L01.1E

AB

DVD Supplement On SM L01.1E AB (3122 785 12860)

for DVD-module see SM DVD-Module SD3 (3122 785 11010)

Service
Service
Service

Service Manual

Contents **Page**

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PHILIPS

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)
	:	NTSC 3.58 (playback only)
	:	NTSC 4.43 (playback only)
Channel selections	:	100 channels
	:	UVSH
IF frequency	:	38.9 MHz
Aerial input	:	75 Ω, Coax

1.1.2 Miscellaneous

Audio output (RMS)	:	2 x 5 W stereo
Mains voltage	:	220 - 240 V (± 10 %)
Mains frequency	:	50 Hz (± 5 %)
Ambient temperature	:	+ 5 to + 45 deg. C
Maximum humidity	:	90 % R.H.
Power consumption	:	58 W (21") to
	:	100 W (33")
Standby Power consumption	:	< 3 W

1.2 Connections

1.2.1 Side Connections, Top (or Front) Control

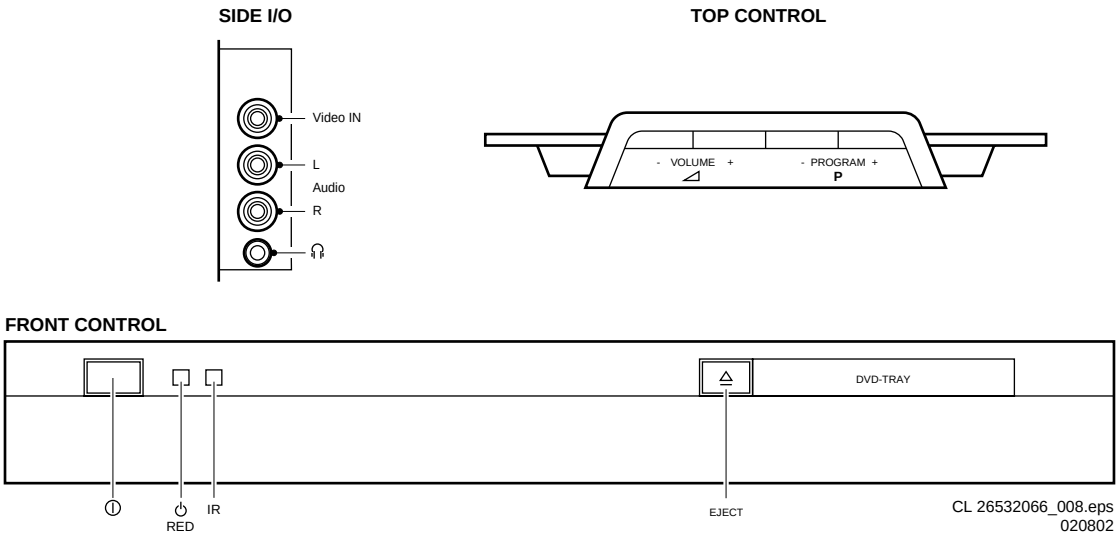

Figure 1-1

Audio / Video In

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

1.2.2 Rear Connections

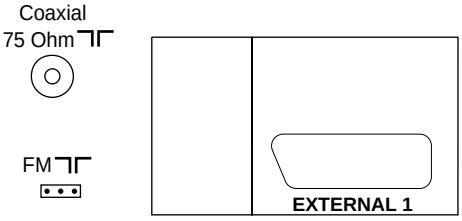

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Figure 1-2 .eps

TV Aerial In

Aerial input : 75 Ω, 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

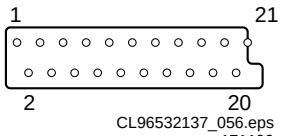

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Figure 1-3

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

1.3 Chassis Overview

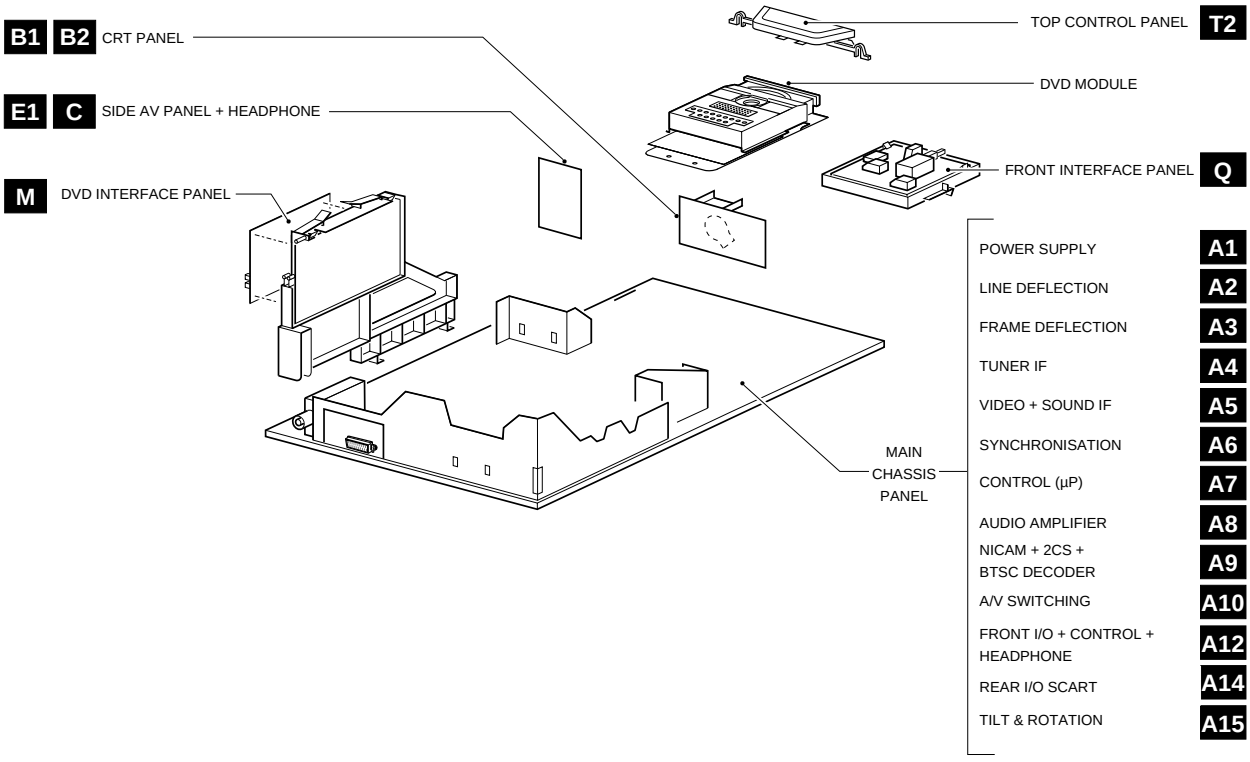

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Figure 1-4

2. Safety & Maintenance Instructions, Warnings, and Notes

2.1 Safety Instructions For Repairs

2.1.1 General Safety

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

Figure 2-1

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 or 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).

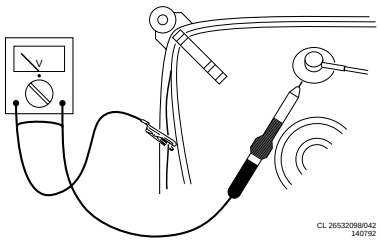


Figure 2-2

- 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 LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN
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 (⏚), or hot ground (⏚), 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 (⊓) and without (⊼) aerial signal. Measure the voltages in the power supply section both in normal operation (⏻) and in standby (⏻). 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.

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.

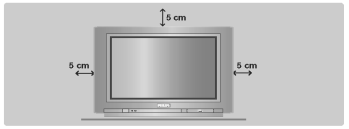
Table of Contents

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).

English

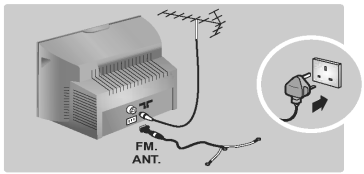
Installing your television set

❶ Positioning the television set



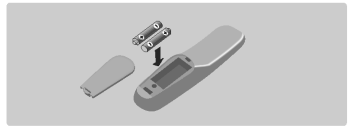
Place your TV on a solid, stable surface, leaving a space of at least 5 cm around the appliance. To avoid accidents, do not put anything on the set such as a cloth or cover, a container full of liquid (vase) or a heat source (lamp). The set must not be exposed to water.

❷ Connections



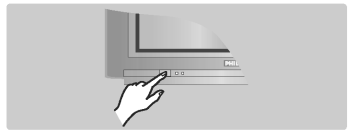
- Insert the aerial plug into the socket at the rear of the set.
- Insert the radio aerial socket into the FM ANT socket using the adapter supplied.
  If you are using an indoor aerial, reception may be difficult in certain conditions. You can improve reception by rotating the aerial. If the reception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

❸ 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.

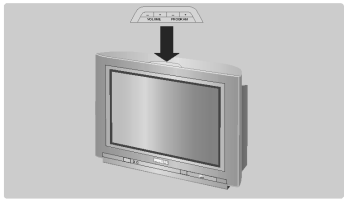
❹ Switching on



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 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.



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 2 ◿ - 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)
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

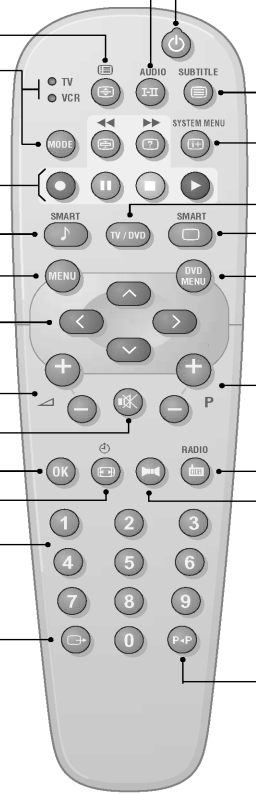
Mute
To mute or restore the sound.

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** (−), (−), ⏻, (0) to (9).

DVD: subtitling 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 programs, 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.

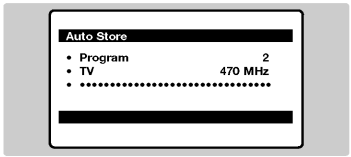
Previous programme
To return to the previous programme.

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

Plug & Play

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.

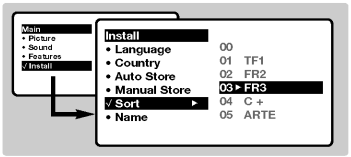
All the available TV programs and radio stations will be stored. This operation takes a few minutes. The display shows the progress of the search and the number of programs found. At the end of the search, the menu disappears.
To exit or interrupt the search, press (MENU).
If no program is found, consult the possible solutions p. 18.

❶ If the transmitter or cable network sends the automatic sort signal, the programs will be numbered correctly. In this case, the installation is complete.

❷ 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 (^)(v) *keys and validate with* (>).

Program sort

❶ Press key (MENU). The **Main menu** is displayed on the screen.



❷ With the cursor, select the **Install** menu followed by the **Sort** menu.

❸ Select the programme you want to move using the (^)(v) keys and press (>).

❹ Then use the (^)(v) keys to select the new number and validate with (<).

❺ Repeat steps ❸ and ❹ for each program you wish to renumber.

❻ To quit the menus, press (⊞).

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.

❶ Press the (MENU) key.

❷ With the cursor, select the **Install** menu, then **Name**

❸ Use the (^)(v) keys to select the programme to name or rename.

❹ Use the (<)(>) keys to move around the name display area (5 characters) and the (^)(v) keys to select the characters.

❺ When the name has been entered, use the (<) key to exit. The name is stored.

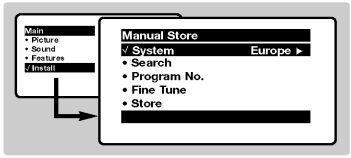
❻ Repeat steps ❸ to ❺ for each programme you wish to name.

❼ To quit the menus, press (⊞).

Manual store

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

1. Press the MENU key.
2. With the cursor, select the **Install** menu then **Manual store**:



3. **System:** select **Europe** (automatic detection*) or **Western Europe** (BG standard), **Eastern Europe** (DK standard), **United Kingdom** (I standard) or **France** (LL' standard).

** Except for France (LL' standard), you must select choice* **France**.

4. **Search:** press ›. 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. 18).
5. **Program No.:** enter the required number with the ‹› or 0 to 9 keys.
6. **Fine Tune:** if the reception is not satisfactory, adjust using the ‹› keys.
7. **Store:** press ›. The program is stored.
8. Repeat steps 4 to 8 for each programme to store.
9. To quit the menus, press EXIT.

Other settings in the Install menu

1. Press the MENU key and select the **Install** menu:
2. **Language:** to change the display language for the menus.
3. **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 "…"
4. 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 ‹› keys and validate with ›. To quit or interrupt the search, press MENU. If no picture is found, consult the possible solutions (p. 18).
5. To quit the menus, press EXIT.

Using the radio

Choice of TV or radio mode
Press the TV/RADIO 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 9 or − **P** + keys to select the FM stations (from 1 to 40).

List of radio stations
Press the LIST key to display the list of radio stations radio. Use the ‹› keys to change station and the EXIT key to exit.

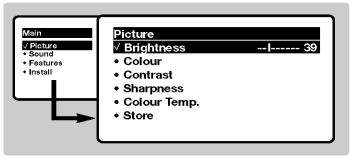
Using the radio menus
Use the MENU key to access the specific radio setting.

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 SCREENSAVER key to activate/deactivate the radio screensaver.

Picture settings

1. Press MENU then ›. The **Picture** menu is displayed:

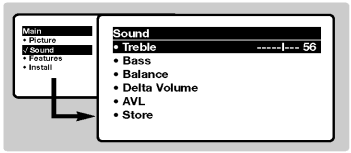


2. Use the ‹› keys to select a setting and the ‹› keys to adjust.
   Note: during the picture adjustment, only the selected line remains displayed. Press ‹› to display the menu again.
3. Once the adjustments have been made, select **Store** and press › to store them. Press EXIT to exit.

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

1. Press MENU, select Sound (˅) and press ›. The **Sound** menu is displayed:



2. Use the ‹› keys to select a setting and the ‹› keys to adjust.
3. Once the adjustments have been made, select Store and press › to store these changes.
4. To quit the menus, press EXIT.

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***: 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*** (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

1. Press MENU, select **Features** (˅) and press ›. You can adjust:
2. **Timer**, **Child Lock** and **Parental Cont.**: see next page
3. **Contrast +:** automatic adjustment of the picture contrast which permanently sets the darkest part of the picture to black.
4. **NR:** attenuates picture noise (snow) in difficult reception conditions.

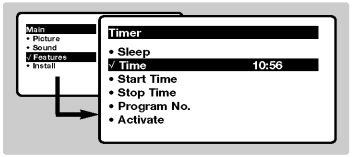
Caution: to store the **Contrast +** *and* **NR** *settings, use the* **Store** *choice in the* **Picture** *menu.*

5. **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.
6. To quit the menus, press EXIT.

Timer function

This menu lets you use the TV set as an alarm.

1. Press the MENU 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 ⏲ key on the remote control.

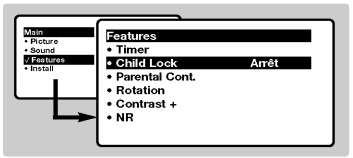
4. **Time:** enter the current time.
   Note: the time is updated automatically each time the TV set is switched on via the teletext information on programme 1. If this program does not have teletext, the update will not take place.
5. **Start Time:** enter the start time.
6. **Stop Time:** enter the 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 ‹ › 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 ⏻ 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.

Child lock

1. Press MENU.
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**.



Parental control

1. Press the MENU key, select the **Features** menu then **Parental Cont.**:
2. You must enter your secret access code.
   The first time you enter this, enter code 0711 twice and then enter your new code choice. The menu is displayed.
3. **Parental Cont.:** Use the ⌃ ⌄ keys to select the TV programme required and validate with ›. The 🔒 symbol will be displayed opposite the programmes or sockets that are locked. From now on, to view a locked programme, you must enter your secret code, otherwise the screen will stay blank.
   The access to the **Install** *menu is also locked. Caution, for encrypted programs using an external decoder, you must lock the corresponding EXT socket.*
4. **Change code:** this allows you to enter a new 4 digit code. Confirm your new code by entering it a second time.
   If you have forgotten your secret code, enter the universal code 0711 twice.
5. **Unlock all:** this is used to unlock all locked programmes.
6. **Lock All:** this is used to lock all the TV programmes and EXT connectors.
7. Press the 🔒 key to quit.

Teletext

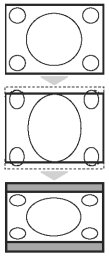
Teletext is an information system broadcast by certain channels which can be consulted like a newspaper. It also offers access to subtitles for viewers with hearing problems or who are not familiar with the transmission language (cable networks, satellite channels, etc.).

Press :	You will obtain:
Teletext call	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).*
0/9 or P± or ⌃⌄ **Selecting a page**	Enter the number of the page required using the 0 to 9 or − **P** + 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	This returns you to the contents page (usually page 100).
Enlarge a page	This allows you to display the top or bottom part of the page and then return to normal size.
Stop sub-page acquisition	Certain pages contain sub-pages which are automatically displayed successively. This key is used to stop or resume sub-page acquisition. The indication appears top left.
Hidden information	To display or hide the concealed information (games solutions).
MENU + 🔒 + coloured keys **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 tetetext is selected. 1. Press the MENU 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 temporaly retrieve the standard items, press MENU. *To clear everything, and return the standard items as the default, press 🔒 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.



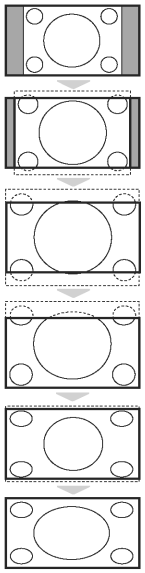
Press the ⊞ key to select the different modes:

4:3
The picture is reproduced in 4:3 format.

Expand 4:3
The picture is enlarged vertically. This mode is used to cancell 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 ⊞ 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 acceed to the DVD features).

Using the built-in DVD player

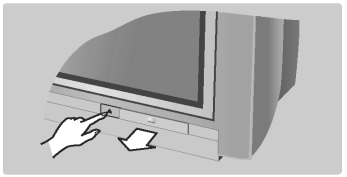
The built-in DVD player allows you to play DVD video disks as well as video and audio CDs (including finalised CD-Rs and CD-RWs). The disks can be recognised by their logo on the packaging.

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

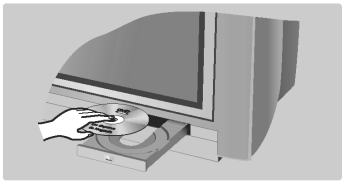
❶ Opening the drawer

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



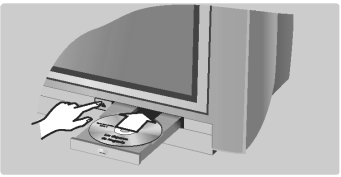
❷ Inserting the disk

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



❸ 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.



❹ 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 I▶ symbol (resume), press ▶ again (otherwise the disk will start playing from the beginning).

The resume function remenbers the last 4 disks played. Simply re-insert the disk and when you see the I▶ 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 DVD MENU 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 DVD MENU exit.

Language selection

Press the I-II 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 TV/DVD 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.

❶ Press ■.
❷ Use the ▼ key to select the trackline.
❸ Use the ◀ ▶ or 0 9 keys to choose the number of the required track.
❹ Press OK to select it. The chosen number appears at the bottom of the screen.
❺ Repeat operations ❸ and ❹ 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.
❻ Press ▶ to begin playing your favourite tracks.
❼ To stop playing favourite tracks, position the on/off line of the menu on **off** (shown in white).
❽ 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 ⊡ 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:

- Preferential settings
- Subtitling language
- Audio language
- Frame by frame
- Slow motion
- Fast play
- Camera angle
- Zoom
- **T** Titles
- **C** Chapters / sequences
- Direct access by time
- Favourite tracks

Symbols shown in grey indicate that the setting is not available.

Using the OSD menu

Audio and subtitling language
On the menu bar, select for the audio language and for subtitling. Use the △▽ keys to choose your settings.
You can also access these settings with key I-II / ≡.

Frame by frame
Select 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 for slow motion or ▶▶ 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 on the menu bar and use the △▽ keys to select the desired angle.

Zoom
Select and press △▽ keys to activate the zoom function with a magnification of 1.33, 2 or 4. The image stops and is enlarged. Press OK if you want a panoramic shot of the enlarged image. Use the ◁▷ △▽ keys to move around and OK confirm. To exit zoom mode, press ▶.

Direct access to Titles and Chapters
On the menu bar, select **T** to access the different titles available on the disk and **C** for the different chapters or film sequences. Use the △▽ keys to choose your settings.
*The − **P** + keys allow you to access the chapters directly.*

Direct access by time
Select and press ▽. The image freezes. Use the 0 9 keys to select the precise moment in the desired sequence. Press △ to confirm. Play resumes at the time indicated.

Favourite tracks
See next page.

Preferential settings
See next page.

Preferential settings

Press ⊡. On the menu bar, select and press ▽ to display the preferential settings 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:
- **Digital output;** allows you to choose: **All**, **PCM** or **Off**.
- **Night mode;** optimises the sound dynamics for low-volume listening.
- **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.

Favourite tracks

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

❶ Press ⊡. On the menu bar, select and press ▽ to display the menu.

❷ Use the ▽ to select the title or chapterline.
❸ Use the ◁▷ or 0 9 keys to choose the number of the favourite **title** or **chapter**.
❹ Press OK to select. The chosen number appears at the bottom of the screen.
❺ Repeat operations ❸ and ❹ 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.
❻ Press ⊡ 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.

❶ Press ⊞. Select and press ⌄ until select menu .

❷ Press › twice to enter the **Access control** menu.

❸ Enter the access code of your choice. You will be asked to enter it a second time to confirm. The **Access control** menu appears:

❹ **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.

❺ **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.

❻ **Change country:** select your country (this setting takes place in the parental level which depends on the country).

❼ **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 ■ ■ ■ ■.

❽ 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.
Playing of audio CDs is authorised at all times.

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

❷ You will be asked to enter your secret code, either for **Play once**, or for **Play always**

❸ 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).

❹ If you select **Play always** (with the ⌄ key), playing of the disk will be permanently authorised.

The player can memorise up to 50 disks. When the list is full and a new disk is added, the last disk in the list is removed.
Double-sided DVD disks (and video CDs with several volumes) may include a different identification code for each side (volume). In this case you will have to authorise each side (volume) separately.

Removing play authorisation

- Insert a disk in the player. Play begins automatically.
- When the ☺ symbol appears, press ■. The symbol ☹ appears, and play authorisation is removed for this disk.

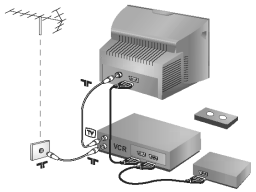
Removing security lock

To permanently remove the play authorisation message:

- Press ■ then ⊞.
- On the menu bar, select then and press ›.
- Enter your access code and position the **Child lock** setting at (off). The symbol is displayed in white.
- Press ⊞ to exit.

Connecting peripheral equipment

Video recorder

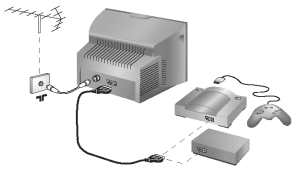


Carry out the connections shown opposite, using a good quality euroconnector cable.
If your video recorder does not have a euroconnector socket, the only connection possible is via the aerial cable. You will therefore need to tune in your video recorder's test signal and assign it programme number 0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

Video recorder with decoder

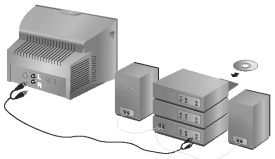
Connect the decoder to the second euroconnector socket of the video recorder. You will then be able to record scrambled transmissions.

Other equipment



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

Amplifier

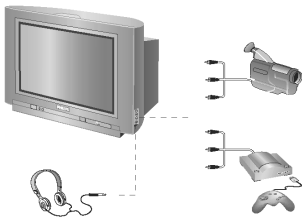


Use a digital audio connecting cable and connect the television's "DIGITAL AUDIO OUT" output to a "DIG IN" input on the amplifier (amplifier with coaxial digital input).

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 1-II 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	menu,
cursor	navigation and adjustments,
OK	validation,
0 9	digit keys,
− P +	programme selection,
P◂P	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 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. Therefor 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.)

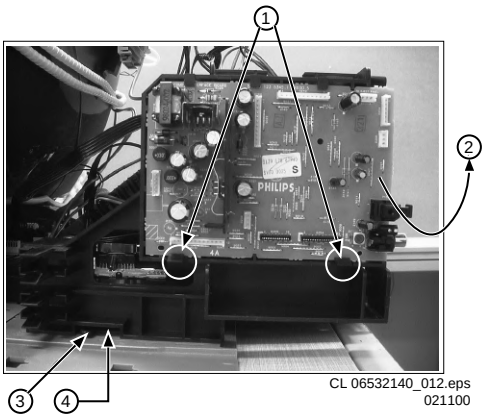


Figure 4-1

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. Therefor 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.**

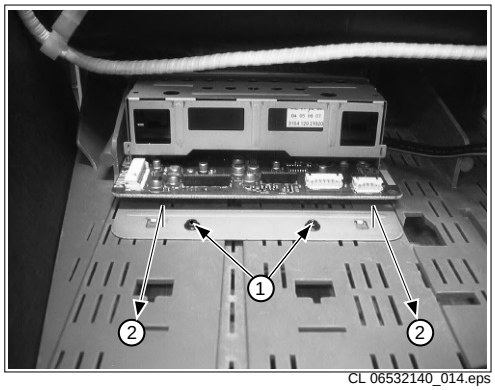


Figure 4-2

4.1.3 Accessing the DVD board

- Remove the top-cover of the DVD. Therefor 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.

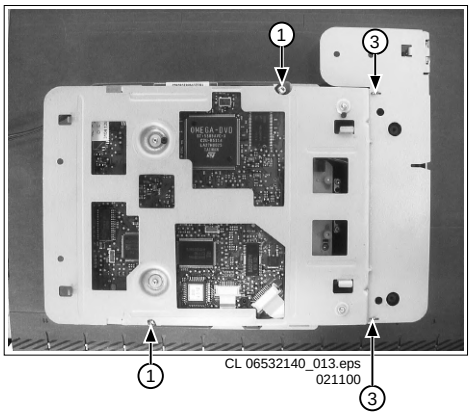


Figure 4-3

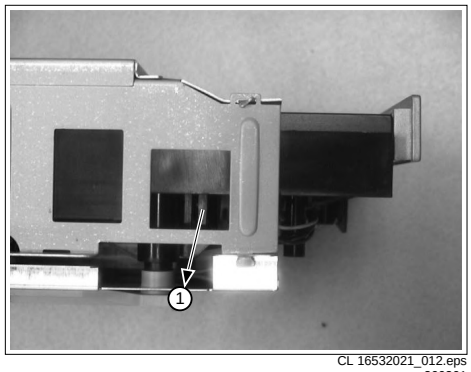


Figure 4-4

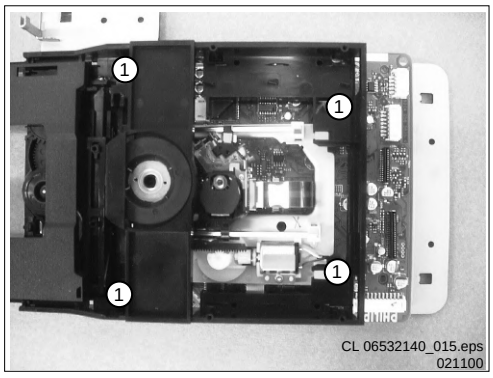


Figure 4-5

5. Service Modes, Error Codes and Fault Finding

Index of this chapter:

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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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).

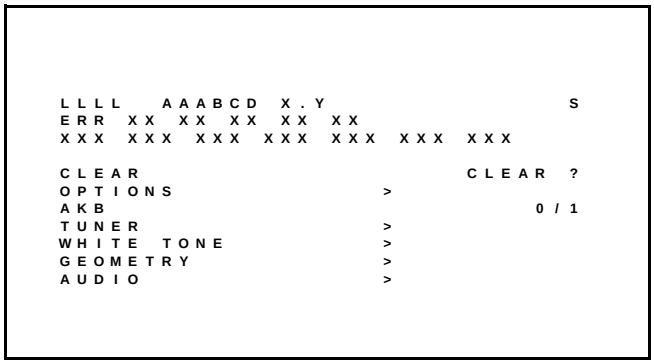
5.2.1 Service Default Alignment Mode (SDAM)

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.

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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020802

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).
  – C = the feature of software diversity: N = stereo non-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 than 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:

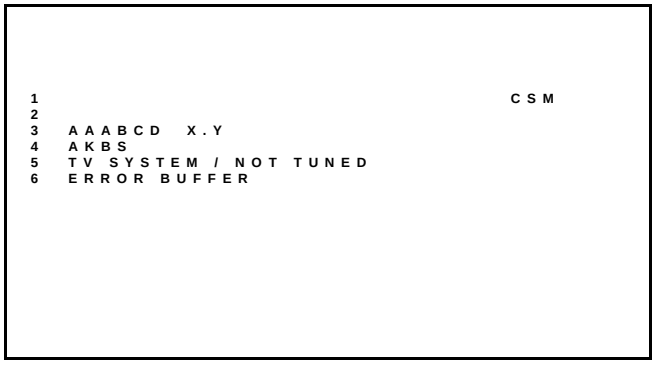

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Figure 5-3 CSM menu

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 I7 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.

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

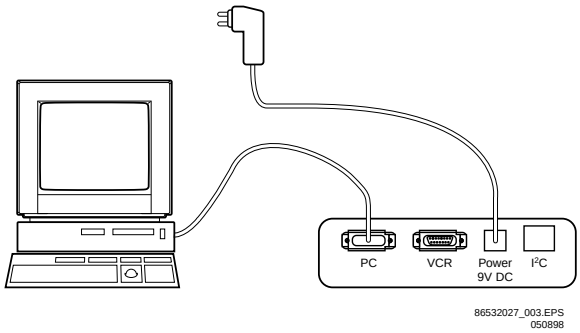


Figure 5-4 ComPair set-up

Connection to the DVD-module
Follow the instructions given on the screen for further diagnosis.
1. 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 de-soldering 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 0 + 'PLAY' key.
      - Region code for Europe: 1 4 1 0 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 0 + 'PLAY' key.
      - Region code for LATAM: 1 4 6 0 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.

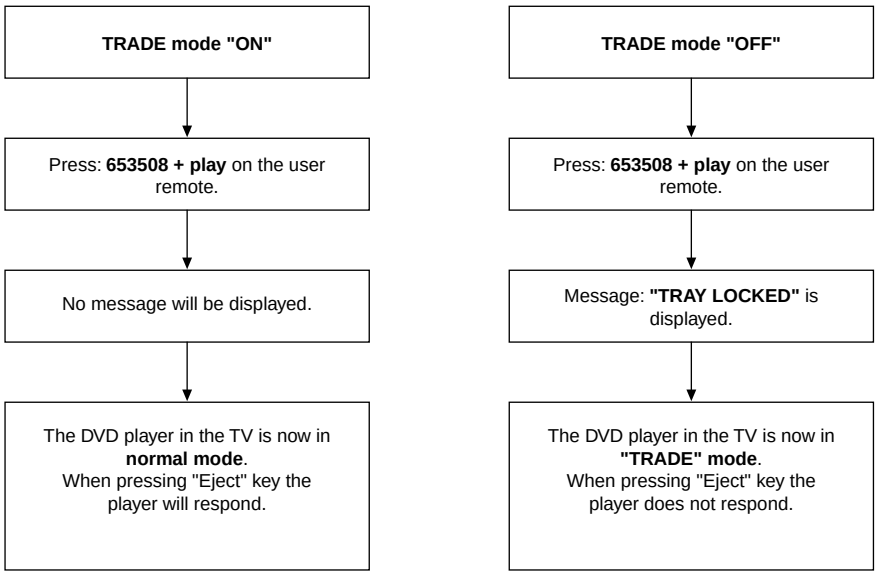


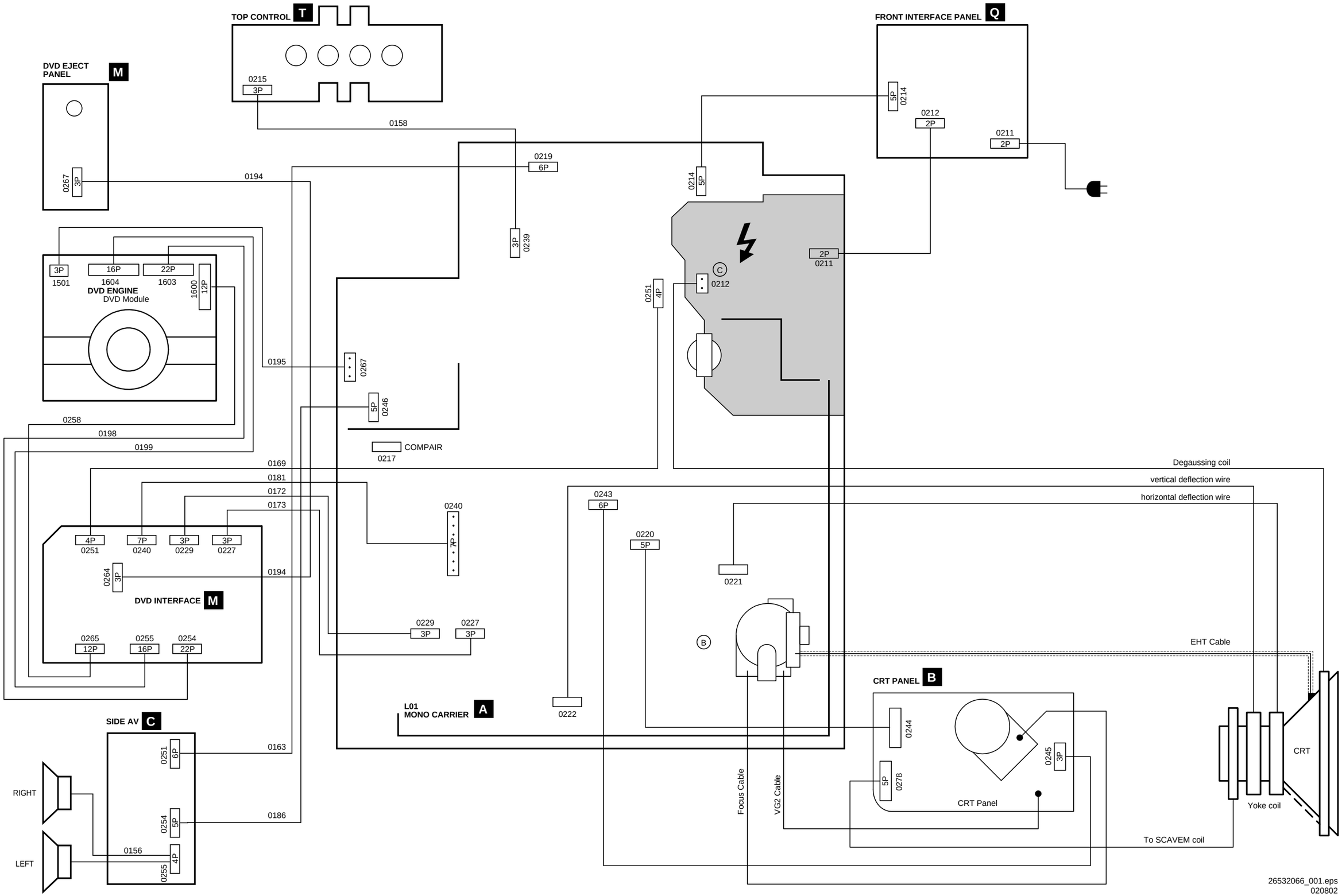
Figure 5-5 DVD trade mode flow chart

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

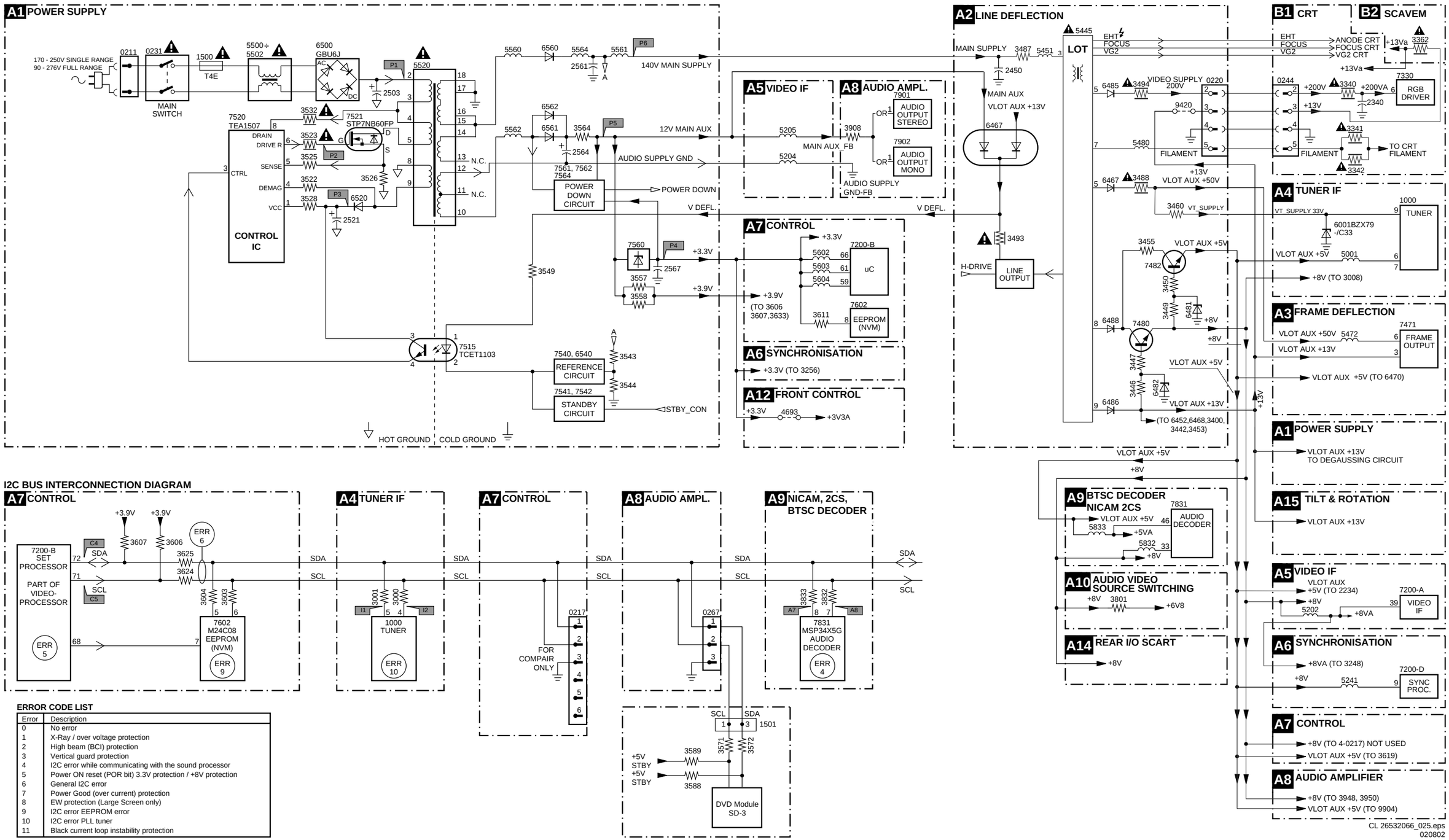
Personal Notes:

6. Wiring, I2C and Supply Voltage Diagram

Wiring Diagram



I2C and Supply Voltage Diagram



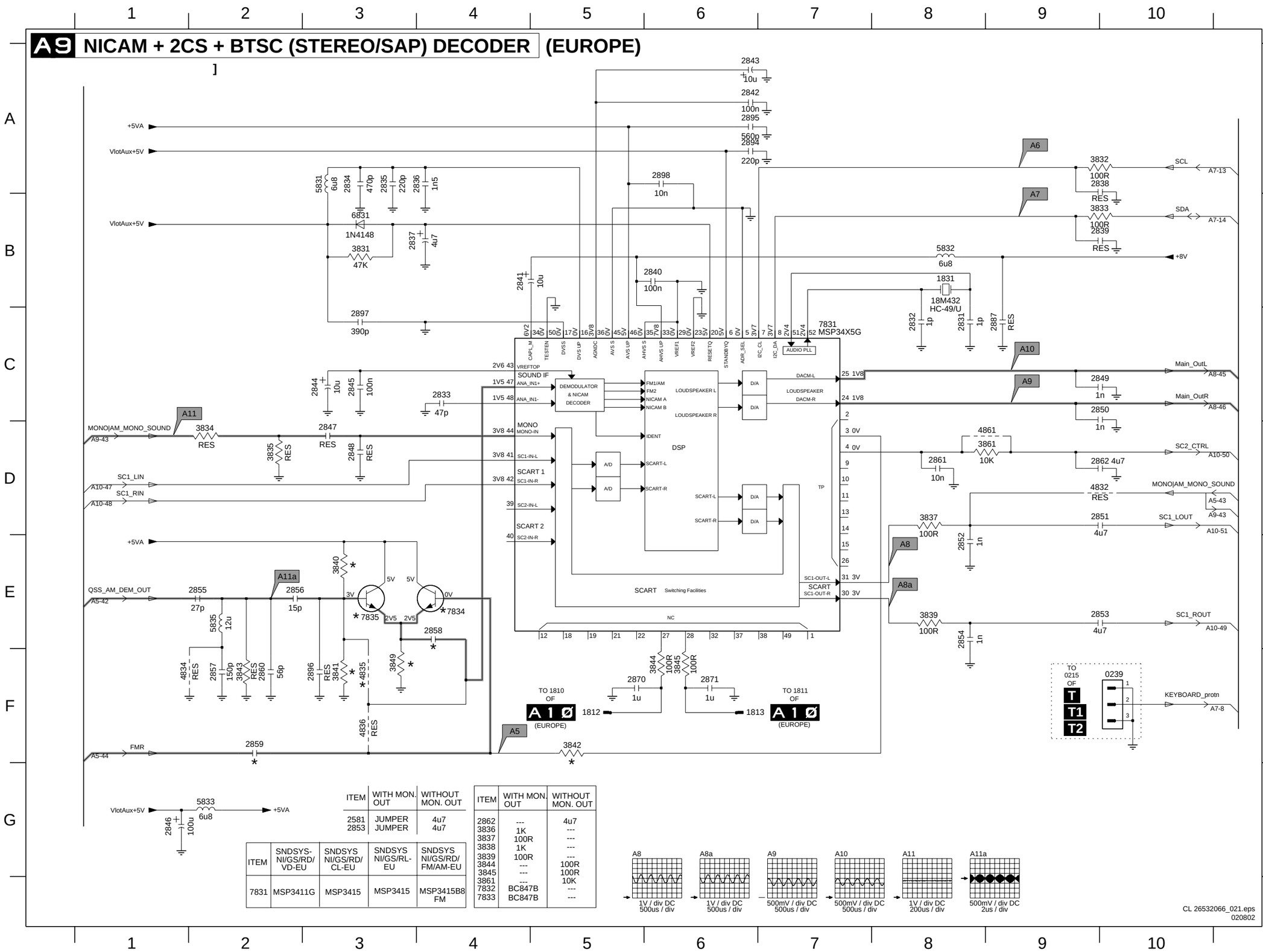
I2C BUS INTERCONNECTION DIAGRAM

ERROR CODE LIST

Error	Description
0	No error
1	X-Ray / over voltage protection
2	High beam (BCI) protection
3	Vertical guard protection
4	I2C error while communicating with the sound processor
5	Power ON reset (POR bit) 3.3V protection / +8V protection
6	General I2C error
7	Power Good (over current) protection
8	EW protection (Large Screen only)
9	I2C error EEPROM error
10	I2C error PLL tuner
11	Black current loop instability protection

7. Electrical Diagrams and PWB's

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



ITEM	WITH MON. OUT	WITHOUT MON. OUT
2581	JUMPER	4u7
2853	JUMPER	4u7

ITEM	SNDSYS-NI/GS/RD/VD-EU	SNDSYS NI/GS/RD/CL-EU	SNDSYS NI/GS/RL-EU	SNDSYS NI/GS/RD/FM/AM-EU
7831	MSP3411G	MSP3415	MSP3415	MSP3415B8 FM

ITEM	WITH MON. OUT	WITHOUT MON. OUT
2862	---	4u7
3836	1K	---
3837	100R	---
3838	1K	---
3839	100R	---
3844	---	100R
3845	---	100R
3861	---	10K
7832	BC847B	---
7833	BC847B	---

DVD Interface Panel: Audio

M 1 AUDIO

FROM DVD ENGINE

TO 0266 OF MAIN CHASSIS A13 / A14

TO 0227 OF LS SCART / TO 0227-4,5,6 OF LS CINCH A13 / A14

RESERVED

WITH SCART2 / AV2 ONLY

OPTICAL OUT

COAXIAL OUT

* DC VOLTAGES MEASURED IN DVD MODE WITHOUT DISK LOADED.

CL 26532066_002.eps
290502

0227 F1
0254 A1
0266 E1
1100 F10
1121 E8
1122 F10
1180 E1
1181 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 B6
6120 B7
7110-A E5
7110-B G5
7110-C F5
7120 A5
7140 B8
7141 B10
7142 C8
7143 D10

DVD Interface Panel: Video

M2 VIDEO

FROM DVD ENGINE
0255
VIDEO_GND
2260 RES
2261 RES
2262 RES
2263 100n -8V_VIDEO
2264 100n +12VSTDBY_VIDEO
2265 100n +5VSTDBY_VIDEO
2266 RES +3V3_VIDEO
C_DVD
Y_DVD

7280 L78L08 IN GND OUT
+12VSTDBY_VIDEO
+8V
2280 10u
2281 10u

TO 0229 OF LS SCART / TO 0229-1,2,3 OF LS CINCH
A13 / A14
0229 EH-B
Y_CVBS_OUT M2-24
C_OUT M2-23

TO 0268 OF MAIN CHASSIS
A13 / A14
0268 EH-B
6250 BZX384-C10 +8V
3251 100R M2-22 C_AV2_IN
1250
3250 75R
2250 330p
3253 10R M2-21 Y_CVBS_AV2_IN
1251 2251 RES 3252 150R 2252 22p
RESERVED
WITH SCART2 / AV2 ONLY

4260 4261 RESERVED
SCL_DVD M4-28
SDA_DVD M4-27

+8V
5200 6u8
3230 22K
3200 270R
2201 10u 2200 100n
0V2
3201 100R
7201 BC857B
2267 10u
0V4
7200 BC847B
3231 24K
3203 6K8
3204 680R
3205 4K7
3206 820R
3202 100R
7202 BC847B
3207 2K2
3208 75R
3209 75R
C_DVD_IN M2-25

4200 4210 RESERVED

5V
3232 22K
3210 270R
2211 100n
3211 100R
4V3
7211 BC857B
2268 10u
-0V3
7210 BC847B
-1V
3233 24K
3213 6K8
3214 680R
3215 4K7
3216 820R
2V6
3212 100R
7212 BC847B
3217 2K2
1V9
3218 75R
2212 2n2
3219 75R
Y_DVD_IN M2-26

4220 RESERVED
+8V
5220 6u8
2220 100n
3221 22K
7220-A HEF4053BT Vdd S Vss Vee E
M2-25 C_DVD_IN
M2-22 C_AV2_IN
SEL_DVD_AV M4-17
C_OUT M2-23
3220 22K
3223 22K
7220-B HEF4053BT
M2-26 Y_DVD_IN
M2-21 Y_CVBS_AV2_IN
Y_CVBS_OUT M2-24
3222 22K
7220-C HEF4053BT
9220

* DC VOLTAGES MEASURED IN DVD MODE WITHOUT DISK LOADED.

⋆ FOR LATAM & USA ONLY

CL 26532066_003.eps
290502

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

DVD Interface Panel: Power Supply

M3 POWER SUPPLY

TO/FROM 0251 OF MAIN CHASSIS

* DC VOLTAGES MEASURED IN DVD MODE WITHOUT DISK LOADED

CL 26532066_004.eps
290502

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

DVD Interface Panel: Control

M4 CONTROL

FOR SLAVE DVD ONLY
RESERVED
A7

0256 FROM DVD ENGINE EH-B
0217 EH-B
0218 EH-B COMPAIR
TO / FROM 0217 - 1,2,3 OF MAIN CHASSIS

M2-28 SCL_DVD
M2-27 SDA_DVD

0240 To 0240 (L01) EH-B
RST_INTERFACE
SDA_L01
SCL_L01

9400
9401
4402
4405
4404

FOR MASTER DVD ONLY
RESERVED

+5VSTDBY_VIDEO
5400 10u
2403 100n GNDDIG
7400 P87LPC762BD
VDD
X2|CLKO|P20
X1|P21
1400 AT-49 16M
2402 22p GNDDIG
2401 22p GNDDIG
TXD|P10
RXD|P11
SCL|T0|P12
SDA|INT0_|P13
INT1_|P14
RST|P15
P16
P17
CMP2|P00
CIN2B|P01
CIN2A|P02
CIN1B|P03
CIN1A|P04
CMPREF|P05
CMP1|P06
T1|P07
VSS
3400 8K2
3401 100R
3402 100R
3403 1K
3404 100R
3405 100R
2400 100p GNDDIG
GNDDIG
4403 GNDDIG

0264 EH-B TO 0267 EJECT BOARD
2404 RES
M5

DVD_STDBY
M3-20
M3-33

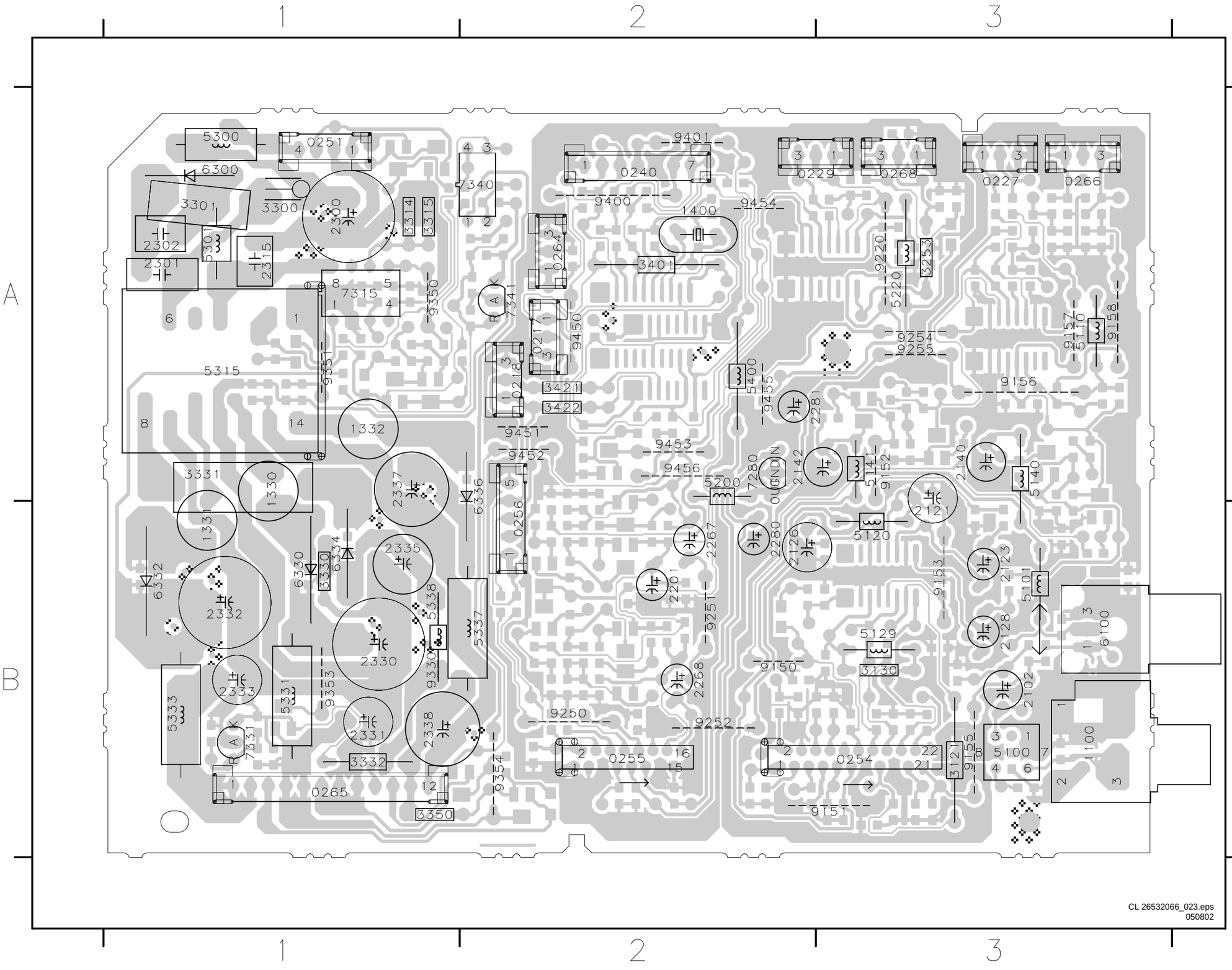
WITH SCART2 / AV2 ONLY
RESERVED
+8V
3406 10K
3407 47K
7401 BC847B
3408 47K
SEL_DVD_AV
M1-30
M1-32
M2-17

7420 PCF8574AT
INT_
A0
A1
A2
SCL
SDA
VDD
VSS
INTERRUPT LOGIC
LP FILTER
INPUT FILTER
I²C BUS CONTROL
POWER-ON RESET
SHIFT REGISTER
8 BIT
I/O PORTS
P0
P1
P2
P3
P4
P5
P6
P7
3421 100R
3422 100R
3420 15K
2421 100n
+5VSTDBY_VIDEO
3425 15K
3424 15K
3423 15K
RESERVED

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

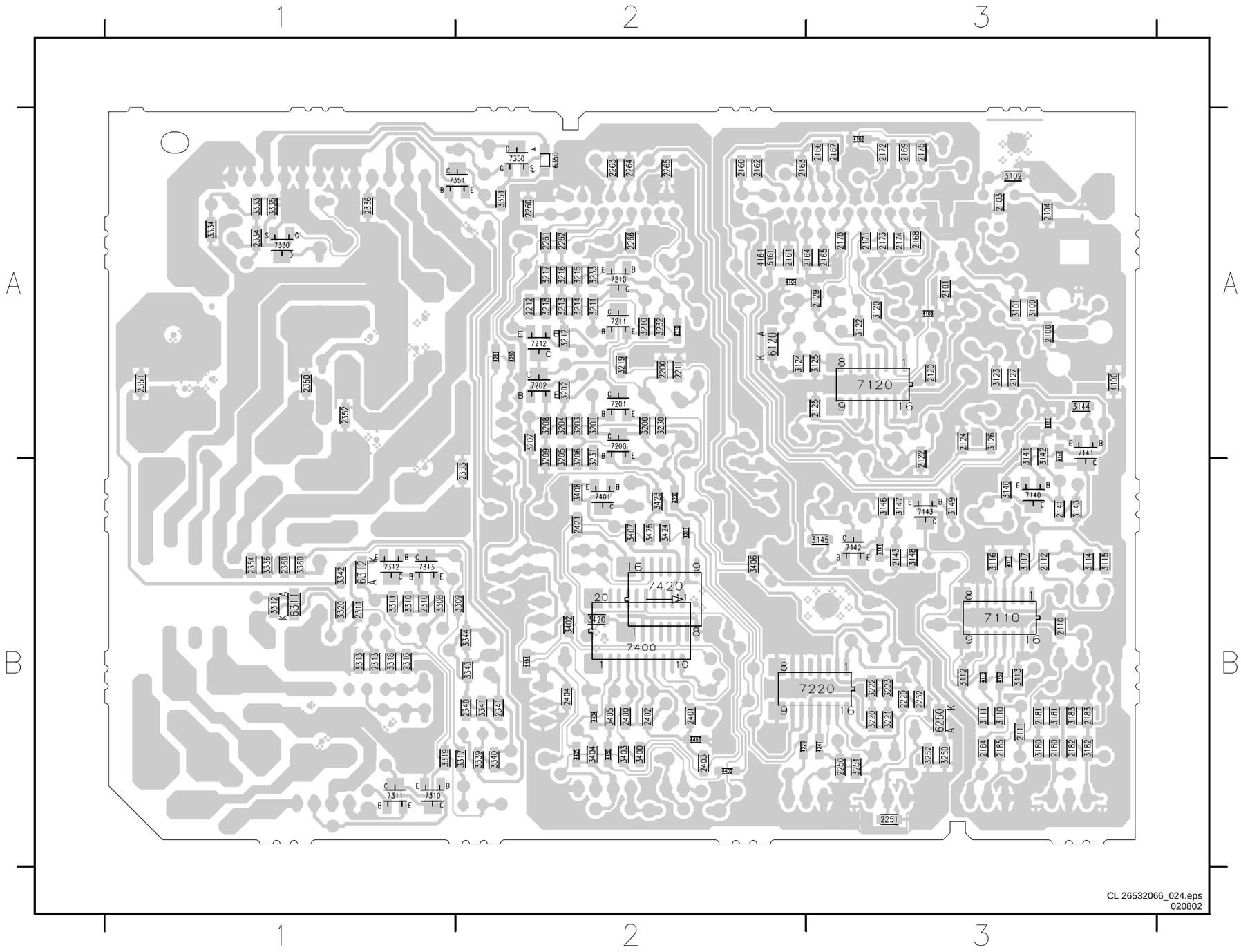
CL 26532066_005.eps
280602

Layout DVD Interface Panel (Top View)



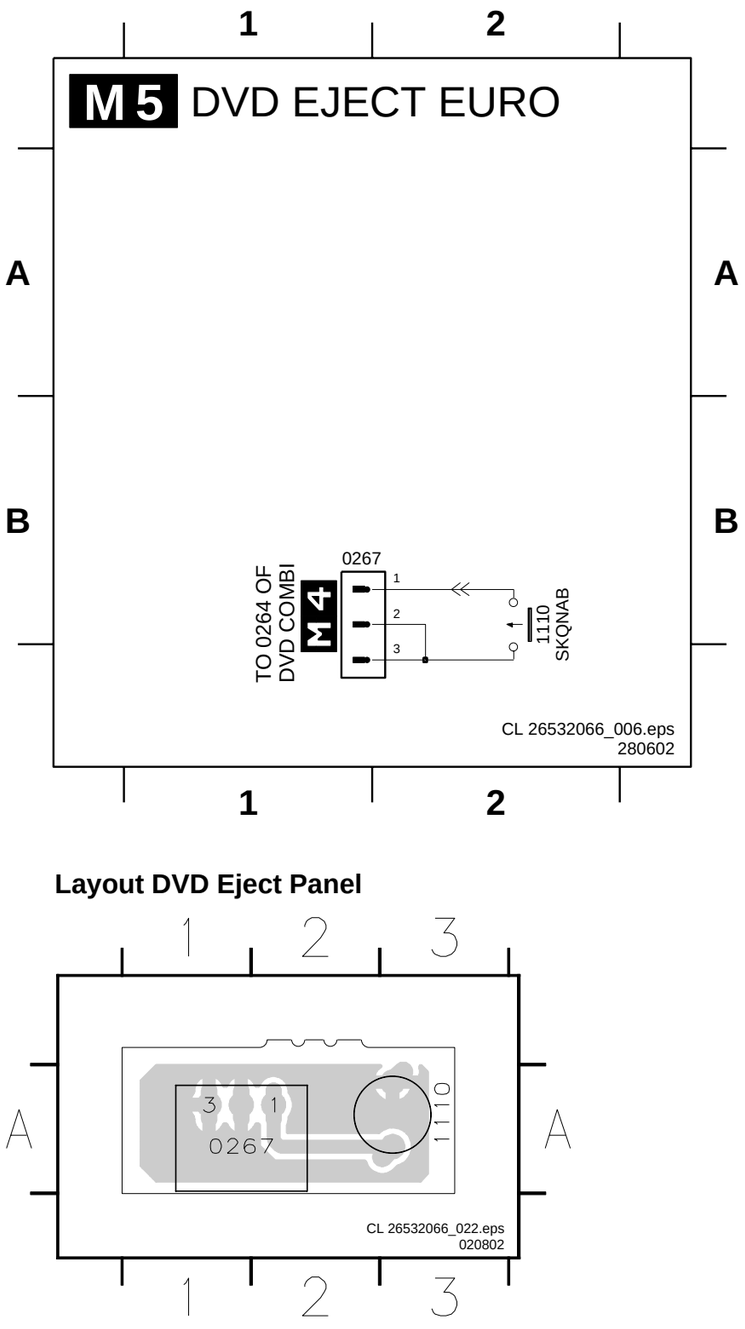
0217	A2	6100	B3
0218	A2	6300	A1
0227	A3	6330	B1
0229	A2	6332	B1
0240	A2	6334	B1
0251	A1	6336	A2
0254	B3	7280	A2
0255	B2	7315	A1
0256	B2	7331	B1
0264	A2	7340	A2
0265	B1	7341	A2
0266	A3	9150	B2
0268	A3	9151	B3
1100	B3	9152	A3
1330	A1	9153	B3
1331	B1	9155	B3
1332	A1	9156	A3
1400	A2	9157	A3
2102	B3	9158	A3
2121	B3	9220	A3
2123	B3	9250	B2
2126	B2	9251	B2
2128	B3	9252	B2
2140	A3	9254	A3
2142	A2	9255	A3
2201	B2	9330	B1
2267	B2	9350	A1
2268	B2	9351	A1
2280	B2	9353	B1
2281	A2	9354	B2
2300	A1	9400	A2
2301	A1	9401	A2
2302	A1	9450	A2
2315	A1	9451	A2
2330	B1	9452	A2
2331	B1	9453	A2
2332	B1	9454	A2
2333	B1	9455	A2
2335	B1	9456	A2
2337	A1		
2338	B1		
3121	B3		
3130	B3		
3253	A3		
3300	A1		
3301	A1		
3314	A1		
3315	A1		
3330	B1		
3331	A1		
3332	B1		
3350	B1		
3401	A2		
3421	A2		
3422	A2		
5100	B3		
5101	B3		
5110	A3		
5120	B3		
5129	B3		
5140	A3		
5141	A3		
5200	A2		
5220	A3		
5300	A1		
5301	A1		
5315	A1		
5331	B1		
5333	B1		
5337	B2		
5338	B1		
5400	A2		

Layout DVD Interface Panel (Bottom Side)



2100	A3	3101	A3	3334	A1	7351	A2
2101	A3	3102	A3	3335	A1	7400	B2
2103	A3	3110	B3	3336	B1	7401	B2
2104	A3	3111	B3	3339	B2	7420	B2
2110	B3	3112	B3	3340	B2		
2111	B3	3113	B3	3341	B2		
2112	B3	3114	B3	3342	B1		
2120	A3	3115	B3	3343	B2		
2122	B3	3116	B3	3344	B2		
2124	A3	3117	B3	3351	A2		
2125	A3	3120	A3	3360	B1		
2127	A3	3122	A3	3400	B2		
2129	A3	3123	A3	3402	B2		
2141	B3	3124	A2	3403	B2		
2143	B3	3125	A3	3404	B2		
2160	A2	3126	A3	3405	B2		
2161	A2	3140	B3	3406	B2		
2162	A2	3141	A3	3407	B2		
2163	A2	3142	A3	3408	B2		
2164	A3	3143	B3	3420	B2		
2165	A3	3144	A3	3423	B2		
2166	A3	3145	B3	3424	B2		
2167	A3	3146	B3	3425	B2		
2168	A3	3147	B3	4100	A3		
2169	A3	3148	B3	4101	A3		
2170	A3	3149	B3	4102	A3		
2171	A3	3180	B3	4103	A3		
2172	A3	3181	B3	4104	A2		
2173	A3	3182	B3	4110	B3		
2174	A3	3183	B3	4111	B3		
2175	A3	3200	A2	4140	A3		
2180	B3	3201	A2	4141	B3		
2181	B3	3202	A2	4150	B3		
2182	B3	3203	A2	4161	A2		
2183	B3	3204	A2	4200	B2		
2184	B3	3205	A2	4201	B2		
2185	B3	3206	A2	4210	A2		
2200	A2	3207	A2	4220	B2		
2211	A2	3208	A2	4241	B3		
2212	A2	3209	A2	4260	A2		
2220	B3	3210	A2	4261	A2		
2250	B3	3211	A2	4402	B2		
2251	B3	3212	A2	4403	B2		
2252	B3	3213	A2	4404	B2		
2260	A2	3214	A2	4405	B2		
2261	A2	3215	A2	4450	B2		
2262	A2	3216	A2	4451	B2		
2263	A2	3217	A2	5161	A2		
2264	A2	3218	A2	6120	A2		
2265	A2	3219	A2	6250	B3		
2266	A2	3220	B3	6311	B1		
2310	B1	3221	B3	6312	B1		
2311	B1	3222	B3	6350	A2		
2313	B1	3223	B3	7110	B3		
2316	B1	3230	A2	7120	A3		
2334	A1	3231	A2	7140	B3		
2336	A1	3232	A2	7141	A3		
2340	B2	3233	A2	7142	B3		
2341	B2	3250	B3	7143	B3		
2350	A1	3251	B3	7200	A2		
2351	A1	3252	B3	7201	A2		
2352	A1	3308	B1	7202	A2		
2353	B2	3309	B2	7210	A2		
2354	B1	3310	B1	7211	A2		
2360	B1	3311	B1	7212	A2		
2400	B2	3312	B1	7220	B3		
2401	B2	3313	B1	7310	B1		
2402	B2	3317	B2	7311	B1		
2403	B2	3318	B1	7312	B1		
2404	B2	3319	B1	7313	B1		
2421	B2	3320	B1	7330	A1		
3100	A3	3333	A1	7350	A2		

DVD Eject Panel

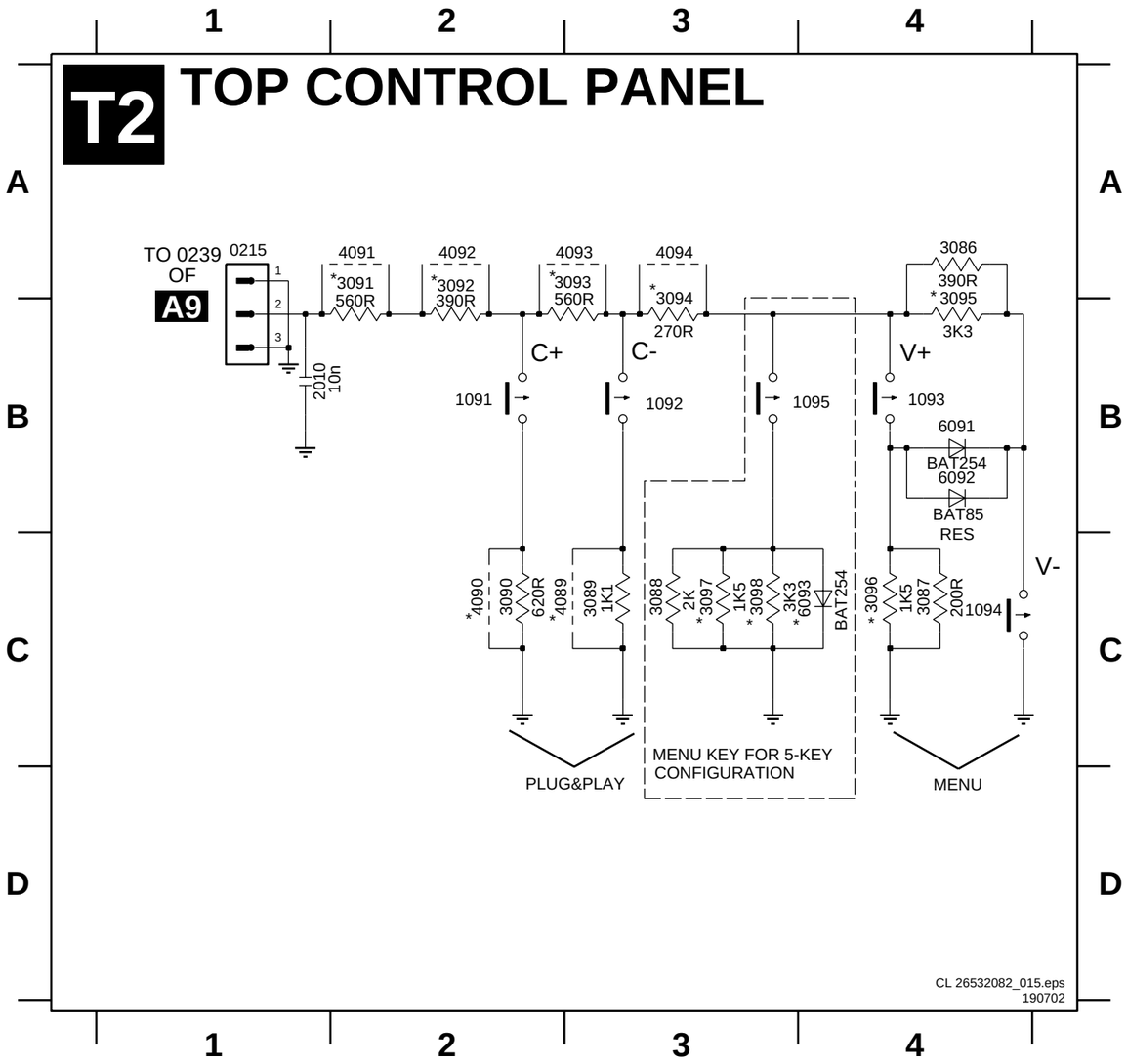


Layout DVD Eject Panel

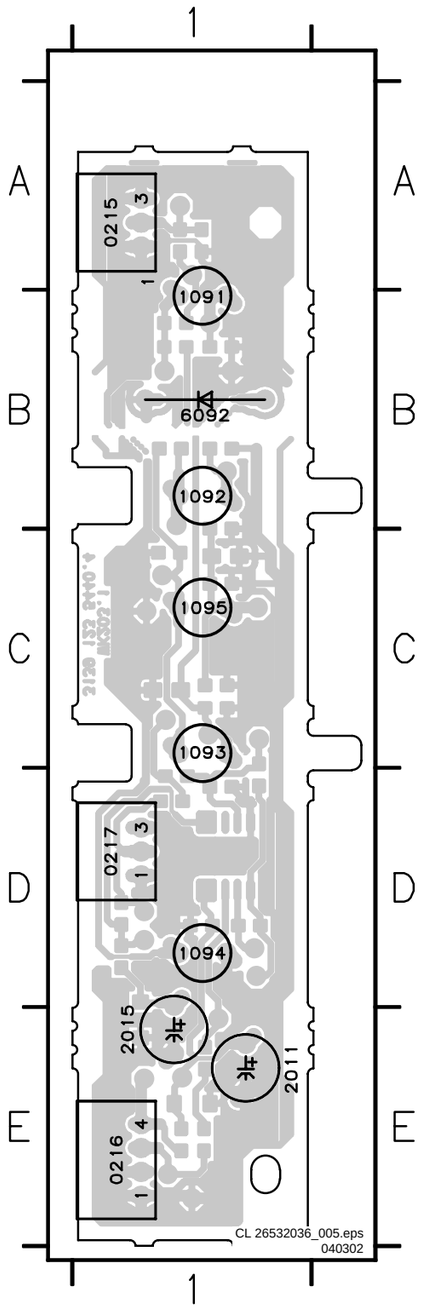
Personal Notes:

Top Contol Panel

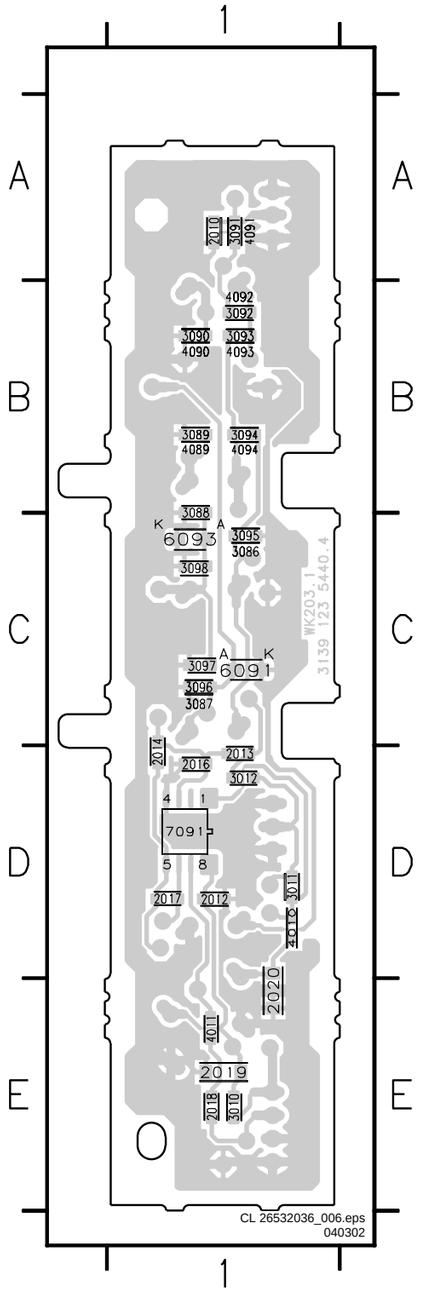
0215 A1 1093 B4 2010 B1 3088 C3 3091 A2 3094 B3 3097 C3 4090 C2 4093 A3 6092 B4
1091 B2 1094 C4 3086 A4 3089 C3 3092 A2 3095 B4 3098 C3 4091 A2 4094 A3 6093 C4
1092 B3 1095 B4 3087 C4 3090 C2 3093 A3 3096 C4 4089 C3 4092 A2 6091 B4



Layout Top Control (Top View)



Layout Top Control (Bottom View)



Personal Notes:

Personal Notes:

8. Alignments

Index of this chapter:

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 (± 10 %), 50 Hz (± 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: Ri > 10 MOhm; Ci < 2.5 pF.
- Use an isolated trimmer / screwdriver to perform the alignments.

8.2 Hardware Alignments

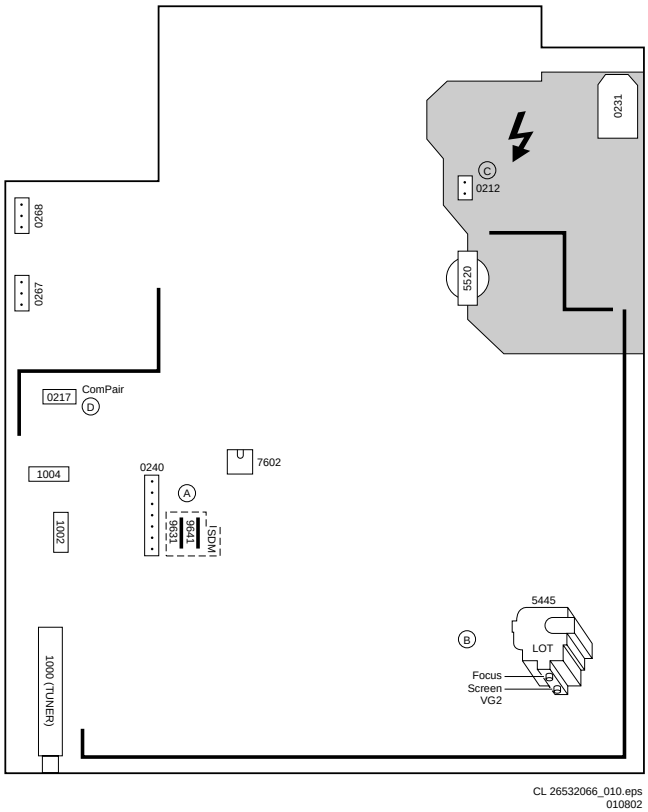


Figure 8-1 Top view monocarrier

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).

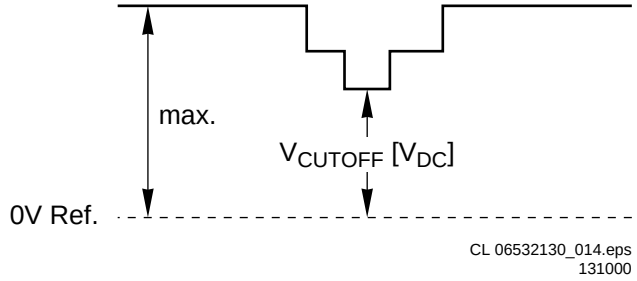


Figure 8-2 Vg2 waveform

Table 8-1 Cut-off voltage

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

8.2.2 Focus alignment

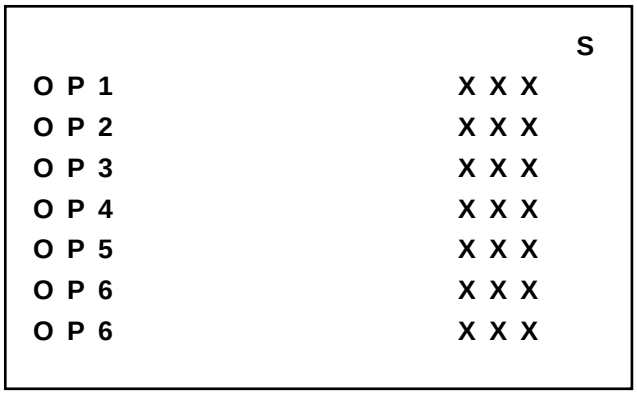
- Tune the set to a circle or crosshatch test pattern (use an external video pattern generator).
- Choose picture mode NATURAL (or MOVIES) with the 'SMART PICTURE' button on the remote control transmitter.
- Adjust the FOCUS potentiometer (see Fig. 8-1) until the vertical lines at 2/3 from east and west, 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.



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010802

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, SW1Txt 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, SW1Txt 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.

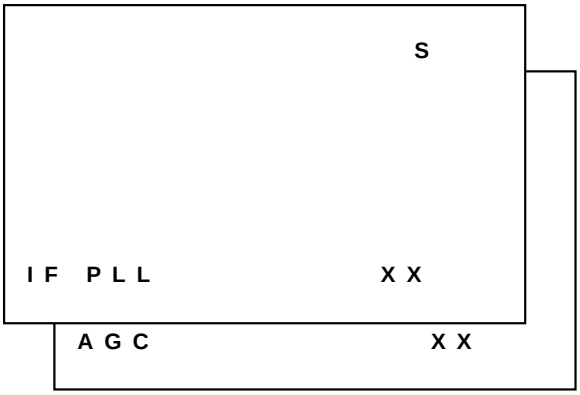

Figure 8-5 Tuner alignment menu

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

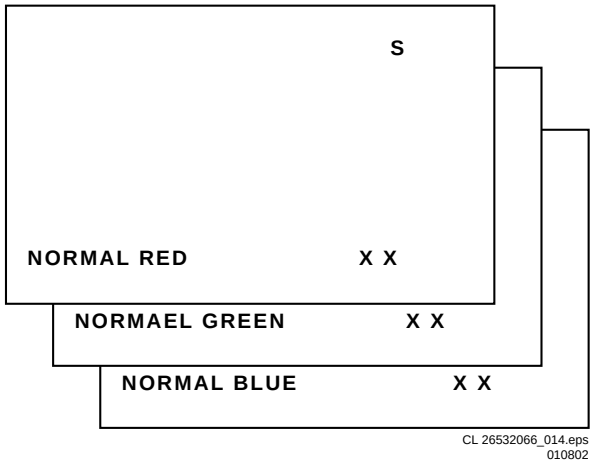

Figure 8-6 White tone alignment menu

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.

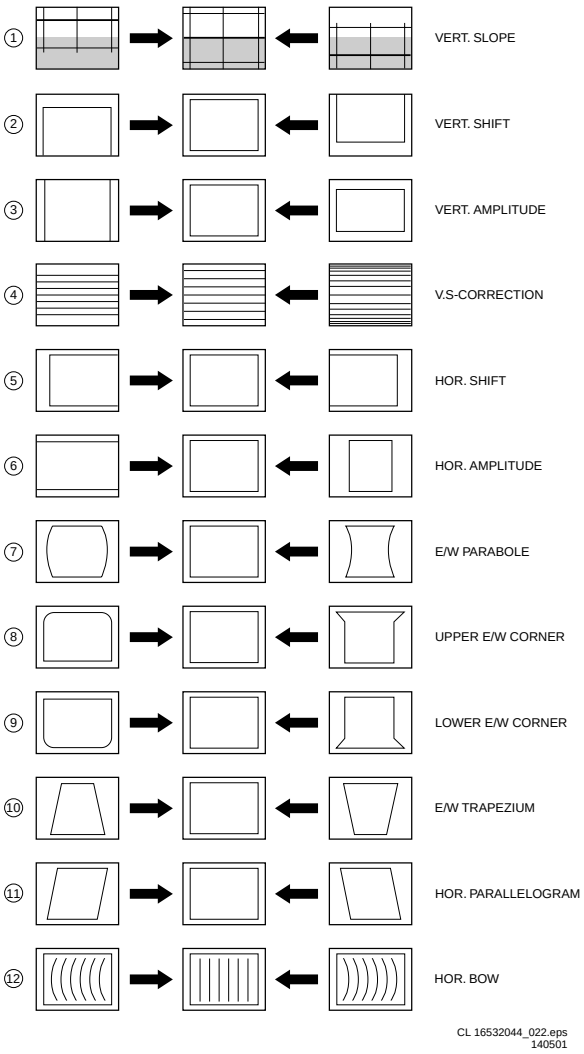

Figure 8-7 Geometry alignments

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.

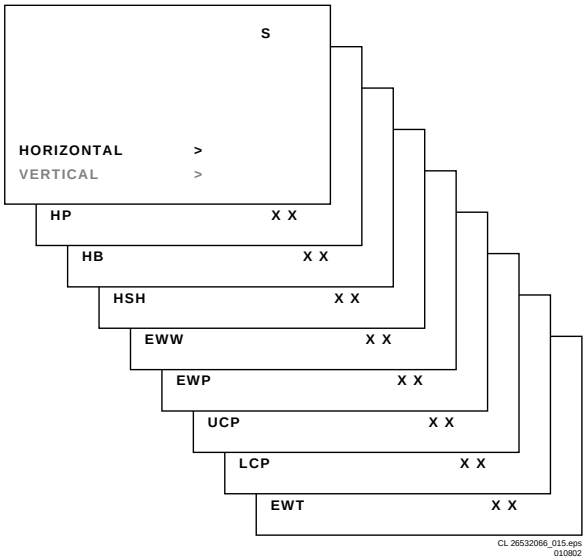

Figure 8-8 Horizontal alignment menu

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)

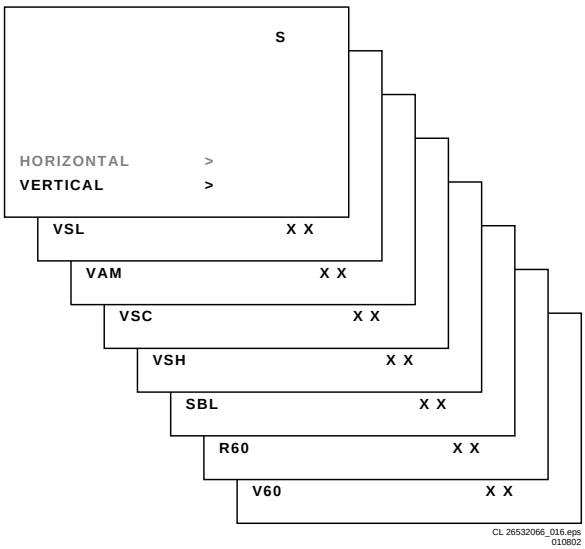

Figure 8-9 Vertical alignment menu

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
HP	Hor. Parallelogram	31	31	31	32	32
HB	Hor. Bow	31	31	31	32	32
HSH	Hor. S hift	38	38	38	27	27
EWW	East West Width	40	40	40	36	36
EWP	East West Parabola	06	06	06	20	20
UCP	Upper Corner Parabola	35	35	35	20	20
LCP	Lower Corner Parabola	35	35	35	25	25
EWT	East West Trapezium	35	35	35	28	28
VSL	Vert. Slope	36	36	36	37	37
VAM	Vert. Amplitude	63	63	63	30	30
VSC	Vert. S -correction	23	23	23	20	20
VSH	Vert. S hift	31	31	31	31	31
VX	Vert. Zoom	25	25	25	25	25
H60	60 Hz Horizontal Shift	09	09	09	09	09
V60	60 Hz Vertical amplitude	64	64	64	64	64

8.3.5 Audio

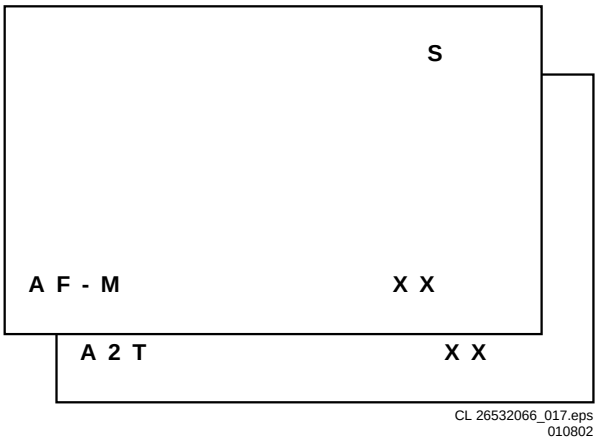

Figure 8-10 Audio alignment menu

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

10. Spare Parts List

Large Signal Panel [A] + CRT [B]

Various

0127	4822 265 11253	Fuse holder
0129	3139 120 10151	NTC holder
0136	4822 492 70788	Fix IC
0137	4822 492 70289	Spring
0138	4822 492 70788	Fix IC
0139	4822 492 62076	Spring for transistor
0140	4822 492 70289	Spring
0141	4822 492 70788	Fix IC
0152	3104 301 09421	Cable 6p 400mm
0159	3104 311 02931	Cable 3p 400mm
0169	3104 311 04931	Cable 4p 480mm
0172	3104 311 01311	Cable 3p 340mm
0173	3104 311 03901	Cable 3p 340mm
0180	3104 311 04941	Cable 6p 560mm
0181	3104 311 01141	Cable 7p 340mm
0186	3104 301 08422	Cable 5p 480mm
0195	3104 311 04951	Cable 3p 220mm
0211	2422 025 16374	2p male
0212	4822 267 10774	2p male (red)
0214	4822 267 10734	5p
0217	4822 267 10735	3p
0219	2422 025 15849	6p female
0220	4822 265 30735	5p
0221	4822 267 10966	2p
0222	2422 025 10646	2p male
0227	2422 025 16382	3p male
0229	4822 267 10735	3p
0235	4822 267 60385	21p
0239	2422 025 16382	3p male
0240	2422 025 11244	7p female
0243	2422 025 04854	6p female
0244	4822 265 30735	5p
0245	2422 025 04854	6p female
0246	4822 267 10734	5p
0251	4822 267 10565	4p
0254	2422 500 80076	CRT socket 9P female
0265	4822 267 10748	3p
0267	2422 025 16382	3p male
0278	4822 267 10735	3p
1000	3139 147 17401	Tuner UR1316R/A I -3
1002	4822 242 81436	OFWK3953M
1004	2422 549 44341	Saw filter 38.9MHz OFWK9656M
1200	4822 242 81712	TPWA04B
1500	2422 086 10914	Fuse 4A 250V
1515	2422 132 07467	Relay 12V 5A
1660	2422 543 01203	Crystal 12.000MHz
1831	4822 242 10769	Crystal 18.432 000 MHz

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2001	5322 122 32658	22pF 5% 50V
2002	5322 122 32658	22pF 5% 50V
2003	4822 122 33177	10nF 20% 50V
2004	4822 126 13751	47nF 10% 63V
2005	4822 124 40248	10µF 20% 63V
2006	4822 124 80791	470µF 16V 20%
2007	4822 126 14585	100nF 10% 50V
2008	4822 124 40207	100µF 20% 25V
2009	5322 122 32654	22nF 10% 63V
2010	5322 126 10511	1nF 5% 50V
2101	9965 000 10115	390pF 10% 50V
2102	9965 000 10115	390pF 10% 50V
2103	2020 552 96305	4U7 20-80% 10V
2104	9965 000 10115	390pF 10% 50V
2105	9965 000 10115	390pF 10% 50V
2106	2020 552 96305	4U7 20-80% 10V
2107	9965 000 10115	390pF 10% 50V
2108	9965 000 10115	390pF 10% 50V
2109	2020 552 96305	4U7 20-80% 10V
2110	9965 000 10115	390pF 10% 50V
2111	9965 000 10115	390pF 10% 50V
2112	2020 552 96305	4U7 20-80% 10V
2113	5322 122 32658	22pF 5% 50V
2114	5322 122 32658	22pF 5% 50V
2115	5322 122 32658	22pF 5% 50V
2116	5322 122 32658	22pF 5% 50V
2117	5322 122 32658	22pF 5% 50V
2118	5322 122 32658	22pF 5% 50V
2120	5322 122 32658	22pF 5% 50V
2161	4822 124 12392	47µF 20% 16V
2184	2020 552 96305	4U7 20-80% 10V
2201	4822 126 14585	100nF 10% 50V
2202	4822 126 14585	100nF 10% 50V
2203	4822 126 14585	100nF 10% 50V
2204	4822 126 14585	100nF 10% 50V
2205	4822 126 14076	220nF 25V
2206	4822 126 13693	56pF 1% 63V
2207	5322 126 10184	820pF 5% 50V
2208	4822 126 14585	100nF 10% 50V
2209	4822 124 40248	10µF 20% 63V
2210	4822 126 14043	1µF 20-80% 16V
2211	4822 126 13482	470nF 20-80% 16V
2213	5322 122 32654	22nF 10% 63V
2214	5322 122 32654	22nF 10% 63V
2215	5322 122 32654	22nF 10% 63V
2216	4822 124 81144	1000µF 16V
2217	5322 122 32654	22nF 10% 63V
2219	4822 126 14076	220nF 25V
2220	4822 121 51252	470nF 5% 63V
2221	5322 122 32654	22nF 10% 63V
2230	4822 124 40769	4.7µF 20% 100V
2234	4822 126 14585	100nF 10% 50V
2238	5322 126 10511	1nF 5% 50V
2239	5322 126 10511	1nF 5% 50V
2240	5322 126 10511	1nF 5% 50V
2241	4822 126 13344	1.5nF 5% 63V
2242	4822 126 14043	1µF 20-80% 16V
2243	4822 122 33177	10nF 20% 50V
2244	5322 121 42386	100nF 5% 63V
2245	4822 126 14107	330nF 20-80% 25V
2247	4822 124 81144	1000µF 16V
2248	5322 122 32654	22nF 10% 63V
2249	5322 122 32654	22nF 10% 63V
2250	4822 124 22652	2.2µF 20% 50V
2252	5322 126 10511	1nF 5% 50V
2253	5322 126 10511	1nF 5% 50V
2254	4822 051 20008	Jumper ()
2330	4822 121 51473	470nF 20% 63V
2340	4822 124 11565	10µF 20% 250V
2341	4822 126 13599	3.3nF 10% 500V
2342	5322 116 80853	560pF 5% 63V
2343	4822 126 12278	3300pF 10% 2kV
2344	4822 051 20008	Jumper ()
2345	4822 122 31175	1nF 10% 500V
2360	4822 124 40764	22µF 100 V
2361	4822 124 40207	100µF 20% 25V
2365	4822 121 40516	22nF 10% 250V
2366	4822 121 40334	100nF 10% 100V
2367	5322 122 33861	120pF 10% 50V
2368	5322 122 32654	22nF 10% 63V
2376	4822 126 14585	100nF 10% 50V
2377	4822 126 14585	100nF 10% 50V
2401	5322 124 41379	2.2µF 20% 50V
2402	4822 122 31177	470pF 10% 500V
2404	4822 124 41751	47µF 20% 50V
2405	4822 124 40196	220µF 20% 16V
2441	4822 124 21913	1µF 20% 63V
2443	4822 126 13751	47nF 10% 63V
2444	4822 124 21913	1µF 20% 63V
2450	4822 124 11575	47µF 20% 160V
2451	4822 121 51305	15nF 10% 50V
2452	4822 126 10326	180pF 5% 63V
2455	4822 124 40433	47µF 20% 25V
2457	4822 121 42365	330nF 5% 250V
2458	4822 124 12438	2.2µF 20% 100V
2459	4822 126 13185	680pF 10% 500V
2460	5322 122 32531	100pF 5% 50V
2463	4822 126 14237	470pF 10% 2kV
2464	4822 121 10739	2.2µF 5% 160V
2465	4822 121 70637	8.2nF 5% 1600V
2466	2222 347 90219	15nF 10% 400V
2471	5322 121 42386	100nF 5% 63V
2472	4822 121 41854	150nF 5% 63V
2473	5322 121 42386	100nF 5% 63V
2474	4822 122 33127	2.2nF 10% 63V
2475	4822 122 33127	2.2nF 10% 63V
2476	5322 126 10223	4.7nF 10% 63V
2480	5322 121 10472	47µF
2481	4822 122 31177	470pF 10% 500V
2482	4822 121 51408	33nF 10% 250V
2485	4822 124 12265	4.7µF 20% 250V
2486	2020 021 91577	470µF 20% 16V
2487	4822 124 80604	47µF 20% 50V
2488	4822 124 81145	1000µF 20% 16V
2489	2020 021 91577	470µF 20% 16V
2491	4822 122 31175	1nF 10% 500V
2493	2222 347 90219	15nF 10% 400V
2500	4822 126 13589	470nF 275V
2501	4822 126 14153	2.2nF 10%B 1kV
2502	4822 126 14153	2.2nF 10%B 1kV
2503	4822 124 12415	220µF 20% 400V
2505	4822 126 14153	2.2nF 10%B 1kV
2507	5322 122 34099	470pF 10% 63V
2508	4822 122 50116	470pF 10% 1kV
2509	4822 121 10711	100nF 20% 275V
2515	4822 126 14049	1.5nF 20% 250V
2516	4822 126 13867	330pF 20% 250V
2520	4822 126 14585	100nF 10% 50V
2521	4822 124 81151	22µF 50V
2522	4822 126 14585	100nF 10% 50V
2523	4822 126 13862	1.5nF 10% 2kV
2525	5322 122 34099	470pF 10% 63V
2526	4822 126 13482	470nF 20-80% 16V
2527	4822 122 33127	2.2nF 10% 63V
2528	5322 122 31647	1nF 10% 63V
2540	4822 122 33177	10nF 20% 50V
2541	4822 122 33177	10nF 20% 50V
2560	4822 126 14152	680pF 10% 1kV
2561	2020 021 91496	100µF 20% 160V
2562	5322 122 32331	1nF 10% 100V
2563	5322 121 42386	100nF 5% 63V
2564	4822 124 12417	2200µF 20% 25V
2567	4822 124 40433	47µF 20% 25V
2568	4822 124 21913	1µF 20% 63V
2580	4822 124 81286	47µF 20% 16V
2601	4822 126 14076	220nF 25V
2602	5322 122 32531	100pF 5% 50V
2606	5322 122 31647	1nF 10% 63V
2607	2238 861 18339	33pF 1% 50V
2608	4822 126 14043	1µF 20-80% 16V
2609	2238 861 18339	33pF 1% 50V
2611	4822 126 14043	1µF 20-80% 16V
2612	4822 126 13694	68pF 1% 63V
2613	4822 126 13694	68pF 1% 63V
2615	5322 122 31647	1nF 10% 63V
2618	4822 126 14043	1µF 20-80% 16V
2619	4822 126 14043	1µF 20-80% 16V
2801	4822 124 80791	470µF 16V 20%
2802	4822 126 14076	220nF 25V
2803	2020 552 96305	4U7 20-80% 10V
2804	2020 552 96305	4U7 20-80% 10V
2805	2020 552 96305	4U7 20-80% 10V
2831	5322 122 32447	1pF 5% 63V
2832	5322 122 32447	1pF 5% 63V
2833	4822 126 13692	47pF 1% 63V
2834	5322 122 32268	470pF 5% 63V
2835	4822 122 33575	220pF 5% 63V
2836	4822 126 13344	1.5nF 5% 63V
2837	4822 124 40769	4.7µF 20% 100V
2840	4822 126 14585	100nF 10% 50V
2841	4822 124 40248	10µF 20% 63V
2842	4822 126 14585	100nF 10% 50V
2843	4822 124 40248	10µF 20% 63V
2844	4822 124 40248	10µF 20% 63V
2845	4822 126 14585	100nF 10% 50V
2846	4822 124 40207	100µF 20% 25V
2849	5322 126 10511	1nF 5% 50V
2850	5322 126 10511	1nF 5% 50V
2851	2020 552 96305	4U7 20-80% 10V
2852	5322 126 10511	1nF 5% 50V
2853	2020 552 96305	4U7 20-80% 10V
2854	5322 126 10511	1nF 5% 50V
2855	4822 122 30045	27pF 2% 100V
2856	4822 126 13486	15pF 2% 63V
2857	5322 122 33538	150pF 2% 63V
2858	5322 126 10511	1nF 5% 50V
2859	5322 126 10511	1nF 5% 50V
2860	4822 126 13693	56pF 1% 63V
2887	4822 122 33177	10nF 20% 50V
2894	4822 122 33575	220pF 5% 63V
2895	5322 116 80853	560pF 5% 63V
2897	4822 122 33172	390pF 5% 50V
2898	4822 122 33177	10nF 20% 50V
2902	4822 124 81144	1000µF 16V
2903	4822 124 21913	1µF 20% 63V
2904	4822 126 13482	470nF 20-80% 16V
2905	5322 116 80853	560pF 5% 63V
2906	4822 126 13482	470nF 20-80% 16V
2907	5322 116 80853	560pF 5% 63V
2908	4822 124 40248	10µF 20% 63V

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3000	4822 116 52175	100Ω 5% 0.5W
3001	4822 116 52175	100Ω 5% 0.5W
3002	4822 117 10833	10kΩ 1% 0.1W
3002	4822 051 20008	Jumper (0805)
3003	4822 117 11139	1.5kΩ 1% 0.1W
3005	4822 116 52175	100Ω 5% 0.5W
3006	4822 117 11449	2.2kΩ 5% 0.1W
3007	4822 117 11507	6.8kΩ 1% 0.1W

3008	4822 117 11449	2.2kΩ 5% 0.1W
3010	4822 117 13577	330Ω 1% 1.25W
3101	4822 116 83868	150Ω 5% 0.5W
3102	3198 021 52240	220kΩ 5%
3103	4822 116 83868	150Ω 5% 0.5W
3104	4822 117 10834	47kΩ 1% 0.1W
3105	4822 116 83868	150Ω 5% 0.5W
3106	3198 021 52240	220kΩ 5%
3107	4822 116 83868	150Ω 5% 0.5W
3108	4822 117 10834	47kΩ 1% 0.1W
3109	4822 116 52201	75Ω 5% 0.5W
3110	4822 116 52175	100Ω 5% 0.5W
3111	4822 116 52264	27kΩ 5% 0.5W
3112	4822 117 11507	6.8kΩ 1% 0.1W
3113	4822 116 52201	75Ω 5% 0.5W
3114	4822 116 52175	100Ω 5% 0.5W
3115	4822 116 52201	75Ω 5% 0.5W
3116	4822 116 52175	100Ω 5% 0.5W
3117	4822 116 52201	75Ω 5% 0.5W
3118	4822 116 52175	100Ω 5% 0.5W
3119	4822 116 52199	68Ω 5% 0.5W
3120	4822 051 10102	1kΩ 2% 0.25W
3121	4822 116 52201	75Ω 5% 0.5W
3155	4822 116 52195	47Ω 5% 0.5W
3200	4822 116 83881	390Ω 5% 0.5W
3201	4822 116 52175	100Ω 5% 0.5W
3202	4822 116 52175	100Ω 5% 0.5W
3203	4822 116 52175	100Ω 5% 0.5W
3204	4822 116 52257	22kΩ 5% 0.5W
3206	3198 021 52240	220kΩ 5%
3207	4822 050 11002	1kΩ 1% 0.4W
3208	4822 117 11503	220Ω 1% 0.1W
3209	4822 117 12521	68Ω 1% 0.1W
3212	4822 051 20471	470Ω 5% 0.1W
3213	4822 051 20561	560Ω 5% 0.1W
3214	4822 116 52175	100Ω 5% 0.5W
3217	4822 051 20334	330kΩ 5% 0.1W
3218	4822 117 11149	82kΩ 1% 0.1W
3219	4822 117 11449	2.2kΩ 5% 0.1W
3223	4822 117 11373	100Ω 1%
3226	4822 051 20561	560Ω 5% 0.1W
3229	4822 117 11454	820Ω 1% 0.1W
3230	4822 117 11504	270Ω 1% 0.1W
3231	4822 051 20561	560Ω 5% 0.1W
3233	4822 117 11454	820Ω 1% 0.1W
3235	4822 116 52175	100Ω 5% 0.5W
3236	4822 051 20154	150kΩ 5% 0.1W
3237	4822 051 20122	1.2kΩ 5% 0.1W
3238	4822 051 20561	560Ω 5% 0.1W
3239	4822 117 11504	270Ω 1% 0.1W
3240	4822 117 10837	100kΩ 1% 0.1W
3241	4822 051 20223	22kΩ 5% 0.1W
3242	4822 117 11383	12kΩ 1% 0.1W
3244	4822 116 52231	820Ω 5% 0.5W
3245	4822 051 20393	39kΩ 5% 0.1W
3246	4822 117 10833	10kΩ 1% 0.1W
3247	2120 108 92641	180kΩ 1%
3248	4822 051 20333	33kΩ 5% 0.1W
3249	4822 116 52231	820Ω 5% 0.5W
3250	4822 116 52303	8.2kΩ 5% 0.5W
3251	4822 116 52175	100Ω 5% 0.5W
3256	4822 051 10102	1kΩ 2% 0.25W
3257	4822 051 20105	1M Ω 5% 0.1W
3258	2120 108 92641	180kΩ 1%
3259	4822 051 20475	4.7M Ω 5% 0.1W
3270	4822 051 20008	Jumper (0805)
3331	4822 116 52175	100Ω 5% 0.5W
3332	3198 013 01020	1kΩ 20% 0.5W
3333	4822 116 52175	100Ω 5% 0.5W
3334	3198 013 01020	1kΩ 20% 0.5W
3335	4822 116 52175	100Ω 5% 0.5W
3336	3198 013 01020	1kΩ 20% 0.5W
3340	4822 052 11109	10Ω 5% 0.5W
3341	4822 052 10108	1Ω 5% 0.33W
3342	4822 052 10108	1Ω 5% 0.33W
3343	3198 013 01520	1.5kΩ 20% 0.5W
3344	4822 116 52186	22Ω 5% 0.5W
3345	4822 117 13016	1M A/50V MAX 115V
3346	4822 116 52186	22Ω 5% 0.5W
3347	4822 051 10102	1kΩ 2% 0.25W
3348	4822 051 10102	1kΩ 2% 0.25W
3350	4822 051 10102	1kΩ 2% 0.25W
3351	4822 051 10102	1kΩ 2% 0.25W
3353	4822 051 10102	1kΩ 2% 0.25W
3354	4822 051 10102	1kΩ 2% 0.25W
3360	4822 117 13424	8.2kΩ 5% 5W
3362	4822 052 10109	10Ω 5% 0.33W
3363	4822 116 52231	820Ω 5% 0.5W
3364	4822 116 80176	1Ω 5% 0.5W
3368	4822 117 12955	2.7kΩ 1% 0.1W
3369	4822 117 10833	10kΩ 1% 0.1W
3370	4822 117 11503	220Ω 1% 0.1W
3371	4822 051 20472	4.7kΩ 5% 0.1W
3373	4822 117 11503	220Ω 1% 0.1W
3374	4822 116 52291	56kΩ 5% 0.5W
3375	4822 116 83872	220Ω 5% 0.5W
3376	4822 051 20008	Jumper (0805)
3377	4822 050 24708	4.7Ω 1% 0.6W
3378	4822 117 11148	56kΩ 1% 0.1W
3379	4822 051 20472	4.7kΩ 5% 0.1W
3382	4822 117 11139	1.5kΩ 1% 0.1W
3383	4822 051 20471	470Ω 5% 0.1W
3384	4822 117 11454	820Ω 1% 0.1W
3385	4822 116 80176	1Ω 5% 0.5W
3386	4822 051 20472	4.7kΩ 5% 0.1W
3387	4822 051 20471	470Ω 5% 0.1W
3390	4822 051 20109	10Ω 5% 0.1W
3391	4822 051 20109	10Ω 5% 0.1W
3392	4822 117 11373	100Ω 1%
3393	4822 051 20472	4.7kΩ 5% 0.1W
3400	4822 116 52219	330Ω 5% 0.5W
3401	4822 116 52257	22kΩ 5% 0.5W
3403	4822 116 52297	68kΩ 5% 0.5W
3404	4822 050 11002	1kΩ 1% 0.4W
3405	4822 050 24708	4.7Ω 1% 0.6W
3406	4822 050 24708	4.7Ω 1% 0.6W
3408	4822 116 52175	100Ω 5% 0.5W
3410	4822 050 21003	10kΩ 1% 0.6W
3411	4822 052 10478	4.7Ω 5% 0.33W
3441	4822 117 11373	100Ω 1%
3442	4822 051 20008	Jumper (0805)
3443	4822 051 20105	1M Ω 5% 0.1W
3445	4822 116 52244	15kΩ 5% 0.5W
3446	4822 116 52289	5.6kΩ 5% 0.5W
3447	4822 116 52213	180Ω 5% 0.5W
3448	4822 116 52231	820Ω 5% 0.5W
3449	4822 116 52199	68Ω 5% 0.5W
3450	4822 116 52191	33Ω 5% 0.5W
3451	4822 052 10109	10Ω 5% 0.33W
3452	4822 050 24703	47kΩ 1% 0.6W
3453	4822 050 11002	1kΩ 1% 0.4W
3454	4822 050 21503	15kΩ 1% 0.6W
3455	4822 053 11688	6.8Ω 5% 2W
3456	4822 051 20008	Jumper (0805)
3457	4822 051 20008	Jumper (0805)
3458	4822 050 11002	1kΩ 1% 0.4W
3459	4822 053 11153	15kΩ 5% 2W
3460	4822 116 52276	3.9kΩ 5% 0.5W
3463	4822 116 52191	33Ω 5% 0.5W
3465	2312 915 12203	22kΩ 1%
3468	4822 116 52213	180Ω 5% 0.5W
3469	4822 116 52269	3.3kΩ 5% 0.5W
3470	2120 108 92641	180kΩ 1%
3471	4822 050 25608	5.6Ω 1% 0.6W
3472	4822 050 25608	5.6Ω 1% 0.6W
3473	4822 050 25608	5.6Ω 1% 0.6W
3474	4822 050 22202	2.2kΩ 1% 0.6W
3475	4822 050 22202	2.2kΩ 1% 0.6W
3477	4822 116 83868	150Ω 5% 0.5W
3478	4822 116 83868	150Ω 5% 0.5W
3479	4822 117 12955	2.7kΩ 1% 0.1W
3480	4822 116 80676	1Ω5 5% 0.5W
3481	4822 050 22703	27kΩ 1% 0.6W
3482	4822 050 23902	3.9kΩ 1% 0.6W
3484	4822 116 52276	3.9kΩ 5% 0.5W
3486	4822 053 12339	33Ω 5% 3W
3488	4822 052 11478	4.7Ω 5% 0.5W
3490	4822 116 52303	8.2kΩ 5% 0.5W
3491	4822 117 10833	10kΩ 1% 0.1W
3492	4822 051 10102	1kΩ 2% 0.25W
3493	4822 052 10688	6.8Ω 5% 0.33W
3494	4822 052 11478	4.7Ω 5% 0.5W
3495	4822 051 20223	22kΩ 5% 0.1W
3496	4822 117 10837	100kΩ 1% 0.1W
3497	4822 117 10837	100kΩ 1% 0.1W
3498	4822 117 11383	12kΩ 1% 0.1W
3504	4822 116 10105	PTC 9Ω 220V
3506	4822 053 21155	1.5M Ω 5% 0.5W
3507	4822 252 11215	DSP301N-A21F
3508	4822 116 83872	220Ω 5% 0.5W
3510	4822 117 12765	4.7Ω 20% 3W
3519	4822 116 83876	270Ω 5% 0.5W
3520	4822 051 20122	1.2kΩ 5% 0.1W
3521	4822 116 52186	22Ω 5% 0.5W
3522	4822 051 20394	390kΩ 5% 0.1W
3523	4822 052 10479	47Ω 5% 0.33W
3524	4822 117 11148	56kΩ 1% 0.1W
3525	4822 051 10102	1kΩ 2% 0.25W
3526	3198 012 11570	0.15Ω 5% 1W
3527	4822 117 11744	0.22Ω 5% 1W
3528	4822 051 20109	10Ω 5% 0.1W
3529	4822 117 10834	47kΩ 1% 0.1W
3530	4822 117 10833	10kΩ 1% 0.1W
3531	4822 051 20472	4.7kΩ 5% 0.1W
3532	4822 052 10222	2.2kΩ 5% 0.33W
3541	4822 051 20471	470Ω 5% 0.1W
3542	4822 117 11139	1.5kΩ 1% 0.1W
3543	4822 050 28203	82kΩ 1% 0.6W
3544	2120 108 92624	4.7kΩ 1%
3545	4822 051 20274	270kΩ 5% 0.1W
3548	4822 116 83933	15kΩ 1% 0.1W
3552	4822 051 20472	4.7kΩ 5% 0.1W
3557	4822 051 10102	1kΩ 2% 0.25W
3561	4822 116 83872	220Ω 5% 0.5W
3562	4822 117 11383	12kΩ 1% 0.1W
3563	4822 051 20822	8.2kΩ 5% 0.1W
3564	2120 106 90565	0.1Ω 5%
3565	4822 053 10331	330Ω 5% 1W
3566	4822 117 11449	2.2kΩ 5% 0.1W
3569	4822 051 20562	5.6kΩ 5% 0.1W
3580	4822 117 10834	47kΩ 1% 0.1W
3594	4822 117 11503	220Ω 1% 0.1W
3595	3198 021 52240	220kΩ 5%
3596	3198 021 52240	220kΩ 5%
3603	4822 116 52175	100Ω 5% 0.5W
3604	4822 116 52175	100Ω 5% 0.5W
3605	4822 051 20472	4.7kΩ 5% 0.1W
3606	4822 116 52256	2.2kΩ 5% 0.5W
3607	4822 116 52256	2.2kΩ 5% 0.5W
3608	4822 116 52175	100Ω 5% 0.5W
3609	4822 050 11002	1kΩ 1% 0.4W
3610	4822 116 52303	8.2kΩ 5% 0.5W
3611	4822 117 11373	100Ω 1%
3612	4822 116 52303	8.2kΩ 5% 0.5W
3614	4822 116 52283	4.7kΩ 5% 0.5W
3618	4822 050 21003	10kΩ 1% 0.6W
3622	4822 117 11373	100Ω 1%
3623	4822 051 20472	4.7kΩ 5% 0.1W
3624	4822 116 52175	100Ω 5% 0.5W
3625	4822 116 52175	100Ω 5% 0.5W
3626	4822 051 20472	4.7kΩ 5% 0.1W
3627	4822 051 20472	4.7kΩ 5% 0.1W
3628	4822 117 10833	10kΩ 1% 0.1W
3630	4822 117 11449	2.2kΩ 5% 0.1W
3632	4822 051 20008	Jumper (0805)
3634	4822 116 52175	100Ω 5% 0.5W
3635	4822 116 52175	100Ω 5% 0.5W
3636	4822 117 11373	100Ω 1%
3692	4822 051 10102	1kΩ 2% 0.25W
3694	4822 051 20472	4.7kΩ 5% 0.1W
3802	4822 116 83872	220Ω 5% 0.5W
3803	4822 117 11149	82kΩ 1% 0.1W
3804	3198 021 52240	220kΩ 5%
3805	4822 051 10102	1kΩ 2% 0.25W
3806	4822 117 11149	82kΩ 1% 0.1W
3807	3198 021 52240	220kΩ 5%
3808	4822 050 11002	1kΩ 1% 0.4W
3809	4822 117 11927	75Ω 1% 0.1W
3810	4822 117 11927	75Ω 1% 0.1W
3831	4822 117 10834	47kΩ 1% 0.1W
3832	4822 116 52175	100Ω 5% 0.5W
3833	4822 116 52175	100Ω 5% 0.5W
3836	4822 050 11002	1kΩ 1% 0.4W
3837	4822 117 11373	100Ω 1%
3838	4822 051 10102	1kΩ 2% 0.25W
3839	4822 117 11373	100Ω 1%
3840	4822 051 20472	4.7kΩ 5% 0.1W
3841	4822 051 20822	8.2kΩ 5% 0.1W
3842	4822 051 10102	1kΩ 2% 0.25W
3849	4822 051 20471	470Ω 5% 0.1W
3901	4822 051 10102	1kΩ 2% 0.25W
3902	4822 051 20332	3.3kΩ 5% 0.1W
3903	4822 117 11383	12kΩ 1% 0.1W
3904	4822 117 10833	10kΩ 1% 0.1W
3905	4822 117 11383	12kΩ 1% 0.1W
3906	4822 117 10833	10kΩ 1% 0.1W
3907	4822 117 11507	6.8kΩ 1% 0.1W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

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5001	4822 157 51216	5.6µH
5002	2422 535 94639	10µH 20% LHL08
5003	4822 157 11866	1.8µH 10%
5201	4822 157 11868	2.7µH 5%
5204	4822 157 11411	Bead 100mH z
5205	4822 157 11411	Bead 100mH z
5242	4822 157 11706	10µH 5%
5342	4822 157 50961	22µH
5343	2722 122 00333	Delay line 160ns
5344	2722 122 00333	Delay line 160ns
5345	2722 122 00333	Delay line 160ns
5360	4822 157 51216	5.6µH
5401	4822 157 11885	1000µH 5%
5445	2422 531 02464	LOT 1342.0033C
5451	4822 157 11869	33µH 10% LHL08TB330K
5452	4822 157 11411	Bead 100mH z
5457	4822 157 11076	Linearity coil
5461	2422 536 00181	Transformer driver SRW0913DR-T

5463	2422 536 00048	Bridge coil C957-02 Y
5471	3198 018 73380	3.3µH 20%
5472	4822 157 51157	3.3µH
5480	4822 157 50961	22µH
5500	4822 157 10476	DMF-2820H
5501	4822 157 11523	Line filter 5mH /2A
5520	3128 138 39721	Transformer CT425V
5521	4822 526 10704	Bead 100mH z
5560	4822 526 10704	Bead 100mH z
5561	4822 157 52392	27µH
5562	4822 526 10704	Bead 100mH z
5564	4822 526 10704	Bead 100mH z
5602	4822 157 11867	5.6µH 5%
5603	4822 157 11867	5.6µH 5%
5604	4822 157 11867	5.6µH 5%
5672	4822 157 71401	27µH
5678	4822 157 71401	27µH
5831	4822 157 11139	6.8µH 5%
5832	4822 157 11139	6.8µH 5%
5833	4822 157 11139	6.8µH 5%
5835	3198 018 31290	12µH 10%

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6001	4822 130 34142	BZX79-B33
6002	4822 130 11397	BAS316
6004	4822 130 11525	1SS356
6101	4822 130 10837	UDZS8.2B
6103	4822 130 10837	UDZS8.2B
6104	4822 130 10837	UDZS8.2B
6105	4822 130 10837	UDZS8.2B
6106	4822 130 11416	PDZ6.8B
6201	4822 130 11397	BAS316
6202	4822 130 11397	BAS316
6206	4822 130 11416	PDZ6.8B
6207	9322 179 26673	ZTE2
6331	4822 130 30842	BAV21
6333	4822 130 30842	BAV21
6335	4822 130 30842	BAV21
6360	4822 130 30621	1N4148
6361	4822 130 11397	BAS316
6362	4822 130 11397	BAS316
6364	4822 130 11397	BAS316
6365	4822 130 11397	BAS316
6400	4822 050 21002	1kΩ 1% 0,6W
6401	4822 130 34383	BZX79-B47
6445	4822 130 11551	UDZS10B
6447	4822 130 30621	1N4148
6448	4822 130 34167	BZX79-B6V2
6449	5322 130 34337	BAV99
6453	3198 020 55680	BZX384-C5V6
6460	9340 559 50112	BY228/24
6461	4822 130 80572	RGP30J
6462	4822 130 34197	BZX79-B12
6465	4822 130 30842	BAV21
6466	4822 130 30842	BAV21
6467	4822 130 11397	BAS316
6468	4822 130 11397	BAS316
6469	4822 130 42606	BYD33J
6470	5322 130 34337	BAV99
6476	4822 130 34281	BZX79-B15
6481	4822 130 34173	BZX79-B5V6
6482	4822 130 30862	BZX79-B9V1
6483	4822 130 34142	BZX79-B33
6485	4822 130 42606	BYD33J
6486	9322 164 42682	EGP20DL-5100
6487	4822 130 42488	BYD33D
6488	9322 164 42682	EGP20DL-5101
6500	9322 132 55667	Bridge coil GBU4JL-7002
6520	4822 130 42488	BYD33D
6522	4822 130 11152	UDZ18B
6523	4822 130 30621	1N4148
6524	4822 130 31083	BYW55
6525	4822 130 31083	BYW55
6526	9340 548 67115	PDZ22B
6540	4822 130 34167	BZX79-B6V2
6541	4822 130 11551	UDZS10B
6560	3139 120 52021	BYV29X-500
6561	4822 130 32715	SB340
6563	4822 130 11397	BAS316
6565	5322 130 34331	BAV70
6566	4822 130 30621	1N4148
6567	4822 130 11148	UDZ4.7B
6569	4822 130 11397	BAS316
6570	9322 163 91685	BZX384-C6V2
6580	4822 130 11397	BAS316
6808	9322 179 26673	ZTE3
6831	4822 130 30621	1N4148
6901	4822 051 20008	Jumper (0805)

7001	4822 130 63732	MMUN2212
7101	5322 130 60159	BC846B
7200	9352 684 13557	TDA9565H/N1/5
7201	5322 130 60159	BC846B
7204	4822 130 60373	BC856B
7206	5322 130 42755	BC847C
7209	5322 130 42718	BFS20
7210	5322 130 42718	BFS20
7330	9352 561 40112	TDA6108
7331	5322 130 60159	BC846B
7332	5322 130 60159	BC846B
7333	5322 130 60159	BC846B
7360	4822 130 40959	BC547B
7362	9322 166 55682	2SA1358
7363	4822 130 40959	BC547B
7365	9322 166 56682	2SC3421
7366	4822 130 41646	BF423
7367	4822 130 44568	BC557B
7400	9322 157 37687	STP3NC60FP
7441	4822 130 60373	BC856B
7443	4822 130 44568	BC557B
7450	3198 010 44010	PDTA114ET
7460	9340 550 92127	BU4508DX
7461	4822 130 40981	BC337-25
7462	9340 547 00215	PDTC143ZT
7463	4822 130 41246	BC327-25
7471	9352 701 64112	TDA8359J/N2
7480	4822 130 40823	BD139
7482	4822 130 40823	BD139
7515	9322 175 72667	TCET1104(G)
7520	9352 673 56112	TEA1507P/N1
7521	9322 160 63687	STP7NC80ZFP
7522	5322 130 60159	BC846B
7540	4822 130 40959	BC547B
7541	4822 130 11155	PDTC114ET
7542	4822 130 60373	BC856B
7560	4822 209 16978	LF33CV
7561	9340 547 00215	PDTC143ZT
7580	4822 130 60373	BC856B
7602	9322 147 25682	M24C16-WBN6
7606	9340 547 00215	PDTC143ZT
7801	5322 209 11102	HEF4052BT
7802	5322 209 14481	HEF4053BT
7803	5322 130 60159	BC846B
7804	5322 130 60159	BC846B
7831	9322 182 56682	MSP3411G-PO-B11
7832	5322 130 60159	BC846B
7833	5322 130 60159	BC846B
7834	5322 130 60159	BC846B
7835	5322 130 60159	BC846B
7901	9322 158 65667	AN7522N
9611	4822 157 52392	27UH

Side AV Panel [C+E1]

Various

0232▲	4822 267 31014	Headphone socket
0250	4822 265 11606	3p
0251	2422 025 15849	6p female
0254	4822 267 10734	5p
0255	4822 267 10565	4p

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2171	5322 122 32311	470pF 10% 100V
2172	5322 122 32311	470pF 10% 100V
2173	5322 122 32311	470pF 10% 100V
2174	5322 122 32311	470pF 10% 100V
2176	5322 122 32311	470pF 10% 100V
2177	4822 124 40248	10µF 20% 63V
2178	5322 122 32311	470pF 10% 100V
2179	4822 124 40248	10µF 20% 63V

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3150	4822 116 83884	47kΩ 5% 0.5W
3151	4822 116 83868	150Ω 5% 0.5W
3152	4822 116 83884	47kΩ 5% 0.5W
3153	4822 116 83868	150Ω 5% 0.5W
3155	4822 116 52201	75Ω 5% 0.5W
3156	4822 116 52206	120Ω 5% 0.5W
3156	4822 116 83876	270Ω 5% 0.5W
3157	4822 116 52206	120Ω 5% 0.5W
3157	4822 116 83876	270Ω 5% 0.5W

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6161	4822 130 34278	BZX79-B6V8

DVD Interface Panel [M]

Various

0001	9305 023 61101	VAL6011/01
0194	3104 301 09451	Cable 3p 560mm
0198	3139 131 01152	Cable foil 22p 340mm
0199	3139 131 01162	Cable foil 16p 340mm
0227	2422 025 16382	3p male
0229	4822 267 10735	3p
0240	2422 025 11244	7p female
0251	4822 267 10565	4p
0254	4822 265 11154	22p
0255	2422 025 16525	16p male
0258	3139 131 01191	Cable 12p 280mm
0264	4822 267 10735	3p
0265	2422 025 08333	12p male
0267	4822 267 10748	3p
1100	4822 267 31729	Cinch socket 1p
1100	2422 025 16543	4p male
1104	2422 025 15963	24p female
1106	2422 025 16158	8p female
1110	4822 276 13775	Switch
1205	2422 540 98428	Crystal 8.467MHz
1300	2422 540 98426	Crystal 6MHz
1301	4822 267 51454	11p female
1330	4822 071 52502	Fuse 2.5A
1331	4822 071 52502	Fuse 2.5A
1332	2422 086 10783	Fuse 2A 250V
1400	2422 540 98525	Crystal 8MHz
1501	2422 025 16702	5p male
1600	2422 025 16705	12p male
1602	2422 025 16703	7p male
1603	2422 025 16389	22p female
1604	2422 025 16388	16p male

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2100	2238 586 59812	100nF 50V
2101	2238 586 59812	100nF 50V
2101	4822 126 11785	47pF 5% 50V
2102	4822 124 11947	10µF 20% 16V
2103	4822 126 11785	47pF 5% 50V
2103	4822 124 80151	47µF 16V
2104	2238 586 59812	100nF 50V
2104	4822 126 13193	4.7nF 10% 63V
2105	4822 122 33761	22pF 5% 50V
2107	4822 126 13956	68pF 5% 63V
2108	4822 126 14315	390pF 5% 50V
2109	2020 552 96643	1.5nF 5% 50V
2110	2222 861 15222	2N2 5% 63V
2111	2238 586 59812	100nF 50V
2111	3198 017 41050	1µF 10V
2112	5322 126 11578	1nF 10% 50V
2112	3198 017 41050	1µF 10V
2113	2238 586 59812	100nF 50V
2114	2020 552 94427	100pF 5%
2115	2238 586 59812	100nF 50V
2116	2238 586 59812	100nF 50V
2117	2238 586 59812	100nF 50V
2118	3198 017 42230	22nF 50V
2119	3198 017 42230	22nF 50V
2120	2238 586 59812	100nF 50V
2121	4822 126 13879	220nF 20-80% 16V
2121	4822 124 40433	47µF 20% 25V
2122	2238 586 59812	100nF 50V
2122	3198 017 42230	22nF 50V
2123	2238 586 59812	100nF 50V
2123	4822 124 40248	10µF 20% 63V
2124	2238 586 59812	100nF 50V
2124	5322 126 11583	10nF 10% 50V
2125	2238 586 59812	100nF 50V
2125	5322 126 11578	1nF 10% 50V
2126	2238 586 59812	100nF 50V
2126	4822 124 40433	47µF 20% 25V
2127	2238 586 59812	100nF 50V
2127	5322 126 11583	10nF 10% 50V
2128	4822 124 40248	10µF 20% 63V
2128	4822 126 14508	180pF 5% 50V
2129	4822 126 14508	180pF 5% 50V
2130	4822 122 33761	22pF 5% 50V
2131	4822 126 14494	22nF 10% 25V
2136	2238 586 59812	100nF 50V
2137	2238 586 59812	100nF 50V
2138	2238 586 59812	100nF 50V
2139	2238 586 59812	100nF 50V

2140	4822 124 23052	100µF 20% 16V
2140	4822 126 14241	50V 330P
2141	3198 017 41050	1µF 10V
2141	4822 122 33761	22pF 5% 50V
2142	4822 124 23052	100µF 20% 16V
2142	5322 126 11583	10nF 10% 50V
2143	3198 017 41050	1µF 10V
2143	4822 126 13883	220pF 5% 50V
2144	4822 126 13883	220pF 5% 50V
2145	4822 126 13883	220pF 5% 50V
2160	5322 126 11583	10nF 10% 50V
2165	5322 126 11583	10nF 10% 50V
2166	2238 586 59812	100nF 50V
2167	2238 586 59812	100nF 50V
2169	5322 126 11583	10nF 10% 50V
2172	4822 122 33761	22pF 5% 50V
2173	4822 122 33761	22pF 5% 50V
2184	2238 586 59812	100nF 50V
2185	2238 586 59812	100nF 50V
2200	2238 586 59812	100nF 50V
2201	4822 124 11947	10µF 20% 16V
2203	2238 586 59812	100nF 50V
2204	2238 586 59812	100nF 50V
2205	2238 586 59812	100nF 50V
2206	4822 126 14549	33nF 16V
2207	5322 126 11578	1nF 10% 50V
2208	2238 586 59812	100nF 50V
2209	2238 586 59812	100nF 50V
2210	5322 126 11578	1nF 10% 50V
2211	2238 586 59812	100nF 50V
2212	2238 586 59812	100nF 50V
2213	2238 586 59812	100nF 50V
2214	3198 017 42230	22nF 50V
2215	4822 124 23237	22µF 6.3V
2216	5322 126 11578	1nF 10% 50V
2226	2238 586 59812	100nF 50V
2227	2238 586 59812	100nF 50V
2228	2238 586 59812	100nF 50V
2229	2238 586 59812	100nF 50V
2260	4822 126 13883	220pF 5% 50V
2261	5322 126 11583	10nF 10% 50V
2262	5322 126 11583	10nF 10% 50V
2263	2238 586 59812	100nF 50V
2264	2238 586 59812	100nF 50V
2265	2238 586 59812	100nF 50V
2266	4822 126 13879	220nF 20-80% 16V
2267	4822 124 40248	10µF 20% 63V
2268	4822 124 40248	10µF 20% 63V
2280	4822 124 11947	10µF 20% 16V
2281	4822 124 11947	10µF 20% 16V
2300	2238 586 59812	100nF 50V
2300	4822 124 11565	10µF 20% 250V
2301	2238 586 59812	100nF 50V
2301	4822 121 41664	22nF 10% 400V
2302	2238 586 59812	100nF 50V
2302	4822 126 13682	100pF 5% 1kV
2303	4822 124 80349	47µF 20% 6.3V
2304	3198 017 42230	22nF 50V
2305	3198 017 42230	22nF 50V
2306	4822 124 23002	10µF 16V
2307	3198 017 42230	22nF 50V
2309	2238 586 59812	100nF 50V
2310	2238 586 59812	100nF 50V
2311	2020 552 96684	470nF 10% 25V
2313	4822 126 13881	470pF 5% 50V
2314	2238 586 59812	100nF 50V
2315	2238 586 59812	100nF 50V
2315	4822 126 12263	220pF 10% 1kV
2316	4822 126 14549	33nF 16V
2318	5322 122 33861	120pF 10% 50V
2319	4822 126 11669	27pF
2320	2238 586 59812	100nF 50V
2321	2238 586 59812	100nF 50V
2330	4822 124 12417	2200µF 20% 25V
2331	4822 124 80195	470µF 20% 10V
2332	4822 124 12417	2200µF 20% 25V
2333	4822 124 80195	470µF 20% 10V
2335	4822 124 80875	220µF 20% 25V
2337	4822 124 80061	1000µF 20% 25V
2338	4822 124 80061	1000µF 20% 25V
2341	4822 126 13879	220nF 20-80% 16V
2350	5322 126 11578	1nF 10% 50V
2351	5322 126 11578	1nF 10% 50V
2352	5322 126 11578	1nF 10% 50V
2353	5322 126 11578	1nF 10% 50V
2354	2238 586 59812	100nF 50V
2400	2238 586 59812	100nF 50V
2404	2238 586 59812	100nF 50V
2405	2238 586 59812	100nF 50V
2415	2238 586 59812	100nF 50V
2418	4822 124 12095	100µF 20% 16V
2419	4822 124 80349	47µF 20% 6.3V
2420	4822 124 80349	47µF 20% 6.3V
2421	2238 586 59812	100nF 50V
2422	2238 586 59812	100nF 50V
2423	2238 586 59812	100nF 50V
2424	2238 586 59812	100nF 50V
2425	2238 586 59812	100nF 50V
2426	2238 586 59812	100nF 50V
2427	2238 586 59812	100nF 50V
2428	2238 586 59812	100nF 50V
2431	2238 586 59812	100nF 50V
2432	2238 586 59812	100nF 50V
2500	2238 586 59812	100nF 50V
2503	2238 586 59812	100nF 50V
2504	4822 124 23002	10µF 16V
2507	4822 126 14494	22nF 10% 25V
2509	4822 124 23002	10µF 16V
2510	2238 586 59812	100nF 50V
2511	4822 124 23002	10µF 16V
2512	2238 586 59812	100nF 50V
2513	4822 122 33761	22pF 5% 50V
2514	4822 122 33761	22pF 5% 50V
2515	4822 122 33761	22pF 5% 50V
2516	4822 122 33761	22pF 5% 50V
2517	2238 586 59812	100nF 50V
2518	3198 030 74780	4.7µF 20% 35V
2519	2238 586 59812	100nF 50V
2520	2238 586 59812	100nF 50V
2521	2238 586 59812	100nF 50V
2522	2238 586 59812	100nF 50V
2523	2238 586 59812	100nF 50V
2524	2238 586 59812	100nF 50V
2525	2238 586 59812	100nF 50V
2526	2238 586 59812	100nF 50V
2527	2238 586 59812	100nF 50V
2528	2238 586 59812	100nF 50V
2529	3198 030 74780	4.7µF 20% 35V
2530	2238 586 59812	100nF 50V
2531	2238 586 59812	100nF 50V
2532	4822 126 11785	47pF 5% 50V
2533	4822 126 11785	47pF 5% 50V
2534	5322 126 11578	1nF 10% 50V
2535	5322 126 11578	1nF 10% 50V
2536	2238 586 59812	100nF 50V
2537	2238 586 59812	100nF 50V
2538	2238 586 59812	100nF 50V
2539	2238 586 59812	100nF 50V
2540	2238 586 59812	100nF 50V
2600	4822 126 14494	22nF 10% 25V
2601	4822 126 14247	1.5nF 50V
2602	4822 126 14247	1.5nF 50V
2603	2238 586 59812	100nF 50V
2604	4822 124 12095	100µF 20% 16V
2606	4822 124 12095	100µF 20% 16V
2607	4822 124 12095	100µF 20% 16V
2608	4822 124 23002	10µF 16V
2609	4822 124 80151	47µF 16V
2610	2238 586 59812	100nF 50V
2611	4822 124 12095	100µF 20% 16V
2612	2238 586 59812	100nF 50V
2613	2238 586 59812	100nF 50V
2619	2238 586 59812	100nF 50V
2622	4822 126 11785	47pF 5% 50V
2623	4822 126 11785	47pF 5% 50V
2624	4822 126 11785	47pF 5% 50V
2625	4822 126 11785	47pF 5% 50V
2626	4822 126 11785	47pF 5% 50V
2627	4822 126 11785	47pF 5% 50V
2632	4822 124 12095	100µF 20% 16V
2633	4822 124 12095	100µF 20% 16V
2634	2238 586 59812	100nF 50V
2635	2238 586 59812	100nF 50V
2636	2238 586 59812	100nF 50V
2637	2238 586 59812	100nF 50V
2638	2238 586 59812	100nF 50V
2639	2238 586 59812	100nF 50V
2641	4822 122 33761	22pF 5% 50V
2642	4822 122 33761	22pF 5% 50V
2647	4822 124 23002	10µF 16V
2648	2238 586 59812	100nF 50V

3100	4822 117 11152	4.7Ω 5%
3101	4822 051 30101	100Ω 5% 62mW
3102	5322 117 13034	1.5kΩ 1% 63mW
3102	4822 051 30689	68Ω 5% 63mW
3103	5322 117 13034	1.5kΩ 1% 63mW
3104	5322 117 13062	390Ω 1% 63mW
3105	4822 051 30103	10kΩ 5% 62mW
3106	4822 051 30479	47Ω 5% 62mW
3107	4822 051 20228	2.2Ω 5% 0.1W
3108	4822 051 20228	2.2Ω 5% 0.1W
3110	4822 051 30479	47Ω 5% 62mW
3111	5322 117 13058	150Ω 1% 63mW
3112	5322 117 13021	47Ω 1% 63mW
3114	4822 051 20228	2.2Ω 5% 0.1W
3115	4822 051 20228	2.2Ω 5% 0.1W
3116	5322 117 13042	3.9kΩ 1% 63mW
3117	4822 051 30181	180Ω 5% 62mW
3118	4822 051 30681	680Ω 5% 62mW
3119	5322 117 13062	390Ω 1% 63mW
3120	4822 051 30101	100Ω 5% 62mW
3120	4822 051 30102	1kΩ 5% 62mW
3121	4822 116 52175	100Ω 5% 0.5W
3121	4822 051 30273	27kΩ 5% 62mW
3122	4822 051 30101	100Ω 5% 62mW
3122	4822 051 30471	470Ω 5% 62mW
3123	4822 051 30101	100Ω 5% 62mW
3123	4822 051 30103	10kΩ 5% 62mW
3124	4822 051 30222	2.2kΩ 5% 62mW
3124	4822 051 30471	470Ω 5% 62mW
3125	4822 051 30103	10kΩ 5% 62mW
3125	4822 051 30562	5.6kΩ 5% 63mW
3126	4822 051 30101	100Ω 5% 62mW
3126	4822 051 30103	10kΩ 5% 62mW
3127	4822 051 30223	22kΩ 5% 62mW
3128	2322 704 69109	91Ω 1%
3129	4822 051 30392	3.9kΩ 5% 63mW
3130	4822 051 20228	2.2Ω 5% 0.1W
3130	4822 116 52195	47Ω 5% 0.5W
3131	4822 051 20228	2.2Ω 5% 0.1W
3132	4822 051 20228	2.2Ω 5% 0.1W
3133	4822 051 20228	2.2Ω 5% 0.1W
3134	5322 117 13047	330Ω 1% 63mW
3135	4822 117 13613	2.2Ω 5%
3137	4822 117 13613	2.2Ω 5%
3138	5322 117 13053	6.8kΩ 1% 63mW
3139	4822 117 12917	1Ω 5% 62mW
3140	4822 117 13632	100kΩ 1% 0.62W
3140	4822 051 30479	47Ω 5% 62mW
3141	4822 117 13632	100kΩ 1% 0.62W
3141	4822 117 11152	4.7Ω 5%
3142	5322 117 13028	12kΩ 1% 63mW
3142	4822 051 30102	1kΩ 5% 62mW
3143	4822 051 30121	120Ω 5% 62mW
3143	5322 117 13043	220Ω 1% 63mW
3144	2322 704 69109	91Ω 1%
3145	4822 117 13632	100kΩ 1% 0.62W
3146	4822 117 13632	100kΩ 1% 0.62W
3146	4822 051 30103	10kΩ 5% 62mW
3147	4822 051 30103	10kΩ 5% 62mW
3147	4822 051 30102	1kΩ 5% 62mW
3148	4822 051 30121	120Ω 5% 62mW
3148	5322 117 13022	22kΩ 1% 63mW
3153	4822 117 12139	22Ω 5% 62mW
3155	4822 051 30103	10kΩ 5% 62mW
3157	4822 051 30103	10kΩ 5% 62mW
3158	5322 117 13017	100Ω 1% 63mW
3160	4822 051 30101	100Ω 5% 62mW
3161	4822 117 13613	2.2Ω 5%
3162	4822 051 30101	100Ω 5% 62mW
3163	4822 051 30273	27kΩ 5% 62mW
3164	4822 117 13613	2.2Ω 5%
3165	5322 117 13063	120Ω 1% 63mW
3166	4822 051 30393	39kΩ 5% 62mW
3167	4822 051 30101	100Ω 5% 62mW
3168	5322 117 13047	330Ω 1% 63mW
3169	4822 051 30101	100Ω 5% 62mW
3170	4822 051 30101	100Ω 5% 62mW
3171	4822 051 30101	100Ω 5% 62mW
3172	4822 117 13632	100kΩ 1% 0.62W
3173	4822 117 13632	100kΩ 1% 0.62W
3174	4822 117 11152	4.7Ω 5%
3175	4822 117 13613	2.2Ω 5%
3176	4822 051 30153	15kΩ 5% 62mW
3178	4822 117 11151	1Ω 5%
3179	4822 051 30221	220Ω 5% 62mW
3180	4822 117 13632	100kΩ 1% 0.62W
3181	4822 051 30561	560Ω 5% 62mW
3182	5322 117 13018	1kΩ 1% 63mW
3183	5322 117 13017	100Ω 1% 63mW
3184	2322 704 61204	120k 1%
3185	4822 117 11151	1Ω 5%
3187	4822 051 30273	27kΩ 5% 62mW
3189	4822 051 30008	Jumper
3190	4822 051 30008	Jumper
3191	4822 051 30008	Jumper
3192	4822 051 30008	Jumper
3193	4822 051 30008	Jumper
3194	4822 051 30008	Jumper
3195	4822 051 30008	Jumper
3197	4822 051 30008	Jumper
3198	5322 117 13049	470Ω 1% 63mW
3199	5322 117 13042	3.9kΩ 1% 63mW
3200	4822 051 30103	10kΩ 5% 62mW
3200	4822 051 30271	270Ω 5% 62mW
3201	4822 051 30101	100Ω 5% 62mW
3201	4822 117 11151	1Ω 5%
3202	4822 051 30101	100Ω 5% 62mW

3202	4822 117 11151	1Ω 5%
3203	4822 051 30105	1M Ω 5% 62mW
3203	4822 051 30682	6.8kΩ 5% 62mW
3204	4822 051 30331	330Ω 5% 62mW
3204	4822 117 12968	820Ω 5% 0.62W
3205	4822 051 30103	10kΩ 5% 62mW
3205	4822 051 30472	4.7kΩ 5% 62mW
3206	4822 051 30103	10kΩ 5% 62mW
3206	4822 051 30681	680Ω 5% 62mW
3207	4822 051 30271	270Ω 5% 62mW
3208	4822 051 30272	2.7kΩ 5% 62mW
3208	4822 051 30759	75Ω 5% 62mW
3209	4822 051 30472	4.7kΩ 5% 62mW
3209	4822 051 30759	75Ω 5% 62mW
3210	4822 051 30271	270Ω 5% 62mW
3210	4822 051 30392	3.9kΩ 5% 63mW
3211	4822 051 30101	100Ω 5% 62mW
3211	4822 051 30472	4.7kΩ 5% 62mW
3212	4822 051 30101	100Ω 5% 62mW
3212	4822 117 11152	4.7Ω 5%
3213	4822 117 11152	4.7Ω 5%
3213	4822 051 30682	6.8kΩ 5% 62mW
3214	4822 051 30392	3.9kΩ 5% 63mW
3214	4822 117 12968	820Ω 5% 0.62W
3215	4822 051 30103	10kΩ 5% 62mW
3215	4822 051 30472	4.7kΩ 5% 62mW
3216	4822 051 30681	680Ω 5% 62mW
3217	4822 051 30271	270Ω 5% 62mW
3218	4822 117 13501	82Ω 5% 0.62W
3219	4822 051 30103	10kΩ 5% 62mW
3220	4822 051 30103	10kΩ 5% 62mW
3221	4822 051 30103	10kΩ 5% 62mW
3224	4822 051 30151	150Ω 5% 62mW
3225	2322 704 62004	200k 1%
3226	4822 051 30103	10kΩ 5% 62mW
3227	4822 051 30472	4.7kΩ 5% 62mW
3229	4822 051 30123	12kΩ 5% 62mW
3230	4822 051 30103	10kΩ 5% 62mW
3230	4822 051 30223	22kΩ 5% 62mW
3231	4822 051 30103	10kΩ 5% 62mW
3231	4822 117 13525	24kΩ 1% 0.62W
3232	4822 117 13613	2.2Ω 5%
3232	4822 051 30223	22kΩ 5% 62mW
3233	4822 117 13525	24kΩ 1% 0.62W
3234	4822 117 12902	8.2kΩ 1% 63mW
3235	4822 117 13632	100kΩ 1% 0.62W
3236	4822 051 30472	4.7kΩ 5% 62mW
3237	4822 051 30103	10kΩ 5% 62mW
3238	4822 051 30103	10kΩ 5% 62mW
3240	4822 051 30103	10kΩ 5% 62mW
3251	4822 051 30008	Jumper
3252	4822 051 30008	Jumper
3259	4822 117 11151	1Ω 5%
3260	4822 117 11151	1Ω 5%
3261	4822 051 30102	1kΩ 5% 62mW
3262	4822 051 30008	Jumper
3263	4822 051 30008	Jumper
3265	4822 051 30472	4.7kΩ 5% 62mW
3266	4822 117 13632	100kΩ 1% 0.62W
3300	4822 052 10108	1Ω 5% 0.33W
3300	4822 117 11152	4.7Ω 5%
3301	4822 051 30105	1M Ω 5% 62mW
3301	4822 053 11683	68kΩ 5% 2W
3302	4822 051 30221	220Ω 5% 62mW
3304	4822 051 30272	2.7kΩ 5% 62mW
3305	4822 051 30272	2.7kΩ 5% 62mW
3308	4822 051 30103	10kΩ 5% 62mW
3309	4822 051 30103	10kΩ 5% 62mW
3310	4822 051 30103	10kΩ 5% 62mW
3310	4822 051 30223	22kΩ 5% 62mW
3311	4822 051 30181	180Ω 5% 62mW
3311	4822 051 30223	22kΩ 5% 62mW
3312	4822 051 30109	10Ω 5% 62mW
3312	4822 051 30472	4.7kΩ 5% 62mW
3313	4822 051 30103	10kΩ 5% 62mW
3313	4822 051 30472	4.7kΩ 5% 62mW
3314	4822 116 80176	1Ω 5% 0.5W
3315	4822 116 80176	1Ω 5% 0.5W
3316	4822 051 20108	1Ω 5% 0.1W
3317	4822 051 30103	10kΩ 5% 62mW
3317	4822 051 20108	1Ω 5% 0.1W
3318	4822 051 30472	4.7kΩ 5% 62mW
3319	4822 051 30103	10kΩ 5% 62mW
3319	4822 051 30479	47Ω 5% 62mW
3320	4822 051 30472	4.7kΩ 5% 62mW
3320	2322 704 67503	75kΩ 1%
3321	4822 051 30682	6.8kΩ 5% 62mW
3322	5322 117 13026	4.7kΩ 1% 63mW
3323	5322 117 13026	4.7kΩ 1% 63mW
3324	4822 117 13632	100kΩ 1% 0.62W
3325	4822 051 30682	6.8kΩ 5% 62mW
3326	4822 051 30479	47Ω 5% 62mW
3327	4822 051 30682	6.8kΩ 5% 62mW
3328	4822 051 30223	22kΩ 5% 62mW
3329	4822 051 30223	22kΩ 5% 62mW
3330	4822 116 83868	150Ω 5% 0.5W
3330	4822 051 30223	22kΩ 5% 62mW
3331	4822 053 12109	10Ω 5% 3W
3331	4822 051 30332	3.3kΩ 5% 62mW
3332	4822 051 30332	3.3kΩ 5% 62mW
3333	4822 051 30101	100Ω 5% 62mW
3334	4822 051 30101	100Ω 5% 62mW
3335	4822 051 30101	100Ω 5% 62mW
3336	4822 051 30101	100Ω 5% 62mW
3336	4822 051 30689	68Ω 5% 63mW
3337	4822 051 30101	100Ω 5% 62mW
3338	4822 051 30101	100Ω 5% 62mW
3339	4822 051 30102	1kΩ 5% 62mW
3339	4822 051 30008	Jumper
3340	4822 051 30101	100Ω 5% 62mW
3340	4822 051 30008	Jumper
3342	5322 117 13034	1.5kΩ 1% 63mW
3344	5322 117 13026	4.7kΩ 1% 63mW
3347	4822 117 11152	4.7Ω 5%
3348	4822 117 11152	4.7Ω 5%
3350	4822 116 52251	18kΩ 5% 0.5W
3351	4822 051 30102	1kΩ 5% 62mW
3360	4822 117 13608	4.7Ω 5% 1.6mW
3400	4822 051 30101	100Ω 5% 62mW
3401	4822 051 30101	100Ω 5% 62mW
3402	4822 051 30103	10kΩ 5% 62mW
3405	4822 051 30103	10kΩ 5% 62mW
3418	4822 051 30008	Jumper
3419	4822 051 30103	10kΩ 5% 62mW
3420	4822 051 30103	10kΩ 5% 62mW
3421	4822 051 30103	10kΩ 5% 62mW
3422	4822 051 30105	1M Ω 5% 62mW
3423	4822 051 30472	4.7kΩ 5% 62mW
3423	4822 051 30561	560Ω 5% 62mW
3424	4822 051 30008	Jumper
3500	4822 051 30332	3.3kΩ 5% 62mW
3501	4822 051 30332	3.3kΩ 5% 62mW
3502	4822 051 30223	22kΩ 5% 62mW
3505	4822 051 30103	10kΩ 5% 62mW
3506	4822 051 30472	4.7kΩ 5% 62mW
3508	4822 051 30332	3.3kΩ 5% 62mW
3509	4822 051 30103	10kΩ 5% 62mW
3512	4822 051 30103	10kΩ 5% 62mW
3513	4822 051 30103	10kΩ 5% 62mW
3514	4822 051 30103	10kΩ 5% 62mW
3515	4822 051 30103	10kΩ 5% 62mW
3517	4822 051 30332	3.3kΩ 5% 62mW
3518	4822 051 30332	3.3kΩ 5% 62mW
3519	4822 051 30103	10kΩ 5% 62mW
3520	4822 051 30332	3.3kΩ 5% 62mW
3521	4822 117 13613	2.2Ω 5%
3522	4822 117 13613	2.2Ω 5%
3525	4822 051 30101	100Ω 5% 62mW
3530	2322 704 61303	13kΩ 1%
3531	2322 704 61303	13kΩ 1%
3532	4822 051 30101	100Ω 5% 62mW
3533	5322 117 13042	3.9kΩ 1% 63mW
3534	5322 117 13042	3.9kΩ 1% 63mW
3535	4822 051 30101	100Ω 5% 62mW
3536	4822 051 30101	100Ω 5% 62mW
3537	4822 051 30103	10kΩ 5% 62mW
3583	4822 051 30008	Jumper
3588	4822 051 30332	3.3kΩ 5% 62mW
3589	4822 051 30332	3.3kΩ 5% 62mW
3590	4822 051 30681	680Ω 5% 62mW
3591	4822 051 30152	1.5kΩ 5% 62mW
3592	4822 051 30101	100Ω 5% 62mW
3596	4822 051 30101	100Ω 5% 62mW
3597	4822 051 30101	100Ω 5% 62mW
3606	4822 117 12925	47kΩ 1% 63mW
3607	4822 117 13632	100kΩ 1% 0.62W
3608	4822 117 13632	100kΩ 1% 0.62W
3609	4822 117 13632	100kΩ 1% 0.62W
3610	4822 051 30103	10kΩ 5% 62mW
3611	4822 051 30103	10kΩ 5% 62mW
3615	4822 051 30103	10kΩ 5% 62mW
3618	4822 051 30223	22kΩ 5% 62mW
3619	4822 051 30223	22kΩ 5% 62mW
3620	4822 051 30101	100Ω 5% 62mW
3621	4822 051 30101	100Ω 5% 62mW
3622	4822 051 30101	100Ω 5% 62mW
3623	4822 051 30101	100Ω 5% 62mW
3624	4822 051 30101	100Ω 5% 62mW
3625	4822 051 30101	100Ω 5% 62mW
3629	4822 051 30472	4.7kΩ 5% 62mW
3635	4822 051 30682	6.8kΩ 5% 62mW
3636	4822 051 30682	6.8kΩ 5% 62mW
3637	4822 051 30332	3.3kΩ 5% 62mW
3648	5322 117 13059	560Ω 1% 63mW
3651	5322 117 13059	560Ω 1% 63mW
3654	5322 117 13059	560Ω 1% 63mW
3655	5322 117 13059	560Ω 1% 63mW
3656	5322 117 13059	560Ω 1% 63mW
3657	5322 117 13059	560Ω 1% 63mW
3658	4822 051 30102	1kΩ 5% 62mW
3659	4822 051 30102	1kΩ 5% 62mW
3660	4822 051 30102	1kΩ 5% 62mW
3665	4822 117 12139	22Ω 5% 62mW
3672	4822 051 30479	47Ω 5% 62mW
3686	4822 051 30223	22kΩ 5% 62mW
3687	4822 051 30223	22kΩ 5% 62mW
3688	4822 051 30472	4.7kΩ 5% 62mW
3689	4822 051 30223	22kΩ 5% 62mW
3692	4822 051 30331	330Ω 5% 62mW
3693	4822 051 30331	330Ω 5% 62mW
3694	4822 051 30681	680Ω 5% 62mW
3695	4822 051 30681	680Ω 5% 62mW
3707	4822 051 30472	4.7kΩ 5% 62mW
3711	4822 051 30101	100Ω 5% 62mW

5100	4822 157 70601	100µH
5100	4822 051 30008	Jumper
5101	4822 051 30008	Jumper
5102	4822 051 30008	Jumper
5120	4822 157 11838	0.22µH 10%
5140	4822 157 11838	0.22µH 10%
5141	4822 157 11838	0.22µH 10%
5161	4822 157 10977	4.7µH 10%
5200	4822 157 11139	6.8µH 5%
5200	4822 157 11717	BLM31P500SPT
5300	4822 157 52392	27µH
5300	4822 157 11717	BLM31P500SPT
5301	4822 526 10704	Bead 100mH z
5301	4822 157 11717	BLM31P500SPT
5315	2422 531 02521	Transformer SS25105-02
5331	4822 157 71736	10µH 5%
5333	4822 157 71736	10µH 5%
5337	4822 157 71736	10µH 5%
5400	4822 157 11499	BLM11P600SPT
5402	4822 157 11499	BLM11P600SPT
5403	4822 157 11499	BLM11P600SPT
5501	4822 157 70299	2.2µH NL322522T-2.2RJ
5502	4822 157 70299	2.2µH NL322522T-2.2RJ
5503	4822 051 20008	Jumper (0805)
5504	4822 051 20008	Jumper (0805)
5600	4822 157 71206	BLM21A601SPT
5601	4822 157 11499	BLM11P600SPT
5603	4822 157 71206	BLM21A601SPT
5606	4822 157 70651	12µH NL322522T-120J
5607	4822 157 70651	12µH NL322522T-120J
5608	4822 157 70651	12µH NL322522T-120J
5609	4822 157 11717	BLM31P500SPT
5610	4822 157 11717	BLM31P500SPT
5611	4822 157 11717	BLM31P500SPT
5613	4822 157 11717	BLM31P500SPT
5614	4822 157 11717	BLM31P500SPT
5615	2422 549 43303	Bead 100mH z
5616	2422 549 43303	Bead 100mH z
5617	2422 549 43303	Bead 100mH z
5618	2422 549 43303	Bead 100mH z
5619	2422 549 43303	Bead 100mH z

6120	4822 130 11397	BAS316
6200	4822 130 11397	BAS316
6300	4822 130 42606	BYD33J
6301	9322 128 69685	S1D
6302	9322 128 69685	S1D
6303	9322 128 69685	S1D
6311	4822 130 11397	BAS316
6312	9340 548 67115	PDZ22B
6330	9322 164 42682	EGP20DL-5102
6332	9322 161 76682	SB340L-7024
6334	4822 130 42488	BYD33D
6336	5322 130 31938	BYV27-200
6350	9340 548 61115	PDZ12B
6600	9322 154 46685	RB501V-40

7100	5322 130 42718	BFS20
7101	5322 130 42718	BFS20
7102	9352 637 37518	TZA1033HL
7103	4822 209 17229	BA5938FM
7104	4822 209 30095	LM833D
7105	4822 209 32073	MC34072D
7106	5322 130 42718	BFS20
7109	9322 136 29668	L78M9CDT
7110	9337 331 10215	BST82
7111	5322 130 60159	BC846B
7112	5322 130 60159	BC846B
7113	5322 130 60159	BC846B

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

⊣⊢

2691	4822 124 40248	10µF 20% 63V
2698	5322 121 42386	100nF 5% 63V

⊣▭⊢

3500	4822 053 21335	3.3M Ω 5% 0.5W
3501	4822 053 21335	3.3M Ω 5% 0.5W
3691	4822 116 52219	330Ω 5% 0.5W
3693	4822 116 83872	220Ω 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	560Ω 5% 0.1W
3092	4822 051 20391	390Ω 5% 0.1W
3093	4822 051 20561	560Ω 5% 0.1W
3094	4822 051 20391	390Ω 5% 0.1W
3095	4822 051 20332	3.3kΩ 5% 0.1W
3096	4822 117 11139	1.5kΩ 1% 0.1W

⊣▶⊢

6091	4822 130 11528	1PS76SB10