EXHIBIT 7

Measurement Procedure & Test Equipment Used

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-(EIA/TIA-603-D) and Digital C4FM/CQPSK Transceiver Measurement Method (TIA 102 CAAA-C).

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.

1. Test Equipment List x
2. RF Power Output x
3. Audio Frequency Response x
4. Audio Low Pass Filter Response x
5. Modulation Limiting x
6. Occupied Bandwidth x
7. Transmit Radiated Spurious Emissions x
8. Conducted Spurious Emissions x
9. Frequency Stability (Supply Voltage/Temp) x
10. Transient Frequency Behavior x
11. Adjacent Channel Power ______
12. 1559-1605MHz Radiated Emissions (GNSS) ______

Test Equipment List

Measurement Equipment List- Pursuant To FCC Rules 2.947 (d)

No	Equipment	Calibration Date (next due)
1	Computer: DELL Latitude D600 Notebook, Window 2000.	*calibration not required*
2	Spectrum Analyzer: Agilent E4445A, 3 Hz – 13.2 GHz	7th December 2014
3	Spectrum Analyzer: HP 8560E, 30 Hz - 2.9 GHz	16th August 2014
4	Dynamic Signal Analyzer: HP35665A	13th February 2015
5	RF Signal Generator: E4420BB, 250 kHz – 2 GHz RF Signal Generator	14th December 2014
6	Modulation Analyzer. HP 8901B	15th January 2015
7	Audio Analyzer .HP 8903B	11th August 2014
8	Power Meter. HP437B. Sensor 80401A	26nd November 2014
9	Oscilloscope. Phillips PM3382	4th January 2015
10	Multimeter: Hewlett Packard 34401A	15th October 2014
11	DC Power Supply: Hewlett Packard 6623A	7th August 2014
12	Directional Coupler: Hewlett Packard 778D, Dual Directional Coupler	*calibration not required*
13	Temperature Chamber: VOTSCH, VT4010	21st January 2015
14	30 dB attenuator: MCE/Weinschel, model 33-30-34	*calibration not required*
15	High Pass Filter, Mini-Circuit NHP 300 & 25W	*calibration not required*
16	MCE/Weinschel 1429-4, 50 ohms terminating load	*calibration not required*
17	Microwave Generator, SMP04	23-Mar-15
18	Spectrum Analyzer/ESI Test Receiver, ESIB 40	30-Mar-15
19	Bilog Antenna [30MHz-2GHz], CBL6112B	30-May-15
20	Bilog Antenna [30MHz-2GHz], CBL6112D	28-Dec-14
21	DRG Horn Freq. 700MHz-18GHz, SAS-571	18-Oct-14
22	DRG Horn Freq. 700MHz-18GHz, SAS-571	17-Apr-15
23	Temp/Humidity Monitor, TM 320	12-Jun-15
24	SAC (5m Semi-anechoic Chamber), S800-HX	Dec-14
25	Antenna Positioning Tower (Boresight), TLT2	*calibration not required*
26	System controller, SC104V	*calibration not required*
27	Turntable. Flush Mount 2M, FM2011	*calibration not required*
28	Pre-amplifier, PAM-0118	*calibration not required*

Table 1: List of equipment used

Test Name	FCC Rules Part (47 CFR)	IC Rules
RF Power Output	2.1046(a), 2.1033(c)(6), 2.1033(c)(7) and 2.1033(c)(8) * 90.541, 90.545(b)(4) (700MHz) * 22.565(f) (VHF & UHF), * 24.132 (900MHz) * 74.461 (VHF, UHF)	* RSS-Gen Sec 4.8, * RSS-119 Sec 5.4.1, * RSS 119 Sec 5.4.5 (700MHz) * RSS 134 (900MHz)
Audio Frequency Response	2.1047 and 2.1033(c)(13)	-
Audio Low Pass Filter Response	2.1047	-
Modulation Limiting	2.1047	-
Occupied Bandwidth	2.1049, 90.210, * 90.691 (800MHz), * 22.359 (b) (VHF & UHF), * 24.133 (900MHz) * 74.462 (b) (VHF, UHF)	* RSS GEN Sec 4.6, * RSS 119 Sec 5.5, * RSS 134 Sec 5.5 (900MHz)
Radiated Spurious Emissions	2.1053, 90.210, * 22.359 (a) (VHF & UHF) * 74.462 (b) (VHF, UHF)	* RSS GEN Sec 4.9, * RSS 119 Sec 4.2, 5.8
Conducted Spurious Emissions	2.1051, 90.210, * 22.359 (a) (VHF & UHF), * 24.133 (900MHz) * 80.211 (c) (VHF) * 74.462 (c) (VHF, UHF)	* RSS GEN Sec 6.2, * RSS 119 Sec 4.2, 5.8, * RSS 134 Sec 6.3(ii) (900MHz) * RSS 182 (VHF)
Frequency Stability (Supply Voltage/ Temp)	2.1055, 90.213, * 90.539 (700MHz) * 22.355 * 24.135 (900MHz) * 74.464 (VHF, UHF)	* RSS GEN Sec 4.7, * RSS 119 Sec 5.3 * RSS 134 Sec 7 (900MHz)
Transient Frequency Behavior	90.214	* RSS 119 Sec 5.9
* Adjacent Channel Power	* 90.543 (700MHz)	* RSS 119 Sec 4.3, 5.8.9 (700MHz)
* 1559-1610 MHz Radiated Emissions (GNSS)	* 2.1053, 90.543 (e) (700MHz)	-

Table 2: List of FCC and IC reference

* *Note: Not Applicable for this filing*

EXHIBIT 7A - RF Output Power

The RF power output is measured with the transmitter adjusted in accordance with the tune-up procedure outlined in Exhibit 10 to give the value of voltage and current as specified in Exhibit 12 as required by 2.1033(c)(8). A 50-ohm RF attenuator of proper power rating was used as a load for making these measurements.

The power measurements are made using an RF power meter and 30dB attenuator.

EXHIBIT 7B - Audio Frequency Response

Operate the transmitter under standard test conditions and monitor the output with a frequency deviation meter or calibrated test receiver. With 1000 Hz sine wave audio input applied through a dummy microphone circuit, adjust the audio input to give 20% of full rated system deviation. Maintaining a constant input voltage, vary the input frequency from 300 to 3000 Hz, and observe the deviation.

EXHIBIT 7C - Audio Low Pass Filter Response

The audio oscillator portion of an audio analyzer is connected to the input of the post limiter low pass filter. The oscillator is adjusted, at 1000 Hz and level 16dB greater than that required to produce standard test modulation. The output of the low pass filter is measured with an dynamic signal analyzer. The response is swept between the limits of 1000 Hz - 30000 Hz. Oscillator level is chosen to be as high as possible and that will not cause limiting at any frequency, and maintaining a constant input level versus frequency.

EXHIBIT 7D – Modulation Limiting

The transmitter shall be adjusted for full rated system deviation. Adjust the audio input for 60% of rated system deviation at 1000 Hz. Using this level as a reference (0 dB) vary the audio input level from the reference to a level 20 dB above it for modulation frequencies between 300 and 3000 Hz in 100Hz steps. Record the system deviation obtained as a function of the input level.

EXHIBIT 7E - Occupied Bandwidth

Data on occupied bandwidth is presented in the form of a spectrum analyzer photograph, which illustrates the transmitter sidebands. For analog signals, the reference line for the data plot is taken of the unmodulated carrier, 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. For digital voice, data, and TDMA, the reference line for the data plot is that of the peak value of the modulated carrier. For digital data, the Standard Transmitter Test Pattern is a continuously repeating 511 bit pseudo-random bit sequence based on ITU-T 0.153. If tone or digital coded squelch is indicated, photographs using both the 2500 Hz tone and the indicated squelch signal are used to modulate the transmitter. During these measurements, the instantaneous Deviation Control is set for a maximum of +5 kHz.

EXHIBIT 7F - Transmit Radiated Spurious Emissions

The site, located at Plantation EMC laboratory is in a region which is reasonably free from RF interference and has been approved by the Commission for Spurious Measurements.

The equipment is placed on the turntable, connected to a dummy RF load and then placed in normal operation using the intended power source. A broadband receiving antenna, located 3 meters from the transmitter-under-test (TUT), picks up any signals radiated from the transmitter and its operation accessories. The antenna is adjustable in height and can by horizontally and vertically polarized. A spectrum analyzer covering the necessary frequency range is used to detect and measure any radiation picked up by the above mentioned receiving antenna.

<u>Method of Measurement:</u>

The equipment is 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 the receiving antenna. To obtain actual radiated signal strength for each spurious and harmonic frequency observed, a standard signal generator with calibrated output is connected to a dipole antenna adjusted to that particular frequency. This dipole antenna is substituted for the transmitter under test. The signal generator is adjusted in output level until a reading identical to that obtained with the actual transmitter is observed on the spectrum analyzer. Signal strength is then read directly from the generator. Actual measurements are recorded on the attached graphs.

Note:
RBW setting is adjusted to 100 kHz for spurious emissions below 1 GHz and 1 MHz for spurious emissions above 1 GHz.

EXHIBIT 7G – Conducted Spurious Emissions

The transmitter is terminated into a 50 ohm load and interfaced with a spectrum analyzer which allows the spurious emission level relative to the carrier level to be measured directly. Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that required to produce 50% of rated system deviation at 1000 Hz. Measurements shall be made from the lowest radio frequency generated in the equipment to the tenth harmonic of the carrier or as high as the state of the art permits except for that region close to the carrier equal to ± 250% of the authorized bandwidth.

Note:
RBW setting is adjusted to 100 kHz for spurious emissions below 1 GHz and 1 MHz for spurious emissions above 1 GHz.

EXHIBIT 7H – Frequency Stability (Supply voltage / Temperature)

A. Temperature (Non-heated type crystal oscillators):
Frequency measurements are made at the extremes of the temperature range -30 to +60 degrees centigrade and at intervals of not more than 10 degrees centigrade throughout the range. Sufficient time is allowed prior to each measurement for the circuit components to stabilize.

B. Power Supply Voltage:
The primary voltage was varied from 85% to 115% of the nominal 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.

EXHIBIT 7I - Transient Frequency Behavior

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 (TUT) 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 oscilloscope. The output of the directional coupler is mixed, via an RF combining network, with the output of a signal generator. Verify that the TUT signal level present at the combining network output 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 TUT, 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, and the test receiver's output port to a vertical input channel of the storage scope. Adjust the horizontal sweep rate on the oscilloscope to 10 msec/div, and the vertical amplitude to display the 1 kHz tone over +/- 4 divisions centered on the display. Reduce the transmit attenuation by 30 dB as per step (l) so that the difference in the power between the reference signal and the TUT signal at the combiner is 50 dB when the TUT 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 TUT is turned on. Switch on the TUT 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 TUT is turned off. Switch off the transmitter and record the display (for RF Output Power OFF).

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

Method of Measurement -- Per TIA/EIA-603-2.2.19.

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.

EXHIBIT 7J – Adjacent Channel Power

A reference level of the Unit Under Test was obtained by setting the measurement bandwidth of the spectrum analyzer to the channel size and measuring the power in the channel. Measurements were then taken at specified offsets and measurement bandwidths as specified in 90.543(a). For the far-out offsets, the dynamic range of the spectrum analyzer had to be extended. This was accomplished by connecting the output of the Unit Under Test to Port 1 of a circulator, connecting a tunable bandpass filter with a terminating load to Port 2 and connecting Port 3 of the circulator to the spectrum analyzer. With the spectrum analyzer swept over the desired measurement offset, the bandpass filter was slowly tuned from a higher frequency setting toward the current transmitter frequency. As the bandpass filter is tuned, frequencies outside of the filter's bandpass response are reflected back to the circulator where they are then passed to the spectrum analyzer. Frequencies inside the filter's response are passed to the terminating load and thus eliminated from the input of the spectrum analyzer. As the bandpass filter is tuned, the display of the spectrum analyzer is observed. As the center frequency of the filter approaches the current transmitter frequency, the level of the transmitter signal on the display of the spectrum analyzer will drop. The bandpass filter was tuned to the point where sufficient dynamic range of the spectrum analyzer was obtained. Actual measurements are recorded in the attached table.

EXHIBIT 7K – 1559-1610MHz Radiated Emissions (GNSS)

Measurements were conducted per TIA-102.CAAA-B Section 2.2.6.4. The transmitter is terminated into a 50 ohm load and interfaced through a suitable high pass filter to a spectrum analyzer. This allows for the measurement of spurious emission levels in the GNSS band. The transmitter is replaced with a signal generator to determine the loss of the setup at the measurement frequencies. And, the radiated emissions in the GNSS band are calculated as follows:

EIRP (dBm) = Level (dBm) - Loss (dB) + Antenna Gain (dBi)

Note:
RBW setting is adjusted to 1MHz.