

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-603D).

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.

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|----|------------------------------|--------------|
| 1. | Test Equipment List | <u> x </u> |
| 2. | RF Power Output Data | <u> x </u> |
| 3. | Radiated Spurious Emissions | <u> x </u> |
| 4. | Conducted Spurious Emissions | <u> x </u> |

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	18 th September 2016
3	Dynamic Signal Analyzer: HP35665A	16 th Oct 2015
4	RF Signal Generator: E4420BB, 250 kHz – 2 GHz RF Signal Generator	8 th July 2015
5	Modulation Analyzer. HP 8901B	25 th May 2016
6	Audio Analyzer .HP 8903B	22 nd August 2015
7	Power Meter. HP437B. Sensor 80401A	3 th December 2015
8	Oscilloscope. Phillips PM3382	21 th June 2015
9	Multimeter: Hewlett Packard 34401A	25 th July 2017
10	HP Power supply 6031A	1 st April 2017
11	Directional Coupler: Hewlett Packard 778D, Dual Directional Coupler	*calibration not required*
12	Temperature Chamber: VOTSCH, VT4010	21 st July 2016
13	30 dB attenuator: MCE/Weinschel, model 33-30-34	*calibration not required*
14	High Pass Filter, Mini-Circuit NHP 300 & 25W	*calibration not required*
15	MCE/Weinschel 1429-4, 50 ohms terminating load	*calibration not required*
16	Microwave Generator, SMP04	23-Oct-16
17	Spectrum Analyzer/ESI Test Receiver, ESIB 40	24-May-16
18	Bilog Antenna [30MHz-2GHz], CBL6112B	30-May-15
19	Bilog Antenna [30MHz-2GHz], CBL6112D	14-June-15
20	DRG Horn Freq. 700MHz-18GHz, SAS-571	21-Oct-15
21	DRG Horn Freq. 700MHz-18GHz, SAS-571	15-Feb-16
22	Temp/Humidity Monitor, TM 320	12-Jun-15
23	SAC (5m Semi-anechoic Chamber), S800-HX	Dec-15
24	Antenna Positioning Tower (Boresight), TLT2	*calibration not required*
25	System controller, SC104V	*calibration not required*
26	Turntable. Flush Mount 2M, FM2011	*calibration not required*
27	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 Data	2.1046(a), 2.1033(c)(6), 2.1033(c)(7) and 2.1033(c)(8) * 90.541, 90.545(b)(4) (700 MHz) * 22.565(f) (VHF & UHF), 24.132 (900 MHz) * 74.461 (VHF & UHF)	RSS-Gen Sec 6.12, RSS-119 Sec 5.4.1, * RSS 119 Sec 5.4.5 (700 MHz) RSS 134 Sec 5.4 (900 MHz)
* Audio Frequency Response	* 2.1047 and 2.1033(c)(13)	-
* Audio Low Pass Filter Response	* 2.1047	-
* Modulation Limiting	* 2.1047 *74.463 (VHF & UHF)	-
* Occupied Bandwidth	2.1049, 90.210, 90.691 (800 MHz), * 22.359 (VHF,UHF), * 24.133 (900 MHz), *74.462(b) (VHF & UHF)	RSS GEN Sec 6.6, RSS 119 Sec 5.5, * RSS 134 Sec 5.5 (900 MHz)
TX Radiated Spurious Emissions	2.1053, 90.210, * 22.359 (VHF,UHF), 24.133 (900MHz), * 74.462(c) (VHF & UHF)	RSS GEN Sec 6.13, RSS 134 Sec 6.3(ii) (900MHz) RSS 119 Sec 4.2, 5.8
TX Conducted Spurious Emissions	2.1051, 90.210, * 22.359 (VHF,UHF), 24.133 (900MHz) * 80.211(c) (VHF), * 74.462(c) (VHF & UHF)	RSS GEN Sec 6.13, RSS 119 Sec 4.2, 5.8, RSS 134 Sec 6.3(ii) (900MHz) * RSS 182 (VHF)
* Frequency Stability (Temp / Supply Voltage)	2.1055, 90.213, * 90.539 (700 MHz) * 22.355 * 24.135 (900 MHz) * 74.464 (VHF & UHF)	RSS GEN Sec 6.11 RSS 119 Sec 5.3 * RSS 134 Sec 7 (900MHz) Notice 2011-08 (TETRA)
* Power Line Conducted Spurious Emissions	15.107	-
* Adjacent Channel Power	* 90.543 (a)-(d)(700 MHz) * 90.221(b) (UHF TETRA) 90.221(c) (8/900 TETRA) R&O FCC 12-114, FCC 11-63 (TETRA)	* RSS 119 Sec 4.3 (700 MHz) * RSS 119 Sec 5.8.9 (700 MHz) RSS 119 Sec 5.5 Table 3 ^(Note 2) (TETRA) RSS 119 Sec 5.8.10 (TETRA)
* Transient Frequency Behaviour	* 90.214 (VHF & UHF)	* RSS 119 Sec 5.9 (VHF & UHF)

Table 2: List of FCC and IC reference

* Note: Not Applicable for this filing

EXHIBIT 7A - RF Power Output

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 30 dB attenuator.

EXHIBIT 7B - Radiated Spurious Emissions

The site, located at Motorola Solutions Penang, Malaysia, 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 be 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.

Method of Measurement:

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 100kHz for spurious emissions below 1GHz and 1MHz for spurious emissions above 1GHz.

EXHIBIT 7C - 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 $\pm 250\%$ of the authorized bandwidth.

Note:

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