

Exhibit 6. Measured Data -- Pursuant 47 CFR. 2.1041**6.1 Transmitter Power**

The transmitter is a variable power type used in a SMR trunking system. Output power (as defined in 47 CFR 90.7) is dynamically controlled as described in Exhibit 12.

6.1.1 Maximum Output Power Rating -- Pursuant 47 CFR 2.1033(c)7 and 90.635(d))

Maximum output power rating: 640 milliwatts (28.06 dBm), pulse average power.

Note 1: Nominal output power rating: 600 milliwatts (27.78 dBm) (Pulse average power).

Note 2: These ratings are compliant with the FCC maximum of 100 watts (50 dBm) for Mobile stations

Note 3: The term pulse average power is used to specify the power that would be measured during the intervals of recurrent TDM transmission pulses by an average responding RF power meter. Power expressed in this manner is independent of the TDM duty cycle, and facilitates RF system coverage analysis.

6.1.2 Operating output power range -- Pursuant 47 CFR 2.1033(c)(6)

Maximum tuned output power will vary over a range of 640 (maximum pulse average power) to a minimum of 0.081 milliwatts (pulse average power), 39 dB below maximum tuned output power.

6.1.3 DC power used by final amplifier device -- Pursuant 47 CFR 2.1033(c)(8)

In order to prevent the malfunctions that can occur due to directly measuring the DC characteristics of the final RF amplifying stage, data was obtained by measuring the entire radio DC current and is reported herein for the entire radio. The DC current and the RF output power was measured with a special RF/DC test fixture set to supply the radio with the nominal battery voltage of 4.0 V. The characteristics were measured during a transmission pulse and are listed in the Table 6-1.

6.2 ISM Band Transmitter Output Power -- Pursuant 47 CFR 2.1033(b)(6) and 15.247(b)(2)

The ISM transmitter operating in the 902-928 MHz band is a frequency hopped, fixed output power type. Output power (as defined in 47 CFR 15.247) is controlled as described in Exhibit 12.

Maximum peak output power rating: 1000 milliwatts (30 dBm), peak power. The modulation scheme employed can cause peak fluctuations in output power of up to .5 dB from maximum pulse average power, which is 891 mW (29.5 dBm).

Output power is intentionally not adjusted in operation in the ISM frequency range. Nominal output power is 743 mW (28.71 dBm), pulse average power. This level established to maintain compliance with maximum output power rating. It includes consideration of variation of peak to average power fluctuations in the output RF power, variation in output power due to changes in voltage and operating temperature, and manufacturing tolerances in establishing nominal output power.

	Land Mobile		ISM
Characteristics	800 MHz		902-928 MHz
Power Setting	maximum	minimum	maximum
DC Voltage (Volts)	4	4	4
DC Current (A)	1.18	0.597	1.33
Output Power (mW)	590	0.072	743

Table 6-1 Characteristics for 800 and 900 MHz bands

6.3 Land Mobile Modulation Characteristics and Necessary Bandwidth -- Pursuant 47 CFR 2.1033(c)13, 2.1047(d) & 2.202

Digitally encoded speech or digital data is transmitted in four sub-channels at a 4 kHz rate using M-ary symbols mapped to predetermined fixed magnitude and phase components within 1 of 3 constellations associated with a particular modulation scheme. Figure 6-2 illustrates symbol mapping to one of the four QPSK sub-channels constellations. Figure 6-3 illustrates symbol mapping to one of the four 16QAM sub-channels constellation. Figure 6-4 illustrates symbol mapping to one of the four 64QAM sub-channels constellation. For Quad-QPSK modulation, this mapping adjusts the amplitude and phase variations of the baseband signal to one of 4 points on the constellation. For Quad-16QAM modulation, this mapping adjusts the amplitude and phase variations of the baseband signal to one of 16 points on the constellation. For Quad-64 modulation, this mapping adjusts the amplitude and phase variations of the baseband signal to one of 64 points on the constellation. The bandwidth of the modulating signals is limited by the pair of modulation limiting low pass filters within the modem block function of U801 (see Figure 4-2 in Exhibit 4.3). These filters serve to limit out-of-band and spurious emissions due to modulation. The necessary bandwidth of the sub-channels is limited to 4.8 kHz by the pair of modulation limiting low pass filters. The transfer response of these filters is depicted in Figure 6-1 where the filter excess bandwidth coefficient of 0.2 is shown. This excess bandwidth leads to the necessary bandwidth calculation of $(1 + 0.2) \times (4 \text{ kHz}) = 4.8 \text{ kHz}$. Since the sub-channels are spaced 4.5 kHz apart, the necessary bandwidth of the composite 4 sub-channel symbol streams is $4.8 + (3 \times 4.5) = 18.3 \text{ kHz}$.

Modulation Low Pass Filter Response

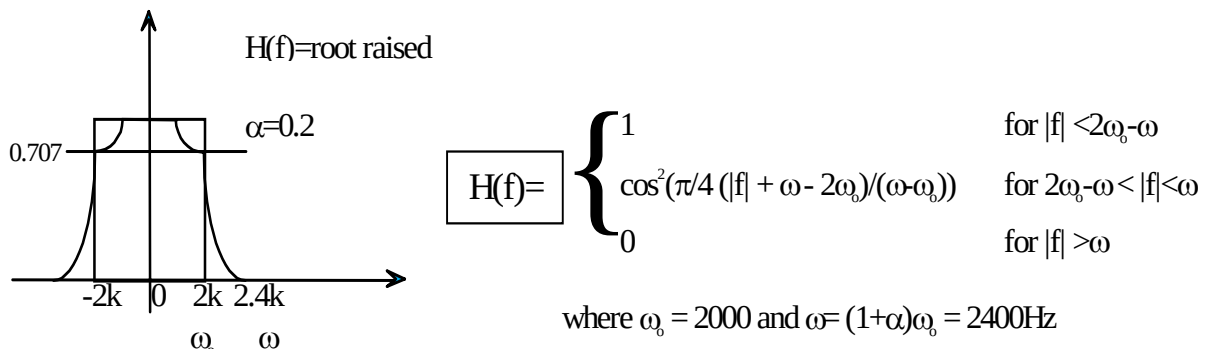


Figure 6-1: Modulation Low Pass Filter Response

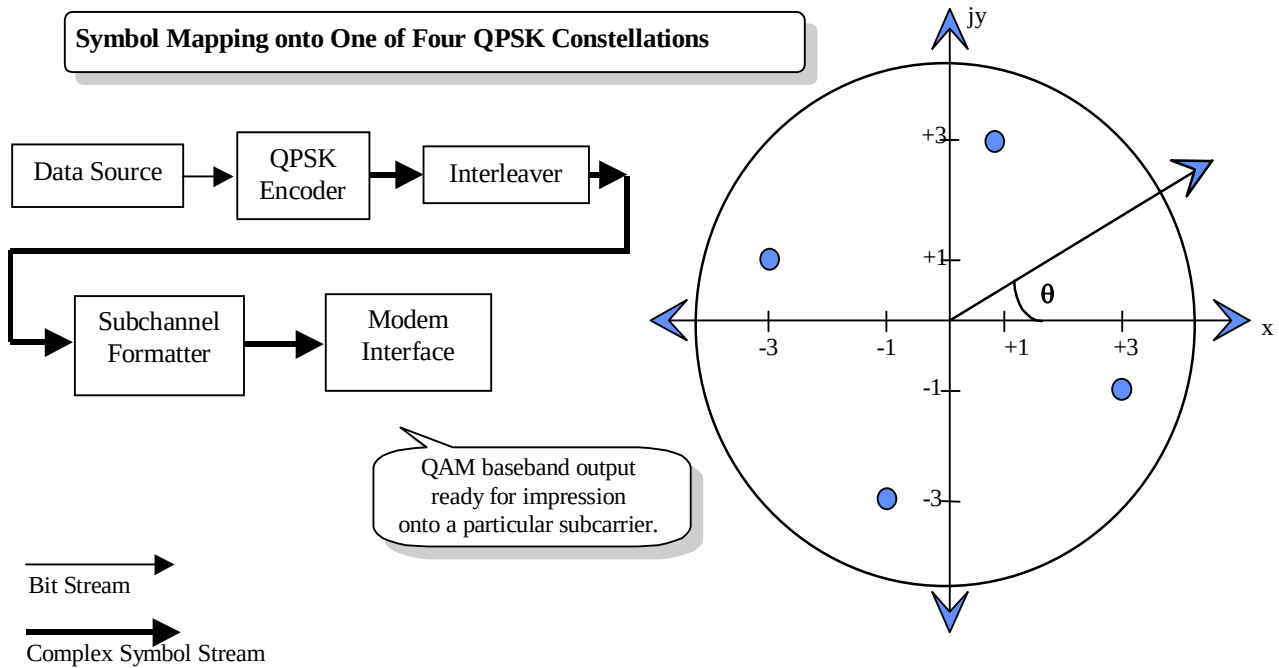


Figure 6-2: Symbol Mapping onto One of Four QPSK Constellations

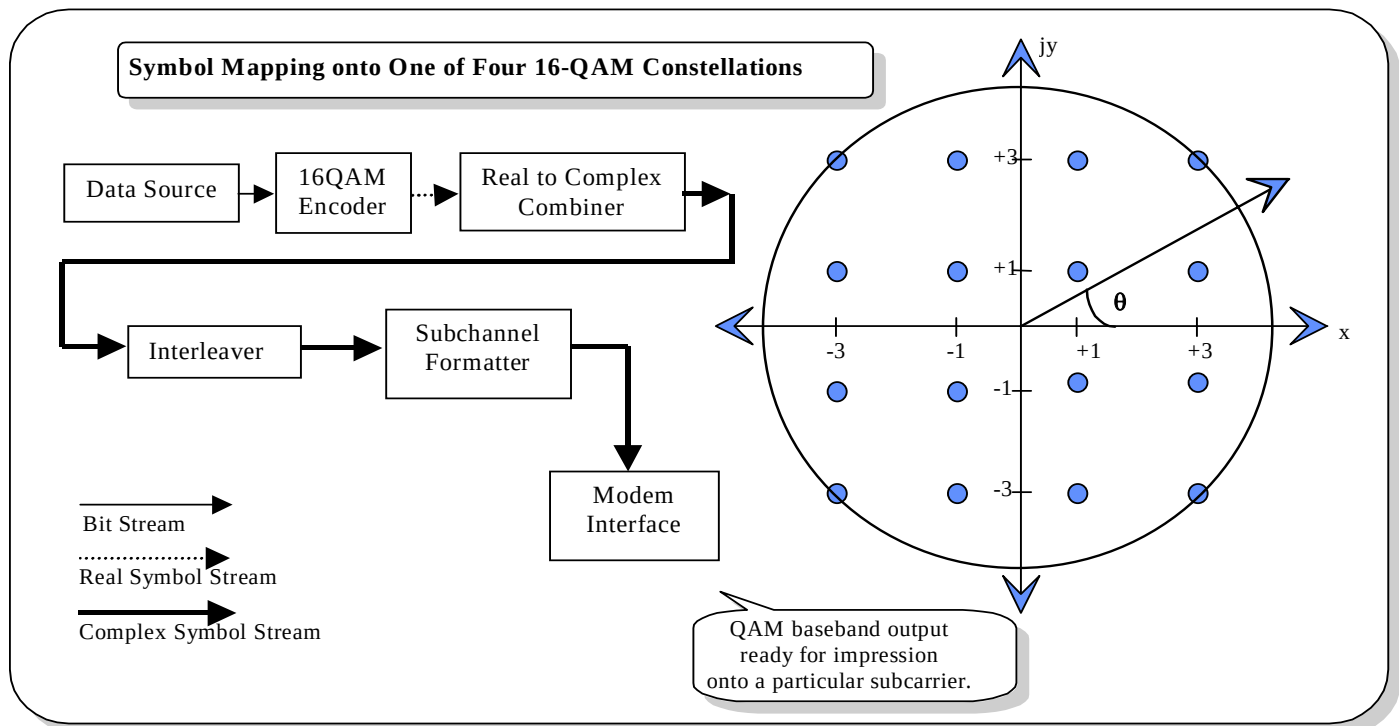


Figure 6-3: Symbol Mapping onto One of Four 16-QAM Constellations

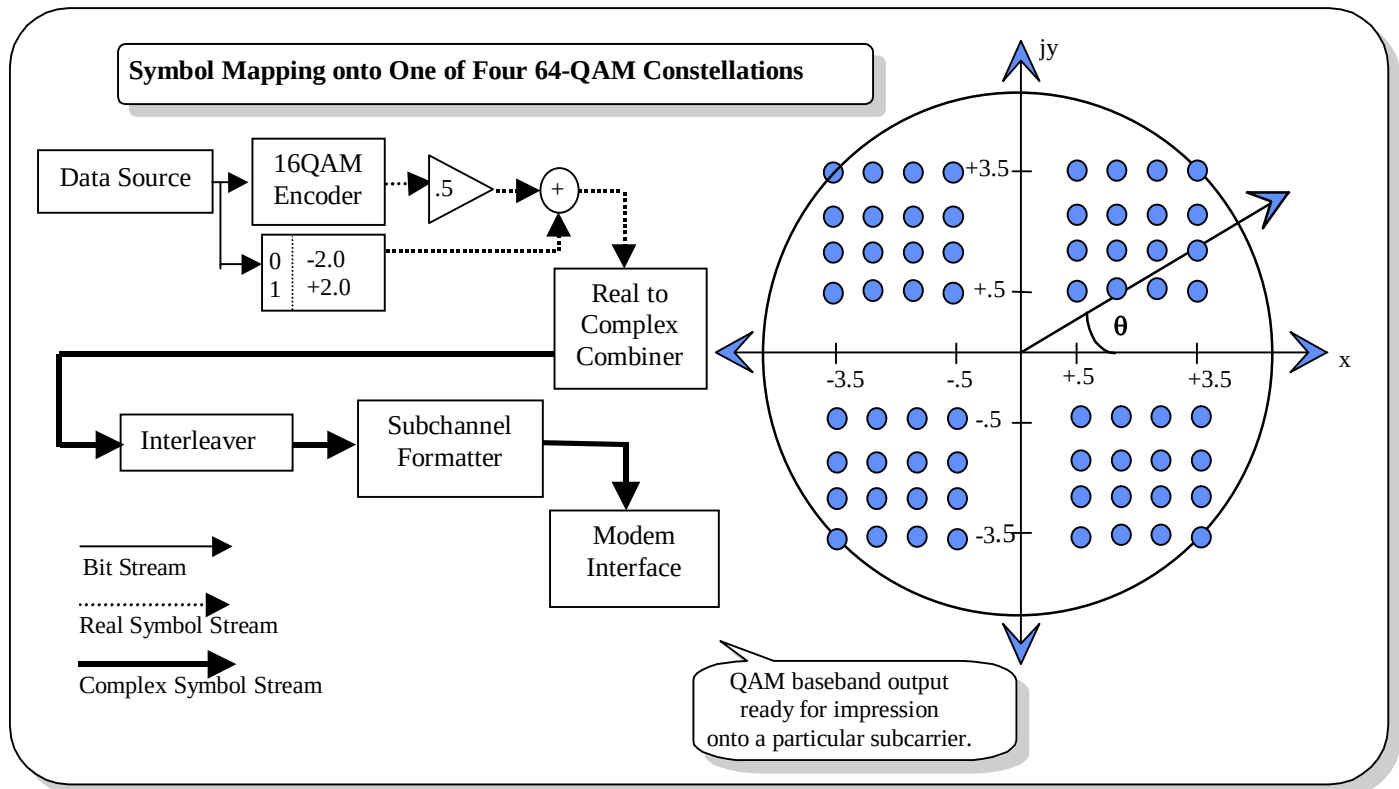


Figure 6-4: Symbol Mapping onto One of Four 64-QAM Constellations

6.4 Emission Mask -- Pursuant 47 CFR 2.1049(h) & 90.210(m)

The method described in paragraph 7.2 was employed with the following conditions:

For Quad-QPSK Modulation:

32K Bits Per Second Pseudo-Random Digital Modulation.

Vertical division: 10 dB/div.

Carrier Reference: Carrier Reference 0 dB corresponds to maximum and minimum peak output power settings, respectively.

For Quad-16QAM Modulation:

64K Bits Per Second Pseudo-Random Digital Modulation

Vertical: 10 dB/div

Carrier Reference: Carrier Reference 0 dB corresponds to maximum and minimum peak output power settings, respectively.

For Quad-64QAM Modulation:

96K Bits Per Second Pseudo-Random Digital Modulation

Vertical: 10 dB/div

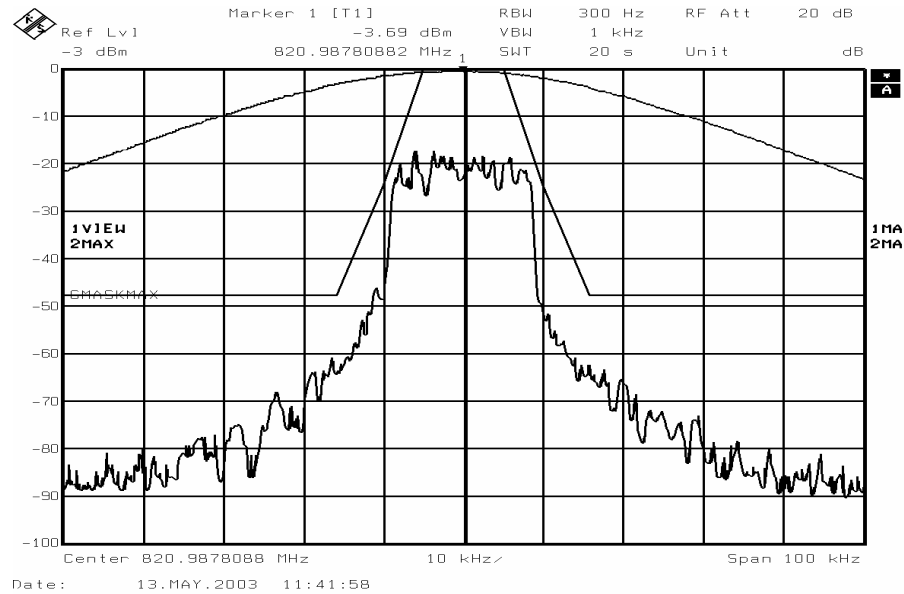
Carrier Reference: Carrier Reference 0 dB corresponds to maximum and minimum peak output power settings, respectively.

In Figures 6-5 through Figure 6-22, one trace was used to capture transmitter performance, measured using a resolution bandwidth of 300 Hz, while the reference level was obtained by another trace, using a resolution bandwidth of 30 kHz. A third trace shows the applicable emission mask.

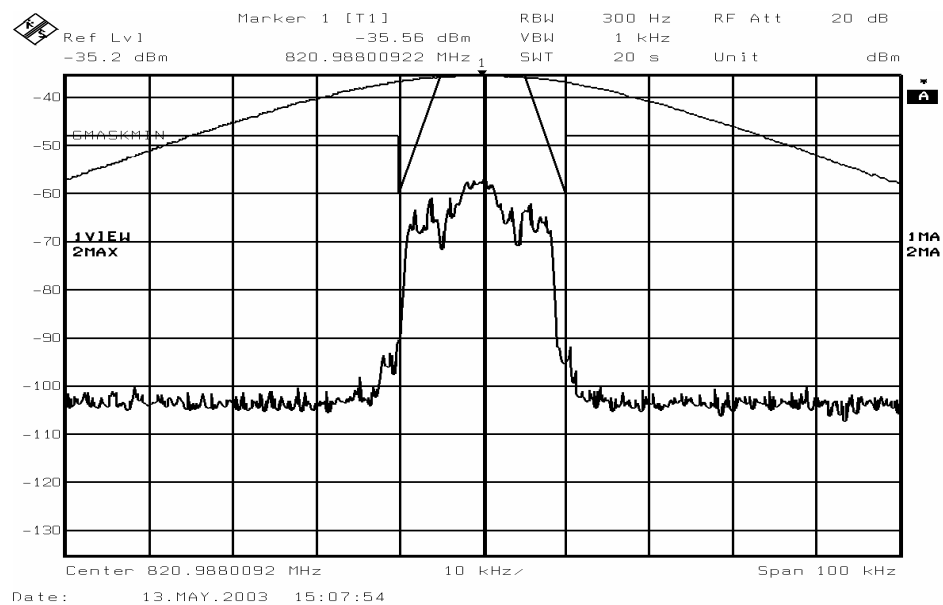
6.4.1 800 MHz Band Operation Measured Data

FCC Limits

- Per 47CFR90.210(g)
- Per EA SMR Emission Mask, 47CFR90.691(a)



**Figure 6-5: Quad-QPSK Modulation performance relative to mask 47 CFR 90.210(g)
(MAXIMUM POWER SETTING)**



**Figure 6-6: Quad-QPSK Modulation performance relative to mask 47 CFR 90.210(g)
(MINIMUM POWER SETTING)**

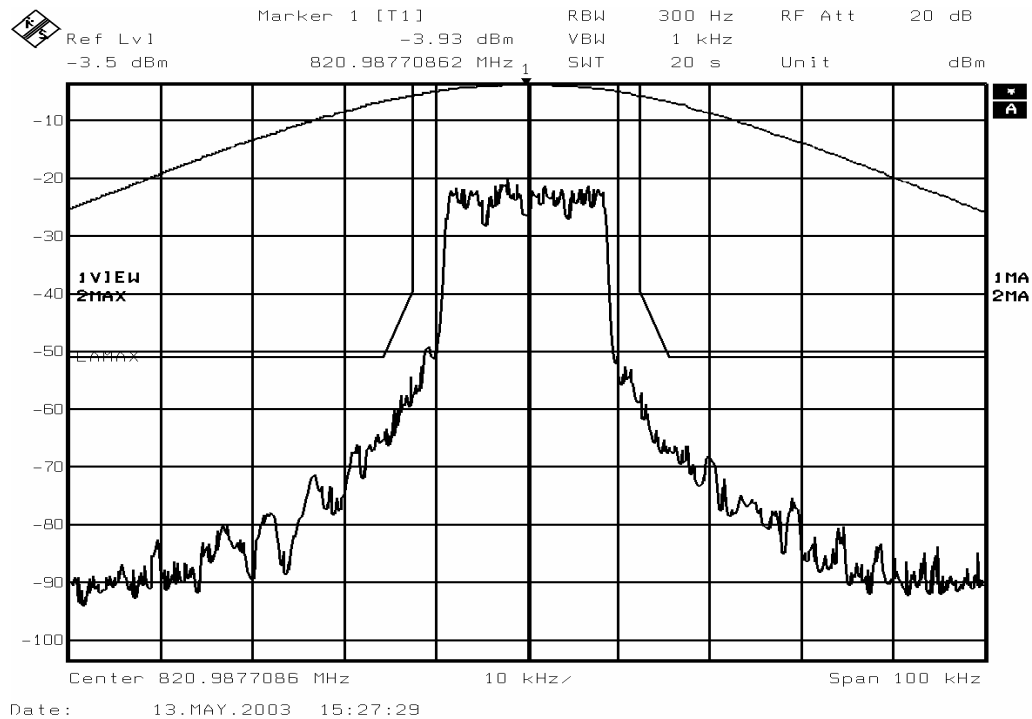


Figure 6-7: Quad-QPSK Modulation performance relative to mask 47 CFR 90.691. (MAXIMUM POWER SETTING)

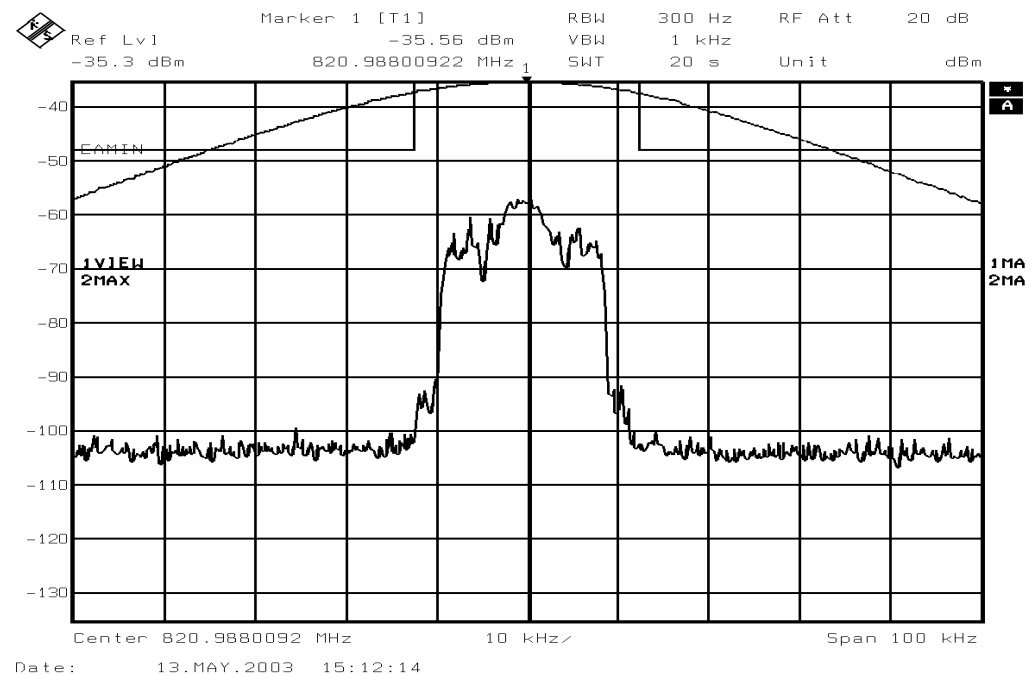


Figure 6-8: Quad-QPSK Modulation performance relative to mask 47 CFR 90.691. (MINIMUM POWER SETTING)

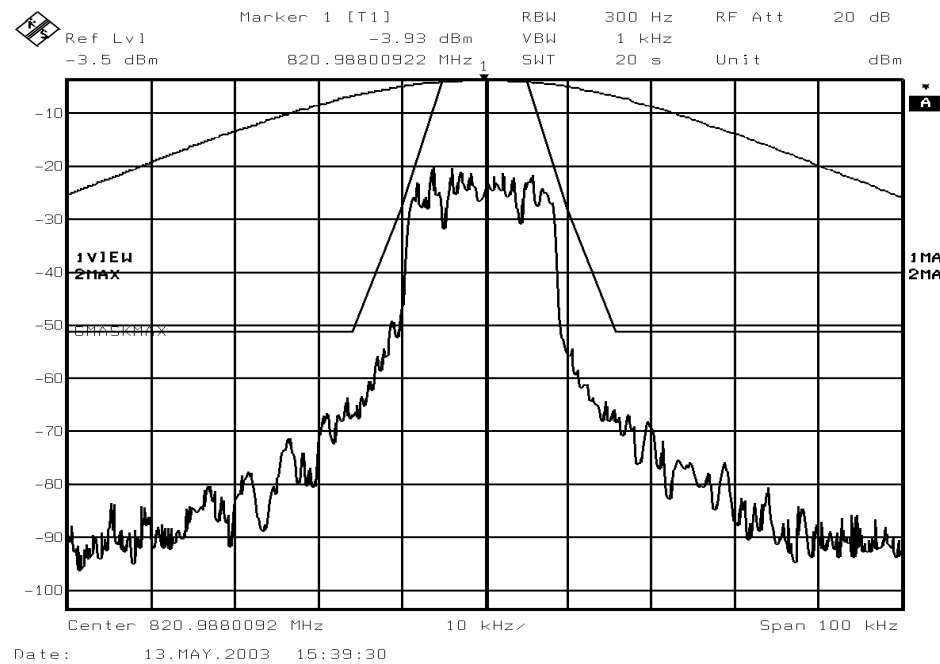


Figure 6-9: Quad-16QAM Modulation performance relative to mask 47 CFR 90.210(g) (MAXIMUM POWER SETTING)

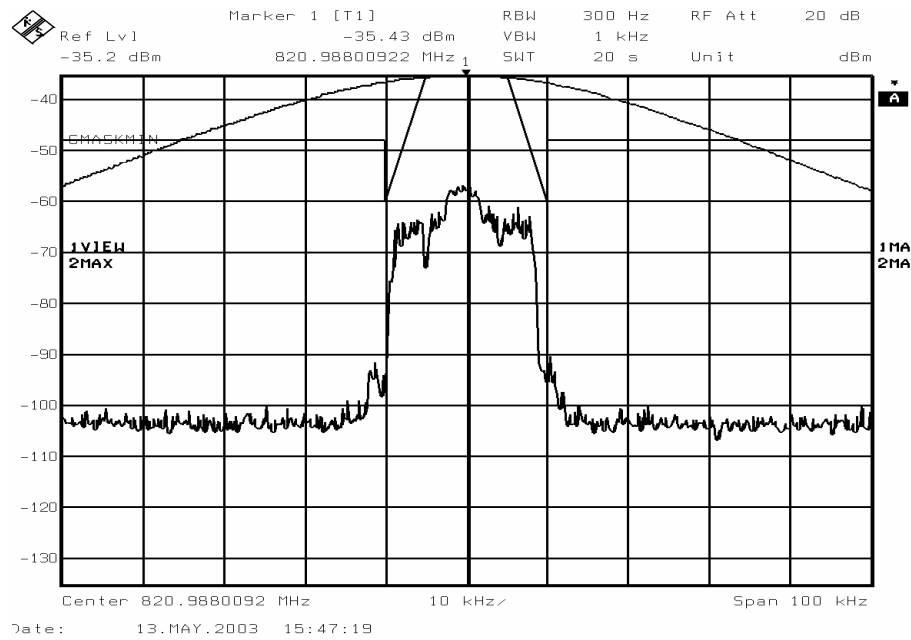


Figure 6-10: Quad-16QAM Modulation performance relative to mask 47 CFR 90.210(g) (MINIMUM POWER SETTING)

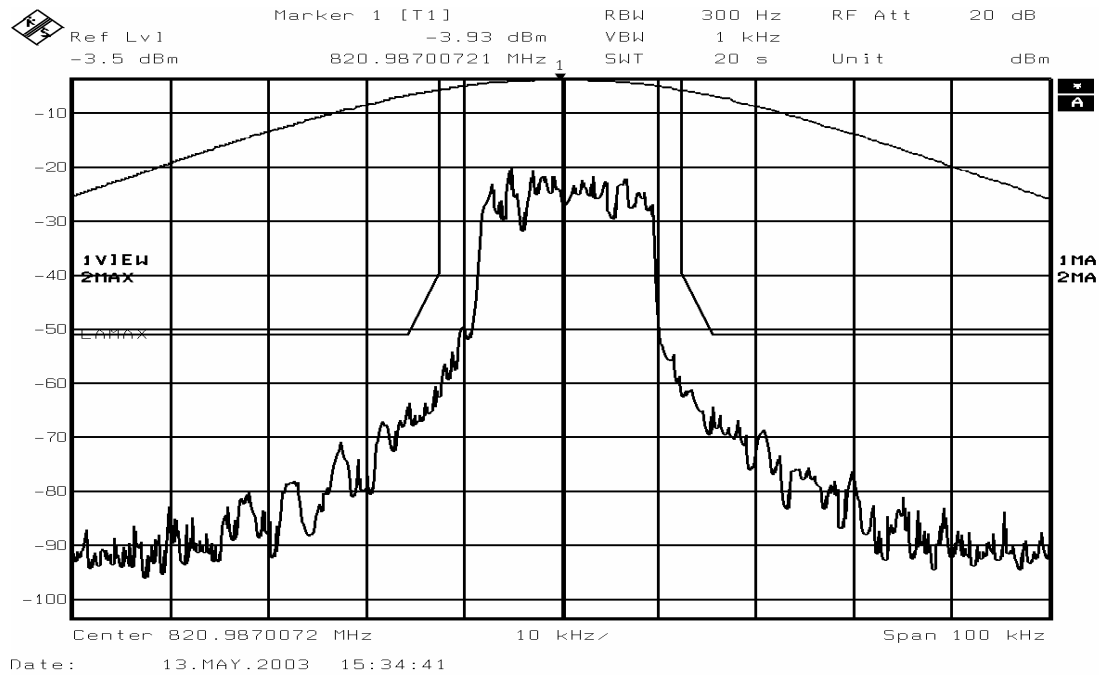


Figure 6-11: Quad-16QAM Modulation performance relative to mask 47 CFR 90.691.
(MAXIMUM POWER SETTING)

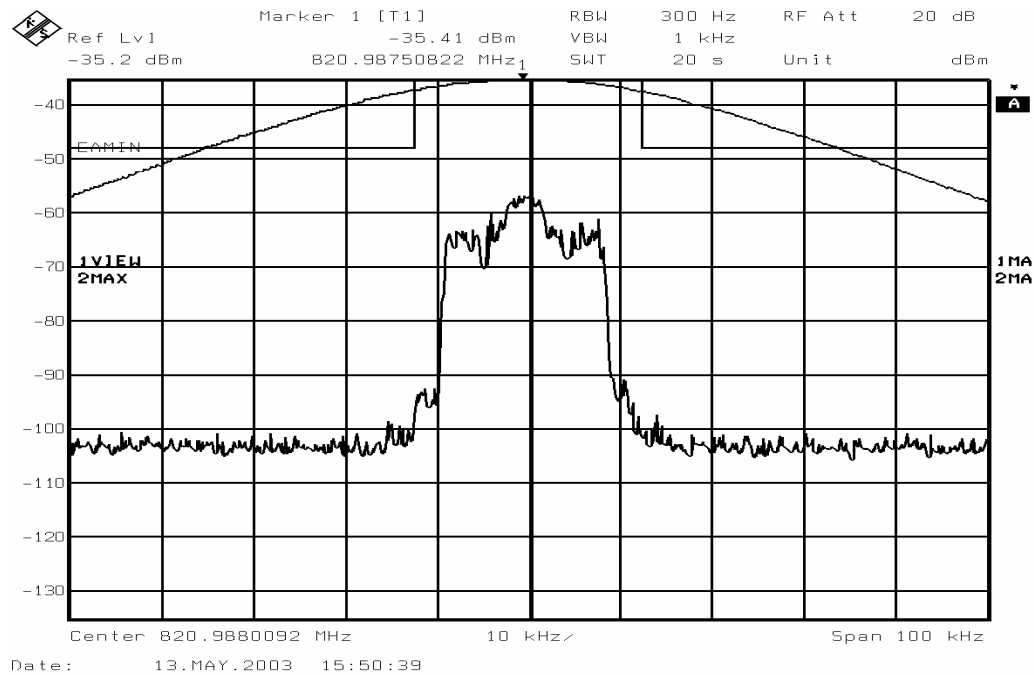


Figure 6-12: Quad-16QAM Modulation performance relative to mask 47 CFR 90.691.
(MINIMUM POWER SETTING)

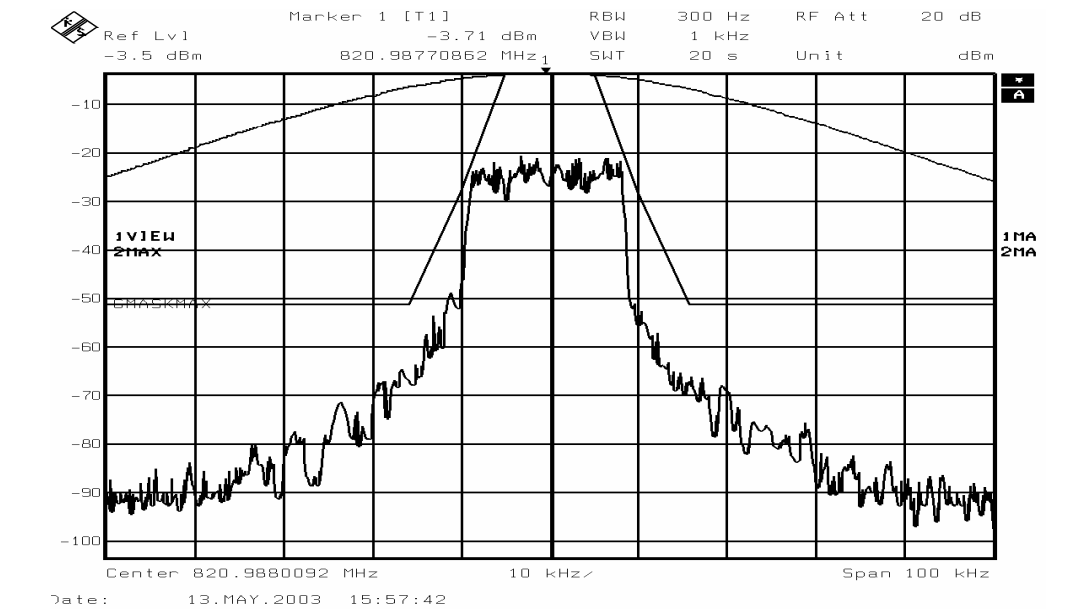


Figure 6-13: Quad-64QAM Modulation performance relative to mask 47 CFR 90.210(g) (MAXIMUM POWER SETTING)

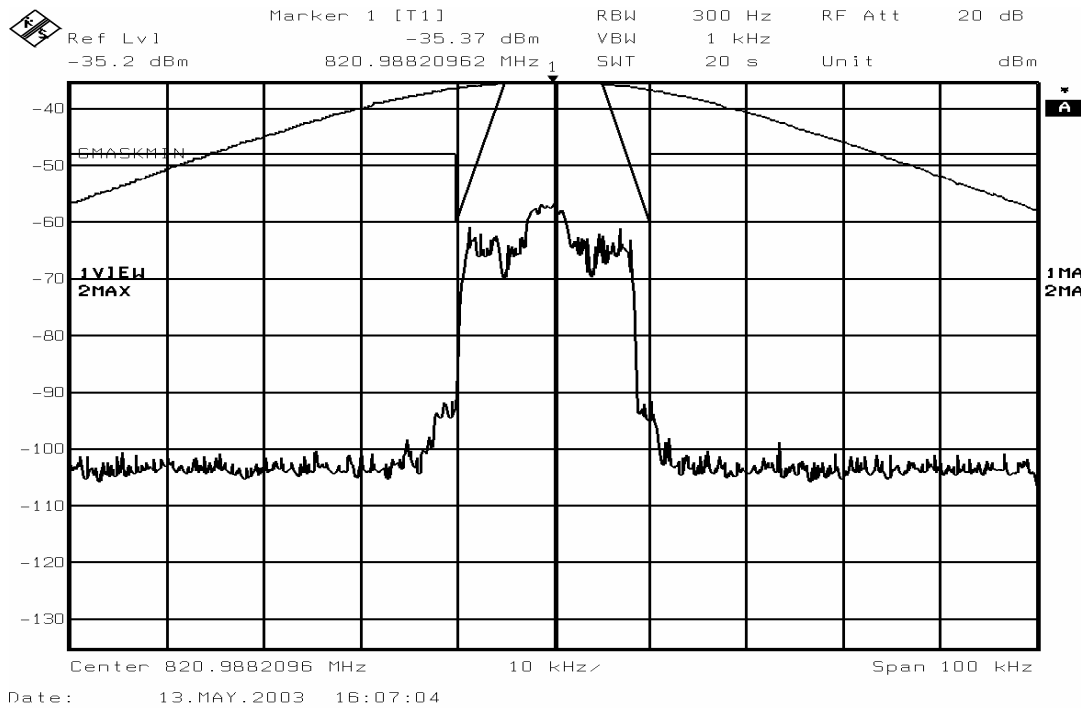


Figure 6-14: Quad-64QAM Modulation performance relative to mask 47 CFR 90.210(g) (MINIMUM POWER SETTING)

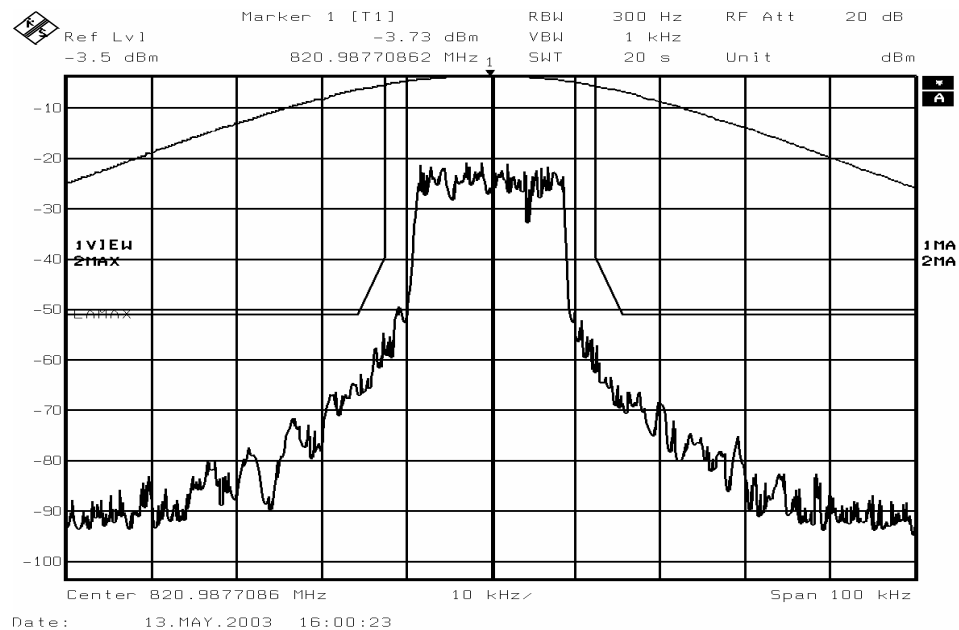


Figure 6-15: Quad-64QAM Modulation performance relative to mask 47 CFR 90.691. (MAXIMUM POWER SETTING)

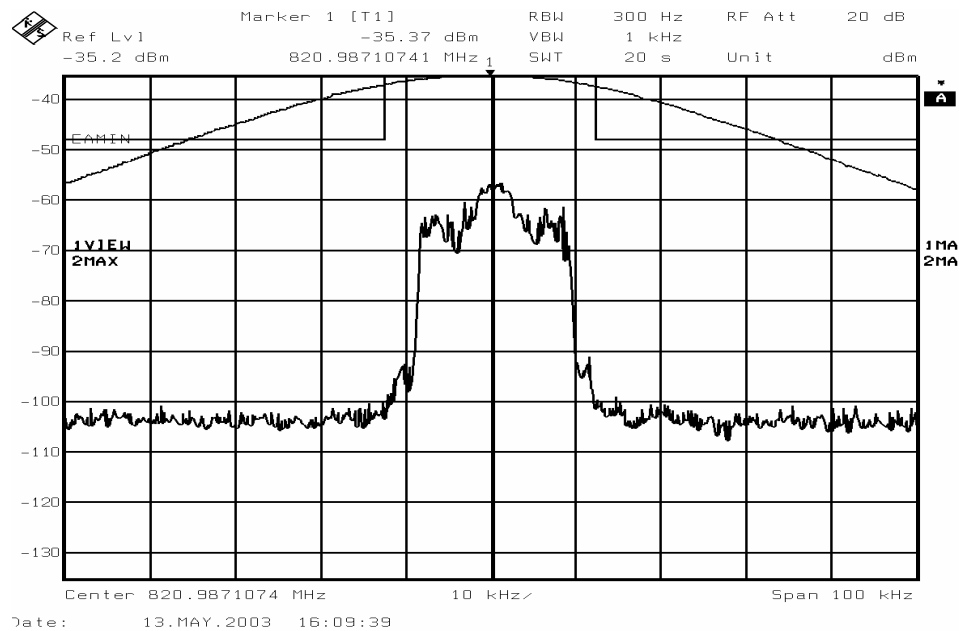


Figure 6-16: Quad-64QAM Modulation performance relative to mask 47 CFR 90.691. (MINIMUM POWER SETTING)

6.5 900 MHz ISM Band Modulation Characteristics and Necessary Bandwidth

In the 900 MHz ISM band, the subject radio makes use of Frequency Shift Keying. The modulation can vary from 2FSK, 4FSK, 6FSK or 8FSK. 2FSK will operate at 800 symbols per second while all others will operate at 3200 symbols per second. The symbol spacing at RF will be a minimum of 3200 Hz resulting in a 99% bandwidth of 25.6 kHz.

The data symbols are up-sampled to a rate N_s times the symbol rate, and pulse shaped by a filter having impulse response p_n . The pulse shape filter is the cascade of a square pulse, of duration equal to one symbol interval, convolved with a Gaussian filter with 3 dB bandwidth equal to 8000 Hz or $BT = 2.5$. The pulse-shaped signal is integrated using a backward-summation, and then mapped to in-phase (I) and quadrature (Q) channels using the cosine and sine functions, respectively. A scaling factor of π/N_s is required to convert the integrator output to modulated phase. This modulation is shown in Figure 6-18.

The pre-modulation filter has the continuous-time impulse response

$$p(t) = Q\left[\frac{2\pi B}{\sqrt{\ln 2}}\left(t - \frac{T}{2}\right)\right] - Q\left[\frac{2\pi B}{\sqrt{\ln 2}}\left(t + \frac{T}{2}\right)\right]$$

where t is time in seconds, $T = 1/3200$ is the symbol interval in seconds, B is the 8000 Hz 3-dB bandwidth, and $Q(x)$ is the complimentary distribution function for a Gaussian random variable with zero mean and unit variance, given by

$$Q(x) = \int_x^{\infty} \frac{1}{\sqrt{2\pi}} e^{-x^2/2} dx$$

The discrete-time impulse response is generated by sampling the continuous-time function. In theory, $p(t)$ has infinite time span, but, for all practical purposes, it is time-limited to the interval

$$-3T/4 < t < 3T/4$$

Given this, the discrete-time version is generated as

$$p_n = p\left(t_0 + \frac{nT}{N_s}\right) \quad n = 0, 1, \dots, N_p - 1$$

where t_0 is the time of the first sample, N_s is the number of samples per second, and N_p is the filter length.

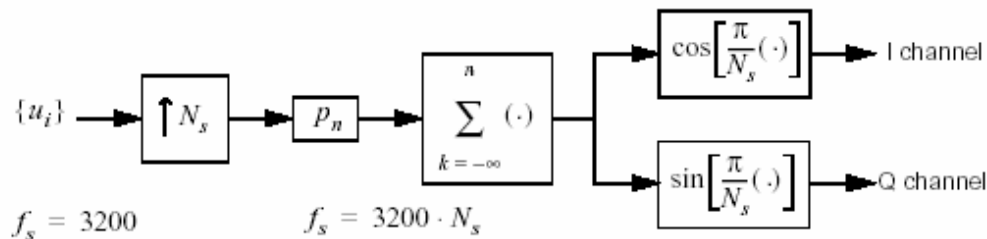


Figure 6-17. FSK Modulator

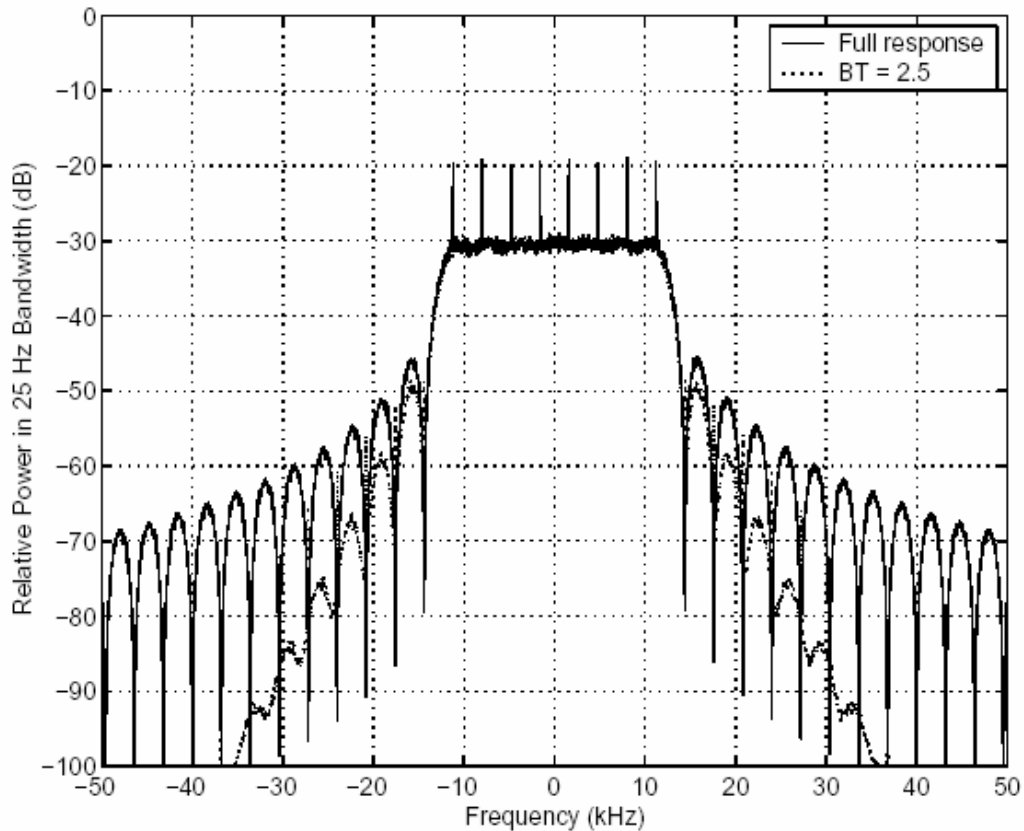


Figure 6-18. Compares the full response of the 8FSK Spectrum vs. the filtered version.

The symbols can have different frequency deviation depending on the particular slot being transmitted. The worst case deviation is 11.2 kHz from the carrier frequency. The following tables represent the possible combinations for a given transmitted slot.

Symbol Value	Symbol Value Deviation (Hz)
-7	-11200
-5	-8000
-3	-4800
-1	-1600
+1	+1600
+3	+4800
+5	+8000
+7	+11200

Table 6-2. Symbols operating at 3200 symbols per second.

Symbol Value	Symbol Value Deviation (Hz)
+2.00, -2.00	+/- 3200
+2.25, -2.25	+/- 3600
+2.50, -2.50	+/- 4000
+2.75, -2.75	+/- 4400
+3.00, -3.00	+/- 4800
+3.25, -3.25	+/- 5200
+3.50, -3.50	+/- 5600
+3.75, -3.75	+/- 6000
+4.00, -4.00	+/- 6400
+4.25, -4.25	+/- 6800
+4.50, -4.50	+/- 7200
+4.75, -4.75	+/- 7600
+5.00, -5.00	+/- 8000

Table 6-3. Symbols operating at 800 symbols per second.

Symbol Value	Symbol Value Deviation (Hz)
-6	-9600
-4	-6400
-2	-3200
+2	+3200
+4	+6400
+6	+9600

Table 6-4. Symbols operating at 3200 symbols per second.

The emission requirements specified for operation in the 902-928 MHz ISM Band include a requirement that there is no emission greater than -20 dBc detectable in a 100 KHz bandwidth at all frequencies outside the ISM band. Table 6-5 shows on the left the emission levels measured in a 100 KHz bandwidth centered 50 KHz removed from the lower ISM band edge. For this measurement the transmitter is tuned to maximum output power at the lowest operating frequency. A similar measurement was made at the upper ISM band edge with the transmitter operating at the maximum ISM band operating frequency.

Lower ISM Band Edge			Upper ISM Band Edge		
Band Edge	Freq op	Power Level	Freq op	Band Edge	Power Level
901.95 MHz	902.525 MHz	Delta (dB)	927.475 MHz	928.05 MHz	Delta (dB)
-35.3 dBm	28.7 dBm	64.0 dBc	28.8 dBm	-34.5 dBm	63.3 dBc

Table 6-5. 900 MHz ISM Necessary Bandwidth

Note: Power levels shown are not absolute power levels of the device under test. There was a 10 dB RF attenuator and associated cabling between the device and the measuring spectrum analyzer. Test procedure is included in section 7.4.

EXHIBIT 6b: MEASURED DATA – Pursuant 47 CFR 2.1041**6.4 Radiated Spurious Emissions -- Pursuant 47 CFR 2.1053, 2.1057, 90.210(g)(3), 90.691(a)(2), 15.247(c)****6.4.1 Land Mobile band Limits**

Per 90.210(g)(3) and 90.691(a)(2), radiated spurious emissions shall be attenuated below the maximum level of emission of the carrier frequency in accordance with the following formula:

$$\text{Spurious attenuation in dB} = 43 + 10 \log_{10} (P)$$

(Thus the effective limit is -13 dBm for any transmitter power level).

NOTE: Spurious emissions are dependent on the linearity of the Power Amplifier (U516) and are independent of modulation type or TDM interleaving. Thus, for the Cellular Band, emissions were tested with the radio set to Quad-16QAM.

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1612.1250	-13	<-36 dBm	<-36 dBm
2418.1875	-13	<-36 dBm	<-36 dBm
3224.2500	-13	<-36 dBm	<-36 dBm
4030.3125	-13	*	*
4836.3750	-13	*	*
5642.4375	-13	*	*
6448.5000	-13	*	*
7254.5625	-13	*	*
8060.6250	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-3 . Spurious emissions at 806.0625 (TX: High power 0.7 Watts)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1627.1250	-13	<-36	<-36
2440.6875	-13	<-36	<-36
3254.2500	-13	<-36	<-36
4067.8125	-13	*	*
4881.3750	-13	*	*
5694.9375	-13	*	*
6508.5000	-13	*	*
7322.0625	-13	*	*
8135.6250	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6- 4. Spurious emissions at 813.5625 (TX: High power 0.7 Watts)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1641.9750	-13	<-36	-38.20
2462.9625	-13	<-36	<-36
3283.9500	-13	<-36	<-36
4104.9375	-13	*	*
4925.9250	-13	*	*
5746.9125	-13	*	*
6567.9000	-13	*	*
7388.8875	-13	*	*
8209.8750	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-5 . Spurious emissions at 820.9875 (TX: High power 0.7 Watts)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1649.9750	-13	<-36	<-36
2474.9625	-13	<-36	<-36
3299.9500	-13	<-36	<-36
4124.9375	-13	*	*
4949.9250	-13	*	*
5774.9125	-13	*	*
6599.9000	-13	*	*
7424.8875	-13	*	*
8249.8750	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-6 . Spurious emissions at 824.9875 (TX: High power 0.7 Watts)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1612.1250	-13	<-36	<-36
2418.1875	-13	*	*
3224.2500	-13	<-36	*
4030.3125	-13	*	*
4836.3750	-13	*	*
5642.4375	-13	*	*
6448.5000	-13	*	*
7254.5625	-13	*	*
8060.6250	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-3 . Spurious emissions at 806.0625 (TX: Low power 30 dB cutback)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1627.1250	-13	<-36	<-36
2440.6875	-13	*	*
3254.2500	-13	<-36	*
4067.8125	-13	*	*
4881.3750	-13	*	*
5694.9375	-13	*	*
6508.5000	-13	*	*
7322.0625	-13	*	*
8135.6250	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6- 4. Spurious emissions at 813.5625 ((TX: Low power 30 dB cutback)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1641.9750	-13	<-36	<-36
2462.9625	-13	<-36	*
3283.9500	-13	<-36	<-36
4104.9375	-13	*	*
4925.9250	-13	*	*
5746.9125	-13	*	*
6567.9000	-13	*	*
7388.8875	-13	*	*
8209.8750	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-5 . Spurious emissions at 820.9875 ((TX: Low power 30 dB cutback)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1649.9750	-13	<-36	<-36
2474.9625	-13	*	*
3299.9500	-13	<-36	<-36
4124.9375	-13	*	*
4949.9250	-13	*	*
5774.9125	-13	*	*
6599.9000	-13	*	*
7424.8875	-13	*	*
8249.8750	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-6 . Spurious emissions at 824.9875 (TX: Low power 30 dB cutback)

6.4.2 ISM Band Limits

Per 15.247(c) the peak allowable emission shall be less than 10 dBm when measured in a 100 kHz band outside the ISM Band.

NOTE 1: Spurious emissions are dependent on the linearity of the Power Amplifier (U516) and are independent of modulation type or TDM interleaving. Thus, for the Cellular Band, emissions were tested with the radio set to Quad-16QAM at both maximum and minimum radio output power settings.

NOTE 2: An asterisk () in the data indicates the spurious emission was less than -33 dBm or could not be detected due to noise limitations or ambients.*

NOTE 3: Spurious emission levels were measured with the non-detachable antenna mounted on the radio product, as in intended use.

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1805.0500	-13	<-36	<-36
2707.5750	-13	<-36	<-36
3610.1000	-13	<-36	<-36
4512.6250	-13	*	*
5415.1500	-13	*	*
6317.6750	-13	*	*
7220.2000	-13	*	*
8122.7250	-13	*	*
9025.2500	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-7. Spurious Emissions at 902.525 (ISM Band)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1831.0500	-13	<-36	<-36
2746.5750	-13	<-36	<-36
3662.1000	-13	<-36	<-36
4577.6250	-13	*	*
5493.1500	-13	*	*
6408.6750	-13	*	*
7324.2000	-13	*	*
8239.7250	-13	*	*
9155.2500	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-7. Spurious Emissions at 915.525 (ISM Band)

			Channel Spacing 25kHz S/N 364AENQHCZ
Frequency (MHz)	FCC Failing Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
1854.9500	-13	<-36	<-36
2782.4250	-13	<-36	<-36
3709.9000	-13	<-36	<-36
4637.3750	-13	*	*
5564.8500	-13	*	*
6492.3250	-13	*	*
7419.8000	-13	*	*
8347.2750	-13	*	*
9274.7500	-13	*	*

*Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Table 6-7. Spurious Emissions at 927.475 (ISM Band)

6.7 Land Mobile Frequency Stability -- Pursuant 47 CFR 2.1055a(1) & 2.1055(d)2

Frequency stability measurements were made as described in paragraph 7.4. Because of the transmitter's dependence on the stability of the base station oscillator, it is not possible to provide stability data for this transmitter as is commonly supplied for certification per 47 CFR 2.1055 for a radio with a locally stabilized oscillator.

The following information is provided to clarify how the transmitter attains the necessary accuracy of 2.5 PPM or better for 800MHz band operation and 1.5 PPM or better for 900MHz band operation. The transmitter's suppressed carrier emission is produced by impressing the baseband information signal directly onto a digitally synthesized injection frequency with a channel resolution of 12.5 kHz. The synthesized frequency is derived from a temperature compensated crystal oscillator (Y600 in Figure 4-1). Transmission frequency accuracy is enhanced by the radio receiver circuitry, which causes the radio operating frequency to become locked to within 0.4 PPM of the base station once it has acquired the primary control channel. Thus the temperature and voltage frequency stability of the transmitter is within 0.4 PPM accuracy of the higher stability base station oscillator.

The AFC routine and frequency locking mechanism are implemented using both hardware and software. The hardware and software combined provide an automatic frequency control function which locks the receiver to within 0.4 PPM of the control channel oscillator. Since the base station stability is FCC regulated to be 1.5 PPM or better for the 800MHz band and 0.1 PPM or better for the 900MHz band, the absolute accuracy of the transmitter is inherently better than 1.9 PPM in the 800MHz band and 0.5 PPM in the 900MHz band. This is accomplished by programming fine synthesizer adjustments to U600 while the radio is in operation.

Transmitter frequency stability is guaranteed over all specified environmental operating conditions (battery voltage, temperature, humidity, etc.) because of the nature of the base station frequency locking mechanism. The frequency stability of the transmitter is maintained from a fully charged battery voltage of 4.2V to a low battery voltage of 3.55V, below which the radio products shuts down in order to prevent transmitter malfunction.

NOTE 1: Frequency stability is independent of modulation scheme (Quad-QPSK, Quad-16QAM, Quad-64QAM) or TDM interleaving. The data shown in following tables was taken with the radio set to transmit a Quad-16QAM signal at 820.9875 and 899.48125 MHz while locked to a Motorola R2660C service monitor. Measured frequency error points over all extreme temperature and voltage conditions are substantially smaller than the allowable error.

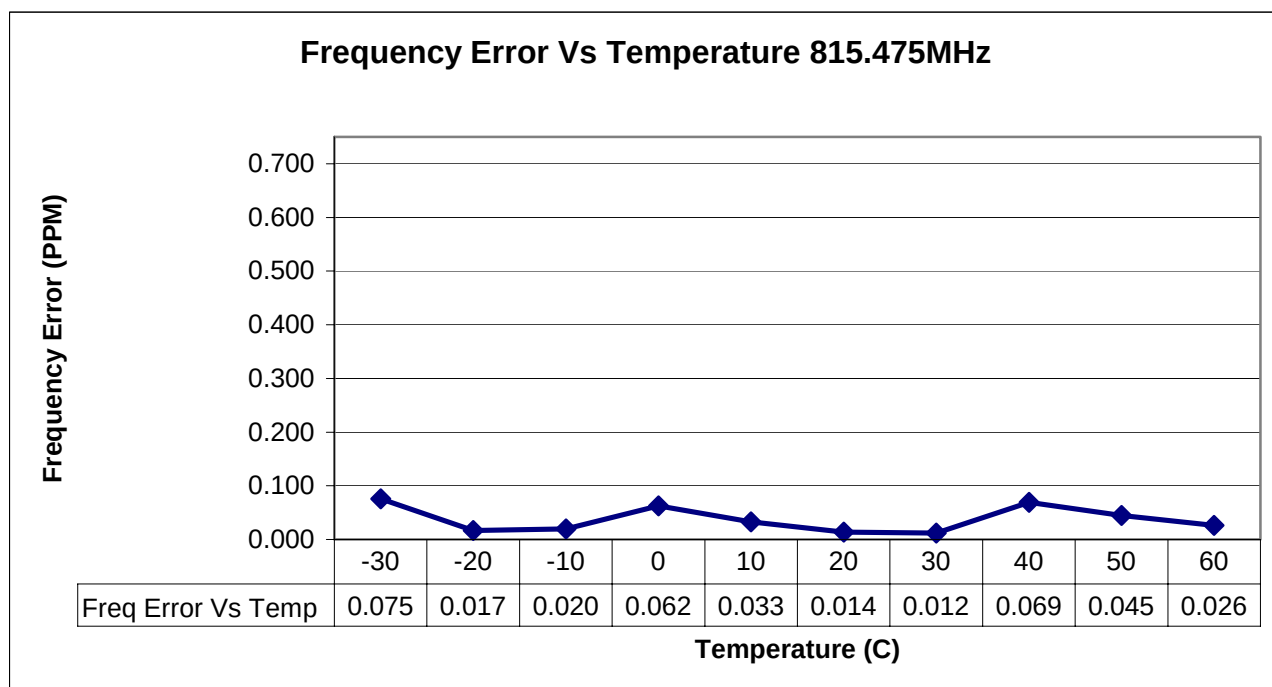


Figure 6-19: Transmitter Frequency Stability (800 MHz band) – Frequency Error vs. Temperature

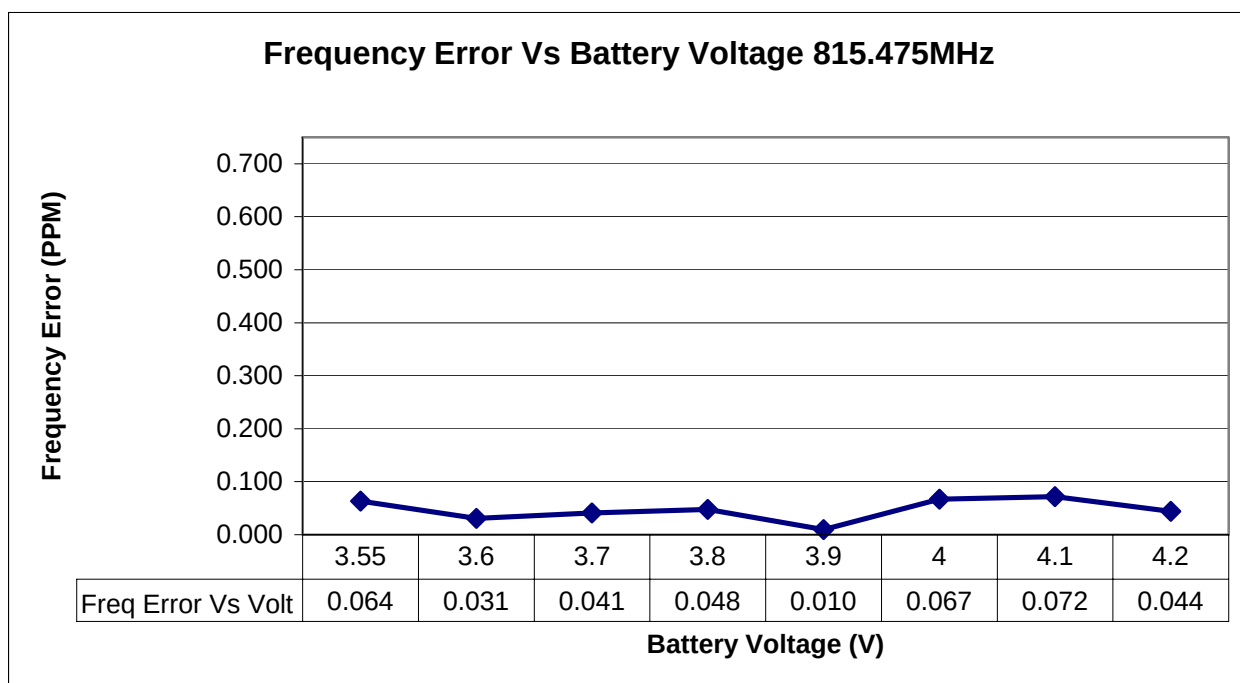


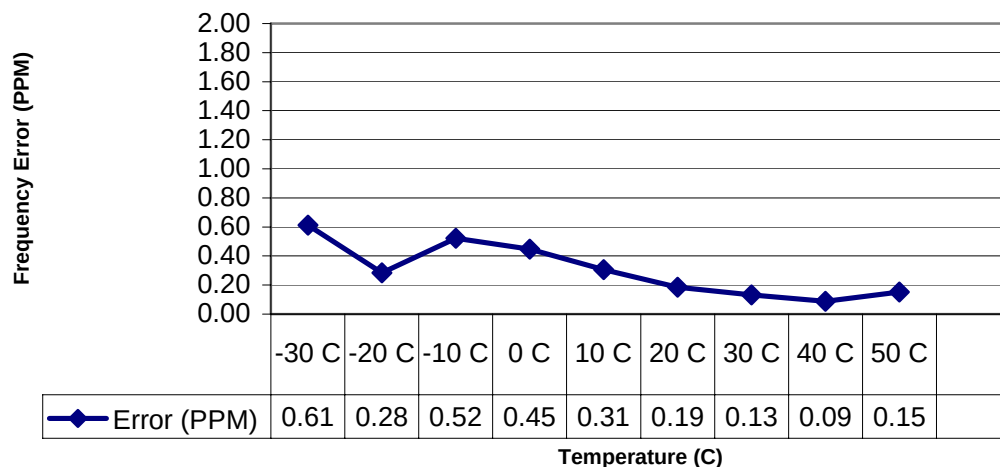
Figure 6-20: Transmitter Frequency Stability (800 MHz band) - Frequency Error vs. Voltage

6.8 Frequency Stability in the 900 MHz ISM Band -- Pursuant 47 CFR 2.1055a(1) & 2.1055(d)2

The transmitter output frequency stability in the ISM band depends upon the inherent frequency stability of the Temperature Compensated Crystal Oscillator (TCXO) used as the frequency reference in the frequency generation scheme described in section 4.2.1 of this application. The total variation of the reference TCXO frequency, including changes caused by ambient temperature, supply voltage variation, and aging of the crystal is specified to be less than 2.25 PPM. This TCXO performance results in a total variation of frequency in the 900 MHz ISM band of less than 2100 Hz from nominal frequency.

No pattern in response to the change in voltage could be identified. There were tens of hertz of noise (uncertainty) in the displayed frequency at all times. This frequency noise appears to have masked the effects of changing the supply voltage.

Frequency Error vs. Temperature and Battery Voltage @ 915.525 MHz



**Figure 6-21. Transmitter Frequency Stability (900 MHz ISM band)-
Frequency Error vs. Temperature and Voltage**

Note: Total frequency variation is reported without separation of effects attributable to changing voltage supply to the transmitter being tested. The change of frequency due to changes in supply voltage could not be determined in the manual measurement made of this parameter. Random frequency variation, on the order of tens of hertz, were present in the measured frequency output. Close examination of frequency within the seconds around a voltage change did not reveal a reportable pattern associated with change in battery voltage. Test method is described in section 7.4.

6.9 Power Line Conducted Spurious Voltage -- Pursuant 47 CFR 15.207

Conducted voltage limits:

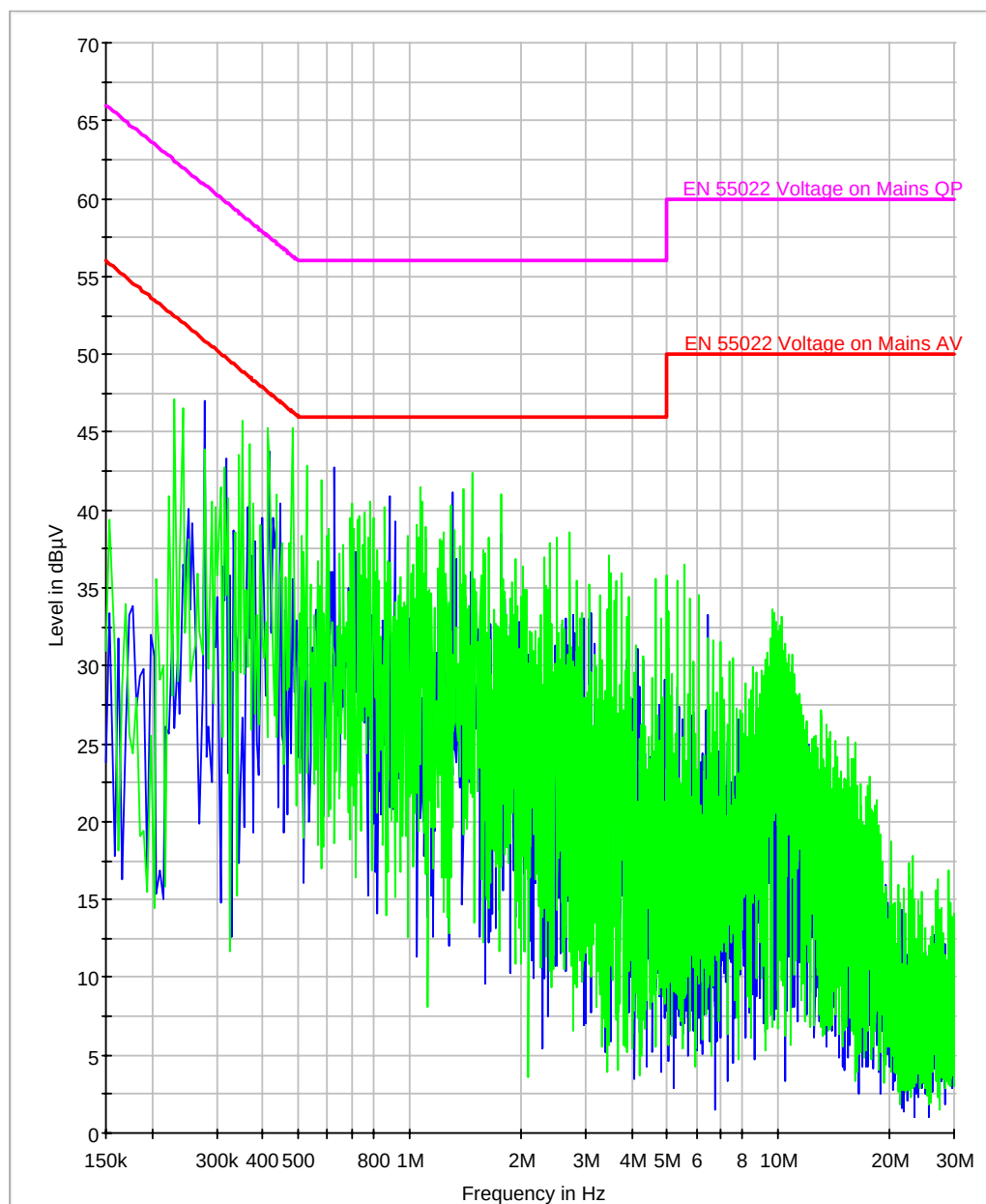
-Per 47 CFR 15.207

This radio product can transmit in Land Mobile Band while resting in a battery charger that is connected to the AC power line. Figures 6-35 and 6-36 demonstrate compliance with the cited limit. Each figure contains two measurement traces in addition to the two applicable limit lines (black traces), the higher being applicable to measurements utilizing a quasi-peak detector and the lower being applicable to measurements utilizing an average detector. The upper data trace (light blue) portrays the amplitude of

the voltage measured during sweeping with a peak detector while the lower trace (light green) represents the amplitude of the voltage measured using an average detector. These detectors facilitated the measurement process. Measurements with a quasi-peak detector lie between these bounds.

For the phase line, six local voltage maxims in Figure 6-35 were re-measured with the quasi-peak and average detector. The quasi-peak detector readings, the average detector readings and the relevant limits are tabulated in the Table 6-3. Note that the readings with either type of detector are lower than the respective limits, thus indicating full compliance.

For the neutral line, six local voltage maxims in Figure 6-36 were re-measured with the quasi-peak and average detector. The quasi-peak detector readings, the average detector readings and the relevant limits are tabulated in the Table 6-4. Note that the readings with either type of detector are lower than the respective limits, thus indicating full compliance.



**Figure 6-22: Phase Line Voltage with a Peak and Average Detector
(Radio in transmit mode at 806.0625 MHz)**

Frequency	All units dB μ V/m						
<= 500kHz	QP value	QP Limit	QP Margin	Avr Value	Avr Limit	Avr Margin	Ph
230000	40.40	63.70	23.30	20.80	53.70	32.90	N
242000	45.60	63.36	17.76	30.30	53.36	23.06	N
354000	42.60	60.14	17.54	29.20	50.14	20.94	N
370000	42.10	59.68	17.58	30.80	49.68	18.88	N
414000	41.90	58.41	16.51	29.00	48.41	19.41	N
482000	41.20	56.46	15.26	27.10	46.46	19.36	N
278000	34.50	62.32	27.82	13.80	52.32	38.52	L1
318000	36.60	61.17	24.57	22.30	51.17	28.87	L1
446000	36.60	57.49	20.89	19.90	47.49	27.59	L1
500kHz - 5MHz							
626000	34.10	56.00	21.90	20.80	46.00	25.20	L1
882000	33.90	56.00	22.10	15.60	46.00	30.40	L1
1310000	31.60	56.00	24.40	17.30	46.00	28.70	L1

**Table 6-17: Line Voltage Data- Quasi-Peak and Average
(Radio in transmit mode at 806.0625 MHz)**

EXHIBIT 6c : MEASURED DATA – Pursuant 47 CFR 2.1041**6.7 6.10 Effective Radiated Power (ERP) – Pursuant 15.247(b)(3)**

As described in Exhibit 7.1, the radiated power received at a spectrum analyzer was measured from the radio product specimen with integral antenna at 2 degrees increments as the specimen was rotated. These recorded power readings are uncalibrated ERP measurements. To convert these readings to ERP values a reference reading was obtained from a calibrated (to an ideal dipole) antenna to which was applied the same power level as the measured output power of the radio specimen. The reading at the spectrum analyzer from this calibrated reference antenna served to calibrate the spectrum analyzer readings for ERP measurements. By comparing the readings between the reference antenna and the radio product specimen, and with a measurement of the output power of the radio product specimen, this measurement also serves to determine the radio specimen antenna gain.

6.10.1 ERP in 806 MHz - 825 MHz band

The following calculations show how the reported scaled ERP was determined.

$$\text{Measured ERP, dBd} = 10 * \log(\text{measured output power, mW}) + \text{measured antenna gain, dBd}$$

The resulting ERP was converted to mW:

$$\text{Measured ERP, mW} = 10^{\left(\frac{\text{Measured ERP, dBd}}{10}\right)}$$

Since the measured ERP was not determined at the production maximum output power, a simple scaling is performed to 700 mW, or, in the case of the ISM Band, to 850 mW:

$$\text{Scaled ERP, mW} = \text{Measured ERP, mW} * \left(\frac{640 \text{ mW}}{\text{measured output power, mW}} \right)$$

The method above was used to process all rotational measurement data and, for brevity, the Table 6-18 and Figure 6-23 summarizes the maximum ERP values obtained in the two transmit.

Freq, MHz	Scaled ERP, mW	Azimuth, degrees
800	634	95
ISM (902-927)	746	100

Table 6-18. Maximum ERP Values.

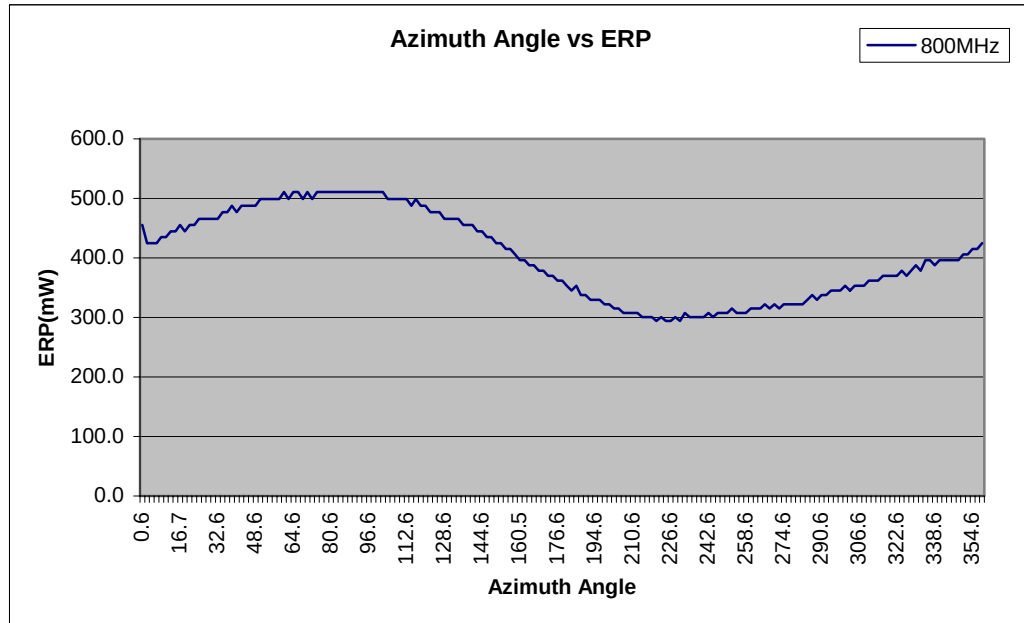


Figure 6-23. Land Mobile Band Scaled ERP vs. Azimuth Angle

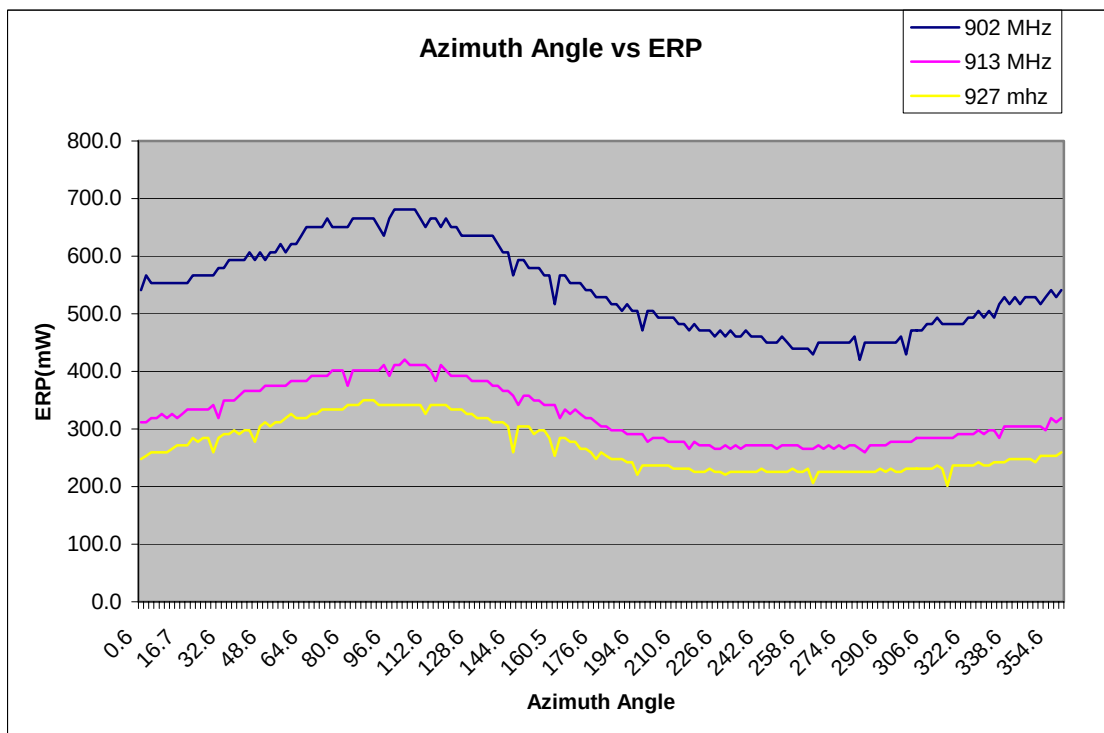


Figure 6-24 ISM Band Scaled ERP v. Azimuth Angle.

6.11 900 ISM Band Carrier Separation between Hopsets – Pursuant 47 CFR, Part 15.247(a)(1)

The separation between frequencies is measured to be 500 kHz as shown in Figure 6-41.

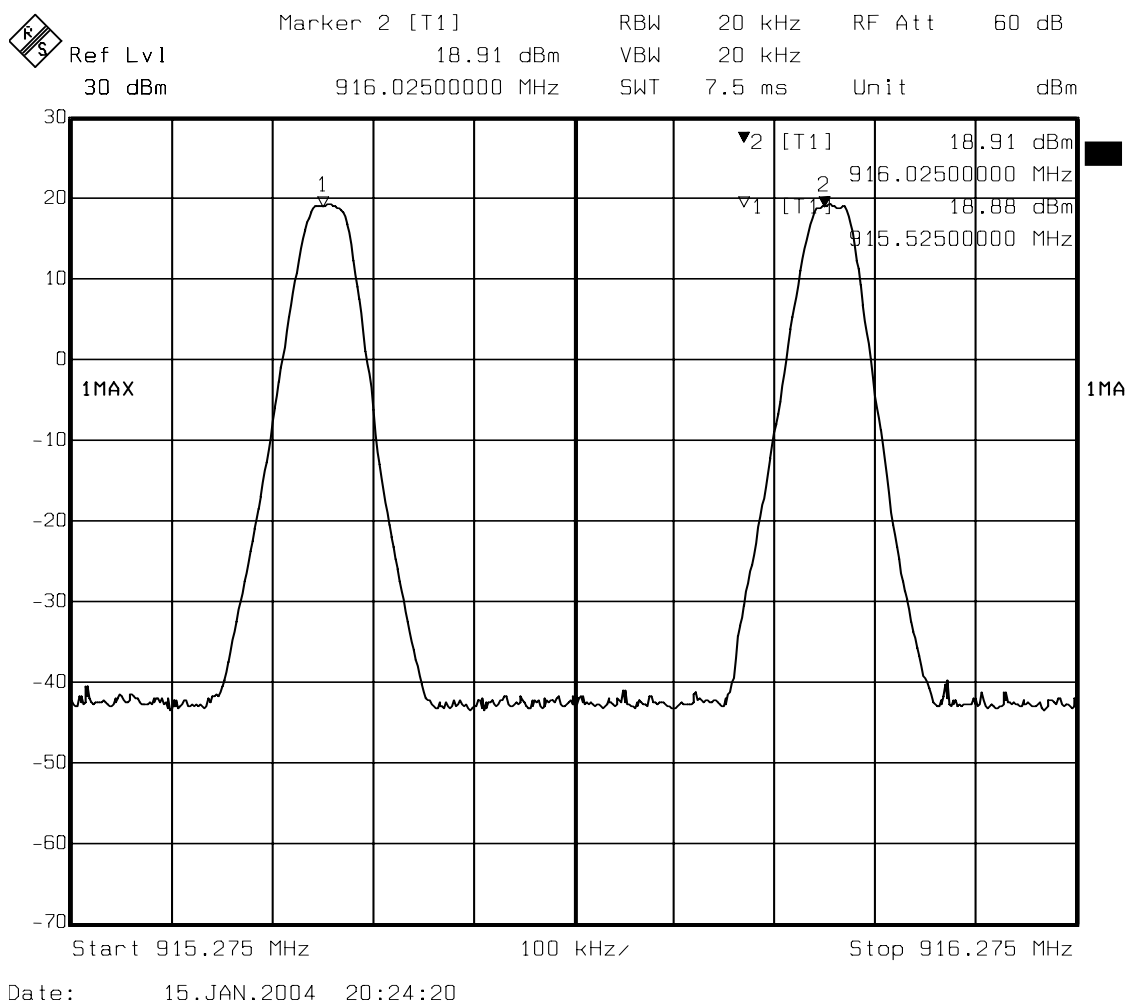


Figure 6-24. Plot of 900 MHz ISM Band adjacent channel separation within a hopset.

6.12 900 ISM Band Hopping Bandwidth between Hopsets –Pursuant 47 CFR, Part 15.247 (a)(1)(i)

Figure 6-25 shows the plot of the 8-FSK, traffic channel ISM Band spectrum with its 20 dB bandwidth of 25.65 kHz. .

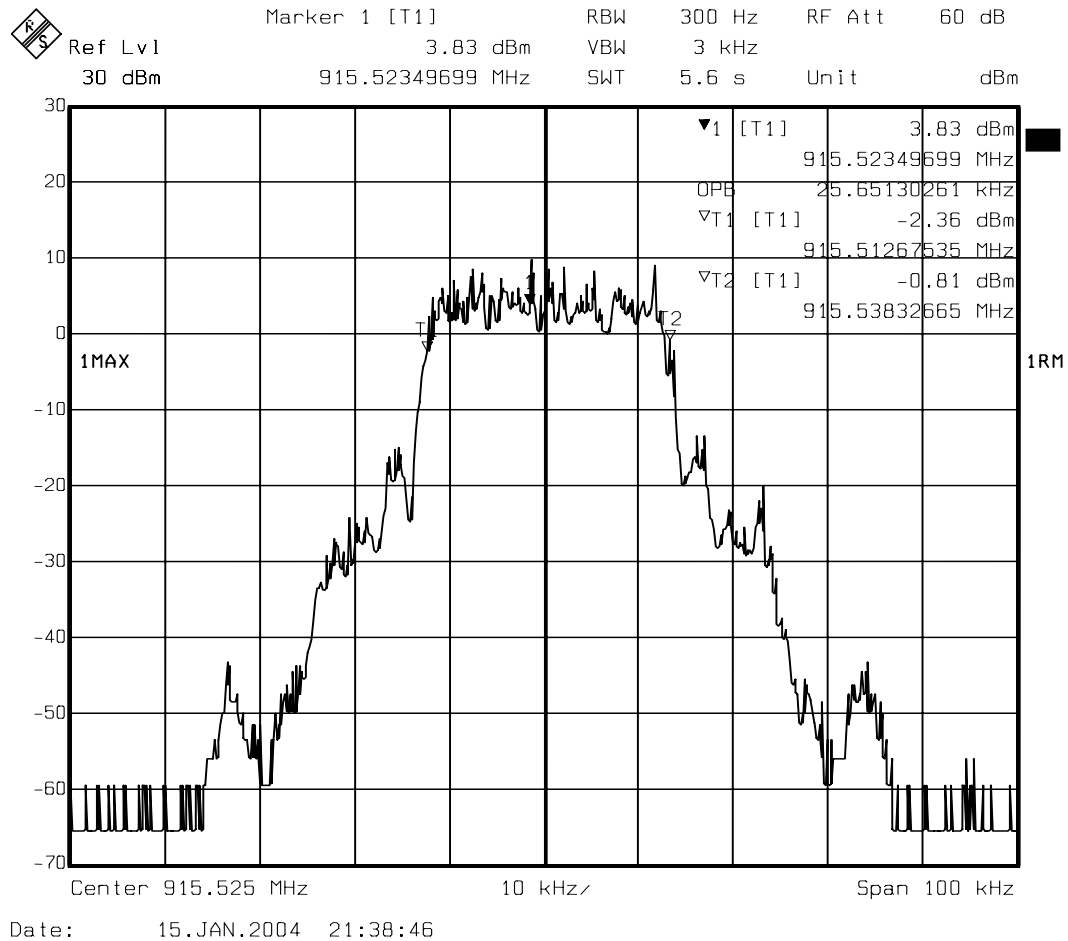


Figure 6-25. Spectrum analyzer plot of 900 MHz ISM Band 8-FSK traffic channel signal's 99% Bandwidth

The adjacent hopset channel separation was measured between hopset @ 915.525 MHz and hopset @ 916.025 MHz which is 50 kHz.

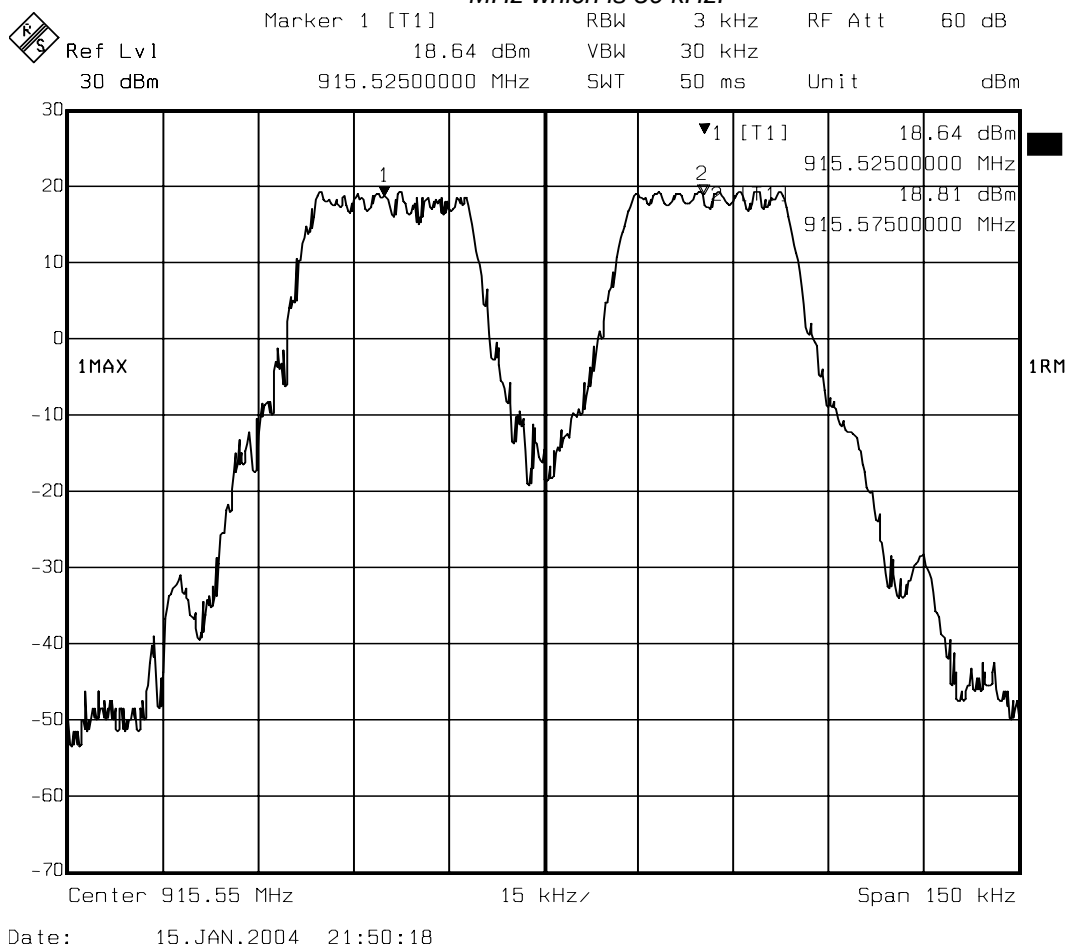


Figure 6-26. Adjacent hopset separation.

6.13 900 ISM Band Receiver Bandwidth – Pursuant 47 CFR, Part 15.247(a)(1)

The receiver bandwidth is limited by a 2-pole analog filter and digital processing that includes a 5th order sinc filter, IIR high-pass programmable bandwidth filter, and a 15th order programmable selectivity filter. The composite 3dB bandwidth is 28 kHz.

6.14 900 ISM Band Number of Hopping Frequencies – Pursuant 47 CFR, 15.247(a)(1)(i)

The 900 MHz ISM Band transmitter uses 50 frequencies within each selected hopset.

Hopset	1 st Frequency (MHz)	Progression (MHz)	Last (50th) Frequency (MHz)
1	902.525	903.025, 903.525, 904.025...	927.025
2	902.575	903.075, 903.575, 904.075...	927.075
3	902.625	903.125, 903.625, 904.125...	927.125
4	902.675	903.175, 903.675, 904.175...	927.175
5	902.725	903.225, 903.725, 904.225...	927.225
6	902.775	903.275, 903.775, 904.275...	927.275
7	902.825	903.325, 903.825, 904.325...	927.325
8	902.875	903.375, 903.875, 904.375...	927.375
9	902.925	903.425, 903.925, 904.425...	927.425
10	902.975	903.475, 903.975, 904.475...	927.475

Table 6-19. 900 MHz Band Transmitter Frequency Hopsets.

6.15 900 ISM Band Average Time of Occupancy – Pursuant 47 CFR, Part 15.247(a)(1)(i)

Worst case scenario (continuous transmission) is as follows:

85.625 ms bursts at 90 ms intervals (hop intervals)

20 seconds per window / 0.09 seconds per hop = 222.22 hops per window

222.22 hops / 50 carriers = 4.444 bursts per carrier window

4.444 bursts * 0.08569183 seconds per burst = 0.381 seconds (less than the 0.4 second requirement)

The calculations show the average time of occupancy of 0.4 seconds or less.

Verification of burst is shown in Figure 6-27 below.

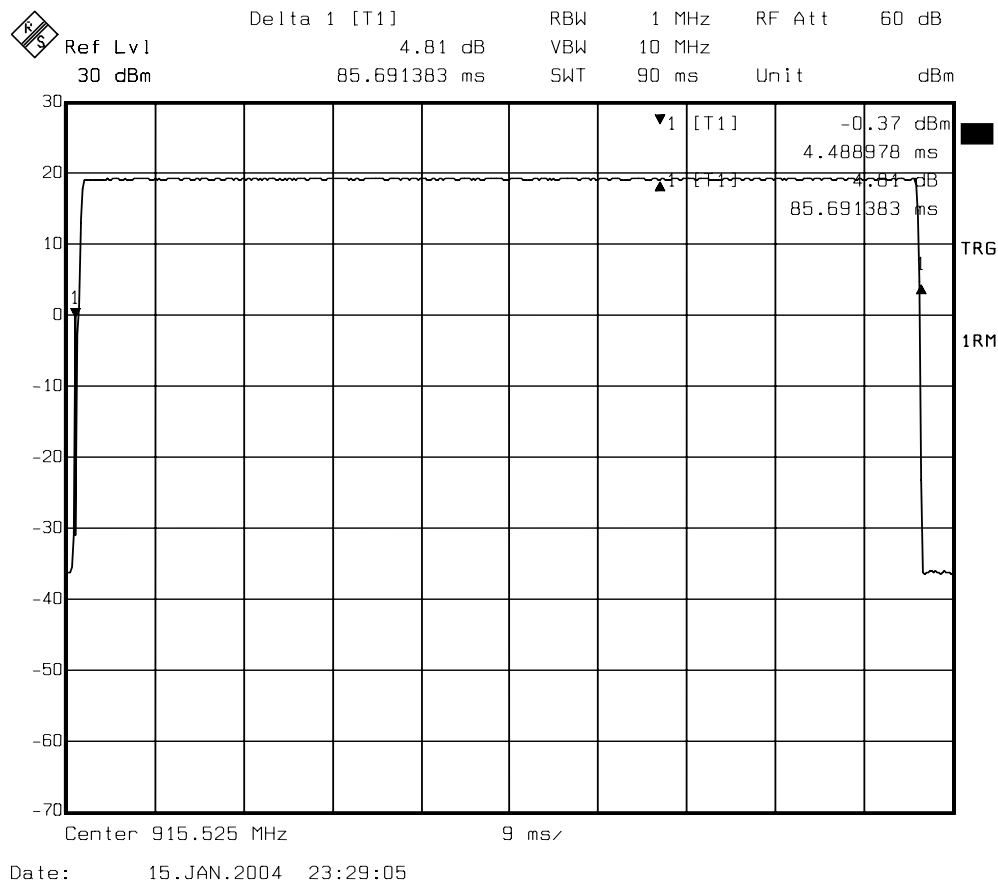


Figure 6-27. 900 MHz ISM Band Average Measured Time of Occupancy.

6.16 900 ISM Band Equal Distribution of Hopping Frequencies for Continuous Transmission – Pursuant 47 CFR, Part 15.247(a)(1)(i) & 15.247(g)

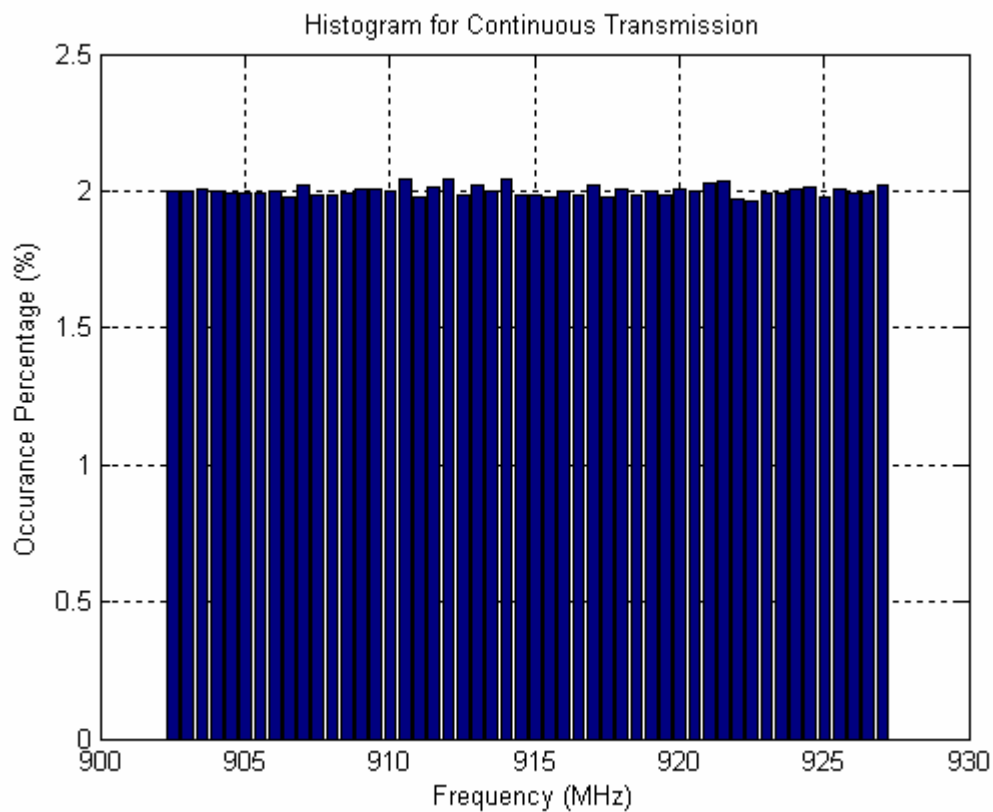


Figure 6-28. Histogram for 900 MHz ISM Band Continuous Transmission

6.17 900 ISM Band Equal Distribution of Hopping Frequencies for Discontinuous Transmission - Pursuant 47 CFR, Part 15.247(a)(1)(i) & 15.247(g)

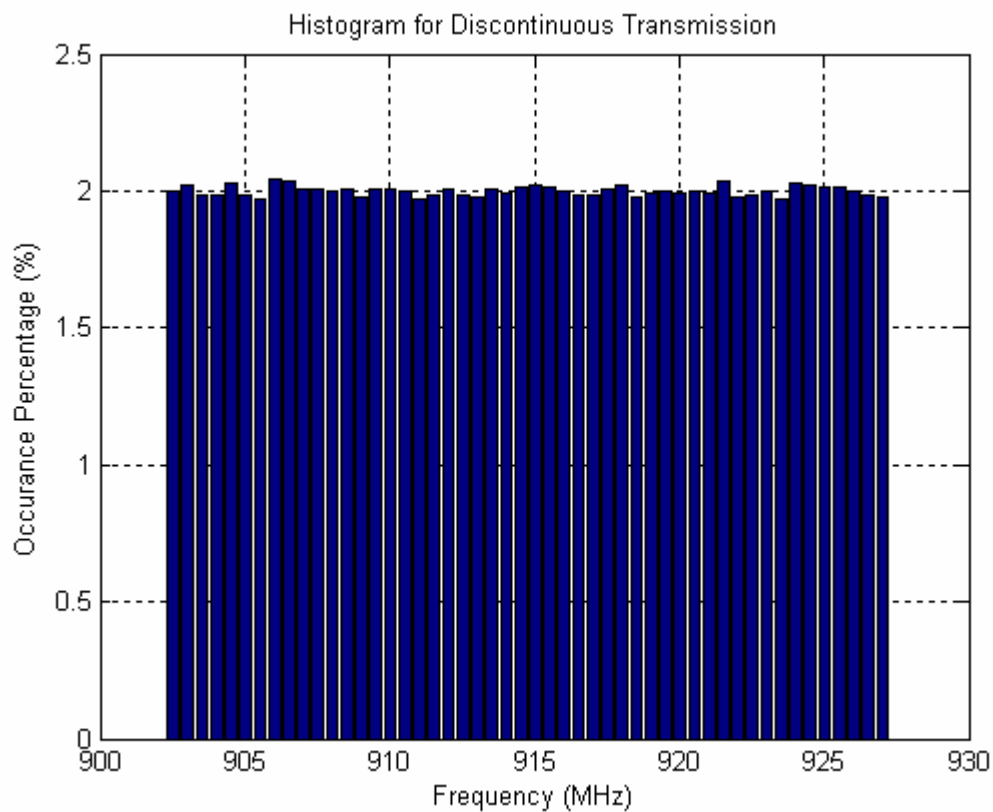


Figure 6-29. Histogram for 900 MHz ISM Band Discontinuous Transmission

Exhibit 7. Measurement Procedures -- 47 CFR. 2.947

7.1 RF Power – Pursuant to 47 CFR 2.947(c)

Method of Conducted Output Power Measurement: Adaptation of TIA/EIA-603-B clause 2.2.1 for Pulsed Measurements

The RF output power is not adjustable by the user. The output power is controlled by the radio in response to the received signal strength or by or special radio service software. To obtain RF output power reading, the radio was programmed to utilize the maximum and minimum output power setting. To correct the average reading power meter, a setting of the duty cycle on the RF power meter was set to 16.667% for herein reported 6:1 TDM test signals.

A special DC/RF test fixture was utilized to interface with the radio test RF connector while simultaneously supplying the nominal operating voltage of 4.0V. The radio RF connector is utilized in all factory tuning and testing procedures, and provides a 50 ohm connection to the transmitter path while disconnecting the radio antenna. All conducted measurements were performed via this test port.

NOTE: This DC/RF test fixture is not offered for sale.

Method of Measurement for Effective Radiated Power: TIA/EIA-603-B 2.2.17.2

The ERP characteristic was measured while a radio was set to transmit a test mode CW signal at the maximum rated output power (+/- 5%) and was vertically mounted on a non-conducting platform/turntable in a RF Anechoic Chamber. The power received at an antenna located at the end of the chamber was recorded on a spectrum analyzer for a complete 360-degree rotation. The same procedure was repeated for 800 and 900 MHz sleeve reference dipole. The CW RF output power of the radio product was measured by a conducted means to determine the necessary input power for the reference dipole (after compensation for interface, cable, and antenna losses). The maximum power levels measured were compared to determine the antenna gain of the radio antenna in reference to the standard dipole. This relative antenna gain was used to scale the maximum RF conducted output power and determine the maximum herein reported ERP.

7.2 Emission Mask-- Pursuant to 47 CFR 2.947(b)

Method of Measurement: Per TIA/EIA-603-B clause 2.2.11

- (1) Set the radio for measurement of RF output power using the power test procedure in the service manual which employs a pseudo random data sequence per part 2.1049(h), and attach it to a spectrum analyzer through a 10 dB attenuator. The analyzer is to be set for peak detection with a video bandwidth of 3 times the resolution bandwidth setting, a span of 100 kHz, and a sweep period of 20 seconds.
- (2) Using a 30 kHz resolution bandwidth to assure that essentially all of the transmitted energy is measured, obtain a "rainbow" curve and adjust the analyzer setting so that the crest of the curve lies at the 0 dB reference location. This is portrayed as trace 1 on the analyzer display.
- (3) Reduce the resolution bandwidth to 300 Hz to characterize the transmitter emission on-channel and adjacent channels spectral performance characteristic. This is portrayed as trace 2 on the analyzer display of Figures 6-7 to 6-12.
- (4) Overlay the applicable emission mask on the analyzer display as trace 3.
- (5) Compare traces 2 and 3 to ensure that trace 2 never exceeds trace 3.

7.3 Radiated Spurious Emissions -- Pursuant to 47 CFR 2.947(b)

Test Sites:

Open Area Test Site (OATS) of the Motorola EMC Lab, 8000 W. Sunrise Blvd., Plantation, Florida 33322 which is accredited to ISO/IEC 25 from the American Association for Laboratory Accreditation (FCC Registration: 91932 /Industry Canada: IC3697). The radiated emission testing was performed for minimum and maximum power levels in transmit mode.

Method of Measurement: TIA/EIA-603-B clause 2.2.12

The equipment is placed on the turntable and placed in normal operation transmit mode of operation.

A broad-band receiving antenna located 3 meters from the transmitter receives any signal radiated from the transmitter and its operational accessories. The antenna is adjustable in height and can be rotated for horizontal or vertical polarization. A spectrum analyzer covering the necessary frequency range is used to detect and measure any radiation received by the antenna.

The transmitter's modulated pseudo random digital signal is monitored and adjusted to obtain peak reading of received signals wherever they occur in the spectrum by:

- (1) Rotating the transmitter under test.
- (2) Adjusting the antenna height.

The testing procedure is repeated for both horizontal and vertical polarization of the receiving antenna. Relative signal strength is indicated on the spectrum analyzer connected to this antenna. The spectrum analyzer resolution bandwidth was set to 10 kHz for emissions below 1 GHz, and 1 MHz for higher frequency emissions. To obtain actual radiated signal strength for each spurious and harmonic frequency observed, a standard signal generator with calibrated output is connected to an antenna adjusted to in the range from 30 MHz to that harmonic frequency. This antenna is substituted for the transmitter under test. The signal generator output level is adjusted until a reading identical to that obtained with the actual transmitter is observed on the spectrum analyzer. Signal strength is then derived from the generator and appropriate cable losses due to set up. Measured emissions for both maximum and minimum transmit power levels are recorded in tables in Exhibit 6.

7.4 Emission Chart 902 MHz to 928 MHz ISM Band --- pursuant to 47 CFR 15.247(c)

- (1) Connect DUT to spectrum analyzer through 10 dB, 2W, RF power attenuator
- (2) Set up the spectrum analyzer as follows for measurement:
 - (a) Center frequency 902.525 MHz
 - (b) Span = 100KHz
 - (c) Sweep = Auto
 - (d) Ref Level = 30 dBm
 - (e) Trace = Max Hold (Positive peak detector)
- (3) Initiate transmission at 902.525 MHz and measure power
- (4) Change spectrum analyzer frequency to center frequency 901.95 MHz and measure power.
- (5) Repeat steps 2 and 3 for 927.475 MHz
- (6) Repeat step four for center frequency 928.05 MHz.

The comparison between on channel power in a 100 KHz BW and outside band edge 100 KHz BW power at both band edges demonstrates compliance with 47 CFR, part 15.247(c)

7.5 Frequency Stability -- Pursuant to 47 CFR 2.947(c)

Measuring the frequency accuracy of the iDEN time division multiplexed (TDM) transmitter needs special procedures for 3 reasons. First is the short (15 ms.) nature of its TDM pulses, which preclude the use of an ordinary CW type digital frequency counter. Second, software in the radio prevents the radio from transmitting its TDM pulses unless it is receiving a signal on the trunking system control channel. Third, to maintain the very high stability (greater than that required by part 90 rules) needed for system operation, the radio transmitter frequency is controlled by an automatic frequency control loop in the radio's receiver which locks onto the system forward control channel produced by a compatible FCC certified part 90 base station. This process results in electronic adjustments of the synthesizer section of the radio, which is used for both transmission and reception.

As a result, unlike traditional transceivers which do not frequency lock to a remote base station reference frequency, the transmitter frequency accuracy is essentially independent of the voltage and temperature induced variations of the subject transceiver's frequency reference oscillator. Rather, the transceiver frequency stability is that of the remote base station, but degraded by any inaccuracy in the transceiver frequency locking process.

By locking onto a base station meeting the requirements of 47 CFR 90.213, which is necessary for the transceiver to function, the transceiver transmitter inherits the inherent 1.5 PPM or better stability of the compatible base station. To assure attainment of the frequency accuracy requirement (1.5 PPM accuracy requirement for the 800MHz band and the 1.5PPM accuracy requirement for the 900MHz band) of part 90.213 for this transceiver, the frequency error is measured when locked to a base station simulator.

Frequency Error vs. temperature

The radio product sample tested used a frequency of 860.9875/820.9875 MHz (800MHz Band) and 938.48125/899.48125 MHz (900MHz band). A Power Supply was controlled to provide a continuous 4.0VDC to the unit tested. The sensor leads from the power supply were attached to the input of the DC/RF test fixture in which the radio was placed. A Temperature Chamber was used to control a temperature range of -30 degree Celsius to +60 degree Celsius.

At each set point, a soak time of 15 minutes was used to ensure thermal penetration of the unit tested before each measurement of frequency error was taken. A soak time of 45 minutes was used at -30 degree Celsius to ensure thermal penetration of the unit tested because of the variance from the starting temperature of +25 degree Celsius. Soak cycles of 20 minutes each thereafter were used because of the fact that the set points were incremented at 10 degree (Celsius) steps.

The measurement was taken by placing the unit tested into a phone call to the Motorola R2660C. The iDEN 3:1 Call Test on the Motorola R2660C was controlled to facilitate the call. Once the call had been established, a Hewlett Packard Model 89441A gathered measurements of the frequency error and recorded it to a data file.

After having taken measurement at a specific set point in the temperature range previously specified, the iDEN 3:1 Call test on the Motorola R2660C was terminated. The Temperature Chamber would proceed to its next increment and repeat the test execution process at the end of that particular soak cycle. The process was continued until measurements were made at each of the specified temperatures in the temperature range previously mentioned.

Frequency Error vs. voltage

The unit tested used a frequency of 860.9875/820.9875 MHz (800MHz Band) and 938.48125/899.48125 MHz (900MHz band). A Power Supply was controlled to provide a voltage range of 3.55VDC to 4.2VDC to the unit tested. The sensor leads from the power supply were attached to the input of the battery eliminator of the unit tested.

The measurements were taken by placing the unit tested into a phone call to the Motorola R2660C. The iDEN 3:1 Call Test on the Motorola R2660C was controlled to facilitate the call. Once the call had been established, a Hewlett Packard Model 89441A took measurement of the frequency error and recorded it to a data file.

After having taken a frequency error measurement at 4.2VDC, the Power Supply's output was reduced by an increment of 0.1VDC. The measurement process was repeated until Frequency Error measurements were made in 0.1VDC steps of each of the specified voltages in the range previously mentioned.

ISM Band: Frequency Error measurement in 902 MHz to 928 MHz ISM band

The unit was tested at a transmitter output frequency of 915.525 MHz. A power supply with the capability of toggling between 4.0 V and 3.55 V was used to provide battery voltage to the unit being tested. The units RF output was attached to a spectrum analyzer capable of making an occupied bandwidth measurement with high frequency accuracy.

The measurements were made by soaking the unit tested in an idle mode for the length of time necessary to stabilize transmitter temperature, at least 40 min per temperature. At the end the temperature soak the transmitter was enabled in the ISM band. Frequency deviation from 915.525 MHz was recorded after the transmitter had produced full output power for 10 seconds (as determined manually).

During operation of the transmitter at -30C, 20C, and 50C an attempt was made to determine frequency error caused by changing the supply voltage from 4.0 VDC (nominal) to 3.55 VDC (minimum). The voltage was toggled from nominal to minimum to nominal repeatedly while monitoring frequency.

Method of Measurement: Proprietary

Since the transmitter frequency is locked to the frequency of the compatible base station via the receiver in this transceiver, frequency accuracy data was measured with the transceiver locked onto a base station transmitter emulated by a Motorola R2660C Service Monitor as shown in Figure 7-1. This was done using the Quad-16QAM time division multiple access (TDMA) characteristic of the transceiver wherein it was placed into a TDMA mode of transmission as normally used to make a call to a landline phone.

During the test the transceiver was receiving a very high accuracy forward control channel frequency signal from the compatible base station emulator and TDMA transmitting a signal on the reverse control channel at a frequency 45 MHz lower in the 800MHz band, (39 MHz lower in the 900MHz band) corresponding to the normally assigned frequency separation. A Hewlett Packard model 89441A signal analyzer was used to measure the centroid frequency of the emission. The frequency of the transceiver was measured as operating voltage or temperature was varied, and compared to the frequency of the assigned channel.

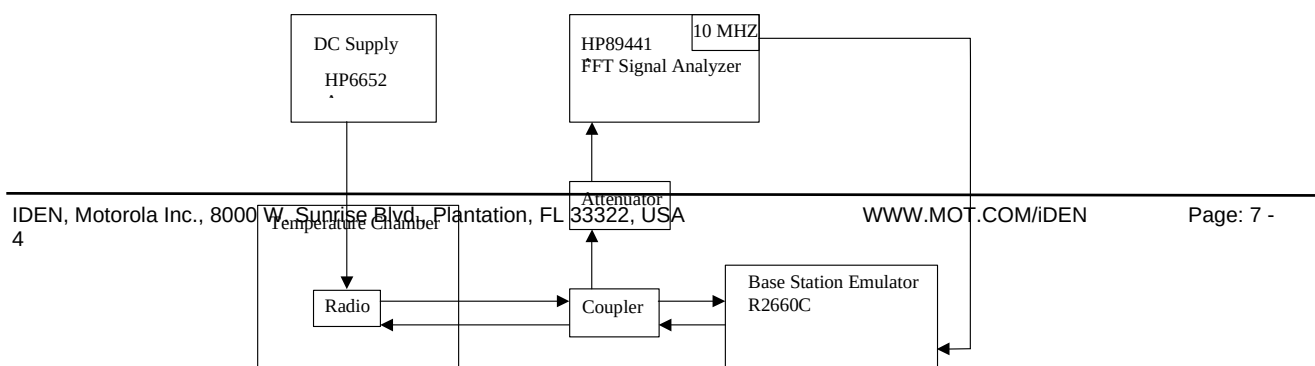


Figure 7-1: Transmit Frequency Measurement Setup

7.6 Power Line Conducted Spurious Output Voltage Pursuant 47 CFR 15.107

Test Site:

Open Area Test Site (OATS) of the Timco Eng. Lab, 849 N.W. State Road 45, Newberry, Florida 32669 which is accredited to ISO/IEC 25 from the American Association for Laboratory Accreditation (FCC Registration: 95517 /Industry Canada: 2056-A).

Method of Measurement: TIA/TEA-603-B clause 2.1.3

Connect the receiver to the power line through a line stabilization network. A spectrum analyzer of nominal 50 Ω impedance to one terminal ("neutral") of the line stabilization network. The spectrum analyzer is then tuned to search for spurious outputs from *150 kHz to 30 MHz pursuant 47 CFR 15.107*. All spurious voltages are recorded. Six highest local maxima are noted, measured with a "Quasi-peak" and "Average" detectors, and then tabulated.

7.7 Carrier Separation between Hopsets

The carriers within a 900 ISM Band hopset are separated by 500 kHz, and the 20 dB bandwidth of a 900 ISM Band carrier is 25.6 kHz.

The test is setup as shown in Figure 7-2. The spectrum analyzer is setup to capture two adjacent carriers. Transmission in the 900 ISM Band mode is initiated until relevant data is captured.

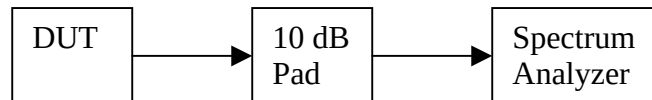


Figure 7-2. Test bench for ISM Band multi-channel measurements.

7.8 Hopping Bandwidth between Hopsets

The aggregate of all 10 hopsets result in an overall carrier separation of 50 kHz with a 20 dB bandwidth of 25.6 kHz.

Step 1. Connect the DUT to the spectrum analyzer as in Figure 7-3.

Step 2. Set up the spectrum analyzer as required to measure the 20 dB bandwidth

Span = 100 kHz

RBW = 300 kHz

Sweep = Auto

Ref. Level = 30 dBm

Trace = Max Hold (RMS Detector used)

Occupied Bandwidth

Step 3. Initiate Transmission until relevant data captured.

- Step 4. Set up the spectrum analyzer as required to capture two adjacent carriers.
 Span = 150 kHz
 RBW = 300 Hz
 Sweep = Auto
 Ref. Level = 30 dBm
 Trace = Max Hold
 Use Markers
 Step 5. Initiate Transmission until relevant data captured.

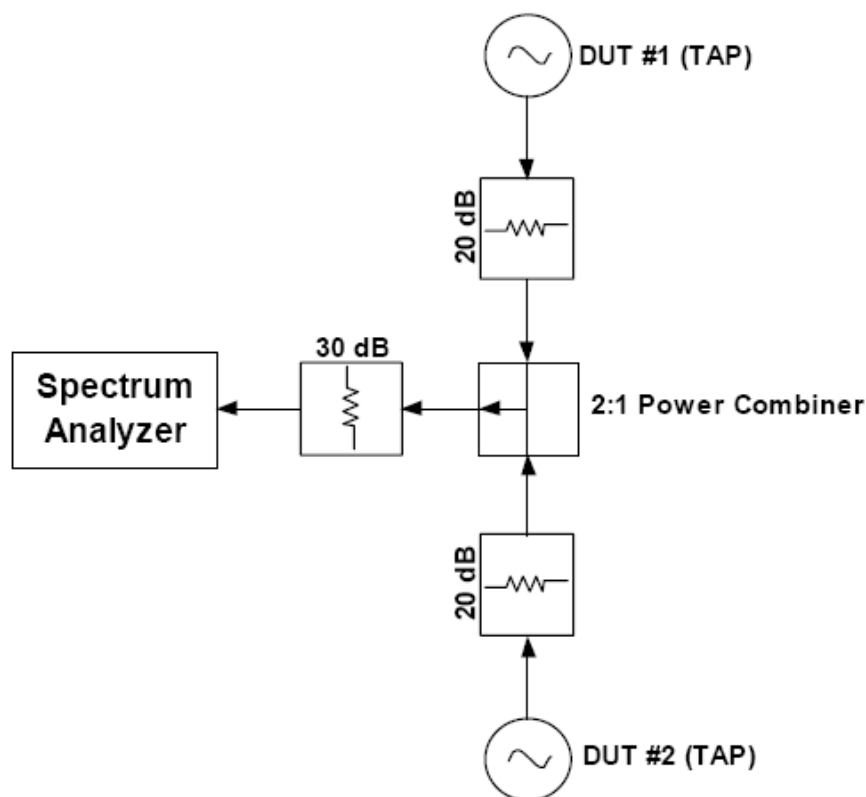


Figure 7-3. Test setup for multi-channel measurements.

7.9 Average Time of Occupancy

- Step 1. Set up the spectrum analyzer (or oscilloscope) as required to capture a single transmitted burst (or a continuous stream of bursts at the same frequency).
 Step 2. Initiate Transmission until relevant data captured.
 Step 3. Measure the duration of the 85.625 ms burst.
 Step 4. Describe worst case scenario (continuous transmission).

7.10 Equal Distribution of Hopping Frequencies for Continuous Transmission

Through ISM Band subscriber test-mode software, a frequency counting algorithm was implemented and used to keep count of how many times a particular frequency was used during a continuous transmission with a DUT. From this data, the frequency distribution can be calculated.

7.11 Equal Distribution of Hopping Frequencies for Discontinuous Transmission

Through ISM Band subscriber test-mode software, a frequency counting algorithm was implemented and used to keep count of how many times a particular frequency was used during a transmission with a DUT. The algorithm used the probability density function for 800/900 Band dispatch call lengths based on actual user data (refer to Figure 7-4) to model multiple ISM Band transmission times with the same call length distribution. The frequency distribution was calculated from the data generated.

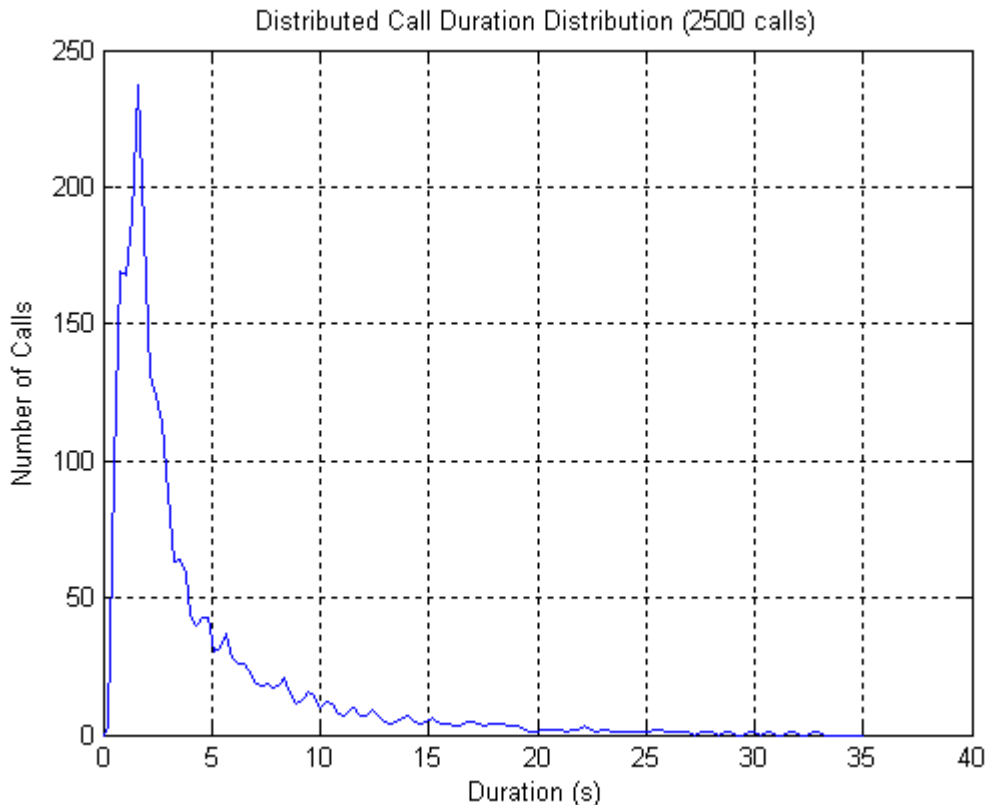


Figure 7-4. Call-length Probability Distribution Function

7.12 Measurement Equipment List ---- 47 CFR 2.947(d)

1. Spectrum Analyzer
 - H.P. 8566B
 - H.P. 8563E
 - Rhode & Schwarz ESI26
2. Vector Signal Analyzer
 - H.P. 89441A
3. Communications System Analyzer
 - Motorola R2660C MIRS Digital Communication System Analyzer
4. Oscilloscope
 - HP 54616B, Oscilloscope
 - Tektronix, Model TCP202, Current Probe
5. RF Signal Generator
 - H.P. 8656A
 - Rhode and Schwarz SMP22

- H.P. E4420A
- 6. Power Meter
 - H.P. 437B Power Meter
 - H.P. 8482A Power Sensor
- 7. Multimeter
 - Keithley 2001 Multimeter
- 8. Power Supply
 - Motorola Lithium Ion Battery, Kit #: NTN 5705A
 - DC Power Supply, H.P., Model: 6652A
 - DC Power Supply, H.P., Model: 6632A
 - DC Power Supply, H.P., Model: 6032A
 - Battery Charger, Model: NNTN4680A
 - DC/RF Test Fixture, 22000uF shunt capacitor / series .2 ohm resistor
- 9. RF Load
 - Weinschel Engineering, Model: 9305-30, 20 Watt, 30 dB Attenuator
 - Weinschel Engineering, Model: 9305-10, 20 Watt, 10 dB Attenuator
 - Narda, Model: MOD766-30, 20 Watt, 30 dB Attenuator
- 10. Filter
 - Trilithic, Model: X5HX1612-0-75-AA, High Pass Filter
 - Trilithic, Model: R9H1-1G4/8G-28A, High Pass Filter
- 11. Amplifier
 - MITEQ AFS5-00101800-25-ULN, 1-18GHz, 25dB Gain Amplifier
 - PST 10W Amplifier
- 12. Antenna
 - Watkins - Johnson, 0.5 GHz - 12.4 GHz, Model WJ-48010
 - Watkins - Johnson, Model: AR122
 - A.H. Systems Inc., Model: SAS-200/571, 700MHz - 18GHz, Double Ridge Guide Horn
 - EMCO, Model: 3141, 20MHz – 1GHz, Biconilog
 - Schaffner-Chase EMC Ltd., Bilog Antenna, Model CBL6112B
 - Watkins-Johnson L.P. antenna AR7-17A
 - Sleeved-Dipole
- 13. Temperature Chamber
 - Thermotron, Model: S-8.0C
- 14. LISN
 - EMCO, Model: 3810/2NM, Line Impedance Stabilization Network
- 15. Antenna Positioning Mast / Turntable
 - Sunol Sciences Corp., Model: FM 2011, Turntable
 - Sunol Sciences Corp., Model: TLT95, Antenna Positioning Mast
 - Sunol Sciences Corp., Model: SC98V, System controller
 - Scientific Atlanta Antenna Analyzer System 2083A
- 16. Computers
 - Dell, Laptop Computer
 - Hitachi MX 166 computer, Hyperlink Terminal
 - Dell Precision 420 Computer
- 17. Programming Cable
 - RS232 Data Cable
- 18. Table
 - PVC Table
- 19. RF Tray
 - OATS RF Tray, Model 2000
- 20. Test Site
 - OATS, Ground plane
 - 60' Tapered Anechoic Chamber, Emerson & Cummings 1203