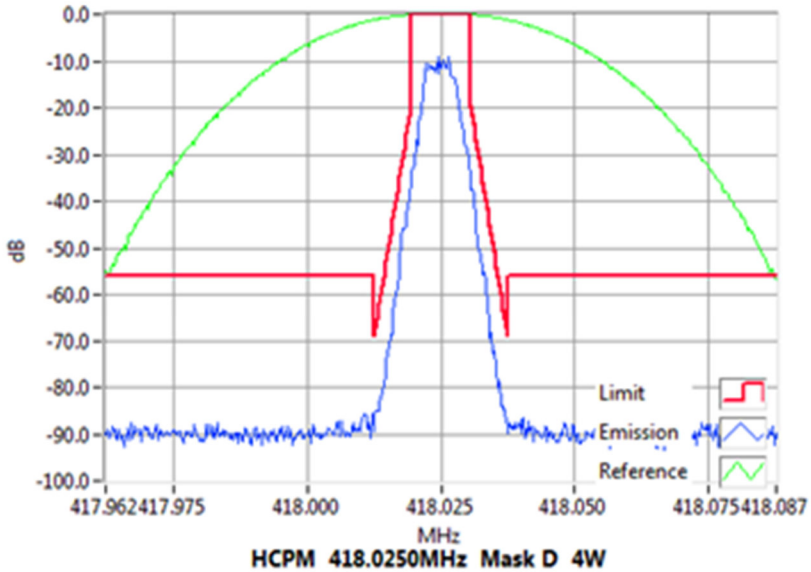
Transmitter Spectrum Masks

APCO P25 phase-2

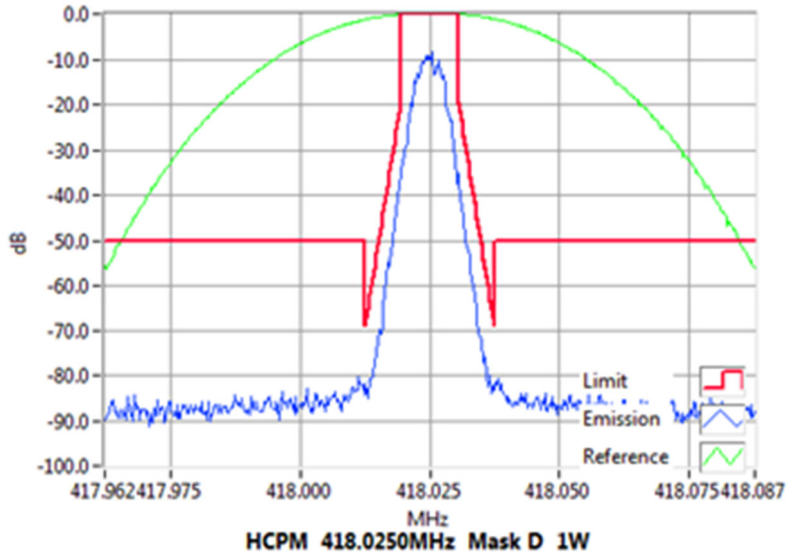
SPECIFICATION: FCC 47 CFR 2.1049 (c) RSS-119 5.5

Tx FREQUENCY: 418.025 MHz 4 W 12.5 kHz Channel Spacing



HCPM 418.0250MHz Mask D 4W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Tx FREQUENCY: 418.025 MHz 1 W 12.5 kHz Channel Spacing



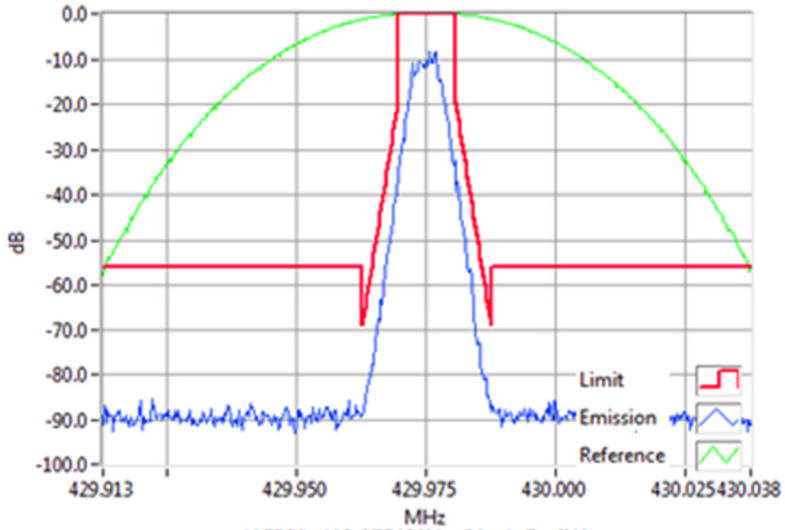
HCPM 418.0250MHz Mask D 1W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Transmitter Spectrum Masks

APCO P25 phase-2

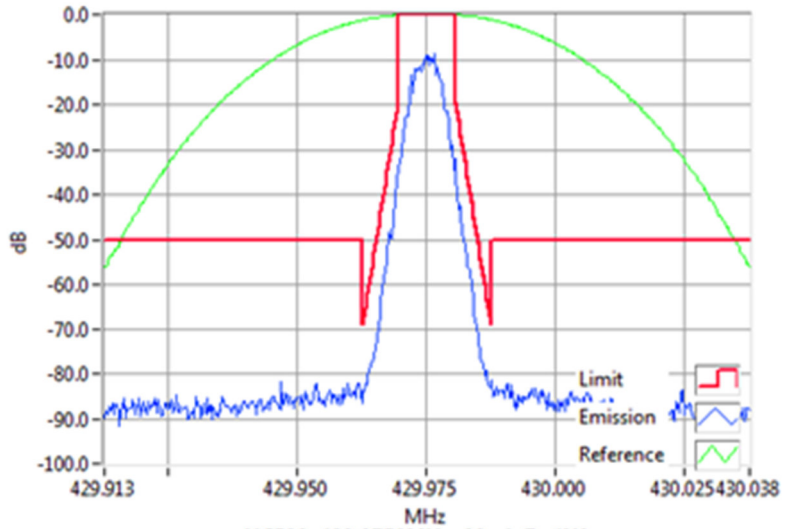
SPECIFICATION: FCC 47 CFR 2.1049 (c) RSS-119 5.5

Tx FREQUENCY: 429.975 MHz 4 W 12.5 kHz Channel Spacing



HCPM 429.9750MHz Mask D 4W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Tx FREQUENCY: 429.975 MHz 1 W 12.5 kHz Channel Spacing



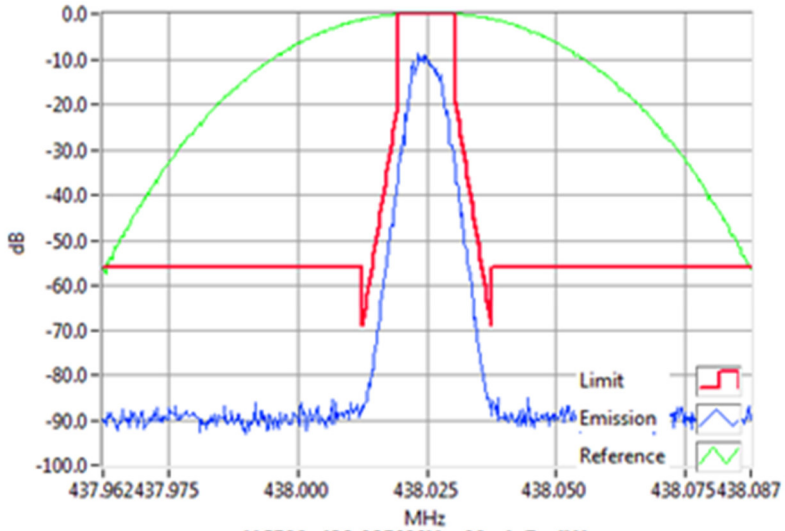
HCPM 429.9750MHz Mask D 1W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Transmitter Spectrum Masks

APCO P25 phase-2

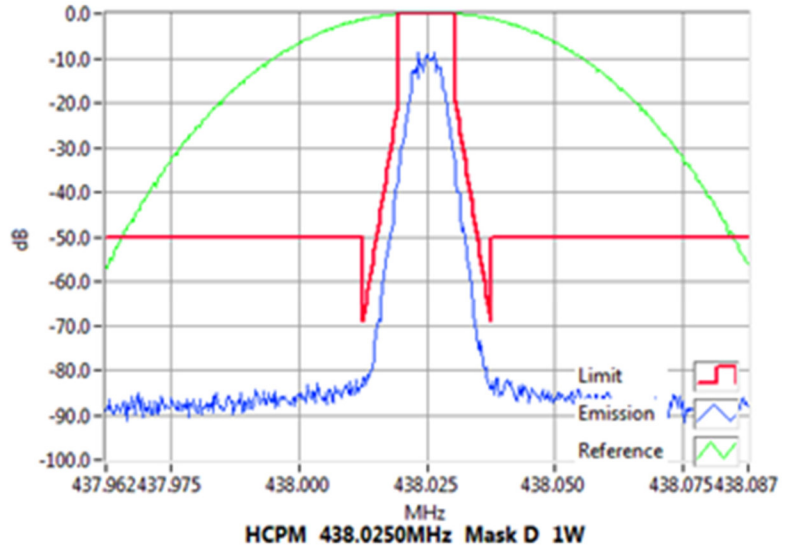
SPECIFICATION: FCC 47 CFR 2.1049 (c) RSS-119 5.5

Tx FREQUENCY: 438.025 MHz 4 W 12.5 kHz Channel Spacing



HCPM 438.0250MHz Mask D 4W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Tx FREQUENCY: 438.025 MHz 1 W 12.5 kHz Channel Spacing



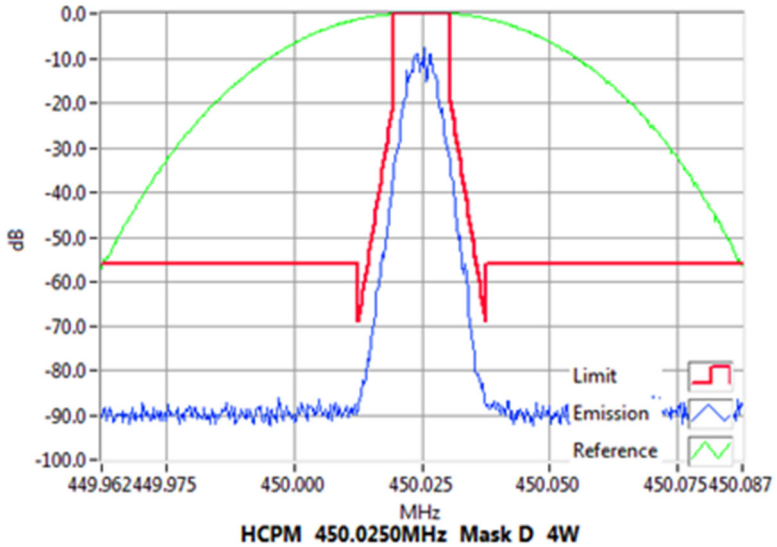
HCPM 438.0250MHz Mask D 1W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Transmitter Spectrum Masks

APCO P25 phase-2

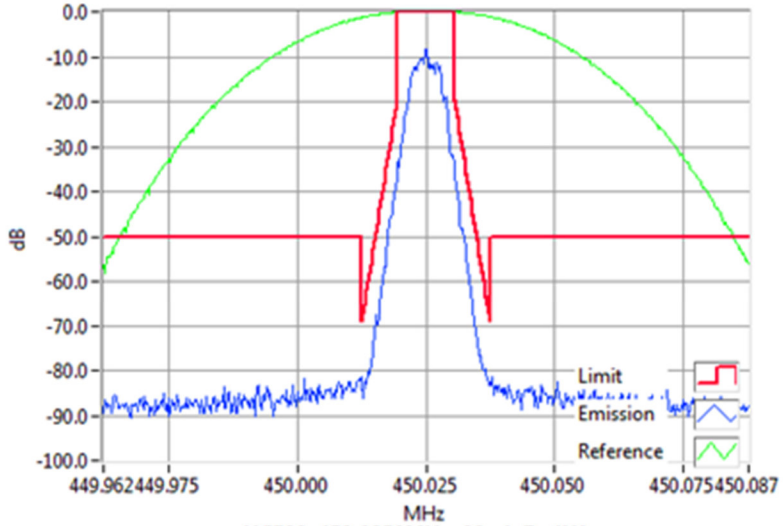
SPECIFICATION: FCC 47 CFR 2.1049 (c) RSS-119 5.5

Tx FREQUENCY: 450.025 MHz 4 W 12.5 kHz Channel Spacing



HCPM 450.0250MHz Mask D 4W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Tx FREQUENCY: 450.025 MHz 1 W 12.5 kHz Channel Spacing



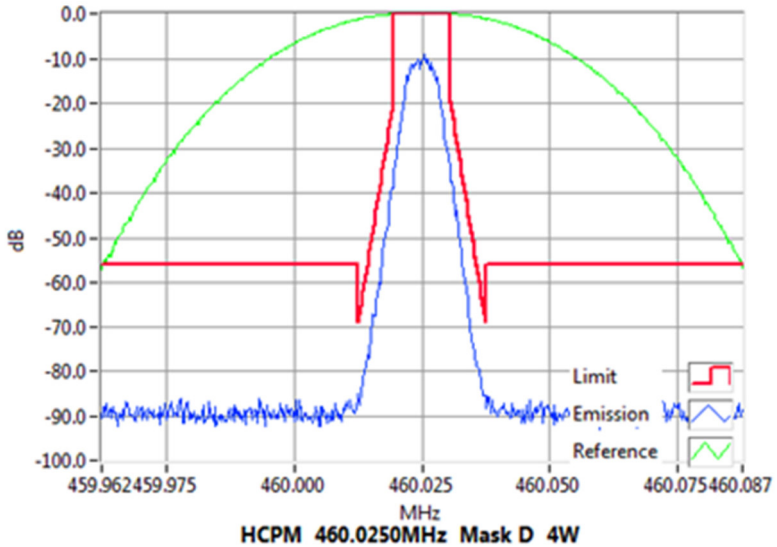
HCPM 450.0250MHz Mask D 1W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Transmitter Spectrum Masks

APCO P25 phase-2

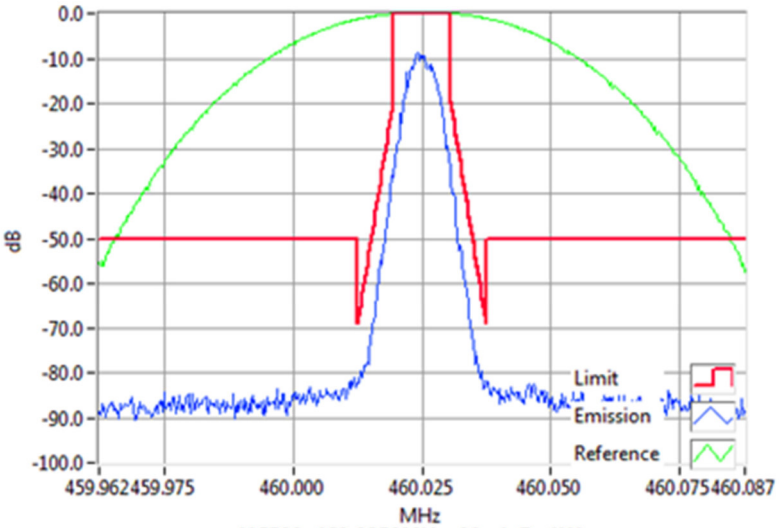
SPECIFICATION: FCC 47 CFR 2.1049 (c) RSS-119 5.5

Tx FREQUENCY: 460.025 MHz 4 W 12.5 kHz Channel Spacing



HCPM 460.0250MHz Mask D 4W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Tx FREQUENCY: 460.025 MHz 1 W 12.5 kHz Channel Spacing



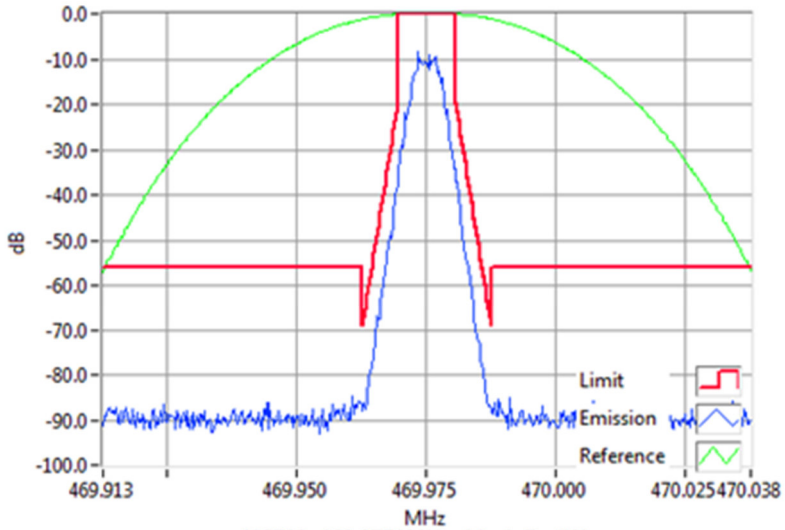
HCPM 460.0250MHz Mask D 1W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Transmitter Spectrum Masks

APCO P25 phase-2

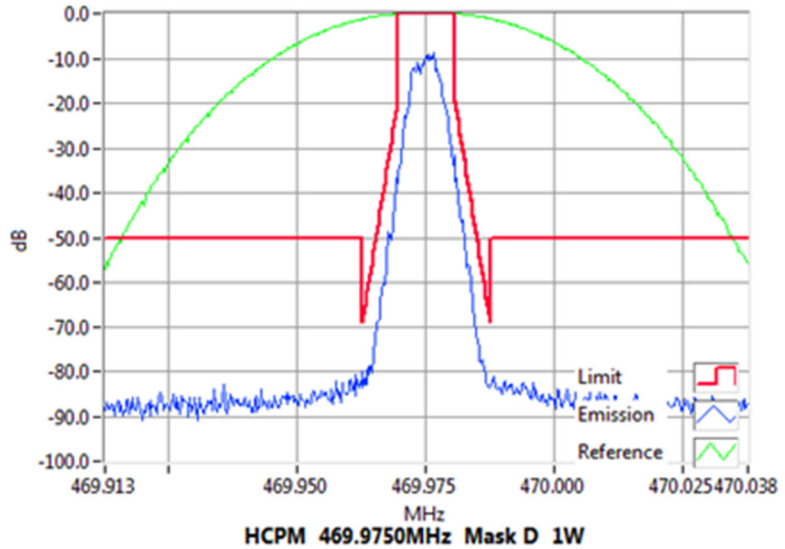
SPECIFICATION: FCC 47 CFR 2.1049 (c) RSS-119 5.5

Tx FREQUENCY: 469.975 MHz 4 W 12.5 kHz Channel Spacing



HCPM 469.9750MHz Mask D 4W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

Tx FREQUENCY: 469.975 MHz 1 W 12.5 kHz Channel Spacing



HCPM 469.9750MHz Mask D 1W
RBW=100Hz, VBW=1000Hz, Detector Mode=Peak
Result=Pass

TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED)

SPECIFICATIONS: FCC 47 CFR 2.1051 RSS-119 5.8

GUIDE: ANSI C63.26 5.7

MEASUREMENT PROCEDURE:

1. Refer Annex A for equipment set up.
2. The frequency range examined was from the lowest frequency generated within the EUT, to a frequency higher than the 10th Harmonic: 9 kHz to Fc-BW
   Fc+ BW to 10Fc (4.7GHz)
3. The EUT was set to transmit high or low power. A scan is performed with a resolution bandwidth of 100 kHz and a video bandwidth of 300 kHz for frequencies up to 1 GHz, and a resolution bandwidth of 1 MHz and a video bandwidth of 3 MHz for frequencies above 1 GHz.
4. For frequencies close to the carrier the spectrum was measured using a resolution bandwidth of 1kHz, the results were then integrated to give measurements for 100kHz bandwidth.
5. A high-pass, band reject filter was used for frequencies from 400MHz to 520MHz.
6. For each frequency range the spectrum analyser was loaded with the appropriate calibration figures to compensate for the cables, attenuator, and filter losses, allowing the emission levels to be read directly with no further calculation.
7. The results of the various sweeps were combined programmatically to give charts for frequencies near the carrier, up to 1GHz and above 1GHz.

   The calibrations are loaded as an overall reference level offset plus a set of correction factors for the required frequency band.

Spurious emissions which were attenuated by more than 20 dB below the limit were not recorded.

Example of attenuation correction: (dB)

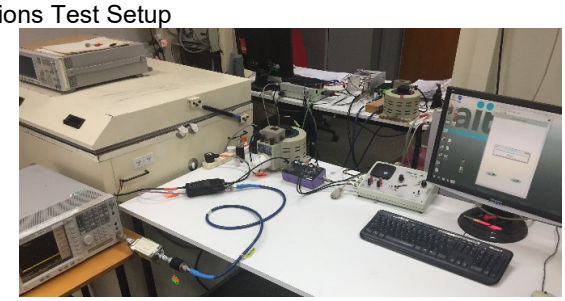
E3673 20dB 25W BD5871	19.83	
E5028 1m5 Blue 501868	0.29	
E3384 400_520MHz HPBRF	37.67	
Total Attenuation @ 500 MHz	57.79	Sum of component attenuation (a)
Amplitude offset	27.01	(b)
Correction @ 500 MHz	30.78	(a-b)

MEASUREMENT UNCERTAINTY: ≤12.75 GHz ± 3.0 dB

MEASUREMENT RESULTS:
See the tables and plots on the following pages for 12.5 kHz channel spacing.

LIMIT CLAUSES: FCC 47 CFR 90.210 RSS-119 5.8

Photo: Conducted Emissions Test Setup



Spurious Emissions (Tx Conducted)

SPECIFICATION: FCC 47 CFR 2.1051 RSS-119 5.8

12.5 kHz Channel Spacing 406.125 MHz @ 4 W Emission Mask D

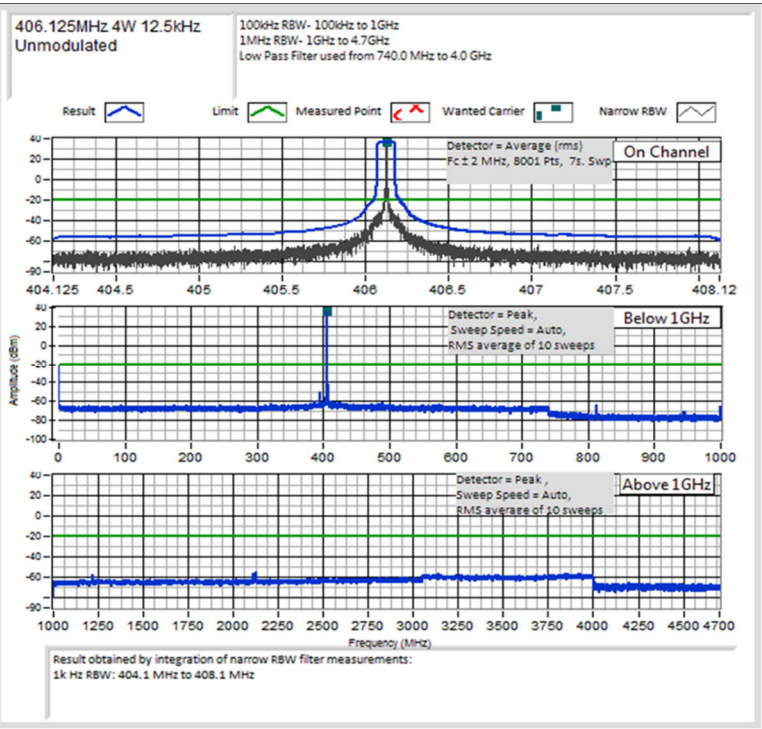
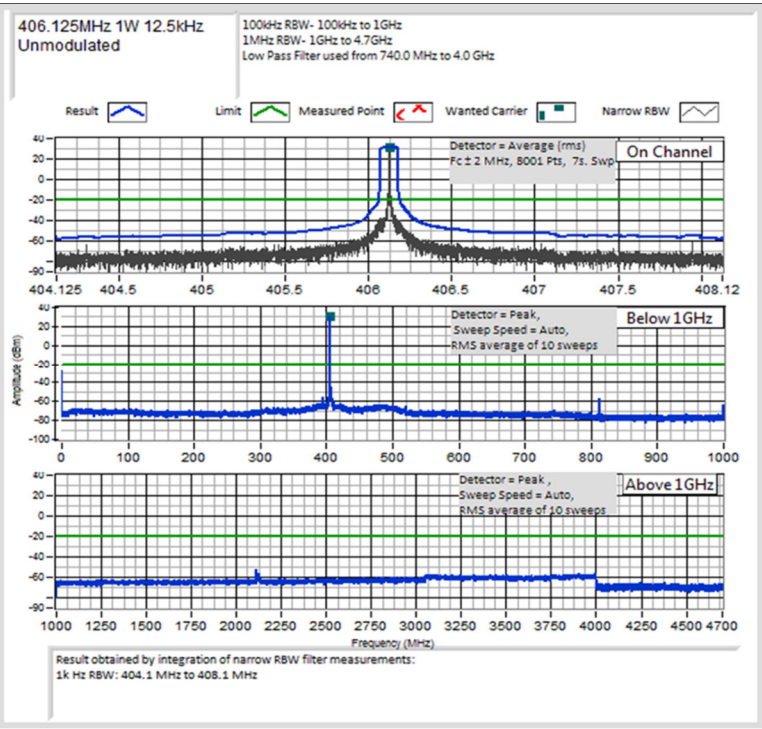
Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~

12.5 kHz Channel Spacing 406.125 MHz @ 1 W Emission Mask D

Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~
No emissions were detected at a level greater than 20 dB below the limit.		

Spurious Emissions (Tx Conducted)

406.125 MHz, 9 kHz to 4.7 GHz scan

4 W	1 W
	

Spurious Emissions (Tx Conducted)

SPECIFICATION: FCC 47 CFR 2.1051 RSS-119 5.8

12.5 kHz Channel Spacing 418.025 MHz @ 4 W Emission Mask D

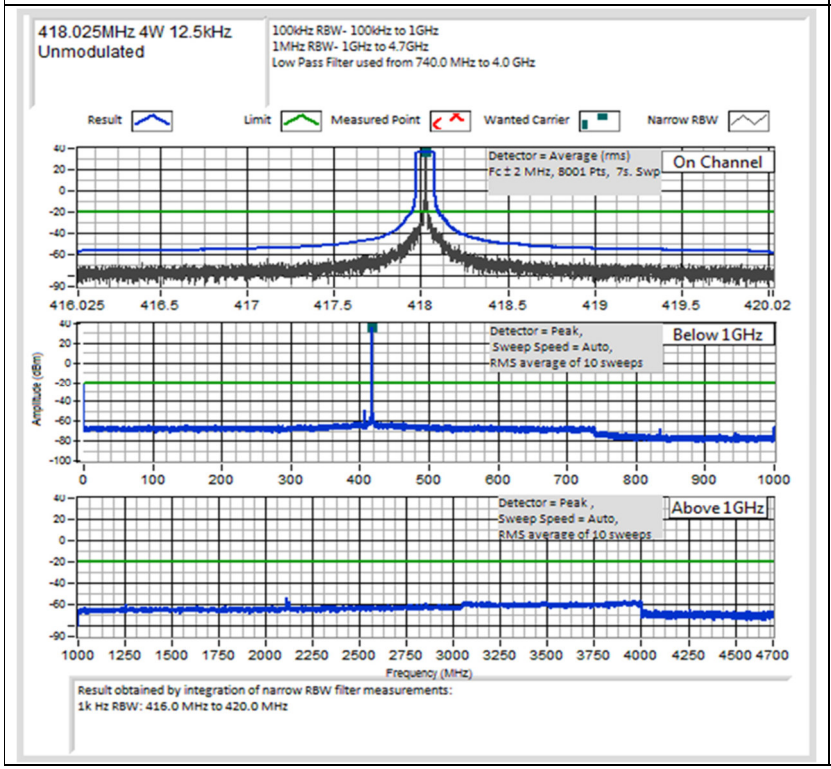
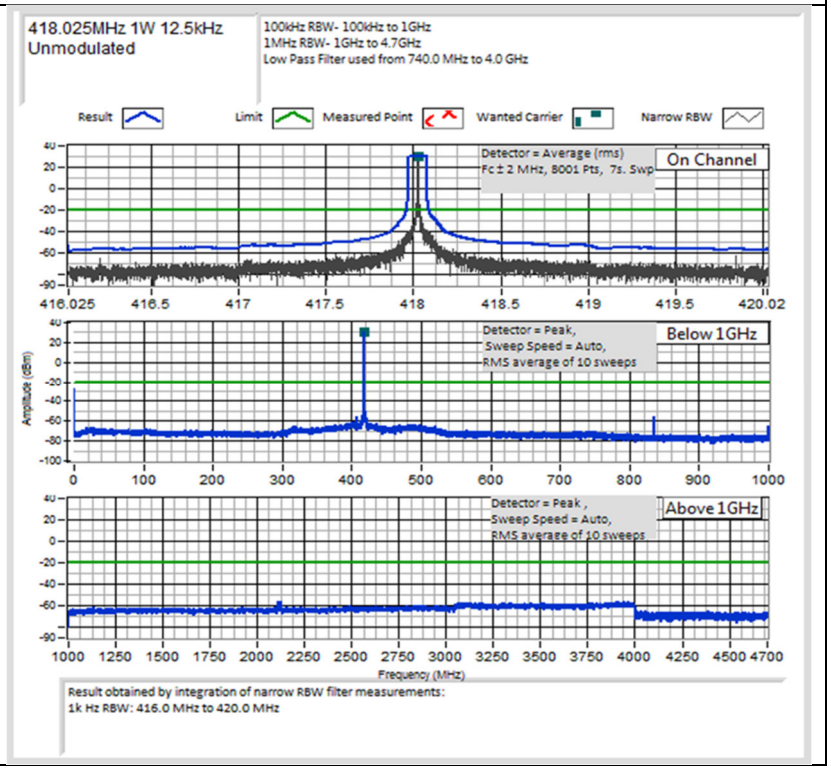
Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~

12.5 kHz Channel Spacing 418.025 MHz @ 1 W Emission Mask D

Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~
No emissions were detected at a level greater than 20 dB below the limit.		

Spurious Emissions (Tx Conducted)

418.025 MHz, 9 kHz to 4.7 GHz scan

4 W	1 W
	

Spurious Emissions (Tx Conducted)

SPECIFICATION: FCC 47 CFR 2.1051 RSS-119 5.8

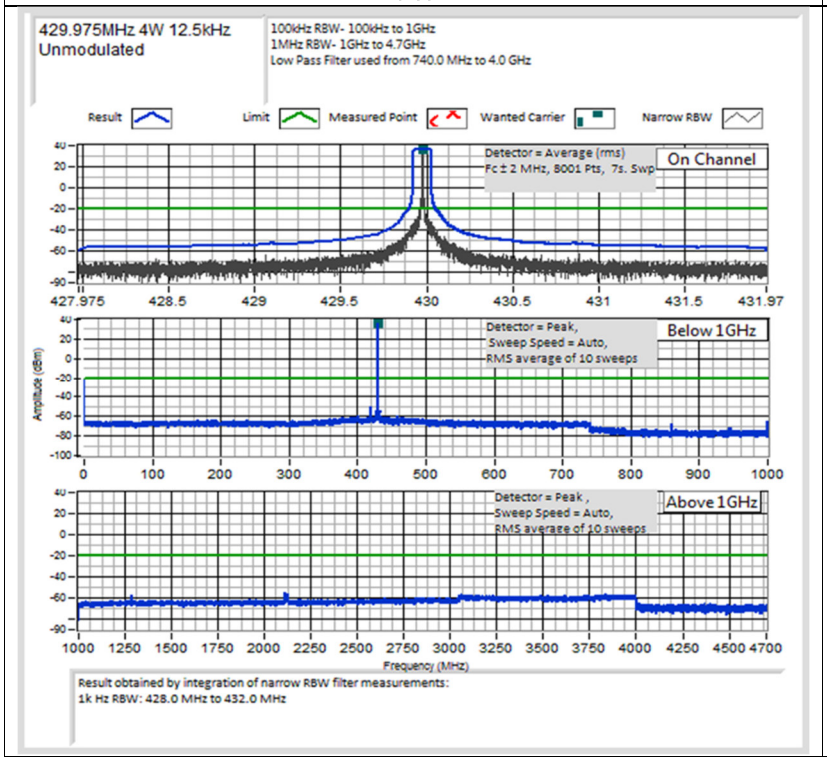
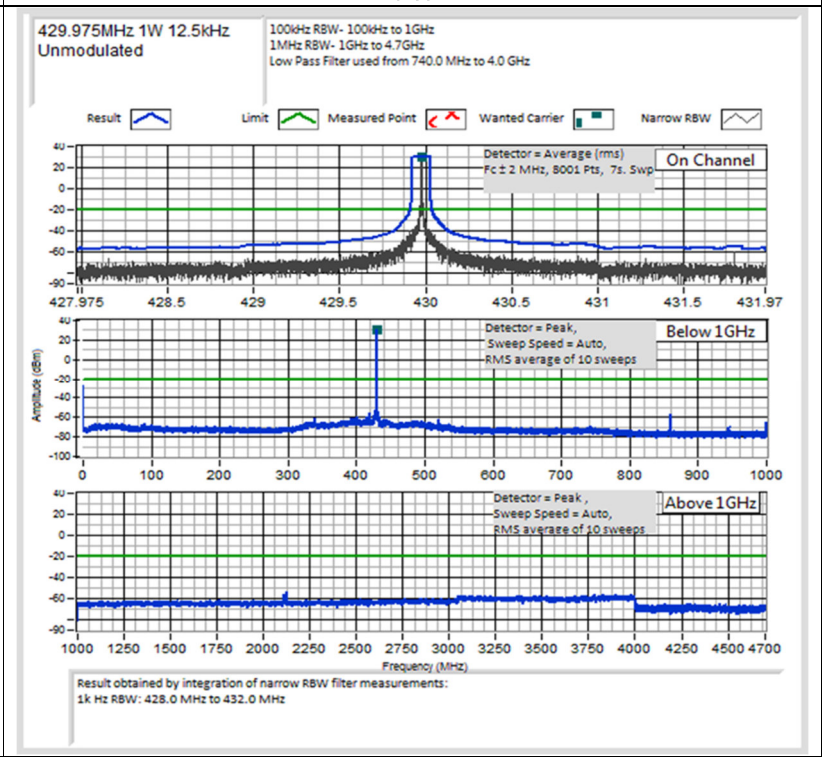
12.5 kHz Channel Spacing 429.975 MHz @ 4 W Emission Mask D

Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~

12.5 kHz Channel Spacing 429.975 MHz @ 1 W Emission Mask D

Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~
No emissions were detected at a level greater than 20 dB below the limit.		

Spurious Emissions (Tx Conducted)

429.975 MHz, 9 kHz to 4.7 GHz scan	
4 W	1 W
	

Spurious Emissions (Tx Conducted)

SPECIFICATION: FCC 47 CFR 2.1051 RSS-119 5.8

12.5 kHz Channel Spacing 438.025 MHz @ 4 W Emission Mask D

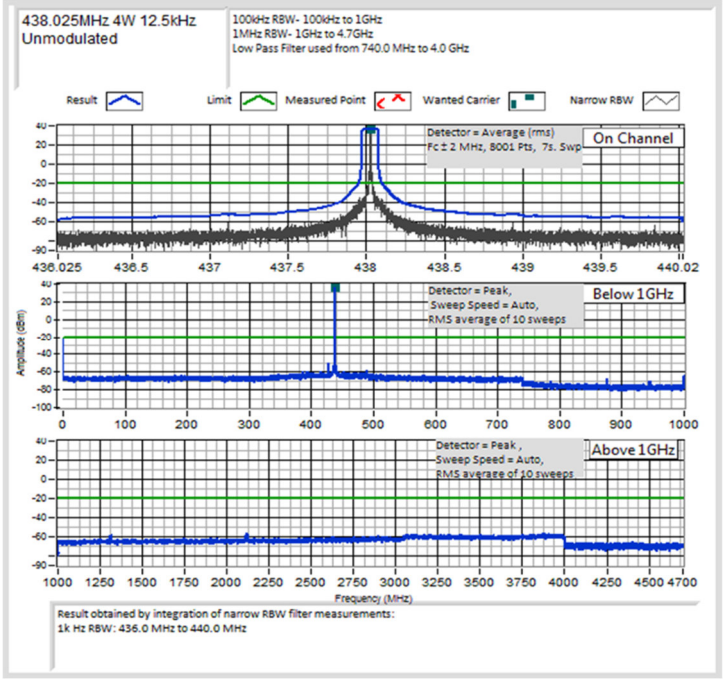
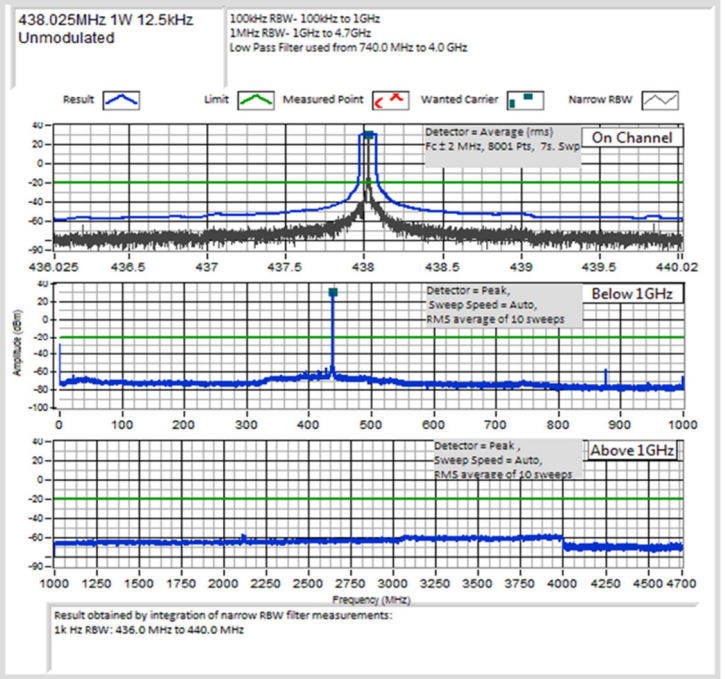
Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~

12.5 kHz Channel Spacing 438.025 MHz @ 1 W Emission Mask D

Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~
No emissions were detected at a level greater than 20 dB below the limit.		

Spurious Emissions (Tx Conducted)

438.025 MHz, 9 kHz to 4.7 GHz scan

4 W	1 W
	

Spurious Emissions (Tx Conducted)

SPECIFICATION: FCC 47 CFR 2.1051 RSS-119 5.8

12.5 kHz Channel Spacing 450.025 MHz @ 4 W Emission Mask D

Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~

12.5 kHz Channel Spacing 450.025 MHz @ 1 W Emission Mask D

Emission Frequency (MHz)	Level (dBm)	Level (dBc)
~	~	~
No emissions were detected at a level greater than 20 dB below the limit.		