## 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).

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 Data                                                       x

3. Radiated Spurious Emissions                                            x

4. Conducted Spurious Emissions                                         x

5. Frequency Stability (Volt/Temp)                                        x

EXHIBIT 7
SHEET 1 OF 4

## Test Equipment List

Pursuant To FCC Rules 2.947 (d)

| Device | Model | S/N | Due Date |
|---|---|---|---|
| Modulation Analyzer | HP 8901B | 3122A03671 | 11-Oct-12 |
| Spectrum Analyzer | Agilent E4440A | MY45304982 | 05-Apr-14 |
| Power Meter | Agilent E4416A | GB41293831 | 16-Jul-14 |
| Power Sensor | Agilent E9301B | MY51190010 | 22-Nov-14 |
| DC Power Supply | HP 6033A | MY41000280 | 06-Jun-14 |
| High Pass Filter | Mini Circuits NHP 700 | - | - |

Additional equipment used by ACS Test Laboratory

| AssetID | Manufacturer | Model # | Equipment Type | Serial # | Calibration Due Date |
|---|---|---|---|---|---|
| 524 | Chase | CBL6111 | Antennas | 1138 | 07-Jan-2013 |
| 2004 | EMCO | 3146 | Antennas | 1385 | 30-Nov-2013 |
| 2006 | EMCO | 3115 | Antennas | 2573 | 02-Mar-2013 |
| 2007 | EMCO | 3115 | Antennas | 2419 | 18-Jan-2014 |
| 2011 | Hewlett-Packard | HP 8447D | Amplifiers | 2443A03952 | 02-Jan-2013 |
| 2037 | ACS Boca | Chamber EMI Cable Set | Cable Set | 2037 | 02-Jan-2013 |
| 2091 | Agilent Technologies, Inc. | 8573A | Spectrum Analyzers | 2407A03233 | 12-Dec-2013 |
| RE586 | Agilent Technologies, Inc. | 83017A | Amplifiers | 3123A00168 | 23-Sep-2012 |
| RE563 | Hewlett-Packard | 8673D | Signal Generators | 3034A01078 | 22-Feb-2013 |

## RF Power Output

Pursuant to FCC Rules 2.1046 (a)

Method of Measurement

Conducted power is measured in accordance with TIA/EIA-603 section 2.2.1.2. The transmitter under test is connected to an HP 438A Power Meter using the forward port of a directional coupler and a 20 dB pad. Appropriate calibration offsets, derived from a traceable RF attenuator, which has been precision characterized by an outside testing laboratory, are entered into the wattmeter to calibrate for the use of the coupler.

The transmitter is operated under normal conditions at the specified nominal DC input voltage. The DC supply path to the final stage only (or to the RF power amplifier module, if the final stage only is not accessible) is interrupted to allow insertion of a DC ammeter in series with the DC supply. The DC voltage drop of the ammeter is negligible. A DC voltmeter is used to measure the DC voltage applied to the final stage. The DC input power to the final stage (in watts) is computed as the product of the DC current (in amperes) times the DC voltage (in volts). This measurement is performed at the lowest, the middle, and the highest operating frequencies of the operating bandwidth of the equipment.

EXHIBIT 7
SHEET 2 OF 4

The calibration of the power meter, detector, and attenuator pads is verified on an annual basis. Other power measurement systems that may be used are correlated with this calibrated reference system before measurements are performed, and calibration factors are adjusted as necessary to obtain precise correlation.

## Conducted Spurious Emissions

Pursuant to FCC Rule 2.1051

Method of Measurement:
The output of the transmitter is connected, via a suitable attenuator, to the input of an Agilent E4404B spectrum analyzer. This data is measured at the upper and lower frequency limits of the frequency range. If transmit power is adjusted, the measurement is repeated at various power levels including minimum and maximum.

## Radiated Spurious Emissions

Pursuant to FCC Rules 2.1053
Test Site:

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.

Method of Measurement:

Transmitter radiated spurious emissions were measured by Motorola Plantation EMC Lab. Measurements were made at an approved open field test site constructed in accordance with Appendix B, FCC/OST 55 (1982), and were performed in accordance with the Code of Federal Regulations, Title 47, Part 2, paragraph 2.1053. The data is plotted as "Radiated Spurious Emissions" on the graphs comprising EXHIBIT 6C. The specification limit corresponding to a level of 50 dB + 10log (Pout) for 12.5 kHz Channel Spacing below the fundamental carrier power of the transmitter as indicated on each graph for reference.

The test site is: Advanced Compliance Solutions, Inc, United States of America. Advanced Compliance Solutions, Inc is listed with FCC as follows:

1.  FCC registration number is: 588486

    SITE ADDRESS:
    Advanced Compliance Solutions, Inc.
    3998 FAU Blvd.,
    Suite #310,
    Boca Raton, FL 33431-0991

EXHIBIT 7
SHEET 3 OF 4

## Frequency Stability

Pursuant to FCC Rule 2.1055

Method of Measurement:

Frequency Stability vs. Temperature data is measured in accordance with FCC Rules Part 2.1055 (a) (1). A HP8901B modulation analyzer is used to measure the frequency of the signal transmitted by the radio by way of a 20dB attenuator.. The radio is placed in a Votsch, model VT4010 Temperature Chamber, and the frequency is measured as the temperature is incremented from –30 to +60 degrees C in 10 degrees increments.

Frequency Stability versus Voltage data is measured in accordance with FCC Rules Part 2.1055 (d). A HP8901B modulation analyzer is used to measure the frequency of the signal transmitted by the radio by way of a 20dB attenuator. The supply voltage of the radio is swept +30% and –23% of 7.5Vdc.

FCC Limits -- Per 90.214.

## Frequency Range (MHz)

| Time Interval | 30 to 300 | 300 to 500 | 500 to 1000 |
|---|---|---|---|
| T-1 | 5.0 ms | 10.0 ms | 20.0 ms |
| T-2 | 20.0 ms | 25.0 ms | 50.0 ms |
| T-3 | 5.0 ms | 10.0 ms | 10.0 ms |

*Per Applicable Rule Parts.

EXHIBIT 7
SHEET 4 OF 4