

5. Service Modes, Error Codes, and Fault Finding

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5.1 Test Points

As most signals are digital, it will be difficult to measure waveforms with a standard oscilloscope. However, several key ICs are capable of generating test patterns, which can be controlled via ComPair. In this way it is possible to determine which part is defective.

Perform measurements under the following conditions:

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

5.2 Service Modes

Service Default mode (SDM) and Service Alignment Mode (SAM) offers several features for the service technician, while the Customer Service Mode (CSM) is used for communication between the call centre and the customer.

Note: For the new model range, a new remote control (RC) is used with some renamed buttons. This has an impact on the activation of the Service modes. For instance the old "MENU" button is now called "HOME" (or is indicated by a "house" icon).

5.2.1 Service Default Mode (SDM)

Purpose

- To create a pre-defined setting, to get the same measurement results as given in this manual.
- To override SW protections detected by the standby processor and make the TV start up to the step just before protection. See section "5.3 Start-up".
- To start the blinking LED procedure where only LAYER 2 errors are displayed. (see also section "5.5 Error Codes").

Specifications

Table 5-1 SDM default settings

Region	Freq. (MHz)	Default system
Europe, AP(PAL/Multi)	475.25	PAL B/G
Europe, AP DVB-T	546.00 PID Video: 0B 06 PID PCR: 0B 06 PID Audio: 0B 07	DVB-T

- All picture settings at 50% (brightness, colour, contrast).
- Sound volume at 25%.

How to Activate SDM

For this chassis there are two kinds of SDM: an **analogue SDM** and a **digital SDM**. Tuning will happen according [Table 5-1](#).

- **Analogue SDM:** use the RC-transmitter and key in the code "062596", directly followed by the "MENU" (or "HOME") button.
Note: It is possible that, together with the SDM, the main menu will appear. To switch the main menu "off", push the "MENU" (or "HOME") button again.
Analogue SDM can also be activated by grounding the solder path on the SSB, with the indication "SDM" (see figure [Service mode pad](#)).

- **Digital SDM:** use the RC-transmitter and key in the code "062593", directly followed by the "MENU" (or "HOME") button.

Note: It is possible that, together with the SDM, the main menu will appear. To switch it "off", push the "MENU" (or "HOME") button again.

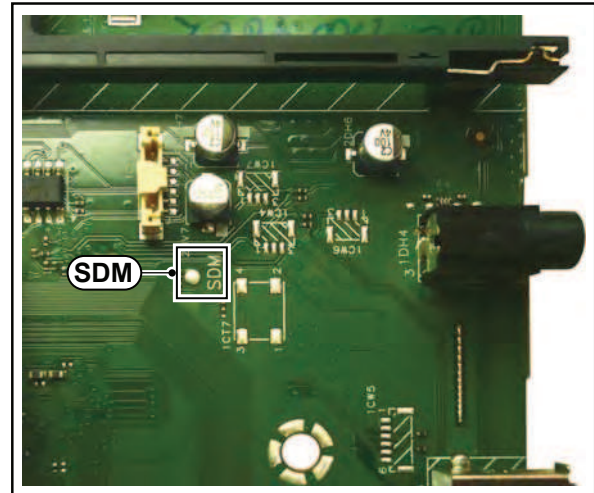


Figure 5-1 Service mode pad

After activating this mode, "SDM" will appear in the upper right corner of the screen (when a picture is available).

How to Exit SDM

Use one of the following methods:

- Switch the set to STANDBY via the RC-transmitter.
- Via a standard customer RC-transmitter: key in "00"-sequence.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To perform (software) alignments.
- To change option settings.
- To easily identify the used software version.
- To view operation hours.
- To display (or clear) the error code buffer.

How to Activate SAM

Via a standard RC transmitter: Key in the code "062596" directly followed by the "INFO" or "OK" button. After activating SAM with this method a service warning will appear on the screen, continue by pressing the "OK" button on the RC.

Contents of SAM

- **Hardware Info.**
 - **A. SW Version.** Displays the software version of the main software (**example:** QF2XX_1.2.3.4 = AAABB_X.Y.W.Z).
 - **AAA=** the chassis name.
 - **BB=** Product ID.
 - **X.Y.W.Z=** the software version, where X is the main version number (different numbers are not compatible with one another) and Y.W.Z is the sub version number (a higher number is always compatible with a lower number).
 - **B. Standby processor version.** Displays the software version of the standby processor.
 - **C. Production Code.** Displays the production code of the TV, this is the serial number as printed on the back of the TV set. Note that if an NVM is replaced or is initialized after corruption, this production code has to