

2.0 TESTS PERFORMED

2.1 Output Power

2.1.1 Equipment Used

Test Equipment		Asset #	Serial #	Cal Date
X	Hewlett Packard Power Sensor	628	2552A49410	04/03
X	Hewlett Packard Power Meter M/N 437B	N/A	2949A02617	04/03
X	Narda 769-20 High Band Attenuator	284	03793	C.P.U.
X	Narda 769-20 High Band Attenuator	471	02951	C.P.U.

2.1.2 Test Conditions

The output power was measured with the OpenSky P801T Portable Radio placed on top of a wooded turntable located in Test Site A. The ambient temperature of the room was 20°C.

The OpenSky P801T Portable Radio has two modes of operation OCF and OCF talk around. The OCF mode of operation is digital FM modulation, which transmits from 806.0125MHz to 823.9875MHz. The OCF Talk Around mode of operation is digital FM modulation that transmits from 851.0125MHz to 868.9875MHz.

The OpenSky P801T Portable Radio was configured to operate in two modes of operation transmitting at the low, mid and high frequency of each band. The OpenSky P801T Portable Radio was set up and powered by a fully charged battery for the test.

The modes of operation and frequencies tested are as follows:

OCF Mode	OCF Talk Around
Ch# 1 806.0125MHz	Ch# 1 851.0125MHz
Ch# 415 816.3625MHz	Ch# 415 861.3625MHz
Ch# 830 823.9875MHz	Ch# 830 868.9875MHz

2.1.3 Test Method

The output power of the OpenSky P801T Portable Radio was measured at the high, middle, and low frequency channels. The output of the transmitter was connected to two attenuators. The attenuators were connected to a RF Power Meter.

Channel numbers 830, 415, and 1 were tested for the occupied bandwidth

2.1.4 Results

The M/A-Com OpenSky P801T Portable Radio meets the Output Power requirements of FCC Part 90. See the attached data sheet for the output power.

2.1.5 Test Data

OUTPUT POWER MEASUREMENTS

CUSTOMER: M/A-COM

DATE: 04/30/02 AND 05/14/02

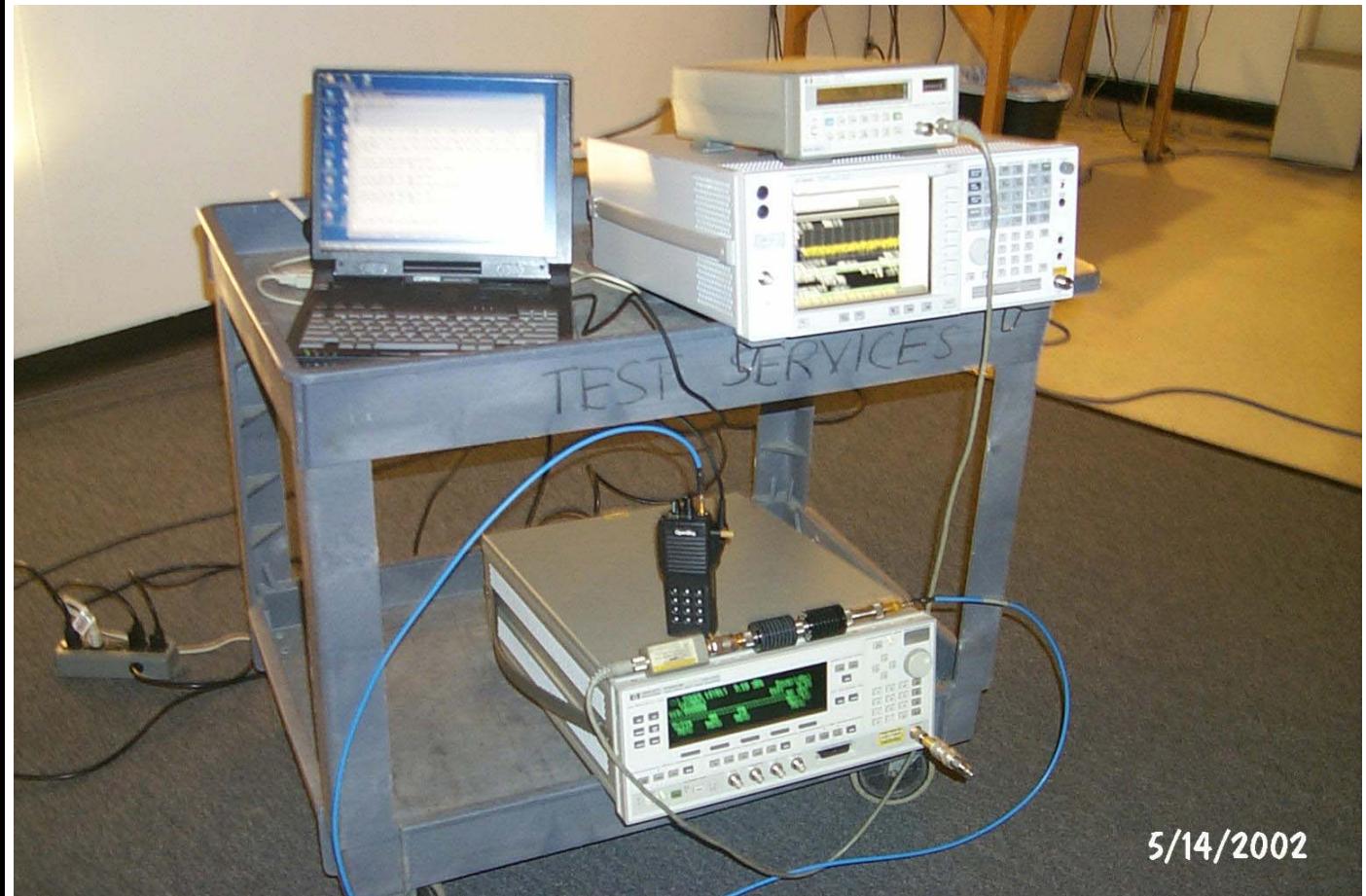
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 3

TESTED BY: MANUEL MARTINEZ

FREQUENCY MHz	MODE OF OPERATION	PEAK MEASURED LEVEL dBm	PEAK MEASURED LEVEL W	LIMIT W
851.0125	OCF Talk Around	34.67	2.93	3.0
861.3625	OCF Talk Around	34.70	2.95	3.0
868.9875	OCF Talk Around	34.70	2.95	3.0

NOTES:

2.1.6 Photographic Documentation**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 04/30/02 AND 05/14/02****TEST NUMBER: 3****Photograph Description: Radiated set-up****FORM CTS-PHOTO**

2.2 Occupied Bandwidth

2.2.1 Equipment Used

Test Equipment		Asset #	Serial #	Cal Date
X	H/P E4401 Spectrum Analyzer	N/A	4895C76451	04/03
X	Narda 769-20 High Band Attenuator	284	03793	C.P.U.
X	Narda 769-20 High Band Attenuator	471	02951	C.P.U.

2.2.2 Test Conditions

The occupied bandwidth measurement was made with the OpenSky P801T Portable Radio placed on a turntable located in Test Site A. The output of the P-8001T was connected to a spectrum analyzer via a N-Type coax cable. The ambient temperature of the room was 20°C.

The OpenSky P801T Portable Radio was configured to operate in two modes of operation transmitting at the low, mid and high frequency of each band. The OpenSky P801T Portable Radio was set up and powered by a fully charged battery for the test.

The modes of operation and frequencies tested are as follows:

OCF Mode	OCF Talk Around
Ch# 1 806.0125MHz	Ch# 1 851.0125MHz
Ch# 415 816.3625MHz	Ch# 415 861.3625MHz
Ch# 830 823.9875MHz	Ch# 830 868.9875MHz

2.2.3 Test Method

The output of the OpenSky P801T Portable Radio was measured at the high, middle, and low frequency channels. The output of the transmitter was connected to two attenuators. The attenuators were connected to a RF Power Meter. See Figure 4 for test set-up.

2.2.4 Results

The M/A-Com OpenSky P801T Portable Radio meets the Occupied Bandwidth of requirements of FCC Part 90. See the attached data sheet for the results.

2.2.5 Test Data

OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM

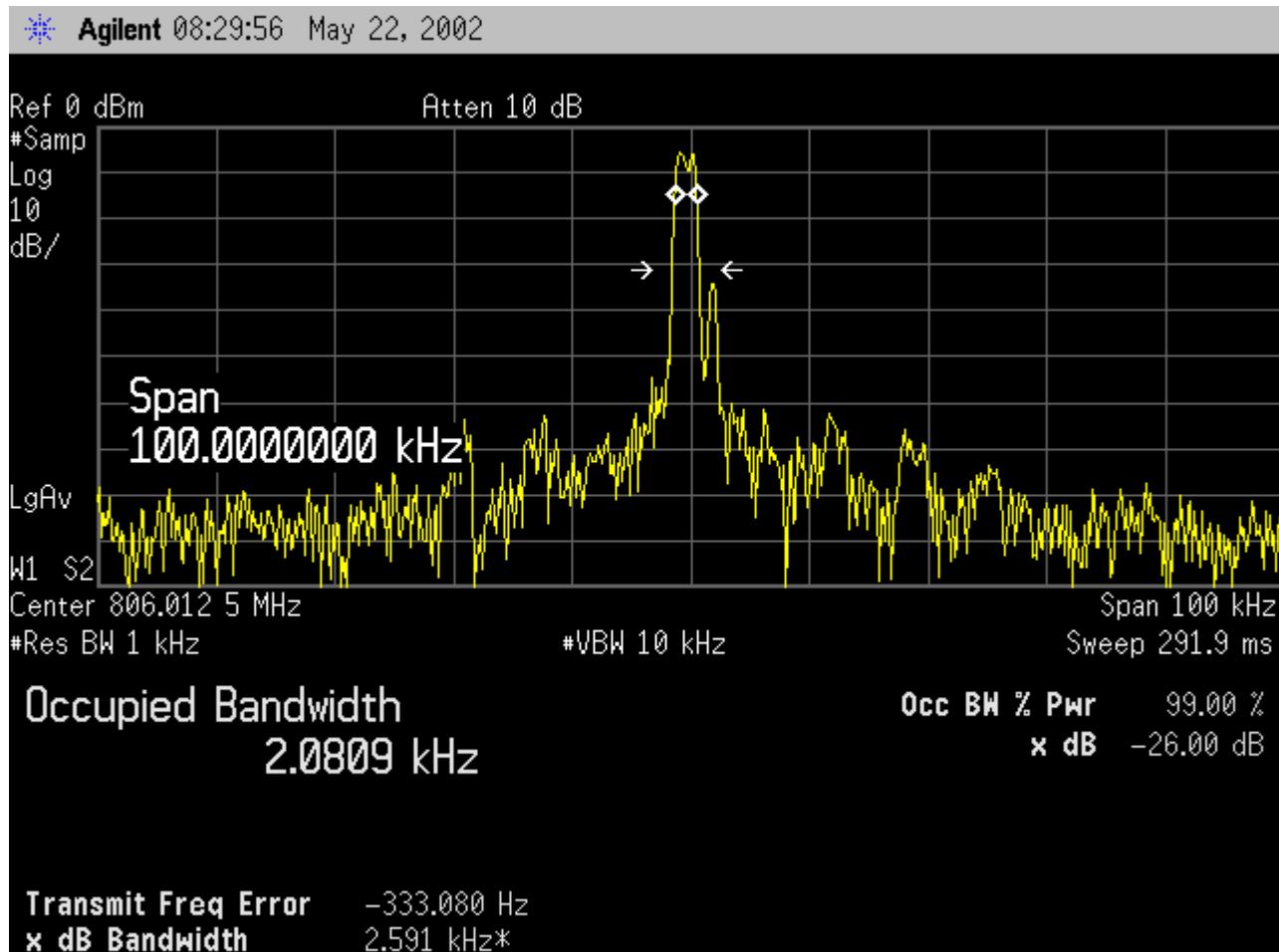
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 2

OPERATING MODE: NORMAL FULL POWER TRANSMIT MODE – CHANNEL 1-OCF



OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM

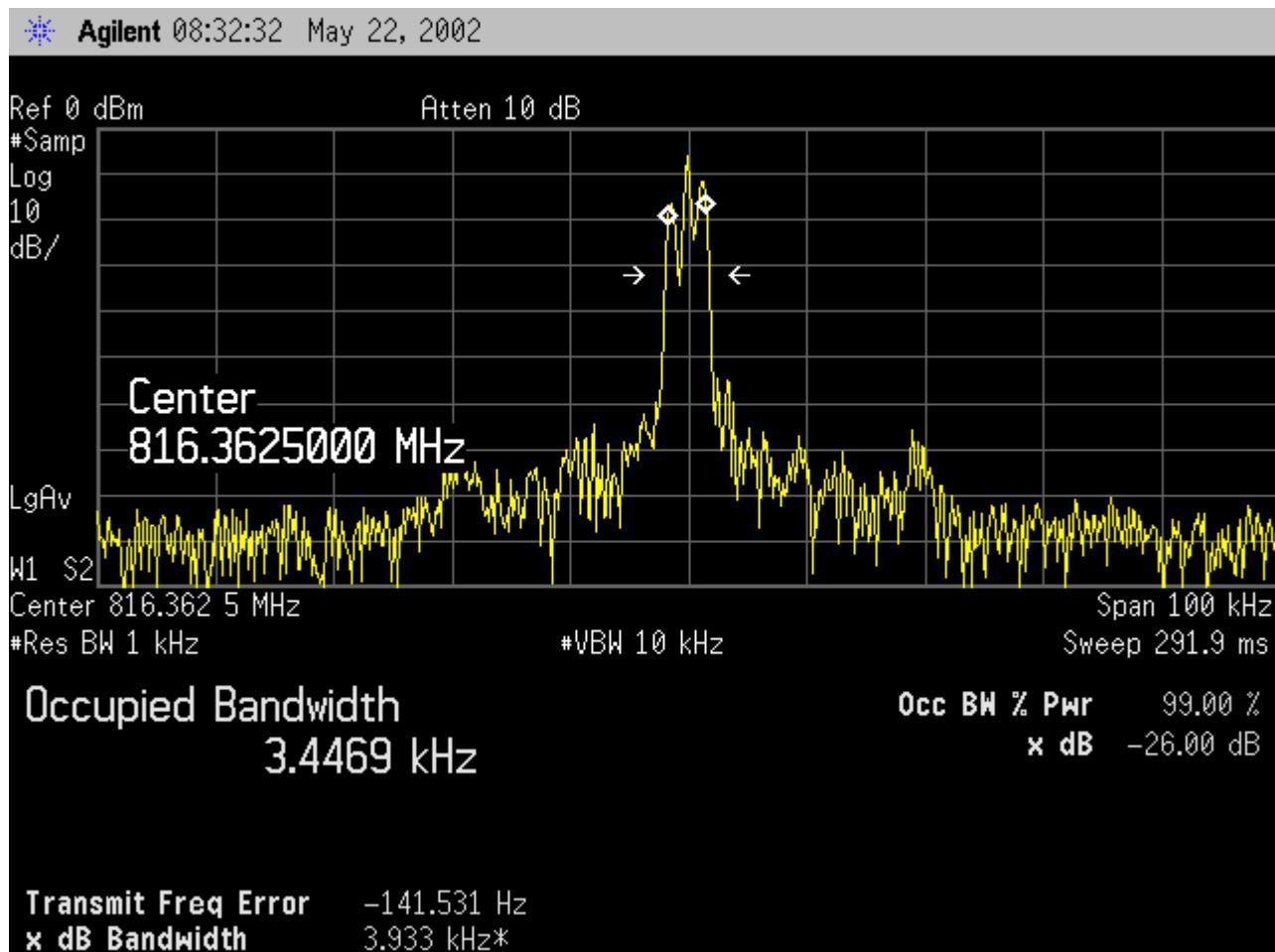
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 2

OPERATING MODE: NORMAL FULL CHANNEL TRANSMIT MODE - CHANNEL 415- OCF



Document #: EMI3360.US.02
Date: July 30, 2002

OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM

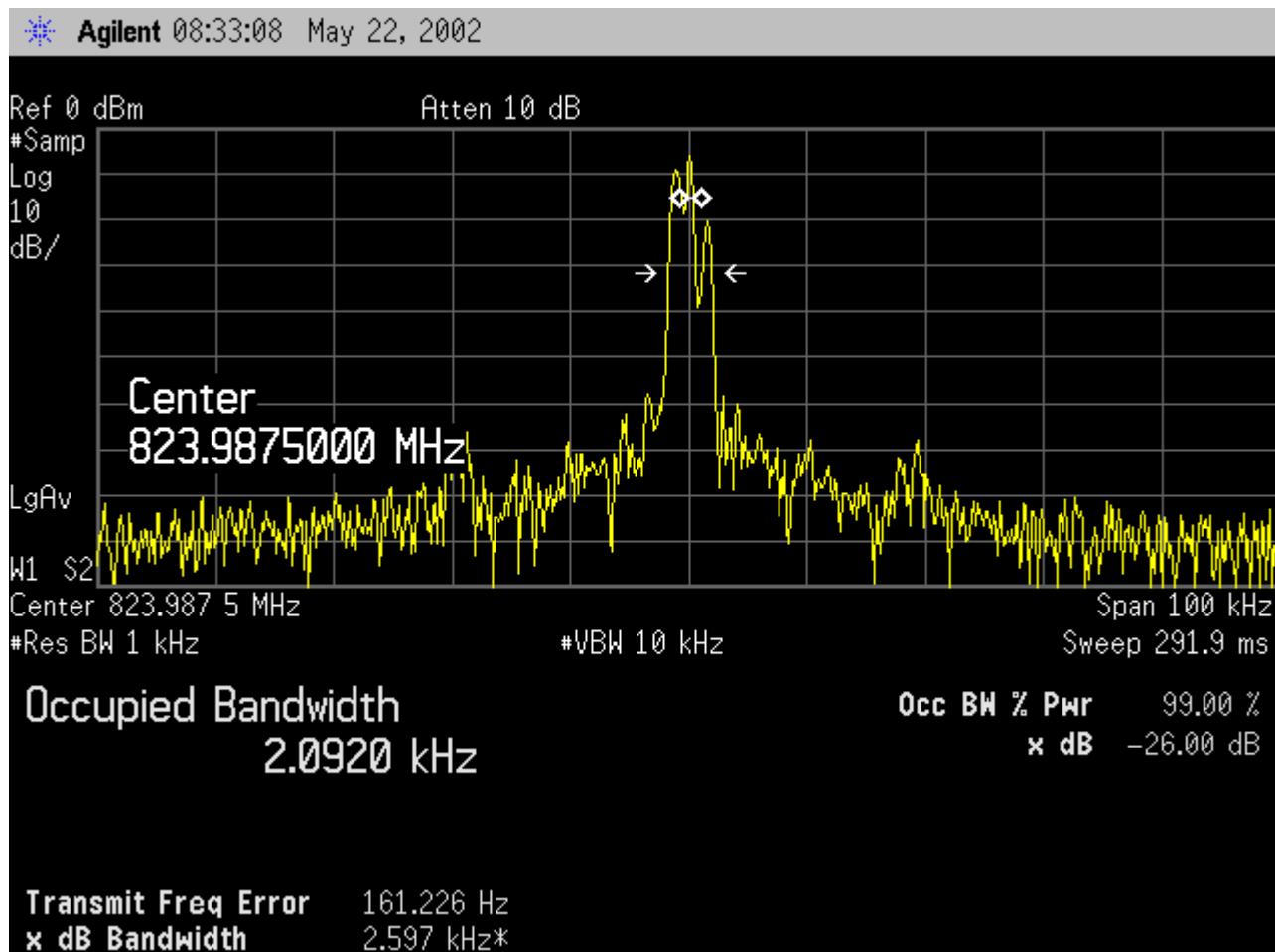
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 2

OPERATING MODE: NORMAL FULL POWER TRANSMIT MODE - CHANNEL 830- OCF



Document #: EMI3360.US.02
Date: July 30, 2002

OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM

DATE: 05/16/02

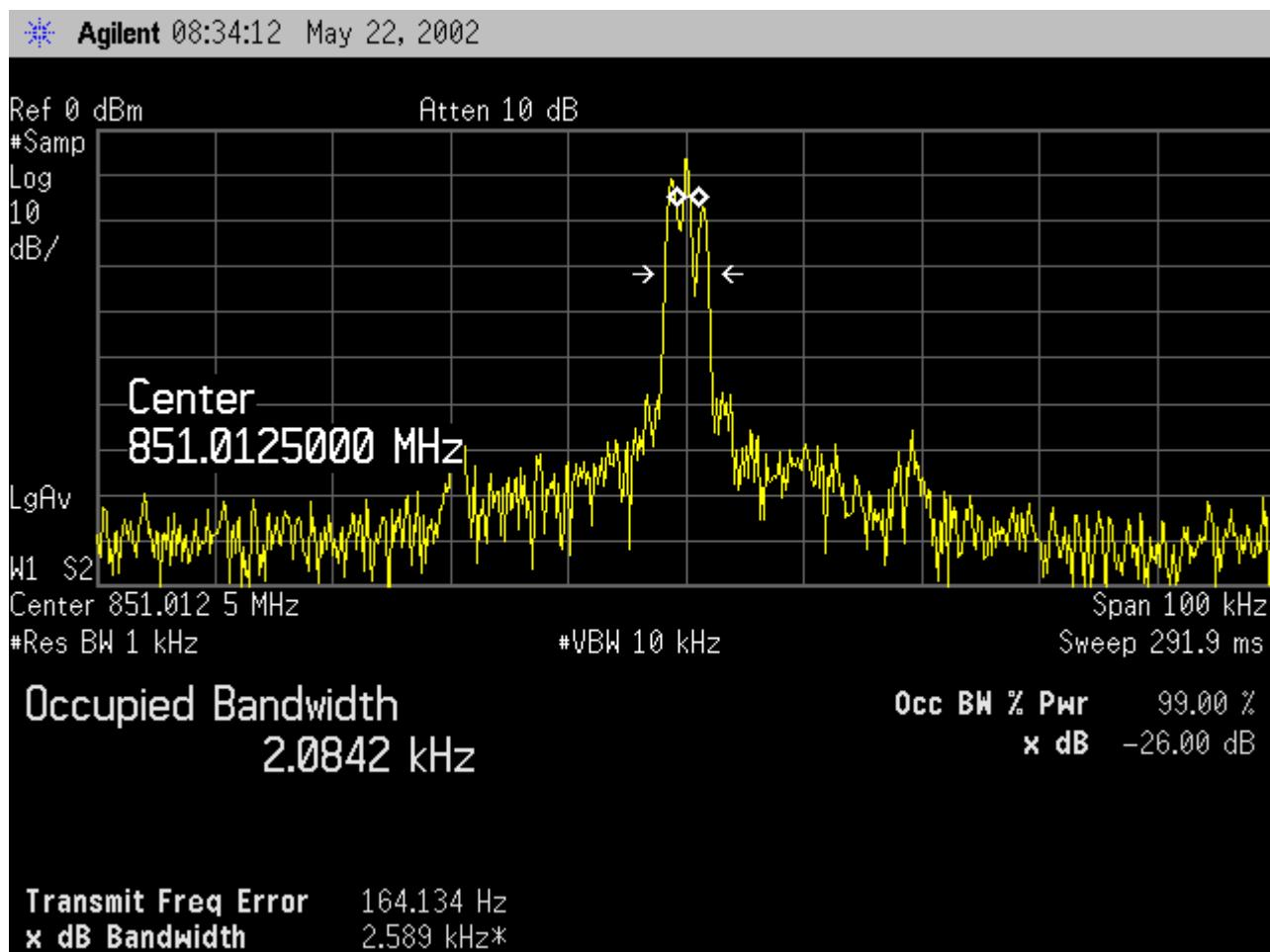
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 2

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 1-OCF TALK AROUND



OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM

DATE: 05/16/02

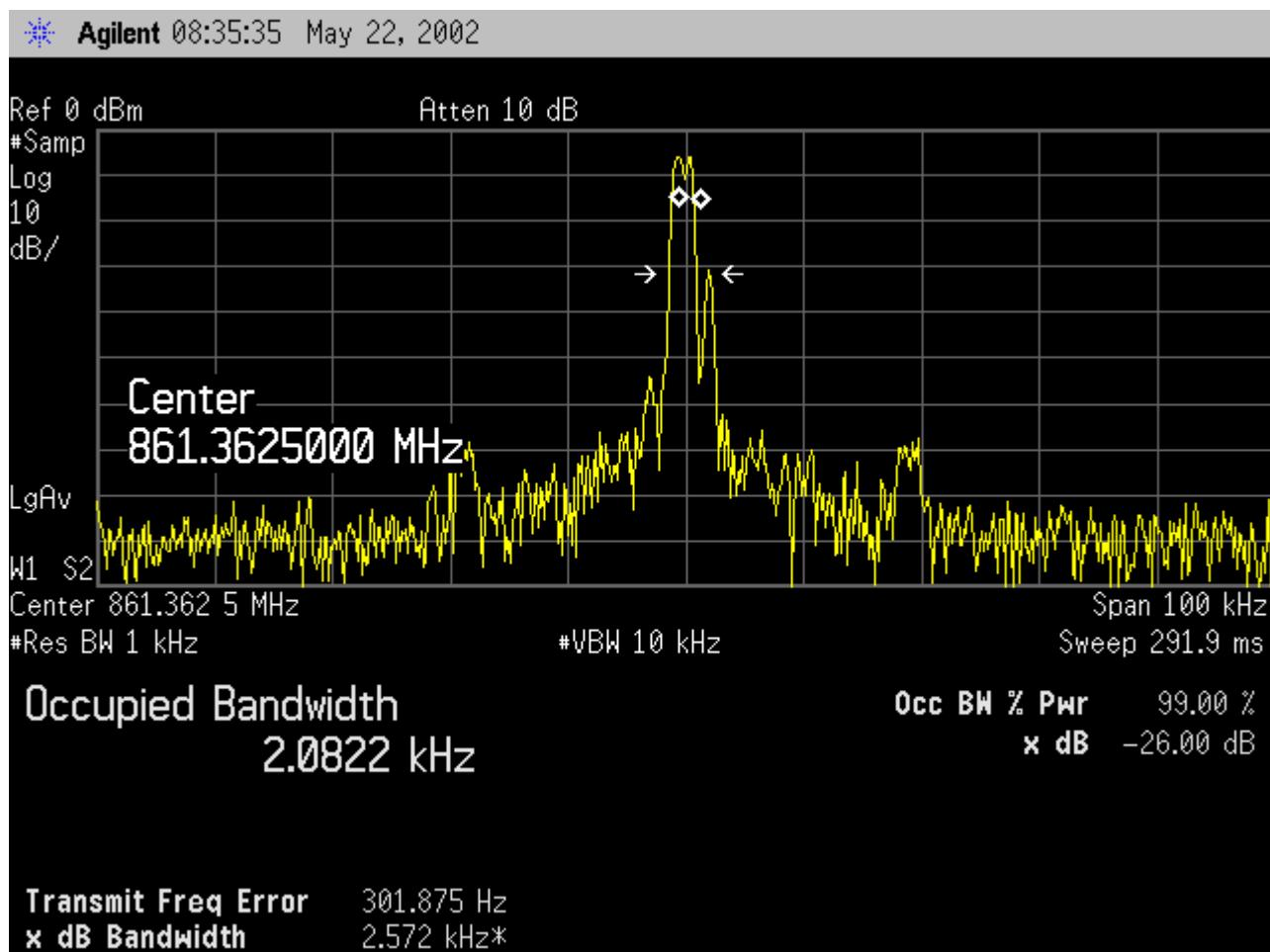
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 2

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL CHANNEL

TRANSMIT MODE - CHANNEL 415- OCF TALK AROUND



OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

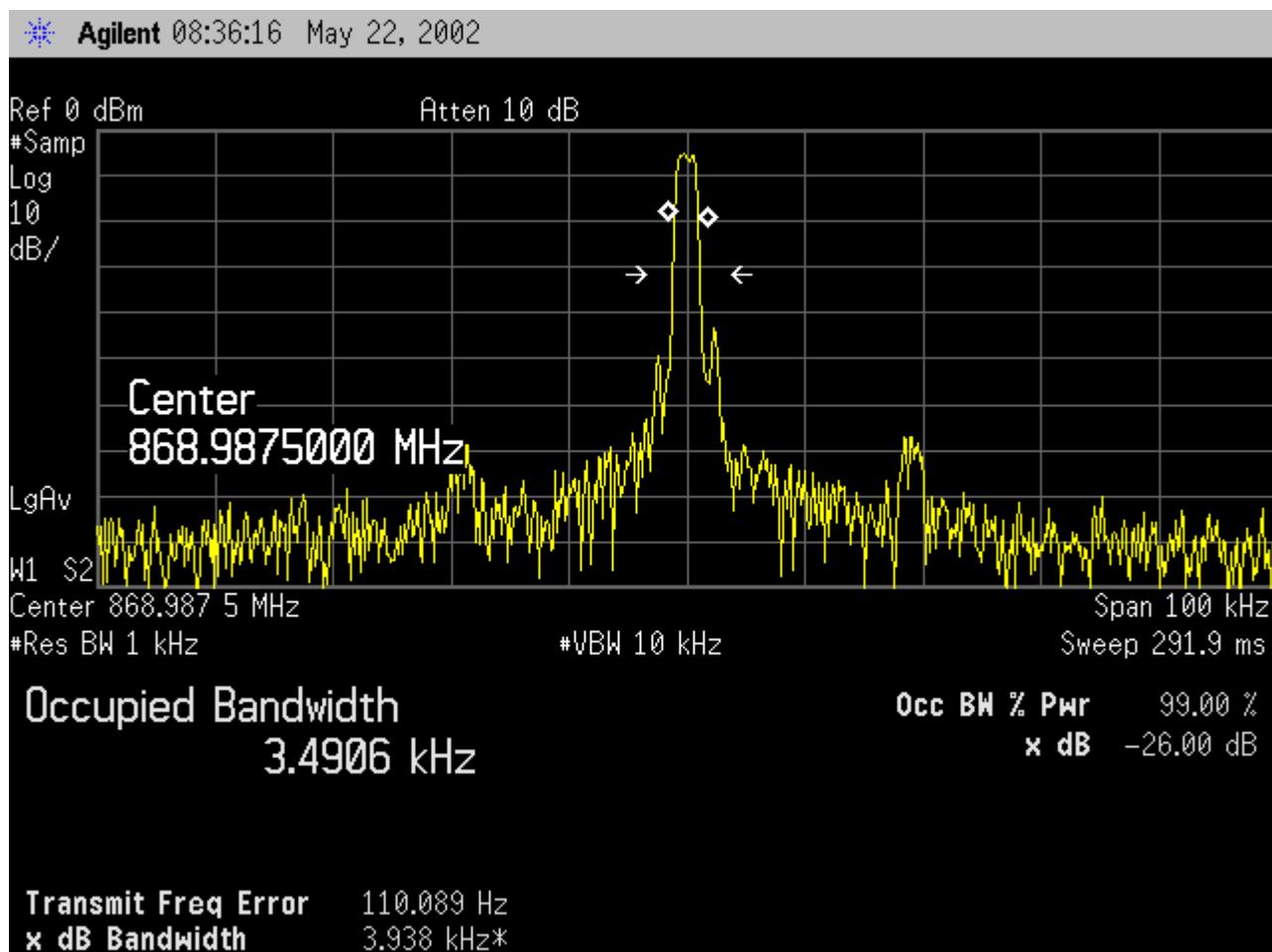
TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 2

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE - CHANNEL 830- QCF TALK AROUND



Document #: EMI3360.US.02
Date: July 30, 2002

2.2.6 Photographic Documentation**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 04/22/02 AND 05/16/02****TEST NUMBER: 2**

2.3 Emissions Mask

2.3.1 Equipment Used

Test Equipment		Asset #	Serial #	Cal Date
X	H/P E4401 Spectrum Analyzer	N/A	4895C76451	04/03
X	Narda 769-20 High Band Attenuator	284	03793	C.P.U.
X	Narda 769-20 High Band Attenuator	471	02951	C.P.U.

2.3.2 Test Conditions

The Emission Mask was measured with the OpenSky P801T Portable Radio placed on top of a wooded turntable located in Test Site A. The ambient temperature of the room was 20°C.

The OpenSky P801T Portable Radio was configured to operate in two modes of operation transmitting at the low, mid and high frequency of each band. The OpenSky P801T Portable Radio was set up and powered by a fully charged battery for the test.

The modes of operation and frequencies tested are as follows:

OCF Mode	OCF Talk Around
Ch# 1 806.0125MHz	Ch# 1 851.0125MHz
Ch# 415 816.3625MHz	Ch# 415 861.3625MHz
Ch# 830 823.9875MHz	Ch# 830 868.9875MHz

2.3.3 Test Method

The output of the OpenSky P801T Portable Radio was connected to a spectrum analyzer via a N-Type cable and 40dB of attenuation. The P801T was set up to transmit with out modulation the power level of transmission was recorded and the spectrum analyzers reference level was set to that power level. The P801T was then set to transmit with the desired modulation and frequency scan of the transmitted signal was saved and compared to the appropriate emission mask.

The output of the OpenSky P801T Portable Radio was compared to the Emissions Mask H of FCC Part 90.210.

2.3.4 Results

The M/A-Com OpenSky P801T Portable Radio meets the requirements of FCC Part 90.210 Emissions Mask H.

2.3.5 Test Data

EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

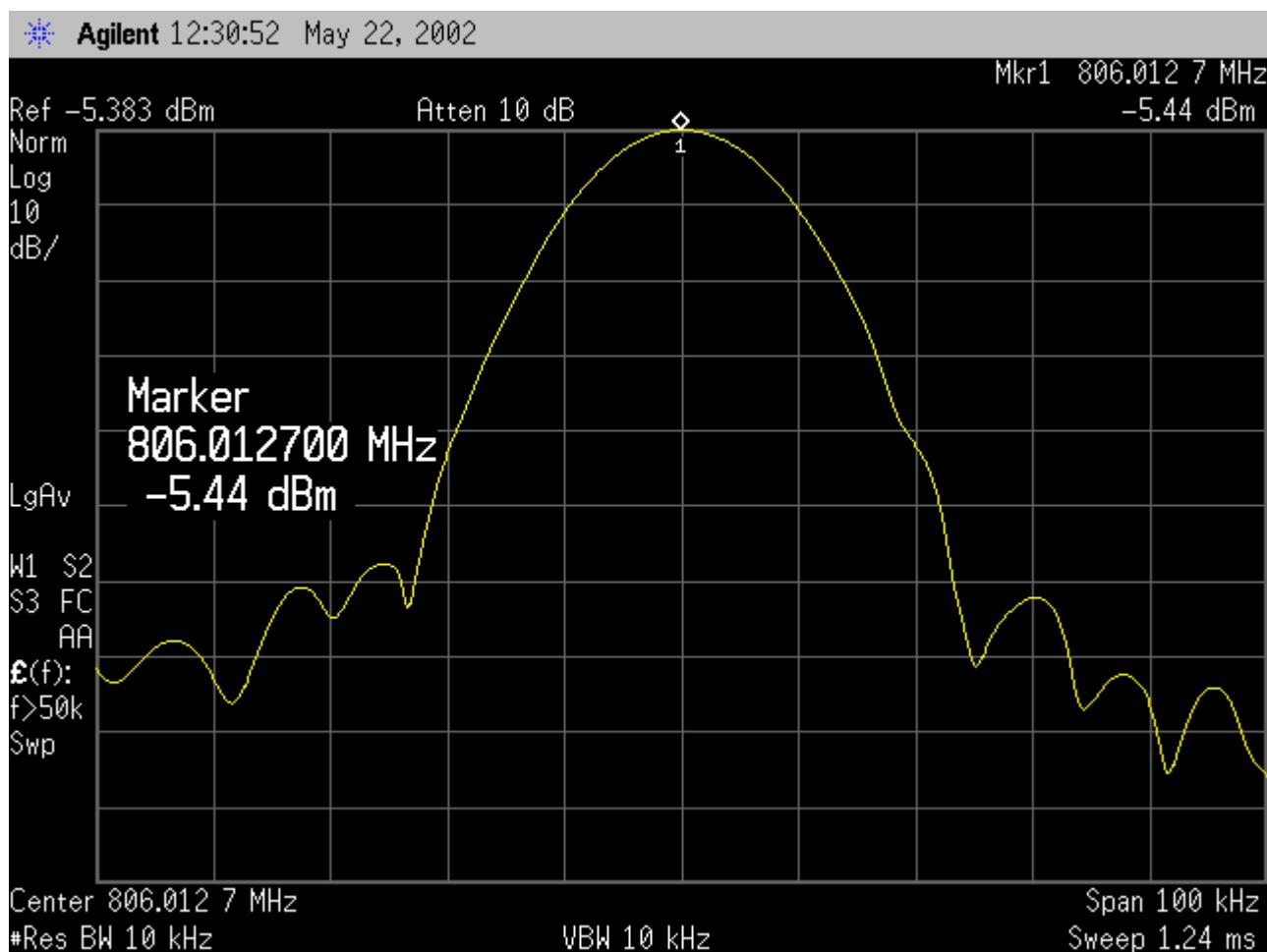
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 1-OCF UNMODULATED



EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

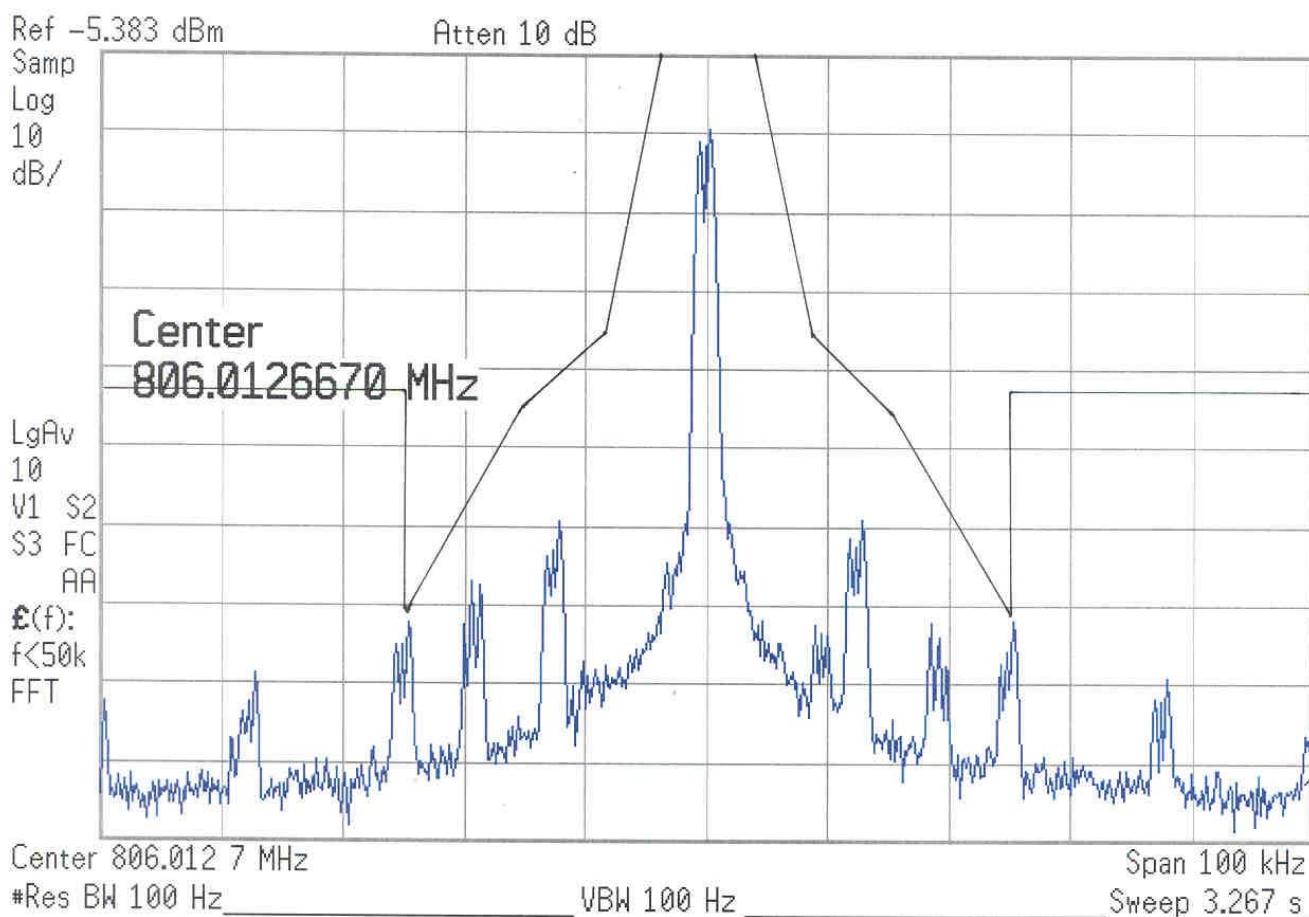
TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 1-OCF MODULATED

Agilent 12:32:09 May 22, 2002



EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 415-OCF UNMODULATED



EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

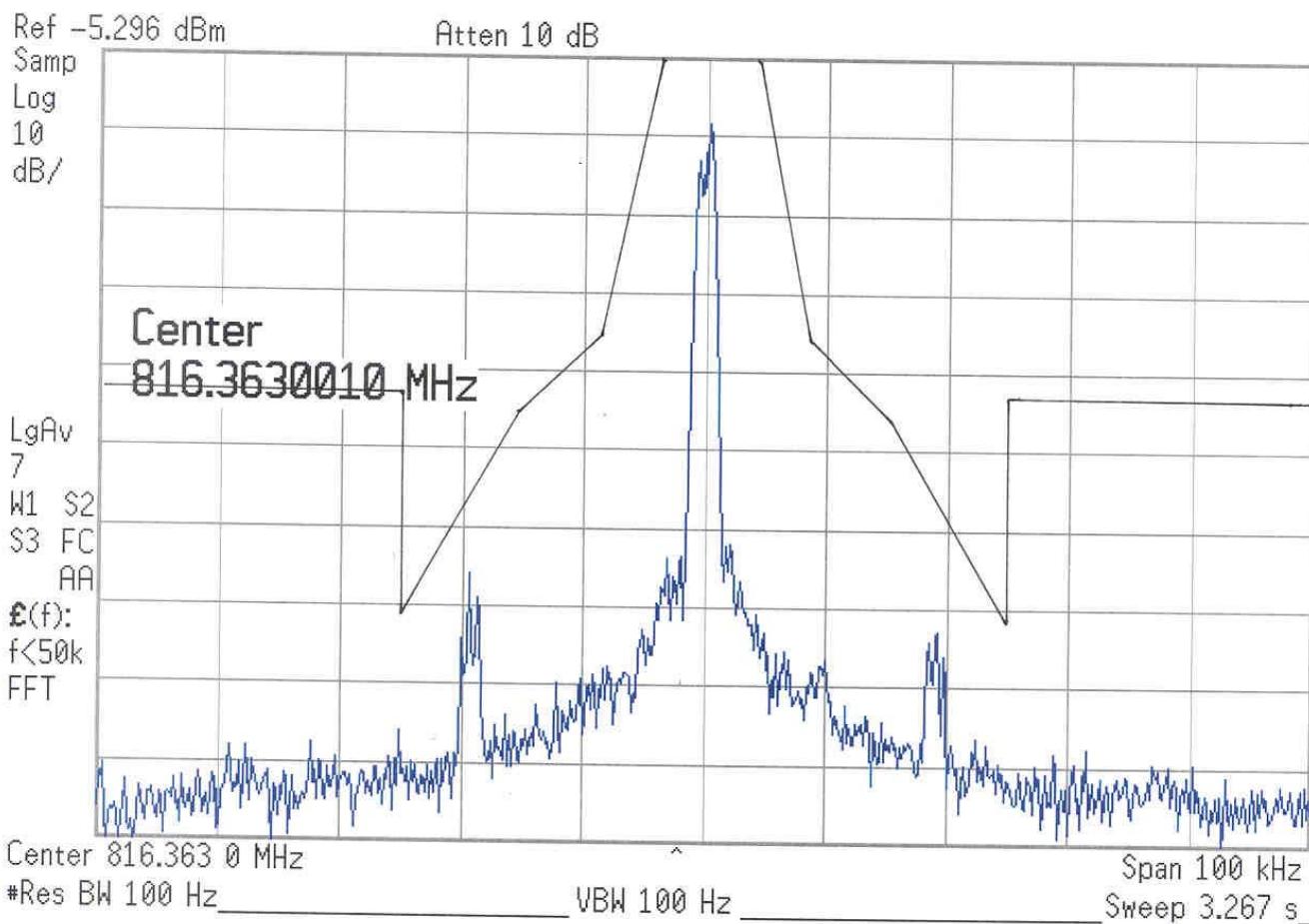
TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 415-OCF MODULATED

Agilent 12:45:01 May 22, 2002



EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

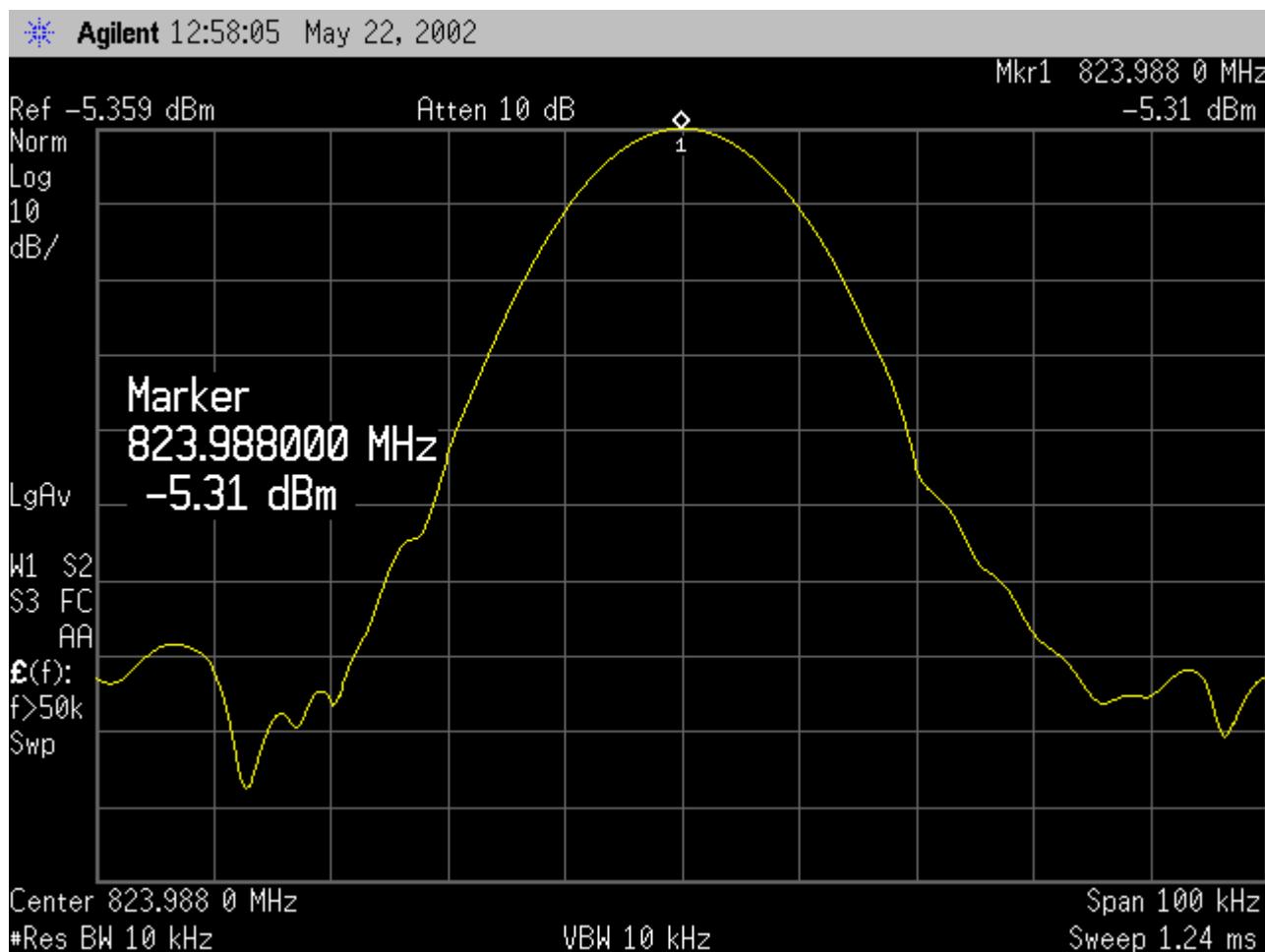
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 830-OCF UNMODULATED



EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

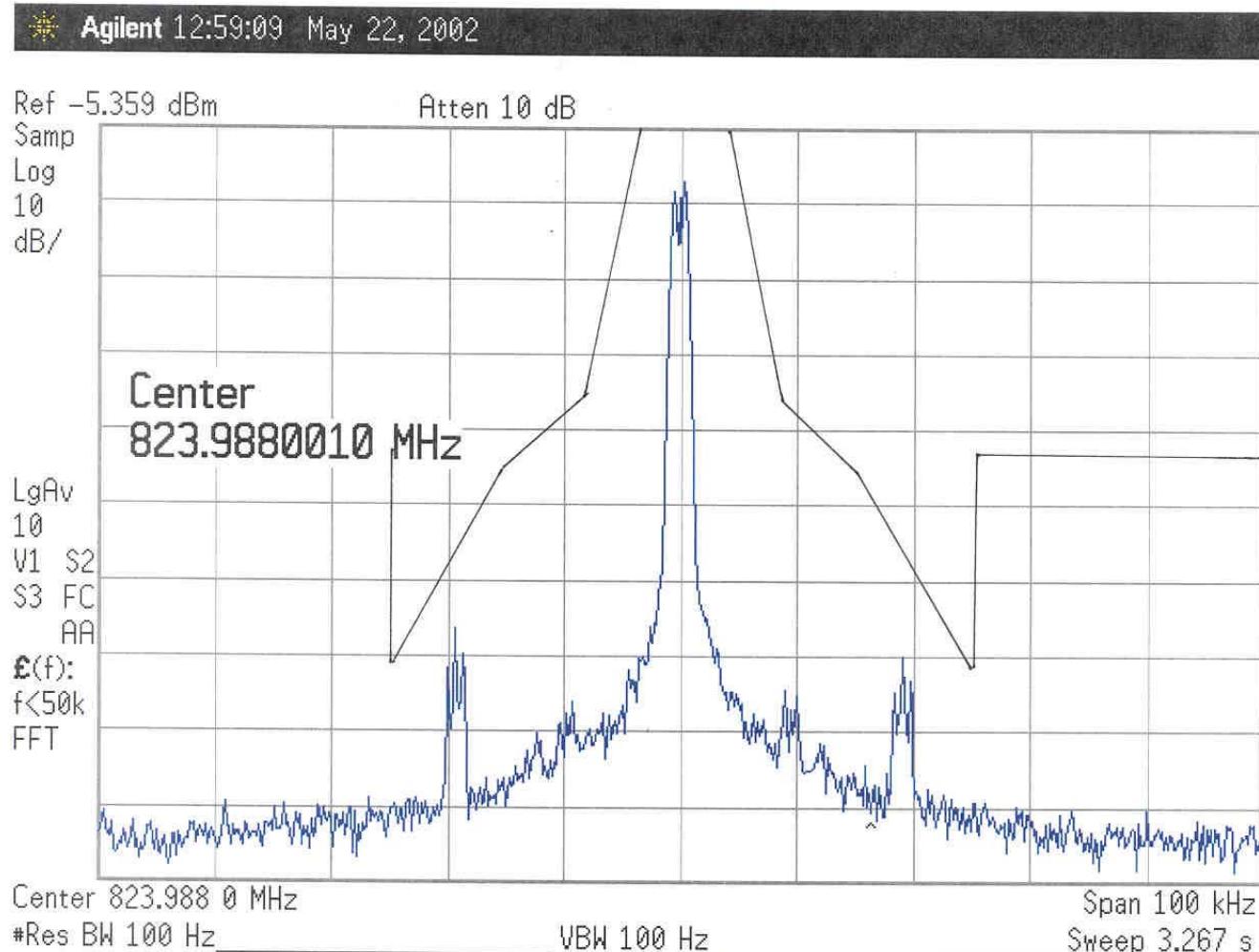
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 830-OCF MODULATED



EMISSION MASK

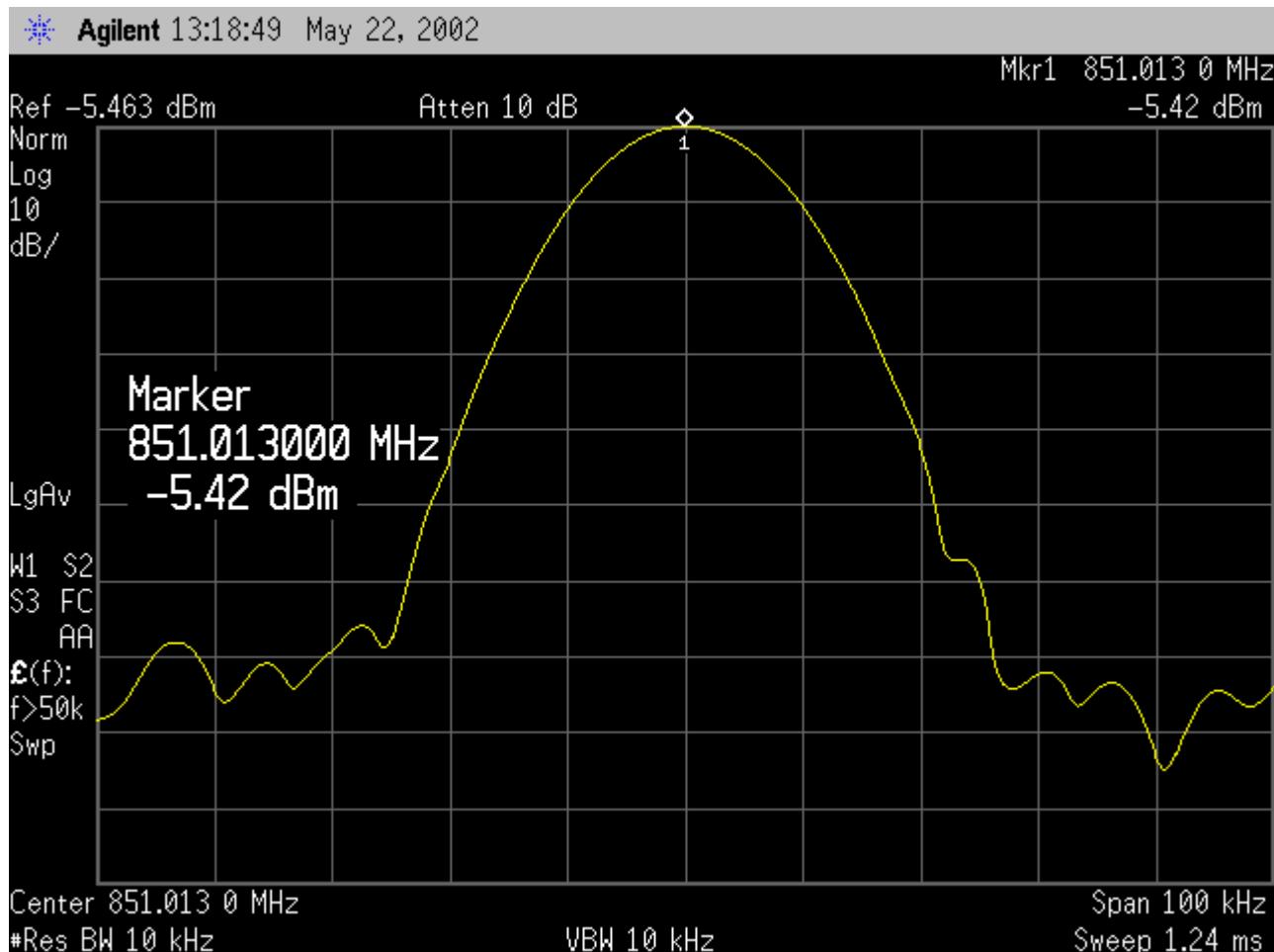
CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 1-OCF TALK AROUND
UNMODULATED

EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

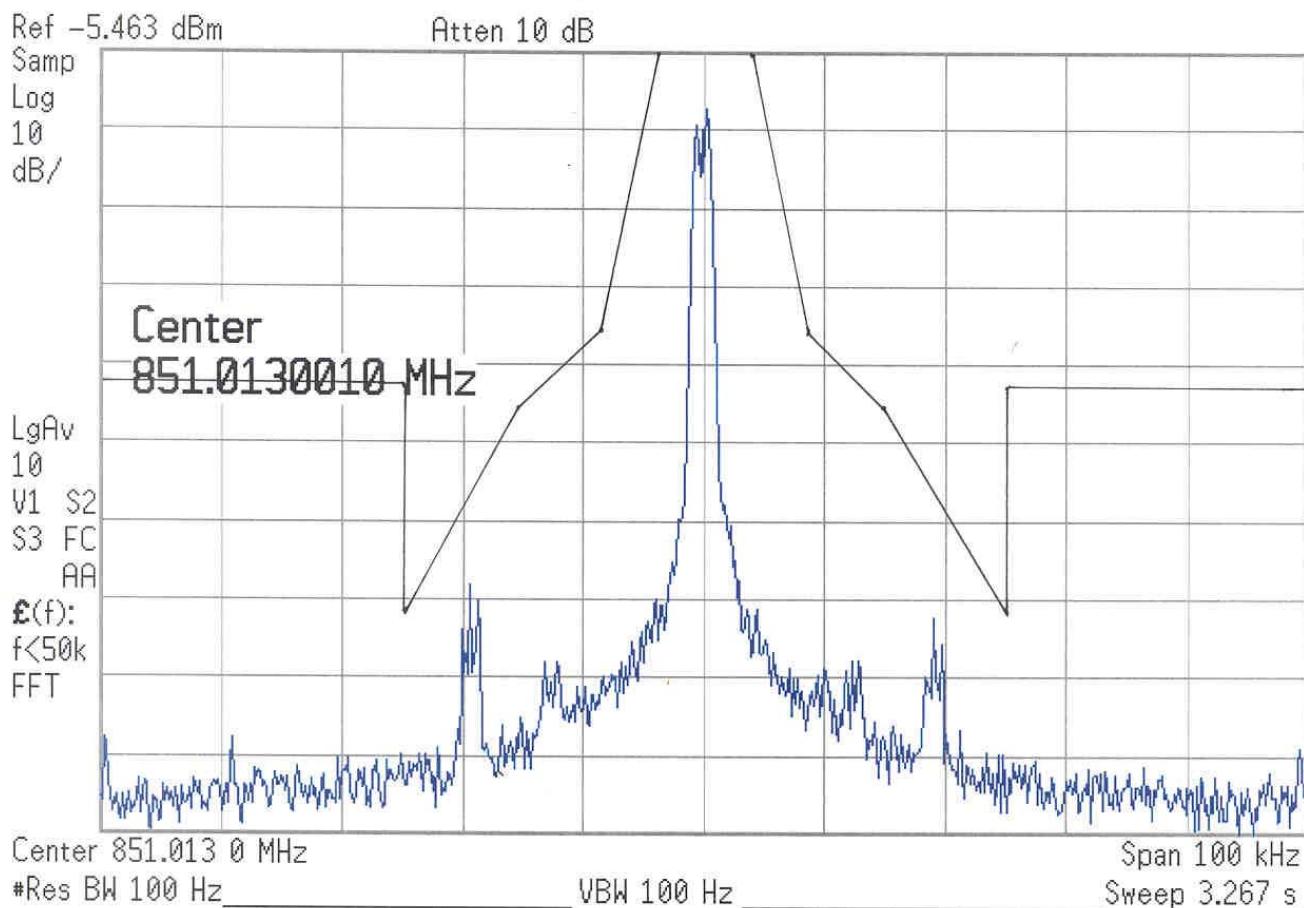
TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 1-OCF TALK AROUND
MODULATED

Agilent 13:21:59 May 22, 2002



EMISSION MASK

CUSTOMER: M/A-COM

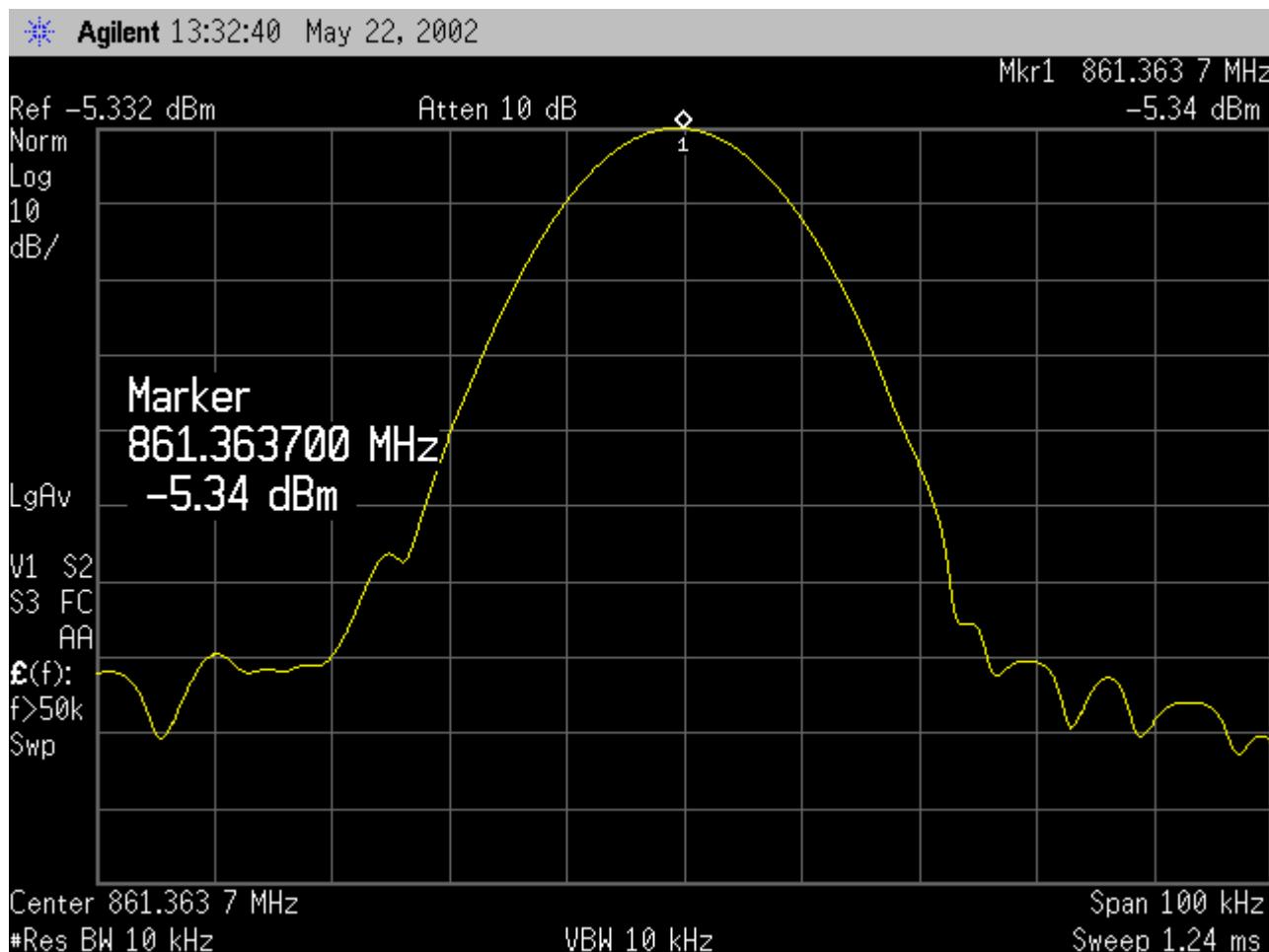
DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 415-OCF TALK AROUND
UNMODULATED

EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

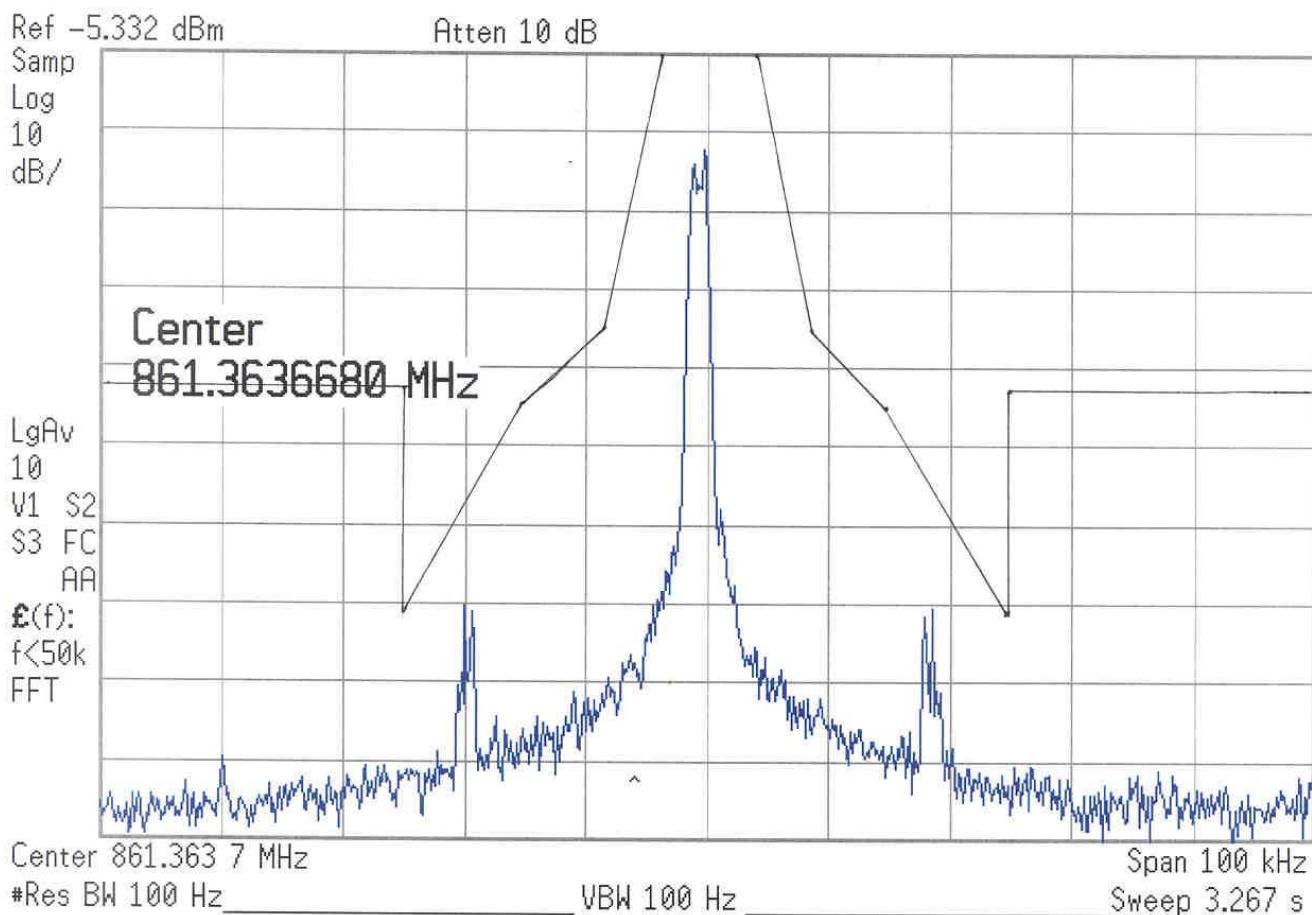
TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 415-OCF TALK AROUND
MODULATED

Agilent 13:34:53 May 22, 2002



EMISSION MASK

CUSTOMER: M/A-COM

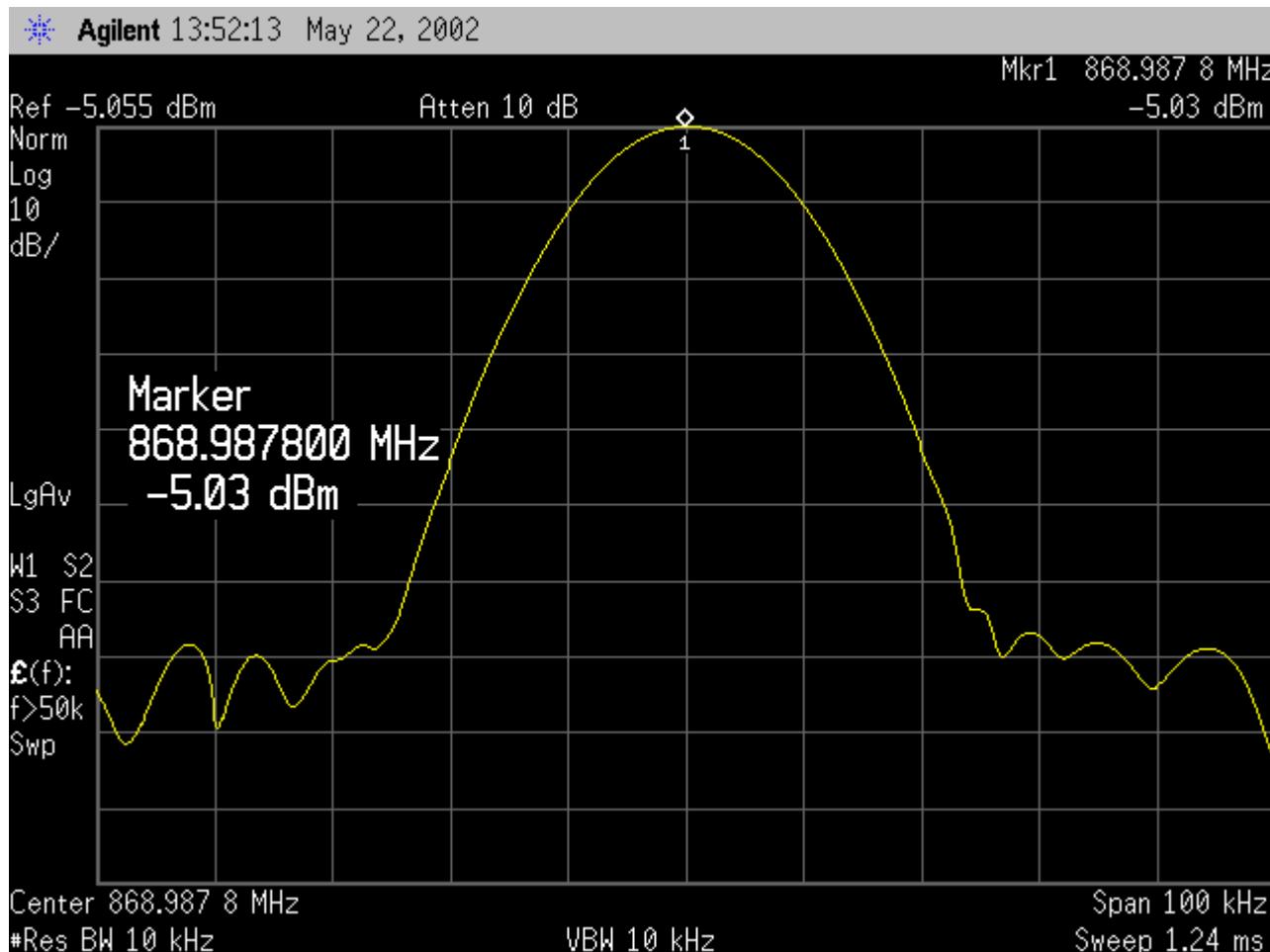
DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 5

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 830-OCF TALK AROUND
UNMODULATED

EMISSION MASK

CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

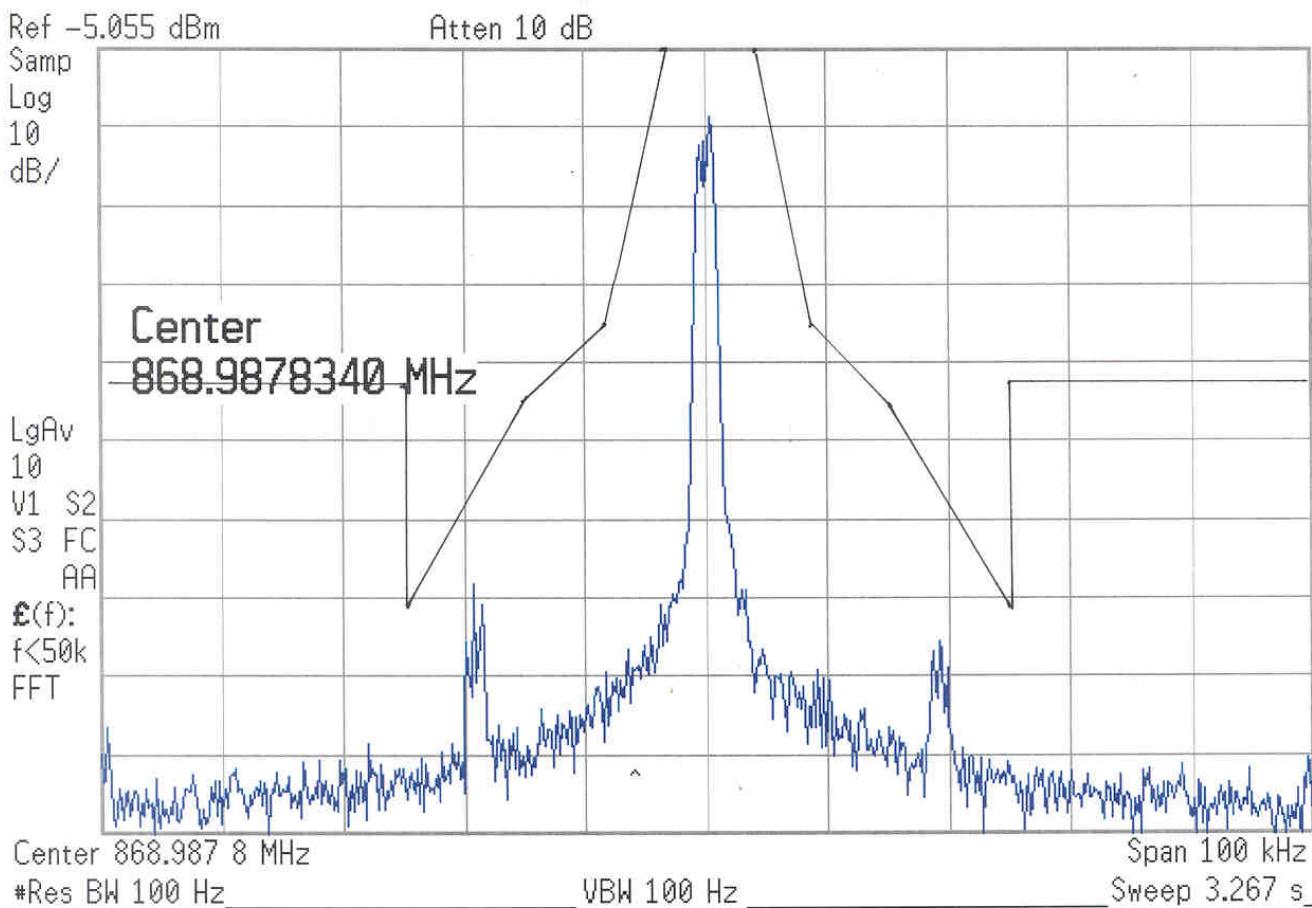
TEST NUMBER: 5

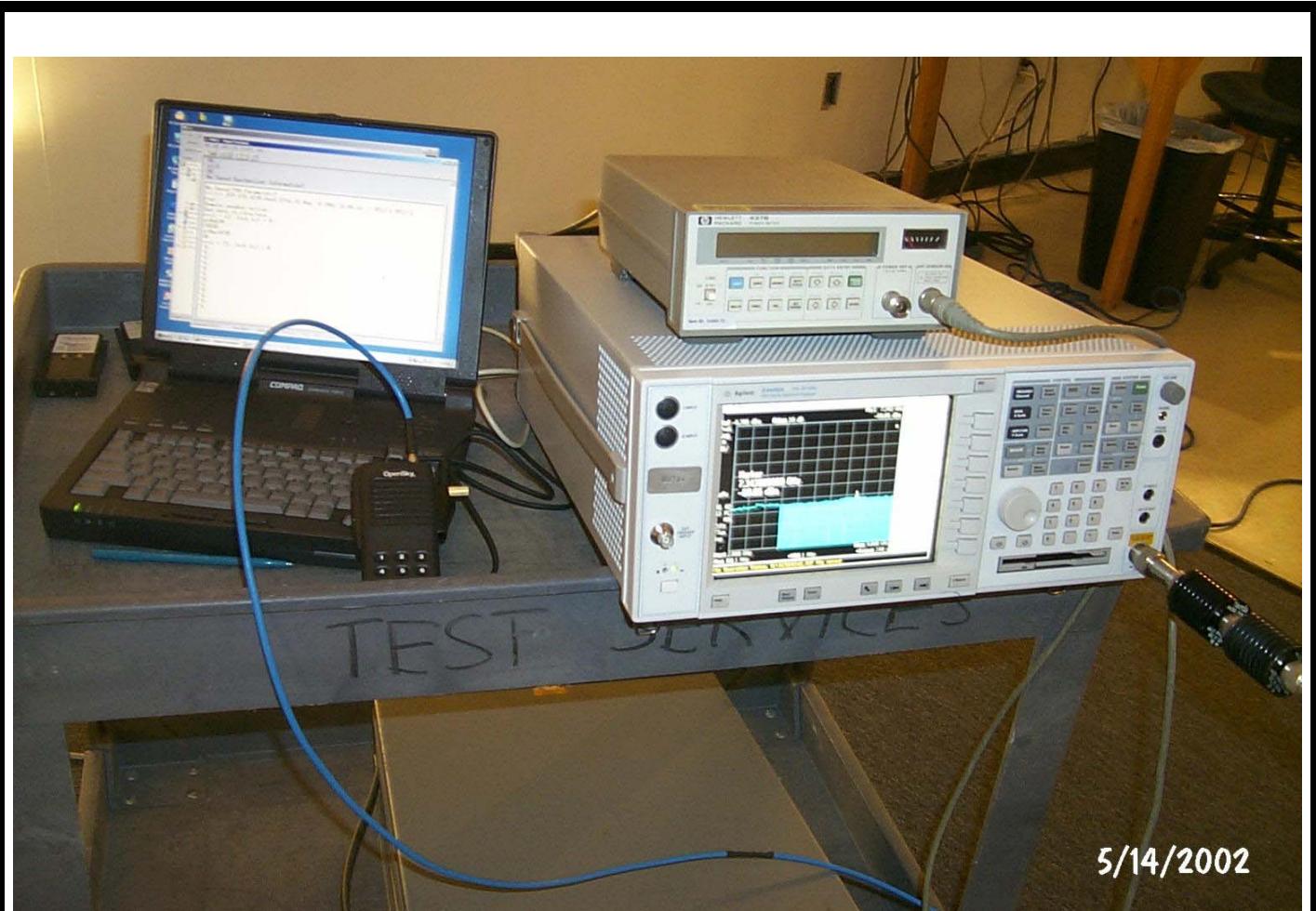
TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 830-OCF TALK AROUND
MODULATED

Agilent 13:59:45 May 22, 2002



2.3.6 Photographic Documentation**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/14/02 AND 05/16/02****TEST NUMBER: 5**

2.4 Conducted Spurious at the Antenna Terminals

2.4.1 Equipment Used

Test Equipment		Asset #	Serial #	Cal Date
X	H/P E4401 Spectrum Analyzer	N/A	4895C76451	04/03
X	Narda 769-20 High Band Attenuator	284	03793	C.P.U.
X	Narda 769-20 High Band Attenuator	471	02951	C.P.U.

2.4.2 Test Conditions

The conducted spurious emission at the antenna terminals was measured with the OpenSky P801T Portable Radio placed on top of a wooded turntable located in Test Site A. See figure 5 for the test setup.

The OpenSky P801T Portable Radio was configured to operate in two modes of operation transmitting at the low, mid and high frequency of each band. The OpenSky P801T Portable Radio was set up and powered by a fully charged battery for the test.

The modes of operation and frequencies tested are as follows:

OCF Mode	OCF Talk Around
Ch# 1 806.0125MHz	Ch# 1 851.0125MHz
Ch# 415 816.3625MHz	Ch# 415 861.3625MHz
Ch# 830 823.9875MHz	Ch# 830 868.9875MHz

2.4.3 Test Method

The output of the OpenSky P801T Portable Radio was connected to a spectrum analyzer via a N-Type cable and 40dB of attenuation. The P801T was set up to transmit with the desired modulation and maximum power. Two frequency scans were performed, 4MHz to 1GHz and 1GHz to 9GHz. The output of the OpenSky P801T Portable Radio was compared to Part 90.210 Emission Mask H paragraph 5. *"The power of any emission must be below the unmodulated carrier power (P). On any frequency removed from the center frequency of the authorized bandwidth by more than 25kHz, At least 43 + 10log (P)".*

2.4.4 Results

The M/A-Com OpenSky P801T Portable Radio meets the requirements of Part 90.210 Emissions Mask H paragraph 5.

2.4.5 Test Data

CONDUCTED SPURIOUS

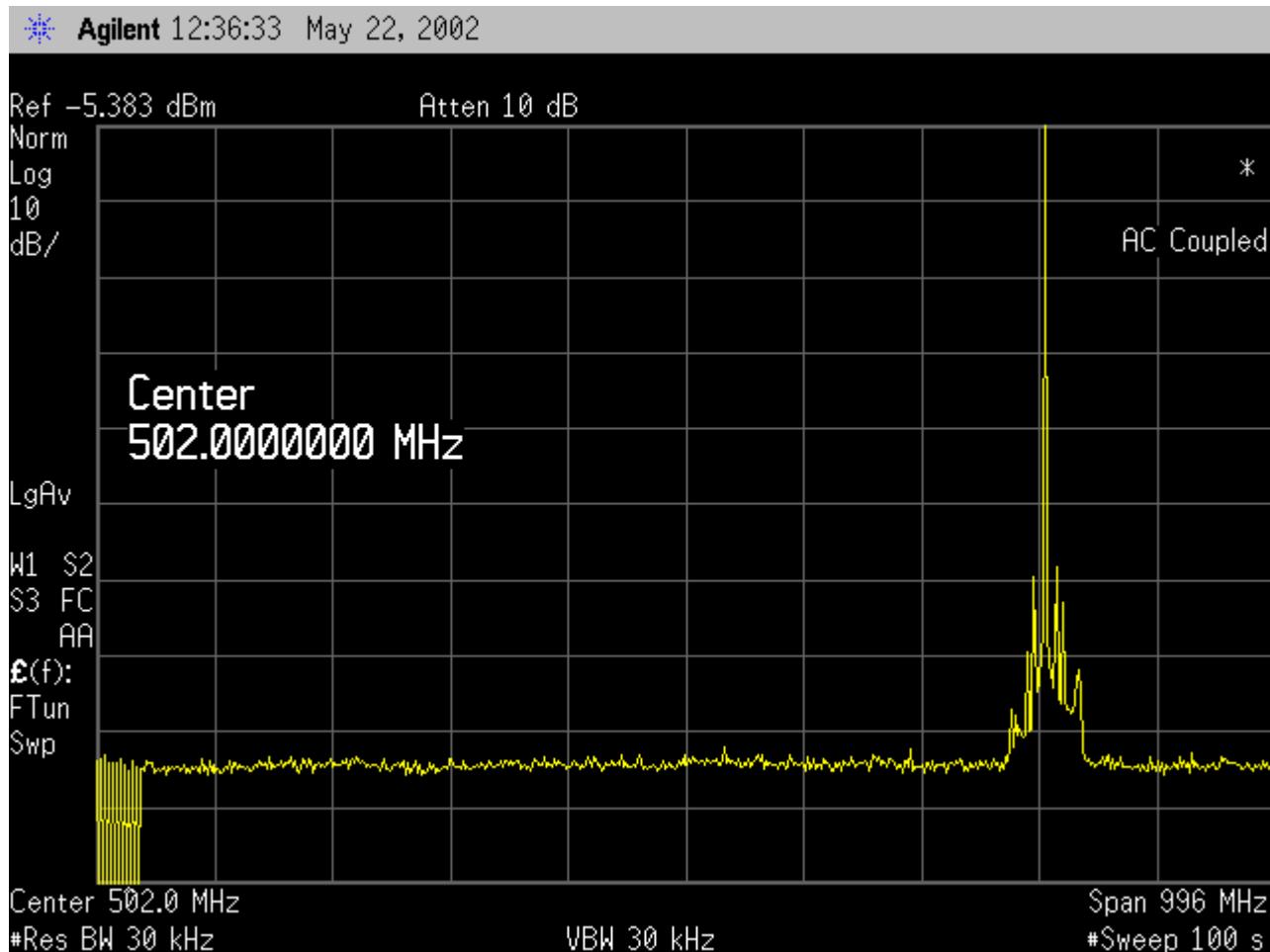
CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 1

OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 1-OCF

CONDUCTED SPURIOUS

CUSTOMER: M/A-COM**DATE: 05/16/02****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****TEST NUMBER: 1****TESTED BY: MANUEL MARTINEZ****OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 1-OCF**

CONDUCTED SPURIOUS

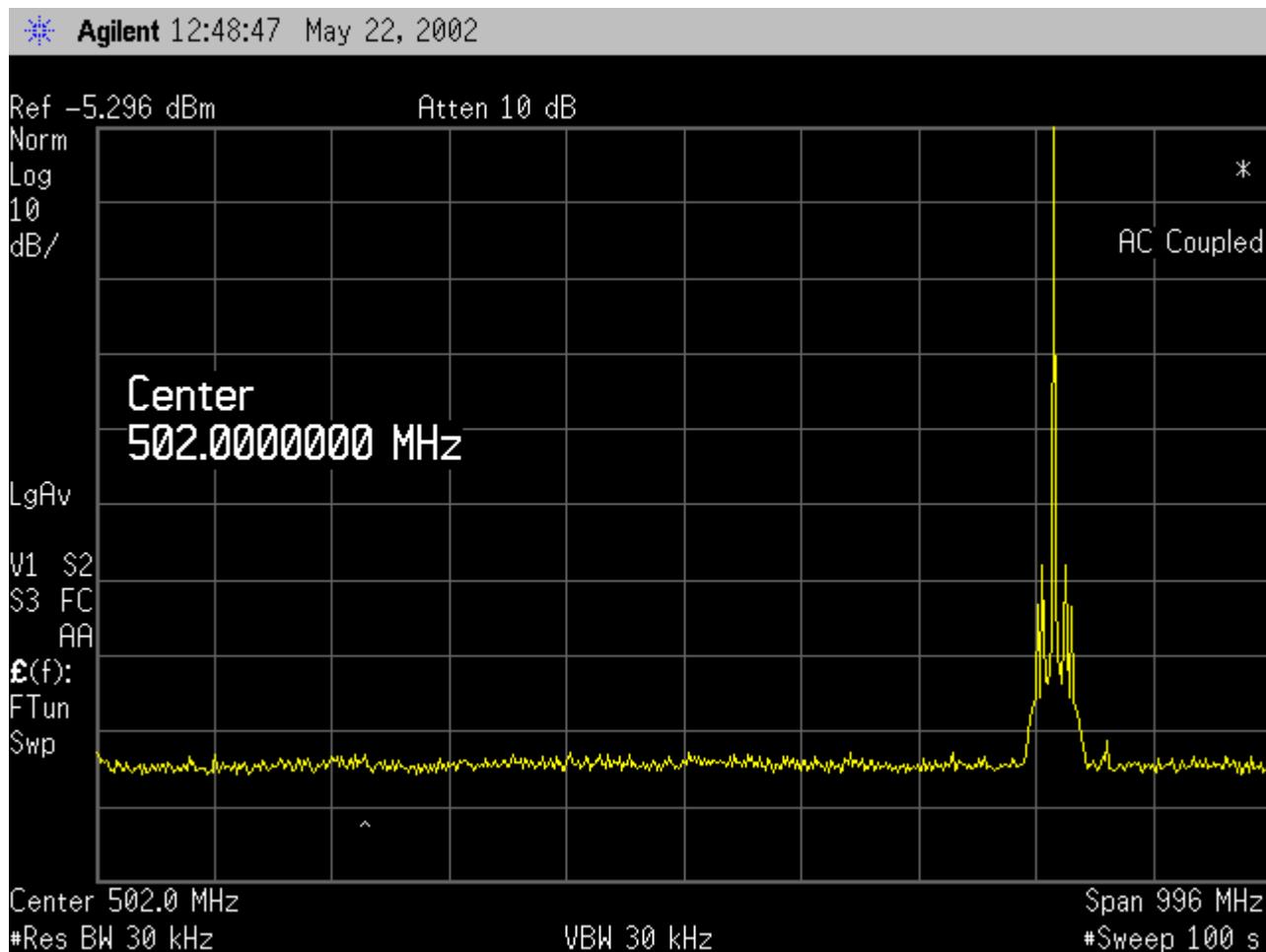
CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 1

OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 415-OCF

CONDUCTED SPURIOUS

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 1

OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 415-OCF

CONDUCTED SPURIOUS

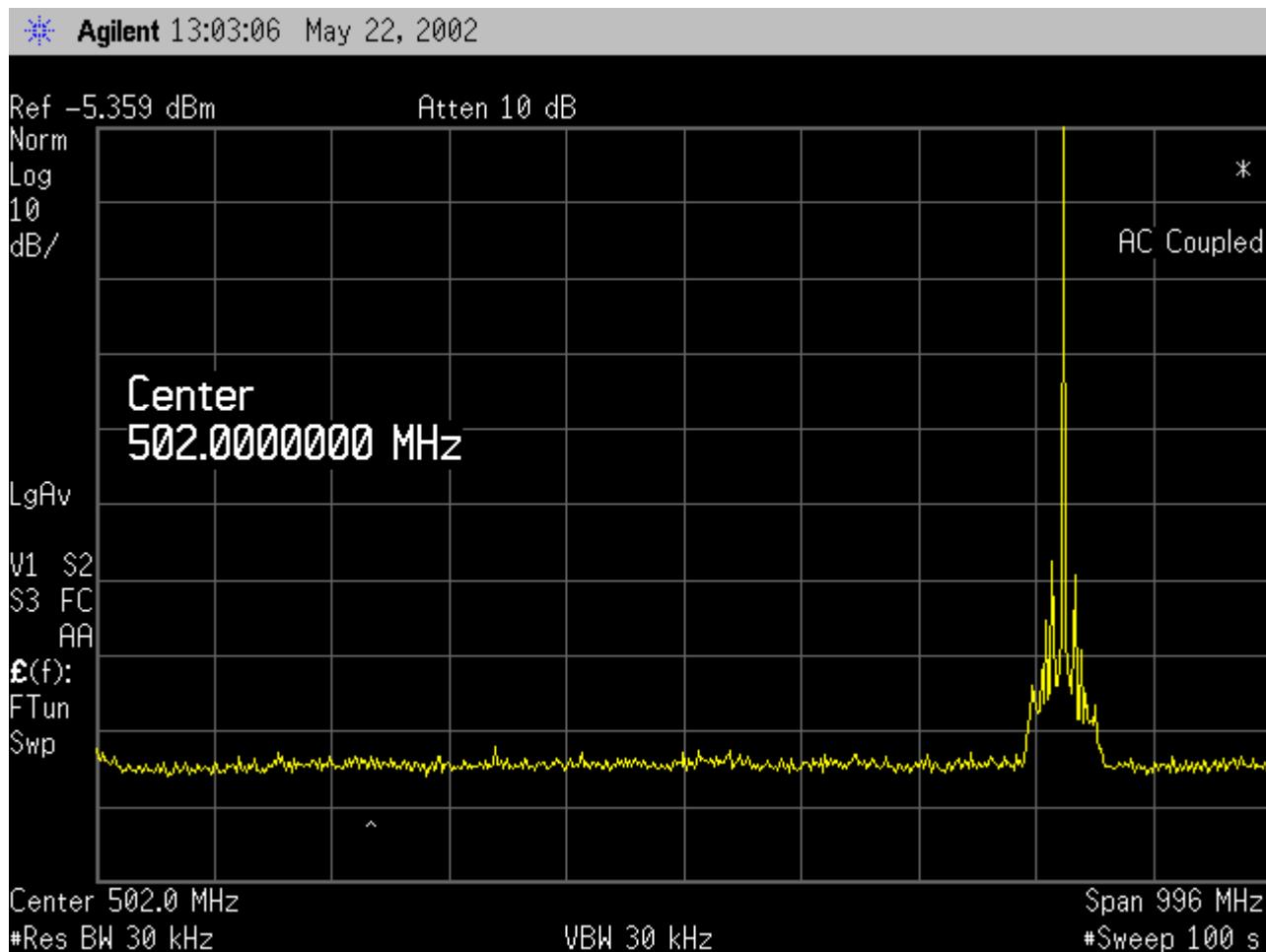
CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 1

OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 830-OCF

CONDUCTED SPURIOUS

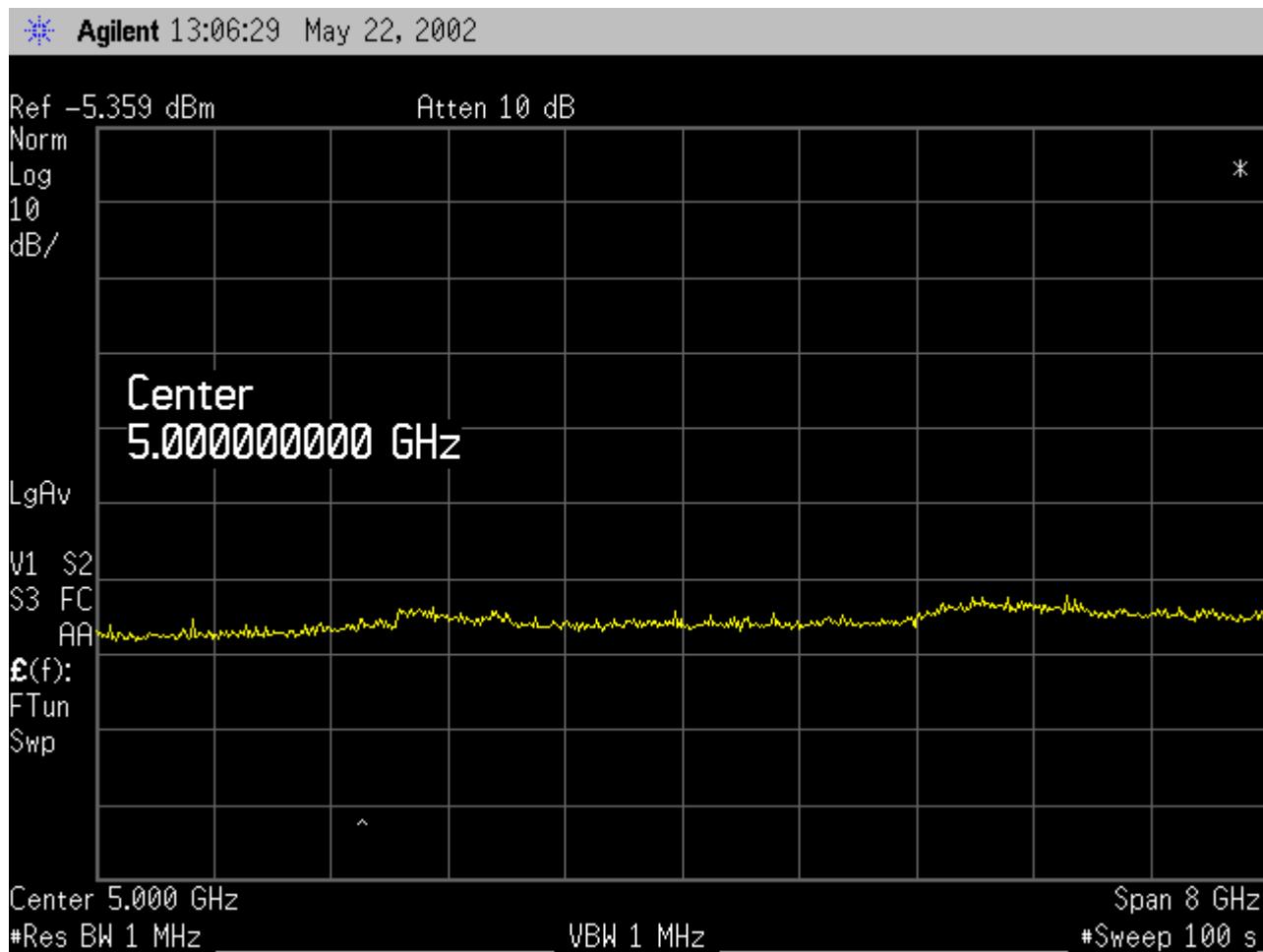
CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 1

OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 830-OCF

CONDUCTED SPURIOUS

CUSTOMER: M/A-COM

DATE: 05/16/02

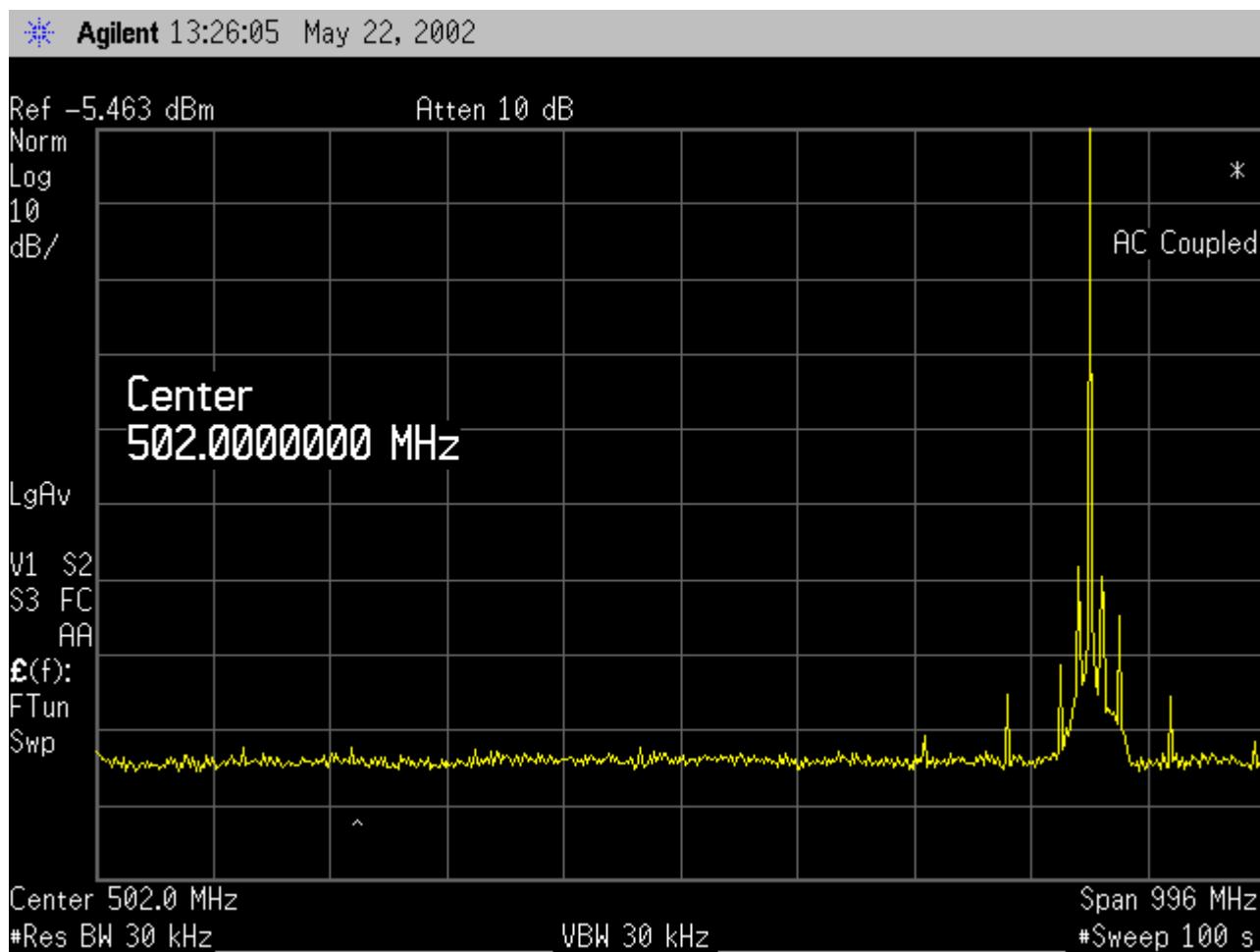
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 1

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 1-OCF TALK AROUND



CONDUCTED SPURIOUS

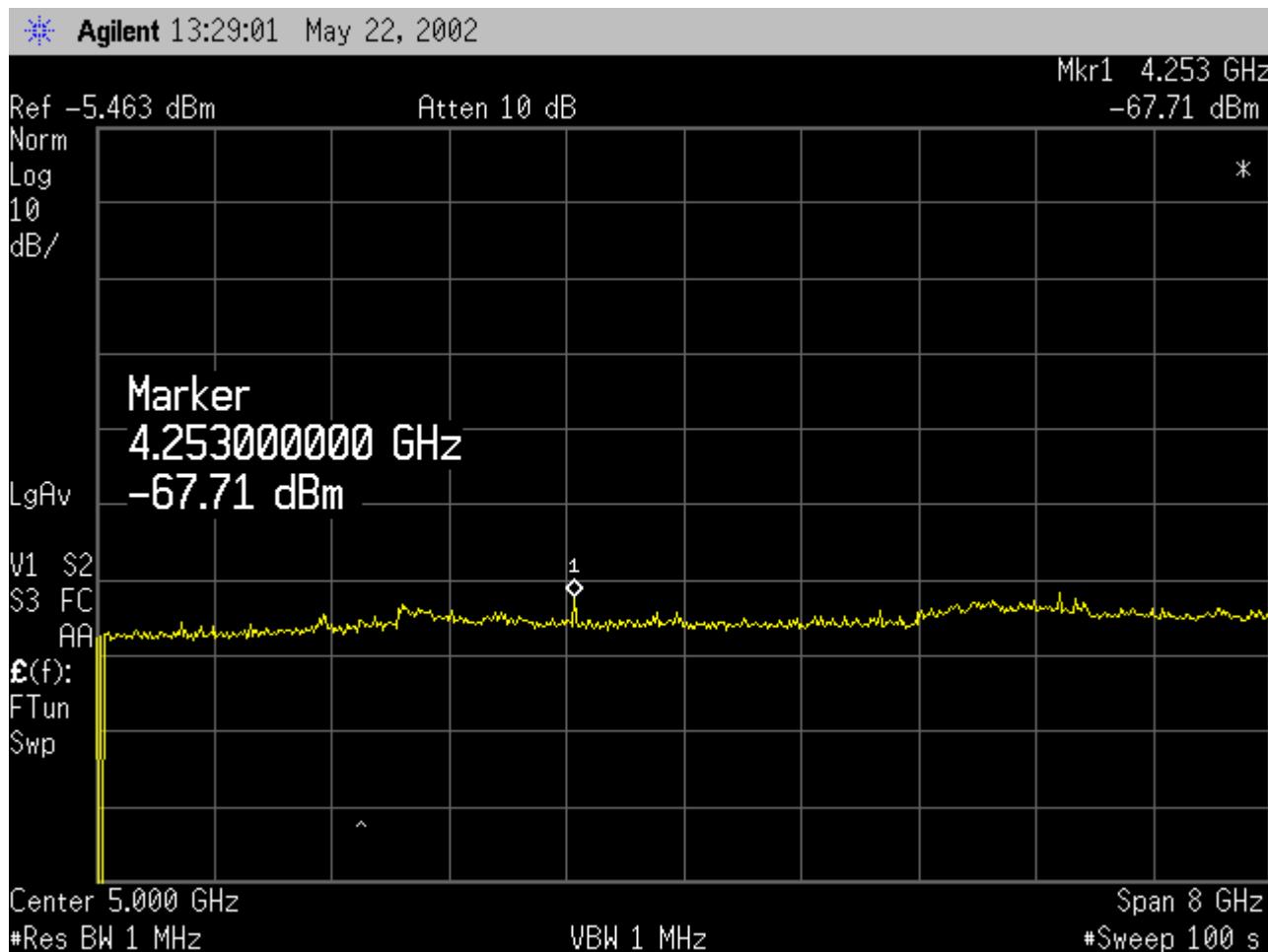
CUSTOMER: M/A-COM

DATE: 05/16/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 1

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER
TRANSMIT MODE – CHANNEL 1-OCF TALK AROUND

CONDUCTED SPURIOUS

CUSTOMER: M/A-COM

DATE: 05/16/02

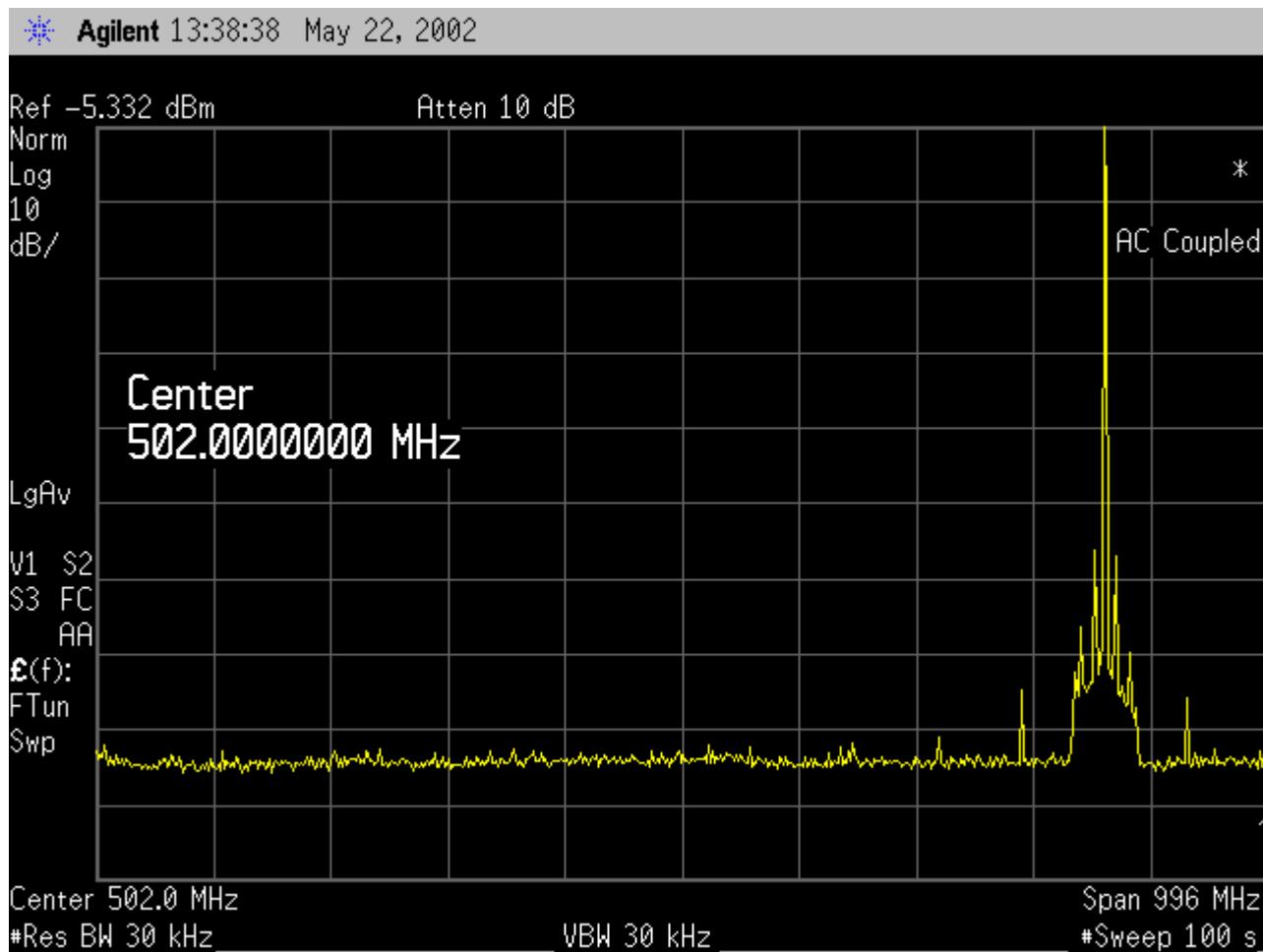
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 1

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 415-OCF TALK AROUND



CONDUCTED SPURIOUS

CUSTOMER: M/A-COM

DATE: 05/16/02

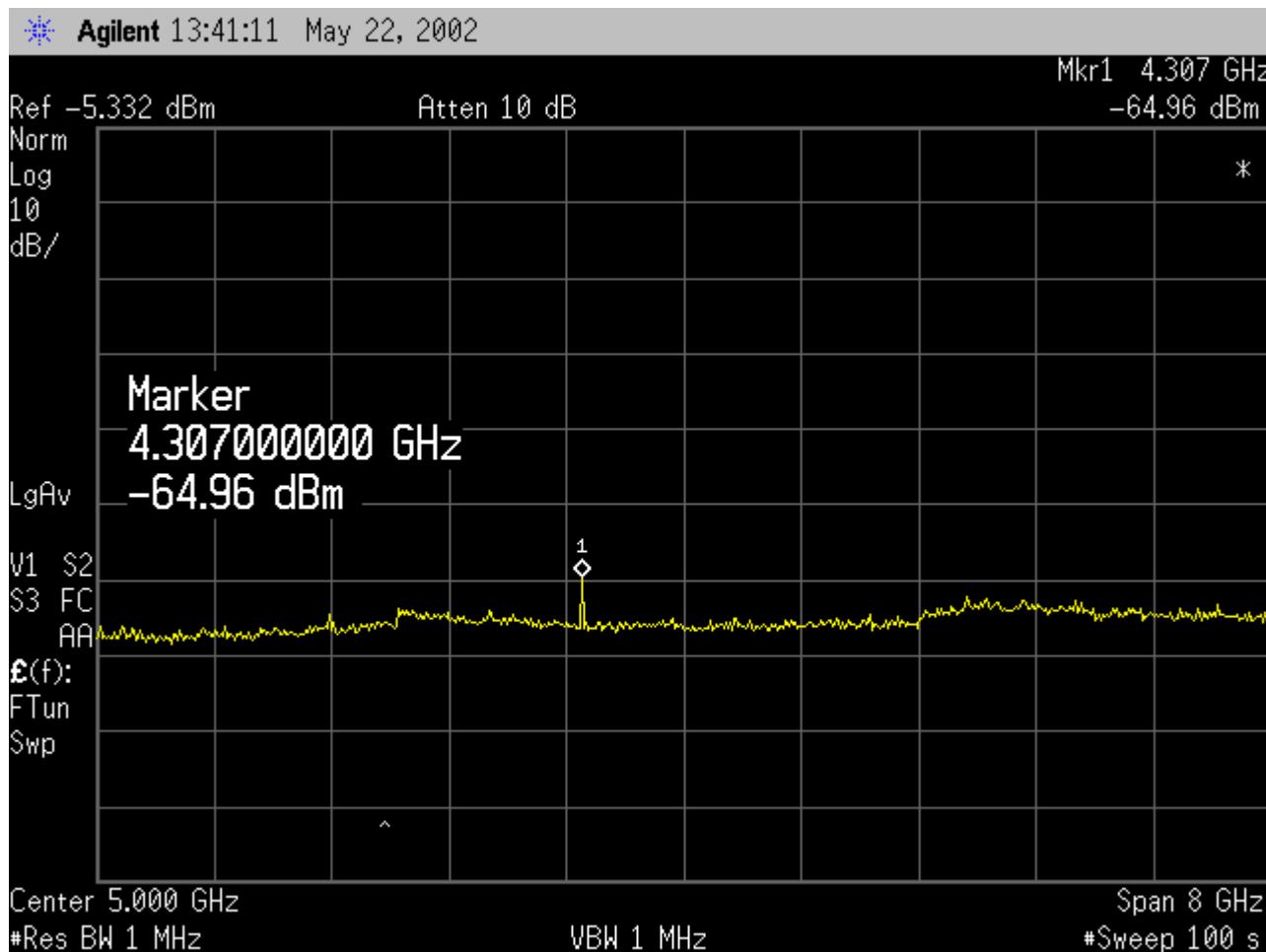
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 1

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 415-OCF TALK AROUND



CONDUCTED SPURIOUS

CUSTOMER: M/A-COM

DATE: 05/16/02

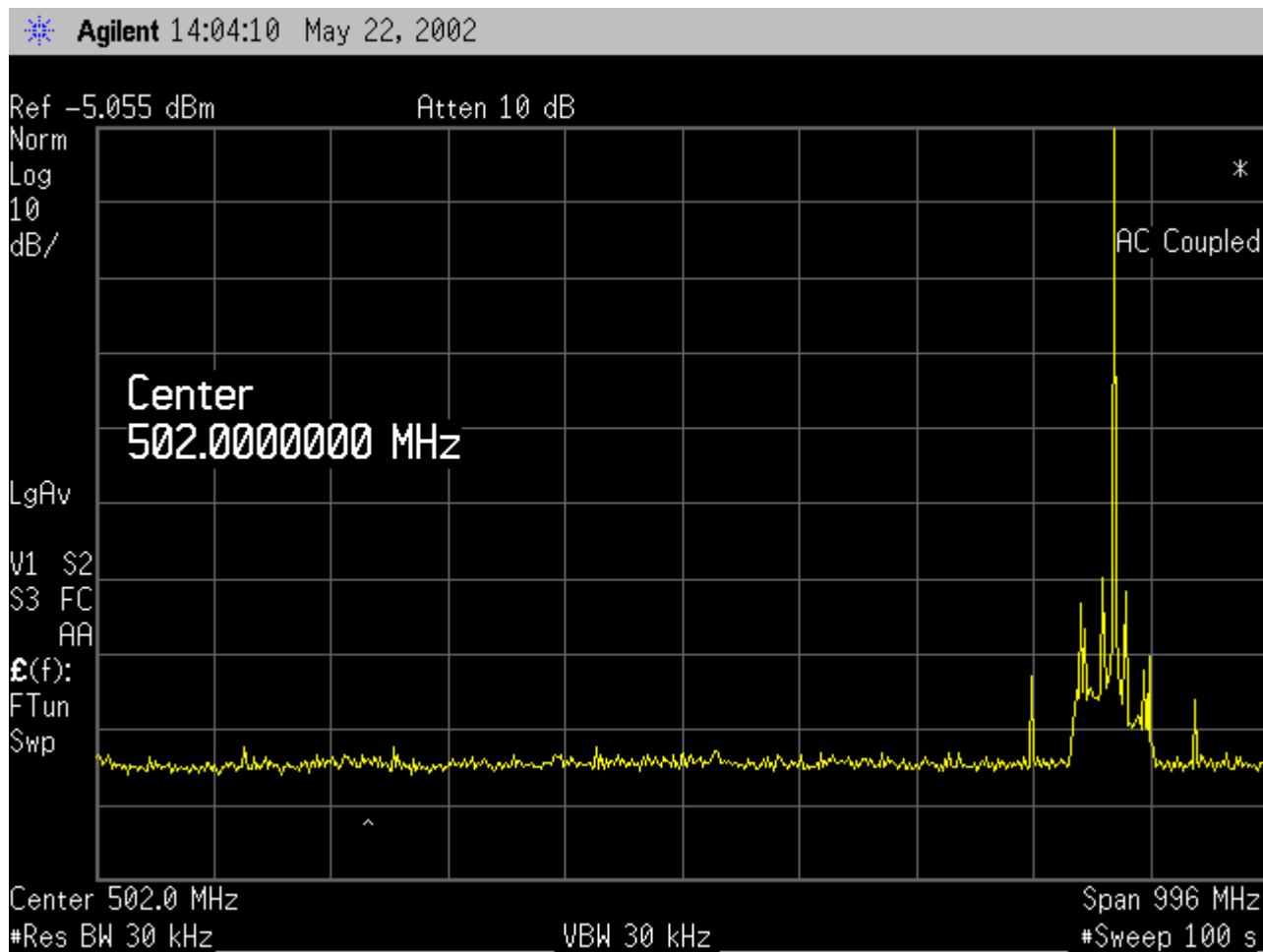
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 1

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE – CHANNEL 830-OCF TALK AROUND



CONDUCTED SPURIOUS

CUSTOMER: M/A-COM

DATE: 05/16/02

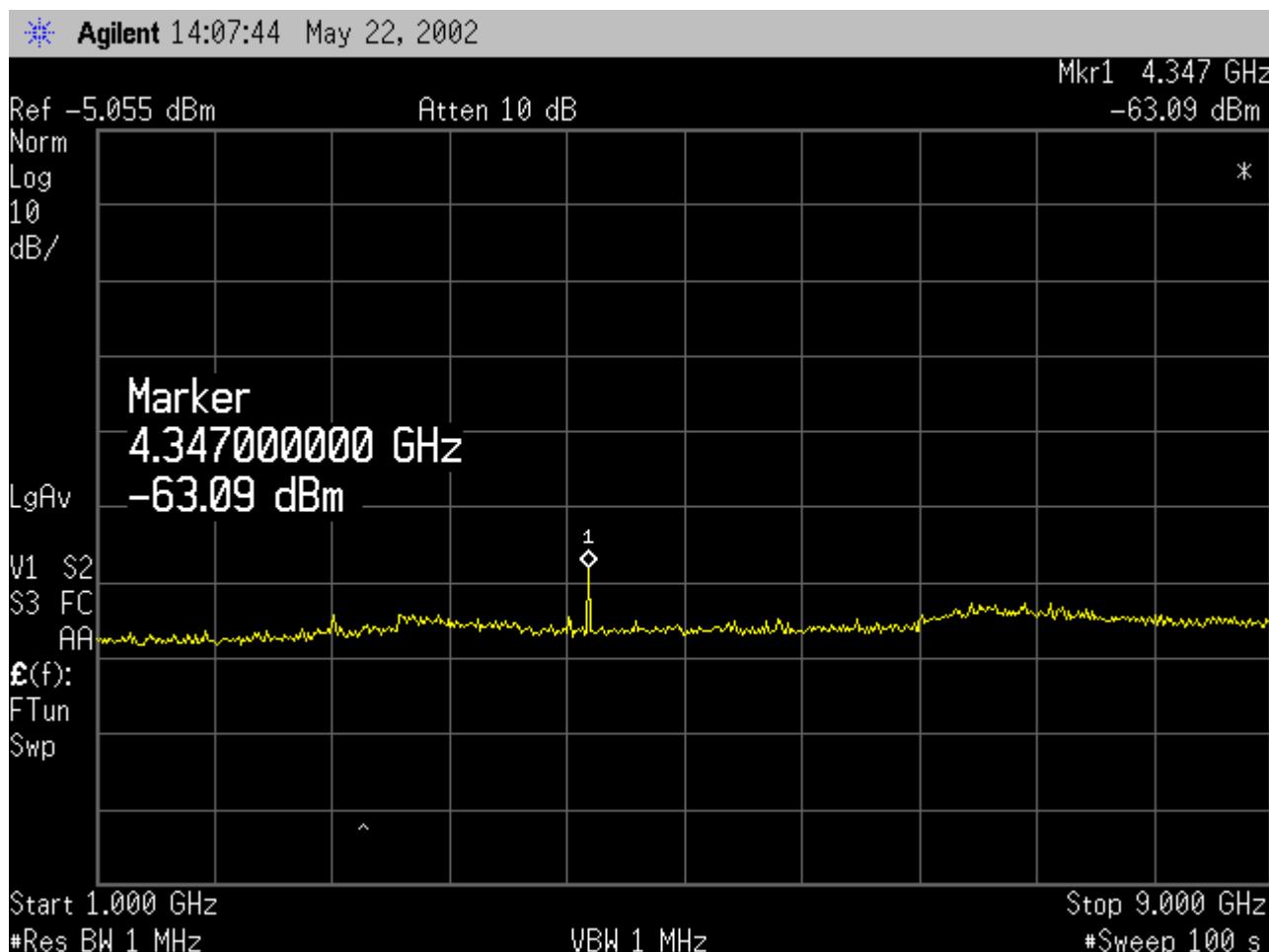
EQUIPMENT: OPENSKY P801T PORTABLE RADIO

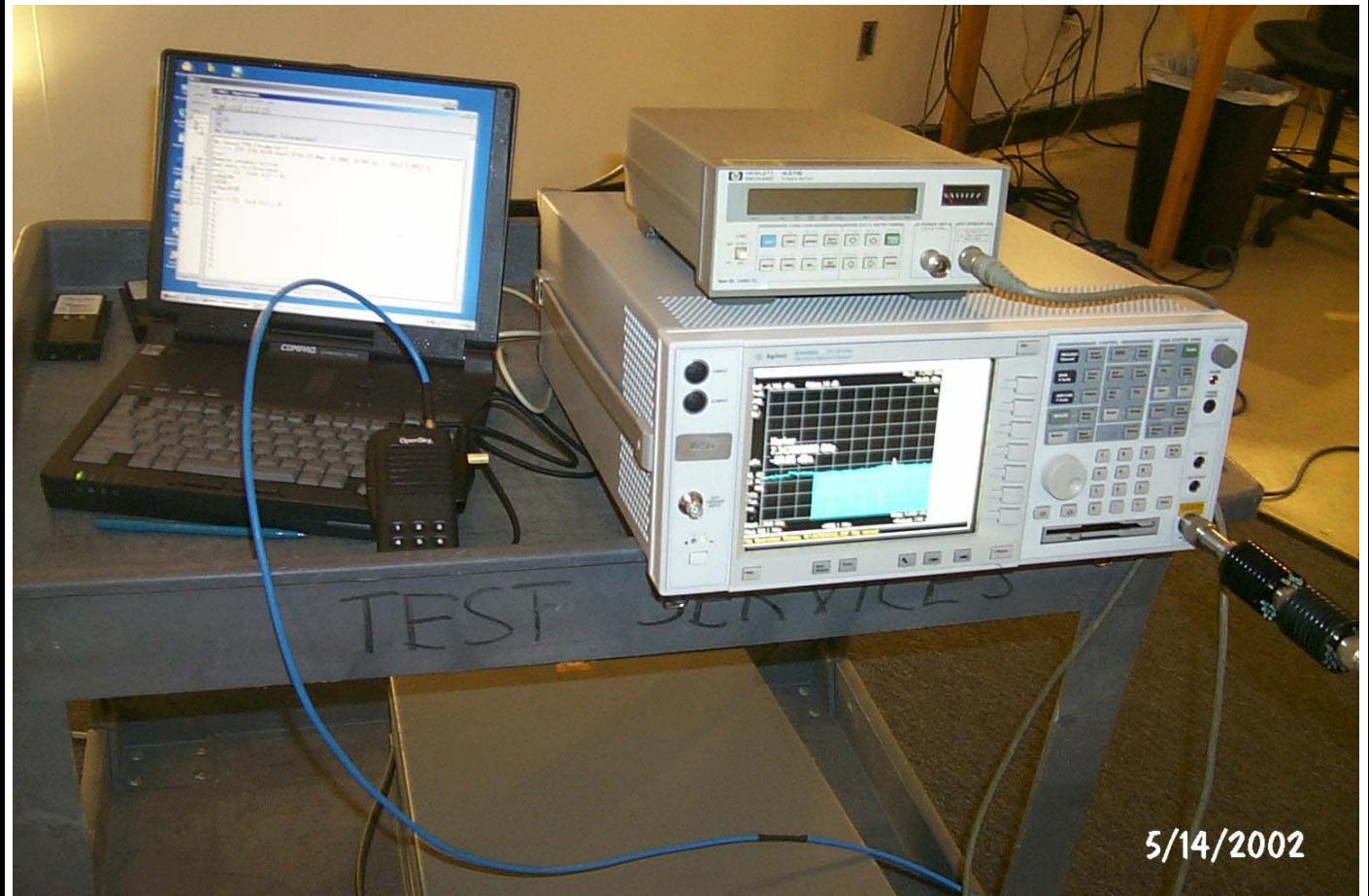
TEST NUMBER: 1

TESTED BY: MANUEL MARTINEZ

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE - CHANNEL 830-OCF TALK AROUND



2.4.6 Photographic Documentation**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 04/22/02 AND 05/16/02****TEST NUMBER: 1****FORM CTS-PHOTO**

Document #: EMI3360.US.02
Date: July 30, 2002

2.5 Radiated Spurious Emissions

2.5.1 Equipment Used

Test Equipment		Asset #	Serial #	Cal Date
X	H/P E4401 Spectrum Analyzer	N/A	4895C76451	04/03
X	EMCO 3115 Microwave Horn Antenna	376	2796	01/03
X	EMCO 3115 Microwave Horn Antenna	376	2796	01/03
X	EMCO 3120 Tuned Dipole Antenna B1	477	56	01/03
X	EMCO 3121 Tuned Dipole Antenna B2	478	176	01/03
X	EMCO 3121 Tuned Dipole Antenna B3	479	728	01/03

2.5.2 Test Conditions

Radiated spurious emissions were measured with the OpenSky P801T Portable Radio placed on top of a wooded turntable located in Test Site A. The test procedure and setup of TIA/EIA 603A was followed. See Figure 5 for the test setup.

The OpenSky P801T Portable Radio was configured to operate in two modes of operation transmitting at the low, mid and high frequency of each band. The OpenSky P801T Portable Radio was set up and powered by a fully charged battery for the test.

The modes of operation and frequencies tested are as follows:

OCF Mode	OCF Talk Around
Ch# 1 806.0125MHz	Ch# 1 851.0125MHz
Ch# 415 816.3625MHz	Ch# 415 861.3625MHz
Ch# 830 823.9875MHz	Ch# 830 868.9875MHz

2.5.3 Test Method

The test method of TIA/EIA 603A section 2.2.12 was followed for radiated spurious emissions. The P801T was placed on the turntable three meters from the receive antenna. A non-radiating load was placed on the P801T. An emission scan was performed from 4 MHz to 9GHz. All spurious emissions were recorded and measured with substitution method listed in TIA/EIA 603A.

2.5.4 Results

The M/A-Com OpenSky P801T Portable Radio meets the requirements for Radiated Spurious Emissions as required by FCC Part 2.933.

Radiated Spurious Test Setup

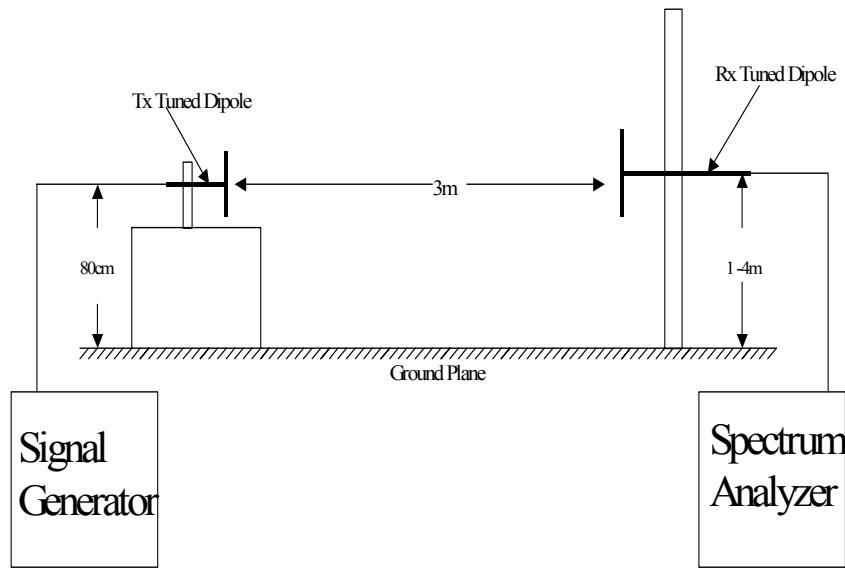


Figure 5

2.5.5 Test Data

CUSTOMER: M/A-COM

DATE: 05/30/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 7

RADIATED SPURIOUS EMISSION MEASUREMENTS
(CHANNEL #1)

FREQUENCY MHz	Mode of Operation	Output of Sig. Gen. -dBm	Cable Loss	Gain dBi	EIRP dBm	LIMIT dBm
1612.025	OCF	32	2.1	7.0	-22.9	-8.6
2418.037	OCF	52	0.7	7.4	-43.9	-8.6
3224.050	OCF	25	0.8	8.2	-16.0	-8.6
4030.062	OCF	31	1.8	7.7	-21.5	-8.6
4836.075	OCF	33	2.9	9.2	-20.9	-8.6
5642.087	OCF	40	3.0	8.8	-28.2	-8.6
6448.100	OCF	30	5.1	10.0	-14.9	-8.6

CUSTOMER: M/A-COM

DATE: 05/30/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 7

RADIATED SPURIOUS EMISSION MEASUREMENTS
(CHANNEL #415)

FREQUENCY MHz	Mode of Operation	Output of Sig. Gen. -dBm	Cable Loss	Gain dBi	EIRP dBm	LIMIT dBm
1632.725	OCF	36	2.1	7.0	-26.9	-8.6
2449.087	OCF	46	0.7	7.4	-37.9	-8.6
3265.450	OCF	27	0.8	8.2	-18.0	-8.6
4081.810	OCF	30	1.8	7.7	-20.5	-8.6
4898.173	OCF	34	2.9	9.2	-21.9	-8.6
5714.535	OCF	37	3.0	8.8	-25.2	-8.6

CUSTOMER: M/A-COM

DATE: 05/30/02

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TEST NUMBER: 7

RADIATED SPURIOUS EMISSION MEASUREMENTS
(CHANNEL #830)

FREQUENCY MHz	Mode of Operation	Output of Sig. Gen. -dBm	Cable Loss	Gain dBi	EIRP dBm	LIMIT dBm
1647.975	OCF	34	2.1	7.0	-24.9	-8.6
2471.962	OCF	42	0.7	7.4	-33.9	-8.6
3295.950	OCF	27	0.8	8.2	-18.0	-8.6
4119.937	OCF	27	1.8	7.7	-17.5	-8.6
4943.925	OCF	31	2.9	9.2	-18.9	-8.6
5767.912	OCF	37	3.0	8.8	-25.2	-8.6

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

DATE: 05/30/02

TEST NUMBER: 7

RADIATED SPURIOUS EMISSION MEASUREMENTS
(CHANNEL #1)

FREQUENCY MHz	Mode of Operation	Output of Sig. Gen. -dBm	Cable Loss	Gain dBi	EIRP dBm	LIMIT dBm
1702.025	OCF Talk Around	46	2.1	7.0	-36.9	-8.6
2553.037	OCF Talk Around	34	0.7	7.4	-25.9	-8.6
3404.050	OCF Talk Around	32	0.8	8.2	-23.0	-8.6
4255.062	OCF Talk Around	32	1.8	7.7	-22.5	-8.6
5106.075	OCF Talk Around	34	2.9	9.2	-21.9	-8.6
5957.087	OCF Talk Around	29	3.0	8.8	-17.2	-8.6

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

DATE: 05/30/02

TEST NUMBER: 7

RADIATED SPURIOUS EMISSION MEASUREMENTS
(CHANNEL #415)

FREQUENCY MHz	Mode of Operation	Output of Sig. Gen. -dBm	Cable Loss	Gain dBi	EIRP dBm	LIMIT dBm
1722.725	OCF Talk Around	45	2.1	7.0	-35.9	-8.6
2584.087	OCF Talk Around	37	0.7	7.4	-28.9	-8.6
3445.450	OCF Talk Around	29	0.8	8.2	-20.0	-8.6
4306.812	OCF Talk Around	46	1.8	7.7	-36.5	-8.6
5168.175	OCF Talk Around	33	2.9	9.2	-20.9	-8.6
6029.537	OCF Talk Around	36	3.0	8.8	-24.2	-8.6

CUSTOMER: M/A-COM

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

DATE: 05/30/02

TEST NUMBER: 7

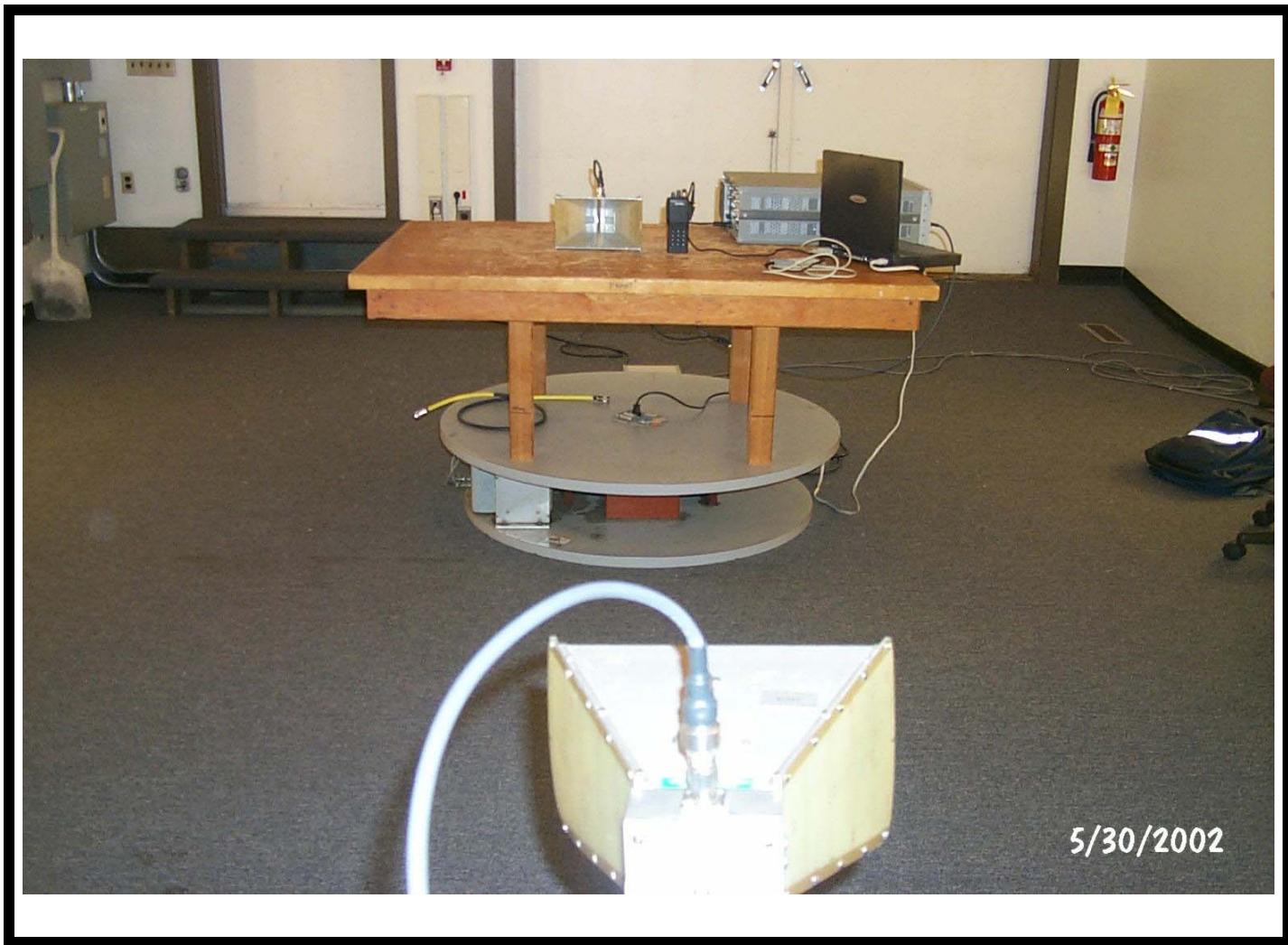
RADIATED SPURIOUS EMISSION MEASUREMENTS
(CHANNEL #830)

FREQUENCY MHz	Mode of Operation	Output of Sig. Gen. -dBm	Cable Loss	Gain dBi	EIRP dBm	LIMIT dBm
1737.975	OCF Talk Around	52	2.1	7.0	-42.9	-8.6
2606.962	OCF Talk Around	35	0.7	7.4	-26.9	-8.6
3475.950	OCF Talk Around	37	0.8	8.2	-28.0	-8.6
4344.937	OCF Talk Around	27	1.8	7.7	-17.5	-8.6
5213.925	OCF Talk Around	35	2.9	9.2	-22.9	-8.6
6082.912	OCF Talk Around	27	3.0	8.8	-15.2	-8.6
6951.900	OCF Talk Around	40	5.1	10.0	-24.9	-8.6

2.5.6 Photographic Documentation**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/30/02****TEST NUMBER: 7**

Photograph Description: Radiated set-up

FORM CTS-PHOTO

CUSTOMER: M/A-COM**EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/30/02****TEST NUMBER: 7**

Photograph Description: Radiated set-up

FORM CTS-PHOTO

Document #: EMI3360.US.02
Date: July 30, 2002

2.6 Frequency Stability

2.6.1 Equipment Used

Test Equipment		Asset #	Serial #	Cal Date
X	H/P Frequency Counter 5340A	139	214A08245	12/02
X	Cincinnati Sub Zero ZH-32-2H/AC Temperature Chamber	544	Z09712530	05/03
X	Narda 769-20 High Band Attenuator	284	03793	C.P.U.
X	H/P 8368A Signal Generator	399	8965B0091	06/02
X	Narda 769-20 High Band Attenuator	471	02951	C.P.U.

2.6.2 Test Conditions

The Frequency Stability “Temperature” tests were performed with the OpenSky P801T Portable Radio placed inside a Temperature/Humidity Chamber.

The Frequency Stability “Voltage” tests were performed with the OpenSky P801T Portable Radio placed on top of a wooden turntable. The ambient temperature was 20°C

The OpenSky P801T Portable Radio was configured to operate at the middle channel OCF mode.

2.6.3 Test Method

Frequency Stability-Temperature

The OpenSky P801T Portable Radio was placed inside a temperature/humidity chamber. The ambient temperature inside the chamber is computer controlled and varied from -30°C to +50° in 10° steps for this test. The temperature was initially set to 20°C and a reference measurement was taken. The ambient temperature was then dropped to -30°C and stepped up to +50°C in 10°C intervals. A measurement was taken every 10°C. The output of the OpenSky P801T Portable Radio was connected to a frequency counter via two 20dB attenuators and a N-Type coax cable. The P801T Radio was set to 816.3625 MHz (Channel 415) OCF Mode. See Figure 6 for test set-up. The temperature was measured by placing a thermal couple on the outside chassis of the P801T Radio. The P801T Portable Radio was turned off between each 10° step.

Frequency Stability-Voltage

The OpenSky P801T Portable Radio was placed on top of a wooden table connected to a modified battery pack enclosure. The battery pack enclosure with exposed terminals (no cells) was connected to a DC supply. Testing was performed at 8VDC (above nominal), 7.3VDC (nominal), and 6.093VDC (battery end-point). The voltage variation test was performed at the high, middle, and low channels in the OCF Mode.

The modes of operation and frequencies tested are as follows:

OCF Mode	
Ch# 1	806.0125MHz
Ch# 415	816.3625MHz
Ch# 830	823.9875MHz

2.6.4 Results

The M/A-Com OpenSky P801T Portable Radio meets the Frequency Stability requirements of FCC Part 90.213 and Part 2.995.

Test Setup

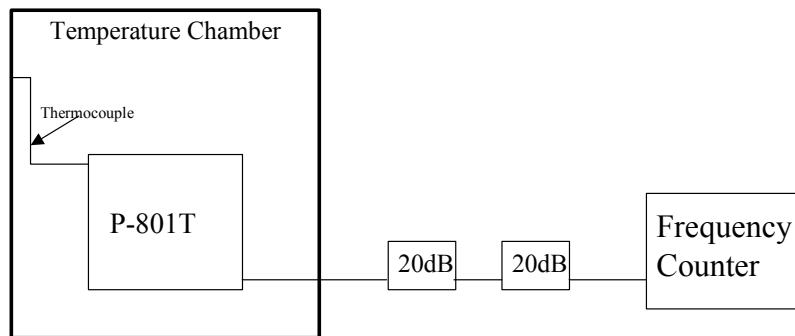


Figure 6

2.6.5 Test Data

P801T Radio OCF Mode**Frequency Stability Test (Voltage)**

	CH001 (806.0125 MHz)	CH 415 (816.3625 MHz)	CH 830 (823.9875 MHz)
8.00 VDC	806.01214	816.36222	823.98723
7.30 VDC	806.01234	816.36233	823.98731
6.35 VDC	806.01243	816.36244	823.98746

Frequency Stability Test (Temperature)

Temperature	Frequency (MHz) (823.9875 MHz)
-30°C	823.98607
-20°C	823.98606
-10°C	823.98607
0°C	823.98613
10°C	823.98639
20°C	823.98683
30°C	823.98706
40°C	823.98745
50°C	823.98753

2.6.6 Photographic Documentation**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/14/02****TEST NUMBER: 6**

Photograph Description: Temperature test set-up

FORM CTS-PHOTO

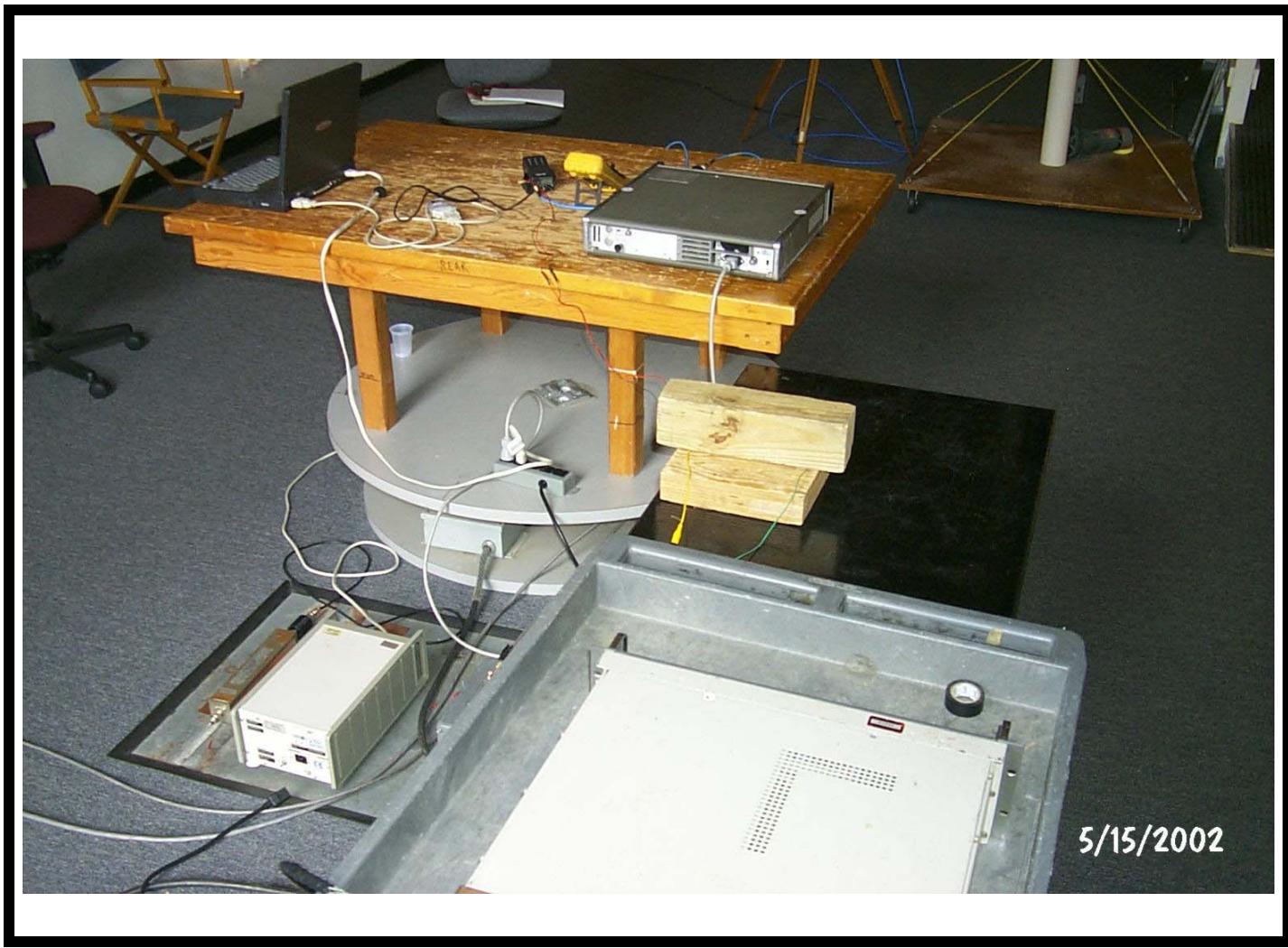
CUSTOMER: M/A-COM**EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/14/02****TEST NUMBER: 6****Photograph Description: Temperature test set-up****FORM CTS-PHOTO**

Document #: EMI3360.US.02
Date: July 30, 2002

CUSTOMER: M/A-COM**EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/30/02****TEST NUMBER: 6**

Photograph Description: Voltage test set-up

FORM CTS-PHOTO

CUSTOMER: M/A-COM**EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/15/02****TEST NUMBER: 6**

Photograph Description: Voltage test set-up

FORM CTS-PHOTO

2.7 Radiated Electromagnetic Emissions Receiver

2.7.1 Equipment Used

Test Equipment		Asset #	Serial #	Cal Date
X	Tektronix 496 Spectrum Analyzer	1	B010559	10/02
X	H/P E4401 Spectrum Analyzer	N/A	895C76451	04/03
X	Rhode and Schwartz ESV Test Receiver	15	875931049	09/02
X	Hewlett Packard 8447D Pre Amp	4	2727A06065	01/03
X	EMCO 3120 Tuned Dipole Antenna B1	477	56	01/03
X	EMCO 3121 Tuned Dipole Antenna B2	478	176	01/03
X	EMCO 3121 Tuned Dipole Antenna B3	479	728	01/03
X	EMCO 3115 Microwave Horn Antenna	376	2796	01/03

2.7.2 Test Conditions

The OpenSky P801T Portable Radio was set up on a wooden table 3 meters from the receiving antenna within Open Area Test Site A.

The OpenSky P801T Portable Radio was configured to operate in the OCF mode of operation to maximize the emissions. The EUT was set up and powered by a fully charged battery for radiated emission tests. The worst case signals detected were recorded.

The OpenSky P801T Portable Radio was tested in two different configurations.

1. Standalone with $\frac{1}{2}$ wave antenna.
2. Standalone with $\frac{1}{4}$ wave antenna.

2.7.3 Test Method

The test method of ANSI-C63.4 was followed for Class B equipment. For the radiated emission measurements, a manual scan was performed from 30MHz to 10GHz. During this scan, the antenna, turntable and EUT's cable positions were manipulated to maximize the emission levels in a given frequency band displayed on the spectrum analyzer.

2.7.4 Results

The M/A-Com OpenSky P801T Portable Radio meets the requirements for Radiated Emissions as required by FCC Part 15 Subpart B for Class B equipment.

2.7.5 Test Data

RADIATED E FIELD EMISSION MEASUREMENTS

CUSTOMER: M/A-COM

DATE: 05/13/02

EQUIPMENT: P801T S/N 158 Ch. HALF WAVE ANTENNA

TEST NUMBER: 4

TESTED BY: MANUEL MARTINEZ

COUPLING DEVICE: DIPOLE ANTENNAS

OPERATING MODE: OCF

TEST SPEC: FCC PART 15 AND 90 CLASS B

BANDWIDTH: [X] 100 kHz (PEAK)/120 kHz (QP)

PROCEDURE: ANSI C63.4

FREQUENCY RANGE: [X] 30MHz – 10GHz

ANTENNA DISTANCE: [X] 3 METERS

[] 11.76 GHz – 12.7 GHz

[] 10 METERS

FREQUENCY MHz	PEAK MEASURED LEVEL -dBm	QUASI- PEAK MEASURED LEVEL dBuV	ANTENNA HEIGHT (METERS)	TURNTABLE AZIMUTH (DEGREES)	ANTENNA H/V	ANTENNA FAC/CABLE LOSS dB	FIELD LEVEL dBuV/m ♦	LIMIT dBuV/m (QP)
400.0	85	--	1.5	0	V	-4.0	18.0	46.0
418.0	84	--	1.5	0	V	-3.3	19.7	46.0
921.01	--	6	1.5	0	V	+32.3	38.3	46.0
931.36	--	6	1.5	0	V	+32.5	38.5	46.0
938.9	--	7.5	1.5	0	V	+32.7	40.2	46.0
With Lapel microphone								
921.01	--	6.5	1.5	0	V	+32.3	38.8	46.0
931.36	--	6.5	1.5	0	V	+32.5	39.0	46.0
938.9	--	7.5	1.5	0	V	+32.7	40.2	46.0
With programming cable								
921.01	--	6	1.5	0	V	+32.3	38.3	46.0
931.36	--	6	1.5	0	V	+32.5	38.5	46.0
938.9	--	7	1.5	0	V	+32.7	39.7	46.0
1878.0	88	--	1.2	0	V	+28.6	47.6	54.0

♦ All signals greater than 3dB from the limit are calculate to the nearest whole number.

♦ Field Level (dBuV/m) = [107 – Measured level (dBm)] + Antenna Factor/Cable Loss (dB)

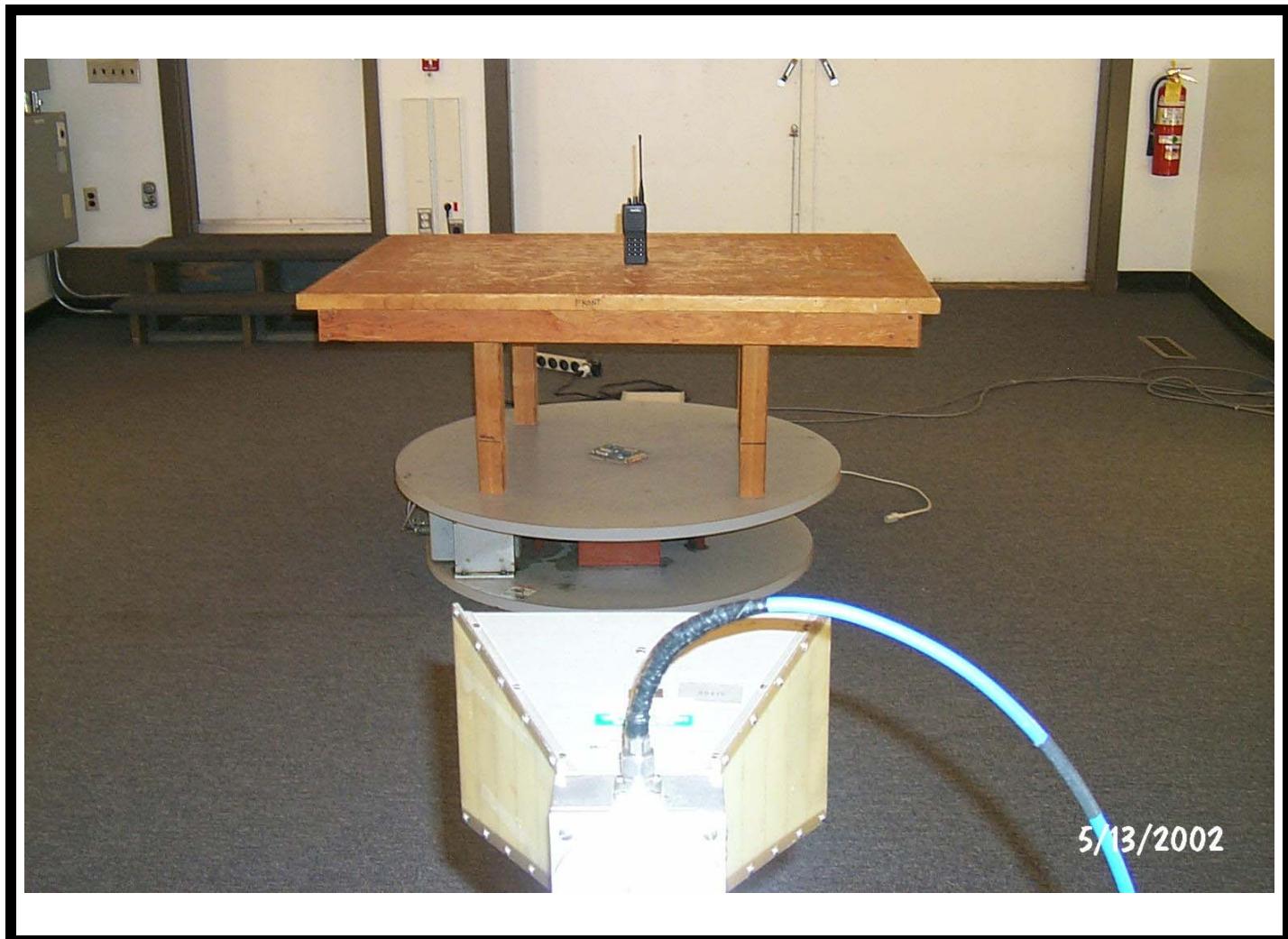
Ambient Temperature: 66°F

Humidity: 46%

Atmospheric Pressure: 30.1"

NOTES:

FORM CTS-DS-001R

2.7.6 Photographic Documentation**CUSTOMER: M/A-COM****EQUIPMENT: OPENSKY P801T PORTABLE RADIO****DATE: 05/13/02****TEST NUMBER: 4****Photograph Description: Test set-up****FORM CTS-PHOTO**

CHOMERICS

 Parker Seals

TEST SERVICES

APPENDIX A
TEST LOG

Document #: EMI3360.US.02
Date: July 30, 2002

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TEST LOG

CUSTOMER: M/A-COM

PROGRAM: N/A

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: MANUEL MARTINEZ

Pre-Test Checklist	Date	Comments					
	04/17/02	Test Plan/Procedure: ANSI C63.4 and per Test Spec Test Specification: FCC Part 90, FCC Part 2, FCC Part 15 Chomerics Procedure: CHO TPEC T2 EUT Power Requirement Verified: DC Battery EUT Functional Operational Check: [X] Pass [] Fail Environmental: Bonding/Grounding: N/A Safety Issues: N/A					
In-Process Test Checklist	Date	Test #	Test Type	Test Equipment Calibrated	Test Performed Properly – Data Accepted	EUT Set-up Check/Operational Check	EUT Pass/Fail
	04/22/02 & 05/16/02	1	Conducted Spurious	X	X	X	PASS
	04/22/02 & 05/16/02	2	Occupied Bandwidth	X	X	X	PASS
	04/30/02 & 05/14/02	3	RF Output Power	X	X	X	PASS
	05/13/02	4	FCC Part 15 Radiated Emissions	X	X	X	PASS
	05/14/02 & 05/16/02	5	Emission Mask	X	X	X	PASS
	05/15/02 & 05/30/02	6	Frequency Stability Voltage and Temperature	X	X	X	PASS
	05/30/02	7	Radiated Spurious	X	X	X	PASS
Post Test Checklist	Date: 05/30/02	EUT Functional Operation Check: [X] Pass [] Fail			<hr/> Test Engineer/Tech Approved Signatory		

FORM CTS-010

Document #: EMI3360.US.02
Date: July 30, 2002

TEST LOG

CUSTOMER: M/A-COM

PROGRAM: N/A

EQUIPMENT: OPENSKY P801T PORTABLE RADIO

TESTED BY: ROBERT FOSTER

Pre-Test Checklist	Date	Comments					
	05/22/02	Test Plan/Procedure: ANSI C63.4 and per Test Spec Test Specification: FCC Part 90, FCC Part 2 Chomerics Procedure: CHO TPEC T2 EUT Power Requirement Verified: DC Battery EUT Functional Operational Check: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail Environmental: Bonding/Grounding: N/A Safety Issues: N/A					
In-Process Test Checklist	Date	Test #	Test Type	Test Equipment Calibrated	Test Performed Properly – Data Accepted	EUT Set-up Check/Operational Check	EUT Pass/Fail
	05/22/02	1	Emission Mask	X	X	X	PASS
	05/22/02	2	Conducted Spurious	X	X	X	PASS
	05/22/02	3	Occupied Bandwidth	X	X	X	PASS
	05/22/02	4	Radiated Spurious	X	X	X	PASS
Post Test Checklist	Date: 05/30/02	EUT Functional Operation Check: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail			<hr/> Test Engineer/Tech <hr/> Approved Signatory		

FORM CTS-010

Document #: EMI3360.US.02
Date: July 30, 2002