Submitted Measured Data

MEASUREMENT		EXHIBIT	NUMBER OF PAGES
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9.	Transient Frequency Behavior	6I	3

EXHIBIT 6

RF Power Output Data

The RF power output was measured with the indicated voltage applied to and current into the final RF amplifying device.

154.225 MHz

Measured RF output	6.6 Watts
Nominal DC voltage	7.5 Volts
Nominal DC Current	1.94 Amps
Primary Supply Voltage	7.5 Volts

Measured RF output	3.0 Watts
Nominal DC voltage	7.5 Volts
Nominal DC Current	1.20 Amps
Primary Supply Voltage	7.5 Volts

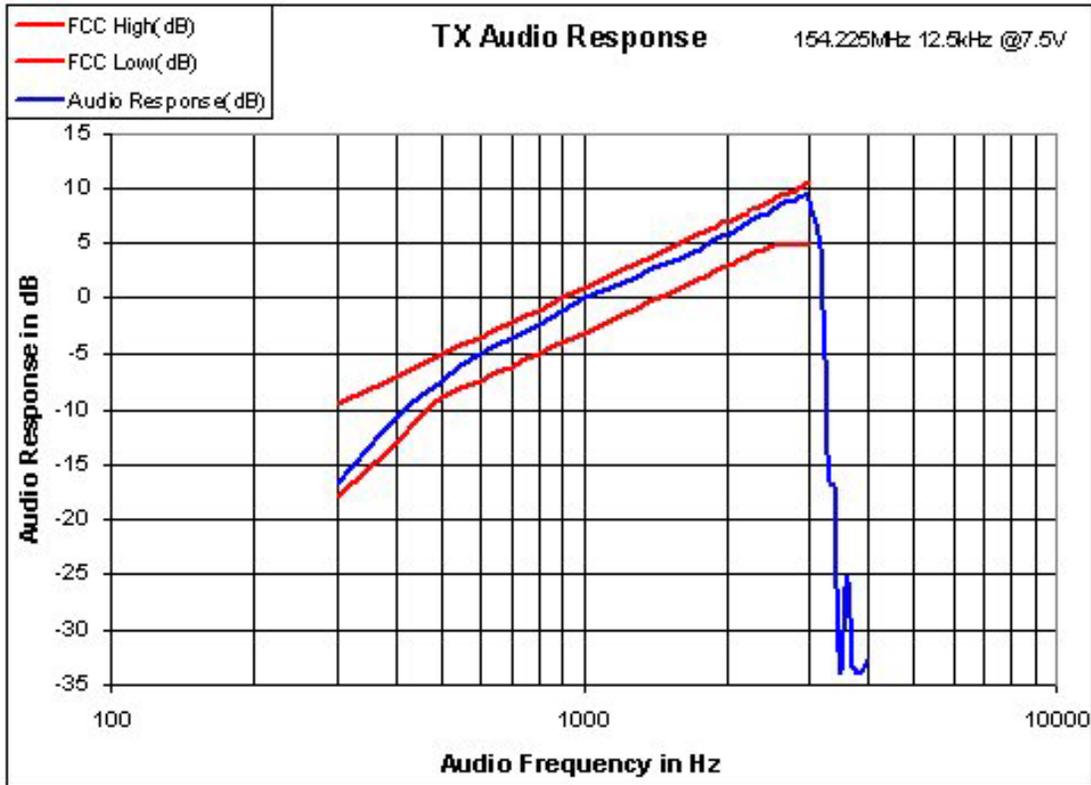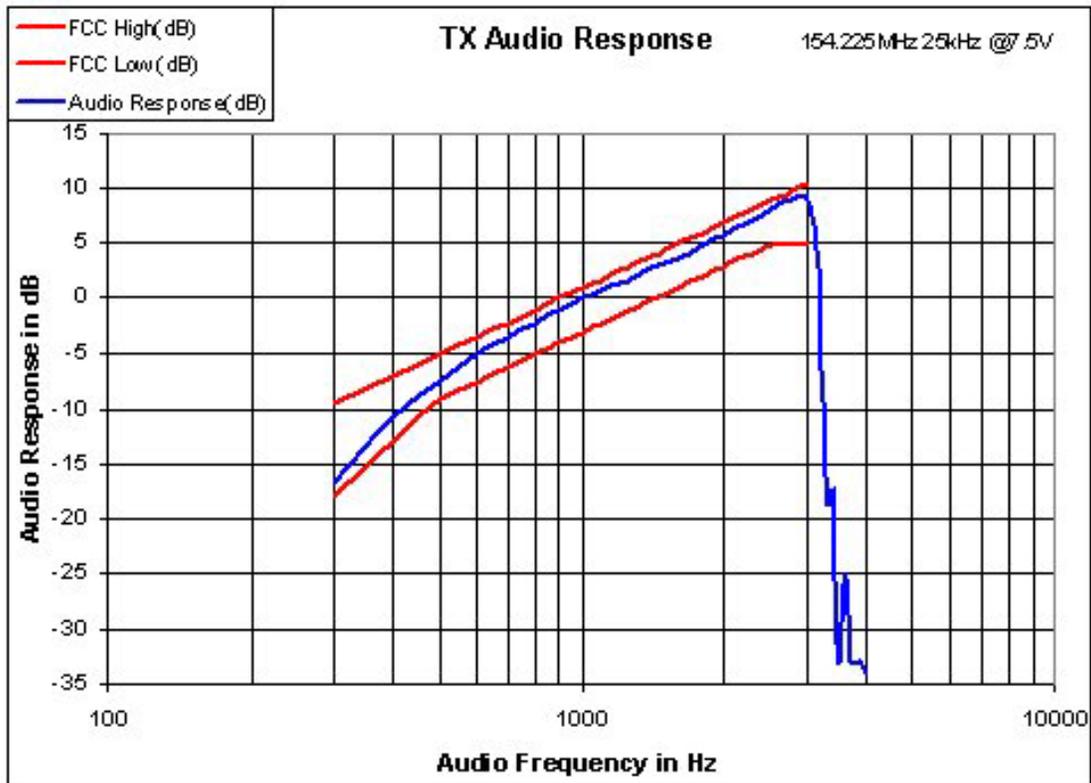|	
Measured RF output	1.0 Watt
Nominal DC voltage	7.5 Volts
Nominal DC Current	0.765 Amps
Primary Supply Voltage	7.5 Volts

EXHIBIT 6A

EXHIBIT 6B-1

EXHIBIT 6B-2
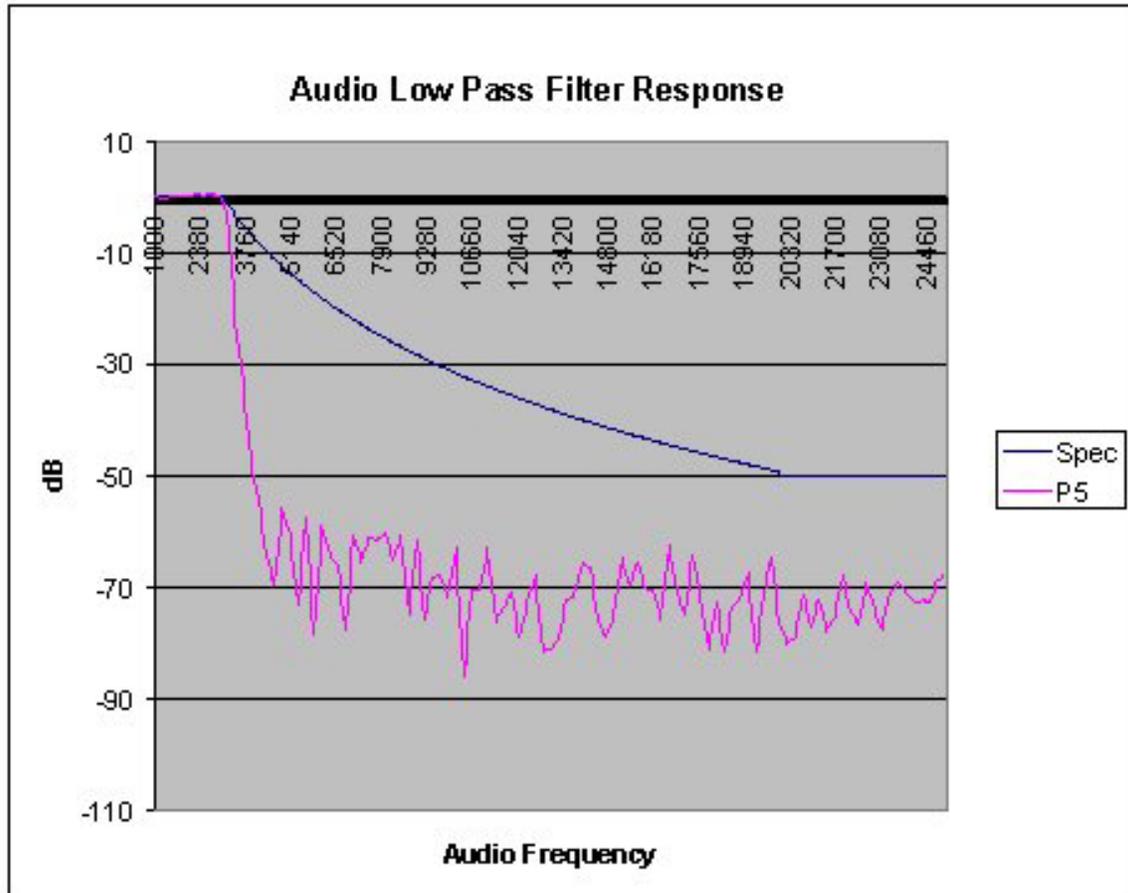
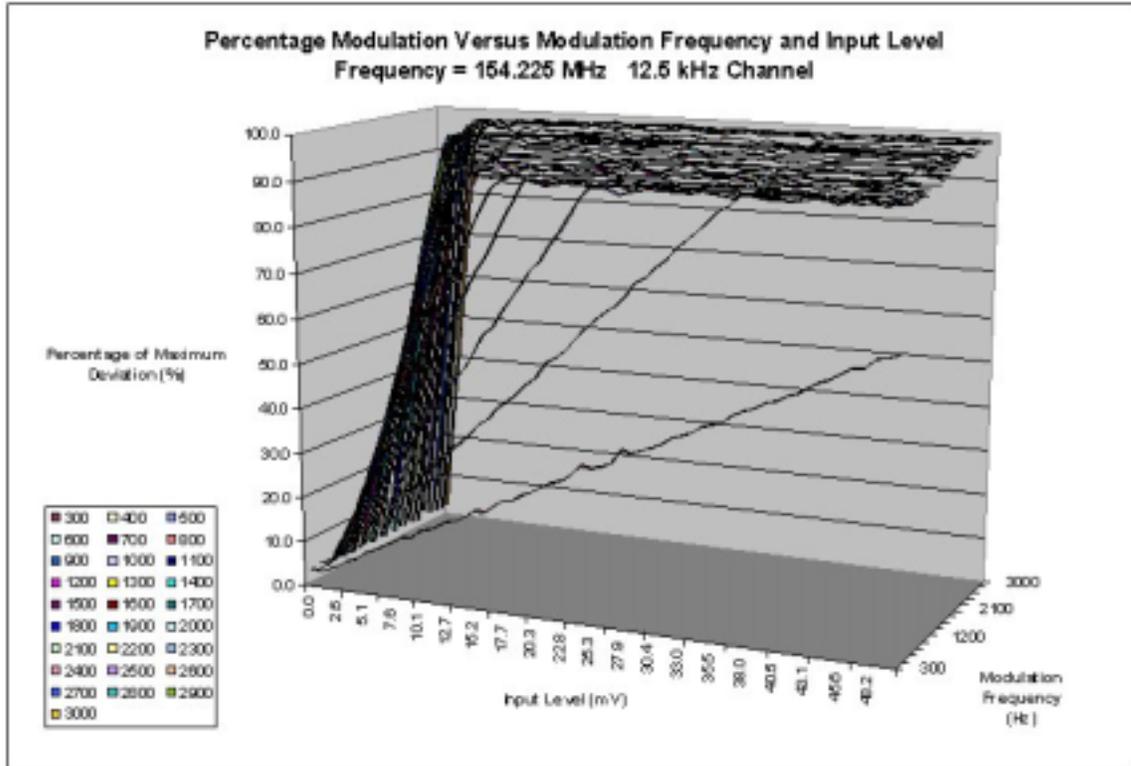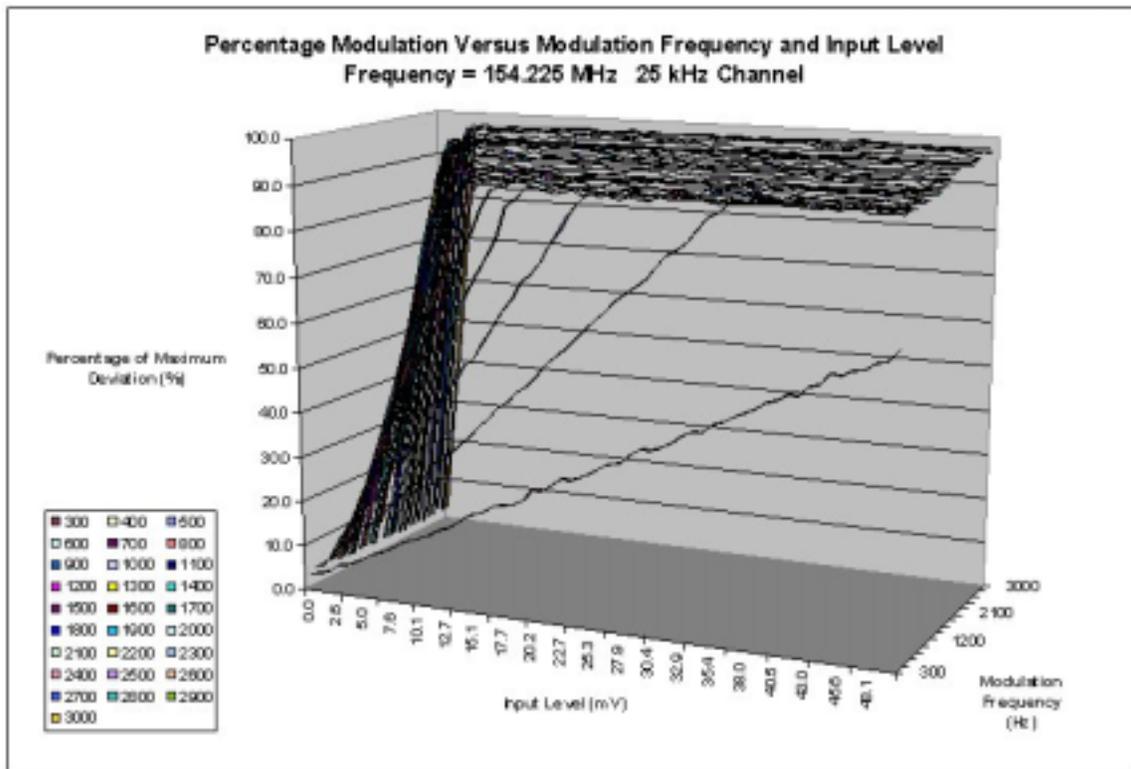Audio Low Pass Filter Response

EXHIBIT 6C

The Percentage of Max. Deviation on the "Z" axis is referenced to 2.5kHz for 12.5kHz bandwidth   EXHIBIT 6D-1

The Percentage of Max. Deviation on the "Z" axis is referenced to 5.0kHz for 25kHz bandwidth   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: AZ489FT5804.

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 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-2
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-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 TSB102.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 TSB102.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 Modulation (20 kHz Channelization, Digital Voice with encryption):
Emission Designator   20K0F1E

In this case, the maximum modulating frequency is 6 kHz with a 4 kHz deviation.

BW = 2(M+D) = 2*(6 kHz + 4 kHz) = 20 kHz ===> 20K0
F1E portion of the designator indicates digital voice.

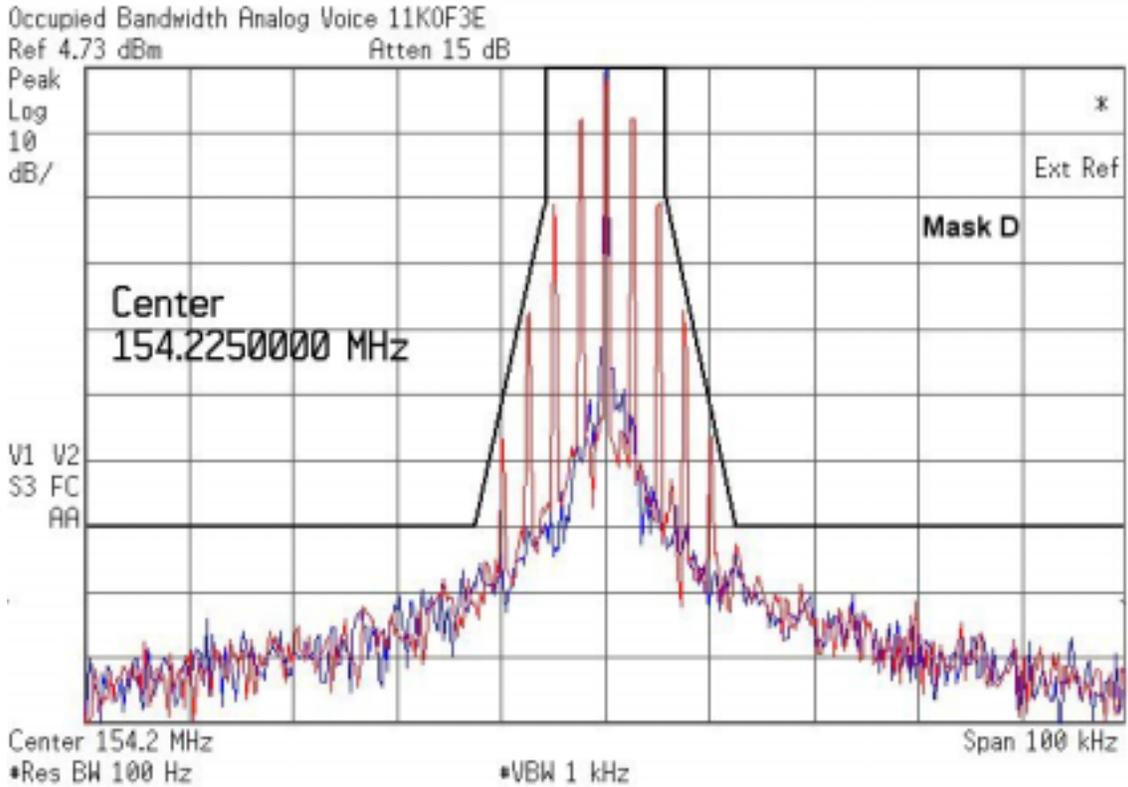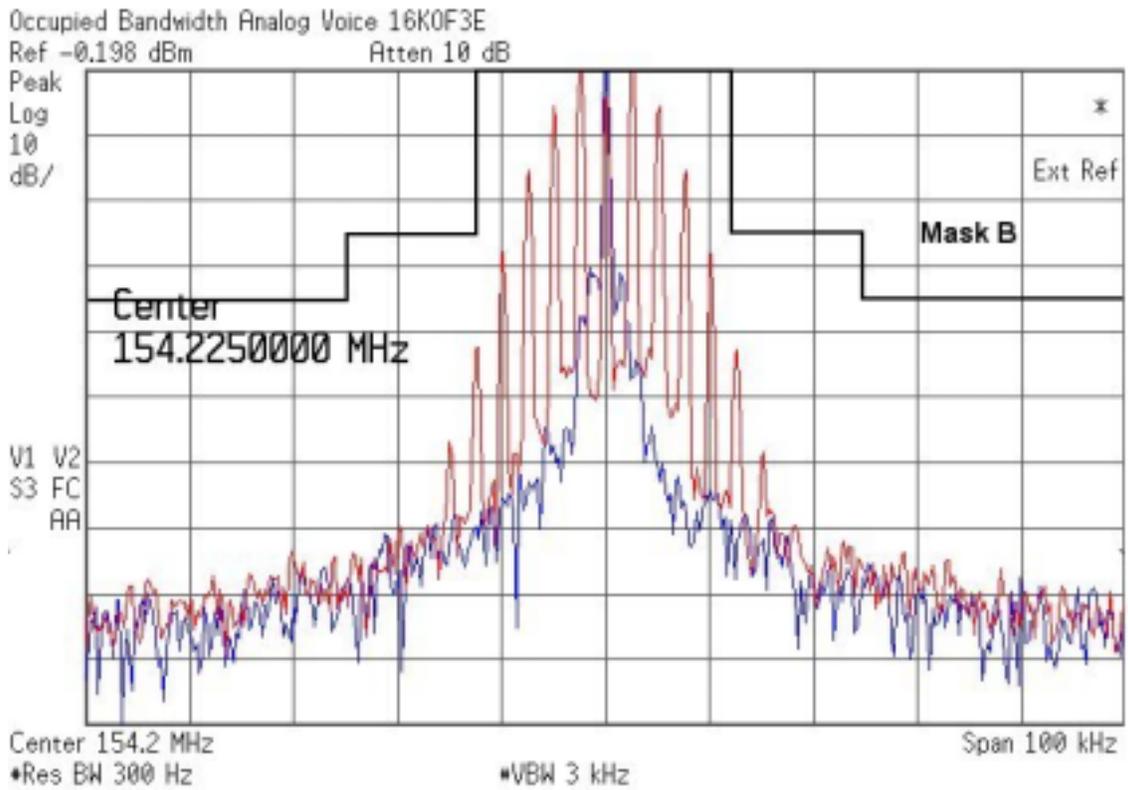Therefore, the entire designator for 20 kHz channelization analog voice is 20K0F1E.

EXHIBIT 6E

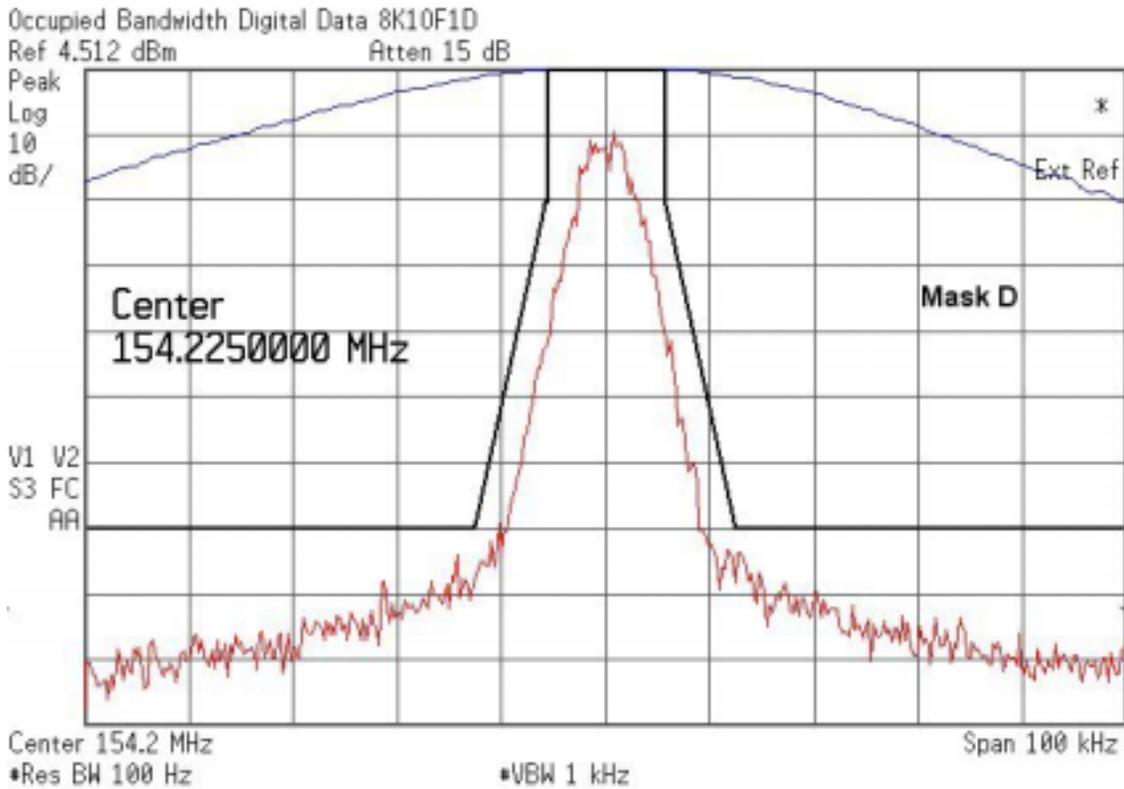Occupied Bandwidth Analog Voice 11K0F3E
Ref 4.73 dBm   Atten 15 dB

Peak
Log
10
dB/

Ext Ref

Mask D

Center
154.2250000 MHz

V1 V2
S3 FC
AA

Center 154.2 MHz   Span 100 kHz
*Res BW 100 Hz   *VBW 1 kHz

EXHIBIT 6E-1

Occupied Bandwidth Analog Voice 16K0F3E
Ref -0.198 dBm   Atten 10 dB

Peak
Log
10
dB/

Ext Ref

Mask B

Center
154.2250000 MHz

V1 V2
S3 FC
AA

Center 154.2 MHz   Span 100 kHz
*Res BW 300 Hz   *VBW 3 kHz

EXHIBIT 6E-2

Occupied Bandwidth Digital Data 8K10F1D
Ref 4.512 dBm   Atten 15 dB

EXHIBIT 6E-3

Occupied Bandwidth Digital Voice 8K10F1E
Ref 4.512 dBm   Atten 15 dB

EXHIBIT 6E-4

Occupied Bandwidth Digital Voice Encryption 20K0F1E
Ref 4.462 dBm   Atten 15 dB

Center 154.2250000 MHz

Center 154.2 MHz
*Res BW 300 Hz   *VBW 3 kHz   Span 100 kHz
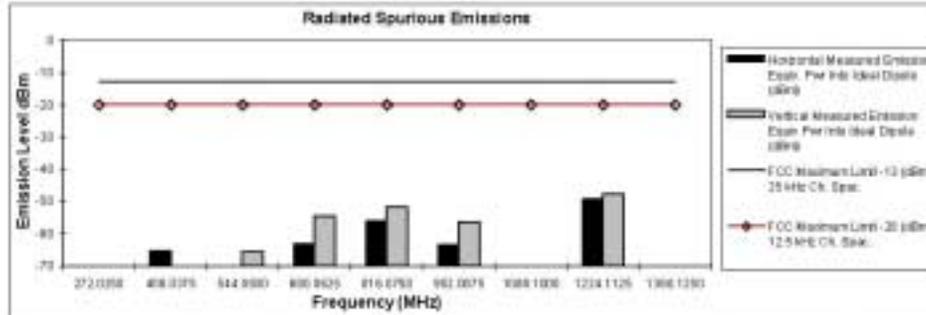
EXHIBIT 6E-5

Transmitter Radiated Spurious Emissions: XTS5000R_VHF

136.0125 MHz   **6.6 Watts**   **Channel Spacing 12.5kHz | S/N 20_Helical # 1**

Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	FCC Maximum Limit -20 (dBm) 12.5 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
272.0250	-13	-20	-72.95	-73.64
408.0375	-13	-20	-66.53	-70.50
544.0500	-13	-20	-71.21	-65.94
680.0625	-13	-20	-60.30	-54.75
816.0750	-13	-20	-56.04	-51.95
952.0875	-13	-20	-63.65	-56.41
1088.1000	-13	-20	*	*
1224.1125	-13	-20	-48.55	-47.95
1360.1250	-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: June 19, 2002
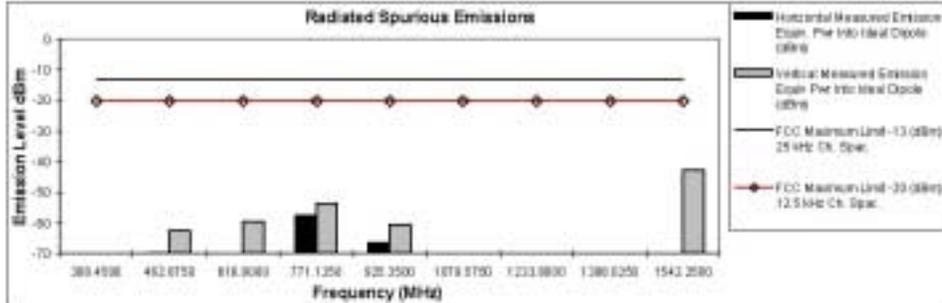FCC Registration: 91932 / Industry Canada: IC3679

EXHIBIT 6F-1

Transmitter Radiated Spurious Emissions: XTS5000R_VHF

154.225 MHz   **6.6 Watts**   **Channel Spacing 12.5kHz | S/N 20_Helical # 1**

Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	FCC Maximum Limit -20 (dBm) 12.5 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
308.4500	-13	-20	-77.32	-79.01
462.6750	-13	-20	-69.86	-62.56
616.9000	-13	-20	-71.33	-59.69
771.1250	-13	-20	-57.83	-53.78
925.3500	-13	-20	-66.76	-60.65
1079.5750	-13	-20	*	*
1233.8000	-13	-20	*	*
1388.0250	-13	-20	*	*
1542.2500	-13	-20	*	-42.77

* 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: June 19, 2002
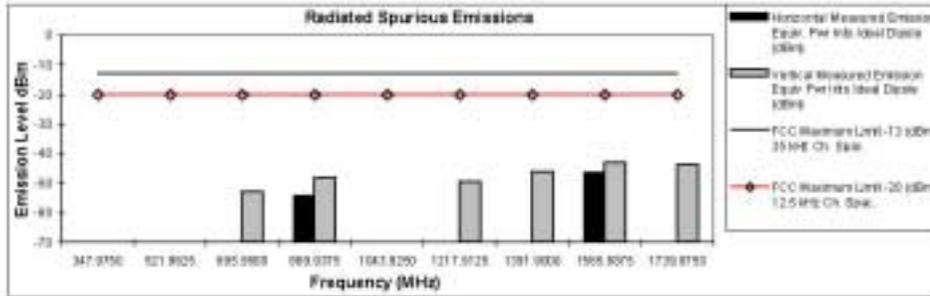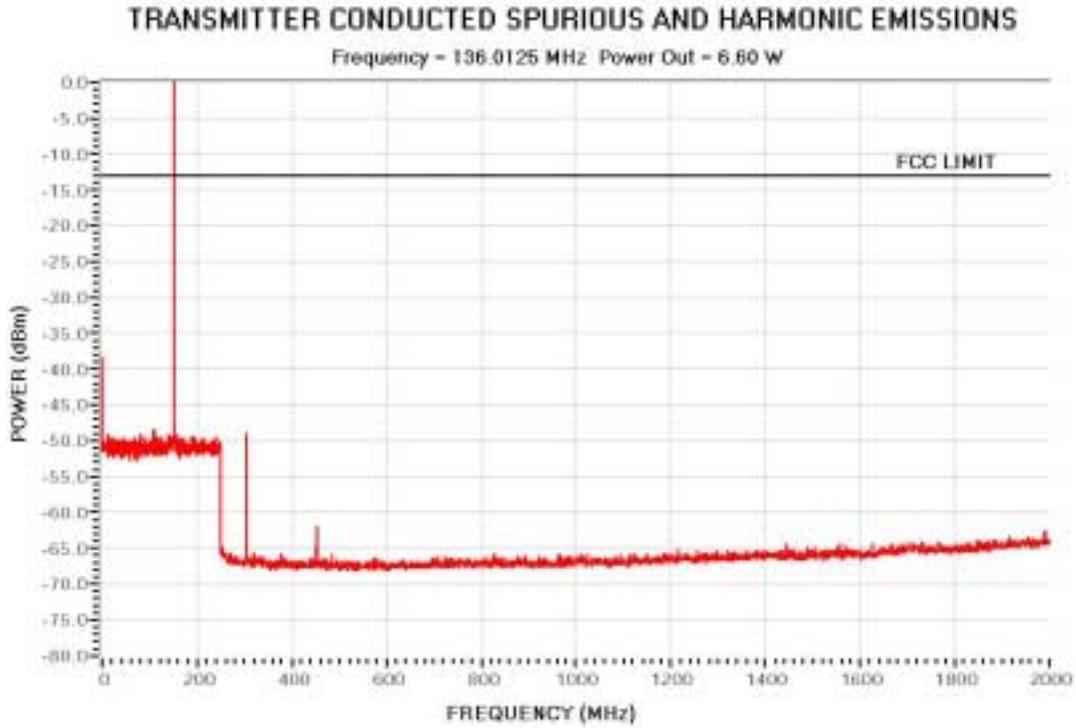FCC Registration: 91932 / Industry Canada: IC3679

EXHIBIT 6F-2

Transmitter Radiated Spurious Emissions: XTS5000R_VHF

173.9875 MHz   **6.6 Watts**   **Channel Spacing 12.5kHz | S/N 20_Helical # 1**

Frequency (MHz)	FCC Maximum Limit -13 (dBm) 25 kHz Ch. Spac.	FCC Maximum Limit -20 (dBm) 12.5 kHz Ch. Spac.	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)
347.9750	-13	-20	-78.19	-76.02
521.9625	-13	-20	*	*
695.9500	-13	-20	-73.62	-52.85
869.9375	-13	-20	-54.31	-48.19
1043.9250	-13	-20	*	*
1217.9125	-13	-20	*	-49.49
1391.9000	-13	-20	*	-45.34
1565.8875	-13	-20	-46.46	-43.23
1739.8750	-13	-20	*	-43.73

*   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.

EXHIBIT 6F-3

TRANSMITTER CONDUCTED SPURIOUS AND HARMONIC EMISSIONS

Frequency = 136.0125 MHz Power Out = 6.60 W

Exhibit 6G – 1 (12.5kHz Ch Sp)

TRANSMITTER CONDUCTED SPURIOUS AND HARMONIC EMISSIONS

Frequency = 154.225 MHz Power Out = 6.60 W

Exhibit 6G – 2 (12.5kHz Ch Sp)

TRANSMITTER CONDUCTED SPURIOUS AND HARMONIC EMISSIONS
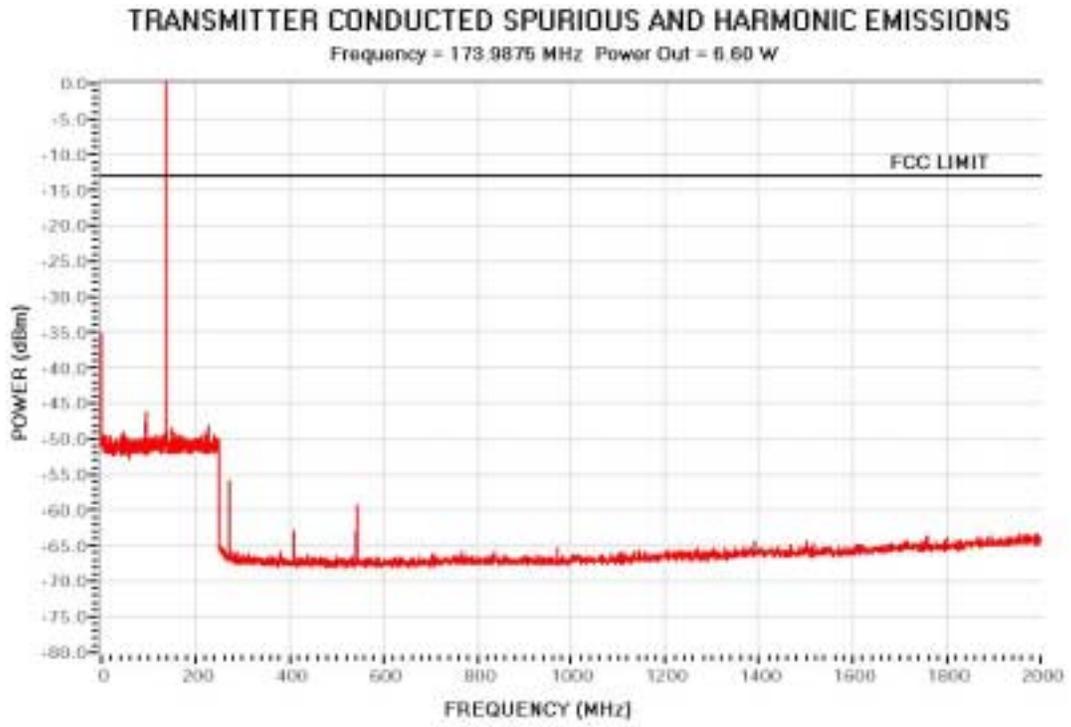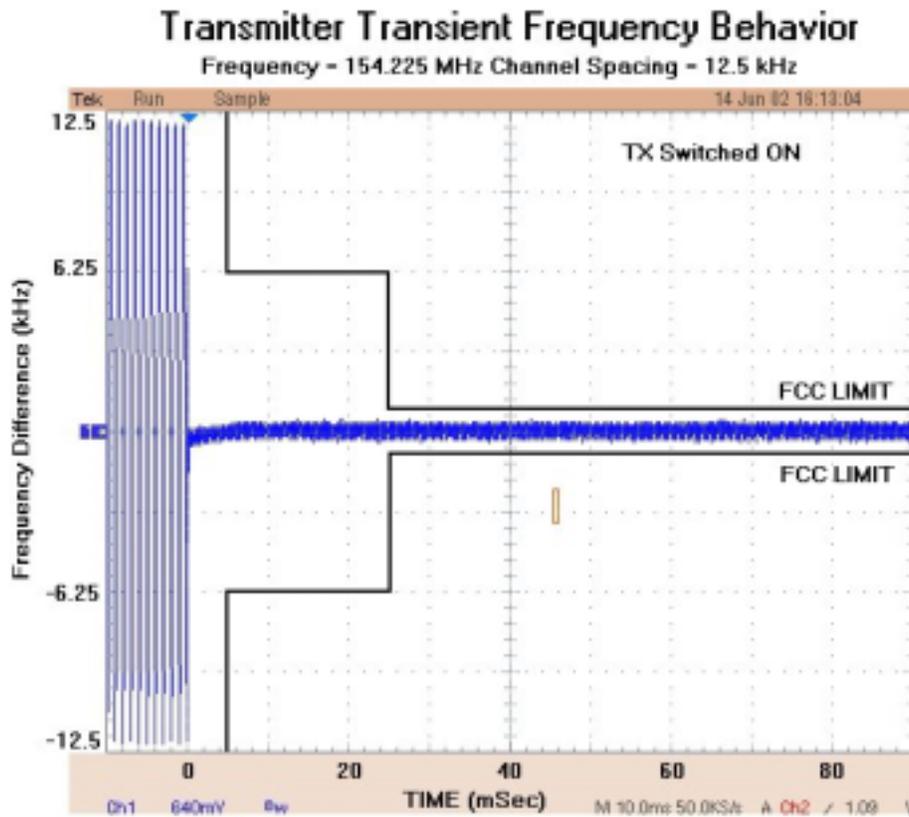
Frequency = 173.9875 MHz Power Out = 6.60 W
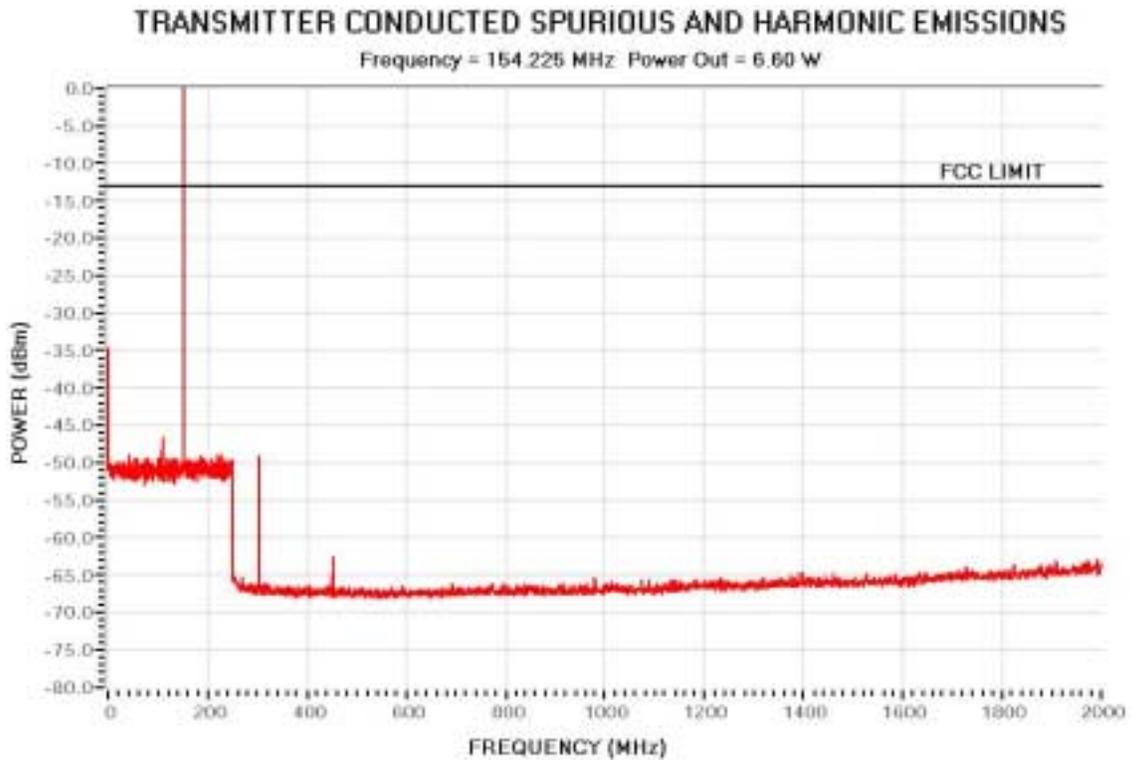
Exhibit 6G – 3 (12.5kHz Ch Sp)

EXHIBIT 6H-1

EXHIBIT 6H-2

Transmitter Transient Frequency Behavior
Frequency = 154.225 MHz Channel Spacing = 12.5 kHz

EXHIBIT 6I-1

Transmitter Transient Frequency Behavior
Frequency = 154.225 MHz Channel Spacing = 12.5 kHz

EXHIBIT 6I-2

Transmitter Transient Frequency Behavior
Frequency = 154.225 MHz Channel Spacing = 25.0 kHz

EXHIBIT 6I-3

Transmitter Transient Frequency Behavior
Frequency = 154.225 MHz Channel Spacing = 25.0 kHz
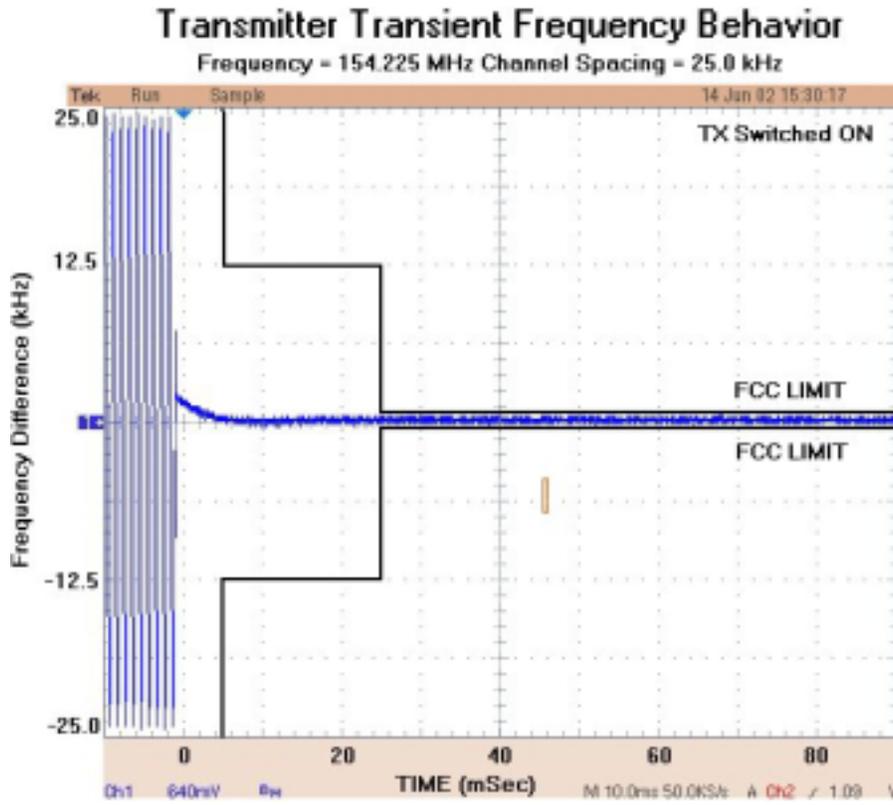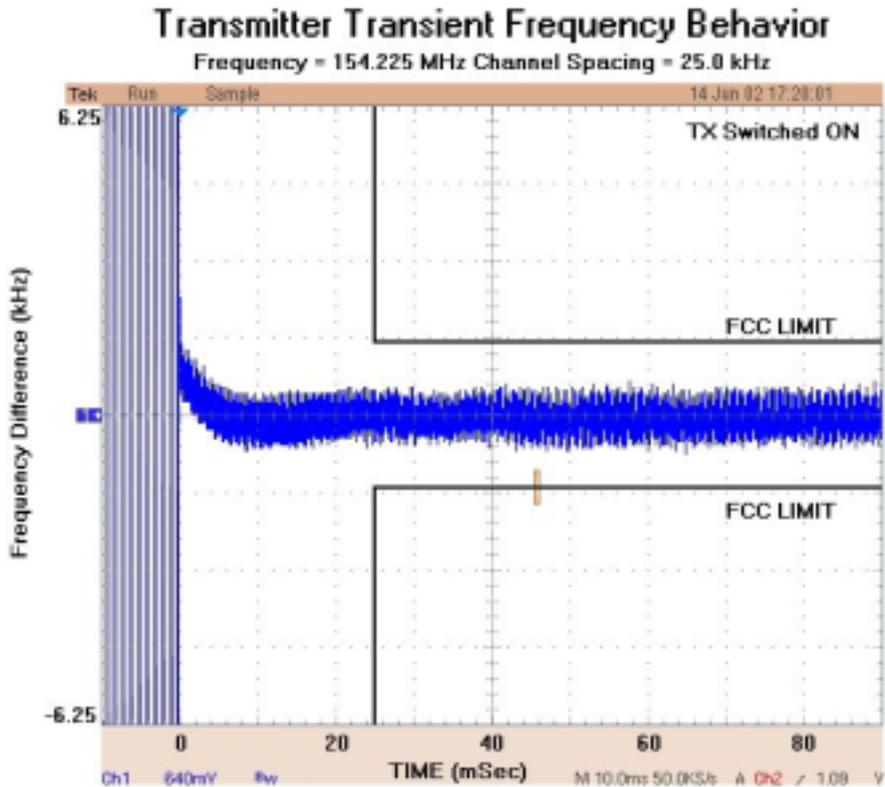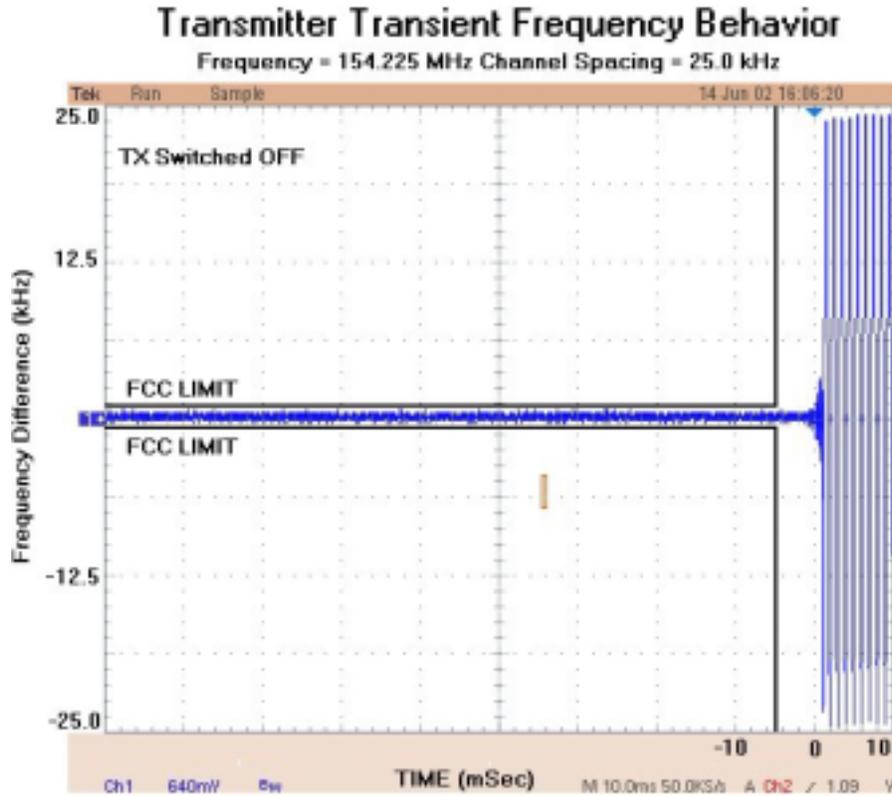

*** Note: Zoomed in for better resolution.   EXHIBIT 6I-4

Transmitter Transient Frequency Behavior
Frequency = 154.225 MHz Channel Spacing = 25.0 kHz

EXHIBIT 6I-5

Transmitter Transient Frequency Behavior
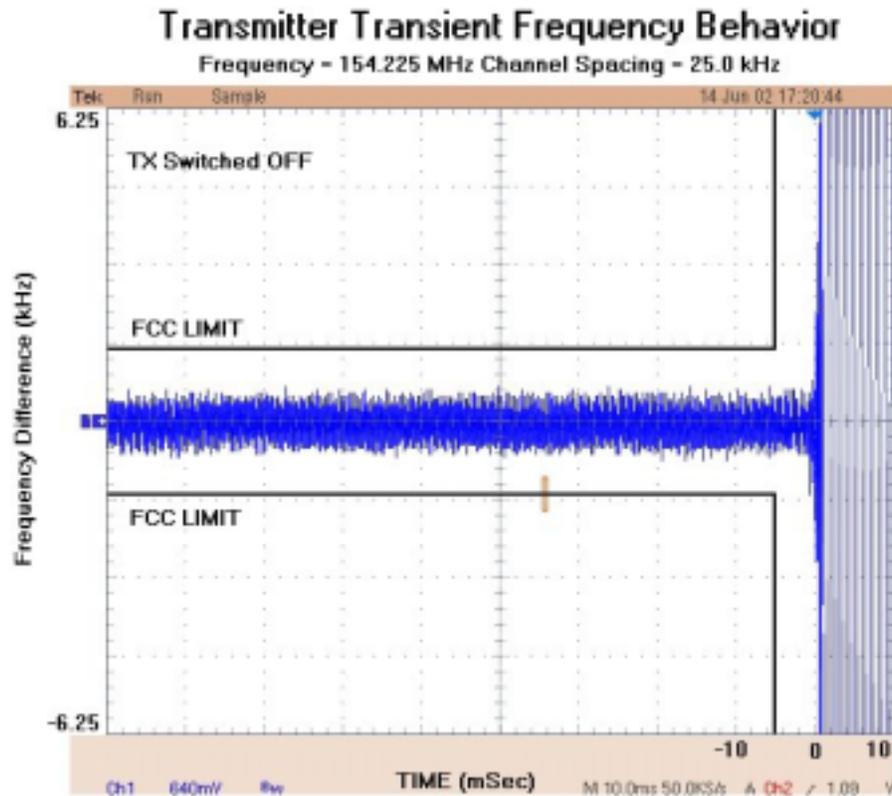### Frequency = 154.225 MHz Channel Spacing = 25.0 kHz

*** Note: Zoomed in for better resolution.   EXHIBIT 6I-6