

**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

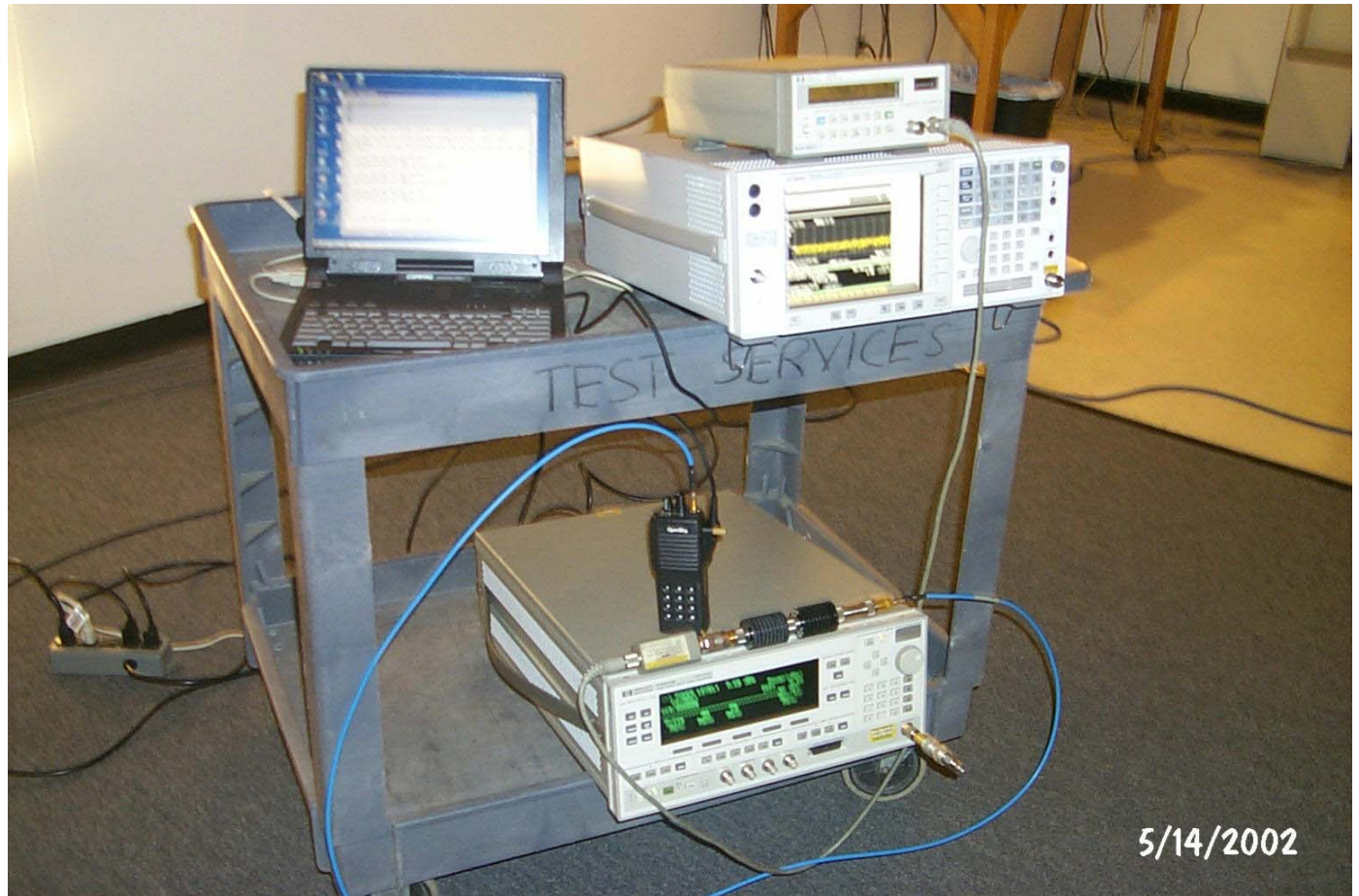
**2.1.4 Results**

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.

**TEST SERVICES****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.

## Test Setup

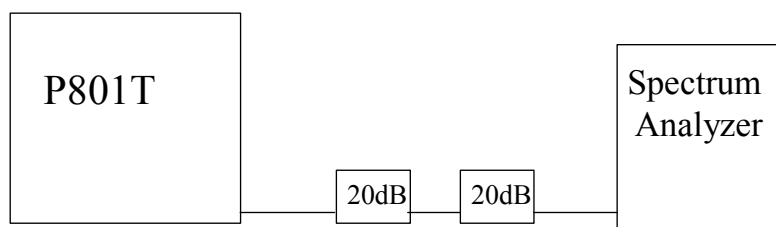
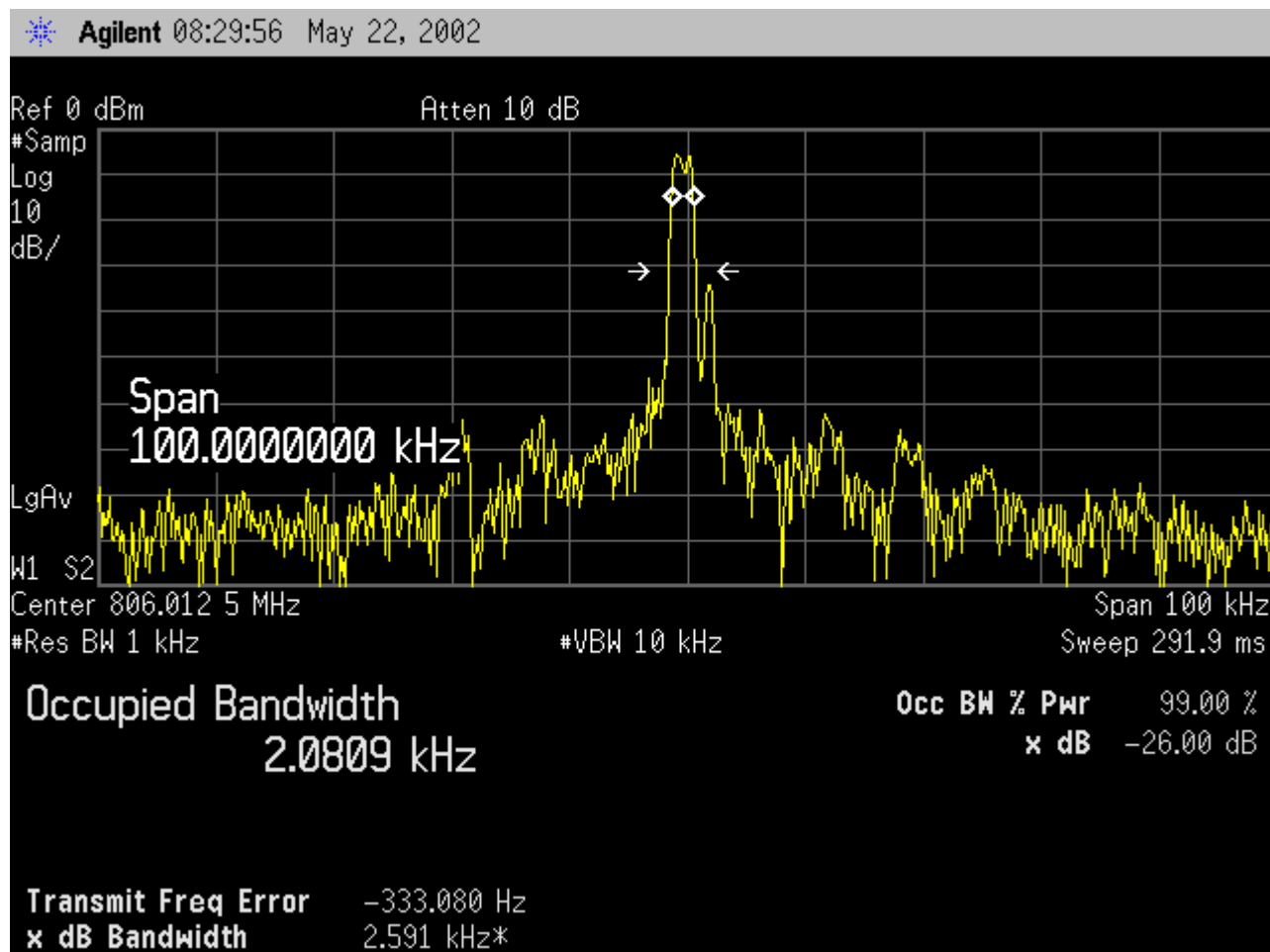


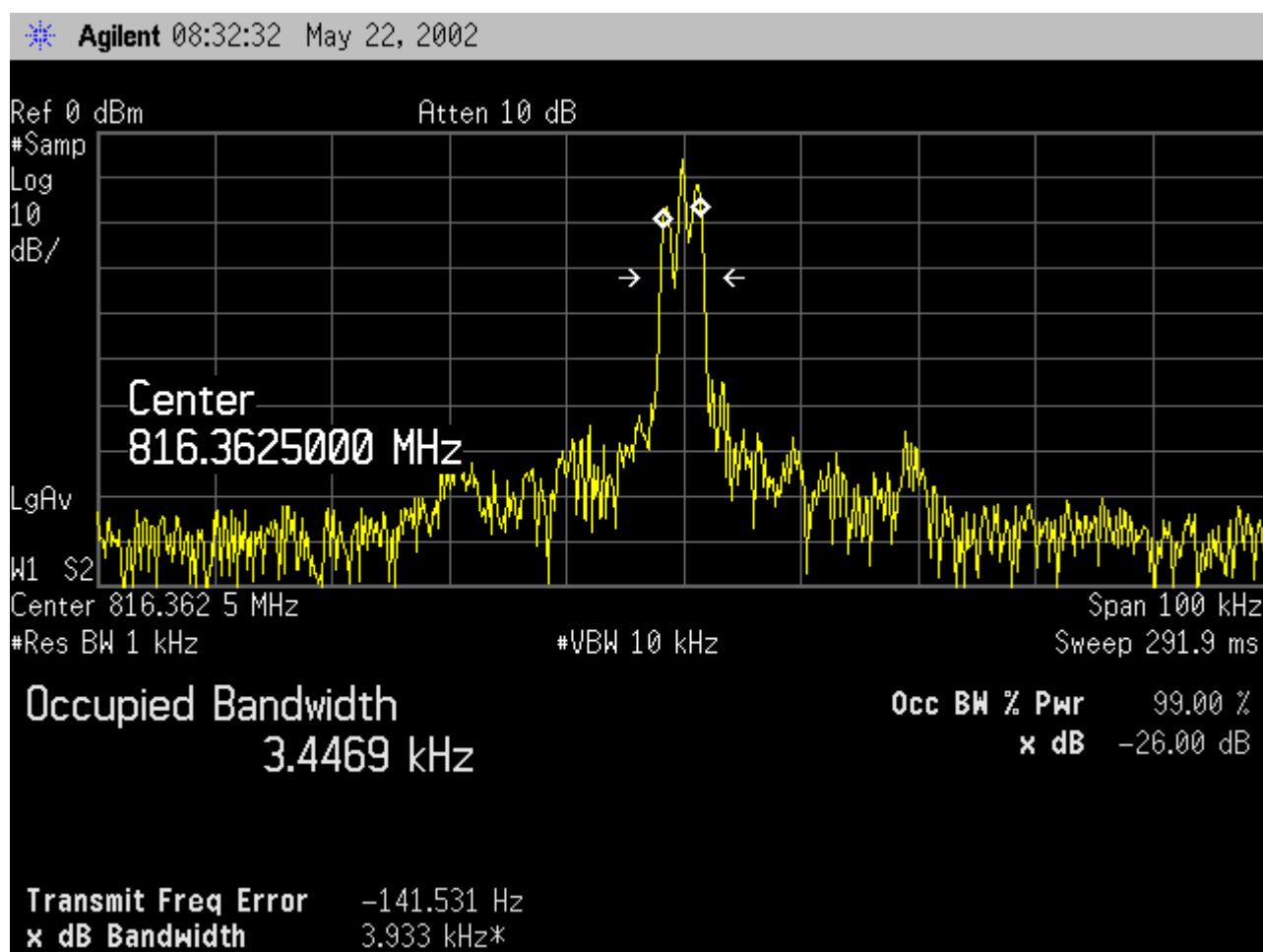
Figure 4

**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**

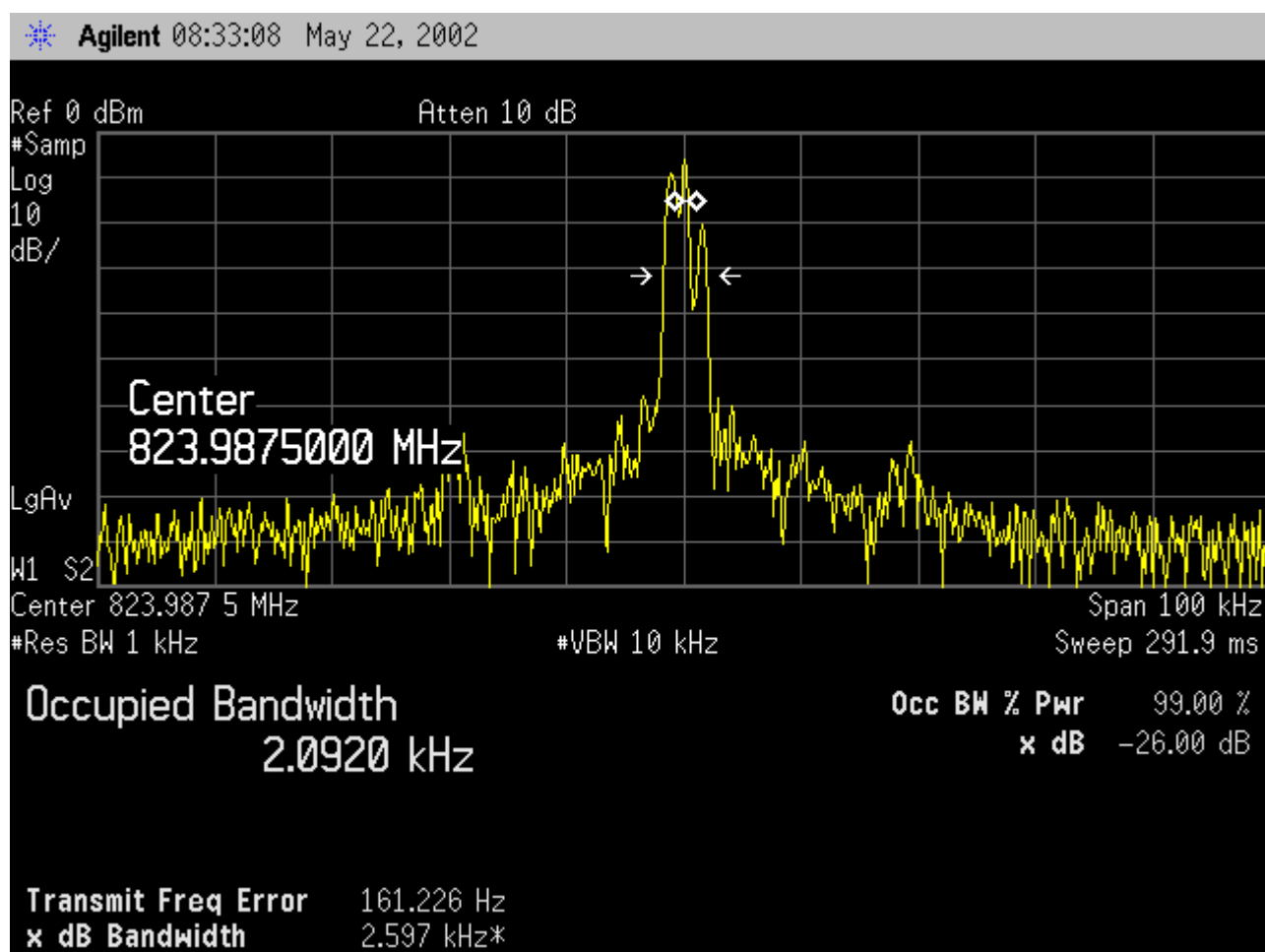


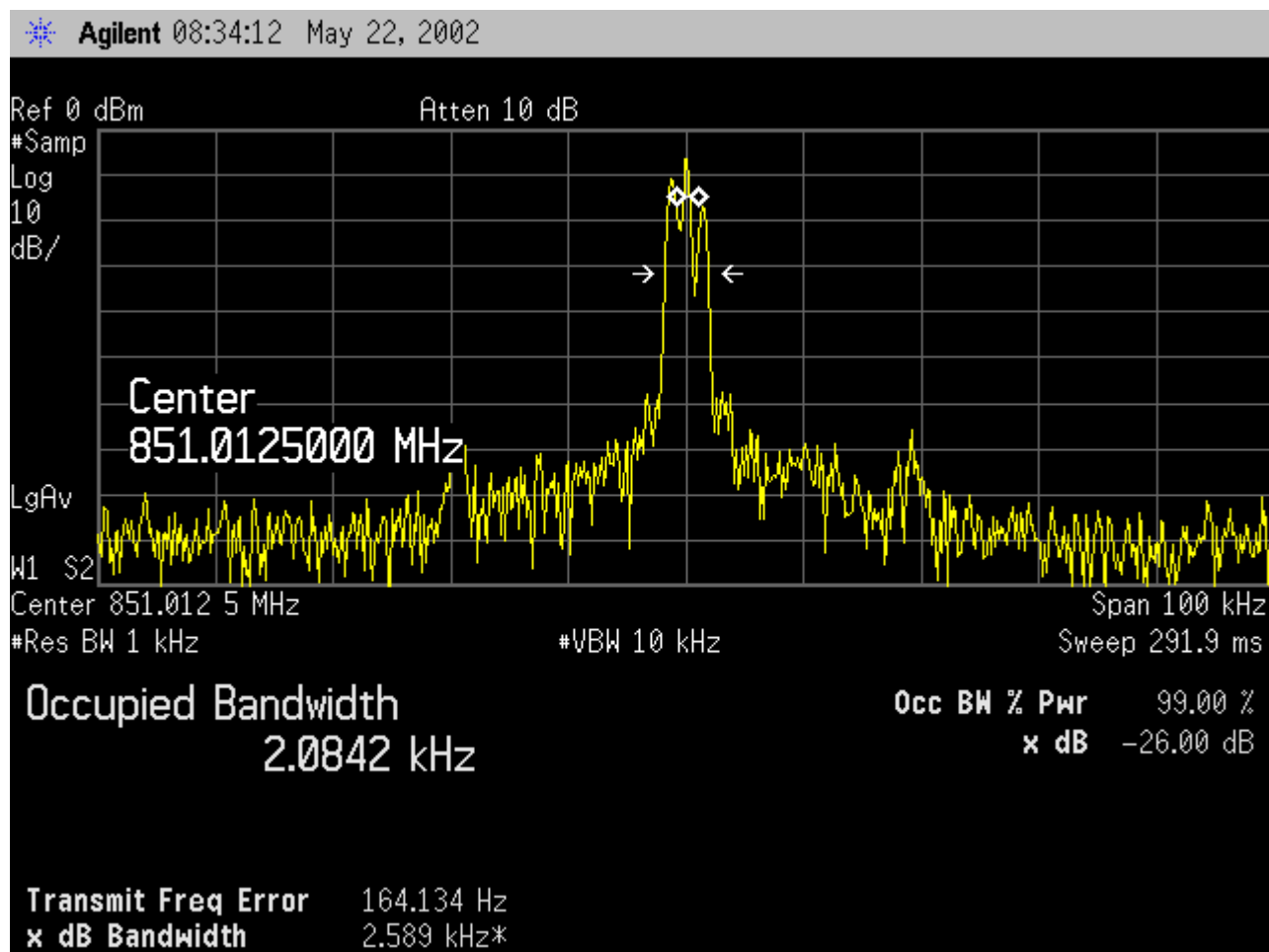


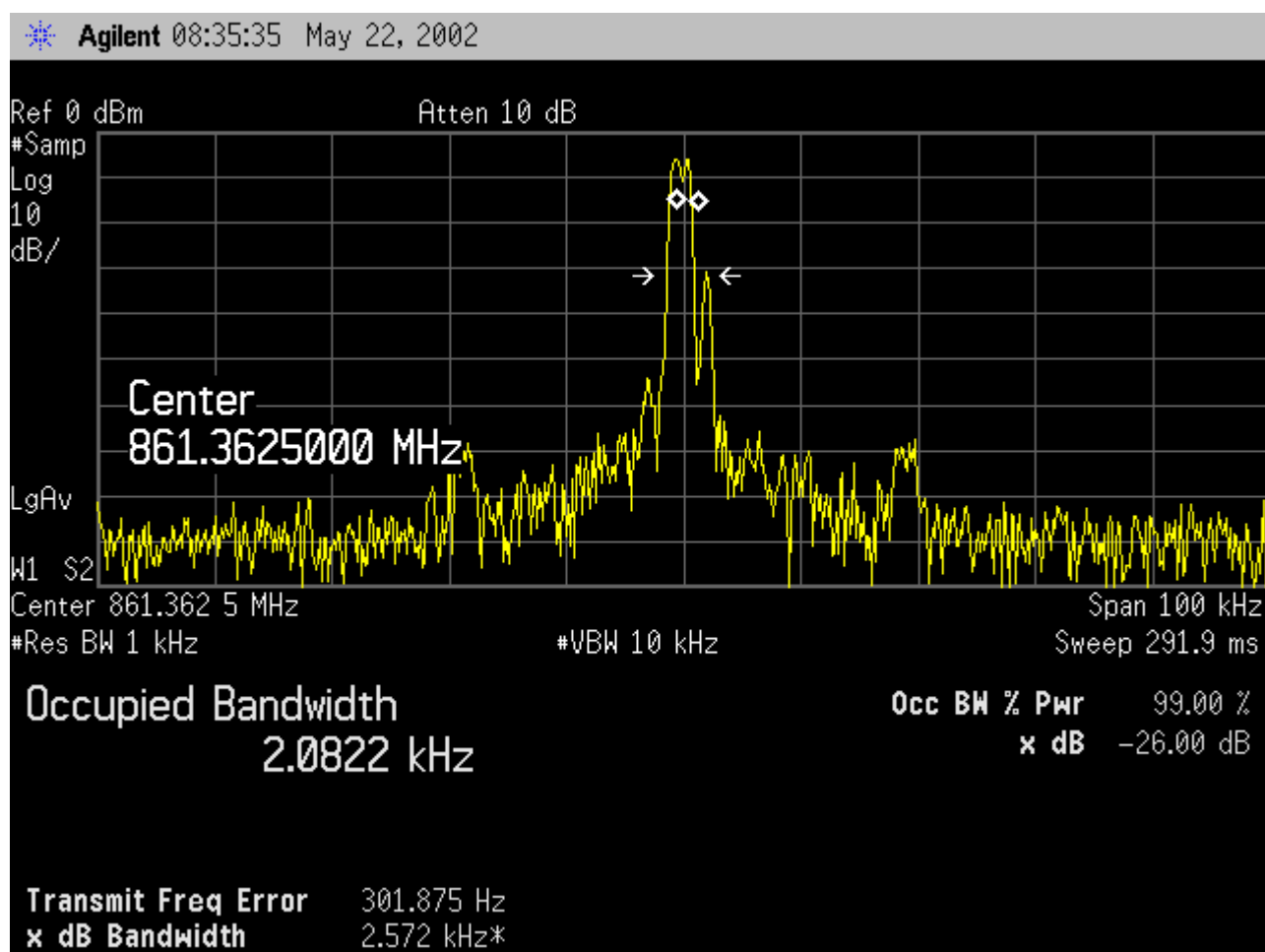
**OCCUPIED BANDWIDTH**

**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**



**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 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 CHANNEL****TRANSMIT MODE - CHANNEL 415- OCF TALK AROUND**

## OCCUPIED BANDWIDTH

CUSTOMER: M/A-COM

EQUIPMENT: OPENSky P801T PORTABLE RADIO

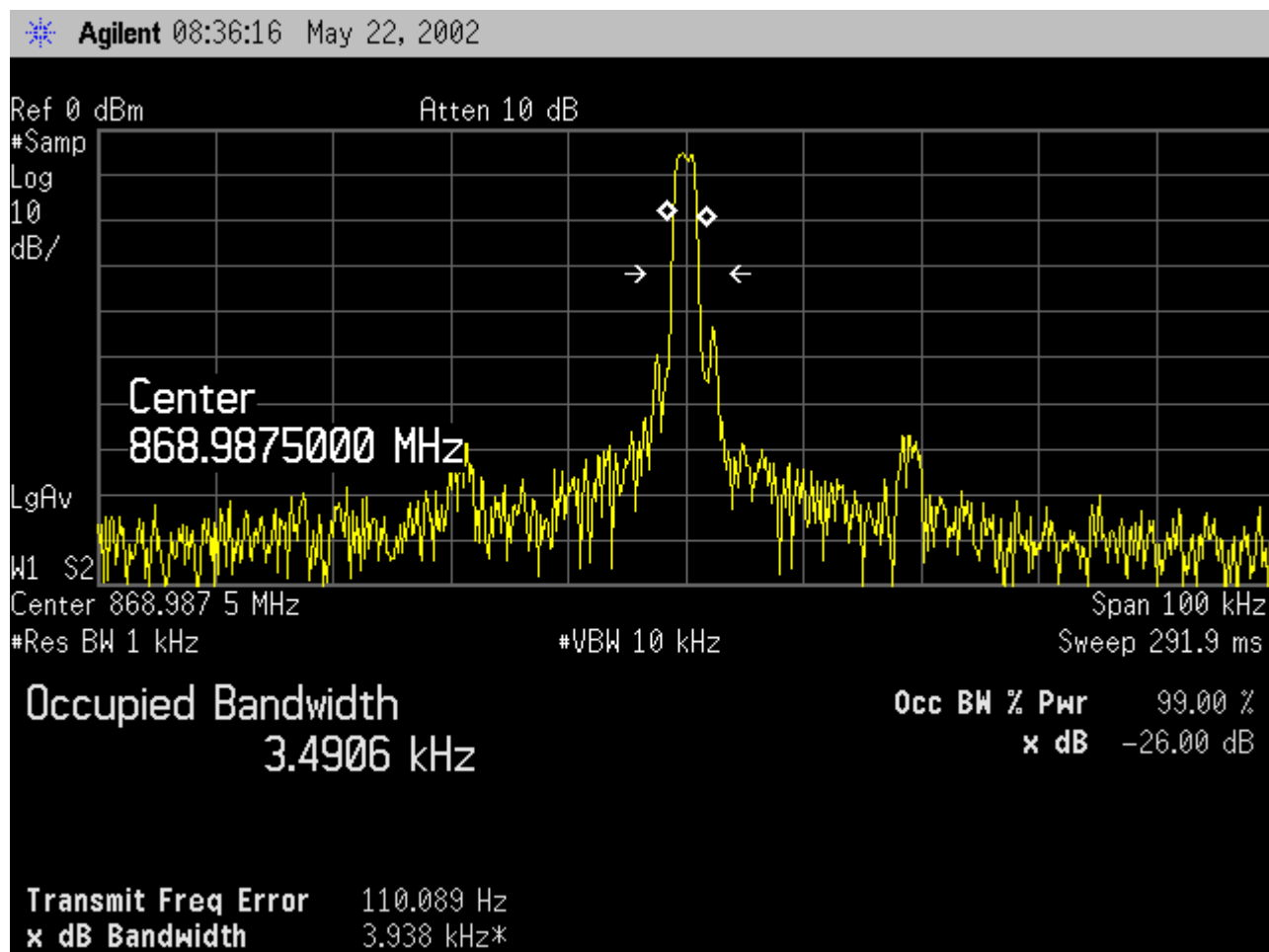
TESTED BY: MANUEL MARTINEZ

DATE: 05/16/02

TEST NUMBER: 2

OPERATING MODE: NORMAL FULL POWER

TRANSMIT MODE - CHANNEL 830- OCF TALK AROUND



**2.2.6 Photographic Documentation**

**CUSTOMER: M/A-COM**

**DATE: 04/22/02 AND 05/16/02**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**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 see 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

**EQUIPMENT:** OPENSky P801T PORTABLE RADIO

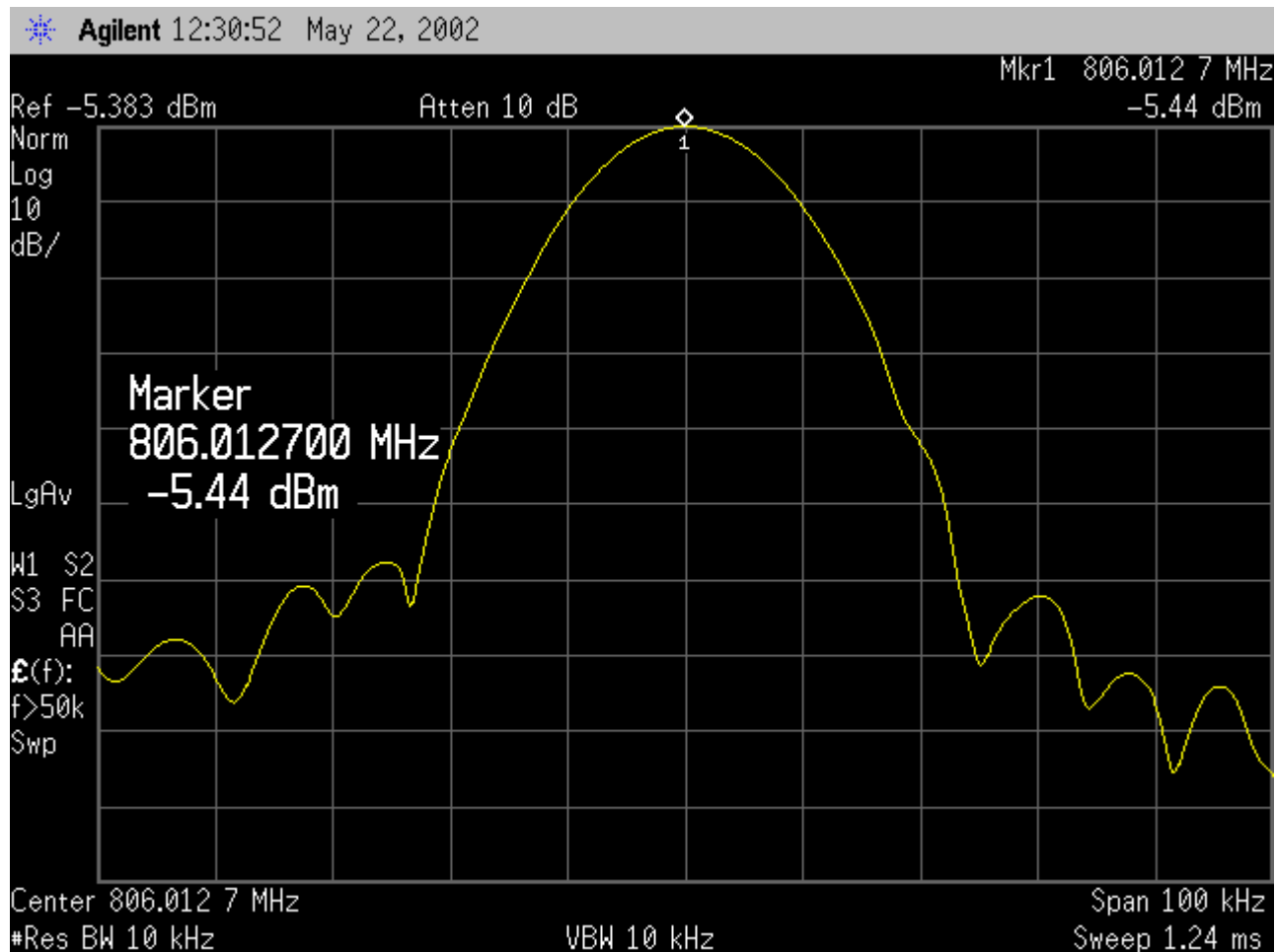
**TESTED BY:** MANUEL MARTINEZ

**DATE:** 05/16/02

**TEST NUMBER:** 5

**OPERATING MODE:** NORMAL FULL POWER

**TRANSMIT MODE – CHANNEL 1-OCF UNMODULATED**



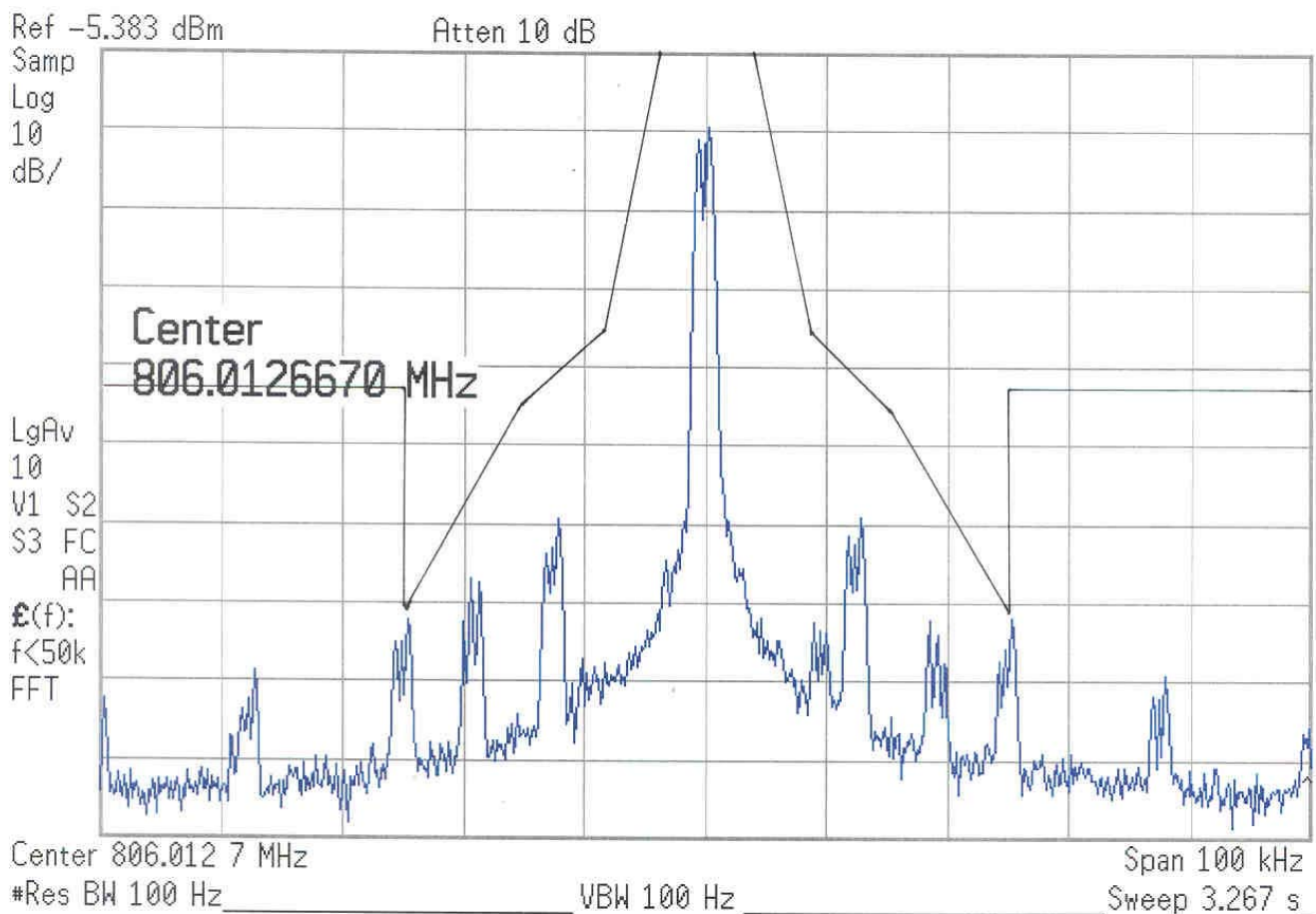


### EMISSION MASK

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

**DATE:** 05/16/02  
**TEST NUMBER:** 5  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 1-OCF MODULATED**

Agilent 12:32:09 May 22, 2002



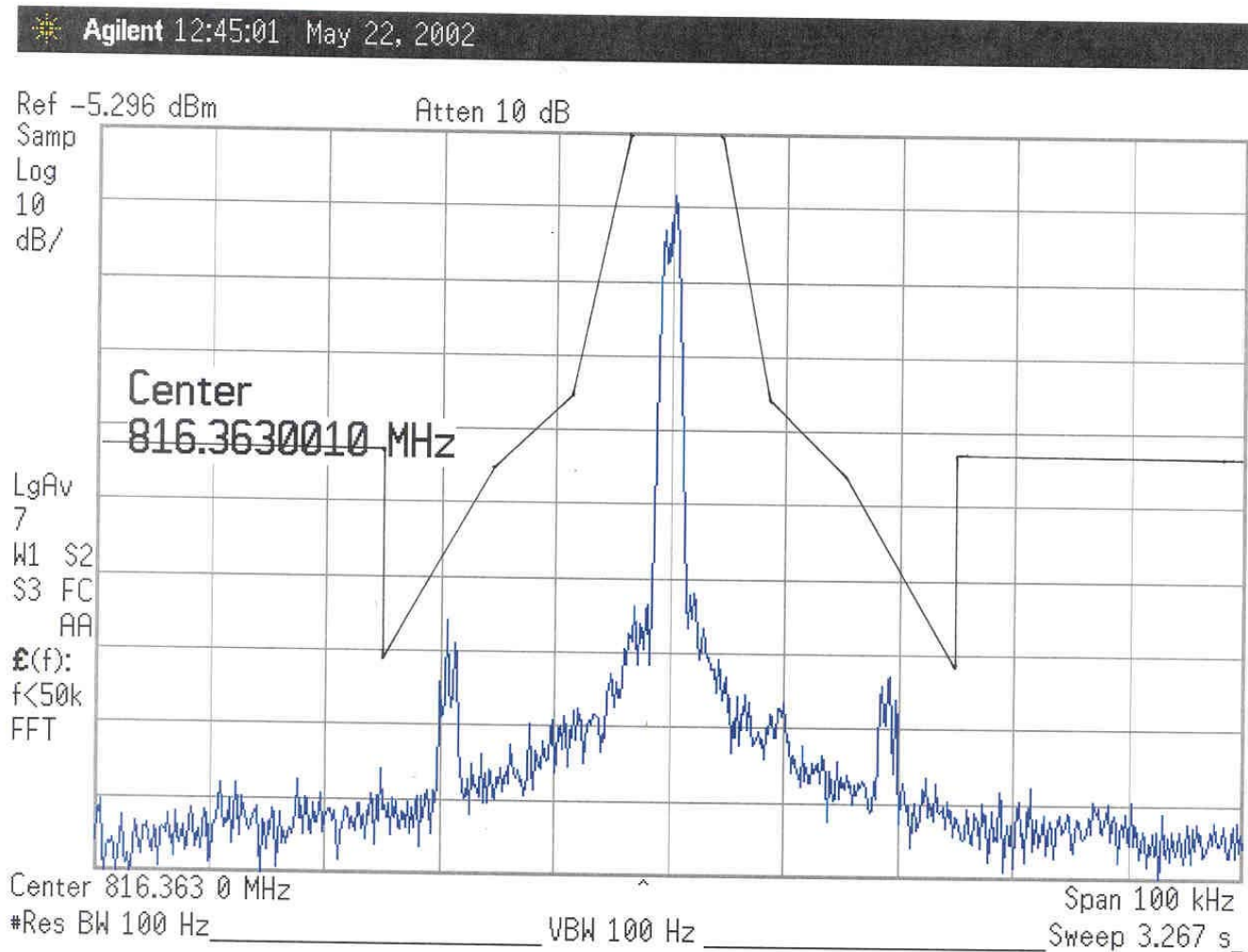


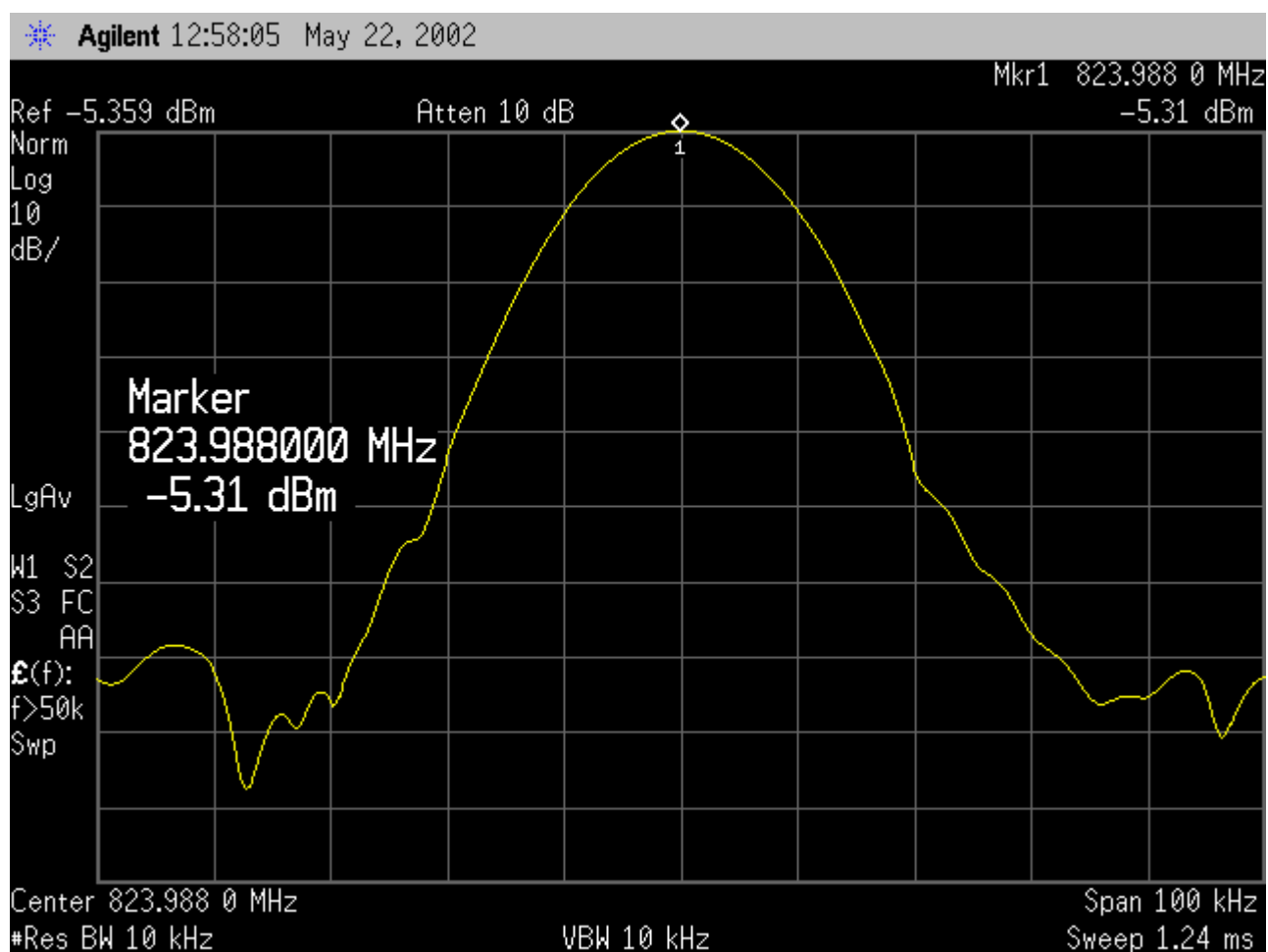
**EMISSION MASK****CUSTOMER: M/A-COM****EQUIPMENT: OPENSky P801T PORTABLE RADIO****TESTED BY: MANUEL MARTINEZ****DATE: 05/16/02****TEST NUMBER: 5****OPERATING MODE: NORMAL FULL POWER****TRANSMIT MODE – CHANNEL 415-OCF UNMODULATED**

### EMISSION MASK

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

**DATE:** 05/16/02  
**TEST NUMBER:** 5  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 415-OCF MODULATED**



**TEST SERVICES****EMISSION MASK****CUSTOMER: M/A-COM****EQUIPMENT: OPENSky P801T PORTABLE RADIO****TESTED BY: MANUEL MARTINEZ****DATE: 05/16/02****TEST NUMBER: 5****OPERATING MODE: NORMAL FULL POWER****TRANSMIT MODE – CHANNEL 830-OCF UNMODULATED**

## EMISSION MASK

**CUSTOMER: M/A-COM**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TESTED BY: MANUEL MARTINEZ**

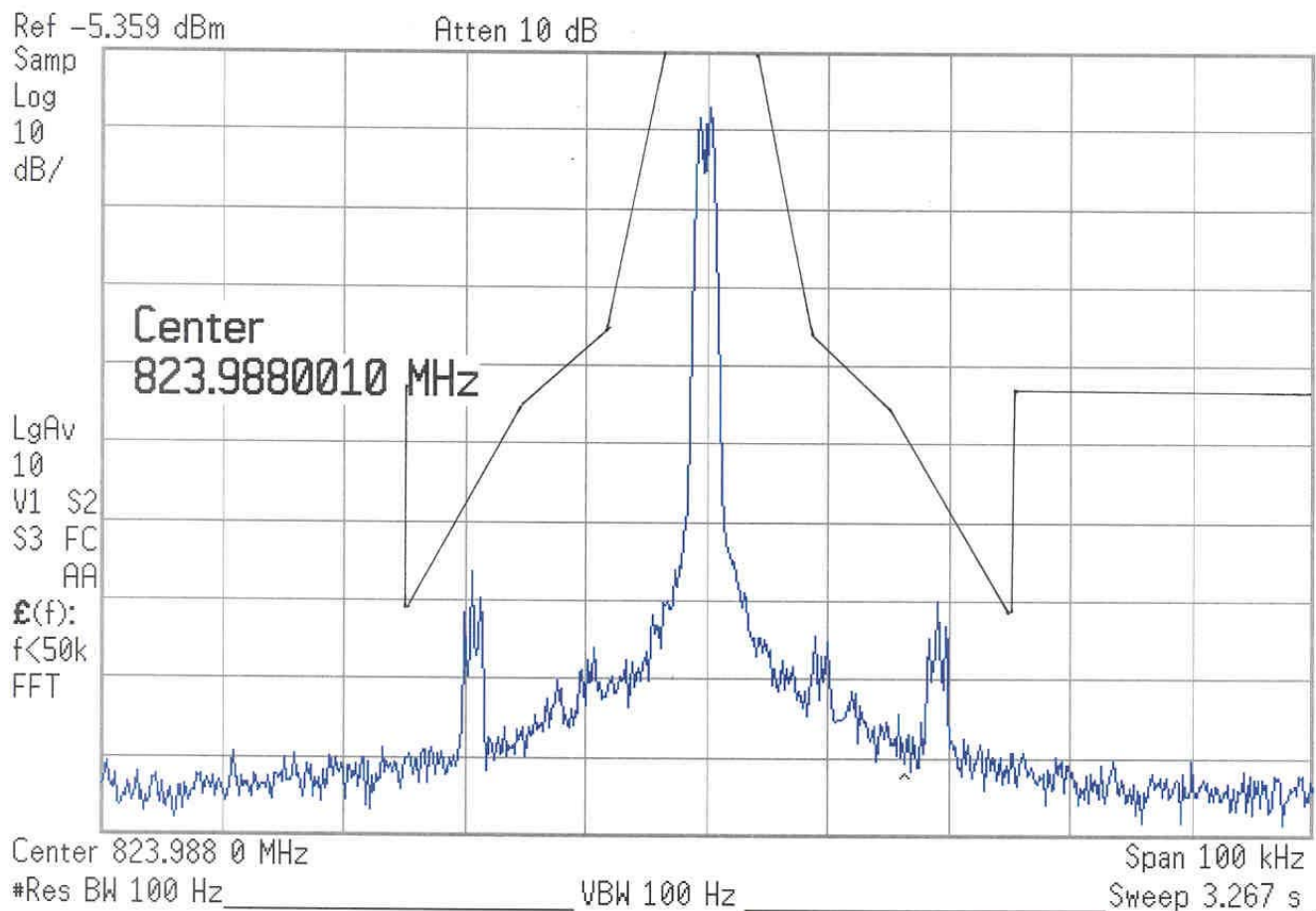
**DATE: 05/16/02**

**TEST NUMBER: 5**

**OPERATING MODE: NORMAL FULL POWER**

**TRANSMIT MODE – CHANNEL 830-OCF MODULATED**

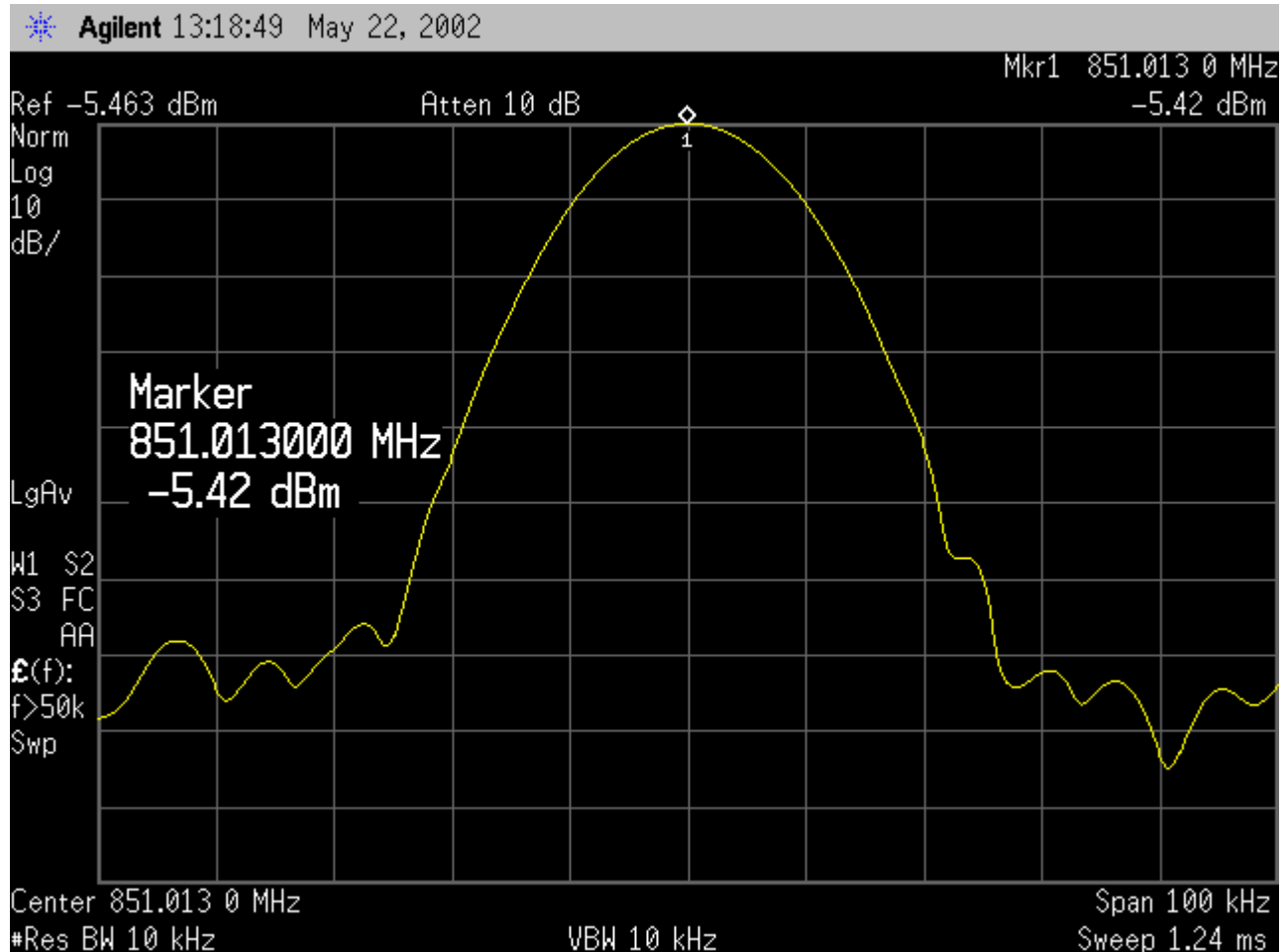
Agilent 12:59:09 May 22, 2002



## EMISSION MASK

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

**DATE:** 05/16/02  
**TEST NUMBER:** 5  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 1-OCF TALK AROUND**  
**UNMODULATED**



### EMISSION MASK

**CUSTOMER: M/A-COM**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TESTED BY: MANUEL MARTINEZ**

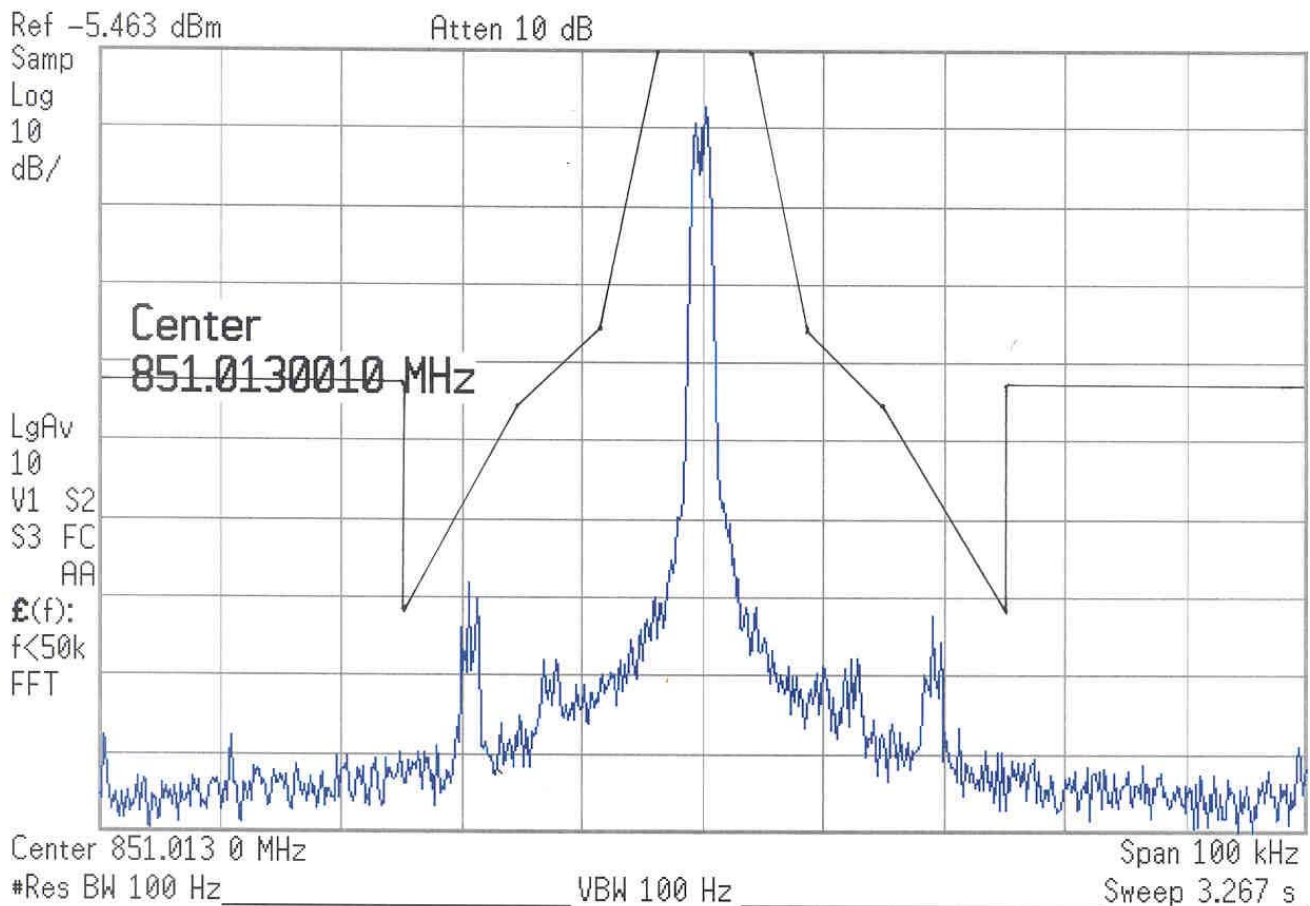
**DATE: 05/16/02**

**TEST NUMBER: 5**

**OPERATING MODE: NORMAL FULL POWER**

**TRANSMIT MODE – CHANNEL 1-OCF TALK AROUND  
MODULATED**

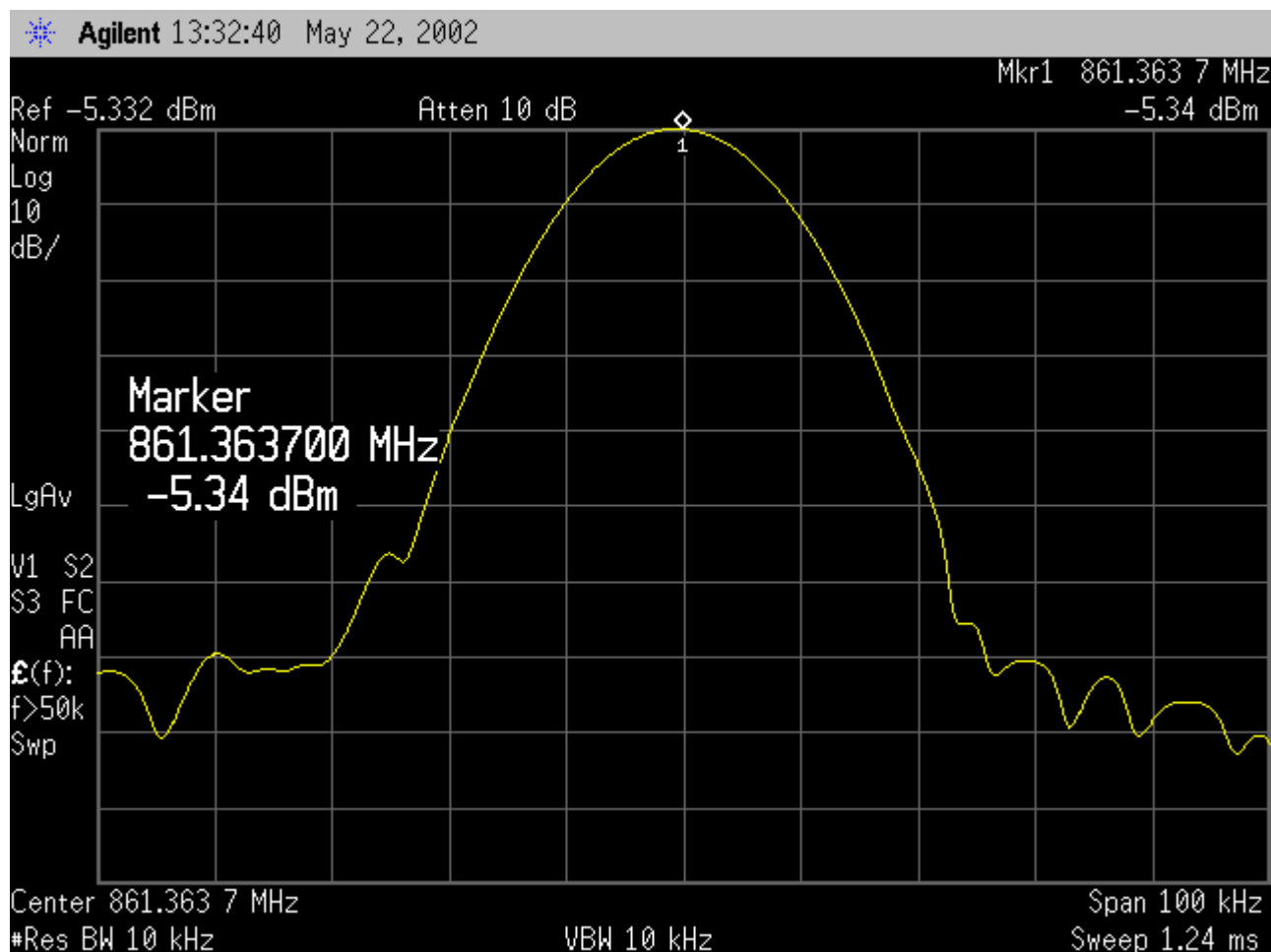
Agilent 13:21:59 May 22, 2002



## EMISSION MASK

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

**DATE:** 05/16/02  
**TEST NUMBER:** 5  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 415-OCF TALK AROUND UNMODULATED**

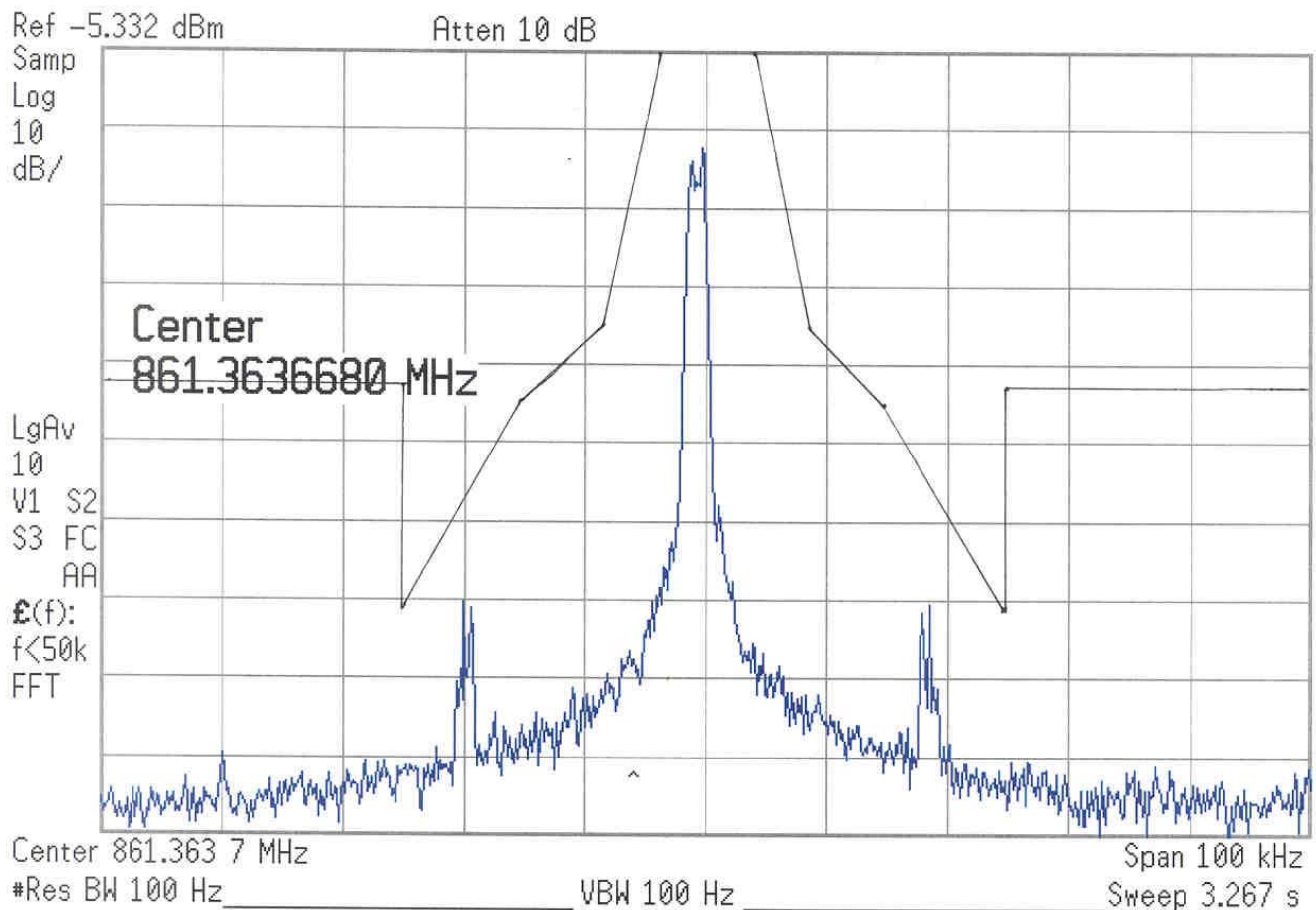


### EMISSION MASK

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

**DATE:** 05/16/02  
**TEST NUMBER:** 5  
**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**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TESTED BY: MANUEL MARTINEZ**

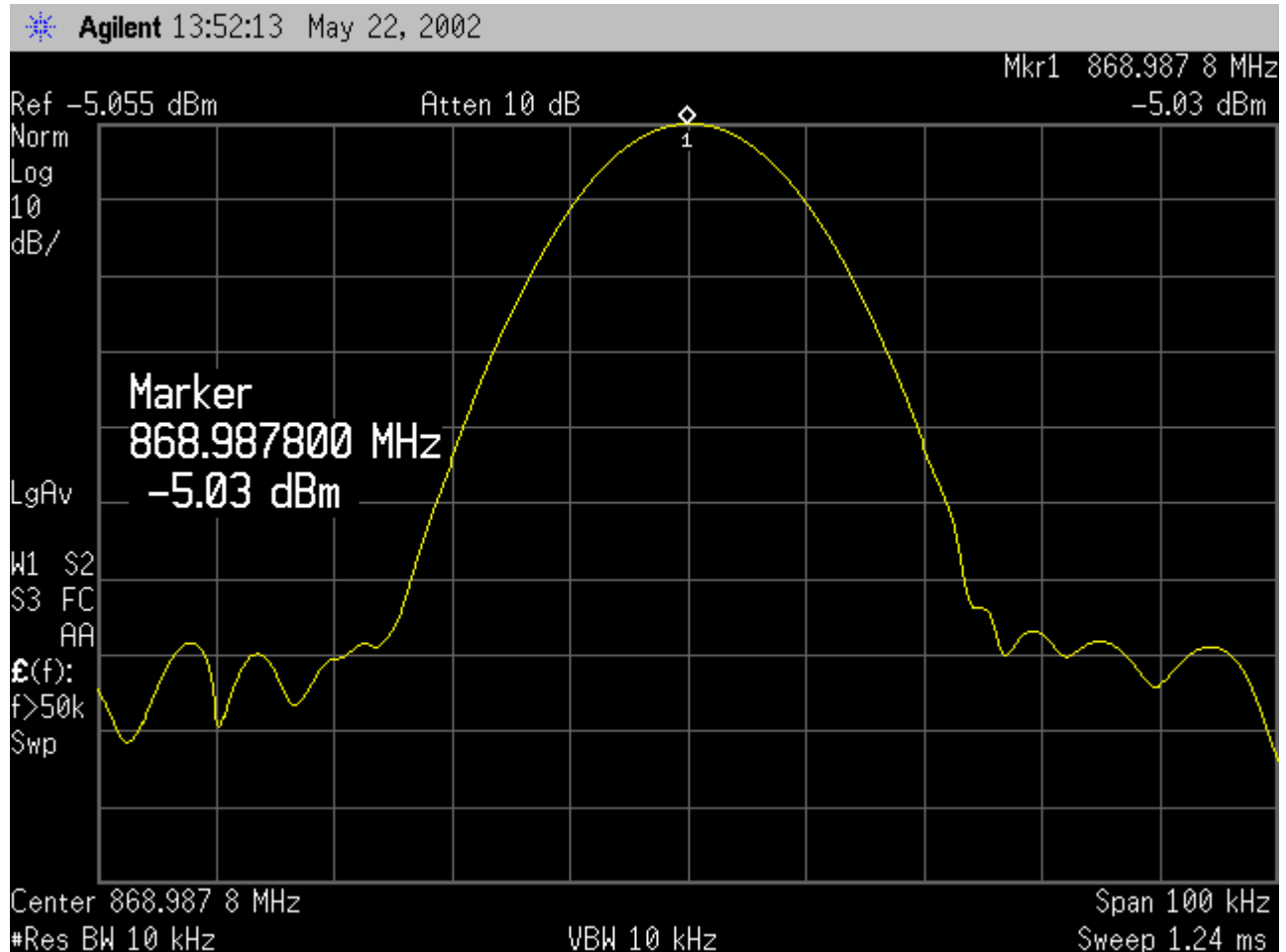
**DATE: 05/16/02**

**TEST NUMBER: 5**

**OPERATING MODE: NORMAL FULL POWER**

**TRANSMIT MODE – CHANNEL 830-OCF TALK AROUND**

**UNMODULATED**

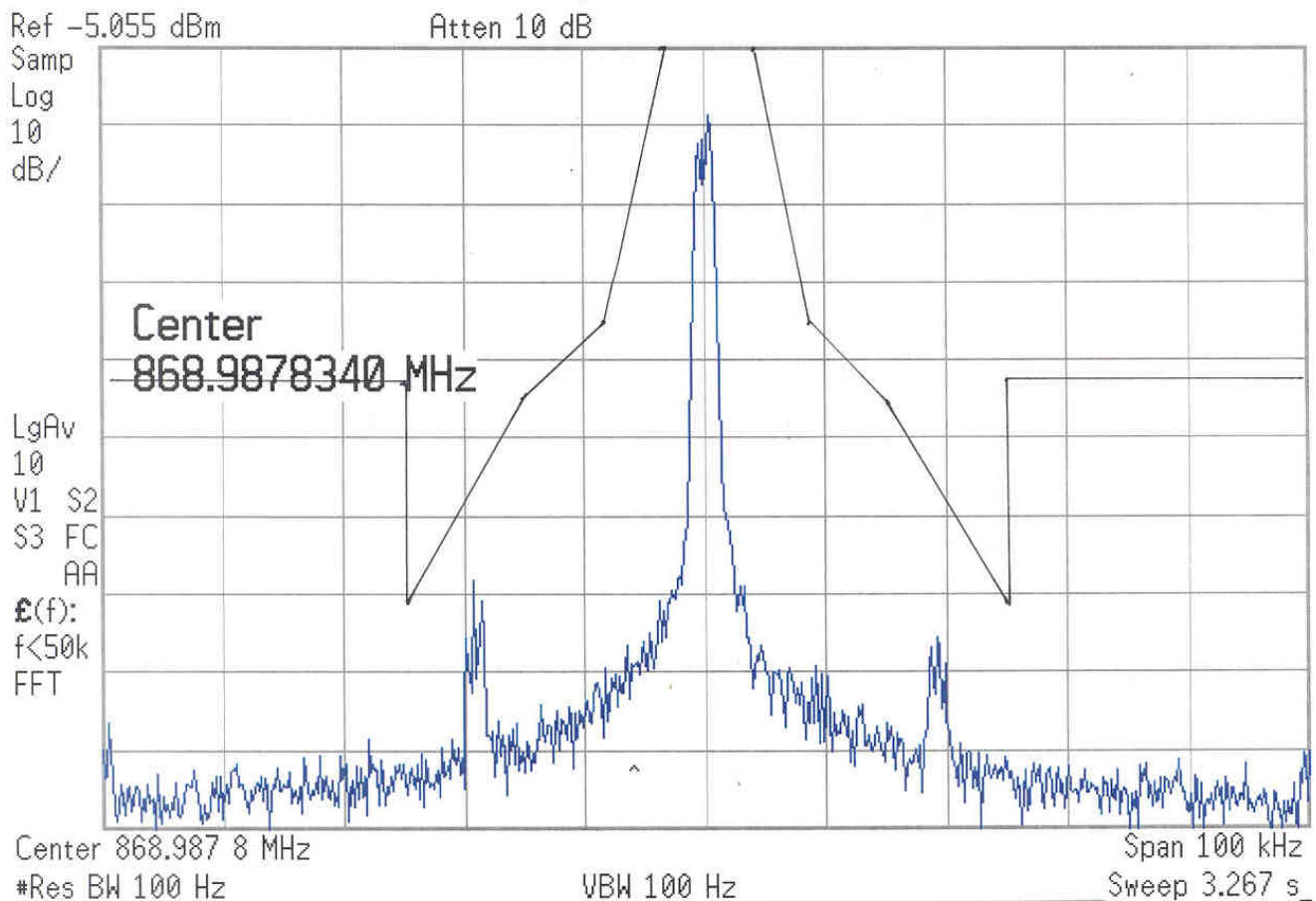


## EMISSION MASK

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

**DATE:** 05/16/02  
**TEST NUMBER:** 5  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 830-OCF TALK AROUND MODULATED**

Agilent 13:59:45 May 22, 2002



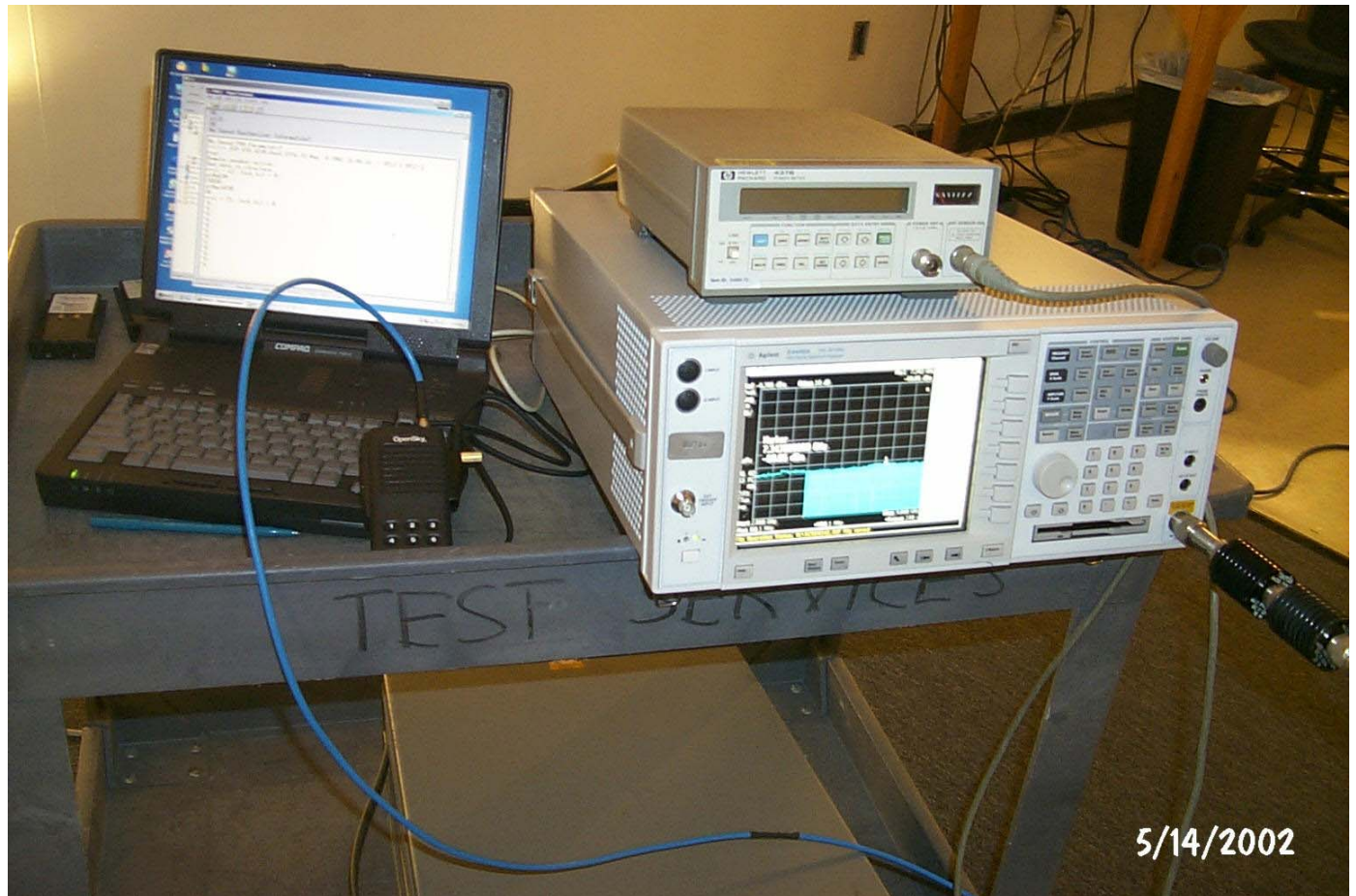
## 2.3.6 Photographic Documentation

**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:

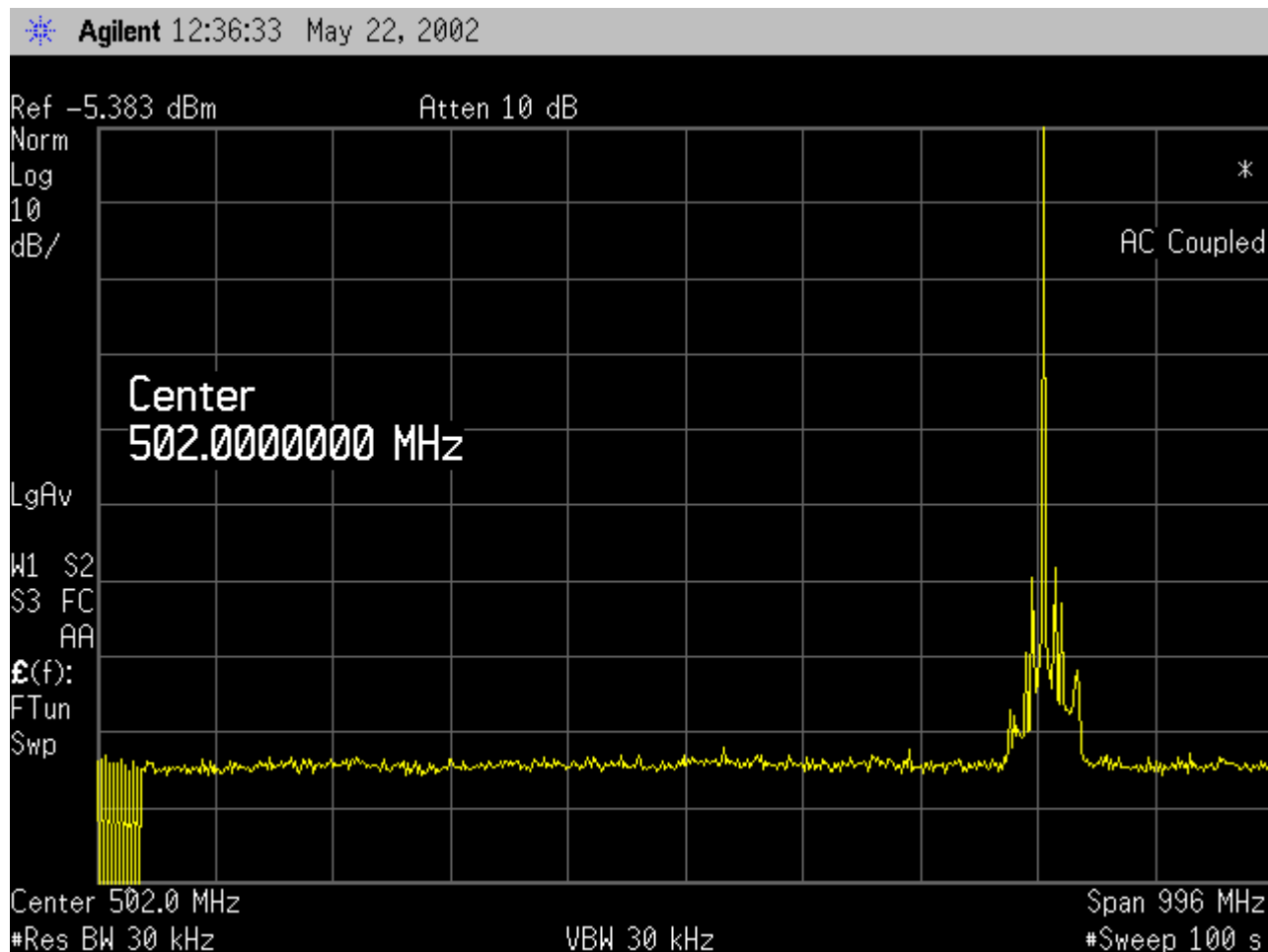
OCF Mode		OCF Talk Around	
Ch# 1	806.0125MHz	Ch# 1	851.0125MHz
Ch# 415	816.3625MHz	Ch# 415	861.3625MHz
Ch# 830	823.9875MHz	Ch# 830	868.9875MHz

**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  $43 + 10\log(P)$ ”.*

**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  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

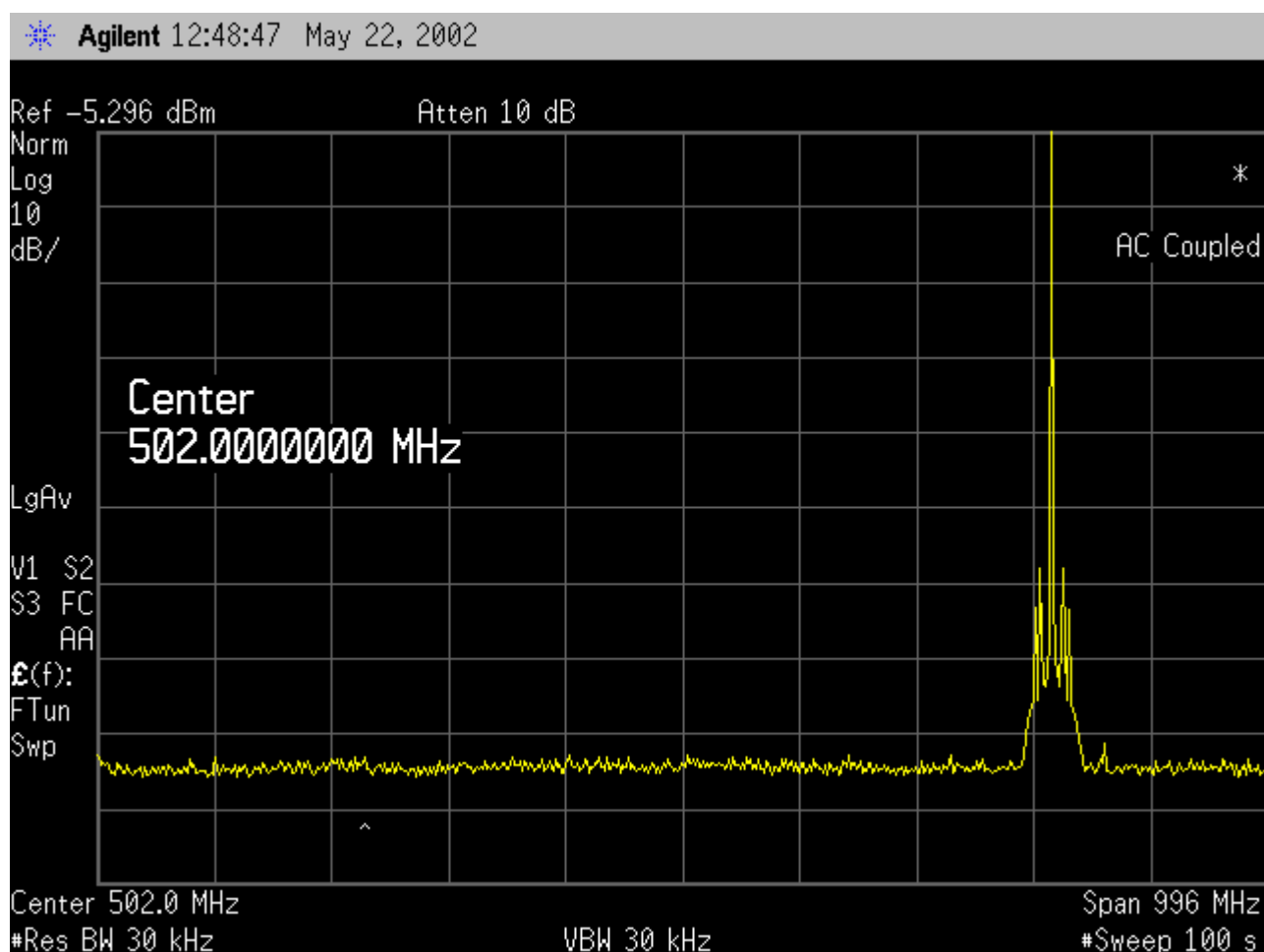
**DATE:** 05/16/02  
**TEST NUMBER:** 1  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 1-OCF**



**CONDUCTED SPURIOUS**

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

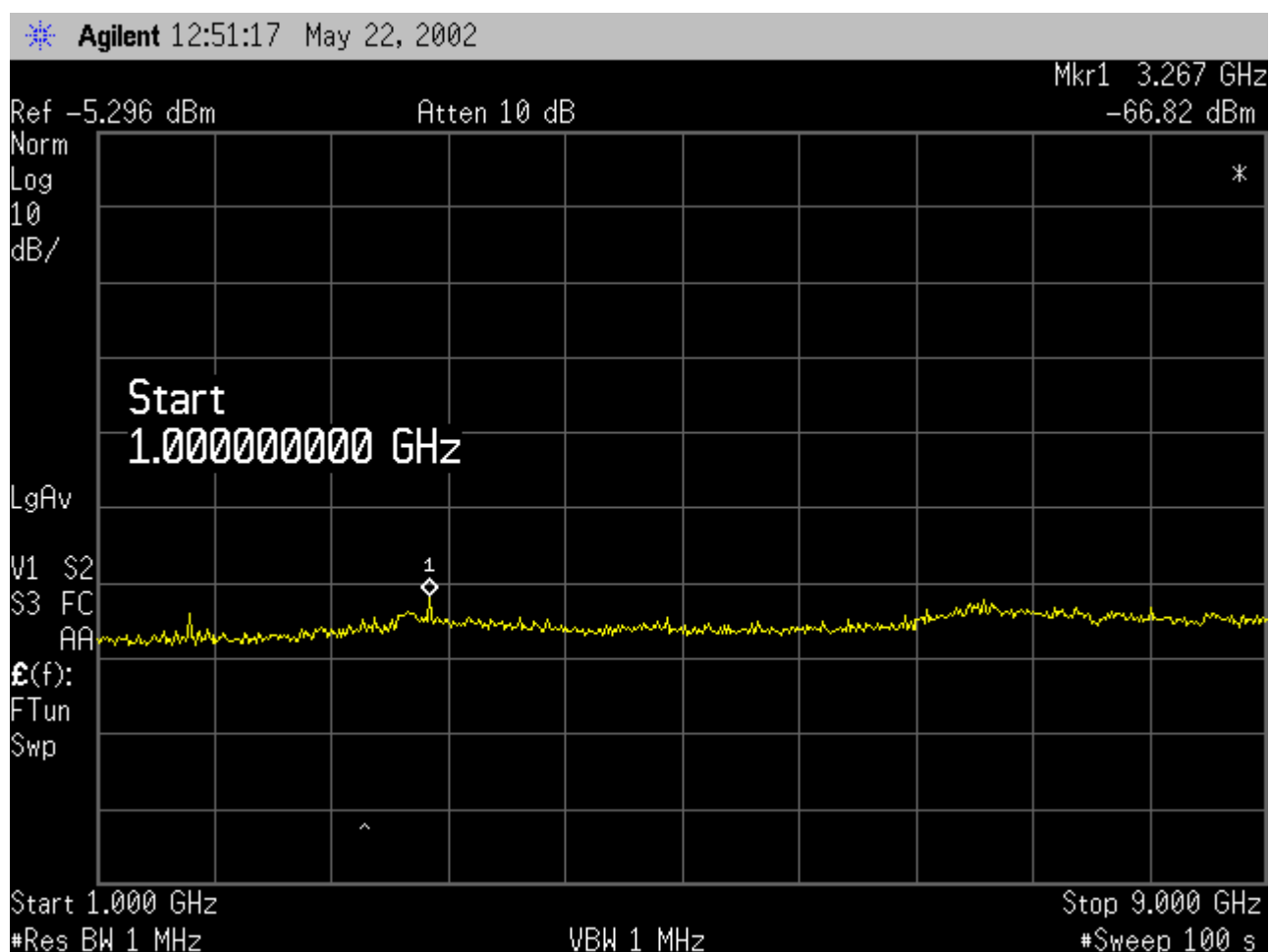
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**TEST NUMBER:** 1  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 415-OCF**



**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**

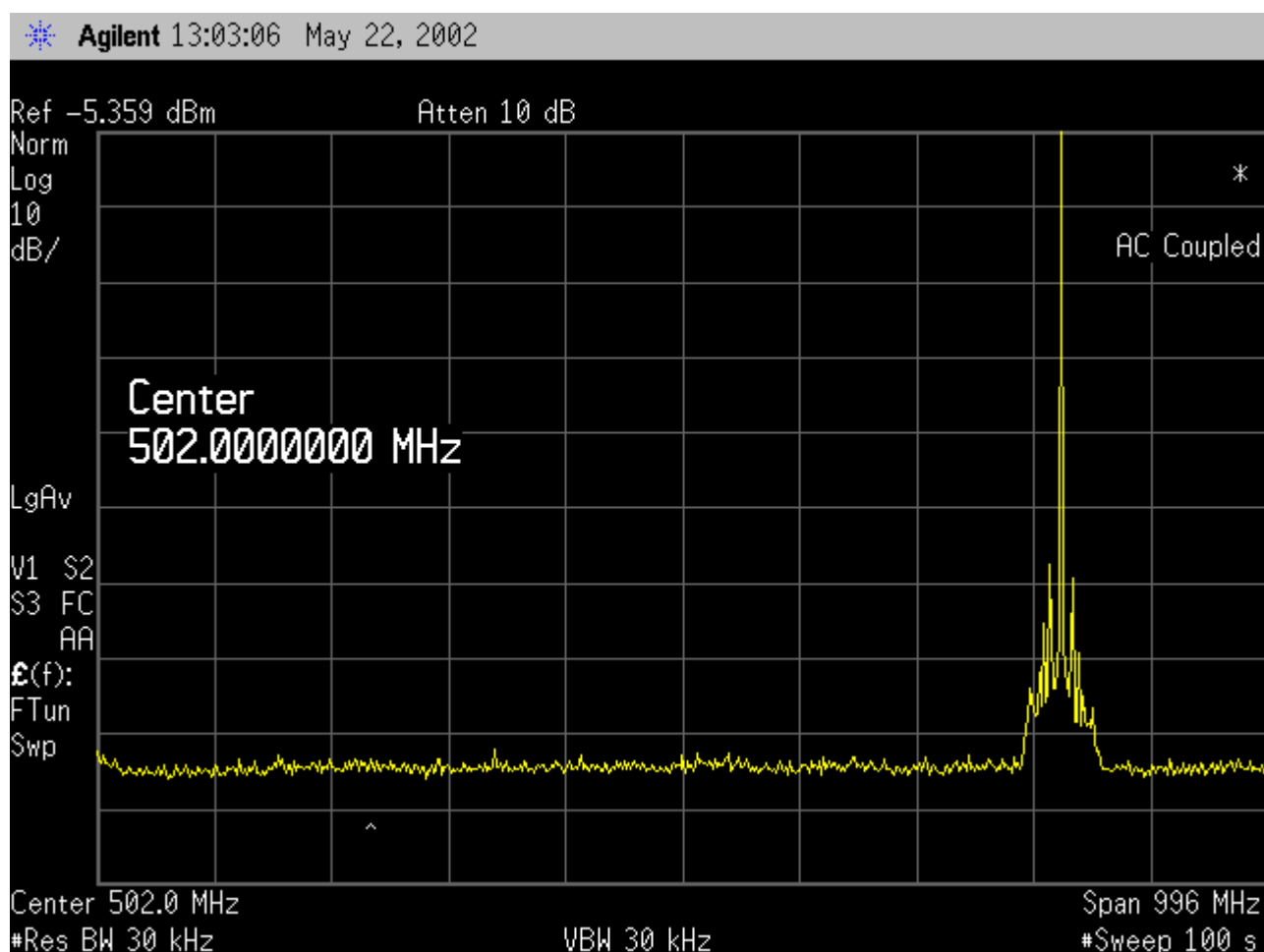




**CONDUCTED SPURIOUS**

**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

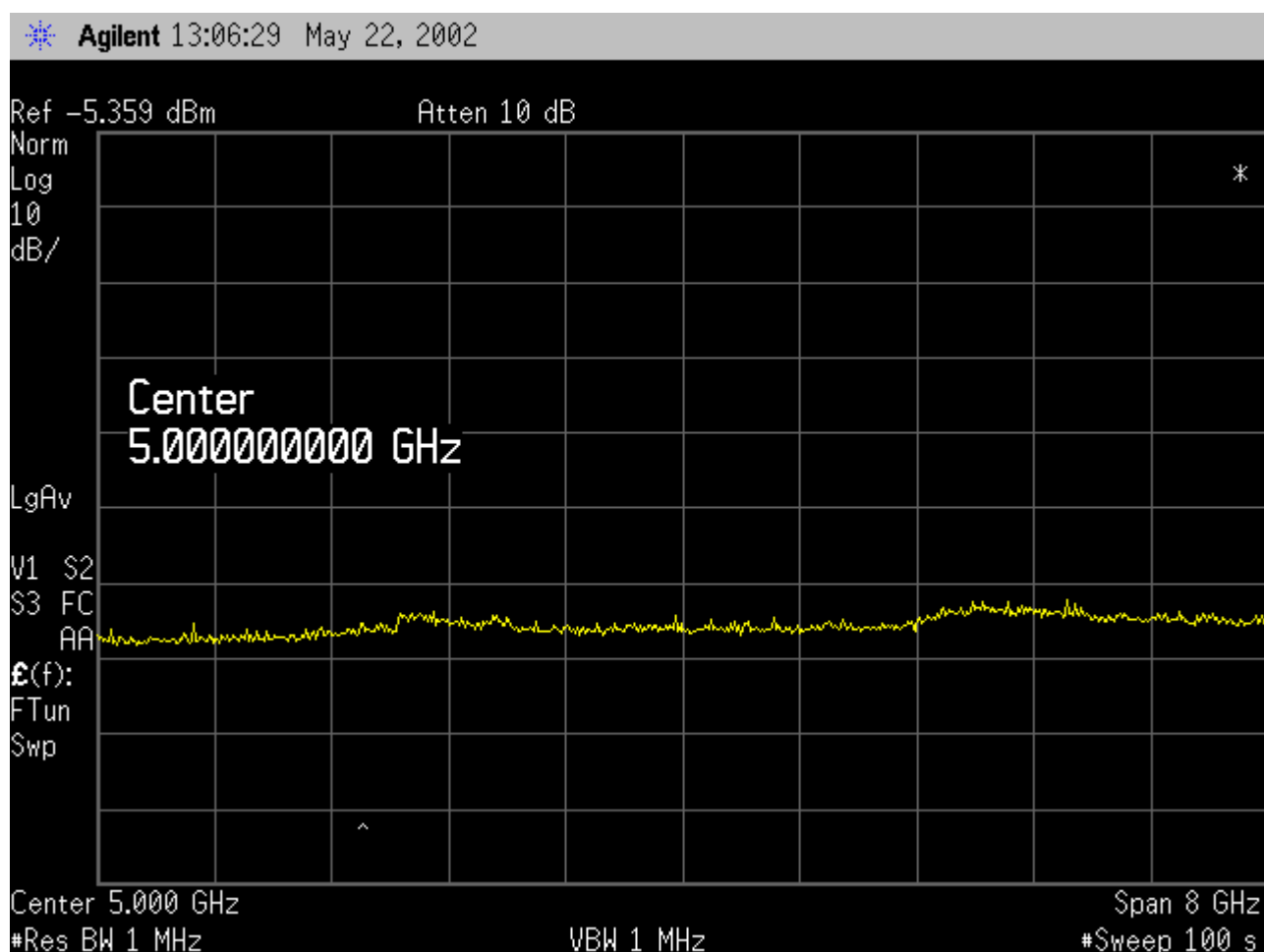
**DATE:** 05/16/02  
**TEST NUMBER:** 1  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 830-OCF**

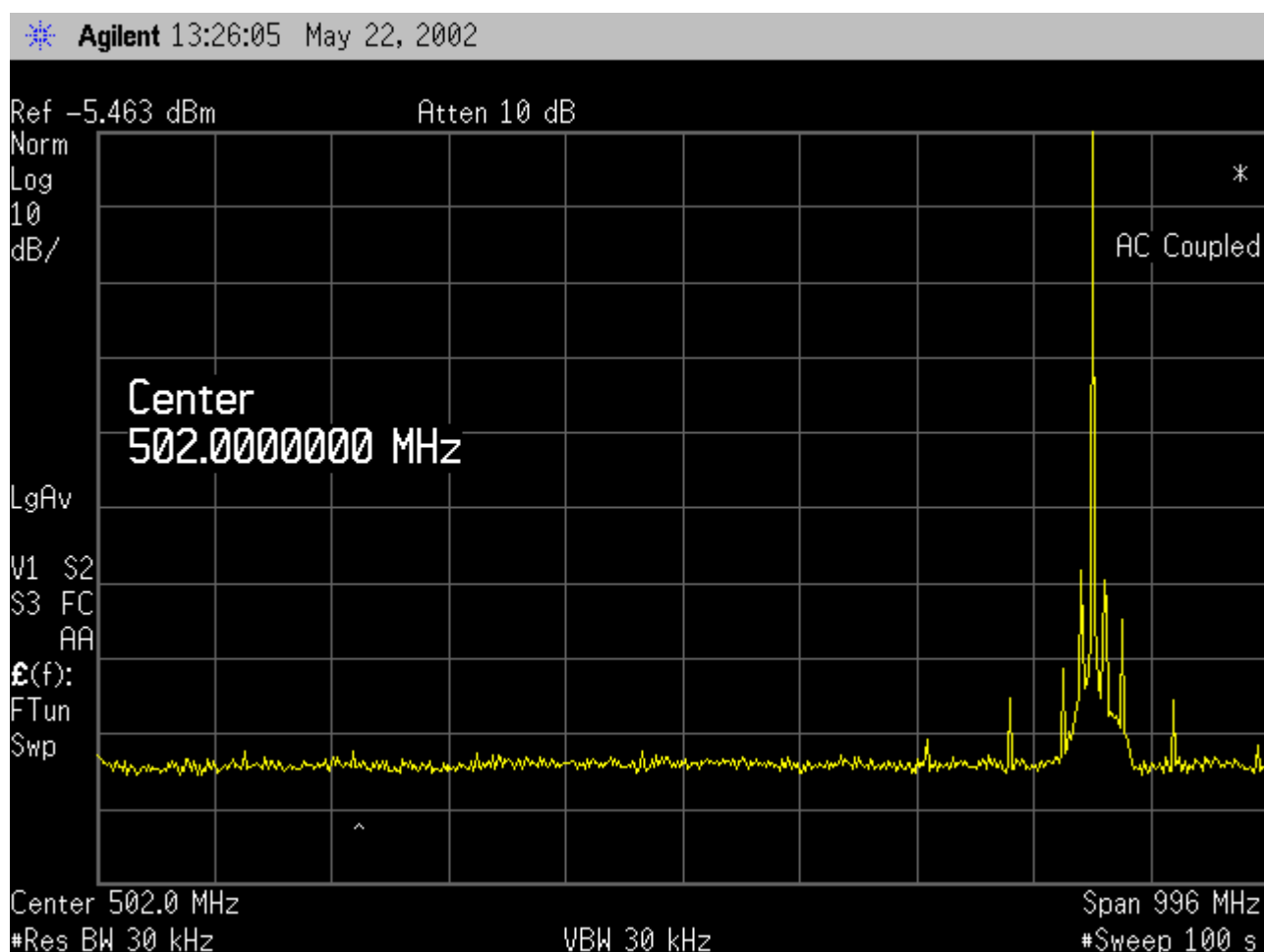


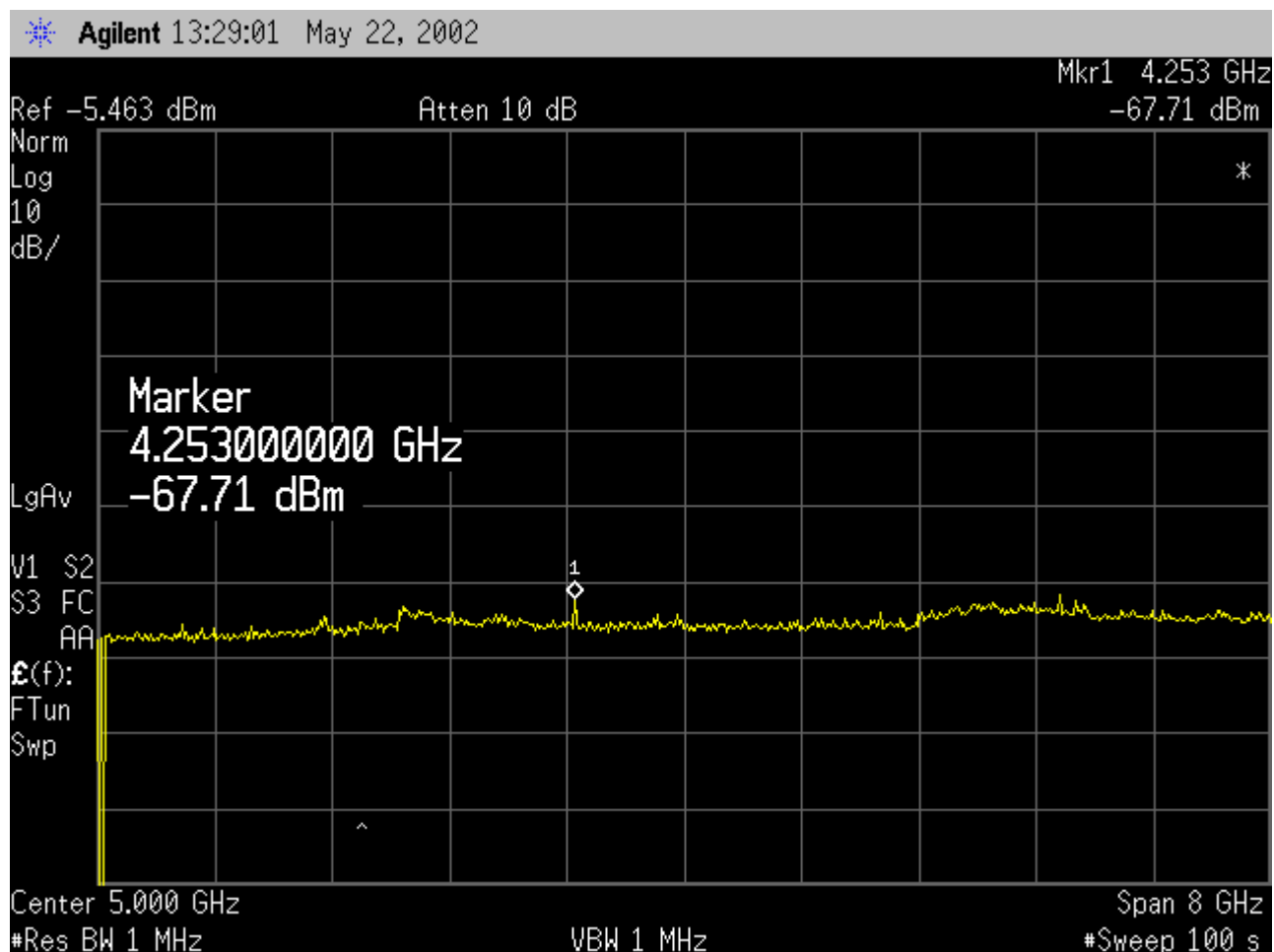
### CONDUCTED SPURIOUS

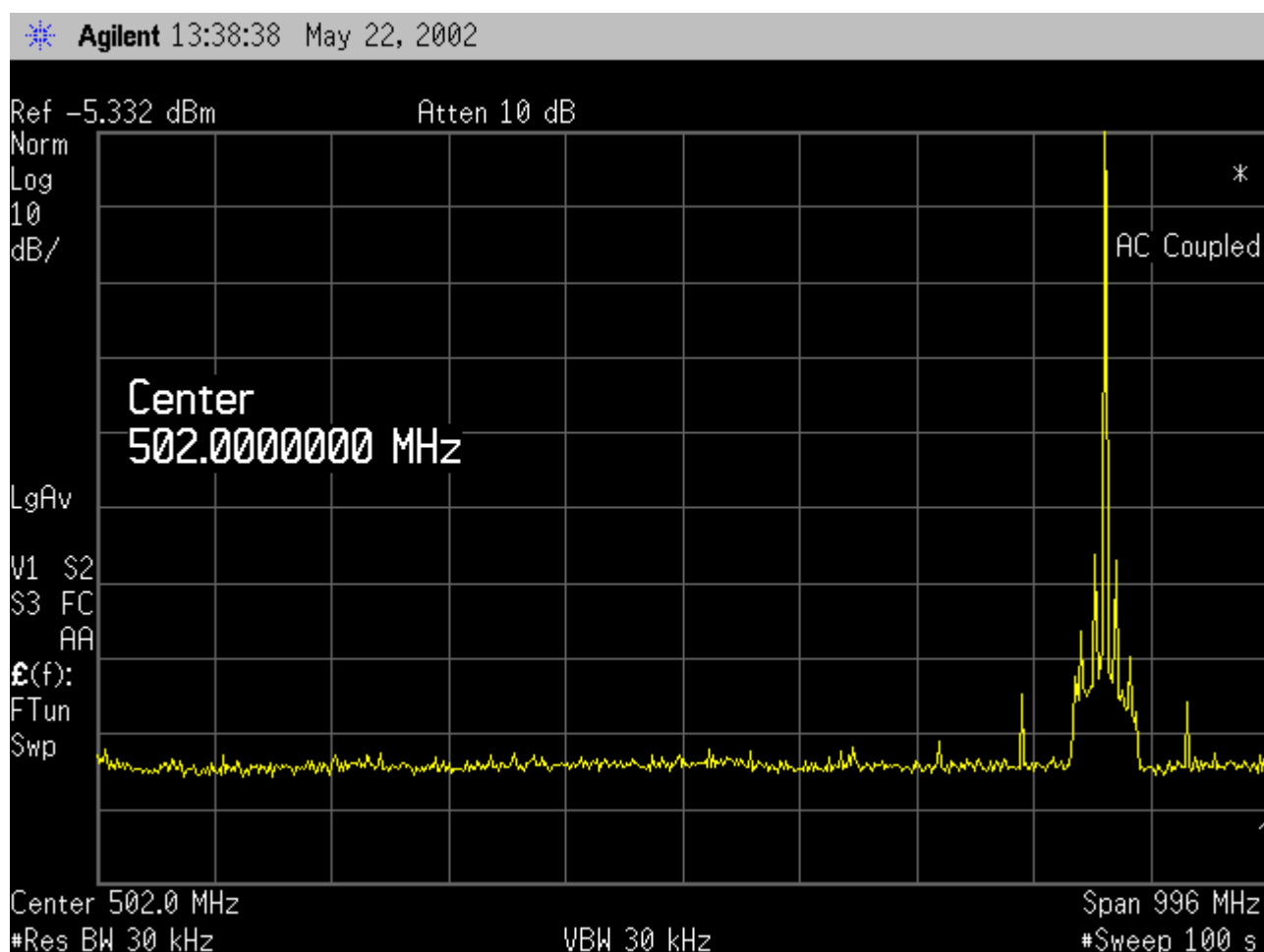
**CUSTOMER:** M/A-COM  
**EQUIPMENT:** OPENSky P801T PORTABLE RADIO  
**TESTED BY:** MANUEL MARTINEZ

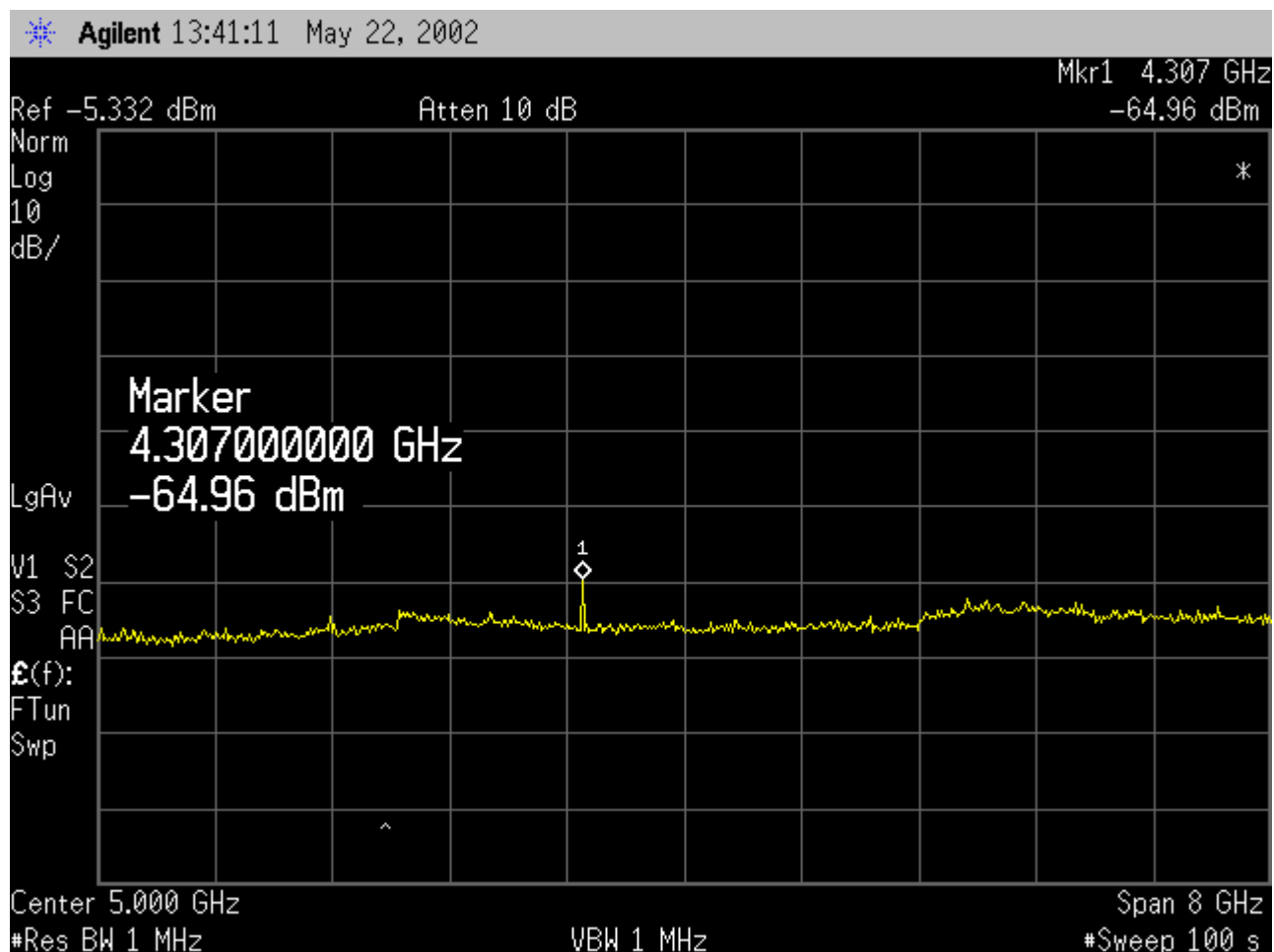
**DATE:** 05/16/02  
**TEST NUMBER:** 1  
**OPERATING MODE:** NORMAL FULL POWER  
**TRANSMIT MODE – CHANNEL 830-OCF**



**TEST SERVICES****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 TALK AROUND**

**TEST SERVICES****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 TALK AROUND**

**TEST SERVICES****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 TALK AROUND**

**TEST SERVICES****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 TALK AROUND**

## CONDUCTED SPURIOUS

**CUSTOMER: M/A-COM**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

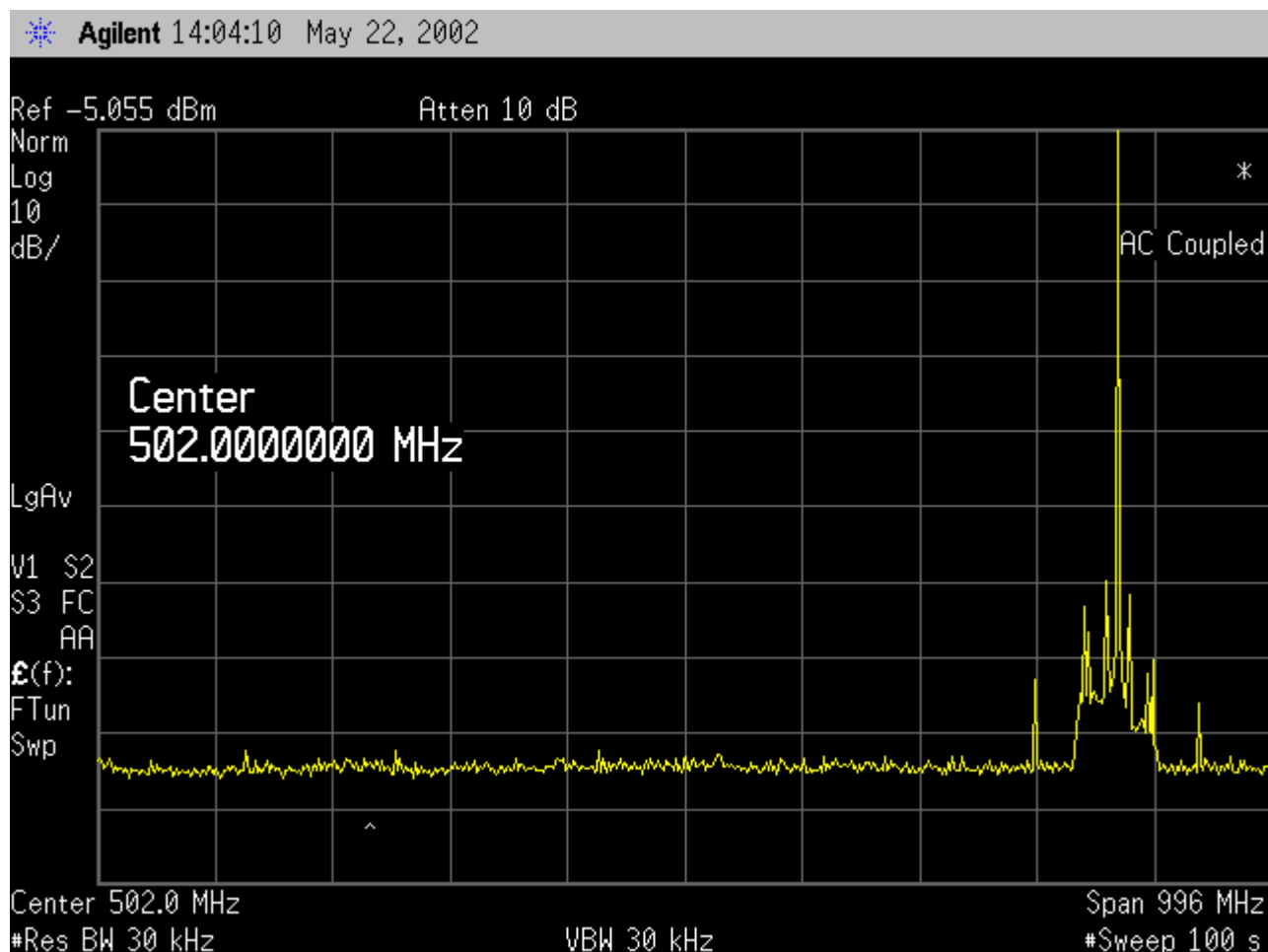
**TESTED BY: MANUEL MARTINEZ**

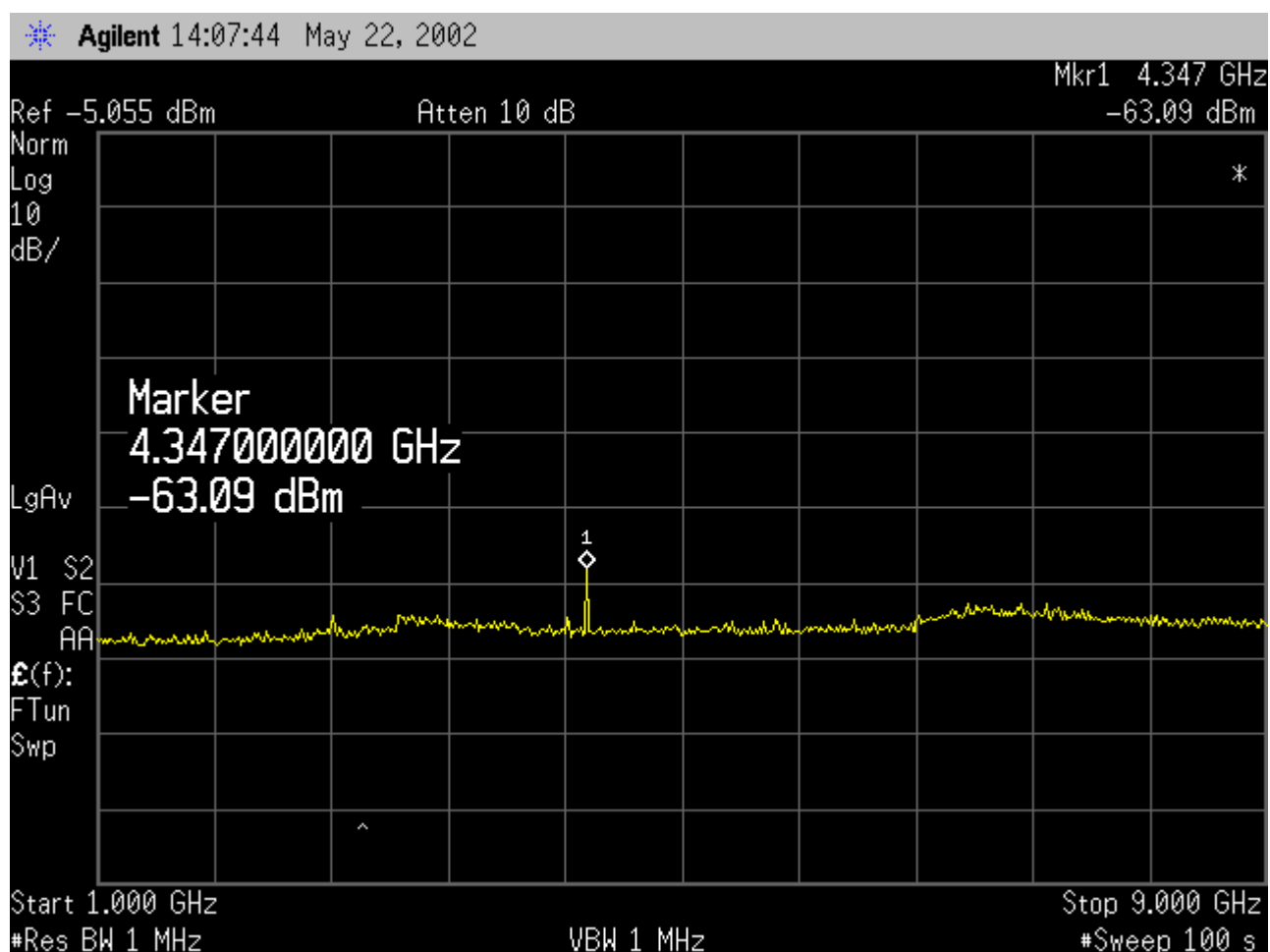
**DATE: 05/16/02**

**TEST NUMBER: 1**

**OPERATING MODE: NORMAL FULL POWER**

**TRANSMIT MODE – CHANNEL 830-OCF TALK AROUND**



**TEST SERVICES****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 TALK AROUND**



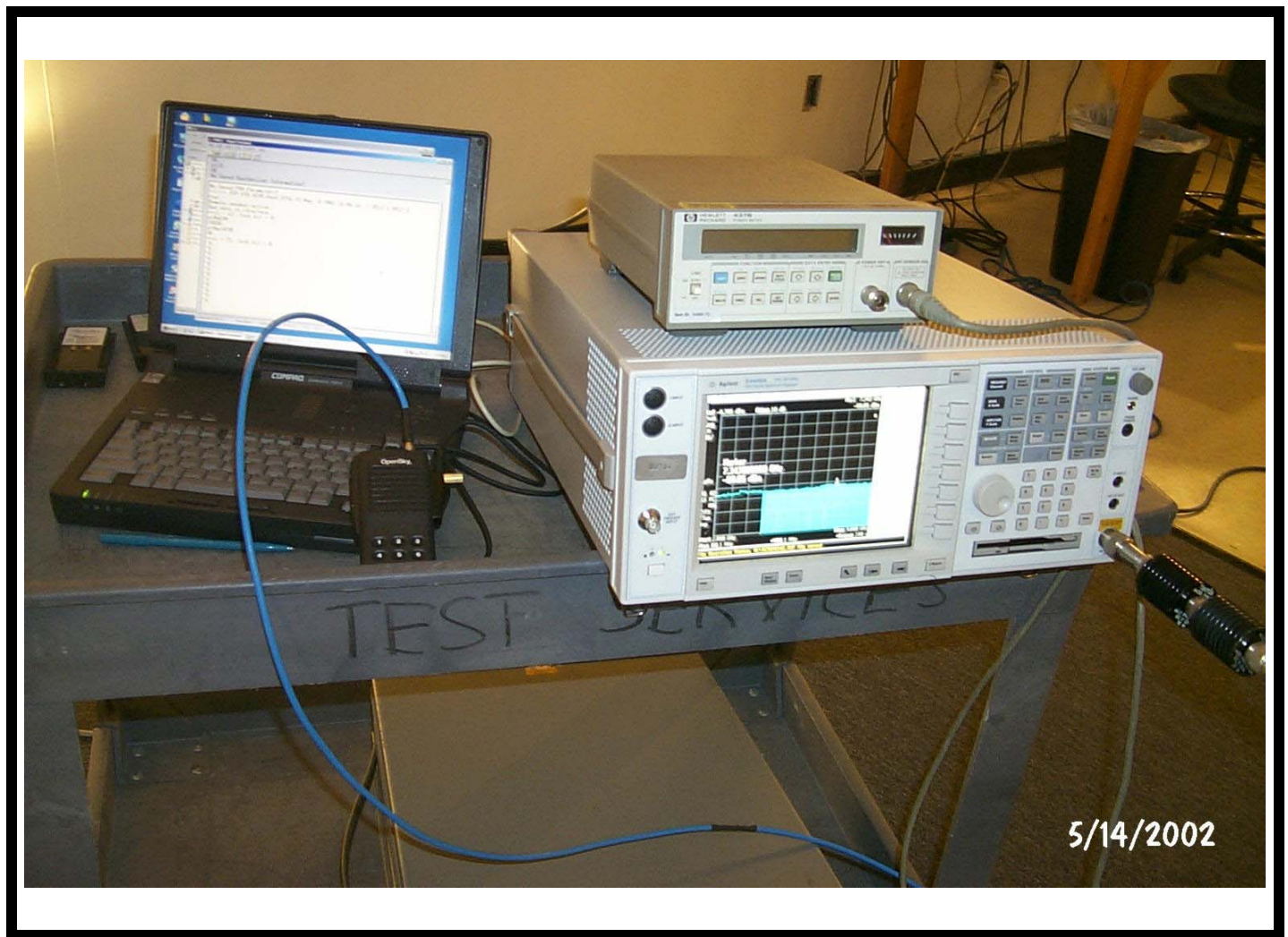
## 2.4.6 Photographic Documentation

**CUSTOMER: M/A-COM**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**DATE: 04/22/02 AND 05/16/02**

**TEST NUMBER: 1**



**FORM CTS-PHOTO**

**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

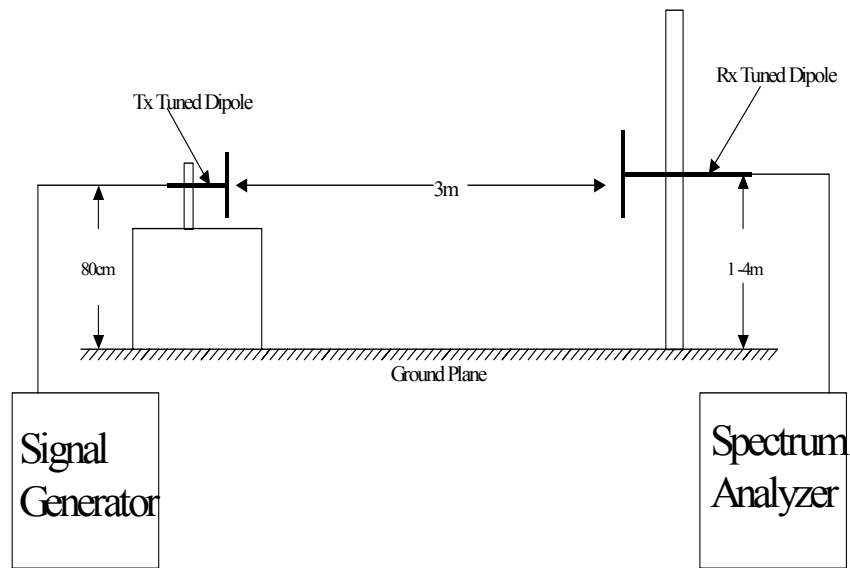


Figure 5

**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)**

<b>FREQUENCY MHz</b>	<b>Mode of Operation</b>	<b>Output of Sig. Gen. -dBm</b>	<b>Cable Loss</b>	<b>Gain dBi</b>	<b>EIRP dBm</b>	<b>LIMIT dBm</b>
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**

**DATE: 05/30/02**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TEST NUMBER: 7**

**RADIATED SPURIOUS EMISSION MEASUREMENTS  
(CHANNEL #1)**

<b>FREQUENCY MHz</b>	<b>Mode of Operation</b>	<b>Output of Sig. Gen. -dBm</b>	<b>Cable Loss</b>	<b>Gain dBi</b>	<b>EIRP dBm</b>	<b>LIMIT dBm</b>
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

# TEST SERVICES

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
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



**TEST SERVICES****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
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

**DATE:** 05/30/02

**EQUIPMENT:** OPENSky P801T PORTABLE RADIO

**TEST NUMBER:** 7



Photograph Description: Radiated set-up

**FORM CTS-PHOTO**

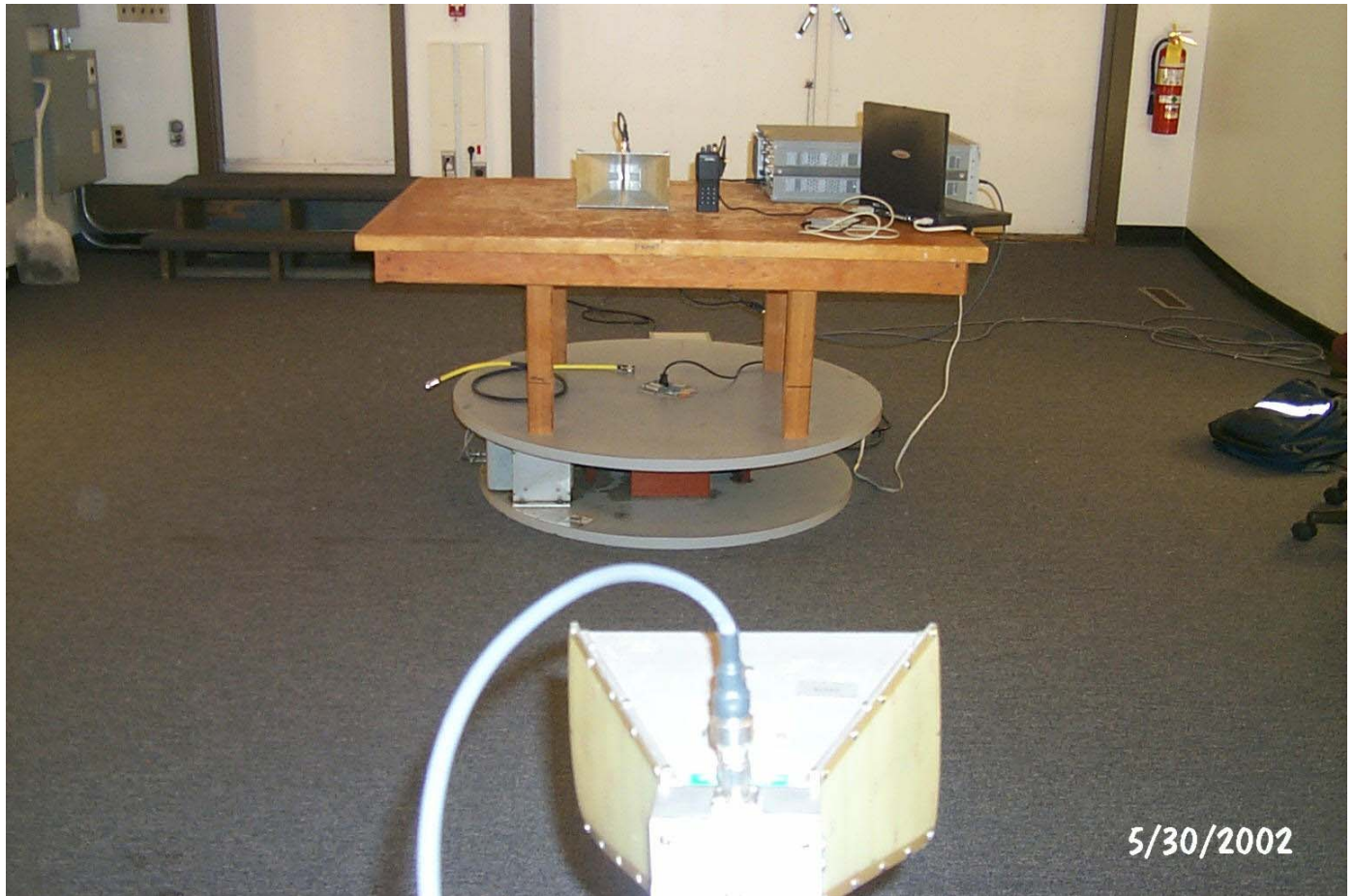
## TEST SERVICES

**CUSTOMER: M/A-COM**

**DATE: 05/30/02**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TEST NUMBER: 7**



Photograph Description: Radiated set-up

**FORM CTS-PHOTO**

**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

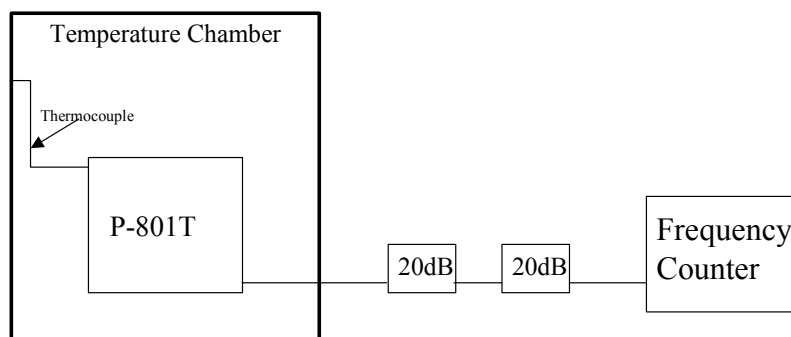


Figure 6



## 2.6.5 Test Data

## P801T Radio OCF Mode

## Frequency Stability Test (Voltage)

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

## Frequency Stability Test (Temperature)

<b>Temperature</b>	<b>Frequency (MHz) (823.9875 MHz)</b>
-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****DATE: 05/14/02****EQUIPMENT: OPENSky P801T PORTABLE RADIO****TEST NUMBER: 6**Photograph Description: Temperature test set-up**FORM CTS-PHOTO**

## TEST SERVICES

**CUSTOMER: M/A-COM****DATE: 05/14/02****EQUIPMENT: OPENSky P801T PORTABLE RADIO****TEST NUMBER: 6**

Photograph Description: Temperature test set-up

FORM CTS-PHOTO



**CUSTOMER: M/A-COM**

**DATE: 05/30/02**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TEST NUMBER: 6**



Photograph Description: Voltage test set-up

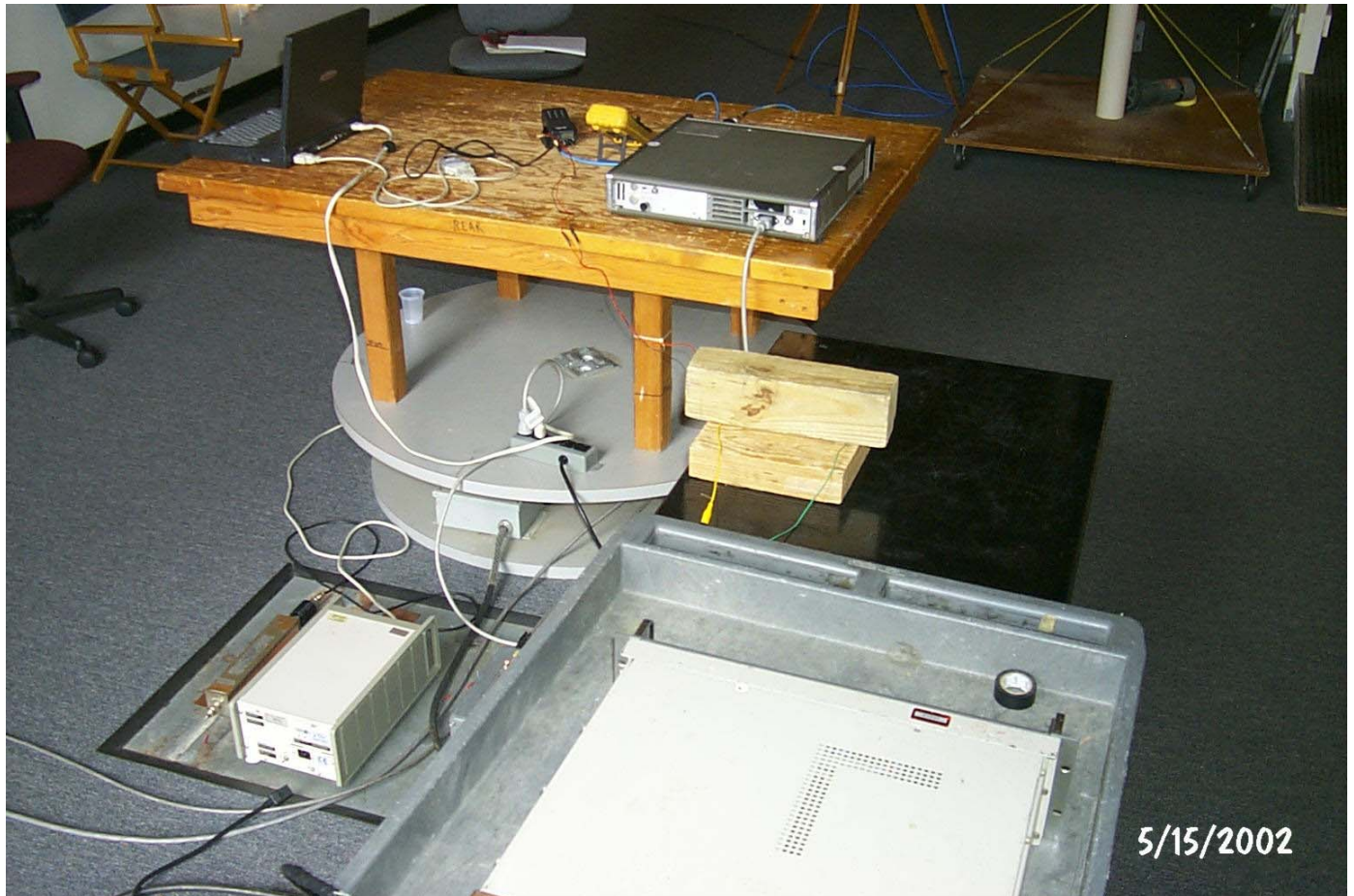
**FORM CTS-PHOTO**

**CUSTOMER: M/A-COM**

**DATE: 05/15/02**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**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

**EQUIPMENT:** P801T S/N 158 CH. HALF WAVE ANTENNA

**TESTED BY:** MANUEL MARTINEZ

**OPERATING MODE:** OCF

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

**FREQUENCY RANGE:** [ X ] 30MHz – 10GHz

[ ] 11.76 GHz – 12.7 GHz

**DATE:** 05/13/02

**TEST NUMBER:** 4

**COUPLING DEVICE:** DIPOLE ANTENNAS

**TEST SPEC:** FCC PART 15 AND 90 CLASS B

**PROCEDURE:** ANSI C63.4

**ANTENNA DISTANCE:** [ X ] 3 METERS

[ ] 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

Document #: EMI3360.US.02

Date: July 30, 2002

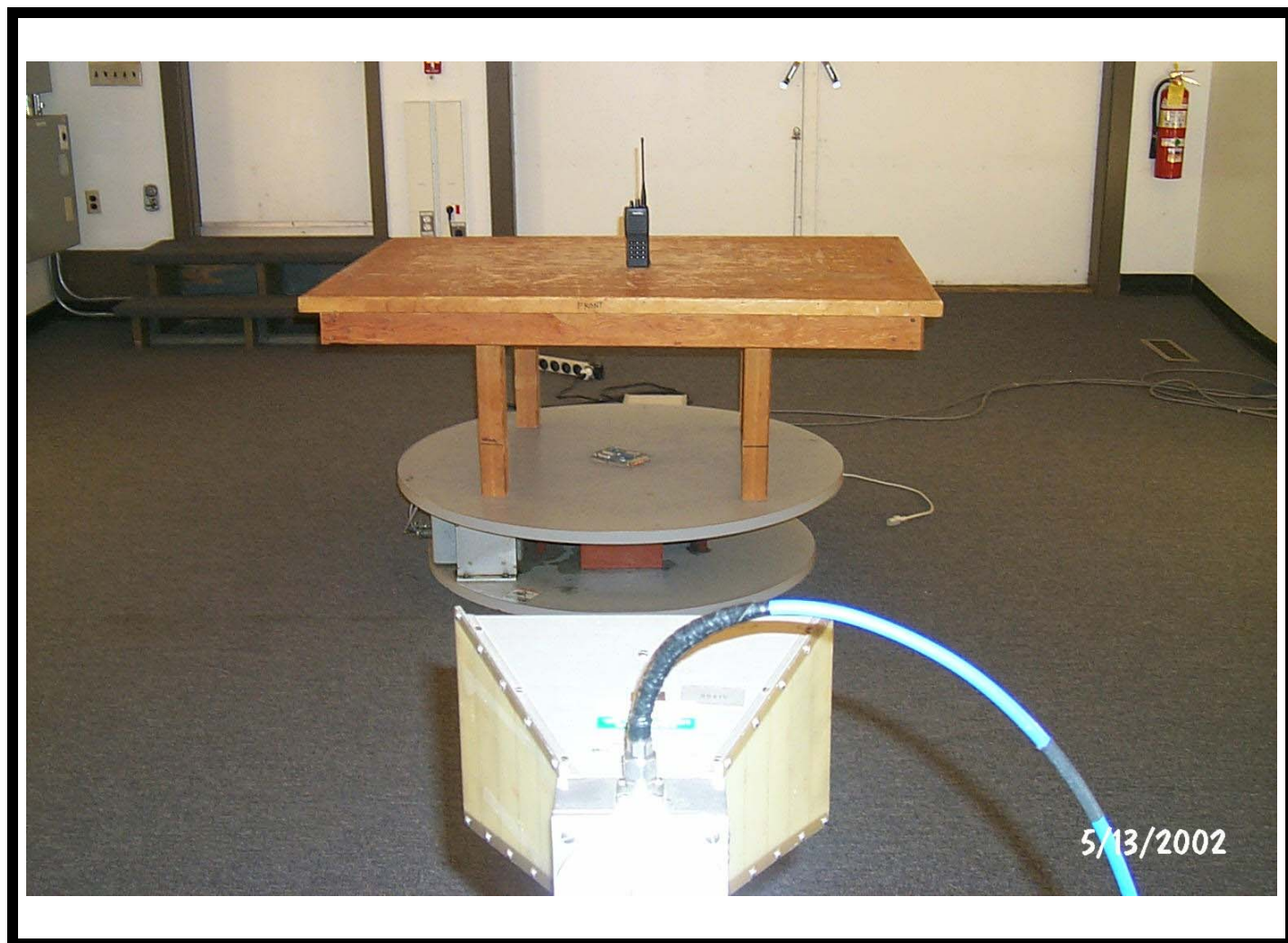
## 2.7.6 Photographic Documentation

**CUSTOMER: M/A-COM**

**DATE: 05/13/02**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TEST NUMBER: 4**



Photograph Description: Test set-up

**FORM CTS-PHOTO**

**APPENDIX A  
TEST LOG**

## TEST SERVICES

### TEST LOG

**CUSTOMER: M/A-COM**

**PROGRAM: N/A**

**EQUIPMENT: OPENSky P801T PORTABLE RADIO**

**TESTED BY: MANUEL MARTINEZ**

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

**FORM CTS-010**

Document #: EMI3360.US.02

Date: July 30, 2002

## TEST SERVICES

### 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	<p>Test Plan/Procedure: ANSI C63.4 and per Test Spec</p> <p>Test Specification: FCC Part 90, FCC Part 2</p> <p>Chomerics Procedure: CHO TPEC T2</p> <p>EUT Power Requirement Verified:</p> <p style="padding-left: 40px;">DC Battery</p> <p>EUT Functional Operational Check: <input checked="" type="checkbox"/> Pass   <input type="checkbox"/> Fail</p> <p>Environmental: Bonding/Grounding: N/A   Safety Issues: N/A</p>					
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"/> X <input type="checkbox"/> Fail					
				<div style="display: flex; justify-content: space-between;"> <div>_____ Test Engineer/Tech</div> <div>_____ Approved Signatory</div> </div>			

FORM CTS-010