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Class II Permissive Change Report

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MODEL: P7200 700/800 MHz Portable Radio

FCC ID: BV8P7200

IC: 3670A-P7200

September 19, 2007

Standards Referenced for this Report	
Part 2: 2006	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
Part 90: 2006	Private Land Mobile Radio Services
ANSI TIA-603-C-2004	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
ANSI/TIA/EIA – 102.CAAA; 2002	Digital C4FM/CQPSK Transceiver Measurement Methods
Industry Canada RSS-119 Issue 9 June 2007	Land Mobile and Fixed Radio Transmitters and Receivers Operating in the Frequency Range 27.41 - 960 MHz

Report Prepared By Test Engineer: Daniel Baltzell

Document Number: 2007239/QRTL07-238

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Frequency Range (MHz)	Measured Output Power (W) Conducted	Frequency Tolerance (ppm)	Modulation	Mode	Emission Designator
809-824	3.24	1.5	Analog FM (SMR)	OCF Trunked/Conventional	16K3F9W
806-824	3.24	1.5	Analog FM (SMR)	OCF Trunked/Conventional	16K0F3E
806-824	3.24	1.5	Analog FM (NPSPAC)	OCF Trunked/Conventional	14K0F3E
851-869	3.16	1.5	Analog FM (SMR)	OCF Talkaround	16K0F3E
851-869	3.16	1.5	Analog FM (NPSPAC)	OCF Talkaround on NPSPAC channels	14K0F3E
806-809, 821-824	3.20	1.5	2-level (digitized data/voice)	NPSPAC Trunked/Conventional	11K9F1D/E
806-824	3.20	1.5	2-level (digitized data/voice)	SMR Trunked/Conventional	14K2F1D/E
851-854, 866-869	3.24	1.5	2-level (digitized data/voice)	NPSPAC T/A	11K9F1D/E
851-869	3.20	1.5	2-level (digitized data/voice)	SMR T/A	14K2F1D/E
806-824	3.31	1.5	P25 (digitized data/voice)	Trunked or Conventional	8K4F1D/E
851-869	3.24	1.5	P25 (digitized data/voice)	Talkaround	8K4F1D/E
806-809, 821-824	3.24	1.5	OTP	NPSPAC Trunked	13K2F9W
806-824	3.20	1.5	OTP	SMR Trunked	13K2F9W
764-767, 773-776	2.82	0.4	P25 (digitized data/voice)	Talkaround	8K4F1D/E
794-797, 803-806	2.82	0.4	P25 (digitized data/voice)	Trunked or Conventional	8K4F1D/E
794-797, 803-806	2.88	0.4	OTP	Trunked	13K2F9W
764-767, 773-776	1.86	0.4	Analog FM (12.5 kHz channel spacing)	Talkaround	11K0F3E
794-797, 803-806	1.91	0.4	Analog FM (12.5 kHz channel spacing)	Trunked or Conventional	11K0F3E

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1 General Information

The following Class II Permissive Change report is prepared on behalf of **M/A-COM, Inc.** in accordance with the Federal Communications Commission and Industry Canada Rules and Regulations. The Equipment Under Test (EUT) was the **P7200 700/800 MHz Portable Radio; FCC ID: BV8P7200, IC: 3670A-P7200.** The test results reported in this document relate only to the item that was tested.

All measurements contained in this application were conducted in accordance with FCC Rules and Regulations CFR 47, Industry Canada RSS-119, and ANSI C63.4 Methods of Measurement of Radio Noise Emissions, 2003. The instrumentation utilized for the measurements conforms to the ANSI C63.4 standard for EMI and Field Strength Instrumentation. Calibration checks are performed regularly on the instruments, and all accessories including high pass filter, coaxial attenuator, preamplifier and cables.

1.1 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the parking lot of Rhein Tech Laboratories, Inc. 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report submitted to and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing.

1.2 Related Submittal(s)/Grant(s)

The reason for this Class II Permissive Change application is due to a revision change to the original radio (rev. GD being changed to rev. H). The hardware component changes are outlined in Appendix A. Unintentional digital radiated and AC conducted emissions are also contained in this report for reference.

Based on the changes, specific tests were performed in each of the bands of operation for the worst case modes of operation.

The original FCC grant and IC certificates were issued September 20, 2005, and September 19, 2005, respectively; a permissive change grant and a reassessment certificate were issued September 27, 2006.

2 Tested System Details

The test sample was received on August 13, 2007. Listed below are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable. The device was programmed for multiple modes of operation and modulation types.

Table 2-1: Equipment Under Test (EUT)

Part	Manufacturer	Model	Serial Number	FCC ID	Cable	RTL Bar Code
Radio	M/A-COM, Inc.	P7200 700/800 MHz Portable Radio	A40041006C40	BV8P7200	N/A	18085
Radio	M/A-COM, Inc.	P7200 700/800 MHz Portable Radio	A40041006C37	BV8P7200	N/A	18084
Battery	M/A-COM, Inc.	7.5V NiCd	BKB191210/5 R5A	N/A	N/A	14620
Antenna	M/A-COM, Inc.	Whip	KRE1011219/3	N/A	N/A	14622
Handset/ Microphone	M/A-COM, Inc.	OT-V2-10122 F1	N/A	N/A	0.55 m shielded I/O	18117
Charger	M/A-COM, Inc.	BML 161 78/20	R5A DE 0321	N/A	2.1 m unshielded AC Power	15386
Power Supply Adapter	M/A-COM, Inc.	BKB 191 212/5 R1A	N/A	N/A	1.1 m unshielded DC Power	18118
Programming Interface	M/A-COM, Inc.	TQ3370	SLR04421802	N/A	1 m unshielded I/O; 1 m shielded serial; 1.1 m unshielded DC power	18119

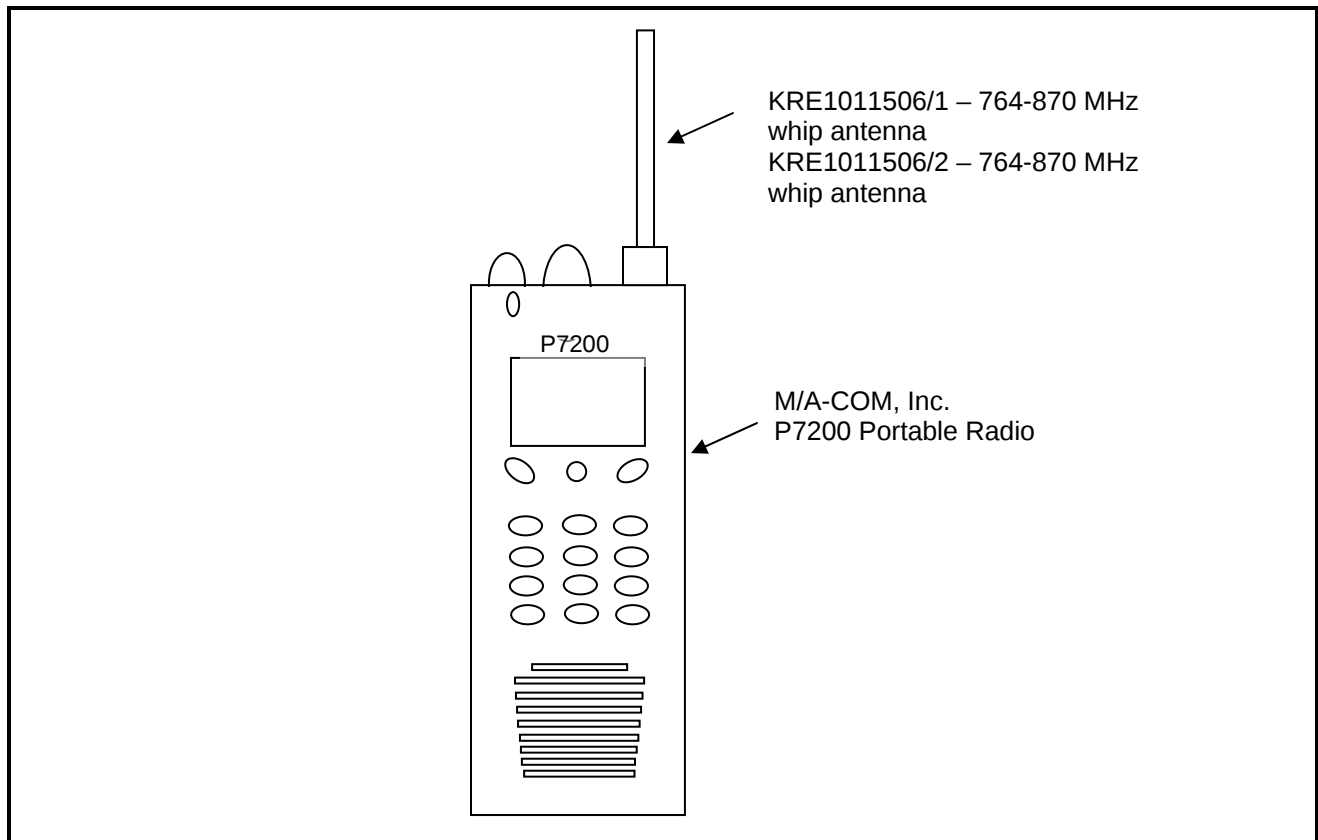


Figure 2-1: Configuration of Tested System

3 FCC Rules and Regulations Part 2 §2.1046(a): RF Power Output: Conducted; Part 90 §90.541(c): Transmitting Power Limits; RSS-119 §6.2: Output Power Test

3.1 Test Procedure

ANSI/TIA/EIA-603-2002, section 2.2.1

The EUT was connected to a coaxial attenuator having a 50 Ω load impedance.

3.2 Test Data

Table 3-1: RF Power Output: Carrier Output Power - Analog

Frequency (MHz)	Mode	High Power RF Power Measured (Watt)*
816.36250	Analog WB	3.2
861.36250	Analog WB	3.24
866.20000	Analog NP	3.19
821.20000	Analog NP	3.16
764.00625	Analog WB	2.74
794.00625	Analog WB	2.74
773.00625	Analog WB	2.73
803.00625	Analog WB	2.73
861.36250	P25 NB	3.24
816.36250	P25 NB	3.2
866.20000	P25 NB	3.19
821.20000	P25 NB	3.15
764.00625	P25 NB	2.74
794.00625	P25 NB	2.73
773.00625	P25 NB	2.72
803.00625	P25 NB	2.74
816.36250	Analog WB	3.2
861.36250	Analog WB	3.24
866.20000	Analog NP	3.19
821.20000	Analog NP	3.16
764.00625	Analog WB	2.74

* Measurement accuracy: +/- .02 dB (logarithmic mode)

Table 3-2: RF Power Output: Carrier Output Power - EDACS

Frequency (MHz)	Mode	High Power RF Power Measured (Watt)*
806.0125	EDACS WP	3.2
806.0125	EDACS NP	3.21
823.9875	EDACS WP	3.12
823.9875	EDACS NP	3.12
851.0125	EDACS WP	3.26
851.0125	EDACS NP	3.26
868.9875	EDACS WP	3.04
868.9875	EDACS NP	3.03

* Measurement accuracy: +/- .02 dB (logarithmic mode)

Table 3-3: RF Power Output: Carrier Output Power - OCF

Frequency (MHz)	Mode	High Power RF Power Measured (Watt)*
806.0125	Analog WB	3.2
806.0125	Analog NP	3.2
823.9875	Analog WB	3.12
823.9875	Analog NP	3.12
851.0125	Analog WB	3.26
851.0125	Analog NP	3.26
868.9875	Analog WB	3.04
868.9875	Analog NP	3.04
794.0125	Analog NB	2.75
805.9875	Analog NB	2.73
764.0125	Analog NB	2.74
775.9875	Analog NB	2.71

* Measurement accuracy: +/- .02 dB (logarithmic mode)

Table 3-4: RF Power Output: Carrier Output Power - OTP

Frequency (MHz)	Mode	High Power RF Power Measured (Watt)*
806.0125	OTP WB	3.2
806.0125	OTP NB	3.2
823.9875	OTP WB	3.12
823.9875	OTP NB	3.12
794.0125	OTP NP	2.74
805.9875	OTP NP	2.71

* Measurement accuracy: +/- .02 dB (logarithmic mode)

Table 3-5: RF Power Output: Carrier Output Power – P25

Frequency (MHz)	Mode	High Power RF Power Measured (Watt)*
806.0125	P25 NB	3.2
823.9875	P25 NB	3.12
794.0125	P25 NB	2.75
805.9875	P25 NB	2.72
851.0125	P25 NB	2.71
868.9875	P25 NB	3.03
764.0125	P25 NB	2.73
775.9875	P25 NB	2.71

* Measurement accuracy: +/- .02 dB (logarithmic mode)

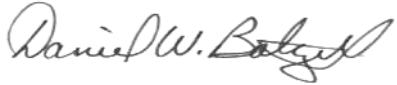
Table 3-6: RF Power Output (Rated Power)

Rated Power High Power (W)	Rated Power Low Power (W)
3.15 (800 MHz Band)	0.100 (800 MHz Band)
2.85 (700 MHz Band)	0.100 (700 MHz Band)

Table 3-7: RF Power Output – Conducted Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901356	Agilent Technologies	E9323A	Power Sensor	31764-264	10/3/07
901184	Agilent Technologies	E4416A	EPM-P Power Meter, single channel	GB41050573	10/3/07

Test Personnel:

Daniel Baltzell		September 5, 2007
Test Engineer	Signature	Date Of Test

4 FCC Rules and Regulations Part 2 §2.1051: Spurious Emissions at Antenna Terminals; Part 90 §90.543(b): Out of Band Emissions Limit; RSS-119 §6.3: Unwanted Emissions

4.1 Test Procedure

ANSI/TIA/EIA-603-2002, Section 2.2.13

The transmitter is terminated with a 50 Ω load and interfaced with a spectrum analyzer.

Device with digital modulation: Modulated to its maximum extent using a pseudo random data sequence – 19,200 bps for OTP and 9,600 bps for P25 and EDACS modes.

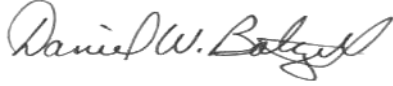
4.2 Test Data

No conducted spurious emissions were found within 20 dB of the limit; therefore, no data is reported in this report.

Table 4-1: Conducted Spurious Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901413	Agilent Technologies	E4448A	Spectrum Analyzer	US44020346	6/13/08
901139	Weinschel Corp.	48-20-34 DC-18GHz	Attenuator, 100W 20dB	BK5859	1/13/09

Test Personnel:

Daniel Baltzell		September 6, 2007
Test Engineer	Signature	Date Of Test

5 FCC Rules and Regulations Part 2 §2.1053(a): Field Strength of Spurious Radiation; Part 90 §90.543(b): Out of Band Emissions Limit; RSS-119 §6.3: Unwanted Emissions

5.1 Test Procedure

ANSI/TIA/EIA-603-2002, section 2.2.12

Analog Modulation: The transmitter is terminated with a 50 Ω load and is modulated with a 2,500 Hz sine wave at an input level 16 dB greater than that required to produce 50% of the rated system deviation at 1,000 Hz.

Device with digital modulation: Modulated to its maximum extent using a pseudo random data sequence – 19,200 bps for OTP and 9,600 bps for P25 and EDACS modes.

The spurious emissions levels were measured, and the device under test was replaced by a substitution antenna connected to a signal generator. The signal generator level was then corrected by subtracting the cable loss from the substitution antenna to the signal generator, and the gain of the antenna was further corrected to a half wave dipole.

5.2 Test Data

5.2.1 CFR 47 Part 90.210 Requirements

The worst case emissions test data are shown. The magnitude of emissions attenuated more than 20 dB below the FCC limit need not be recorded.

Table 5-1: Field Strength of Spurious Radiation – Analog Wideband– 851.0125 MHz

Conducted Power = 35.1 dBm = 3.26 W; Limit = 43 + 10 Log P = 48.1 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1702.0250	38.0	-42.1	5.7	5.4	77.5	-29.4
2553.0375	29.1	-53.3	7.3	7.2	88.5	-40.4
3404.0500	19.1	-64.7	8.7	7.5	101.0	-52.9
4255.0625	27.8	-49.2	9.5	7.9	85.9	-37.8
5106.0750	27.0	-49.1	10.7	8.3	86.6	-38.5
5957.0875	26.7	-51.0	11.4	8.8	88.7	-40.6
6808.1000	27.9	-50.5	12.4	9.3	88.7	-40.6
7659.1125	27.0	-50.6	12.6	8.8	89.5	-41.4
8510.1250	27.9	-43.9	12.6	8.8	82.8	-34.7

*This insertion loss corresponds to the cable connecting the RF Signal Generator to the ½ wave dipole antenna.

Table 5-2: Field Strength of Spurious Radiation – Analog Wideband – 794.00625 MHz

Conducted Power = 34.4 dBm = 2.74 W; Limit = 43 + 10 Log P = 47.4 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1588.0125	33.0	-45.9	5.7	5.2	81.5	-34.2
2382.0188	31.6	-52.0	6.6	6.9	86.8	-39.5
3176.0250	31.7	-51.2	8.5	7.5	87.3	-40.0
3970.0313	20.6	-43.4	9.3	7.4	80.4	-33.1
4764.0375	27.2	-51.7	10.3	8.4	88.7	-41.4
5558.0438	25.7	-51.7	10.9	8.3	89.4	-42.1
6352.0500	25.5	-51.4	11.7	9.1	89.1	-41.8
7146.0563	27.3	-51.0	12.7	9.2	89.6	-42.3
7940.0625	26.7	-51.6	13.3	8.9	91.1	-43.8

*This insertion loss corresponds to the cable connecting the RF Signal Generator to the ½ wave dipole antenna.

Table 5-3: Digital/Receiver Emissions

Temperature: 93°F Humidity: 38%										
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Turntable Azimuth (deg)	Antenna Height (m)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Pass/Fail
228.003	Qp	V	195	1.0	24.9	-17.0	7.9	46.0	-38.1	Pass
252.003	Qp	H	0	1.0	29.1	-14.8	14.3	46.0	-31.7	Pass
264.000	Qp	V	185	1.0	31.5	-13.7	17.8	46.0	-28.2	Pass
264.003	Qp	V	180	1.0	28.3	-13.7	14.6	46.0	-31.4	Pass
276.001	Qp	V	185	1.0	28.9	-14.2	14.7	46.0	-31.3	Pass
300.000	Qp	V	0	1.0	31.0	-13.5	17.5	46.0	-28.5	Pass
432.001	Qp	V	185	1.0	15.8	-9.4	6.4	46.0	-39.6	Pass

Table 5-4: Field Strength of Spurious Radiation Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901053	Schaffner-Chase	CBL6112	Antenna (25 MHz – 2 GHz)	2648	11/01/07
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	6/14/10
900321	EMCO	3161-03	Horn Antenna (4.0 - 8.2 GHz)	9508-1020	6/14/10
900323	EMCO	3160-07	Horn Antenna (8.2 - 12.4 GHz)	9605-1054	6/14/10
900932	Hewlett Packard	8449B OPT H02	Preamplifier (1 - 26.5 GHz)	3008A00505	N/A
901215	Hewlett Packard	8596EM	Spectrum Analyzer (9 kHz - 12.8GHz)	3826A00144	10/16/07
900928	Hewlett Packard	83752A	Synthesized Sweeper (0.01 - 20 GHz)	3610A00866	11/30/07
901424	Insulated Wire Inc.	KPS-1503-360-KPS	RF cable 36"	NA	12/5/07
901425	Insulated Wire, Inc.	KPS-1503-2400-KPS	RF cable, 20'	NA	12/5/07
901426	Insulated Wire Inc.	KPS-1503-3600-KPS	RF cable, 30'	NA	12/5/07
901281	Rhein Tech Labs	PR-1040	Amplifier (10 MHz - 2 GHz)	1004	1/19/08

Test Personnel:

Daniel Baltzell		September 7, 2007
Test Engineer	Signature	Date Of Test

6 AC Conducted Emissions - FCC Rules and Regulations Part 15 §15.207; RSS-Gen 7.2.2: Conducted Limits

6.1 Site and Test Description

The power line conducted emissions measurements were performed in a Series 81 type shielded enclosure manufactured by Rayproof. The EUT was assembled on a wooden table 80 centimeters high. Power was fed to the EUT through a 50 ohm/50 microhenry Line Impedance Stabilization Network (LISN). The EUT LISN was fed power through an A.C. filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. A second LISN, the peripheral LISN, provides isolation for the EUT test peripherals. This peripheral LISN was also fed A.C. power. A metal power outlet box, which is bonded to the ground plane and electrically connected to the peripheral LISN, powers the EUT host peripherals.

The spectrum analyzer was connected to the A.C. line through an isolation transformer. The 50 ohm output of the EUT LISN was connected to the spectrum analyzer input through a Solar 100 kHz high-pass filter. The filter is used to prevent overload of the spectrum analyzer from noise below 100 kHz. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable).

The analyzer's 6 dB bandwidth was set to 9 kHz. Video filter less than 10 times the resolution bandwidth is not used. Average measurements are performed in linear mode using a 10 kHz resolution bandwidth, a 1 Hz video bandwidth, and by increasing the sweep time in order to obtain a calibrated measurement. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded.

6.2 Test Limits

Class A Line-Conducted Emissions		
Limit (dBµV)		
Frequency (MHz)	Quasi-Peak	Average
0.15 to 0.50	79	66
0.50 to 30.0	73	60

Class B Line-Conducted Emissions		
Limit (dBµV)		
Frequency (MHz)	Quasi-Peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.00	56	46
5.00 to 30.00	60	50

6.3 Conducted Emissions Test Data

Table 6-1: Conducted Emissions Test Data – Mode TX, Neutral Side Line 1

Temperature: 74°F Humidity: 36%									
Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)	Pass/Fail
0.207	Pk	50.1	0.2	50.3	63.3	-13.0	53.3	-3.0	Pass
0.311	Pk	43.3	0.3	43.6	59.9	-16.3	49.9	-6.3	Pass
0.415	Pk	41.9	0.3	42.2	57.5	-15.3	47.5	-5.3	Pass
0.720	Pk	35.2	0.4	35.6	56.0	-20.4	46.0	-10.4	Pass
3.380	Pk	34.5	1.0	35.5	56.0	-20.5	46.0	-10.5	Pass
29.410	Pk	35.2	2.2	37.4	60.0	-22.6	50.0	-12.6	Pass

Table 6-2: Conducted Emissions Test Data – Mode TX, Hot Side Line 2

Temperature: 74°F Humidity: 36%									
Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)	Pass/Fail
0.207	Pk	49.5	0.2	49.7	63.3	-13.6	53.3	-3.6	Pass
0.312	Pk	42.8	0.3	43.1	59.9	-16.8	49.9	-6.8	Pass
0.414	Pk	44.3	0.3	44.6	57.6	-13.0	47.6	-3.0	Pass
0.720	Pk	36.0	0.4	36.4	56.0	-19.6	46.0	-9.6	Pass
3.230	Pk	37.3	1.0	38.3	56.0	-17.7	46.0	-7.7	Pass
29.560	Pk	33.8	2.3	36.1	60.0	-23.9	50.0	-13.9	Pass

Table 6-3: Conducted Emissions Test Data – Mode RX, Neutral Side Line 1

Temperature: 74°F Humidity: 36%									
Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)	Pass/Fail
0.208	Av	44.3	0.2	44.5	63.3	-18.8	53.3	-8.8	Pass
0.310	Pk	46.1	0.3	46.4	60.0	-13.6	50.0	-3.6	Pass
0.417	Pk	43.0	0.3	43.3	57.5	-14.2	47.5	-4.2	Pass
0.650	Pk	36.0	0.2	36.2	56.0	-19.8	46.0	-9.8	Pass
3.600	Pk	31.9	1.0	32.9	56.0	-23.1	46.0	-13.1	Pass
29.710	Pk	32.0	2.3	34.3	60.0	-25.7	50.0	-15.7	Pass

Table 6-4: Conducted Emissions Test Data – Mode RX, Hot Side Line 2

Temperature: 74°F Humidity: 36%									
Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)	Pass/Fail
0.207	Av	46.8	0.2	47.0	63.3	-16.3	53.3	-6.3	Pass
0.310	Pk	48.1	0.3	48.4	60.0	-11.6	50.0	-1.6	Pass
0.412	Pk	45.3	0.3	45.6	57.6	-12.0	47.6	-2.0	Pass
0.800	Pk	36.3	0.3	36.6	56.0	-19.4	46.0	-9.4	Pass
3.380	Pk	35.7	1.0	36.7	56.0	-19.3	46.0	-9.3	Pass
29.630	Pk	34.0	2.3	36.3	60.0	-23.7	50.0	-13.7	Pass

Table 6-5: Conducted Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901215	Hewlett Packard	8596EM	Spectrum Analyzer (9 kHz - 12.8 GHz)	3826A00144	10/16/07
901084	AFJ International	LS16	16A LISN	16010020082	3/28/08

Test Personnel:

Daniel Baltzell		September 7, 2007
Test Engineer	Signature	Date Of Test

7 FCC Rules and Regulations Part 2 §2.1049(c)(1): Occupied Bandwidth; Part 90 §90.543(d): Authorized Bandwidth; RSS-119 §6.4: Emissions Masks; Part 90 §90.543(a)

Occupied Bandwidth - Compliance with the emission masks

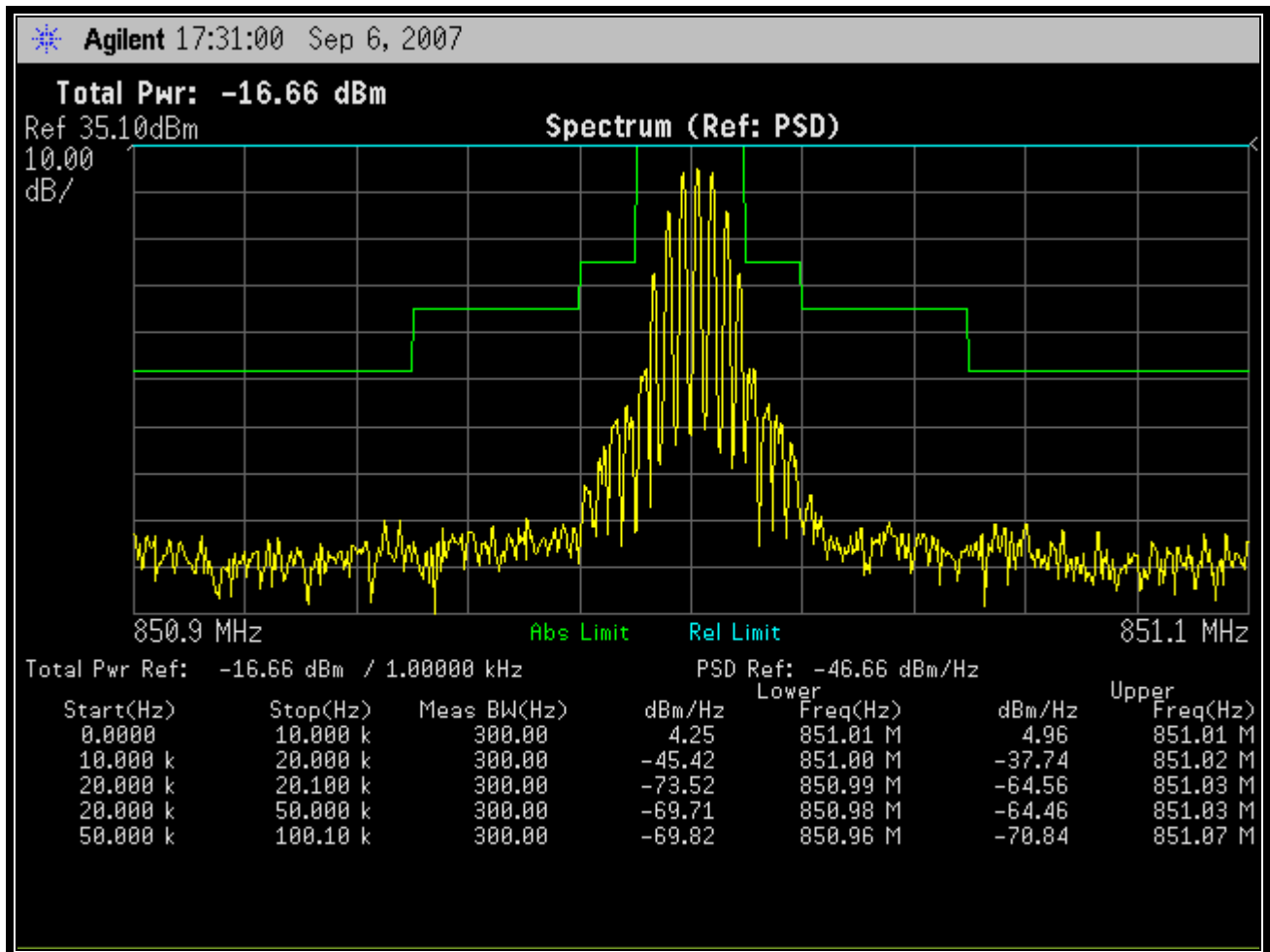
7.1 Test Procedure

ANSI/TIA/EIA-603-2002, section 2.2.11 and TIA/EIA-102.CAAA-2002 section 2.2.5

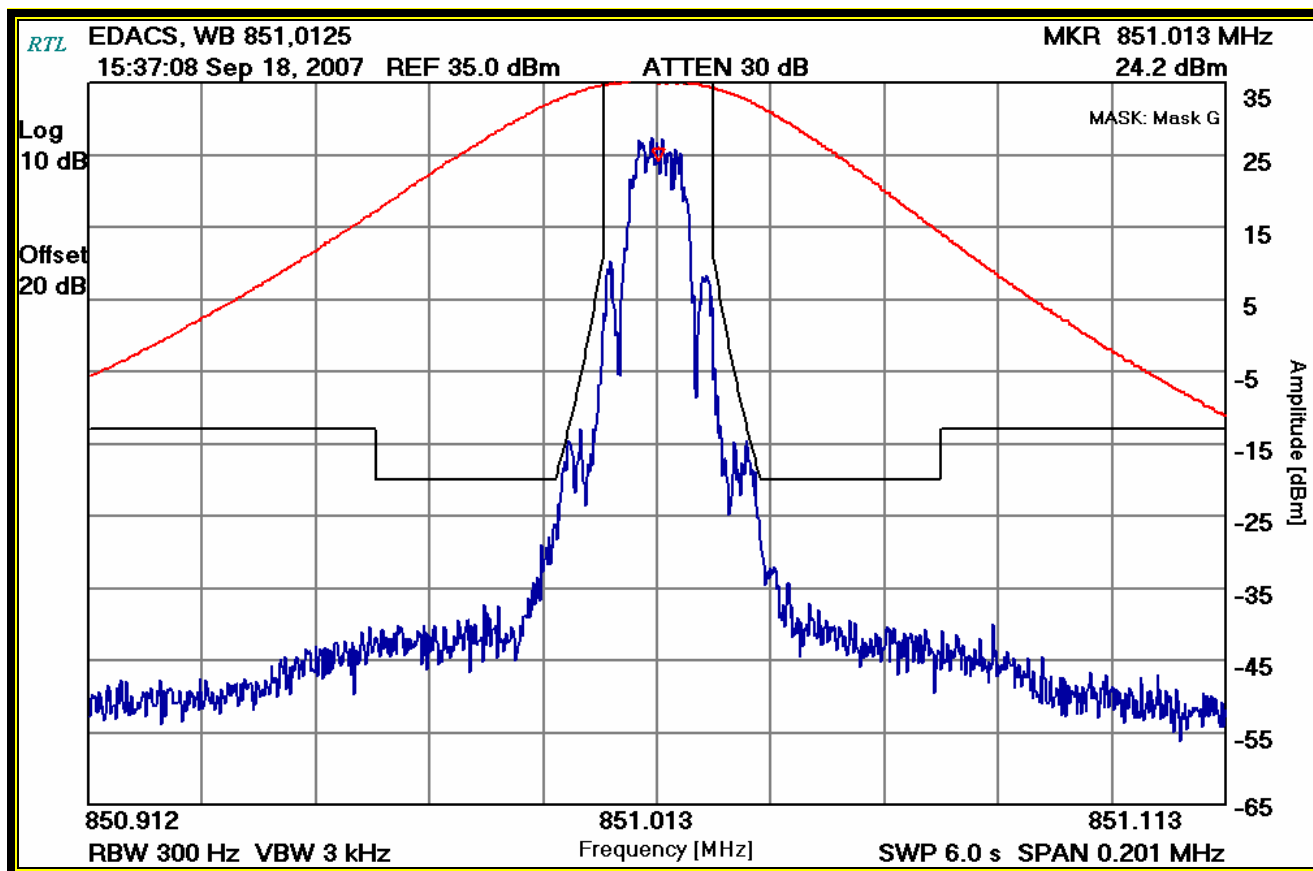
Device with digital modulation: Modulated to its maximum extent using a pseudo random data sequence – 19,200 bps for OTP mode, and 9600 bps for P25 and EDACS modes.

7.2 Test Data

Plot 7-1: Occupied Bandwidth – 851.0125 MHz; OCF; Wideband (Mask B); High Power



Plot 7-2: Occupied Bandwidth – 851.0125 MHz; EDACS; Wideband (Mask G); High Power



Plot 7-3: Occupied Bandwidth – 806.0125 MHz; OTP; Narrowband (Mask H); High Power

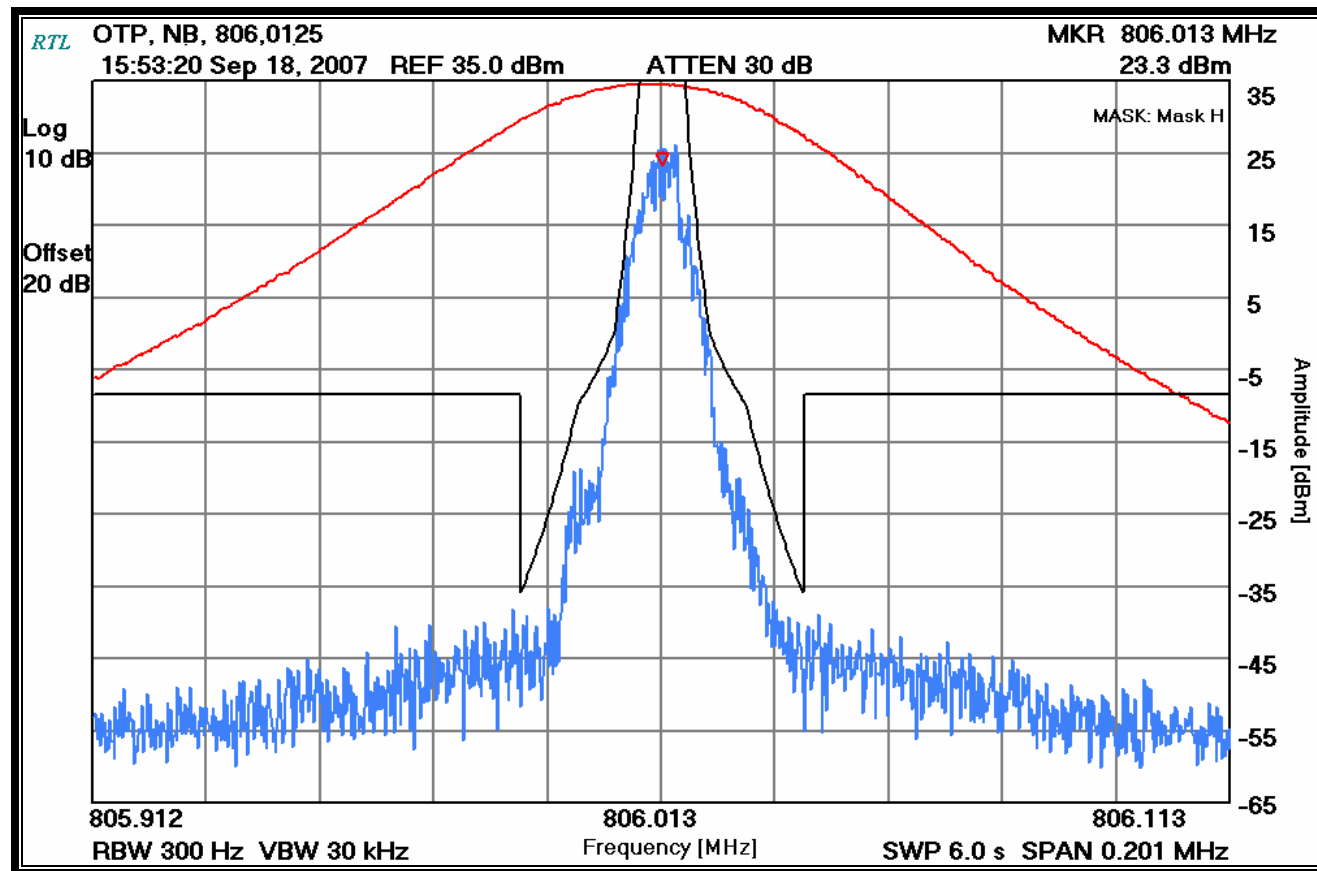


Table 7-1: Occupied Bandwidth Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901413	Agilent Technologies	E4448A	Spectrum Analyzer	US44020346	6/13/08
901139	Weinschel Corp.	48-20-34 DC-18GHz	Attenuator, 100 W 20 dB	BK5859	1/13/09
900931	Hewlett Packard	8566B	Spectrum Analyzer	3138A07771	5/22/08

Test Personnel:

Daniel Baltzell		September 6 and 18, 2007
Test Engineer	Signature	Dates Of Tests

8 FCC Rules and Regulations Part 90 §90.543(a): Emission Limitations: ACP Requirements

Transmitters designed to operate in the 764-776 MHz and 794-806 MHz frequency bands must meet the emission limitations of this section.

8.1 Test Procedure

Device with digital modulation: Modulated to its maximum extent using a pseudo random data sequence – 9,600 bps for P25 mode.

For mobile transmitter designed to operate with a 12.5 kHz channel bandwidth, the ACP shall be in accordance with the values in the following table:

Offset From Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACP (dBc)
(+/-)9.375	6.25	-40
(+/-)15.625	6.25	-60
(+/-)21.875	6.25	-60
(+/-)37.5	25	-65
(+/-)62.5	25	-65
(+/-)87.5	25	-65
(+/-)150	100	-65
(+/-)250	100	-65
(+/-)350	100	-65
>400 to 12 MHz	30(s)	-75
12 MHz to receive band	30(s)	-75
In receive band	30(s)	-100

FCC Rules and Regulations Part 90 §90.543(b)

Setting Reference Level - Part 90 §90.543(b)(1): Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth to the channel size. Set the frequency offset of the measurement to zero, and adjust the center frequency of the spectrum analyzer to give the power level in the measurement bandwidth. Record this power as the reference power level.

Non-swept power measurement: Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth and frequency offset from the assigned center frequency as shown in the tables in §90.543(a) above. Any value of resolution bandwidth may be used as long as it does not exceed 2 percent of the specified measurement bandwidth. Measure the power level in dBm. These measurements should be made at maximum power. Calculate ACP by subtracting the reference power level measured from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

Swept power measurement: Set a spectrum analyzer to 30 kHz resolution bandwidth, 1 MHz video bandwidth and average, sample, or RMS detection. Set the reference level of the spectrum analyzer to the RMS value of the transmitter power. Sweep above and below the carrier frequency to the limits defined in the tables. Calculate ACP by subtracting the reference power level from the measurements made in this step. The absolute value of the calculated ACP must be greater than or equal to the absolute value of the ACP given in the table for each condition above.

8.2 Test Data

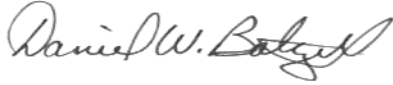
Table 8-1: P25 Mode

			794.0125 MHz	
Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Max ACP Low Offset (dBc)	Max ACP High Offset (dBc)
(+/-)9.375	6.25	-40	-42.3	-43.5
(+/-)15.625	6.25	-60	-71.1	-71.4
(+/-)21.875	6.25	-60	-73.6	-72.8
(+/-)37.5	25	-60	-70.4	-70.4
(+/-)62.5	25	-65	-73.7	-73.5
(+/-)87.5	25	-65	-77.3	-77.0
(+/-)150	100	-65	-74.6	-75.4
(+/-)250	100	-65	-80.3	-78.7
(+/-)350	100	-65	-81.4	-80.6
>400 to 12 MHz	30(s)	-75	-81.5	-80.8
12 MHz to RX band	30(s)	-75	-90.8	N/A
In RX band	30(s)	-100	-105.3	N/A

Table 8-2: ACP Requirements Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due
901413	Agilent Technologies	E4448A	Spectrum Analyzer	US44020346	6/13/08

Test Personnel:

Daniel Baltzell		September 19, 2007
Test Engineer	Signature	Date Of Test

9 Conclusion

The data in this measurement report shows that the **M/A-COM, Inc. Model P7200 700/800 MHz Portable Radio; FCC ID: BV8P7200, IC: 3670A-P7200**, complies with all the applicable requirements of Parts 90, 15 and 2 of the FCC Rules, and Industry Canada RSS-119.