

## Tom Collins

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**From:** ted <ted@fullerelectronics.com>  
**Sent:** Monday, August 04, 2014 9:09 PM  
**To:** Fred Keith  
**Cc:** Tom Collins; ARBRadio@aol.com  
**Subject:** translator update

Mr. Keith,

I will be sending updates, as we discussed, in regards to the translator. Please excuse the technical jargon, but in order to make a proper record for Tom's files I will include it.

In regard to the 500 watt amp: There are two power modules, each capable of 250 watts, and when added through a built-in combiner can create 500 watts of output. The inputs to these power modules are driven by a 50 watt amplifier and power divider.

The problem with the unit is that the input of each power module exhibits excessive capacitance, and both modules have the exact same problem. At mid-band of 98 mhz, the impedance is around 40 ohms resistive and 70 ohms capacive. It is the capacitive component that causes the 50 watt amplifier to see excessive reflected power and because of this the modules cannot be driven and maintained at full power. This problem also creates a spurious emission issue that, even if the power level was correct, would make on-air operation unacceptable.

I believe that all components in both modules are working correctly, and the 50 watt amplifier is working correctly. My belief is that this problem has always been present in this unit, but to a lesser degree that was not noticable until the the current repair session was needed.

Once I have completed my consultation with the factory, I believe a solution can be found. It is very likely that some re-tuning to the circuit may solve the problem. There are no variable capacitors or inductors in any of the amplifier modules, so tuning must be acheived by changing component values.

I will keep you posted on the progress.

Ted Fuller