

# Service Manual

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# 1. Technical Specifications, Connections and Chassis Overview

**Note:** Described specifications are valid for the *whole* product range.

## 1.1 Technical Specifications

### 1.1.1 Reception

Tuning system	: PLL
Colour systems	: PAL B/G, D/K, I : SECAM B/G, L/L'
Sound systems	: FM/AM-mono : FM-stereo (2CS) : NICAM : FM radio (10.7 MHz)
A/V connections	: PAL BG : SECAM L/L' : PAL 60 (playback only)

Channel selections

IF frequency

Aerial input

: NTSC 3.58 (playback only)
: NTSC 4.43 (playback only)
: 100 channels
: UVSH
: 38.9 MHz
: 75 $\Omega$ , Coax

### 1.1.2 Miscellaneous

Audio output (RMS)

Mains voltage

Mains frequency

Ambient temperature

Maximum humidity

Power consumption

Standby Power consumption

: 2 x 5 W stereo
: 220 - 240 V ( $\pm$ 10 %)
: 50 Hz ( $\pm$ 5 %)
: + 5 to + 45 deg. C
: 90 % R.H.
: 58 W (21") to
: 100 W (33")
: < 3 W

## 1.2 Connections

### 1.2.1 Side Connections, Top (or Front) Control

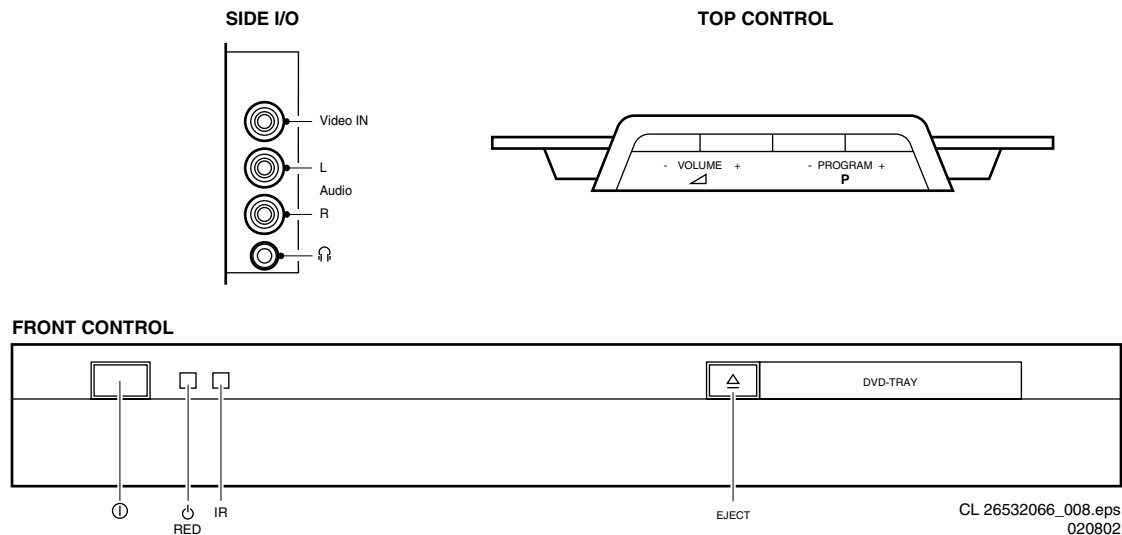


Figure 1-1

#### Audio / Video In

1 - Video	CVBS (1 Vpp / 75 $\Omega$ )	
2 - Audio	L (0.5 Vrms / 10 k $\Omega$ )	
3 - Audio	R (0.5 Vrms / 10 k $\Omega$ )	
4 - Headphone	3.5 mm (8 - 600 $\Omega$ / 4 mW)	

1.2.2 Rear Connections

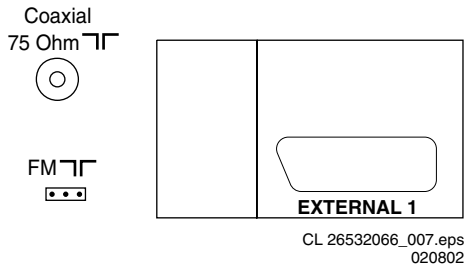


Figure 1-2 .eps

- TV Aerial In**  
 Aerial input : 75  $\Omega$ , Coax (IEC-type)
- FM Radio In**  
 Aerial input : via 'coax-to-3 pins' adapter  
 : 'cable' or 'wire' antenna

External 1: RGB/YUV in + CVBS in/out

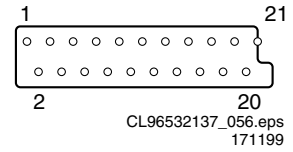
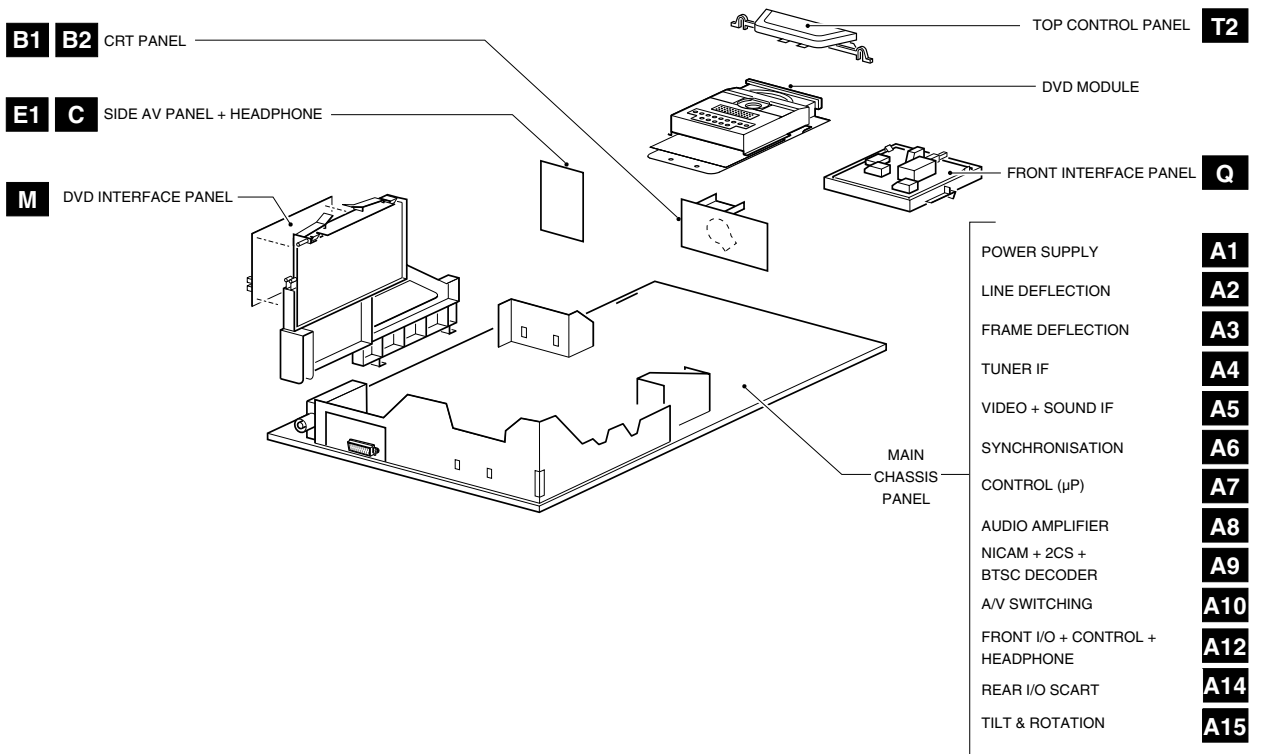


Figure 1-3

- |                 |  |          |
|-----------------|--|----------|
| 1 - Audio       | R (0.5 Vrms / 1 k $\Omega$ )                                 | $\oplus$ |
| 2 - Audio       | R (0.5 Vrms / 10 k $\Omega$ )                                | $\oplus$ |
| 3 - Audio       | L (0.5 Vrms / 1 k $\Omega$ )                                 | $\oplus$ |
| 4 -             | GND  | $\perp$  |
| 5 -             | GND  | $\perp$  |
| 6 - Audio       | L (0.5 Vrms / 10 k $\Omega$ )                                | $\oplus$ |
| 7 - Blue / U    | (0.7 Vpp / 75 $\Omega$ )                                     | $\oplus$ |
| 8 - CVBS-status | 0 - 2.0 V: INT<br>4.5 - 7 V: EXT 16:9<br>9.5 - 12 V: EXT 4:3 | $\perp$  |
| 9 -             | GND  | $\perp$  |
| 10 -            |  |          |
| 11 - Green / Y  | (0.7 Vpp / 75 $\Omega$ )                                     | $\oplus$ |
| 12 -            |  |          |
| 13 -            | GND  | $\perp$  |
| 14 -            | GND  | $\perp$  |
| 15 - Red / V    | (0.7 Vpp / 75 $\Omega$ )                                     | $\oplus$ |
| 16 - RGB-status | 0 - 0.4 V: INT 1 - 3 V: EXT / 75 $\Omega$                    | $\perp$  |
| 17 -            | GND  | $\perp$  |
| 18 -            | GND  | $\perp$  |
| 19 - CVBS       | (1 Vpp / 75 $\Omega$ )                                       | $\oplus$ |
| 20 - CVBS       | (1 Vpp / 75 $\Omega$ )                                       | $\oplus$ |
| 21 - Earth      | GND  | $\perp$  |

1.3 Chassis Overview



CL 26532066\_009.eps  
 010802

Figure 1-4

## 2. Safety & Maintenance Instructions, Warnings, and Notes

### 2.1 Safety Instructions For Repairs

#### 2.1.1 General Safety



Figure 2-1

Safety regulations require that during a repair:

- Due to the 'hot' parts of this chassis, the set must be connected to the AC power via an isolation transformer.
- Safety components, indicated by the symbol ▲, should be replaced by components identical to the original ones.
- When replacing the CRT, safety goggles must be worn.

Safety regulations require that after a repair, the set must be returned in its original condition. Pay particular attention to the following points:

- General repair instruction: as a strict precaution, we advise you to re-solder the solder connections through which the horizontal deflection current is flowing, in particular:
  - all pins of the line output transformer (LOT)
  - fly-back capacitor(s)
  - S-correction capacitor(s)
  - line output transistor
  - pins of the connector with wires to the deflection coil
  - other components through which the deflection current flows.

Note: This re-soldering is advised to prevent bad connections due to metal fatigue in solder connections and is therefore only necessary for television sets more than two years old.

- Route the wire trees and EHT cable correctly and secure them with the mounted cable clamps.
- Check the insulation of the AC power cord for external damage.
- Check the strain relief of the AC power cord for proper function, to prevent the cord from touching the CRT, hot components, or heat sinks.
- Check the electrical DC resistance between the AC plug and the secondary side (only for sets that have an isolated power supply). Do this as follows:
  1. Unplug the AC power cord and connect a wire between the two pins of the AC plug.
  2. Turn on the main power switch (keep the AC power cord unplugged!).
  3. Measure the resistance value between the pins of the AC plug and the metal shielding of the tuner or the aerial connection of the set. The reading should be between 4.5 MΩ and 12 MΩ.
  4. Switch the TV OFF and remove the wire between the two pins of the AC plug.
- Check the cabinet for defects, to prevent the possibility of the customer touching any internal parts.

#### 2.1.2 Laser Safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

##### Laser Device Unit

Type	: Semiconductor laser GaAlAs
Wavelength	: 650 nm (DVD) : 780 nm (VCD/CD)
Output Power	: 7 mW (DVD) : 10 mW (VCD/CD)
Beam divergence	: 60 degree

**Note:** Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

#### 2.1.3 Shock, Fire Hazard Service Test

**Caution:** After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer. Ref.UL Standard NO.1492.

##### Note on safety:

Symbol ▲: Fire or electrical shock hazard. Only original parts should be used to replace any part with symbol ▲. (other than original type), may increase risk of fire or electrical shock hazard.

### 2.2 Maintenance Instructions

It is recommended to have a maintenance inspection carried out by qualified service personnel. The interval depends on the usage conditions:

- When the set is used under normal circumstances, for example in a living room, the recommended interval is three to five years.
- When the set is used in an environment with higher dust, grease or moisture levels, for example in a kitchen, the recommended interval is one year.
- The maintenance inspection includes the following actions:
  1. Perform the 'general repair instruction' noted above.
  2. Clean the power supply and deflection circuitry on the chassis.
  3. Clean the picture tube panel and the neck of the picture tube.

## 2.3 Warnings

### 2.3.1 General

- In order to prevent damage to ICs and transistors, avoid all high voltage flashovers. In order to prevent damage to the picture tube, use the method shown in Fig. 2-1, to discharge the picture tube. Use a high voltage probe and a multi-meter (position VDC). Discharge until the meter reading is 0 V (after approx. 30 s).

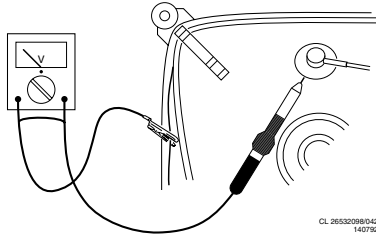


Figure 2-2

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD) ⚡. Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable, and ground cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Together with the deflection unit and any multi-pole unit, flat square picture tubes form an integrated unit. The deflection and the multi-pole units are set optimally at the factory. Adjustment of this unit during repair is therefore not recommended.
- Be careful during measurements in the high voltage section and on the picture tube.
- Never replace modules or other components while the unit is switched ON.
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

### 2.3.2 Laser

- The use of optical instruments with this product, will increase eye hazard.
- Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.
- Repair handling should take place as much as possible with a disc loaded inside the player.
- Text below is placed inside the unit, on the laser cover shield:

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM  
 ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING  
 ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN  
 VARNING SYNLIG OCH OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN  
 VAROJ AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN  
 VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRALHUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN  
 DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM  
 ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

Figure 2-3

## 2.4 Notes

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground ( $\perp$ ), or hot ground ( $\downarrow$ ), depending on the area of circuitry being tested.
- The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a color bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz (PAL) or 61.25 MHz (NTSC, channel 3).
- Where necessary, measure the waveforms and voltages with ( $\square$ ) and without ( $\times$ ) aerial signal. Measure the voltages in the power supply section both in normal operation ( $\text{Ⓢ}$ ) and in standby ( $\text{Ⓢ}$ ). These values are indicated by means of the appropriate symbols.
- The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
- The semiconductors indicated in the circuit diagram and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

## 3. Directions For Use

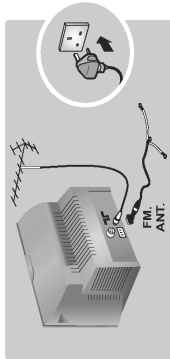
### Installing your television set

#### 1 Positioning the television set



Place your TV on a solid, stable surface, leaving a space of at least 5 cm around the appliance. To avoid accidents, do not put anything on the set such as a cloth or cover, a container full of liquid (vase) or a heat source (lamp). The set must not be exposed to water.

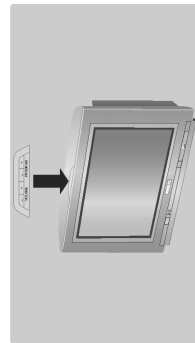
#### 2 Connections



- Insert the aerial plug into the **FM ANT.** socket at the rear of the set.
- Insert the radio aerial socket into the **FM ANT.** socket using the adapter supplied. *If you are using an indoor aerial, reception may be difficult in certain conditions. You can improve reception by rotating the aerial. If the reception remains poor, you will need to use an external aerial.*
- Insert the mains plug into a wall socket (220-240 V / 50 Hz).

### The keys on the TV set

The television set has 4 keys which are located on the front or the top of the set depending on the model.



### Introduction

Thank you for purchasing this television set. This handbook has been designed to help you install and operate your TV set. We would strongly recommend that you read it thoroughly.

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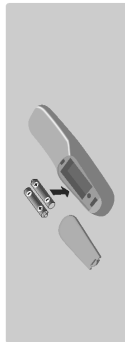
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#### Recycling

The materials used in your set are either reusable or can be recycled. To minimise environmental waste, specialist companies collect used appliances and dismantle them after retrieving any materials that can be used again (ask your dealer for further details).

#### 3 Remote control



Insert the two R6-type batteries (supplied) making sure that they are the right way round. Check that the mode selector is set to TV. The batteries supplied with this appliance do not contain mercury or nickel cadmium. If you have access to a recycling facility, please do not discard your used batteries (if in doubt, consult your dealer). When the batteries are replaced, use the same type.

#### 4 Switching on



To switch on the set, press the on/off key. A red indicator comes on and the screen lights up. Go straight to the chapter Quick installation on page 4. If the television remains in standby mode, press **P** on the remote control. The indicator will flash when you use the remote control.

The **VOLUME - + (- / +)** keys are used to adjust sound levels. The **PROGRAM - + (- P +)** keys are used to select the required programmes. To access the menus, simultaneously hold down the **↵** - and **↵** + keys. The **PROGRAM - +** keys may then be used to select an adjustment and the **↵** + keys to make that adjustment. To exit from the menus, hold down the **↵** - and **↵** + keys.

*Note: when the Child Lock function is activated, these keys are unavailable (refer to Features menu on page 7).*

## Remote control keys

**DVD: language selection (p. 11)**  
TV: sound mode  
Used to force programmes in Stereo and Nicam Stereo to Mono or for bilingual programmes, to choose between Dual I or Dual II. The Mono indication is red when in forced position.

**List of radio stations (p. 5)**

**Mode selector (p. 17)**

**DVD keys (p. 11)** and **Teletext keys (p. 8)**

**VCR keys (p. 17)** and **Teletext keys (p. 8)**

**Pre-set sound**  
Used to access a series of stored settings: Speech, Music, Theatre and return to Personal.

**TV Menu**  
To call up or exit the menus.

**Cursor**  
These 4 keys are used to move around the menus.

**Volume**  
To adjust the sound level.

**Mute**  
To mute or restore the sound.

**Validation (DVD/VCR)**

**16:9 modes (p. 9)**

**Number keys**  
Direct access to the programmes. For a 2 digit program, enter the 2nd digit before the dash disappears.

**Selection of EXT socket**  
Press several times to select EXT1 and AV (p. 16).

**Standby**  
Lets you place the TV set on standby. To turn on the TV, press P (p. 9), (0) to (9).

**DVD: subtiting language (p. 11)**  
**TV: teletext (p. 8)**

**DVD: OSD menu (p. 13)**  
**TV: screen information / permanent no.**  
To display / clear the program number, name (if it exists), time, audio mode and time remaining for the sleep feature. Press the key for 5 seconds to activate permanent display of the number. This key is also used to exit from the menu.

**TV / DVD mode**  
To switch the TV set to TV or DVD mode (p. 11).

**Pre-set image**  
Used to access a series of stored settings: Bright, Natural, Soft, Multimedia and return to Personal.

**DVD menu (p. 11)**

**Program selection**  
To access the next or previous programme. For some programmes, the title of the program will be displayed at the bottom of the screen.

**RADIO / TV mode**  
To switch the TV set to TV or Radio mode (p. 5).

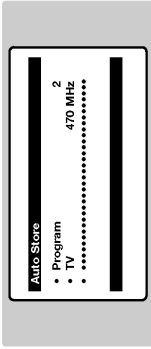
**Surround Sound**  
To activate / deactivate the surround sound effect. In stereo, this gives the impression that the speakers are further apart. For models equipped with Virtual Dolby Surround\*, you can experience Dolby Surround Pro Logic sound effects. In mono, a stereo spatial effect is simulated.

**Previous programme**  
To return to the previous programme.

\* "Dolby" and the double-D symbols DD are trademarks of the Dolby Laboratories Licensing Corporation. Manufactured under license of Dolby Laboratories Licensing Corporation.

## Quick installation

The first time you switch on the television, a menu appears on the screen and the tuning starts automatically.



If the menu is not displayed, press and hold down the **▲** and **▶** keys on the TV set for 5 seconds to start the tuning.

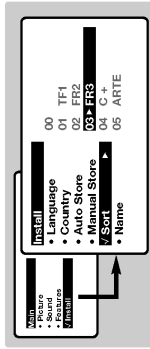
All the available TV programs and radio stations will be stored. This operation takes a few minutes. The display shows the progress of

the search and the number of programs found. At the end of the search, the menu disappears. To exit or interrupt the search, press **(M)**. If no program is found, consult the possible solutions p. 18.

- 1 If the transmitter or cable network sends the automatic sort signal, the programs will be numbered correctly. In this case, the installation is complete.
- 2 If this is not the case, you need to use the **Sort** menu to number the programs correctly. Some transmitters or cable networks broadcast their own sort parameters (region, language, etc.). In this case, indicate your choice using the **(◀)** keys and validate with **(▶)**.

## Program sort

1 Press key **(M)**. The Main menu is displayed on the screen.



- 2 With the cursor, select the **Install** menu followed by the **Sort** menu.
- 3 Select the programme you want to move using the **(◀)** keys and press **(▶)**.
- 4 Then use the **(◀)** keys to select the new number and validate with **(▶)**.
- 5 Repeat steps 3 and 4 for each program you wish to renumber.
- 6 To quit the menu, press **(M)**.

## Program name

If required, you can give a name to the programmes and external connectors. Note: on installation, the programs are named automatically when an identification signal is sent.

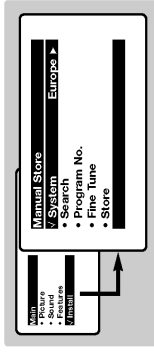
- 1 Press the **(M)** key.
- 2 With the cursor, select the **Install** menu, then **Name**.
- 3 Use the **(◀)** keys to select the programme to name or rename.
- 4 Use the **(◀)** keys to move around the name display area (5 characters) and the **(▶)** keys to select the characters.
- 5 When the name has been entered, use the **(▶)** key to exit. The name is stored.
- 6 Repeat steps 3 to 5 for each programme you wish to name.
- 7 To quit the menu, press **(M)**.

## Plug & Play

## Manual store

This menu is used to store the programmes one at a time.

- Press the **(M)** key.
- With the cursor, select the **Install** menu then **Manual store**:



- System:** select **Europe** (automatic detection<sup>\*)</sup> or **Western Europe** (BG standard), **Eastern Europe** (DK standard), **United Kingdom** (I standard) or **France** (L1 standard).

*\* Except for France (L1 standard), you must select choice **France**.*

- Search:** press **(S)**. The search starts. Once a programme is found, the scanning stops and its name is displayed (when available). Go to the next step. If you know the frequency of the required programme, this can be entered directly using the **(0)** to **(9)** keys.  
*If no picture is found, consult the possible solutions (p. 19).*
- Program No.:** enter the required number with the **(C)** or **(0)** to **(9)** keys.
- Fine Tune:** if the reception is not satisfactory, adjust using the **(C)** or **(S)** keys.
- Store:** press **(S)**. The program is stored.
- Repeat steps **4** to **6** for each programme to store.
- To quit the menu, press **(M)**.

## Other settings in the Install menu

- Press the **(M)** key and select the **Install** menu:
- Language:** to change the display language for the menu.
- Country:** to select your country (**GB** for Great Britain).  
*This setting is used for the search, automatic programme sort and teletext display. If your country does not appear in the list, select "...".*
- Auto Store:** to start automatic search for all programmes available in your region. If the transmitter or cable network sends the

automatic sort signal, the programmes will be numbered correctly. If this is not the case, you need to use the Sort menu to renumber the programmes (see p. 4).  
*Some transmitters or cable networks broadcast their own sort parameters (region, language, etc.). In this case, indicate your choice using the **(C)** or **(S)** keys and validate with **(S)**. To quit or interrupt the search, press **(M)**. If no picture is found, consult the possible solutions (p. 18).*

- To quit the menu, press **(M)**.

## Using the radio

### Choice of TV or radio mode

Press the **(M)** key on the remote control to switch the TV set to either TV or radio mode. In radio mode, the number, station name (if available), frequency and sound mode are displayed on the screen. To enter the station names, use the **Name** menu (p. 4).

### Program selection

Use the **(0)** or **(P)** keys to select the FM stations (from 1 to 40).

### List of radio stations

Press the **(M)** key to display the list of radio stations radio. Use the **(C)** or **(S)** keys to change station and the **(M)** key to exit.

### Using the radio menu

Use the **(M)** key to access the specific radio setting.

### Search for radio stations

If you used the quick installation, all available FM stations have already been stored. To start a new search, use the **Install - Auto Store** menu (for a complete search) or **Manual Store** (for a station by station search). The

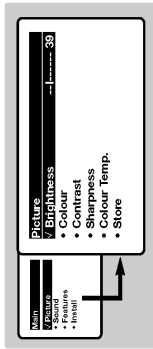
**Sort and Name** menus let you sort or name the radio stations. Operation of these menus is the same as for the TV menus.

### Screensaver (only available on certain versions)

Use the **(M)** key to activate/deactivate the radio screensaver.

## Picture settings

- Press **(M)** then **(S)**. The **Picture** menu is displayed:



- Use the **(C)** or **(S)** keys to select a setting and the **(C)** or **(S)** keys to adjust.

*Note: during the picture adjustment, only the selected line remains displayed. Press **(C)** or **(S)** to display the menu again.*

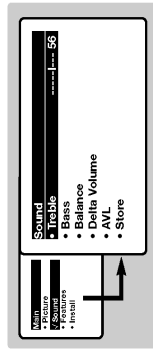
- Once the adjustments have been made, select **Store** and press **(S)** to store them. Press **(M)** to exit.

### Description of the adjustments:

- Brightness:** this changes picture brilliance.
- Colour:** this changes the intensity of the colour.
- Contrast:** this changes the difference between the light and dark tones.
- Sharpness:** this changes the picture definition.
- Colour Temp.:** this changes the colour rendering: **Cold** (bluer), **Normal** (balanced) or **Warm** (redder).
- Store:** to store the picture adjustments and settings (as well as the settings for **Contrast +** and **NR** in the **Features** menu).

## Sound adjustments

- Press **(M)**, select **Sound** **(S)** and press **(S)**. The **Sound** menu is displayed:



- Use the **(C)** or **(S)** keys to select a setting and the **(C)** or **(S)** keys to adjust.

- Once the adjustments have been made, select **Store** and press **(S)** to store these changes.

- To quit the menu, press **(M)**.

### Description of the settings:

- Treble:** this alters the high frequency sounds.
- Bass:** this alters the low frequency sounds.
- Balance:** this balances the sound on the left and right speakers.
- Delta Volume<sup>®</sup>:** this is used to compensate any volume discrepancies between the different programs or EXT sockets. This setting is available for programs 0 to 40 and the EXT sockets.
- AVL<sup>®</sup> (Automatic Volume Leveller):** this is used to limit increases in sound, especially on program change or advertising slots.
- Store:** this is used to store the sound settings.

*\* Only available on certain versions.*

## Feature settings

- Press **(M)**, select **Features** **(S)** and press **(S)**. You can adjust:

- Timer, Child Lock and Parental Cont.:** see next page

- Contrast +:** automatic adjustment of the picture contrast which permanently sets the darkest part of the picture to black.

- NR:** attenuates picture noise (snow) in difficult reception conditions.

*Caution: to store the **Contrast +** and **NR** settings, use the **Store** choice in the **Picture** menu.*

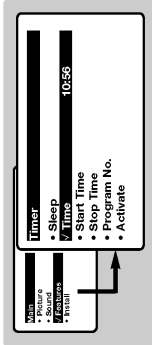
- Rotation** (only available on very large screen sets): large screen sets are sensitive to terrestrial magnetic field variations. This setting is used to compensate for this by adjusting the picture rotation.

- To quit the menu, press **(M)**.



### Timer function

- 1 Press the **Time** key.
- 2 With the cursor, select the **Features** menu then **Timer** :
- 3 **Sleep**: to select an automatic standby period.



This setting is also available via the **Time** key on the remote control.

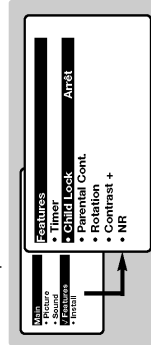
- 4 **Time**: enter the current time.  
*Note: the time is updated automatically each time the TV set is switched on via the teletext information on programme 1. If this program does not have teletext, the update will not take place.*

- 5 **Start Timer**: enter the start time.
  - 6 **Stop Timer**: enter the standby time.
  - 7 **Program No.**: enter the number of the programme for the wake-up alarm. For models equipped with a radio, you can select an FM station by using the **FM** keys (the **0** **9** keys are only used to select TV programs).
  - 8 **Activate**: the settings include:
    - **Once** for a single alarm.
    - **Daily** for each day.
    - **Stop** to cancel.
  - 9 Press **Time** to put the TV set in standby. It will automatically come on at the time programmed. If you leave the TV set on, it will just change programmes at the time entered (and will go to standby mode at the **Stop Time**).
- By combining the **TV lock** and **Timer** functions, you can restrict the period during which the TV set is used, for example by your children.

### TV lock

You can block certain programs or inhibit use of the TV set completely by locking the keys.

- 1 Press **Time**.
- 2 With the cursor, select the **Features** menu and position **Child Lock** to **On**.
- 3 Turn off the TV set and hide the remote control. The TV set cannot be used (except via the remote control).
- 4 To cancel, position **Child Lock** to **Off**.



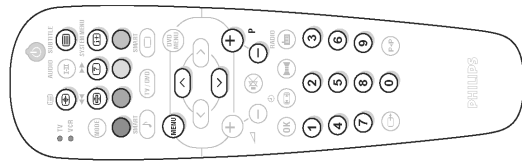
- 5 **Parental control**
  - 1 Press the **Time** key, select the **Features** menu then **Parental Cont.**:
  - 2 You must enter your secret access code.

### Teletext

Teletext is an information system broadcast by certain channels which can be consulted like a newspaper. It also offers access to subtitles for viewers with hearing problems or who are not familiar with the transmission language (cable networks, satellite channels, etc.).

- Press :
- You will obtain:**

This is used to call teletext, change to transparent mode and then exit. The summary appears with a list of items that can be accessed. Each item has a corresponding 3 digit page number.  
If the channel selected does not broadcast teletext, the indication 100 will be displayed and the screen will remain blank (in this case, exit teletext and select another channel).



- Selecting a page**
- Enter the number of the page required using the **0** to **9** or **(-)** **(+)** keys, **(<)** **(>)**. Example: page 120, enter **1** **2** **0**. The number is displayed top left, the counter turns and then the page is displayed. Repeat this operation to view another page.  
If the counter continues to search, this means that the page is not transmitted. Select another number.

- Direct access to the items**
- Coloured areas are displayed at the bottom of the screen. The 4 coloured keys are used to access the items or corresponding pages.  
The coloured areas flash when the item or the page is not yet available.

- Contents**
  - Enlarge a page**
- This returns you to the contents page (usually page 100).  
This allows you to display the top or bottom part of the page and then return to normal size.

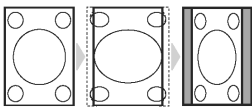
- Stop sub-page acquisition**
  - Hidden information**
- Certain pages contain sub-pages which are automatically displayed successively. This key is used to stop or resume sub-page acquisition. The indication **SP** appears top left.  
To display or hide the concealed information (games solutions).

- Favourite pages**
- Instead of the standard coloured areas displayed at the bottom of the screen, you can store 4 favourite pages on the first 40 channels which can then be accessed using the coloured keys (red, green, yellow, blue). Once set, these favourite pages will become the default every time teletext is selected.
- 1 Press the **Time** key to change to favourite pages mode.
  - 2 Display the teletext page that you want to store.
  - 3 Press the coloured key of your choice for 3 seconds. The page is now stored.
  - 4 Repeat the operation with the other coloured keys.
  - 5 Now when you consult teletext, your favourite pages will appear in colour at the bottom of the screen.
- To temporarily retrieve the standard items, press **Time**.  
To clear everything, and return the standard items as the default, press **Time** for 5 seconds.

### 16:9 Formats

The pictures you receive may be transmitted in 16:9 format (wide screen) or 4:3 format (conventional screen). 4:3 pictures sometimes have a black band at the top and bottom of the screen (letterbox format). This function allows you to optimise the picture display on screen.

#### If your television is equipped with a 4:3 screen.



Press the **[M]** key to select the different modes:

##### 4:3

The picture is reproduced in 4:3 format.

##### Expand 4:3

The picture is enlarged vertically. This mode is used to cancel the black bands when watching a programme in letterbox format.

##### Compress 16:9

The picture is compressed vertically into 16:9 format.

#### If your television is equipped with a 16:9 screen.

Press the **[M]** key to select the different modes:

*This TV set is also equipped with automatic switching which will select the correct-screen format, provided the specific signals are transmitted with the programmes.*

##### 4:3

The picture is reproduced in 4:3 format and a black band is displayed on either side of the picture. The picture may be progressively enlarged using the **[<=>]** keys.

##### Zoom 14:9

The picture is enlarged to 14:9 format, a thin black band remains on both sides of the picture. The **[<=>]** keys allow you to compress and move the image vertically to view the top or bottom of the picture (subtitles).

##### Zoom 16:9

The picture is enlarged to 16:9 format. This mode is recommended when displaying pictures which have black bands at the top and bottom (letterbox format). Use the **[<=>]** keys if you wish to compress and move the image vertically to view the top or bottom of the picture.

##### Subtitle Zoom

This mode is used to display 4:3 pictures using the full surface of the screen leaving the sub-titles visible. Use the **[<=>]** keys to increase or decrease the compression at the bottom of the screen.

##### Super Wide

This mode is used to display 4:3 pictures using the full surface of the screen by enlarging the sides of the picture. The **[<=>]** keys allow you to scroll the image up or down the screen.

##### Widescreen

This mode restores the correct proportions of pictures transmitted in 16:9 using full screen display.

*Note: when watching a DVD, you can only use the **[<=>]** keys while the screen format is displayed on the screen (otherwise you proceed to the DVD features).*

### Using the built-in DVD player

The built-in DVD player allows you to play DVD video disks as well as video and audio CDs (including finalised CD-Rs and CD-RWs). The disks can be recognised by their logo on the packaging.

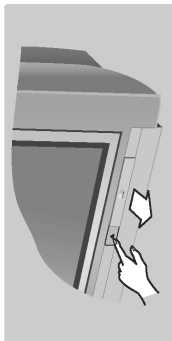


*Note: Generally, DVD films are not placed on the market at the same time in the various regions of the world. Accordingly, DVD players are provided with geographical zone codes. If you insert a disk which has a regional code that is different from that of your reader, you will see a message displayed on the screen. The disk cannot be played and you will have to remove it.*

### Inserting a disk

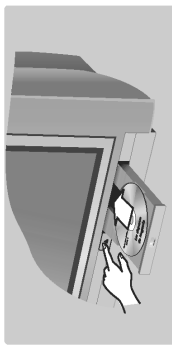
#### 1 Opening the drawer

Press the **EJECT** (**[A]**) button twice on the front, to the left of the drawer.



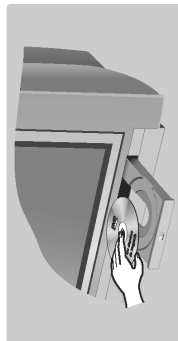
#### 3 Closing the drawer

Gently push the drawer back in or press the **EJECT** button next to the drawer to close. The disk will begin to play.



#### 2 Inserting the disk

Place the disk in the drawer, with the label facing upwards. Makes sure that it is positioned correctly in the recess.

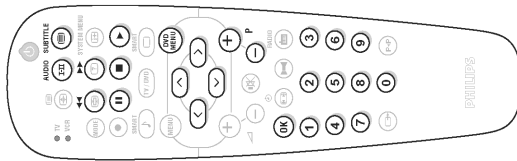


#### 4 Automatic play

Play begins automatically when the drawer closes. A status window appears on the left of the screen and indicates the current operation, the type of disk and its length. Next, the content of the disk is displayed.

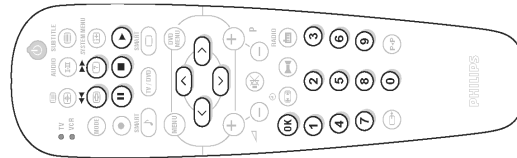


**Playing a DVD or video CD**



- Play** Once the disk has been inserted and the drawer closed, play begins automatically. Certain disks will ask you to select a heading from a menu. Use the buttons **0** **9** or **<** **>** then press **OK**.
- Stopping play** Press the **■** button to stop play. The default screen appears and displays information on the player status.
- Re-starting play ("resume" function)** When you stop a disk mid-play (by switching to TV mode, standby, ejecting the disk or pressing **■**), you can resume play at the exact point you stopped the disk. Simply press the **▶** button, then when you see the **▶** symbol (resume), press **▶** again (otherwise the disk will start playing from the beginning).  
*The resume function remembers the last 4 disks played. Simply re-insert the disk and when you see the **▶** symbol press **▶**.*
- Slow motion, fast forward and rewind** During play, press the **<** button to slow play down to 1/2, 1/4 or 1/8 speed. Press the **<<** or **>>** (or **<** **>**) button to fast forward or rewind at x4 or x32 speed. Press **▶** to return to normal speed.
- Freeze-frame** Press **■** (or **<**) to freeze the image. Press **■** again to move to the next frame or **▶** to resume play.
- Next / previous chapter** DVD disks are split into different chapters to allow certain scenes to be accessed directly. Use the **<** **P** **+** keys to access the previous or next chapter.
- DVD menu** Press the **☰** key. The DVD menu appears. Its contents will depend on the DVD. It allows you to access different sections, such as choice of language, direct access to certain scenes, special production notes, trailers, etc.  
Use the **<** **>** **<** **>** keys to select, **OK** confirm and **☰** exit.
- Language selection** Press the **☰** key to select the different languages available on the disk. A menu bar appears at the top of the screen, this will disappear after a few seconds.
- Subtitling language** Press the **☰** key to choose your subtitling language (choose **off** to deactivate it). The menu disappears after a few seconds.
- Ejecting the disk** Press the **EJECT** (**▲**) button located on the front of the television. Play stops, then after several seconds the drawer opens.
- Choice of TV or DVD mode** Press the **☰** key on the remote control to switch the TV set to either TV or DVD mode.

**Playing an audio CD**



- Play** Once the disk has been inserted and the drawer has closed, play begins automatically. A special menu appears on the screen, indicating the number of tracks, the total length of the disk, the current track and time.
- Changing tracks** Use the **<** **P** **+** keys on the remote control to change tracks or the **0** **9** keys to select the track of your choice.
- Fast forward and rewind** Press the **<<** key or **>>** to fast forward or rewind at x4 or x8 speed. Press **▶** to return to normal speed.  
*Note : this function is not available with MP3 audio CDs.*
- Pause / stop / eject** Press **■** to pause and **▶** to resume play. Press **■** to stop and the **EJECT** (**▲**) button located on the front of the television to eject the disk.
- Programming a favourite track selection** This function allows you to programme a selection of tracks into the memory.  
*Note : this function is not available with MP3 audio CDs.*
- 1 Press **■**.
  - 2 Use the **<** **>** key to select the trackline.
  - 3 Use the **<** **>** or **0** **9** keys to choose the number of the required track.
  - 4 Press **OK** to select it. The chosen number appears at the bottom of the screen.
  - 5 Repeat operations 1 and 4 for each favourite track you wish to select (maximum of 20 per disk).  
If you wish you can repeat the same track number several times.
  - 6 Press **▶** to begin playing your favourite tracks.
  - 7 To stop playing favourite tracks, position the on/off line of the menu on **off** (shown in white).
  - 8 To delete everything, select **Delete all** and press **OK**.  
*To delete one track only, simply select its number in the favourites list (at the bottom of the screen) and press **OK**.*
- Playing an MP3 audio CD** The MP3 CDs allow you to store several albums on a single disc. Use the **<** **>** keys to select the albums and the **<** **>** or **0** **9** keys to select certain sections.



## OSD menu

This menu allows you to access all the special functions of the DVD player.

Press the **(M)** key (SYSTEM MENU).

A menu bar appears at the top of the screen with symbols for each setting. Use the **(←)** **(→)** keys to select and make settings.



### Description of symbols:

- (M)** Preferential settings
  - (S)** Subtling language
  - (A)** Audio language
  - (F)** Frame by frame
  - (S)** Slow motion
  - (F)** Fast play
  - (Z)** Camera angle
  - (M)** Zoom
  - (T)** Titles
  - (C)** Chapters / sequences
  - (D)** Direct access by time
  - (F)** Favourite tracks
- Symbols shown in grey indicate that the setting is not available.*

## Using the OSD menu

### Audio and subtling language

On the menu bar, select **(A)** for the audio language and **(S)** for subtling. Use the **(←)** **(→)** keys to choose your settings.

*You can also access these settings with key **(M)** / **(M)**.*

### Frame by frame

Select **(F)** and press **(←)**. The image freezes. Use the **(←)** or **(→)** keys to move forwards or backwards frame by frame.

Press **(→)** to resume normal play.

### Slow motion / fast play

Select **(S)** for slow motion or **(F)** for fast play and press **(←)**. Use the **(←)** **(→)** keys to select the desired speed. To resume normal speed, press **(→)**.

### Camera angle

Some disks include sequences recorded from several camera angles. Generally a special icon will appear. Select **(Z)** on the menu bar and use the **(←)** **(→)** keys to select the desired angle.

### Zoom

Select **(M)** and press **(←)** **(→)** keys to activate

## Preferential settings

Press **(M)**. On the menu bar, select **(M)** and press **(←)** to display the preferential settings menu:



- **Karaoke vocal:** Only activate this function for playing special karaoke DVDs (the karaoke voices on the disk are then mixed into the normal stereo sound).

### Language preference:

- **Audio language:** to define the preferred language for the soundtracks of DVD films.
- **Subtitle:** to define the preferred language for subtitles on DVD films.

*If the preferred language is available on the disk, it will be selected by default. If not, the first language on the disk will be activated.*

### Display preferences:

- **Access control** (see next page)
- **Status window:** to turn off the display of the player's status window.
- **Low-power standby:** on a fixed image, the contrast automatically fades after 5 min.
- **PBC:** to activate/disable the indexing function available on certain video CDs.
- **Help text:** to display/clear the explanation of the icons on the OSD menu.

### Image preferences:

- **Black level shift:** to highlight the levels of black in the image (only works with NTSC images).

- **Video shift:** to move the image horizontally.

- **Sound preferences:** **(M)**

- **Digital output;** allows you to choose: **All**,

- **PCM** or **Off**.

- **Night mode;** optimises the sound dynamics for low-volume listening.

## Favourite tracks

This function allows you to program a selection of favourite tracks into the memory.

- 1 Press **(M)**. On the menu bar, select **(M)** and press **(←)** to display the menu.



- 2 Use the **(←)** **(→)** to select the title or chapterline.
- 3 Use the **(←)** **(→)** or **(0)** **(9)** keys to choose the number of the favourite **title** or **chapter**.

- 4 Press **(OK)** to select. The chosen number appears at the bottom of the screen.
- 5 Repeat operations 3 and 4 for each favourite title or chapter to be selected (maximum of 20 per disk).

*If you wish you can repeat the same track number several times.*

- 6 Press **(M)** to exit. The favourite tracks begin playing automatically.

### To stop playing favourite tracks

Position the **on/off** line of the menu on **off** (shown in white).

### To delete all

Select **Delete all** and press **(OK)**.  
*To delete one title or track only, simply select its number in the favourites list (at the bottom of the screen) and press **(OK)**.*

## Access control and lock

This function allows you to access various levels of security for the player.

- 1 Press **Ⓜ**, select **Ⓜ** and press **Ⓜ** until select menu **Ⓜ**.
- 2 Press **Ⓜ** twice to enter the **Access control** menu.
- 3 Enter the access code of your choice. You will be asked to enter it a second time to confirm. The **Access control** menu appears:



- 4 **Child lock:** select **Ⓜ** to switch this on or **Ⓜ** off (the 'on' symbol is shown in white). When the child lock is on, you will be asked to enter a

code to authorise the playing of DVD and video CD disks.

- 5 **Parental level:** to activate the level of security from 0 (off) to 8 (maximum).  
Certain DVD disks include security levels (1 to 8) with substitute scenes. For example, if you choose level 4, all scenes of level 4 (and below) will be played. Scenes of a higher level will not be played or will be replaced by substitute scenes. If the disk does not contain any substitute scenes, play stops and you will be asked to enter the 4-digit code.
- 6 **Change country:** select your country (this setting takes place in the parental level which depends on the country).
- 7 **Change code:** to modify the access code. You will be asked to enter it a second time to confirm.  
If you have forgotten your confidential code, enter the universal code **■ ■ ■ ■ ■**.
- 8 Press **Ⓜ** to exit.

## Play authorisation

When the **Child lock** function is switched on, you will be asked to enter your code to authorise the playing of DVD and video CD disks.

- 1 Insert a disk in the player. A dialogue field appears:



- 2 You will be asked to enter your secret code, either for **Play once**, or for **Play always**
- 3 If you select **Play once**, the disk will be able to be played as long as it is not removed from the player and the television remains switched on (and in DVD mode).
- 4 If you select **Play always** (with the **Ⓜ** key), playing of the disk will be permanently authorised.

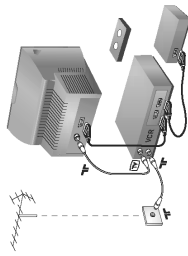
## Connecting peripheral equipment

### Video recorder

Carry out the connections shown opposite, using a good quality euroconnector cable.

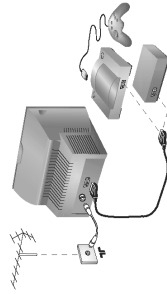
If your video recorder does not have a euroconnector socket, the only connection possible is via the aerial cable. You will therefore need to tune in your video recorder's test signal and assign it programme number 0 (refer to manual store, p. 6) to reproduce the video recorder picture, press **Ⓜ**.

**Video recorder with decoder**  
Connect the decoder to the second euroconnector socket of the video recorder. You will then be able to record scrambled transmissions.



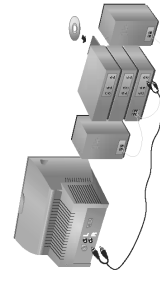
### Other equipment

**Satellite receiver, decoder, CDV, games, etc.**  
Carry out the connections shown opposite.



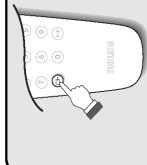
### Amplifier

Use a digital audio connecting cable and connect the television's "DIGITAL AUDIO OUT" output to a "DIG IN" input on the amplifier (amplifier with coaxial digital input).

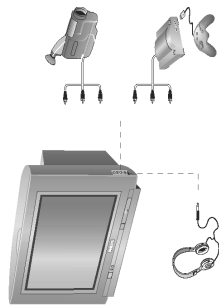


### To select connected equipment

Press the **Ⓜ** key to select **EXT1** and **AV** for connections on the front panel.  
Most equipment (decoder, video recorder) carries out the switching itself.



**Side connections**



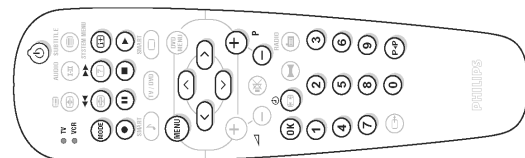
Make the connections as shown opposite. With the **⏻** key, select AV. For a monophonic device, connect the audio signal to the AUDIO L input. Use the **⏻** key to reproduce the sound on the left and right speakers of the TV set.

**Headphones**

When headphones are connected, the sound on the TV set will be cut. The **⏻** **P** **+** keys are used to adjust the volume level. The headphone impedance must be between 32 and 600 Ohms.

**VCR key**

The remote control lets you control the main functions of the VCR.



Press the **MODE** key to select the required mode : **VCR** (video recorder) or **TV**. The remote control indicator lights up to display the selected mode. It switches off automatically after 20 seconds if left idle. The remote control automatically returns to TV mode. The following keys are operational, depending on the equipment :

- ⏻** standby,
- ⏮** fast rewind,
- ⏭** fast forward,
- ⏺** recording,
- ⏸** pause
- ⏹** stop,
- ▶** play,
- ⌚** timer,
- ☰** menu,
- ⏪** cursor navigation and adjustments,
- OK** validation,
- 0-9** digit keys,
- P** programme selection,
- ⏮** index function.

\* Some functions are not available on all VCRs. The remote control is compatible with all VCRs using the RC5 standard.

**Tips**

**Poor reception**

The proximity of mountains or high buildings may be responsible for ghost pictures, echoing or shadows. In this case, try manually adjusting your picture; see **Fine Tuning** (p.5) or modify the orientation of the outside aerial. Does your antenna enable you to receive broadcasts in this frequency range (UHF or VHF band)?

In the event of difficult reception (snowy picture) switch the **NR** on the **Features** menu to **ON**. (p.6).

**No picture**

If the television does not switch on, please press the standby key **⏻** (located on the remote control) twice.

Have you connected the aerial socket properly? Have you chosen the right system? (p.5).

Poorly connected euroconnector cables or aerial sockets are often the cause of picture or sound problems (sometimes the connectors can become half disconnected if the TV set is moved or turned). Check all connections.

**Peripheral equipment gives a black and white picture**

To play a video cassette, check that it has been recorded under the same standard (PAL, SECAM, NTSC) which can be replayed by the video recorder.

**The remote control no longer works.**

Check that the mode selector on the side of the remote control is set to TV.

**No sound**

If on certain channels you receive a picture but no sound, this means that you do not have

the correct TV system. Modify the **System** setting (p.5).

**Teletext**

Are certain characters not displayed correctly? Check that the **Country** setting has been positioned correctly (p.5).

**Does the DVD player no longer work?**

Check that the disk does not have any fingerprints on it. Clean it with a soft cloth, wiping from the centre to the edge.

**Remote control**

The TV set does not react to the remote control; the indicator on the set no longer flashes when you use the remote control? Replace the batteries.

**Standby**

When you switch the TV set on it remains in standby mode and the indication **Locked** is displayed when you use the keys on the TV set? The **Child Lock** function is switched **On** (p.7).

If the set receives no signal for 15 mins, it automatically goes into standby mode. To save power, your set is fitted with components that give it a very low power consumption when in standby mode (less than 3 W).

**Still no results?**

If your TV set breaks down, never attempt to repair it yourself; contact your dealer's after-sales service.

**Cleaning the set**

Only use a clean, soft and lint-free cloth to clean the screen and the casing of your set. Do not use alcohol-based or solvent-based products.

**Glossary**

**RGB Signals:** These are 3 Red, Green and Blue video signals which directly drive the red, green and blue emitters in the cathode ray tube. Using these signals provides better picture quality.

**NICAM sound:** Process by which digital sound can be transmitted.

**System:** Television pictures are not broadcast in the same way in all countries. There are different standards: BG, DK, I, and L. The SYSTEM setting (p.6) is used to select these different standards. This is not to be confused with PAL or SECAM colour coding. PAL is used in most countries in Europe, Secam in France, Russia and most African countries. The United States and Japan use a different system called NTSC.

**16:9:** Refers to the ration between the length and height of the screen. Wide screen televisions have a ration of 16/9, conventional screen TV sets have a ration of 4/3.

## 4. Mechanical instructions

### 4.1 Service positions

The following PWB's or modules are added for DVD (see also PWB location drawing, chapter 1):

1. DVD Interface panel.
2. DVD Module.

**Note:** Figures can deviate slightly from the actual situation, due to different set executions.

#### 4.1.1 Accessing the DVD Interface panel

For better accessibility of the panel, remove the complete PWB from its bracket. Therefore release the two clamps at the side of the bracket [1] and lift the panel out [2], **Fig. 4-1**. (For measuring safely when the LSP is in service position, remove the bracket from the bottom tray by pulling it backward while lifting the clamp [3]. Then pull it upward [4], **Fig. 4-1** and replace the panel into the bracket.)

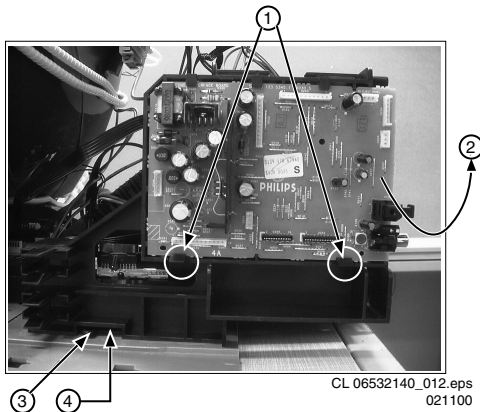


Figure 4-1

#### 4.1.2 Accessing the DVD Module

- Remove cables from connectors 1501, 1600, 1603 and 1604 from the DVD Module and 0264 (to eject panel) from the DVD Interface panel.
- Remove the DVD Interface module from the bottom tray. Therefore lift the clamp [3] and pull the module backward [4], **Fig. 4-1**. Place the module left from the TV.

Release the LSP from the bottom tray and shift it slightly to the right, until the DVD Module is accessible.

- Unscrew the two fixation screws [1], **Fig. 4-2**.
- Lift the DVD Module and remove it in a backward motion [2], **Fig. 4-2**.

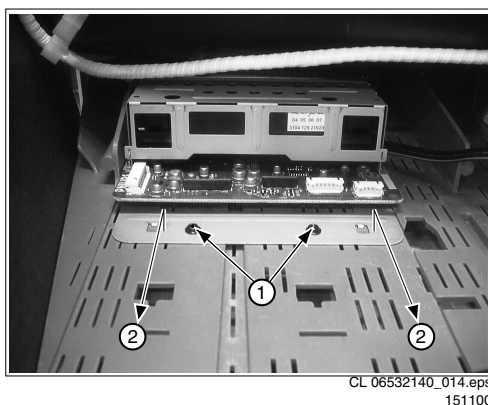


Figure 4-2

#### 4.1.3 Accessing the DVD board

- Remove the top-cover of the DVD. Therefore unscrew two fixation screws [1] and un-twist the two lugs [3] on the bottom-side, **Fig. 4-3**. The top-cover can now be removed.
- Press the DVD-tray release-catch [1] and slide the DVD tray forward, **Fig. 4-4** (be sure to push it in far enough, a screwdriver might be needed).
- Remove the bottom-cover of the DVD by unscrewing the four fixation screws [1], **Fig. 4-5**. The DVD board can now be accessed.

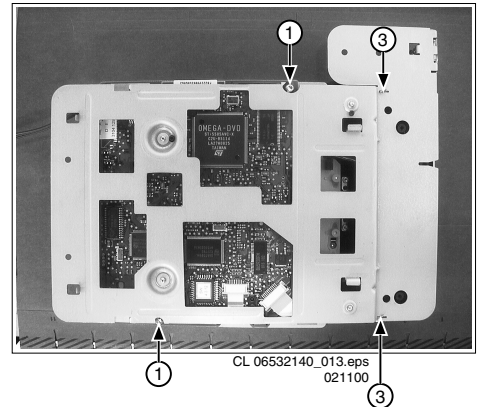


Figure 4-3

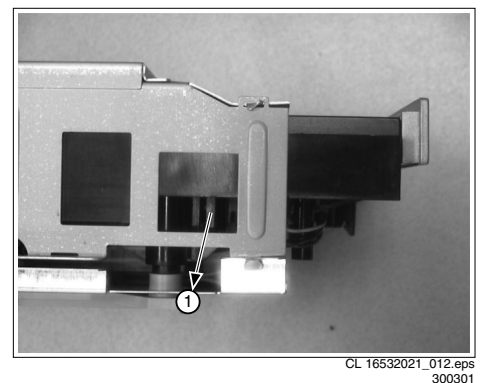


Figure 4-4

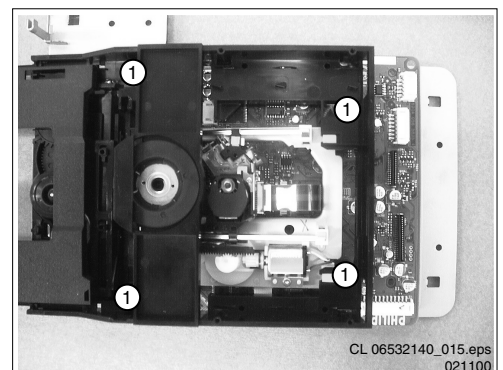


Figure 4-5

## 5. Service Modes, Error Codes and Fault Finding

Index of this chapter:

1. Test points.
2. Service Modes.
3. Problems and Solving Tips (related to CSM).
4. ComPair.
5. Error Codes.
6. The Blinking LED Procedure.
7. Protections.
8. Repair Tips.

### 5.1 Test Points

The chassis is equipped with test points printed on the circuit board assemblies. These test points refer to the functional blocks:

TEST POINT OVERVIEW L01		
Test point	Circuit	Diagram
A1-A2-A3-.....	Audio processing	A8, A9 / A11
C1-C2-C3-.....	Control	A7
F1-F2-F3-.....	Frame drive	A3
I1-I2-I3-.....	Tuner & IF	A4
L1-L2-L3-.....	Line drive	A2
P1-P2-P3-.....	Power supply	A1
S1-S2-S3-.....	Synchronisation	A6
V1-V2-V3-.....	Video processing	A5, B1

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210501

Figure 5-1 Test point overview

The numbering is in a logical sequence for diagnostics. Always start diagnosing within a functional block in the sequence of the relevant test points for that block.

Perform measurements under the following conditions:

- Service Default Alignment Mode.
- Video: colour bar signal.
- Audio: 3 kHz left, 1 kHz right.

### 5.2 Service Modes

Combined Service Default Alignment Mode (SDAM) offers several features for the service technician, while the Customer Service Mode (CSM) is used for communication between dealer and customer.

There is also the option of using ComPair, a hardware interface between a computer (see requirements) and the TV chassis or DVD module. It offers the ability of structured troubleshooting, error code reading and software version readout for TV DVD (Large Screen) chassis.

**Minimum requirements:** a Pentium processor, Windows 95/98, and a CD-ROM drive (see also paragraph 5.4).

#### 5.2.1 Service Default Alignment Mode (SDAM)

##### Purpose

- To create a predefined setting to get the same measurement results as given in this manual.
  - To override SW protections.
  - To start the blinking LED procedure.
  - To change option settings.
  - To display / clear the error code buffer.
  - To perform alignments.
- C = the feature of software diversity: N = stereo non-

##### Specifications

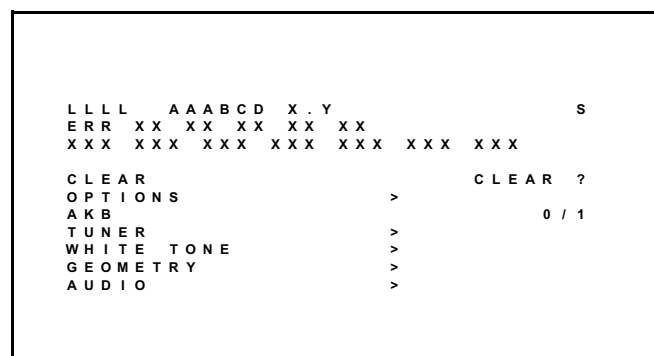
- Tuning frequency:
  - 475.25 MHz for PAL/SECAM.
- Colour system:
  - SECAM L for France.
  - PAL-BG for Europe and AP-PAL.
- All picture settings at 50 % (brightness, colour contrast, hue).
  - Bass, treble and balance at 50 %; volume at 25 %.
- All service-unfriendly modes (if present) are disabled, like:
  - (Sleep) timer,
  - Child/parental lock,
  - Blue mute,
  - Hotel/hospitality mode
  - Auto switch-off (when no 'IDENT' video signal is received for 15 minutes),
  - Skip / blank of non-favourite presets / channels,
  - Auto store of personal presets,
  - Auto user menu time-out.
- Operation hours counter (maximum of four digits displayed).
- Software version.
- Option settings.
- Error buffer reading and erasing.
- Software alignments.

##### How to enter SDAM

Use one of the following methods:

- Use a standard customer RC-transmitter and key in the code 062596 directly followed by the 'M' (menu) button.
- Short circuit jumper wires 9631 and 9641 on the mono carrier (see Fig. 8-1) and switch "on" the set. Then press the power button (remove the short circuit after start-up).  
**Caution:** Entering SDAM by shorten wires 9631 and 9641 will override the +8V-protection. Do this only for a short period. When doing this, the service-technician must know exactly what he is doing, as it could lead to damaging the set.
- Via ComPair.

After entering SDAM, the following screen is visible, with S at the upper right side for recognition.



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Figure 5-2 SAM menu

- **LLLL.** This is the operation hours counter. It counts the normal operation hours, not the standby hours (maximum four digits Displayed).
- **AAABCD-X.Y.** This is the software identification of the main micro controller:
  - A = the chassis name (L01).
  - B = the region (E = Europe, A = Asia Pacific, U = NAFTA, L = LATAM).
  - dBx, S = stereo dBx, M = mono, D = DVD



- D = the language cluster number:
- X = the main software version number.
- Y = the sub software version number.
- **S.** Indication of the actual mode (S = SDAM = Service Default Alignment mode).
- **Error buffers.** Five errors possible.
- **Option bytes.** Seven codes possible.
- **Clear.** Erase the contents of the error buffer. Select the CLEAR menu item and press the CURSOR RIGHT key. The content of the error buffer is cleared.
- **Options.** To set the Option Bytes. See chapter 8.3.1 for a detailed description.
- **AKB.** Disable (0) or enable (1) the 'black current loop' (AKB = Auto Kine Bias).
- **Tuner.** To align the Tuner. See chapter 8.3.2 for a detailed description.
- **White Tone.** To align the White Tone. See chapter 8.3.3 for a detailed description.
- **Geometry.** To align the set geometry. See chapter 8.3.4 for a detailed description.
- **Audio.** To align the Audio parameters. See chapter 8.3.5 for a detailed description.

#### How to navigate

- In SDAM, select menu items with the CURSOR UP/DOWN key on the remote control transmitter. The selected item will be highlighted. When not all menu items fit on the screen, move the CURSOR UP/DOWN key to display the next / previous menu items.
- With the CURSOR LEFT/RIGHT keys, it is possible to:
  - Activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.
- In SDAM, when you press the MENU button, the set will switch to the normal user menus (with the SDAM mode still active in the background). To return to the SDAM menu press the OSD / STATUS button.
- When you press the MENU key in a submenu, you will return to the previous menu.

#### How to store settings

To store the settings, leave the SDAM (at main menu figure 5-2 "SAM menu") with the 'Standby' button on the remote.

#### How to exit

Switch the set to STANDBY by pressing the power button on the remote control (if you switch the set "off" by removing the mains voltage, the set will return in SDAM when is switched "on" again). The error buffer is not cleared.

### 5.2.2 Customer Service Mode (CSM)

#### Purpose

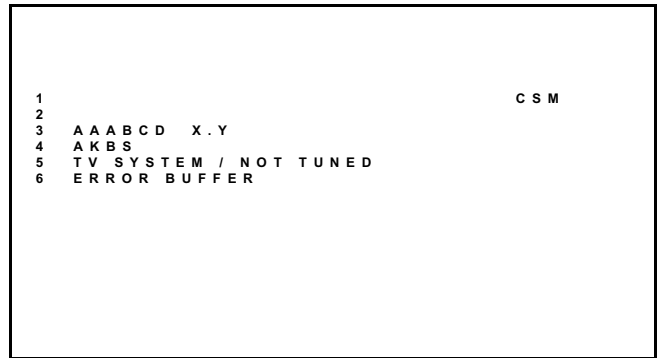
When a customer is having problems with his TV-set, he can call his dealer. The service technician can then ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge how severe the complaint is. In many cases, he can advise the customer how to solve the problem, or he can decide if it is necessary to visit the customer.

The CSM is a read only mode; therefore, modifications in this mode are not possible.

#### How to enter

To enter the CSM, key in the code '123654' on the user remote control.

After switching "on" the Customer Service Mode, the following screen will appear:



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Figure 5-3 CSM menu

1. Indication of the actual mode CSM = Customer Service Mode
2. Reserved item.
3. Software identification of the main micro controller (see paragraph 5.2.1 for an explanation)
4. Reserved item.
5. Indicates TV system and or not receiving an 'IDENT' signal on the selected source. In case no IDENT signal is present. It will display 'NOT TUNED'
6. Error code buffer (see paragraph 5.5 for more details). Displays the last five errors of the error code buffer.

#### How to exit

Use one of the following methods:

- Press one of the buttons 'Menu', 'OSD' or 'Standby' of the remote control keys.
- Switch "off" the TV set with the mains switch.

## 5.3 Problems and Solving Tips (Related to CSM)

### 5.3.1 Picture Problems

**Note:** Below described problems are all related to the TV settings. The procedures to change the value (or status) of the different settings are described.

#### No colours / noise in picture

Check CSM line 5. Wrong colour system installed. To change the setting:

1. Press the MENU button on the remote control.
2. Select the INSTALLATION sub menu.
3. Select and change the SYSTEM setting until picture and sound are correct.
4. Select the STORE menu item.

#### Colours not correct / unstable picture

Check CSM line 5. Wrong colour system installed. To change the setting:

1. Press the MENU button on the remote control.
2. Select the INSTALLATION sub menu.
3. Select and change the SYSTEM setting until picture and sound are correct.
4. Select the STORE menu item.

#### Picture too dark or too bright

Increase / decrease the BRIGHTNESS and / or the CONTRAST value when:

- The picture improves after you have pressed the 'Smart Picture' button on the remote control.
- The picture improves after you have switched on the Customer Service Mode

The new "Personal" preference value is automatically stored.

**White line around picture elements and text**

Decrease the SHARPNESS value when the picture improves after you have pressed the 'Smart Picture' button on the remote control.

The new "Personal" preference value is automatically stored.

**Snowy picture**

Check CSM line 5. If this line indicates 'NOT TUNED', check the following:

- No or bad antenna signal. Connect a proper antenna signal.
- Antenna not connected. Connect the antenna.
- No channel / pre-set is stored at this program number. Go to the INSTALL menu and store a proper channel at this program number.
- The tuner is faulty (in this case the CODES line will contain error number 10). Check the tuner and replace / repair if necessary.

**Snowy picture and/or unstable picture**

A scrambled or decoded signal is received.

**Black and white picture**

Increase the COLOR value when the picture improves after you have pressed the 'Smart Picture' button on the remote control.

The new "Personal" preference value is automatically stored.

**Menu text not sharp enough**

Decrease the CONTRAST value when the picture improves after you have pressed the 'Smart Picture' button on the remote control.

The new "Personal" preference value is automatically stored.

**5.3.2 Sound Problems****No sound or sound too loud (after channel change / switching on)**

Increase / decrease the VOLUME level when the volume is OK after you switched on the CSM.

The new "Personal" preference value is automatically stored.

**5.4 ComPair****5.4.1 Introduction**

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

**5.4.2 Specifications**

ComPair consists of a Windows based faultfinding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial or RS232 cable.

In case of the L01 chassis, the ComPair interface box and the TV communicate via a bi-directional service cable via the service connector (located on the Main panel, see also figure 8-1 suffix D).

The ComPair faultfinding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- **Automatic** (by communication with the television): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I2C level. ComPair can access the I2C bus of the television. ComPair can send and receive I2C commands to the micro controller of the television. In this way, it is possible for ComPair to communicate (read and write) to devices on the I2C busses of the TV-set.
- **Manually** (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extend. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions (**example: Does the screen give a picture? Click on the correct answer: YES / NO**) and showing you examples (**example: Measure test-point 17 and click on the correct oscillogram you see on the oscilloscope**). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question / answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some additional features like:

- Up or downloading of presets.
- Managing of preset lists.
- If both ComPair and SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink. **Example: Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the Monocarrier. Click on the 'Panel' hyperlink to automatically show the PWB with a highlighted capacitor C2568. Click on the 'Schematic' hyperlink to automatically show the position of the highlighted capacitor.**

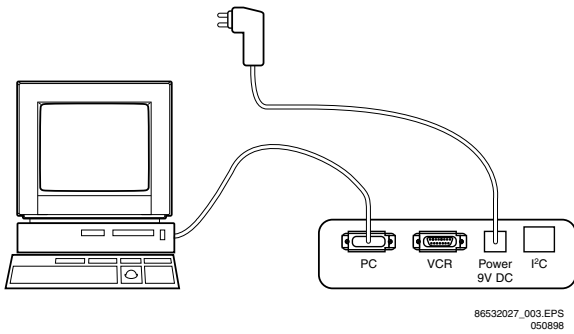
**5.4.3 How To Connect**

First install the ComPair Browser software before connecting ComPair to the L01.1E-DVD (see the Quick Reference Card for installation instructions). In the L01.1E-DVD, you must diagnose the TV (including the DVD-interface) and the DVD-module separately. Always start the diagnosis by connecting the ComPair tool to the TV-set. If something is wrong with the DVD-module, ComPair will explain how and when to connect the ComPair tool to the DVD-module.

**Connection to the TV-set**

1. Connect the RS232 interface cable between a free serial (COM) port of your PC and the PC connector (marked with 'PC') of the ComPair interface.
2. Connect the mains adapter to the supply connector (marked with 'POWER 9V DC') on the ComPair interface.
3. Switch the ComPair interface "off".
4. Switch the television set "off" with the mains switch.
5. Connect the ComPair interface cable (3122 785 90004) between the connector on the rear side of the ComPair interface (marked with 'I2C') and the ComPair connector 0217 on the mono carrier (see figure 8-1 in chapter 'Alignments').
6. Plug the mains adapter in the mains outlet and switch "on" the interface. The green and red LEDs light up together. The red LED extinguishes after approx. 1 second while the green LED remains lit.

- Start the ComPair program and read the 'introduction' chapter.



**Figure 5-4 ComPair set-up**

#### Connection to the DVD-module

Follow the instructions given on the screen for further diagnosis.

- Use the ComPair DVD interface cable (3122 785 90017) to connect the DVD-module to the ComPair interface.

#### 5.4.4 How To Order

ComPair order codes:

- Starter kit ComPair32/SearchMan32 software and ComPair interface (excl. transformer): 3122 785 90450.
- ComPair interface (excluding transformer): 4822 727 21631.
- Starter kit ComPair32 software (registration version): 3122 785 60040.
- Starter kit SearchMan32 software: 3122 785 60050.
- ComPair32 CD (update): 3122 785 60070.
- SearchMan32 CD (update): 3122 785 60080.
- ComPair interface cable for TV set: 3122 785 90004.
- ComPair interface cable for DVD-module: 3122 785 90017

## 5.5 Error Codes

### 5.5.1 Error Buffer

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is written at the left side and all other errors shift one position to the right.

### 5.5.2 How To Read The Error Buffer

You can read the error buffer in 3 ways:

- On screen via the SDAM (only if you have a picture).  
Examples:
  - ERROR: 0 0 0 0 0 : No errors detected.
  - ERROR: 6 0 0 0 0 : Error code 6 is the last and only detected error.
  - ERROR: 9 6 0 0 0 : Error code 6 was first detected and error code 9 is the last detected (newest) error.
- Via the blinking LED procedure (when you have no picture). See next paragraph.
- Via ComPair.

### 5.5.3 How To Clear The Error Buffer

The error code buffer is cleared in the following cases:  
By activation of the CLEAR command in the SDAM menu:  
If the content of the error buffer has not changed for 50 hours, it resets automatically.

#### Notes:

- When leaving SDAM by disconnecting the set from the mains, the error buffer is not reset.

### 5.5.4 Error Codes

In case of non-intermittent faults, clear the error buffer before you begin the repair. These to ensure that old error codes are no longer present.

If possible, check the entire contents of the error buffer. In some situations an error code is only the result of another error code and not the actual cause (e.g., a fault in the protection detection circuitry can also lead to a protection).

**Table 5-1 Error code overview**

Error	Device	Error description	Check item	Diagram
0	Not applicable	No Error		
1	Not applicable	X-Ray Protection (USA)	2465, 7460	A2
2	Not applicable	Horizontal Protection	7460, 7461, 7462, 7463, 6467	A2
3	TDA8359TDA9302	Vertical Protection	7861, VlotAux+13v	A2, A3
4	MSP34X5TDA9853	MSP I2C identification error	7831, 7861	A9 or A11
5	TDA95XX	POR 3.3V / 8V Protection	7200, 7560, 7480	A1, A2, A5, A6, A7
6	I2C bus	General I2C bus error	7200, 3624, 3625	A7
7	-	-	-	-
8	Not applicable	E/W Protection	7400, 3405, 3406, 3400	A2
9	M24C08	NVM I2C ident. error	7602, 3611, 3603, 3604	A7
10	Tuner	Tuner I2C ident. error	1000, 7482	A2, A4
11	TDA6107/8	Black current loop protection	7330, RGB amps, CRT	B1, B2
12	M65669	PIP I2C ident. error (USA)	7803	P
13	SBF 1005T	Voice Control I2C ident. error	7004 Hello IC	Voice Control cct
14	Not applicable	DVD Loader I2C ident. error	DVD Loader	DVD Loader SD3.11 (SM)

## 5.6 The Blinking LED Procedure

Via this procedure you can make the contents of the error buffer visible via the front LED. This is especially useful when there is no picture.

When the SDAM is entered, the LED will blink the contents of the error-buffer.

- 'n' short blinks (where 'n' = 1 - 14),
- When all the error-codes are displayed, the sequence finishes with a LED blink of 3 s,
- The sequence starts again.

Example of error buffer: **12 9 6 0 0**

After entering SDAM:

- **12** short blinks followed by a pause of 3 s,
- **9** short blinks followed by a pause of 3 s,
- **6** short blinks followed by a pause of 3 s,
- **1** long blink of 3 s to finish the sequence,
- The sequence starts again.

## 5.7 Protections

If a fault situation is detected an error code will be generated and if necessary the set will be put in the protection mode. Blinking of the red LED at a frequency of 3 Hz indicates the protection mode. In some error cases the microprocessor does not put the set in the protection mode. The error codes of the error buffer and the blinking LED procedure can be read via the service menu (SDAM), or via ComPair.

To get a quick diagnosis the chassis has two service modes implemented:

- The Customer Service Mode (CSM).
- The Service Default Alignment Mode (SDAM). Start-up of the set in a predefined way and adjustment of the set via a menu and with the help of test patterns.

See for a detailed description Chapter 9.7.6.

## 5.8 Repair Tips

Below some failure symptoms are given, followed by a repair tip.

- **Set is dead and makes a hiccupping sound.** 'MainSupply' is available. Hiccupping stops when desoldering L5561, meaning that problem is in the 'MainSupply' line. No output voltages at LOT, no horizontal deflection. Reason: line transistor 7460 is defective.
- **Set is dead, and makes no sound.** Check power supply IC 7520. Result: voltage at pins 1, 3, 4, 5 and 6 are about 180 V and pin 8 is 0 V. The reason why the voltage on these pins is so high is because the output driver (pin 6) has an open load. That is why MOSFET 7521 is not able to switch. Reason: feedback resistor 3523 is defective.  
**Caution:** be careful measuring on the gate of 7521; circuitry is very high ohmic and can easily be damaged!
- **Set is in hiccup mode and shuts down after 8 s.** Blinking LED (set in SDM mode) indicates error 5. As it is unlikely that P 'POR' and '+8V protection' happen at the same time, measure the '+8V'. If this voltage is missing, check transistor 7480.
- **Set is non-stop in hiccup mode.** Set is in over current mode; check the secondary sensing (opto coupler 7515) and the 'MainSupply' voltage. Signal 'Stdby\_con' must be logic low under normal operation conditions and goes to high (3.3 V) under standby and fault conditions.
- **Set turns on, but without picture and sound.** The screen shows snow, but OSD and other menus are okay. Blinking LED procedure indicates error 11, so problem is expected in the tuner (pos. 1000). Check presence of supply voltages. As 'Vlotaux+5V' at pin 5 and 7 are okay, 'VT\_supply' at pin 9 is missing. Conclusion: resistor 3460 is defective.

- **Set turns on, but with a half screen at the bottom. Sound is okay.** Blinking LED (set in SDM mode) indicates error 3. Check 'Vlotaux+11V' and '+50V'. If they are okay, problem is expected in the vertical amplifier IC 7471. Measure with a scope the waveform on pin 17 of the UOC. Measure also at pin 1 of IC 7471. If here the signal is missing, a defective resistor R3244 causes the problem.

## 5.9 Regions code setting

### Notes:

- This information is confidential and may not be distributed.
- Only a qualified service person is allowed to reprogram the mono board.

### 5.9.1 Reprogramming the Mono Board

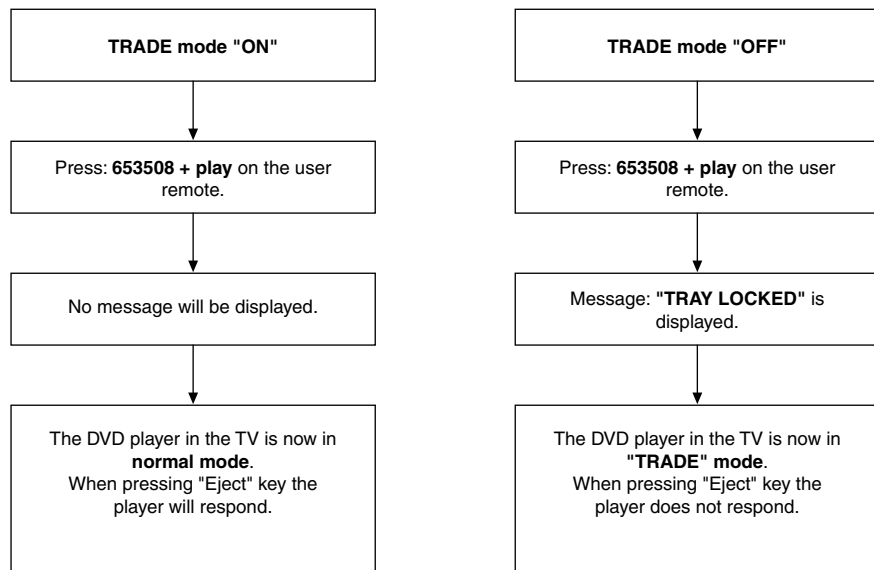
After reset of NV-memory or repair of the mono board, all the customer settings and also the region code will be lost. Reprogramming of the mono board will put the player back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.

Reprogramming will be done by way of the remote control.

1. Go to DVD mode by pressing "TV/DVD" button.
2. Put the player in stop mode, no disc loaded.
3. Reprogramming is limited to 25 times: when the counter reaches 25, reprogramming is not possible anymore!
4. Press the following keys on the remote control:
  1. 'PLAY' followed by the numerical keys '1 5 9'.
  2. The display at the screen shows now: '-----' (12 dashes)
  3. Enter region code by keying in:
    - Region code for NAFTA: 1 4 0 0 0 0 0 0 0 0 0 + 'PLAY' key.
    - Region code for Europe: 1 4 1 0 0 0 0 0 0 0 0 + 'PLAY' key.
    - Region code for AP: 1 4 3 0 0 0 0 0 0 0 0 + 'PLAY' key.
    - Region code for LATAM: 1 4 6 0 0 0 0 0 0 0 0 + 'PLAY' key.
5. The TV screen will turn blue during a short time, to confirm that the mono board has been reprogrammed.

### 5.9.2 Trade Mode

When the TV DVD is in Trade Mode, the TV DVD cannot be controlled by means of the front key buttons, but only by means of the remote control.



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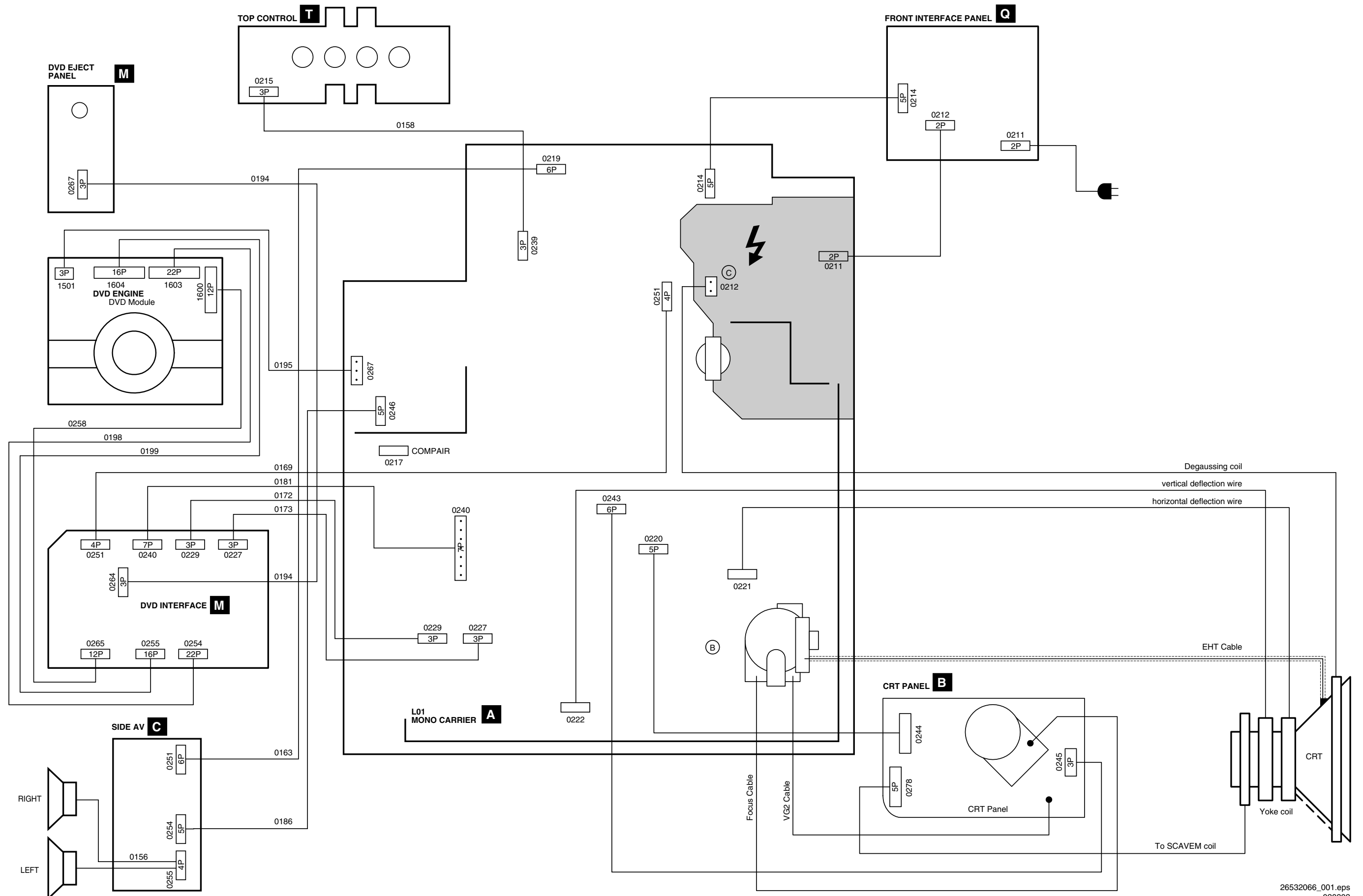
Figure 5-5 DVD trade mode flow chart

For more information on test instructions and diagnostic software description of the DVD module see service manual DVD-module SD3 (3122 785 11010).

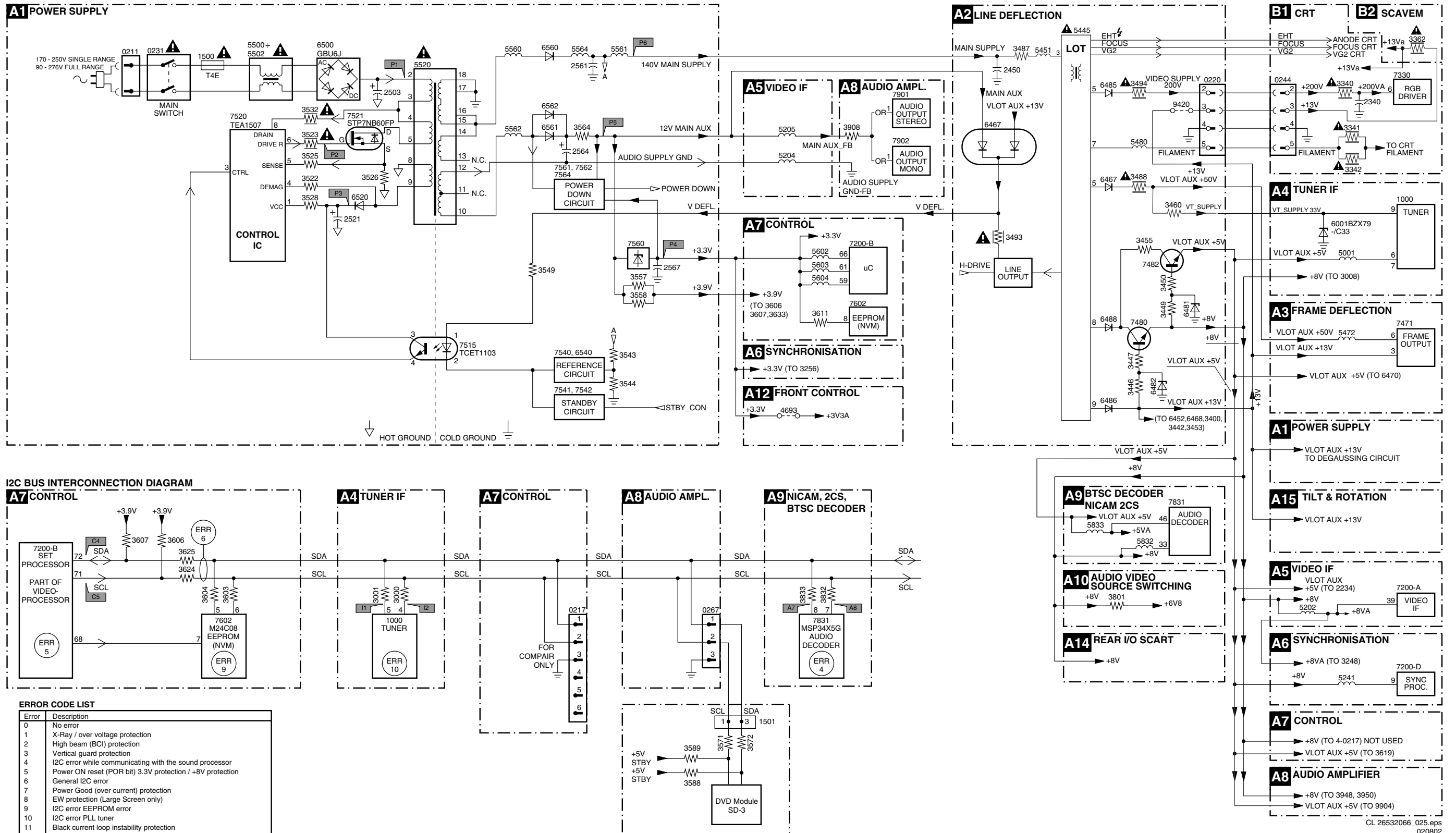


# 6. Wiring, I2C and Supply Voltage Diagram

## Wiring Diagram



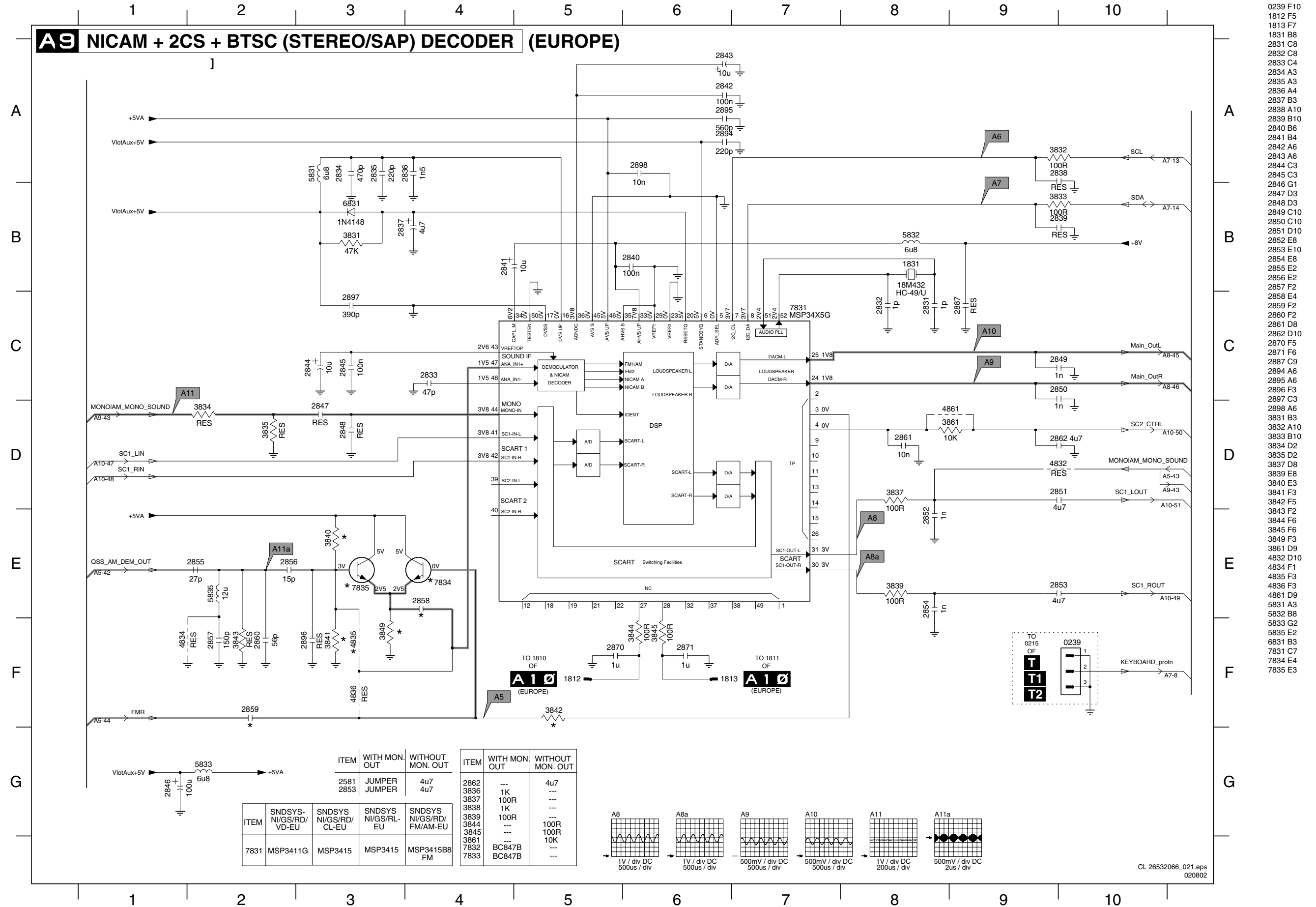
I2C and Supply Voltage Diagram





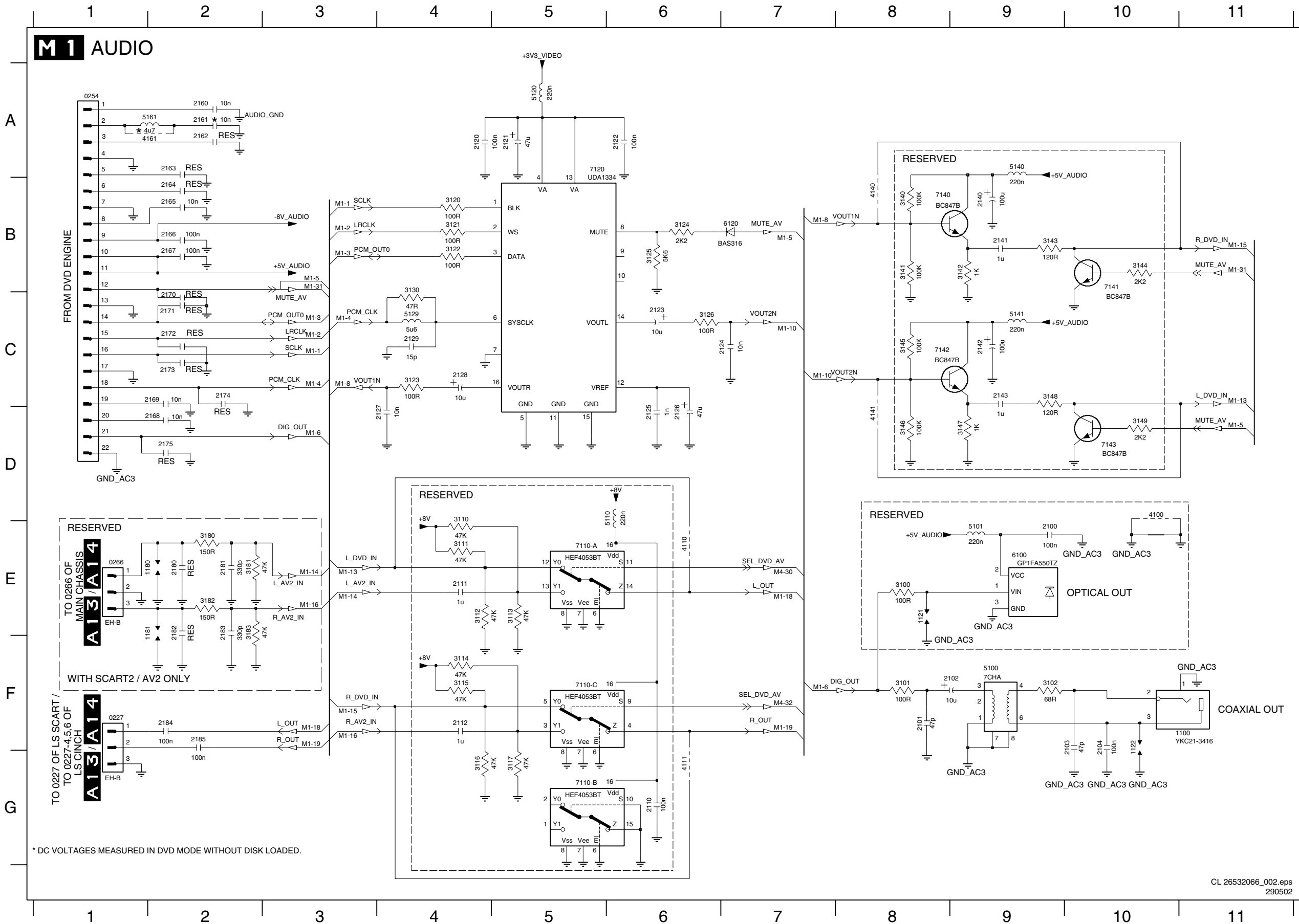
# 7. Electrical Diagrams and PWB's

## Mono Carrier: NICAM + 2CS + BTSC (Stereo / SAP) Decoder



- 0239 F10
- 1812 F5
- 1813 F7
- 1831 B8
- 2831 C8
- 2832 C8
- 2833 C4
- 2834 A3
- 2835 A3
- 2836 A4
- 2837 B3
- 2838 A10
- 2839 B10
- 2840 B6
- 2841 B4
- 2842 A6
- 2843 A6
- 2844 C3
- 2845 C3
- 2846 G1
- 2847 D3
- 2848 D3
- 2849 C10
- 2850 C10
- 2851 D10
- 2852 E8
- 2853 E10
- 2854 E8
- 2855 E2
- 2856 E2
- 2857 F2
- 2858 E4
- 2859 F2
- 2860 F2
- 2861 D8
- 2862 D10
- 2870 F5
- 2871 F6
- 2887 C9
- 2894 A6
- 2895 A6
- 2896 F3
- 2897 C3
- 2898 A6
- 3831 B3
- 3832 A10
- 3833 B10
- 3834 D2
- 3835 D2
- 3837 D8
- 3839 E8
- 3840 E3
- 3841 F3
- 3842 F5
- 3843 F2
- 3844 F6
- 3845 F6
- 3849 F3
- 3861 D9
- 4832 D10
- 4834 F1
- 4835 F3
- 4836 F3
- 4861 D9
- 5831 A3
- 5832 B8
- 5833 G2
- 5835 E2
- 6831 B3
- 7831 C7
- 7834 E4
- 7835 E3

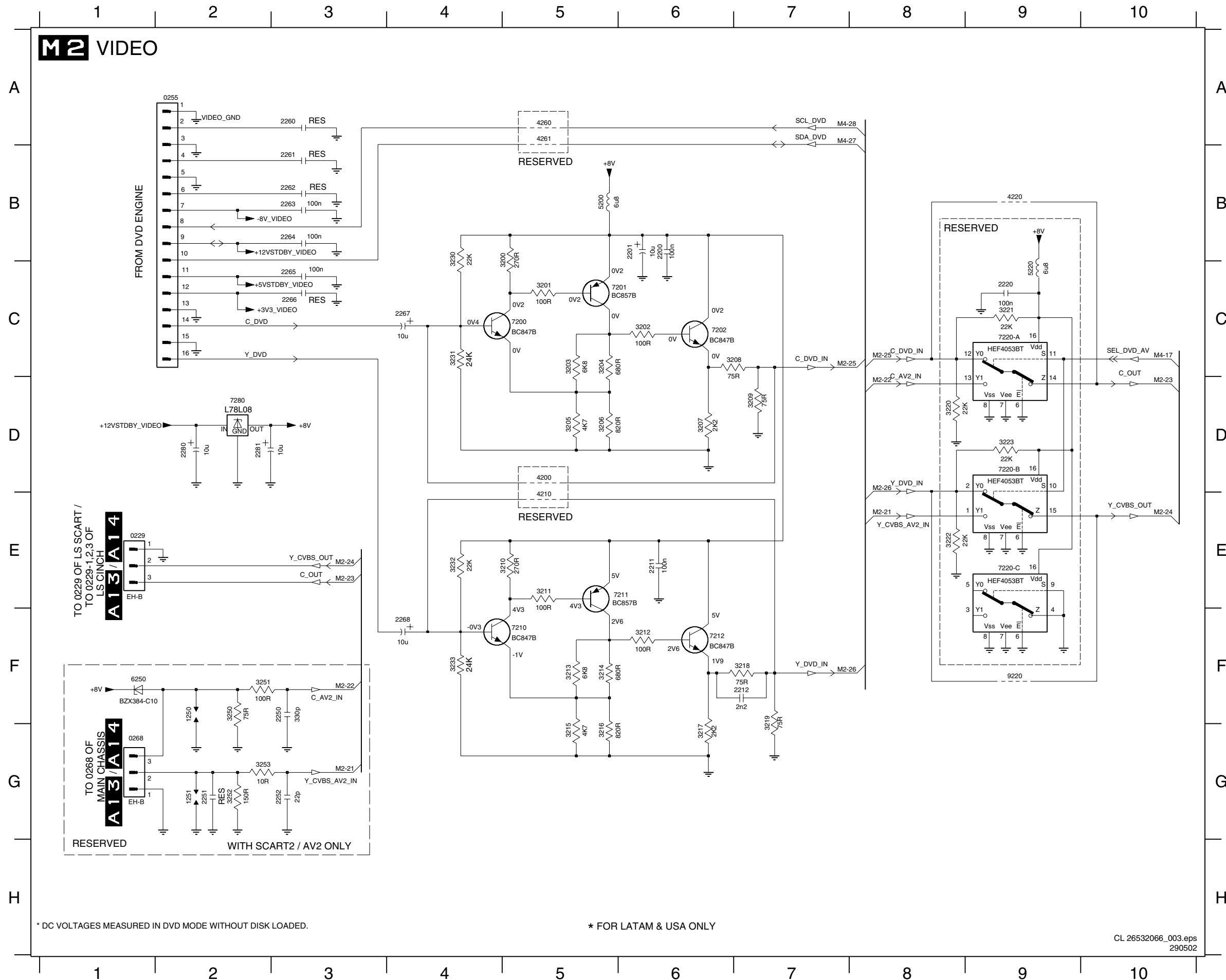
DVD Interface Panel: Audio



- 0227 F1
- 0254 A1
- 0266 E1
- 1100 F10
- 1121 E8
- 1122 F10
- 1180 E1
- 2100 E9
- 2101 F8
- 2102 F9
- 2103 F10
- 2104 F10
- 2110 G6
- 2111 E4
- 2112 F4
- 2120 A4
- 2121 A5
- 2122 A6
- 2123 C6
- 2124 C7
- 2125 D6
- 2126 D6
- 2127 D4
- 2128 C4
- 2129 C4
- 2140 B9
- 2141 B9
- 2142 C9
- 2143 C9
- 2160 A2
- 2161 A2
- 2162 A2
- 2163 A2
- 2164 B2
- 2165 B2
- 2166 B2
- 2167 B2
- 2168 D2
- 2169 C2
- 2170 C2
- 2171 C2
- 2172 C2
- 2173 C2
- 2174 C2
- 2175 D2
- 2180 E2
- 2181 E2
- 2182 E2
- 2183 E2
- 2184 F2
- 2185 F2
- 3100 E8
- 3101 F8
- 3102 F9
- 3110 E4
- 3111 E4
- 3112 E4
- 3113 E5
- 3114 F4
- 3115 F4
- 3116 G4
- 3117 G5
- 3120 B4
- 3121 B4
- 3122 B4
- 3123 C4
- 3124 B6
- 3125 B6
- 3126 C6
- 3130 C4
- 3140 B8
- 3141 B8
- 3142 B9
- 3143 B9
- 3144 B10
- 3145 C8
- 3146 D8
- 3147 D9
- 3148 C9
- 3149 D10
- 3180 E2
- 3181 E2
- 3182 E2
- 3183 E2
- 4100 D10
- 4110 E6
- 4111 G6
- 4140 B8
- 4141 D8
- 4161 A2
- 5100 F9
- 5101 E9
- 5110 D6
- 5120 A5
- 5129 C4
- 5140 A9
- 5141 C9
- 5161 A2
- 6100 E9
- 6120 B7
- 7110-A E5
- 7110-B G5
- 7110-C F5
- 7120 A5
- 7140 B8
- 7141 B10
- 7142 C8
- 7143 D10

\* DC VOLTAGES MEASURED IN DVD MODE WITHOUT DISK LOADED.

DVD Interface Panel: Video

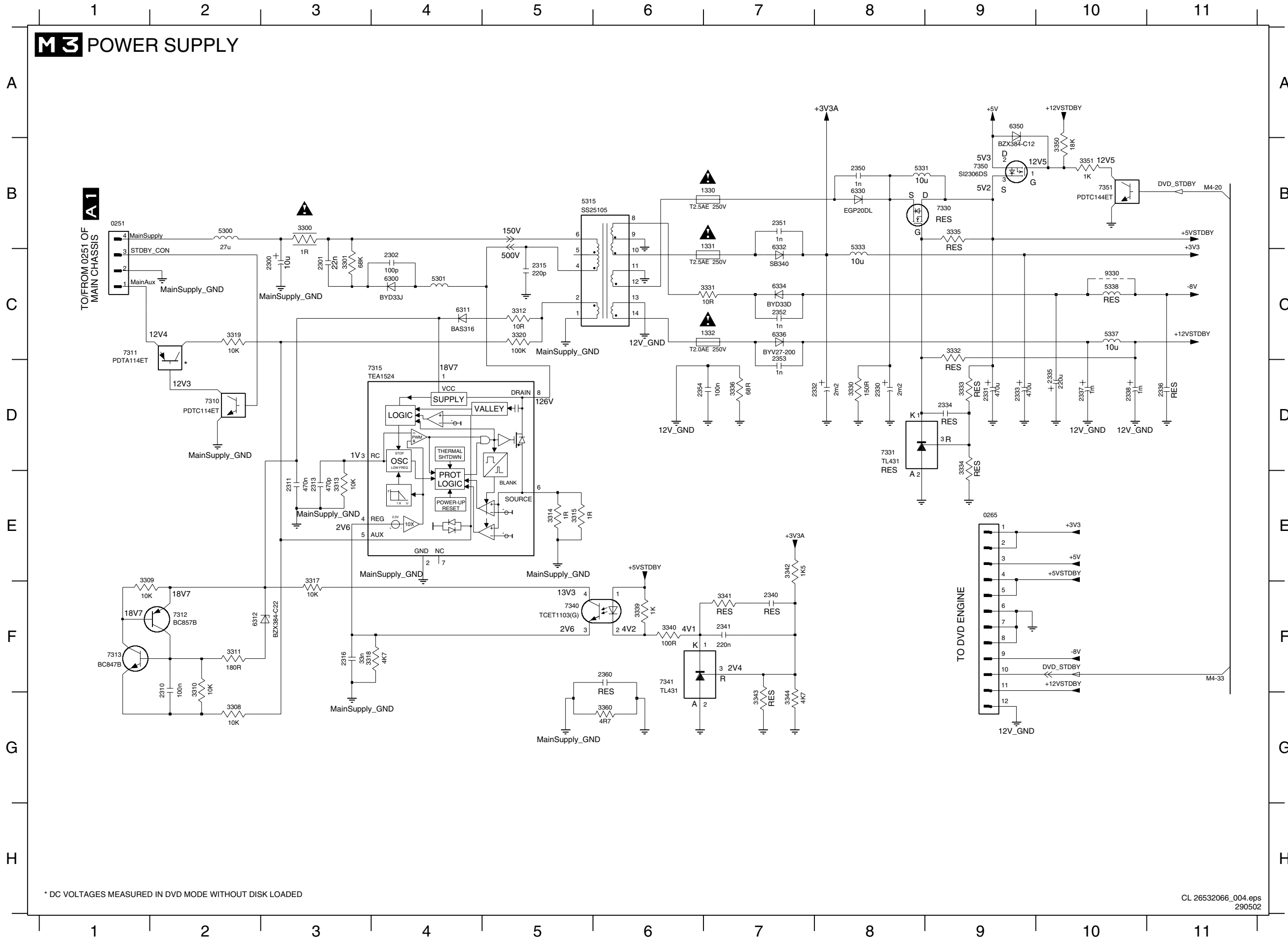


- 0229 E1
- 0255 A2
- 0268 G1
- 1250 F2
- 1251 G2
- 2200 B6
- 2201 B6
- 2211 E6
- 2212 F7
- 2220 C9
- 2250 F3
- 2251 G2
- 2252 G3
- 2260 A3
- 2261 B3
- 2262 B3
- 2263 B3
- 2264 B3
- 2265 C3
- 2266 C3
- 2267 C4
- 2268 F4
- 2280 D2
- 2281 D2
- 3200 B5
- 3201 C5
- 3202 C6
- 3203 C5
- 3204 C5
- 3205 D5
- 3206 D5
- 3207 D6
- 3208 C7
- 3209 D7
- 3210 E5
- 3211 E5
- 3212 F6
- 3213 F5
- 3214 F5
- 3215 G5
- 3216 G5
- 3217 G6
- 3218 F7
- 3219 F7
- 3220 D8
- 3221 C9
- 3222 E8
- 3223 D9
- 3230 B4
- 3231 C4
- 3232 E4
- 3233 F4
- 3250 F2
- 3251 F2
- 3252 G2
- 3253 G2
- 4200 D5
- 4210 E5
- 4220 B9
- 4260 A5
- 4261 A5
- 5200 B5
- 5220 C9
- 6250 F1
- 7200 C5
- 7201 C5
- 7202 C6
- 7210 F5
- 7211 E5
- 7212 F6
- 7220-A C9
- 7220-B D9
- 7220-C E9
- 7280 D2
- 9220 F9

\* DC VOLTAGES MEASURED IN DVD MODE WITHOUT DISK LOADED.

\* FOR LATAM & USA ONLY

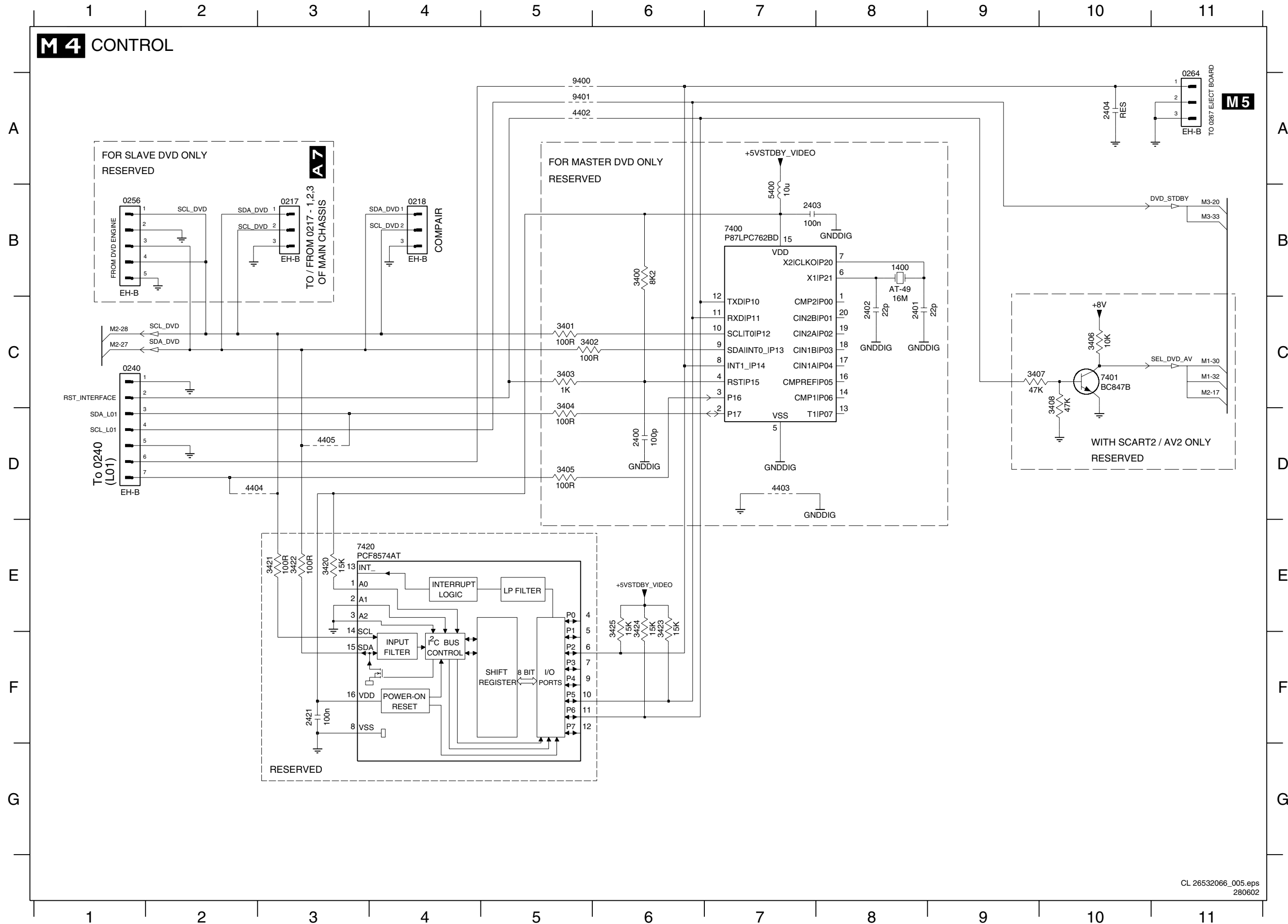
### DVD Interface Panel: Power Supply



- 0251 B1
- 0265 E9
- 1330 B7
- 1331 B7
- 1332 C7
- 2300 C3
- 2301 C3
- 2302 C4
- 2310 F2
- 2311 E3
- 2313 E3
- 2315 C5
- 2316 F3
- 2330 D8
- 2331 D9
- 2332 D8
- 2333 D9
- 2334 D9
- 2335 D10
- 2336 D11
- 2337 D10
- 2338 D10
- 2340 F7
- 2341 F7
- 2350 B8
- 2351 B7
- 2352 C7
- 2353 D7
- 2354 D6
- 2360 F6
- 3300 B3
- 3301 C3
- 3308 G2
- 3309 F1
- 3310 F2
- 3311 F2
- 3312 C5
- 3313 E3
- 3314 E5
- 3315 E5
- 3317 F3
- 3318 F3
- 3319 C2
- 3320 C5
- 3330 D8
- 3331 C7
- 3332 C9
- 3333 D9
- 3334 D9
- 3335 B9
- 3336 D7
- 3339 F6
- 3340 F6
- 3341 F7
- 3342 E7
- 3343 G7
- 3344 G7
- 3350 B10
- 3351 B10
- 3360 G6
- 5300 B2
- 5301 C4
- 5315 B5
- 5331 B8
- 5333 C8
- 5337 C10
- 5338 C10
- 6300 C4
- 6311 C4
- 6312 F2
- 6330 B8
- 6332 C7
- 6334 C7
- 6336 C7
- 6350 A9
- 7310 D2
- 7311 C1
- 7312 F2
- 7313 F1
- 7315 D3
- 7330 B9
- 7331 D8
- 7340 F5
- 7341 F6
- 7350 B9
- 7351 B10
- 9330 C10

\* DC VOLTAGES MEASURED IN DVD MODE WITHOUT DISK LOADED

DVD Interface Panel: Control



- 0217 B3
- 0218 B4
- 0240 C1
- 0256 B1
- 0264 A11
- 1400 B8
- 2400 D6
- 2401 C8
- 2402 C8
- 2403 B7
- 2404 A10
- 2421 F3
- 3400 B6
- 3401 C5
- 3402 C5
- 3403 C5
- 3404 D5
- 3405 D5
- 3406 C10
- 3407 C9
- 3408 C10
- 3420 E3
- 3421 E3
- 3422 E3
- 3423 E6
- 3424 E6
- 3425 E6
- 4402 A5
- 4403 D7
- 4404 D2
- 4405 D3
- 5400 B7
- 7400 B7
- 7401 C10
- 7420 E3
- 9400 A5
- 9401 A5



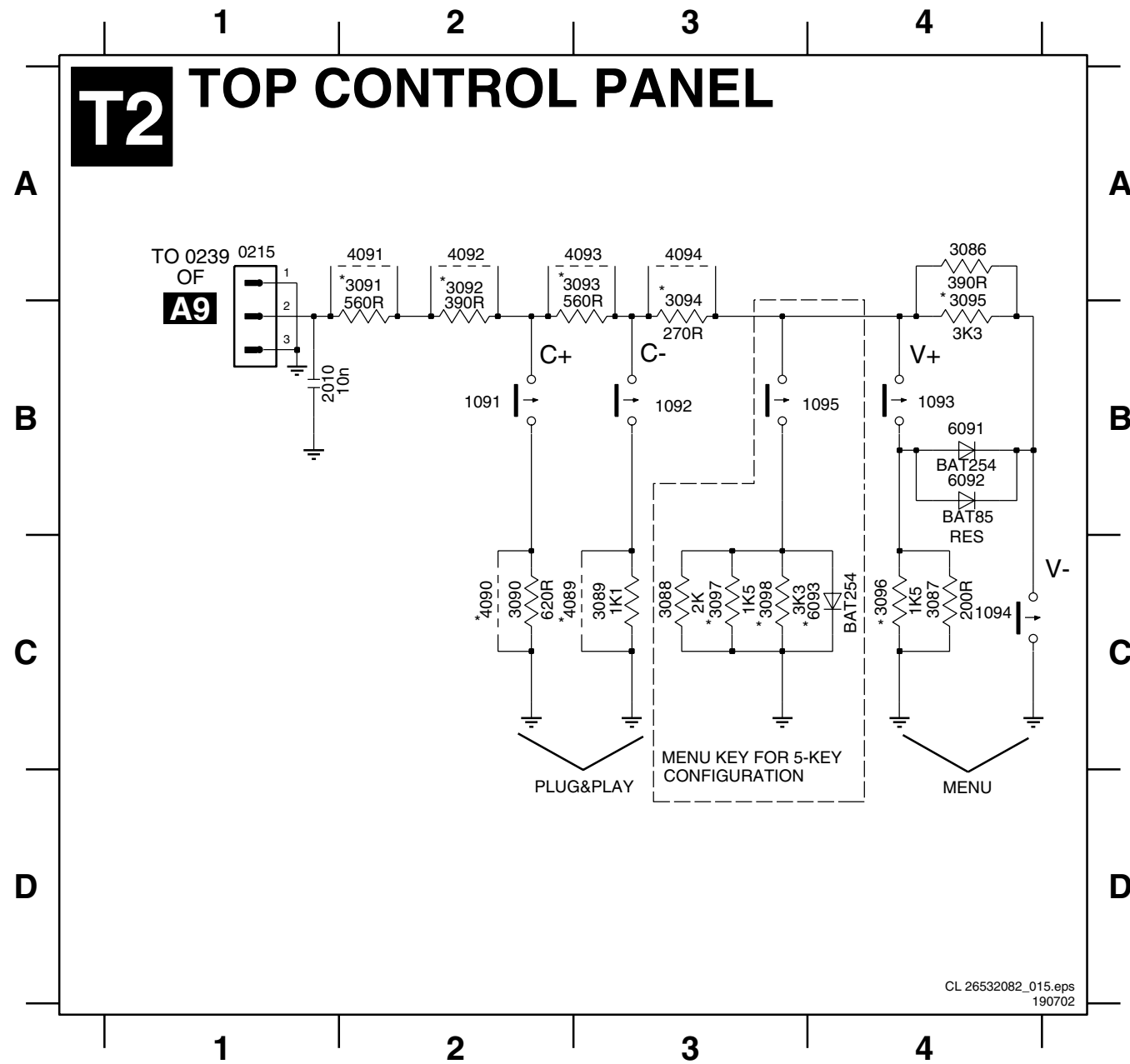






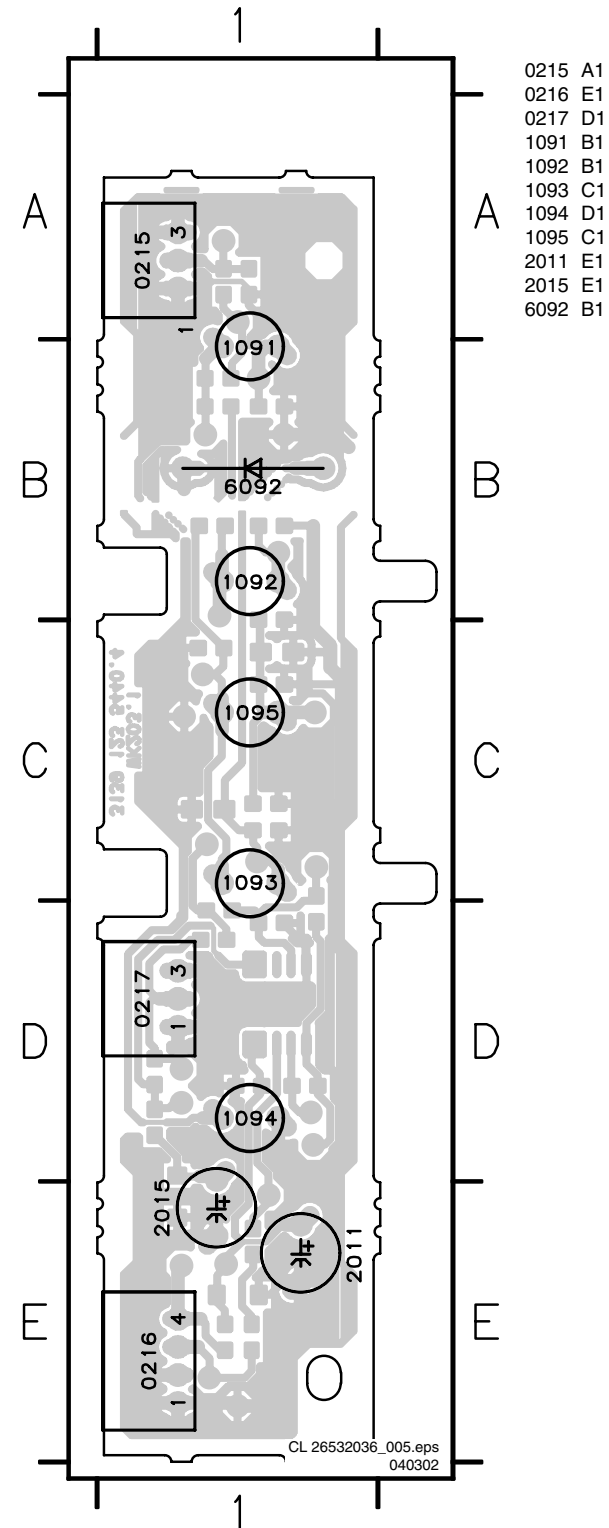
Top Control Panel

0215 A1	1093 B4	2010 B1	3088 C3	3091 A2	3094 B3	3097 C3	4090 C2	4093 A3	6092 B4
1091 B2	1094 C4	3086 A4	3089 C3	3092 A2	3095 B4	3098 C3	4091 A2	4094 A3	6093 C4
1092 B3	1095 B4	3087 C4	3090 C2	3093 A3	3096 C4	4089 C3	4092 A2	6091 B4	

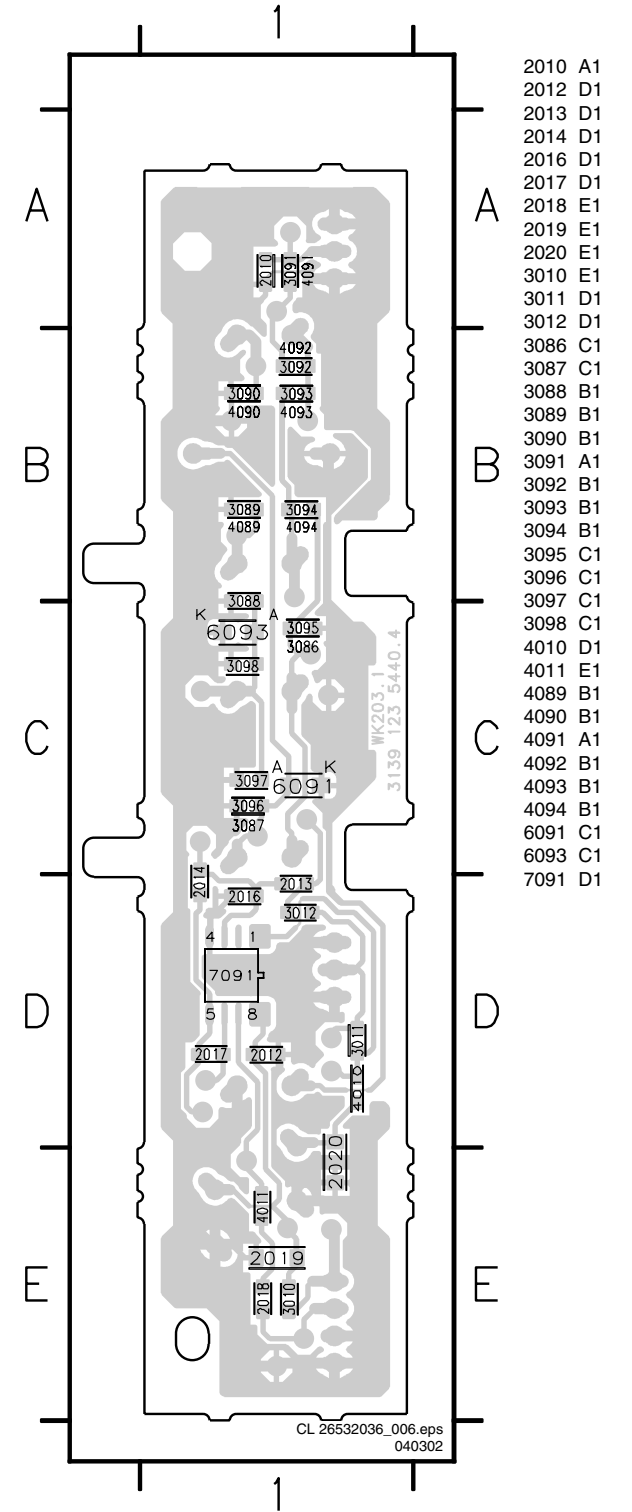


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Layout Top Control (Top View)



Layout Top Control (Bottom View)





## 8. Alignments

Index of this chapter:

1. General Alignment Conditions
2. Hardware Alignments
3. Software Alignments and Settings

**Note:** The Service Default Alignment Mode (SDAM) was described in chapter 5. Menu navigation is done with the 'CURSOR UP, DOWN, LEFT or RIGHT' keys of the remote control transmitter.

### 8.1 General Alignment Conditions

Perform all electrical adjustments under the following conditions:

- Mains voltage and frequency: 230 V ( $\pm 10\%$ ), 50 Hz ( $\pm 5\%$ ).
- Connect the set to the Mains voltage via an isolation transformer.
- Allow the set to warm up for approximately 20 minutes.
- Measure the voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply). Never use the cooling fins / plates as ground.
- Test probe:  $R_i > 10\text{ MOhm}$ ;  $C_i < 2.5\text{ pF}$ .
- Use an isolated trimmer / screwdriver to perform the alignments.

### 8.2 Hardware Alignments

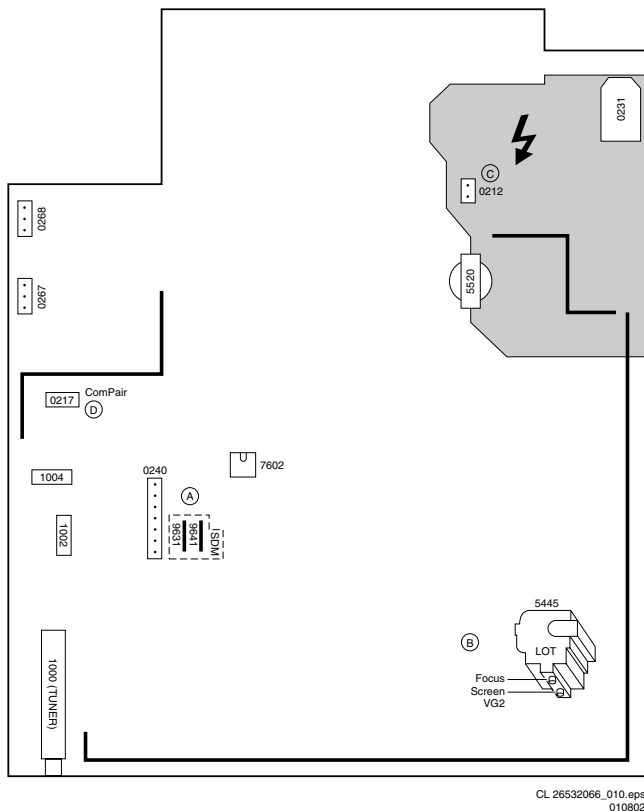
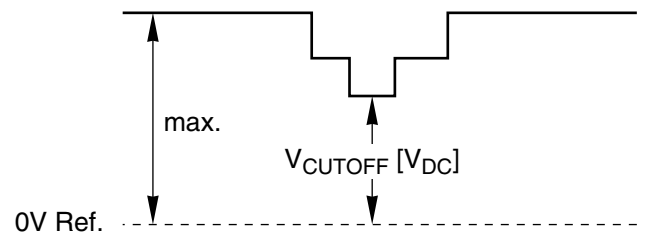


Figure 8-1 Top view monocarrier

#### 8.2.1 Vg2 Adjustment

1. Activate the SDAM.
2. Go to the WHITE TONE sub menu.
3. Set the values of NORMAL RED, GREEN and BLUE to 40.
4. Go, via the MENU key, to the normal user menu and set

5. CONTRAST to zero.
6. BRIGHTNESS to minimum (OSD just visible in a dark room).
7. Return to the SDAM via the MENU key.
8. Connect the RF output of a pattern generator to the antenna input. Test pattern is a 'black' picture (blank screen on CRT without any OSD info).
9. Set the channel of the oscilloscope to 50 V/div and the time base to 0.2 ms (external triggering on the vertical pulse).
10. Ground the scope at the CRT panel and connect a 10:1 probe to one of the cathodes of the picture tube socket (see diagram B).
11. Measure the cut off pulse during first full line after the frame blanking (see figure 8-2). You will see two pulses, one being the cut off pulse and the other being the white drive pulse. Choose the one with the lowest value; this is the cut off pulse.
12. Select the cathode with the highest Vdc value for the alignment. Adjust the Vcutoff of this gun with the SCREEN potentiometer (see figure 8-1) on the LOT, to the correct value (see table below).
13. Restore BRIGHTNESS and CONTRAST to normal (= 31).



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Figure 8-2 Vg2 waveform

Table 8-1 Cut-off voltage

Screen Size	Cut-off Voltage
21RF Philips, 24WSRF EU	+160V +/- 4V

#### 8.2.2 Focus alignment

- Tune the set to a circle or crosshatch test pattern (use an external video pattern generator).
- Choose picture mode NATURAL (or MOVIES) with the 'SMART PICTURE' button on the remote control transmitter.
- Adjust the FOCUS potentiometer (see Fig. 8-1) until the vertical lines at 2/3 from east and west, at the height of the centreline, are of minimum width without visible haze.

### 8.3 Software Alignments and Settings

Enter the Service Default Alignment Mode (see chapter 5). The SDAM menu will now appear on the screen. Select one of the following alignments:

1. Options
2. Tuner
3. White tone
4. Geometry
5. Audio

#### 8.3.1 Options

Options are used to control the presence / absence of certain features and hardware.

O P 1	X X X	S
O P 2	X X X	
O P 3	X X X	
O P 4	X X X	
O P 5	X X X	
O P 6	X X X	
O P 6	X X X	

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Figure 8-3 Option menu

**How to change an Option Byte**

An Option Byte represents a number of different options. Changing these bytes directly makes it possible to set all options very fast. All options are controlled via seven option bytes. Select the option byte (OP1.. OP7) with the MENU UP/DOWN keys, and enter the new value.

Leaving the OPTION submenu saves changes in the Option Byte settings. Some changes will only take effect after the set has been switched OFF and ON with the mains switch (cold start).

**How to calculate the value of an Option Byte**

Calculate an Option Byte value (OB1 .. OB7) in the following way:

Check the status of the single option bits (OP): are they enabled (1) or disabled (0).

When an option bit is enabled (1) it represents a certain value (see column 'Dec. value' in table below). When an option bit is disabled, its value is 0.

The total value of an Option Byte is formed by the sum of its eight option bits.

Bit (value)	OB1	OB2	OB3	OB4	OB5	OB6	OB7
0 (1)	OP10	OP20	OP30	OP40	OP50	OP60	OP70
1 (2)	OP11	OP21	OP31	OP41	OP51	OP61	OP71
2 (4)	OP12	OP22	OP32	OP42	OP52	OP62	OP72
3 (8)	OP13	OP23	OP33	OP43	OP53	OP63	OP73
4 (16)	OP14	OP24	OP34	OP44	OP54	OP64	OP74
5 (32)	OP15	OP25	OP35	OP45	OP55	OP65	OP75
6 (64)	OP16	OP26	OP36	OP46	OP56	OP66	OP76
7 (128)	OP17	OP27	OP37	OP47	OP57	OP67	OP77
Total:	Sum	Sum	Sum	Sum	Sum	Sum	Sum

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Figure 8-4 Option byte structure

Table 8-2 Option code setting

Typenumber	OP1	OP2	OP3	OP4	OP5	OP6	OP7
21PT6807/01 DVD	216	247	249	184	208	54	3
21PT6807/05 DVD	220	247	249	184	208	54	3
21PT6807/58 DVD	216	247	249	184	208	54	0
24PW6817/01 DVD	216	247	253	184	208	54	3
24PW6817/05 DVD	220	247	253	184	208	54	3

**Option Bit Assignment**

Following are the option bit assignments for all L01 software clusters.

- Option Byte 1 (OB1)
  - OP10: CHINA
  - OP11: VIRGIN\_MODE
  - OP12: UK\_PNP
  - OP13: ACI
  - OP14: ATS
  - OP15: LNA
  - OP16: FM\_RADIO
  - OP17: PHILIPS\_TUNER
- Option Byte 2 (OB2)
  - OP20: HUE
  - OP21: COLOR\_TEMP
  - OP22: CONTRAST\_PLUS
  - OP23: TILT
  - OP24: NOISE\_REDUCTION
  - OP25: CHANNEL\_NAMING
  - OP26: SMART\_PICTURE
  - OP27: SMART\_SOUND
- Option Byte 3 (OB3)
  - OP30: AVL
  - OP31: WSSB
  - OP32: WIDE\_SCREEN
  - OP33: VIRTUAL\_DOLBY
  - OP34: MSP34X5\_VOL\_CTRL
  - OP35: COMPRESS\_16\_9
  - OP36: EXPAND\_4\_3
  - OP37: EW\_FUNCTION
- Option Byte 4 (OB4)
  - OP40: STEREO\_NON\_DBX
  - OP41: STEREO\_DBX
  - OP42: STEREO\_PB
  - OP43: STEREO\_NICAM\_2CS
  - OP44: DELTA\_VOLUME
  - OP45: ULTRA\_BASS
  - OP46: VOLUME\_LIMITER
  - OP47: INCR\_SUR
- Option Byte 5 (OB5)
  - OP50: PIP
  - OP51: HOTEL\_MODE
  - OP52: SVHS
  - OP53: CVI
  - OP54: AV3
  - OP55: AV2
  - OP56: AV1
  - OP57: NTSC\_PLAYBACK
- Option Byte 6 (OB6)
  - OP60: BASS\_TREBLE, SW1Ttxt for EU
  - OP61: SMART\_TEXT
  - OP62: SMART\_LOCK
  - OP63: VCHIP
  - OP64: WAKEUP\_CLOCK
  - OP65: SMART\_CLOCK
  - OP66: SMART\_SURF
  - OP67: PERSONAL\_ZAPPING
- Option Byte 7 (OB7)
  - OP70: SOUND\_SYSTEM\_AP\_3 / MULTI\_STANDARD\_EUR / SYSTEM\_LT\_2
  - OP71: SOUND\_SYSTEM\_AP\_2 / WEST\_EU / SYSTEM\_LT\_1
  - OP72: SOUND\_SYSTEM\_AP\_1
  - OP73: COLOR\_SYSTEM\_AP
  - OP74: SIGNAL\_STRENGTH / DVD WAKEUP TIMER
  - OP75: LNA\_PP (for L01 AP cluster), VOICE\_CONTROL
  - OP76: ACTIVE\_CONTROL
  - OP77: TIME\_WIN1

**Option bit definition****OP10: CHINA**

0: Tuning is not for China set, or this option bit is not applicable,

1: Tuning is for China set,

Default setting: 0.

**OP11: VIRGIN\_MODE**

0: Virgin mode is disabled or not applicable,  
 1: Virgin mode is enabled. Plug and Play menu item will be displayed to perform installation at the initial start-up of the TV when VIRGIN\_MODE is set to 1. After installation is finished, this option bit will be automatically set to 0,  
 Default setting: 0.

**OP12: UK\_PNP**

0: UK's default Plug and Play setting is not available or not applicable,  
 1: UK's default Plug and Play setting is available. When UK\_PNP and VIRGIN\_MODE are set to 1 at the initial set-up, LANGUAGE = ENGLISH, COUNTRY = GREAT BRITAIN and after exiting from menu, VIRGIN\_MODE will be set automatically to 0 while UK\_PNP remains 1,  
 Default setting: 0.

**OP13: ACI**

0: ACI feature is disabled or not applicable,  
 1: ACI feature is enabled,  
 Default setting: 0.

**OP14: ATS**

0: ATS feature is disabled or not applicable,  
 1: ATS feature is enabled. When ATS is enabled, it sorts the program in an ascending order starting from program 1,  
 Default setting: 0.

**OP15: LNA**

0: Auto Picture Booster is not available or not applicable,  
 1: Auto Picture Booster is available,  
 Default setting: 0.

**OP16: FM\_RADIO**

0: FM radio feature is disabled or not applicable,  
 1: FM radio feature is enabled,  
 Default setting: 0.

**OP17: PHILIPS\_TUNER**

0: ALPS / MASCO compatible tuner is in use,  
 1: Philips compatible tuner is in use,  
 Default setting: 0.

**OP20: HUE**

0: Hue/Tint Level is disabled or not applicable,  
 1: Hue/Tint Level is enabled,  
 Default setting: 0.

**OP21: COLOR\_TEMP**

0: Colour Temperature is disabled or not applicable,  
 1: Colour Temperature is enabled,  
 Default setting: 0.

**OP22: CONTRAST\_PLUS**

0: Contrast+ is disabled or not applicable,  
 1: Contrast+ is enabled,  
 Default setting: 0.

**OP23: TILT**

0: Rotate Picture is disabled or not applicable,  
 1: Rotate Picture is enabled,  
 Default setting: 0.

**OP24: NOISE\_REDUCTION**

0: Noise Reduction (NR) is disabled or not applicable,  
 1: Noise Reduction (NR) is enabled,  
 Default setting: 0.

**OP25: CHANNEL\_NAMING**

0: Name FM Channel is disabled or not applicable,  
 1: Name FM Channel is enabled,  
 Default setting: 0.  
**Note:** Name FM channel can be enabled only when FM\_RADIO = 1.

**OP26: SMART\_PICTURE**

0: Smart Picture is disabled or not applicable,  
 1: Smart Picture is enabled,

Default setting: 1

**OP27: SMART\_SOUND**

0: Smart Sound is disabled or not applicable,  
 1: Smart Sound is enabled,  
 Default setting: 1

**OP30: AVL**

0: AVL is disabled or not applicable,  
 1: AVL is enabled,  
 Default setting: 0.

**OP31: WSSB**

0: WSSB is disabled or not applicable,  
 1: WSSB is enabled,  
 Default setting: 0.  
**Note:** This option bit can be set to 1 only when WIDE\_SCREEN = 1.

**OP32: WIDE\_SCREEN**

0: Software is used for 4:3 set or not applicable,  
 1: Software is used for 16:9 set,  
 Default setting: 0.

**OP33: VIRTUAL\_DOLBY**

Default setting: 1.

**OP34: MSP34X5\_VOL\_CTRL**

Default setting: 0.  
 Note For 2x10W sets only

**OP35: COMPRESS\_16\_9**

0: COMPRESS 16:9 selection is not applicable. Item should not be in the FORMAT menu list,  
 1: COMPRESS 16:9 selection is applicable. Item should not be in the FORMAT menu list,  
 Default setting: 0.

**OP36: EXPAND\_4\_3**

0: Expand 4:3 selection is not applicable. Item should not be in the FORMAT menu list,  
 1: Expand 4:3 selection is applicable. Item should be in the FORMAT menu list,  
 Default setting: 0.

**OP37: EW\_FUNCTION**

0: EW function is disabled. In this case, only Expand 4:3 is allowed, Compress 16:9 is not applicable.  
 1: EW function is enabled. In this case, both Expand 4:3 and Compress 16:9 are applicable.  
 Default setting: 0.

**OP40: STEREO\_NON\_DBX**

0: For AP\_NTSC, chip TDA 9853 is not present,  
 1: For AP\_NTSC, chip TDA 9853 is present,  
 Default setting: 0.

**OP41: STEREO\_DBX**

0: For AP\_NTSC, chip MSP 3445 is not present,  
 1: For AP\_NTSC, chip MSP 3445 is present,  
 Default setting: 0.

**OP42: STEREO\_PB**

0: For AP\_PAL, chip MSP3465 is not present,  
 1: For AP\_PAL, chip MSP3465 is present,  
 Default setting: 0.

**OP43: STEREO\_NICAM\_2CS**

0: For EU and AP\_PAL, chip MSP 3415 is not present,  
 1: For EU and AP\_PAL, chip MSP 3415 is present,  
 Default setting: 0.

**OP44: DELTA\_VOLUME**

0: Delta Volume Level is disabled or not applicable,  
 1: Delta Volume Level is enabled,  
 Default setting: 0.

**OP45: ULTRA\_BASS**

0: Ultra Bass is disabled or not applicable,  
1: Ultra Bass is enabled,  
Default setting: 0.

**OP46: VOLUME\_LIMITER**

0: Volume Limiter Level is disabled or not applicable,  
1: Volume Limiter Level is enabled,  
Default setting: 0.

**OP47: INCR\_SUR**

0: Incredible Surround feature is disabled,  
1: Incredible Surround feature is enabled,  
Default setting: 1

**OP50: PIP**

0: PIP is disabled or not applicable,  
1: PIP is enabled,  
Default setting: 0.

**OP51: HOTEL\_MODE**

0: Hotel mode is disabled or not applicable,  
1: Hotel mode is enabled,  
Default setting: 0.

**OP52: SVHS**

0: SVHS source is not available,  
1: SVHS source is available,  
Default setting: 0.

**Note:** This option bit is not applicable for EU.

**OP53: CVI**

0: CVI source is not available,  
1: CVI source is available,  
Default setting: 0.

**OP54: AV3**

0: Side/Front AV3 source is not present,  
1: Side/Front AV3 source is present,  
Default setting: 0.

**OP55: AV2**

0: AV2 source is not present,  
1: AV2 source is present,  
Default setting: 0.

**Note:** For EU, when AV2=1, both EXT2 and SVHS2 should be included in the OSD loop.

**OP56: AV1**

0: AV1 source is not present,  
1: AV1 source is present,  
Default setting: 0.

**OP57: NTSC\_PLAYBACK**

0: NTSC playback feature is not available,  
1: NTSC playback feature is available,  
Default setting: 0.

**OP60: BASS\_TREBLE, SW1Ttxt for EU**

Default setting: 0.

**OP61: SMART\_TEXT**

0: Smart Text Mode and Favourite Page are disabled or not applicable,  
1: Smart Text Mode and Favourite Page are enabled,  
Default setting: 1.

**OP62: SMART\_LOCK**

0: Child Lock and Lock Channel are disabled or not applicable for EU,  
1: Child Lock and Lock Channel are enabled for EU,  
Default setting: 1.

**OP63: VCHIP**

0: VCHIP feature is disabled,  
1: VCHIP feature is enabled,  
Default setting: 1.

**OP64: WAKEUP\_CLOCK**

0: Wake up clock feature is disabled or not applicable,  
1: Wake up clock feature is enabled,  
Default setting: 1.

**OP65: SMART\_CLOCK**

0: Smart Clock Using Teletext and Smart Clock Using PBS is disabled or not applicable,  
1: Smart Clock Using Teletext and Smart Clock Using PBS is enabled. For NAFTA, menu item AUTOCHRON is present in the INSTALL submenu,  
Default setting: 0.

**OP66: SMART\_SURF**

0: Smart Surf feature is disabled or not applicable,  
1: Smart Surf feature is enabled,  
Default setting: 0.

**OP67: PERSONAL\_ZAPPING**

0: Personal Zapping feature is disabled or not applicable,  
1: Personal Zapping feature is enabled,  
Default setting: 0.

**OP70: MULTI\_STANDARD\_EUR**

0: Not for Europe multi standard set, or this option bit is not applicable,  
1: For Europe multi standard set.  
Default setting: 0.

**Note:** This option bit is used to control the SYSTEM selection in Manual Store: If MULTI\_STANDARD\_EUR = 1 then SYSTEM = Europe, West Europe, East Europe, UK, France. Otherwise SYSTEM = 'Europe, West Europe, UK for West Europe' (WEST\_EU=1) or SYSTEM = 'Europe, West Europe, East Europe for East Europe' (WEST\_EU=0)

**OP71: WEST\_EU**

0: For East Europe set, or this option bit is not applicable,  
1: For West Europe set,  
Default setting: 0.

**OP71 and 70: SYSTEM\_LT\_1, SYSTEM\_LT\_2**

These two option bits are allocated for LATAM system selection.

00: NTSC-M

01: NTSC-M, PAL-M

10: NTSC-M, PAL-M, and PAL-N

11: NTSC-M, PAL-M, PAL-N, and PAL-BG

Default setting: 00

**OP70, 71 and 72: SOUND\_SYSTEM\_AP\_1, SOUND\_SYSTEM\_AP\_2, SOUND\_SYSTEM\_AP\_3**

These three option bits are allocated for AP\_PAL sound system selection.

000: BG

001: BG / DK

010: I / DK

011: BG / I / DK

100: BG / I / DK / M

Default setting: 00

**OP73: COLOR\_SYSTEM\_AP**

This option bit is allocated for AP-PAL colour system selection.  
0: Auto, PAL 4.43, NTSC 4.43, and NTSC 3.58  
1: Auto, PAL 4.43, NTSC 4.43, NTSC 3.58, and SECAM  
Default setting: 0

**OP74: SIGNAL\_STRENGTH / DVD WAKEUP TIMER**

Default setting: 0.

**OP75: LNA\_PP (for L01 AP cluster), VOICE\_CONTROL**

Default setting: 0.

**OP76: ACTIVE\_CONTROL**

Default setting: 0.

**OP77: TIME\_WIN1**

00: The time window is set to 1.2 s

01: The time window is set to 2 s

10: The time window is set to 5 s

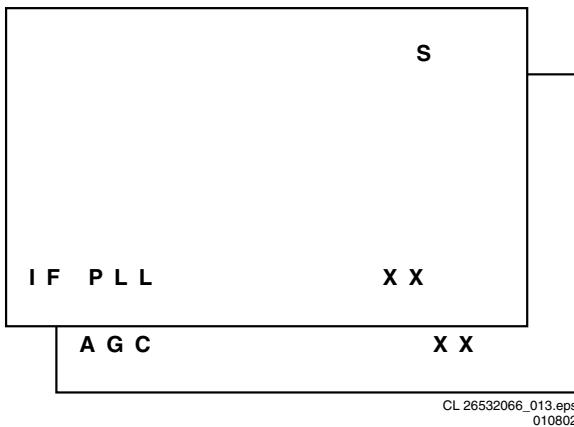
11: not in use

Default setting: 01

**Note:** The time-out for all digit entries depends on this setting.

**8.3.2 Tuner**

**Note:** Described alignments are only necessary when the NVM (item 7602) is replaced.



**Figure 8-5 Tuner alignment menu**

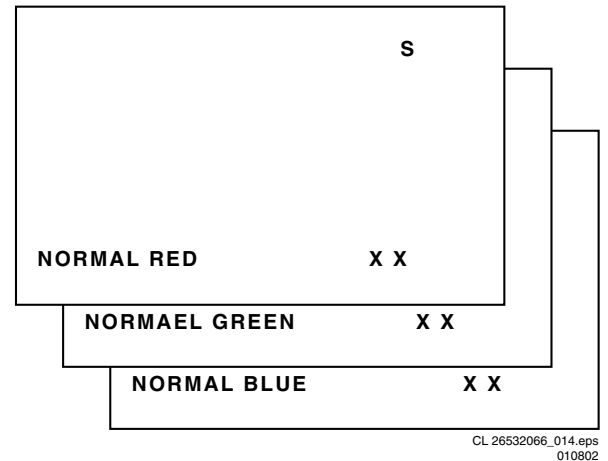
**IF PLL**

This adjustment is auto-aligned. Therefore, no action is required.

**AGC (AGC take over point)**

Set the external pattern generator to a colour bar video signal and connect the RF output to aerial input. Set amplitude to 10 mV and set frequency to 475.25 MHz (PAL/SECAM).

1. Connect a DC multimeter to pin 1 of the tuner (item 1000 on the main chassis).
2. Activate the SDAM.
3. Go to the TUNER sub menu.
4. Select AGC with the UP/DOWN cursor keys.
5. Adjust the AGC-value (default value is 28) with the LEFT/RIGHT cursor keys until the voltage at pin 1 of the tuner lies between 3.8 and 2.3 V.
6. Return to the SDAM via the MENU key and Switch the set to STANDBY.

**8.3.3 White Tone**

**Figure 8-6 White tone alignment menu**

In the WHITE TONE sub menu, the values of the black cut off level can be adjusted. Normally, no alignment is needed for the WHITE TONE. You can use the given default values.

The colour temperature NORMAL RED, NORMAL GREEN and NORMAL BLUE can be selected with the UP/DOWN RIGHT/LEFT cursor keys. The value can be changed with the LEFT/RIGHT cursor keys.

**Note:** After alignment, switch the set to standby, in order to store the alignments value.

Default settings:

**NORMAL** (colour temperature = 9600 K):

- NORMAL R = 40
- NORMAL G = 40
- NORMAL B = 40

**8.3.4 Geometry**

The geometry alignments menu contains several items to align the set, in order to obtain correct picture geometry.

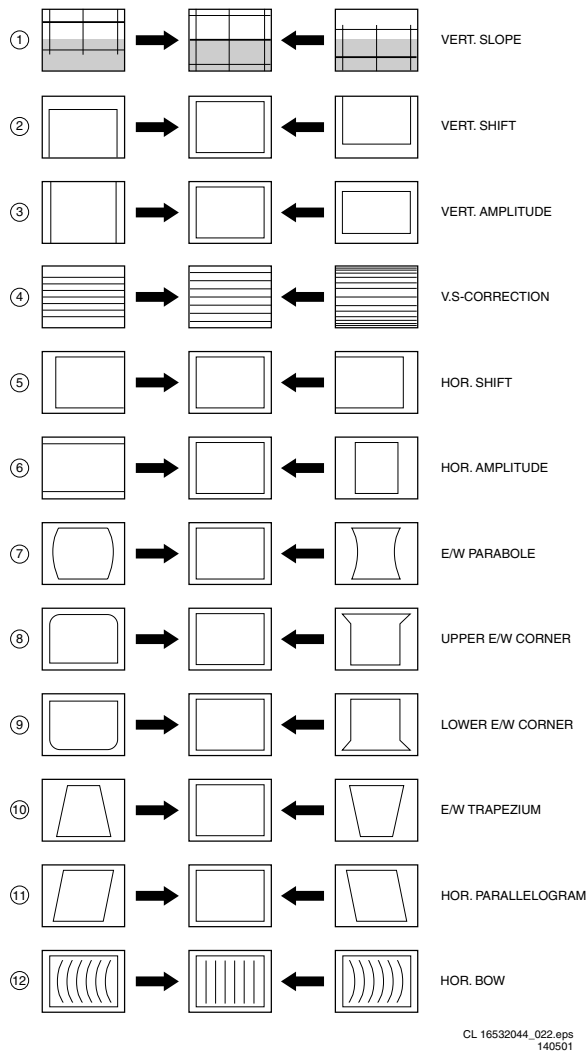


Figure 8-7 Geometry alignments

**How to align:**

Connect an external video pattern generator to the aerial input of the TV-set and input a crosshatch test pattern. Set the generator amplitude to at least 1 mV and set frequency to 475.25 MHz (PAL/SECAM).

1. Set 'Smart Picture' to NATURAL (or MOVIES).
2. Activate the SDAM menu (see chapter 5).
3. Go to the GEOMETRY sub menu.
4. Choose HORIZONTAL or VERTICAL alignment

Now the following alignments can be performed:

**Horizontal alignment:**

- **Horizontal Parallelogram (HP).** Align straight vertical lines in the top and the bottom; vertical rotation around the centre.
- **Horizontal Bow (HB).** Align straight horizontal lines in the top and the bottom; horizontal rotation around the centre.
- **Horizontal Shift (HSH).** Align the horizontal centre of the picture to the horizontal centre of the CRT.
- **East West Width (EWW).** Align the picture width until the complete test pattern is visible.
- **East West Parabola (EWP).** Align straight vertical lines at the sides of the screen.
- **Upper Corner Parabola (UCP).** Align straight vertical lines in the upper corners of the screen.
- **Lower Corner Parabola (LCP).** Align straight vertical lines in the lower corners of the screen.
- **East West Trapezium (EWT).** Align straight vertical lines in the middle of the screen.

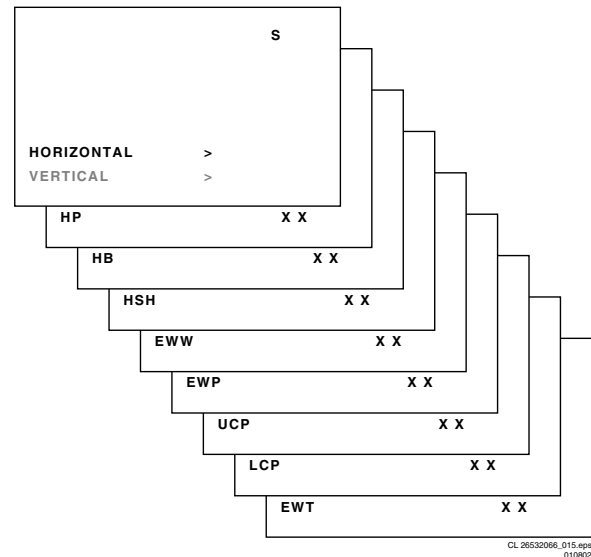


Figure 8-8 Horizontal alignment menu

**Vertical alignment:**

- **Vertical slope (VSL).** Align the vertical centre of the picture to the vertical centre of the CRT. This is the first of the vertical alignments to perform. For an easy alignment, set SBL to ON.
- **Vertical Amplitude (VAM).** Align the vertical amplitude so that the complete test pattern is visible.
- **Vertical S-Correction (VSC).** Align the vertical linearity, meaning that vertical intervals of a grid pattern must be equal over the entire screen height.
- **Vertical Shift (VSH).** Align the vertical centring so that the test pattern is located vertically in the middle. Repeat the 'vertical amplitude' alignment if necessary.
- **Service blanking (SBL).** Switch the blanking of the lower half of the screen ON or OFF (to be used in combination with the vertical slope alignment).
- **60 Hz Horizontal Shift (H60).** Align straight horizontal lines if NTSC input (60 Hz) is used i.s.o. PAL (50 Hz) or so called Horizontal Shift Offset (NTSC)
- **60 Hz Vertical amplitude (V60).** Align straight vertical lines if NTSC input (60 Hz) is used i.s.o. PAL (50 Hz) or so called Vertical Shift Offset (NTSC)

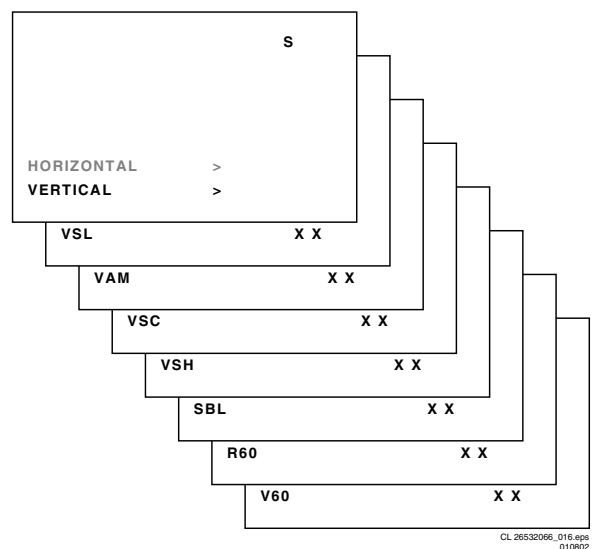


Figure 8-9 Vertical alignment menu

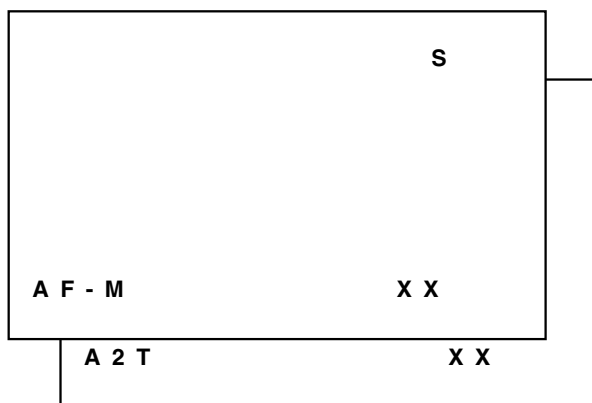


In the table below, you will find the GEOMETRY default values for the different sets.

**Table 8-3 Default geometry values**

Alignment	Description	21PT6807/01 DVD	21PT6807/05 DVD	21PT6807/58 DVD	24PW6817/01 DVD	24PW6817/05 DVD
<b>HP</b>	Hor. Parallelogram	31	31	31	32	32
<b>HB</b>	Hor. Bow	31	31	31	32	32
<b>HSH</b>	Hor. S hift	38	38	38	27	27
<b>EWV</b>	East West Width	40	40	40	36	36
<b>EWV</b>	East West Parabola	06	06	06	20	20
<b>UCP</b>	Upper Corner Parabola	35	35	35	20	20
<b>LCP</b>	Lower Corner Parabola	35	35	35	25	25
<b>EWT</b>	East West Trapezium	35	35	35	28	28
<b>VSL</b>	Vert. Slope	36	36	36	37	37
<b>VAM</b>	Vert. Amplitude	63	63	63	30	30
<b>VSC</b>	Vert. S -correction	23	23	23	20	20
<b>VSH</b>	Vert. S hift	31	31	31	31	31
<b>VX</b>	Vert. Zoom	25	25	25	25	25
<b>H60</b>	60 Hz Horizontal Shift	09	09	09	09	09
<b>V60</b>	60 Hz Vertical amplitude	64	64	64	64	64

### 8.3.5 Audio



CL 26532066\_017.eps  
010802

**Figure 8-10 Audio alignment menu**

There are no alignments necessary for the audio sub menu. Use the given default values.

#### **AF-M**

Default value is 300

#### **A2T**

TV A2 Threshold  
Default value is 25

## 9. Circuit Description

For circuit description of the TV-set see service manual L01.1E AB (3122 785 12860).

For circuit description of the DVD Module see service manual DVD Module SD-3 (3122 785 11010).

### 9.1 List Of Abbreviations

AC3	Digital Audio Compression standard
CDDA	Compact Disc Digital Audio
CSM	Customer Service Mode
DTS	Digital Theater Systems
DVD	Digital Versatile Disc
LPCM	Linear Pulse Code Modulation
LSP	Large Signal Panel
MPEG	Moving Picture Experts Group
OSD	On Screen Display
SAM	Service Alignment Mode
SDM	Service Default Mode











7114	5322	130	60159	BC846B
7115	4822	130	60373	BC856B
7116	5322	130	60159	BC846B
7120	9352	703	94118	UDA1334BT/N2
7140	5322	130	60159	BC846B
7142	5322	130	60159	BC846B
7200	5322	130	60159	BC846B
7201	9351	869	80118	74HCT573DB
7201	4822	130	60373	BC856B
7202	5322	130	60159	BC846B
7203	4822	130	60373	BC856B
7207	9352	636	60557	SAA7399HL/M2A
7208	9322	163	27685	NCP301LSN45
7209	4822	209	90927	L78L05ACD
7210	5322	130	60845	BC807-25
7210	5322	130	60159	BC846B
7211	4822	130	42804	BC817-25
7211	4822	130	60373	BC856B
7212	5322	130	60159	BC846B
7280	4822	209	17338	L78L08ACZ
7304	9322	139	85668	BA6665FM
7310	4822	209	15899	CY7C199-15C
7310	4822	130	11155	PDTC114ET
7311	3198	010	44010	PDTA114ET
7311	9352	622	13557	SAA7335HL
7312	4822	130	60373	BC856B
7313	5322	130	60159	BC846B
7315	5322	130	60159	BC846B
7315	9352	639	17112	TEA1523P/N1
7316	9352	500	20118	74LVC08AD
7317	9352	500	20118	74LVC08AD
7340	8238	274	02070	TCET1103G
7341	4822	209	81397	TL431CLPST
7350	9322	163	75685	SI2306DS
7351	4822	130	10255	MMUN2213
7400	9352	499	60118	74LVC00AD
7406	4822	209	16044	PCF8584T
7407	9322	166	67668	MT48LC4M16A2TG-7E
7408	5322	209	11517	PC74HCU04T
7409	9352	115	40118	74LVC245APW
7501	5322	130	60159	BC846B
7503	9322	170	24671	STI5580EVA
7504	2722	171	08709	Crystal 27MHz
7505	9322	156	81668	M24C32-WMN6TNKSA
7506	9965	000	04199	BSN20
7507	9965	000	04199	BSN20
7600	5322	209	71568	PC74HCT14T
7601	9322	142	88668	LF25CDT
7602	9322	142	88668	LF25CDT
7605	4822	209	17398	LD1117DT33
7608	4822	130	60373	BC856B
7609	4822	130	60373	BC856B
7610	5322	130	60159	BC846B
7611	9352	456	80115	74HCT1G125GW
7615	5322	130	60159	BC846B
7617	5322	130	60159	BC846B
7618	5322	130	60159	BC846B
7620	4822	130	60373	BC856B
7621	4822	130	42804	BC817-25

### Front Interface [Q]

#### Various

0157	3139	131	01251	Cable 5p 400mm
0177	3104	311	03011	Cable 2p 340mm
0211	2422	025	16268	2p male
0212	2422	025	16268	2p male
0214	2422	025	06353	5p male
0231	2422	128	02972	Power switch

#### -H-

2691	4822	124	40248	10 $\mu$ F 20% 63V
2698	5322	121	42386	100nF 5% 63V

#### -□-

3500	4822	053	21335	3.3M $\Omega$ 5% 0.5W
3501	4822	053	21335	3.3M $\Omega$ 5% 0.5W
3691	4822	116	52219	330 $\Omega$ 5% 0.5W
3693	4822	116	83872	220 $\Omega$ 5% 0.5W

#### →

6691	9322	050	99682	LTL-10224WHCR
6692	9322	127	54667	IR receiver TSOP1836UH1

### Top Control [T2]

#### Various

0158	3139	131	01771	Cable 3p 1000mm
0215	2422	025	16601	3p male
1091	4822	276	13775	Switch
1092	4822	276	13775	Switch
1093	4822	276	13775	Switch
1094	4822	276	13775	Switch

#### -□-

3091	4822	051	20561	560 $\Omega$ 5% 0.1W
3092	4822	051	20391	390 $\Omega$ 5% 0.1W
3093	4822	051	20561	560 $\Omega$ 5% 0.1W
3094	4822	051	20391	390 $\Omega$ 5% 0.1W
3095	4822	051	20332	3.3k $\Omega$ 5% 0.1W
3096	4822	117	11139	1.5k $\Omega$ 1% 0.1W

#### →

6091	4822	130	11528	1PS76SB10
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