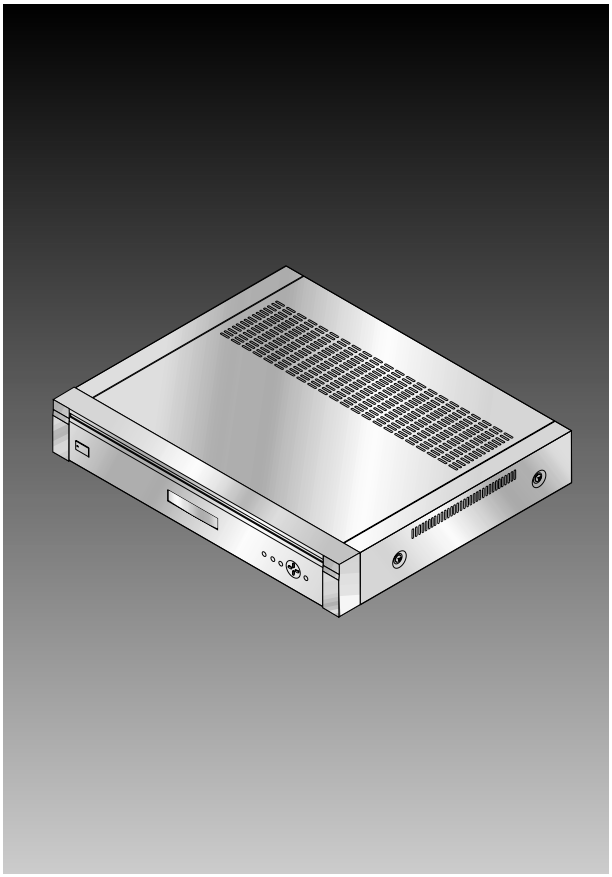
SAMSUNG

DIGITAL SET TOP BOX

Chassis : T13A
Model: SIRT150X/XAA

SERVICE Manual

DIGITAL SET TOP BOX



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ELECTRONICS

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1. Precautions

Follow these safety, servicing and ESD precautions to prevent damage and protect against potential hazards such as electrical shock and X-rays.

1-1 Safety Precautions

1. Be sure that all of the built-in protective devices are replaced. Restore any missing protective shields.

2. When reinstalling the chassis and its assemblies, be sure to restore all protective devices, including: nonmetallic control knobs and compartment covers.

3. Make sure that there are no cabinet openings through which people—particularly children—might insert fingers and contact dangerous voltages. Such openings include the spacing between the picture tube and the cabinet mask, excessively wide cabinet ventilation slots, and improperly fitted back covers.

   If the measured resistance is less than 1.0 megohm or greater than 5.2 megohms, an abnormality exists that must be corrected before the unit is returned to the customer.

4. Leakage Current Hot Check (Figure 1-1):
   Warning: Do not use an isolation transformer during this test. Use a leakage-current tester or a metering system that complies with American National Standards Institute (ANIS C101.1, Leakage Current for Appliances), and Underwriters Laboratories (UL Publication UL1410, 59.7).

5. With the unit completely reassembled, plug the AC line cord directly into the power outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: antennas, handle brackets, metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

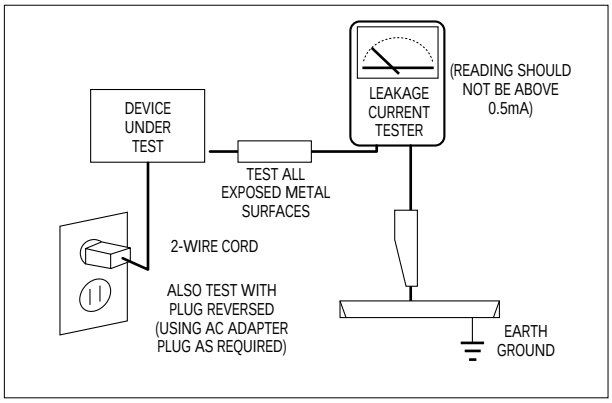


Fig. 1-1 AC Leakage Test

6. Antenna Cold Check:
   With the unit's AC plug disconnected from the AC source, connect an electrical jumper across the two AC prongs. Connect one lead of the ohmmeter to an AC prong. Connect the other lead to the coaxial connector.

7. High voltage is maintained within specified limits by close-tolerance, safety-related components and adjustments. If the high voltage exceeds the specified limits, check each of the special components.

8. Design Alteration Warning:
   Never alter or add to the mechanical or electrical design of this unit. Example: Do not add auxiliary audio or video connectors. Such alterations might create a safety hazard. Also, any design changes or additions will void the manufacturer's warranty.

9. Some TV chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.

1-1 Safety Precautions (Continued)

10. Components, parts and wiring that appear to have overheated or that are otherwise damaged should be replaced with parts that meet the original specifications. Always determine the cause of damage or overheating, and correct any potential hazards.

11. Observe the original lead dress, especially near the following areas: Antenna wiring, sharp edges, and especially the AC and high voltage power supplies. Always inspect for pinched, out-of-place, or frayed wiring. Do not change the spacing between components and the printed circuit board. Check the AC power cord for damage. Make sure that leads and components do not touch thermally hot parts.

12. Product Safety Notice:
    Some electrical and mechanical parts have special safety-related characteristics which might not be obvious from visual inspection. These safety features and the protection they give might be lost if the replacement component differs from the original—even if the replacement is rated for higher voltage, wattage, etc.

    Components that are critical for safety are indicated in the circuit diagram by shading, (⚠) or (⚠).
    Use replacement components that have the same ratings, especially for flame resistance and dielectric strength specifications.
    A replacement part that does not have the same safety characteristics as the original might create shock, fire or other hazards.

1-2 Servicing Precautions

Warning 1 : First read the "Safety Precautions" section of this manual. If some unforeseen circumstance creates a conflict between the servicing and safety precautions, always follow the safety precautions. Warning 2 : An electrolytic capacitor installed with the wrong polarity might explode.

1. Servicing precautions are printed on the cabinet. Follow them.

2. Always unplug the unit's AC power cord from the AC power source before attempting to: (a) Remove or reinstall any component or assembly, (b) Disconnect an electrical plug or connector, (c) Connect a test component in parallel with an electrolytic capacitor.

3. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.

4. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the portion around the serviced part has not been damaged.

5. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).

6. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500V) to the blades of the AC plug.

   The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.

7. Never defeat any of the B+ voltage interlocks. Do not apply AC power to the unit (or any of its assemblies) unless all solid-state heat sinks are correctly installed.

8. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 Precautions for Electrostatically Sensitive Devices (ESDs)

1. Some semiconductor (“solid state”) devices are easily damaged by static electricity. Such components are called Electrostatically Sensitive Devices (ESDs); examples include integrated circuits and some field-effect transistors. The following techniques will reduce the occurrence of component damage caused by static electricity.

2. Immediately before handling any semicon ductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. (Be sure to remove it prior to applying power—this is an electric shock precaution.)

3. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of electrostatic charge.

4. Do not use freon-propelled chemicals. These can generate electrical charges that damage ESDs.

5. Use only a grounded-tip soldering iron when soldering or unsoldering ESDs.

6. Use only an anti-static solder removal device. Many solder removal devices are not rated as “anti-static”; these can accumulate sufficient electrical charge to damage ESDs.

7. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.

8. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.

9. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an ESD.

2. Specifications

System	Broadcasting	ATSC DTV (USA)
	Tuning	Frequency Synthesizer
	Sound	DTV
	Programme Channel	VHF : CH2 ~ CH13
		UHF : CH14 ~ CH69
Antenna Impedance		VHF/UHF Tuner : 75Ω Unbalanced Coaxial
AGC		Reverse AGC
Power	Consumption	35W ± 10%
	Requirement	120V/60Hz
Sound Output		SPDIF (OPTICAL/COAXIAL), DOWN MIXED R/L, OUTPUT
Dimensions (W x D x H)		16.54 x 14.21 x 3.07 in
Weight		1.72lbs

MEMO

3. Servicing Information

3-1 Source Program Download & Generals

3-1-1 Sofrware Version Check Method

Check the S/W version to see if the source code is updated.
After pressing the Menu key, turn on Help and press the Display key. Then, the S/W version will be displayed on the Help screen.

3-1-2 Serial Download Method

1. Put the execution file, Donw2.exe and the source code file of the T150 set on the same directory.
2. Connect the RS-232 serial cable to the Set-Top Box.
3. Enter the DOS Mode and move to the directory including Dawn2.exe and the source code file.
4. Write Down2 1 3333 Source code file name, “Enetr key”, then Power On the Set-Top Box, and the program will be updated.

3-1-3 Hyper Terminal Setting

Set the hyper terminal to observe the progress of the TV via the RS-232 cable.

Set up a hyper terminal.

1) When settings up a hyper terminal, set it in sub-program.
2) Enter a new name.
3) Select modem(com 1 and direct connection.)
4) Set the bit/second to 115200.
5) Set the data bit to 8.
6) No parity bit.
7) Set the stop bit to 1.
8) No flow control.
9) Stone in menory.
10) At this point, the new hyper terminal is ready.

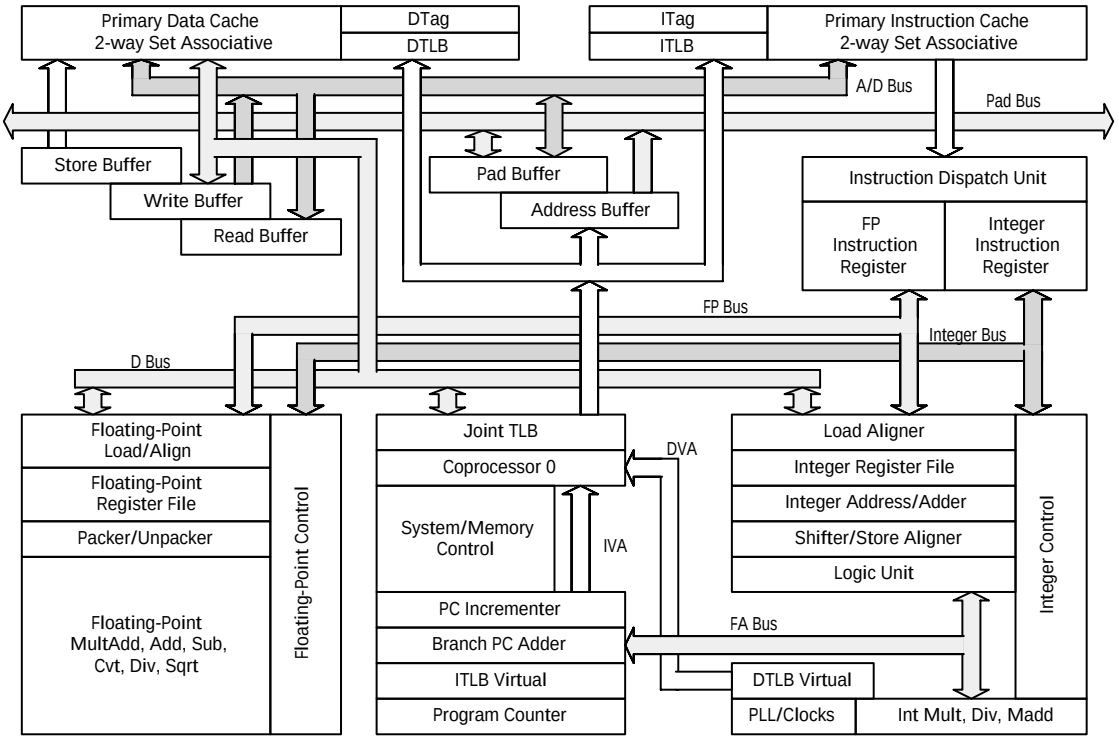
3-2 MAIN IC Description

3-2-1 RM5231

FEATURES

- Dual Issue superscalar microprocessor
  - —150, 200, 225, & 250 MHz operating frequencies
  - —300 Dhrystone2.1 MIPS
  - —SPECInt95 5.0, SPECfp95 5.25
- System interface optimized for embedded applications
  - — 32-bit system interface lowers total system cost
  - — High-performance write protocols maximize uncached write bandwidth
  - — Processor clock multipliers 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9
  - —2.5V core with 3.3V IO's
  - —IEEE 1149.1 JTAG boundary scan
- Integrated on-chip caches
  - —32KB instruction and 32KB data - 2 way set associative
  - —Per set locki ng
  - —Virtually indexed, physically tagged
  - —Write-back and write-through on per page basis
  - —Pipeline restart on first double for data cache misses
- Integrated memory management unit
  - —Fully associative joint TLB (shared by I and D translations)
  - —48 dual entries map 96 pages
  - —Variable page size (4KB to 16MB in 4x increments)
- High-performance floating-point unit - up to 500 MFLOPS
  - —Single cycle repeat rate for common single-precision opera-tions and some double precision operations
  - —Two cycle repeat rate for double-precision multiply and dou-ble precision combined multiply-add operations
  - —Single cycle repeat rate for single-precision combined multi-ply-add operation
- MIPS IV instruction set
  - —Floating point multiply-add instruction increases perfor-mance in signal processing and graphics applications
  - —Conditional moves to reduce branch frequency
  - —Index address modes (register + register)
- Embedded application enhancements
  - —Specialized DSP integer Multiply-Accumulate instruction and 3 operand multiply instruction
  - —I and D cache locking by set
  - —Optional dedicated exception vector for interrupts
- Fully static CMOS design with power down logic
  - —Standby reduced power mode with WAIT instruction
  - —2.7 W typical power @ 200MHz
- 128-pin Power-Quad 4 package

BLOCK DIAGRAM



3-2-2 TL810

FEATURES

- Programmable Transport Input/ Demultiplexer
  - —Two dedicated transport input ports (Satellite, Cable, Terrestrial or D-VHS)
  - —One bi-directional transport port (Satellite, Cable, Terrestrial or D-VHS)
  - —One dedicated transport output port (TL850 HD decoder, SD decoder or D-VHS)
  - —Glueless interface to IEC 61883-4 compliant IEEE1394 devices to transfer data to D-VHS recorder or HDTV
  - —ATSC/DVB/ARIB/DirecTV compliant
  - —Glueless interface to most front-end ICs
  - —Maximum input bit rate of 80Mbits/sec supported on each port
  - —Ability to transfer multiple HD/SD streams to the TeraLogic MPEG decoder ICs for HD/SD PIP applications

- Descramblers
  - —DVB, DES, Multi-2 descrambling supported
  - —Simultaneous descrambling of two streams supported
  - —All three transport input ports can access the descramblers
  - —Bypass mode of transport streams supported
    CPU Interface
  - —Glueless interface to MIPS CPUs such as QED RM5231, NEC VR5432, VR4300, IDT RC4640 and RC4650 (32-bit mode).
  - —32-bit wide multiplexed address/data supported
  - —Up to 100MHz clock interface
  - —CPU address mapping to all TL810 and external resources
  - —Write and Read posting buffers between CPU and external resources (PCI, Memory Bus and Local bus).

- Local Bus
  - —6 Pre decoded chip selects (BootROM, Flash and I/Os)
  - —Programmable timing for each chip select region
  - —Optional external wait state to support peripheral I/O
  - —8-bit and/or 16-bit device width support
  - —Upto 96MB of address space

- IDE Ultra DMA Interface
  - —Supports one IDE connector for upto 2 IDE drives
  - —Ultra DMA specifications allows 33MByte/s transfer rate
  - —16 x 32-bit Read ahead and posted write buffers
  - —Tri-state IDE signals for swap bay support.

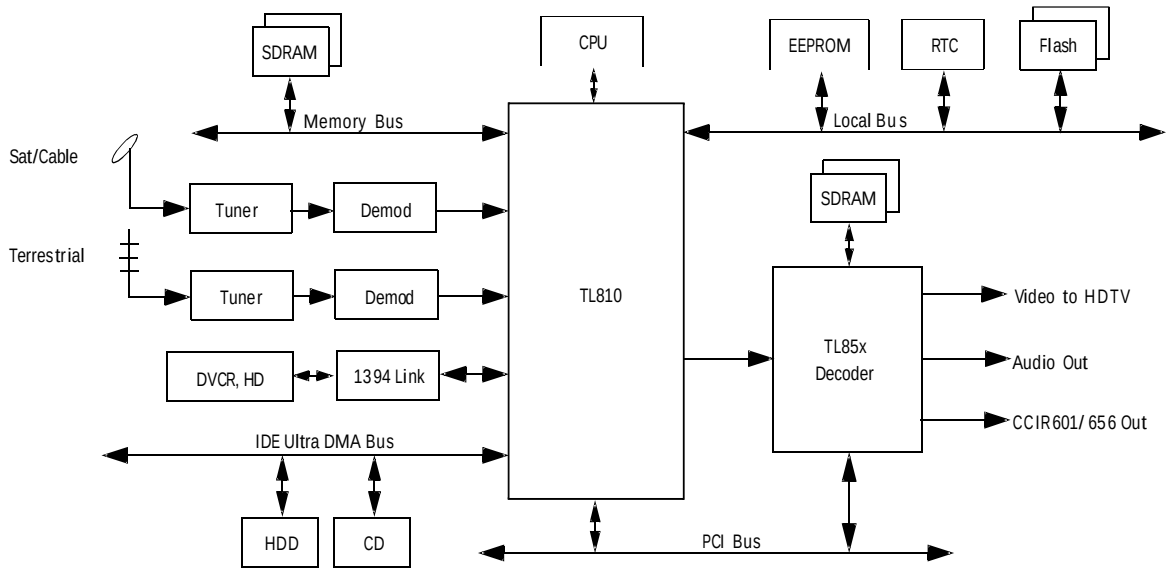
- SDRAM Interface
  - —32-bit wide SDRAM interface up to 100 MHz
  - —Supports 16/64/128-Mbit SDRAM devices
  - —1 - 2 banks supported
  - —2 way and 4 way bank interleaving support
  - —Up to 64 MByte SDRAM addressing range

- PCI Bus Interface
  - —32-bit PCI 2.1 compliant interface
  - —66-MHz or 33-MHz bus clock
  - —Posted read and write prefetch buffers
  - —PCI Master/Slave/Arbiter capability supported
  - —Programmable bus swapping through the PCI interface
  - —Supports burst transfers for efficient data movement
  - —Advanced DMA controller moves data between PCI and SDRAM

- Peripherals
  - —Two ISO-7816 compliant smart card interfaces
  - —Four asynchronous UARTs capable of up to 115kbps
  - —Two I 2 C compatible master and slave ports
  - —Programmable PWM input for infra red receiving application
  - —Programmable PWM output for infra red blasting applicatior
  - —Three 32-bit timers / counters running at CPU interface clock
  - —User configurable General Purpose I/Os

- Technol ogy
  - —2.5-V core, 3.3-V I/O, 0.25-µ CMOS
  - —324-pin Ball Grid Array package

BLOCK DIAGRAM

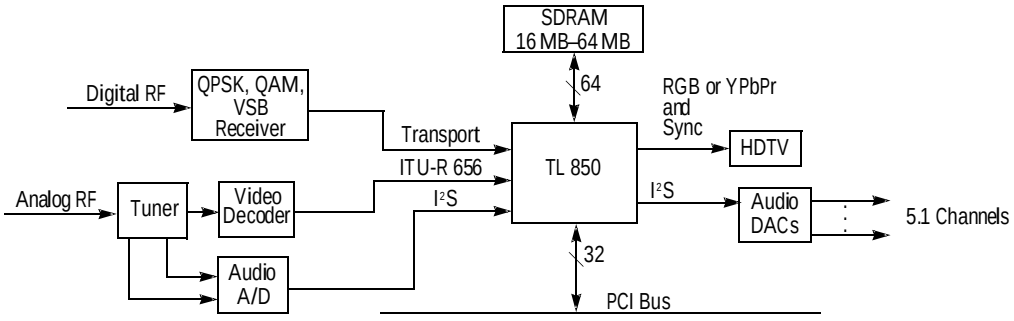


3-2-3 TL850

FEATURES

- High-Performance Digital Video Decoder
  - —MP@HL MPEG2 decoder
  - —All ATSC-compliant decode formats
  - —Decodes 1 HD (MP@HL) or 4 SD (MP@ML) streams simultaneously
  - —Multiple decode contexts; decode and display multiple programs simultaneously
- High-Performance Display Processor
  - —Multiple output display formats supported, including 1920x1080I, 1280x720P, 704x480P and 704x480I
  - —Many nonstandard input and output formats supported
  - —Letterbox and pan-and-scan options for displaying 16:9 video on 4:3 displays
  - —Multiple video services displayed on the same screen; supports viewing of multiplex services, Picture-in-Picture, and Picture out of Picture applications
  - —Graphics overlay plane with up to 24 bits per pixel and 8-bit alpha channel
  - —Cursor plane with 32x32 pixel cursor with 4-bit index (16 colors with 8-bit alpha blending)
  - —Analog RGB or YCC output for HDTV display or SD display in down-conversion mode
  - —EIA 770, SMPTE 274M, SMPTE 296M and SMPTE 293M compatible tri-level sync on analog output supported
  - —16- or 24-bit digital video output in YCrCb or RGB mode
- Flexible Format Converter
  - —High-quality scan conversions from ATSC, NTSC source formats to many output display formats
  - —High-quality up-conversion and down-conversion of source video to selected display format
  - —Integrated high-quality line doubler
- NTSC Video Integration
  - —Video capture port for NTSC/PAL digital video, ITU-R 656 compatible
  - —Simultaneous output in HD and 704x480I; supports analog VCR recording of off-air programming (Option for no OSD)
- Programmable Transport Demultiplexer
  - —ATSC/ ARIB/ DVB/ DSS compliant transport demultiplexing
- Audio Integration & Processing
  - —Supports integration of an external Dolby Digital (AC3) or
- MPEG audio decoder
  - —Supports software audio decode
  - —Provides audio rate buffer
  - —Supports audio and video PTS synchronization
  - —Audio capture to memory or bypass to output
  - —Audio stream play from memory
  - —Audio mix, cross-fade, and attenuate between sources
  - —Six-channel audio input and output
  - —IEC-958 formatted output supported
- Memory Controller
  - —64-bit wide SDRAM interface up to 125 MHz
  - —Programmable clock generator
  - —Up to 64 Mbytes addressing range
  - —Advanced Memory Reduction (AMR) mode supports HD decode in 8 Mbytes of commodity SDRAM
  - —AMR mode supports HD decode and down-conversion to standard definition display format (480I and 480P) using 4 Mbytes of commodity SDRAM
- Accelerated 2-D Graphics
  - —256 ROP hardware BLT engine
  - —1-, 4-, 8-, 15-, 16-, and 24-bit per pixel RGB graphics support
  - —1-, 4- or 8-bit per-pixel, and global alpha channel
  - —Alpha channel arithmetic engine
  - —Hardware color expansion and reduction
  - —Hardware flicker reduction for interlaced display
- PCI Bus Interface
  - —32-bit interface at 33-MHz or 66-MHz bus clock
  - —PCI Master/Slave capability supported
  - —DMA master capability over PCI bus supported
- Technol ogy
  - —2.5-V core, 3.3-V I/O, 0.25-µ CMOS
  - —348-pin Ball Grid Array package

BLOCK DIAGRAM



3-2-4 BCM3510

GENERAL DESCRIPTION

The BCM3510 is a digital receiver compatible with both North American digital cable television and digital terrestrial broadcast television standards. It is capable of receiving all standard-definition and high-definition digital television formats (SDTV/HDTV)

The BCM3510 accepts an analog signal centered at the standard with an integrated programmable gain amplifier and 10-bit A/D converter, demodulates and filters the signal with a combined 64/256-QAM and 8/16-VSB demodulator, adaptively filters the signal to remove multipath propagation effects and NTSC co-channel interference, and error corrects the resulting data with integrated trellis and Reed-Solomon decoders supporting both the ATSC A/53 and ITU-T J.83 Annex A/B/C coding formats. The final received data stream is delivered in either parallel or serial MPEG-2 transport format. All gain, clock, and carrier, ac-quisition and tracking loops are integrated on-chip as are the necessary phase-locked loops, referenced to a single external crystal

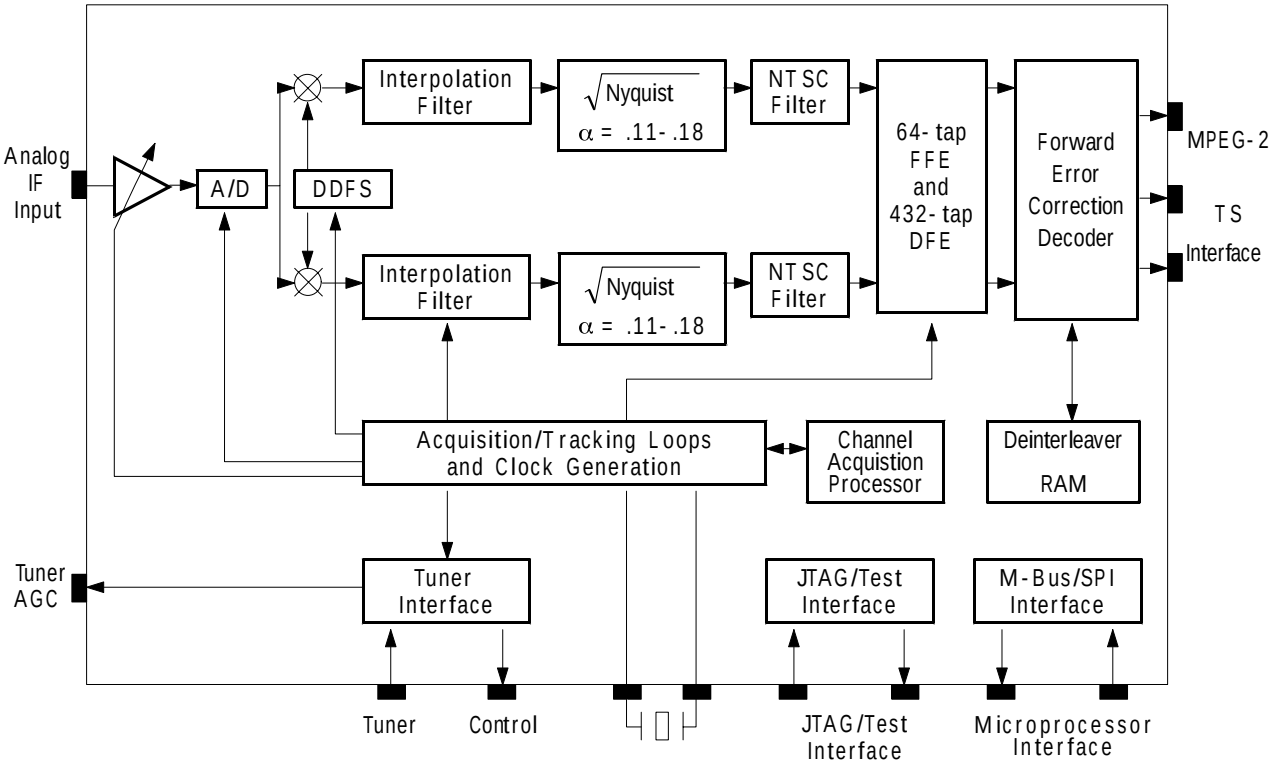
FEATURES

- Integrated 64/256-QAM and 8/16-VSB Receiver
  - —Variable rate QAM/VSB receiver
  - —Direct 36/44 MHz IF sampled architecture
  - —10-bit A/D converter with integral AGC amplifier
  - —Digital demodulator and matched fiters
  - —NTSC co-channel rejection filter
  - —496-tap adaptive decision-feedback equalizer
  - —All digital clock and carrier recovery
  - —integrated PLLs minimize external components
- CATV/HDTV Standards Compliant FEC Decoder
  - —ITU-TJ.83 Annex A/B/C/D CATV modes
  - —ATSC A/53 (HDTV) mode
  - —Integrated deinterleaver RAM for all modes
- Channel Acquisition Processor
- MPEG-2 Transport Output
  - —PCMCIA and Smart Card Format-EIA 679,A,B
  - —PLL Generated Output Clock
- Low Power Standby Mode
- I^2C or SPI Microcontroller Interface
- IEEE 1149.1 (JTAG) Test Interface
- 128-pin MQFP
- 1.8V/3.3V Operation

APPLICATION

- Digital CATV/HDTV Set-Top Boxes
- Digital CATV/HDTV Television

BLOCK DIAGRAM



3-2-5 CS49325

FEATURES

- CS4930X: DVD Audip Sub-family
  - —PES layer decode for A/V sync
  - —DVD Audio Pack Layer Support
  - —Meridian Lossless Packing(MLP)™
  - —Dolby Digital™
  - —MPEG Multi-Channel
  - —DTS Digital Surround™
- CS4931X: Broadcast Sub-family
  - —PES layer decode for A/V sync
  - —MPEG Advanced AUDIO cODING algorithm(AAC)
  - —MPEG Multi Channel
  - —Dolby Digital
- CS4932X: AVR Sub-family
  - —Dolby Digital with integrated code
  - —DTS decoding with integrated DTS tables & code
  - —Crystal Original Surround with integrated code
  - —MPEG Advanced Audio Coding Algorithml(AAC)
  - —MPEG Multi-Channel
- CS4933X: General Purpose Audio DSP
  - —THX™ and THX Surround EX
  - —Car Audio
  - —Mixer Applications
- Features are a super-set of the CS4923/4/5/6/7/8
  - —8 channel output, including dual zone output capability
  - —Supports up to 192kHz Fs @ 24 bit throughput
  - —Increased memory/MIPs
  - —SRAM Interface for increased delay and buffer capability
  - —MPEG Layer 3(MP3)

DESCRIPTION

The CS493XX is a family of multichannel audio decoders intended to supersede the CS4923/4/5/6/7/8 family as the leader of audio decoding in both the DVD, boardcast and receiver markets. The family will be split into parts tailored for each of these distinct market segments.

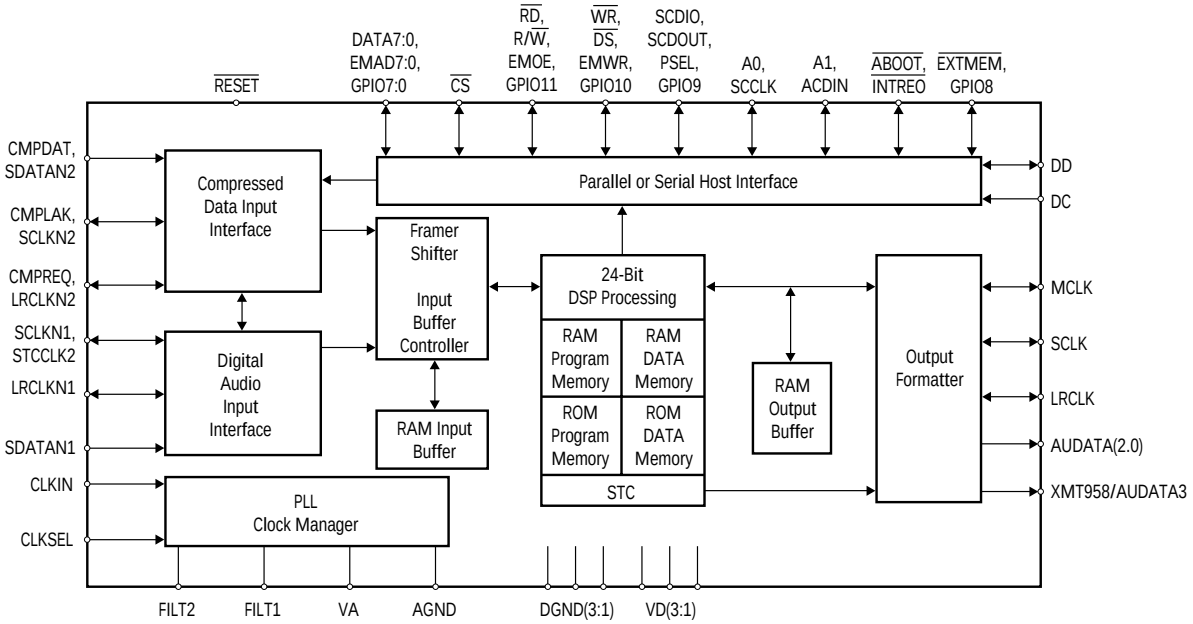
For the DVD market, parts will be offered which support Meridian Lossless Packing(MLP), Dolby Digital, MPEG Multi-Channel, DTS and syubsets thereof. For the receiver market, parts will be offered which support Dolby Digital, MPEG Multi-Channel, DTS, AAC and subsets thereof.
For the broadcast market parts will be offered which support Dolby Digital, MPEG Advanced Audio Coding(AAC), and MPEG Multi-Channel.

Under the Crystal brand, Cirrus Logic is the only single supplier of high-performance 24-bit multi-standard audio DSP decoders, DSP firmware, and high-resolution data converters.
This combination of DSPs, system firmware, and data converters simplify rapid creation of world-class high-fidelity products.

Ordering Information

	APPLICATION	FEATURES
CS49300	DVD Audio	MLP, AC3, DTA and MPEG5.1
CS49310	Broadcast	AAC, AC3, MPEG5.1
CS49325	AVR	AC3(IBA), MPEG5.1
CS49326	AVR	AC3(IBA), DTS(IBA), MPEG5.1
CS49329	AVR	AC3(IBA), AAC, DTS, MPEG5.1, PDM Pass-through(IBA)
CS49330	Audio DSP	THX

BLOCK DIAGRAM



3-2-6 SAA7120

FEATURES

- Monolithic CMOS 3.3 V (5 V) device
- Digital PAL/NTSC encoder
- System pixel frequency 13.5 MHz
- Accepts MPEG decoded data on 8-bit wide input port; input data format Cb-Y-Cr (CCIR 656), SAV and EAV
- Three DACs for Y, C and CVBS, two times oversampled with 10 bit resolution
- Real time control of subcarrier
- Cross colour reduction filter
- Closed captioning encoding and WST- and
- NABTS-Teletext encoding including sequencer and filter
- Line 23 wide screen signalling encoding
- Fast I 2 C-bus control port (400 kHz)
- Encoder can be master or slave
- Programmable horizontal and vertical input synchronization phase
- Programmable horizontal sync output phase
- Internal colour bar generator (CBG)
- 2 X 2 bytes in lines 20 (NTSC) for copy guard management system can be loaded via I 2 C-bus
- Down-mode of DACs
- Controlled rise/fall times of synchronization and blanking output signals
- Macrovision Pay-per-View copy protection system rev.7 and rev.6.1 as option.

  This applies to SAA7120 only. The device is protected by USA patent numbers 4631603, 4577216 and 4819098 and other intellectual property rights. Use of the Macrovision anti-copy process in the device is licensed for non-commercial home use only. Reverse engineering or disassembly is prohibited. Please contact your nearest Philips Semiconductors sales office for more information.

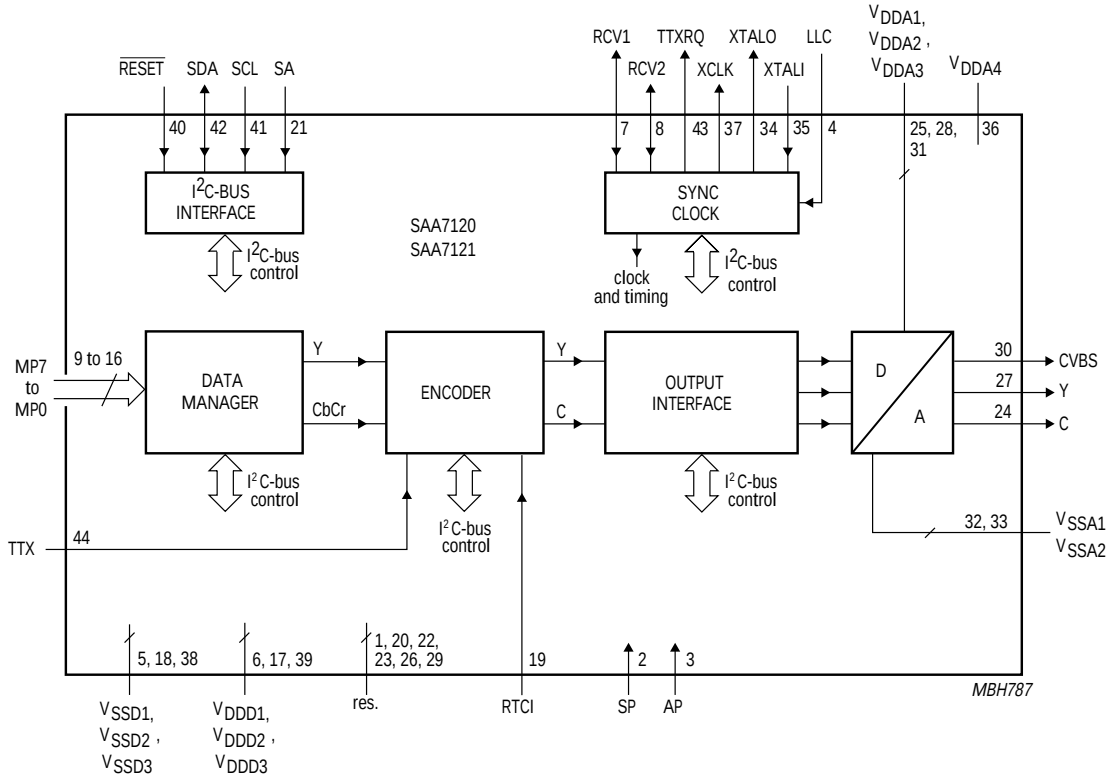
- QFP44 package.

GENERAL DESCRIPTION

The SAA7120; SAA7121 encodes digital YUV video data to an NTSC or PAL CVBS or S-Video signal.

The circuit accepts CCIR compatible YUV data with 720 active pixels per line in 4 :2 :2multiplexed formats, for example MPEG decoded data. It includes a sync/clock generator and on-chip DACs.

BLOCK DIAGRAM



3-3 Connector Specification

JP403

Pin No	NAME
1	GND
2	GND
3	UNLOCK
4	LOCK
5	IR-INPUT
6	KEY-S3
7	KEY-S2
8	KEY-S1
9	KEY-S0
10	STBY-5V
11	D-5V

JP406 DIGITAL POWER

Pin No	NAME
1	D3.3V
2	GND
3	D3.3V
4	GND
5	D3.3V
6	GND
7	D5V
8	GND
9	D5V
10	GND
11	D5V
12	GND

JP407

Pin No	NAME
1	A5V
2	GND
3	A12V
4	GND
5	-A5V
6	GND

JP408

Pin No	NAME
1	A30V-CH
2	GND
3	A12V-CH
4	GND
5	POWER
6	GND
7	STBY-5V
8	GND

3-4 Power Operation Description

3-4-1 SMPS section

On contrary to the Forward system, which when the primary turns ON, the secondary also turns ON, the SMPS section applies the Flyback system; On-Off type, which the primary turns ON, but the secondary turns OFF.
IC801S functions as a Power Switch, which contains MOSFET, PWM IC, an oscillation circuit and feedback circuits. When IC801S turns ON, the primary current of transformer flows. Since the winding direction of both transformer primary and secondary are different, when the switching TR is turned on, the reverse bias is applied to the terminals of the secondary of Diode(D811,812,814,816 ,818,820,822). Therefore, the Diode keeps itself in turnoff and no energy is transmitted to the output.
In this case, the current that flows into the primary increases in a straight line. When the IC801S Switching TR is turned OFF, the energy accumulated in the transformer core is transmitted to the outputting end through a diode.
Once the core energy is completely transmitted, the secondary current IC becomes 0. After that, only the DC input voltage is applied to the terminals of IC801S SW TR and the switching repeats.

3-4-2 Snubber circuit

Since the flyback circuit makes an artificial and big gap on the Transformer, the leakage flux increases and causes a big surge.
C804, R803 and D802 generates a big counter electromotive force, just when the Switching TR turns OFF. They composes a snubber circuit to reduce the surge voltage that happens when superimposing on the TR drain.
The power to be accumulated on the Leakage Inductance is in proportion to the switching frequency and counter-electromotive force.
As the counter-electromotive force has the pulse attribute, it is first rectified into DC by the capacitor C804 and then consumed by the resistance R803.

3-4-3 SMPS section

3-4-3(a) D+3.3V

The output (constant) voltage is output after the voltage divided by R813, R814 and VR801 is applied to the Shunt Regulator IC811 (KA431AZ) Error Amp Input INV. terminal (Pin #1) and compared with the reference voltage (Vref 2.495V) set inside IC811 (N.I terminal). The output from IC811 turns ON / OFF the Optocoupler Diode side, controls IC801S and maintains the constant voltage.
Where the output voltage Vo is smaller than the reference voltage Vref (VoÿVref), the IN / OUT of current is not done through the cathode. In case of VoÿVref, however, the current flows into the cathode. Therefore, Vo=Vref works by making the output voltage constant, Vo=Vref.

$$Vo = (1 + R813 / (R814+VR811) \times Vref$$
$$= (1 + 820\Omega / 2.5k\Omega) \times 2.495V$$
$$\fallingdotseq 3.3$$

3-4-3(b) D+5V, A+5V, A+12V, A+30V, A-5V

In proportion to the D+3.3V terminal, the voltage is applied to D+5V, A+5V, A+12V, A+30V, A-5V winding. The voltage applied to each winding to some extent changes according to the load fluctuation of D+3.3V terminal. Therefore, D+5V, A+5V, A+12V, A 5V requiring the constant voltage outputs the voltage that is stabilized through a regulator.

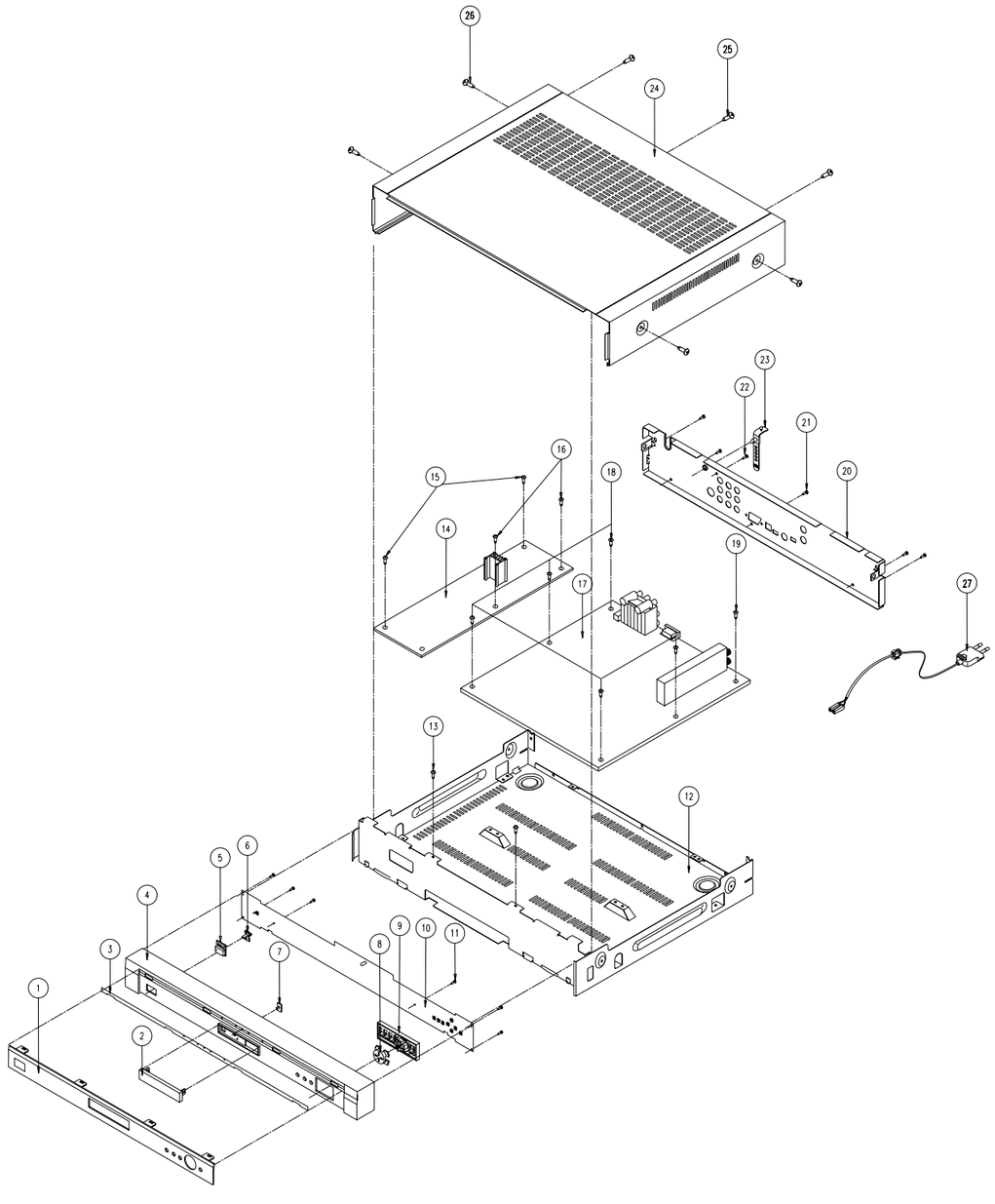
3-4-3(b) OUTPUT SWITCH CONTROL

The output stage other than ST5V(Standby) is available for SWITCH CONTROL.
After the output stage filters AC, it falls the voltage using TS811S (LINEAR TRANSFORMER) and smooths down via the bridge diode (DS811~814) and electrolytic capacitor. And then it generates ST5V through a regulator and performs ON / OFF CONTROL by applying a high / low signal to QS811.

MEMO

4. Exploded View & Parts List

4-1 SIRT1150X/XAA



No	Code No	Description	Specification	Q'ty	Remark
1	AA63-00292B	COVER-CENTER	;SIRT150,AL 6063,-,-,TITAN G	1	
2	AA64-01095C	WINDOW REMOCON	;SIRT150,PC V0,-,-,-,-,VIO	1	
3	AA64-01098B	WINDOW-LED	;SIRT150,PC,T1.0,-,-,-,BLK,-	1	
4	AA64-01142B	PANEL-FRONT	;SIRT150,PS V0 ,BLK(EMI)SPRAY	1	
5	AA64-01099B	KNOB-POWER	;SIRT150,ABS HB,-,G3676,SV022P	1	
6	AA64-01097B	INDICATOR-POWER	;SIRT150,ACRYL,-,CLR,-,-,	1	
7	AA64-01094B	INDICATOR-LED	;SIRT150,ACRYL,-,MILKY,-,-,	1	
8	AA61-00436B	HOLDER-FAMILY	;SIRT150,ABS HB,G3676,-,-,S	1	
9	AA64-01100B	KNOB-FAMILY	;SIRT150,ABS HB,-,G3676,-,-,-	1	
10	AA95-00741A	ASSY-PCB,FRONT	;-,SIRT150X/XAA,T13A,-,-,U	1	
11	6003-001023	SCREW-TAPTITE	;RWH,+,B,M3,L10,ZPC(YEL),SW	6	CP+PF
12	AA91-00508A	ASSY-PANEL.BOTTOM	;-,-,SECC T0.8,SIRT150	1	
13	6003-000275	SCREW-TAPTITE	;BH,+,B,M3,L10,BLK ,SWCH101	2	PF+P
14	AA98-00087A	ASSY-PCB,POWER	;-,SIRT150X/XAA,T13A,-,-,-	1	
15	6003-001023	SCREW-TAPTITE	;RWH,+,B,M3,L10,ZPC(YEL),SW	2	PP+PB
16	AA60-00014A	SCREW-SET	;-,-,-,-,-,SILVER,ZPC,M3*6,-,-	2	PP+PB
17	AA94-02676A	ASSY PCB MAIN(OPT)	;SIRT150X/XAA,T13A,USA	1	
18	AA60-00014A	SCREW-SET	;-,-,-,-,-,SILVER,ZPC,M3*6,-,-	5	PM+PB
19	6003-001023	SCREW-TAPTITE	;RWH,+,B,M3,L10,ZPC(YEL),SW	1	PM+PB
20	AA64-01143B	PANEL-REAR	;SIRT150,SECC T0.8,-,-,BLK,-,-	1	
21	6003-000275	SCREW-TAPTITE	;BH,+,B,M3,L10,BLK ,SWCH101	5	PB+PR
22	AA65-00003A	CABLE-CLAMP	;PE BLACK,-,-,-,SIR-T100,-	1	
23	6003-001019	SCREW-TAPTITE	;RH,+,B,M4,L12,ZPC(BLK),SWR	1	PR+RJ
24	AA64-01133B	PANEL-TOP	;SIRT150,DG810P,VCH T0.6,-,-		
25	6003-000275	SCREW-TAPTITE	;BH,+,B,M3,L10,BLK ,SWCH101	3	PT+PR
26	6003-000275	SCREW-TAPTITE	;BH,+,B,M3,L10,BLK ,SWCH101	4	PT+PB
27	AA96-00156A	ASSY-POWER,CORD	;-,EP2/YES(US),H/C100MM,K	1	

5. Electric Parts List

5-1 SIRT150X/XAA

Loc. No.	Code No.	Description ; Specification	Remark
		ASSY PCB MAIN(OPT)	
1 *	AA94-02676A	ASSY PCB MAIN(OPT);SIRT150X/XAA,T13A,USA	
..2 JP202	3701-001129	CONNECTOR-DSUB;15P,3R,FEMALE,ANGLE,AUF	
..2 JP203	3722-001532	JACK-RCA;9P+S1P,3.5mm,NI,BLK,-	
..2 JP204	3707-001005	CONNECTOR-OPTICAL;PLUG,SM,-,4.4/2.0MM	
..2 JP403	3711-000628	CONNECTOR-HEADER;-,11P,1R,2.5mm,STRAIGHT	
..2 JP404	3722-000143	JACK-PHONE;1P(VER),3.4mm,AG,BLK,NO	
..2 JP406	3711-003974	CONNECTOR-HEADER;BOX,12P,1R,2.5mm,STRAIG	
..2 JP407	3711-003045	CONNECTOR-HEADER;BOX,6P,1R,2.5mm,STRAIGH	
..2 JP408	3711-003051	CONNECTOR-HEADER;BOX,8P,1R,2.5mm,STRAGHT	
..2 JP409	3408-001065	SWITCH-SLIDE;50V,0.3A,2C4P,-,-	
..2 JP410	3408-001048	SWITCH-SLIDE;30V,0.2A,DP4T,OFF-ON,-	
..2 PCB	AA41-00315A	PCB-MAIN;SIR-T150,FR-4,6L,A,1.6T,245x24	S.N.A
⚠ ..2 U405	AA13-30019A	IC-MCU;Z86E3016PSC-OTP,OTP,ST,4K,28P,	
⚠ ..2 U412	1203-000298	IC-POSI.FIXED REG.;7809,TO-220,3P,-,PLAS	
..2 U600	AA40-00065A	TUNER;DTNM3200AWL,-,NTSC,181CH,45.75	
..2 U602	2904-001111	FILTER-SAW AV;43.75MHz,SIP5P,ST,14.5dB,D	
..2 X600	2903-001216	FILTER-CERAMIC;TR,47.25MHZ,-,-,1DB MAX,T	
..2	0202-001004	SOLDER-CREAM;SQ-2030M SZH-1,S63A,D0.04,6	S.N.A
..2	AA39-00201A	LEAD CONNECTOR ASSY;-,-,-,6P,-,-,-,35155	
..2	0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2	AA99-10185C	ASSY-PCB MAIN,AUTO; AA94-02676A ,V	S.N.A
...3 C015	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C101	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C102	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C103	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C104	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C105	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C106	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C107	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C108	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C109	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C110	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C111	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C112	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C113	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C114	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C115	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C116	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C117	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C118	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C121	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C122	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C123	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C124	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C128	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C129	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C132	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C133	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C140	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C141	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C142	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C143	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C144	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C145	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C146	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C147	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C148	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C152	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C153	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C154	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C155	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C202	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C203	2203-001256	C-CERAMIC,CHIP;0.008nF,0.25pF,50V,NP0,TP	
...3 C204	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C205	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C206	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C207	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C208	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C209	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C210	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C211	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C213	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C214	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C215	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C216	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C217	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C218	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C219	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C220	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C224	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C225	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C226	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C227	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C228	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C233	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C234	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C235	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C236	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C237	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C238	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C239	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C240	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C241	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C242	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C266	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C267	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C268	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C270	2203-000716	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,2012	
...3 C271	2203-000716	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,2012	
...3 C272	2404-000212	C-TA,CHIP;3.3uF,20%,25V,-,TP,3528,-	
...3 C273	2404-000212	C-TA,CHIP;3.3uF,20%,25V,-,TP,3528,-	
...3 C274	2203-000374	C-CERAMIC,CHIP;15nF,10%,50V,X7R,TP,2012	
...3 C275	2203-000374	C-CERAMIC,CHIP;15nF,10%,50V,X7R,TP,2012	
...3 C276	2203-001105	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,2012	
...3 C277	2203-001105	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,2012	
...3 C278	2404-000235	C-TA,CHIP;4.7uF,20%,16V,-,TP,3528,1.4	
...3 C279	2404-000235	C-TA,CHIP;4.7uF,20%,16V,-,TP,3528,1.4	
...3 C280	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528,-	
...3 C281	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528,-	
...3 C283	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C284	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C285	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
...3 C286	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528,-	
...3 C287	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C288	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C289	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C290	2402-001044	C-AL,SMD;100uF,20%,25V,-,TP,8.3x8.3x6.3	
...3 C291	2203-000716	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,2012	
...3 C292	2203-000716	C-CERAMIC,CHIP;3.3nF,10%,50V,X7R,TP,2012	
...3 C293	2404-000212	C-TA,CHIP;3.3uF,20%,25V,-,TP,3528,-	
...3 C294	2404-000212	C-TA,CHIP;3.3uF,20%,25V,-,TP,3528,-	
...3 C295	2203-000374	C-CERAMIC,CHIP;15nF,10%,50V,X7R,TP,2012	
...3 C296	2203-000374	C-CERAMIC,CHIP;15nF,10%,50V,X7R,TP,2012	
...3 C297	2404-000235	C-TA,CHIP;4.7uF,20%,16V,-,TP,3528,1.4	
...3 C298	2404-000235	C-TA,CHIP;4.7uF,20%,16V,-,TP,3528,1.4	
...3 C299	2203-001105	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,2012	
...3 C300	2203-001105	C-CERAMIC,CHIP;6.8nF,10%,50V,X7R,TP,2012	
...3 C301	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528,-	
...3 C302	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528,-	
...3 C303	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C304	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A

Loc. No.	Code No.	Description ; Specification	Remark
...3 C308	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C310	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C311	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C312	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C313	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C316	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C317	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C318	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C327	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C329	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C336	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C337	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C339	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C341	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C342	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C345	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C347	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C349	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C350	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C351	2203-000748	C-CERAMIC,CHIP;0.03nF,5%,50V,NP0,TP,2012	
...3 C352	2203-000748	C-CERAMIC,CHIP;0.03nF,5%,50V,NP0,TP,2012	
...3 C353	2203-000595	C-CERAMIC,CHIP;0.22nF,5%,50V,NP0,TP,2012	
...3 C356	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C357	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C358	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C360	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C361	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C362	2402-001070	C-AL,SMD;470uF,20%,16V,GP,TP,10x10.2,-	
...3 C381	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C401	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
⚠ ...3 C402	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C403	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C404	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
⚠ ...3 C405	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C409	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C411	2203-000634	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,201	
⚠ ...3 C412	2203-005590	C-CERAMIC,CHIP;330NF,10%,16V,X7R,TP,2012	
⚠ ...3 C413	2203-000634	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,201	
⚠ ...3 C418	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C419	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C420	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C421	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
⚠ ...3 C422	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C423	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
⚠ ...3 C424	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
⚠ ...3 C425	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
⚠ ...3 C426	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
⚠ ...3 C427	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
⚠ ...3 C428	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
⚠ ...3 C429	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
⚠ ...3 C430	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C431	2203-000784	C-CERAMIC,CHIP;0.33nF,5%,50V,NP0,TP,2012	
⚠ ...3 C432	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
⚠ ...3 C434	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C435	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C436	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C439	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C440	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C441	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C442	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C443	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C444	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C445	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C451	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C452	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C453	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
⚠ ...3 C458	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C460	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C461	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C464	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
⚠ ...3 C466	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C468	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
⚠ ...3 C470	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C472	2402-001044	C-AL,SMD;100uF,20%,25V,-,TP,8.3x8.3x6.3	
⚠ ...3 C474	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C478	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C479	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
⚠ ...3 C480	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
⚠ ...3 C481	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C482	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C483	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C484	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
⚠ ...3 C485	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C501	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C502	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C503	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C504	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C505	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C506	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C507	2203-000938	C-CERAMIC,CHIP;0.47nF,5%,50V,NP0,TP,2012	
...3 C508	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528,-	
...3 C509	2404-000167	C-TA,CHIP;2.2uF,20%,16V,-,TP,3216,-	
...3 C510	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C511	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
...3 C512	2203-000979	C-CERAMIC,CHIP;47nF,10%,50V,X7R,TP,2012	
...3 C513	2203-000495	C-CERAMIC,CHIP;2.2nF,10%,50V,X7R,TP,2012	
...3 C514	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C515	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C516	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C517	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C518	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C519	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C520	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C521	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C522	2404-000151	C-TA,CHIP;1uF,20%,16V,-,TP,3216,-	
...3 C526	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C527	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C528	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C529	2402-001044	C-AL,SMD;100uF,20%,25V,-,TP,8.3x8.3x6.3	
...3 C530	2402-001044	C-AL,SMD;100uF,20%,25V,-,TP,8.3x8.3x6.3	
...3 C532	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C533	2203-000802	C-CERAMIC,CHIP;33nF,10%,50V,X7R,TP,2012	
...3 C534	2203-000802	C-CERAMIC,CHIP;33nF,10%,50V,X7R,TP,2012	
...3 C600	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C601	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
...3 C602	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C603	2404-000151	C-TA,CHIP;1uF,20%,16V,-,TP,3216,-	
...3 C604	2203-000748	C-CERAMIC,CHIP;0.03nF,5%,50V,NP0,TP,2012	
...3 C605	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C606	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
...3 C607	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C608	2402-000170	C-AL,SMD;1uF,20%,50V,GP,TP,4.3x4.3x5.4,	
...3 C609	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C610	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
...3 C611	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C612	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
...3 C613	2203-000748	C-CERAMIC,CHIP;0.03nF,5%,50V,NP0,TP,2012	
...3 C615	2203-000748	C-CERAMIC,CHIP;0.03nF,5%,50V,NP0,TP,2012	
...3 C617	2203-000748	C-CERAMIC,CHIP;0.03nF,5%,50V,NP0,TP,2012	
...3 C630	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
...3 C631	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C633	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C634	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C635	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C636	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C637	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C638	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C639	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C640	2402-000179	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4	
...3 C641	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C642	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C643	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C644	2203-005590	C-CERAMIC,CHIP;330NF,10%,16V,X7R,TP,2012	
...3 C645	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C646	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C651	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C652	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C653	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C654	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C661	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C662	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C663	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C664	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C665	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A

Loc. No.	Code No.	Description ; Specification	Remark
...3 C666	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C667	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C668	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C670	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C671	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C672	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C673	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C674	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C675	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C676	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C677	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C684	2203-000634	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,201	
...3 C685	2203-000634	C-CERAMIC,CHIP;0.022nF,5%,50V,NP0,TP,201	
...3 C686	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C687	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C690	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
...3 C691	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C692	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C693	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.	
...3 C694	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 C695	2203-000181	C-CERAMIC,CHIP;100nF,+80-20%,25V,Y5V,TP,	S.N.A
...3 D111	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D201	0401-000133	DIODE-SWITCHING;RLS4148,100V,200mA,SOD-8	
...3 D202	0401-000133	DIODE-SWITCHING;RLS4148,100V,200mA,SOD-8	
...3 D205	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D206	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D207	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D208	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D209	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D210	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D211	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D212	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D213	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D214	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D215	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D216	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D217	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D218	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D219	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D220	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D402	0403-000620	DIODE-ZENER;RLZ5.6B,5.6,500mW,LL-34,TP	
...3 D410	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D412	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D413	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D414	0401-000132	DIODE-SWITCHING;BAV99,70V,715mA,SOT-23,T	
...3 D600	0403-000620	DIODE-ZENER;RLZ5.6B,5.6,500mW,LL-34,TP	
...3 D601	0403-000620	DIODE-ZENER;RLZ5.6B,5.6,500mW,LL-34,TP	
...3 D602	0403-000620	DIODE-ZENER;RLZ5.6B,5.6,500mW,LL-34,TP	
...3 D603	0403-000620	DIODE-ZENER;RLZ5.6B,5.6,500mW,LL-34,TP	
...3 L208	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L300	2901-001119	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L301	2901-001119	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L302	2901-001119	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L303	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L304	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L305	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L306	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L307	2901-001119	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L308	2901-001119	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L309	2901-001119	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L310	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L311	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L312	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L313	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L314	2901-001118	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L315	2901-001119	FILTER-EMI SMD;25V,100mA,-,-,3.2x1.6x1,T	
...3 L401	3301-000316	CORE-FERRITE BEAD;AB,120ohm,2x1.25x0.85m	
...3 L403	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L406	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L407	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L408	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L409	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L410	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L411	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L416	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L500	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L600	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L601	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 L621	3301-001202	CORE-FERRITE BEAD;AB,120ohm,4.5x3.2x1.3m	
...3 Q203	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
...3 Q204	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
...3 Q205	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
...3 Q206	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
...3 Q207	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
...3 Q208	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
...3 Q401	0501-000342	TR-SMALL SIGNAL;KSC1623-Y,NPN,200mW,SOT-	
...3 Q402	0501-000312	TR-SMALL SIGNAL;KSA812,PNP,150mW,SOT-23,	
...3 Q500	0501-000344	TR-SMALL SIGNAL;KSC1623-G,NPN,200mW,SOT-	
...3 Q501	0501-000312	TR-SMALL SIGNAL;KSA812,PNP,150mW,SOT-23,	
...3 Q600	0501-000525	TR-SMALL SIGNAL;BF799,NPN,280mW,SOT-323,	
...3 R101	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R102	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R103	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R111	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R112	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R113	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R114	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R115	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R116	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R117	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R118	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R119	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R120	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R121	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R122	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R123	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R124	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R125	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R126	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R127	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R128	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R134	2007-000781	R-CHIP;33OHM,5%,1/10W,DA,TP,2012	
...3 R137	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R138	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R139	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R140	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R141	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R142	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R143	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R144	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R145	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R146	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R147	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R148	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R149	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R150	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R151	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R152	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R153	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R154	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R155	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R156	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R157	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R158	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R159	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R160	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R161	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R162	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R163	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R164	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R165	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R166	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R167	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R168	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R169	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R170	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R171	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R172	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R173	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R202	2007-000028	R-CHIP;39OHM,5%,1/10W,DA,TP,2012	
...3 R203	2007-000028	R-CHIP;39OHM,5%,1/10W,DA,TP,2012	
...3 R204	2007-000028	R-CHIP;39OHM,5%,1/10W,DA,TP,2012	
...3 R205	2007-000941	R-CHIP;47KOHM,5%,1/10W,DA,TP,2012	
...3 R206	2007-000781	R-CHIP;33OHM,5%,1/10W,DA,TP,2012	

Loc. No.	Code No.	Description ; Specification	Remark
...3 R207	2007-000798	R-CHIP;360OHM,5%,1/10W,DA,TP,2012	
...3 R208	2007-000415	R-CHIP;15OHM,5%,1/10W,DA,TP,2012	
...3 R209	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R210	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R211	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
...3 R213	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R214	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R230	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R231	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R232	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R233	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R234	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R235	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R236	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R237	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R238	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R239	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R240	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R241	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R242	2007-000728	R-CHIP;300OHM,5%,1/10W,DA,TP,2012	
...3 R243	2007-000728	R-CHIP;300OHM,5%,1/10W,DA,TP,2012	
...3 R244	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R245	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R246	2007-001224	R-CHIP;9.1KOHM,5%,1/10W,DA,TP,2012	
...3 R247	2007-001224	R-CHIP;9.1KOHM,5%,1/10W,DA,TP,2012	
...3 R248	2007-000457	R-CHIP;18KOHM,5%,1/10W,DA,TP,2012	
...3 R249	2007-000457	R-CHIP;18KOHM,5%,1/10W,DA,TP,2012	
...3 R250	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R251	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R252	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R253	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
...3 R254	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
...3 R255	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R256	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R259	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R260	2007-001118	R-CHIP;680OHM,5%,1/10W,DA,TP,2012	
...3 R262	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R263	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R264	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R265	2007-000328	R-CHIP;11KOHM,5%,1/10W,DA,TP,2012	
...3 R266	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R267	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R268	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R269	2007-001009	R-CHIP;51KOHM,5%,1/10W,DA,TP,2012	
...3 R270	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R271	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R272	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R273	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R274	2007-000728	R-CHIP;300OHM,5%,1/10W,DA,TP,2012	
...3 R275	2007-000728	R-CHIP;300OHM,5%,1/10W,DA,TP,2012	
...3 R276	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R277	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R278	2007-001224	R-CHIP;9.1KOHM,5%,1/10W,DA,TP,2012	
...3 R279	2007-001224	R-CHIP;9.1KOHM,5%,1/10W,DA,TP,2012	
...3 R280	2007-000457	R-CHIP;18KOHM,5%,1/10W,DA,TP,2012	
...3 R281	2007-000457	R-CHIP;18KOHM,5%,1/10W,DA,TP,2012	
...3 R282	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R283	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R286	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R288	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
...3 R289	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
...3 R290	2007-000258	R-CHIP;1.6KOHM,5%,1/10W,DA,TP,2012	
...3 R291	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R292	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R293	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R294	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R295	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R296	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R297	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R298	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R299	2007-000241	R-CHIP;1.5KOHM,5%,1/10W,DA,TP,2012	
...3 R300	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R301	2007-000241	R-CHIP;1.5KOHM,5%,1/10W,DA,TP,2012	
...3 R302	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R303	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R304	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R305	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R306	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R307	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R308	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R309	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R310	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R311	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R314	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R320	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R325	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R326	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R327	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R328	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R329	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R330	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R331	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R332	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R333	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R334	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
...3 R335	2007-000931	R-CHIP;470OHM,5%,1/10W,DA,TP,2012	
...3 R336	2007-001201	R-CHIP;820OHM,5%,1/10W,DA,TP,2012	
...3 R337	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R338	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R339	2007-001155	R-CHIP;750OHM,5%,1/10W,DA,TP,2012	
...3 R340	2007-000207	R-CHIP;1.1KOHM,1%,1/10W,DA,TP,2012	
...3 R341	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R342	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R343	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R344	2007-001166	R-CHIP;75OHM,5%,1/10W,DA,TP,2012	
...3 R345	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R346	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R362	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R363	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R364	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R365	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R366	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R367	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R368	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R369	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R380	2007-000221	R-CHIP;1.2KOHM,5%,1/10W,DA,TP,2012	
...3 R381	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R382	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R383	2007-000221	R-CHIP;1.2KOHM,5%,1/10W,DA,TP,2012	
...3 R384	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R385	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R386	2007-000465	R-CHIP;1KOHM,1%,1/10W,DA,TP,2012	
...3 R387	2007-000401	R-CHIP;150OHM,5%,1/10W,DA,TP,2012	
...3 R388	2007-000207	R-CHIP;1.1KOHM,1%,1/10W,DA,TP,2012	
⚠ ...3 R402	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R403	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R404	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R407	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R408	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R409	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R411	2007-000653	R-CHIP;27KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R412	2007-000593	R-CHIP;22OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R413	2007-000267	R-CHIP;1.8KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R416	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R417	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R418	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R419	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R420	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R421	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R422	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R423	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R424	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R425	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R426	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R427	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R428	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R429	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R430	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R431	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R432	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R433	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R434	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R435	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R436	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	

Loc. No.	Code No.	Description ; Specification	Remark
⚠ ...3 R437	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R438	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R439	2007-000941	R-CHIP;47KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R440	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R441	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R442	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R443	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R444	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R447	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R450	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R451	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
⚠ ...3 R452	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R501	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R502	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R505	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R506	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R508	2007-000941	R-CHIP;47KOHM,5%,1/10W,DA,TP,2012	
...3 R509	2007-000774	R-CHIP;33KOHM,5%,1/10W,DA,TP,2012	
...3 R510	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R511	2007-000781	R-CHIP;33OHM,5%,1/10W,DA,TP,2012	
...3 R512	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R513	2007-000941	R-CHIP;47KOHM,5%,1/10W,DA,TP,2012	
...3 R514	2007-000964	R-CHIP;5.1KOHM,5%,1/10W,DA,TP,2012	
...3 R515	2007-000941	R-CHIP;47KOHM,5%,1/10W,DA,TP,2012	
...3 R516	2007-000941	R-CHIP;47KOHM,5%,1/10W,DA,TP,2012	
...3 R518	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R519	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R520	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R521	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R523	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
...3 R525	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R526	2007-000728	R-CHIP;300OHM,5%,1/10W,DA,TP,2012	
...3 R600	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R601	2007-000947	R-CHIP;47OHM,5%,1/10W,DA,TP,2012	
...3 R602	2007-000947	R-CHIP;47OHM,5%,1/10W,DA,TP,2012	
...3 R603	2007-000947	R-CHIP;47OHM,5%,1/10W,DA,TP,2012	
...3 R604	2007-000947	R-CHIP;47OHM,5%,1/10W,DA,TP,2012	
...3 R611	2007-001043	R-CHIP;56OHM,5%,1/10W,DA,TP,2012	
...3 R612	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R613	2007-000221	R-CHIP;1.2KOHM,5%,1/10W,DA,TP,2012	
...3 R614	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R615	2007-000483	R-CHIP;10HM,5%,1/10W,DA,TP,2012	
...3 R616	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R617	2007-000931	R-CHIP;470OHM,5%,1/10W,DA,TP,2012	
...3 R618	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R619	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R620	2007-000290	R-CHIP;100OHM,5%,1/10W,DA,TP,2012	
...3 R621	2007-000221	R-CHIP;1.2KOHM,5%,1/10W,DA,TP,2012	
...3 R622	2007-000221	R-CHIP;1.2KOHM,5%,1/10W,DA,TP,2012	
...3 R623	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R624	2007-000738	R-CHIP;30KOHM,5%,1/10W,DA,TP,2012	
...3 R625	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R626	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R650	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R651	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R652	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R653	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R654	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
...3 R655	2007-000507	R-CHIP;2.49KOHM,1%,1/10W,DA,TP,2012	
...3 R656	2007-000207	R-CHIP;1.1KOHM,1%,1/10W,DA,TP,2012	
...3 R657	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R658	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 R659	2007-000872	R-CHIP;4.7KOHM,5%,1/10W,DA,TP,2012	
...3 U101	0802-001041	IC-BICMOS LOGIC;74LVTH16373,-,SOP,48P,38	
...3 U102	1203-002074	IC-POSI.FIXED REG.;MIC39150,TO-263,3P,-,	
...3 U104	1107-001228	IC-FLASH MEMORY;28F640,8Mx8/4Mx16Bit,TSO	
...3 U105	1105-001308	IC-DRAM;4S281632,2MX16X4Bit,TSOP,54P,4	
...3 U106	1105-001308	IC-DRAM;4S281632,2MX16X4Bit,TSOP,54P,4	
...3 U108	1103-000180	IC-EEPROM;24C16,2Kx8Bit,SOP,8P,150MIL,10	
...3 U109	0904-001464	IC-BUS CONTROLLER;810B,32Bit,BGA,324P,95	
...3 U110	0902-001344	IC-MICROPROCESSOR;5231,32Bit,QFP,128P,11	
...3 U202	1204-001708	IC-DECODER;TL850,TR,348P,1060MIL,PALSTIC	
...3 U203	1105-001305	IC-DRAM;4S641632,1Mx16x4Bit,TSOP,54P,4	
...3 U204	1105-001305	IC-DRAM;4S641632,1Mx16x4Bit,TSOP,54P,4	
...3 U205	1105-001305	IC-DRAM;4S641632,1Mx16x4Bit,TSOP,54P,4	
...3 U206	1105-001305	IC-DRAM;4S641632,1Mx16x4Bit,TSOP,54P,4	
...3 U208	1203-002074	IC-POSI.FIXED REG.;MIC39150,TO-263,3P,-,	
...3 U210	1201-000247	IC-OP AMP;3403,SOP,ST,14P,150MIL,QUAD,20	
...3 U211	1201-000247	IC-OP AMP;3403,SOP,ST,14P,150MIL,QUAD,20	
...3 U212	1201-001720	IC-VIDEO AMP;EL2386CS,SOP,16P,393MIL,TRI	
...3 U213	0801-000901	IC-CMOS LOGIC;74HC04,INVERTER,SOP,14P,15	
...3 U214	1201-001720	IC-VIDEO AMP;EL2386CS,SOP,16P,393MIL,TRI	
...3 U216	1204-001241	IC-ENCODER;SAA7120,QFP,44P,-,PLASTIC,3.5	
...3 U217	1201-001720	IC-VIDEO AMP;EL2386CS,SOP,16P,393MIL,TRI	
⚠ ...3 U401	1205-001606	IC-BUFFER;CY2305SC-1H,SOIC,8P,150MIL,PLA	
⚠ ...3 U402	1205-001606	IC-BUFFER;CY2305SC-1H,SOIC,8P,150MIL,PLA	
⚠ ...3 U404	AA13-00084A	IC-ASIC;-,M4LV-32/32-12VC48,TQFP,48P,-	
⚠ ...3 U406	1103-000180	IC-EEPROM;24C16,2Kx8Bit,SOP,8P,150MIL,10	
⚠ ...3 U407	1203-001824	IC-VOL. DETECTOR;7042,SOT-89,3P,-,PLASTI	
⚠ ...3 U409	1006-001032	IC-LINE TRANSCEIVER;3223,SOP,20P,300MIL,	
⚠ ...3 U410	1209-001318	IC-SYNTHESIZER;MK2722-01STR,SOP,16P,150M	
⚠ ...3 U411	1203-001419	IC-VOLTAGE REGULATOR;4931,TO-252,3P,6.6x	
...3 U500	1204-001716	IC-DECODER;CS493253-CL,PLCC,44P,650MIL,P	
...3 U501	1001-001149	IC-AUDIO SWITCH;CS8415A-CS,-,SOP,28P,300	
...3 U502	1002-001227	IC-D/A CONVERTER;CS4340-KSR,24BIT,SOP,16	
...3 U503	0803-000307	IC-TTL;74LS157,2-TO-1 DATA SELECTOR,S	
...3 U603	1201-001451	IC-VIDEO AMP;592,SOP,8P,150MIL,DUAL,-,-,	
...3 U604	1201-000166	IC-OP AMP;358,SOP,8P,150MIL,DUAL,100V/mV	
...3 U605	1205-001905	IC-RECEIVER;BCM3510KPF,QFP,128P,-,PLASTI	
...3 U606	1203-001198	IC-POSI.ADJUST REG.;1086,-,3P,400MIL,PLA	
⚠ ...3 X401	2804-001388	OSCILLATOR-CLOCK;100MHz,100ppm,15pF,TP,3	
⚠ ...3 X402	2804-001378	OSCILLATOR-CLOCK;33MHz,100ppm,CMOS(30pF)	
⚠ ...3 X403	2806-001202	OSCILLATOR-VCXO;27MHz,30ppm,5TTL,TP,3.3V	
⚠ ...3 X404	2801-003948	CRYSTAL-SMD;12MHz,30ppm,28-AAN,12pF,60oh	
...3 X601	2801-003848	CRYSTAL-SMD;26.8MHz,30ppm,28-AAN,20pF,50	
..2	AA39-00121C	LEAD CONNECTOR ASSY;-,-,-,12P,-,-,-,3515	
..2	AA39-20010H	LEAD CONNECTOR-ASSY;-,YFH800-01,S,1P,300	
..2	AA39-00133E	LEAD CONNECTOR ASSY;-,-,-,8P,-,-,-,35155	

ASSY-PCB,FRONT

1	*	AA95-00741A	ASSY-PCB,FRONT;-,SIRT150X/XAA,T13A,-,-,U	
..2	C101	2201-000281	C-CERAMIC,DISC;1nF,+80-20%,50V,Y5V,TP,5x	
..2	C102	2401-001513	C-AL;47uF,20%,16V,WT,TP,5x11,5	
..2	D101	0601-000262	LED;ROUND,RED,5mm,700nm	
..2	D102	0601-001381	LED;ROUND,RED/GRN,5.0MM,650/563NM	
..2	J101	3711-003353	CONNECTOR-HEADER;BOX,11P,1R,2.5mm,ANGLE,	
..2	PCB	AA41-00316A	PCB-FRONT;SIR-T150,FR-1,1L,A,1.6T,245x36	S.N.A
..2	R101	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
..2	R102	2001-000020	R-CARBON(S);22OHM,5%,1/2W,AA,TP,2.4X6.4M	
..2	R103	2001-000028	R-CARBON(S);100OHM,5%,1/2W,AA,TP,2.4X6.4	
..2	R104	2001-000028	R-CARBON(S);100OHM,5%,1/2W,AA,TP,2.4X6.4	
..2	R105	2001-000028	R-CARBON(S);100OHM,5%,1/2W,AA,TP,2.4X6.4	
..2	SW101	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW102	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW103	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW104	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW105	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW106	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW107	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW108	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	SW109	3404-000178	SWITCH-TACT;12V,50mA,120gf,6x6mm,SPST	
..2	U101	AA59-00079A	MODULE-REMOCON;-,GP1U271R,38KHZ,940MM,ME	
..2		0202-000187	SOLDER-WIRE FLUX;-,RS60S,D1.2,63Sn/37Pb	S.N.A
..2		AA39-20160H	LEAD CONNECTOR-ASSY;-,67096-11,S,11P,300	

ASSY-POWER,CORD

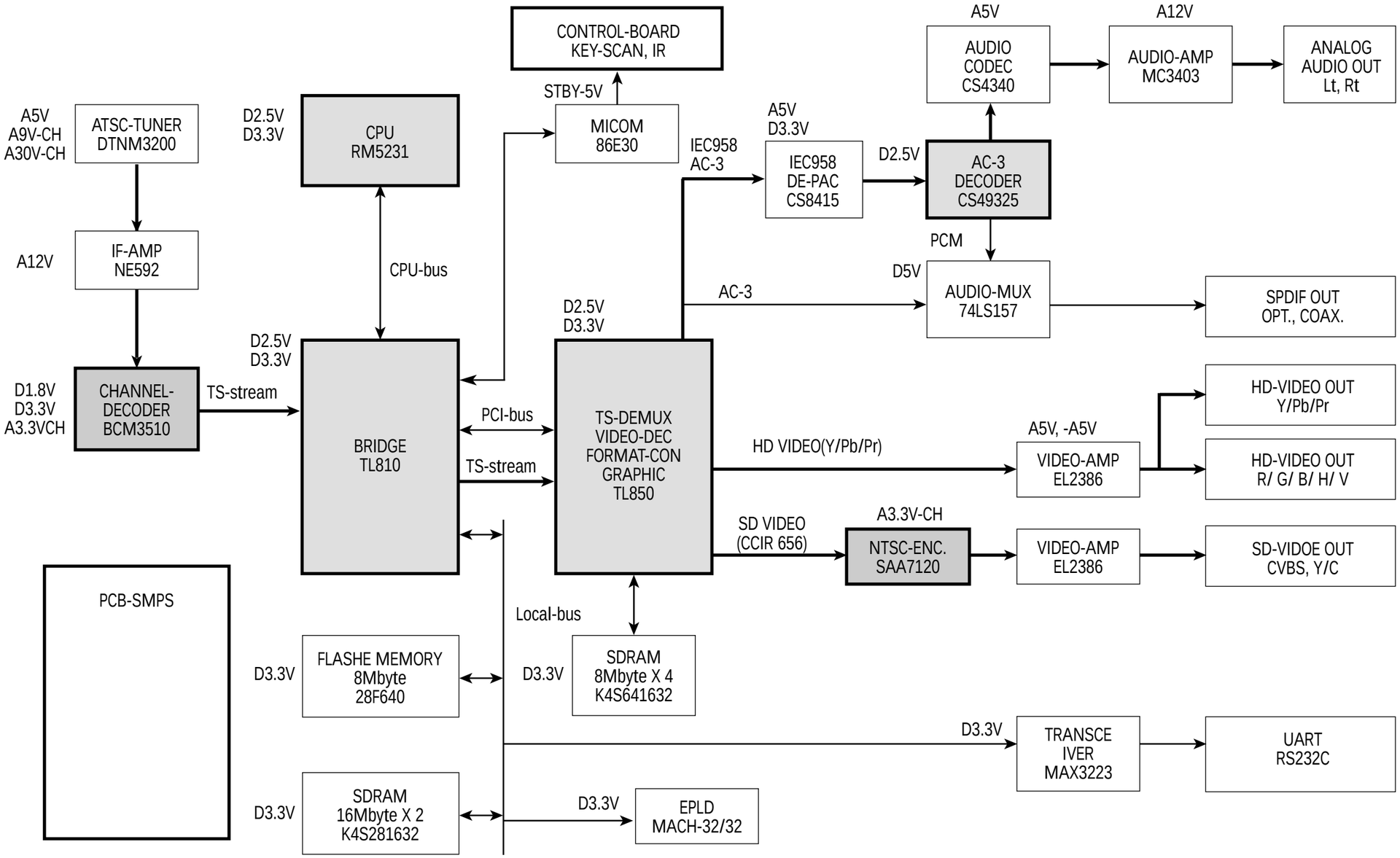
1	*	AA96-00156A	ASSY-POWER,CORD;-,EP2/YES(US),H/C100MM,K	
..2		AA39-10007Y	POWER-CORD;-,EP2/YES,SPT-2 18AWGx2C,2.4m	
..2		AA63-10002B	BAND-TIE;-,NYLON66 V2,-,-,L140,NTR,-,-	S.N.A
..2		AA61-20284A	HOLDER;-,P-CORD,PP,VO,BLK,KE-002	S.N.A
..2		3811-000401	WIRE-PVC CU;BCWA,300V,ROLL,17/0.16mm,#22	S.N.A
..2		3301-001201	CORE-FERRITE;AE,21x11x32mm,1500,280G	

Loc. No.		Code No.	Description ; Specification	Remark
			ASSY-CABINET	
1	*	AA90-00109C	ASSY-CABINET;SIRT150,SIRT150X/XAA	S.N.A
..2	PB+PR	6003-000275	SCREW-TAPTITE;BH,+,B,M3,L10,BLK ,SWCH101	S.N.A
..2	PF+PB	6003-000275	SCREW-TAPTITE;BH,+,B,M3,L10,BLK ,SWCH101	S.N.A
..2	PR+RJ	6003-001019	SCREW-TAPTITE;RH,+,B,M4,L12,ZPC(BLK),SWR	
..2	PT+PB	6003-000275	SCREW-TAPTITE;BH,+,B,M3,L10,BLK ,SWCH101	S.N.A
..2	PT+PR	6003-000275	SCREW-TAPTITE;BH,+,B,M3,L10,BLK ,SWCH101	S.N.A
..2		AA65-00003A	CABLE-CLAMP;PE BLACK,-,-,-,SIR-T100,-	
..2		AA64-01143B	PANEL-REAR;SIRT150,SECC T0.8,-,-,BLK,-,-	
..2		AA64-01133B	PANEL-TOP;SIRT150,DG810P,VCH T0.6,-,-	
			ASSY CHASSIS PART	
1	*	AA90-00656A	ASSY CHASSIS PART;T13A,SIRT150	S.N.A
..2	CP+PF	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	
..2	PM+PB	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	
..2	PM+PB	AA60-00014A	SCREW-SET;-,-,-,-,-,SILVER,ZPC,M3*6,-,-	S.N.A
..2	PP+PB	AA60-00014A	SCREW-SET;-,-,-,-,-,SILVER,ZPC,M3*6,-,-	S.N.A
..2	PP+PB	6003-001023	SCREW-TAPTITE;RWH,+,B,M3,L10,ZPC(YEL),SW	
..2		6021-001114	NUT-HEXAGON;-,M3/8X32,ZPC(YEL),MBsBD	
..2		6031-001413	WASHER-PLAIN;MBsBD,-,-,PI15,10,T0.8,-	
..2		AA62-00095A	HEAT SINK;-,A6063 EXTR,10,28,28.5,NTR,-,	S.N.A
			ASSY-PANEL.BOTTOM	
1	*	AA91-00131C	ASSY-PANEL.BOTTOM;-,SIRT150,SETTOP BOX,-,	
..2		AA64-01142B	PANEL-FRONT;SIRT150,PS V0 ,BLK(EMI)SPRAY	
..2		AA64-01100B	KNOB-FAMILY;SIRT150,ABS HB,-,G3676,-,-,-	
..2		AA64-01099B	KNOB-POWER;SIRT150,ABS HB,-,G3676,SV022P	
..2		AA64-01098B	WINDOW-LED;SIRT150,PC,T1.0,-,-,-,BLK,-	
..2		AA64-01097B	INDICATOR-POWER;SIRT150,ACRYL,-,CLR,-,-,	
..2		AA64-01095C	WINDOW REMOCON;SIRT150,PC V0,-,-,-,-,VIO	
..2		AA64-01094B	INDICATOR-LED;SIRT150,ACRYL,-,MILKY,-,-,	
..2		AA63-00292B	COVER-CENTER;SIRT150,AL 6063,-,-,TITAN G	
..2		AA61-00436B	HOLDER-FAMILY;SIRT150,ABS HB,G3676,-,-,S	
			ASSY-PANEL.BOTTOM	
1	*	AA91-00508A	ASSY-PANEL.BOTTOM;-,-,SECC T0.8,SIRT150	
..2		6003-000333	SCREW-TAPTITE;RH,+,2S,M3,L10,ZPC(YEL),SW	
..2		AA60-00088A	SPACER-BUMPON;SIRT150,POLYURETHAN,PI19,-	
..2		AA64-01144B	PANEL-BOTTOM;SIRT150,SECC T0.8,-,-,-,-,-	
..2		AA63-00404A	COVER-BUSHING;SIRT150,NYLON 6/6,-,-,-,DA	
			ASSY-PCB,POWER	
1	*	AA98-00087A	ASSY-PCB,POWER;-,SIRT150X/XAA,T13A,-,-,-	
			REMOCON	
1	*	AA59-00048A	REMOCON;-,TM61,CL7500FE,35,L/GRAY,S/S,	
..2		2802-000194	RESONATOR-CERAMIC;8MHz,1.0%,TP,8.5x4.5x5	
..2		AA59-90001C	JOYSTICK-ASSY;-,IP-P001,-,N,PLASTIC,N,BK	
..2		AA13-00072A	IC-MCU;SZTM-830(R4396),-,ST,16KB,44P,	

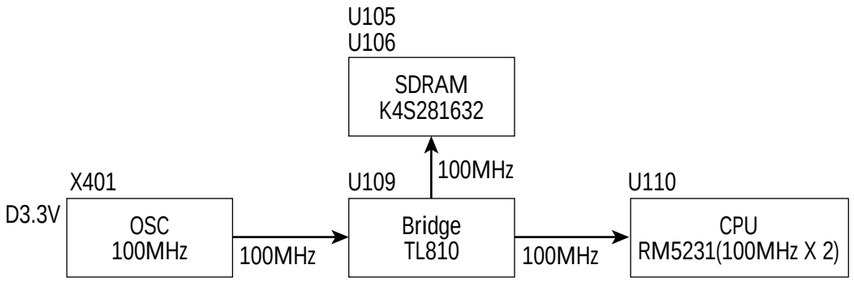
Loc. No.		Code No.	Description ; Specification	Remark
			ASSY ACCESSORY	
1	*	AA94-02675A	ASSY ACCESSORY;SIRT150X/XAA,T13A,USA	S.N.A
..2		AA68-01291A	MANUAL USERS;SIR-T150,-,ENG,USA,W/P100(G	S.N.A
..2		AA39-00034A	CABLE-RCA;-,RCA,2500MM,0.12/10,RED/WHT,9	
..2		AA39-00033A	CABLE-RCA;-,RCA,2500MM,0.12/10,RED/GRN/B	

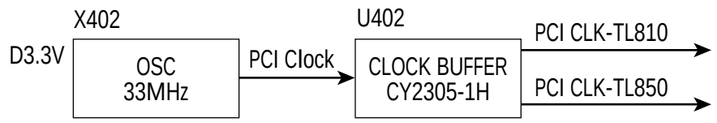
6. Block Diagrams

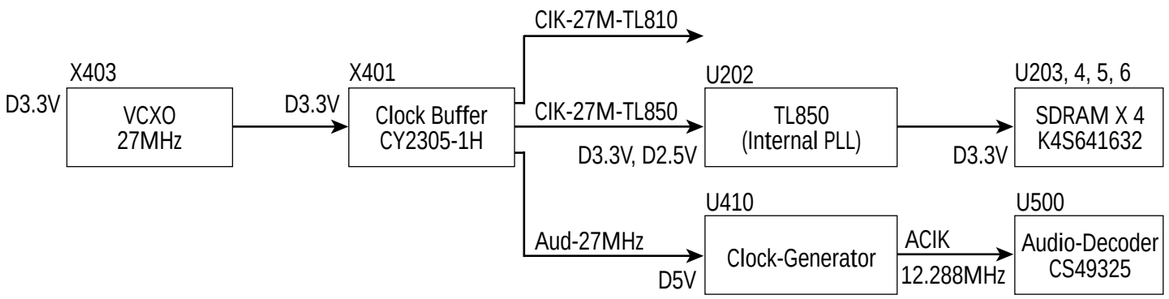
6-1 Digital Board Diagram

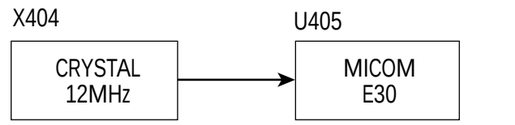


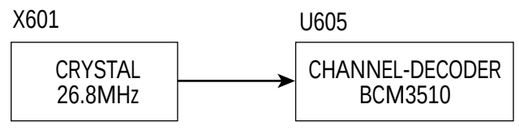
6-2 Digital Board Clock System



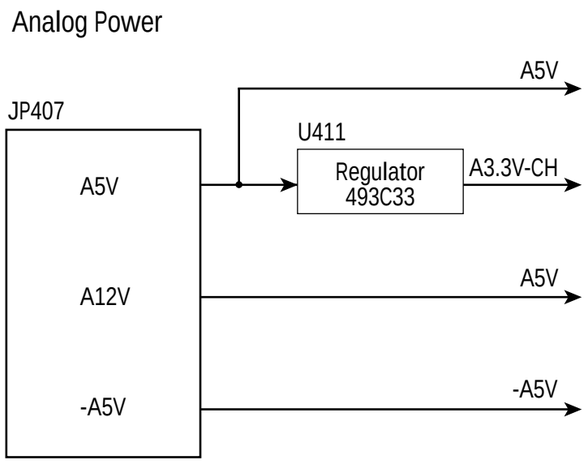


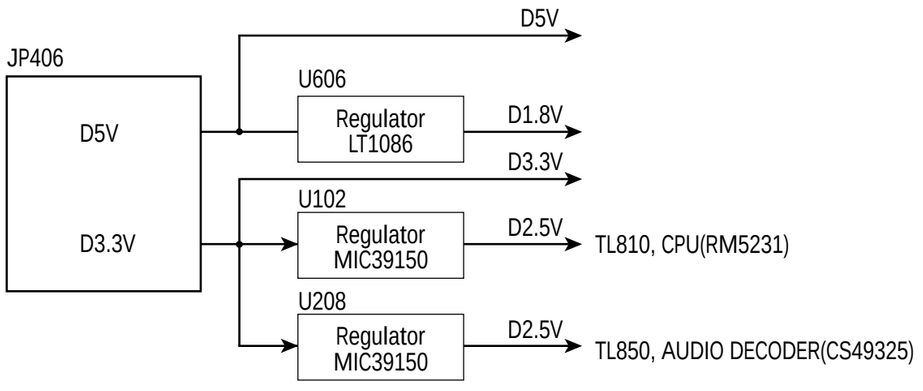


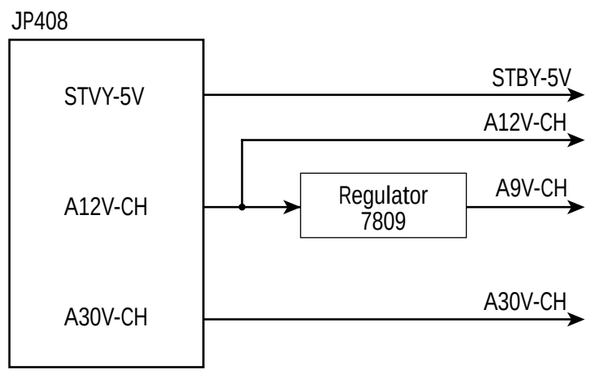




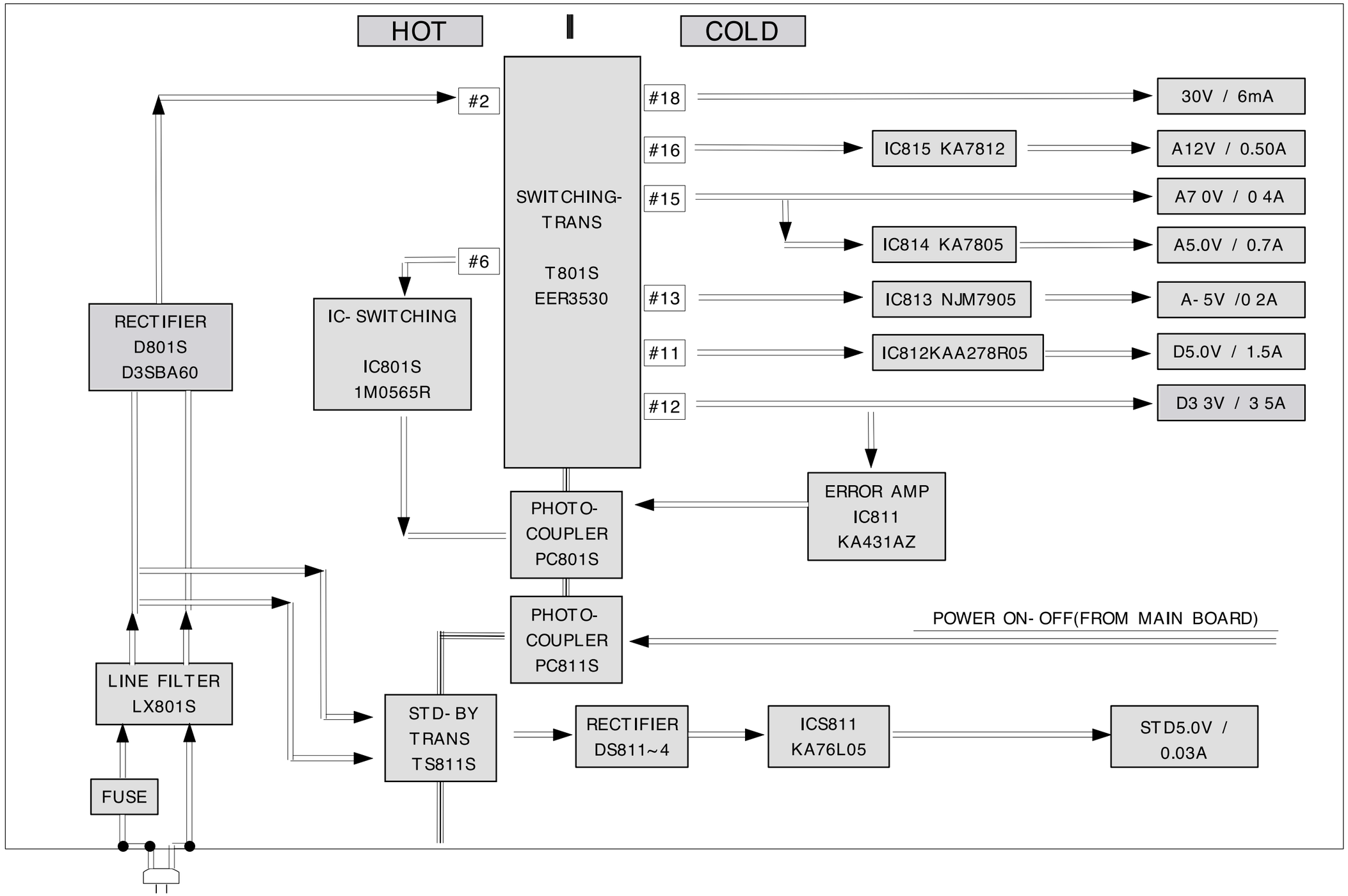
6-3 Power Distribution Diagram

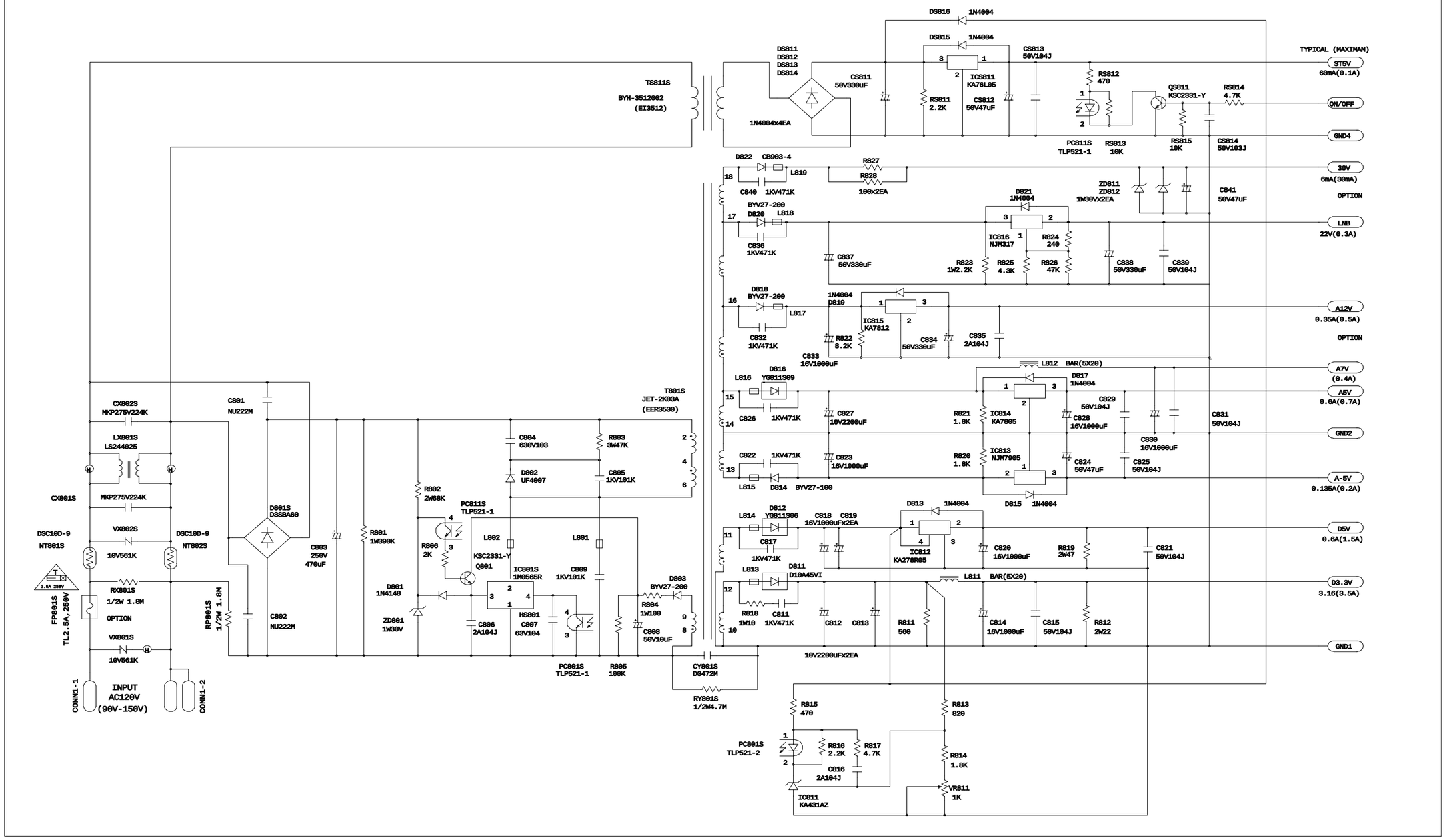






6-4 Assy Power Diagram



7. Schematic Diagram

7-1 POWER