

EXHIBIT 6**INDEX OF SUBMITTED MEASURED DATA**

This exhibit contains the measured data for this equipment as follows:

EXHIBIT 6A - RF Power Output**EXHIBIT 6B – Modulation Techniques and Occupied Bandwidth**

- 6B-1 – 806.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask Y (IC Only)
- 6B-2 – 809.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask B, Mask 90.691
- 6B-3 – 815.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask B, Mask 90.691
- 6B-4 – 815.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask Y (IC Only)
- 6B-5 – 823.925 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask B, Mask 90.691
- 6B-6 – 823.925 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask Y (IC Only)
- 6B-7 – 851.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask Y (IC Only)
- 6B-8 – 854.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask B, Mask 90.691
- 6B-9 – 859.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask B, Mask 90.691
- 6B-10 – 859.025 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask Y (IC Only)
- 6B-11 – 868.9875 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask B, Mask 90.691
- 6B-12 – 868.9875 MHz, DQPSK Data & Voice Modulation, 22K0D1W Mask Y (IC Only)

EXHIBIT 6C - Conducted Spurious Emissions

- 6C-1 – 2 Watts, 806.025 MHz, 25 kHz Channel Spacing (IC Only)
- 6C-2 – 2 Watts, 809.025 MHz, 25 kHz Channel Spacing
- 6C-3 – 2 Watts, 815.025 MHz, 25 kHz Channel Spacing
- 6C-4 – 2 Watts, 823.9875 MHz, 25 kHz Channel Spacing
- 6C-5 – 2 Watts, 851.025 MHz, 25 kHz Channel Spacing (IC Only)
- 6C-6 – 2 Watts, 854.025 MHz, 25 kHz Channel Spacing
- 6C-7 – 2 Watts, 859.025 MHz, 25 kHz Channel Spacing
- 6C-8 – 2 Watts, 868.9875 MHz, 25 kHz Channel Spacing

EXHIBIT 6D – Radiated Spurious Emissions

- 6D-1 – 2 Watts, 806.0125 MHz, 25 kHz Channel Spacing (IC Only)
- 6D-2 – 2 Watts, 809.0125 MHz, 25 kHz Channel Spacing
- 6D-3 – 2 Watts, 815.0125 MHz, 25 kHz Channel Spacing
- 6D-4 – 2 Watts, 823.9875 MHz, 25 kHz Channel Spacing
- 6D-5 – 2 Watts, 851.025 MHz, 25 kHz Channel Spacing (IC Only)
- 6D-6 – 2 Watts, 854.025 MHz, 25 kHz Channel Spacing
- 6D-7 – 2 Watts, 859.025 MHz, 25 kHz Channel Spacing
- 6D-8 – 2 Watts, 868.9875 MHz, 25 kHz Channel Spacing

EXHIBIT 6E – Frequency Stability

- 6E-1 – 815.025 MHz (TMO) Frequency Stability vs. Temperature
- 6E-2 – 815.025 MHz (TMO) Frequency Stability vs. Supply Voltage
- 6E-3 – 859.025 MHz (DMO) Frequency Stability vs. Temperature
- 6E-4 – 859.025 MHz (DMO) Frequency Stability vs. Supply Voltage

EXHIBIT 6F – Powerline Conducted Emission

- 6F-1 – Ambient Noise
- 6F-2 – Radio Off Line/Neutral
- 6F-3 – Radio on Receive Line/Neutral 854.025 MHz (DMO)
- 6F-4 – Radio on Receive Line/Neutral 859.025 MHz (DMO)
- 6F-5 – Radio on Receive Line/Neutral 868.9875 MHz (DMO)
- 6F-6 – Radio on Transmit Line/Neutral 854.025 MHz (DMO)
- 6F-7 – Radio on Transmit Line/Neutral 859.025 MHz (DMO)
- 6F-8 – Radio on Transmit Line/Neutral 868.9875 MHz (DMO)
- 6F-9 – Radio on Transmit Line/Neutral 809.0125 MHz (TMO)
- 6F-10 – Radio on Transmit Line/Neutral 815.0125 MHz (TMO)
- 6F-11 – Radio on Transmit Line/Neutral 823.9875 MHz (TMO)

EXHIBIT 6G – Adjacent Channel Power

6G-1 – 815.025 MHz, 25 kHz Channel Spacing

6G-2 – 859.025 MHz, 25 kHz Channel Spacing

**** Please note that the above data were taken following the procedures and limits outlined in FCC R&O FCC-12-114A1 and RSS 119 during the month of February 2014 and additional measurements done on November 2014. See Table 2 in Ex07_test_procedures**

Radio model tested: H63UCH6TZ7AN

Important Note: The data in this test report meets or exceeds the technical requirements of FCC Rule Parts 90 and FCC R&O 12-114A1.

Pursuant to Note 6 of FCC Waiver 11-63, it allows a bandwidth of up to 22kHz providing the additional Adjacent Channel Power (ACP) requirements are met.

All transmit tests in exhibits 6A, 6B, 6C, 6D, 6E and 6F were conducted at constant wave (CW) mode at max power, unless otherwise stipulated. This mode represents the worst case performance of the radio as the duty cycle is 100%.

Lab details:

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EXHIBIT 6A – RF POWER OUTPUT**HIGH POWER SETTING, FREQUENCY 806.025 MHz (IC Only)**

Measured RF Output Power:	1.98 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	2.45 Amperes

HIGH POWER SETTING, FREQUENCY 809.025 MHz

Measured RF Output Power:	2.00 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	2.45 Amperes

HIGH POWER SETTING, FREQUENCY 815.025 MHz

Measured RF Output Power:	2.00 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	4.43 Amperes

HIGH POWER SETTING, FREQUENCY 823.9875 MHz

Measured RF Output Power:	1.98 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	2.32 Amperes

HIGH POWER SETTING, FREQUENCY 851.025 MHz (IC Only)

Measured RF Output Power:	1.99 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	2.21 Amperes

HIGH POWER SETTING, FREQUENCY 854.025 MHz

Measured RF Output Power:	2.00 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	2.24 Amperes

HIGH POWER SETTING, FREQUENCY 859.025 MHz

Measured RF Output Power:	2.00 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	2.22 Amperes

HIGH POWER SETTING, FREQUENCY 868.9875 MHz

Measured RF Output Power:	2.00 Watts
Measured DC Voltage:	3.8 Volts
Measured DC Input Current:	2.43 Amperes

EXHIBIT 6B – Modulation TechniquesHigh Performance Data (HPD) Digital Modulation (25 kHz Channelization, Digital Data)

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 22.0 kHz is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a).

Per CFR Title 47, Part 2, Section 2.201:

Main carrier is amplitude and angle modulated		D
Single channel containing quantized or digital information		
without the use of modulating sub carrier, excluding time division		1
Data transmission, telemetry, telecommand		D

The complete emissions designator for this transmitter is **22K0D1D**.

High Performance Data (HPD) Digital Modulation (25 kHz Channelization, Digital Voice)

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 22.0 kHz is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a).

Per CFR Title 47, Part 2, Section 2.201:

Main carrier is amplitude and angle modulated		D
Single channel containing quantized or digital information		
without the use of modulating sub carrier, excluding time division		1
Telephony (including sound broadcasting)		E

The complete emissions designator for this transmitter is **22K0D1E**.

High Performance Data (HPD) Digital Modulation (25 kHz Channelization, Digital Voice & Data)

Necessary Bandwidth Calculation:

The necessary bandwidth of the modulation signal is not calculable per the formulas defined in 47 CFR 2.202 (b). Specifically, although the modulation for this emission is a composite modulation, the equations given in the composite tables in 2.202 are not applicable since none of them adequately approximate the form of digital modulation used. The necessary bandwidth of 22.0 kHz is based upon a 99% power measurement of the transmitter spectrum, per 2.202 (a).

Per CFR Title 47, Part 2, Section 2.201:

Main carrier is amplitude and angle modulated		D
Single channel containing quantized or digital information		
without the use of modulating sub carrier, excluding time division		1
Combination of the above		W

The complete emissions designator for this transmitter is **22K0D1W**.

Conducted Occupied Bandwidth

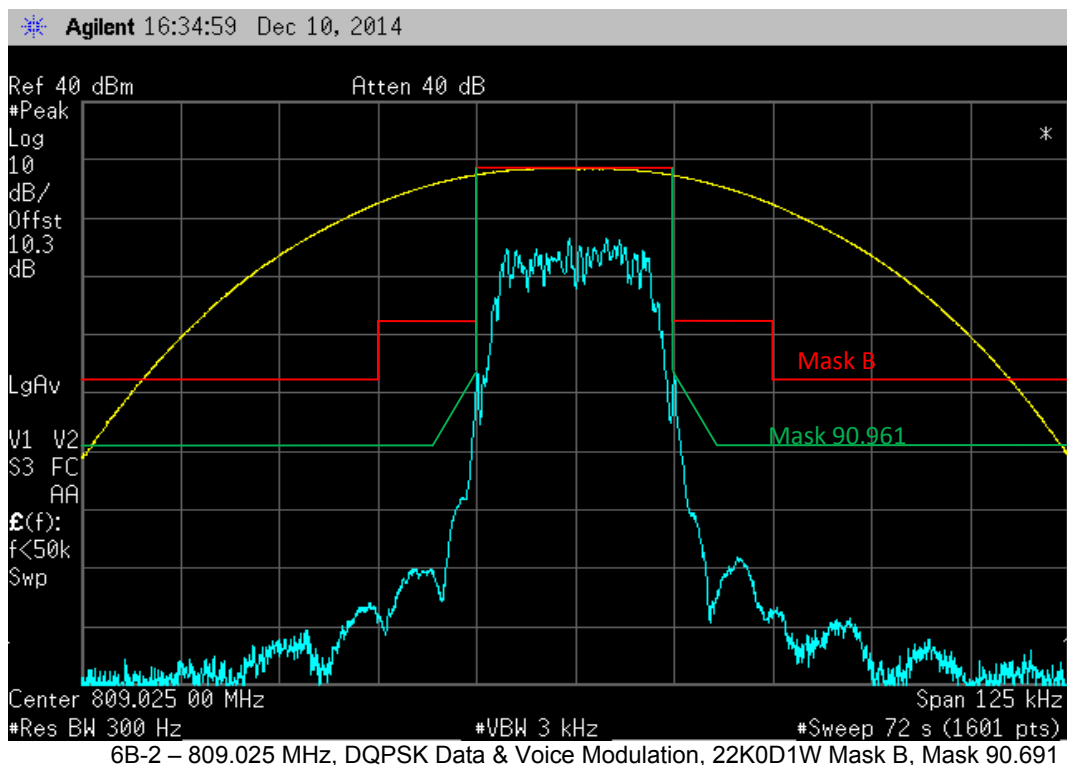
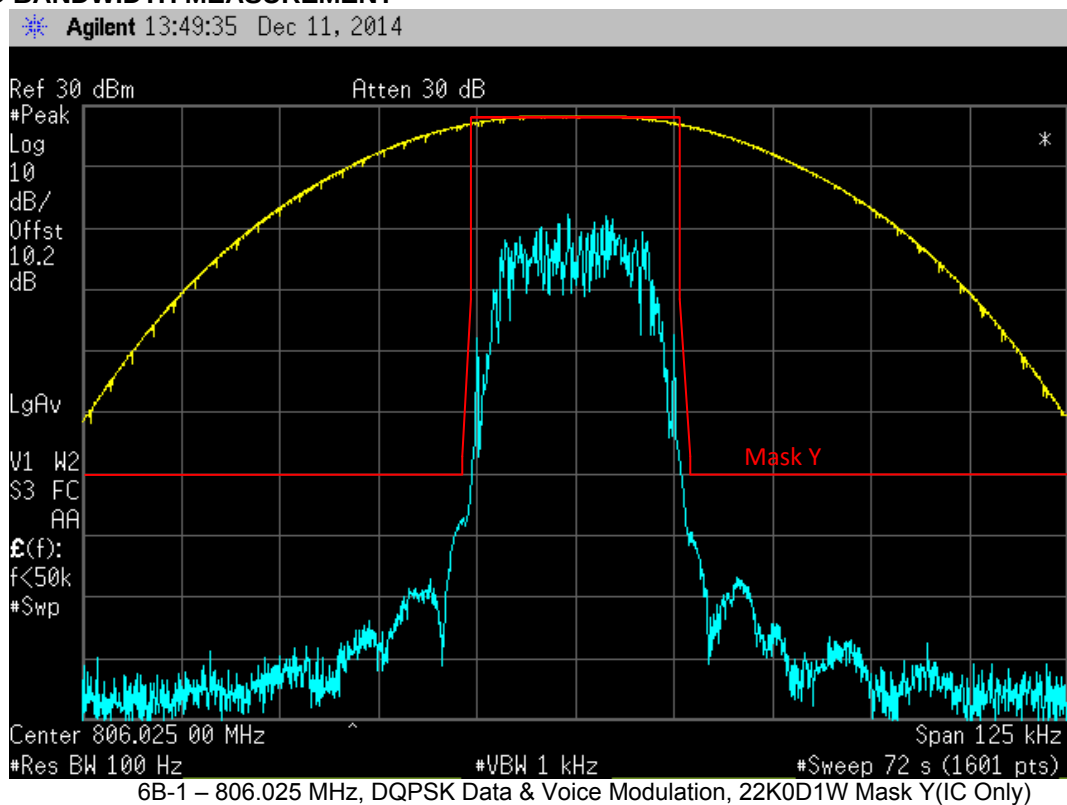
Spectrum Analyzer setting as below:

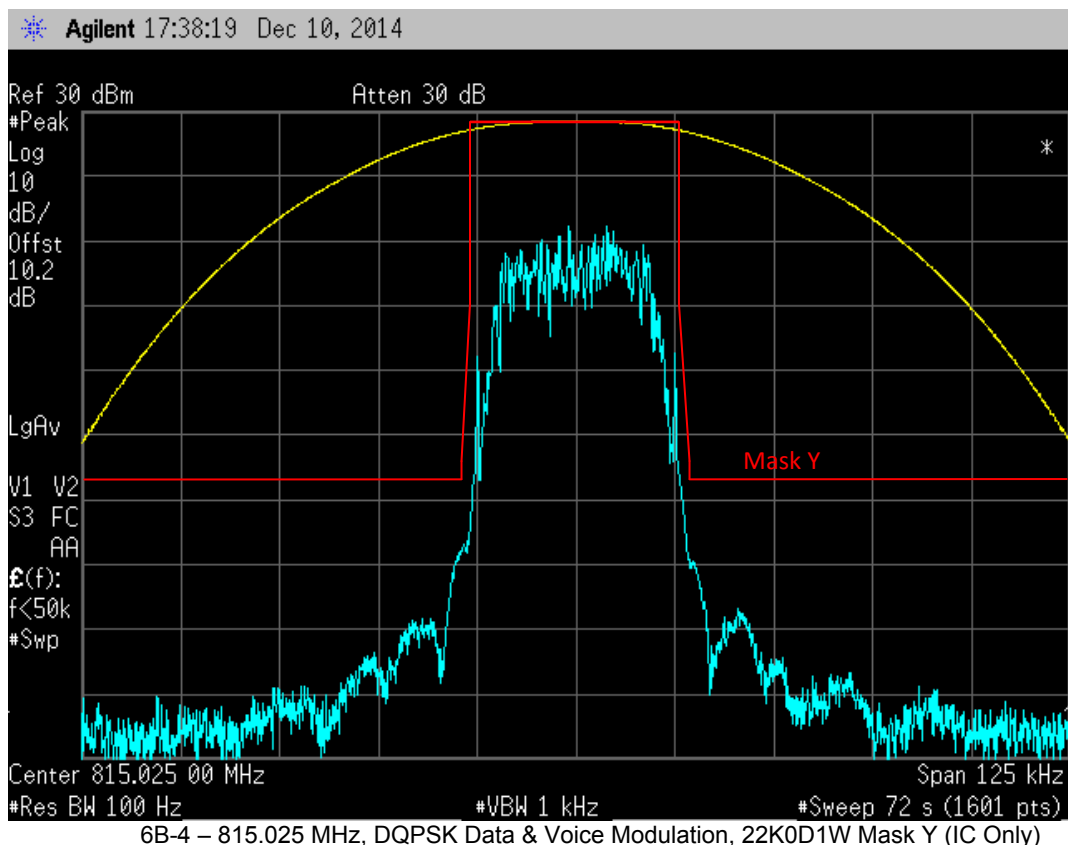
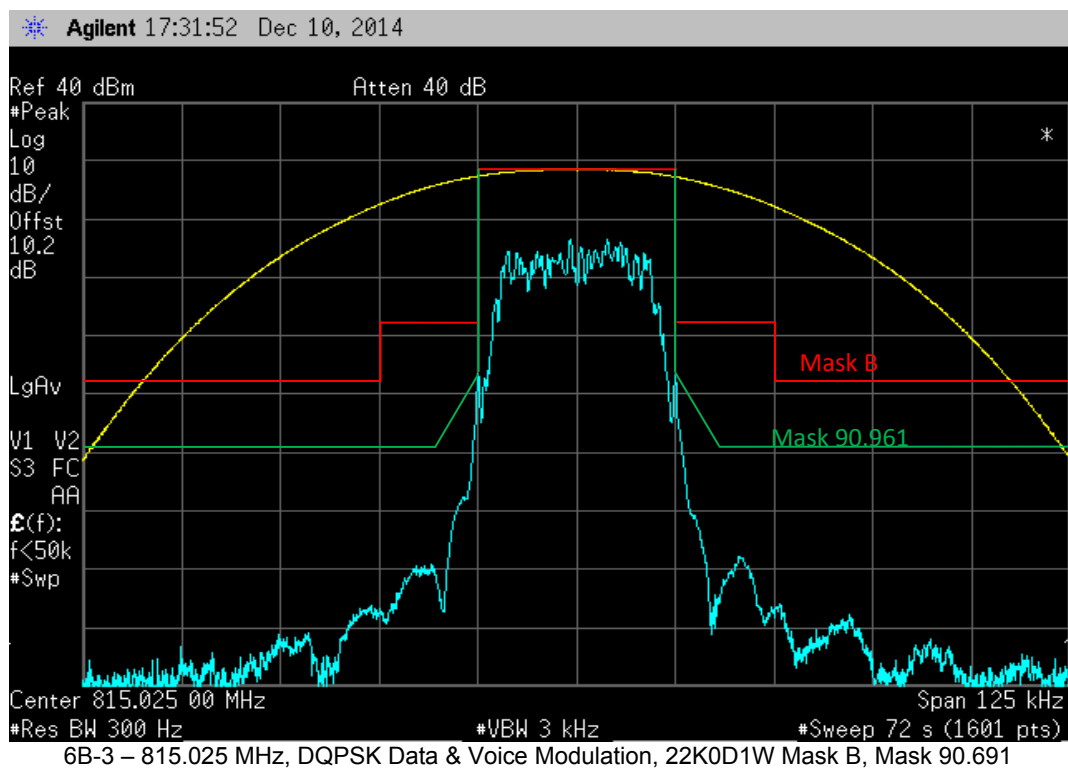
RBW = 300 Hz, VBW = 3 kHz, Span = 40 kHz

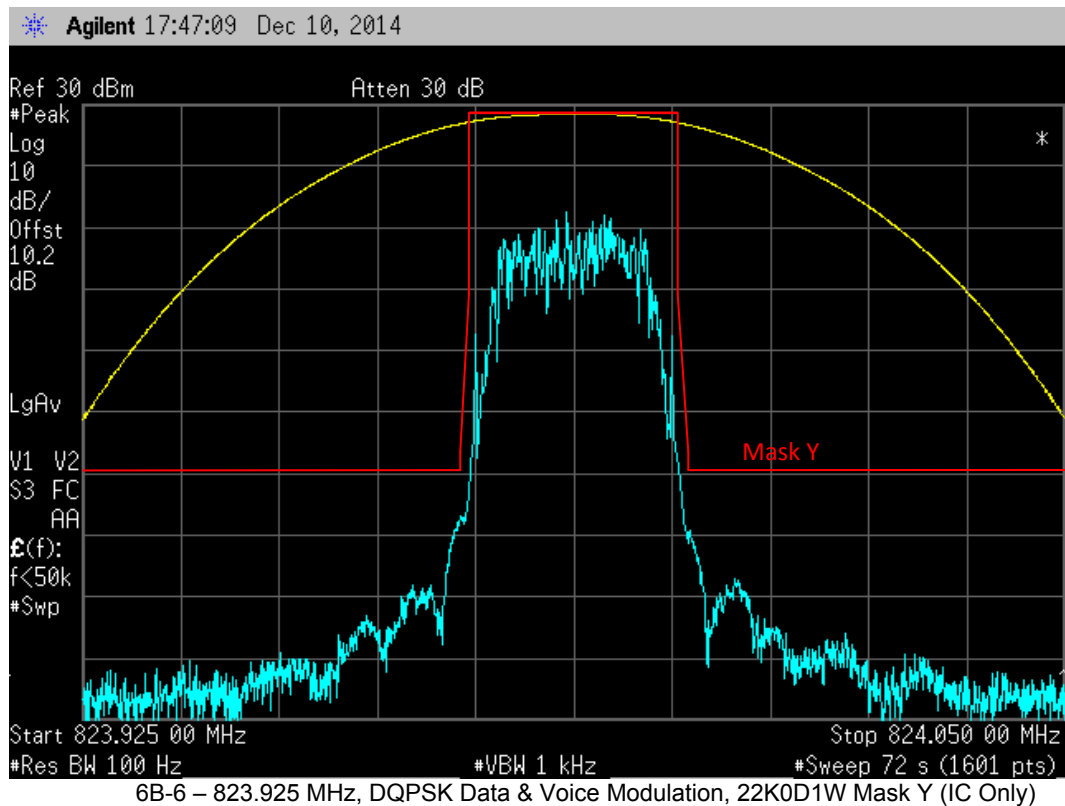
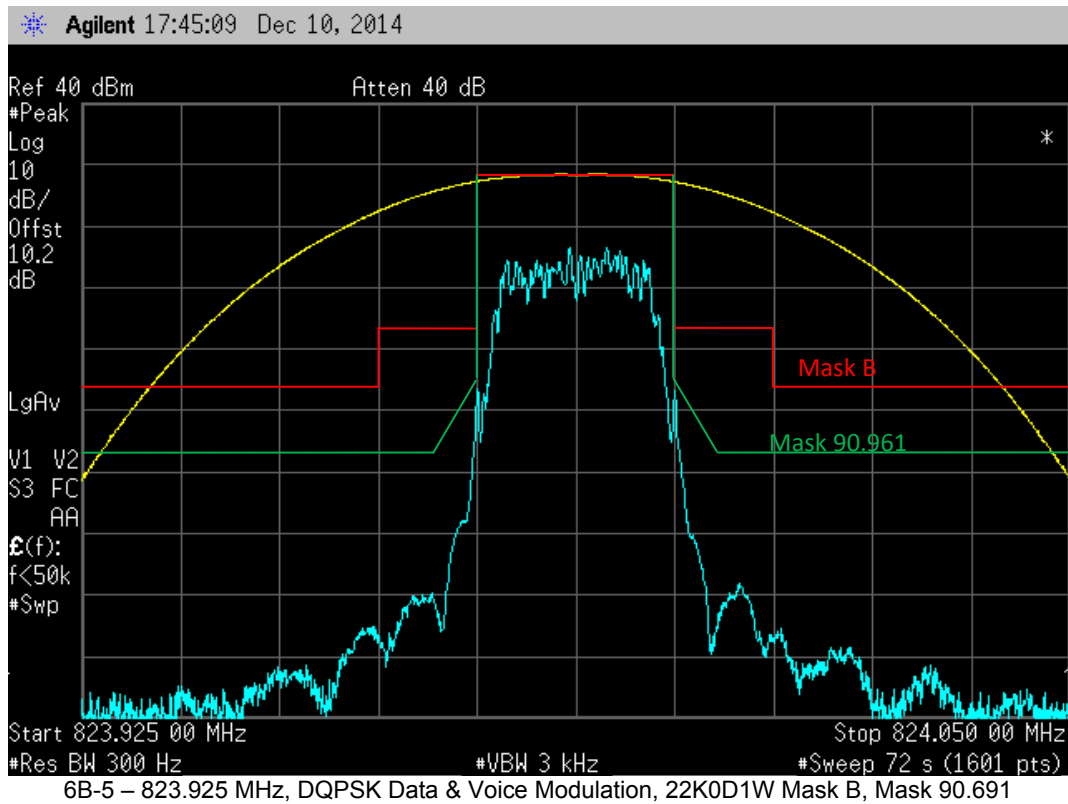
Mode	Frequency Range	Bandwidth Power (99%)
TMO Mode	815.025 MHz	20.36 kHz
DMO Mode	859.025 MHz	20.37 kHz

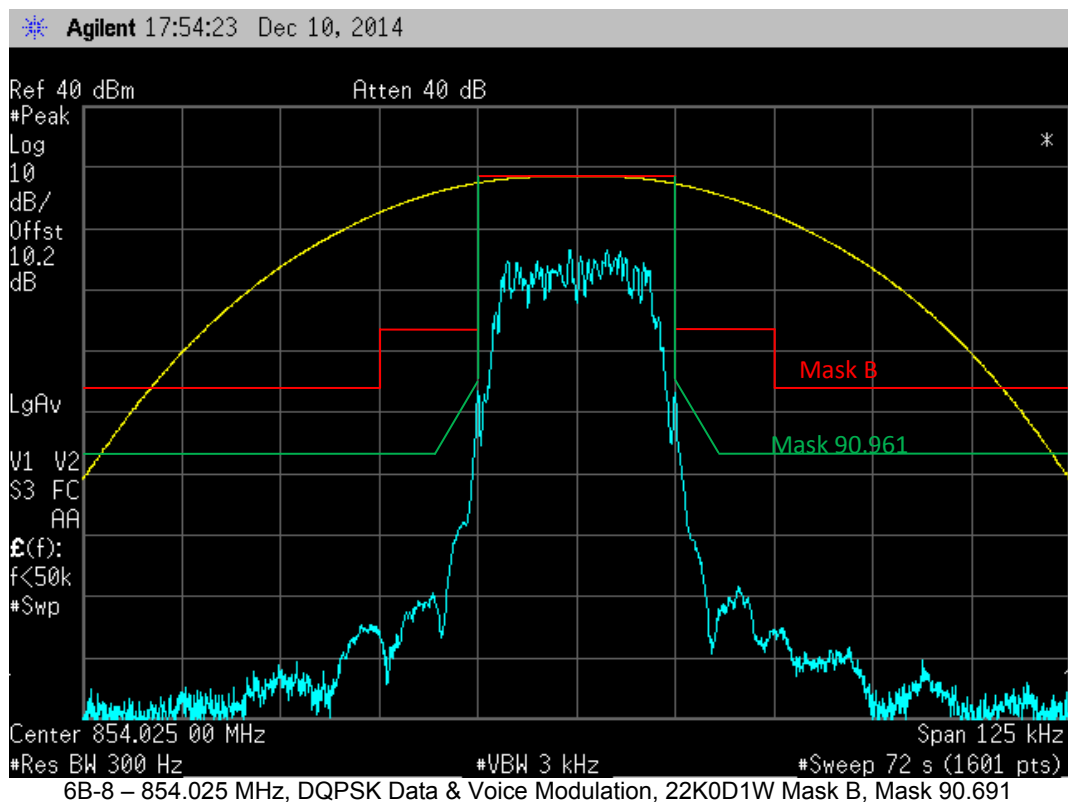
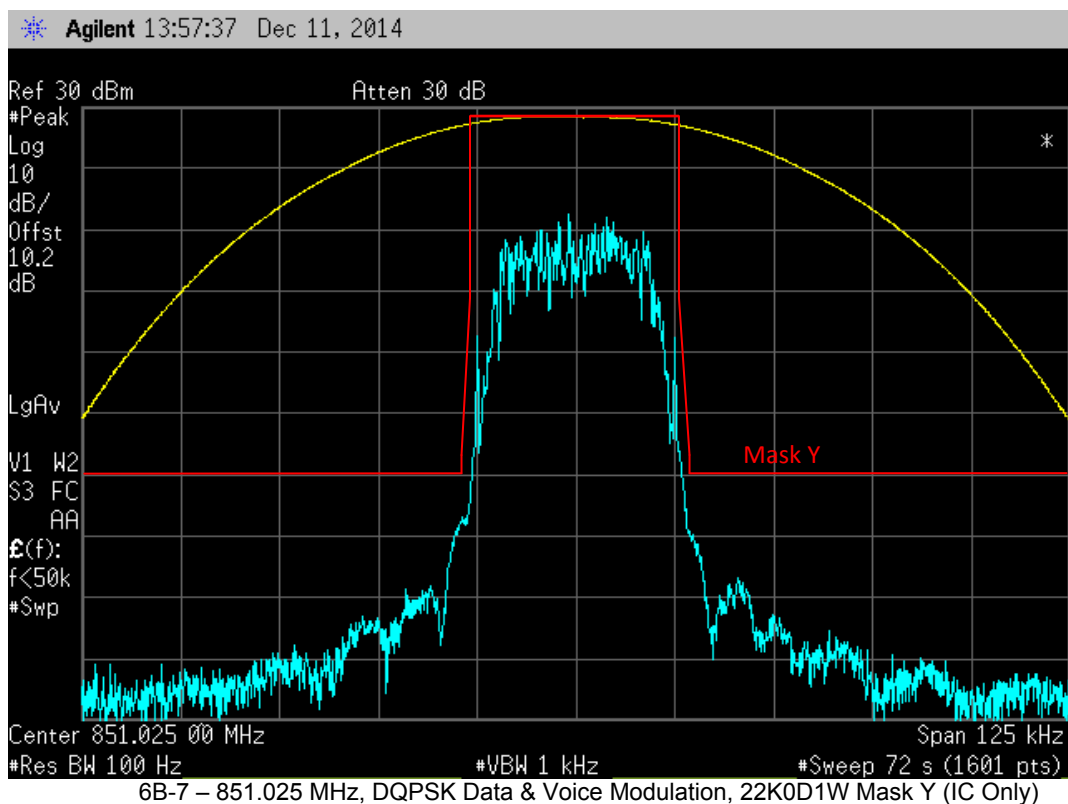
As per R&O FCC 12-114A1, for TETRA that are designed to operate with a 25 kHz channel spacing may be authorized up to a **22 kHz** bandwidth if the equipment meets the adjacent channel power (ACP) limits.

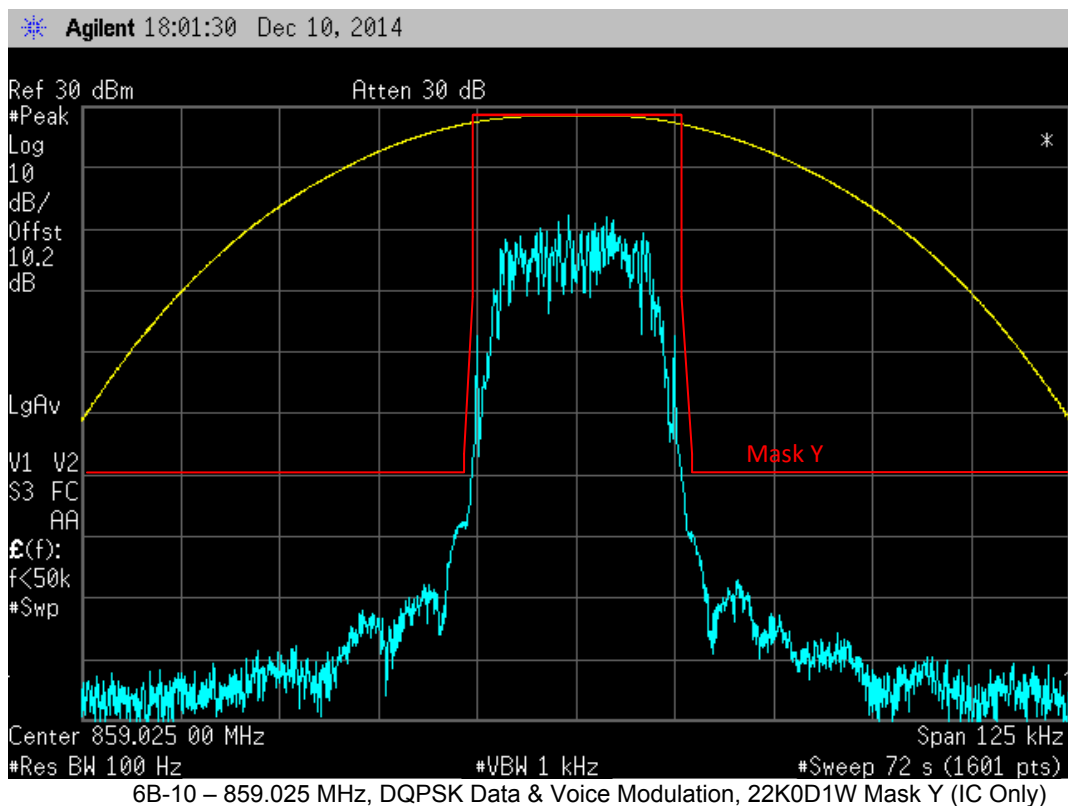
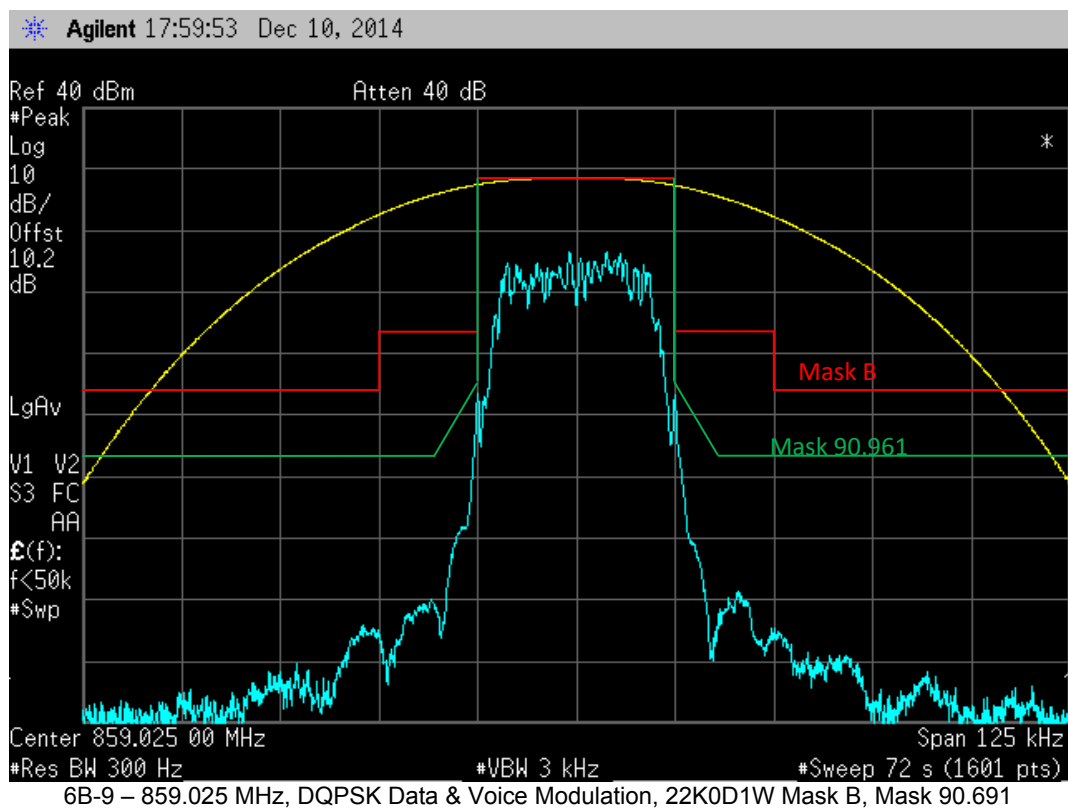
OCCUPIED BANDWIDTH MEASUREMENT

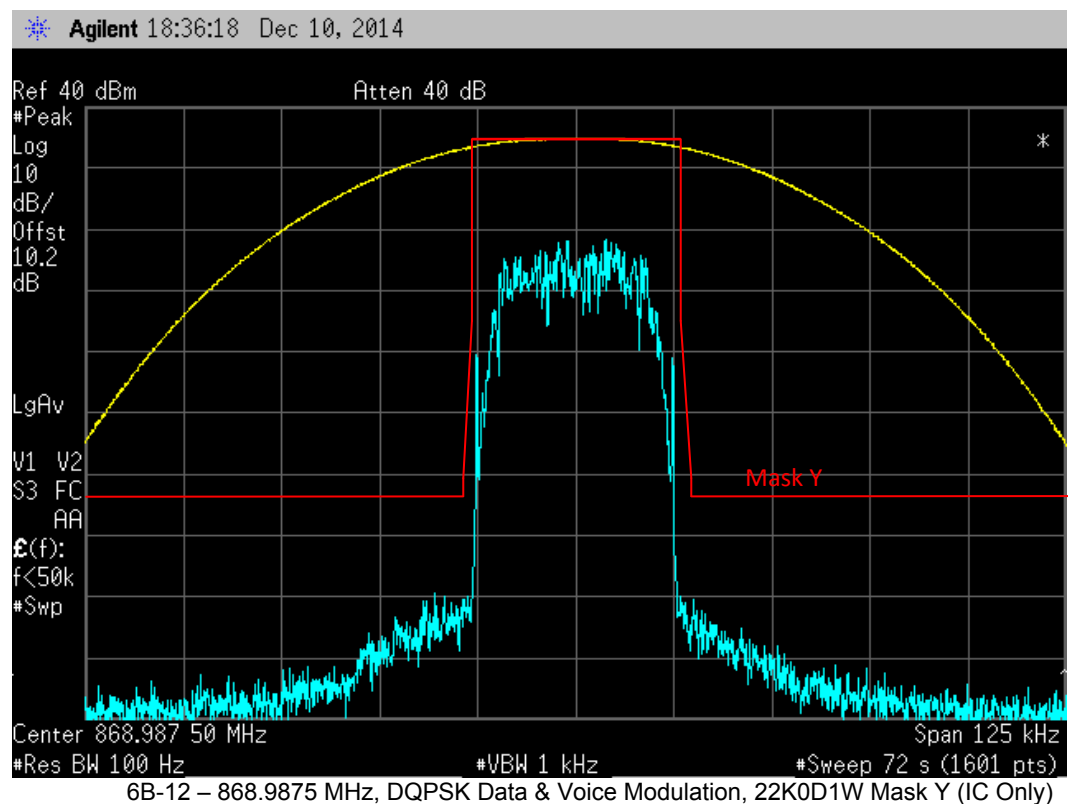
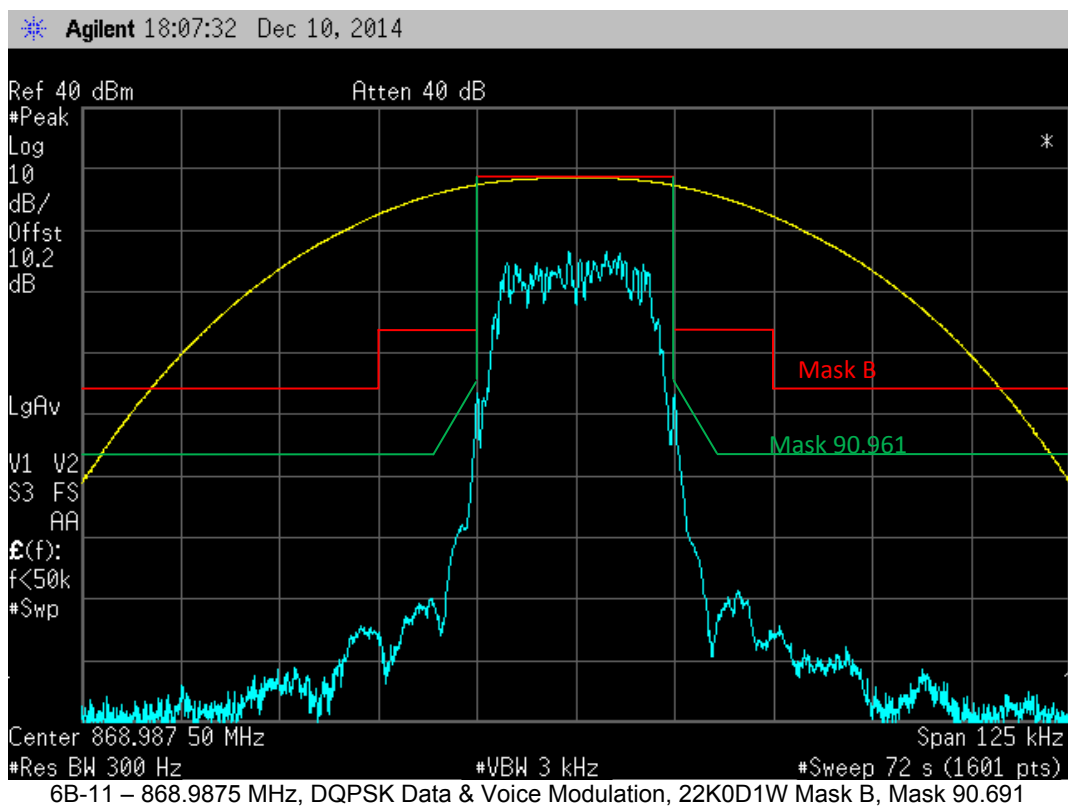








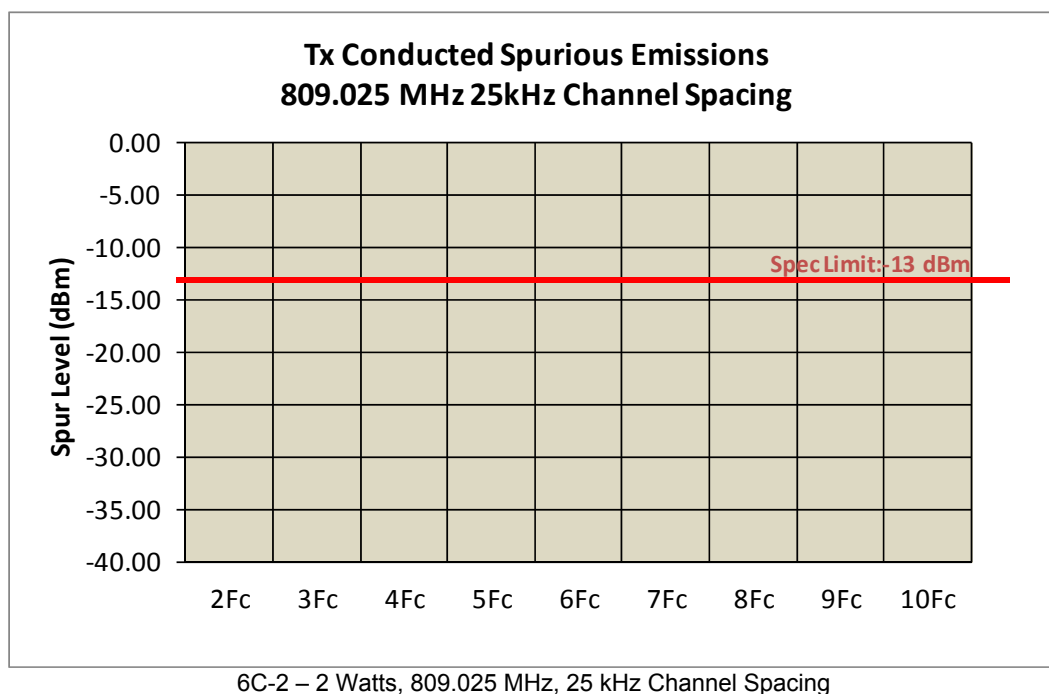
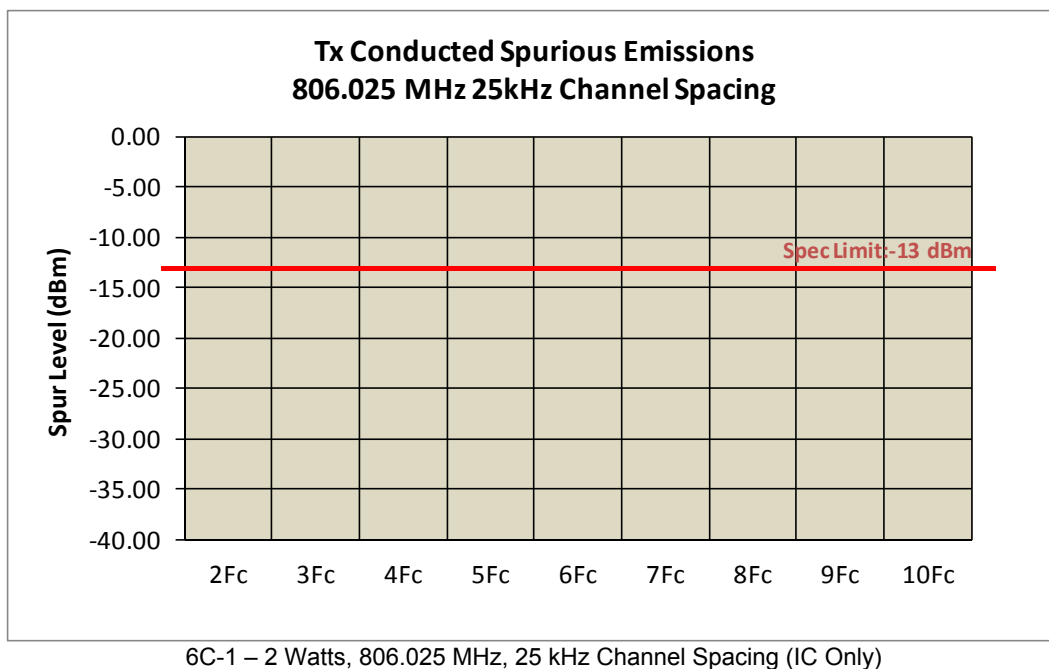


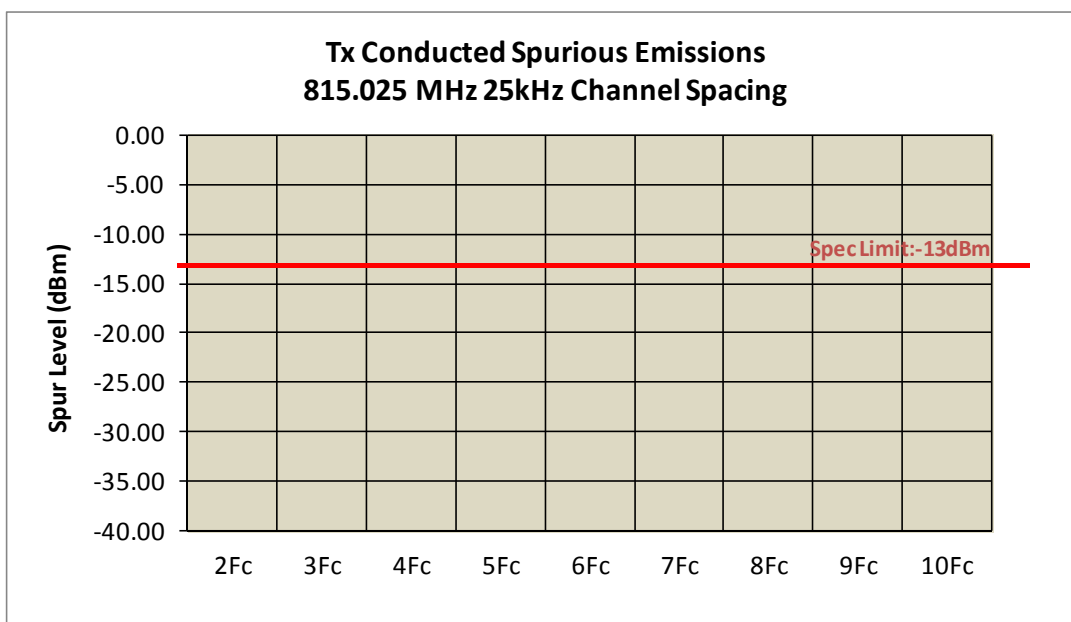


*Note: Only emission masks for 22K0D1W will be shown as the 22K0D1E and 22K0D1D exhibit the same modulation type and nature of modulating signals, and are thus spectrally identical

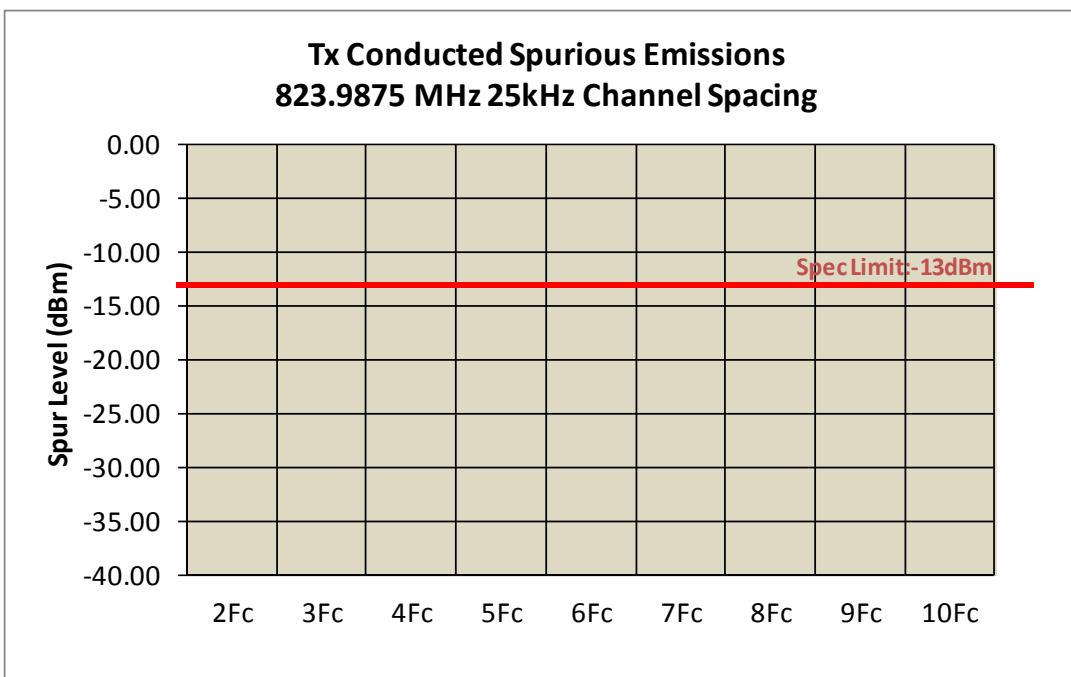
EXHIBIT 6C – Transmitter Conducted Spurious Emissions

Note: Display lines on graphs correspond to the FCC limit of -13dBm (25 kHz channel spacing).

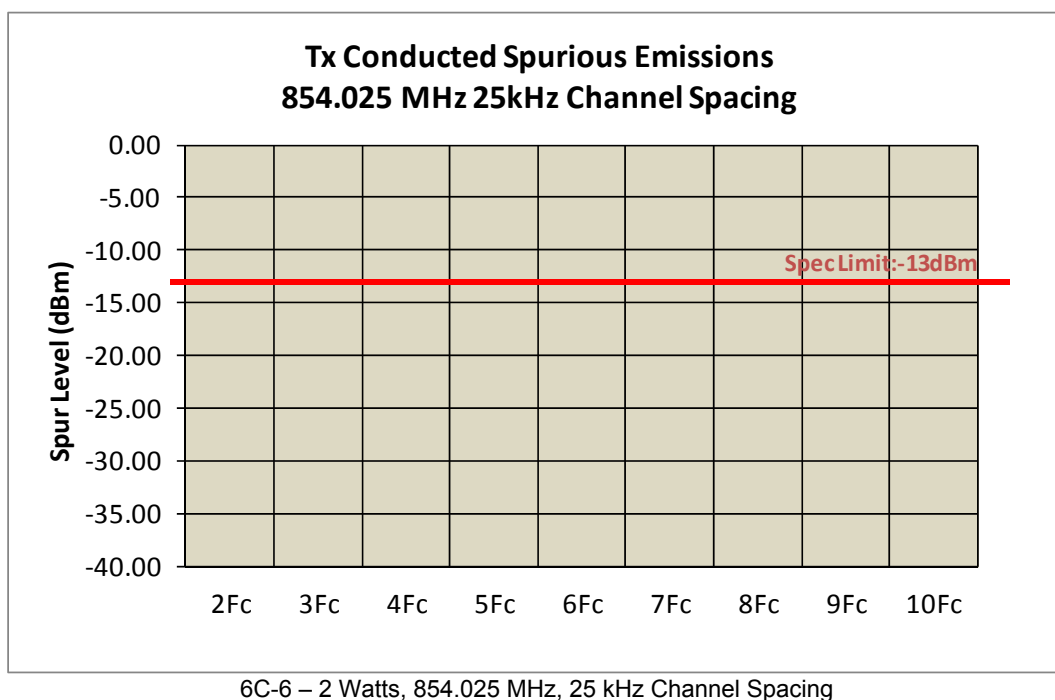
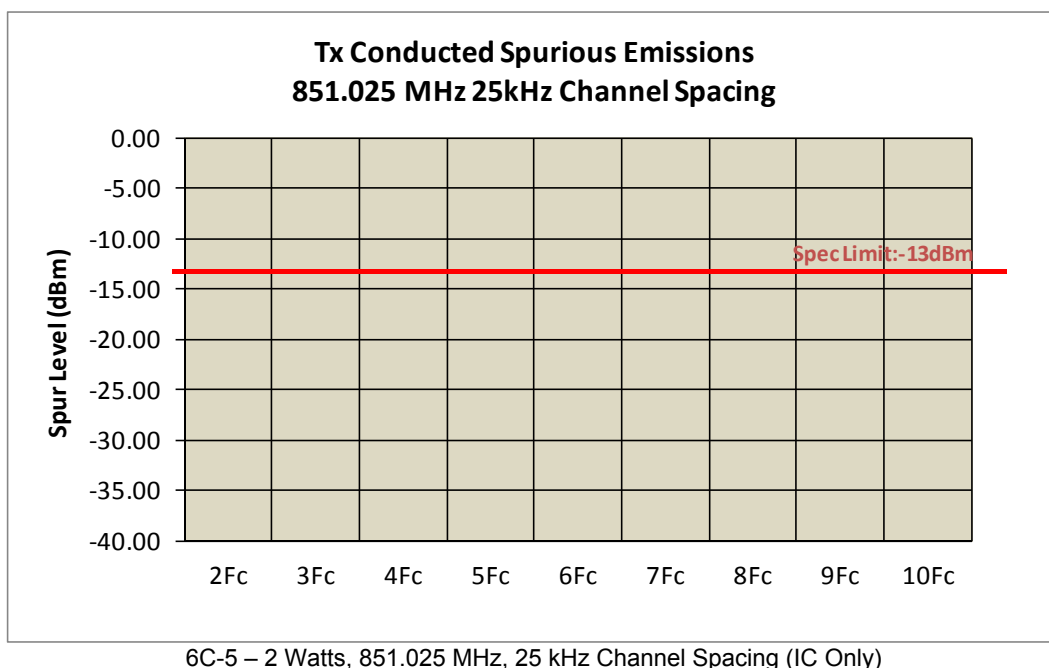


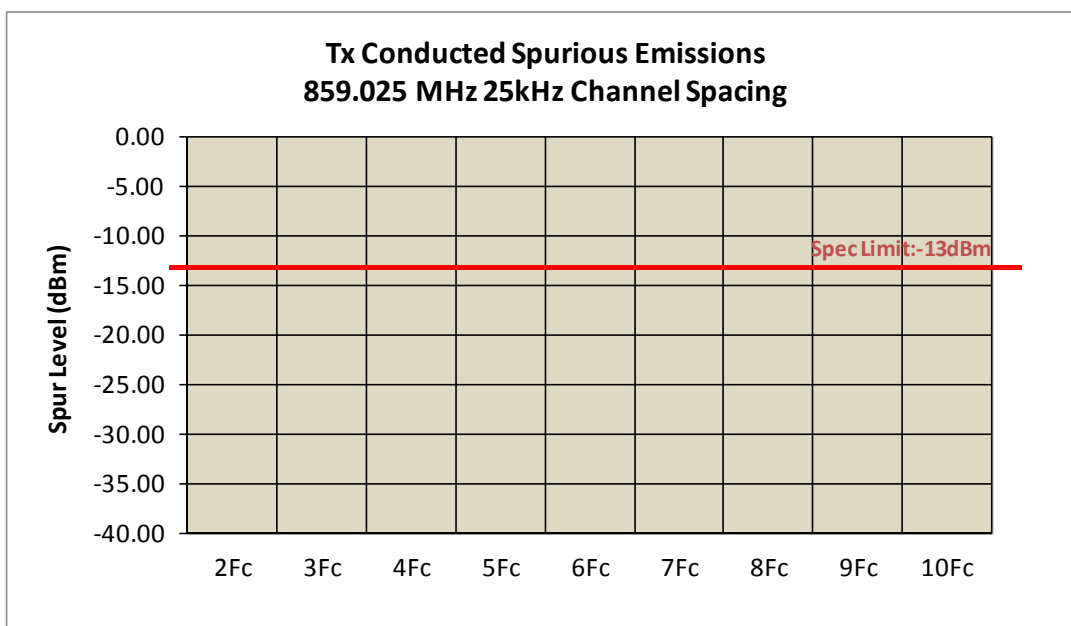


6C-3 – 2 Watts, 815.025 MHz, 25 kHz Channel Spacing

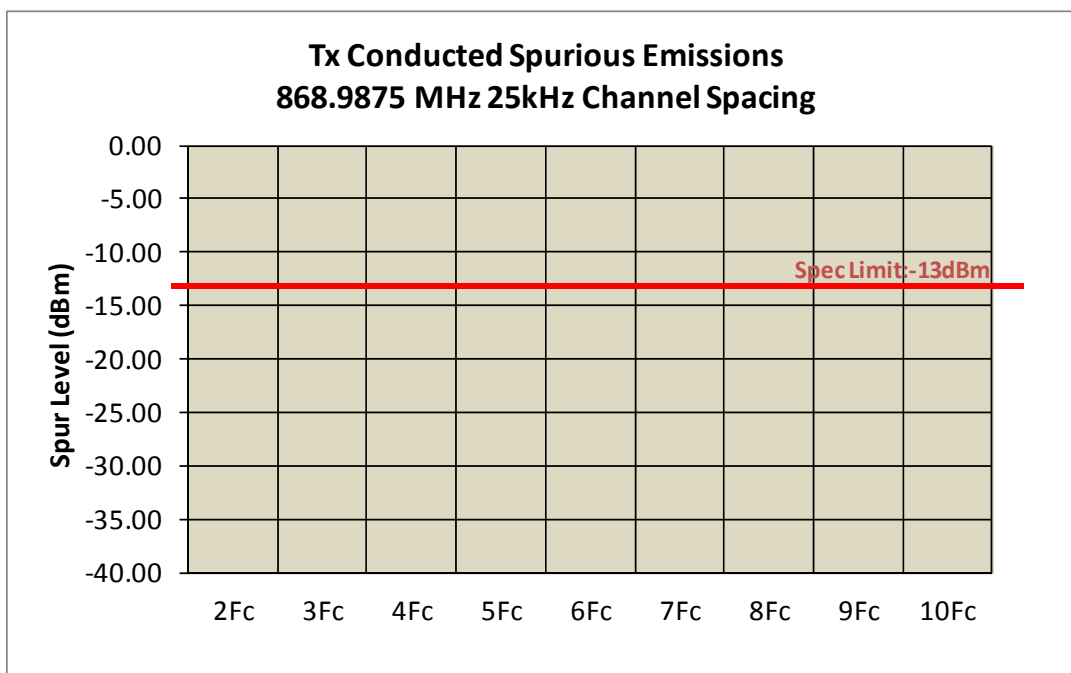


6C-4 – 2 Watts, 823.9875 MHz, 25 kHz Channel Spacing





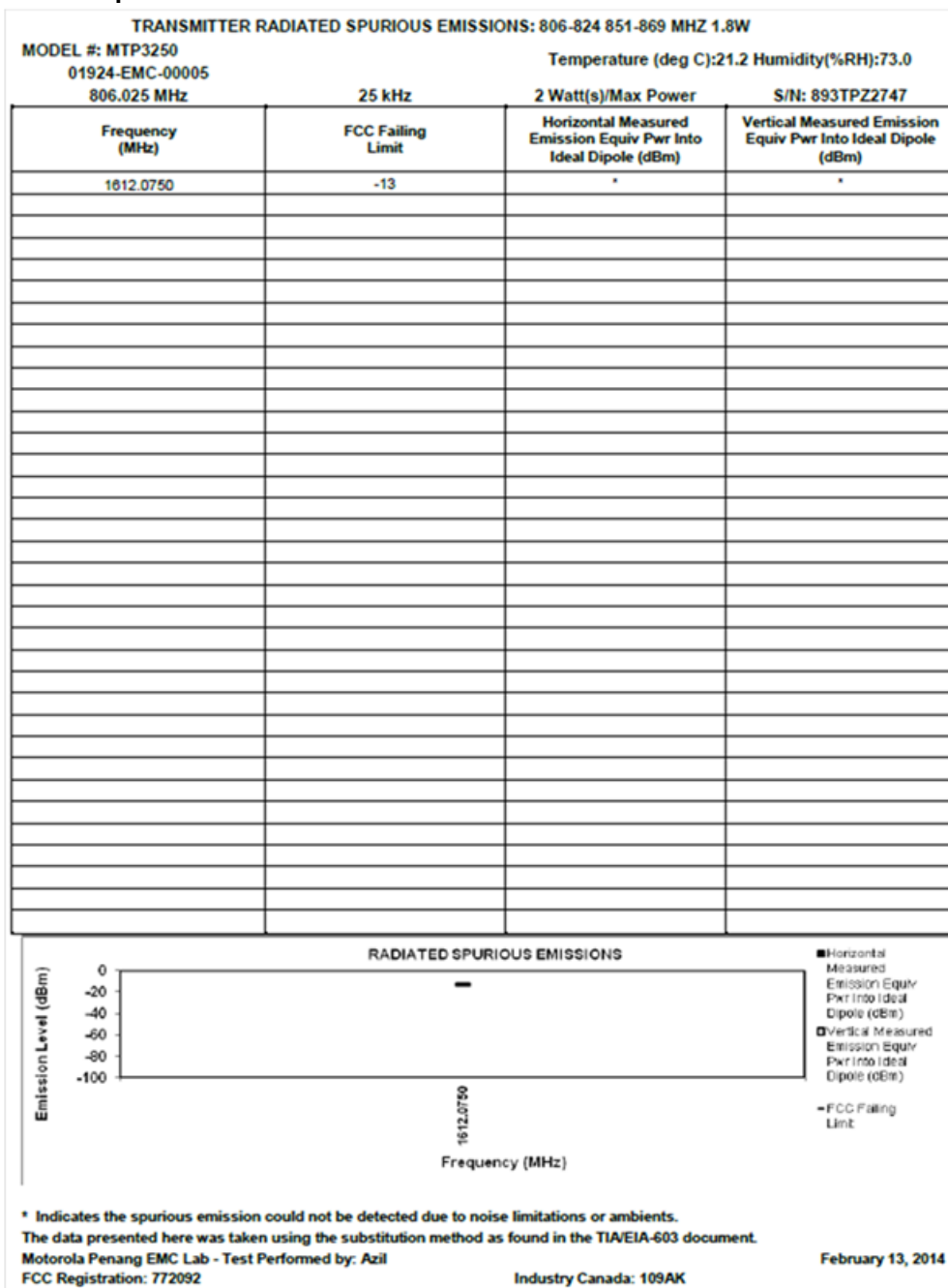
6C-7 – 2 Watts, 859.025 MHz, 25 kHz Channel Spacing



6C-8 – 2 Watts, 868.9875 MHz, 25 kHz Channel Spacing

****Note: Data with more than 20dB margin from spec limit will not be displayed.**

Transmitter Radiated Spurious Emissions



6D-2 – 2 Watts, 809.025 MHz, 25 kHz Channel Spacing

6D-3 – 2 Watts, 815.025 MHz, 25 kHz Channel Spacing

RADIATED SPURIOUS EMISSIONS

Y-axis: Emission Level (dBm)

X-axis: Frequency (MHz)

Legend:

- Horizontal Measured Emission Equiv Par into Ideal Dipole (dBm)
- Vertical Measured Emission Equiv Par into Ideal Dipole (dBm)
- FCC Rating Limit

Data Point: 1647.5610 MHz, -100 dBm

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6D-5 – 2 Watts, 851.025 MHz, 25 kHz Channel Spacing (IC Only)

RADIATED SPURIOUS EMISSIONS

Y-axis: Emission Level (dBm)

X-axis: Frequency (MHz)

Legend:

- Horizontal Measured Emission Equiv. Pwr into Ideal Dipole (dBm)
- Vertical Measured Emission Equiv. Pwr into Ideal Dipole (dBm)
- FCC Rating Limit

Frequency (MHz)	Emission Level (dBm)	Measurement Type
1708.0570	-10	Horizontal Measured Emission Equiv. Pwr into Ideal Dipole (dBm)

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RADIATED SPURIOUS EMISSIONS

■ Horizontal Measured Emission Equip Per Into Ideal Dipole (dBm)

□ Vertical Measured Emission Equip Per Into Ideal Dipole (dBm)

- FCC Failing Limit

Frequency (MHz)

1719.0610

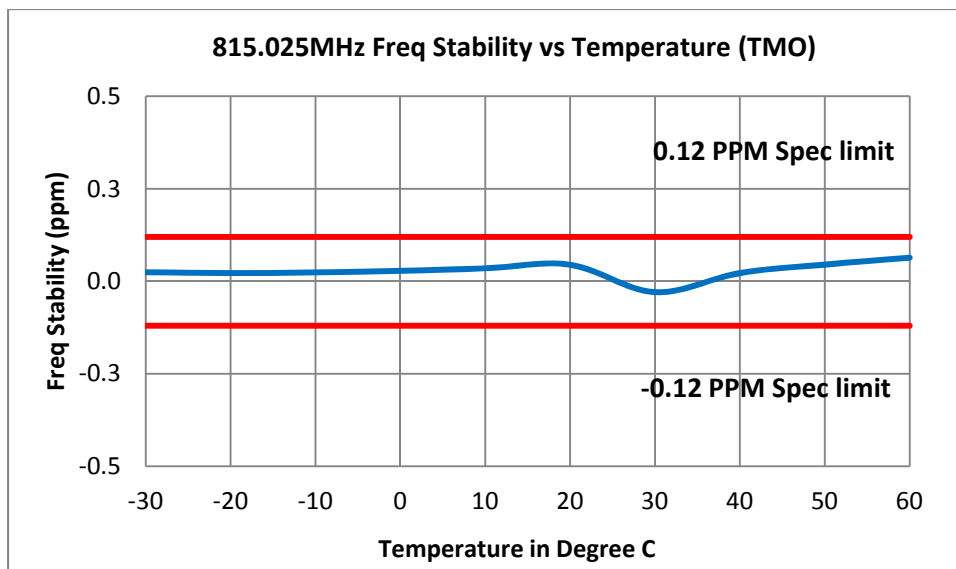
Emission Level (dBm)

Frequency (MHz)	Horizontal Measured Emission Level (dBm)	Vertical Measured Emission Level (dBm)	FCC Failing Limit (dBm)
1719.0610	-15	-100	-15

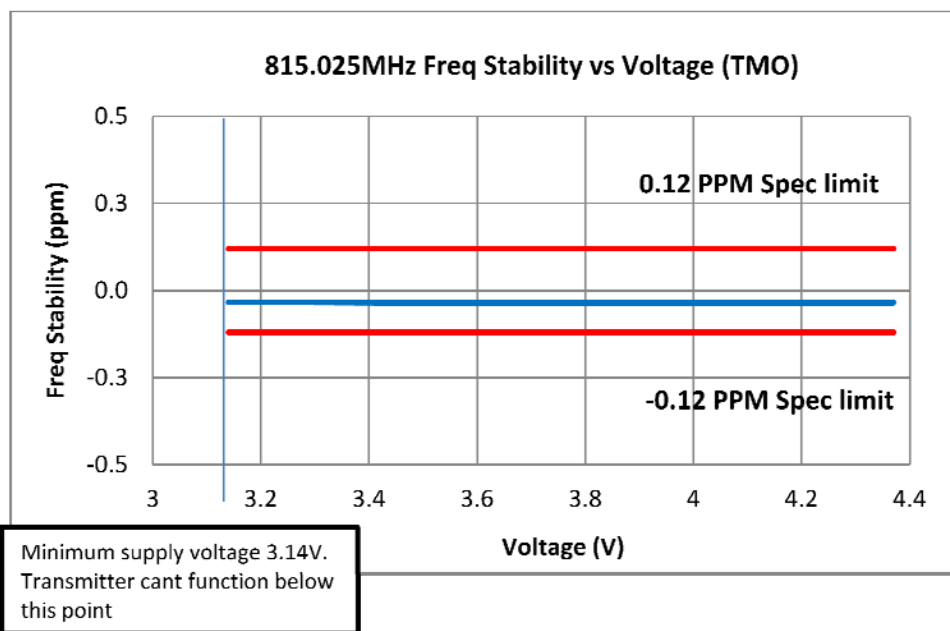
February 13, 2014

6D-8 – 2 Watts, 868.9875 MHz, 25 kHz Channel Spacing

EXHIBIT 6
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EXHIBIT 6E – Frequency Stability**6E-1 – 815.025 MHz Frequency Stability vs. Temperature (TMO)**

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**6E-2 – 815.025 MHz Frequency Stability vs. Supply Voltage (TMO)**

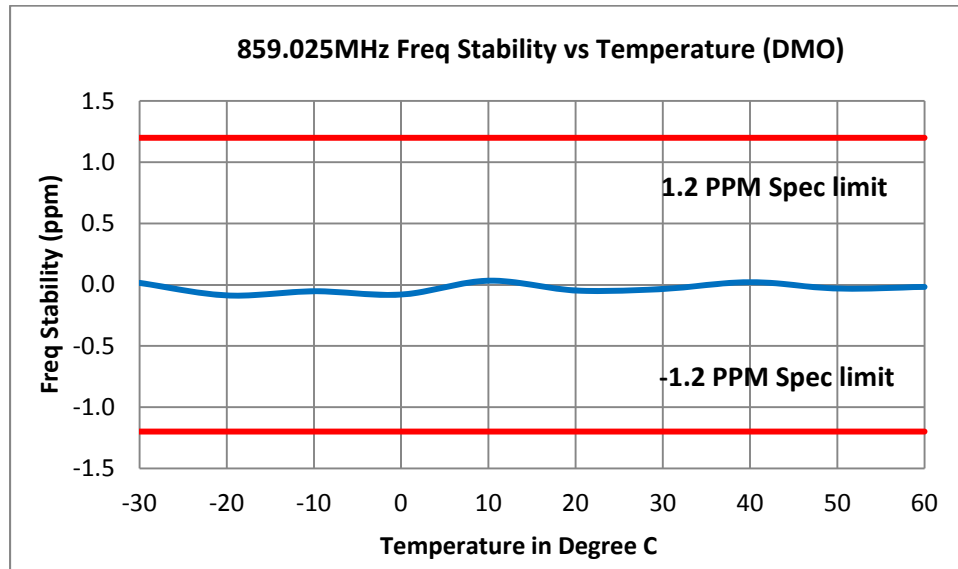
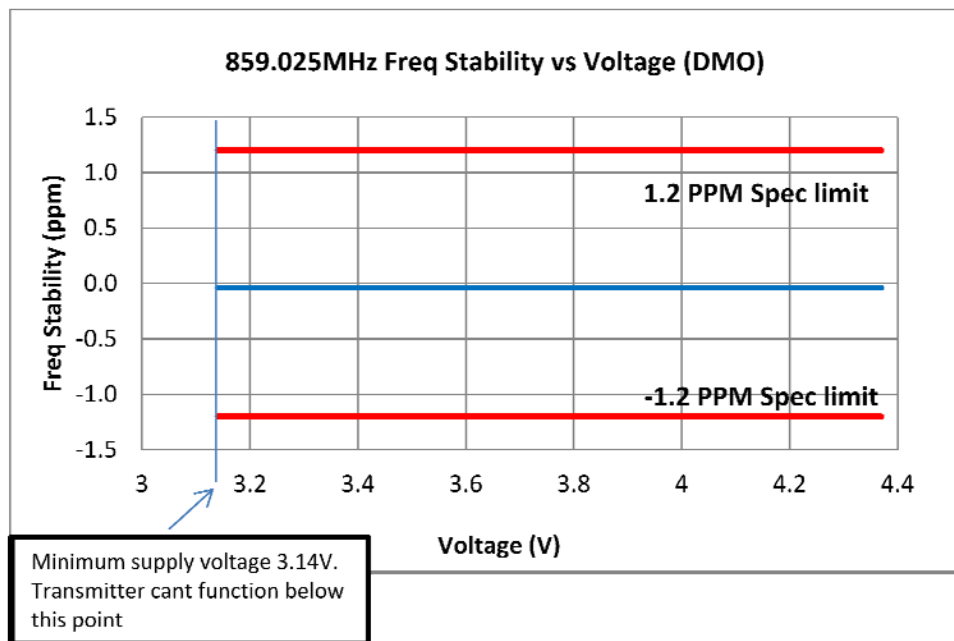
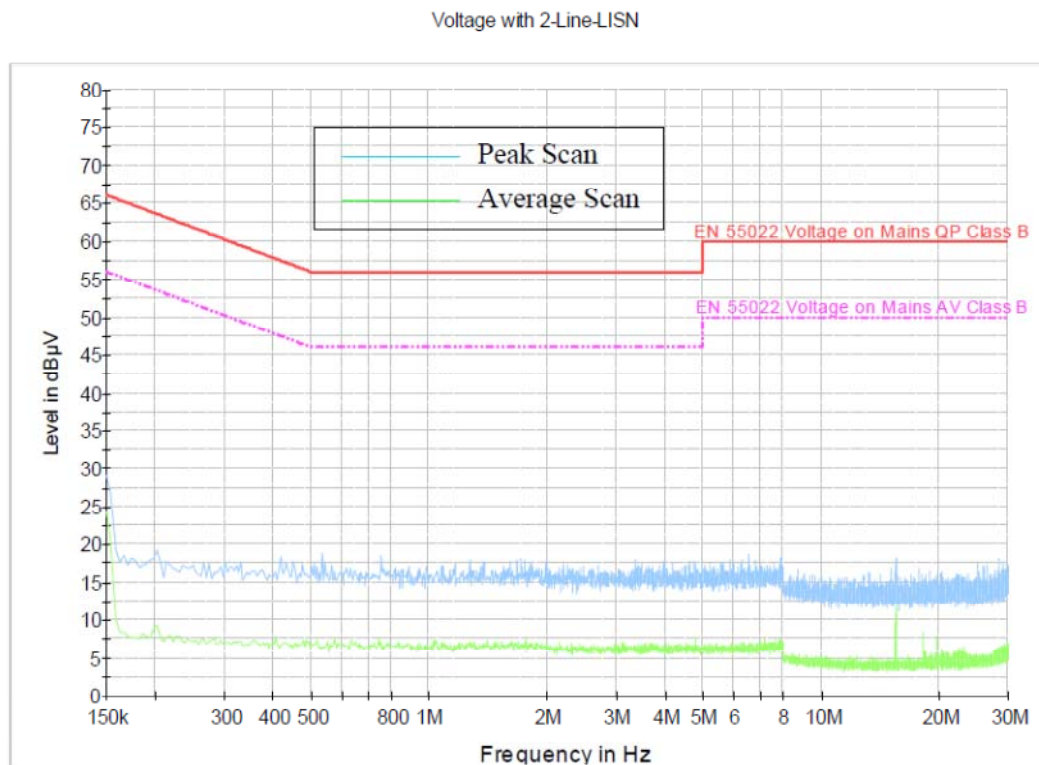
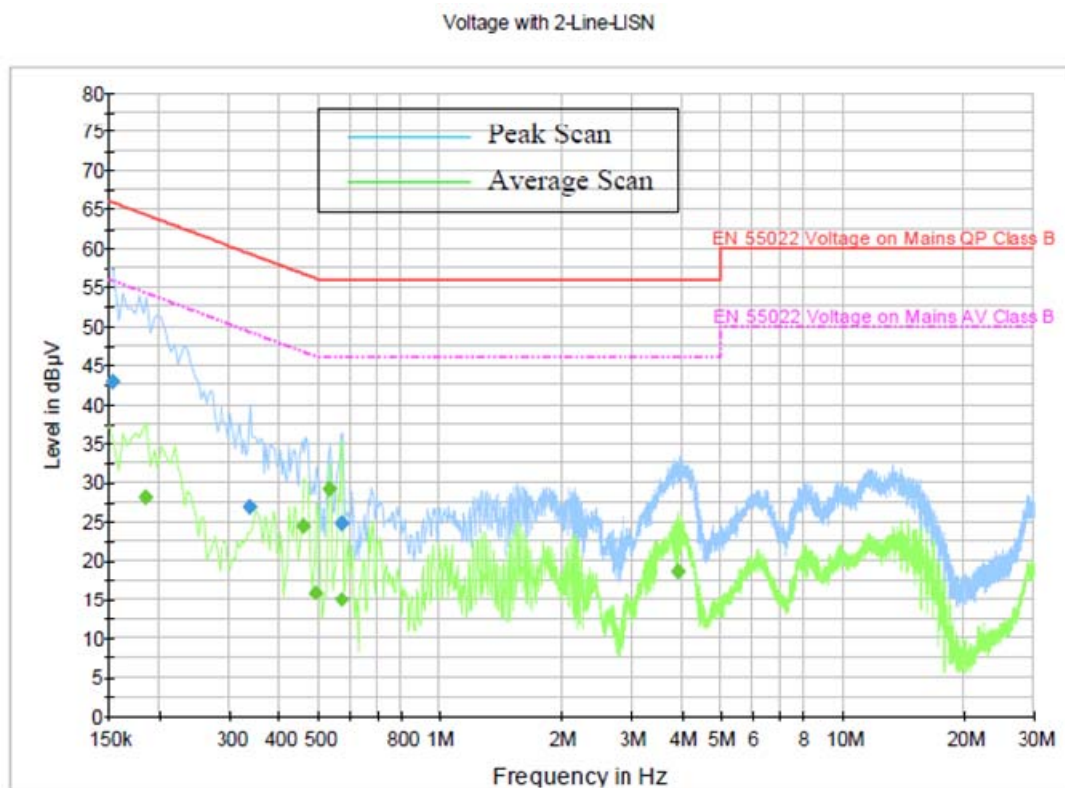
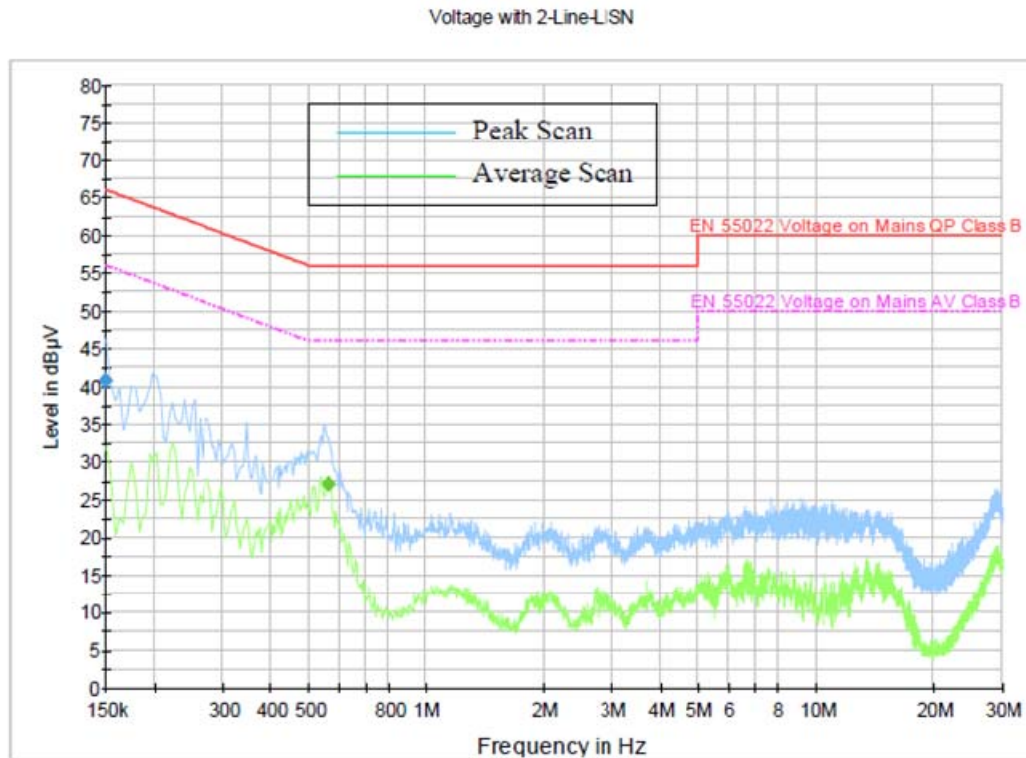
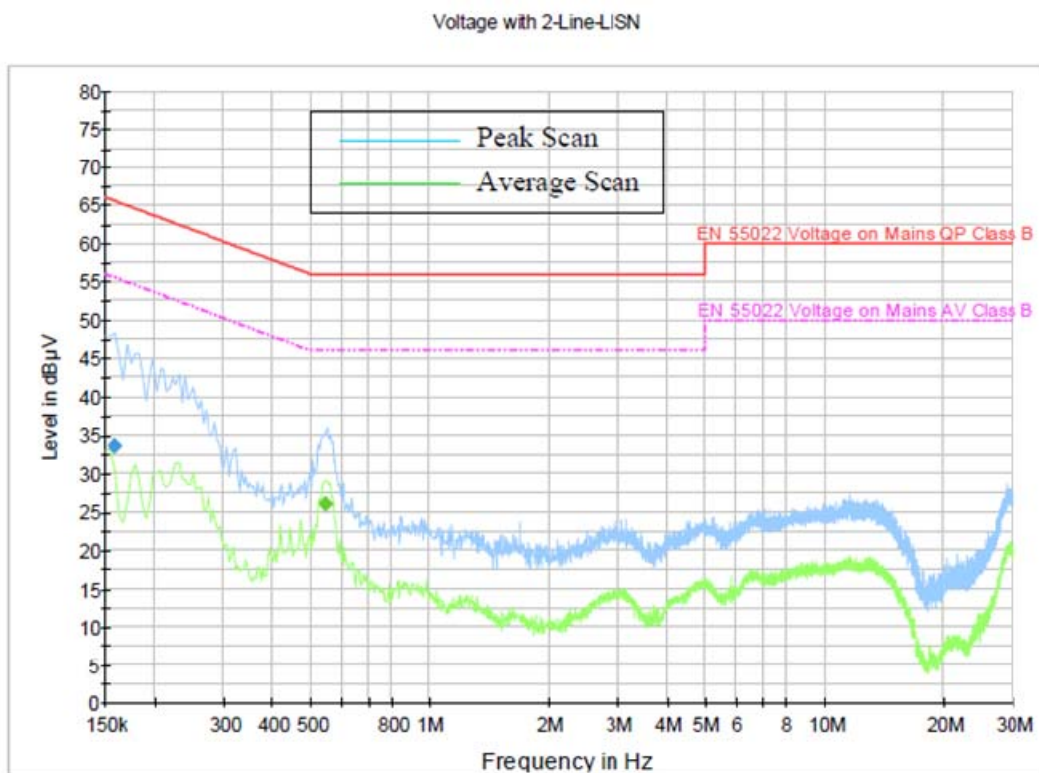
**6E-3** – 859.025 MHz Frequency Stability vs. Temperature (DMO)**6E-4** – 859.025 MHz Frequency Stability vs. Supply Voltage (DMO)

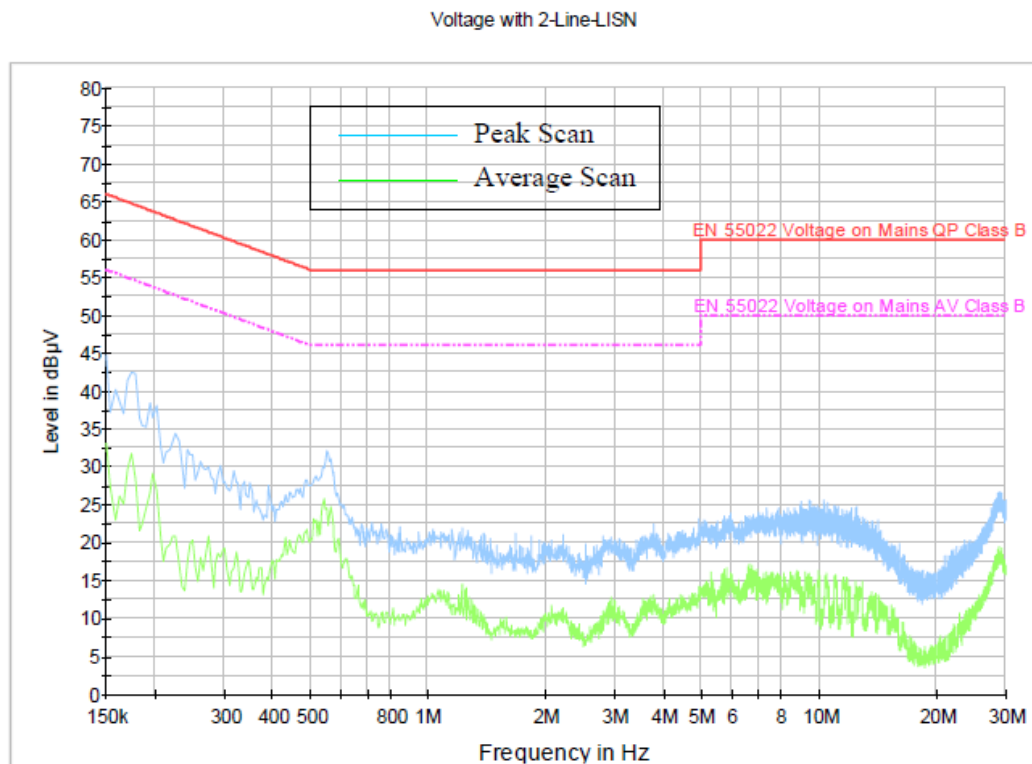
EXHIBIT 6F – Powerline Conducted Emission

6F-1 – Ambient Noise

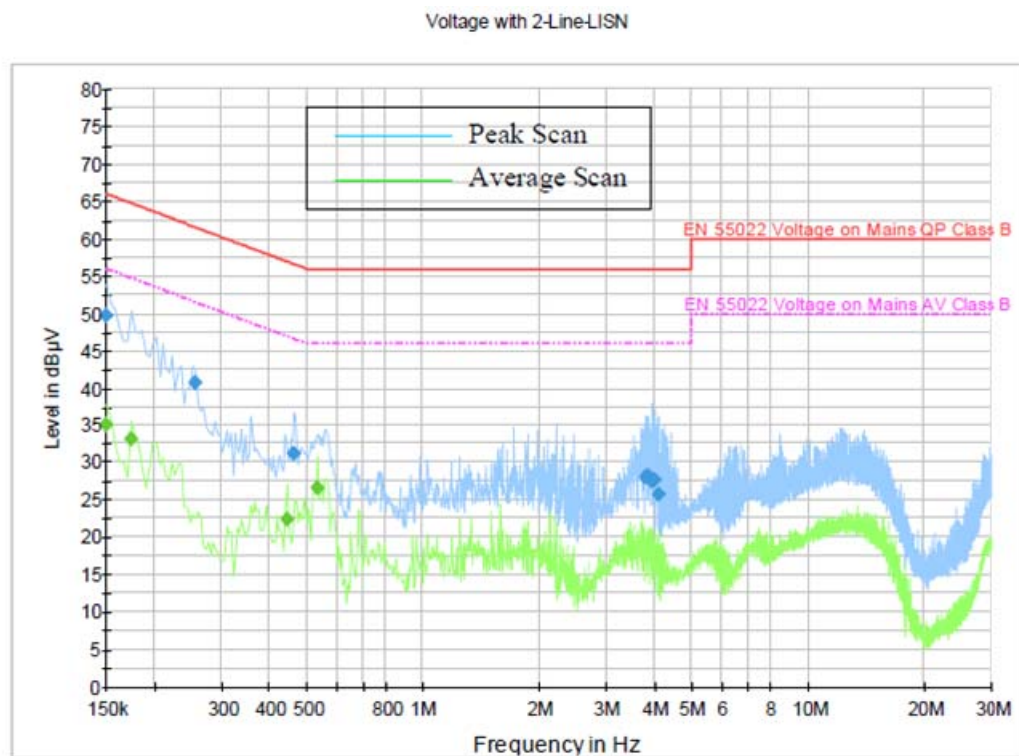


6F-2 – Radio Off Line/Neutral

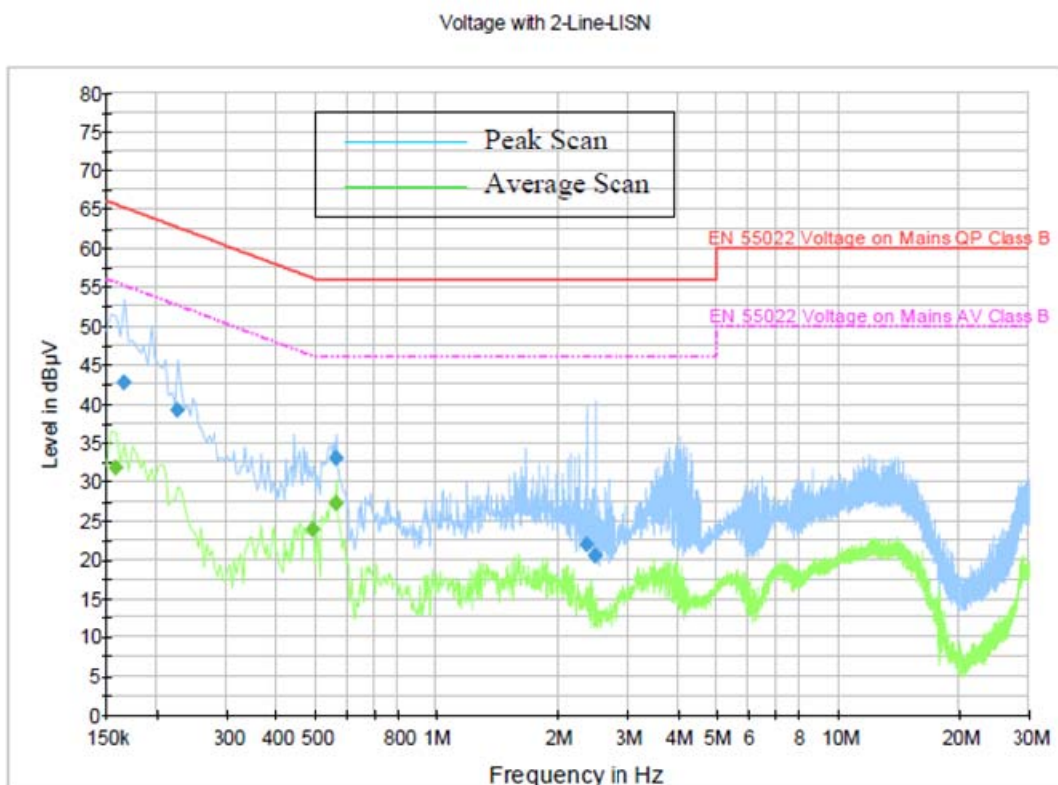




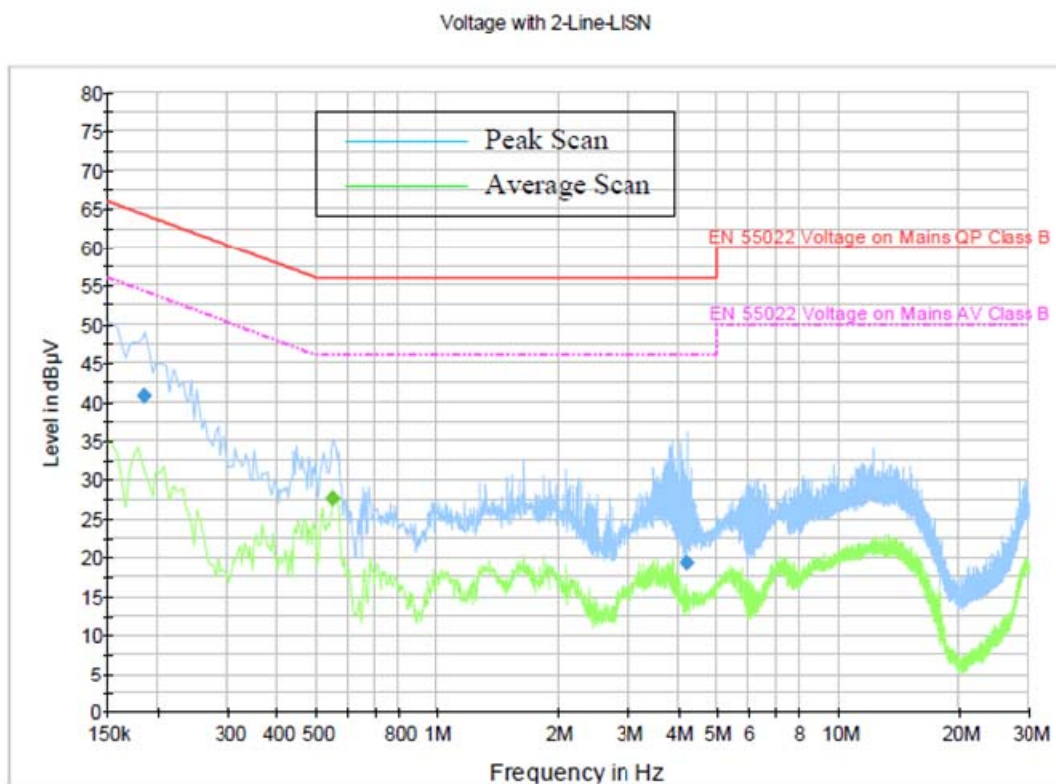
6F-5 – Radio on Receive Line/Neutral 868.9875 MHz (DMO)



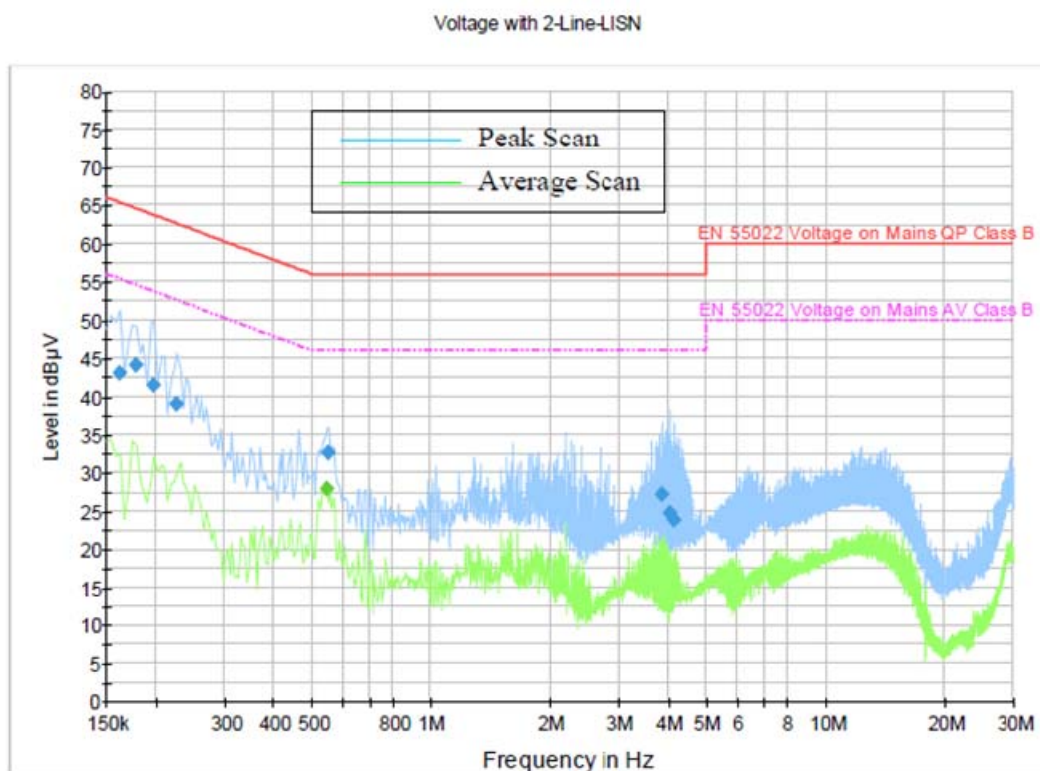
6F-6 – Radio on Transmit Line/Neutral 854.025 MHz (DMO)



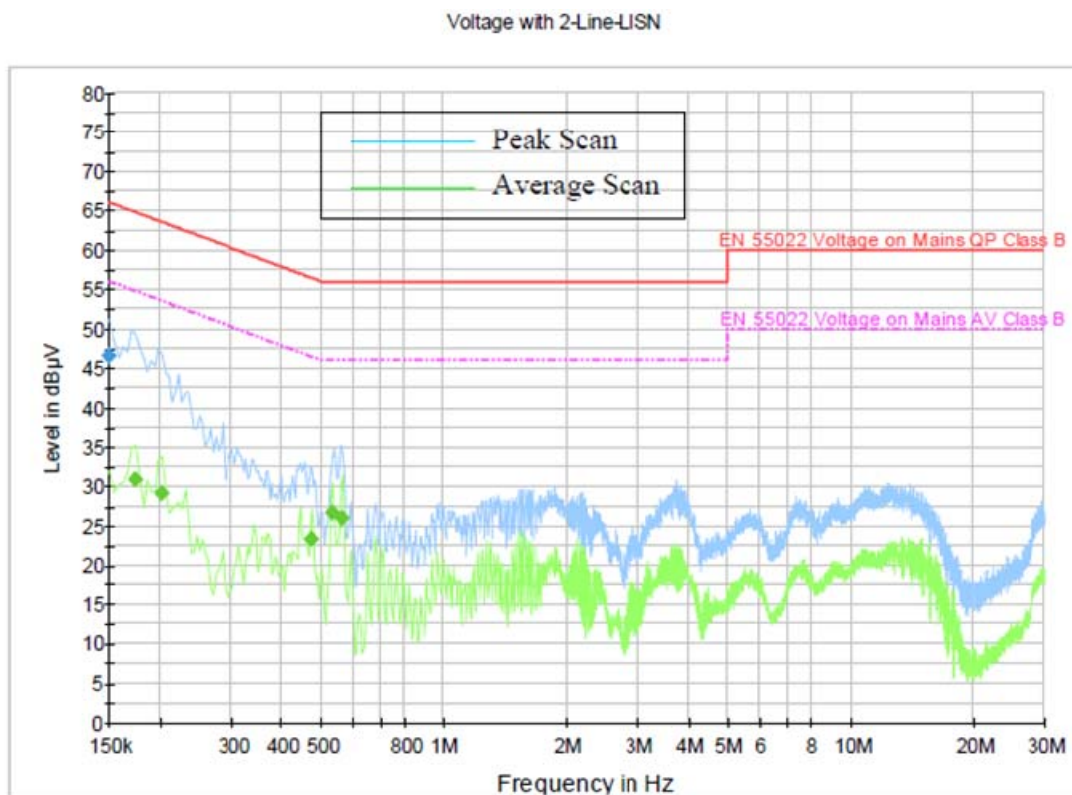
6F-7 – Radio on Transmit Line/Neutral 859.025 MHz (DMO)



6F-8 – Radio on Transmit Line/Neutral 868.9875 MHz (DMO)

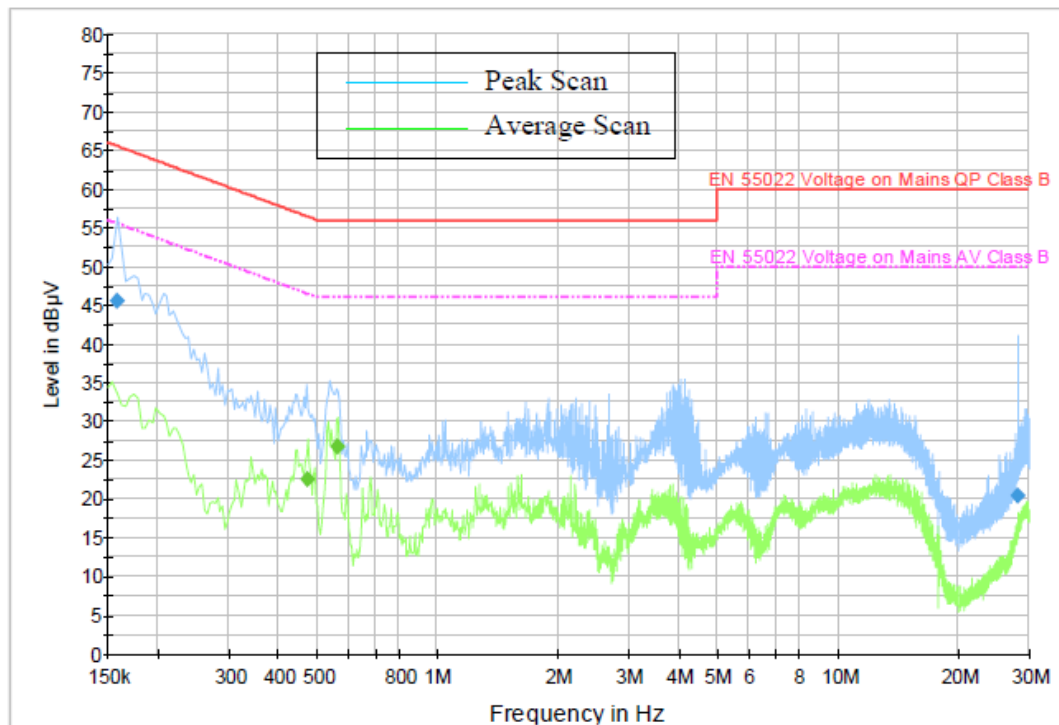


6F-9 – Radio on Transmit Line/Neutral 809.0125 MHz (TMO)



6F-10 – Radio on Transmit Line/Neutral 815.0125 MHz (TMO)

Voltage with 2-Line-LISN



6F-11 – Radio on Transmit Line/Neutral 823.9875 MHz (TMO)

EXHIBIT 6G – Adjacent Channel Power

Frequency Offset	ACP level (dB)	Maximum ACP (dBc) for device < 15W
- 25 kHz	- 68.0	- 55
+ 25 kHz	- 66.7	- 55
- 50 kHz	- 77.9	- 65
+ 50 kHz	- 77.7	- 65
- 75 kHz	- 81.1	- 65
+ 75 kHz	- 81.2	- 65

Table 6G-1 – 815.025 MHz, 25 kHz channel spacing

Frequency Offset	ACP level (dB)	Maximum ACP (dBc) for device < 15W
- 25 kHz	- 65.3	- 55
+ 25 kHz	- 65.4	- 55
- 50 kHz	- 76.3	- 65
+ 50 kHz	- 76.1	- 65
- 75 kHz	- 80.6	- 65
+ 75 kHz	- 80.6	- 65

Table 6G-2 – 859.025 MHz, 25 kHz channel spacing