Submitted Measured Data

MEASUREMENT		EXHIBIT	NUMBER OF PAGES
1.	RF Power Output Data	6A	1
2.	Audio Frequency Response	6B	1
3.	Low Pass Filter Response	6C	1
4.	Modulation Limiting	6D	2
5.	Occupied Bandwidth	6E	6
6.	Radiated Spurious Emissions	6F	4
7.	Conducted Spurious Emissions	6G	6
8.	Frequency Stability	6H	2
9.	Transient Frequency Behavior	6I	4

RF Power Output Data

Frequency, MHz	425.375	Power Supply Voltage, V	Current, A
Measured High Power Level, W	48.00	13.6	8.06A
Measured Medium Power Level, W	24.10	13.6	5.53
Measured Low Power Level, W	4.00	13.6	2.54

EXHIBIT 6A

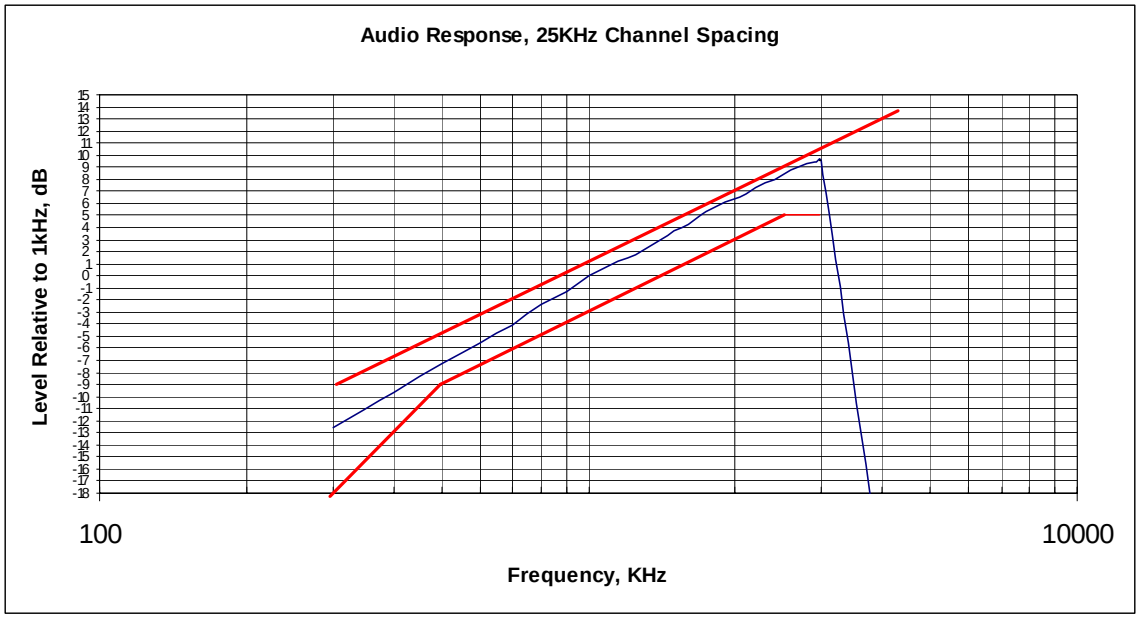


EXHIBIT 6B-1

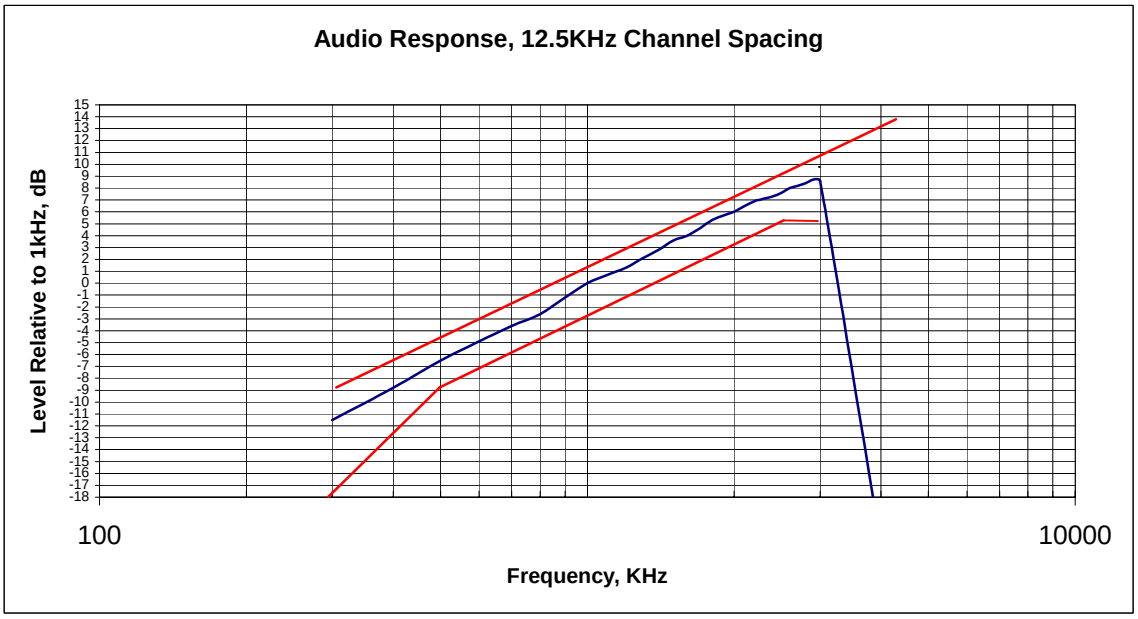


EXHIBIT 6B-2

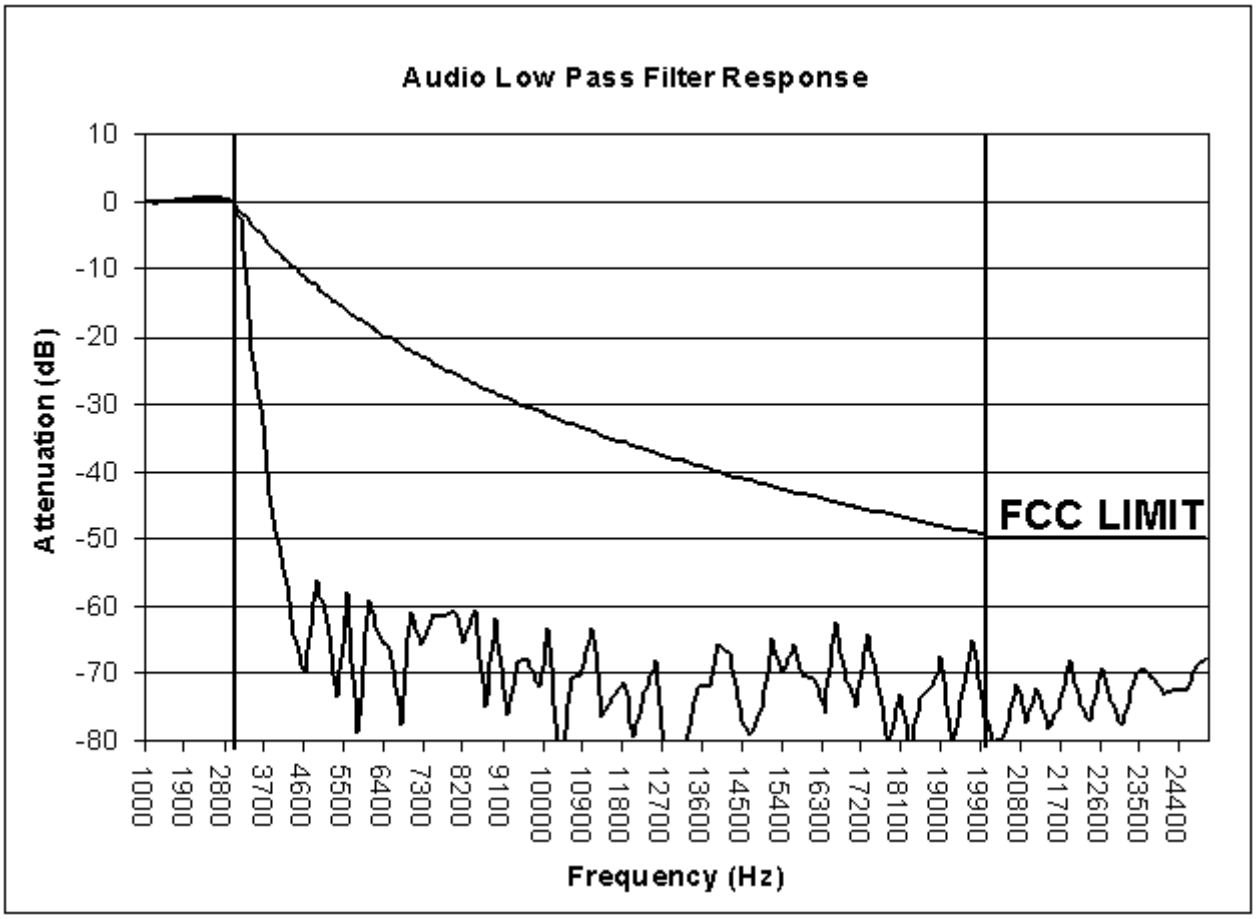

Audio Low Pass Filter Response
Attenuation (dB)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
FCC LIMIT
1000
1900
2800
3700
4600
5500
6400
7300
8200
9100
10000
10900
11800
12700
13600
14500
15400
16300
17200
18100
19000
19900
20800
21700
22600
23500
24400
Frequency (Hz)

EXHIBIT 6C

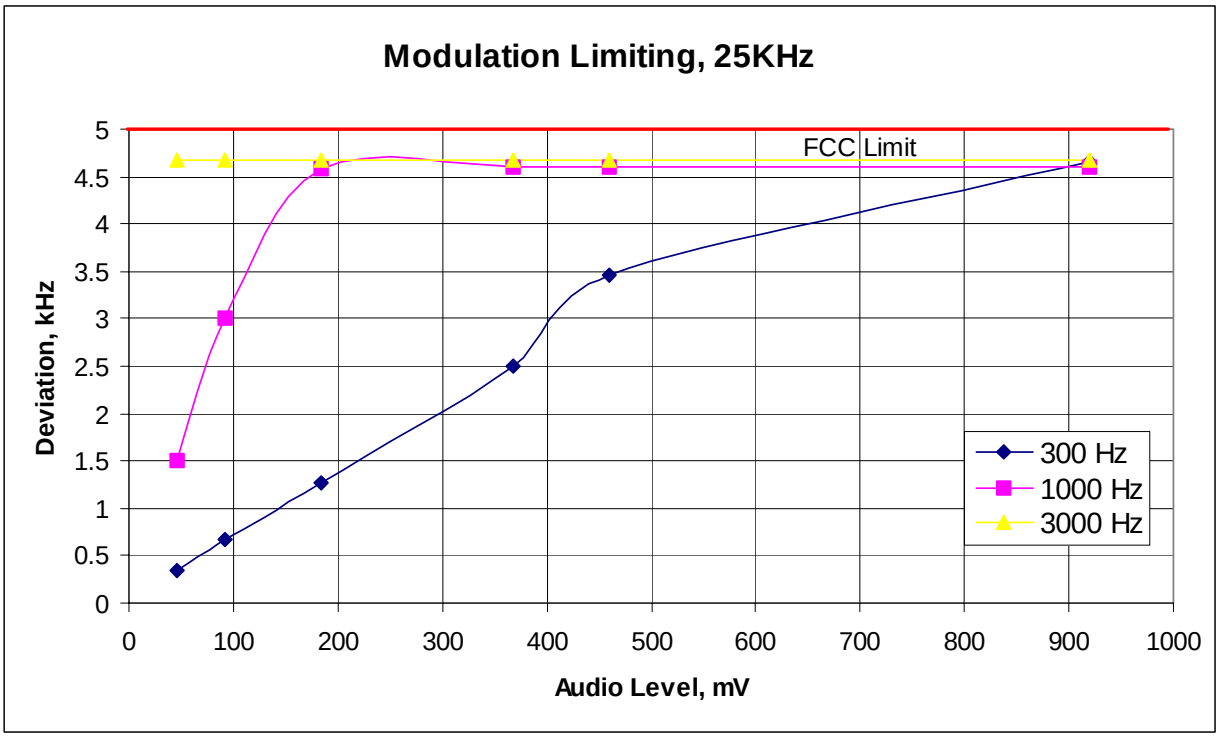

Modulation Limiting, 25KHz
Deviation, kHz
Audio Level, mV
FCC Limit
300 Hz
1000 Hz
3000 Hz
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0
100
200
300
400
500
600
700
800
900
1000

EXHIBIT 6D-1

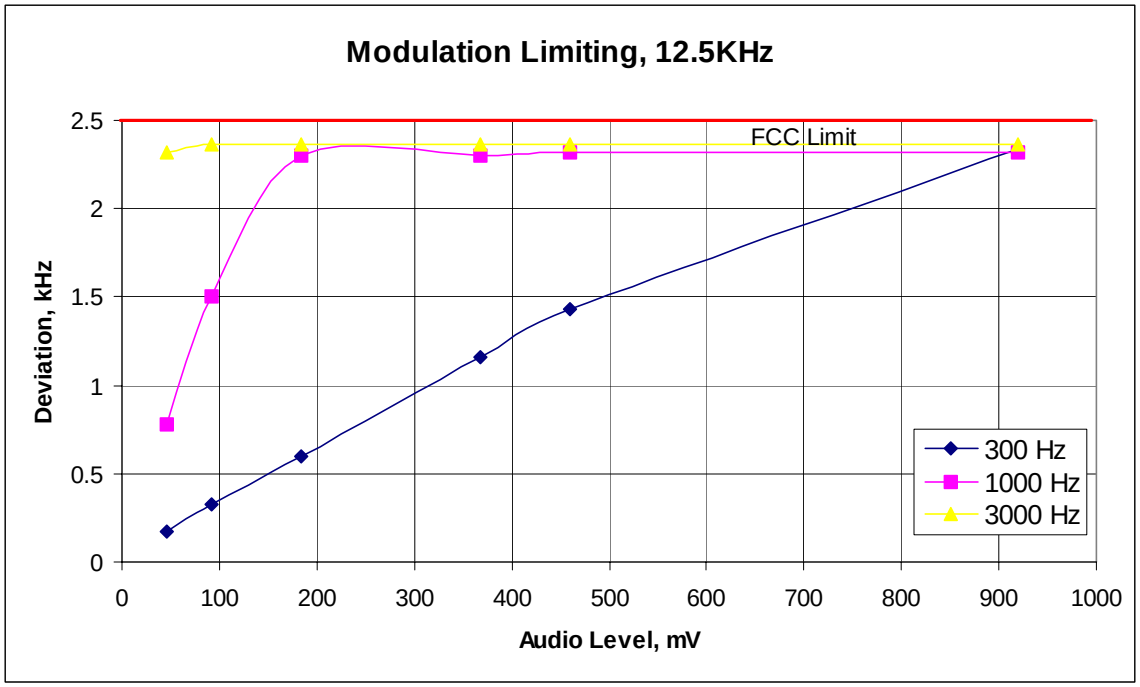

Modulation Limiting, 12.5KHz
Deviation, kHz
2.5
2
1.5
1
0.5
0
0
100
200
300
400
500
600
700
800
900
1000
Audio Level, mV
FCC Limit
300 Hz
1000 Hz
3000 Hz

EXHIBIT 6D-2

Occupied Bandwidth Data

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) where: BW = Bandwidth
M= Maximum modulating frequency
D = Deviation

Shown below are the calculations required for FCC ID: AZ492FT4862

EXHIBIT 6E-1
Standard Audio Modulation (25 kHz Channelization, Analog Voice):
Emission Designator 16K0F3E

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

BW = 2(M+D) = 2*(3 kHz + 5 kHz) = 16 kHz ===> 16K0
F3E portion of the designator indicates voice.

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

EXHIBIT 6E-2
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 kHz + 2.5 kHz) = 11 kHz ===> 11K0
F3E portion of the designator indicates voice.

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

EXHIBIT 6E-3
Digital (12.5 kHz Channelization, Digital Data):
Emission Designator 8K10F1D

Measurements per Rule Part 2.202 Section C (4) were done because Part 2.202 Section g Table III A, 1 formulation produces an excessive result using the value of K recommended in the Table. Therefore, the 99% energy rule (title 47CFR 2.989) 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 2.2.5.2. 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

Measurements per Rule Part 2.202 Section C (4) were done because Part 2.202 Section g Table III A, 1 formulation produces an excessive result using the value of K recommended in the Table. Therefore, the 99% energy rule (title 47CFR 2.989) 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 2.2.5.2. 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 Voice Encryption):
Emission Designator 8K10F1E (Per 47CFR 90.212(b))

Measurements per Rule Part 2.202 Section C (4) were done because Part 2.202 Section g Table III A, 1 formulation produces an excessive result using the value of K recommended in the Table. Therefore, the 99% energy rule (title 47CFR 2.989) 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 2.2.5.2. 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 (with encryption) is 8K10F1E.

EXHIBIT 6E-6
Secure Mode (20.0 kHz Channelization, Digital Voice Encryption):
Emission Designator 20K0F1E

In this case, the maximum modulating frequency is 6.0 kHz with a 4.0 kHz deviation.

BW = 2(M+D) = 2*(6.0 kHz + 4.0 kHz) = 20 kHz ===> 20K0
F1E portion of the designator indicates digital voice.

Therefore, the entire designator for 20.0 kHz channelization secure mode (digital voice encryption) is 20K0F1E.

Note: The 90.203(j) efficiency standard for "F1D" emission is met by sending 2 bits at a time, at a rate of 4800 symbols/second. This yields 9600 bits/second, which is achieved using the modulation technique described in the note below. Modulation results from one of the digital 4-level standard symbol patterns applied to the modulation at a rate of 9600 bits/second. The modulation technique is 4-level FM. The information bits are commonly represented by a symbol that corresponds to one of 4 levels of FM deviation according to the following table.

Information Bits	Symbol	C4FM Deviation
01	+3	+1.8 kHz
00	+1	+0.6 kHz
10	-1	-0.6 kHz
11	-3	-1.8 kHz

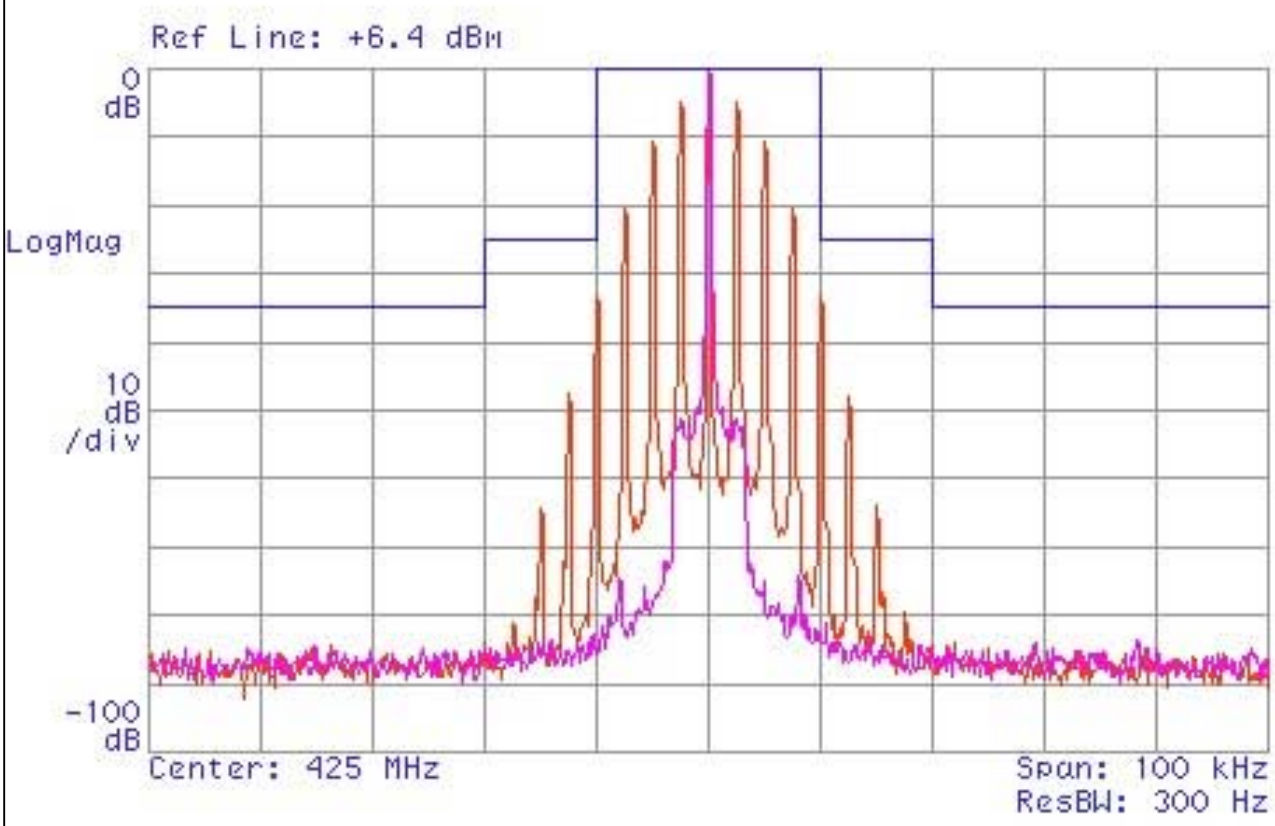
For example, an 8-bit binary pattern of 0010 1101 would be sent as symbols +1, -1, -3, +3, which would cause a modulation signal (Frequency-Shift-Keyed) of +1.8 kHz, -600 Hz, -1.8 kHz, and +1.8 kHz. This results in 9600 bits/second of information being sent on a 12.5 kHz channel, which is the equivalent of 4800 bits/second per 6.25 kHz.

Note: The "F1D" and "F1E" signal parameters are described as follows: The modulation is 4-level FSK with +/-600 Hz and +/-1.8 kHz shifting (+/-600 Hz and +/-1.8 kHz are the 4 distinct levels of signals). The digital voice test pattern is created by a 2500 Hz sine wave modulated at a level that is 16 dB above that required to produce 50% deviation at the radio output. The digital data test signal is generated by an internally generated pseudo random test pattern based on ITU-T 0.153 (formally CCITT V.52).

OCCUPIED BANDWIDTH (EMISSION DESIGNATOR 16K0F3E)

UNIT DESCRIPTION: FREQ = 425 MHz **ANALOG VOICE**
POWER = 48 Watts **CHANNEL**

SPACING = 25.0 kHz

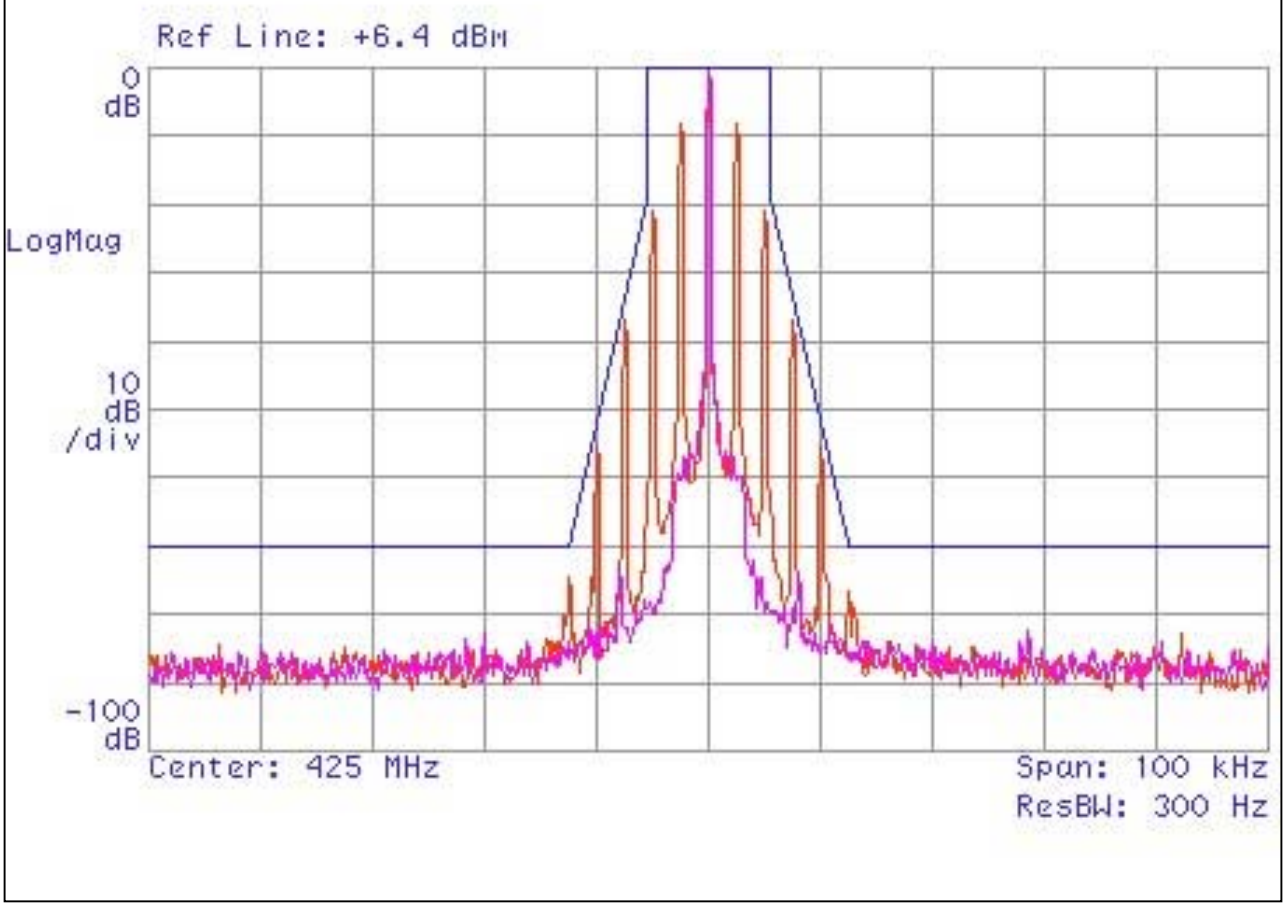


Mask B

OCCUPIED BANDWIDTH (EMISSION DESIGNATOR 11K0F3E)

UNIT DESCRIPTION: FREQ = 425 MHz **ANALOG VOICE**
POWER = 48 Watts **CHANNEL**

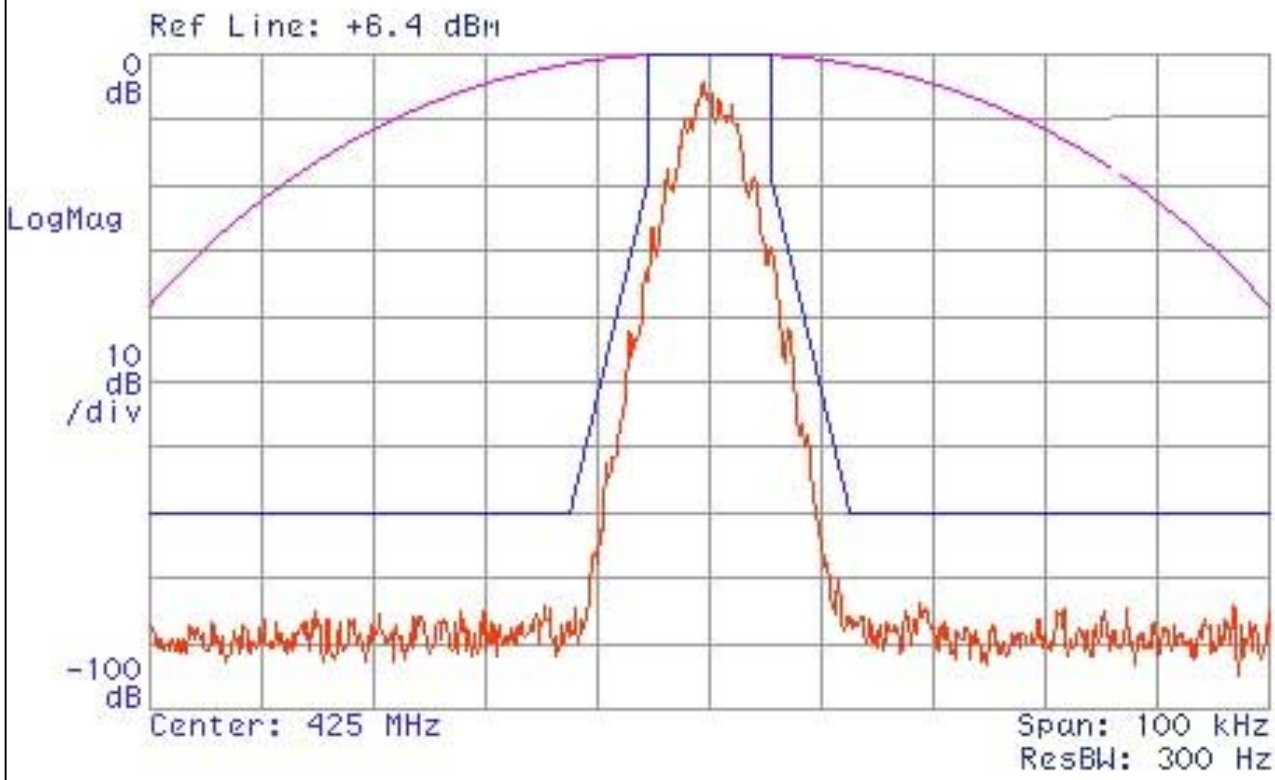
SPACING = 12.5 kHz



Mask D

OCCUPIED BANDWIDTH (EMISSION DESIGNATOR 8K10F1D)

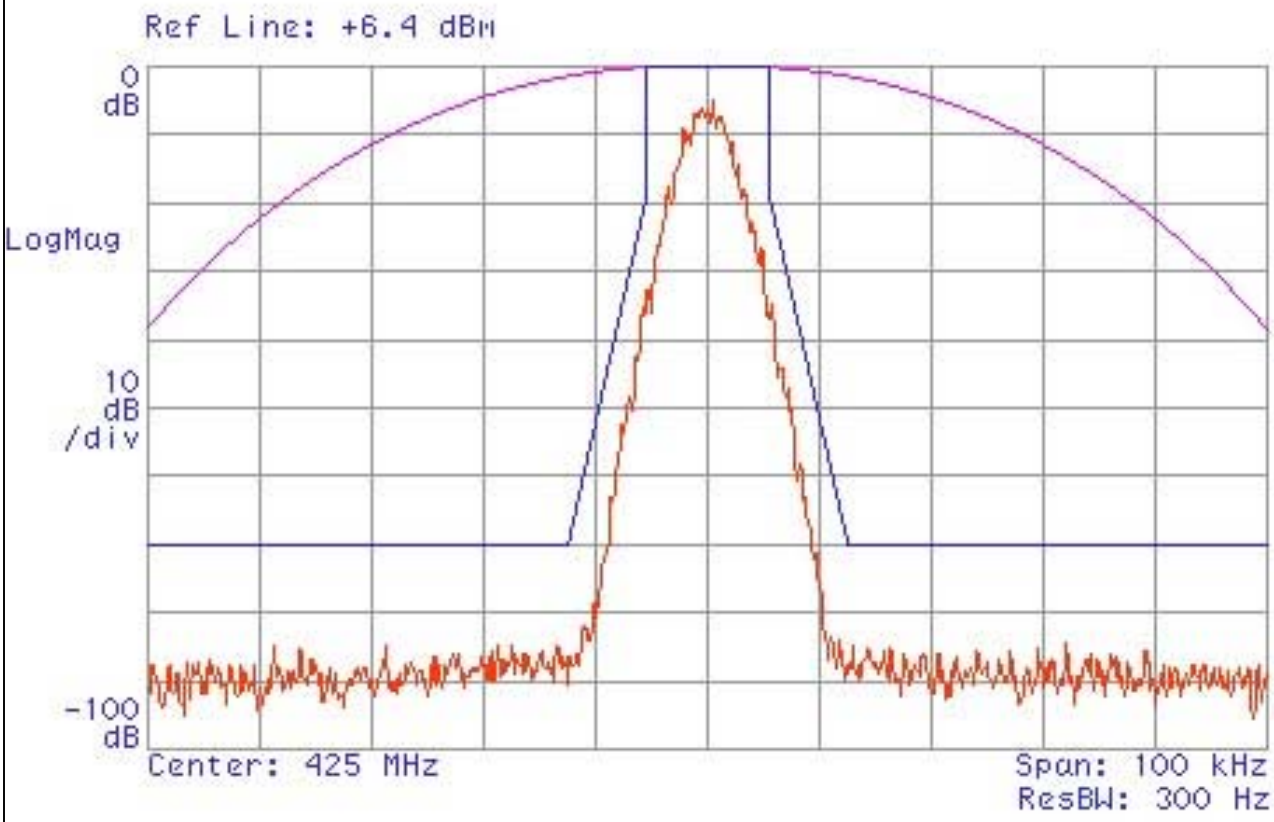
UNIT DESCRIPTION: FREQ = 425 MHz **DIGITAL DATA**
POWER = 48 Watts **CHANNEL**
SPACING = 12.5 kHz



Mask D

OCCUPIED BANDWIDTH (EMISSION DESIGNATOR 8K10F1E)

UNIT DESCRIPTION: FREQ = 425 MHz **DIGITAL VOICE**
POWER = 48 Watts **CHANNEL**
SPACING = 12.5 kHz

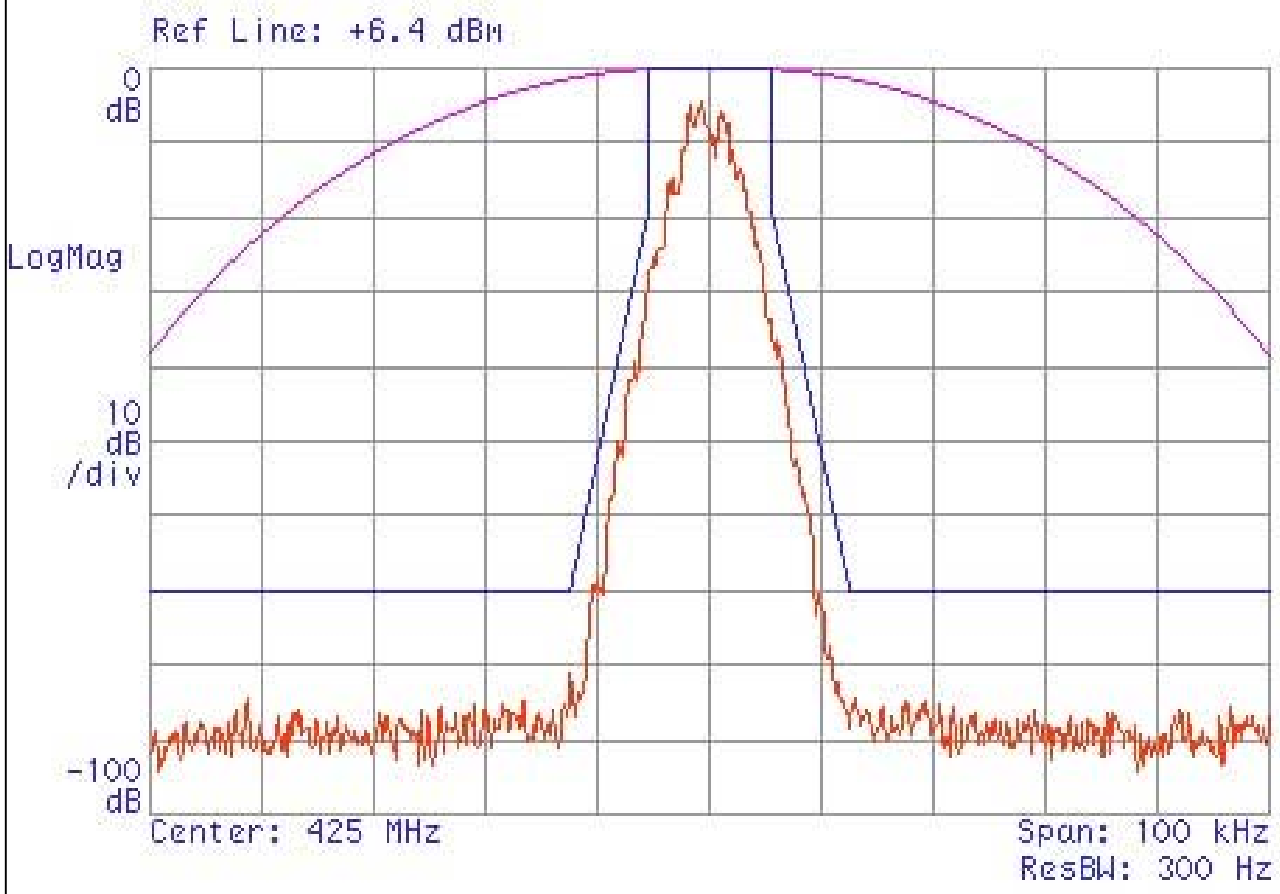


Mask D

EXHIBIT 6E-4

OCCUPIED BANDWIDTH (EMISSION DESIGNATOR 8K10F1E)

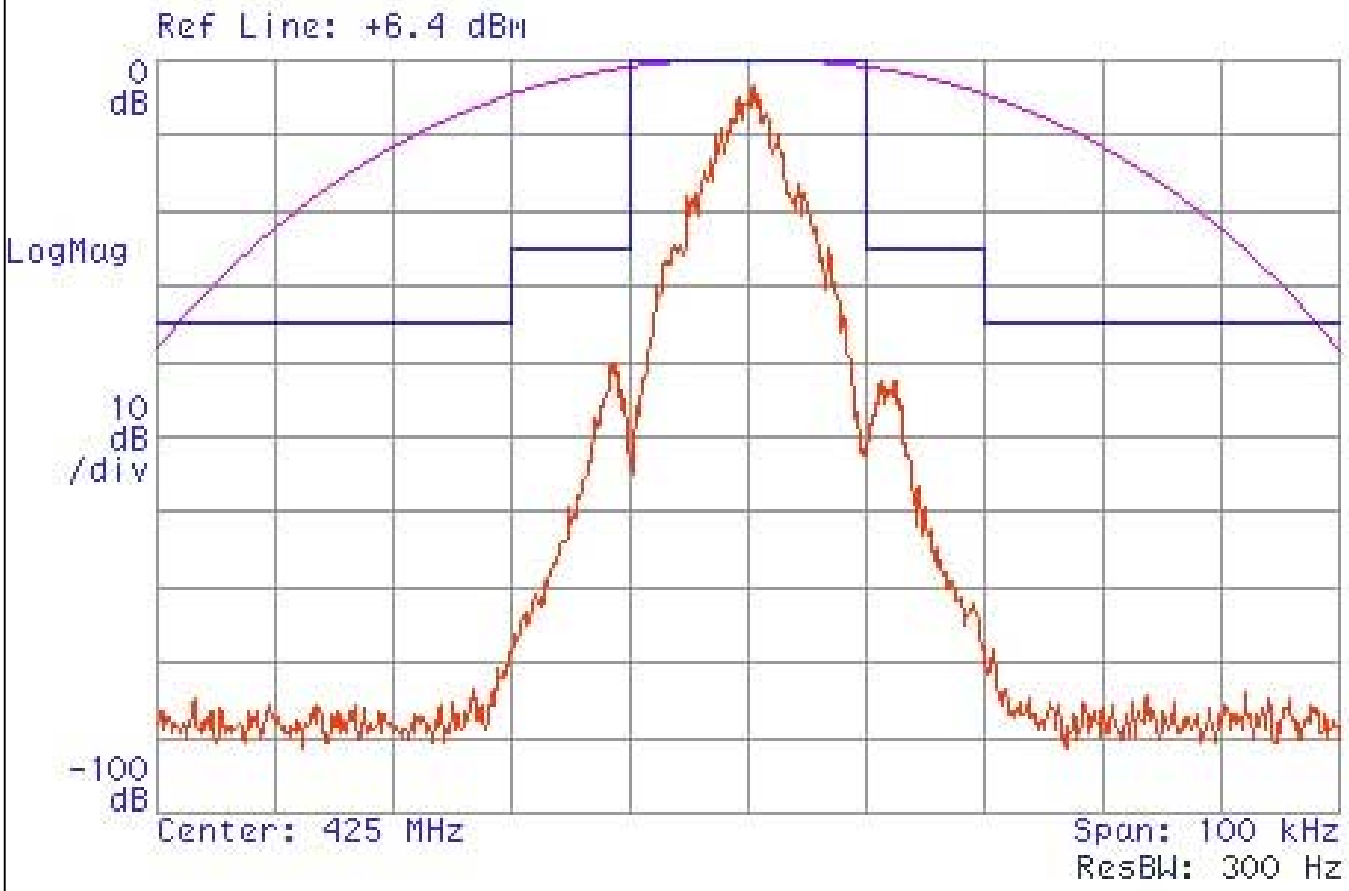
UNIT DESCRIPTION: FREQ = 425 MHz DIGITAL VOICE ENCRYPTION
POWER = 48 Watts CHANNEL
SPACING = 12.5 kHz



Mask D

OCCUPIED BANDWIDTH (EMISSION DESIGNATOR 20K0F1E)

UNIT DESCRIPTION: FREQ = 425 MHz DIGITAL VOICE ENCRYPTION
POWER = 48 Watts CHANNEL
SPACING = 20.0 kHz

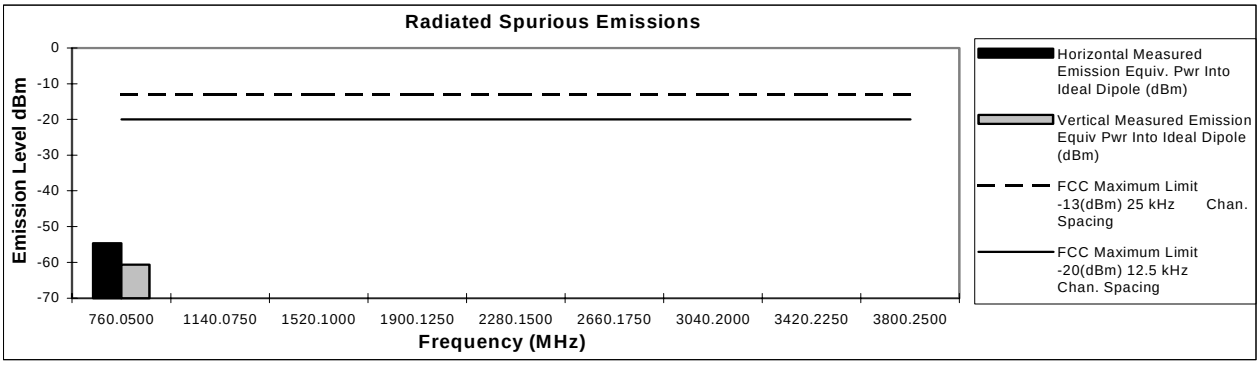


Mask B

Transmitter Radiated Spurious Emissions:

380.025 MHz **48 Watts** **Channel Spacing 12.5kHz | S/N P5 #2.6**

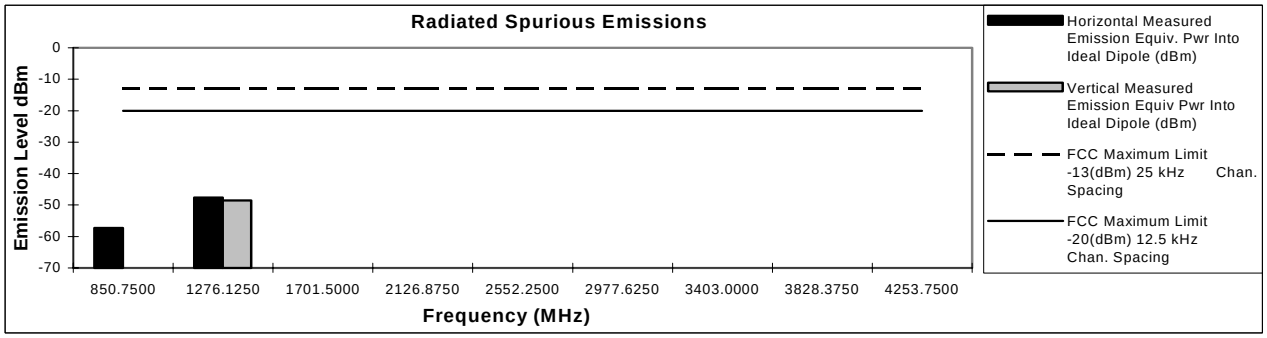
Frequency (MHz)	FCC Maximum Limit -13(dBm) 25 kHz Chan. Spacing	FCC Maximum Limit -20(dBm) 12.5 kHz Chan. Spacing	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
760.0500	-13	-20	-54.66	-60.60
1140.0750	-13	-20	*	*
1520.1000	-13	-20	*	*
1900.1250	-13	-20	*	*
2280.1500	-13	-20	*	*
2660.1750	-13	-20	*	*
3040.2000	-13	-20	*	*
3420.2250	-13	-20	*	*
3800.2500	-13	-20	*	*



Transmitter Radiated Spurious Emissions:

425.375 MHz **48 Watts** **Channel Spacing 12.5kHz | S/N P5 #2.6**

Frequency (MHz)	FCC Maximum Limit -13(dBm) 25 kHz Chan. Spacing	FCC Maximum Limit -20(dBm) 12.5 kHz Chan. Spacing	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
850.7500	-13	-20	-57.34	*
1276.1250	-13	-20	-47.63	-48.56
1701.5000	-13	-20	*	*
2126.8750	-13	-20	*	*
2552.2500	-13	-20	*	*
2977.6250	-13	-20	*	*
3403.0000	-13	-20	*	*
3828.3750	-13	-20	*	*
4253.7500	-13	-20	*	*



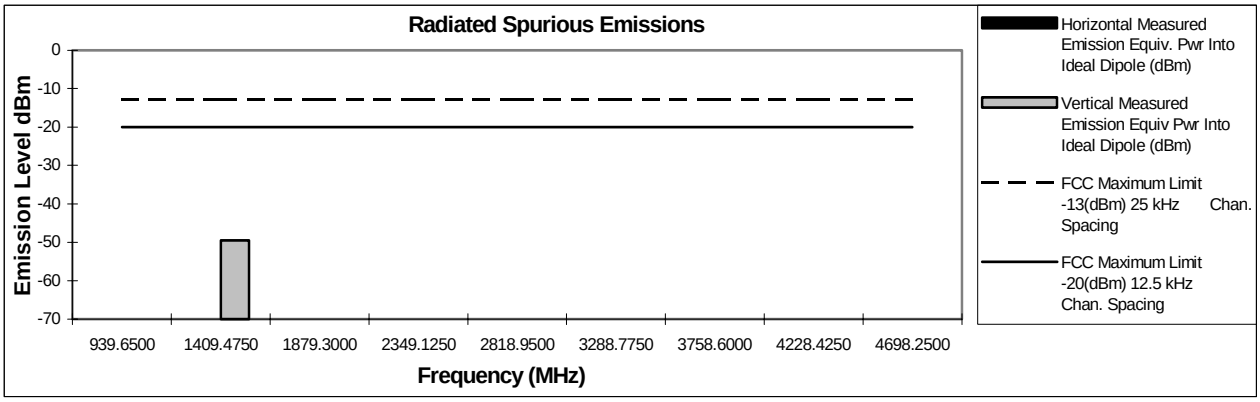
* Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Transmitter Radiated Spurious Emissions:

469.825 MHz **48 Watts** **Channel Spacing 12.5kHz | S/N P5 #2.6**

Frequency (MHz)	FCC Maximum Limit -13(dBm) 25 kHz Chan. Spacing	FCC Maximum Limit -20(dBm) 12.5 kHz Chan. Spacing	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
939.6500	-13	-20	*	*
1409.4750	-13	-20	*	-49.54
1879.3000	-13	-20	*	*
2349.1250	-13	-20	*	*
2818.9500	-13	-20	*	*
3288.7750	-13	-20	*	*
3758.6000	-13	-20	*	*
4228.4250	-13	-20	*	*
4698.2500	-13	-20	*	*

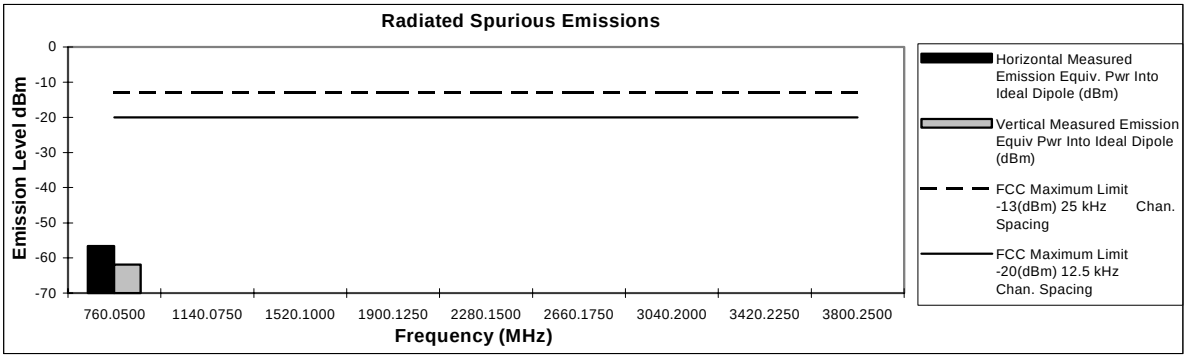


* Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

Transmitter Radiated Spurious Emissions

380.025 MHz **48 Watts** **Channel Spacing 25KHZ | S/N X21690057**

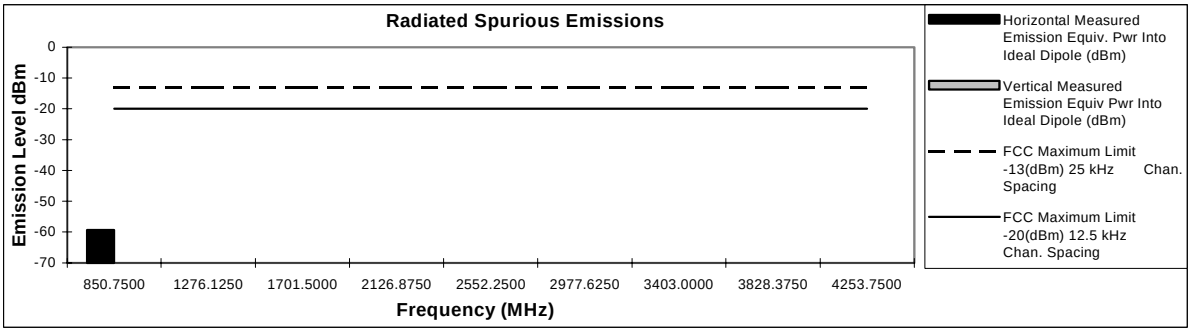
Frequency (MHz)	FCC Maximum Limit -13(dBm) 25 kHz Chan. Spacing	FCC Maximum Limit -20(dBm) 12.5 kHz Chan. Spacing	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
760.0500	-13	-20	-56.60	-61.89
1140.0750	-13	-20	*	*
1520.1000	-13	-20	*	*
1900.1250	-13	-20	*	*
2280.1500	-13	-20	*	*
2660.1750	-13	-20	*	*
3040.2000	-13	-20	*	*
3420.2250	-13	-20	*	*
3800.2500	-13	-20	*	*



Transmitter Radiated Spurious Emissions

425.375 MHz **48 Watts** **Channel Spacing 25KHZ | S/N X21690057**

Frequency (MHz)	FCC Maximum Limit -13(dBm) 25 kHz Chan. Spacing	FCC Maximum Limit -20(dBm) 12.5 kHz Chan. Spacing	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
850.7500	-13	-20	-59.36	*
1276.1250	-13	-20	*	*
1701.5000	-13	-20	*	*
2126.8750	-13	-20	*	*
2552.2500	-13	-20	*	*
2977.6250	-13	-20	*	*
3403.0000	-13	-20	*	*
3828.3750	-13	-20	*	*
4253.7500	-13	-20	*	*



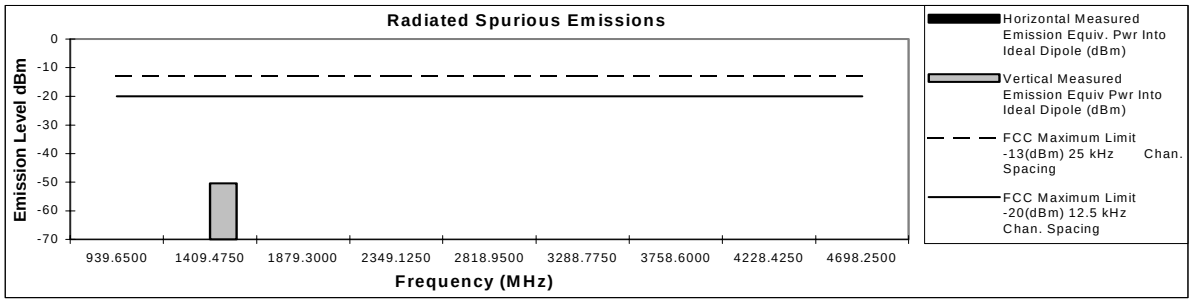
* Indicates the spurious emission was less than -70dBm or could not be detected due to noise limitations or ambients.

The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Transmitter Radiated Spurious Emissions:

469.825 MHz **48 Watts** **Channel Spacing 25KHZ | S/N X21690057**

Frequency (MHz)	FCC Maximum Limit -13(dBm) 25 kHz Chan. Spacing	FCC Maximum Limit -20(dBm) 12.5 kHz Chan. Spacing	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
939.6500	-13	-20	*	*
1409.4750	-13	-20	*	-50.40
1879.3000	-13	-20	*	*
2349.1250	-13	-20	*	*
2818.9500	-13	-20	*	*
3288.7750	-13	-20	*	*
3758.6000	-13	-20	*	*
4228.4250	-13	-20	*	*
4698.2500	-13	-20	*	*



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

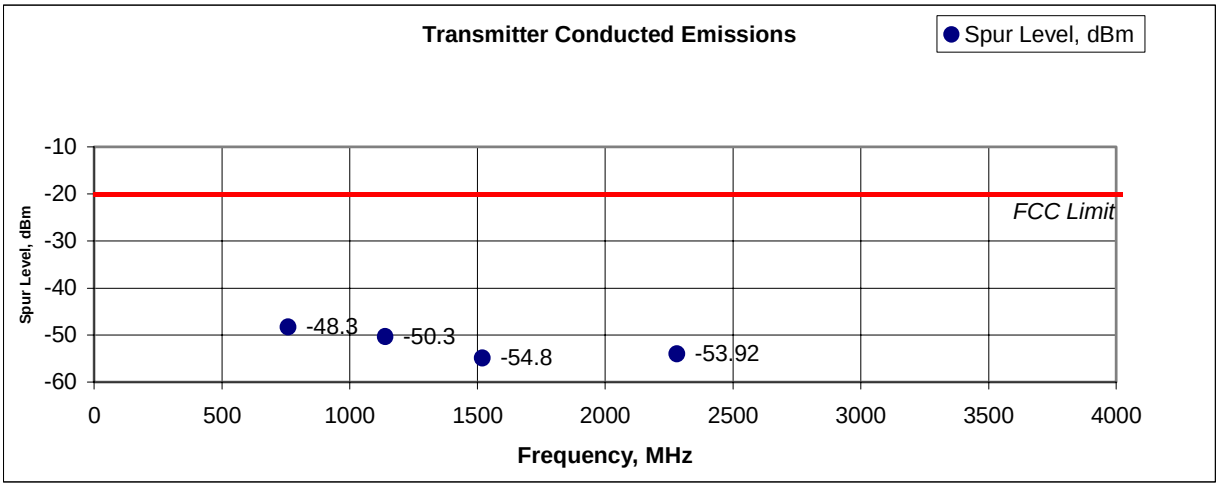
The data presented here was taken using the substitution method as found in the TIA/EIA-603 document.

Motorola Plantation EMC Lab – Test Performed by: Curt Mc Lennan **August 29, 2003**
FCC Registration: 91932 / Industry Canada: IC3679

Transmitter Conducted Spurious Emissions

Frequency, MHz	**380.025**
Power	**48W**
Channel Spacing	**12.5kHz**

Spurious Frequency, MHz	Spur Level, dBm	FCC Limit, dBm
760.05	-48.3	-20
1140.075	-50.3	-20
1520.1	-54.8	-20
1900.125	< -60	-20
2280.15	-53.92	-20
2660.175	< -60	-20
3040.2	< -60	-20
3420.225	< -60	-20
3800.25	< -60	-20



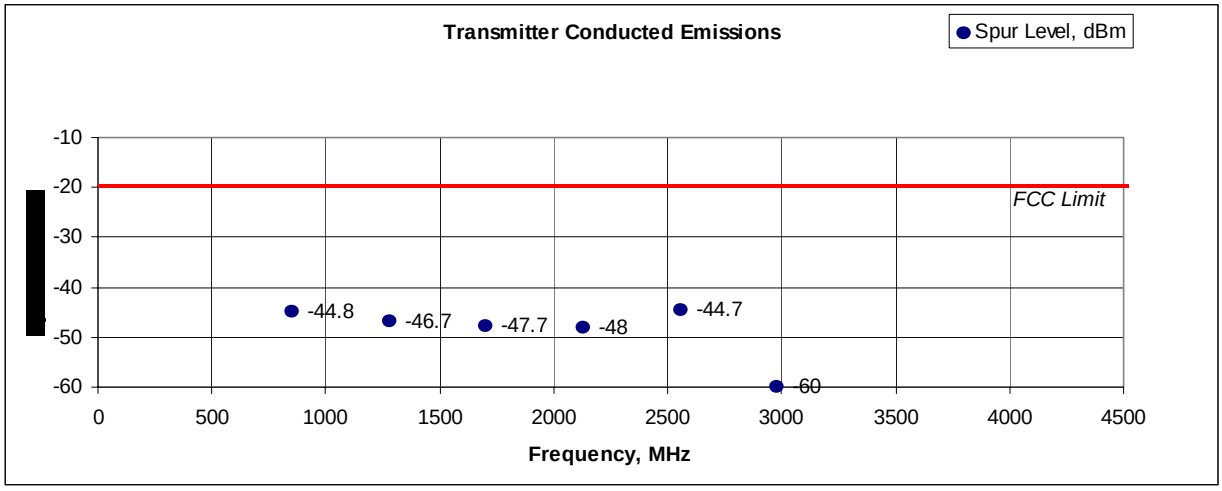
All transmitter conducted spurious emissions are measured to the 10th harmonic.

Exhibit 6G – 1 (12.5kHz Ch Sp)

Transmitter Conducted Spurious Emissions

Frequency, MHz	**425.375**
Power	**48W**
Channel Spacing	**12.5kHz**

Spurious Frequency, MHz	Spur Level, dBm	FCC Limit, dBm
850.75	-44.8	-20
1276.125	-46.7	-20
1701.5	-47.7	-20
2126.875	-48	-20
2552.25	-44.7	-20
2977.625	-60	-20
3403	<-60	-20
3828.375	<-60	-20
4253.75	<-60	-20

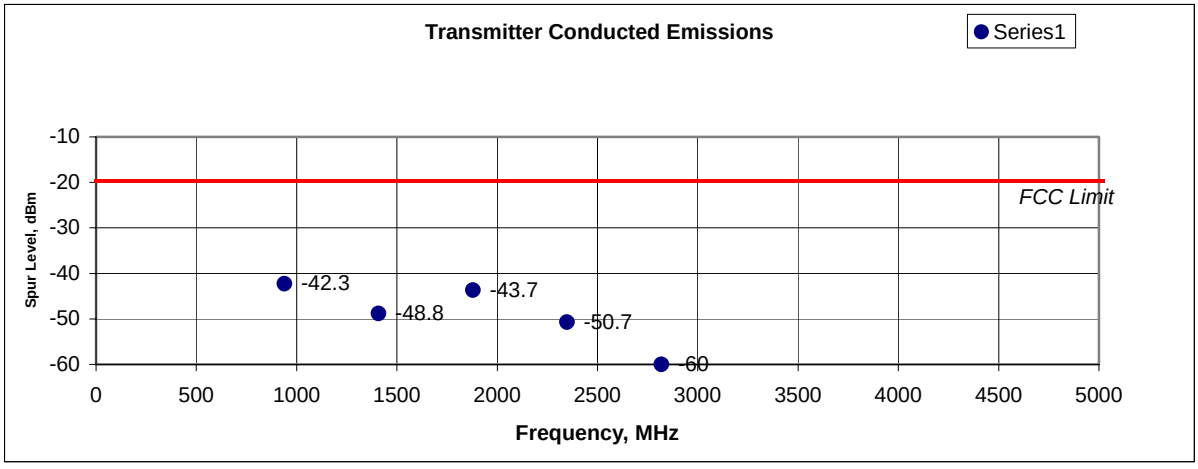


All transmitter conducted spurious emissions are measured to the 10th harmonic.

Transmitter Conducted Spurious Emissions

Frequency	**469.825, MHz**
Power	**48W**
Channel Spacing	**12.5kHz**

Spurious Frequency, MHz	Spur Level, dBm	FCC Limit, dBm
939.65	-42.3	-20
1409.475	-48.8	-20
1879.3	-43.7	-20
2349.125	-50.7	-20
2818.95	-60	-20
3288.775	<-60	-20
3758.6	<-60	-20
4228.425	<-60	-20
4698.25	<-60	-20



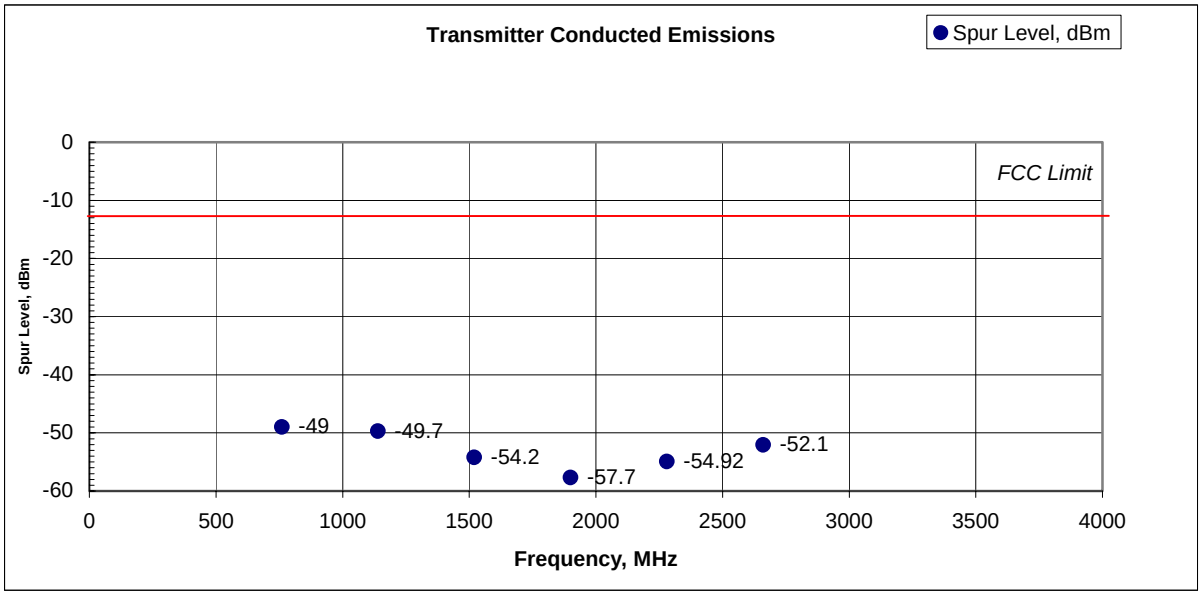
All transmitter conducted spurious emissions are measured to the 10th harmonic.

Exhibit 6G – 3 (12.5kHz Ch Sp)

Transmitter Conducted Spurious Emissions

Frequency	**380.025**
Power	**48W**
Channel Spacing	**25 kHz**

Spurious Frequency, MHz	Spur Level, dBm	FCC Limit, dBm
760.05	-49	-13
1140.075	-49.7	-13
1520.1	-54.2	-13
1900.125	-57.7	-13
2280.15	-54.92	-13
2660.175	-52.1	-13
3040.2	< -60	-13
3420.225	< -60	-13
3800.25	< -60	-13

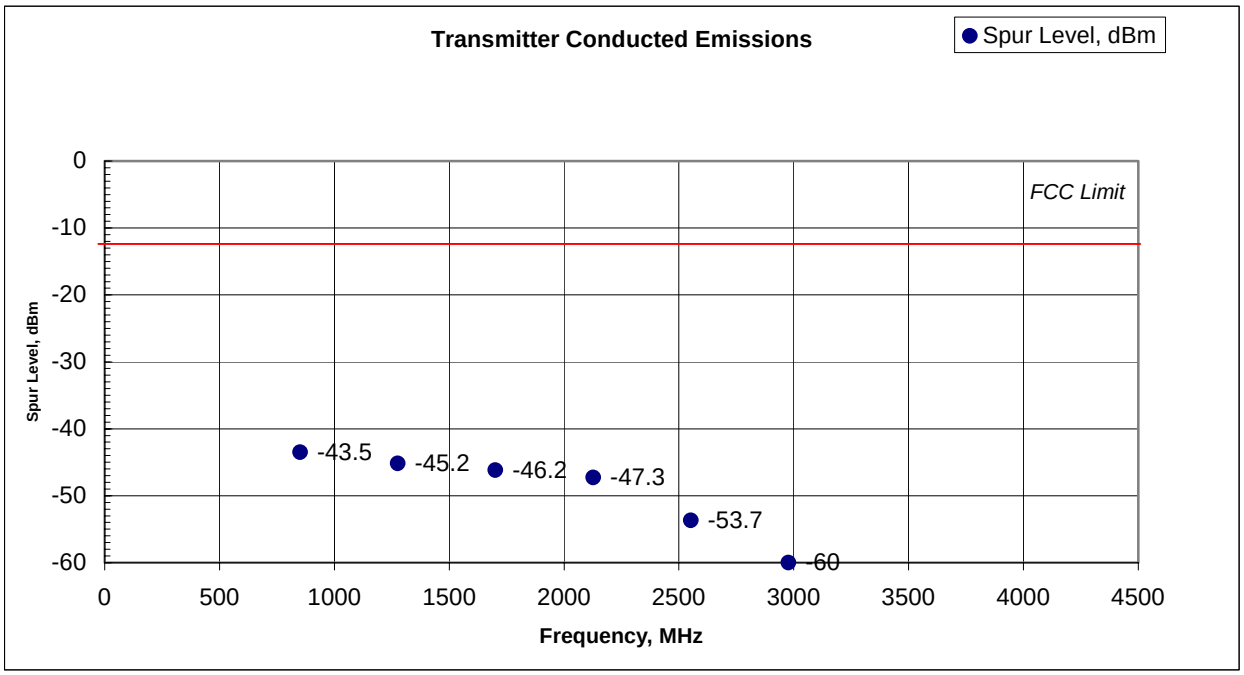


All transmitter conducted spurious emissions are measured to the 10th harmonic.

Transmitter Conducted Spurious Emissions

Frequency	**425.375**
Power	**48W**
Channel Spacing	**25 kHz**

Spurious Frequency, MHz	Spur Level, dBm	FCC Limit, dBm
850.75	-43.5	-13
1276.125	-45.2	-13
1701.5	-46.2	-13
2126.875	-47.3	-13
2552.25	-53.7	-13
2977.625	-60	-13
3403	<-60	-13
3828.375	<-60	-13
4253.75	<-60	-13

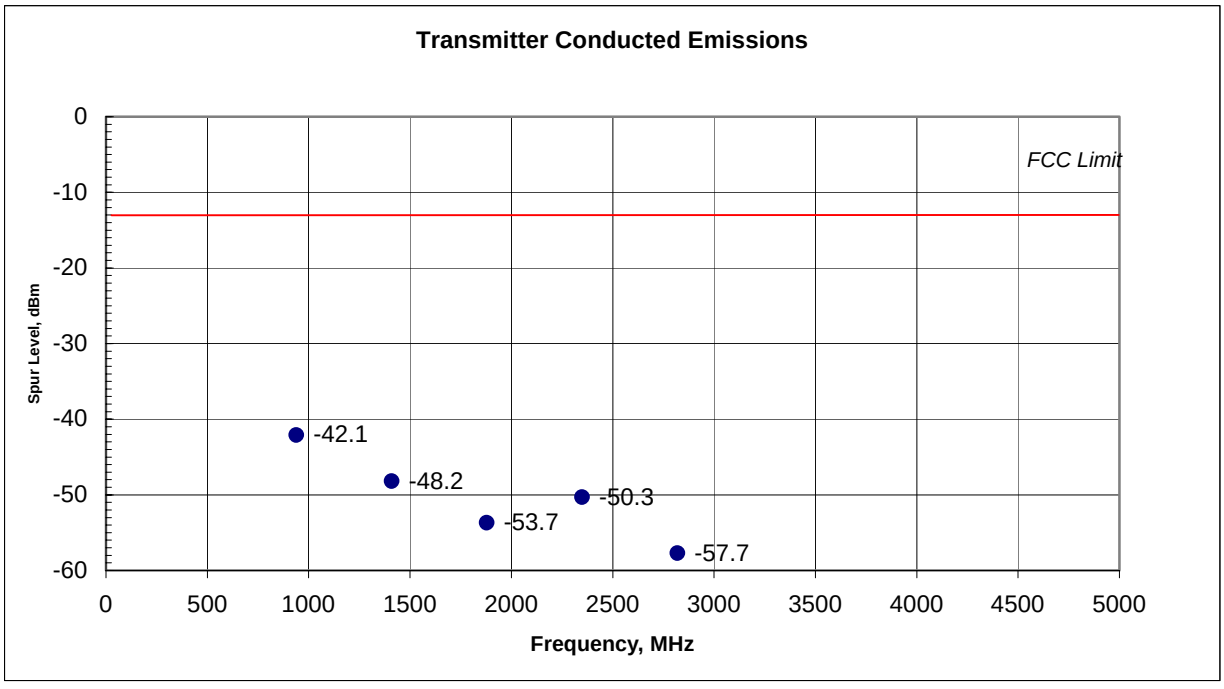


All transmitter conducted spurious emissions are measured to the 10th harmonic.

Transmitter Conducted Spurious Emissions

Frequency	**469.825, MHz**
Power	**48W**
Channel Spacing	**25 kHz**

Spurious Frequency, MHz	Spur Level, dBm	FCC Limit, dBm
939.65	-42.1	-13
1409.475	-48.2	-13
1879.3	-53.7	-13
2349.125	-50.3	-13
2818.95	-57.7	-13
3288.775	<-60	-13
3758.6	<-60	-13
4228.425	<-60	-13
4698.25	<-60	-13



All transmitter conducted spurious emissions are measured to the 10th harmonic.

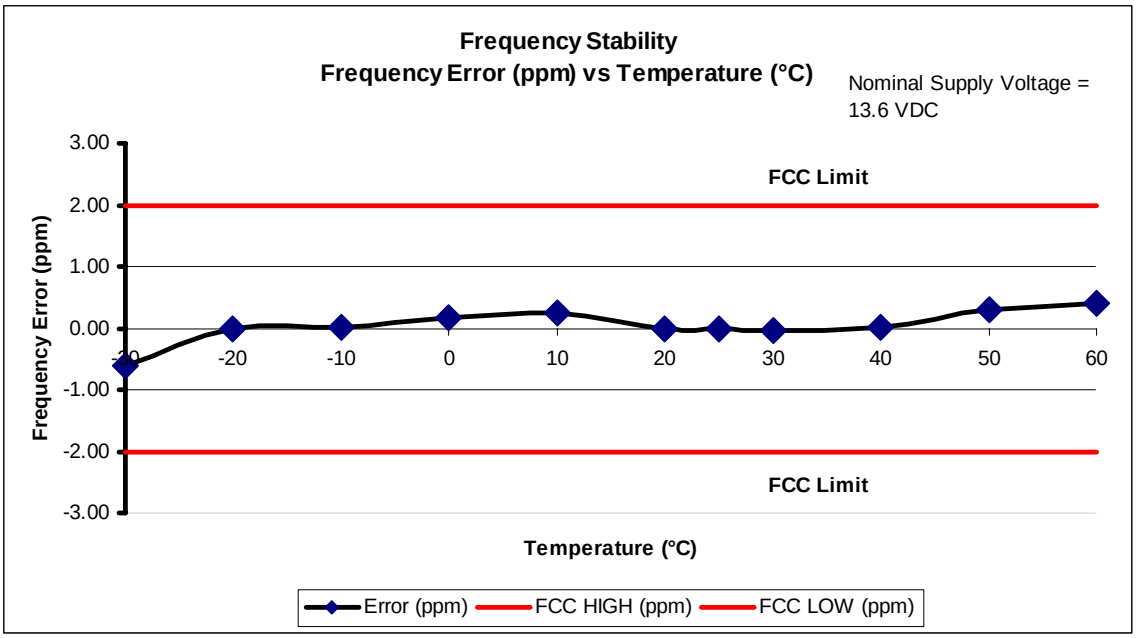

Frequency Stability
Frequency Error (ppm) vs Temperature (°C)
Nominal Supply Voltage = 13.6 VDC
FCC Limit
FCC Limit
Frequency Error (ppm)
3.00
2.00
1.00
0.00
-1.00
-2.00
-3.00
-30
-20
-10
0
10
20
30
40
50
60
Temperature (°C)
Error (ppm)
FCC HIGH (ppm)
FCC LOW (ppm)

EXHIBIT 6H-1

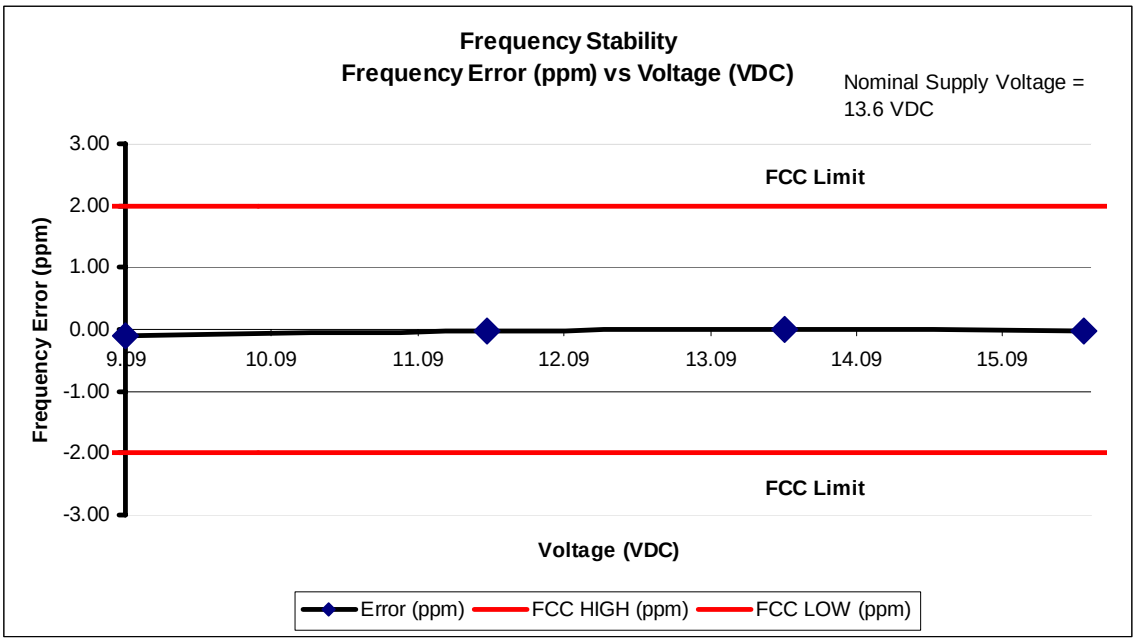

Frequency Stability
Frequency Error (ppm) vs Voltage (VDC)
Nominal Supply Voltage = 13.6 VDC
FCC Limit
FCC Limit
Frequency Error (ppm)
3.00
2.00
1.00
0.00
-1.00
-2.00
-3.00
9.09
10.09
11.09
12.09
13.09
14.09
15.09
Voltage (VDC)
Error (ppm)
FCC HIGH (ppm)
FCC LOW (ppm)

EXHIBIT 6H-2

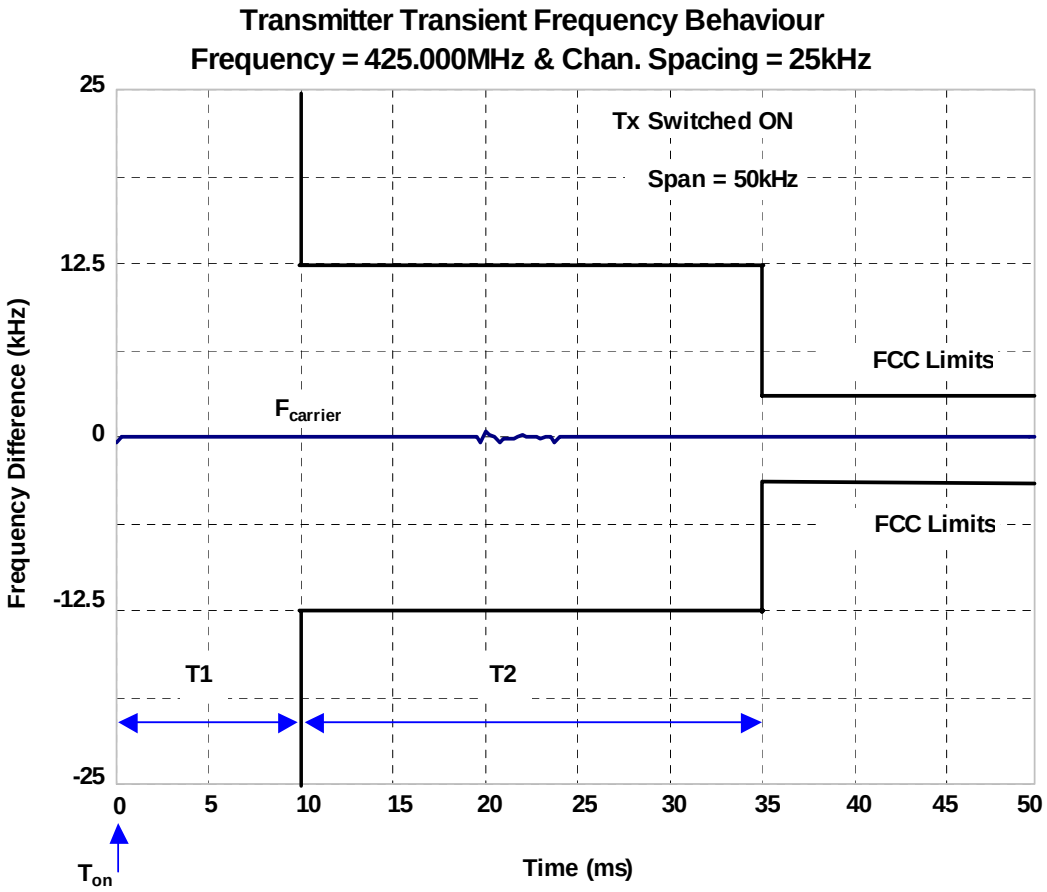

Transmitter Transient Frequency Behaviour
Frequency = 425.000MHz & Chan. Spacing = 25kHz
Tx Switched ON
Span = 50kHz
FCC Limits
FCC Limits
F carrier
T1
T2
T on
Frequency Difference (kHz)
Time (ms)
25
12.5
0
-12.5
-25
0
5
10
15
20
25
30
35
40
45
50

EXHIBIT 6I-1

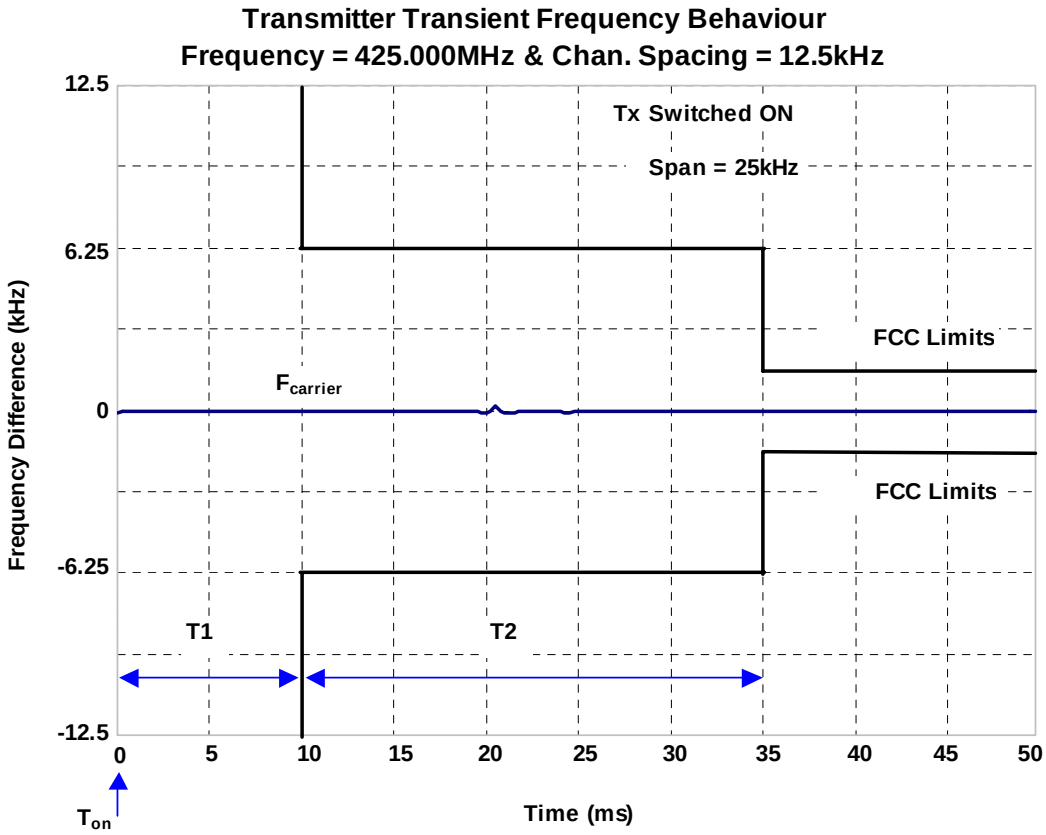

Transmitter Transient Frequency Behaviour
Frequency = 425.000MHz & Chan. Spacing = 12.5kHz
Tx Switched ON
Span = 25kHz
FCC Limits
FCC Limits
$F_{carrier}$
T1
T2
T_{on}
Frequency Difference (kHz)
Time (ms)
12.5
6.25
0
-6.25
-12.5
0
5
10
15
20
25
30
35
40
45
50

EXHIBIT 6I-2

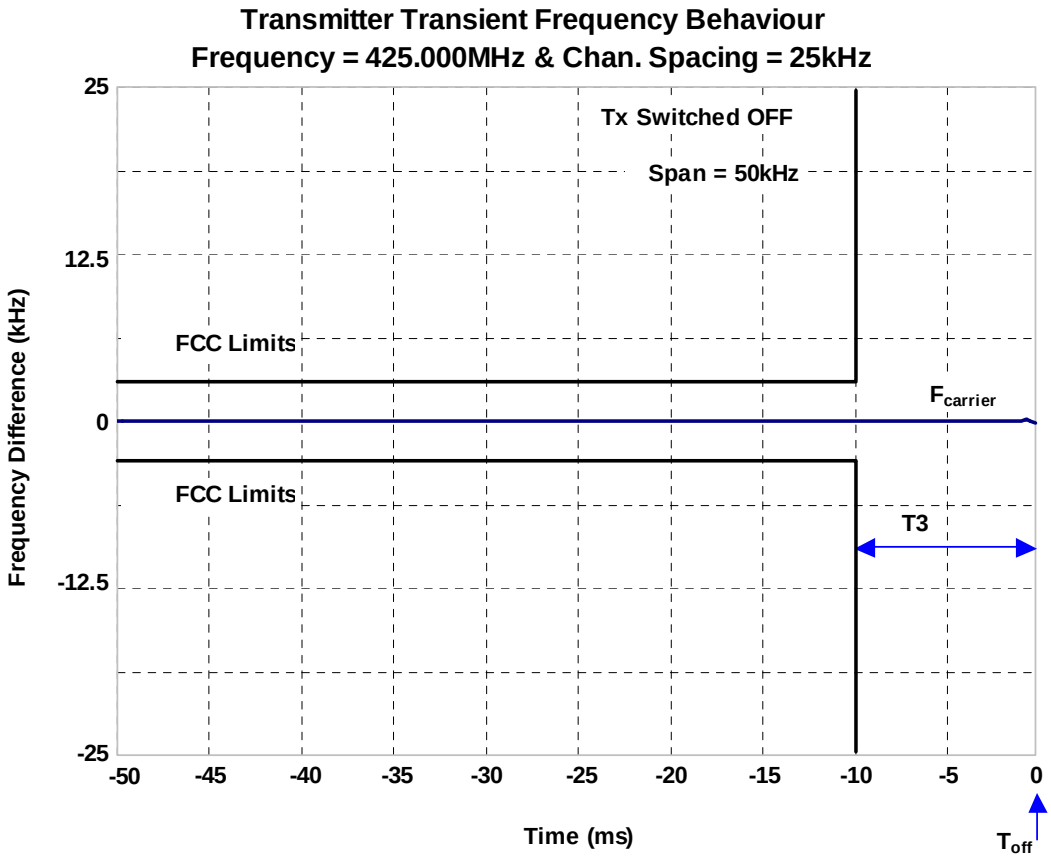
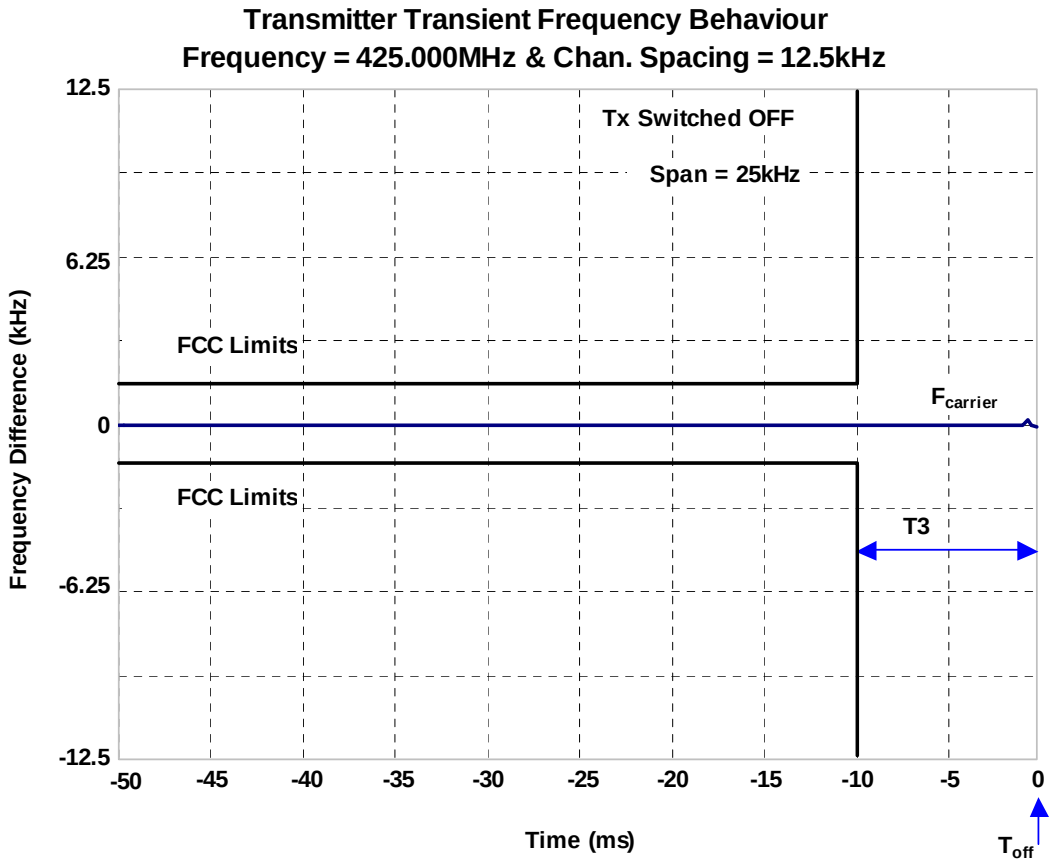

Transmitter Transient Frequency Behaviour
Frequency = 425.000MHz & Chan. Spacing = 25kHz
Tx Switched OFF
Span = 50kHz
FCC Limits
FCC Limits
$F_{carrier}$
T3
Frequency Difference (kHz)
25
12.5
0
-12.5
-25
-50
-45
-40
-35
-30
-25
-20
-15
-10
-5
0
Time (ms)
T_{off}

EXHIBIT 6I-3


Transmitter Transient Frequency Behaviour
Frequency = 425.000MHz & Chan. Spacing = 12.5kHz
Tx Switched OFF
Span = 25kHz
FCC Limits
FCC Limits
$F_{carrier}$
T3
T_{off}
Frequency Difference (kHz)
Time (ms)
12.5
6.25
0
-6.25
-12.5
-50
-45
-40
-35
-30
-25
-20
-15
-10
-5
0