



Engineering Solutions & Electromagnetic Compatibility Services

FCC & IC Class 2 Permissive Change Report

Harris Corporation
RF Communications Division
1680 University Avenue
Rochester, NY 14610

Model: P5300/P5500 800 MHz Portable Radio

FCC ID: OWDTR-0066-E
IC: 3636B-0066

January 22, 2013

Standards Referenced for this Report	
Part 2: 2012	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
Part 90: 2012	Private Land Mobile Radio Services
TIA-102.CCAA August 2011	Two-Slot Time Division Multiple Access Transceiver Measurement Methods
TIA-102.CCAB October 2011	Two - Slot Time Division Multiple Access Transceiver Performance Recommendations
SRSP-500	Technical Requirements for Land Mobile and Fixed Radio Services Operating in the Bands 138-851.0125 MHz and 862.0000-174 MHz
RSS-119, Issue 11; June 2011	Radio Transmitters and Receivers Operating in the Land Mobile and Fixed Services in the Frequency Range 27.41-960 MHz

Frequency Range (MHz)	Rated Transmit Power (W) (Conducted)	Frequency Tolerance (ppm)	Mode	Emission Designator (Transmit Mode)
806-824	0.5 – 3.0	0.2 ppm	H-CPM TDMA	8K10DXW
851-869	0.5 – 3.0	0.2 ppm	H-CPM TDMA	8K10DXW

Report Prepared By: Daniel Baltzell

Document Number: 2012375

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These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1445.

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1 Test Result Summary

Test	FCC Reference	IC Reference	Result
RF Power Output	2.1046(a), 90.541(b), 90.542(a)(6)	RSS-119 5.4	Complies
Spurious Emissions at Antenna Terminals	2.1046(a), 90.541(b), 90.542(a)(6)	RSS-119 5.4	Complies
Occupied Bandwidth/Emission Masks	2.1049(c)(1), 90.543(d)	RSS-119 5.5, 5.8	Complies

2 General Information

The following Class 2 Permissive Change Report is prepared on behalf of Harris Corporation in accordance with the Federal Communications Commission and Industry Canada rules and regulations. The Equipment Under Test (EUT) was P5300 700/800 MHz Radio Family; FCC ID: OWDTR-0066-E, IC: 3636B-0066.

The purpose of this Class 2 Permissive Change is to add emission designator 8K10DXW (H-CPM TDMA).

All measurements contained in this application were conducted in accordance with the applicable sections of FCC Rules and Regulations CFR 47 Parts 2 and 90. Calibration checks are performed regularly on the instruments, and all accessories including high pass filter, coaxial attenuator, preamplifier and cables.

2.1 Test Facility

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

2.2 Related Submittal(s)/Grant(s)

The original FCC certification was granted on September 8, 2011 and the IC family certification was granted on September 14, 2011; the Harris model numbers included are EX55-PB78B, EX55-PF78B, EX53-PB78B, EX53-PF78B and P5570. An FCC Class II permissive change was granted on November 19, 2011.

2.3 Grant Notes

Power continuously variable from 0.5 W to 3 W.

3 Tested System Details

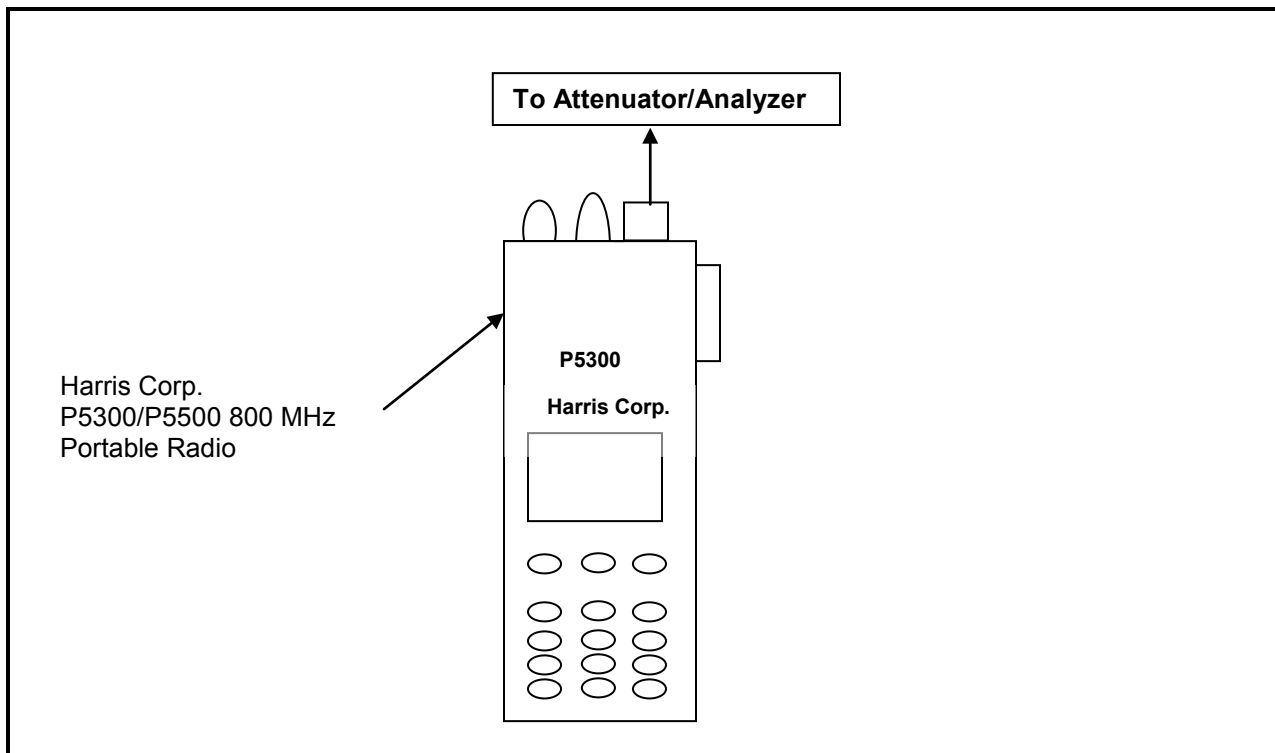
The test sample was received on December 20, 2012. Listed below are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable.

The device was programmed for multiple test patterns using the H-CPM TDMA mode. All test patterns were investigated and found to be nearly identical from an emissions perspective.

Table 3-1: Equipment Under Test (EUT)

Part	Manufacturer	Model	PN/SN	FCC ID	RTL Bar Code
P5300/P5500 800 MHZ Radio	Harris Corporation	EX55-PF78B	A4012B000420	OWDTR-0066-E	20928

Figure 3-1: Configuration of Tested System



4 FCC Rules and Regulations §90.1215(a) and §2.1046(a), IC RSS-119 5.4: Peak Output Power

4.1 Test Procedure

TIA-102.CCAA August 2011, section 2.2.1, TIA-102.CCAB October 2011, section 3.2.1

The EUT was connected via an appropriate 50 ohm attenuator to a signal analyzer. Attenuator loss was accounted for.

4.2 Test Data

Table 4-1: RF Power Output: Modulated Carrier Output Power

Frequency (MHz)	High Power (dBm)	High Power (W)	Low Power (dBm)	Low Power (W)
806.01250	35.4	3.5	28.0	0.6
815.50000	35.5	3.5	27.8	0.6
823.98750	35.2	3.3	27.9	0.6
851.01250	35.3	3.4	27.9	0.6
862.00000	35.4	3.4	27.7	0.6
868.98750	35.4	3.4	28.0	0.6

Table 4-2: RF Power Output (Rated Power)

Frequency (MHz)	High Power Rated (W)
806-869	3

Table 4-3: Test Equipment Used for Testing RF Power Output – Conducted

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	1166.1660.50	Spectrum Analyzer	2001006	6/3/13
901537	Weinschel Corp	48-40-34	Attenuator, 40 dB, 100W	CB66628	12/14/13

Test Personnel:

Daniel Baltzell
EMC Test Engineer



Signature

December 31, 2012
Date of Test

5 FCC Rules and Regulations §2.1051: Spurious Emissions at Antenna Terminals; §90.210: Emissions Masks; RSS-119 §4.2: Transmitter Unwanted Emissions

5.1 Test Procedure

TIA-102.CCAA August 2011, section 2.2.7, TIA-102.CCAB October 2011, section 3.2.7

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

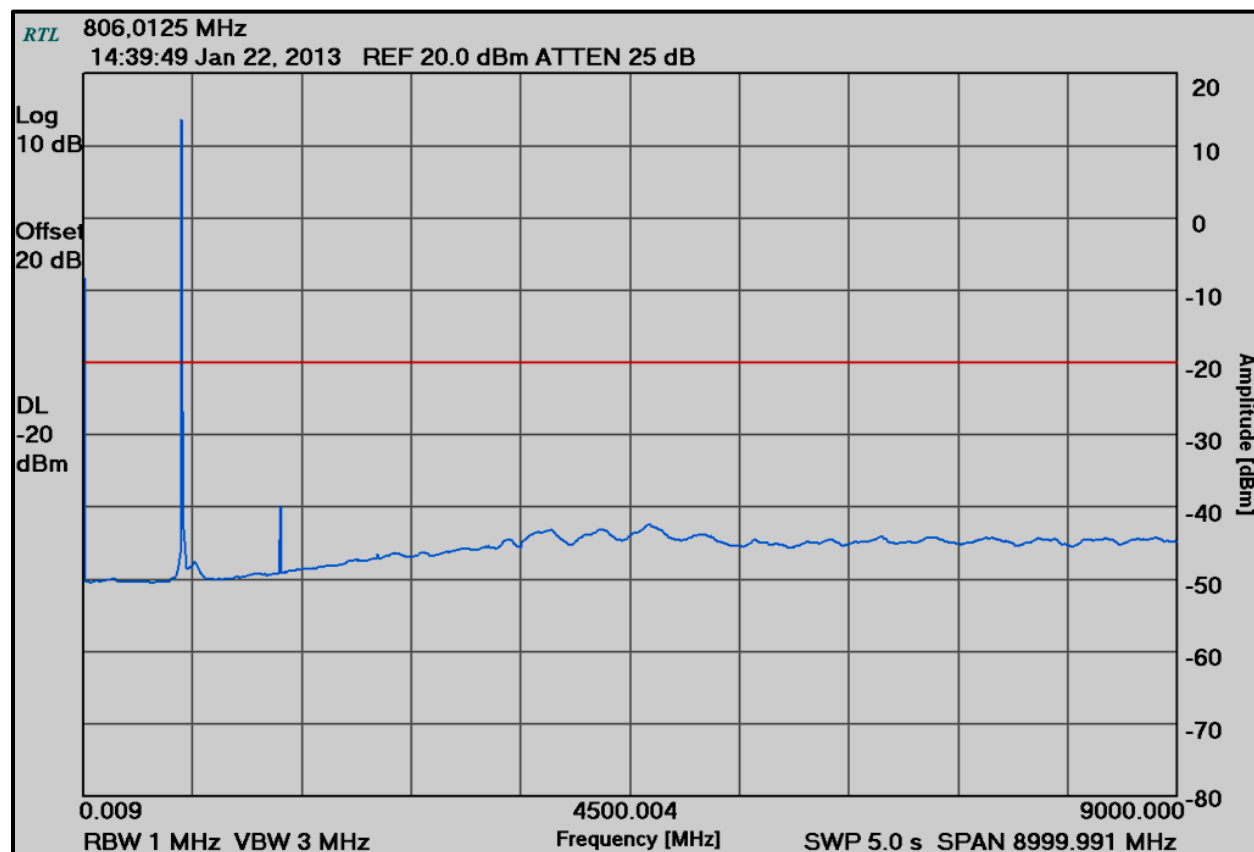
5.2 Test Data

Frequency range of measurement per Part 2.1057: 9 kHz to 10xFc.

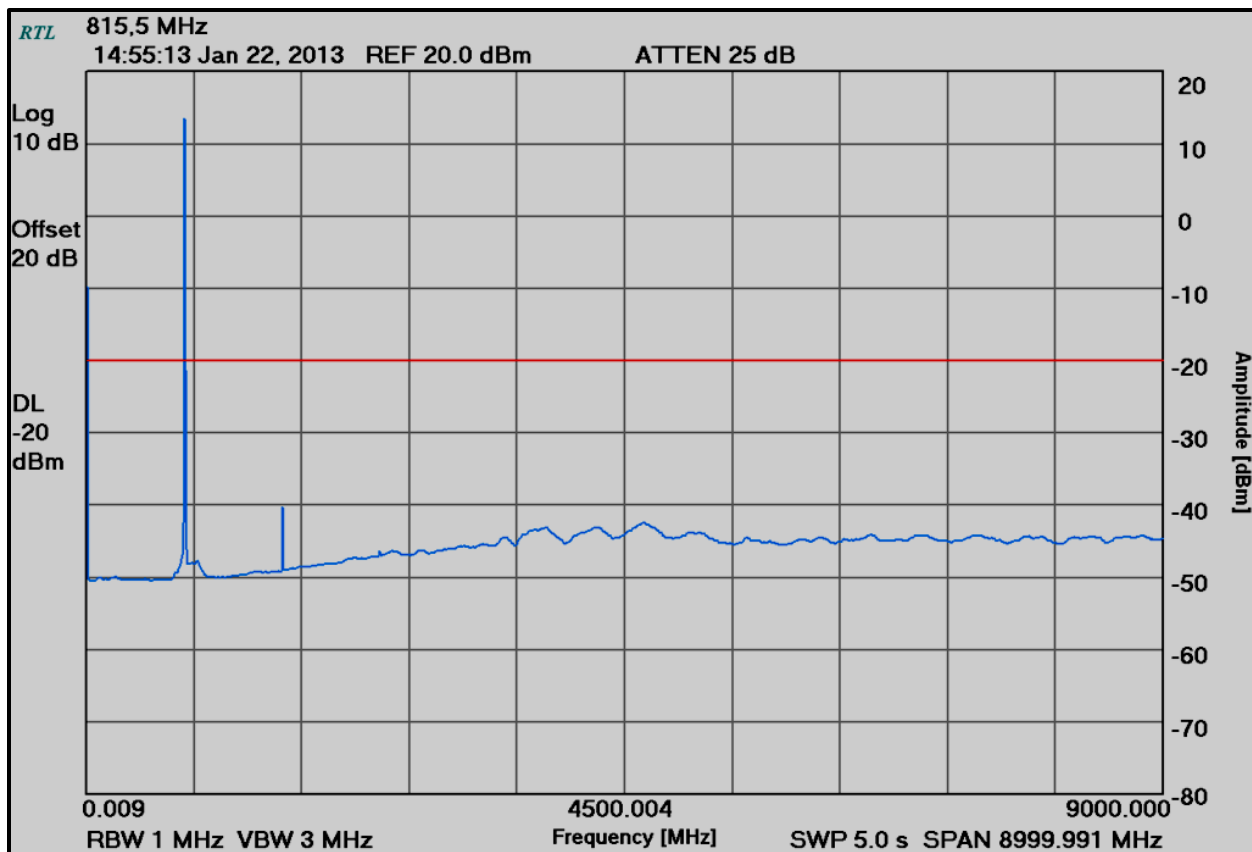
Limit: $P(\text{dBm}) - (50 + 10 \times \text{LOG } P(\text{W}))$

The worst case (unwanted emissions) channels are shown. The magnitude of emissions attenuated more than 20 dB below the FCC limit need not be recorded.

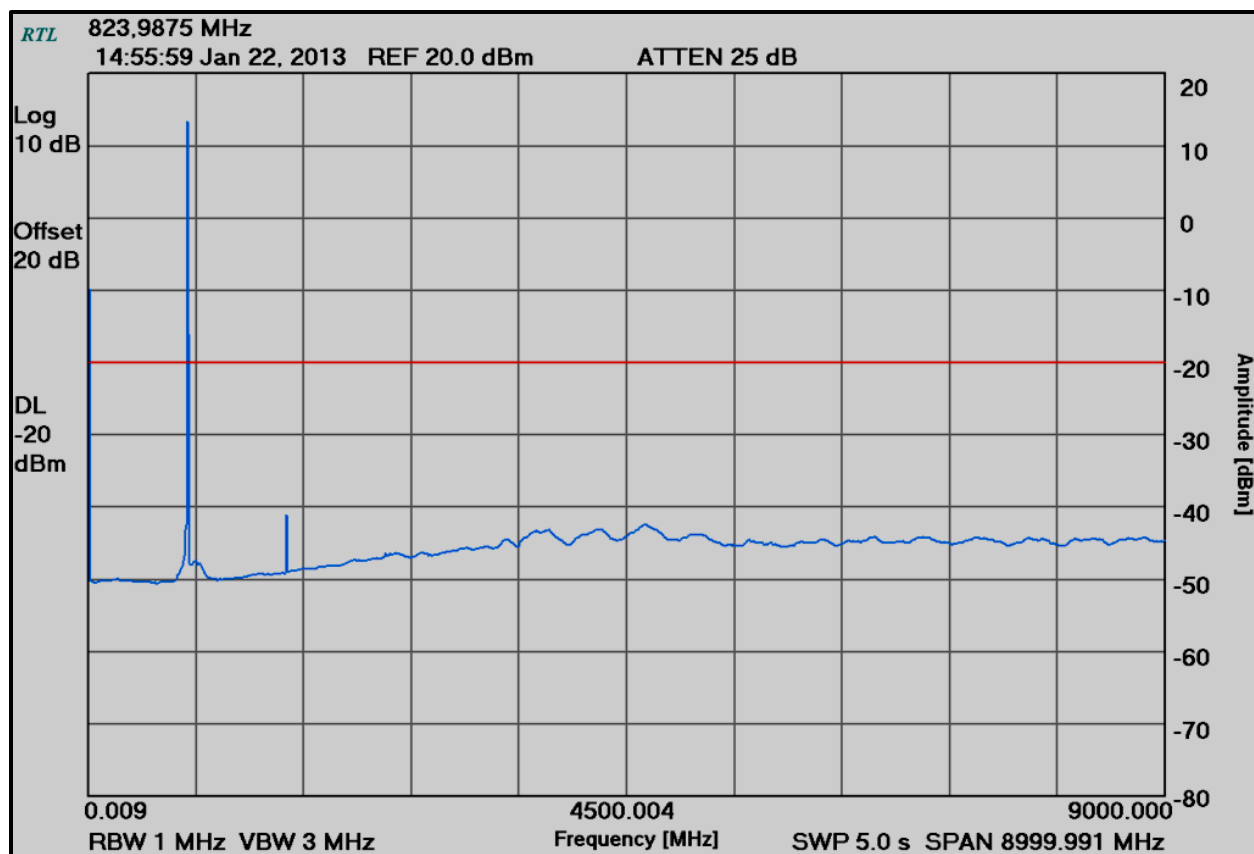
Plot 5-1: Conducted Spurious Emissions – H-CPM TDMA; 806.0125 MHz



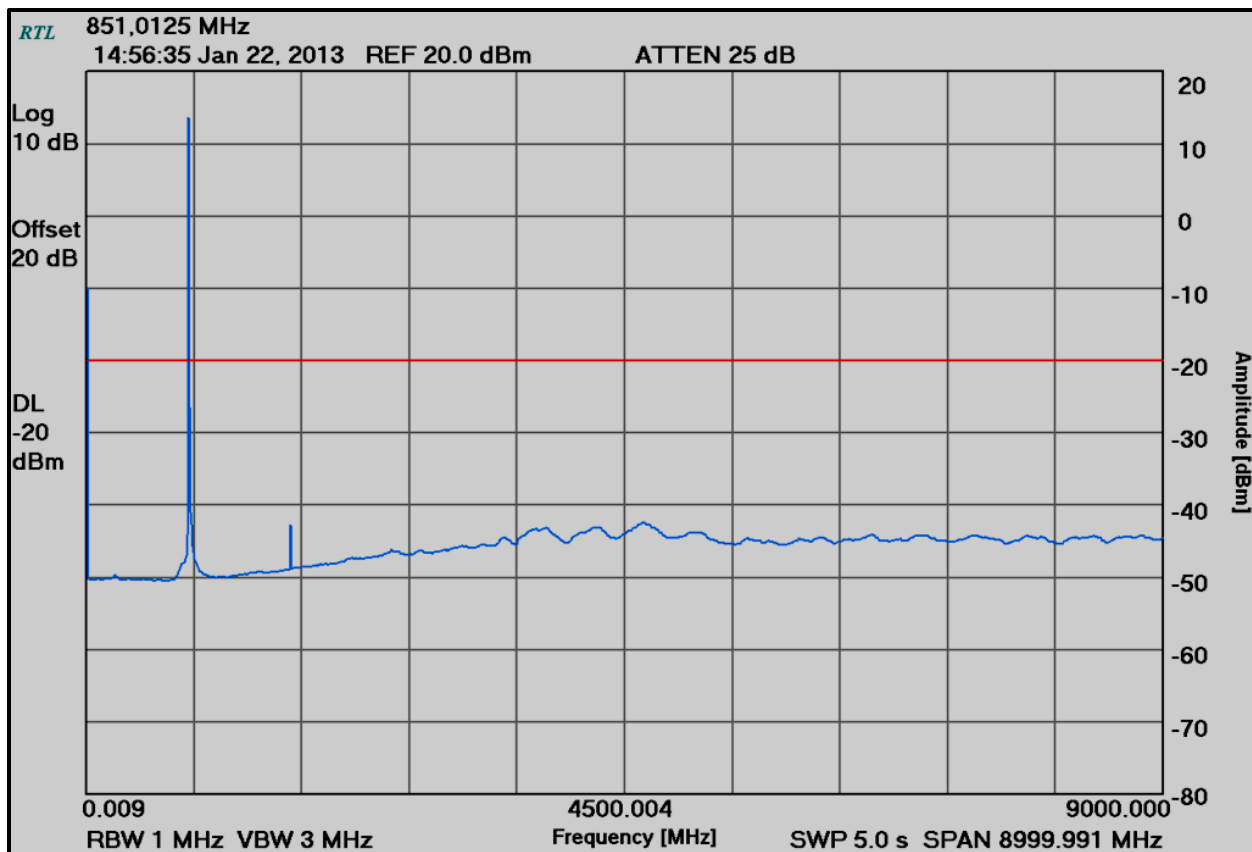
Plot 5-2: Conducted Spurious Emissions – H-CPM TDMA; 815.5000 MHz



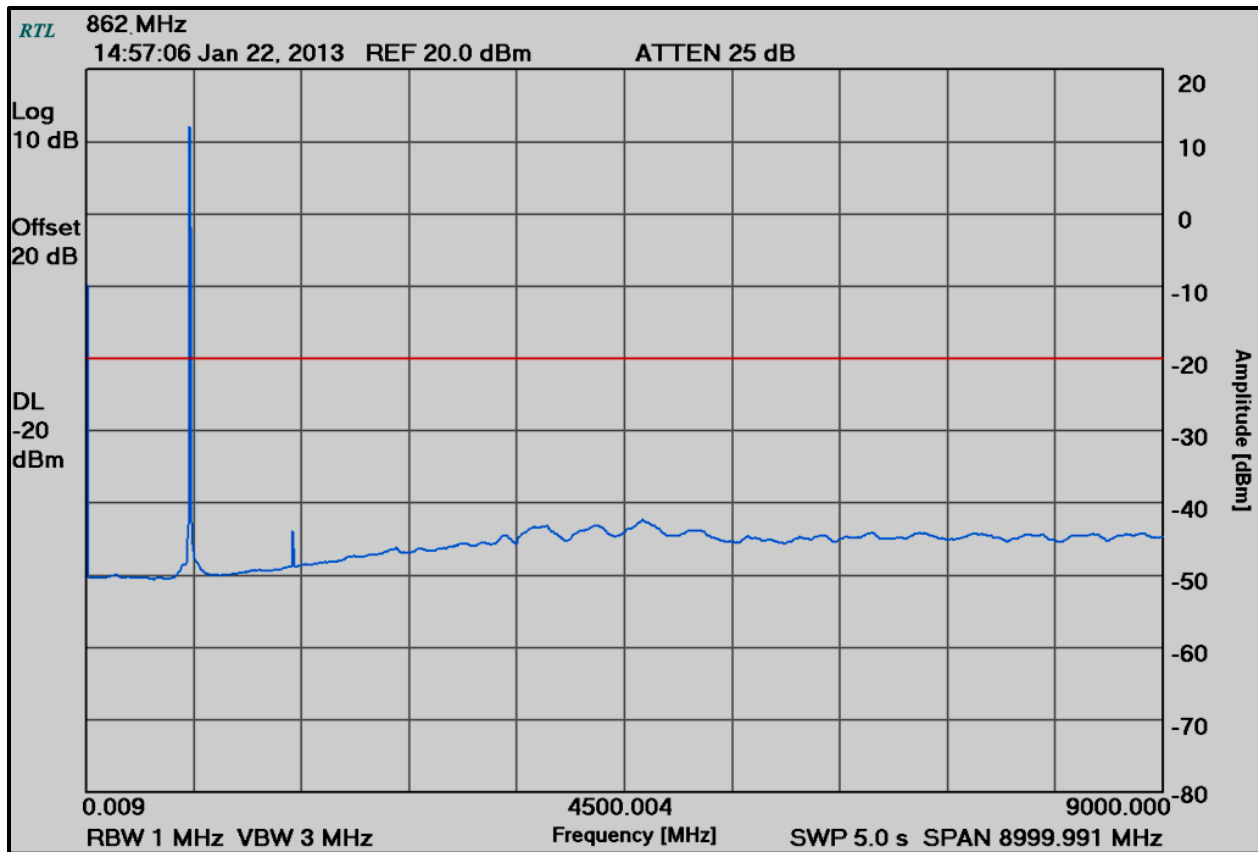
Plot 5-3: Conducted Spurious Emissions – H-CPM TDMA; 823.9875 MHz



Plot 5-4: Conducted Spurious Emissions – H-CPM TDMA; 851.0125 MHz



Plot 5-5: Conducted Spurious Emissions – H-CPM TDMA; 862.0000 MHz



Plot 5-6: Conducted Spurious Emissions – H-CPM TDMA; 868.9875 MHz

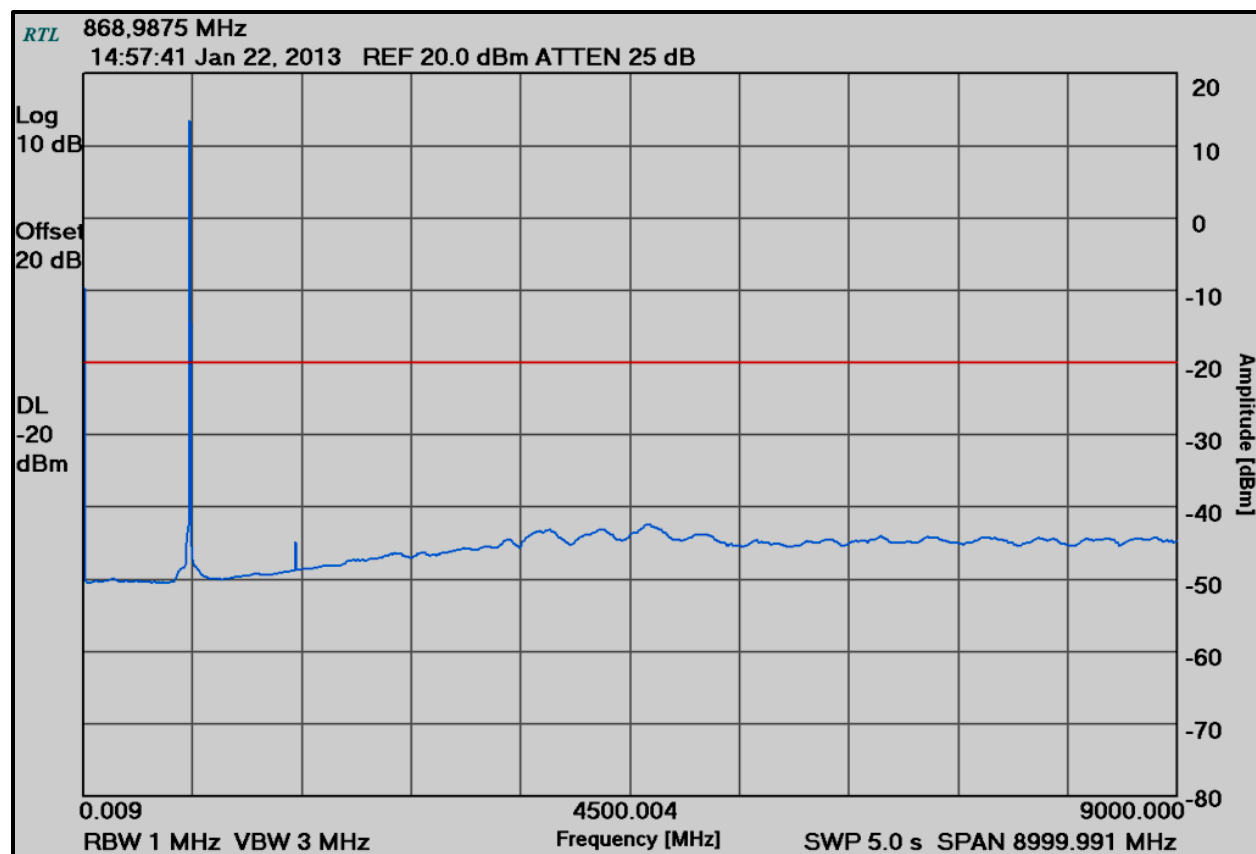


Table 5-1: Test Equipment Used for Testing Spurious Emissions

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	1166.1660.50	Spectrum Analyzer	2001006	6/3/13
901537	Weinschel Corp	48-40-34	Attenuator, 40 dB, 100W	CB66628	12/14/13

Test Personnel:

Daniel Baltzell
EMC Test Engineer

Signature

January 22, 2013
Date of Test

6 FCC Rules and Regulations §2.1049(c)(1); §90.210; RSS-119 §5.8: Occupied Bandwidth

6.1 Test Procedure

TIA-102.CCAA August 2011, section 2.2.5, TIA-102.CCAB October 2011, section 3.2.5

Notes: FCC 90.210 specifies masks G and H for this equipment, RSS-119 and TIA-102.CCAB October 2011 section 3.2.5.1 specify mask D; all data is presented on the following pages

FCC §90.210

Applicable Emission Masks		
Frequency Band (MHz)	Mask for Equipment with Audio Low Pass Filter	Mask for Equipment without Audio Low Pass Filter
Below 25 ¹	A or B	A or C
25–50.....	B	C
72–76.....	B	C
150–174 ²	B, D, or E	C, D, or E
150 Paging-only	B	C
220–222	F	F
421–512 ²	B, D, or E	C, D, or E
450 Paging-only	B	G
806–809/851–854	B	H
809–824/854–869 ³	B	G
896–901/935–940	I	J
902–928	K	K
929–930	B	G
4940–4990 MHz	L or M	L or M
5850–5925 ⁴		
All other bands	B	C

¹ Equipment using single sideband J3E emission must meet the requirements of Emission Mask A. Equipment using other emissions must meet the requirements of Emission Mask B or C, as applicable.

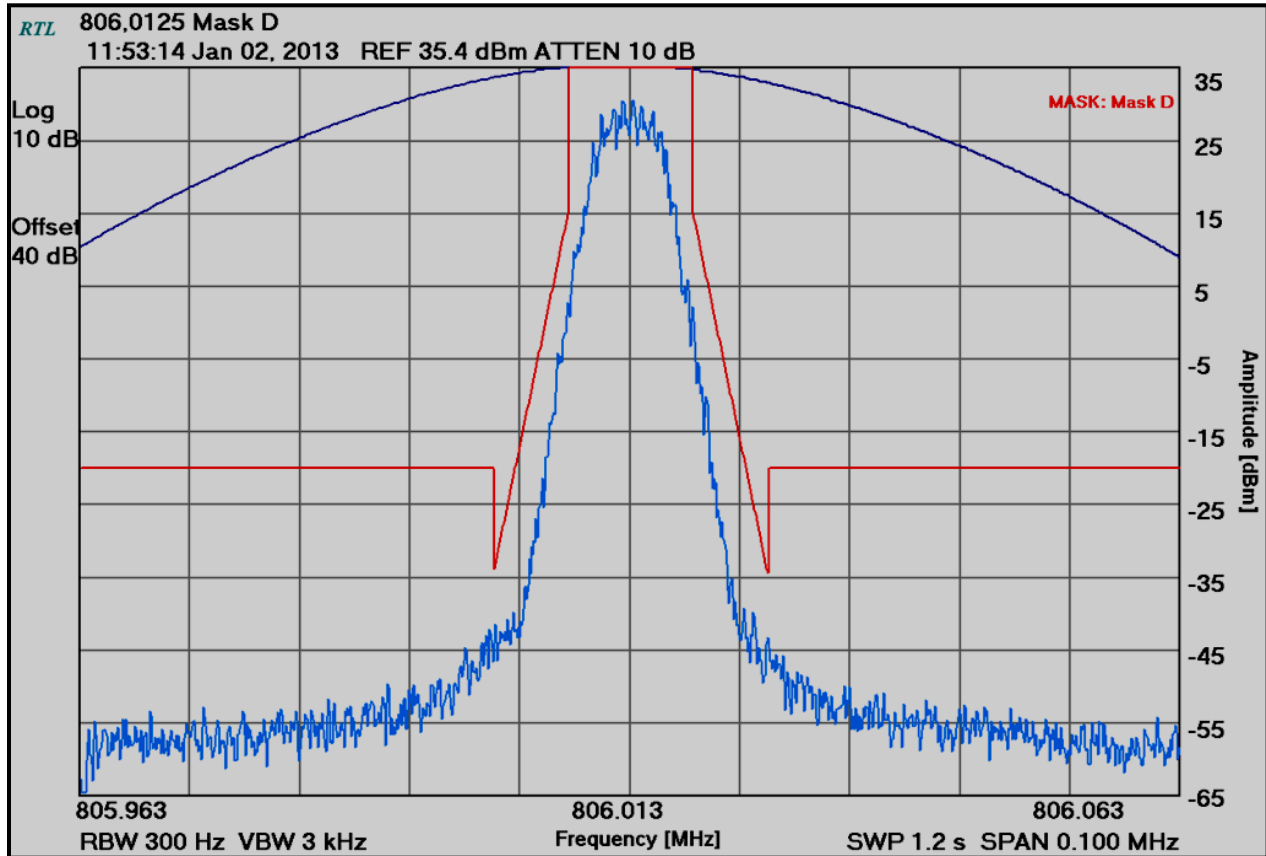
² Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask B or C, as applicable. Equipment designed to operate with a 12.5 kHz channel bandwidth must meet the requirements of Emission Mask D, and equipment designed to operate with a 6.25 kHz channel bandwidth must meet the requirements of Emission Mask E.

³ Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of §90.691.

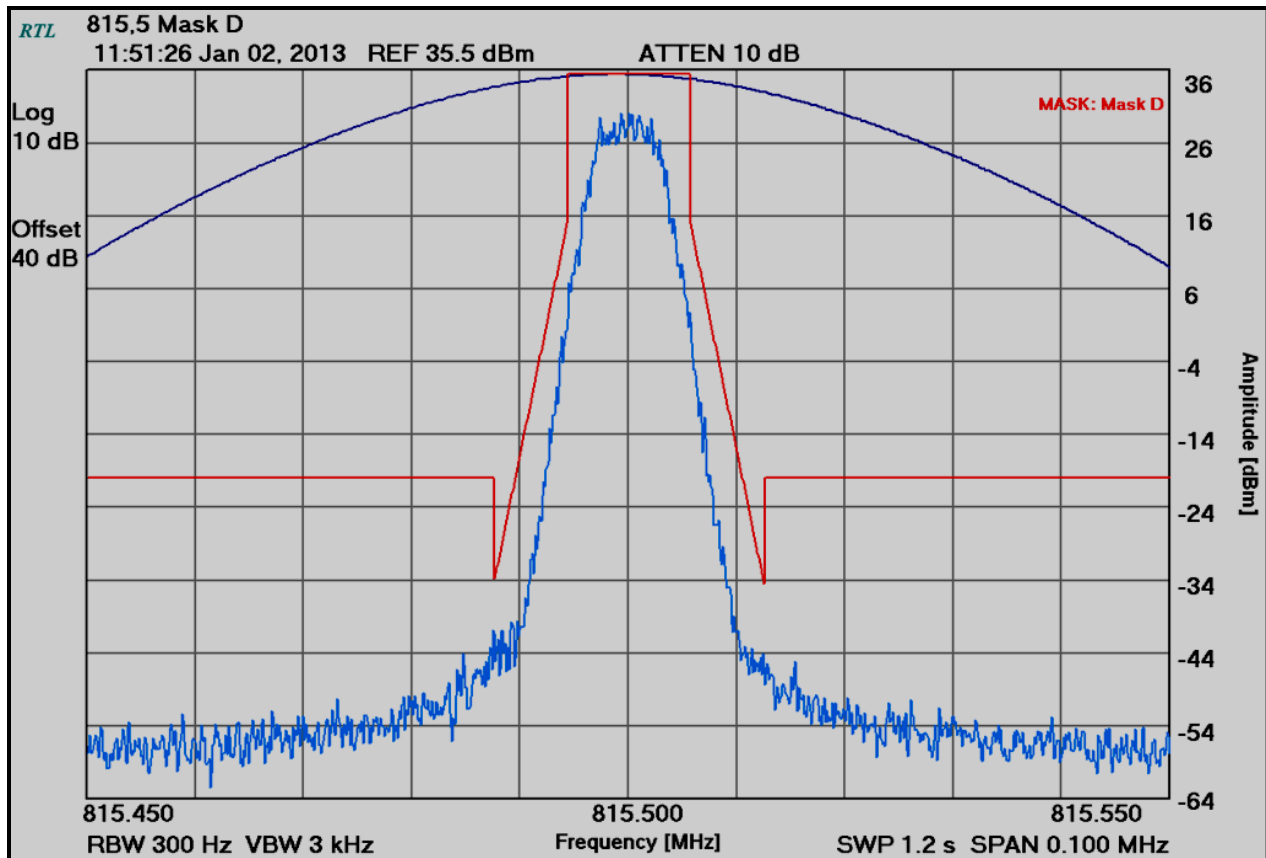
⁴ DSRCS Roadside Unit equipment in the 5850–5925 MHz band is governed under subpart M of this part.

6.2 Test Data

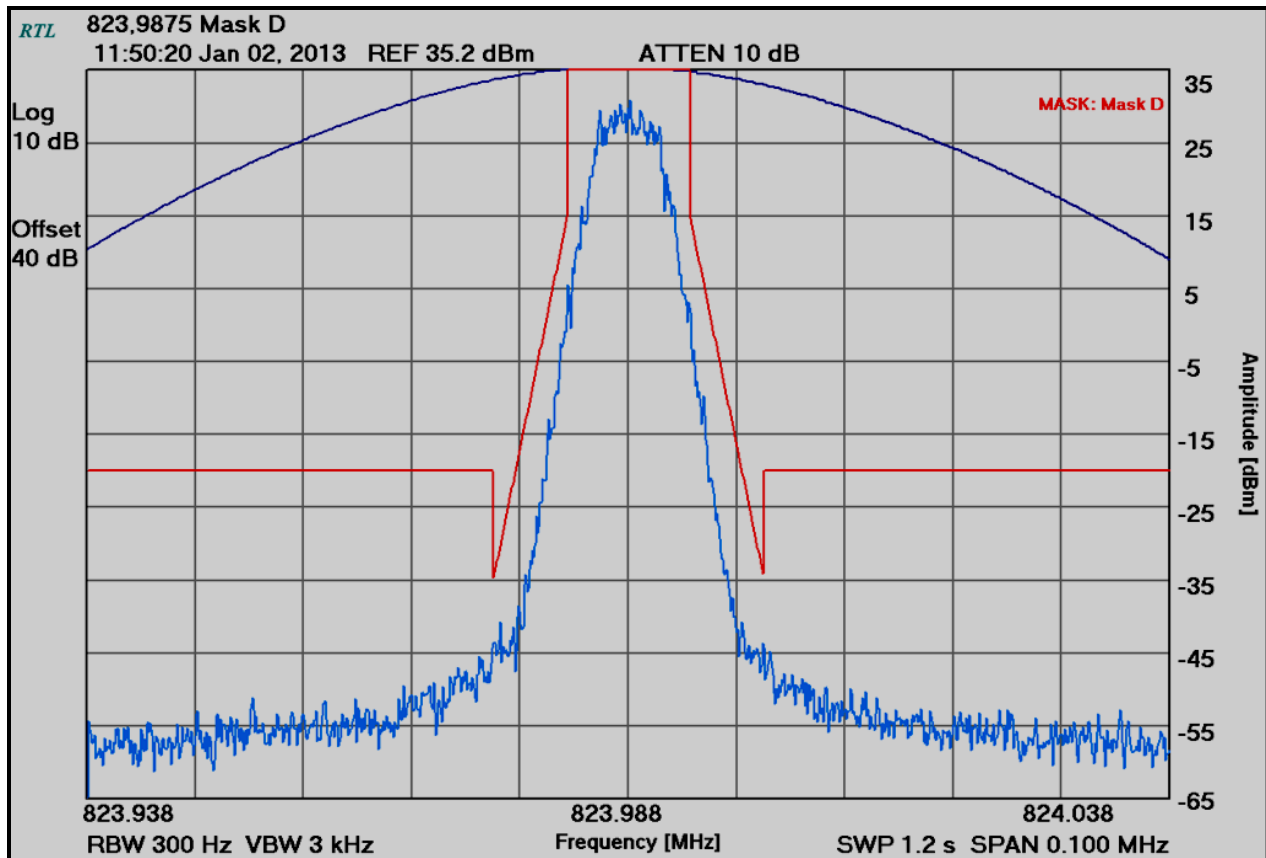
Plot 6-1: Occupied Bandwidth – H-CPM TDMA; 806.0125 MHz; Mask D



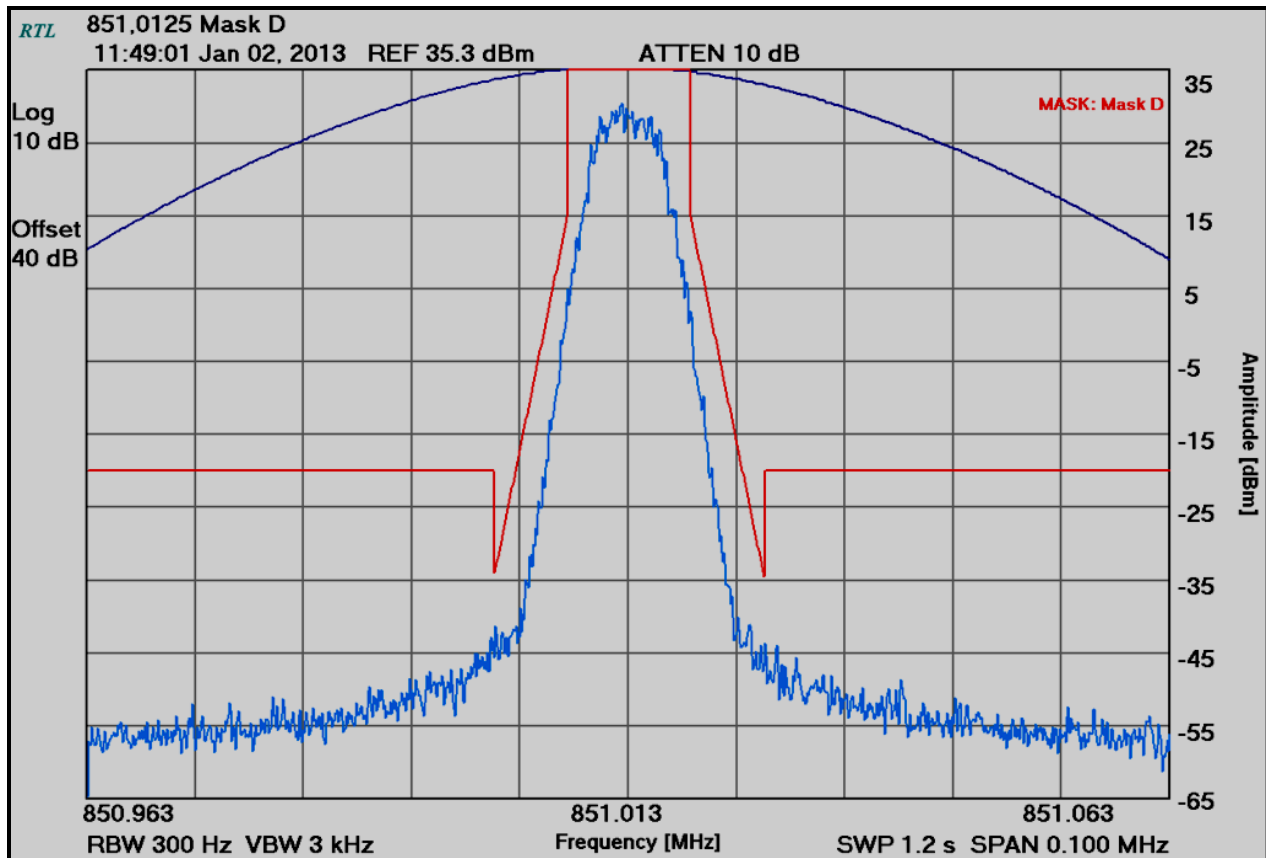
Plot 6-2: Occupied Bandwidth – H-CPM TDMA; 815.5000 MHz; Mask D



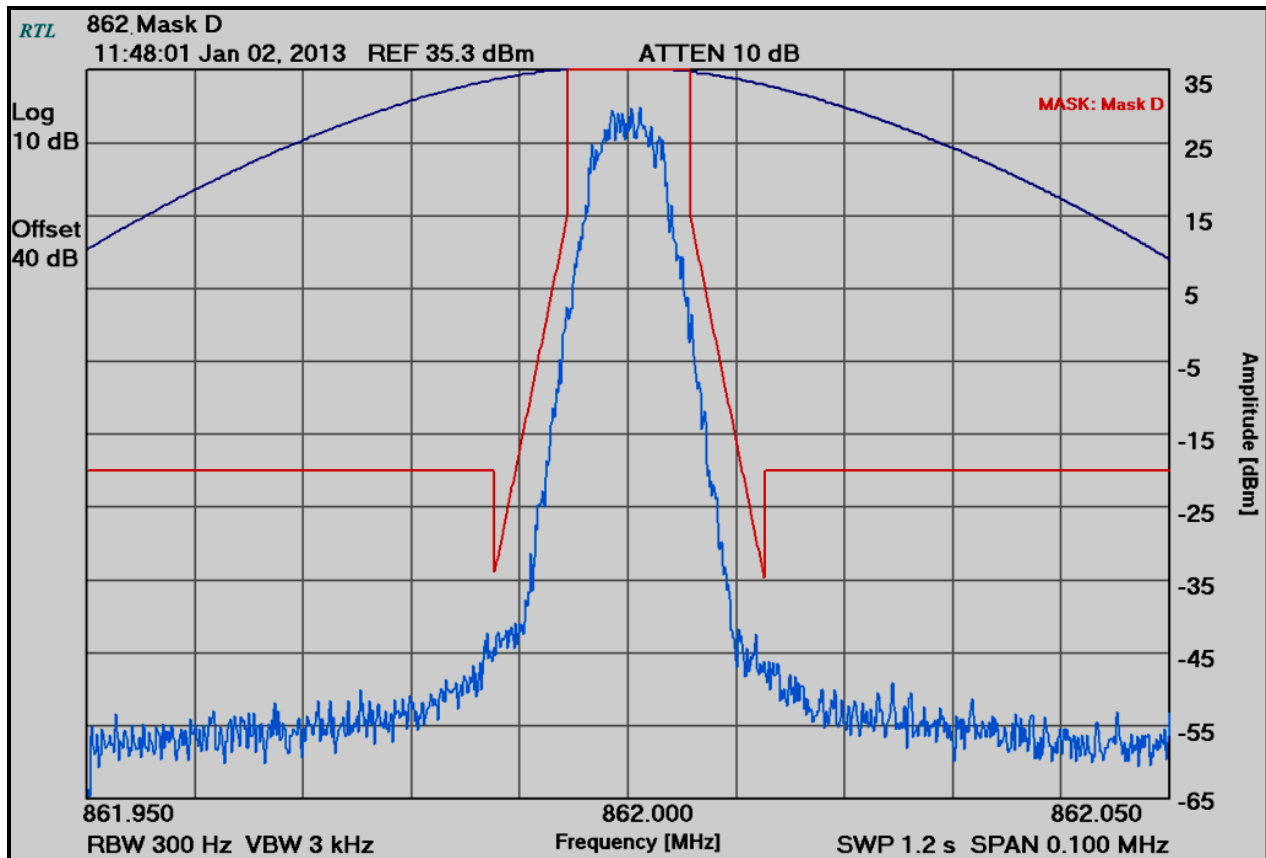
Plot 6-3: Occupied Bandwidth – H-CPM TDMA; 823.9875 MHz; Mask D



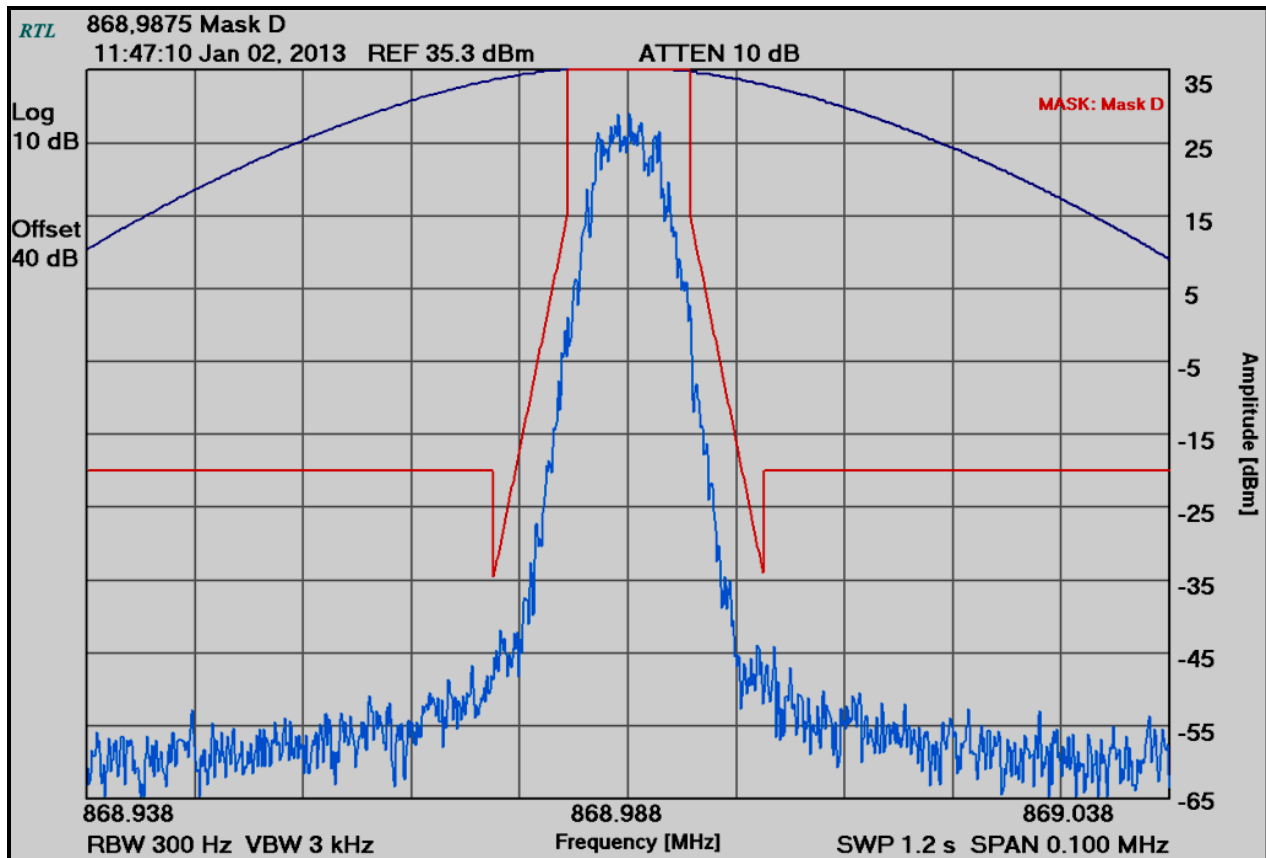
Plot 6-4: Occupied Bandwidth – H-CPM TDMA; 851.0125 MHz; Mask D



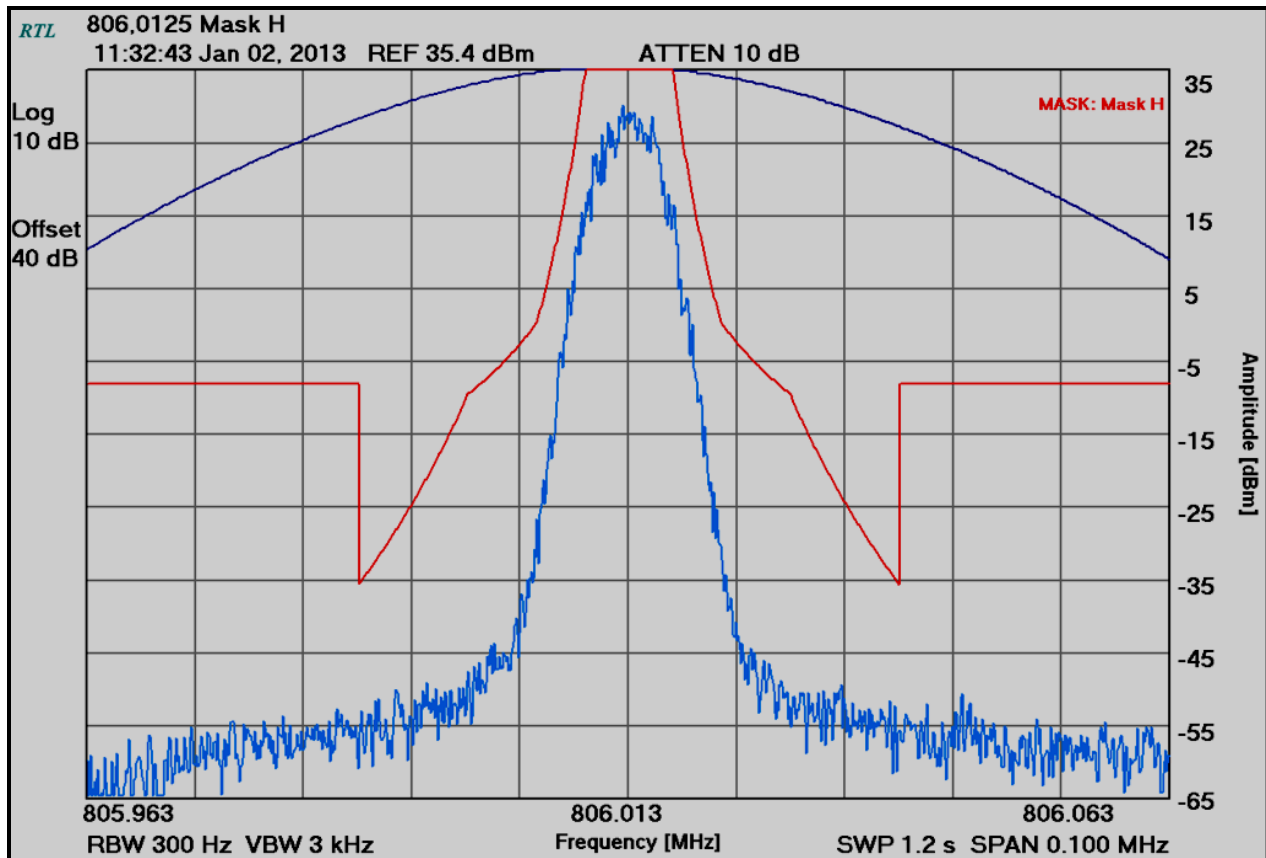
Plot 6-5: Occupied Bandwidth – H-CPM TDMA; 862.0000 MHz; Mask D



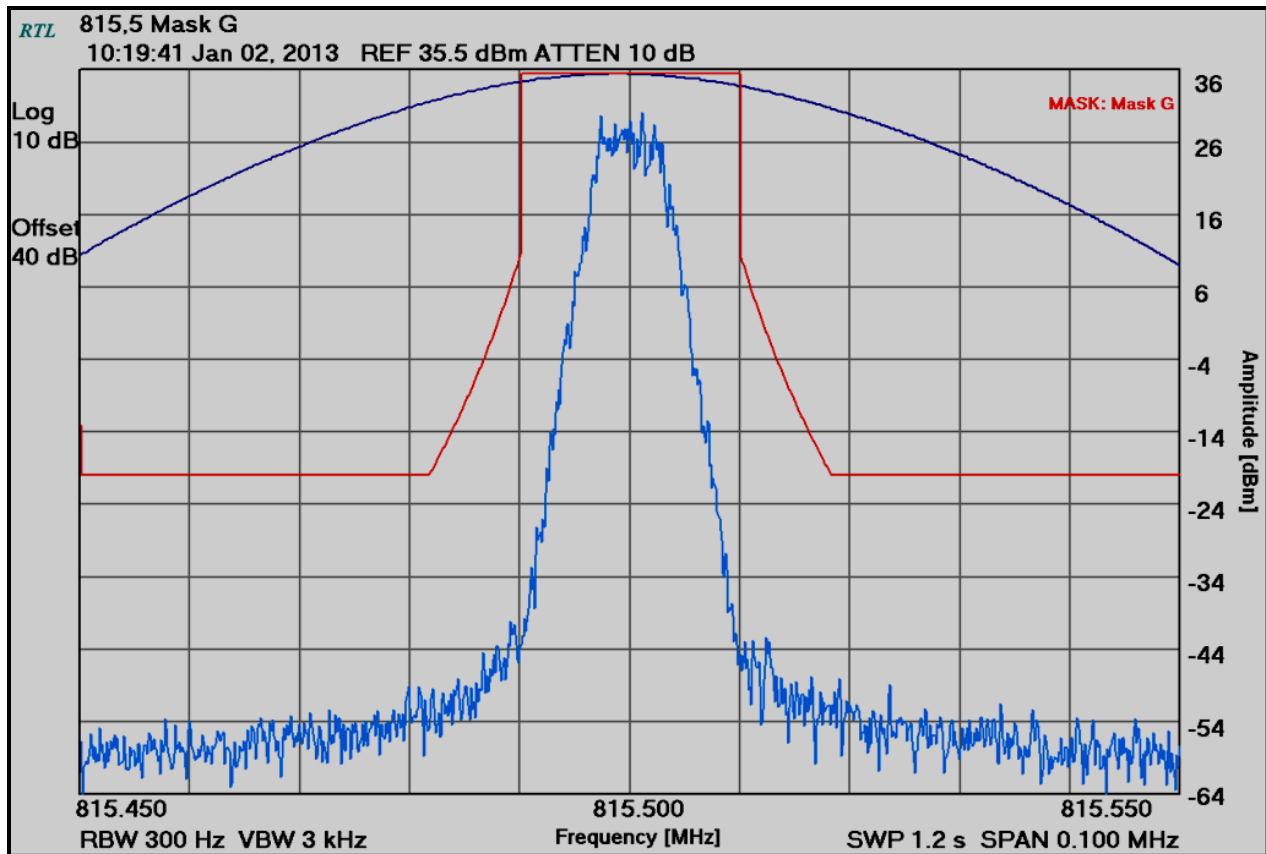
Plot 6-6: Occupied Bandwidth – H-CPM TDMA; 868.9875 MHz; Mask D



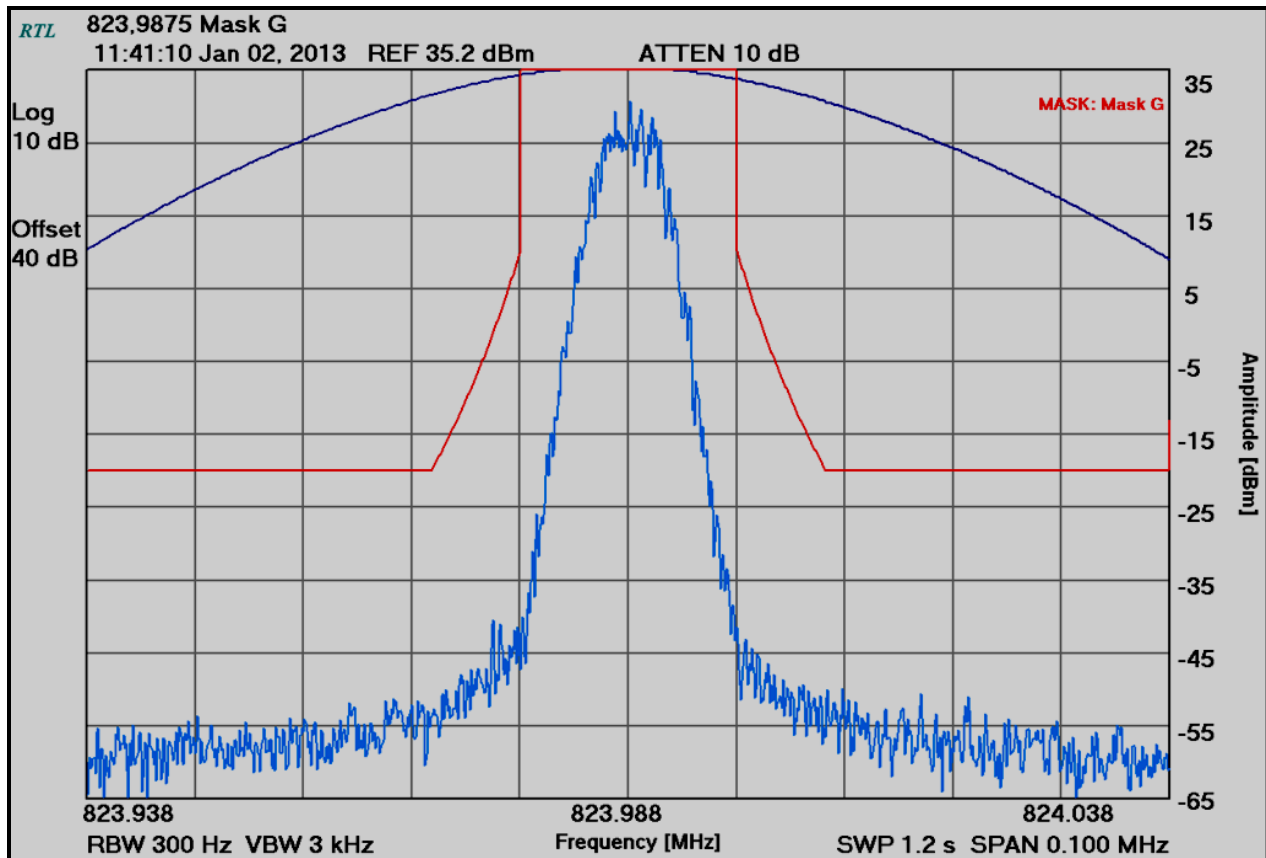
Plot 6-7: Occupied Bandwidth – H-CPM TDMA; 806.0125 MHz; Mask H



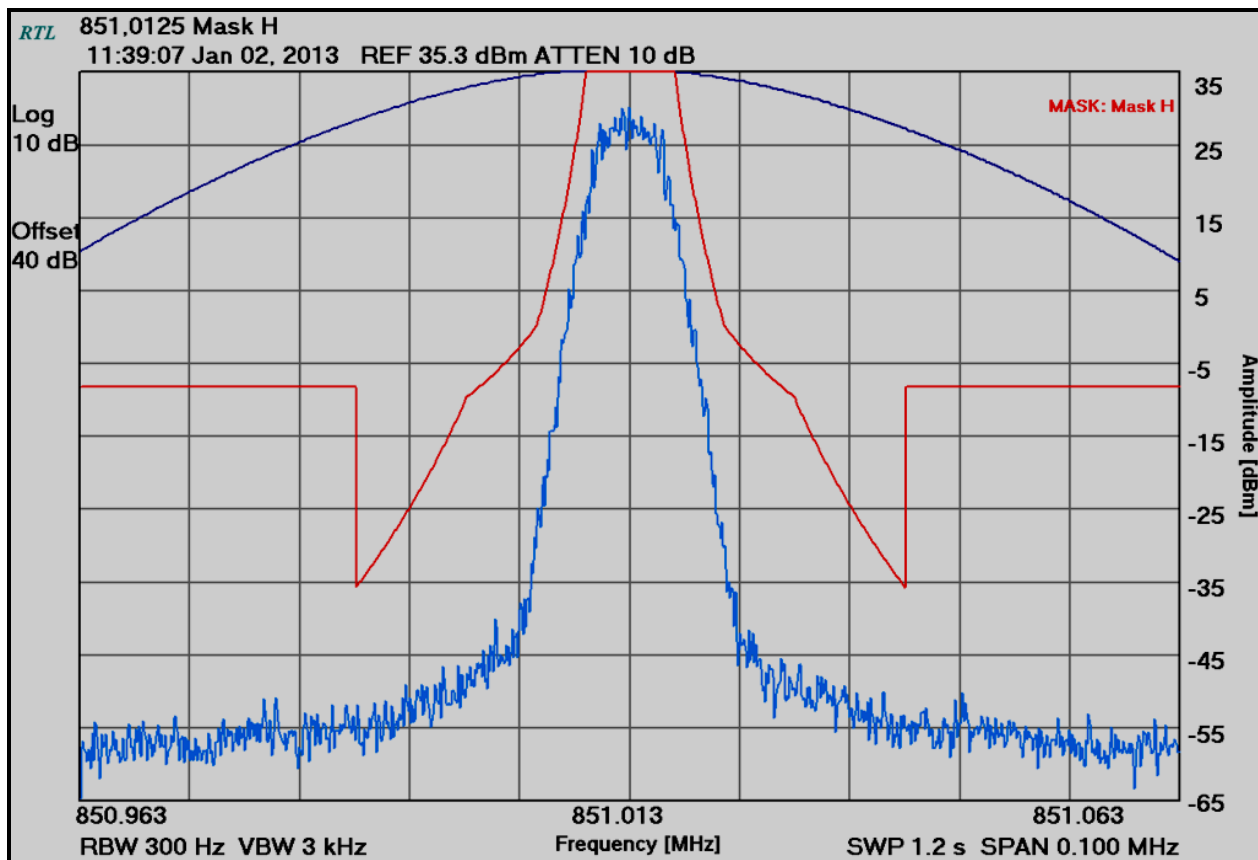
Plot 6-8: Occupied Bandwidth – H-CPM TDMA; 815.5000 MHz; Mask G



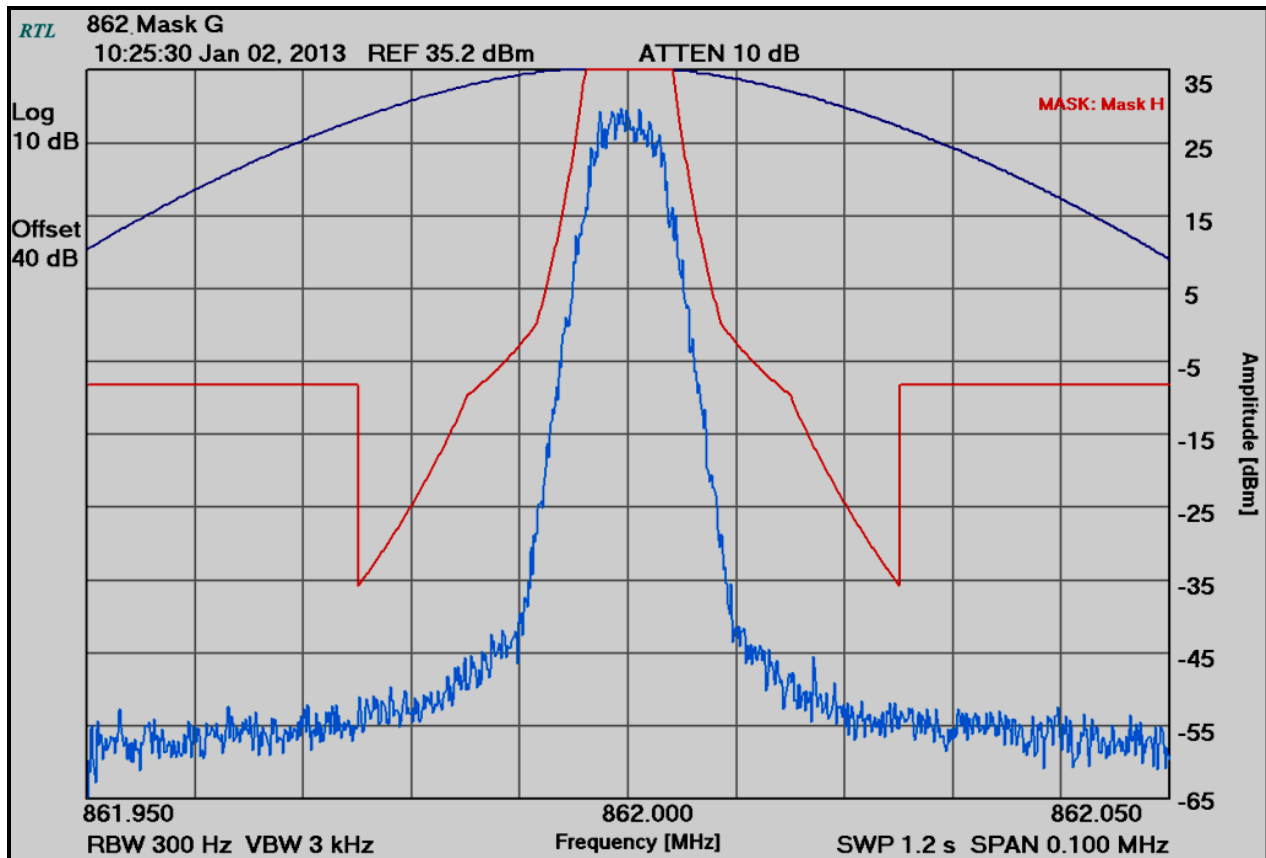
Plot 6-9: Occupied Bandwidth – H-CPM TDMA; 823.9875 MHz; Mask G



Plot 6-10: Occupied Bandwidth – H-CPM TDMA; 851.0125 MHz; Mask H



Plot 6-11: Occupied Bandwidth – H-CPM TDMA; 862.0000 MHz; Mask G



Plot 6-12: Occupied Bandwidth – H-CPM TDMA; 868.9875 MHz; Mask G

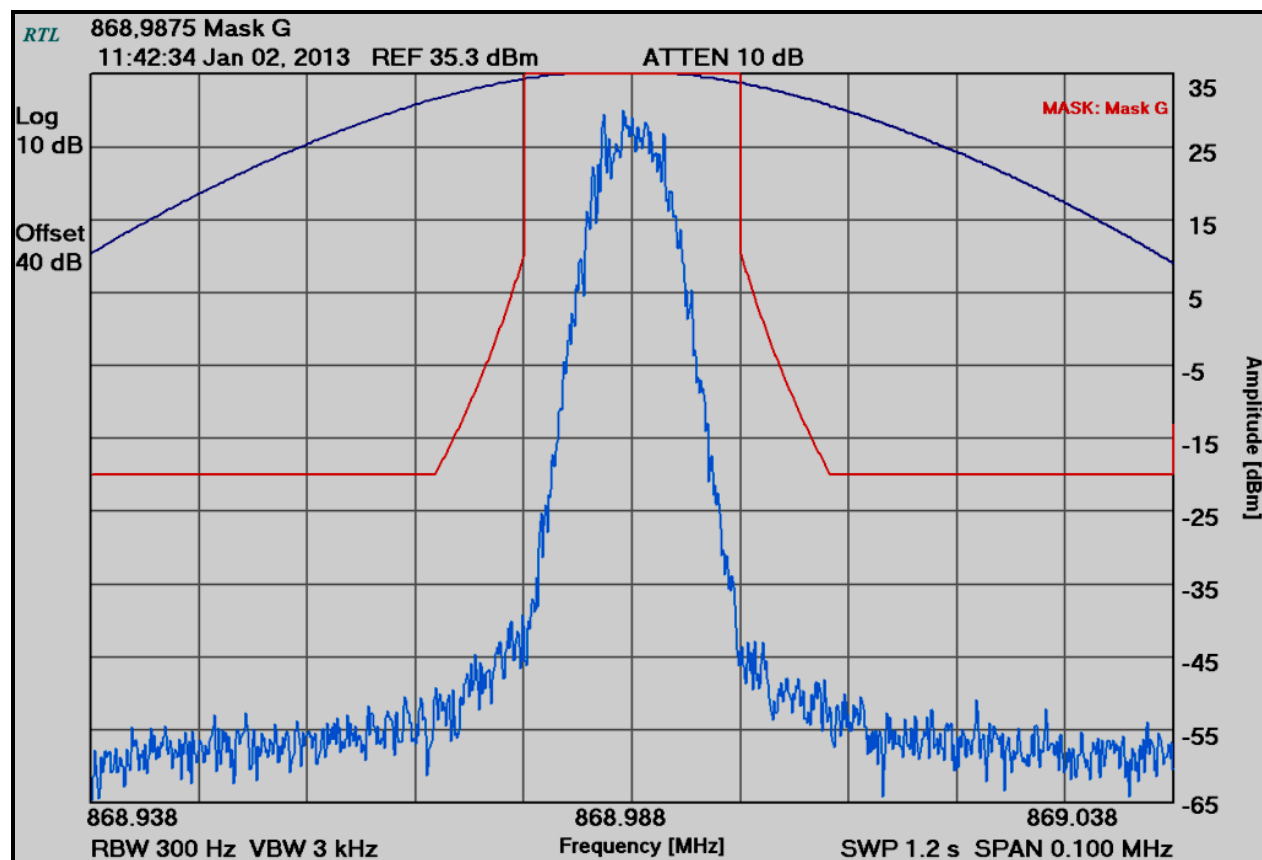


Table 6-1: Test Equipment Used for Testing Occupied Bandwidth

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	1166.1660.50	Spectrum Analyzer	2001006	6/3/13
901537	Weinschel Corp	48-40-34	Attenuator, 40 dB, 100W	CB66628	12/14/13
901337	Narda Microline	766-10	Attenuator (DC-4GHz, 10 dB, 20W)	6242	8/17/13

Test Personnel:

Daniel Baltzell
Test Engineer

Signature

January 2, 2013
Date of Test

Rhein Tech Laboratories, Inc.
360 Herndon Parkway
Suite 1400
Herndon, VA20170
<http://www.rheintech.com>

Client: Harris Corporation
Model: P5300/P5500 800 MHz
ID's: OWDTR-0066-E/3636B-0066
Standards: FCC Part 90/IC RSS-119
Report #: 2012375

7 Conclusion

The data in this Class 2 measurement report shows that the Harris Corporation Model P5300/P5500 800 MHz; FCC ID: OWDTR-0066-E, IC: 3636B-0066, complies with all the applicable requirements of FCC Parts 90 and 2, and Industry Canada RSS-119.