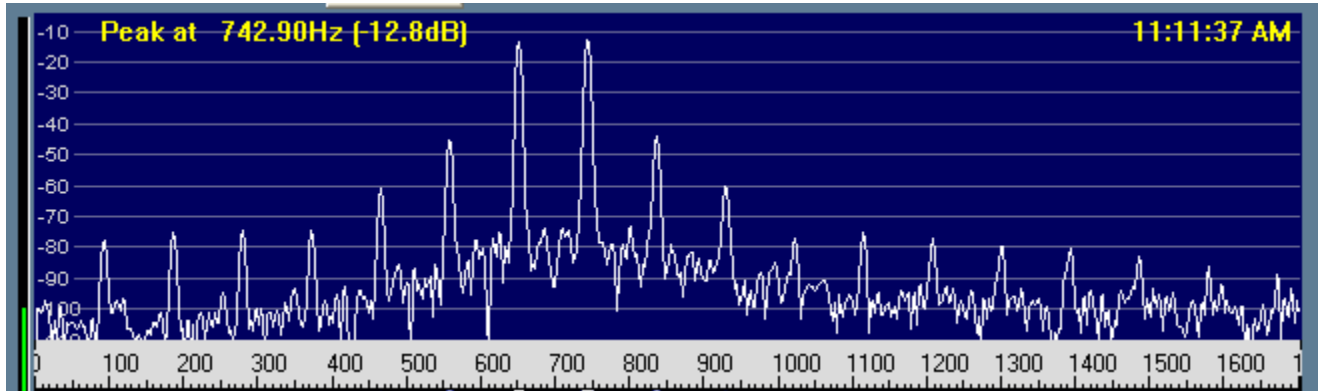


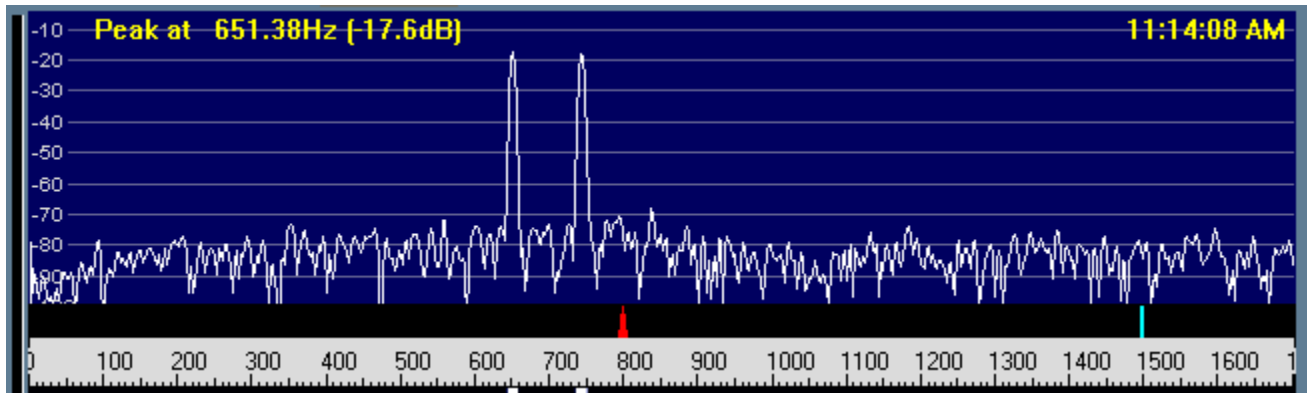
K3 SN0013 IMD observations.

Test conditions - 6.146 kHz two signal source (two XTAL oscillators combined). 35 db over S9 with ATT engaged.

First off - letting the AGC take care of things - this is what I see:



Now - if I back off on the RF gain - and bring up the AF gain - I can get this:



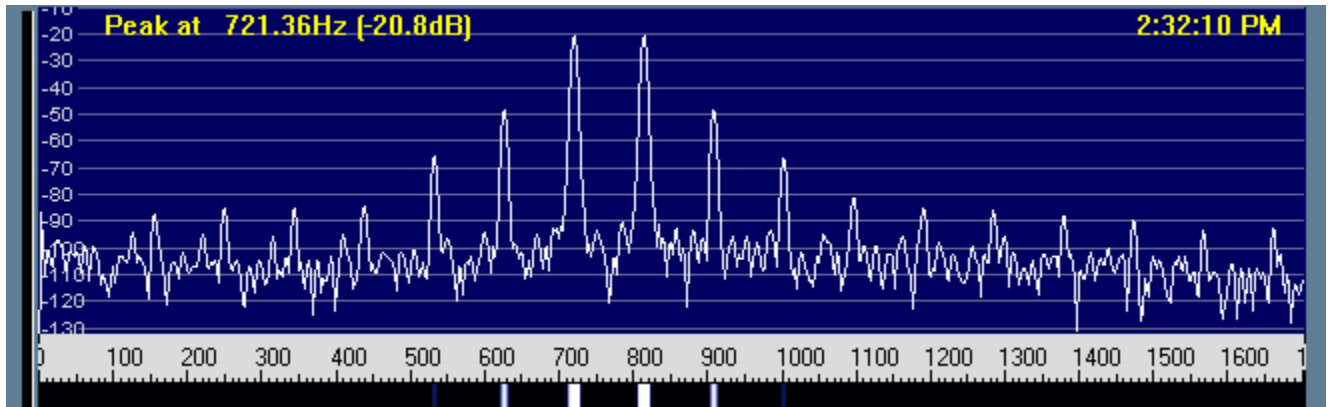
Notice how you can barely see the IMD products - but also notice, the noise floor of the radio has moved up 20 db due to the RF gain issue I previously documented.

Also - if you turn off the AGC - the IMD goes away and you end up adjusting the RF gain about where it was in the above picture. In other words - backing off the RF gain sufficiently is the same thing as turning off the AGC and then backing down the RF gain. I just don't bother with changing the setting. This also gives you some protection if a REALLY LOUD signal shows up... I wish everyone who says they turn off their AGC would understand this.

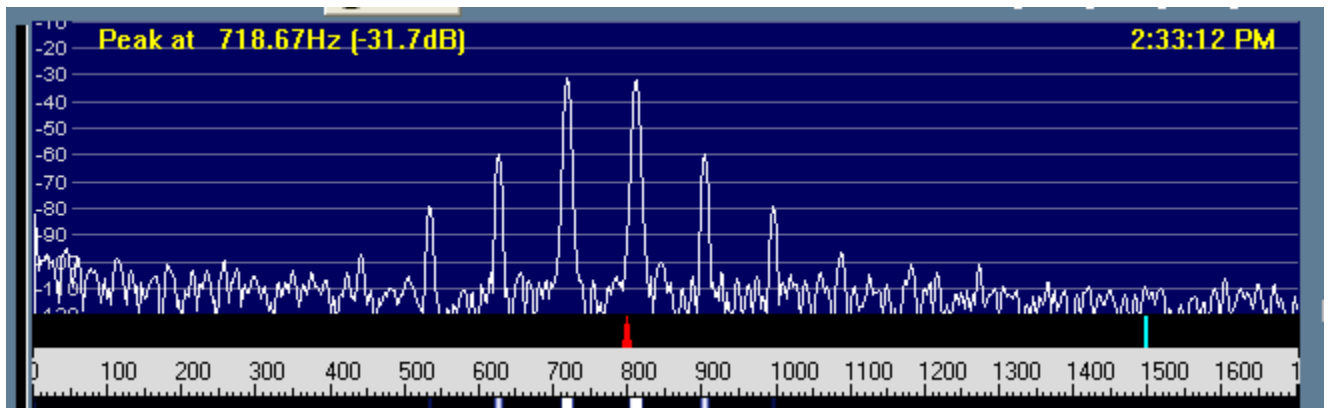
I don't find that I can make the first picture much better with any adjustments of the AGC HLD or THR.

Now to see how the AGC effects IMD with the RF Gain wide open. I had to rebuild my IMD test setup, so we are now on 3760 KHz - about 45 DB over S9 with ATT on. Here is what I have with the AGC on

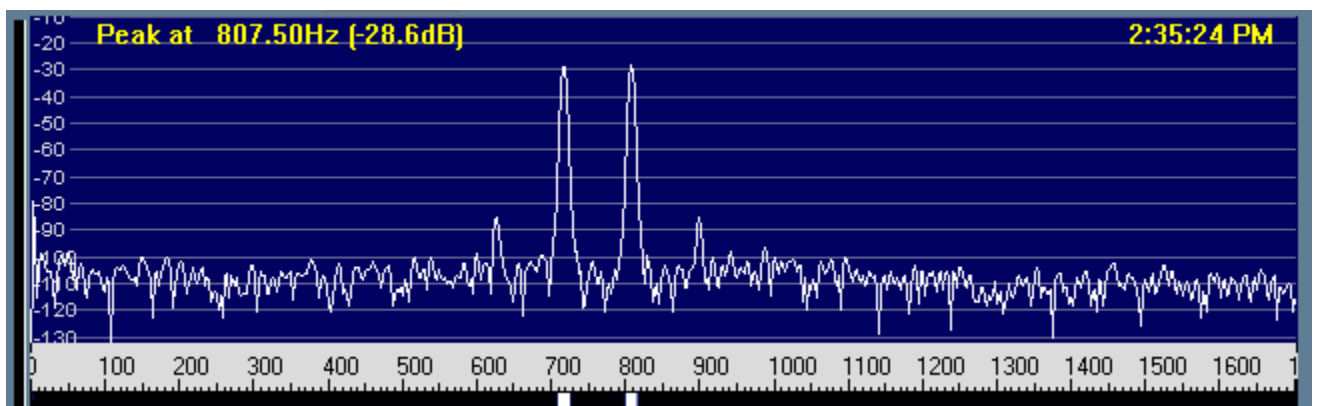
and RF gain wide open:



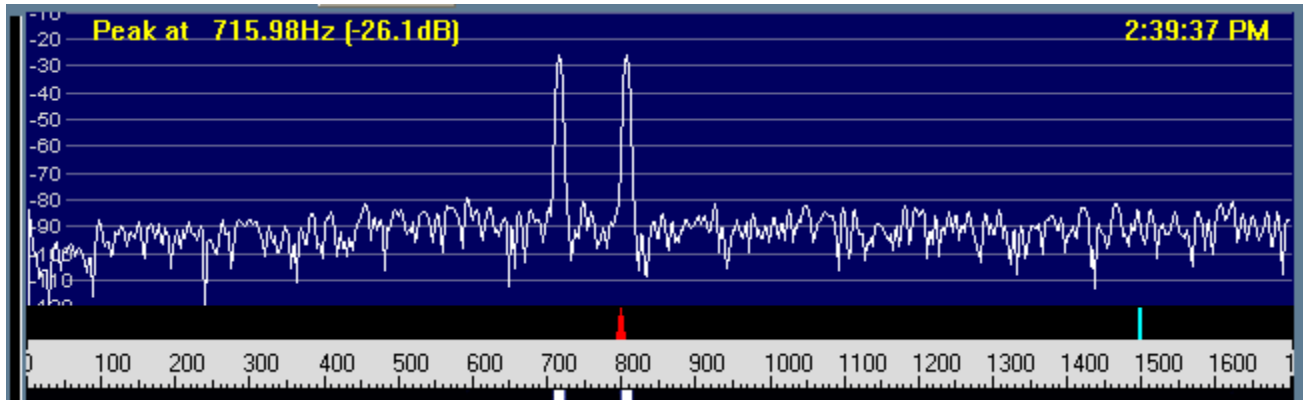
Now with the AGC off and RF gain still open (and AF gain WAY DOWN):



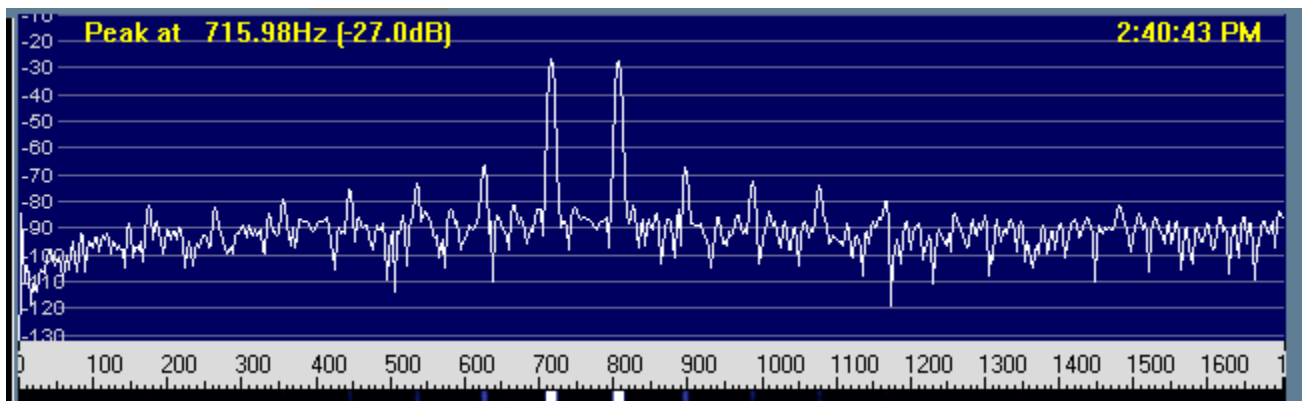
And backing the RF gain back to about 12 O'clock yields this:



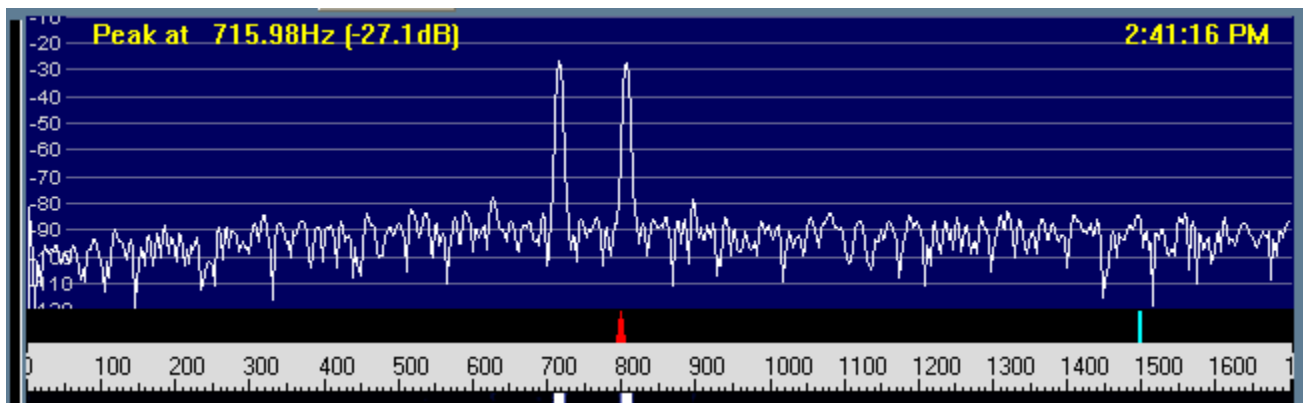
Okay - I clearly need some attenuation here. I am feeding signal into the RX antenna input. If I switch back to the SO239 - I still have a S7 signal. Here is what I see with AGC off and that condition:



Now with AGC on (FAST):



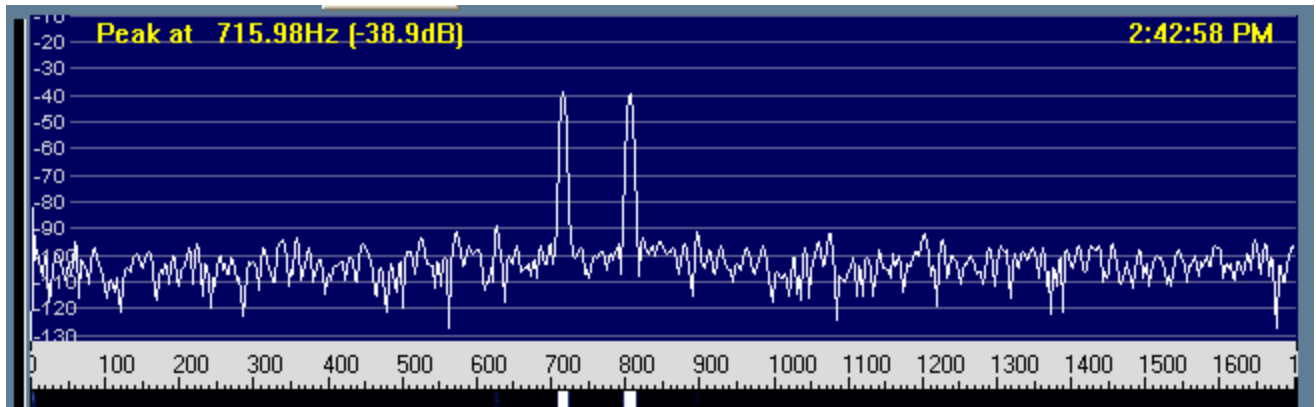
And AGC slow:



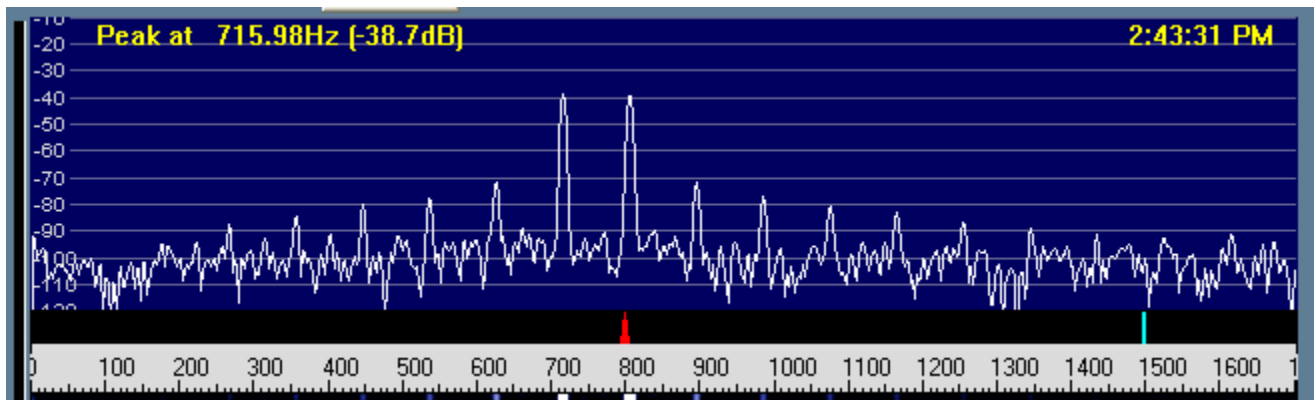
My current AGC settings:

AGC THR 002  
AGC SLP 000

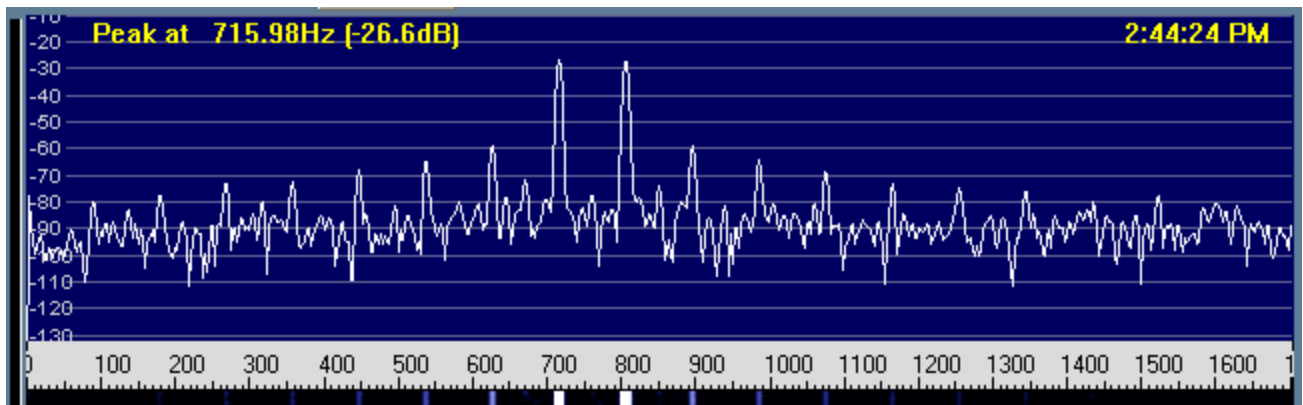
Changing SLP to 015 gives this with AGC Slow:



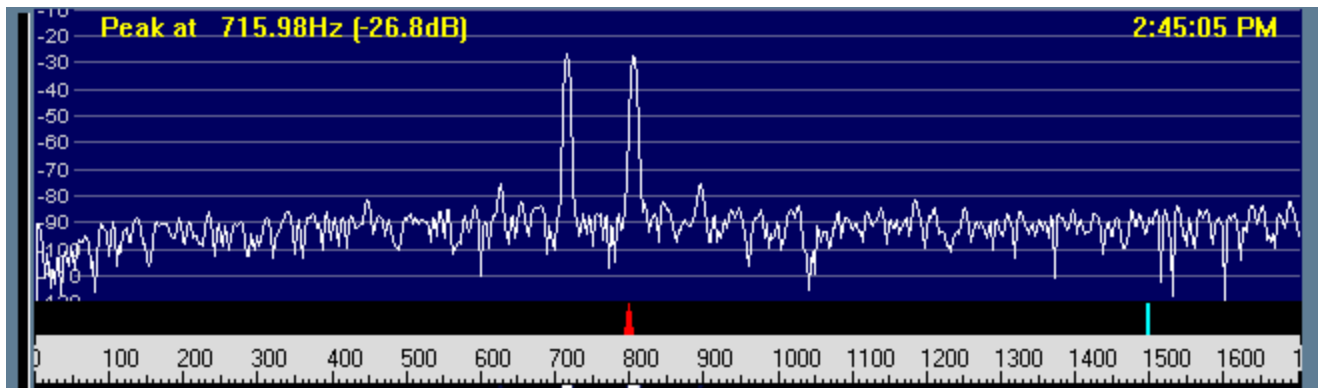
and with AGC FAST



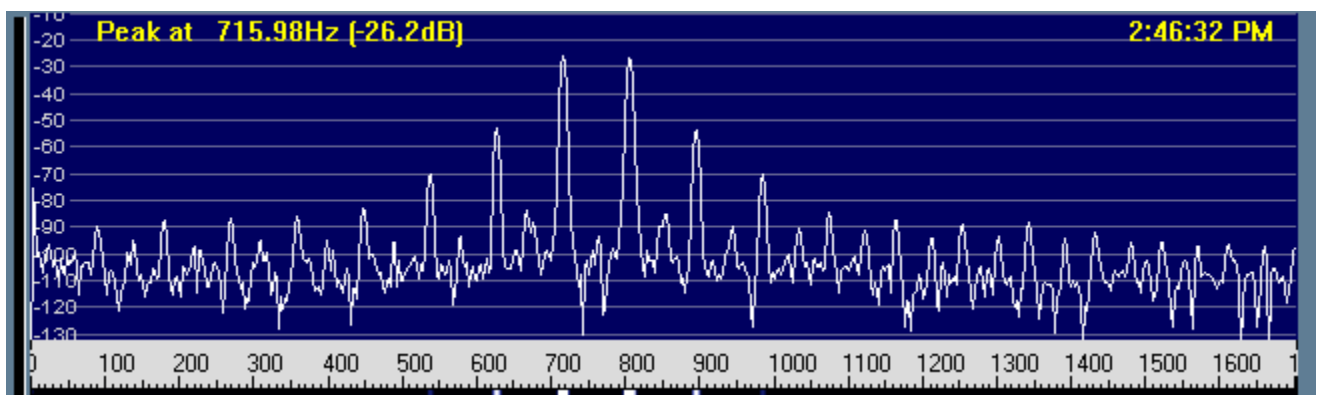
not much change. Going to AGC THR to 008 gives this with FAST



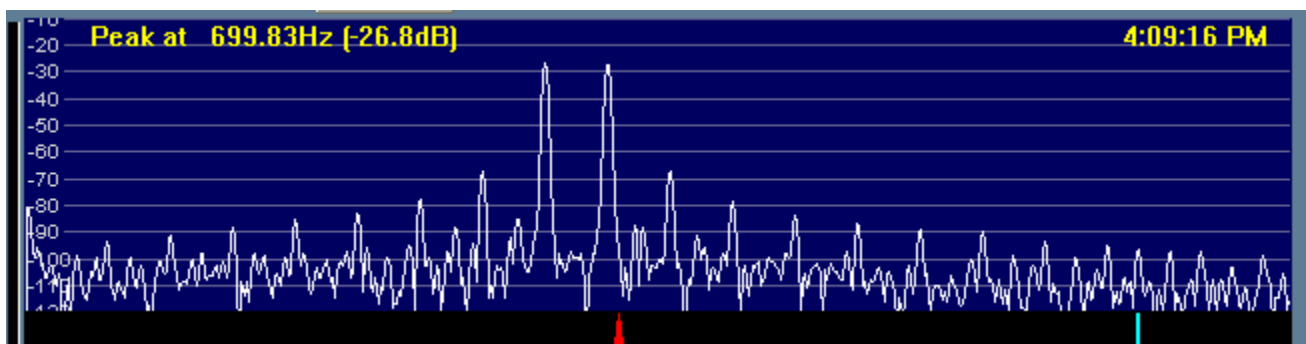
and AGC SLOW



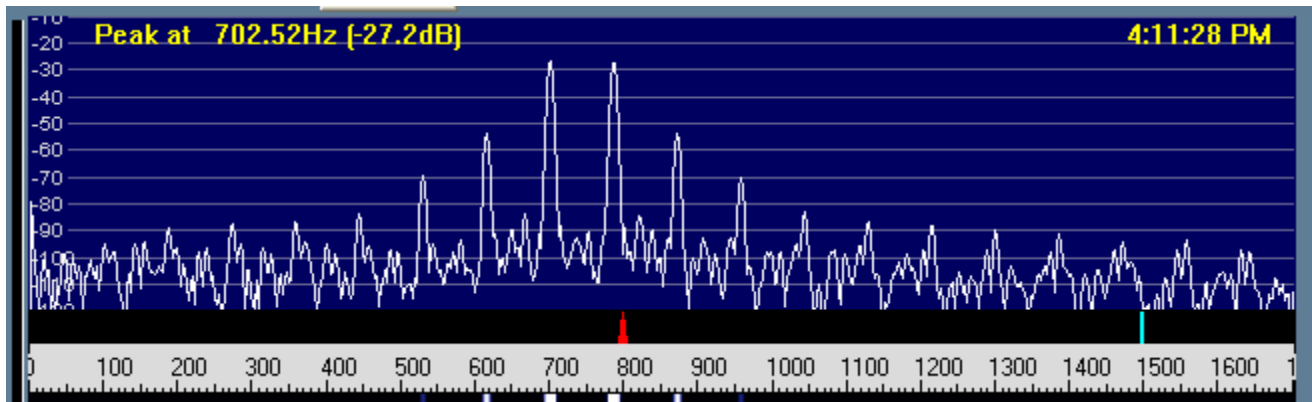
And just for fun - AGC SLOW with the RX ANT back so we are activating HW AGC



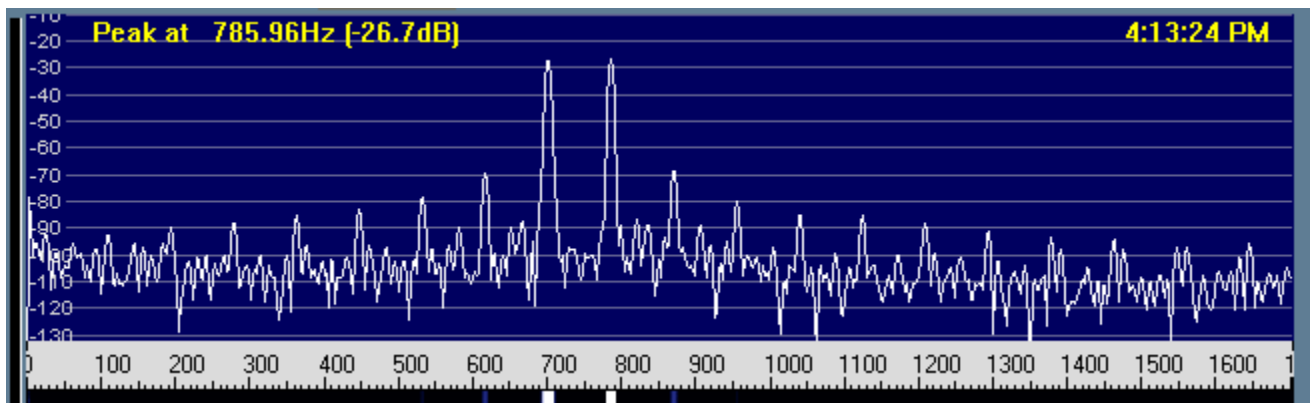
Now with 1 uf across C238:



That looks more good. Let me remove the cap to make sure.



Pretty bad again. Now let me try 2.1 uF



Just a tad better than the 1.1 uF case.

Tree N6TR 03-Dec-2011 and 04-Dec-2011