



Canopy Model 5700G

FCC ID: ABZ89FT7630



Technical Brief Canopy Model 5700G

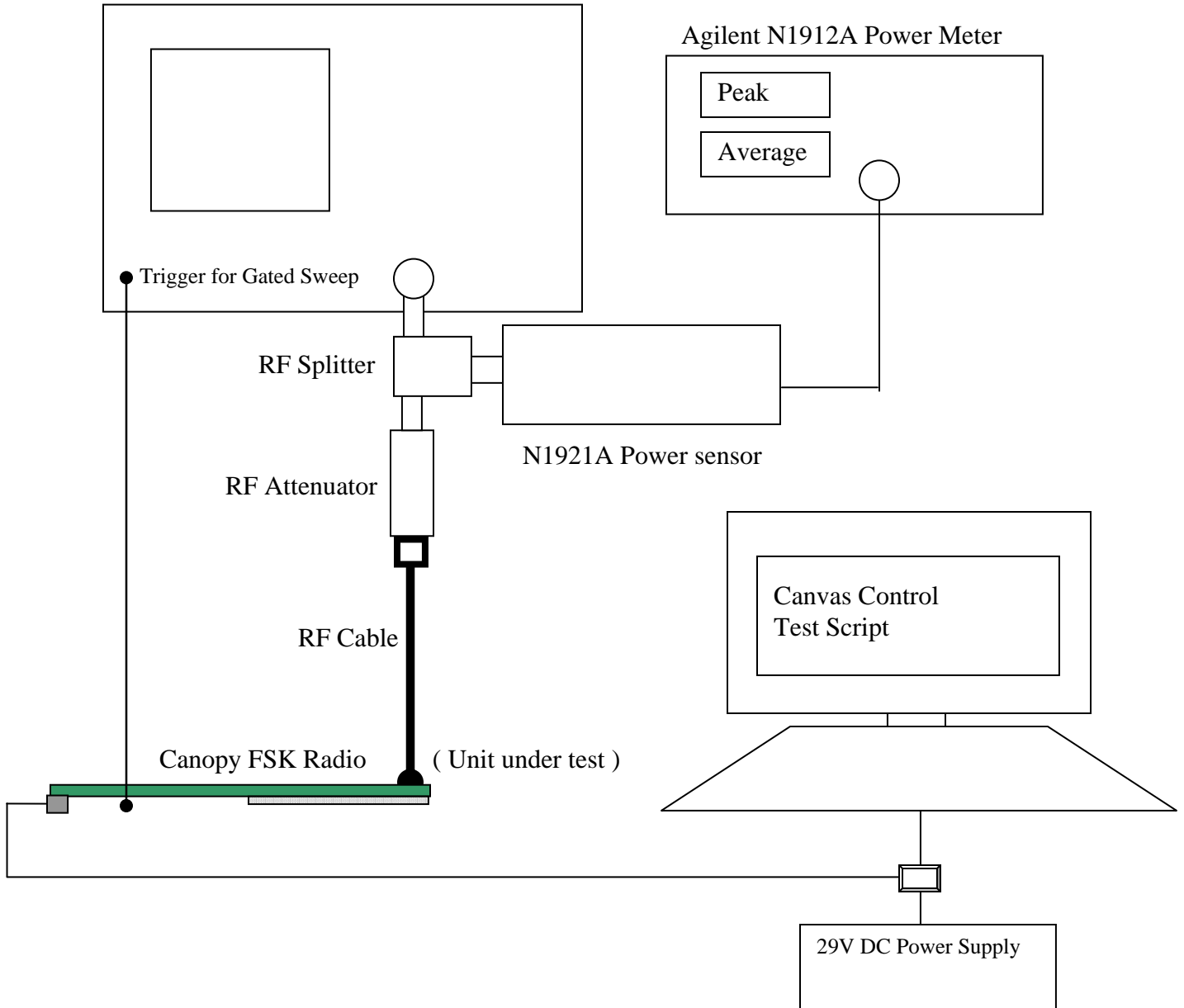
August 1st, 2008

Compliance testing with FCC rules part 15.247(a,b,d,e) was performed conducted. Measurements were made on Canopy unit serial #0A003ED2FA60.

Conducted test setup diagram is as follows:

Agilent E4440A PSA

Agilent N1912A Power Meter



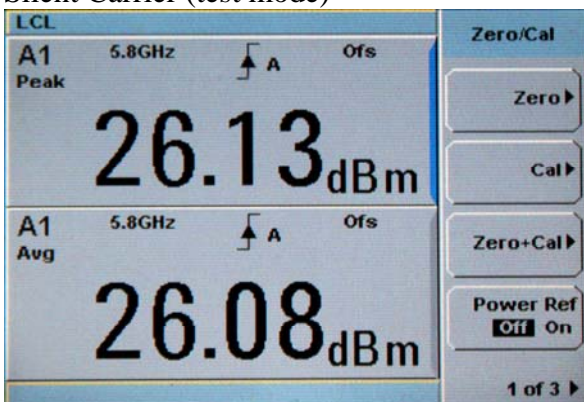
Calibration:

The silent carrier power was measured at all test frequencies. The highest power was determined to be at 5735MHz (low channel).

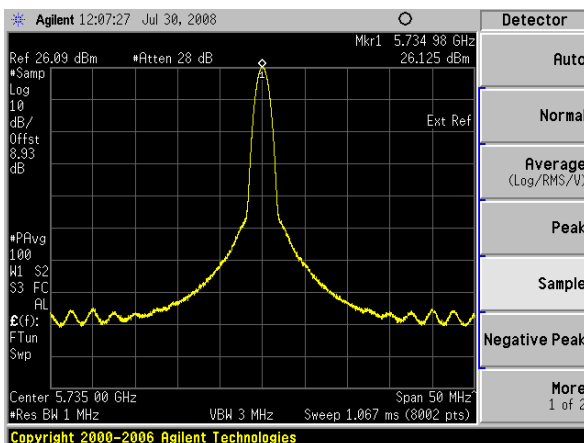
Setup photo:



Silent Carrier (test mode)



Silent carrier 5735MHz

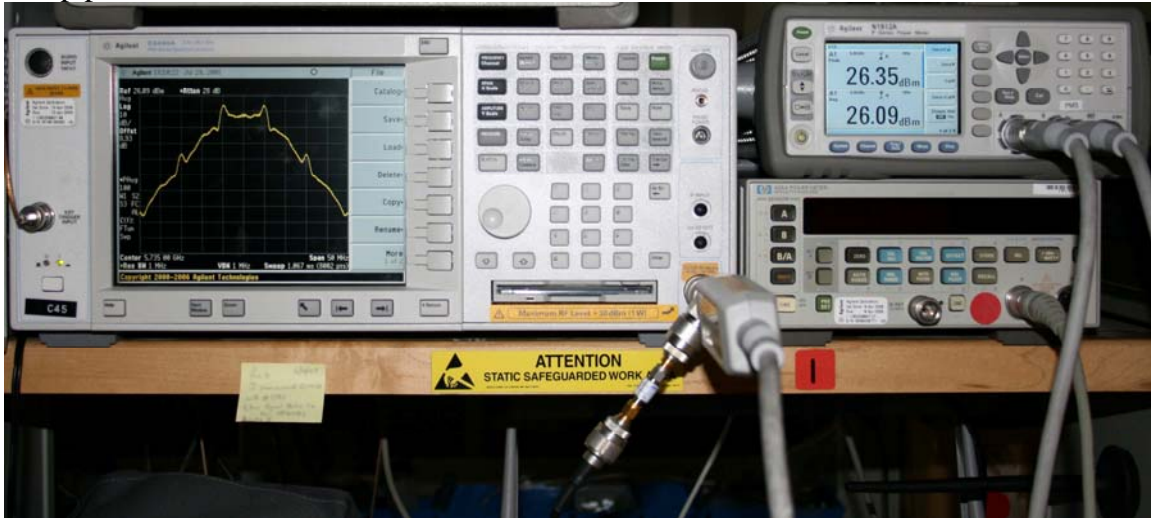


Silent carrier 5735MHz

The spectrum analyzer was correlated to the power meter.

It can be seen from the power meter measurements that both peak and average power compliance are demonstrated for each modulation mode.

Setup photo:



(1X rate)



Frequency 5735MHz Low Channel (1X Modulation Rate)

Highest power of all channels

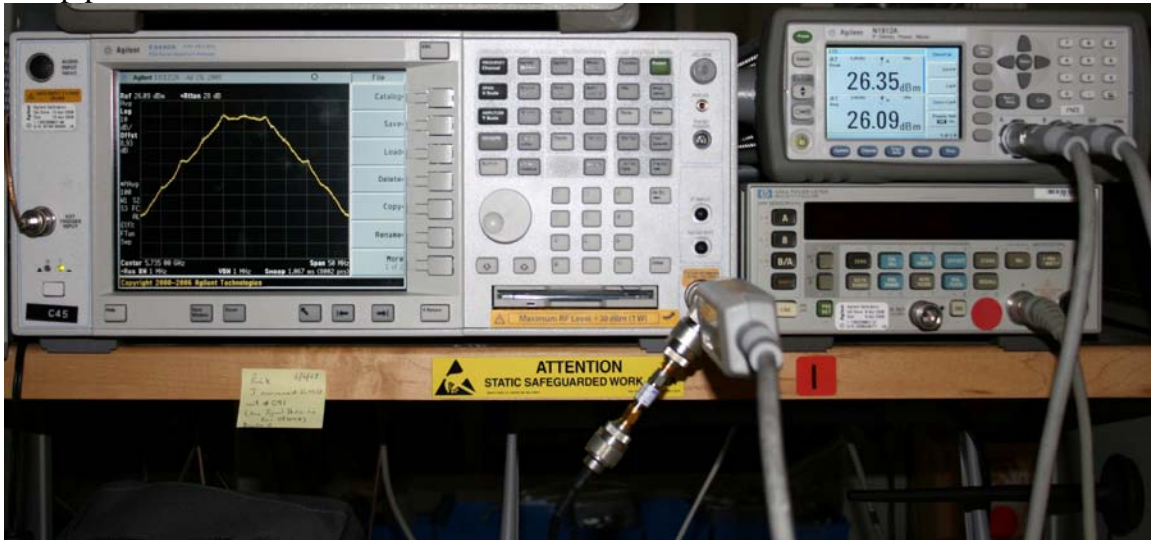


Frequency 5775MHz Mid Channel (1X Modulation Rate)



Frequency 5840MHz High Channel (1X Modulation Rate)

Setup photo:



(2X Rate)



Frequency 5735MHz Low Channel (2X Modulation Rate)

Highest power of all channels



Frequency 5775MHz Mid Channel (2X Modulation Rate)



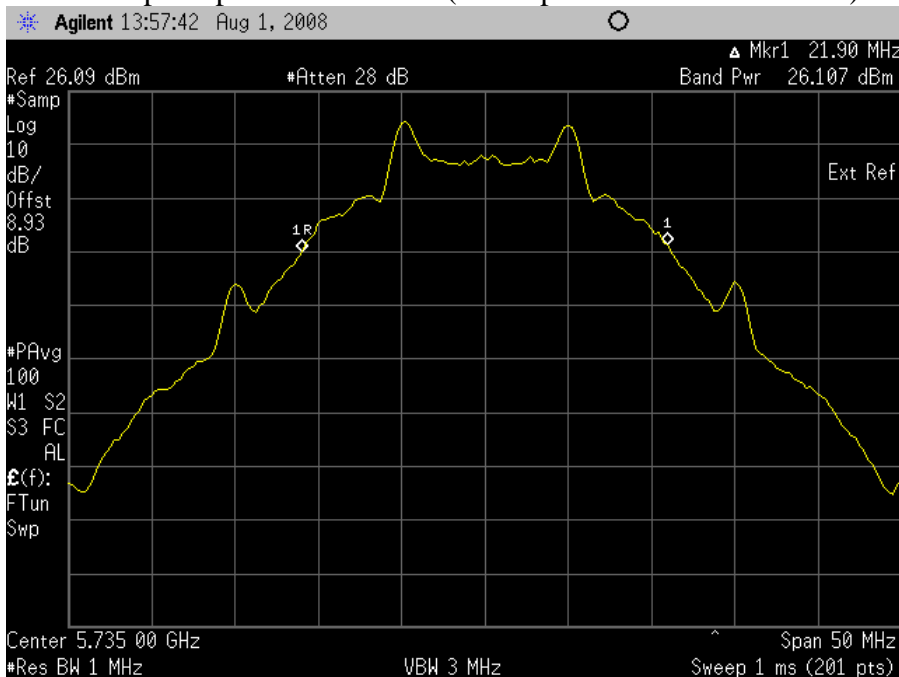
Frequency 5840MHz High Channel (2X Modulation Rate)

The following plots are a comparison of the measurement methods approved by the FCC per Measurement of Digital Transmission Systems Operating under Section 15.247 March23, 2005. The conducted output power was tested on a Canopy 5700G FSK radio. All four methods yielded similar results within 0.3dB whether peak or average measurement.

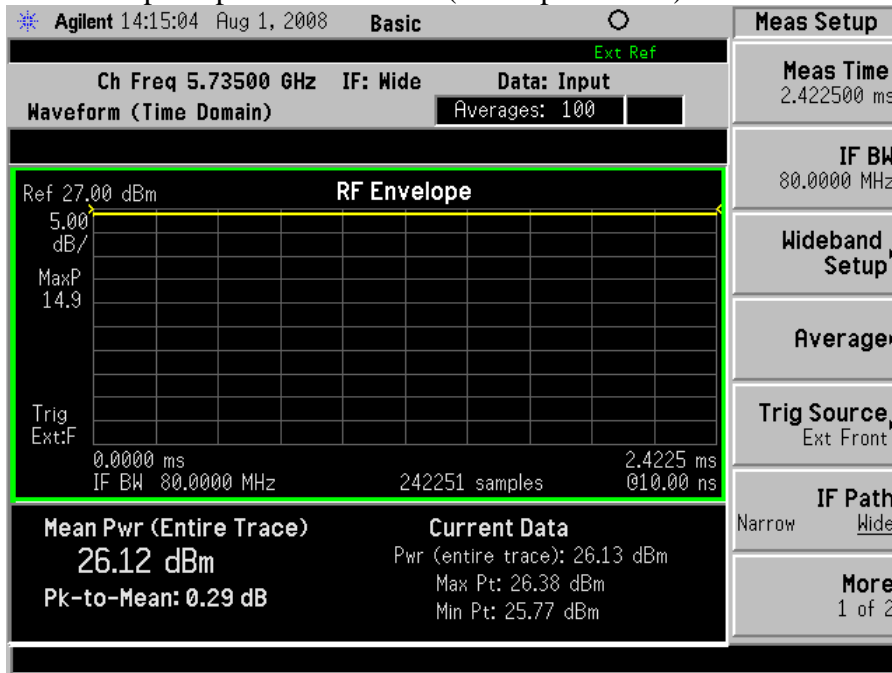
Power Output Option 1 (peak power meter)



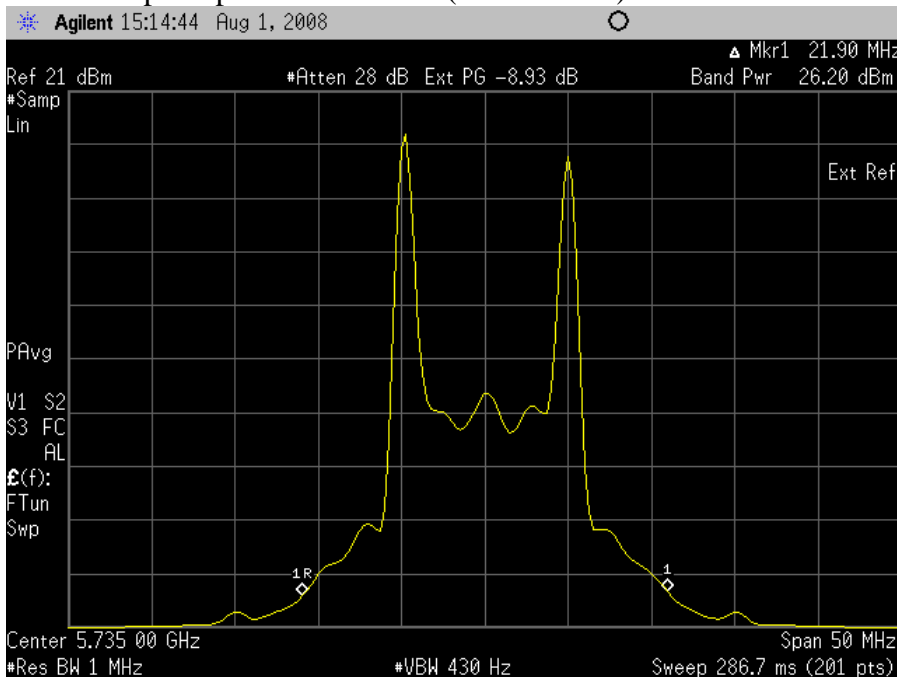
Power Output Option2: Method 1 (Band power over 26dB EBW)



Power Output Option2: Method 2 (zero span mode)



Power Output Option2: Method 3 (linear mode)



For a Canopy FSK radio we have demonstrated power methods option1 (peak power meter) and option 2 (methods 1, 2 and 3) all show powers ranging from 26.38dBm to 26.08dBm. This indicates that the difference between peak or average measurements is on the order of 0.3dB regardless of the measurement method used.

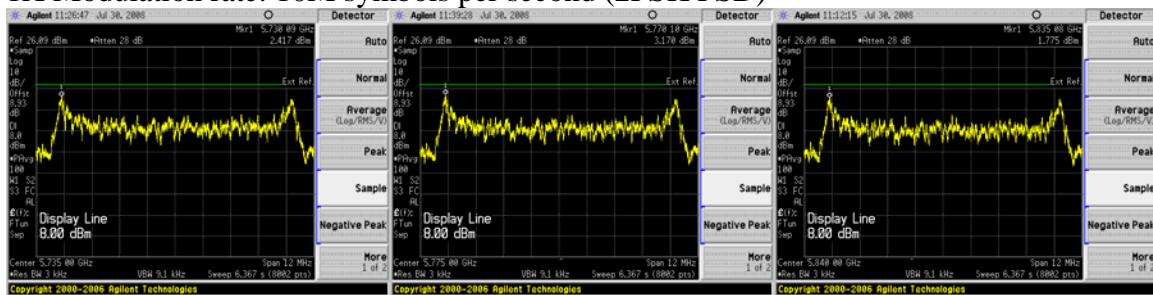
15.247(d) conducted Power Spectral Density

The plots shown below display the power spectral density results for the radio operation in the ISM frequency band 5725-5850MHz.

PSD measurements were taken using the following settings RBW=3kHz, VBW>9kHz, sample detector, max transmit power - gated sweep, 100 sweeps trace averaged, sweep time auto, with bin width set to < 0.5RBW setting.

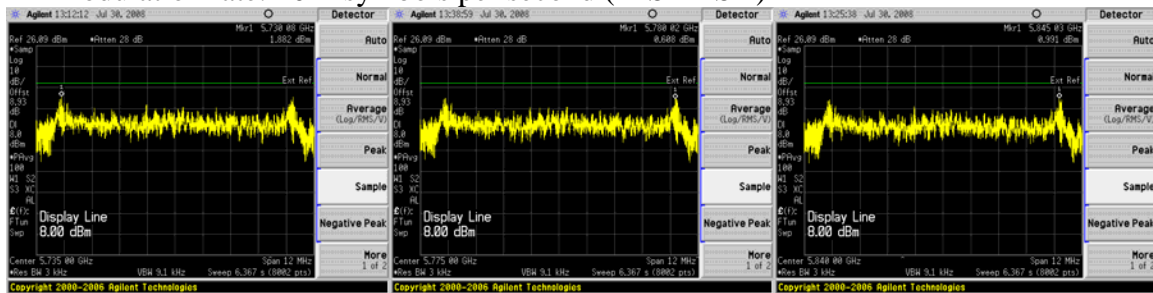
This measurement method is approved by the FCC per Measurement of Digital Transmission Systems March23, 2005.

1X Modulation rate: 10M symbols per second (2FSK PSD)



Test results show worst case margin to spec 4.83dB for 1X modulation rate mid channel 5775MHz.

2X Modulation rate: 20M symbols per second (4FSK PSD)

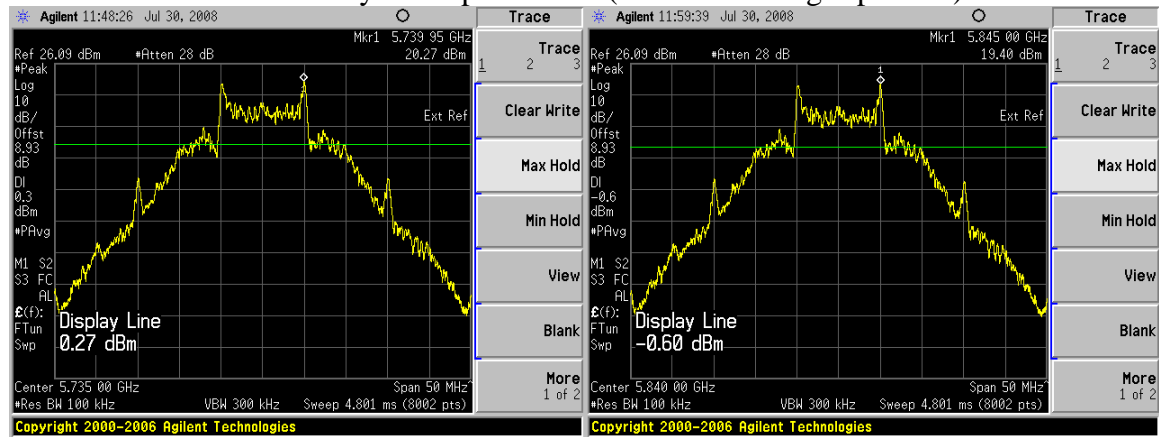


Test results show worst case margin to spec 6.118dB for 2X modulation rate mid channel 5735MHz.

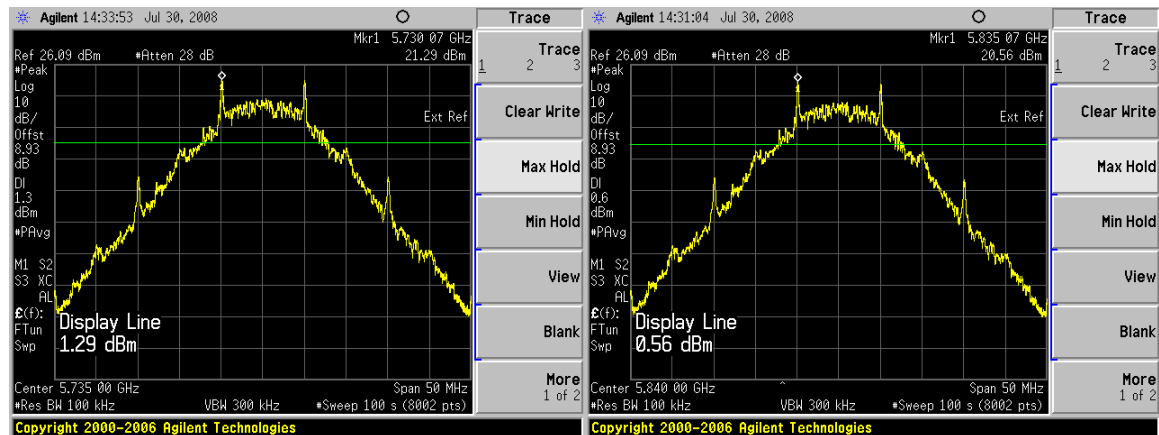
15.247(c) Band edge spurious requirements

The following plots show that the Canopy 5700G Radio produces acceptable out-of-band spectral output at the lowest and highest operating frequencies. The display line indicated the -20dB specification limit for non restricted out-of-band emissions.

1X Modulation rate: 10M symbols per second (2FSK Band edge spurious)



2X Modulation rate: 20M symbols per second (4FSK Band edge spurious)



It can be seen from the graphs that spectral emissions occur 20dB below the highest in-band emission outside the band of operation measured in a 100kHz resolution band width for both 1X and 2X modulation rates.

Test and Measurement Engineer:

A handwritten signature in black ink, appearing to read 'SMP', with a long horizontal stroke extending to the right.

Steven M. Payne, Senior Staff Engineer

More than 20 Years of progressive RF measurement experience. Bachelor of Science Degree in Electrical Engineering from University of Illinois Chicago Circle Campus 1998. Professional Metrologist for United States Marine Corps Active Duty and Reserves 1987 through 1997.

Reviewing Engineer:

A handwritten signature in black ink, appearing to read 'Richard J. Keniuk', written in a cursive style.

Richard J. Keniuk

More than 25 years experience in communications design and engineering in FM broadcast, television broadcast and wideband communications systems. Bachelor of Science Degree in Electrical Engineering from Iowa State University of Engineering and Technology 1989. Holder of General Class Radiotelephone (originally First Class) and Amateur Radio licenses.