

Service
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PHIL -05405

Service Manual

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Technical data

Mains voltage	: 160-276 V ($\pm 10\%$); 50/60 Hz ($\pm 5\%$) : 90-140V, 160-276 ($\pm 10\%$) 50/60 Hz ($\pm 5\%$) : (for multivoltage)
Power cons. at 230V ~	: 25" 90W (stand-by ≤ 10 W) : 29" 90W (stand-by ≤ 10 W)
Aerial input impedance	: 75 Ω - coax
Min. aerial input VHF	: 35 μ V
Min. aerial input UHF	: 40 μ V
Max. aerial input VHF/UHF	: 100mV
Pull-in range colour sync	: ± 300 Hz
Pull-in range horizontal sync	: ± 600 Hz
Pull-in range vertical sync	: ± 5 Hz
Picture tube range	: 25" A59JMZ140X : 29" M68JUA125X
TV Systems	: Multi PAL/SECAM B/G/D/K/K1 : NTSC 3.58 and NTSC 4.43 : Dependent on stroke number.
Indications	: On Screen Display (OSD) : 1- LED (①, ②, RC5)
VCR programs	: 0 - 59
Tuning and operating system	:  $\longrightarrow$ UV916 PLL : Band I: 47 - 170 MHz : Band II: 170 - 450 MHz : UHF: 450 - 861 MHz
Local operating functions	: ①,  , $\pm$ P, HUE $\pm$, ② $\pm$,  , $\pm$, $\triangleright/\diamond$, $\blacktriangleright$

Specification of the terminal sockets

SCART rear

- 1 - Audio $\odot$ R ($0.5V_{RMS} \leq 1k\Omega$)
- 2 - Audio $\ominus$ R ($0.5V_{RMS} \geq 10k\Omega$)
- 3 - Audio $\odot$ L ($0.5V_{RMS} \leq 1k\Omega$)
- 4 - Audio mass
- 5 - Blue mass
- 6 - Audio $\ominus$ L ($0.5V_{RMS} \geq 10k\Omega$)
- 7 - Blue $\ominus$ ($0.7V_{pp}/75\Omega$)
- 8 - n.c.
- 9 - Green mass
- 11 - Green $\ominus$ ($0.7V_{pp}/75\Omega$)
- 13 - Red mass
- 15 - Red $\ominus$ ($0.7V_{pp}/75\Omega$)
- 16 - n.c.
- 17 - mass
- 18 - CVBS mass
- 19 - CVBS $\ominus$ ($1V_{pp}/75\Omega$)
- 20 - CVBS $\odot$ ($1V_{pp}/75\Omega$)
- 21 - Earth screen

Various rear



3,5mm 2 x 8W/8 Ω for L.S.

front



6.3mm

1. A set to be repaired should always be connected to the mains via a suitable isolating transformer.
2. Safety regulations demand that the set be restored to its original condition and that the components identical to the original types be used. Safety components are marked by the symbol .
3. To prevent damage to IC's and transistors any flash-over of the EHT should be avoided. To prevent damage to the picture tube the method, indicated in Fig. 3.1, has to be applied to discharge the picture tube. Make use of an EHT probe and a universal meter (position DC-V). Discharge until the reading of the meter is 0V (after approx 30s).

4. ESD

All IC's and many other semi-conductors 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 via a wrist wrap with resistance. Keep components and tools on the same potential.

5. The deflection and multipole units have been adjusted in an optimum way in the factory. Adjustment of these units during repair is thus not recommended.
6. **Removing the EHT cable.**
After removal of the tube and nip out of the clamping rings N with a screwdriver or side-cutting pliers, the EHT cable may be pulled off the line output transformer (see Fig.3.2). When refitting the cable, first press the clamping ring onto the transformer until a click is heard; after this the cable may be pressed home. Make sure that the cable is pressed down well.
7. Proceed with care when testing the EHT section and the picture tube.
8. Never replace any modules or any other parts while the set is switched on.
9. Wear safety goggles during replacement of the picture tube.
10. Use plastic instead of metal alignment tools. This in order to pre

1. Service position

To facilitate troubleshooting and repairing the set, the chassis can, after disconnecting the degaussing cable, be pulled out of the cabinet, turned 180°, and placed behind the set on the LOT side of the chassis.

2. Servicing of SMD's (Surface Mounted Devices)

2.1 General cautions on handling and storage.

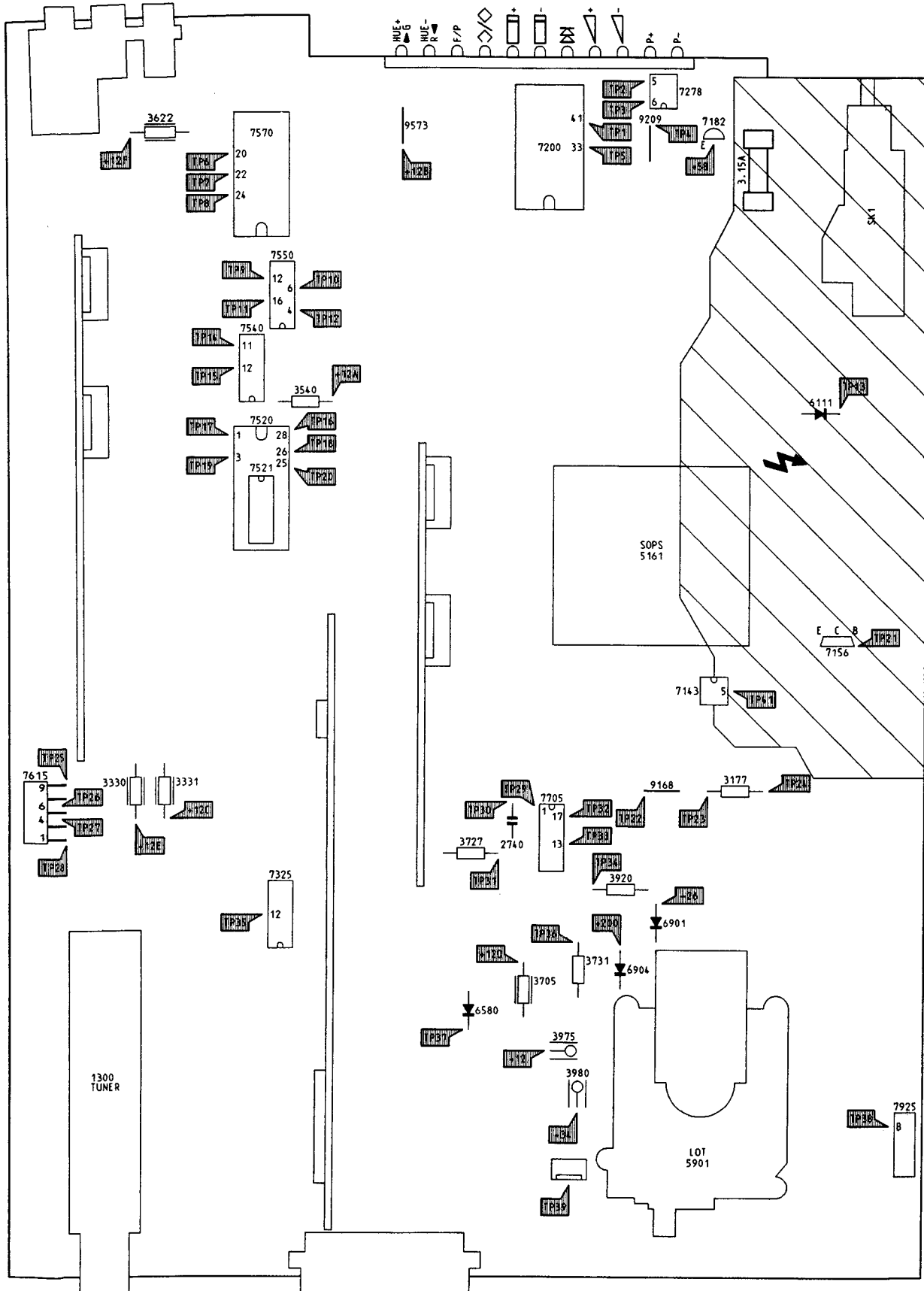
- Oxidation on the SMD's terminals results in poor soldering. Do not handle SMD's with bare hands.
- Avoid for storage places with sulfur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. As a result the capacitance or resistance value of the SMD's may be affected.
- Rough handling of circuit boards containing SMD's may cause damage to the components as well as the circuit boards. Circuit boards containing SMD's should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape SMD components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

2.2 Removal of SMD's

- Heat the solder (for 2-3 seconds) at each terminal of the SMD. Small components can, by means of litze wire and a limited horizontal force, be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 4.1A) or.
- While holding the SMD with a pair of tweezers take it off gently using the soldering iron's heat applied to each terminal (see Fig. 4.1B).
- Remove the excess solder on the solder lands by means of litze wire or a solder sucker (see Fig. 4.1C).

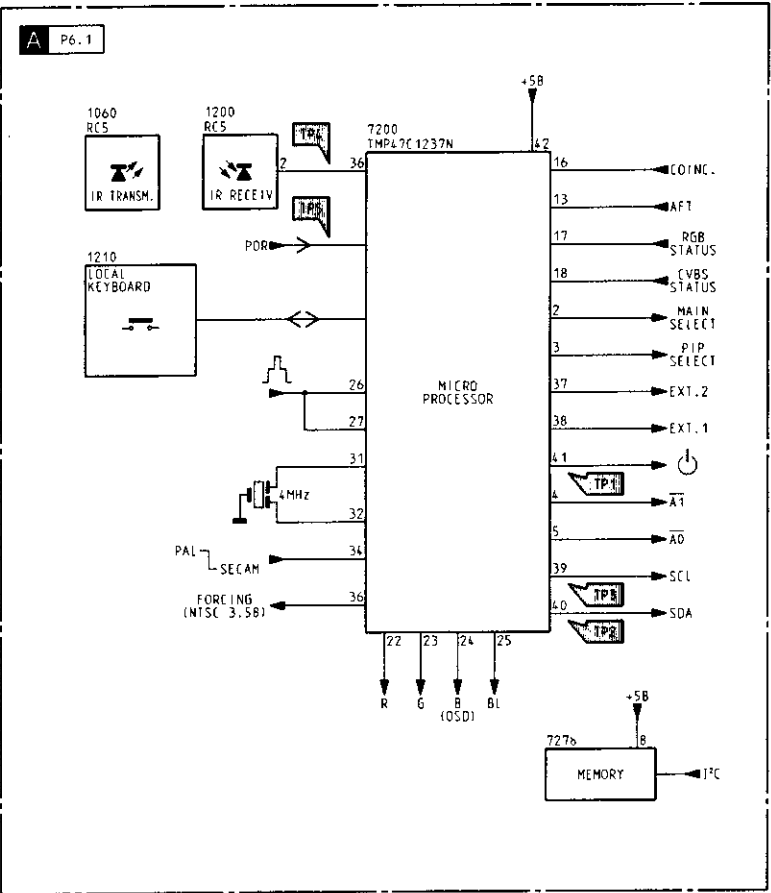
Caution on removal:

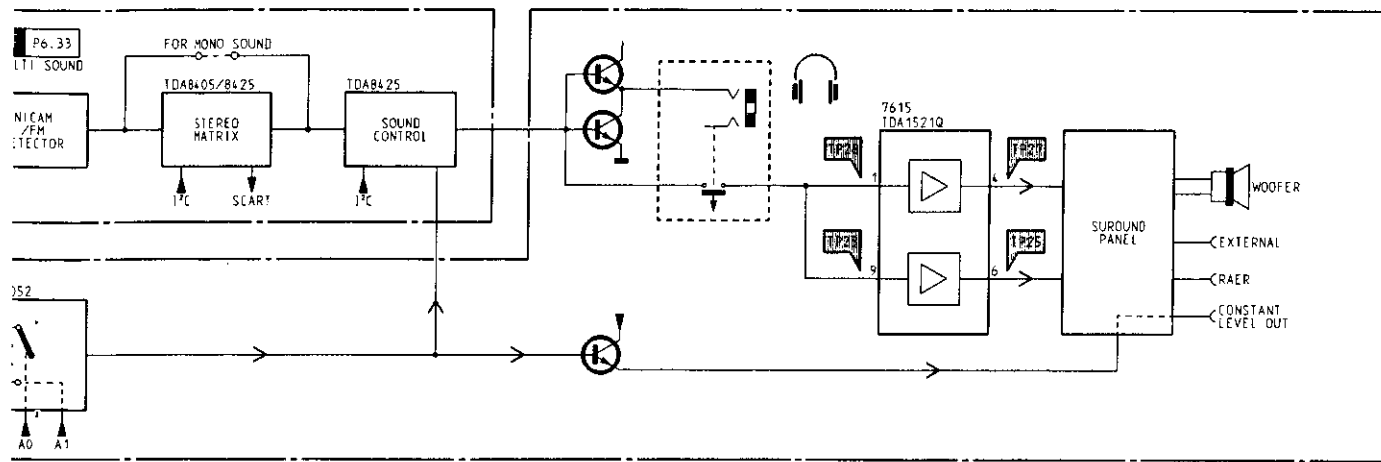
5.1 CHASSIS G112



Blockdiagram

CHASSIS G112 5.2 5.3 CHASSIS G112





Controls

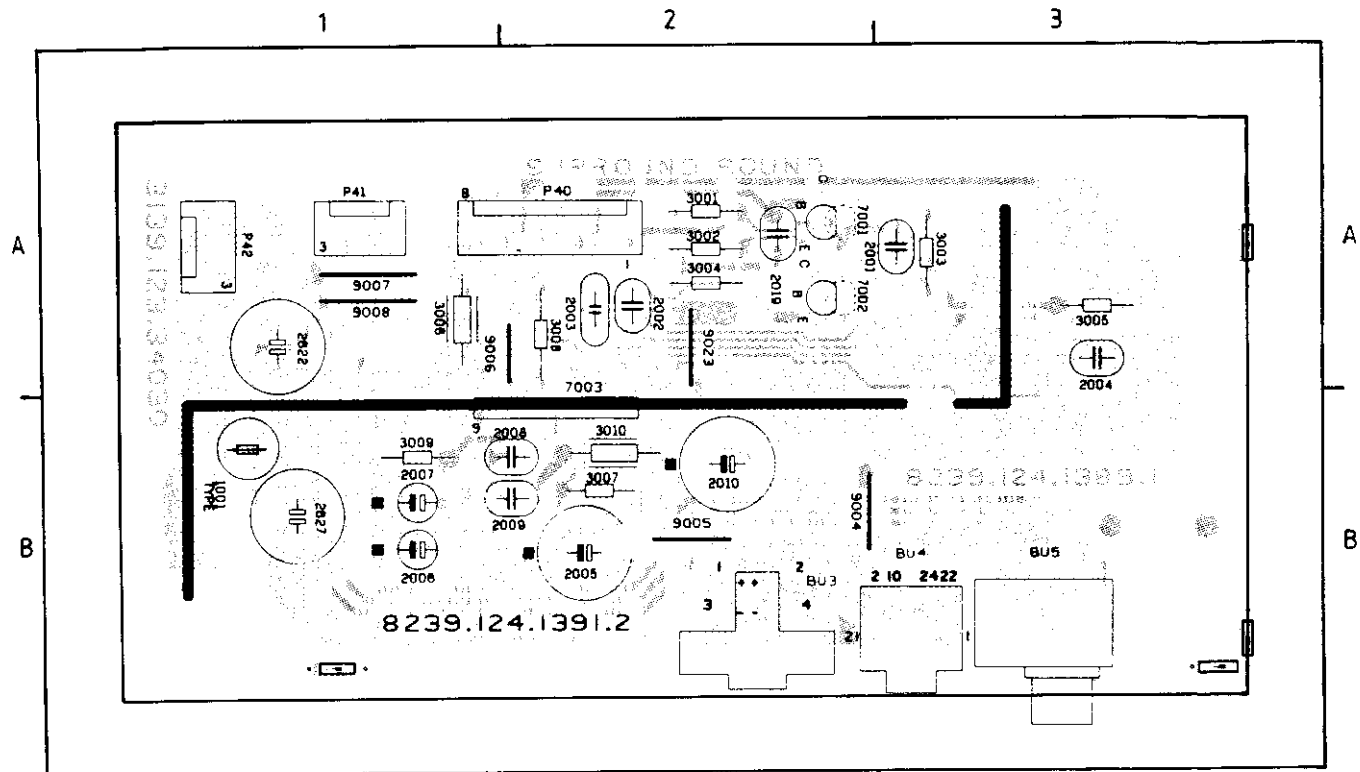
A

A

Surround sound module

CHASSIS G112

6.3



AV module

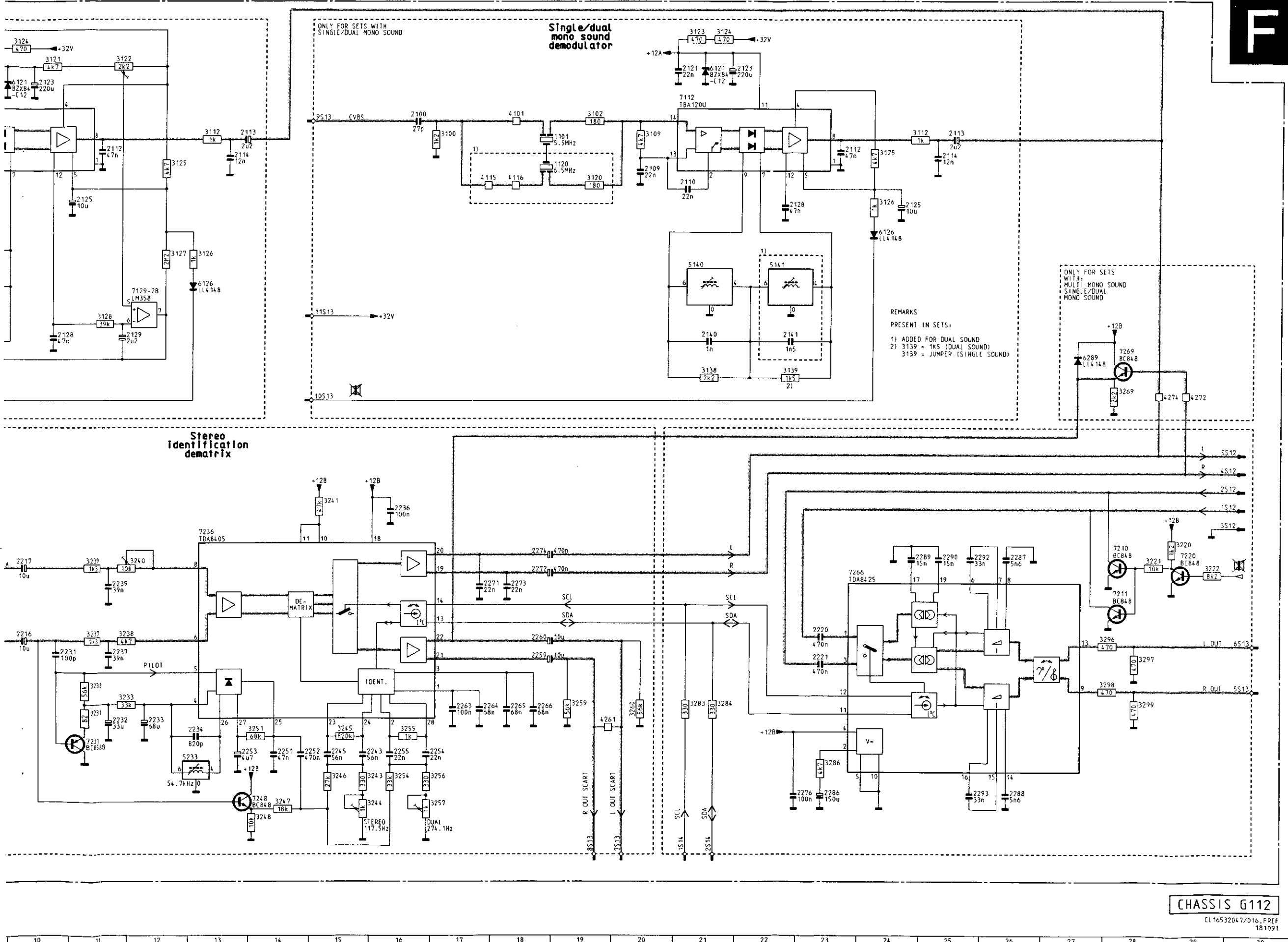
1033 A4	2011 A5	2051 B3	3010 B5	3021 A3
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Sound module

CHASSIS G112

6.33

6.34

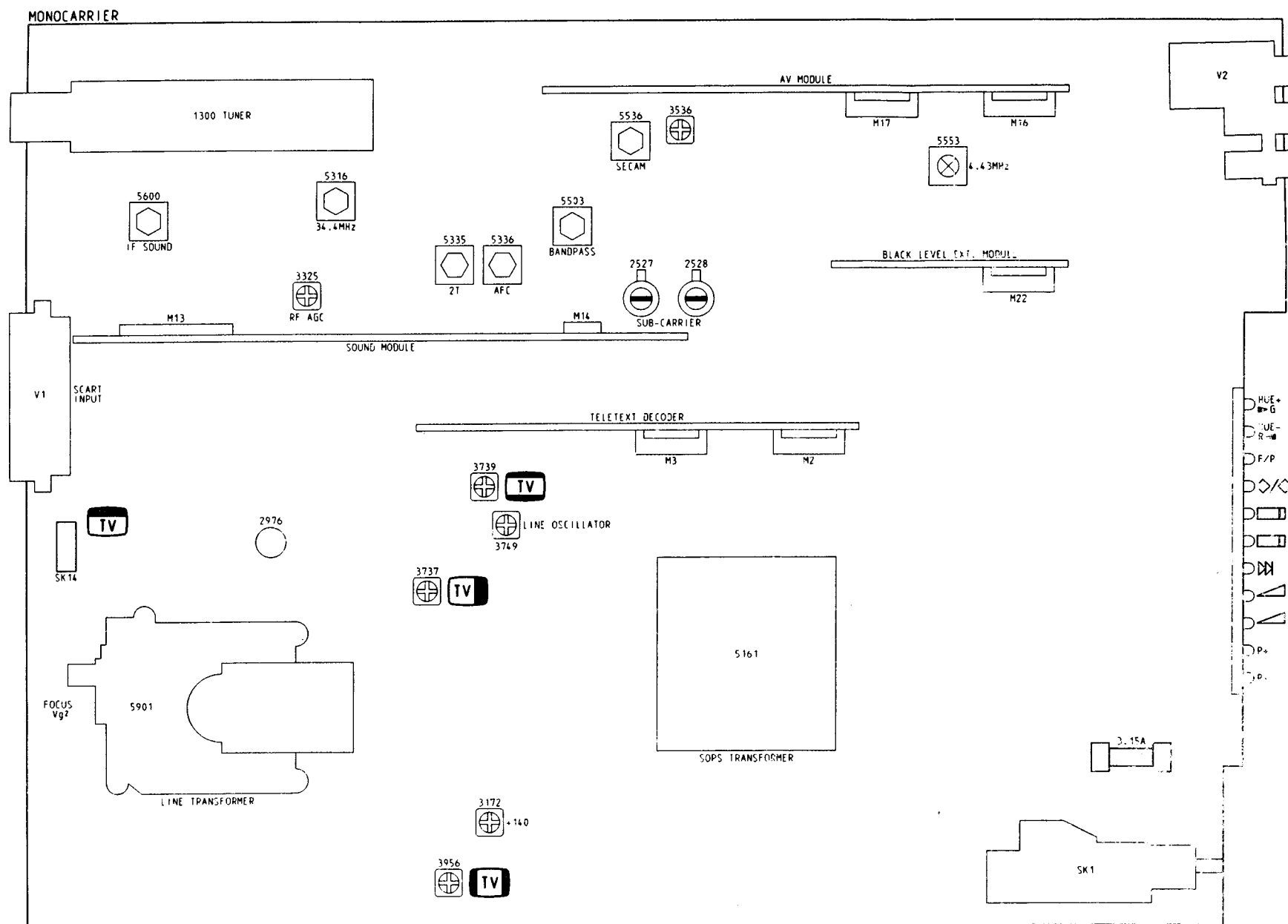


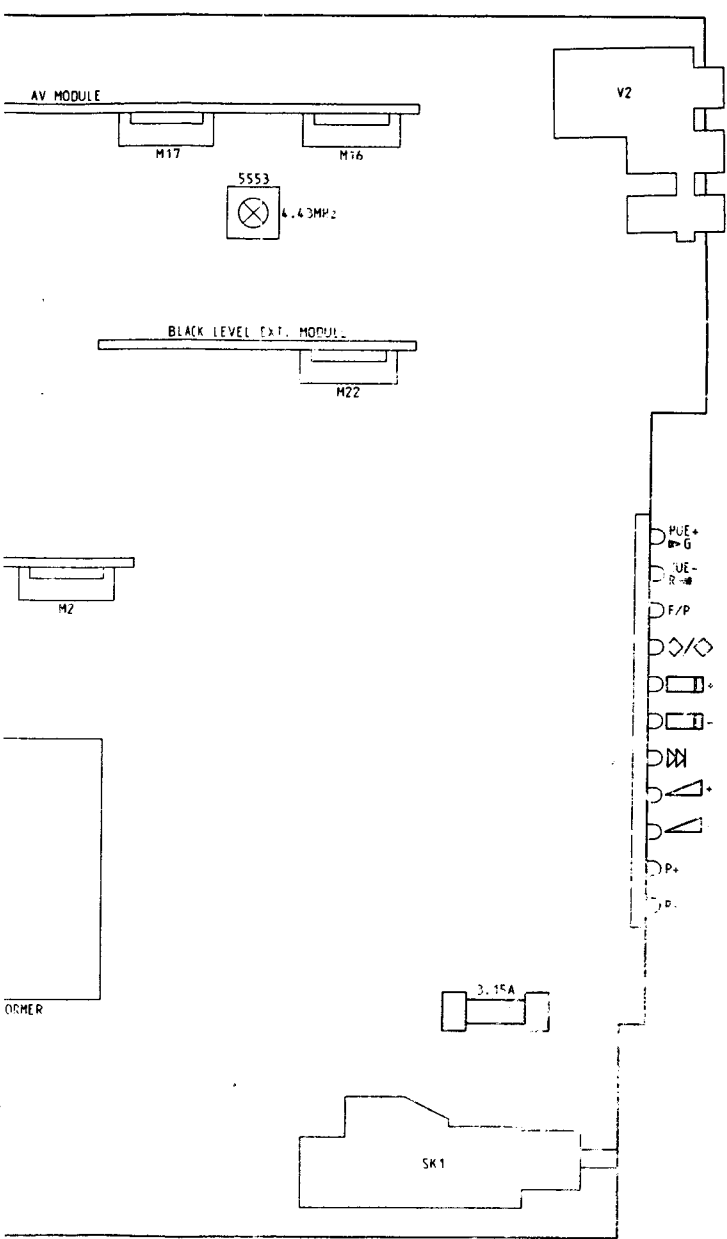
Teletext module

CHASSIS G112

6.39

6.40





TXT module