

## Adjusting the FT-857 for transverter service.

By K0CQ

Many of the 857 settings, including receiver and transmitter gains and power outputs are set in a software alignment menu. Because transistors gains vary from one device to the next, the settings vary from one copy of the 857 (and I presume these apply directly to the 897, I don't know about the 817). Doing a super master reset sets all these values to defaults, usually at the extremes of their adjustment range which tend to not be useful settings. Like SWR fault triggers are set at 0 reflected power while TX gain is set to maximum. In the KB2LJJ Radio Mods Database there is a list of settings for one 857. They can be a start to restoring a radio improperly reset to defaults.

When the TX gain is set to the extreme, the 857 will put a spike on the RF power output at key closure or PTT actuation on AM or FM. That is not good for a transverter. When the TX gain is set to a value like 47 from LJJ's data my transverter assigned 857 does not put out a spike at any power setting or mode.

The FT-857 shop manual gives the procedure for getting into the alignment menu. The data copied on the next page from KB2LJJ does that also and calls it a "hidden" menu. The shop manual gives the procedures for setting to the factory settings. I found that I could change those settings to reduce the power out on 2 m to protect the transverter at all times. Settings 41:VHF-MAX, 42: VHF-MID, and 43:VHF-MIN are there to make the output power match the user menu power settings of 50 watts max, 5 watts min.

I have seen a mod that says crank them to the maximum setting to get nearly double to RF power output. That probably introduces considerable distortion and may very well be detrimental to the life of the output transistors.

I wanted to minimize the power output because every watt of RF wasted in the 10 watt dummy load in the DEMI transverter heats the crystal causing more frequency drift. With values of 2, 3, and 4 for Min, Mid, and MAX, my 857 puts out 2 to 4 watts and if I was to go lower, I'd have to change the range selection in the TC attenuator, so I quit there. It may go to lower power yet. The user menu power setting still shows a range of 5 to 50 watts.

I could have gone to the 857 transverter mode, but I consider that accident prone. Its too easy to not be in transverter mode. Were I going to use the same 857 for 2m liaison and transverter service, I'd use an outboard 2m PA on the 2m antenna. And the other bands have not been affected by this adjustment.

From the KB2LJJ Radio Mods Database:

## Second menu for FT-857

*Author: - [pascal.34@bluewin.ch](mailto:pascal.34@bluewin.ch)*

There is a second set of menu functions F01 to F74.

WARNING: changing these will reset all the memories.

I want to warn you do not change these values unless you are sure of what you are doing. To get them turn transceiver off. Press and hold the A,B,C keys; while holding them in, press and hold in the [PWR] switch for 1/2 second to turn the transceiver On. Now let go of all keys. Press F key to finish.

Function Setting in my radio

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Adjust-No	Function	Setting	Mode	Frequency
NO-040	VHF-PO-MAX	87	CW	145.437.50
NO-041	VHF-PO-MID	43	CW	145.437.50
NO-042	VHF-PO-MIN	7	CW	145.437.50
NO-049	VHF-TXG	47	USB	145.437.50

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He neglects to mention the radio will signify you got to this menu by making a “diddle diddle diddle” sound.

In the shop manual it goes on to say on page 18,  
“In the alignment procedures, each alignment parameter is selected by rotating the main DIAL knob. Each alignment item is then selected by rotating the SELECT knob.

“ To store the alignment parameters when you are satisfied with the alignment, press the [FUNC] key for longer than one second.”

I you don't close with the [FUNC] key the radio forgets all you just did.

K0CQ