Exhibit 7

Test Procedures

Introduction to measurements:

Variants of the MCC-6100 SDR can be placed into transmit mode (keyed) in several ways. The three most common operational ways are:

1. by serial interface command (e.g., via personal computer) accessible at the front panel,
2. by discrete push-to-talk PTT line (e.g., via microphone or control head) accessible at the front panel, and
3. by programmed response to a received command or event.

As the device's operating channel frequency and waveform are conveniently selected using a personal computer, the serial interface method of keying the transmitter by means of a personal computer is used in all of the following tests.

7.1 RF Power Output §2.1046

Applicable modes: See results in Exhibit 8.

For each applicable frequency band of operation the RF power output into a 50 ohm dummy load was measured, as was the DC voltage and current input to the amplifying stage. Output power is equal to the bolometer measurement plus the apparatus attenuation measured by use of the signal generator and spectrum analyzer.

Test Equipment Used		
Type	Manuf	Model
Personal Computer	Toshiba	6100
Power Supply	HP	6264B
or Power Supply	Astron	VS-50M
Load/Attenuator (30dB) or	Bird Electronics	100-SA-MFN-30
Load/Attenuator (30dB)	Aeroflex	47-30-33
Attenuator (10dB)	Minicircuits	CAT-10
Bolometer	HP	435A
Power Sensor	HP	8482A
Spectrum Analyzer (SA), signals	Advantest	R3265A
Signal Generator	Agilent	E4422B

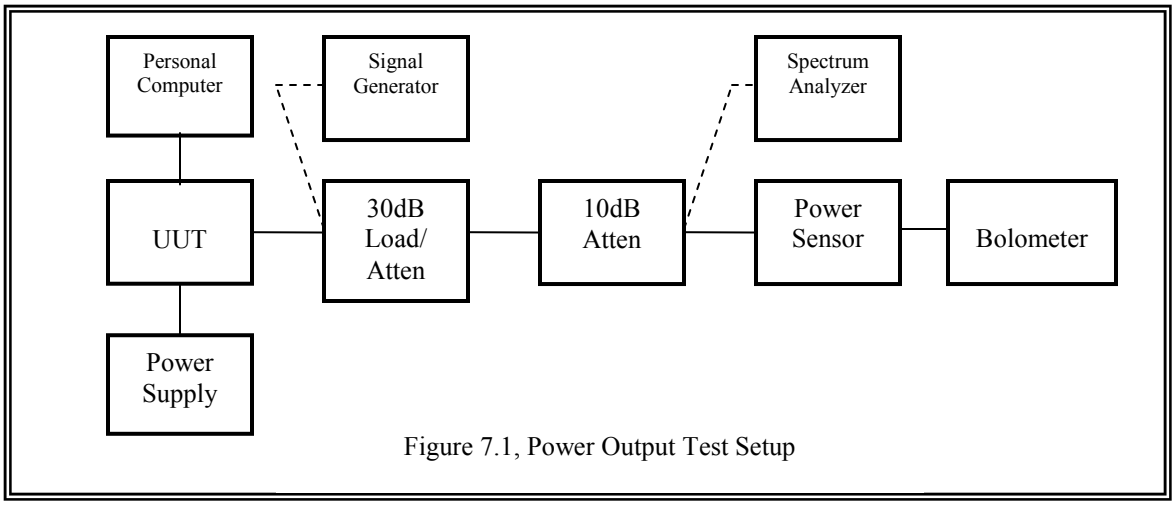

Figure 7.1, Power Output Test Setup

7.2 Modulation Characteristics §2.1047(a)

Applicable modes: See results in Exhibit 8.

Test Equipment Used		
Type	Manuf	Model
Personal Computer	HP	ZV5000
Power Supply	Astron	VS-50M
Audio Signal Generator (ASG)	Agilent	33120A
Attenuator (30dB)	Bird Electronics	8329-300
Vector Signal Analyzer (VSA)	Agilent	89441A

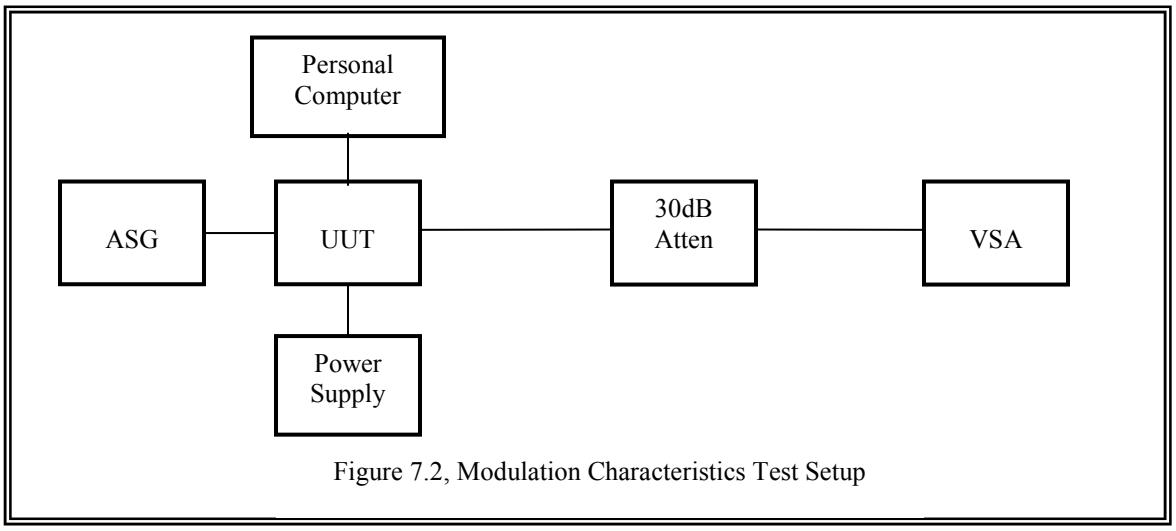

Figure 7.2, Modulation Characteristics Test Setup

7.2.1 Audio Frequency Response and Audio Low Pass Filter Characteristic

Procedure:

1. Test Equipment and UUT set up per Figure 7.2.
2. VSA settings:
    a. Instrument Mode: Demod Analog
    b. Demod type: Analog FM
    c. Average: Continuous Peak
    d. Window: Flat top
3. A reference level was established using a 1000Hz audio input to the UUT at the level required for 20% maximum rated deviation.
4. At a constant level input to the UUT, the audio frequency was varied from 300Hz to 5kHz.
5. The VSA-received and demodulated audio signal levels were observed and recorded.
6. The test was performed on the High Band section of the radio in both 12.5kHz channel space and 25kHz channel space modes and on the UHF section in the 12.5kHz channel space mode.

7.2.2 Modulation Limiting

Applicable modes: See results in Exhibit 8.

Procedure:

1. Test Equipment and UUT set up per Figure 7.2.
2. VSA settings:
    a. Instrument Mode: Demod Analog
    b. Demod type: Analog FM
    c. Average: off
    d. Window: Flat top

3. A 1000Hz modulating signal was applied to the input of UUT. The level of this signal was adjusted to obtain 60% maximum rated deviation as measured by the VSA. The input level was measured and recorded as the reference input.
4. The audio input level was varied from -50dB to +20dB of the reference level in 10dB steps. For each input level, the deviation measured by the VSA was recorded.
5. Step 4 was repeated using 300Hz and then 3000Hz modulating signals, in each case starting with the reference input level recorded in Step 3.
6. The test was performed on the High Band section of the radio in both 12.5kHz channel space and 25kHz channel space modes and on the UHF section in the 12.5kHz channel space mode.

7.3 Occupied Bandwidth §2.1049

Applicable modes: All

Test Equipment Used		
Type	Manuf	Model
Personal Computer	HP	ZV5000
Power Supply	Astron	VS-50M
Audio Signal Generator (ASG)	Agilent	33120A
Attenuator (30dB)	Bird Electronics	8329-300
Vector Signal Analyzer (VSA)	Agilent	89441A

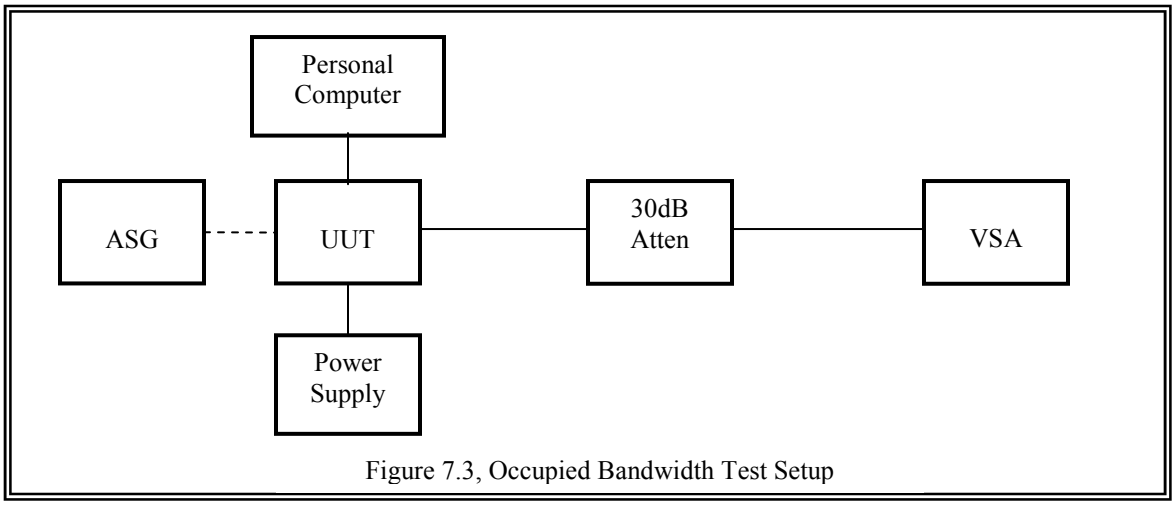

Figure 7.3, Occupied Bandwidth Test Setup

Procedure:

1. Test Equipment and UUT setup per Figure 7.3.
2. Frequency bands and waveforms are selected via the personal computer.
3. Modulation:
    a. For analog voice modes: The ASG frequency was set to 2500Hz and its output level set to that required for 50% maximum rated deviation for the respective mode. The ASG output level was then increased 16dB. Note: the ASG was used only for modes and bands applicable to voice operation and was turned off for data operation.
    b. For data modes: Each applicable modulation type is generated internally to the UUT.
4. VSA settings:
    a. Instrument mode: Scalar
    b. Span = 100 kHz (exception: 111.25kHz for 159MHz measurements)
    c. Resolution BW = 300Hz (exception: 100Hz for 159 MHz measurements)
    d. Average = continuous peak
    e. Window: flat top
5. Results are max hold measurements over 10 sweeps.

7.4 Transient Frequency Behavior, §90.214

Applicable modes: See results in Exhibit 8.

Test Equipment Used		
Type	Manuf	Model
Personal Computer	HP	ZV5000
Power Supply	Astron	VS-50M
Attenuator (30dB)	Bird	8329-300
Variable Attenuator (29dB)	Kay	839
Vector Signal Analyzer (VSA)	Agilent	89441A
Combiner	Synergy	DSK-702B
Signal Generator	Agilent	E4436B

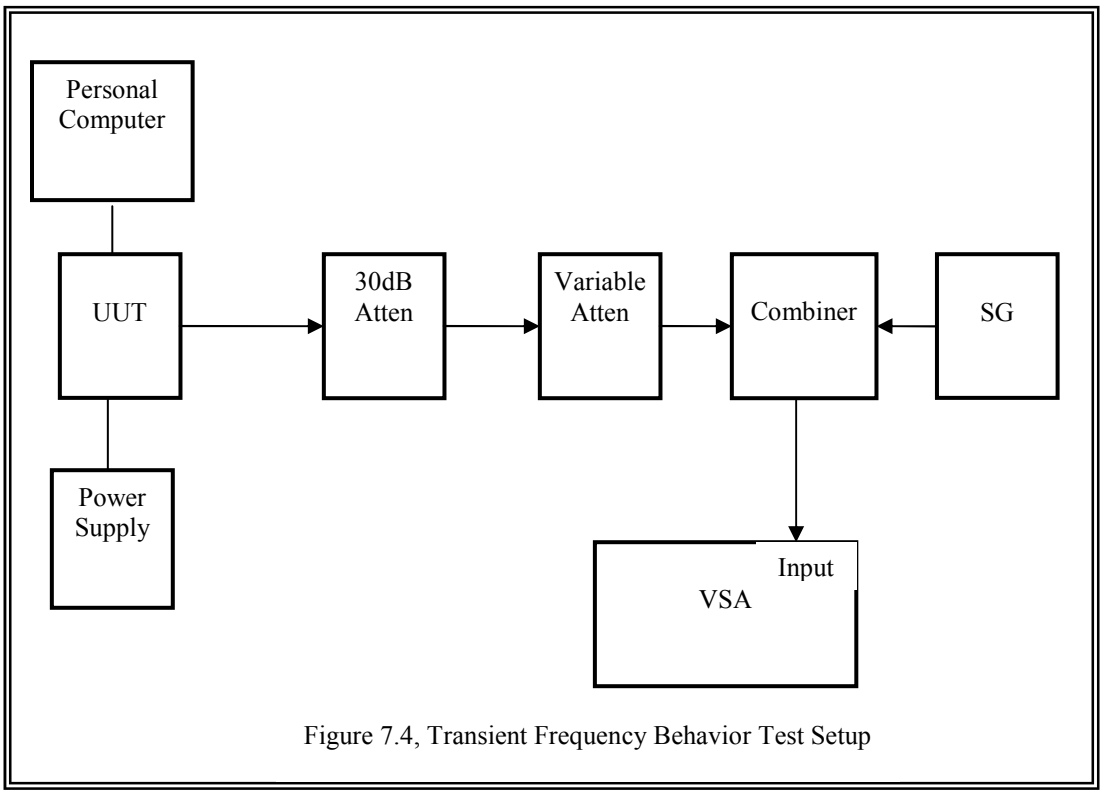

Figure 7.4, Transient Frequency Behavior Test Setup

Procedure:

1. Test Equipment and UUT setup per Figure 7.4.
2. The transmitter was set on the test frequency and keyed.
3. The variable attenuator was used to set the output of Combiner 1 to 40dB below the maximum input level of the VSA. The level was read and recorded.
4. The transmitter was unkeyed.
5. The SG was set to the test frequency and frequency modulated with a 1000 Hz tone. The SG output level was set to 20dB below the level recorded in Step 3.
6. The output of the combiner was connected to the VSA input. For each channel spacing of interest, the SG deviation was set to the "maximum frequency

difference" as denoted on the charts below. In each case the vertical range of the VSA was set to full scale for the deviation applied.

7. Other VSA settings:
    a. Instrument Mode: Demod Analog
    b. Demod Type: Analog FM
    c. Average: off
    d. The trigger of the VSA was enabled and its sensitivity was adjusted to activate from the detector output.
8. The UUT was keyed and the ON transient frequency behavior was recorded and plotted.
9. The UUT was unkeyed and the OFF transient frequency behavior was recorded and plotted.

156.0 - 162.0 MHz for 25kHz channel spacing		
Time Instant	delay	Maximum Frequency Difference
t1	**5mS**	**+/-25kHz**
t2	**20mS**	**+/-12.5kHz**
t3	**5mS**	**+/-25kHz**

156.0 - 162.0 MHz for 12.5kHz channel spacing		
Time Instant	delay	Maximum Frequency Difference
t1	**5mS**	**+/-12.5kHz**
t2	**20mS**	**'+/-6.25kHz**
t3	**5mS**	**+/-12.5kHz**

7.5 Spurious Emissions at Antenna Terminals §2.1051

Applicable modes: See results in Exhibit 8.

Test Equipment Used		
Type	Manuf	Model
Personal Computer	Toshiba	6100
Power Supply	HP	6264B
or Power Supply	Astron	VS-50M
Attenuator (30dB)	Aeroflex	47-30-33
or Attenuator (30dB)	Bird Electronics	100-SA-MFN-30
Attenuator (10dB)	Minicircuits	CAT-10
Spectrum Analyzer (SA), signals <8GHz	Advantest	R3265A
EMC Analyzer (EA), signals >8GHz	Agilent	E7407A
Signal Generator	Agilent	E4422B
Notch Filter, 44.5 MHz	MCC	-
Notch Filter, 160 MHz	MCC	-
Notch Filter, 930 MHz	MCC	-

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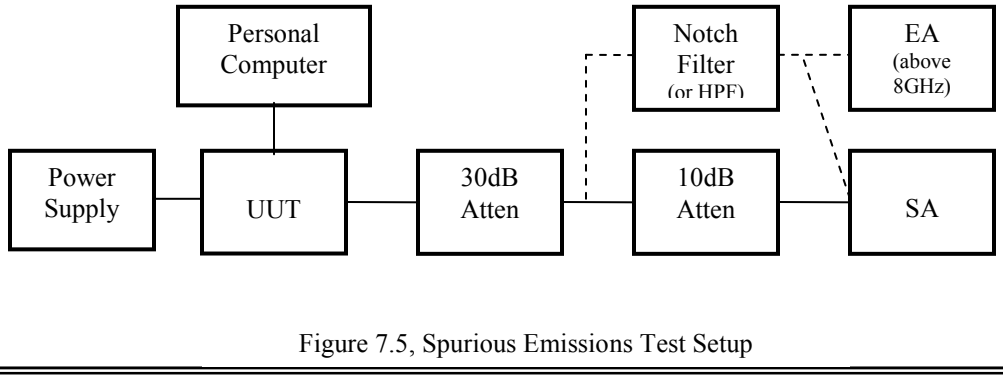

Figure 7.5, Spurious Emissions Test Setup

Procedure:

1. Test Equipment and UUT setup per Figure 7.5. Notch filters tuned to the fundamental transmitter frequency were used in the measurement of harmonic spurious emission products.
2. The transmitter was modulated with 9600bps GMSK data.
3. The transmitter was set on the test frequency and keyed.
4. The range of frequencies investigated included the lowest frequency generated in the UUT to ten times the fundamental output frequency of the transmitter, excluding a band +/- one channel space of the fundamental. Attention was paid to the local oscillator frequency, intermediate frequency, image frequency, harmonics of the fundamental frequency, as well as mixer products and intermodulation products of all of the above.
5. Spurious levels were determined using the signal generator substitution method for spurs below 4 GHz. Above 4 GHz, spur levels were measured and apparatus attenuation values for each frequency were added to the measurement value to determine the respective spurious level.

7.6 Field Strength of Spurious Radiation §2.1053

Applicable modes: See results in Exhibit 9.

Procedure: See Exhibit 9 for Procedure and Exhibit 10 for Test Setup photos.

7.7 Frequency Stability §2.1055

Applicable modes: See results in Exhibit 8.

Test Equipment Used		
Type	Manuf	Model
Personal Computer	Toshiba	6100
Power Supply	Lambda	LLS9018
Temperature Chamber	Ransco	#080236
Attenuator (30dB)	Aeroflex	47-30-33
or Attenuator (30dB)	Bird	100-SA-MFN-30
Frequency Counter (FC)	Agilent	53131A
Thermometer (DVM)	Tektronix	TX3
Thermocouple, K-type	Tektronix	ATK01/ATP01

7.7.1 Frequency Stability Vs. Temperature, §2.1055(a)

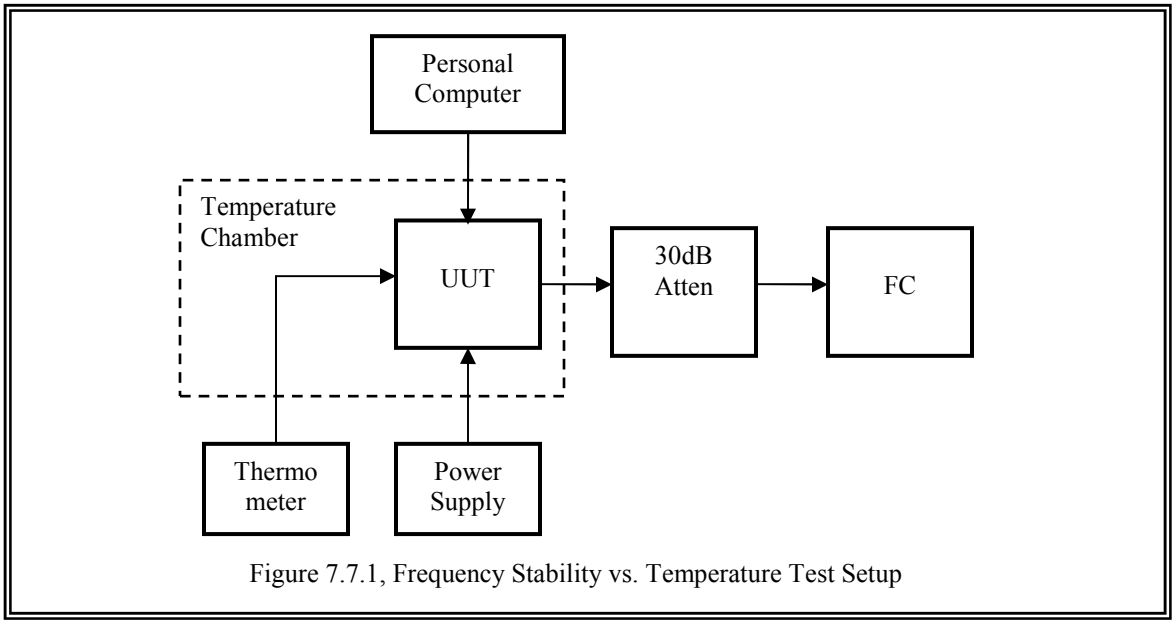

Figure 7.7.1, Frequency Stability vs. Temperature Test Setup

Procedure:

1. Test Equipment and UUT setup per Figure 7.7.1. The oscilloscope was attached to the output of the master reference oscillator.
2. The transmitter was set on the test frequency. The temperature chamber was set initially to cool the UUT to -30°C.
3. The UUT was submitted to the chamber temperature for one hour after the chamber stabilized to the set temperature.
4. The transmitter was keyed and the frequency measured.
5. The transmitter was unkeyed.
6. The temperature chamber temperature was increased to +50 °C in 10 °C increments and steps 3 through 5 were repeated for each step.
7. The data was recorded, and parts-per-million stability was calculated and graphed.

7.7.2 Frequency Stability Vs. Voltage, §2.1055(d)

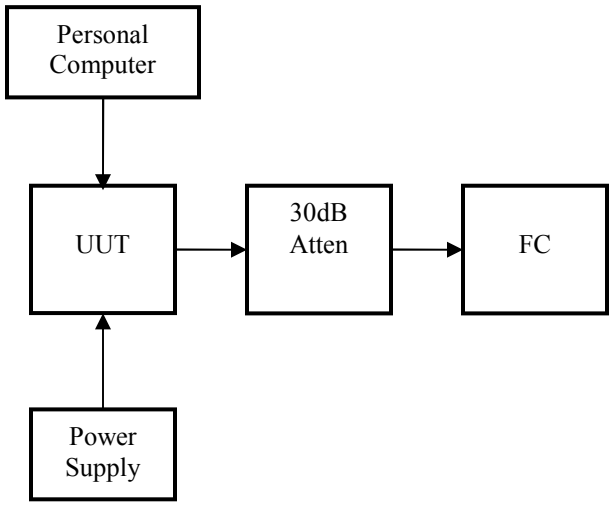

Figure 7.7.2, Frequency Stability vs. Voltage Test Setup

Procedure:

1. Test Equipment and UUT setup per Figure 7.7.2.
2. The transmitter was set on the test frequency and keyed.
3. The power supply voltage was varied from 85% to 115% of the nominal value measured at the input of the cable normally supplied with the equipment.
4. The data was recorded, parts-per-million stability calculated and graphed.

7.8 Measurement Procedure §§2.947, 2.1041, 2.1057

Transmitter testing was conducted using generally accepted engineering laboratory techniques in accordance with EIA/TIA603. ANSI C63.4 also applies for spurious radiation testing. Frequencies investigated during the conducted and radiated spurious emission tests were in the range 19.2MHz (lowest clock frequency of the device) to ten times the fundamental transmitter frequency under test, e.g., up to 9.4GHz in the case of the 940 MHz transmitter.

7.9 Measurement Facilities

All tests other than radiated emissions were performed at the laboratories of Meteor Communications Corporation, 8631 South 212th St., Kent, WA USA 98031. Radiated emissions testing was performed by Spectrum Technology, Inc. (see Attestation, Exhibit 9A) at OATS Facility, Fluke Manufacturing Co., 6920 Seaway Blvd, Everett, WA USA 98203.

7.10 Equipment List §2.947(d)

Refer to the specific test for a list of the equipment used.