EXHIBIT 7: MEASUREMENT PROCEDURES – Pursuant 47 CFR 2.947 & Part 95 Subpart J (MURS)

Except where otherwise stated, all measurements are made following the Electronic Industries Association (EIA) Minimum Standard for Portable/Personal Land Mobile Communications FM or PM Equipment 25-1000 MHz-(TIA/EIA-603-D) and RSS-119 Issue 12.

This exhibit presents a brief summary of how the measurements were made, the required limits, and the test equipment used.

The following procedures are presented with this application.

7.1 RF Power Output

7.2 Modulation Characteristics

- A. Modulation Limiting
- B. Audio Response

7.3 Occupied Bandwidth & Emission Mask

- A. Occupied Bandwidth
- B. Emission Mask

7.4 Radiated Spurious Emissions

7.5 Frequency Stability

- A. Vs. Temperature
- B. Vs. Supply Voltage

7.6 Transient Frequency Behavior

7.7 Measurement Equipment List & Lab Information

7.1 RF Output Power -- Pursuant 47 CFR 2.1046 & 95.639/95.632(b)

The RF power output is measured with the value of voltage and current as required by 2.1046. A 50 ohm RF attenuator of proper power rating was used as a load for making these measurements. For Transmitter having output impedance other than 50 ohm, a suitable matching network is placed between the transmitter and the load.

7.2 Modulation Characteristics -- Pursuant 47 CFR 2.1047 & 95.637

Procedure:

A. Modulation Limiting:
   a. Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1 KHz audio input using this level as a reference (0dB) and vary the input level from rated to +20dB. Record the frequency deviation obtained as a function of the input level.
   b. 2 Sweep audio input frequency from 100 HZ to 5KHz for all three audio levels and record the deviation.

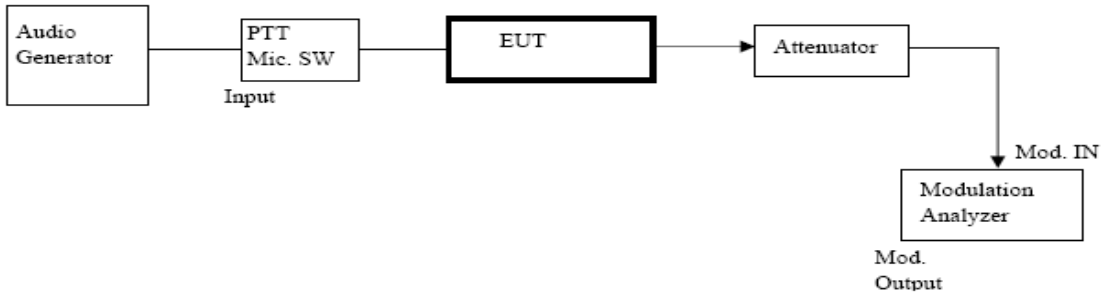

Figure 1. Modulation limiting setup

Minimum Standard

The transmitter modulation must not exceed maximum system deviation at any audio frequency input or reasonable change in input level.

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B. Audio Response:

a. Configure the EUT as shown in figure 2 and adjust the audio input for 20% of rated system deviation at 1 KHz audio frequency input using this level as a reference (0dB).

b. Vary the Audio frequency from 100 Hz to 3 KHz and record the frequency deviation. 4 Audio Frequency Response =20log10 (Deviation of test frequency/Deviation of 1 KHz reference).

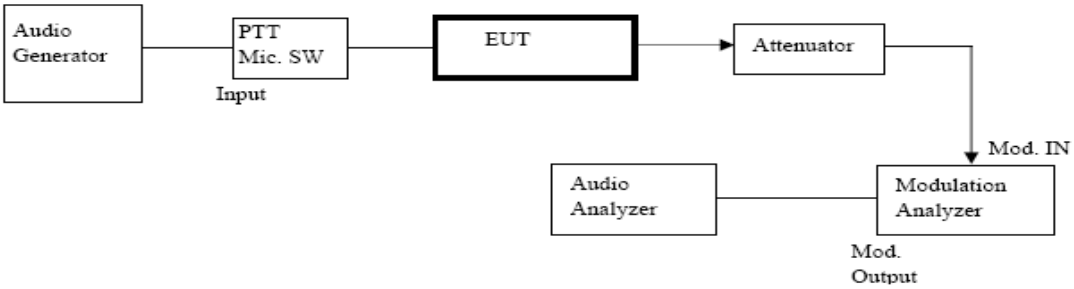

Figure 2. Audio Response setup

Minimum Standard

The audio frequency response shall not vary more than +1 or -3 dB from 300 to 3000 Hz as referenced to 1000 Hz level (with the exception of a permissible 6 dB/octave roll off from 2500 to 3000 Hz)

7.3 Occupied Bandwidth and Emission Mask – Pursuant 47 CFR 2.1049 & 95.632(b)/95.633(f) & 95.635(e):

Occupied Bandwidth

Data on occupied bandwidth is presented in the form of a spectrum analyzer photograph, which illustrates the transmitter sidebands. A photograph is taken of the spectrum with the carrier modulated with a 2500 Hz tone at a level 16 dB greater than that required to produce 50 percent modulation

As shown in figure 2, the EUT was connected to the audio signal generator and the spectrum analyzer via the main RF connector, and through an appropriate attenuator. The EUT was controlled to transmit its maximum power. Then the bandwidth of 99% power can be measured by the spectrum analyzer.

FCC Limits - According to FCC Part 95.632(b), equipment with 12.5KHz channel bandwidth will be authorized 11.25 KHz bandwidth. Equipment with 25 KHz channel bandwidth will be authorized 20 KHz bandwidth.

A. Emission Mask

A plot is generated of the unmodulated carrier, for reference, to which is superimposed the sideband display generated by modulating the carrier with a 2500 Hz tone at a level 16 dB greater than that required to produce 50 percent modulation. If tone or digital coded squelch is indicated, plots are generated using both the 2500 Hz tone and the indicated squelch signal to modulate the transmitter. During these measurements, the instantaneous Deviation Control is set for a maximum of +2.5 kHz.

As shown in figure 3, the EUT was connected to the audio signal generator and the spectrum analyzer via the main RF connector, and through an appropriate attenuator. The EUT was controlled to transmit its maximum power. Then the bandwidth of 99% power can be measured by the spectrum analyzer.

FCC Limits - Per FCC 47 CFR, 95.635(e):

Emission Mask 2, For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows: **(1)** On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB. **(2)** On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB. **(3)** On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 10 log (P) dB.

Emission Mask 1, 12.5 kHz channel bandwidth equipment: For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows: (1) On any frequency from the center of the authorized bandwidth f0 to 5.625 kHz removed from f0: Zero dB. (2) On any frequency removed from the centre of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(fd -2.88 kHz) dB. (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

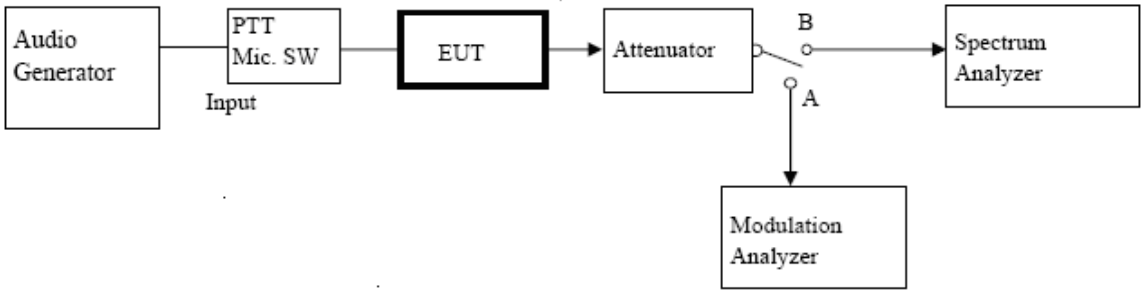

Figure 3. Occupied Bandwidth and Emission Mask Setup

7.4 Transmit Radiated Spurious Emissions -- Pursuant 47 CFR 2.1051, 2.1053, 95.632(b)(7):

Please see attached TIMCO Radiated Spurious Emissions test report as part of the package for full test method details.

7.5 Frequency Stability -- Pursuant 47 CFR 2.1055, 95.632 (c):

A. Vs. Temperature

The EUT is placed in a climate chamber and connected to external spectrum analyzer and power supply for frequency measurements. Frequency measurements are made at the extremes of the temperature range -30 to +50 degrees centigrade and at intervals of not more than 10 degrees centigrade throughout the range. Sufficient time is allowed prior to each measurement for temperature and circuit component stabilization.

B. Vs. Supply Voltage

The primary voltage was varied from 80% to 120% of the normal supply voltage. Voltage is measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

FCC Limits

According to FCC Part 2 Section 2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30℃to +50℃centigrade.

According to FCC Part 2 Section 2.1055 (a) (2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.

According to §95.632, MURS transmitters must maintain a frequency stability of 5.0 ppm, or 2.0 ppm if designed to operate with a 6.25 kHz bandwidth.

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7.6 Transient Frequency Behavior-- Pursuant to FCC Rule 95

Transient frequency behavior is a measure of the difference, as a function in time, of the actual transmitter frequency to the assigned transmitter frequency when the transmitted RF output power is switched on or off.

Setup—Per TIA/EIA-603, Section 2.2.19

Connect the output port of the transmitter under test to an attenuator and this to a directional coupler. Connect an RF peak detector to the coupled output of the directional coupler and connect the output of the RF peak detector to the external trigger on a storage scope. The output of the directional coupler is mixed, via an RF combining network, with the output of a signal generator. Verify that the signal power is approximately 40 dB below the maximum input level of the test receiver as per step (f). Set the signal generator at the same frequency as the transmitter under test, modulated with a 1 kHz tone, with an FM deviation equal to the assigned channel spacing (+25 kHz). Following step (h), adjust the signal generator to provide 20 dB less power at the combiner output than the level set in step (f). Connect the output of the RF combiner to a test receiver. Connect the test receiver's output port to the vertical input channel of the storage scope. Adjust the horizontal sweep rate on the oscilloscope to 10 msec/div and adjust the vertical amplitude to display the 1 kHz tone at +/- 4 divisions centered on the display. Reduce the transmit attenuator by 30 dB as per step (l) so that the difference in power between the reference signal and the transmitter signal at the combiner is 50 dB when the transmitter is turned on. Following step (k), adjust the oscilloscope to trigger on an increasing signal from the RF detector at one division from the left side of the display when the transmitter is turned on. Switch on the transmitter and record the display (For RF Output Power ON.)

Following step (q), adjust the oscilloscope trigger controls to trigger on a decreasing signal from the RF peak detector, at 1 division from the right side of the display when the transmitter is turned off. Switch off the transmitter and record the display (For RF Output Power OFF).

Steps (f), (h), (k), (l), (q) Section 2.2.19 of the TIA/EIA-603 were followed.

Method of Measurement -- Per TIA/EIA-603

For RF Output Power ON: Turn the transmitter ON. Once the demodulator output has been captured by the transmitter power, the 1 kHz test signal will be completely suppressed. This point in time is named T-on. The display will then

show the frequency difference from the assigned frequency to the actual transmitter frequency versus time. Two time intervals will be measured following T-on: T-1 and T-2.

So, the RF ON time intervals are as follows: T-on --------> T-1 -> T-2

For RF Output Power OFF: Turn the transmitter OFF. The display will show the transmitter frequency difference versus time, and when the 1 kHz test signal starts to rise, it indicates total absence of the transmitter output at the specified frequency. This point is named T-off. Time interval T-3 precedes T-off.

So, the RF OFF time intervals are as follows: T-3 --------> T-off

FCC Limits—

Frequency Range (MHz)

151.82 to 154.6 MHz

Time Interval	
T-1	10 ms
T-2	25.0 ms
T-3	10.0 ms

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

The following is the list of test equipment in MSI Engineering lab used to generate the part of the data for Exhibit 6.

Equipment	Serial #	Cal Due Date	Cal Period
Agilent N9030A PXA Signal Analyzer	MY49431450	8/25/2016	1 year
Agilent E4416A Power Meter	45100742	8/31/2016	1 year
Agilent E9321A Power Sensor	MY44420196	8/26/2016	1 year
Weinschel 20 dB High Pwr Pad	CB8227	8/31/2016	1 year
HP6632A DC Power Supply	315A06621	30/4/2016	1 year
Agilent EE38C ESG Vector Signal Generator	MY42080852	8/28/2017	2 years
Tektronix TDS 420A Oscilloscope	B050480	4/1/18	2 years
HP 8901A Modulation Analyzer	343BA05063	8/19/2016	1 year
HP 8903b Audio Analyzer	2514A05450	8/19/2016	1 year
HP 8644A Synthesized Signal Generator	3026A00864	8/20/2018	3 years

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Lab and Contact Information

- MSI Plantation Engineering Lab. Contact: Branko Avanic, 8000 West Sunrise Fl, 33322

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