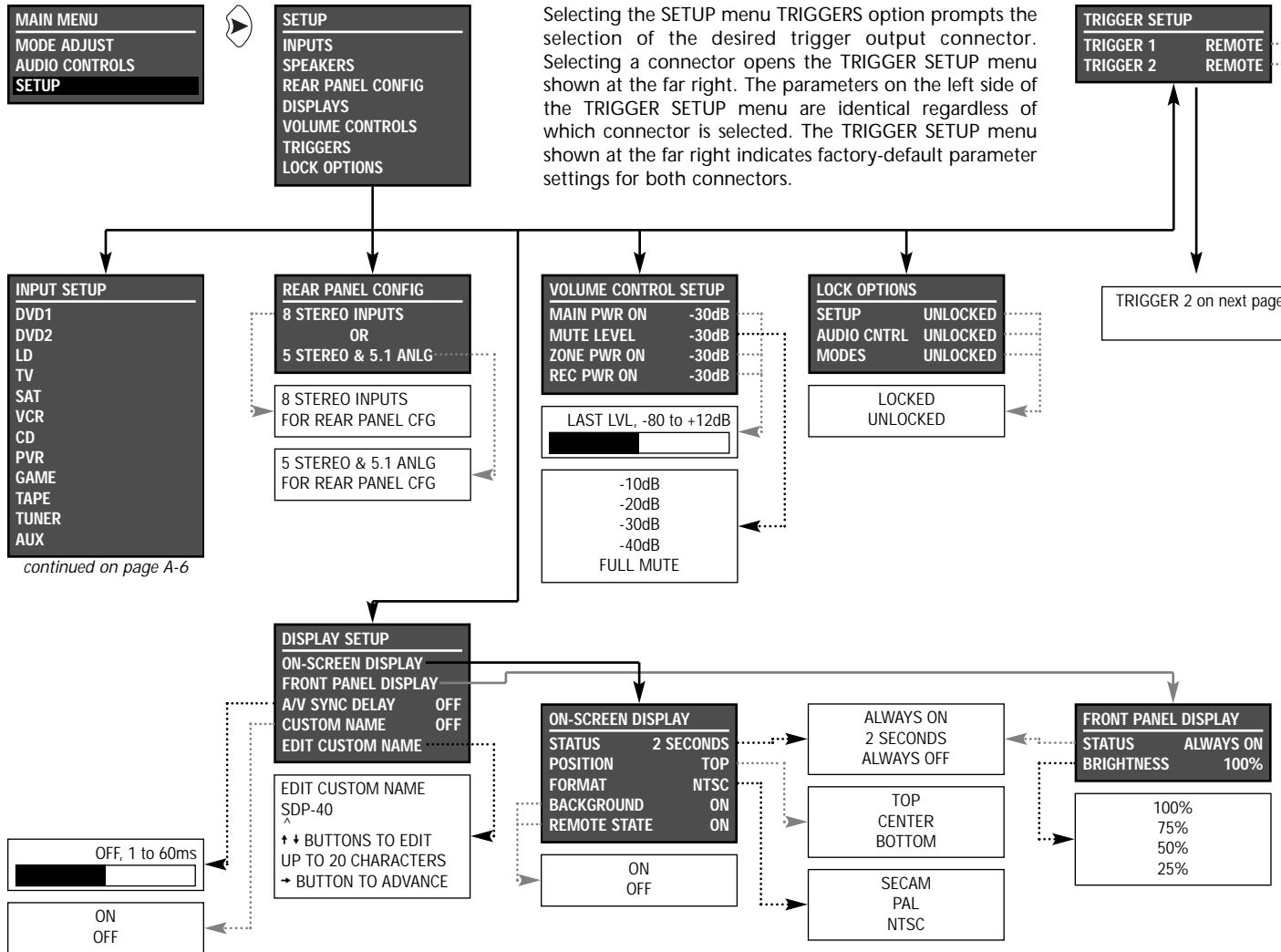
Type of Equipment: Digital Controller

Model: JBL SDP-40

Date: June 2003

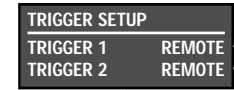
Lexicon, Inc.
Vice President of Engineering
3 Oak Park
Bedford, MA 01730-1413 USA
Tel: 781-280-0300
Fax: 781-280-0490

MENU TREES



continued on page A-6

Selecting the SETUP menu TRIGGERS option prompts the selection of the desired trigger output connector. Selecting a connector opens the TRIGGER SETUP menu shown at the far right. The parameters on the left side of the TRIGGER SETUP menu are identical regardless of which connector is selected. The TRIGGER SETUP menu shown at the far right indicates factory-default parameter settings for both connectors.



TRIGGER 2 on next page

| | |
|----------------|-----|
| TRIGGER 1 | |
| REMOTE ONLY | OFF |
| DVD1 | OFF |
| DVD2 | OFF |
| LD | OFF |
| TV | OFF |
| SAT | OFF |
| VCR | OFF |
| CD | OFF |
| PVR | OFF |
| GAME | OFF |
| TAPE | OFF |
| TUNER | OFF |
| AUX | OFF |
| ZONE2 INPUTS | OFF |
| RECORD INPUTS | OFF |
| FILM | ON |
| TV | ON |
| MUSIC | ON |
| MUSIC SURR | ON |
| PLII + IIX | ON |
| PLII MOVIE | ON |
| PLII MUSIC | ON |
| PRO LOGIC | ON |
| FILM | ON |
| MUSIC | OFF |
| NIGHTCLUB | ON |
| CONCERT HALL | ON |
| CHURCH | ON |
| CATHEDRAL | ON |
| PANORAMA | OFF |
| PARTY | OFF |
| 2-CHANNEL | OFF |
| MONO LOGIC | ON |
| MONO SURROUND | ON |
| MONO | ON |
| 5.1 FILM | ON |
| 5.1 TV | ON |
| 5.1 MUSIC | ON |
| 5.1 IIX SurEX | ON |
| 5.1 IIX MUSIC | ON |
| DIGITAL EX | ON |
| 5.1 2-CHANNEL | OFF |
| 5.1 MONO LOGIC | ON |
| 5.1 MONO SURR | ON |
| 5.1 MONO | ON |
| 5.1 FILM | ON |
| 5.1 MUSIC | ON |
| 5.1 IIX | ON |
| 5.1 IIX MUSIC | ON |
| 5.1a 2-CHAN | OFF |
| 5.1a FILM | ON |
| 5.1a MUSIC | ON |
| 5.1a IIX SurEX | ON |
| 5.1a IIX MUSIC | OFF |
| 5.1a STANDARD | OFF |
| 5.1a 2-CHANNEL | OFF |
| 5.1a BYPASS | OFF |
| 2CH BYPASS | OFF |
| | ON |
| | OFF |

Menu Trees (continued from page A-5)



Selecting the SETUP menu INPUTS option prompts the selection of the desired input (i.e. DVD1). Selecting an input opens the corresponding INPUT SETUP menu shown below. The parameters on the left side of the INPUT SETUP menus are identical regardless of which input is selected. The INPUT SETUP menus shown below indicate factory-default parameter settings for each input.

continued from page A-5

| | |
|----------------|-----|
| TRIGGER 2 | |
| REMOTE ONLY | ON |
| DVD1 | OFF |
| DVD2 | OFF |
| LD | OFF |
| TV | OFF |
| SAT | OFF |
| VCR | OFF |
| CD | OFF |
| PVR | OFF |
| GAME | OFF |
| TAPE | OFF |
| TUNER | OFF |
| AUX | OFF |
| ZONE2 INPUTS | OFF |
| RECORD INPUTS | OFF |
| FILM | OFF |
| TV | OFF |
| MUSIC | ON |
| MUSIC SURR | ON |
| PLII + | OFF |
| PLII MOVIE | OFF |
| PLII MUSIC | ON |
| PRO LOGIC | OFF |
| FILM | OFF |
| MUSIC | OFF |
| NIGHTCLUB | OFF |
| CONCERT HALL | OFF |
| CHURCH | OFF |
| CATHEDRAL | OFF |
| PANORAMA | OFF |
| PARTY | ON |
| 2-CHANNEL | OFF |
| MONO LOGIC | OFF |
| MONO SURROUND | OFF |
| MONO | OFF |
| 5.1 FILM | OFF |
| 5.1 TV | OFF |
| 5.1 MUSIC | ON |
| 5.1 SurEX | OFF |
| 5.1 MUSIC | OFF |
| DIGITAL EX | OFF |
| 5.1 2-CHANNEL | OFF |
| 5.1 MONO LOGIC | OFF |
| 5.1 MONO SURR | OFF |
| 5.1 MONO | OFF |
| FILM | OFF |
| MUSIC | ON |
| | OFF |
| MUSIC | OFF |
| 2-CHAN | OFF |
| 5.1a FILM | OFF |
| 5.1a MUSIC | OFF |
| 5.1a SurEX | OFF |
| 5.1a MUSIC | OFF |
| 5.1a STANDARD | OFF |
| 5.1a 2-CHANNEL | OFF |
| 5.1a BYPASS | OFF |
| 2CH BYPASS | OFF |

| | |
|------------------|------------|
| DVD1 INPUT SETUP | |
| NAME | DVD1 |
| DIGITAL IN | COAX-1 |
| ANALOG IN | NONE |
| ANLG IN LVL | +0dB |
| VIDEO IN | S-VIDEO-1 |
| COMPONENT IN | 1 |
| 2-CH | FILM |
| D/D | 5.1 FILM |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

| | |
|-----------------|------------|
| LD INPUT SETUP | |
| NAME | LD |
| DIGITAL IN | COAX-3 |
| ANALOG IN | ANALOG-1 |
| ANLG IN LVL | +0dB |
| VIDEO IN | S-VIDEO-3 |
| COMPONENT IN | 1 |
| 2-CH | FILM |
| D/D | 5.1 FILM |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | ANLG |
| RECORD IN | ANLG |
| RECORD ADVANCED | |

| | |
|-----------------|------------|
| SAT INPUT SETUP | |
| NAME | SAT |
| DIGITAL IN | OPTICAL-2 |
| ANALOG IN | ANALOG-3 |
| ANLG IN LVL | +0dB |
| VIDEO IN | S-VIDEO-5 |
| COMPONENT IN | 4 |
| 2-CH | TV |
| D/D | 5.1 TV |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | ANLG |
| RECORD IN | ANLG |
| RECORD ADVANCED | |

| | |
|-----------------|-------------|
| CD INPUT SETUP | |
| NAME | CD |
| DIGITAL IN | COAX-4 |
| ANALOG IN | NONE |
| ANLG IN LVL | +0dB |
| VIDEO IN | COMPOSITE-1 |
| COMPONENT IN | 1 |
| 2-CH | MUSIC |
| D/D | 5.1 MUSIC |
| | MUSIC |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

| | |
|------------------|-------------|
| GAME INPUT SETUP | |
| NAME | GAME |
| DIGITAL IN | NONE |
| ANALOG IN | ANALOG-6 |
| ANLG IN LVL | +0dB |
| VIDEO IN | COMPOSITE-2 |
| COMPONENT IN | 1 |
| 2-CH | FILM |
| D/D | 5.1 FILM |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

| | |
|-------------------|------------|
| TUNER INPUT SETUP | |
| NAME | TUNER |
| DIGITAL IN | NONE |
| ANALOG IN | ANALOG-8 |
| ANLG IN LVL | +0dB |
| VIDEO IN | NONE |
| COMPONENT IN | 1 |
| 2-CH | MUSIC |
| D/D | 5.1 MUSIC |
| | MUSIC |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | ANLG |
| RECORD IN | ANLG |
| RECORD ADVANCED | |

| | |
|------------------|------------|
| DVD2 INPUT SETUP | |
| NAME | DVD2 |
| DIGITAL IN | COAX-2 |
| ANALOG IN | NONE |
| ANLG IN LVL | +0dB |
| VIDEO IN | S-VIDEO-2 |
| COMPONENT IN | 2 |
| 2-CH | FILM |
| D/D | 5.1 FILM |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

| | |
|-----------------|------------|
| TV INPUT SETUP | |
| NAME | TV |
| DIGITAL IN | OPTICAL-1 |
| ANALOG IN | ANALOG-2 |
| ANLG IN LVL | +0dB |
| VIDEO IN | S-VIDEO-4 |
| COMPONENT IN | 3 |
| 2-CH | TV |
| D/D | 5.1 TV |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | ANLG |
| RECORD IN | ANLG |
| RECORD ADVANCED | |

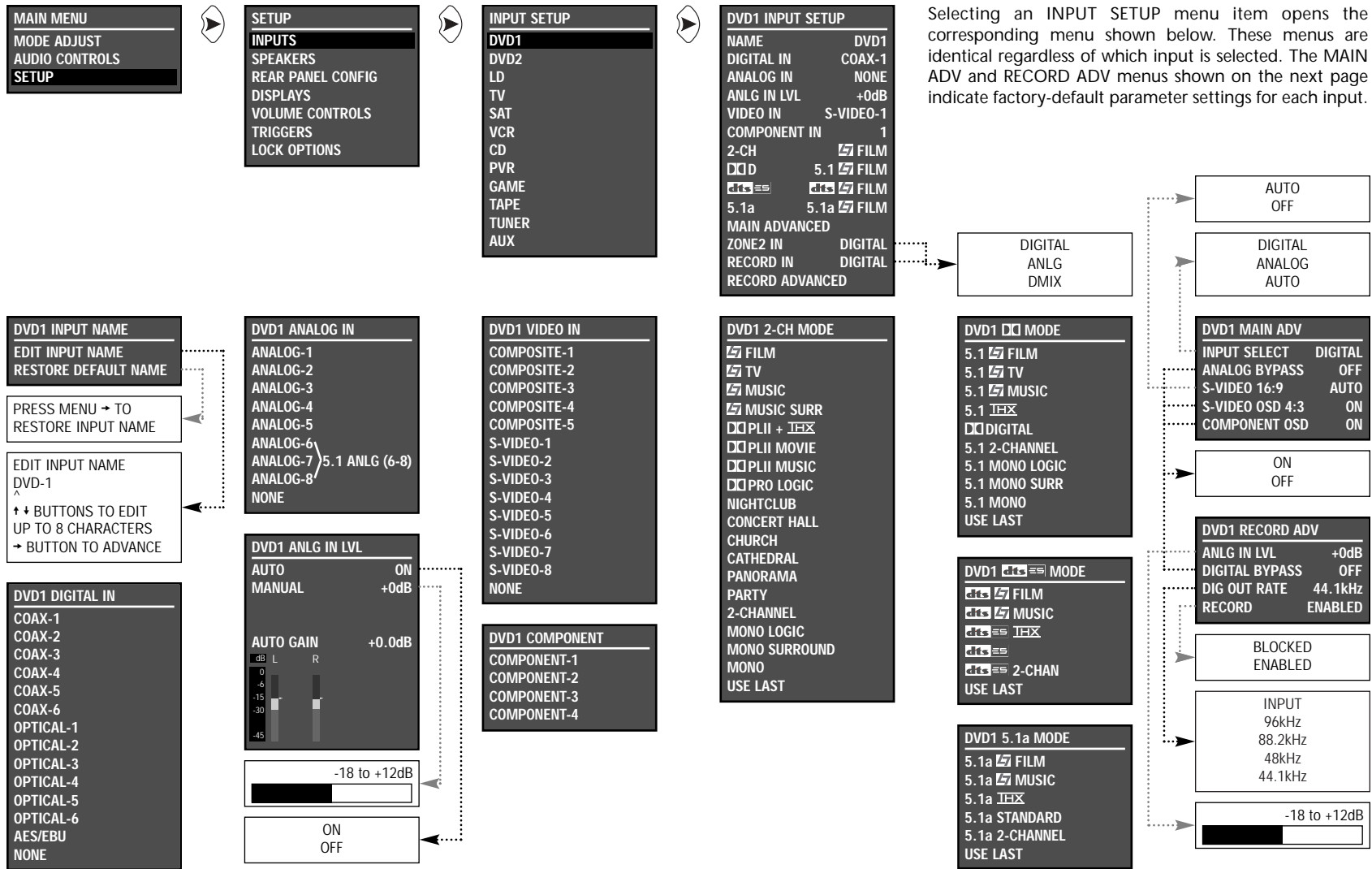
| | |
|-----------------|------------|
| VCR INPUT SETUP | |
| NAME | VCR |
| DIGITAL IN | NONE |
| ANALOG IN | ANALOG-4 |
| ANLG IN LVL | +0dB |
| VIDEO IN | S-VIDEO-6 |
| COMPONENT IN | 1 |
| 2-CH | FILM |
| D/D | 5.1 FILM |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | ANLG |
| RECORD IN | ANLG |
| RECORD ADVANCED | |

| | |
|-----------------|------------|
| PVR INPUT SETUP | |
| NAME | PVR |
| DIGITAL IN | OPTICAL-3 |
| ANALOG IN | ANALOG-5 |
| ANLG IN LVL | +0dB |
| VIDEO IN | S-VIDEO-7 |
| COMPONENT IN | 1 |
| 2-CH | TV |
| D/D | 5.1 TV |
| | FILM |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

| | |
|------------------|------------|
| TAPE INPUT SETUP | |
| NAME | TAPE |
| DIGITAL IN | NONE |
| ANALOG IN | ANALOG-7 |
| ANLG IN LVL | +0dB |
| VIDEO IN | NONE |
| COMPONENT IN | 1 |
| 2-CH | PRO LOGIC |
| D/D | 5.1 MUSIC |
| | PRO LOGIC |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | ANLG |
| RECORD IN | ANLG |
| RECORD ADVANCED | |

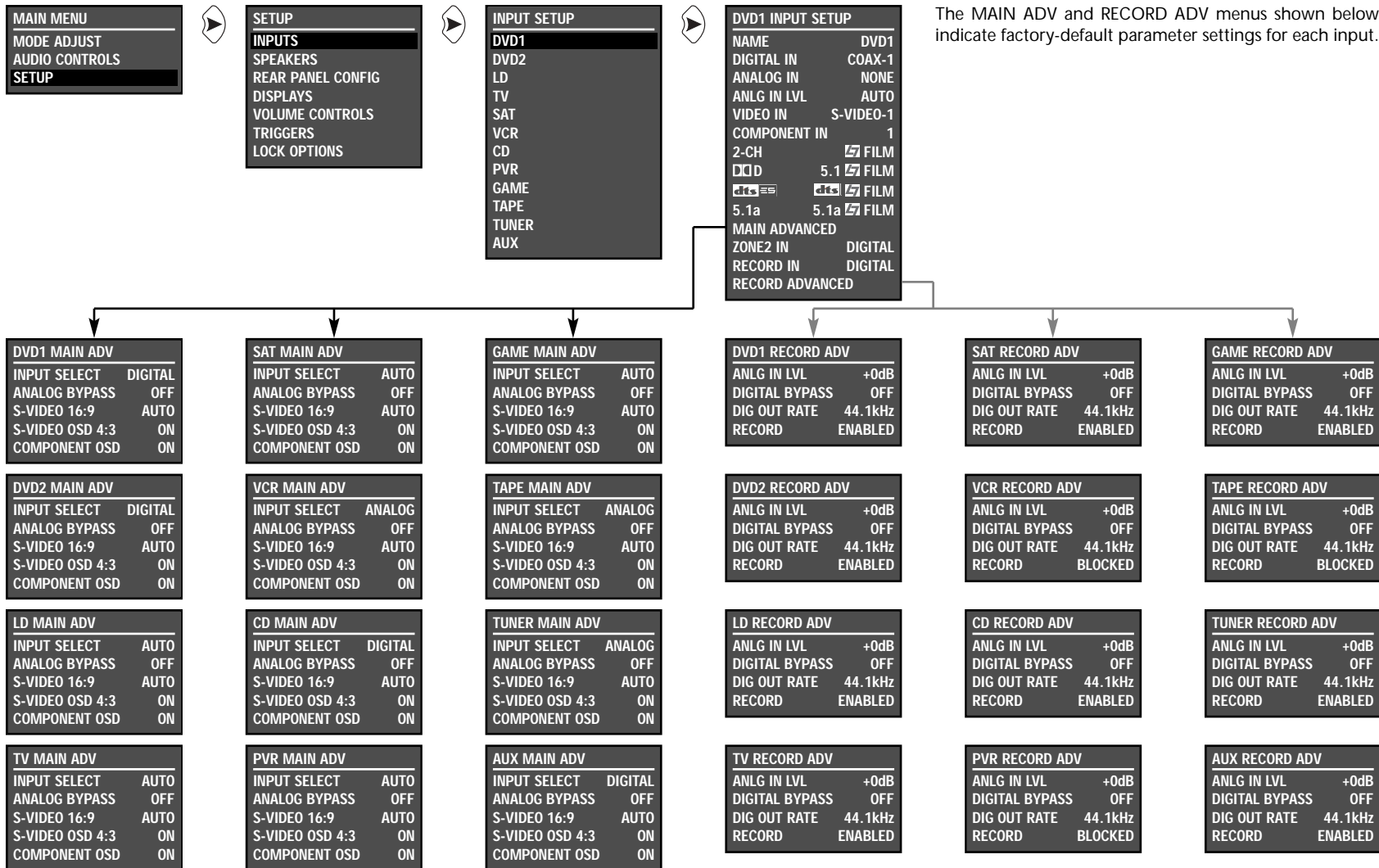
| | |
|-----------------|-------------|
| AUX INPUT SETUP | |
| NAME | AUX |
| DIGITAL IN | OPTICAL-6 |
| ANALOG IN | NONE |
| ANLG IN LVL | +0dB |
| VIDEO IN | COMPOSITE-3 |
| COMPONENT IN | 1 |
| 2-CH | MUSIC |
| D/D | 5.1 MUSIC |
| | MUSIC |
| 5.1a | 5.1a FILM |
| MAIN ADVANCED | |
| ZONE2 IN | DIGITAL |
| RECORD IN | DIGITAL |
| RECORD ADVANCED | |

ON
OFF

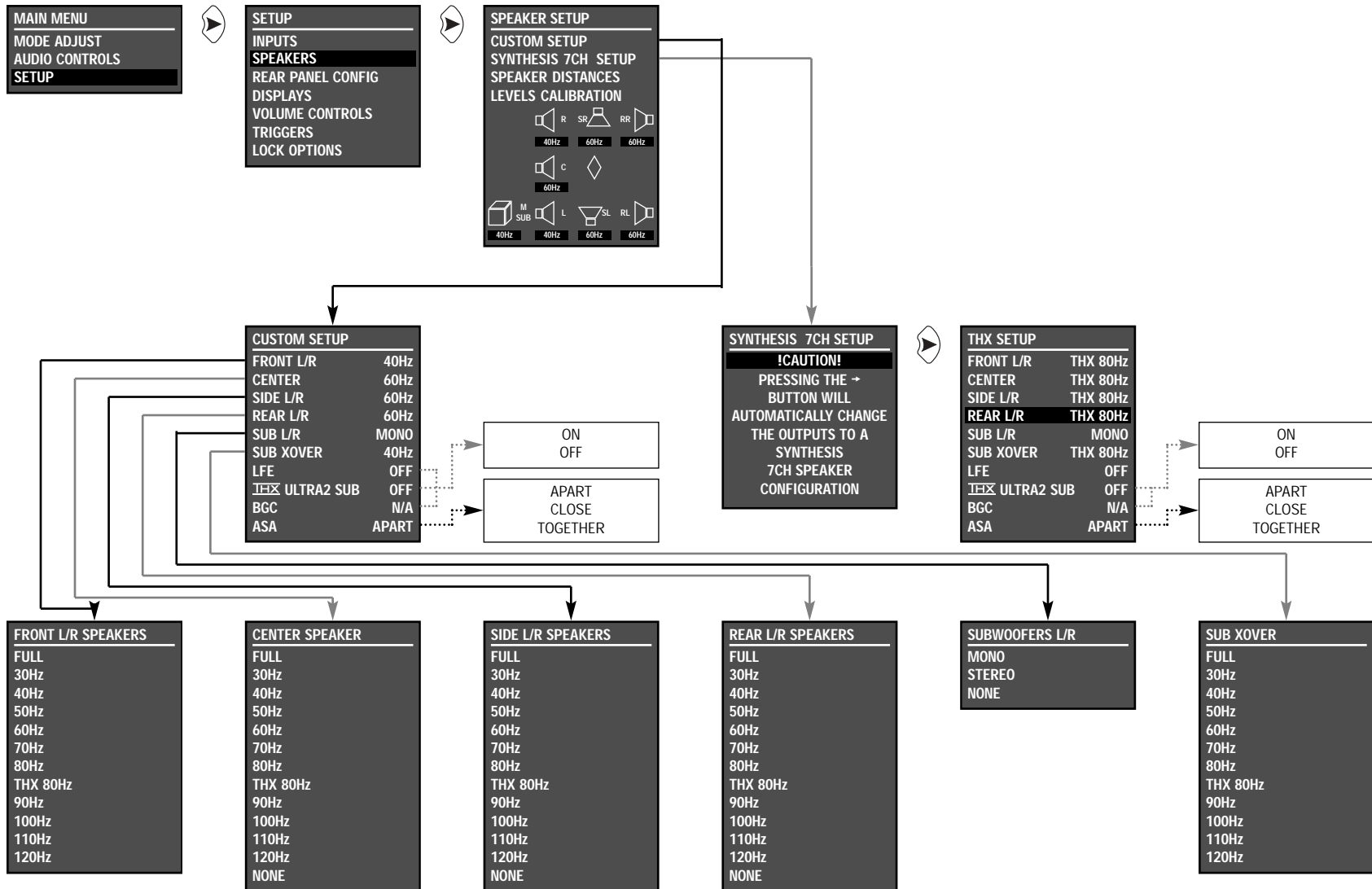


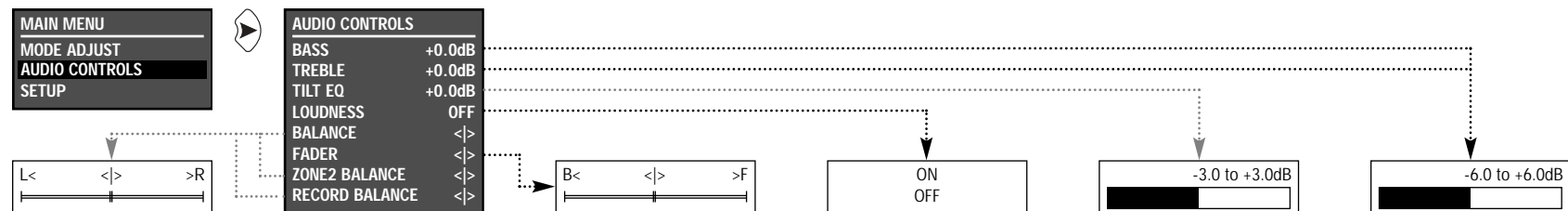
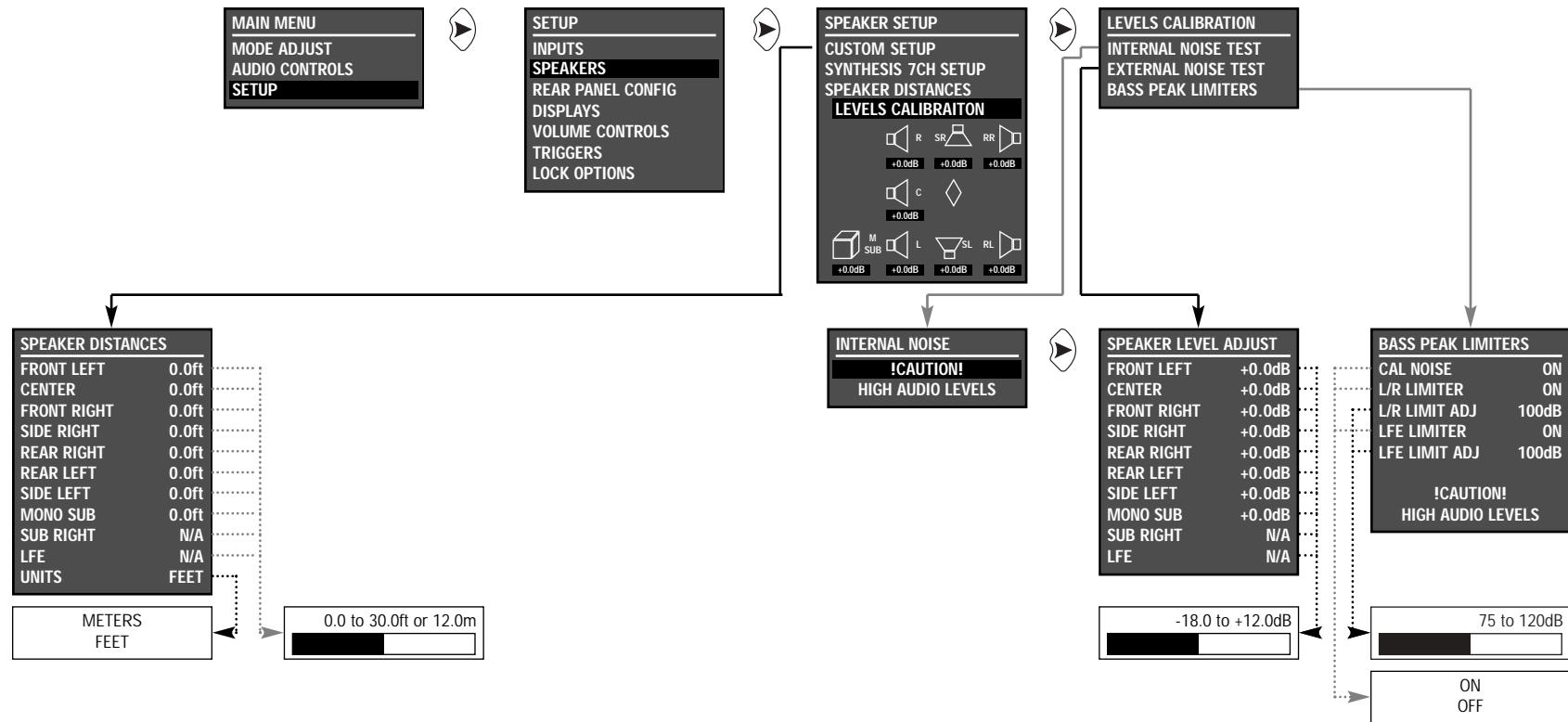
Selecting an INPUT SETUP menu item opens the corresponding menu shown below. These menus are identical regardless of which input is selected. The MAIN ADV and RECORD ADV menus shown on the next page indicate factory-default parameter settings for each input.

Menu Trees (continued from page A-7)



The MAIN ADV and RECORD ADV menus shown below indicate factory-default parameter settings for each input.





Menu Trees (continued from page A-10)

MAIN MENU
MODE ADJUST
 AUDIO CONTROLS
 SETUP



MODE ADJUST

- FILM
- TV
- MUSIC
- MUSIC SURR
- PLII + THX
- PLII MOVIE
- PLII MUSIC
- PRO LOGIC
- FILM
- MUSIC
- NIGHTCLUB
- CONCERT HALL
- CHURCH
- CATHEDRAL
- PANORAMA
- PARTY
- 2-CHANNEL
- MONO LOGIC
- MONO SURROUND
- MONO
- 5.1 FILM
- 5.1 TV
- 5.1 MUSIC
- 5.1 THX*
- 5.1 THX MUSIC
- DIGITAL*
- 5.1 2-CHANNEL
- 5.1 MONO LOGIC
- 5.1 MONO SURR
- 5.1 MONO
- FILM*
- MUSIC*
- THX*
- THX MUSIC
- 2-CHAN*
- 5.1a FILM
- 5.1a MUSIC
- 5.1a THX*
- 5.1a THX MUSIC
- 5.1a STANDARD
- 5.1a 2-CHANNEL
- 5.1a BYPASS
- 2CH BYPASS

Selecting the MAIN MENU MODE ADJUST option opens the MODE ADJUST menu shown at the left, which prompts the selection of the desired listening mode. Selecting a listening mode opens the corresponding listening mode menu shown on pages A-14 to A-16. The parameters on the left side of the listening mode menus differ from listening mode to listening mode. The parameter settings on the right side are adjustable. The listening mode menus shown here indicate factory-default parameter settings for each listening mode. Listening mode menu parameter drop-down menus are shown on pages A-16 to A-17.

FILM

- AUTO AZIMUTH ON
- VOCAL ENHANCE +0.0dB
- RE-EQUALIZER ON
- SOUND STAGE REAR
- 5 SPKR ENHANCE ON
- BASS ENHANCE OFF
- SURR ROLLOFF 15.3kHz
- REAR DLY OFFSET 15ms
- OUTPUT LEVELS CUSTOM

MUSIC SURR

- VOCAL ENHANCE +0.0dB
- FRONT STEERING MSURR
- SOUND STAGE NEUTRAL
- 5 SPKR ENHANCE ON
- BASS ENHANCE OFF
- SURR ROLLOFF 15.3kHz
- REAR DLY OFFSET 15ms
- OUTPUT LEVELS CUSTOM

FILM

- OUTPUT LEVELS CUSTOM

CHURCH

- CENTER DEPTH 5
- SPEECH DETECT ON
- SIZE 20m
- MID RT 1.56s
- BASS RT 1.87s
- PRE-DELAY 24ms
- ROLLOFF 2.4kHz
- EFFECT LVL -3dB
- OUTPUT LEVELS CUSTOM

TV

- AUTO AZIMUTH ON
- VOCAL ENHANCE +0.0dB
- FRONT STEERING FILM
- RE-EQUALIZER OFF
- SOUND STAGE REAR
- 5 SPKR ENHANCE ON
- BASS ENHANCE OFF
- SURR ROLLOFF 15.3kHz
- REAR DLY OFFSET 15ms
- OUTPUT LEVELS CUSTOM

PLII + THX

- RE-EQUALIZER ON
- OUTPUT LEVELS CUSTOM

MUSIC

- OUTPUT LEVELS CUSTOM

CATHEDRAL

- CENTER DEPTH 12
- SPEECH DETECT ON
- SIZE 30m
- MID RT 3.72s
- BASS RT 4.47s
- PRE-DELAY 23ms
- ROLLOFF 3.1kHz
- EFFECT LVL -8dB
- OUTPUT LEVELS CUSTOM

MUSIC

- VOCAL ENHANCE +0.0dB
- FRONT STEERING MUSIC
- SOUND STAGE NEUTRAL
- 5 SPKR ENHANCE ON
- BASS ENHANCE OFF
- SURR ROLLOFF 15.3kHz
- REAR DLY OFFSET 15ms
- OUTPUT LEVELS CUSTOM

PLII MOVIE

- OUTPUT LEVELS CUSTOM

NIGHTCLUB

- CENTER DEPTH 11
- SPEECH DETECT ON
- SIZE 5m
- LIVENESS 196ms
- PRE-DELAY 5ms
- ROLLOFF 9.0kHz
- EFFECT LVL +3dB
- OUTPUT LEVELS CUSTOM

PANORAMA

- EFFECT LVL +4dB
- BASS CONTENT STEREO
- LOW FREQ WIDTH +0
- SURR ROLLOFF 3.1kHz
- REAR DLY OFFSET 15ms
- INPUT BALANCE <->
- CALIBRATION
- OUTPUT LEVELS CUSTOM

PLII MUSIC

- PANORAMA OFF
- CTR WIDTH 3
- DIMENSION NEUTRAL
- SURROUND DLY 10ms
- OUTPUT LEVELS CUSTOM

CONCERT HALL

- CENTER DEPTH 12
- SPEECH DETECT ON
- SIZE 20m
- LIVENESS 1.72s
- PRE-DELAY OFF
- ROLLOFF 2.4kHz
- EFFECT LVL -2dB
- OUTPUT LEVELS CUSTOM

PRO LOGIC

- OUTPUT LEVELS CUSTOM

* These listening mode names differ depending on the current input source, speaker setup, and parameter settings. Refer to the Listening Mode Descriptions section that begins on page 5-7 for more information.


PARTY
 OUTPUT LEVELS
 CUSTOM


2-CHANNEL
 SUB L/R LVL +0dB
 CUSTOM


MONO LOGIC
 EFFECT LVL -9dB
 ACADEMY FILTER ON
 SURR ROLLOFF 3.1kHz
 OUTPUT LEVELS
 CUSTOM


MONO SURROUND
 OUTPUT LEVELS
 CUSTOM

MONO
 SUB L/R LVL +0dB
 CUSTOM

5.1  FILM
 VOCAL ENHANCE +0.0dB
 5 SPKR ENHANCE ON
 BASS ENHANCE OFF
 RE-EQUALIZER ON
 REAR DLY OFFSET 15ms
 COMPRESSION OFF
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1  TV
 VOCAL ENHANCE +0.0dB
 5 SPKR ENHANCE ON
 BASS ENHANCE OFF
 RE-EQUALIZER OFF
 REAR DLY OFFSET 15ms
 COMPRESSION OFF
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1  MUSIC
 VOCAL ENHANCE +0.0dB
 5 SPKR ENHANCE ON
 BASS ENHANCE OFF
 RE-EQUALIZER OFF
 REAR DLY OFFSET 15ms
 COMPRESSION OFF
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1  THX
 RE-EQUALIZER ON
 SURROUND EX AUTO
 COMPRESSION OFF
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1  THX MUSIC
 COMPRESSION OFF
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM




DIGITAL
 EX DECODING AUTO
 COMPRESSION OFF
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM




5.1 2-CHANNEL
 CENTER MIX +0dB
 SURROUND MIX +0dB
 CNTR DLY SAMPLES +0
 MASTER LEVEL +0dB
 COMPRESSION OFF
 LFE MIX +0.0dB
 SUB L/R LVL +0dB
 CUSTOM

5.1 MONO LOGIC
 EFFECT LVL -9dB
 ACADEMY FILTER ON
 SURR ROLLOFF 3.1kHz
 OUTPUT LEVELS
 CUSTOM



5.1 MONO SURR
 OUTPUT LEVELS
 CUSTOM




5.1 MONO
 SUB L/R LVL +0dB
 CUSTOM

  FILM
 VOCAL ENHANCE +0.0dB
 5 SPKR ENHANCE ON
 BASS ENHANCE OFF
 RE-EQUALIZER ON
 REAR DLY OFFSET 15ms
 LFE MIX +0.0dB
 DECODING OFF
 OUTPUT LEVELS
 CUSTOM

  MUSIC
 VOCAL ENHANCE +0.0dB
 5 SPKR ENHANCE ON
 BASS ENHANCE OFF
 REAR DLY OFFSET 15ms
 LFE MIX +0.0dB
 DECODING OFF
 OUTPUT LEVELS
 CUSTOM


  THX
 RE-EQUALIZER ON
 LFE MIX +0.0dB
 DECODING AUTO
 OUTPUT LEVELS
 CUSTOM


  THX MUSIC
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

 
 LFE MIX +0.0dB
 DECODING AUTO
 OUTPUT LEVELS
 CUSTOM

  2-CHAN
 CENTER MIX +0dB
 SURROUND MIX +0dB
 CNTR DLY SAMPLES +0
 MASTER LEVEL +0dB
 LFE MIX +0.0dB
 DECODING AUTO
 SUB L/R LVL +0dB
 CUSTOM

5.1a  FILM
 VOCAL ENHANCE +0.0dB
 5 SPKR ENHANCE ON
 BASS ENHANCE OFF
 RE-EQUALIZER ON
 REAR DLY OFFSET 15ms
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1a  MUSIC
 VOCAL ENHANCE +0.0dB
 5 SPKR ENHANCE ON
 BASS ENHANCE OFF
 RE-EQUALIZER OFF
 REAR DLY OFFSET 15ms
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1a  THX
 RE-EQUALIZER ON
 SURROUND EX OFF
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1a  THX MUSIC
 LFE MIX +0.0dB
 OUTPUT LEVELS
 CUSTOM

5.1a STANDARD
 OUTPUT LEVELS
 CUSTOM

5.1a 2-CHANNEL
 CENTER MIX +0dB
 SURROUND MIX +0dB
 CNTR DLY SAMPLES +0
 MASTER LEVEL +0dB
 LFE MIX +0.0dB
 SUB L/R LVL +0dB
 CUSTOM

5.1a BYPASS
 OUTPUT LEVELS
 CUSTOM

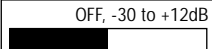
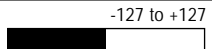

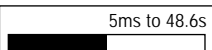
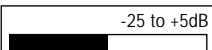
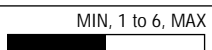
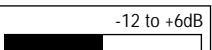
2CH BYPASS
 NO PARAMETERS

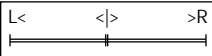

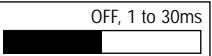
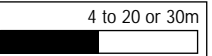
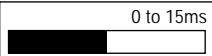
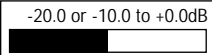
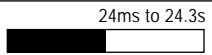
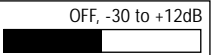
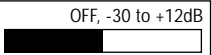
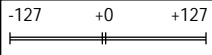
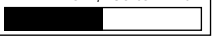
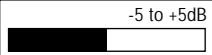
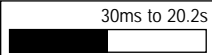
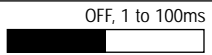
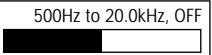
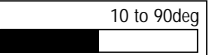
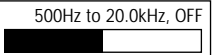
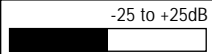
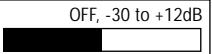
Menu Trees (continued from page A-12)

Selecting the listening mode menu CALIBRATION, OUTPUT LEVELS, or CUSTOM option opens the corresponding menu shown below. The CALIBRATION option is available for the PANORAMA listening mode. The OUTPUT LEVELS and CUSTOM options are available for most listening modes. These menus are identical regardless of which listening mode is selected. Listening mode menu parameter drop-down menus are shown below and on the next page.

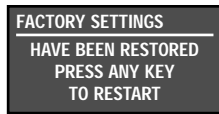
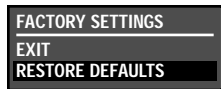
| | | | | | | | | |
|---|---|--|---|---|--|---|---|--|
| PANORAMA EFFECT LVL +4dB BASS CONTENT STEREO LOW FREQ WIDTH +0 SURR ROLLOFF 3.1kHz REAR DLY OFFSET 15ms INPUT BALANCE <> CALIBRATION OUTPUT LEVELS CUSTOM | ▶ | PANORAMA CALIBRATION SOURCE LEFT & RIGHT SPEAKER ANGLE 30deg LISTENER POS +0 NOTE: ENSURE THAT "SPEAKER SETUP" HAS BEEN PERFORMED PROPERLY | MONO LOGIC EFFECT LVL -9dB ACADEMY FILTER ON SURR ROLLOFF 3.1kHz OUTPUT LEVELS CUSTOM | ▶ | OUTPUT LEVELS CENTER +0dB SIDE L/R +0dB REAR L/R +0dB SUB L/R +0dB | MONO LOGIC EFFECT LVL -9dB ACADEMY FILTER ON SURR ROLLOFF 3.1kHz OUTPUT LEVELS CUSTOM | ▶ | CUSTOM CUSTOM VS PRESET RESET MODE |
|---|---|--|---|---|--|---|---|--|

Selecting a listening mode menu parameter opens the corresponding parameter drop-down menus shown below and on the next page. These drop-down menus are identical regardless of which listening mode is selected. However, certain parameter ranges differ from listening mode to listening mode.

| | | | | | |
|-----------------------------|--|--|---|--|---|
| 5 SPKR ENHANCE ON OFF | BASS CONTENT BINAURL MONO STEREO | CENTER OFF, -30 to +12dB  | CNTR DLY SAMPLES -127 to +127  | CUSTOM VS PRESET PRESET CUSTOM | DECODING AUTO ON OFF |
| ACADEMY FILTER ON OFF | BASS ENHANCE ON OFF | CENTER DEPTH 0 to 18  | COMPRESSION AUTO ON OFF | DIMENSION FRONT NEUTRAL REAR | EX DECODING AUTO ON OFF |
| AUTO AZIMUTH ON OFF | BASS RT 5ms to 48.6s  | CENTER MIX -25 to +5dB  | CTR WIDTH MIN, 1 to 6, MAX  | EFFECT LVL -12 to +6dB  | FRONT STEERING OFF MSURR MUSIC FILM |

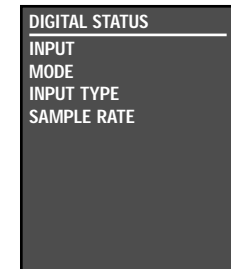
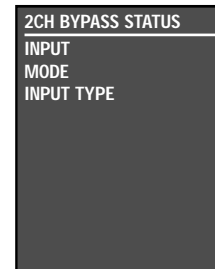
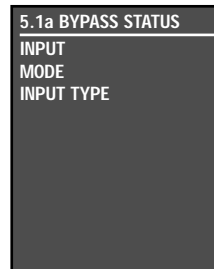
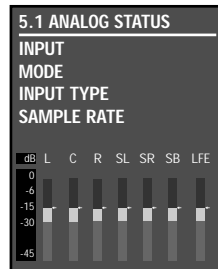
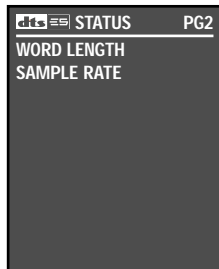
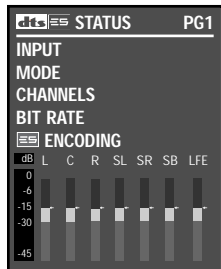
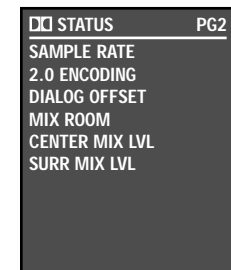
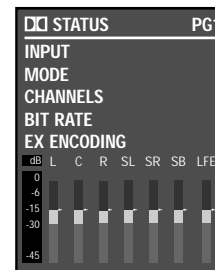
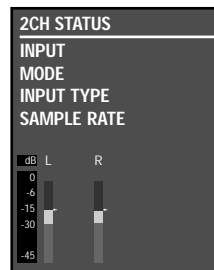
| | | | | | |
|---|--|--|--|---|--|
| INPUT BALANCE  | MASTER LEVEL -5 to +5dB  | REAR DLY OFFSET OFF, 1 to 30ms  | SIZE 4 to 20 or 30m  | SPEECH DETECT ON OFF | SURROUND DLY 0 to 15ms  |
| LFE MIX -20.0 or -10.0 to +0.0dB  | MID RT 24ms to 24.3s  | REAR L/R OFF, -30 to +12dB  | SOUND STAGE FRONT NEUTRAL REAR | SUB L/R OFF, -30 to +12dB  | SURROUND EX AUTO ON OFF |
| LISTENER POSITION -127 +0 +127  | PANORAMA ON OFF | RESET MODE PRESS RIGHT → TO RESTORE MODE | SOURCE RIGHT LEFT & RIGHT LEFT | SUB L/R LVL OFF, -30 to +12dB  | SURROUND MIX -5 to +5dB  |
| LIVENESS 30ms to 20.2s  | PRE-DELAY OFF, 1 to 100ms  | ROLLOFF 500Hz to 20.0kHz, OFF  | SPEAKER ANGLE 10 to 90deg  | SURR ROLLOFF 500Hz to 20.0kHz, OFF  | VOCAL ENHANCE +6.0dB +3.0dB +0.0dB |
| LOW FREQ WIDTH -25 to +25dB  | RE-EQUALIZER ON OFF | SIDE L/R OFF, -30 to +12dB  | | | |

Menu Trees (continued from page A-14)




Pressing and holding the Mute button while the SDP-40 is activated opens the FACTORY SETTINGS menu shown at the left, which can be used to restore factory-default settings.

When the Shift command bank is activated, pressing the STAT button opens the status menu for the current input source. Status menus are available for 2-channel, Dolby Digital, dts(-ES), analog, and digital input sources.



INSTALLATION WORKSHEET

| INPUT SETUP | DVD1 | DVD2 | LD | TV | SAT | VCR | CD | PVR | GAME | TAPE | TUNER | AUX |
|--|------|------|----|----|-----|-----|----|-----|------|------|-------|-----|
| NAME | | | | | | | | | | | | |
| DIGITAL IN | | | | | | | | | | | | |
| ANALOG IN | | | | | | | | | | | | |
| ANLG IN LVL | | | | | | | | | | | | |
| VIDEO IN | | | | | | | | | | | | |
| COMPONENT IN | | | | | | | | | | | | |
| 2-CH | | | | | | | | | | | | |
|  D | | | | | | | | | | | | |
|  ES | | | | | | | | | | | | |
| 5.1a | | | | | | | | | | | | |
| MAIN ADVANCED | | | | | | | | | | | | |
| INPUT SELECT | | | | | | | | | | | | |
| ANALOG BYPASS | | | | | | | | | | | | |
| S-VIDEO 16:9 | | | | | | | | | | | | |
| S-VIDEO OSD 4:3 | | | | | | | | | | | | |
| COMPONENT OSD | | | | | | | | | | | | |
| ZONE2 IN | | | | | | | | | | | | |
| RECORD IN | | | | | | | | | | | | |
| RECORD ADVANCED | | | | | | | | | | | | |
| ANLG IN LVL | | | | | | | | | | | | |
| DIGITAL BYPASS | | | | | | | | | | | | |
| DIG OUT RATE | | | | | | | | | | | | |
| RECORD | | | | | | | | | | | | |


Installation Worksheet (continued from page A-16)


| SPEAKER SETUP | CUSTOM SETUP | SYNTHESIS 7CH SETUP | SPEAKER DISTANCES | LEVELS CALIBRATION | |
|---------------------------|---------------------|----------------------|-------------------|--------------------|--|
| FRONT L/R | | 80Hz | | | |
| CENTER | | 80Hz | | | |
| SIDE L/R | | 80Hz | | | |
| REAR L/R | | 80Hz | | | |
| SUB L/R | | 80Hz | | | |
| SUB XOVER | | 80Hz | | | |
| LFE | | OFF | | | |
| HEX ULTRA2 SUB | | | | | |
| BGC | | | | | |
| ASA | | | | | |
| UNITS | | | | | |
| BASS PEAK LIMITERS | | | | | |
| CAL NOISE | | | | | |
| L/R LIMITER | | | | | |
| L/R LIMIT ADJ | | | | | |
| LFE LIMITER | | | | | |
| LFE LIMIT ADJ | | | | | |
| REAR PANEL CONFIG | | VOLUME CONTROL SETUP | | LOCK OPTIONS | |
| <i>Circle one.</i> | | MAIN PWR ON | | SETUP | |
| 8 STEREO INPUTS | 5 STEREO & 5.1 ANLG | MUTE LEVEL | | AUDIO CNTRL | |
| | | ZONE PWR ON | | MODES | |
| | | REC PWR ON | | | |


| DISPLAY SETUP | | TRIGGER 1 SETUP | | TRIGGER 2 SETUP | |
|-----------------------|--|---|----------------|---|----------------|
| ON-SCREEN DISPLAY | | <i>Circle all parameters set to ON.</i> | | <i>Circle all parameters set to ON.</i> | |
| STATUS | | REMOTE ONLY | PARTY | REMOTE ONLY | PARTY |
| POSITION | | DVD1 | 2-CHANNEL | DVD1 | 2-CHANNEL |
| FORMAT | | DVD2 | MONO LOGIC | DVD2 | MONO LOGIC |
| BACKGROUND | | LD | MONO SURROUND | LD | MONO SURROUND |
| REMOTE STATE | | TV | MONO | TV | MONO |
| FRONT PANEL DISPLAY | | SAT | 5.1 FILM | SAT | 5.1 FILM |
| STATUS | | VCR | 5.1 TV | VCR | 5.1 TV |
| BRIGHTNESS | | CD | 5.1 MUSIC | CD | 5.1 MUSIC |
| A/V SYNC DELAY | | PVR | 5.1 SurEX | PVR | 5.1 SurEX |
| CUSTOM NAME | | GAME | 5.1 MUSIC | GAME | 5.1 MUSIC |
| EDIT CUSTOM NAME | | TAPE | DIGITAL EX | TAPE | DIGITAL EX |
| AUDIO CONTROLS | | TUNER | 5.1 2-CHANNEL | TUNER | 5.1 2-CHANNEL |
| BASS | | AUX | 5.1 MONO LOGIC | AUX | 5.1 MONO LOGIC |
| TREBLE | | ZONE2 INPUTS | 5.1 MONO SURR | ZONE2 INPUTS | 5.1 MONO SURR |
| TILT EQ | | RECORD INPUTS | 5.1 MONO | RECORD INPUTS | 5.1 MONO |
| LOUDNESS | | FILM | FILM | FILM | FILM |
| BALANCE | | TV | MUSIC | TV | MUSIC |
| FADER | | MUSIC | THX | MUSIC | THX |
| ZONE2 BALANCE | | MUSIC SURR | MUSIC | MUSIC SURR | MUSIC |
| RECORD BALANCE | | PLII + THX | | PLII + THX | |
| | | PLII MOVIE | 2-CHAN | PLII MOVIE | 2-CHAN |
| | | PLII MUSIC | 5.1a FILM | PLII MUSIC | 5.1a FILM |
| | | PRO LOGIC | 5.1a MUSIC | PRO LOGIC | 5.1a MUSIC |
| | | FILM | 5.1a SurEX | FILM | 5.1a SurEX |
| | | MUSIC | 5.1a MUSIC | MUSIC | 5.1a MUSIC |
| | | NIGHTCLUB | 5.1a STANDARD | NIGHTCLUB | 5.1a STANDARD |
| | | CONCERT HALL | 5.1a 2-CHANNEL | CONCERT HALL | 5.1a 2-CHANNEL |
| | | CHURCH | 5.1a BYPASS | CHURCH | 5.1a BYPASS |
| | | CATHEDRAL | 2CH BYPASS | CATHEDRAL | 2CH BYPASS |
| | | PANORAMA | | PANORAMA | |


SYMBOLS & LOGOS


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, see Dolby

, see also dts, dts-ES, dts(-ES)

, see dts Neo:6

, see ES

, see LOGIC7

, see THX

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2-CHANNEL Listening Mode, 5-14, A-12 (*menu ill.*)

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2CH BYPASS Listening Mode, 5-32, A-12 (*menu ill.*)

2CH BYPASS STATUS Menu, 2-20 (*ill.*), 2-22, A-15 (*ill.*)

2CH STATUS Menu, 2-20 (*ill.*), A-18 (*menu ill.*)

5 SPKR ENHANCE Parameter, 5-5, 5-6, 5-7, 5-15, 5-16, 5-23, 5-24, 5-27, 5-28, 5-34, A-13


5 STEREO & 5.1 ANLG Option, 3-41, A-5,


5.1 2-CHANNEL Listening Mode, 5-21, A-12 (*menu ill.*)

5.1 ANALOG STATUS Menu, 2-20 (*ill.*), 2-22, A-12 (*ill.*)

5.1  FILM Listening Mode, 5-4, 5-15, A-12 (*menu ill.*)

NUMBERS (continued)


5.1  MUSIC Listening Mode, 5-4, 5-16, A-12 (*menu ill.*)

5.1  TV Listening Mode, 5-4, 5-16, A-12 (*menu ill.*)


5.1 MONO Listening Mode, 5-22, A-12 (*menu ill.*)


5.1 MONO LOGIC Listening Mode, 5-21, A-12 (*menu ill.*)

5.1 MONO SURR Listening Mode, 5-22, A-12 (*menu ill.*)

5.1  Listening Mode, 5-4, 5-17 to 5-18, A-12 (*menu ill.*)

5.1  MUSIC Listening Mode, 5-19, A-12 (*menu ill.*)

5.1  ULTRA2 Listening Mode, 5-17 to 5-18


5.1  SurEX Listening Mode, 5-17 to 5-18

5.1a 2-CHANNEL Listening Mode, 5-31, A-12 (*menu ill.*)

5.1a BYPASS Listening Mode, 5-31, A-12 (*menu ill.*)


5.1a BYPASS STATUS Menu, 2-20 (*ill.*), 2-22

5.1a  FILM Listening Mode, 5-4, 5-27, A-12 (*menu ill.*)

5.1a  MUSIC Listening Mode, 5-4, 5-28, A-12 (*menu ill.*)

5.1a Parameter, 3-11, 3-12 (*menu ill.*), 3-13, 5-3, A-7 (*menu ill.*), A-15

5.1a STANDARD Listening Mode, 5-30, A-12 (*menu ill.*)

5.1a  Listening Mode, 5-4, 5-28 to 5-29, A-12 (*menu ill.*)

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
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
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SYNTHESIS LIMITED WARRANTY

The JBL Synthesis products listed below are warranted for the period stated from the date of original purchase:

Amplifiers, Equalizers, and Surround Sound Processors – two (2) year warranty.

Who is protected by this warranty?

Your JBL warranty protects the original owner and all subsequent owners, so long as the original bill of sale is presented when warranty service is requested.

What is covered by the JBL warranty?

Your JBL warranty covers all defects in the material and workmanship with the following specified exceptions:

1. Damage caused by accident, unreasonable use, or neglect (including the lack of reasonable and necessary maintenance.
2. Damage caused by improper installation or adjustment.
3. Damage occurring during shipment (claims must be presented to the carrier).
4. Damage to or deterioration of any accessory or decorative surface.
5. Damage resulting from failure to follow instructions contained in your user guide.
6. Damage resulting from the performance of repairs by someone other than an authorized JBL warranty station
7. Any JBL unit on which the serial number has been effaced, modified, or removed.
8. Units which have been altered or modified in design, appearance, or construction.
9. Products sold on an "as-is" or final sale basis.

This warranty covers only the actual defects within the product itself, and does not cover the costs of installation or removal from a fixed installation, normal set-up, or adjustments, claims based on any misrepresentation by the seller, or performance variations resulting from installation related circumstances such as program source quality or AC power.

How to obtain warranty service

If your JBL product ever needs service, we may direct you to an Authorized JBL Warranty Station, or ask you to send your unit to the factory for repair, in which case we'll also supply a Service Return Authorization and complete shipping instructions. If the product was purchased in a country other than the USA, it is necessary to return the product to the distributor or selling location in the same country. Either way, you'll need to present the original bill of sale to establish the date of purchase. Please do not ship your JBL product to the factory without our prior authorization. In the United States, please call 1-818-830-8757 for the location of the authorized warranty station nearest you.

If service under this warranty is not necessary, but you have questions regarding the Installation or operation of this unit, please contact your authorized JBL dealer or call 1-818-830-8757 for further assistance.

Who pays for what?

JBL will be happy to pay all labor and material expenses for all repairs covered by this warranty. If necessary repairs are not covered by this warranty or if a unit is examined which is not in need of repair, you will be charged for the repairs or the examination.

Although you must pay any shipping charges incurred in getting your JBL product to an Authorized Warranty Station or to the factory, we will pay return shipping charges within the United States if the repairs are covered by the warranty. Please be sure to save the original shipping cartons because a nominal charge will be made for additional cartons.

Limitation on implied warranties

Implied warranties of merchantability and fitness for particular purpose are limited in duration to the length of this warranty, unless otherwise provided by state law.

Exclusion of certain damages

JBL's liability is limited to the repair or replacement at our option, of any defective product and shall in no event include incidental or consequential commercial damages of any kind.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion of incidental or consequential damages, so they above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

We sincerely thank you for your expression of confidence in JBL products. This equipment has been painstakingly assembled by highly trained craftspeople. It should give you many years of musical enjoyment.



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