

Unblocking the YAESU FRG-8800 Frequency Coverage Limitations

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Introduction

It is well known that some receivers produced in the last decades of the last Century suffered from a limited frequency coverage due to legislative restrictions in force in some Countries (Germany, Australia, etc.).

In particular, in Germany it was forbidden to listen to HF frequencies higher than 26.1 MHz, while in other Countries shortwave were not allowed to receive frequencies below 2 MHz.

These restrictions led most radio manufacturers to produce “blocked” versions of their HF receivers in order to satisfy the various national requirements; almost classical examples are the world renowned SONY ICF-2001D and the PHILIPS D-2935/D-2999 portables.

The blocking/unblocking procedure of some frequency bands was quite simple in microprocessor-governed synthesized radios: usually it was sufficient to add (or remove) proper jumpers in the vicinity of the microprocessor to perform the task, and the correct procedure was often covered in the Service Manuals or in specific Technical Bulletins; in any case plenty of information can be found on the Internet.

With some exceptions, obviously, and the YAESU FRG-8800 just represents one of them: if you search on the original manuals or on the Internet, you will find about NOTHING on the specific matter...

Some More Details

In the User Manual of the YAESU FRG-8800 Receiver it is specified that it was manufactured in different versions according to government regulations (look at Figure A), but on its Service Manual nothing is specified on the various frequency blocks or on how to remove them.

As I recently stumbled upon a “blocked” FRG-8800 of the German version and I needed to remove any frequency limitation, I and my close friend Gigi Lombardo of Bassano del Grappa, Italy, started a deep research on the Internet (with practically no results).

I also subscribed to a Facebook Group (Fox Tango International) and posted my question, receiving some answers from the members Andy Jack and from Simon N. Poysden (many thanks to them all!).

In particular Andy invited me to contact Guy Desimone VK3GUY, the Australian Repair Workshop for Yaesu Japan.

Unfortunately, Guy was not able to help me and he promised to ask Yaesu Japan about the specific matter.

At the same time, Gigi Lombardo continued his search, he also contacted some German hams and, after some silly answers, he at last obtained a very interesting reply from Jurgen, DF5TY (many thanks Gigi and many thanks Jurgen!).

Jurgen suggested to look for some pins near the FRG-8800 microprocessor and to remove the short circuit among them... and he was right!!!

The solution of an annoying problem

In order to remove any frequency limitation in the YAESU FRG-8800, please perform the following steps carefully:

- 1) Remove the bottom and the top cover of the unit, in the top chassis of the FRG-8800 is located the PLL unit (Figure B).
- 2) Precisely locate the TPO-16, TP-17 and TP-18 positions (look at Figures C and D); consider also the FRG-8800 PLL schematic (a detail in Figure E).
- 3) Carefully remove the screws that fasten the PLL board to the chassis (and the “Remote” connectors on the rear panel) and reverse the board in order to access its track side.
- 4) Identify the TP-16, TP-17 and TP-18 positions (look at Figure F).
- 5) Remove (unsolder) any short among TP-16, TP-17 and TP-18 (Figure G shows a 25.999,9 blocked unit, Figure H shows a fully unblocked unit; in Figure I is represented an “unblocked” FRG-8800).
- 6) Carefully reinstall the top and the bottom covers of the radio and enjoy your unblocked receiver.

Final Notices

It's also worth to notice that:

- shorting TP16 to TP17 inhibits the FRG-8800 to receive above 26 MHz;
- shorting TP16 to TP18 inhibits receiving below 2 MHz.

The FRG-8800 frequency limitations do not alter the optional FRV-8800 VHF Converter coverage in any way.

My special thanks to Luigi Lombardo (my friend Gigi), who is the true developer of the procedure.

And that's all for now, best 73!

Paolo Viappiani

allowing operators with personal computers to add, as desired, such as unlimited additional memories, automated scanning systems and even voting reception, using computer and a Yaesu FIF CAT Interface Unit.

The FRV-8800 VHF converter, which mounts inside the FRG-8800, is available as an option to add the range of 118 to 173.999 MHz. The FRV-7700 Converters, FRA-7700 Active Antenna, FRT-7700 and FF-5 Lowpass Filter originally designed for the FRG-8800, are of course fully compatible with the FRG-8800.

Please read this manual carefully in order to gain the full benefit of the functions of each control and button, in order to get the best performance from the many convenient features of the FRG-8800. If you would like to try out each control while reading this manual, please describe them, please read the "Installation" section before connecting power to the receiver.

SPECIFICATIONS

Frequency range:

150 kHz (or 2 MHz) to 29.999 MHz (or 25.999MHz), (according to government regulations)

Modes of reception:

AM, SSB (LSB and USB), CW, FM narrow (FM wide optional)

Sensitivity:

see Chart below

Selectivity:

	(kHz)	@-6dB	@-50dB
AM wide		6	15
AM narrow		2.7	8
SSB/CW		2.7	8
FM narrow		12.5	30(@-40dB)

External audio output:

4 to 16 ohms (for headphones), 1/4" (3.5mm) jack and 600 ohms (for external speaker)

Power requirements:

100/120/220/240V AC, 50/60Hz, 100W for memory bank

Power consumption:

AC 35VA in receive, 15VA in transmit, 10VA in standby (power off)

Dimensions:

334W x 118H x 100D (mm)

Weight:

6.1 kg (without accessories)

Specifications are subject to change without notice.

Figure A: The YAESU FRG-8800 specs from its User Manual.

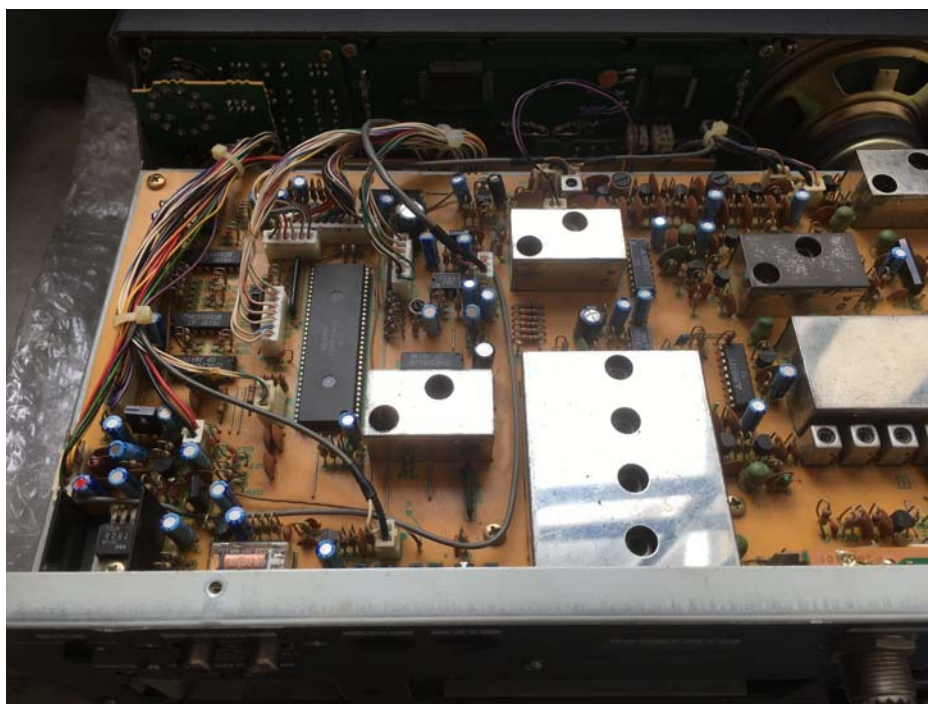


Figure B: The FRG-8800 PLL board.



Figure C: A FRG-8800 PLL board detail.

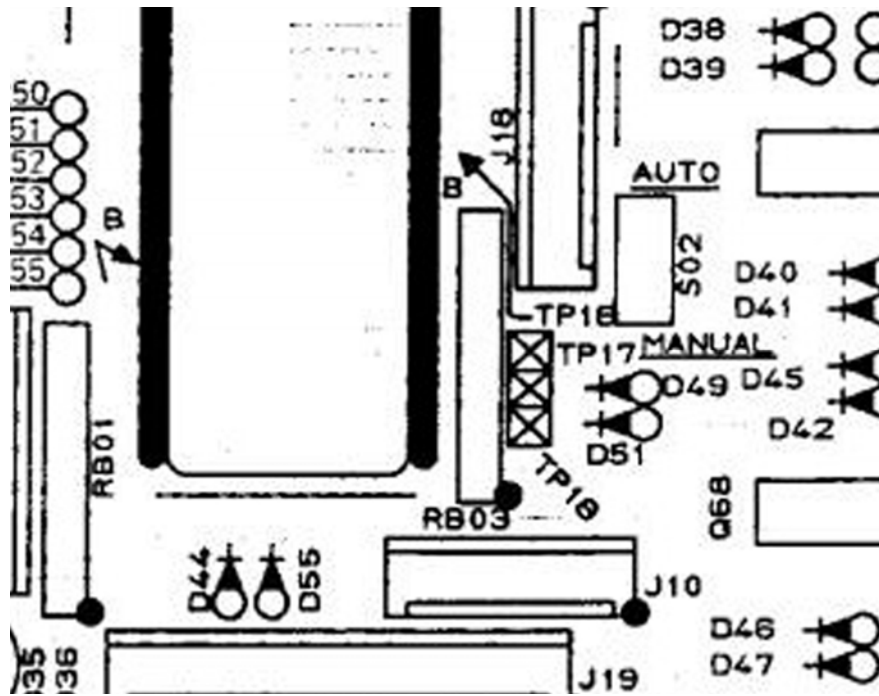


Figure D: FRG-8800 PLL board drawing detail.

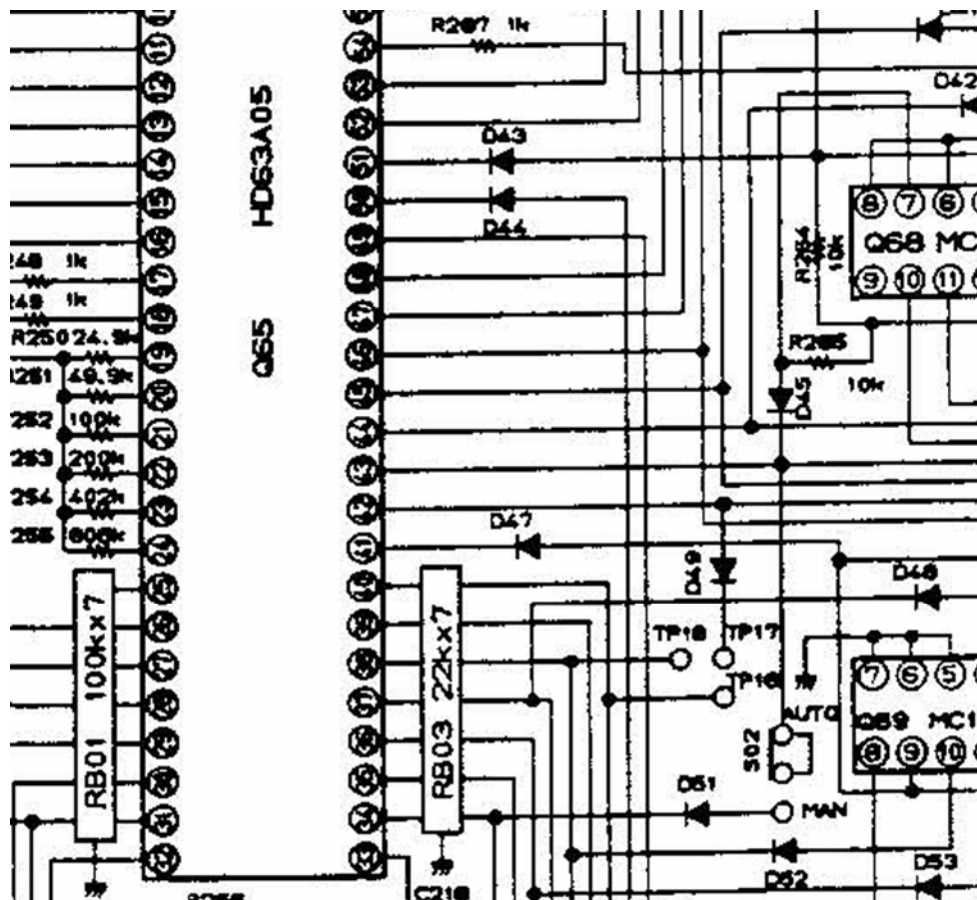


Figure E: FRG-8800 PLL board schematic detail.

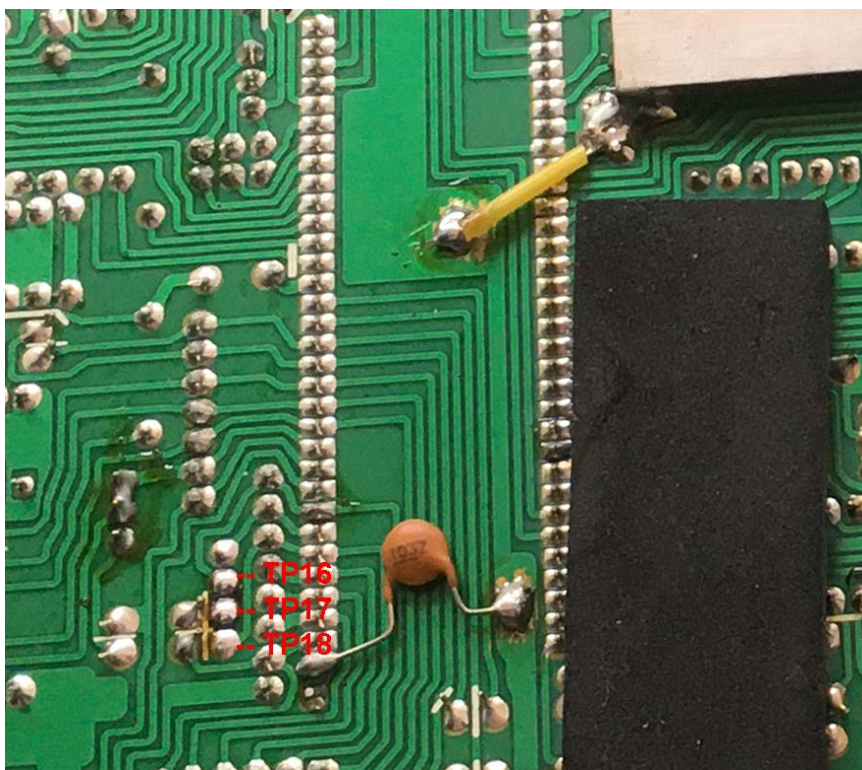


Figure F: FRG-8800 board track side detail.

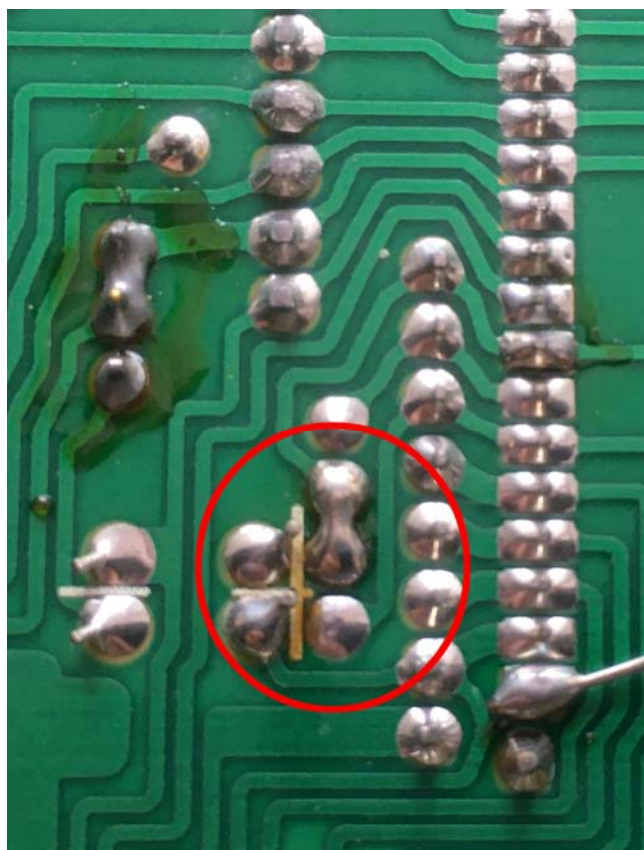


Figure G: FRG-8800 board track side detail (with the 25.999,9 MHz block).

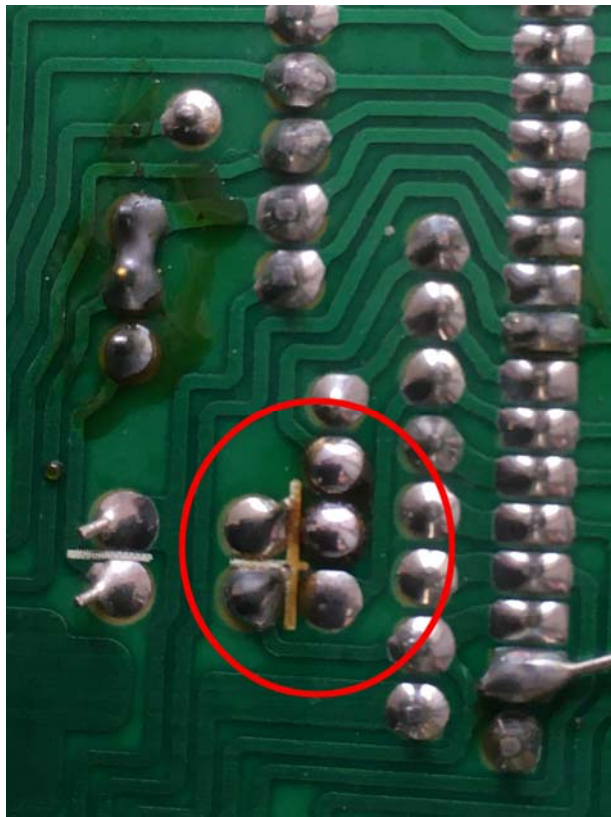


Figure H: FRG-8800 board track side detail (receiver fully unblocked).



Figure I: A just unblocked receiver tuned to 29.999,9 MHz.