Engineering and Testing for EMC and Safety Compliance

TYPE CERTIFICATION REPORT

M/A-COM, Inc.
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MODEL: M7200 Series Mobile Radio
700/800 MHz

FCC ID: BV8M7200
IC: 3670A-M7200

September 20, 2005

STANDARDS REFERENCED FOR THIS REPORT	
PART 2: 2003	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS
PART 15: 2003	RADIO FREQUENCY DEVICES - §15.109: RADIATED EMISSIONS LIMITS
PART 90: 2003	PRIVATE LAND MOBILE RADIO SERVICES
ANSI C63.4-2003	AMERICAN NATIONAL STANDARD FOR METHODS OF MEASUREMENT OF RADIO NOISE EMISSIONS FROM LOW –VOLTAGE ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE OF 9 KHZ – 40 GHZ
ANSI/TIA/EIA603 - 2002	LAND MOBILE FM OR PM COMMUNICATIONS EQUIPMENT – MEASUREMENT AND PERFORMANCE STANDARDS
ANSI/TIA/EIA –102.CAAA; 2002	DIGITAL C4FM/CQPSK TRANSCEIVER MEASUREMENT METHODS
RSS-119; Issue 6; 2000	LAND MOBILE AND FIXED RADIO TRANSMITTERS AND RECEIVERS 27.41 TO 960.0 MHZ
ICES-003: 1997	SPECTRUM MANAGEMENT; INTERFERENCE-CAUSING EQUIPMENT STANDARD – DIGITAL APPARATUS

REPORT PREPARED BY TEST ENGINEER: DANIEL BIGGS

Document Number: 2005131/QRTL05-217

360 Herndon Parkway
Suite 1400
Herndon, VA 20170
Phone: 703-689-0368 Fax: 703-689-2056

Frequency Range (MHz)	Measured Output Power (W) Conducted	Frequency Tolerance (ppm)	Modulation	Mode	Emission Designator
806-824	14.3	1.5	P25 (digitized data)	Trunked/Conventional	8K4F1D
806-824	14.6	1.5	P25 (digitized voice)	Trunked/Conventional	8K4F1E
851-869	14.4	1.5	P25 (digitized data)	T/A	8K4F1D
851-869	14.3	1.5	P25 (digitized voice)	T/A	8K4F1E
806-824	14.2	1.5	OTP	SMR/NPSPAC Trunked	12K1F9W
806-809	15.2	1.5	Analog FM (NPSPAC)	Trunked/Conventional	14K0F3E
806-821	15.1	1.5	Analog FM (SMR)	Trunked/Conventional	16K0F3E
821-824	15.4	1.5	Analog FM (SMR)	Trunked/Conventional	16K0F3E
821-824	15.2	1.5	Analog FM (NPSPAC)	Trunked/Conventional	14K0F3E
851-854	14.8	1.5	Analog FM (NPSPAC)	T/A	14K0F3E
851-869	14.4	1.5	Analog FM (SMR)	T/A	16K0F3E
866-869	14.3	1.5	Analog FM (NPSPAC)	T/A	14K0F3E
806-809	14.4	1.5	2-level (digitized data)	NPSPAC Trunked/Conventional	11K9F1D
806-809	14.4	1.5	2-level (digitized voice)	NPSPAC Trunked/Conventional	11K9F1E
806-809	14.3	1.5	2-level (digitized data)	SMR Trunked/Conventional	14K2F1D
806-809	14.3	1.5	2-level (digitized voice)	SMR Trunked/Conventional	14K2F1E
809-824	14.2	1.5	2-level (digitized data)	SMR Trunked/Conventional	14K2F1D
809-824	14.2	1.5	2-level (digitized voice)	SMR Trunked/Conventional	14K2F1E
821-824	14.2	1.5	2-level (digitized data)	NPSPAC Trunked/Conventional	11K9F1D
821-824	14.2	1.5	2-level (digitized voice)	NPSPAC Trunked/Conventional	11K9F1E
851-854	15.2	1.5	2-level (digitized data)	NPSPAC T/A	11K9F1D
851-854	15.2	1.5	2-level (digitized voice)	NPSPAC T/A	11K9F1E
851-854	15.1	1.5	2-level (digitized data)	SMR T/A	14K2F1D
851-854	15.1	1.5	2-level (digitized voice)	SMR T/A	14K2F1E
854-866	15.1	1.5	2-level (digitized data)	SMR T/A	14K2F1D
854-866	15.1	1.5	2-level (digitized voice)	SMR T/A	14K2F1E
866-869	15.2	1.5	2-level (digitized data)	SMR T/A	14K2F1D
866-869	15.2	1.5	2-level (digitized voice)	SMR T/A	14K2F1E
866-869	15.4	1.5	2-level (digitized data)	NPSPAC T/A	11K9F1D
866-869	15.4	1.5	2-level (digitized voice)	NPSPAC T/A	11K9F1E
Frequency Range (MHz)	**Measured Output Power (W) Conducted**	**Frequency Tolerance (ppb)**	**Modulation**	**Mode**	**Emission Designator**
764-767, 773-776, 794-797, 803-806	14.0	400	P25 (digitized data)	T/A, Trunked/Conventional	8K4F1D
764-767, 773-776, 794-797, 803-806	14.0	400	P25 (digitized voice)	T/A, Trunked/Conventional	8K4F1E
794-797, 803-806	14.0	400	OTP	Trunked	12K1F9W
764-767, 773-776, 794-797, 803-806	15.0	400	Analog FM (12.5kHz spaced)	T/A, Trunked/Conventional	11K0F3E

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1 GENERAL INFORMATION

The following Type Certification 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 **M7200 Series Mobile Radio; FCC ID: BV8M7200**. The test results reported in this document relate only to the item that was tested.

The radio has two models:

M7250	Trunk-Mount Full-Duplex Mobile Radio with CH-103 or CH-103PA Control Head
M7270	Trunk-Mount Full-Duplex Mobile Radio with CH-721 Control Head

The M7250 version of the product was tested. The difference in product types is the user control head only.

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 dated March 3, 1994, submitted to and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

1.2 Related Submittal(s)/Grant(s)

N/A

2 CONFORMANCE STATEMENT

STANDARDS REFERENCED FOR THIS REPORT	
PART 2: 2003	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS
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Frequency Range (MHz)	Measured Output Power (W) Conducted	Frequency Tolerance (ppm)	Modulation	Mode	Emission Designator
806-824	14.3	1.5	P25 (digitized data)	Trunked/Conventional	8K4F1D
806-824	14.6	1.5	P25 (digitized voice)	Trunked/Conventional	8K4F1E
851-869	14.4	1.5	P25 (digitized data)	T/A	8K4F1D
851-869	14.3	1.5	P25 (digitized voice)	T/A	8K4F1E
806-824	14.2	1.5	OTP	SMR/NPSPAC Trunked	12K1F9W
806-809	15.2	1.5	Analog FM (NPSPAC)	Trunked/Conventional	14K0F3E
806-821	15.1	1.5	Analog FM (SMR)	Trunked/Conventional	16K0F3E
821-824	15.4	1.5	Analog FM (SMR)	Trunked/Conventional	16K0F3E
821-824	15.2	1.5	Analog FM (NPSPAC)	Trunked/Conventional	14K0F3E
851-854	14.8	1.5	Analog FM (NPSPAC)	T/A	14K0F3E
851-869	14.4	1.5	Analog FM (SMR)	T/A	16K0F3E
866-869	14.3	1.5	Analog FM (NPSPAC)	T/A	14K0F3E
806-809	14.4	1.5	2-level (digitized data)	NPSPAC Trunked/Conventional	11K9F1D
806-809	14.4	1.5	2-level (digitized voice)	NPSPAC Trunked/Conventional	11K9F1E
806-809	14.3	1.5	2-level (digitized data)	SMR Trunked/Conventional	14K2F1D
806-809	14.3	1.5	2-level (digitized voice)	SMR Trunked/Conventional	14K2F1E
809-824	14.2	1.5	2-level (digitized data)	SMR Trunked/Conventional	14K2F1D
809-824	14.2	1.5	2-level (digitized voice)	SMR Trunked/Conventional	14K2F1E
821-824	14.2	1.5	2-level (digitized data)	NPSPAC Trunked/Conventional	11K9F1D
821-824	14.2	1.5	2-level (digitized voice)	NPSPAC Trunked/Conventional	11K9F1E
851-854	15.2	1.5	2-level (digitized data)	NPSPAC T/A	11K9F1D
851-854	15.2	1.5	2-level (digitized voice)	NPSPAC T/A	11K9F1E
851-854	15.1	1.5	2-level (digitized data)	SMR T/A	14K2F1D
851-854	15.1	1.5	2-level (digitized voice)	SMR T/A	14K2F1E
854-866	15.1	1.5	2-level (digitized data)	SMR T/A	14K2F1D

854-866	15.1	1.5	2-level (digitized voice)	SMR T/A	14K2F1E
866-869	15.2	1.5	2-level (digitized data)	SMR T/A	14K2F1D
866-869	15.2	1.5	2-level (digitized voice)	SMR T/A	14K2F1E
866-869	15.4	1.5	2-level (digitized data)	NPSPAC T/A	11K9F1D
866-869	15.4	1.5	2-level (digitized voice)	NPSPAC T/A	11K9F1E
Frequency Range (MHz)	**Measured Output Power (W) Conducted**	**Frequency Tolerance (ppb)**	**Modulation**	**Mode**	**Emission Designator**
764-767, 773-776, 794-797, 803-806	14.0	400	P25 (digitized data)	T/A, Trunked/Conventional	8K4F1D
764-767, 773-776, 794-797, 803-806	14.0	400	P25 (digitized voice)	T/A, Trunked/Conventional	8K4F1E
794-797, 803-806	14.0	400	OTP	Trunked	12K1F9W
764-767, 773-776, 794-797, 803-806	15.0	400	Analog FM (12.5kHz spaced)	T/A, Trunked/Conventional	11K0F3E

We, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this attached test record. No modifications were made to the equipment during testing in order to achieve compliance with these standards. The test results relate only to the item that was tested.

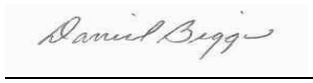
Furthermore, there was no deviation from, additions to or exclusions from the above standards for Certification methodology.

Signature: 

Date: September 20, 2005

Typed/Printed Name: Desmond A. Fraser

Position: President

Signature: 

Date: September 20, 2005

Typed/Printed Name: Daniel Biggs

Position: Test Engineer

3 TESTED SYSTEM DETAILS

The test sample was received on July 11, 2005. 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 3-1: EQUIPMENT UNDER TEST (EUT)

Part	Manufacturer	Model	PN/SN	FCC ID	RTL Bar Code
Radio	M/A Com, Inc.	M7200 Series	MAHROS0050/A40041001004	BV8M7200	16802
Radio	M/A Com, Inc.	M7200 Series	MAHROS0050/A40041001005	BV8M7200	16803
Power Supply	M/A Com, Inc.	SEC212	N/A	N/A	16804
Power Supply	M/A Com, Inc.	SEC212	N/A	N/A	16805
Control Head	M/A Com, Inc.	CH103	A4000A17036D	N/A	16808
Control Head	M/A Com, Inc.	CH103	A4000A16FF8A	N/A	16809
Microphone	OTTO	N/A	LS102824V10	N/A	16810
Speaker	M/A Com, Inc.	N/A	MC103334V1	N/A	16811
Antenna	MaxRad	(B)MUF7603	AN-025167-009	N/A	16812
Antenna	MaxRad	(B)Max7603S	AN-025167-005	N/A	16813
Antenna	MaxRad	MLPV700	AN-025167-0011	N/A	16814

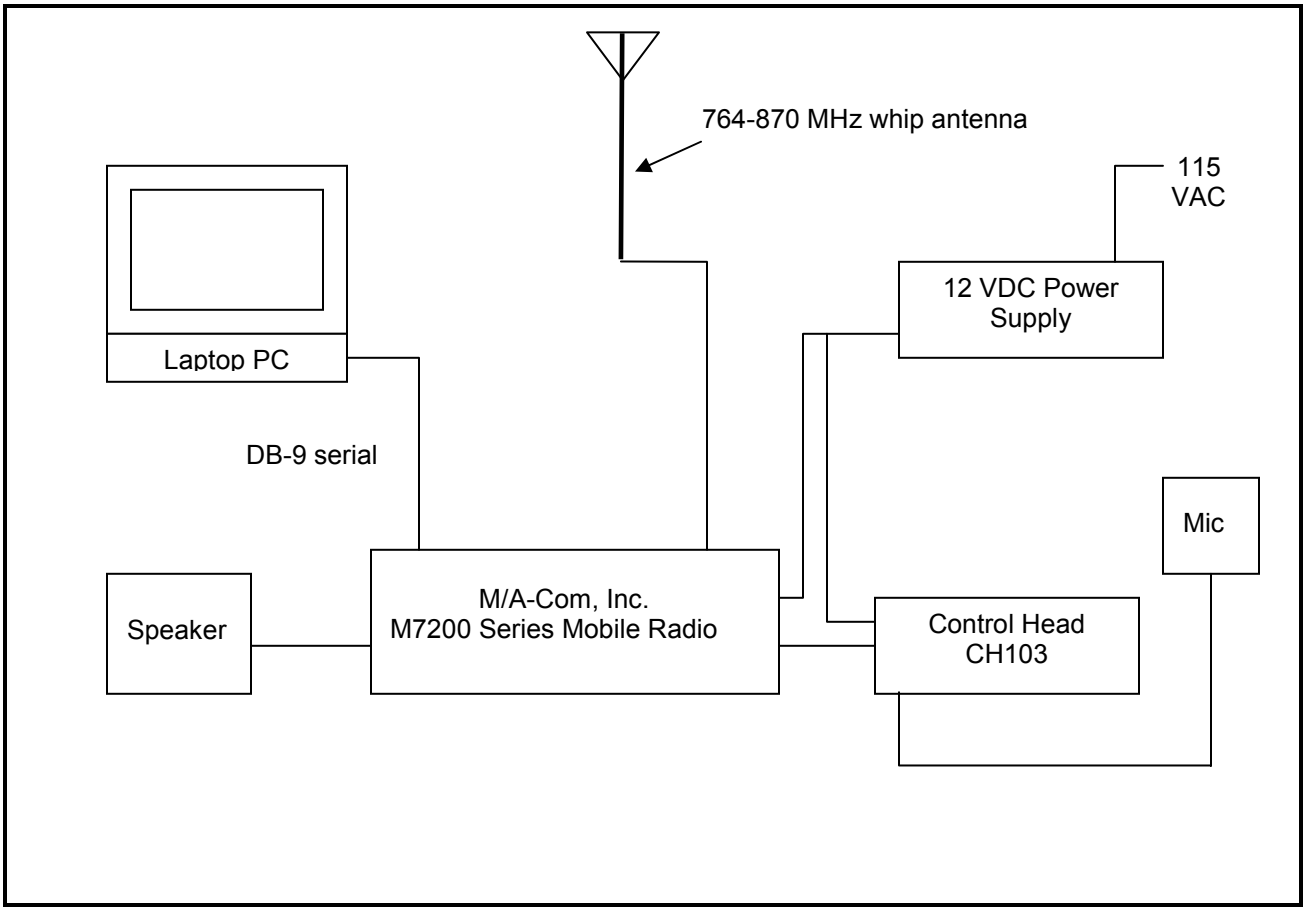


FIGURE 3-1: CONFIGURATION OF TESTED SYSTEM

4 FCC RULES AND REGULATIONS PART 2 §2.1033(C)(8) VOLTAGES AND CURRENTS THROUGH THE FINAL AMPLIFYING STAGE

Nominal DC Voltage: 13.8 VDC
Current: 6 AMPS TX

5 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

5.1 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.

Power is software controlled and is continuously variable from 1 W to 15 W.

5.2 Test Data

TABLE 5-1: RF POWER OUTPUT: CARRIER OUTPUT POWER 800 BAND

Frequency (MHz)	Band	Mode	High Power RF Power Measured (Watt)*	Low Power RF Power Measured (Watt)*
806.012500	SMR	OCF	14.29	1.02
806.012500	NPSPAC	OCF	14.32	1.02
823.987500	SMR	OCF	14.13	1.01
823.987500	NPSPAC	OCF	14.16	1.01
851.012500	SMR	OCF TA	14.55	0.99
851.012500	NPSPAC	OCF TA	14.55	0.99
868.987500	SMR	OCF TA	14.76	0.97
868.987500	NPSPAC	OCF TA	14.76	0.97
806.012500	SMR	OTP	14.39	1.00
806.012500	NPSPAC	OTP	14.39	1.00
823.987500	SMR	OTP	14.29	1.01
823.987500	NPSPAC	OTP	14.22	1.01
806.012500	SMR	EDACS	14.32	1.00
806.012500	NPSPAC	EDACS	14.39	1.00
823.987500	SMR	EDACS	14.22	1.00
823.987500	NPSPAC	EDACS	14.22	1.01
851.012500	SMR	EDACS	15.14	0.98
851.012500	NPSPAC	EDACS	15.17	0.99
868.987500	SMR	EDACS	15.21	0.95
868.987500	NPSPAC	EDACS	15.42	0.96
806.012500	SMR/NPS	P25	14.32	1.01
823.987500	SMR/NPS	P25	14.19	1.01
851.012500	SMR/NPS	P25 TA	14.55	1.00
868.987500	SMR/NPS	P25 TA	14.79	0.97

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

TABLE 5-2: RF POWER OUTPUT: CARRIER OUTPUT POWER 700 BAND

Frequency (MHz)	Band	Mode	High Power RF Power Measured (Watt)*	Low Power RF Power Measured (Watt)*
794.012500	700low	OTP	13.96	0.99
805.987500	700hi	OTP	13.96	1.00
794.012500	700low	P25	13.90	1.00
805.987500	700hi	P25	14.00	1.01
764.012500	700low	P25 TA	13.96	0.99
775.987500	700hi	P25 TA	13.93	1.00
764.012500	700low	OCF	14.93	0.99
775.987500	700hi	OCF	14.93	1.00
794.012500	700low	OCF	14.93	1.00
805.987500	700hi	OCF	15.03	1.01

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

TABLE 5-3: RF POWER OUTPUT (RATED POWER)

Rated Power (W) High Power	Rated Power (W) Low Power
15 (800 Band), 15 (700 Band)	1.0 (800 Band), 1.0 (700 Band)

TABLE 5-4: TEST EQUIPMENT USED FOR TESTING RF POWER OUTPUT - CONDUCTED

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901184/901186	Agilent	E4416A/E9323A	Power Meter/ Sensor	GB41050573/US420.52510380	09/02/06

TEST PERSONNEL:

Daniel Biggs		August 8 & August 16, 2005
Test Technician/Engineer	Signature	Dates Of Test

6 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

6.1 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.

6.2 Test Data

Frequency range of measurement per Part 2.1057: 9 kHz to 10 x Fc

Limits: (43+10xLOG P(W))

The following channels (in MHz) were investigated: 806.0125, 823.9875, 851.0125, 868.9875, 764.0125, 775.0125, 794.0125 and 805.0125. The worse case (unwanted emissions) channels are shown. The magnitude of emissions attenuated more than 20 dB below the FCC limit need not be recorded.

Both high and low power settings were checked; high power was reported as worst case.

TABLE 6-1: CONDUCTED SPURIOUS EMISSIONS – OCF – SMR - 806.0125 MHz

(806.0125 MHz); 25 kHz channel spacing; Conducted Power = 14.29 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1612.025	69.07	54.55	-14.52
2418.0375	97.15	54.55	-42.60
3224.05	98.45	54.55	-43.90
4030.0625	101.45	54.55	-46.90
4836.075	100.75	54.55	-46.20
5642.0875	100.55	54.55	-46.00
6448.1	94.25	54.55	-39.70
7254.1125	90.35	54.55	-35.80
8060.125	86.15	54.55	-31.60

TABLE 6-2: CONDUCTED SPURIOUS EMISSIONS – OCF – NPSPAC - 806.0125 MHz

(806.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 14.29 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1612.025	70.10	54.56	-15.54
2418.0375	96.66	54.56	-42.10
3224.05	100.36	54.56	-45.80
4030.0625	101.96	54.56	-47.40
4836.075	101.96	54.56	-47.40
5642.0875	99.26	54.56	-44.70
6448.1	92.96	54.56	-38.40
7254.1125	92.26	54.56	-37.70
8060.125	85.76	54.56	-31.20

TABLE 6-3: CONDUCTED SPURIOUS EMISSIONS – OCF – SMR - 823.9875 MHz

(823.9875 MHz); 25 kHz channel spacing; Conducted Power = 14.13 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1647.975	73.95	54.50	-19.45
2471.9625	97.76	54.50	-43.26
3295.95	99.60	54.50	-45.10
4119.9375	99.30	54.50	-44.80
4943.925	96.27	54.50	-41.77
5767.9125	97.87	54.50	-43.37
6591.9	90.30	54.50	-35.80
7415.8875	92.60	54.50	-38.10
8239.875	80.10	54.50	-25.60

TABLE 6-4: CONDUCTED SPURIOUS EMISSIONS – OCF – NPSPAC - 823.9875 MHz

(823.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 14.16 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1647.975	74.05	54.51	-19.54
2471.9625	99.17	54.51	-44.66
3295.95	101.61	54.51	-47.10
4119.9375	98.21	54.51	-43.70
4943.925	98.08	54.51	-43.57
5767.9125	98.18	54.51	-43.67
6591.9	90.61	54.51	-36.10
7415.8875	92.81	54.51	-38.30
8239.875	81.61	54.51	-27.10

TABLE 6-5: CONDUCTED SPURIOUS EMISSIONS – OCF – SMR - 851.0125 MHz

(851.0125 MHz); 25 kHz channel spacing; Conducted Power = 14.55 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1702.025	83.86	54.63	-29.23
2553.0375	95.96	54.63	-41.33
3404.05	99.26	54.63	-44.63
4255.0625	98.90	54.63	-44.27
5106.075	99.23	54.63	-44.60
5957.0875	66.56	54.63	-11.93
6808.1	92.73	54.63	-38.10
7659.1125	90.13	54.63	-35.50
8510.125	93.10	54.63	-38.47

TABLE 6-6: CONDUCTED SPURIOUS EMISSIONS – OCF – NPSPAC - 851.0125 MHz

(851.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 14.55 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1702.025	85.98	54.63	-31.35
2553.0375	94.26	54.63	-39.63
3404.05	100.16	54.63	-45.53
4255.0625	98.90	54.63	-44.27
5106.075	100.93	54.63	-46.30
5957.0875	65.96	54.63	-11.33
6808.1	93.73	54.63	-39.10
7659.1125	90.03	54.63	-35.40
8510.125	92.50	54.63	-37.87

TABLE 6-7: CONDUCTED SPURIOUS EMISSIONS – OCF – SMR - 868.9875 MHz

(868.9875 MHz); 25 kHz channel spacing; Conducted Power = 14.55 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1702.025	77.65	54.69	-22.96
2553.0375	93.69	54.69	-39.00
3404.05	98.66	54.69	-43.97
4255.0625	100.56	54.69	-45.87
5106.075	100.32	54.69	-45.63
5957.0875	88.81	54.69	-34.12
6808.1	93.36	54.69	-38.67
7659.1125	90.86	54.69	-36.17
8510.125	93.26	54.69	-38.57

TABLE 6-8: CONDUCTED SPURIOUS EMISSIONS – OCF – NPSPAC - 868.9875 MHz

(868.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 14.55 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1702.025	78.20	54.69	-23.51
2553.0375	94.49	54.69	-39.80
3404.05	97.36	54.69	-42.67
4255.0625	99.66	54.69	-44.97
5106.075	100.92	54.69	-46.23
5957.0875	89.19	54.69	-34.50
6808.1	92.36	54.69	-37.67
7659.1125	88.56	54.69	-33.87
8510.125	93.56	54.69	-38.87

TABLE 6-9: CONDUCTED SPURIOUS EMISSIONS – P25 TA - 764.0125 MHz

(764.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 13.96 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1528.025	64.75	54.45	-10.30
2292.0375	74.48	54.45	-20.03
3056.05	104.65	54.45	-50.20
3820.0625	84.25	54.45	-29.80
4584.075	99.05	54.45	-44.60
5348.0875	90.05	54.45	-35.60
6112.1	100.05	54.45	-45.60
6876.1125	94.05	54.45	-39.60
7640.125	95.25	54.45	-40.80

TABLE 6-10: CONDUCTED SPURIOUS EMISSIONS – P25 TA - 775.9875 MHz

(775.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 13.93 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1531.975	57.64	54.44	-3.20
2307.9625	94.84	54.44	-40.40
3083.95	99.24	54.44	-44.80
3859.9375	97.64	54.44	-43.20
4635.925	98.94	54.44	-44.50
5411.9125	90.94	54.44	-36.50
6187.9	100.14	54.44	-45.70
6963.8875	92.74	54.44	-38.30
7739.875	91.34	54.44	-36.90

TABLE 6-11: CONDUCTED SPURIOUS EMISSIONS – P25 - 794.0125 MHz

(794.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 13.9 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1588.025	59.60	54.43	-5.17
2382.0375	101.23	54.43	-46.80
3176.05	99.13	54.43	-44.70
3970.0625	99.53	54.43	-45.10
4764.075	95.63	54.43	-41.20
5558.0875	96.93	54.43	-42.50
6352.1	100.63	54.43	-46.20
7146.1125	91.33	54.43	-36.90
7940.125	88.23	54.43	-33.80

TABLE 6-12: CONDUCTED SPURIOUS EMISSIONS – P25 - 805.9875 MHz

(805.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 14.0 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1611.975	69.16	54.46	-14.70
2417.9625	96.89	54.46	-42.43
3223.95	102.46	54.46	-48.00
4029.9375	100.66	54.46	-46.20
4835.925	98.86	54.46	-44.40
5641.9125	98.86	54.46	-44.40
6447.9	90.86	54.46	-36.40
7253.8875	94.76	54.46	-40.30
8059.875	92.36	54.46	-37.90

TABLE 6-13: CONDUCTED SPURIOUS EMISSIONS – P25 – SMR/NPSPAC - 806.0125 MHz

(806.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 14.32 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1612.025	70.10	54.56	-15.54
2418.0375	97.66	54.56	-43.10
3224.05	100.36	54.56	-45.80
4030.0625	101.56	54.56	-47.00
4836.075	99.36	54.56	-44.80
5642.0875	99.36	54.56	-44.80
6448.1	95.16	54.56	-40.60
7254.1125	91.11	54.56	-36.55
8060.125	87.46	54.56	-32.90

TABLE 6-14: CONDUCTED SPURIOUS EMISSIONS – P25 – SMR/NPSPAC - 823.9875 MHz

(823.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 14.2 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1647.975	74.34	54.52	-19.82
2471.9625	96.98	54.52	-42.46
3295.95	99.62	54.52	-45.10
4119.9375	100.12	54.52	-45.60
4943.925	96.79	54.52	-42.27
5767.9125	99.59	54.52	-45.07
6591.9	89.72	54.52	-35.20
7415.8875	91.52	54.52	-37.00
8239.875	83.42	54.52	-28.90

TABLE 6-15: CONDUCTED SPURIOUS EMISSIONS – P25 – SMR/NPSPAC - 851.0125 MHz

(851.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 14.55 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1702.025	85.66	54.63	-31.03
2553.0375	94.66	54.63	-40.03
3404.05	100.56	54.63	-45.93
4255.0625	100.40	54.63	-45.77
5106.075	99.13	54.63	-44.50
5957.0875	65.26	54.63	-10.63
6808.1	93.63	54.63	-39.00
7659.1125	89.83	54.63	-35.20
8510.125	91.30	54.63	-36.67

TABLE 6-16: CONDUCTED SPURIOUS EMISSIONS – P25 – SMR/NPSPAC - 868.9875 MHz

(868.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 14.79 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1702.025	79.03	54.70	-24.33
2553.0375	93.70	54.70	-39.00
3404.05	97.57	54.70	-42.87
4255.0625	98.67	54.70	-43.97
5106.075	100.23	54.70	-45.53
5957.0875	89.70	54.70	-35.00
6808.1	93.87	54.70	-39.17
7659.1125	90.27	54.70	-35.57
8510.125	93.67	54.70	-38.97

TABLE 6-17: CONDUCTED SPURIOUS EMISSIONS – OTP – 794.0125 MHz

(794.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 13.96 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1588.025	59.65	54.45	-5.20
2382.0375	99.65	54.45	-45.20
3176.05	98.75	54.45	-44.30
3970.0625	100.15	54.45	-45.70
4764.075	94.65	54.45	-40.20
5558.0875	98.55	54.45	-44.10
6352.1	99.65	54.45	-45.20
7146.1125	93.65	54.45	-39.20
7940.125	88.75	54.45	-34.30

TABLE 6-18: CONDUCTED SPURIOUS EMISSIONS – OTP – 805.9875 MHz

(805.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 13.96 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1611.975	69.62	54.45	-15.17
2417.9625	98.15	54.45	-43.70
3223.95	98.65	54.45	-44.20
4029.9375	100.55	54.45	-46.10
4835.925	101.25	54.45	-46.80
5641.9125	95.65	54.45	-41.20
6447.9	93.65	54.45	-39.20
7253.8875	91.05	54.45	-36.60
8059.875	88.65	54.45	-34.20

TABLE 6-19: CONDUCTED SPURIOUS EMISSIONS – OTP – SMR - 806.0125 MHz

(806.0125 MHz); 25 kHz channel spacing; Conducted Power = 14.39 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1612.025	70.35	54.58	-15.77
2418.0375	98.58	54.58	-44.00
3224.05	100.78	54.58	-46.20
4030.0625	101.83	54.58	-47.25
4836.075	99.98	54.58	-45.40
5642.0875	100.93	54.58	-46.35
6448.1	93.78	54.58	-39.20
7254.1125	89.78	54.58	-35.20
8060.125	85.48	54.58	-30.90

TABLE 6-20: CONDUCTED SPURIOUS EMISSIONS – OTP – NPSPAC - 806.0125 MHz

(806.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 14.39 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1612.025	70.10	54.56	-15.54
2418.0375	97.66	54.56	-43.10
3224.05	100.36	54.56	-45.80
4030.0625	101.56	54.56	-47.00
4836.075	99.36	54.56	-44.80
5642.0875	99.36	54.56	-44.80
6448.1	95.16	54.56	-40.60
7254.1125	91.11	54.56	-36.55
8060.125	87.46	54.56	-32.90

TABLE 6-21: CONDUCTED SPURIOUS EMISSIONS – OTP – SMR - 823.9875 MHz

(823.9875 MHz); 25 kHz channel spacing; Conducted Power = 14.29 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1647.975	74.25	54.55	-19.70
2471.9625	97.61	54.55	-43.06
3295.95	101.45	54.55	-46.90
4119.9375	100.95	54.55	-46.40
4943.925	96.62	54.55	-42.07
5767.9125	99.52	54.55	-44.97
6591.9	90.05	54.55	-35.50
7415.8875	91.05	54.55	-36.50
8239.875	80.85	54.55	-26.30

TABLE 6-22: CONDUCTED SPURIOUS EMISSIONS – OTP – NPSPAC - 823.9875 MHz

(823.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 14.22 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1647.975	74.53	54.53	-20.00
2471.9625	97.09	54.53	-42.56
3295.95	99.33	54.53	-44.80
4119.9375	101.33	54.53	-46.80
4943.925	96.70	54.53	-42.17
5767.9125	98.20	54.53	-43.67
6591.9	89.53	54.53	-35.00
7415.8875	92.03	54.53	-37.50
8239.875	82.23	54.53	-27.70

TABLE 6-23: CONDUCTED SPURIOUS EMISSIONS – EDACS – SMR - 806.0125 MHz

(806.0125 MHz); 25 kHz channel spacing; Conducted Power = 14.32 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1612.025	69.49	54.56	-14.93
2418.0375	99.36	54.56	-44.80
3224.05	96.96	54.56	-42.40
4030.0625	101.66	54.56	-47.10
4836.075	100.56	54.56	-46.00
5642.0875	100.46	54.56	-45.90
6448.1	93.66	54.56	-39.10
7254.1125	91.26	54.56	-36.70
8060.125	87.66	54.56	-33.10

TABLE 6-24: CONDUCTED SPURIOUS EMISSIONS – EDACS – NPSPAC - 806.0125 MHz

(806.0125 MHz); 12.5 kHz channel spacing; Conducted Power = 14.39 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1612.025	69.85	54.58	-15.27
2418.0375	95.58	54.58	-41.00
3224.05	97.28	54.58	-42.70
4030.0625	100.98	54.58	-46.40
4836.075	100.58	54.58	-46.00
5642.0875	100.18	54.58	-45.60
6448.1	92.88	54.58	-38.30
7254.1125	89.98	54.58	-35.40
8060.125	84.78	54.58	-30.20

TABLE 6-25: CONDUCTED SPURIOUS EMISSIONS – EDACS – SMR - 823.9875 MHz

(823.9875 MHz); 25 kHz channel spacing; Conducted Power = 14.22 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1647.975	74.43	54.53	-19.90
2471.9625	97.59	54.53	-43.06
3295.95	101.13	54.53	-46.60
4119.9375	100.63	54.53	-46.10
4943.925	96.60	54.53	-42.07
5767.9125	99.80	54.53	-45.27
6591.9	89.93	54.53	-35.40
7415.8875	91.73	54.53	-37.20
8239.875	82.03	54.53	-27.50

TABLE 6-26: CONDUCTED SPURIOUS EMISSIONS – EDACS – NPSPAC - 823.9875 MHz

(823.9875 MHz); 12.5 kHz channel spacing; Conducted Power = 14.22 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin(dB)
1647.975	74.30	54.53	-19.77
2471.9625	97.39	54.53	-42.86
3295.95	100.13	54.53	-45.60
4119.9375	101.73	54.53	-47.20
4943.925	95.50	54.53	-40.97
5767.9125	98.80	54.53	-44.27
6591.9	90.93	54.53	-36.40
7415.8875	92.13	54.53	-37.60
8239.875	82.12	54.53	-27.59

TABLE 6-27: TEST EQUIPMENT USED FOR TESTING CONDUCTED SPURIOUS EMISSIONS

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901215	Hewlett Packard	8596EM	EMC Analyzer (9 kHz-12.8 GHz)	3826A00144	09/08/05
901057	Hewlett Packard	3336B	Synthesizer/Level Generator	2514A02585	09/08/05
901054	Hewlett Packard	HP 3586B	Selective Level Meter	1928A01892	09/08/05

TEST PERSONNEL:

Daniel Biggs		August 10, 2005
Test Technician/Engineer	Signature	Date Of Test

7 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

7.1 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. This 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.

7.2 Test Data

7.2.1 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.

Both high and low power settings were checked; high power was reported as worst case.

TABLE 7-1: FIELD STRENGTH OF SPURIOUS RADIATION – P25 MODE - 806.0125 MHz

Conducted Power = 41.56 dBm = 14.32 W - Limit = 43 + 10 Log P = 54.6 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1612.025	37.9	-35.1	1.3	4.9	73.2	-18.6
2418.038	54.0	-37.7	1.5	6.8	73.9	-19.4
3224.05	48.6	-44.1	1.7	7.5	79.9	-25.3
4030.063	45.0	-41.3	1.6	7.1	77.3	-22.8
4836.075	35.3	-52.6	2.0	7.8	88.3	-33.8
5642.088	34.2	-53.2	2.0	8.3	88.4	-33.9
6448.1	39.6	-48.9	2.2	8.8	83.8	-29.3
7254.113	39.2	-48.8	3.0	8.3	85.0	-30.5
8060.125	38.9	-47.6	2.3	7.3	84.2	-29.6

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

TABLE 7-2: FIELD STRENGTH OF SPURIOUS RADIATION – P25 MODE - 823.9875 MHz

Conducted Power = 41.52 dBm = 14.2 W - Limit = 43 + 10 Log P = 54.5 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1647.975	36.8	-36.4	1.0	5.0	73.8	-19.3
2471.963	54.3	-36.8	1.3	6.8	72.8	-18.3
3295.95	50.3	-42.6	1.6	7.5	78.2	-23.7
4119.938	45.6	-41.8	1.5	7.3	77.5	-23.0
4943.925	35.2	-52.2	1.5	7.7	87.4	-32.9
5767.913	33.6	-54.0	2.0	8.5	89.0	-34.4
6591.9	41.0	-46.4	2.2	8.7	81.3	-26.8
7415.888	39.0	-48.7	2.4	8.8	83.8	-29.3
8239.875	39.3	-44.0	2.8	7.7	80.6	-26.1

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

TABLE 7-3: FIELD STRENGTH OF SPURIOUS RADIATION - P25 MODE – 851.0125 MHz

Conducted Power = 41.43 dBm = 13.9 W - Limit = 43 + 10 Log P = 54.4 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1702.025	39.1	-33.4	1.2	5.0	71.0	-16.6
2553.038	55.3	-35.2	1.4	7.0	71.0	-16.6
3404.05	49.3	-43.2	1.5	7.6	78.5	-24.1
4255.063	39.9	-48.6	1.7	7.6	84.0	-29.6
5106.075	37.1	-49.6	1.8	7.7	85.2	-30.7
5957.088	40.9	-46.1	2.4	8.5	81.4	-27.0
6808.1	39.4	-48.3	2.3	8.5	83.5	-29.0
7659.113	41.5	-46.2	2.5	8.3	81.8	-27.4
8510.125	39.4	-42.6	2.8	8.4	78.5	-24.0

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

TABLE 7-4: FIELD STRENGTH OF SPURIOUS RADIATION – P25 MODE – 868.9875 MHz

Conducted Power = 41.46 dBm = 14.0 W - Limit = 43 + 10 Log P = 54.5 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1737.975	38.0	-32.1	1.2	5.1	69.7	-15.2
2606.963	55.3	-35.2	1.7	7.1	71.3	-16.8
3475.95	50.3	-42.3	1.8	7.6	78.0	-23.5
4344.938	44.9	-43.7	1.5	7.9	78.7	-24.3
5213.925	39.3	-47.3	1.8	7.9	82.6	-28.2
6082.913	37.2	-49.8	2.2	8.7	84.7	-30.3
6951.9	39.7	-48.2	2.2	8.2	83.6	-29.2
7820.888	41.0	-45.9	2.3	7.6	82.0	-27.6
8689.875	38.4	-44.3	2.2	8.4	79.5	-25.0

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

TABLE 7-5: FIELD STRENGTH OF SPURIOUS RADIATION – P25 MODE – 794.0125 MHz

Conducted Power = 41.63 dBm = 14.55 W - Limit = 43 + 10 Log P = 54.6 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1588.025	39.2	-33.0	1.2	4.9	70.9	-16.2
2382.038	59.6	-32.4	1.3	6.5	68.8	-14.2
3176.05	53.6	-39.0	1.5	7.4	74.7	-20.1
3970.063	48.3	-43.2	1.5	7.2	79.1	-24.5
4764.075	36.7	-51.3	1.8	7.8	86.9	-32.3
5558.088	43.6	-43.7	2.1	8.2	79.2	-24.6
6352.1	32.7	-56.0	2.2	8.7	91.1	-36.5
7146.113	41.8	-45.6	2.2	8.2	81.2	-26.5
7940.125	39.5	-47.7	2.2	7.6	83.9	-29.2

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

TABLE 7-6: FIELD STRENGTH OF SPURIOUS RADIATION – P25 MODE – 805.9875 MHz

Conducted Power = 41.7 dBm = 14.79 W - Limit = 43 + 10 Log P = 54.7 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1611.975	40.3	-33.1	1.3	4.9	71.2	-16.5
2417.963	56.8	-34.9	1.5	6.8	71.3	-16.6
3223.95	49.7	-43.0	1.7	7.5	78.9	-24.2
4029.938	46.3	-40.0	1.7	7.1	76.3	-21.6
4835.925	33.4	-54.6	2.0	7.8	90.4	-35.7
5641.913	42.8	-44.6	2.0	8.3	79.9	-25.2
6447.9	34.5	-54.0	2.2	8.8	89.1	-34.4
7253.888	38.4	-49.5	2.8	8.3	85.7	-31.0
8059.875	39.6	-47.2	2.3	7.3	83.9	-29.2

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

TABLE 7-7: FIELD STRENGTH OF SPURIOUS RADIATION – P25 MODE – 764.0125 MHz

Conducted Power = 41.45 dBm = 13.96 W - Limit = 43 + 10 Log P = 54.5 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1528.025	42.6	-28.9	1.2	4.9	66.6	-12.1
2292.038	60.3	-32.5	1.2	6.8	68.2	-13.8
3056.05	56.5	-35.5	1.1	7.4	71.2	-16.7
3820.063	49.6	-41.7	1.7	7.0	77.6	-23.2
4584.075	37.9	-49.9	1.5	7.2	86.0	-31.6
5348.088	41.2	-46.5	1.9	8.3	81.7	-27.3
6112.1	32.3	-54.6	2.1	8.8	89.1	-34.6
6876.113	38	-50.1	1.9	8.3	85.4	-31.0
7640.125	39.4	-48.6	2.2	7.3	85.2	-30.7

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

TABLE 7-8: FIELD STRENGTH OF SPURIOUS RADIATION – P25 MODE – 775.9875 MHz

Conducted Power = 41.44 dBm = 13.93 W - Limit = 43 + 10 Log P = 54.4 dBc

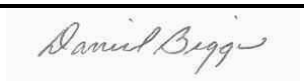
Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss* (dB)	Antenna Gain (dBd)	Corrected Signal Generator Level (dBc)	Margin (dB)
1551.975	37.5	-34.8	1.2	4.9	72.5	-18.0
2327.963	61.2	-31.5	1.2	6.5	67.6	-13.2
3103.95	58.6	-33.5	1.3	7.4	68.8	-14.4
3879.938	46.5	-44.8	1.7	7.2	80.7	-26.2
4655.925	38.7	-49.3	2.0	7.8	84.9	-30.5
5431.913	39.2	-48.0	1.8	8.3	82.9	-28.5
6207.9	33.8	-53.6	2.3	8.8	88.5	-34.1
6983.888	38.4	-49.5	2.2	8.6	84.5	-30.1
7759.875	39.6	-47.7	2.3	7.3	84.1	-29.7

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

TABLE 7-9: TEST EQUIPMENT USED FOR TESTING FIELD STRENGTH OF SPURIOUS RADIATION

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
901053	Schaffner-Chase	CBL6112	Antenna (25 MHz – 2 GHz)	2648	09/20/05
900932	Hewlett Packard	8449B OPT H02	Preamplifier (1 - 26.5 GHz)	3008A00505	N/A
901215	Hewlett Packard	8596EM	Portable Spectrum Analyzer (9 kHz – 12.8 GHz)	3826A00144	09/8/06
900928	Hewlett Packard	HP 83752A	Synthesized Sweeper (.01 - 20 GHz)	3610A00866	09/05/06

TEST PERSONNEL:

Daniel Biggs		September 13, 2005
Test Technician/Engineer	Signature	Date Of Test

8 FCC RULES AND REGULATIONS PART 90 §90.543(A): EMISSION LIMITATIONS: ACCP 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 – 19,200 bps for OTP and 9,600 bps for P25 and EDACS modes.

For a mobile transmitter designed to operate with a 25 kHz channel bandwidth, the ACCP shall be in accordance with the values in the following table:

Offset from Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACCP (dBc)
(+/-)15.625	6.25	-40
(+/-)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

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

Offset from Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACCP (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 ACCP measurements, set the measurement bandwidth to the channel size, 25 kHz. 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.

Measuring the power level at the frequency offset <600 kHz - Part 90 §90.543(b)(2): Using a spectrum analyzer capable of ACCP measurements, set the measurement bandwidth as shown in table. Measure ACCP in dBm. These measurements were made at maximum power. Calculate the coupled power by subtracting the measurements made in this step from the reference power level. The absolute ACCP values must be less than the values given in the table for each condition.

Measuring the power level at the frequency offset >600 kHz - Part 90 §90.543(b)(3): Set the spectrum analyzer to 30 kHz resolution bandwidth, 1 MHz video bandwidth and sample detection mode. Sweep +/-6 MHz from the carrier frequency. Set the reference level to the RMS value of the transmitter power and note the power. The response at frequencies >600 kHz must be less than the values listed in the table.

8.2 Test Data

TABLE 8-1: P25 TA MODE – 764.0125 MHz - HIGH POWER – 12.5 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)9.375	6.25	-40	-42.94	-45.34
(+/-)15.625	6.25	-60	-73.05	-72.26
(+/-)21.875	6.25	-60	-75.87	-73.30
(+/-)37.5	25	-65	-67.99	-69.02
(+/-)62.5	25	-65	-67.44	-67.22
(+/-)87.5	25	-65	-69.26	-69.18
(+/-)150	100	-65	-66.52	-66.95
(+/-)250	100	-65	-69.39	-71.25
(+/-)350	100	-65	-74.03	-74.24

TABLE 8-2: P25 MODE – 794.0125 MHz - HIGH POWER – 12.5 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)9.375	6.25	-40	-41.41	-44.39
(+/-)15.625	6.25	-60	-73.72	-73.12
(+/-)21.875	6.25	-60	-73.71	-73.08
(+/-)37.5	25	-65	-68.4	-69.36
(+/-)62.5	25	-65	-68.36	-68.96
(+/-)87.5	25	-65	-70.35	-69.89
(+/-)150	100	-65	-67.9	-68.25
(+/-)250	100	-65	-71.35	-70.38
(+/-)350	100	-65	-71.01	-70.19

			764.0125 MHz	775.9875 MHz
Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP (dBc)	Max ACCP (dBc)
>400 to 12 MHz	30(s)	-75	-80.2	-81.2
12 MHz to receive band	30(s)	-75	-81.5	-80.6
In receive band	30(s)	-100	-112.4	-111.5

TABLE 8-3: P25 – 805.9875 MHz - HIGH POWER – 12.5 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)9.375	6.25	-40	-40.89	-42.15
(+/-)15.625	6.25	-60	-73.58	-73.71
(+/-)21.875	6.25	-60	-74.73	-74.34
(+/-)37.5	25	-65	-69.78	-69.27
(+/-)62.5	25	-65	-70.10	-69.60
(+/-)87.5	25	-65	-65.57	-65.36
(+/-)150	100	-65	-67.59	-67.38
(+/-)250	100	-65	-68.62	-69.07
(+/-)350	100	-65	-72.69	-72.69

			805.9875 MHz
Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP (dBc)
>400 to 12 MHz	30(s)	-75	-111.1
12 MHz to receive band	30(s)	-75	-106.1
In receive band	30(s)	-100	112.93

TABLE 8-4: OTP MODE – 794.0125 MHz - HIGH POWER – 25 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)15.625	6.25	-40	-51.52	-50.28
(+/-)21.875	6.25	-60	-72.30	-71.77
(+/-)37.5	25	-65	-69.12	-69.85
(+/-)62.5	25	-65	-70.26	-70.17
(+/-)87.5	25	-65	-69.49	-69.30
(+/-)150	100	-65	-68.79	-68.86
(+/-)250	100	-65	-67.92	-68.92
(+/-)350	100	-65	-71.47	-70.72

TABLE 8-5: OTP MODE – 805.9875 MHz - HIGH POWER – 25 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)15.625	6.25	-40	-50.89	-53.41
(+/-)21.875	6.25	-60	-73.09	-72.41
(+/-)37.5	25	-65	-69.28	-68.50
(+/-)62.5	25	-65	-69.07	-70.06
(+/-)87.5	25	-65	-69.92	-70.59
(+/-)150	100	-65	-67.36	-66.50
(+/-)250	100	-65	-68.92	-69.57
(+/-)350	100	-65	-72.78	-72.99

			805.9875 MHz	794.0125 MHz
Offset from Center Freq. (kHz)	**Measurement BW (kHz)**	**Max ACCP (dBc)**	**Max ACCP (dBc)**	**Max ACCP (dBc)**
>400 to 12 MHz	30(s)	-75	-108.6	-107.6
12 MHz to receive band	30(s)	-75	-106.8	-109.1
In receive band	30(s)	-100	-111.6	-113.27

TABLE 8-6: OCF TA MODE – 764.0125 MHz - HIGH POWER – 25 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)15.625	6.25	-40	-50.69	-50.52
(+/-)21.875	6.25	-60	-61.35	-62.35
(+/-)37.5	25	-65	-67.18	-67.19
(+/-)62.5	25	-65	-67.77	-67.72
(+/-)87.5	25	-65	-67.50	-68.61
(+/-)150	100	-65	-65.29	-65.06
(+/-)250	100	-65	-66.61	-66.62
(+/-)350	100	-65	-66.10	-66.37

TABLE 8-7: OCF TA MODE – 775.9875 MHz - HIGH POWER– 25 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)15.625	6.25	-40	-49.94	-51.65
(+/-)21.875	6.25	-60	-60.68	-61.37
(+/-)37.5	25	-65	-67.69	-66.98
(+/-)62.5	25	-65	-68.14	-68.09
(+/-)87.5	25	-65	-67.17	-67.80
(+/-)150	100	-65	-65.47	-64.91
(+/-)250	100	-65	-66.97	-67.51
(+/-)350	100	-65	-67.51	-67.10

			764.0125 MHz	775.9875 MHz
Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP (dBc)	Max ACCP (dBc)
>400 to 12 MHz	30(s)	-75	-108.6	-106.6
12 MHz to receive band	30(s)	-75	-107.6	-108.3
In receive band	30(s)	-100	-112.1	-112.7

TABLE 8-8: OCF MODE – 794.0125 MHz - HIGH POWER– 25 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)15.625	6.25	-40	-47.08	-47.61
(+/-)21.875	6.25	-60	-58.64	-58.10
(+/-)37.5	25	-65	-67.69	-67.86
(+/-)62.5	25	-65	-67.32	-67.69
(+/-)87.5	25	-65	-68.06	-68.39
(+/-)150	100	-65	-64.88	-65.36
(+/-)250	100	-65	-67.41	-66.46
(+/-)350	100	-65	-67.57	-67.27

TABLE 8-9: OCF MODE – 805.9875 MHz - HIGH POWER– 25 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)15.625	6.25	-40	-44.90	-46.10
(+/-)21.875	6.25	-60	-66.24	-66.33
(+/-)37.5	25	-65	-67.82	-67.61
(+/-)62.5	25	-65	-68.76	-67.89
(+/-)87.5	25	-65	-68.45	-68.04
(+/-)150	100	-65	-65.74	-65.42
(+/-)250	100	-65	-66.73	-66.33
(+/-)350	100	-65	-65.97	-66.38

			805.9875 MHz	794.0125 MHz
Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP (dBc)	Max ACCP (dBc)
>400 to 12 MHz	30(s)	-75	-107.2	-105.9
12 MHz to receive band	30(s)	-75	-107.9	-107.5
In receive band	30(s)	-100	-112.9	-113.5

TABLE 8-10: OCF TA MODE – 764.0125 MHz - HIGH POWER – 12.5 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)9.375	6.25	-40	-40.90	-40.93
(+/-)15.625	6.25	-60	-74.08	-74.10
(+/-)21.875	6.25	-60	-72.40	-72.73
(+/-)37.5	25	-65	-67.87	-67.63
(+/-)62.5	25	-65	-68.24	-68.20
(+/-)87.5	25	-65	-67.63	-68.45
(+/-)150	100	-65	-65.58	-65.32
(+/-)250	100	-65	-71.83	-71.91
(+/-)350	100	-65	75.28	-75.04

TABLE 8-11: OCF TA MODE – 775.9875 MHz - HIGH POWER– 12.5 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)9.375	6.25	-40	-40.65	-40.85
(+/-)15.625	6.25	-60	-74.49	-74.90
(+/-)21.875	6.25	-60	-77.48	-75.76
(+/-)37.5	25	-65	-71.45	-71.47
(+/-)62.5	25	-65	-71.87	-73.11
(+/-)87.5	25	-65	-71.71	-72.36
(+/-)150	100	-65	-68.63	-68.74
(+/-)250	100	-65	-71.52	-72.31
(+/-)350	100	-65	-75.26	-74.53

			764.0125 MHz	775.9875 MHz
Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP (dBc)	Max ACCP (dBc)
>400 to 12 MHz	30(s)	-75	-105.3	-106.3
12 MHz to receive band	30(s)	-75	-106.8	-107.1
In receive band	30(s)	-100	-111.8	-112.3

TABLE 8-12: OCF MODE – 794.0125 MHz - HIGH POWER– 12.5 kHz CHANNEL SPACING

Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)9.375	6.25	-40	-40.88	-40.84
(+/-)15.625	6.25	-60	-72.76	-74.51
(+/-)21.875	6.25	-60	-75.91	-75.40
(+/-)37.5	25	-65	-70.87	-70.95
(+/-)62.5	25	-65	-71.76	-70.46
(+/-)87.5	25	-65	-71.39	-71.07
(+/-)150	100	-65	-69.69	-68.20
(+/-)250	100	-65	-72.76	-72.30
(+/-)350	100	-65	-74.97	-75.70

TABLE 8-13: OCF MODE – 805.9875 MHz - HIGH POWER– 12.5 kHz CHANNEL SPACING

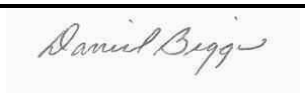
Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP Low Offset (dBc)	Max ACCP High Offset (dBc)
(+/-)9.375	6.25	-40	-40.88	-40.74
(+/-)15.625	6.25	-60	-72.76	-74.21
(+/-)21.875	6.25	-60	-75.91	-76.98
(+/-)37.5	25	-65	-70.87	-71.51
(+/-)62.5	25	-65	-71.76	-70.78
(+/-)87.5	25	-65	-71.39	-71.60
(+/-)150	100	-65	-69.69	-69.68
(+/-)250	100	-65	-72.76	-68.87
(+/-)350	100	-65	-74.97	-77.80

			805.9875 MHz	794.0125 MHz
Offset from Center Freq. (kHz)	Measurement BW (kHz)	Max ACCP (dBc)	Max ACCP (dBc)	Max ACCP (dBc)
>400 to 12 MHz	30(s)	-75	-106.1	-105.9
12 MHz to receive band	30(s)	-75	-107.2	-106.8
In receive band	30(s)	-100	-110.1	-111.4

TABLE 8-14: TEST EQUIPMENT USED FOR TESTING ACCP REQUIREMENTS

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due
901020	Hewlett Packard	8564E	Portable Spectrum Analyzer (9 kHz - 40 GHz)	3943A01719	09/14/06
00067	Hewlett Packard	8564E	Portable Spectrum Analyzer (9 kHz - 40 GHz)	3643A00657	07/16/06

TEST PERSONNEL:

Daniel Biggs		August 10 & September 16, 2005
Test Technician/Engineer	Signature	Dates Of Test