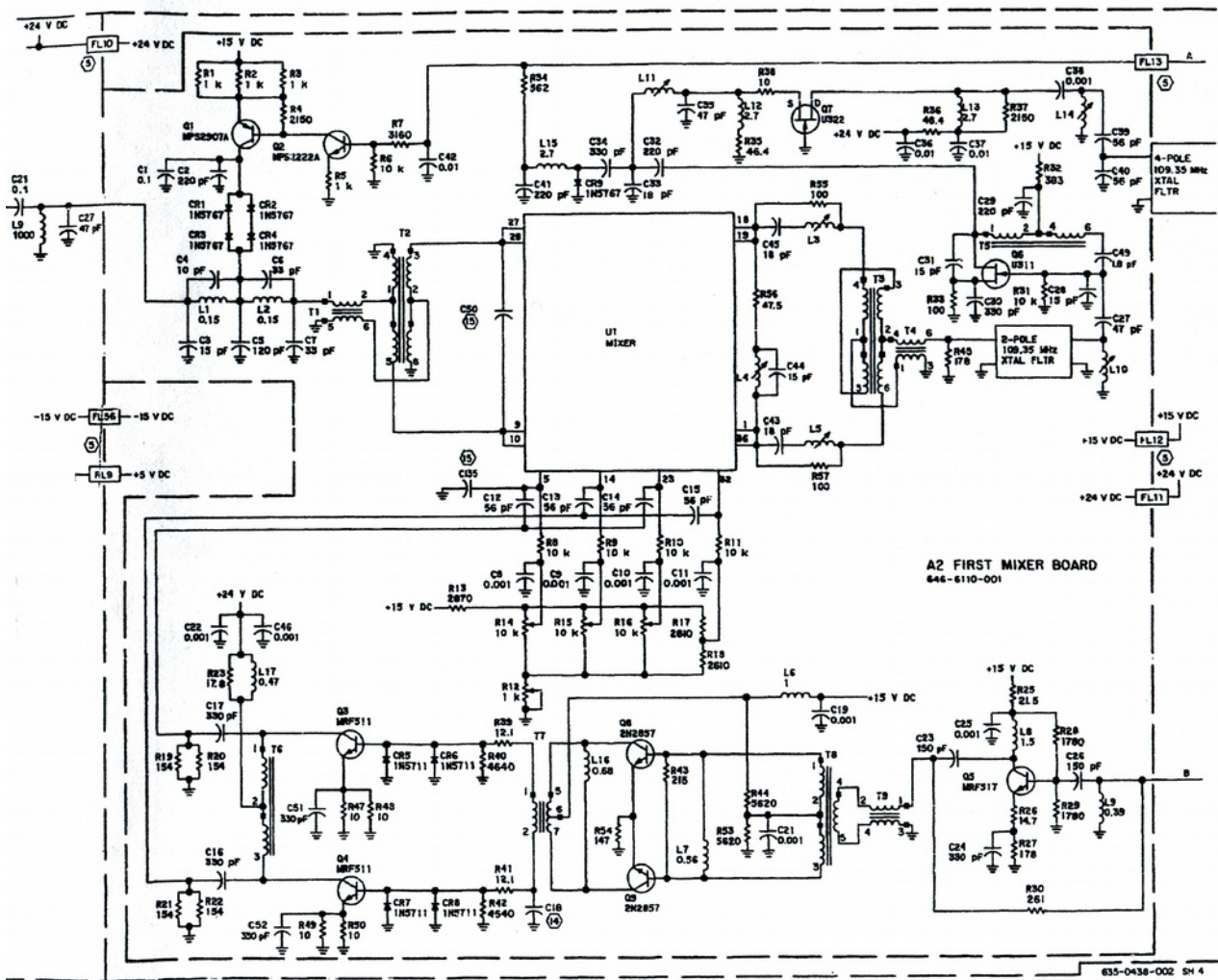


# High IMD Front End in the HF-8054A

In my HF-8054A is a -003 RF unit, that is not covered in my (or apparently all others) manual. As the unit does not work as it should, I had a problem.

Asking the well known expert Jim Stitzinger, he sent to me the rare documentation of the unit. The difference is in the first mixer as the unit should provide higher IMD performance than the standard -001 found in my HF-8050A or in a 851S-1. The remaining circuitry is identical to the standard unit and so are the interface requirements.

Below is a **circuit diagram** of A2, the first mixer board:

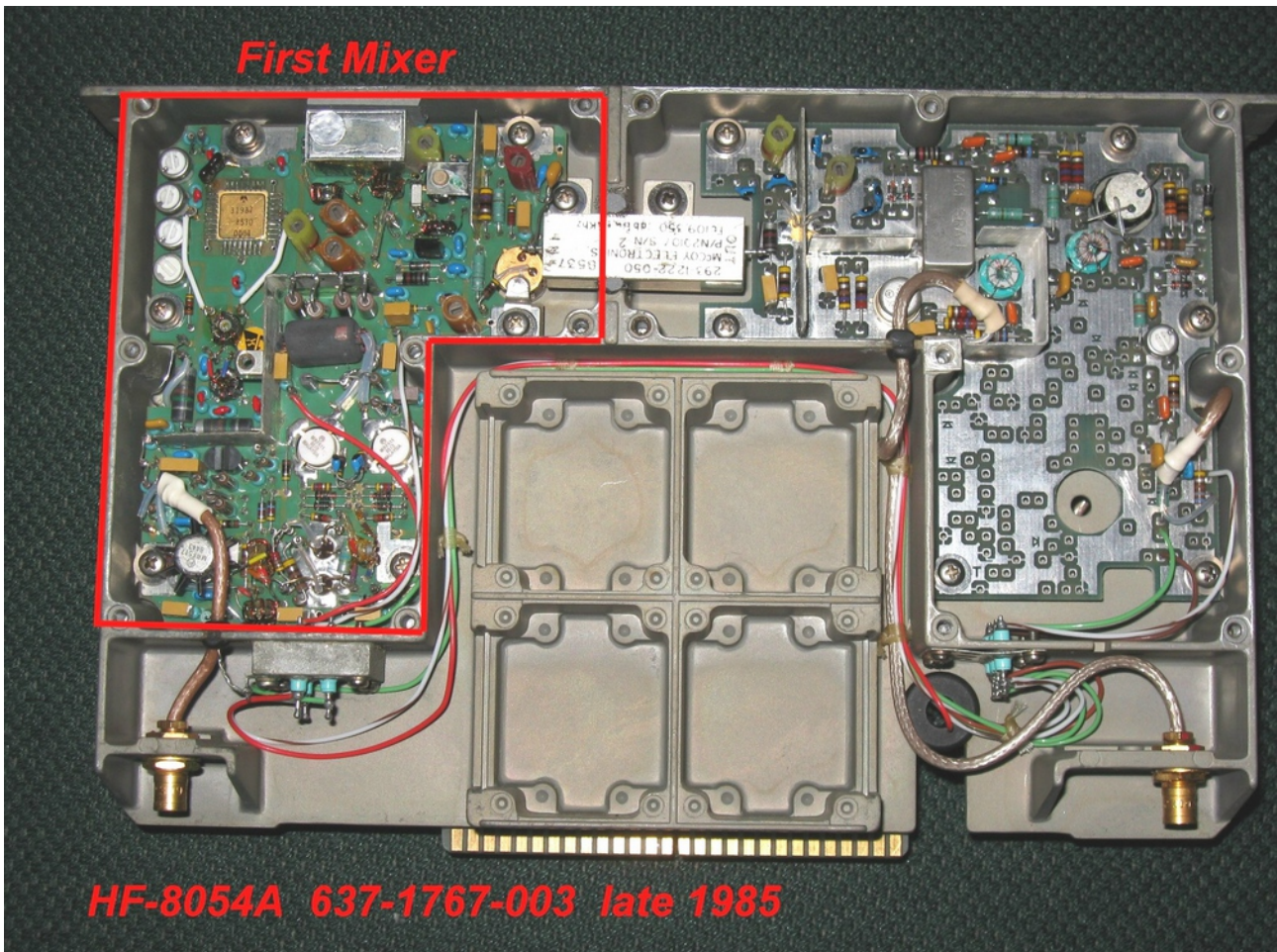


The main difference are the use of a sealed mixer unit U1 and a different LO broadband amplifier providing more power to the (presumably) ring mixer. The mixer bias is adjusted/balanced by three potentiometers R12 and R14-R16, but how they are supposed to be adjusted I do not know.

The problem of my unit (sensitivity about 20dB below what it should be) has not been investigated or found yet. However now there is the information!

In the following **picture** the key components can be seen: the mixer U1 is the golden square in the top left corner with its bias adjusting R12 and R14-R16 potentiometers.

The two white round elements center left are the MRF511 final LO power amplifier transistors Q3 and Q4 providing a high LO level into the mixer U1. Just above them the black thing is the LO output transformer T6.



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**Notes:** for a larger version of the diagram see my website. Copyright of the diagram Rockwell-Collins.

