6. Repair facilities

1. Functional blocks

On both the service printing on the copper and the component side, functional blocks are indicated by lines and text.

2. Test points

The L6 chassis is equipped with test points in the service printing on both sides of mono-board. These test points are referring to the functional blocks as mentioned above:

*	P1-P2-P3, etc:	Test points for the power supply
*	L1-L2-L3, etc:	Test points for the line drive and line output circuitry
*	F1-F2-F3, etc:	Test points for the frame drive and frame output circuitry
*	S1-S2-S3, etc:	Test points for the synchronisation circuitry
*	V1-V2-V3, etc:	Test points for the video processing circuitry
*	A1-A2-A3, etc:	Test points for the audio processing circuitry
*	C1-C2-C3, etc:	Test points for the control circuitry
*	T1-T2-T3, etc:	Test points for the teletext processing circuitry

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

3. Service default-alignment mode (SDAM)

The service default-alignment mode is a pre-defined mode which can be used for faultfinding (especially when the TV gives no picture at all). All oscillograms and DC voltages in this service manual are measured in the service default-alignment mode.

Activate the service default-alignment mode can be done in 2 ways:
1. By short-circuiting the service pins S1 and S2 of the microcomputer (pin 14 of IC7600).
2. From normal operation mode by pressing the button "DEFAULT" or "ALIGN" on the DST (Dealer Service Tool) RC7150.

Leaving the service default-alignment mode to normal operation can only be done by the stand-by on the remote control or by pressing diagnose 99 followed by the OK-button on the DST (so not via mains switch "off"; after mains switch "off" and then "on" again the set will start up in the service default-alignment mode again to enable easy faultfinding).

Functions of the service default-alignment mode:
1. All analogue settings (volume, contrast, brightness and saturation) are in the mid position.
2. Set is tuned to program number 1
3. Delta volume settings are not used (delta volume setting = a delta on the volume setting)
4. OSD error message (present available error code) is displayed continuously
5. The OSD-key will act as search and auto store on the maximum program number.
6. Automatic switch off function (set switches "off" after 15 minutes no IDENT) will be switched off
7. Hotel mode will be disabled
8. All other functions remain normal controllable

Service default-alignment menu:
New option settings are activated immediately.

1. Software version of the microprocessor used in that typical set is displayed in the right top corner
2. A counter in the middle of the screen indicate the normal operation hours of the set in a hexadecimal code (every time the set is switched "on" the counter is incremented by 1 hour, so +1 at the counter).
3. The "S" in the middle of the screen next to the counter indicate that the set is in the service default-alignment mode
4. Option code
   This code indicates the Options setting of the set.
5. Error code history:
   The 5 last different error codes occurred are stored in the EEPROM memory; last error code detected will be displayed on the left side (see for an overview of all possible error codes Fig. 6.3), so e.g.:

0 0 0 0 0	means no error codes present in the buffer
3 0 0 0 0	means one error code present in the buffer; error code 3
2 3 0 0 0	means two error codes present in the buffer; last detected error code is error code 2, previous detected error code is error code 3

The error code history buffer is cleared when the Service Menu is left by the stand-by command or by diagnose 99 command. In case the Service Menu is left by the mains switch "off" the error code history buffer will not be cleared.

Option code + Counter + "S" for Service Menu active + software version →	001	0023S	1.0
Error code history →		23000	
Option setting row →	-	SYSTEM BG+I	+

Fig. 6.1

6. Option setting:
In the bottom line the options are given.
Control of the options is with the following keys on the remote control:

* PROGRAM +/- — Select the option to be changed: Via the "PROGRAM +/-" button the option to be changed can be selected. The selected option is implemented immediately.
* CONTROL up/down — Changes the setting of the option.
* MENU +/- — Changes to a submenu: via "MENU +/-" buttons a submenu is selected in which in a stereo version the sound/sync alignment can be done.

The options are stored immediately in the EEPROM. The following table indicates the possible hardware and software options and their technical consequences:

Text displayed in the option row in the Service Menu		The technical consequence for the selected option
SINGLE	—>	For a PAL BG only or PAL BG/SECAM BGDK set
SYSTEM I:UK	—>	For a PAL I only set
SYSTEM BG+LL'	—>	For a PAL BG/SECAM LL' set
SYSTEM BG+DK	—>	For a PAL BGI/SECAM LL' set
NATIONAL BRAND MAxxxxx—>		Selects MENU-Layout National Brand styling

Fig. 6.2

4. Error messages

The microcomputer also detects errors in circuits connected to the I^2C (Inter IC) bus. These error messages are communicated via OSD (On Screen Display) and a flashing LED in the service default-alignment mode. (error code history buffer):

1. In normal operation:
In normal operation no errors are indicated.
2. In the service default-alignment mode:
In the service default-alignment mode both the "OSD error **message**" and the "LED error" indication will display the present detected error continuously.

"OSD error number" (Service Menu)	"LED behaviour"	Error description	Possible defective component
0	No blinking LED	No error	—
1	LED blinks once	μC error	IC76002
2	LED blinks twice	General I^2C	I^2C bus is blocked
3	LED blinks three times	EEPROM error	IC7605

Fig. 6.3