

Grundig Satellit 2400 Restoration (July-Oct 2025)



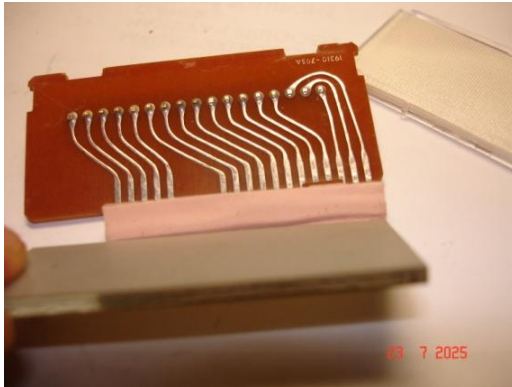
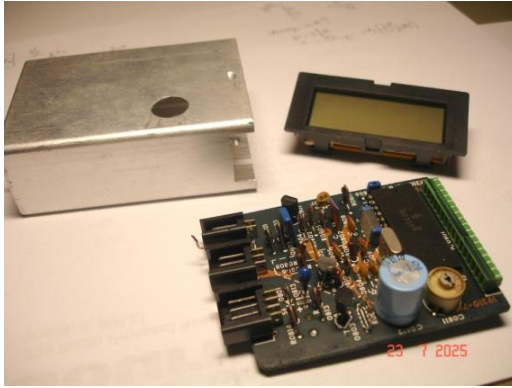
- **Slipping, stuck tuning drive**

Resolved by roughening the tuning shaft with a small, round file. It is quite a hassle to reattach the tuning cord correctly; follow the cord diagram in the **Grundig Satellit 2400 Service Anleitung (1979).pdf** exactly. Initially, shift the tuning pointer to cover the full (lower) 0-100 scale. Check later with station frequencies.



- **Failing segments of the counter-display**

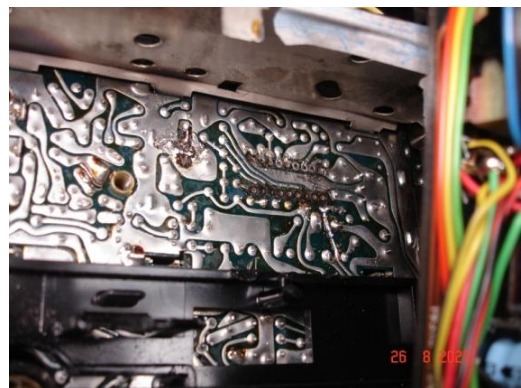
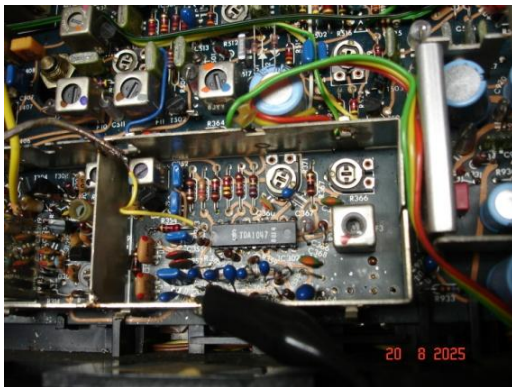
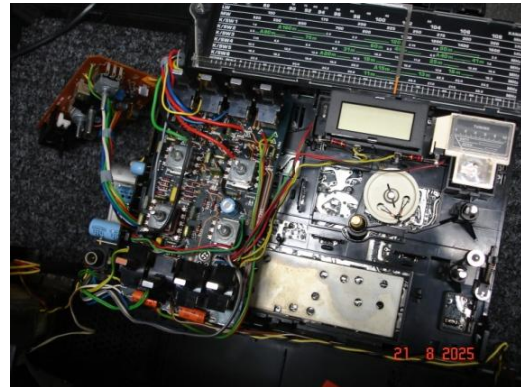
Initially this problem seemed solved by replacing the rubber 'zebra strip' connector, but later the segments started dropping again. It seems that only a very very careful treatment of all the almost invisible, transparent conductive traces on the display surface, with which the zebra strip makes contact, with silver glue will fix this...

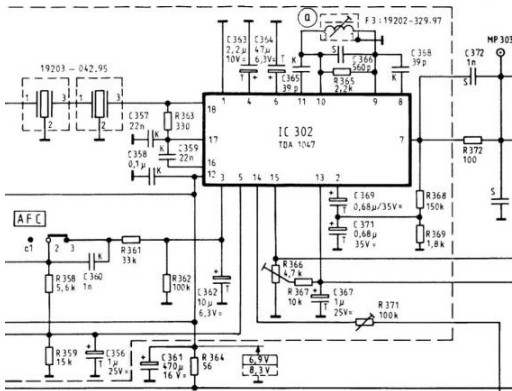
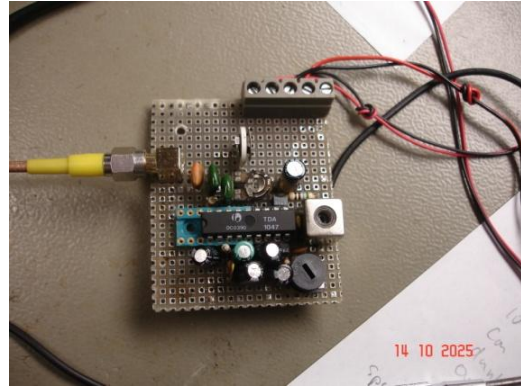
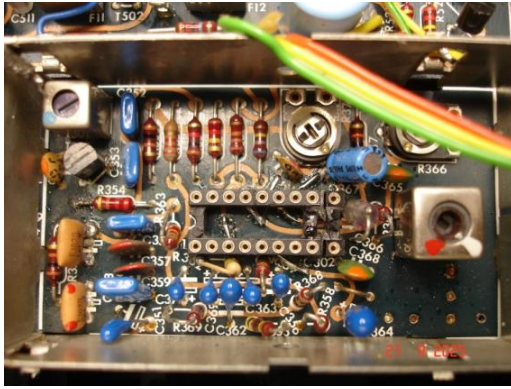


- **Poor and screeching reception on FM**

This truly was a challenge! The FM tuner is enclosed in a sturdy, soldered metal compartment, with another soldered 'lid' on the underside of the PCB. It seemed to be a problem with the FM IC, the TDA 1047, which fortunately was still available for purchase. I replaced the original IC a few times, eventually using an IC-socket, on the

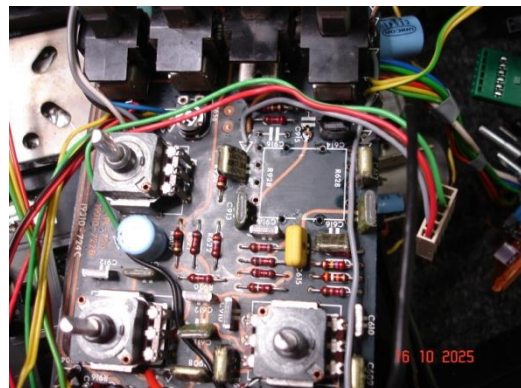
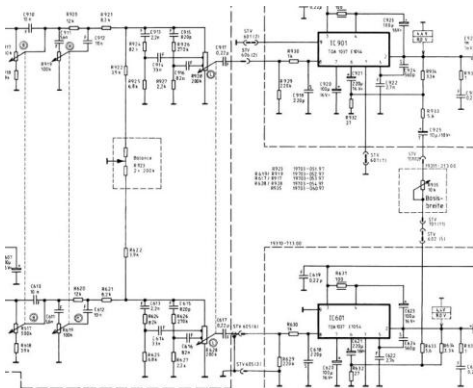
PCB which by now was heavily damaged on both the top and bottom sides... I also replaced various other components, including the ceramic IF filters. It was all in vain. Eventually, I rebuilt the circuit around the TDA 1047 externally on a separate PCB and connected it. That worked well, so it had to be a problem with the components directly surrounding the TDA 1047. After much searching and trying, it eventually turned out that one of the three capacitors at the input of the TDA 1047 was the culprit; unfortunately, it is not clear which one, as all three were replaced at the same time. These are C357, C358, and C359 (see schematic diagram below). And what was wrong with them is also unclear.





- **Difference in timbre L/R**

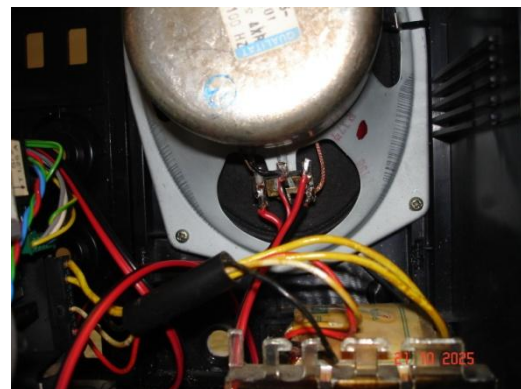
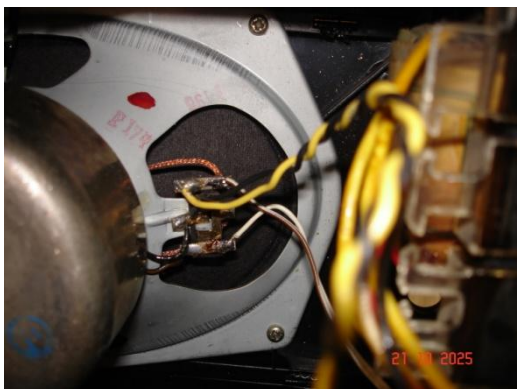
This ultimately turned out to be due to poorly conductive contact tracks inside the housing of the special stereo potentiometer R628/R928. This is a potentiometer with 5 connections per channel, 2 of which are fixed taps, connected to frequency-dependent networks. This causes a 'loudness' timbre effect, depending on the volume setting. The potentiometer was removed from the PCB, its metal housing was slightly bent open at the sides, and the conductivity of the relevant contact tracks at the interrupted spots was very carefully restored using silver glue.





- **Difference in volume L/R**

Although this is not necessarily the main cause of the L/R volume difference, it is noteworthy that the (low-impedance) speaker combinations are connected with fairly thin wire, especially the tweeters, while there is a clear difference in length for the wires to the L and R speakers. Replaced all connections with thicker wires of equal length for L and R.

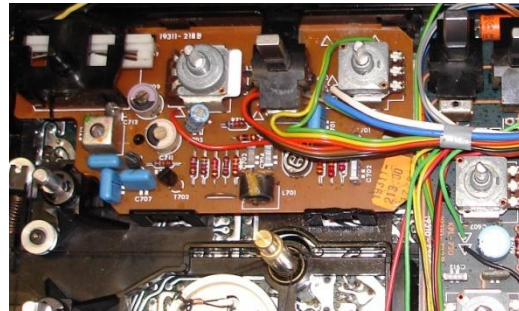
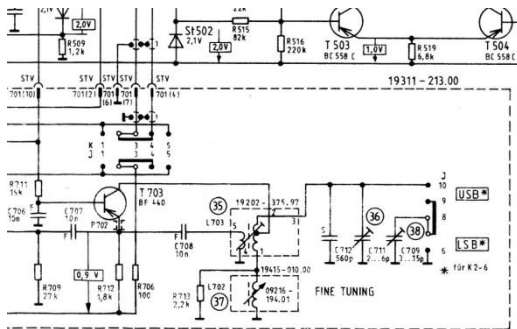


Other points of attention are, once again, the volume potentiometer, and regarding tweeter reproduction, the tweeter switch and the two 3.3 μF electrolytic capacitors C628/C928, which power the tweeters. It is still not quite right.

- **Difference in zero setting LSB/USB**

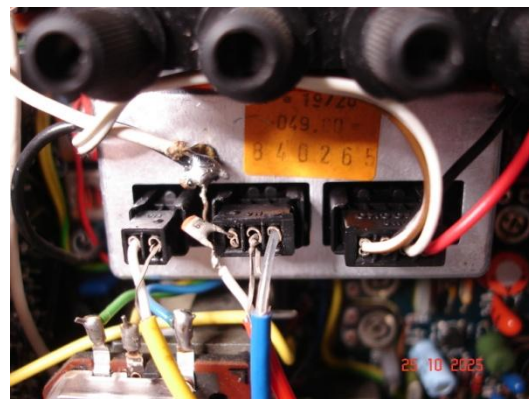
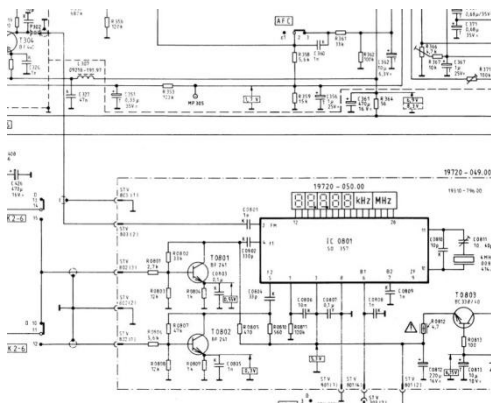
The BFO (Beat Frequency Oscillator) for receiving SSB (Single Side Band) signals is set by adjusting the two trimmers C709 and C711. With correct adjustment, a point of 'zero beat' can be heard at one of the two ends of the BFO/SSB control knob's range, when optimally tuned to a 'bare carrier wave' and with the BFO/SSB switch in the up or down position. With the BFO/SSB control knob set to zero, an approximately 1.5 kHz 'beat frequency' should be audible. Furthermore, with the BFO/SSB control knob

set to zero, in the absence of any signal, the received noise should sound approximately the same for the up or down positions of the BFO/SSB switch.



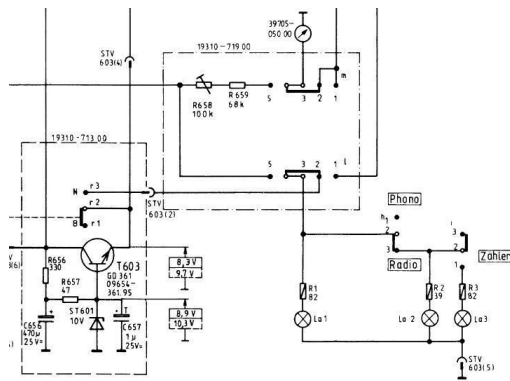
- **Counter feedback on AM tuning**

The frequency counter was found to have feedback on AM tuning when switched on, something that is only noticeable when receiving an SSB voice or morse signal. In that case, you hear a regular 'hiccup' in the sound. The solution was to couple the counter slightly less strongly to the 'local oscillator' by incorporating a small series capacitor in terminal 2 of the counter (hardly visible in the photo, but it is the small coaxial cable with the red sheath). At a value of 6.8 pF (see photo), the counter still worked well on all bands and the problem was virtually gone.



- **Sometimes a slight flickering of scale lighting**

The lights for the scale lighting and the frequency counter lighting (if switched on) sometimes flicker a little. Flipping the PHONO/RADIO switch a few times helps to stop this, but it returns after a while. The cause must be a bad contact in that switch (the connection points h2/h3 in the schematic diagram) but not really worth doing anything about. The illumination of the S-meter/battery voltage meter is unrelated to this.



- **In conclusion**

The Grundig Satellit 2400 (from approx. 1979) is nothing less than a fine work of art, combining hi-fi stereo quality FM reception with AM/SSB reception from LW to SW in multiple spread bands, supported by a digital frequency display and a coarse/fine tuning knob. It is a very ingenious, good receiver, but the designers seem to have done their best to make everything as fragile and inaccessible as possible, and to turn repair or restoration into a major undertaking...

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