

**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 – Transmit Audio Frequency Response**

6B-1 –429.9875 MHz, 12.5 kHz Channel Spacing

6B-2 –429.9875 MHz, 25 kHz Channel Spacing (Not for FCC Review)

**EXHIBIT 6C – Transmit Audio Low Pass Filter Response**

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6C-2 –429.9875 MHz, 25 kHz Channel Spacing (Not for FCC Review)

**EXHIBIT 6D – Modulation Limiting**

6D-1 –429.9875 MHz, 12.5 kHz Channel Spacing

6D-2 –429.9875 MHz, 25 kHz Channel Spacing (Not for FCC Review)

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6E-1: 429.9875 MHz, Channel Spacing: 12.5 kHz, Analog Voice: 11K0F3E Mask D

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6E-3: 429.9875 MHz, Channel Spacing: 25 kHz, Analog Voice: 16K0F3E Mask B (Not for FCC review)

6E-4: 450.025 MHz, Channel Spacing: 25 kHz, Analog Voice: 16K0F3E Mask B (Not for FCC review)

6E-5: 429.9875 MHz, Channel Spacing: 12.5 kHz, Digital Voice: 8K10F1E Mask D

6E-6: 450.025 MHz, Channel Spacing: 12.5 kHz, Digital Voice: 8K10F1E Mask D

6E-7: 429.9875 MHz, Channel Spacing: 12.5 kHz, Digital Data: 8K10F1D Mask D

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6E-9: 429.9875 MHz, Channel Spacing: 12.5 kHz, Digital TDMA: 8K10F1W Mask D

6E-10: 450.025 MHz, Channel Spacing: 12.5 kHz, Digital TDMA: 8K10F1W Mask D

**EXHIBIT 6F –Transmit Radiated Spurious Emissions**

6F-1 - 5.7 W, 380.0125 MHz, 12.5 kHz Channel Spacing (Not for FCC Review)

6F-2 - 5.7 W, 406.1125 MHz, 12.5 kHz Channel Spacing

6F-3 - 5.7 W, 429.9875 MHz, 12.5 kHz Channel Spacing

6F-4 - 5.7 W, 469.9875 MHz, 12.5 kHz Channel Spacing

6F-5 - 5.7 W, 380.0125 MHz, 25 kHz Channel Spacing (Not for FCC Review)

6F-6 - 5.7 W, 406.1125 MHz, 25 kHz Channel Spacing (Not for FCC Review)

6F-7 - 5.7 W, 429.9875 MHz, 25 kHz Channel Spacing (Not for FCC Review)

6F-8 - 5.7 W, 469.9875 MHz, 25 kHz Channel Spacing (Not for FCC Review)

**EXHIBIT 6G - Conducted Spurious Emissions**

6G-1 - 5.7 W, 380.0125 MHz, 12.5 kHz Channel Spacing (Not for FCC Review)

6G-2 - 5.7 W, 406.1125 MHz, 12.5 kHz Channel Spacing

6G-3 - 5.7 W, 429.9875 MHz, 12.5 kHz Channel Spacing

6G-4 - 5.7 W, 469.9875 MHz, 12.5 kHz Channel Spacing

**EXHIBIT 6H – Frequency Stability (Volt/Temp)**

6H-1 – 429.9875 MHz vs. Supply Voltage

6H-2 – 429.9875 MHz vs. Temperature

**EXHIBIT 6I – Transient Frequency Behavior**

- 6I-1 - 429.9875 MHz, 12.5 kHz Channel Spacing – Transmitter On
- 6I-2 - 429.9875 MHz, 12.5 kHz Channel Spacing – Transmitter Off
- 6I-3 - 429.9875 MHz, 25 kHz Channel Spacing – Transmitter On (Not for FCC Review)
- 6I-4 - 429.9875 MHz, 25 kHz Channel Spacing – Transmitter Off (Not for FCC Review)

\*\* Please note that the above data were taken following the procedures and limits outlined in TIA 603-D, TIA 102-CAAA-C and RSS 119 during the month of February 2014. See Table 2 in Ex07\_test procedures

Radio model tested: H84QDH9PW7AN (MUE4386)

**Important Note: The data in this test report meets or exceeds the technical requirements of FCC Rule Parts 90**

**EXHIBIT 6A****RF Conducted Output Power:****Frequency= 380.0125 MHz:**

Output RF power	1.00 Watts
DC Voltage	7.50 Volts
DC Current	0.96 Amps

Output RF power	5.70 Watts
DC Voltage	7.50 Volts
DC Current	1.92 Amps

**Frequency= 406.1125 MHz:**

Output RF power	1.00 Watts
DC Voltage	7.50 Volts
DC Current	0.90 Amps

Output RF power	5.70 Watts
DC Voltage	7.50 Volts
DC Current	1.80 Amps

**Frequency= 429.9875 MHz:**

Output RF power	1.00 Watts
DC Voltage	7.50 Volts
DC Current	0.90 Amps

Output RF power	5.70 Watts
DC Voltage	7.50 Volts
DC Current	1.86 Amps

**Frequency= 450.0250 MHz:**

Output RF power	1.00 Watts
DC Voltage	7.50 Volts
DC Current	0.92 Amps

Output RF power	5.70 Watts
DC Voltage	7.50 Volts
DC Current	1.89 Amps

**Frequency = 469.9875 MHz:**

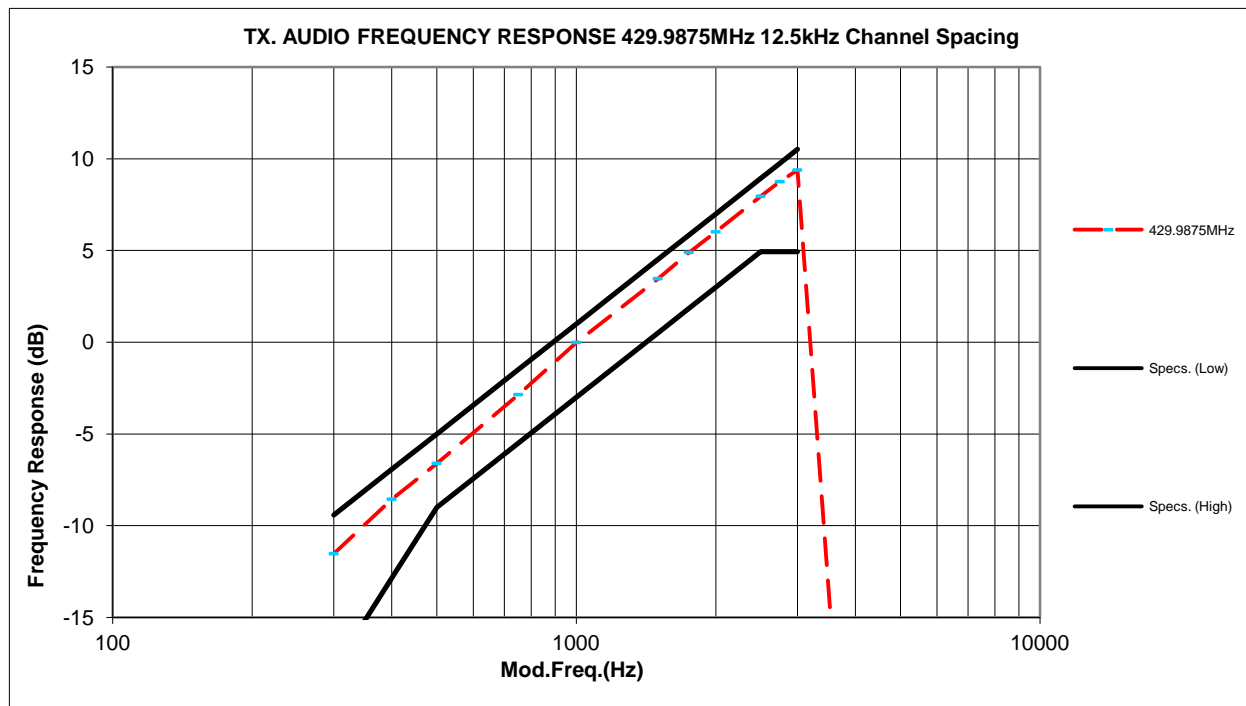
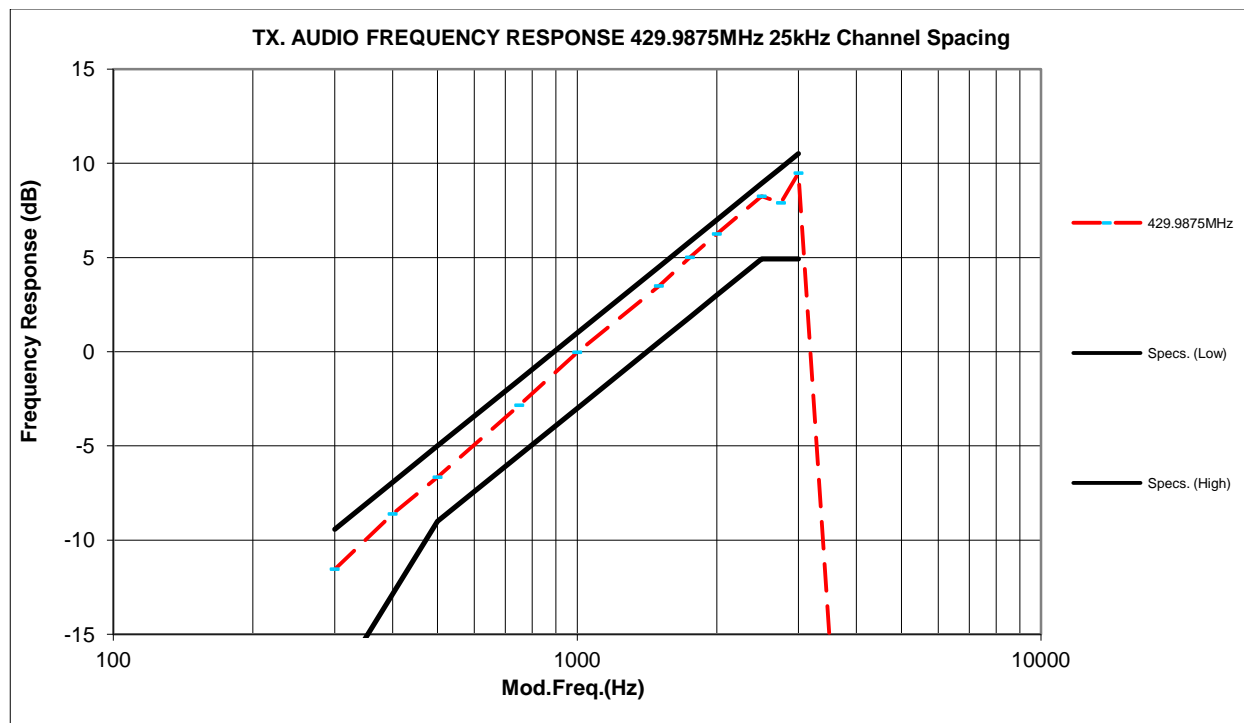
Output RF power	1.00 Watts
DC Voltage	7.50 Volts
DC Current	0.94 Amps

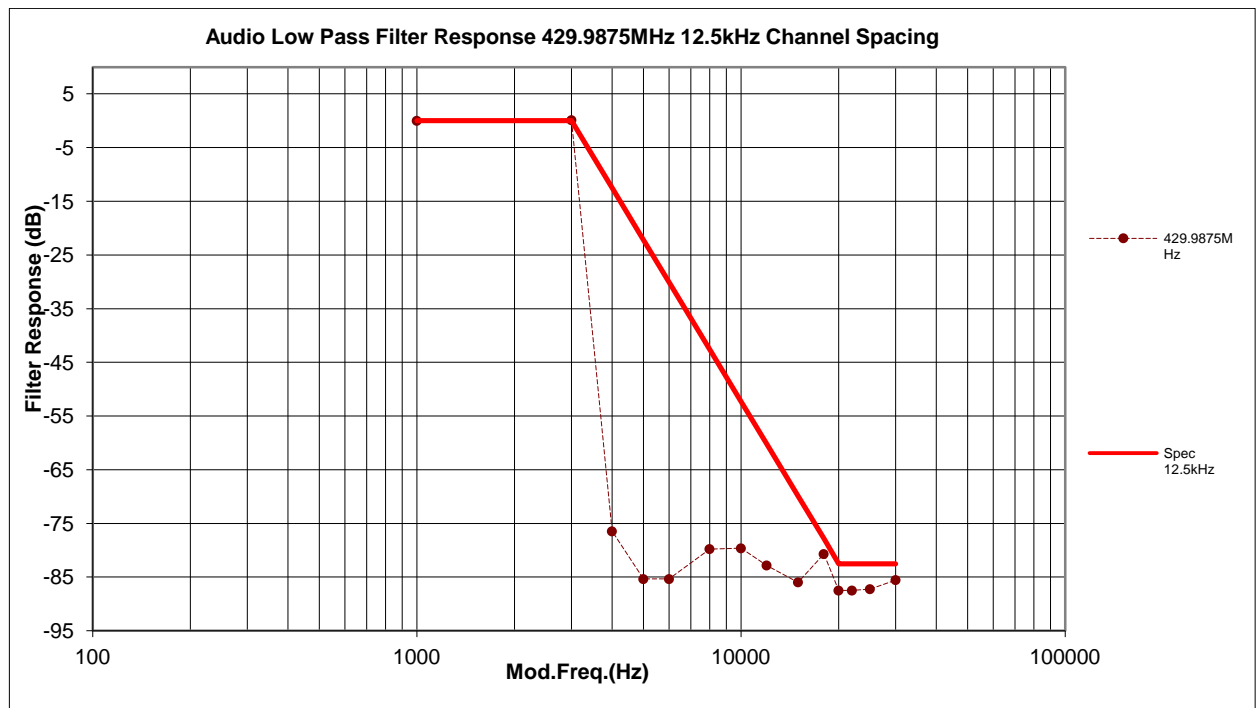
Output RF power	5.70 Watts
DC Voltage	7.50 Volts
DC Current	1.97 Amps

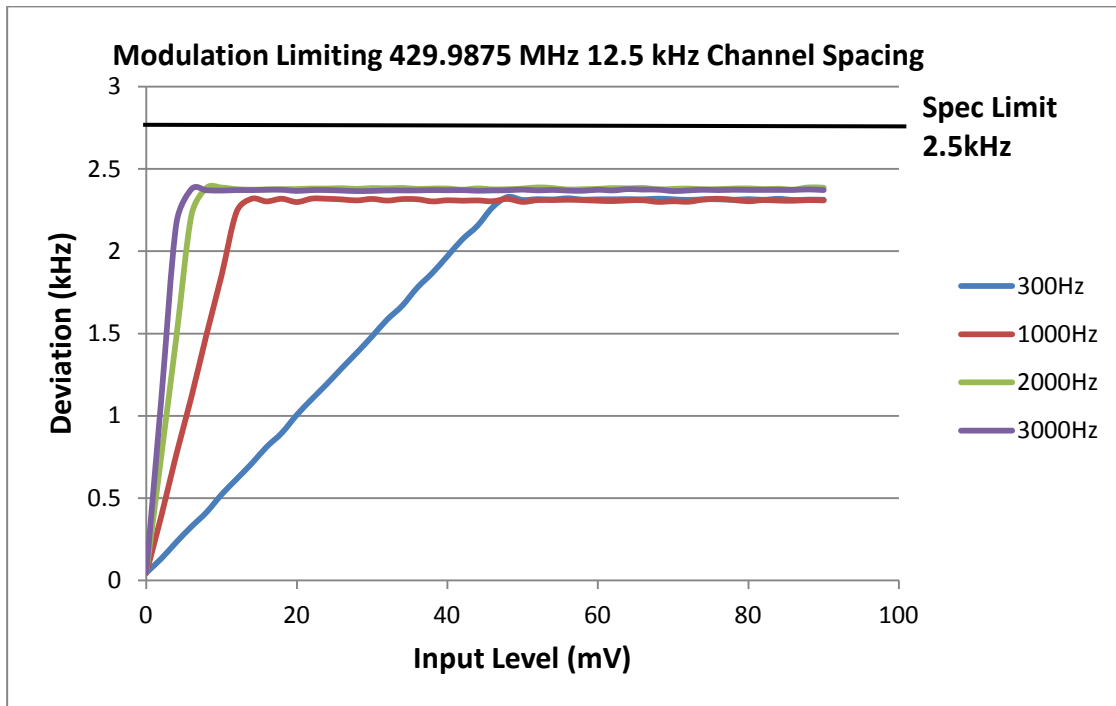
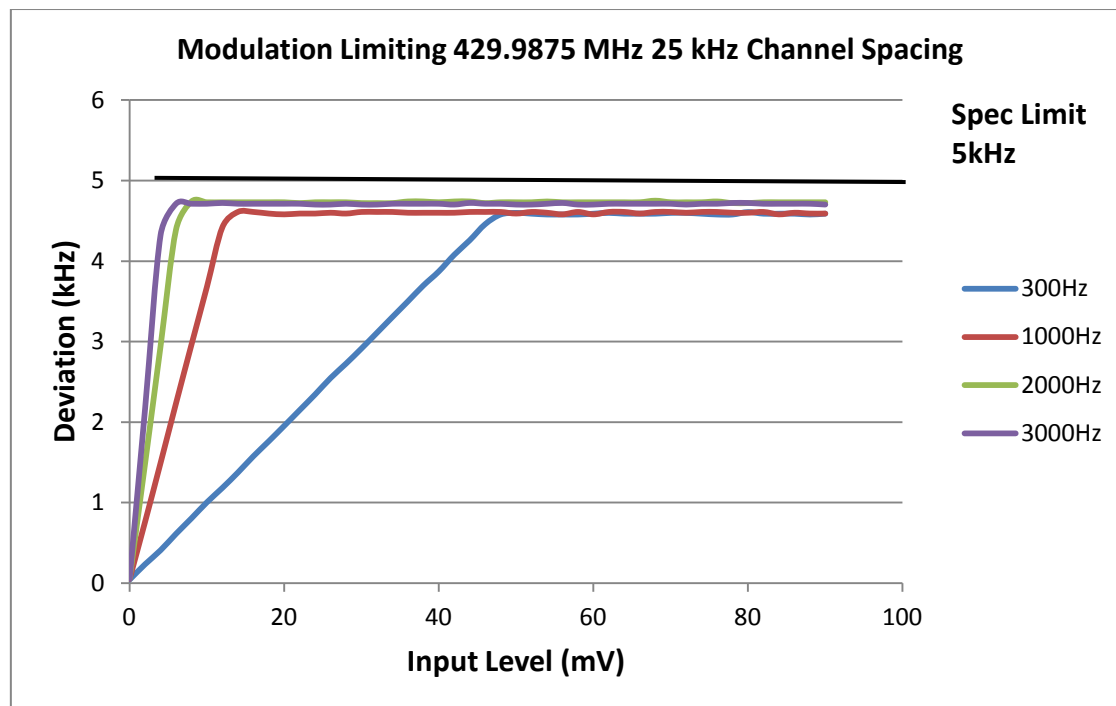
**Frequency = 459.1250 MHz:**

Output RF power	1.00 Watts
DC Voltage	7.50 Volts
DC Current	0.92 Amps

Output RF power	5.70 Watts
DC Voltage	7.50 Volts
DC Current	1.91 Amps

**EXHIBIT 6B****Transmit Audio Frequency Response****Figure 6B-1:** 12.5 kHz Channel Spacing, 429.9875 MHz, Transmit Audio Frequency Response**Figure 6B-2:** 25 kHz Channel Spacing, 429.9875 MHz, Transmit Audio Frequency Response (Not for FCC review)

**EXHIBIT 6C****Transmit Audio Low Pass Filter Response****Figure 6C-1:** 12.5 kHz Channel Spacing, 429.9875 MHz, Transmit Audio Low Pass Filter Response**Figure 6C-2:** 25 kHz Channel Spacing, 429.9875 MHz, Transmit Audio Low Pass Filter Response  
(Not for FCC review)

**EXHIBIT 6D****Modulation Limiting****Figure 6D-1:** 12.5 kHz Channel Spacing, 429.9875 MHz, Modulation Limiting**Figure 6D-2:** 25 kHz Channel Spacing, 429.9875 MHz, Modulation Limiting (Not for FCC review)

**EXHIBIT 6E****BANDWIDTH CALCULATIONS:**

Carson's Rule for FM modulation is utilized to compute the bandwidth shown in the FCC emission designator. Carson's Rule is:

$$BW = 2 * (M + D) \quad \text{where: } BW = \text{Bandwidth}$$

M= Maximum modulating frequency

D = Deviation

Shown below are the calculations required for FCC ID: **AZ489FT4917**.

**EXHIBIT 6E-1****Standard Audio Modulation (12.5 kHz Channelization, Analog Voice):**

Emission Designator 11K0F3E

In this case, the maximum modulating frequency is 3.0 kHz with a 2.5 kHz deviation.

$$BW = 2(M+D) = 2*(3.0 \text{ kHz} + 2.5 \text{ kHz}) = 11 \text{ kHz} \Rightarrow 11K0$$

F3E portion of the designator indicates voice.

Therefore, the entire designator for 12.5 kHz channelization analog voice is 11K0F3E.

**EXHIBIT 6E-2****Standard Audio Modulation (25 kHz Channelization, Analog Voice) (Not for FCC review):**

Emission Designator 16K0F3E

In this case, the maximum modulating frequency is 3 kHz with a 5 kHz deviation.

$$BW = 2(M+D) = 2*(3 \text{ kHz} + 5 \text{ kHz}) = 16 \text{ kHz} \Rightarrow 16K0$$

F3E portion of the designator indicates voice.

Therefore, the entire designator for 25 kHz channelization analog voice is 16K0F3E.

**EXHIBIT 6E-3****Digital (12.5 kHz Channelization, Digital Data):**

Emission Designator 8K10F1D

The 99% energy rule (title 47CFR 2.1049 (h)) was used for digital mode and is more accurate than Carson's rule. It basically states that 99% of the modulation energy falls within X kHz, in this case, 8.10 kHz. Measurements were performed in accordance with TIA/EIA 102.CAAB Section 3.2.5. The emission mask was obtained from 47CFR 90.210(d).

F1D portion of the designator indicates digital data.

Therefore, the entire designator for 12.5 kHz channelization digital data is 8K10F1D.

**EXHIBIT 6E-4****Digital (12.5 kHz Channelization, Digital Voice):**

Emission Designator 8K10F1E

The 99% energy rule (title 47CFR 2.1049 (h)) was used for digital mode and is more accurate than Carson's rule. It basically states that 99% of the modulation energy falls within X kHz, in this case, 8.10 kHz. Measurements were performed in accordance with TIA/EIA 102.CAAB Section 3.2.5. The emission mask was obtained from 47CFR 90.210(d).



F1E portion of the designator indicates digital voice.

Therefore, the entire designator for 12.5 kHz channelization digital voice is 8K10F1E.

**EXHIBIT 6E-5**

**Digital (12.5 kHz Channelization, Digital TDMA):**

Emission Designator 8K10F1W

The 99% energy rule (title 47CFR 2.1049 (h)) was used for digital mode and is more accurate than Carson's rule. It basically states that 99% of the modulation energy falls within X kHz, in this case, 8.10 kHz Measurements were performed in accordance with TIA/EIA 102.CAAB Section 3.2.5. The emission mask was obtained from 47CFR 90.210(d).

F1W portion of the designator indicates digital TDMA.

Therefore, the entire designator for 12.5 kHz channelization digital TDMA is 8K10F1W.

Occupied Bandwidth Data

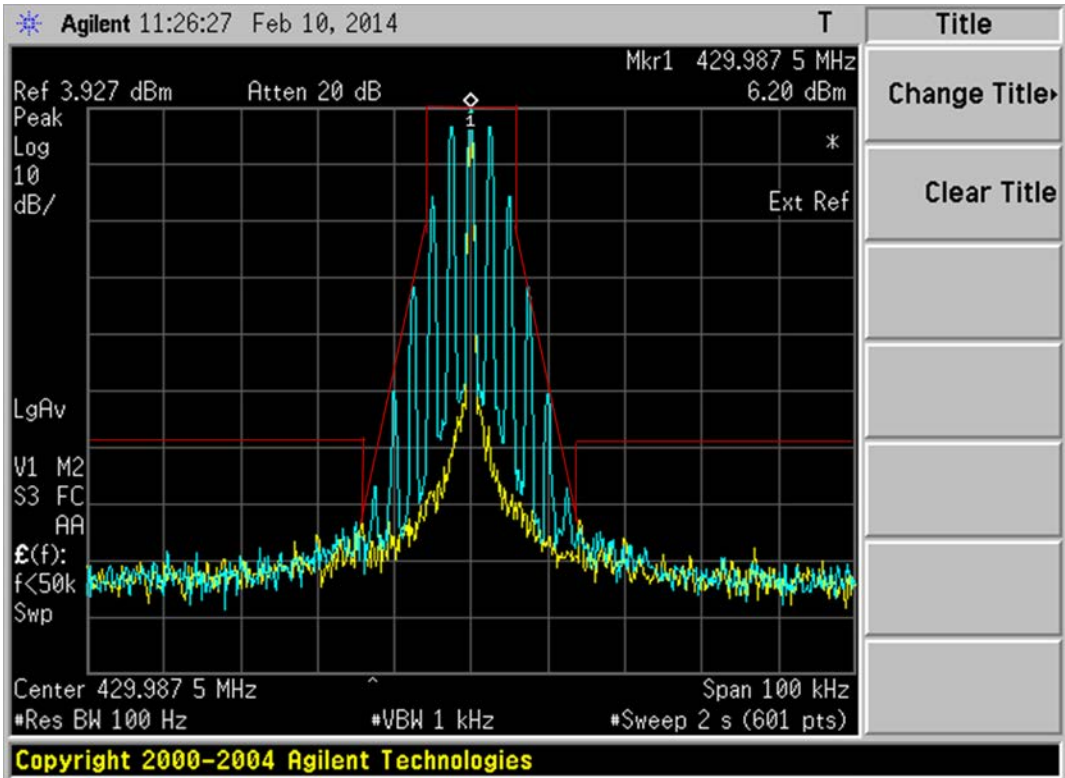


Figure 6E-1: 429.9875MHz, Channel Spacing:12.5 kHz, Analog Voice: 11K0F3E, Mask D

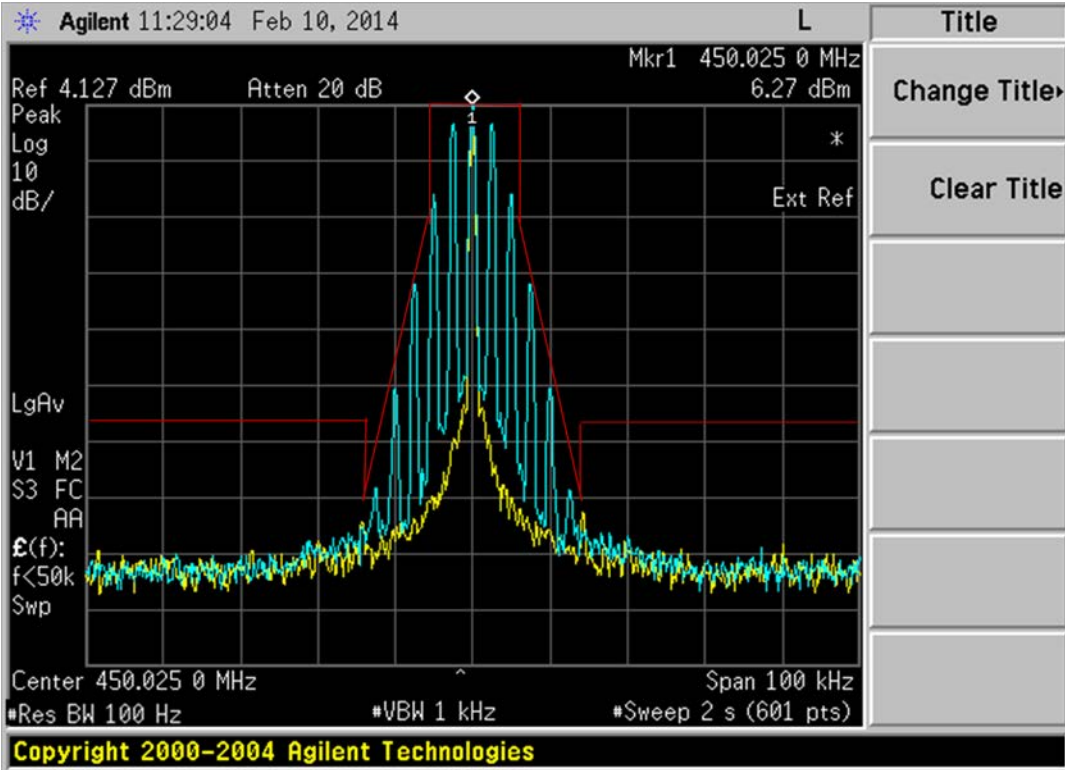


Figure 6E-2: 450.025MHz, Channel Spacing:12.5 kHz, Analog Voice: 11K0F3E, Mask D

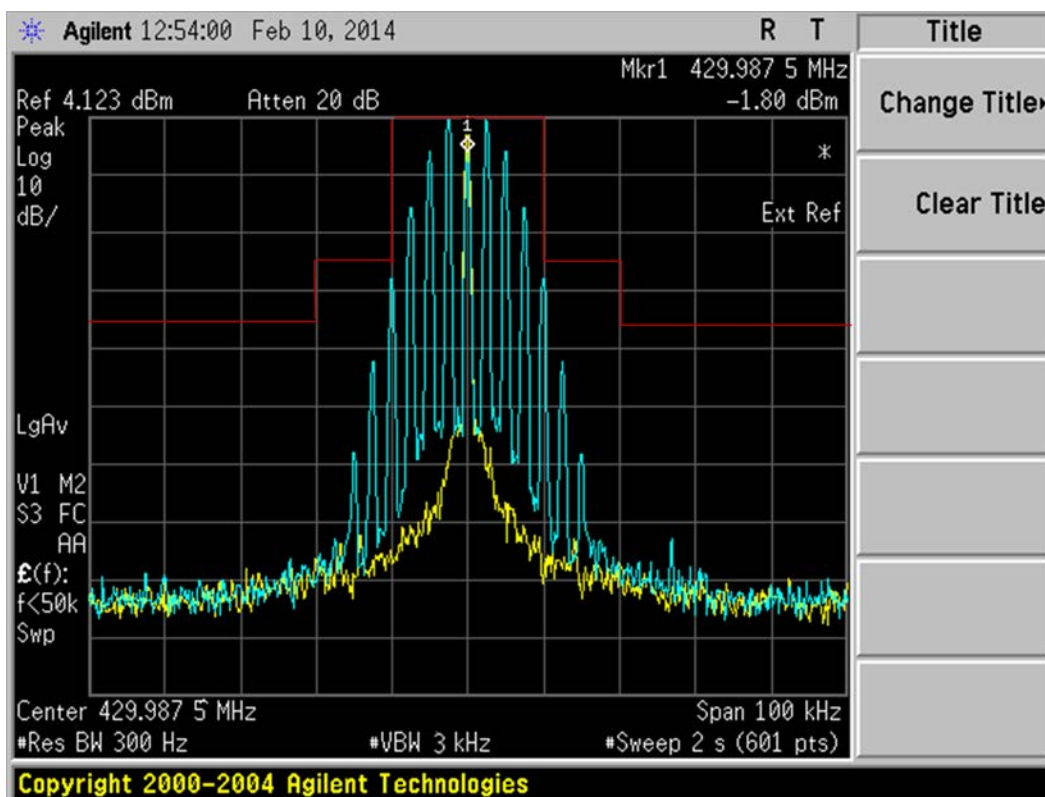


Figure 6E-3: 429.9875MHz, Channel Spacing: 25 kHz, Analog Voice: 16K0F3E, Mask B (Not for FCC review)

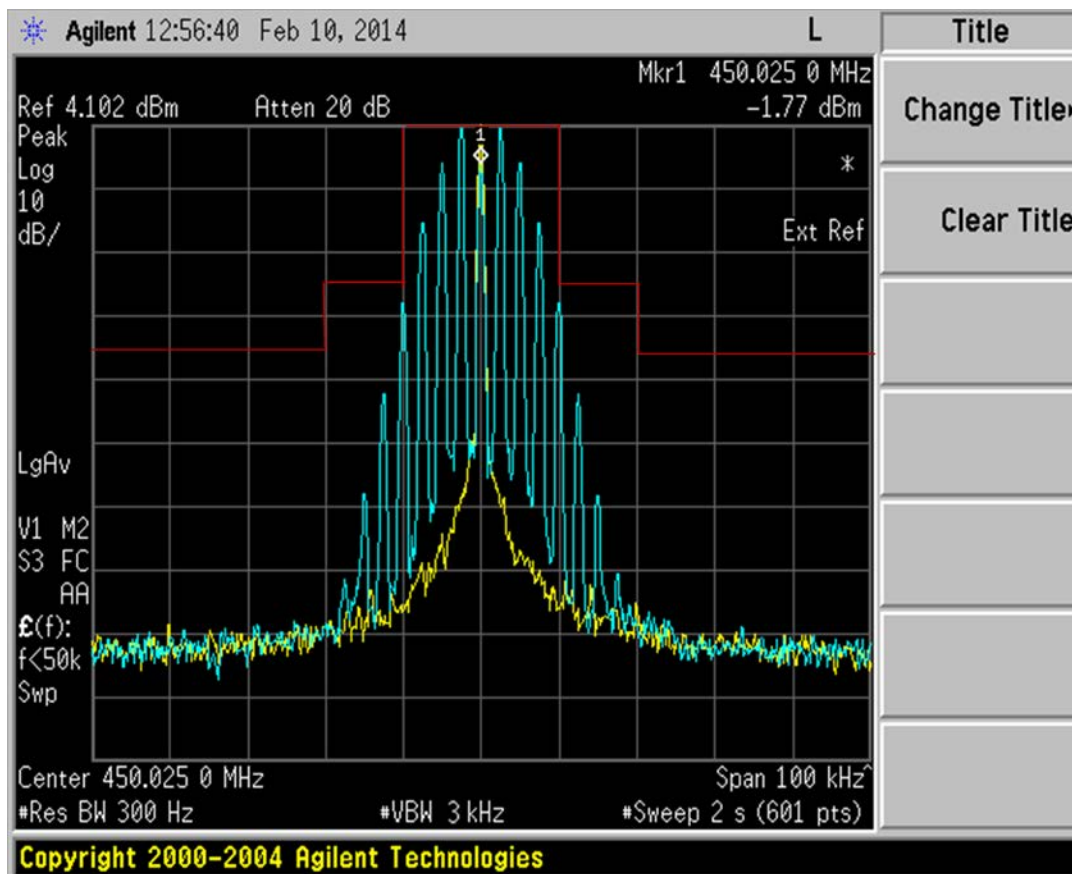


Figure 6E-4: 450.025MHz, Channel Spacing: 25 kHz, Analog Voice: 16K0F3E, Mask B (Not for FCC review)

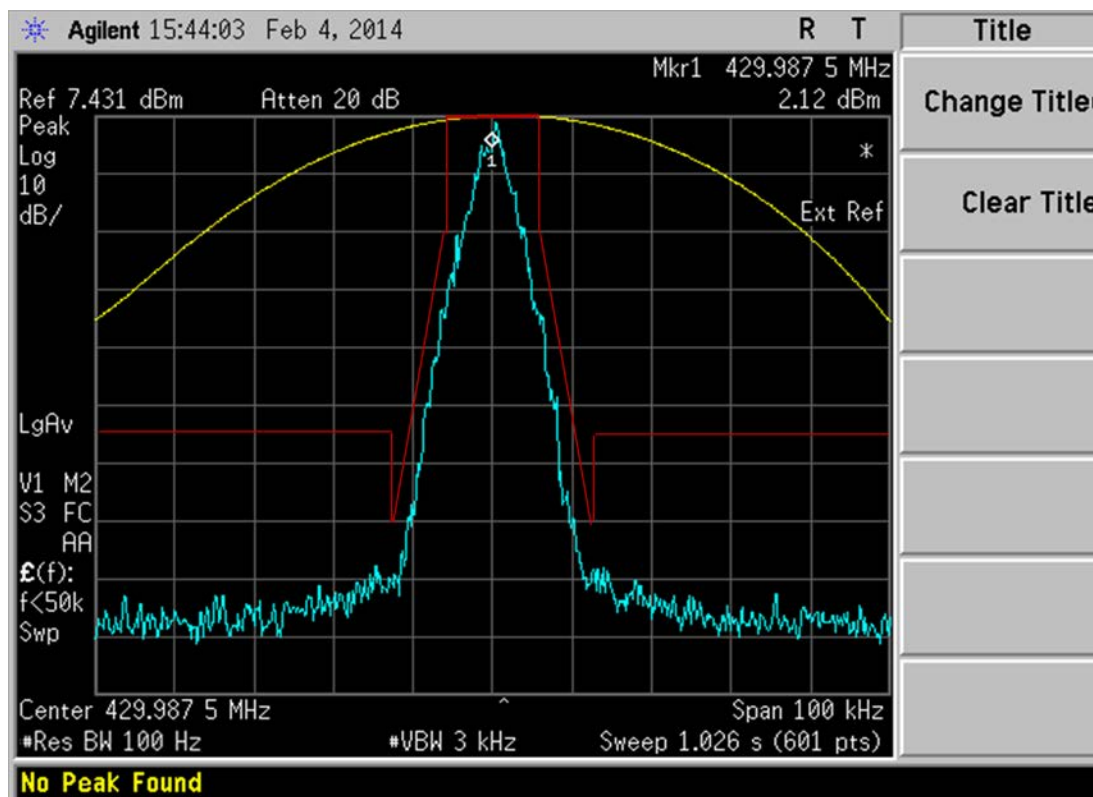


Figure 6E-5: 429.9875MHz, Channel Spacing: 12.5 kHz, Digital Voice: 8K10F1E Mask D

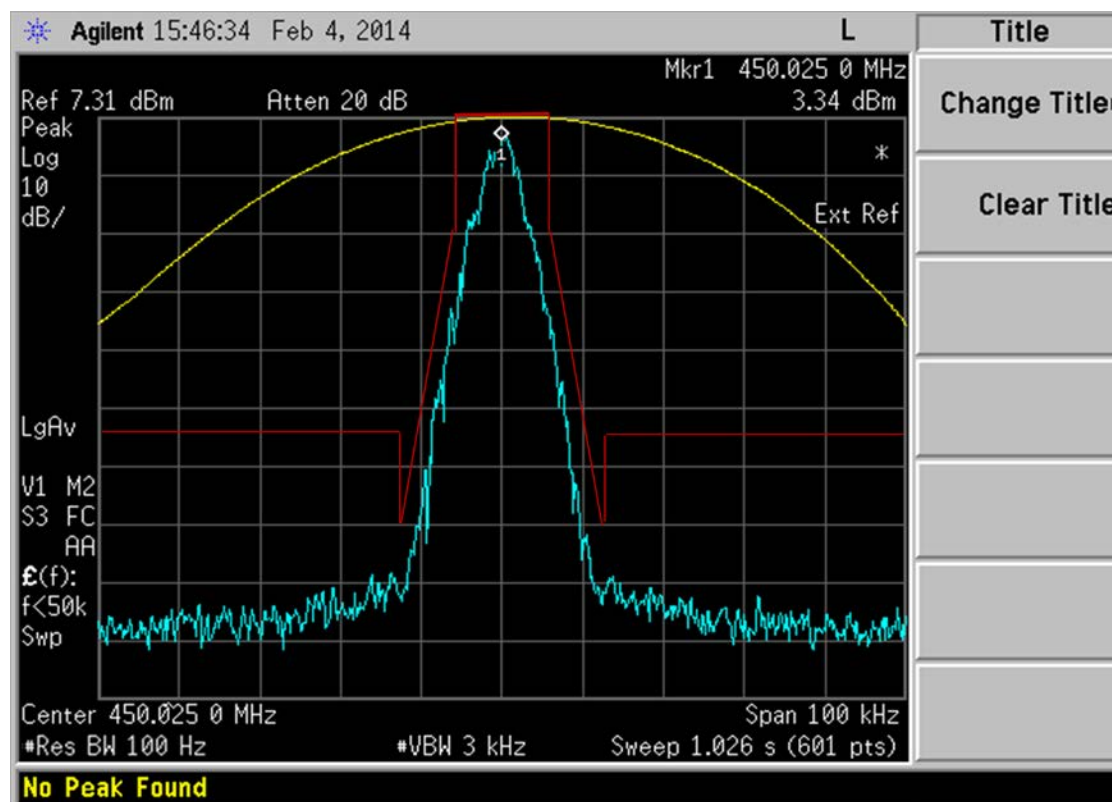


Figure 6E-6: 450.025MHz, Channel Spacing: 12.5 kHz, Digital Voice: 8K10F1E Mask D

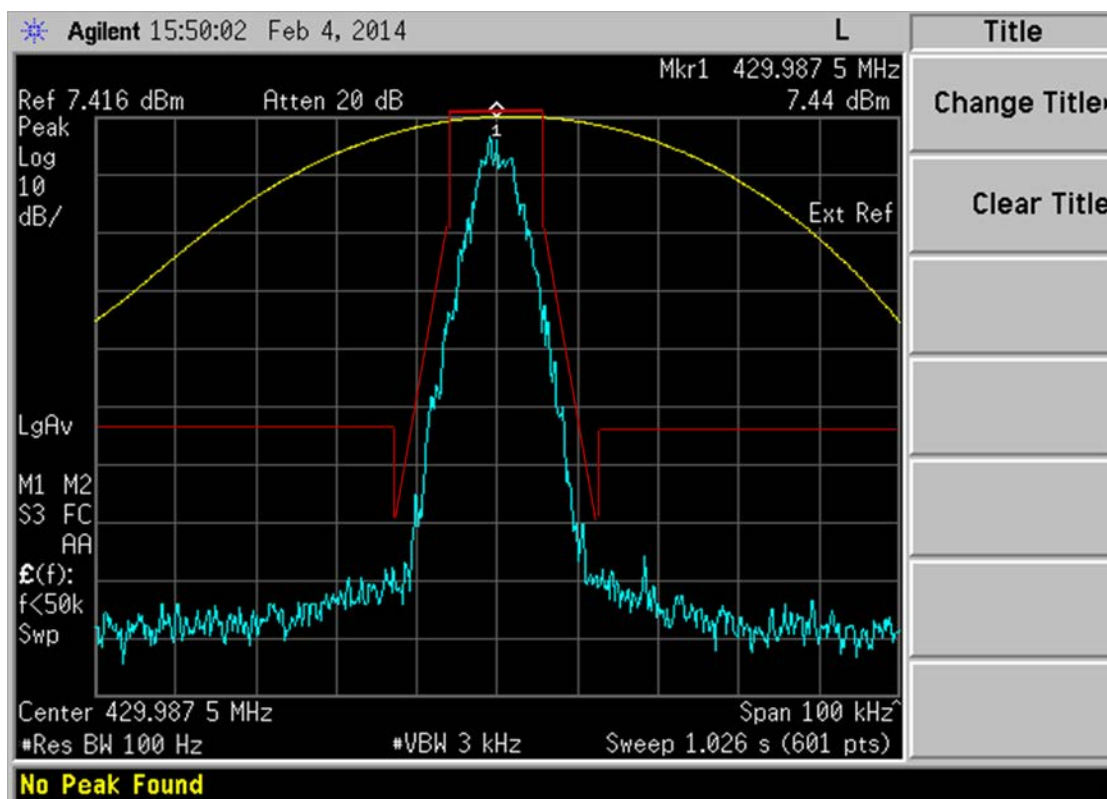


Figure 6E-7: 429.9875MHz, Channel Spacing: 12.5 kHz, Digital Data: 8K10F1D Mask D

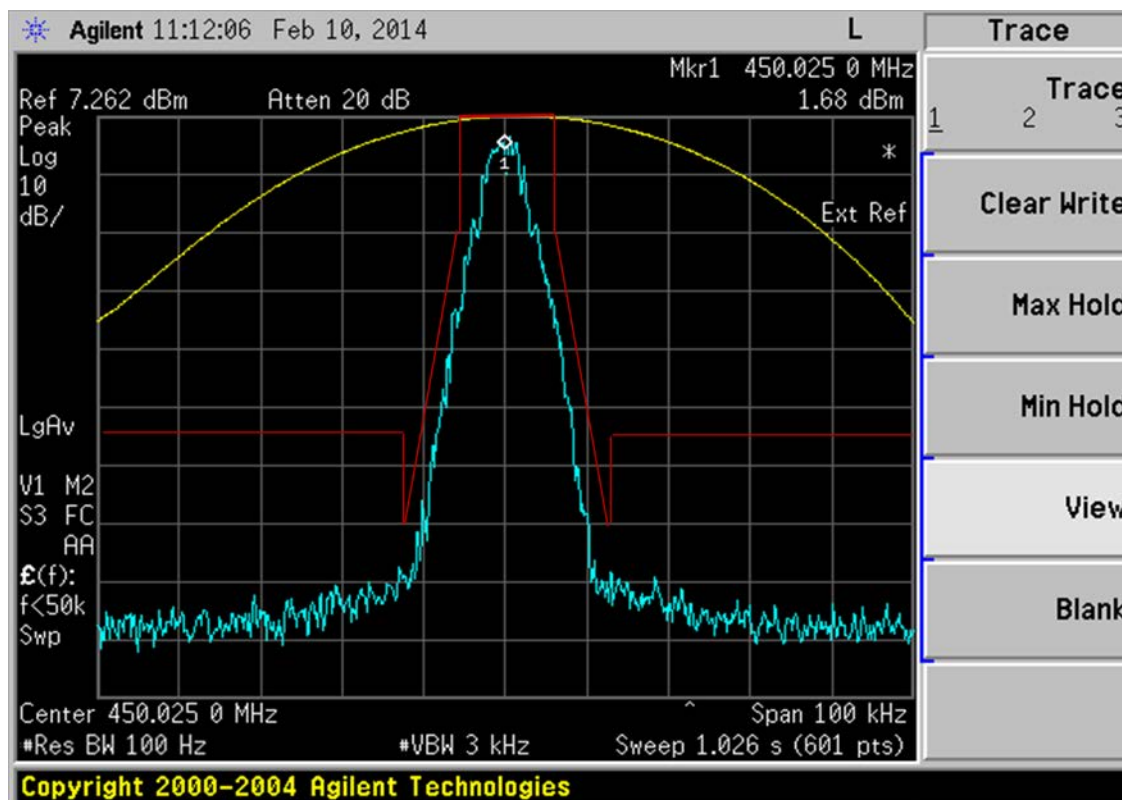


Figure 6E-8 450.025MHz, Channel Spacing: 12.5 kHz, Digital Data: 8K10F1D Mask D



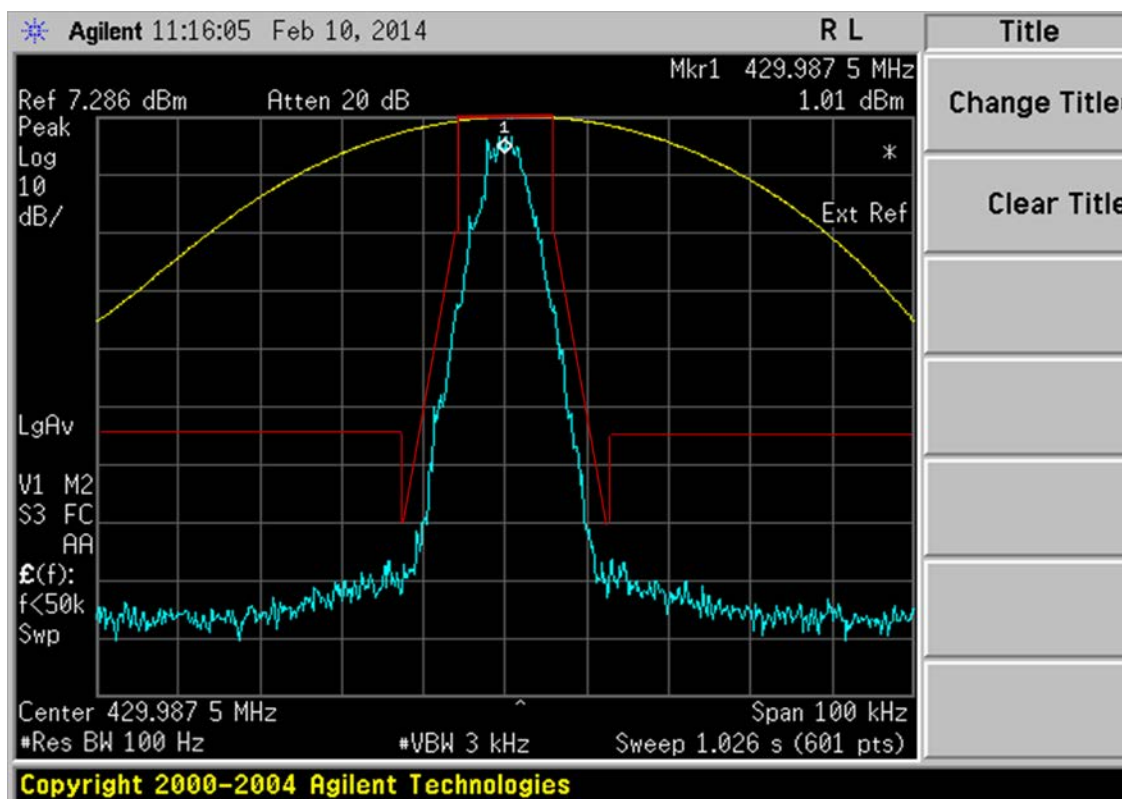


Figure 6E-9: 429.9875MHz, Channel Spacing: 12.5 kHz, Digital TDMA: 8K10F1W Mask D

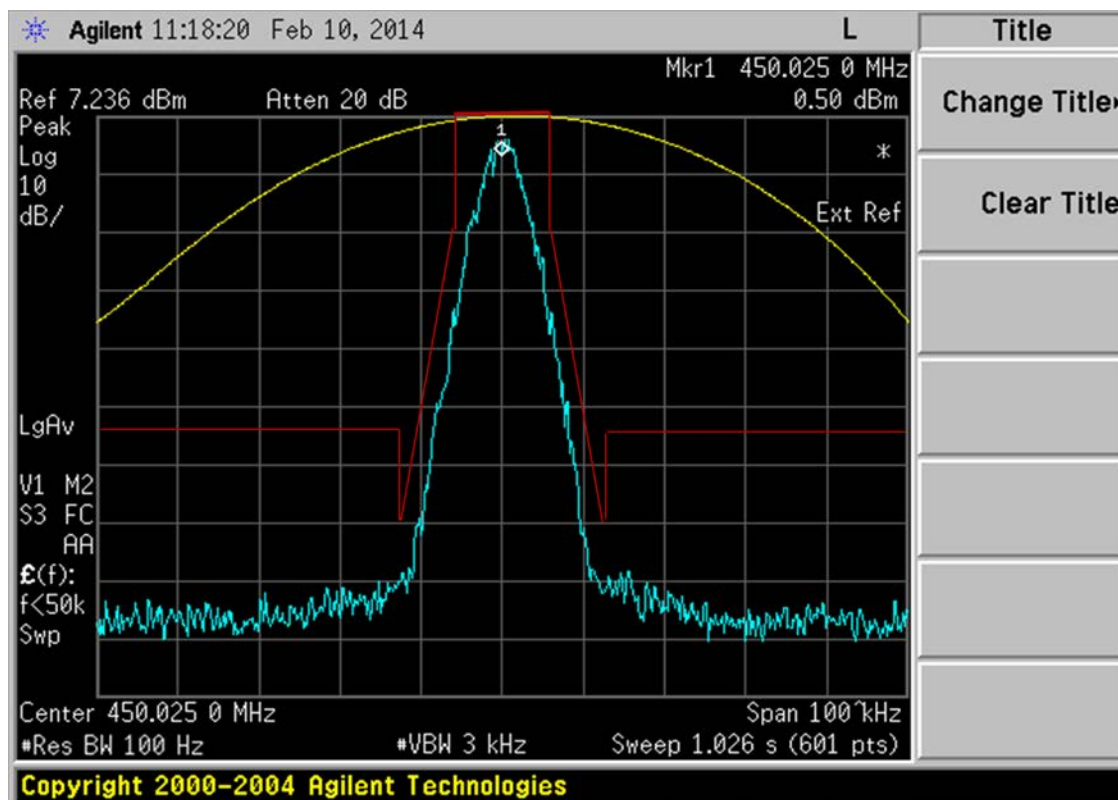
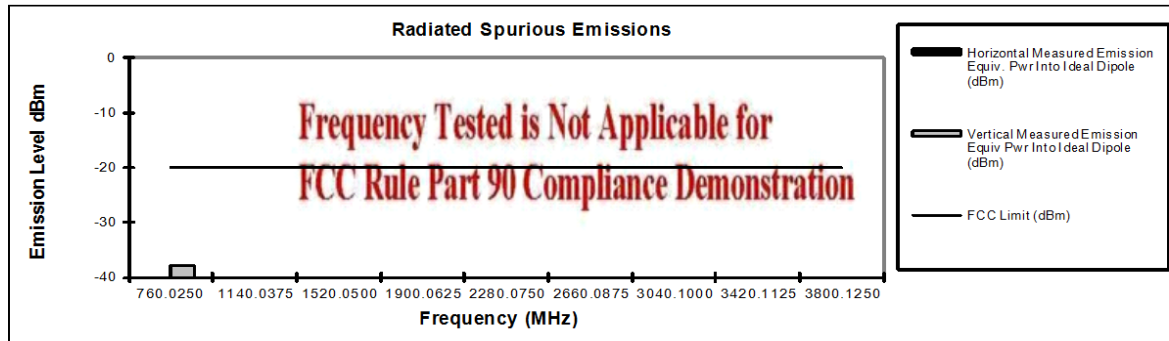


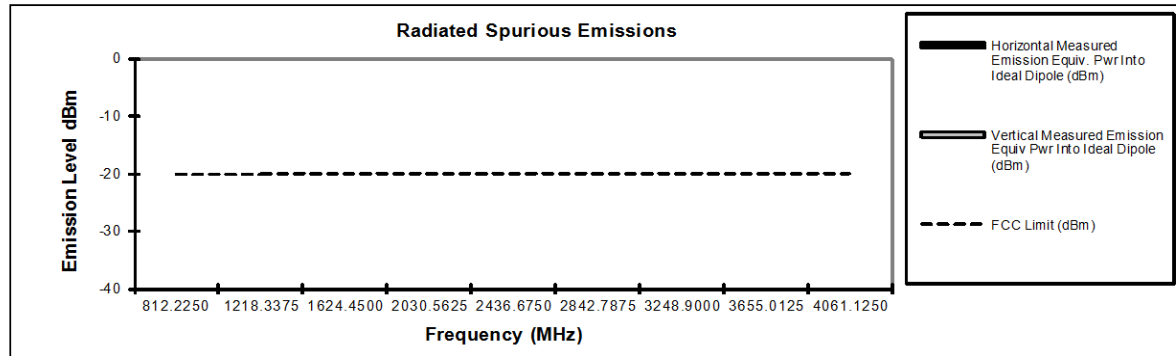
Figure 6E-10: 450.025MHz, Channel Spacing: 12.5 kHz, Digital TDMA: 8K10F1W Mask D

**EXHIBIT 6F****Transmitter Radiated Spurious Emissions****Tx Power: 5.7 Watts****380.0125 MHz****Channel Spacing 12.5kHz | S/N 837TPX0063**

Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
760.0250	-20	*	-37.94
1140.0375	-20	*	*
1520.0500	-20	*	*
1900.0625	-20	*	*
2280.0750	-20	*	*
2660.0875	-20	*	*
3040.1000	-20	*	*
3420.1125	-20	*	*
3800.1250	-20	*	*

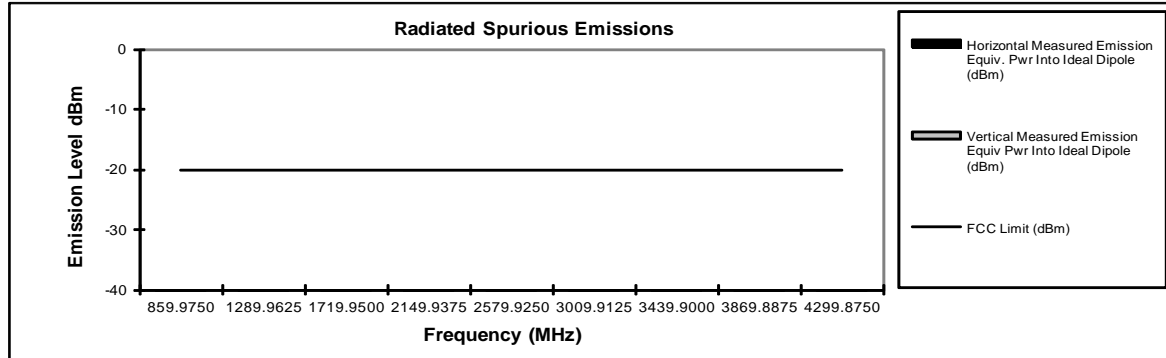
**Figure 6F-1: 5.70W 380.0125 MHz, 12.5 kHz Channel Spacing (Not for FCC Review)****Tx Power: 5.7 Watts****406.1125 MHz****Channel Spacing 12.5kHz | S/N 837TPX0063**

Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
812.2250	-20	*	*
1218.3375	-20	*	*
1624.4500	-20	*	*
2030.5625	-20	*	*
2436.6750	-20	*	*
2842.7875	-20	*	*
3248.9000	-20	*	*
3655.0125	-20	*	*
4061.1250	-20	*	*

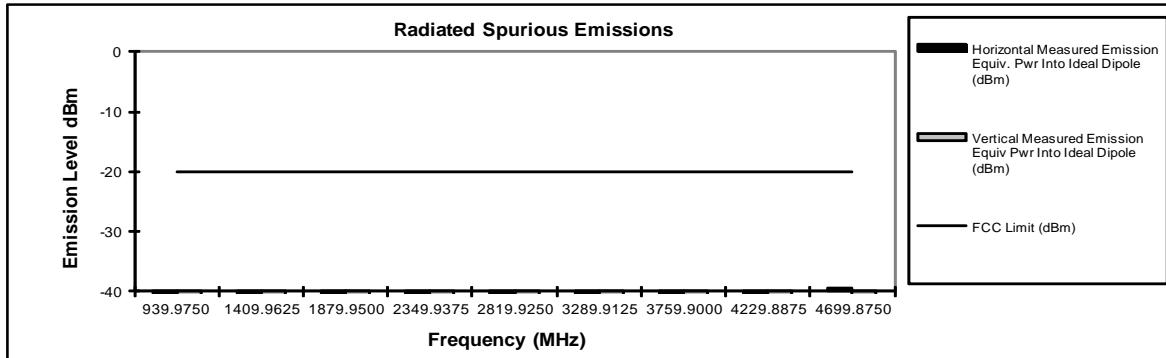
**Figure 6F-2: 5.70W 406.1125 MHz, 12.5 kHz Channel Spacing**

**Tx Power: 5.7 Watts****429.9875 MHz****Channel Spacing 12.5kHz | S/N 837TPX0063**

Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
859.9750	-20	*	*
1289.9625	-20	*	*
1719.9500	-20	*	*
2149.9375	-20	*	*
2579.9250	-20	*	*
3009.9125	-20	*	*
3439.9000	-20	*	*
3869.8875	-20	*	*
4299.8750	-20	*	*

**Figure 6F-3: 5.70W 429.9875 MHz, 12.5 kHz Channel Spacing****Tx Power: 5.7 Watts****469.9875 MHz****Channel Spacing 12.5kHz | S/N 837TPX0063**

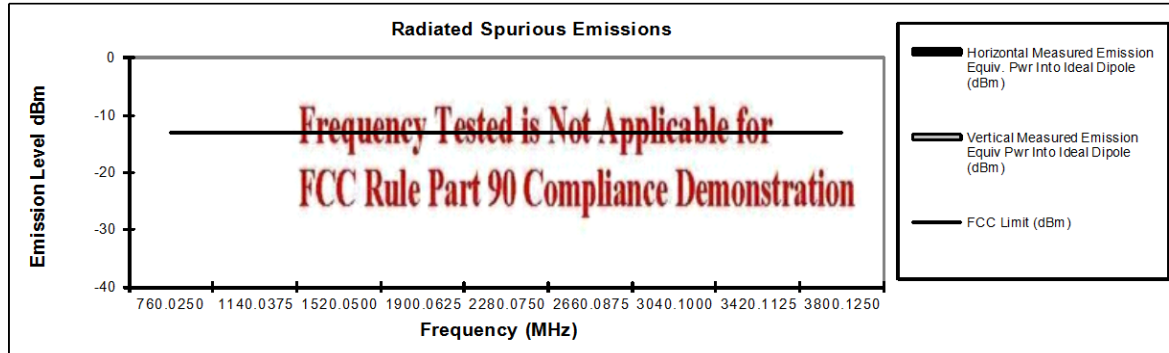
Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
939.9750	-20	*	*
1409.9625	-20	*	*
1879.9500	-20	*	*
2349.9375	-20	*	*
2819.9250	-20	*	*
3289.9125	-20	*	*
3759.9000	-20	*	*
4229.8875	-20	*	*
4699.8750	-20	-39.29	*

**Figure 6F-4: 5.70W 469.9875 MHz, 12.5 kHz Channel Spacing**

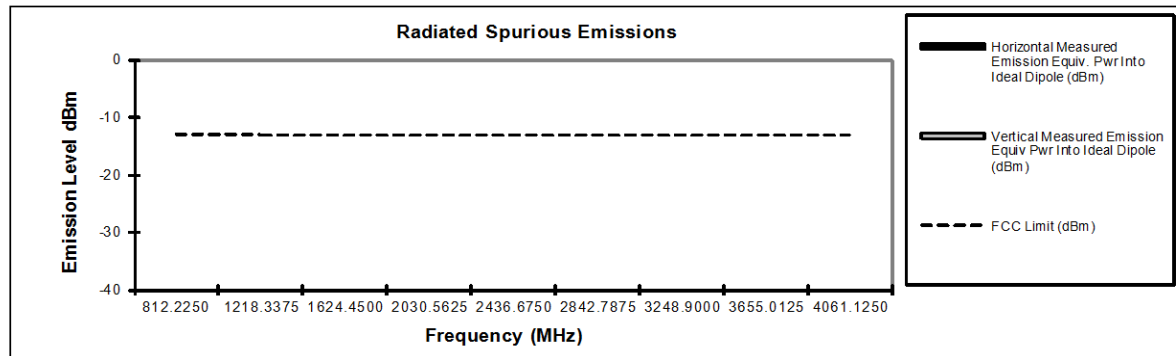


**Tx Power: 5.7 Watts****380.0125 MHz****Channel Spacing 25kHz | S/N 837TPX0063**

Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
760.0250	-13	*	*
1140.0375	-13	*	*
1520.0500	-13	*	*
1900.0625	-13	*	*
2280.0750	-13	*	*
2660.0875	-13	*	*
3040.1000	-13	*	*
3420.1125	-13	*	*
3800.1250	-13	*	*

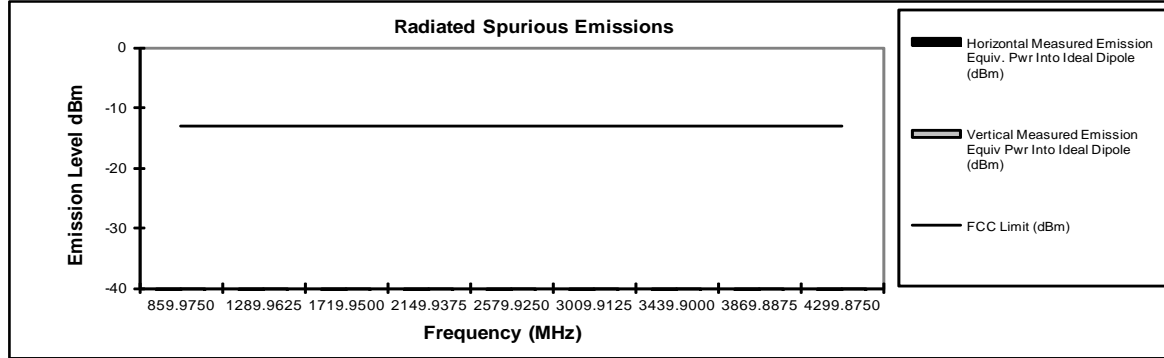
**Figure 6F-5: 5.70W 380.0125 MHz, 25 kHz Channel Spacing (Not for FCC Review)****Tx Power: 5.7 Watts****406.1125 MHz****Channel Spacing 25kHz | S/N 837TPX0063**

Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
812.2250	-13	*	*
1218.3375	-13	*	*
1624.4500	-13	*	*
2030.5625	-13	*	*
2436.6750	-13	*	*
2842.7875	-13	*	*
3248.9000	-13	*	*
3655.0125	-13	*	*
4061.1250	-13	*	*

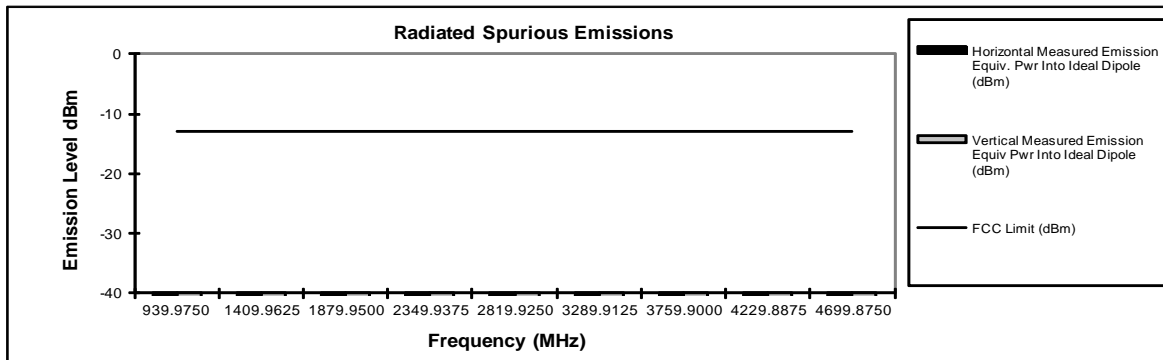
**Figure 6F-6: 5.70W 406.1125 MHz, 25 kHz Channel Spacing (Not for FCC Review)**

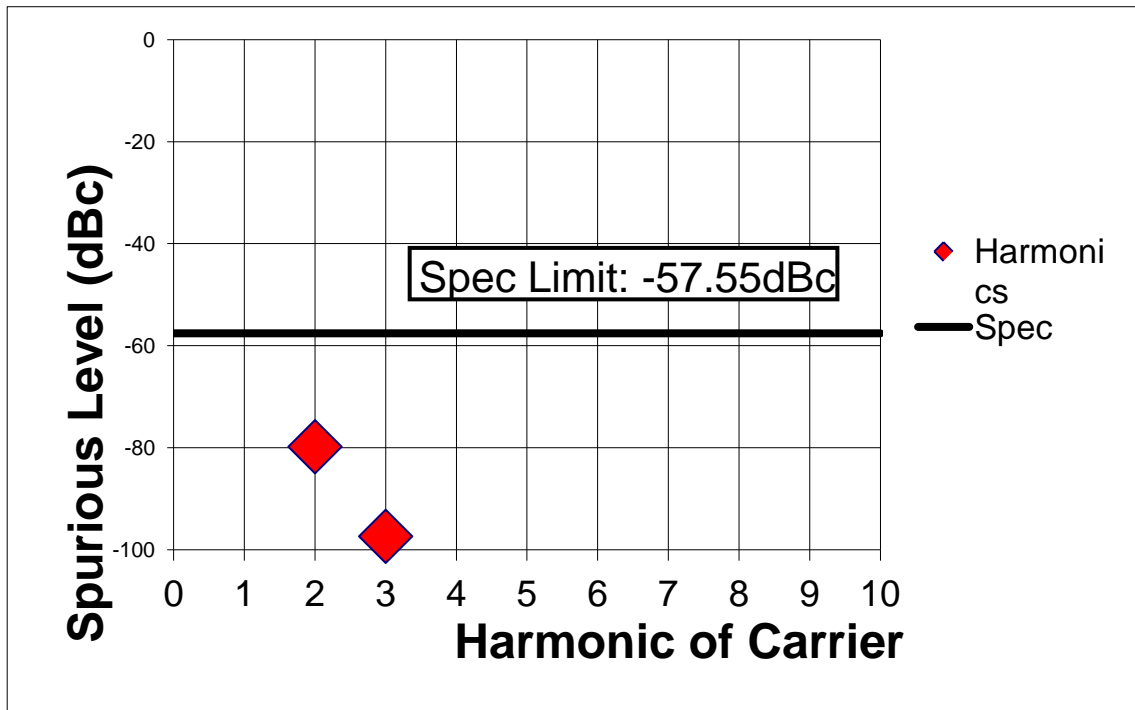
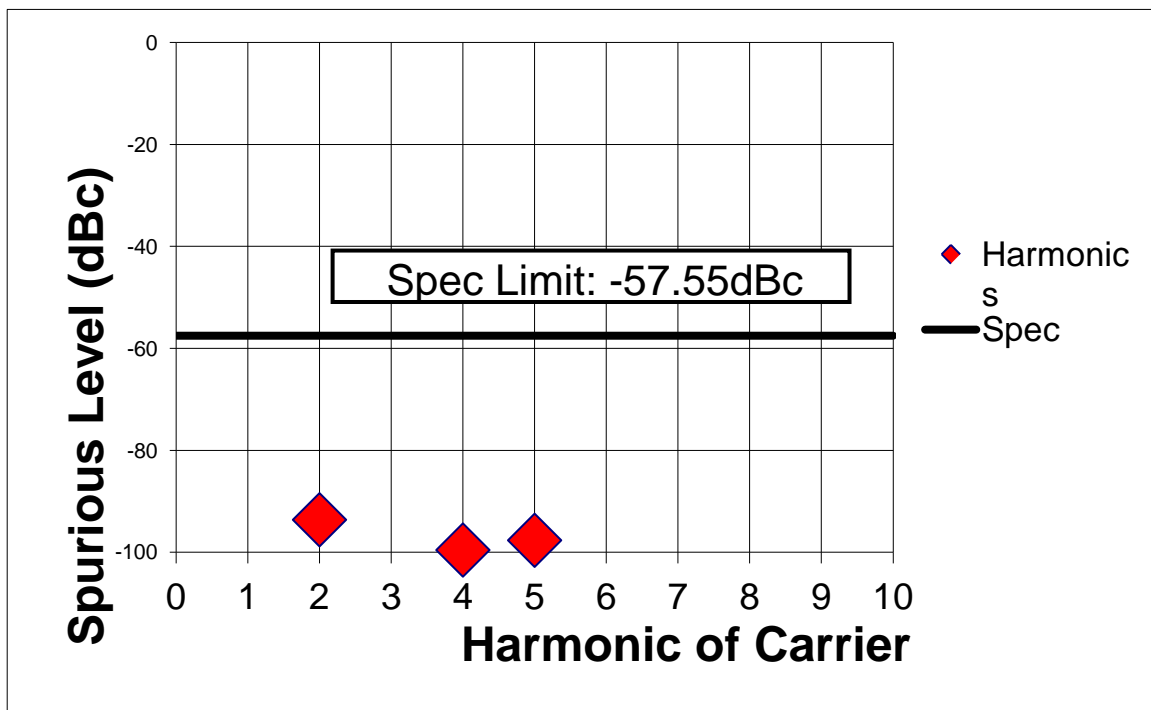
**Tx Power: 5.7 Watts****429.9875 MHz****Channel Spacing 25kHz | S/N 837TPX0063**

Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
859.9750	-13	*	*
1289.9625	-13	*	*
1719.9500	-13	*	*
2149.9375	-13	*	*
2579.9250	-13	*	*
3009.9125	-13	*	*
3439.9000	-13	*	*
3869.8875	-13	*	*
4299.8750	-13	*	*

**Figure 6F-7: 5.70W 429.9875 MHz, 25 kHz Channel Spacing (Not for FCC Review)****Tx Power: 5.7 Watts****469.9875 MHz****Channel Spacing 25kHz | S/N 837TPX0063**

Frequency (MHz)	FCC Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
939.9750	-13	*	*
1409.9625	-13	*	*
1879.9500	-13	*	*
2349.9375	-13	*	*
2819.9250	-13	*	*
3289.9125	-13	*	*
3759.9000	-13	*	*
4229.8875	-13	*	*
4699.8750	-13	*	*

**Figure 6F-8: 5.70W 469.9875 MHz, 25 kHz Channel Spacing (Not for FCC Review)**

**EXHIBIT 6G - Conducted Spurious Emissions****Figure 6G-1:** 5.70W 380.0125 MHz, 12.5 kHz Channel Spacing (Not for FCC review)**Figure 6G-2:** 5.70W 406.1125 MHz, 12.5 kHz Channel Spacing

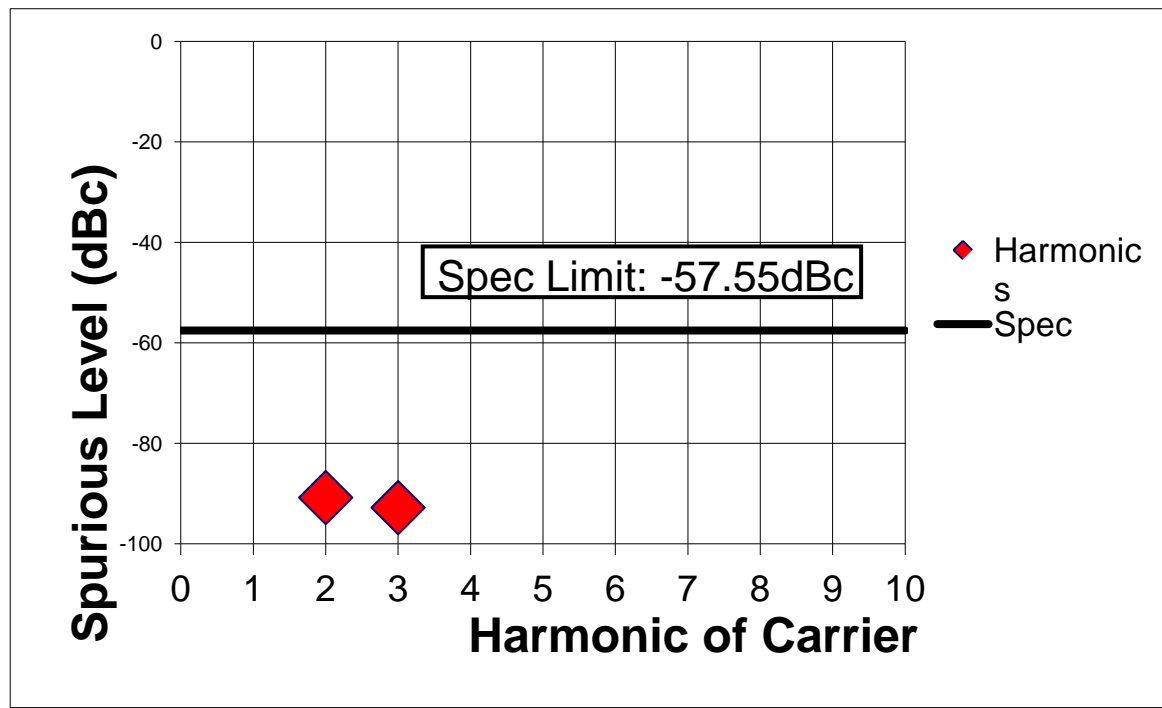


Figure 6G-3: 5.70W 429.9875 MHz, 12.5 kHz Channel Spacing

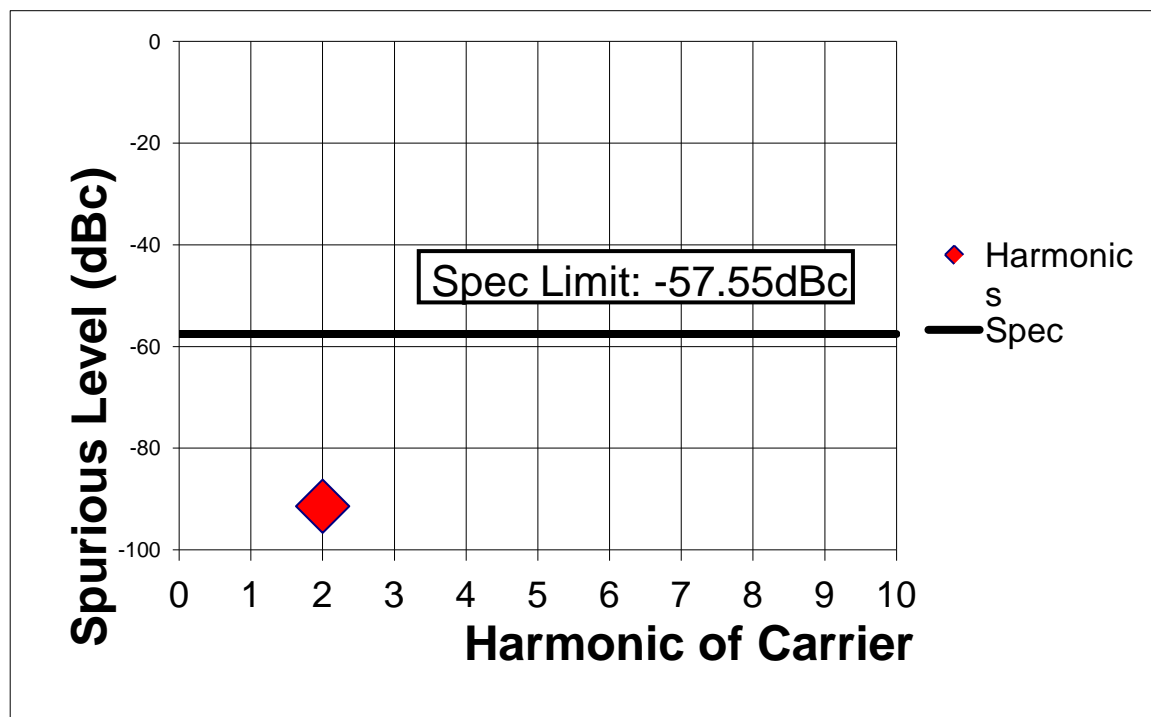
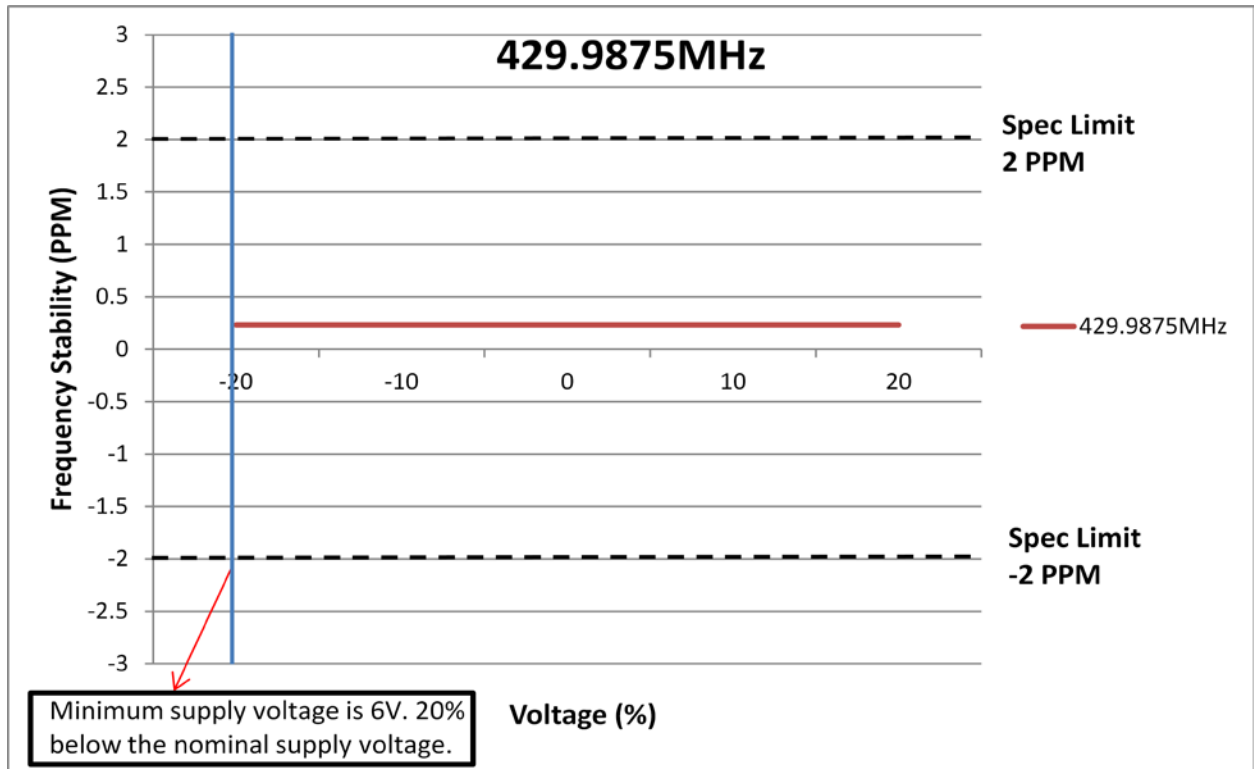
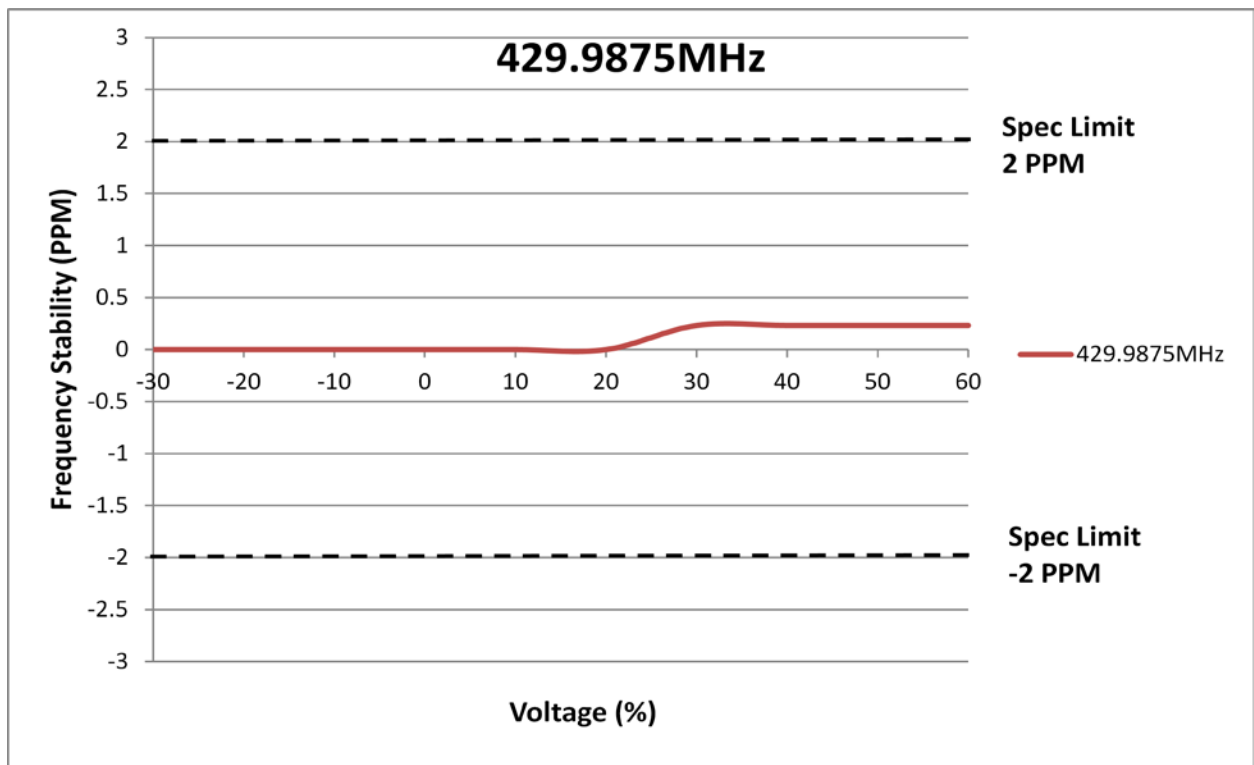
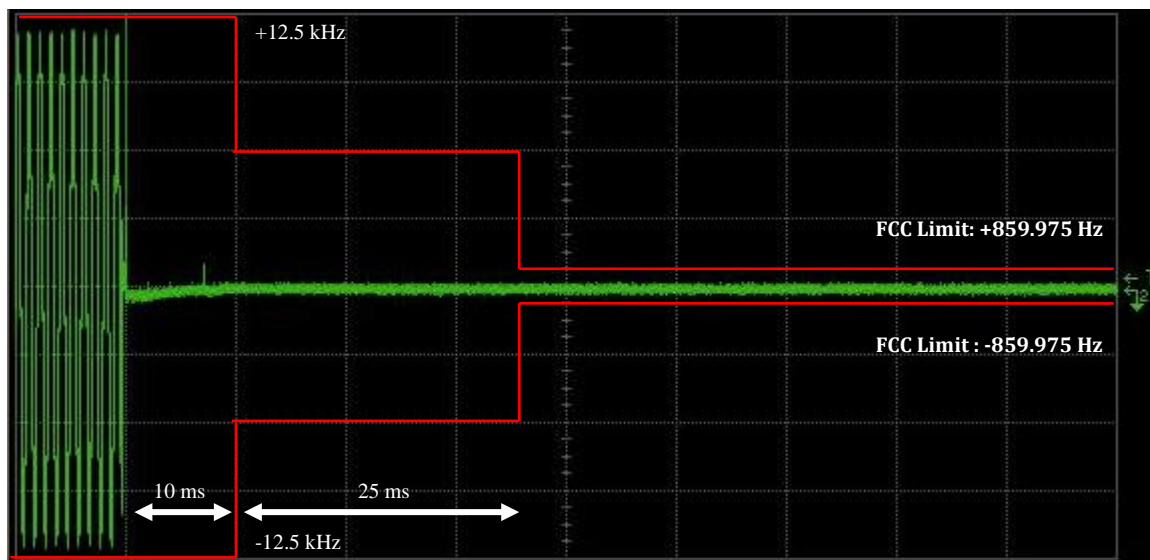
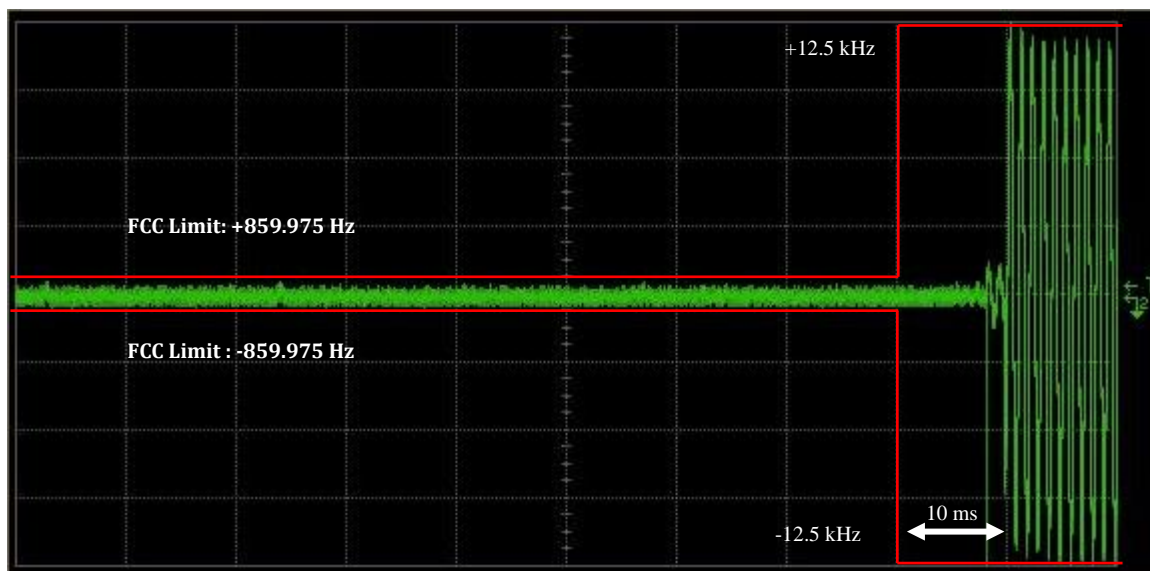


Figure 6G-4: 5.70W 469.9875 MHz, 12.5 kHz Channel Spacing

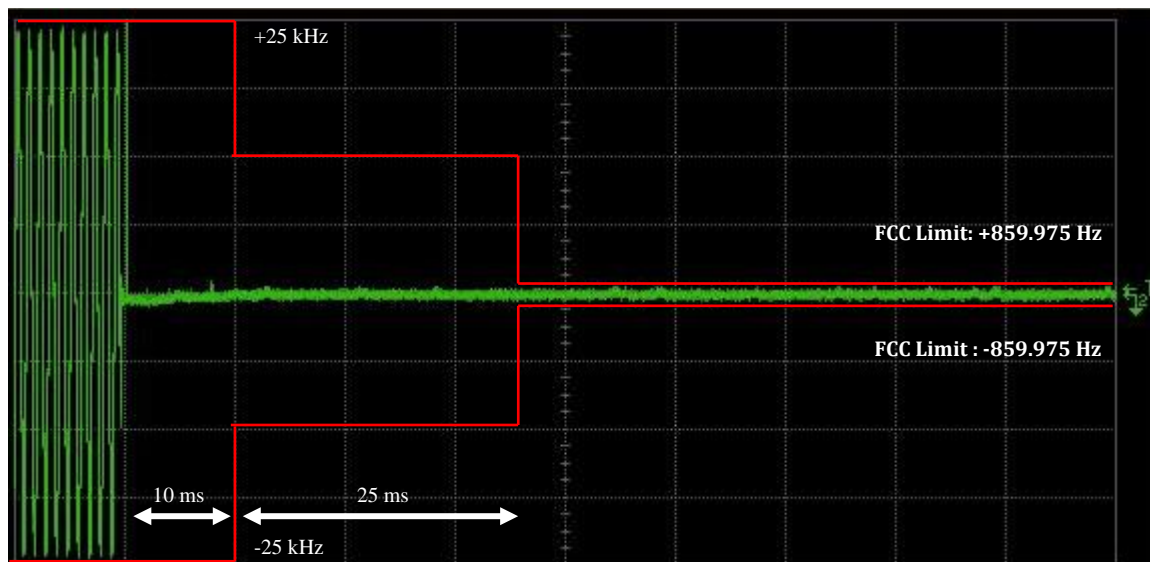
**EXHIBIT 6H****Frequency Stability (Volt/Temp)****Figure 6H-1: 2.0 ppm Frequency Stability vs. Supply Voltage****Figure 6H-2: 2.0 ppm Frequency Stability vs. Temperature**

**EXHIBIT 6I****Transient Frequency Behavior**

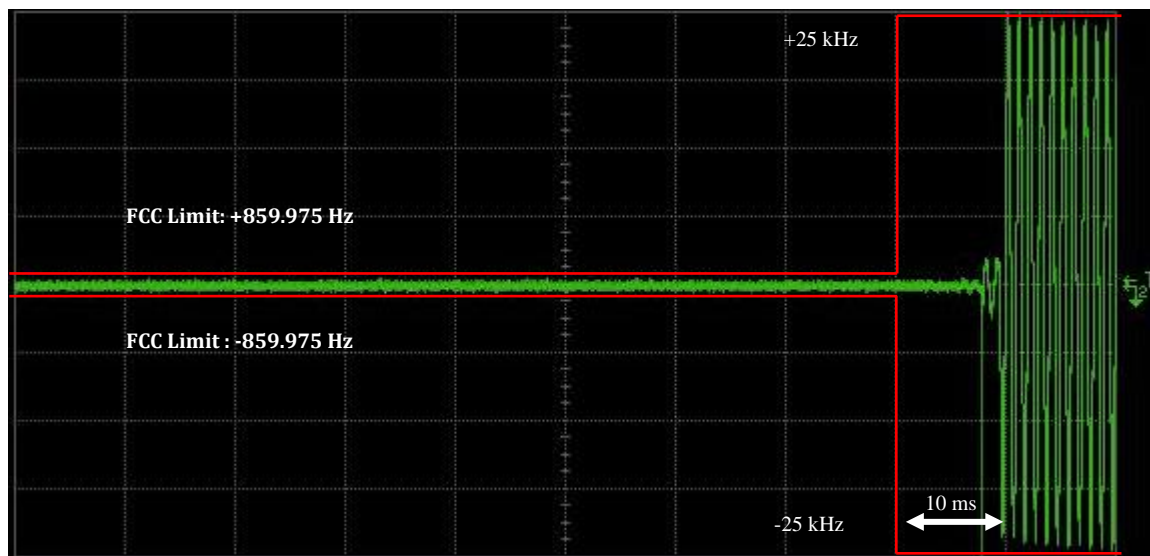
**Figure 6I-1:** TX 429.9875 MHz - 12.5 KHz Channel Spacing – Transmitter On



**Figure 6I-2:** TX 429.9875 MHz - 12.5 KHz Channel Spacing – Transmitter Off



**Figure 6I -3:** TX 429.9875 MHz – 25 KHz Channel Spacing – Transmitter On (Not for FCC review)



**Figure 6I-4:** TX 429.9875 MHz – 25 KHz Channel Spacing – Transmitter Off (Not for FCC review)