RHEIN TECH LABORATORIES, INC.

Engineering Solutions & Electromagnetic Compatibility Services

FCC & IC Class 2 Permissive Change Report

Harris Corporation
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Model: M7300 VHF

FCC ID: OWDTR-0056-E
IC: 3636B-0056

December 3, 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-EIA-603-C August 2004	Land Mobile FM or PM Communications Equipment – Measurement and Performance Standards
ANSI/TIA/EIA –102.CAAA-2002	Digital C4FM/CQPSK Transceiver Measurement Methods
ANSI/TIA/EIA–102.BAAA–1998	Project 25 FDMA Common Air Interface—New Technology Standards Project—Digital Radio Technical Standards
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
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
SRSP-500	Technical Requirements for Land Mobile and Fixed Radio Services Operating in the Bands 138-144 MHz and 148-174 MHz

Report Prepared By: Daniel Baltzell

Document Number: 2013277

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.

FCC Rule Parts	Frequency Range (MHz)	Rated Transmit Power (W) (Conducted)	Frequency Tolerance (ppm)	Mode	Emission Designator
22, 90	136 – 174	110	0.18	H-CPM TDMA (Phase II)	8K10DXW
80	136 – 174	50	0.5	H-CPM TDMA (Phase II)	8K10DXW
22	136 – 174	110	0.18	Voice	16K0F3E
80	136 – 174	50	0.5	Voice	16K0F3E
22, 90	136 – 174	110	0.18	Voice	11K0F3E
80	136 – 174	50	0.5	Voice	11K0F3E
22, 90	136 – 174	110	0.18	2 level NB 9600	9K90F1D/E
80	136 – 174	50	0.5	2 level NB 9600	9K90F1D/E
22, 90	136 – 174	110	0.18	2 level NB 4800	7K10F1D/E
80	136 – 174	50	0.5	2 level NB 4800	7K10F1D/E
22, 90	136 – 174	110	0.18	P25 (Phase I)	8K40F1D/E
80	136 – 174	50	0.5	P25 (Phase I)	8K40F1D/E

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1 Test Result Summary

Test	FCC Reference	Result	IC Reference	Result
RF Power Output	2.1046(a), 80.215; 90.205	Complies	RSS-119 5.4	Complies
Spurious Emissions at Antenna Terminals	2.1057, 80.211(f)(3); 90.210	Complies	RSS-119 5.5, 5.8	Complies
Field Strength of Spurious Radiation	2.1053(a), 2.1057, 80.211(f)(3); 90.210	Complies	RSS-119 5.5, 5.8	Complies
Occupied Bandwidth/Emission Masks	2.1049(c)(1), 80.205, 80.211(f); 90.210	Complies	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 M7300 VHF Radio; FCC ID: OWDTR-0056-E, IC: 3636B-0056.

The purpose of this Class 2 Permissive Change is to demonstrate continued compliance after passive component changes in the transmit chain.

All measurements contained in this application were conducted in accordance with FCC Rules and Regulations CFR 47 Parts 2 and 90, and Industry Canada RSS-119. 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 February 1, 2012; FCC Class II permissive changes were granted on June 27, 2012, August 1, 2012, May 16, 2013, and October 25, 2013.

2.3 Grant Notes

Power is continuously variable from 50 - 110 W. The grant listed power is rated power.

2.4 Tested System Details

The test sample was received on November 14, 2013. 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.

The device was programmed for multiple test patterns and modes. All test patterns were investigated and found to be nearly identical from an emissions perspective.

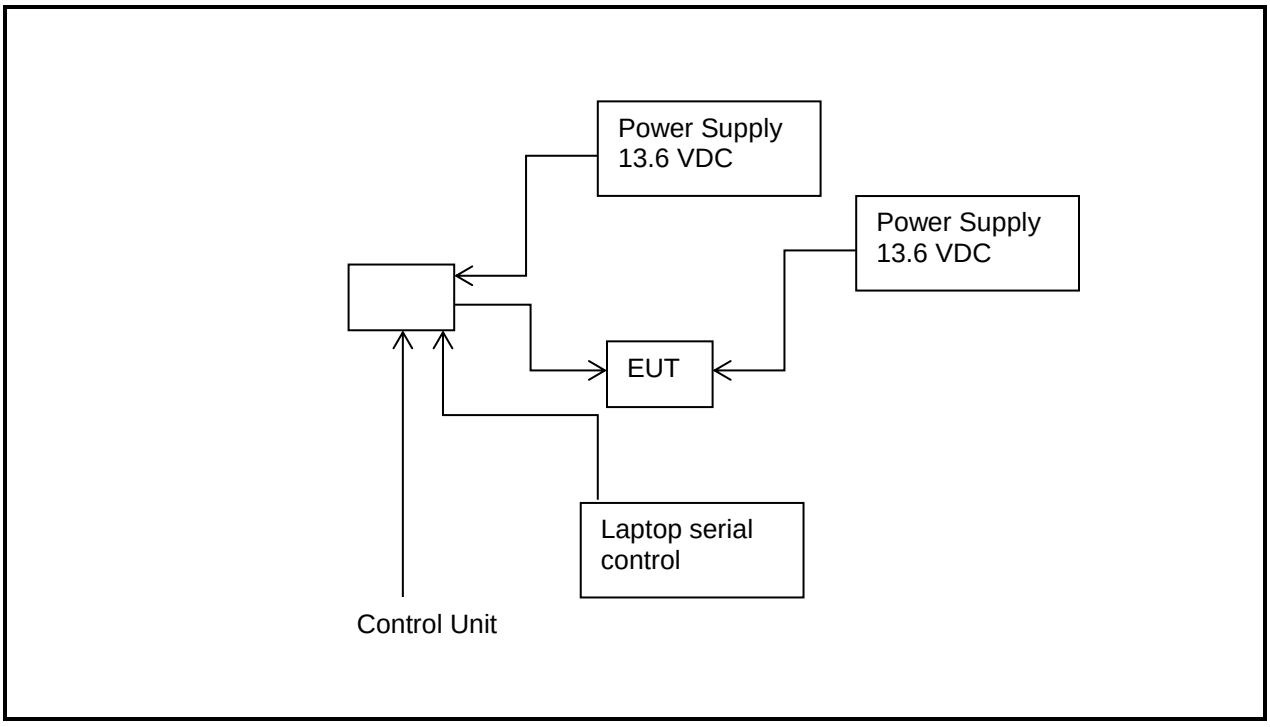
Table 2-1: Equipment Under Test (EUT)

Model	Manufacturer	Model	Part Number	FCC ID	RTL Bar Code
M7300, 136-174MHz 110W Mobile Radio	Harris Corporation	MAMW-SHHXX	RU144750-051	OWDTR-0056-E	21338

Table 2-2: Auxiliary Equipment

Part	Manufacturer	Model	PN/SN	FCC ID	RTL Bar Code
13.8 VDC Power Supply	Alinco	DM-330MV	N/A	DoC	901438
Termination	BIRD Electronic Corporation	8141	4005	N/A	900714
Laptop	Sony	PCG-71314L	N/A	N/A	N/A
Remote Mount Control Head - System	Harris Corporation	CH-271	CU-23218-0004	N/A	20952
30” Unshielded CAN Cable	Harris Corporation	CAN Cable	CA-009562	N/A	N/A
Unshielded DC Power Cable	Harris Corporation	Power Cable	14002-0167	N/A	N/A
Baseband Input Switch	Harris Corporation	N/A	N/A	N/A	17930
Microphone	Tyco Electronics	N/A	MC-101616-040	N/A	21337

Figure 2-1: Configuration of Tested System



3 FCC 2.1046(a), 22.659, 80.215, 90.205; RSS-119 5.4: RF Power Output: Conducted

3.1 Test Procedure

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

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

Manufacturer's Rated Power: 110 W; 50W (Part 80)

3.2 Test Data

Table 3-1: RF Conducted Output Power - Measured

Frequency (MHz)	High Power (dBm)	High Power (W)	Low Power (dBm)	Low Power (W)
136.0125	50.6	114.8	47.3	53.7
138.0000	50.5	112.2	47.2	52.5
141.0000	50.4	109.6	47.1	51.3
144.0000	50.4	109.6	47.1	51.3
148.0000	50.4	109.6	47.1	51.3
150.0000	50.4	109.6	47.1	51.3
162.0000	50.6	114.8	47.4	55.0
173.9875	50.6	114.8	47.3	53.7

Notes: Data presented is for analog mode. All other modes were investigated and found to have equivalent power within measurement tolerances.

Table 3-2: Test Equipment Used For Testing RF Power Output - Conducted

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901594	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36"	NA	8/27/14
901291	Pasternack	PE7031-20	300W Attenuator, DC - 1 GHz, 20 dB	NA	3/25/16
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	4/16/14
901139	Weinschel Corp.	48-20-34 DC-18GHz	Attenuator, 100W 20dB	BK5859	3/25/16

Test Personnel:

Daniel Baltzell		November 19, 2013
EMC Test Engineer	Signature	Date of Test

4 FCC 2.1051, 90.210; RSS-119 5.8: Conducted Spurious Emissions

4.1 Test Procedure

ANSI/TIA-603-C-2004 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.
Frequency range of measurement per Part 2.1057: 9 kHz to 10 x Fc

Limits: (50 + 10 LOG P(W))

The following channels (MHz) were investigated: 136.0125, 138.0, 141.0, 144.0, 148.0, 150.0, 162.0 and 173.9875. Both high and low power settings were checked; high power was found to be worst case. All modes were investigated, and analog mode is presented as representative data.

4.2 Test Data

Table 4-1: Spurious Emissions at Antenna Terminals – 136.0125 MHz

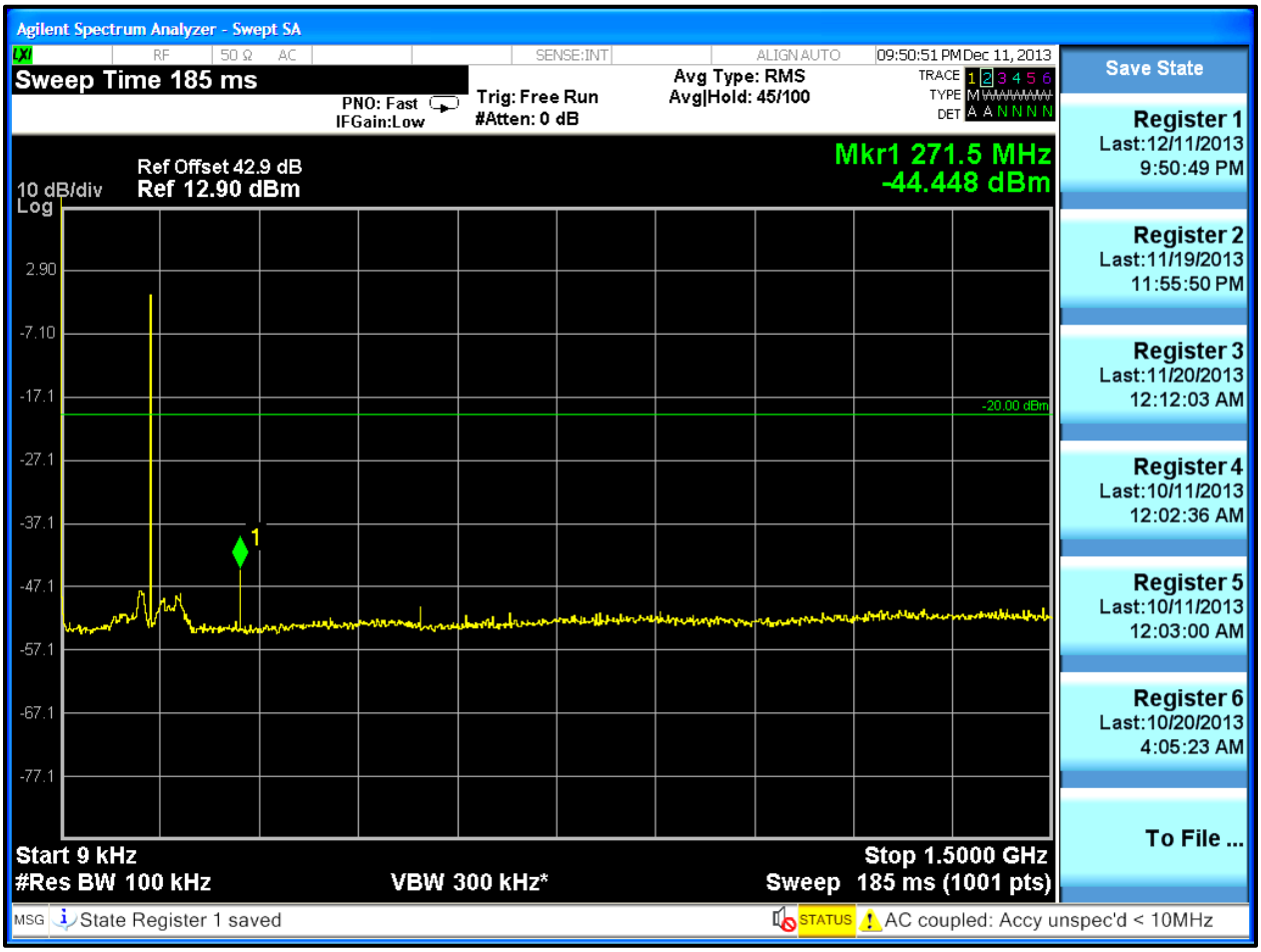


Table 4-2: Spurious Emissions at Antenna Terminals – 138.0 MHz

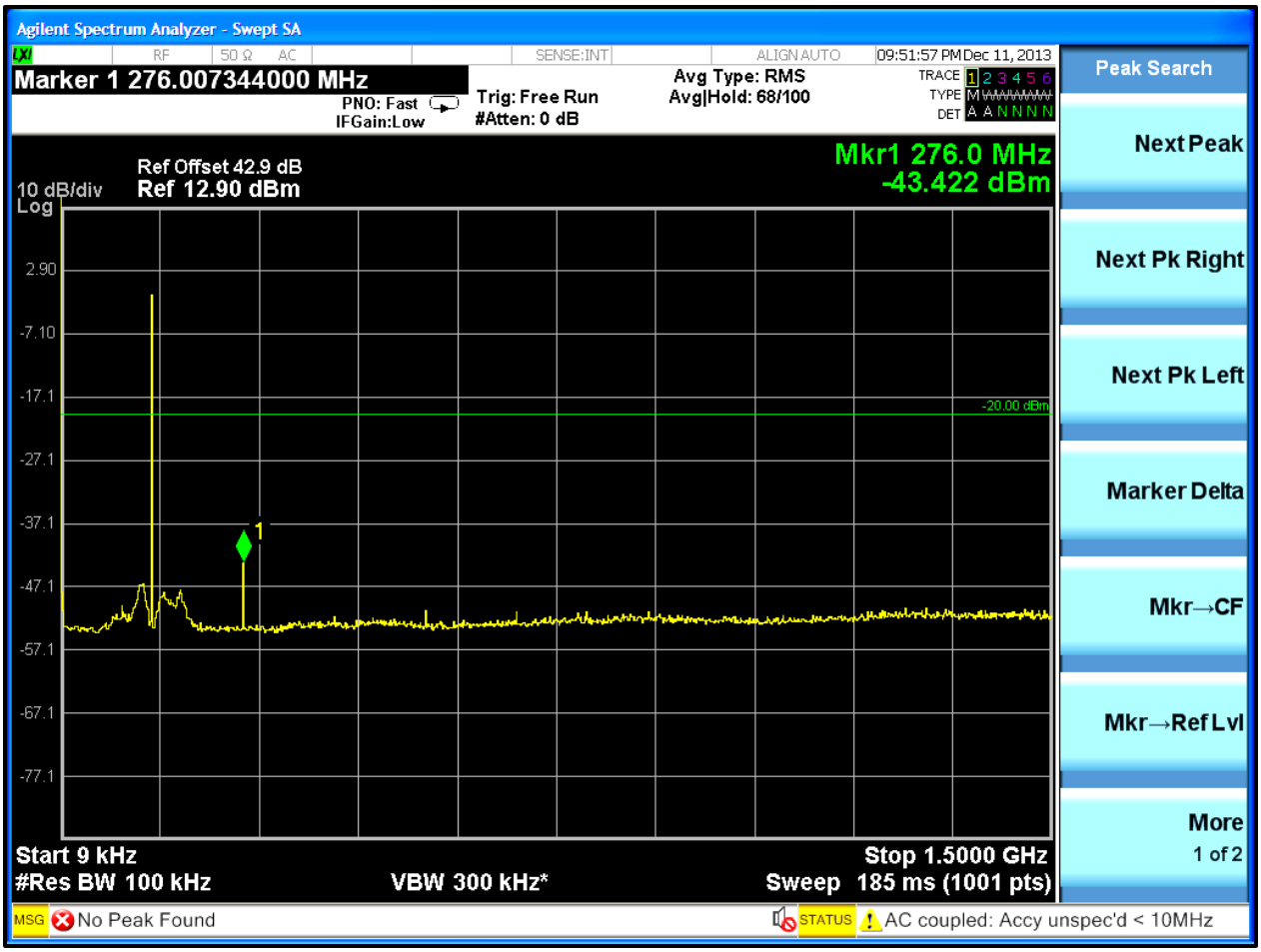


Table 4-3: Spurious Emissions at Antenna Terminals – 141.0 MHz

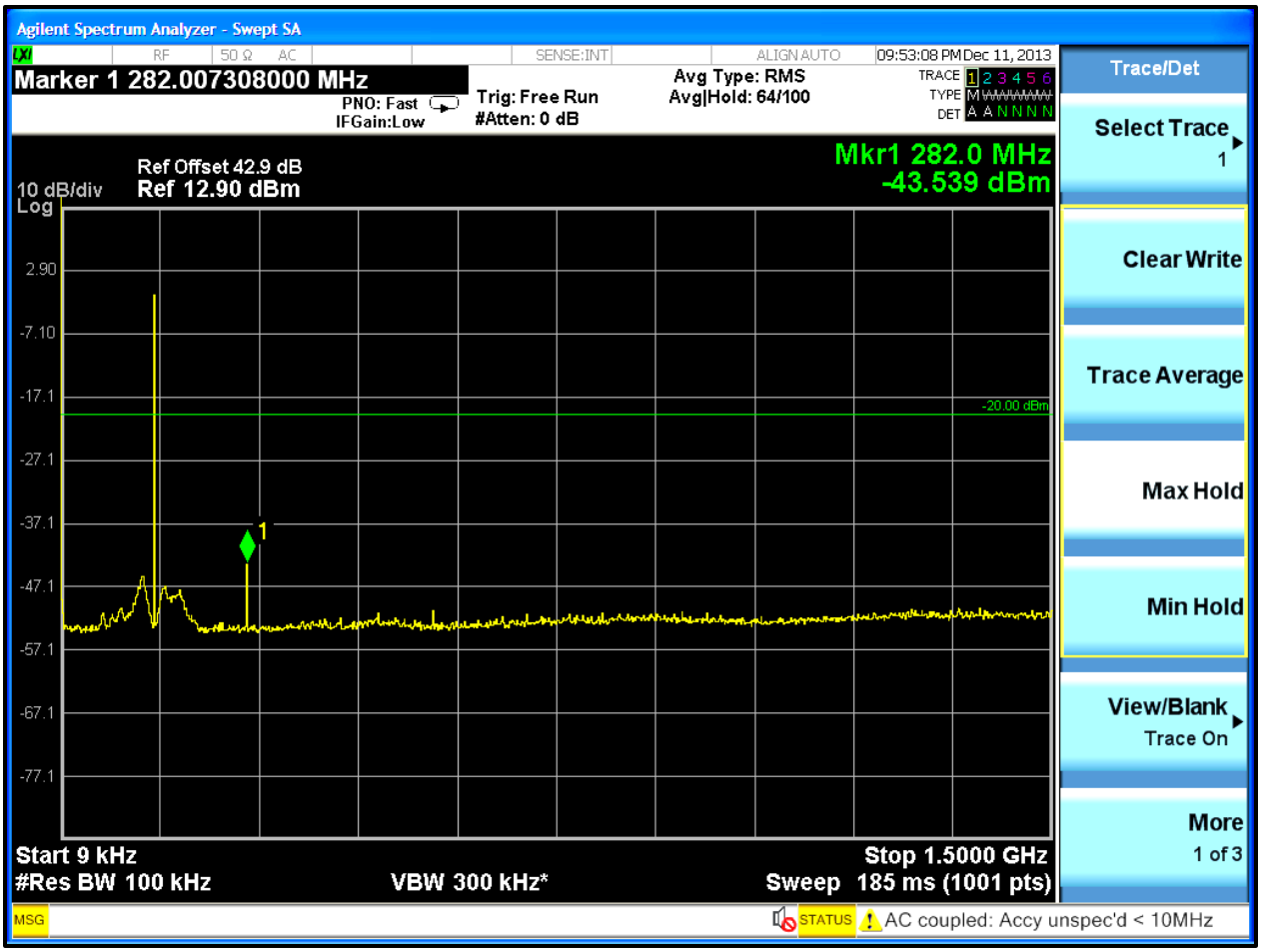


Table 4-4: Spurious Emissions at Antenna Terminals – 144.0 MHz

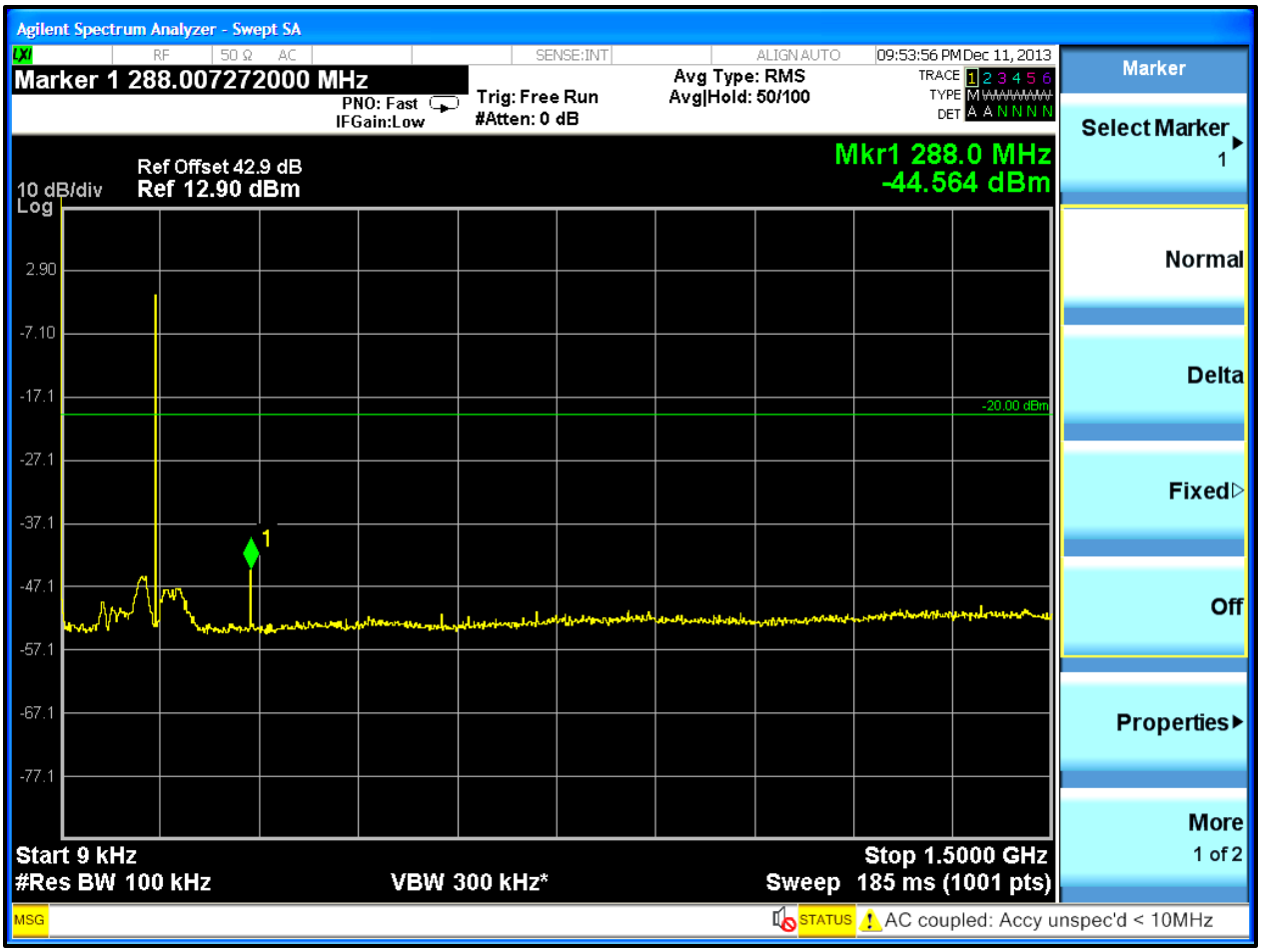


Table 4-5: Spurious Emissions at Antenna Terminals – 148.0 MHz

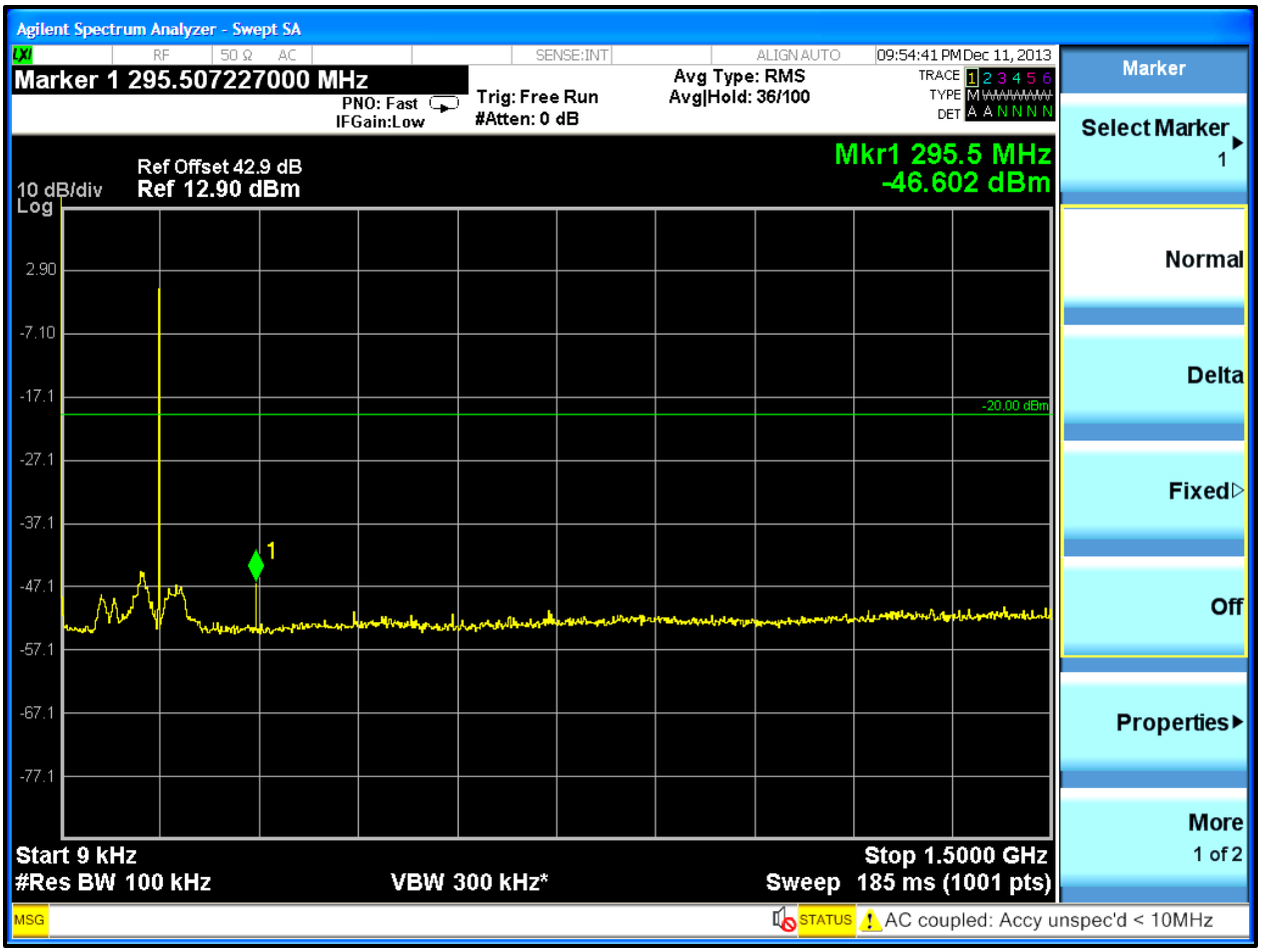


Table 4-6: Spurious Emissions at Antenna Terminals – 150.0 MHz

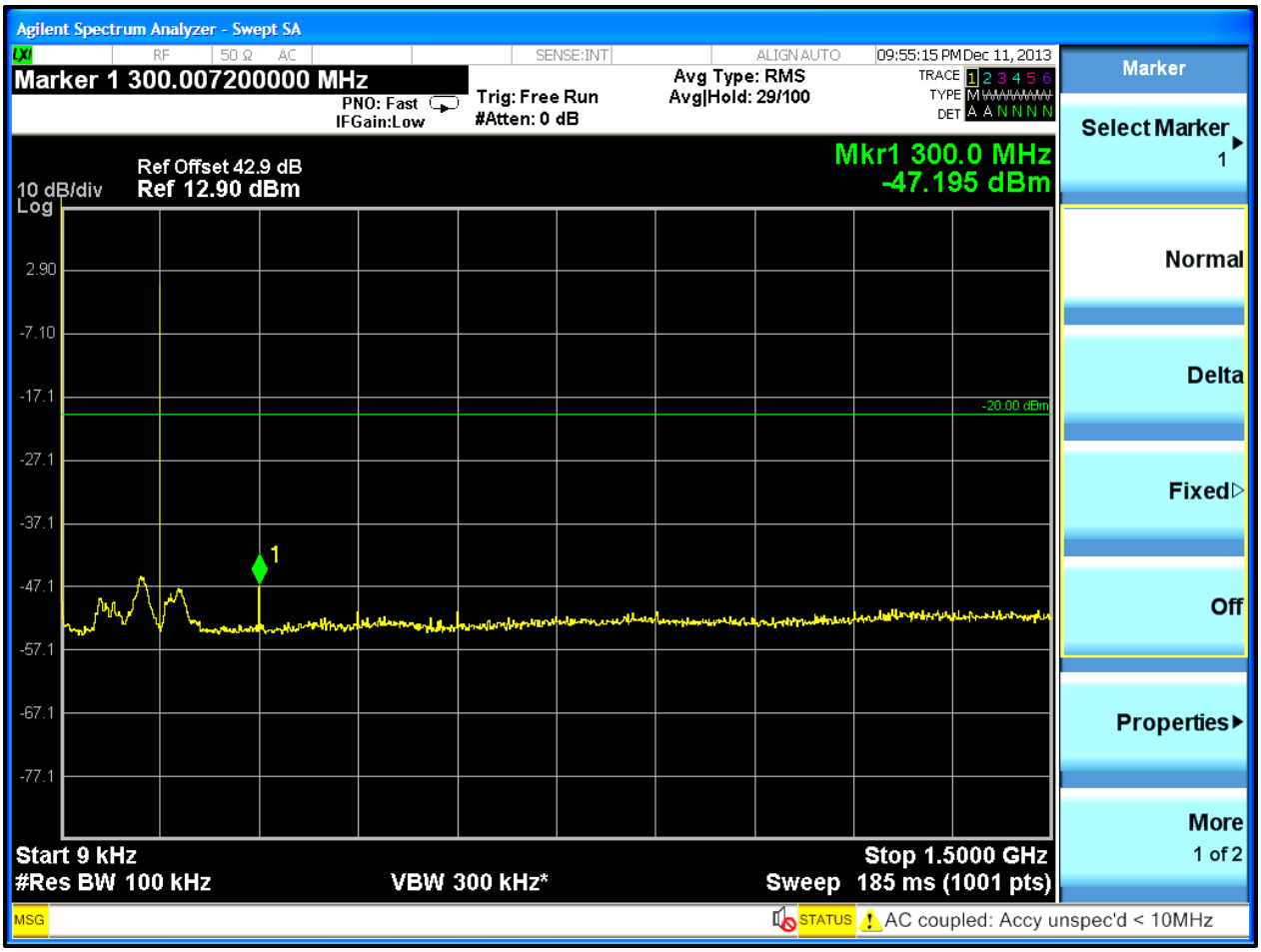


Table 4-7: Spurious Emissions at Antenna Terminals – 162.0 MHz

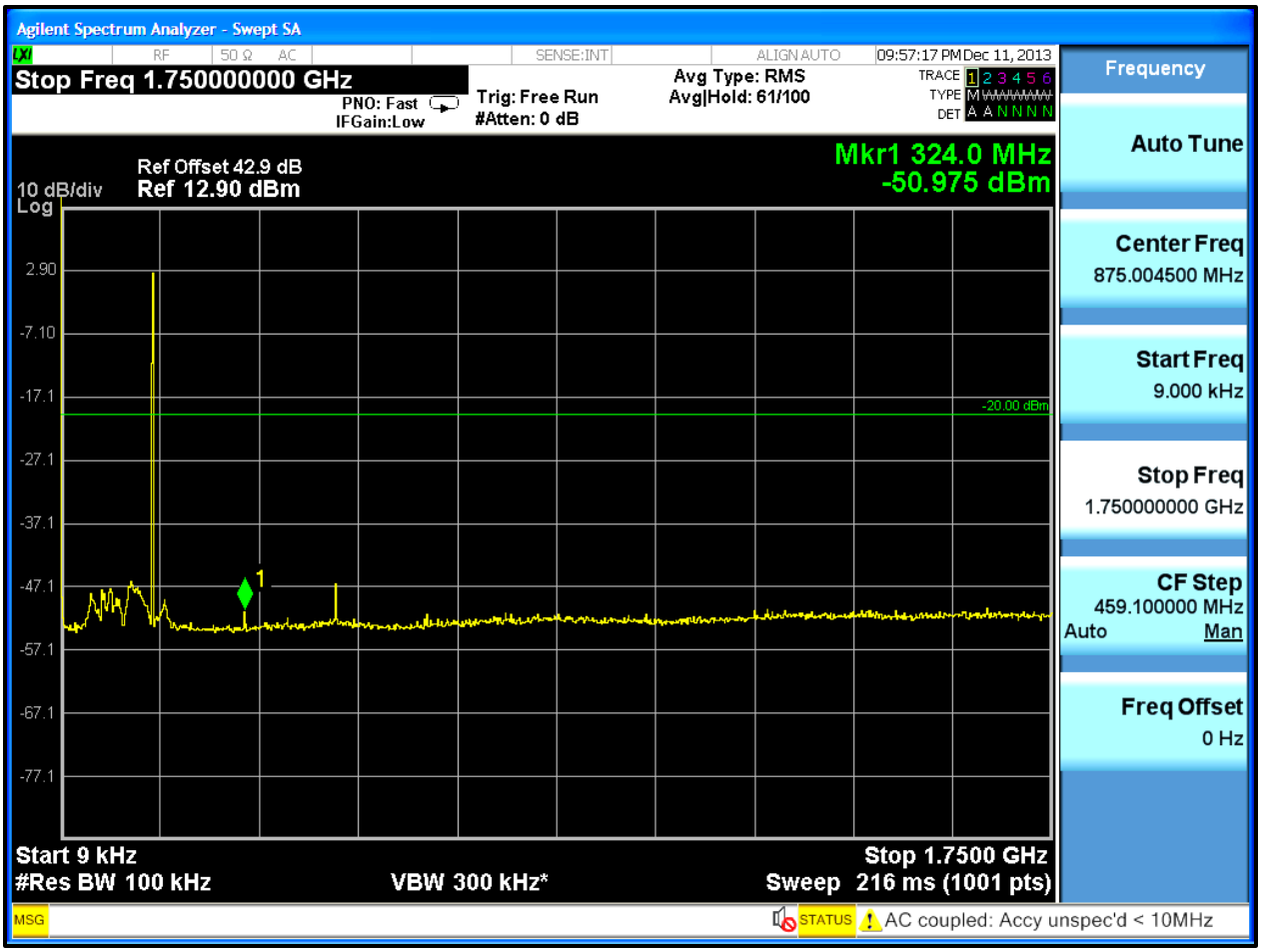


Table 4-8: Spurious Emissions at Antenna Terminals – 173.9875 MHz

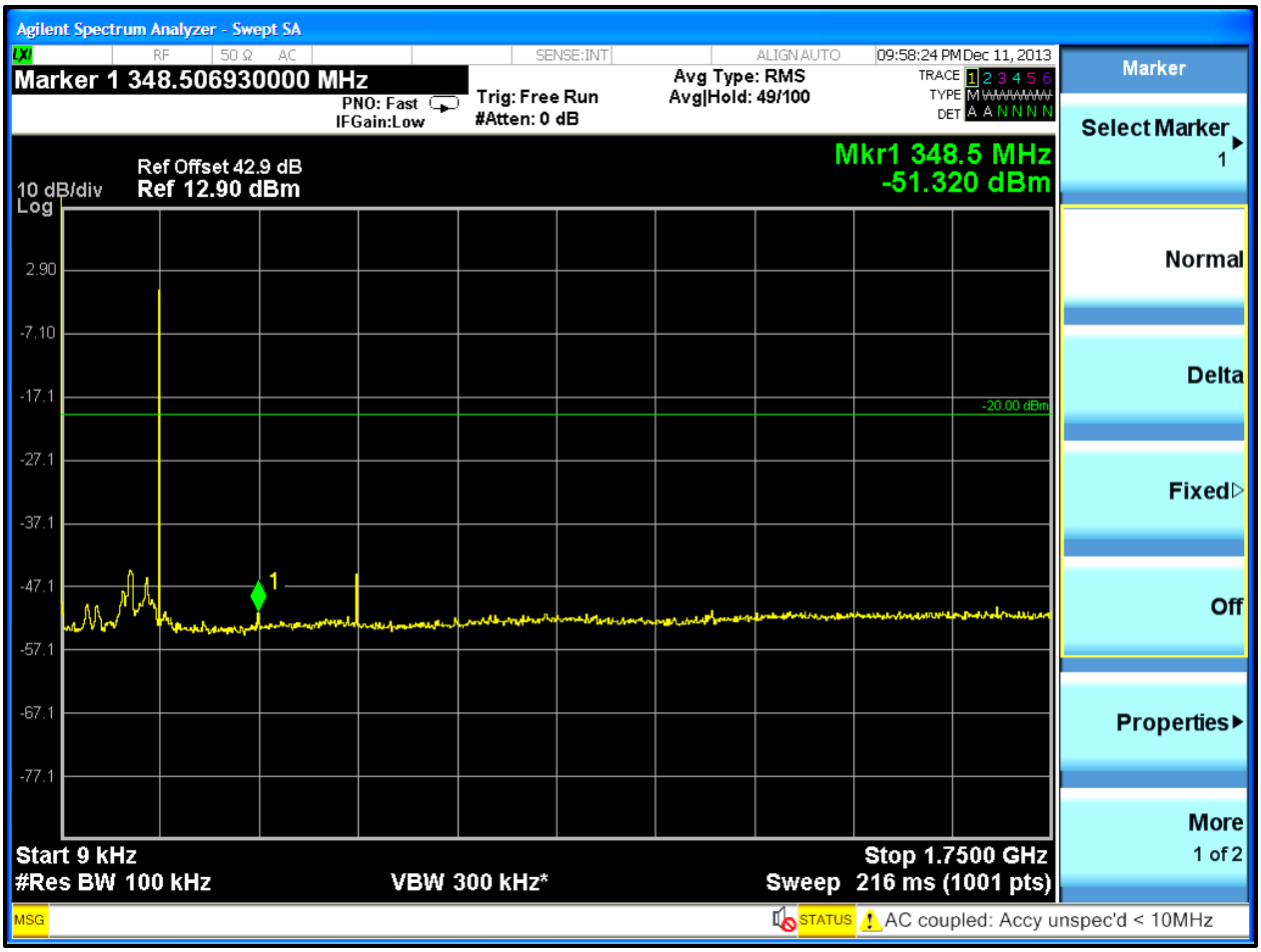


Table 4-9: Test Equipment Used For Testing Spurious Emissions

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	4/16/14
901537	Weinschel Corp	48-40-34	Attenuator, 40 dB, 100W	CB66628	12/14/13
901355	JFW Industries	50FH-003-300	300W 3DB DC1000 MHz Attenuator	N/A	3/25/16
901129	Par Electronics	188-174 (25W)	VHF Notch Filter	N/A	2/28/14
901594	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36”	NA	8/27/14

Test Personnel:

Daniel Baltzell		December 11, 2013
EMC Test Engineer	Signature	Date of Test

5 FCC 2.1053(a), 90.210; RSS-119 5.8: Radiated Spurious Emissions

5.1 Test Procedure

ANSI/TIA-603-C-2004 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.

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. The narrowband limit of 50+10 log(P) was used.

5.2 Test Data

5.2.1 CFR 47 Part 90.210 Requirements

The worst-case emissions test data are shown.

Table 5-1: Field Strength of Spurious Radiation – 136.0125 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
272.0250	65.1	-35.2	0.1	-0.5	86.4	-15.8
408.0375	58.9	-45.5	0.1	-0.4	96.6	-26.0
544.0500	42.5	-55.4	0.2	-0.7	106.9	-36.3
680.0625	52.6	-42.5	0.2	-1.0	94.2	-23.6
816.0750	47.8	-50.5	0.2	-1.5	102.8	-32.2
952.0875	49.9	-53.4	0.3	-0.9	105.2	-34.6
1088.1000	40.5	-62.4	0.2	2.9	110.3	-39.7
1224.1125	45.3	-56.6	0.2	3.4	104.0	-33.4
1360.1250	45.7	-55.5	0.2	4.5	101.8	-31.2

Table 5-2: Field Strength of Spurious Radiation – 138.0 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
276.0000	65.7	-37.1	0.1	-0.5	88.2	-17.7
414.0000	64.7	-39.8	0.1	-0.4	90.8	-20.3
552.0000	45.8	-54.5	0.2	-0.8	105.9	-35.4
690.0000	52.7	-45.0	0.2	-1.0	96.6	-26.1
828.0000	46.1	-48.9	0.2	-1.5	101.0	-30.5
966.0000	54.8	-46.1	0.3	-0.9	97.8	-27.3
1104.0000	46.6	-57.1	0.2	2.9	104.9	-34.4
1242.0000	46.4	-55.9	0.2	3.6	103.1	-32.6
1380.0000	34.8	-65.5	0.2	4.6	111.5	-41.0

Table 5-3: Field Strength of Spurious Radiation – 141 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
282.0000	60.4	-43.3	0.1	-0.6	94.3	-23.9
423.0000	68.0	-35.9	0.1	-0.4	86.9	-16.5
564.0000	48.8	-54.5	0.2	-0.8	105.9	-35.5
705.0000	54.3	-43.8	0.2	-1.0	95.4	-25.0
846.0000	50.3	-49.7	0.3	-1.5	101.8	-31.4
987.0000	50.4	-46.4	0.3	-0.8	97.8	-27.4
1128.0000	41.2	-62.4	0.2	3.0	110.0	-39.6
1269.0000	39.8	-61.5	0.2	3.9	108.3	-37.9
1410.0000	39.3	-61.8	0.2	4.8	107.6	-37.2

Table 5-4: Field Strength of Spurious Radiation – 144 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
288.0000	64.7	-39.5	0.1	-0.6	90.6	-20.2
432.0000	64.8	-37.9	0.1	-0.5	88.9	-18.5
576.0000	60.0	-41.7	0.2	-0.9	93.1	-22.7
720.0000	55.4	-44.7	0.2	-1.0	96.3	-25.9
864.0000	48.4	-52.0	0.3	-1.4	104.1	-33.7
1008.0000	53.1	-51.0	0.2	1.0	100.6	-30.2
1152.0000	48.8	-54.5	0.2	3.0	102.0	-31.6
1296.0000	44.6	-57.7	0.2	4.2	104.1	-33.7
1440.0000	41.5	-58.6	0.2	5.0	104.3	-33.9

Table 5-5: Field Strength of Spurious Radiation – 148 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
296.0000	66.1	-35.6	0.1	-0.7	86.8	-16.4
444.0000	69.6	-32.6	0.1	-0.5	83.5	-13.1
592.0000	50.3	-49.3	0.2	-0.9	100.7	-30.3
740.0000	56.0	-43.3	0.2	-1.2	95.0	-24.6
888.0000	53.1	-47.2	0.3	-1.3	99.2	-28.8
1036.0000	50.9	-54.7	0.2	0.9	104.4	-34.0
1184.0000	46.4	-56.8	0.2	3.1	104.3	-33.9
1332.0000	50.6	-50.5	0.2	4.4	96.7	-26.3
1480.0000	38.6	-60.7	0.2	5.2	106.1	-35.7

Table 5-6: Field Strength of Spurious Radiation – 150 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
300.0000	59.2	-42.7	0.1	-0.8	94.0	-23.6
450.0000	67.2	-35.3	0.1	-0.5	86.3	-15.9
600.0000	48.4	-50.0	0.2	-0.9	101.5	-31.1
750.0000	61.6	-36.4	0.2	-1.3	88.2	-17.8
900.0000	54.0	-43.0	0.3	-1.3	94.9	-24.5
1050.0000	53.8	-49.5	0.2	0.9	99.2	-28.8
1200.0000	43.8	-58.4	0.2	3.1	105.9	-35.5
1350.0000	53.6	-47.8	0.2	4.5	93.9	-23.5
1500.0000	49.5	-50.2	0.2	5.4	95.5	-25.1

Table 5-7: Field Strength of Spurious Radiation – 162 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
324.0000	63.3	-41.0	0.1	1.5	90.2	-19.6
486.0000	65.4	-39.0	0.1	1.6	88.2	-17.6
648.0000	39.1	-61.4	0.2	1.3	110.9	-40.3
810.0000	53.7	-42.5	0.2	0.6	92.7	-22.1
972.0000	45.5	-51.5	0.3	1.3	101.1	-30.5
1134.0000	53.7	-49.6	0.2	3.0	97.3	-26.7
1296.0000	50.0	-52.2	0.2	4.2	98.9	-28.3
1458.0000	43.3	-57.1	0.2	5.1	102.8	-32.2
1620.0000	43.9	-55.5	0.3	6.9	99.5	-28.9

Table 5-8: Field Strength of Spurious Radiation – 173.9875 MHz – Analog High Power

Frequency (MHz)	Spectrum Analyzer Level (dBuV/M)	Signal Generator Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Margin (dB)
347.9750	75.2	-29.1	0.1	-0.5	80.2	-9.6
521.9625	48.2	-51.3	0.1	-0.7	102.7	-32.1
695.9500	29.6	-71.4	0.2	-1.0	123.2	-52.6
869.9375	53.2	-47.4	0.3	-1.4	99.7	-29.1
1043.9250	45.3	-58.0	0.2	0.9	107.9	-37.3
1217.9125	38.4	-63.6	0.2	1.2	113.2	-42.6
1391.9000	43.2	-57.1	0.2	4.7	103.2	-32.6
1565.8875	43.5	-56.4	0.3	6.3	101.0	-30.4
1739.8750	37.3	-62.9	0.2	7.5	106.3	-35.7

Table 5-9: Test Equipment Used For Testing Field Strength of Spurious Radiation

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900791	Chase	CBL6111B	Bilog Antenna (30 MHz – 2000 MHz)	N/A	2/2/14
901158	Compliance Design, Inc.	Roberts Dipole Antenna	Adjustable Elements Dipole Antennas (25 - 1000 MHz)	00401	3/6/14
900814	Electro-Metrics	EM-6961 (RGA-60)	Double Ridged Guide Antenna (1 - 18 GHz)	2310	11/7/15
900917	Hewlett Packard	8648C	Synthesized. Signal Generator (9 kHz - 3200 MHz)	3537A01741	2/2/14
901592	Insulated Wire Inc.	KPS-1503-3600-KPR	SMK RF Cables 20’	NA	8/27/14
901593	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36”	NA	8/27/14
901594	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36”	NA	8/27/14
900913	Hewlett Packard	85462A	EMI Receiver RF Section (9 KHz – 6.5 GHz)	3325A00159	11/4/14
900914	Hewlett Packard	8546OA	RF Filter Section, (100 kHz - 6.5 GHz	3330A00107	11/4/14
900905	Rhein Tech Laboratories	PR-1040	OATS 1 Preamplifier 40dB (30 MHz – 2 GHz)	1006	9/4/14

Test Personnel:

Daniel Baltzell		November 19-21, 2013
Test Engineer	Signature	Dates of Test

6 FCC 2.1049(c)(1), 90.210; RSS-119 5.8: Occupied Bandwidth

Occupied Bandwidth - Compliance with the Emission Masks

6.1 Test Procedure

ANSI/TIA-603-C-2004 Section 2.2.11 and TIA/EIA-102.CAAA-2002 Section 2.2.5

Device with digital modulation: Modulated to its maximum extent using a pseudo-random data sequence.

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

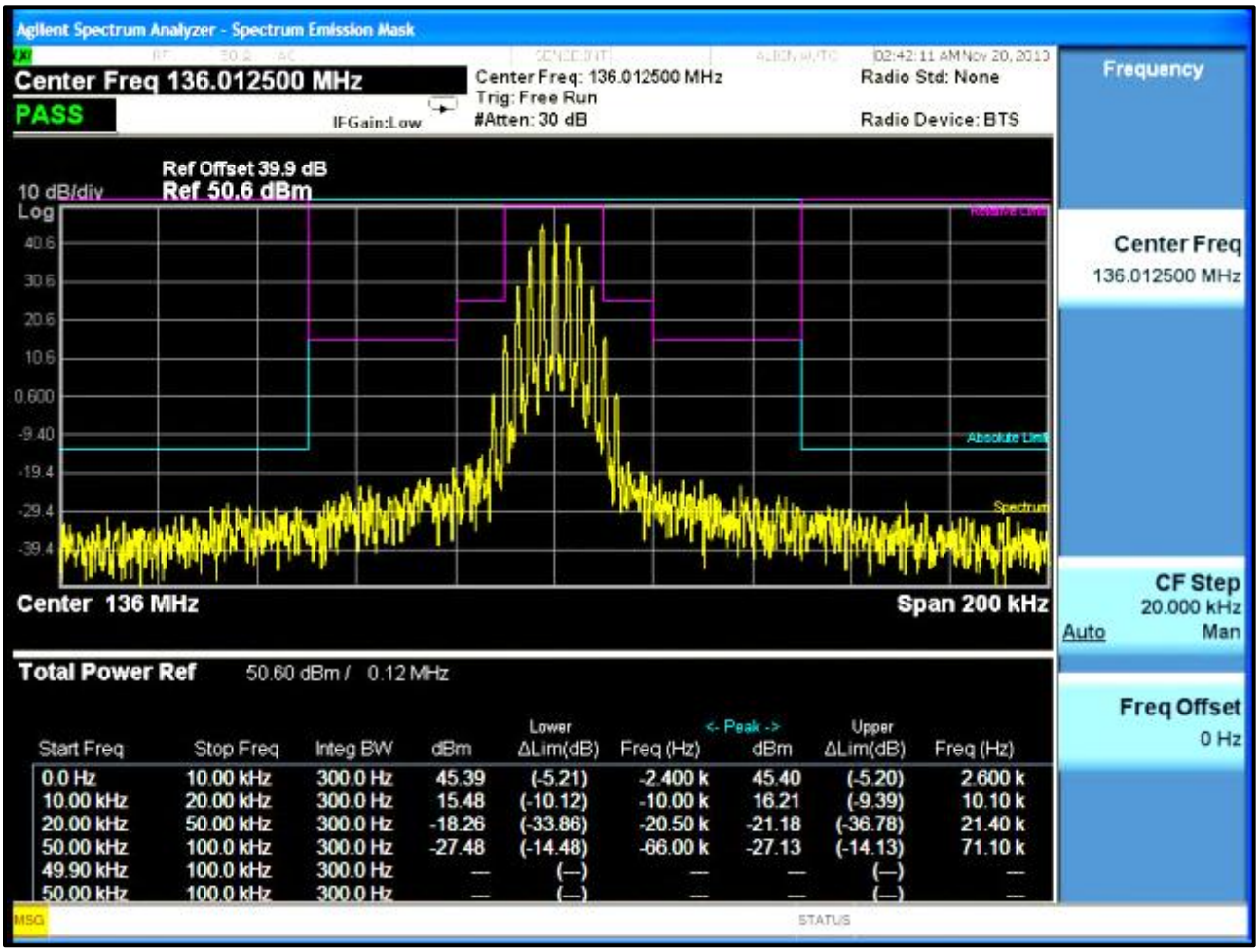
[1] Equipment using single sideband J3E emission must meet the requirements of Emission Mask A. Equipment using other emissions must meet the requirements of Emission Mask B or C, as applicable.
[2] Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask 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.

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

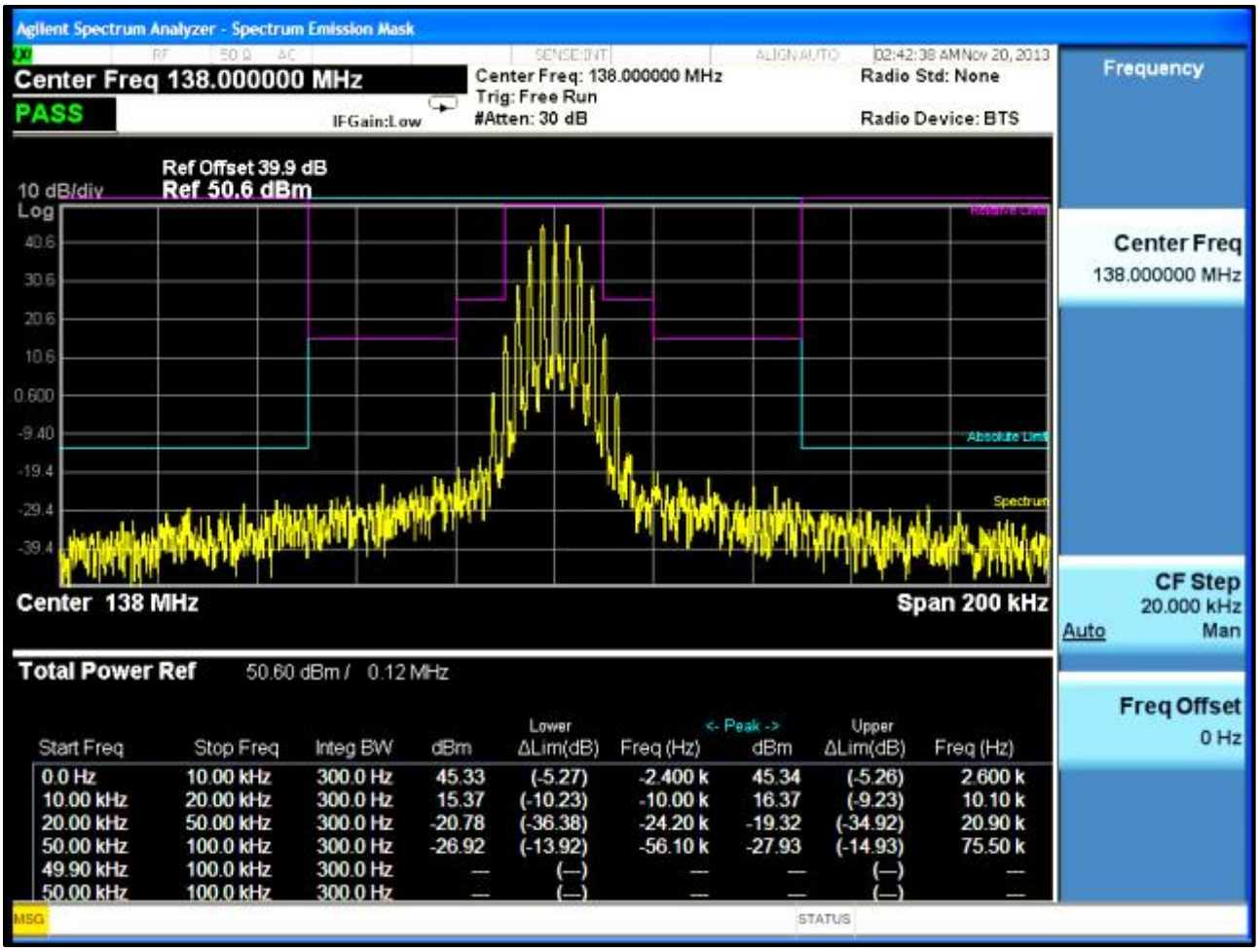
Notes: FCC 90.210 specifies mask D for equipment without an audio low pass filter in the VHF band; IC RSS-119 and TIA-102.CCAB October 2011 section 3.2.5.1 specify mask D as well; data is presented on the following pages.

6.2 Test Data

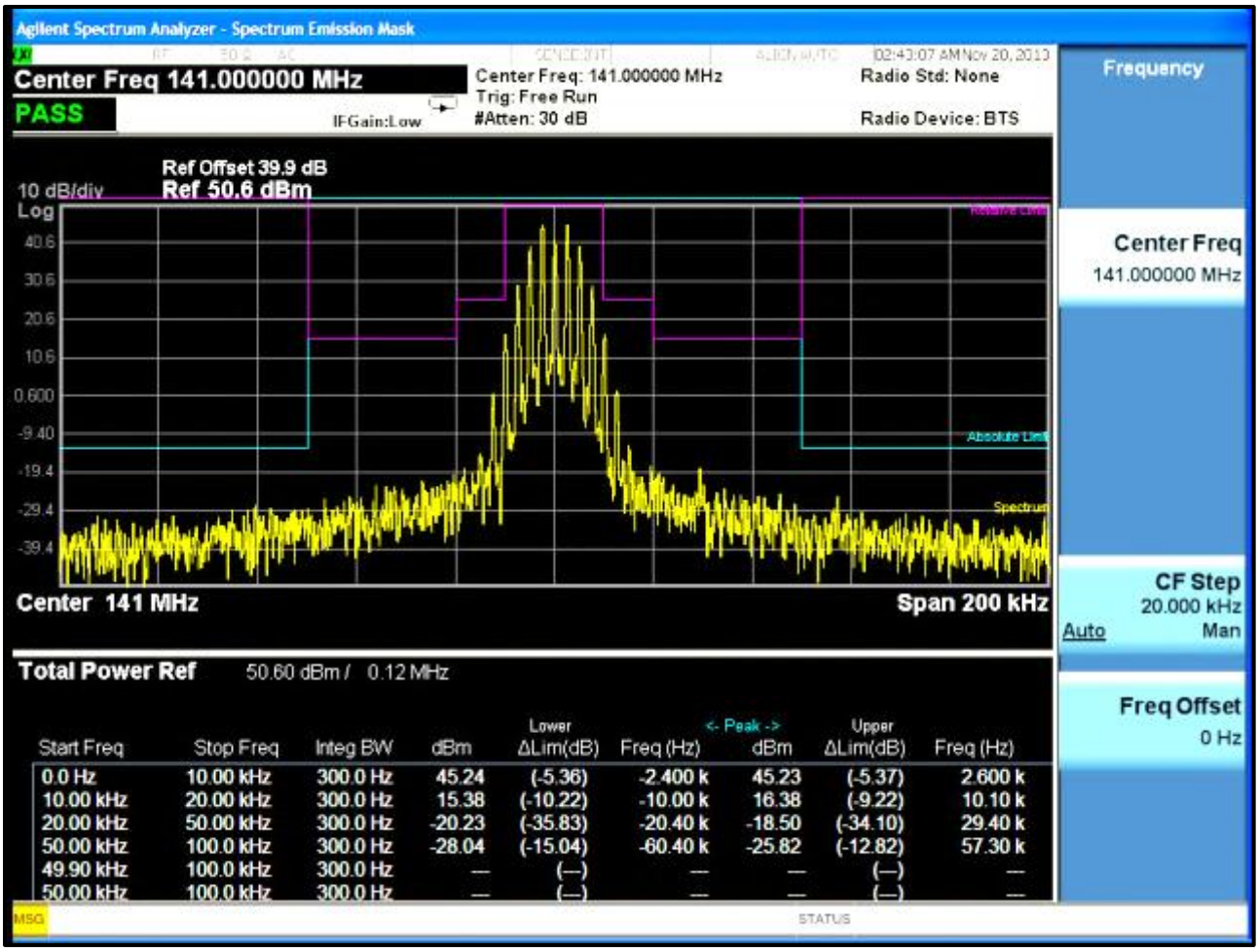
Plot 6-1: Occupied Bandwidth – 136.0125 MHz; WB Analog (Mask B)



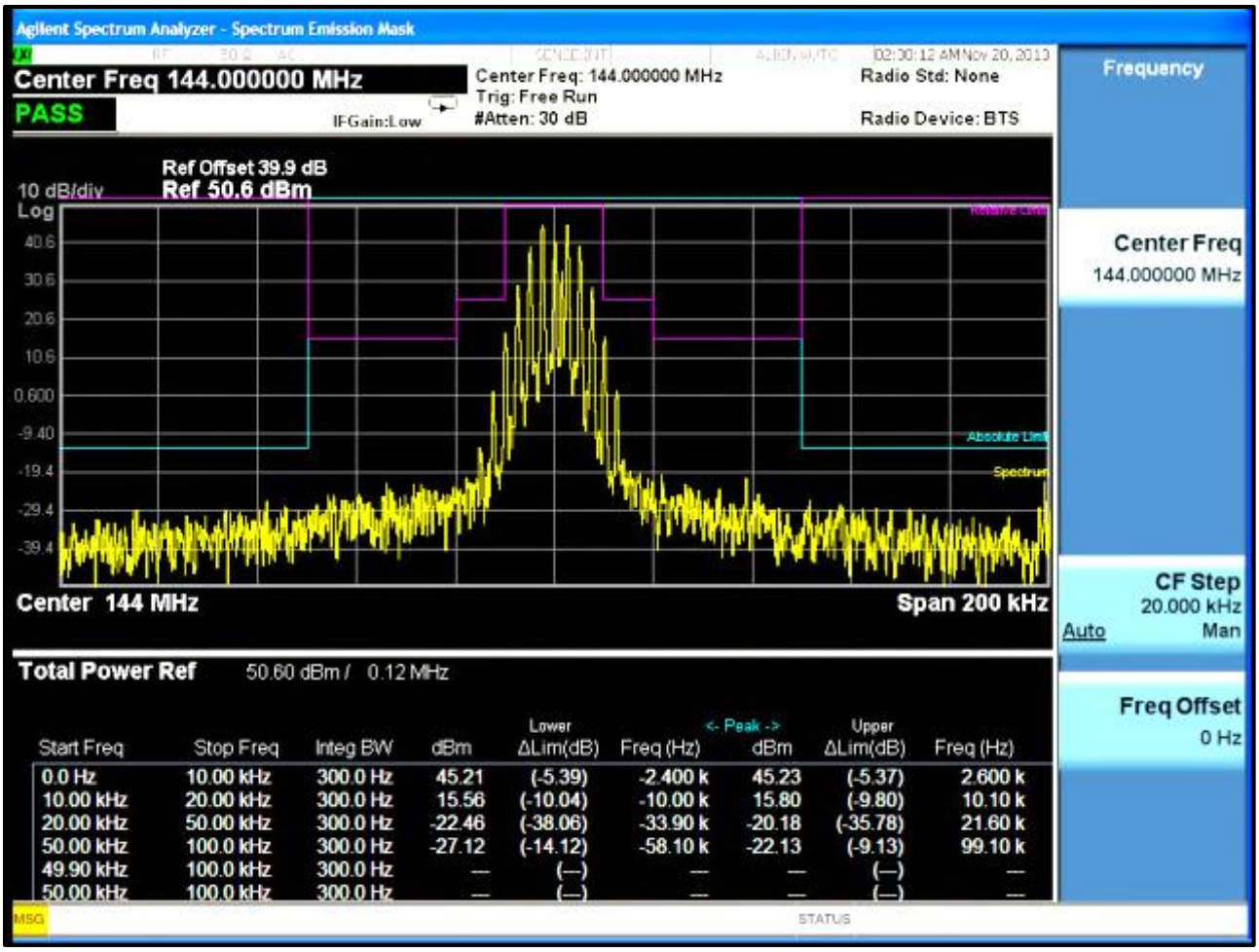
Plot 6-2: Occupied Bandwidth – 138.0 MHz; WB Analog (Mask B)



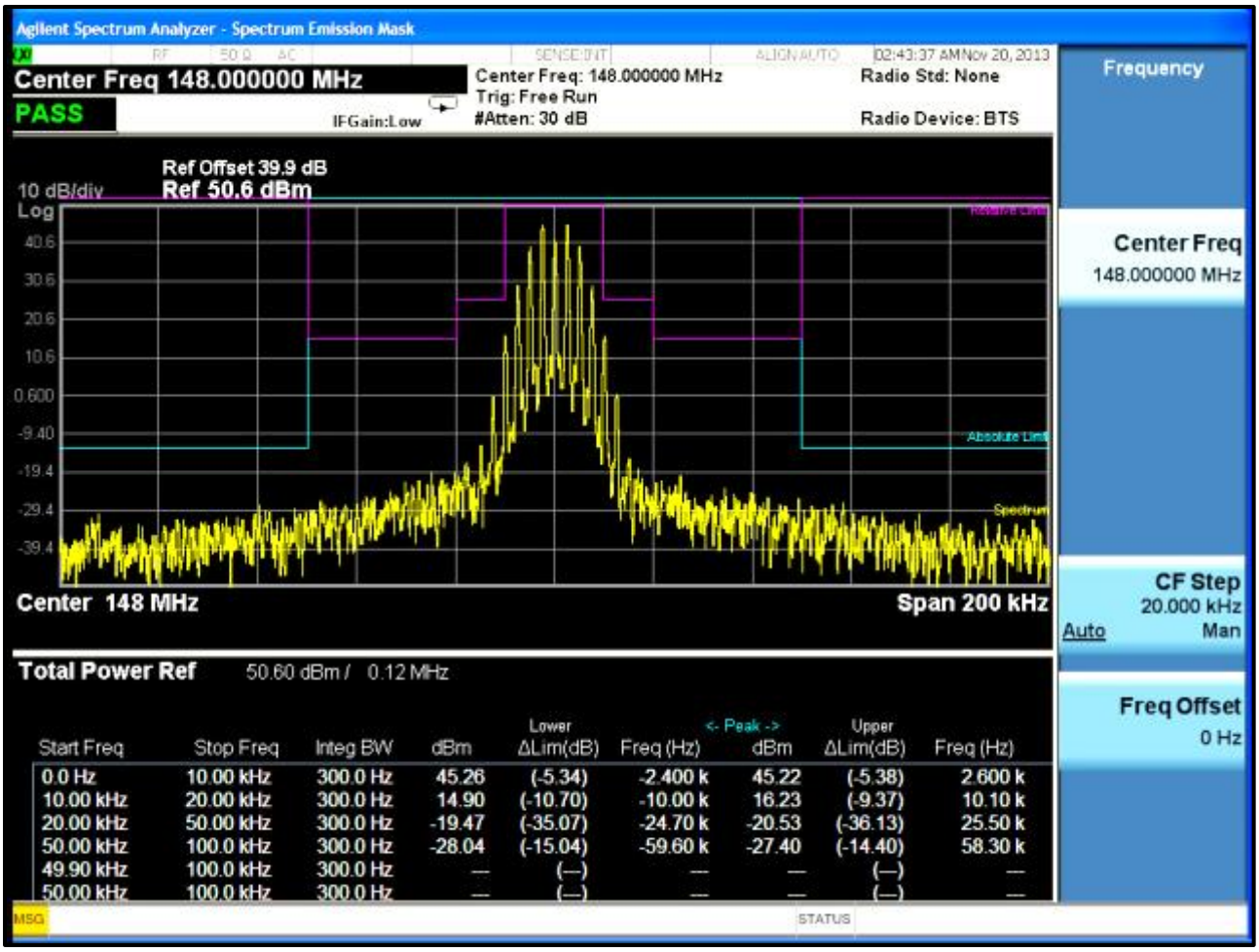
Plot 6-3: Occupied Bandwidth – 141 MHz; WB Analog (Mask B)



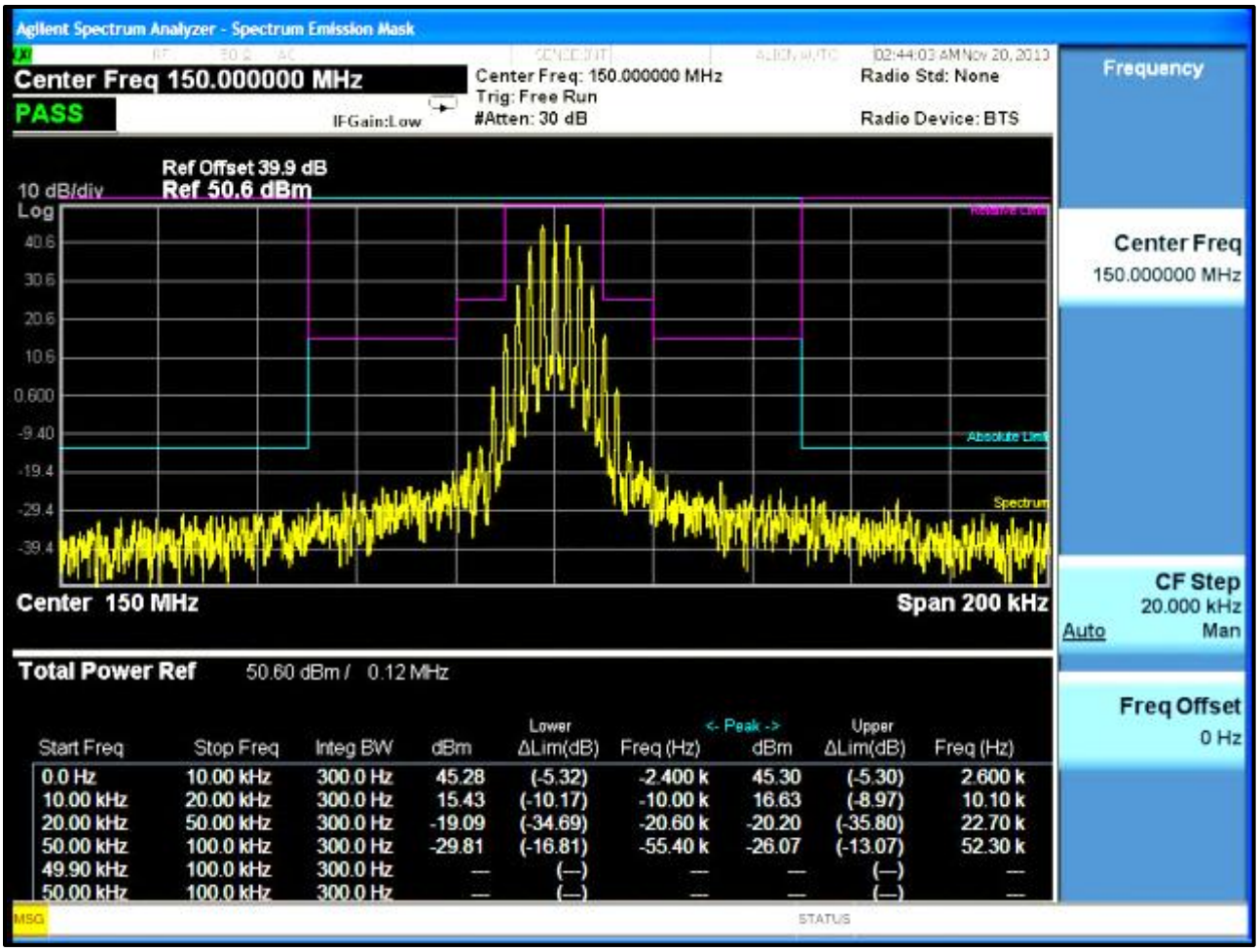
Plot 6-4: Occupied Bandwidth – 144 MHz; WB Analog (Mask B)



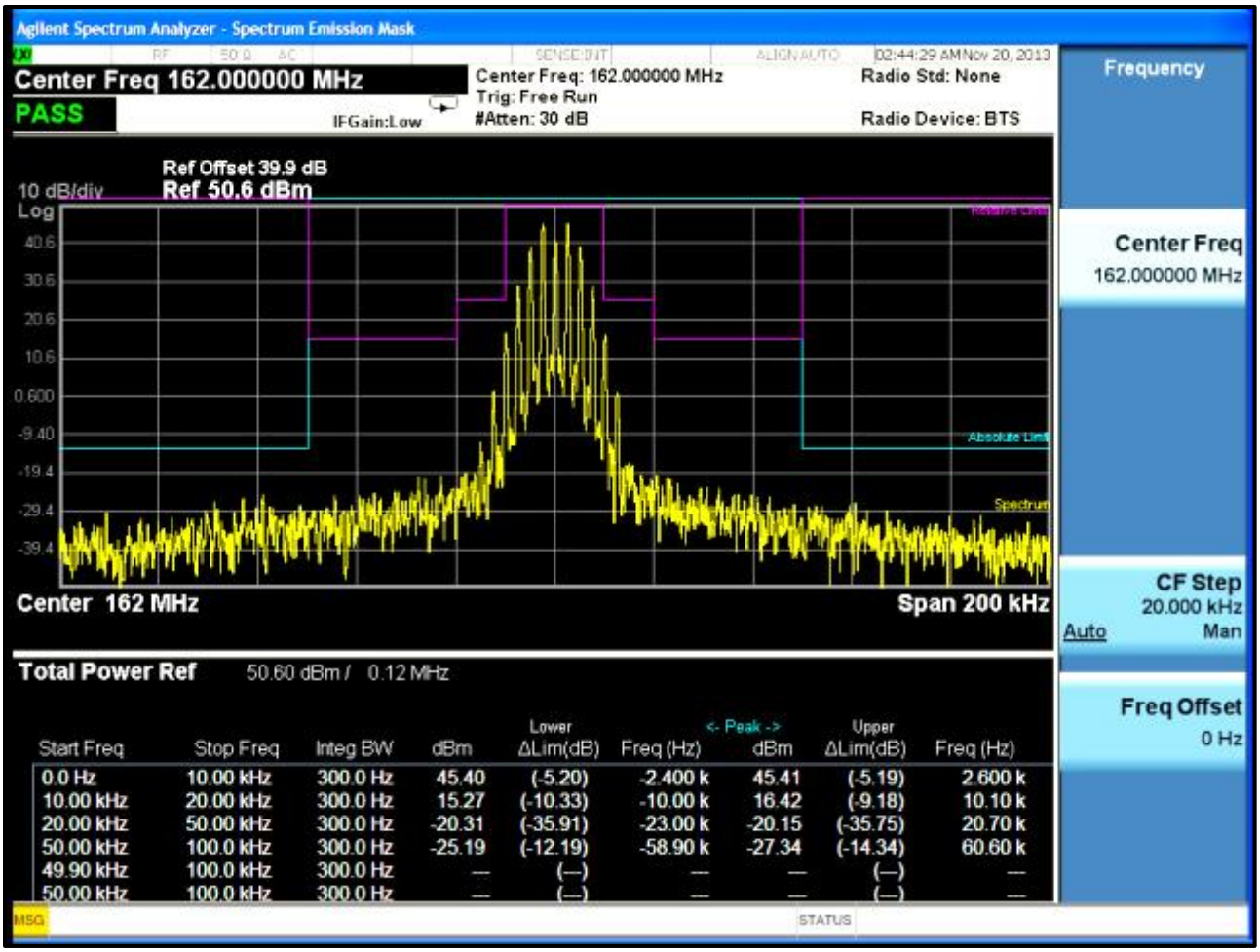
Plot 6-5: Occupied Bandwidth – 148 MHz; WB Analog (Mask B)



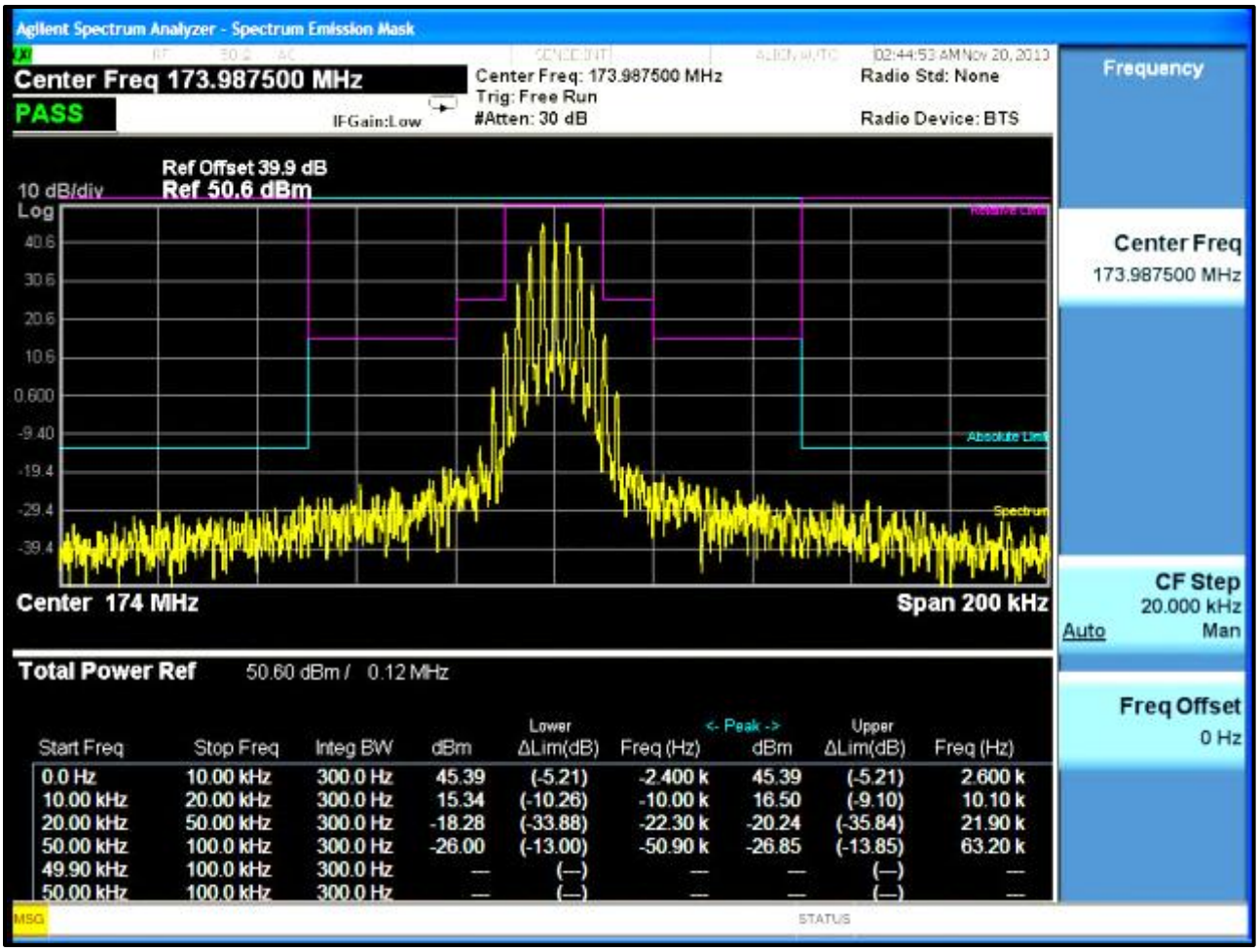
Plot 6-6: Occupied Bandwidth – 150 MHz; WB Analog (Mask B)



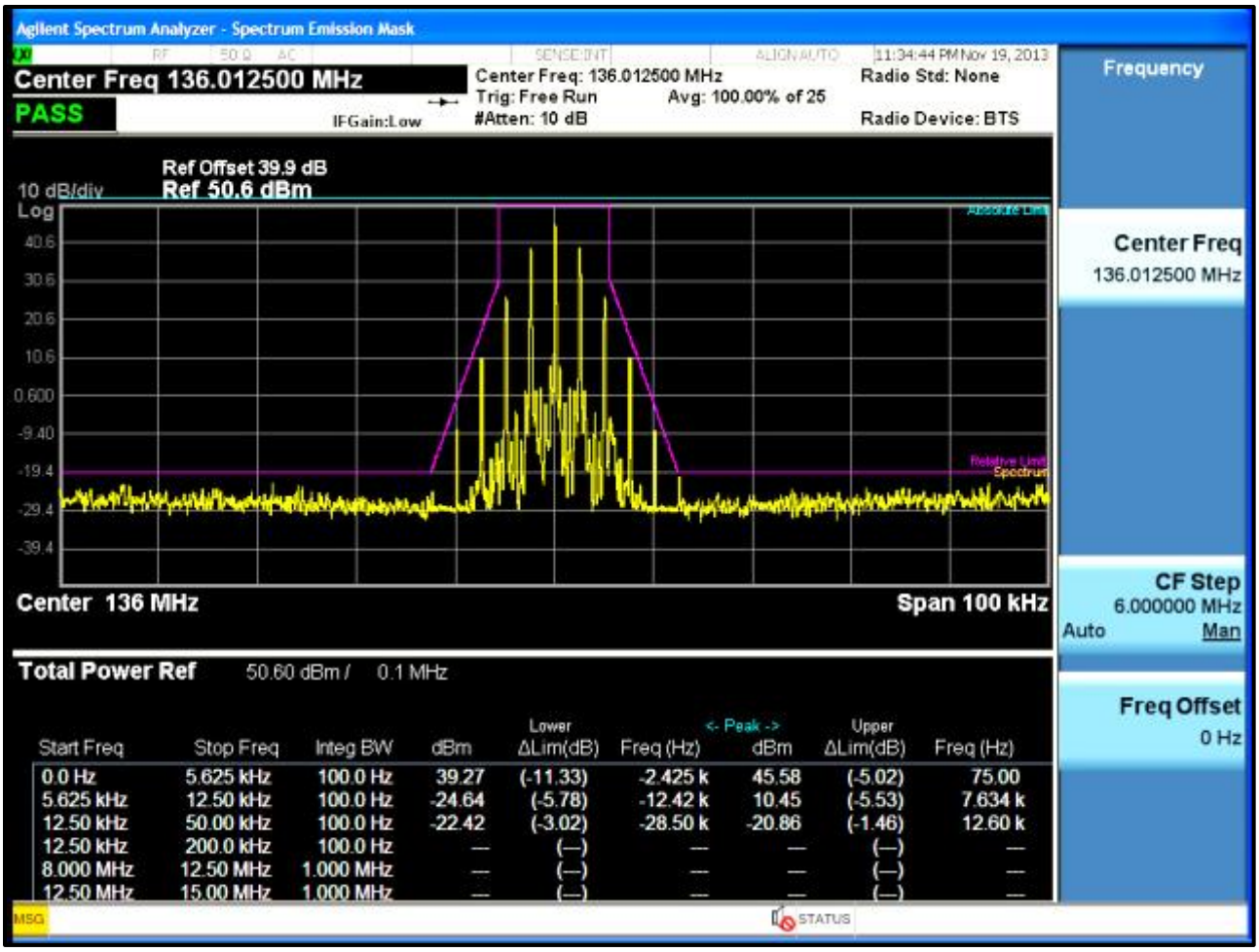
Plot 6-7: Occupied Bandwidth – 162 MHz; WB Analog (Mask B)



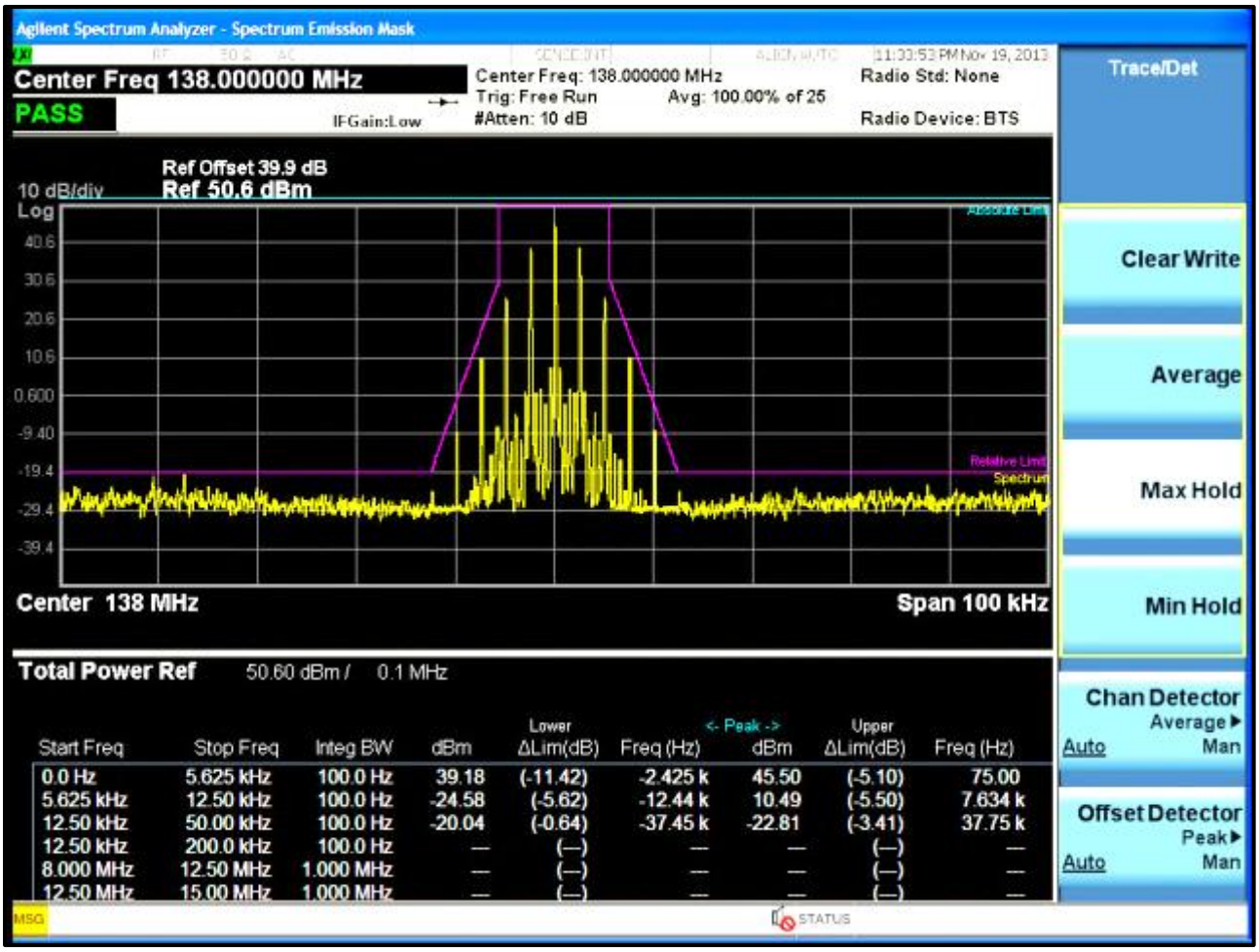
Plot 6-8: Occupied Bandwidth – 173.9875 MHz; WB Analog (Mask B)



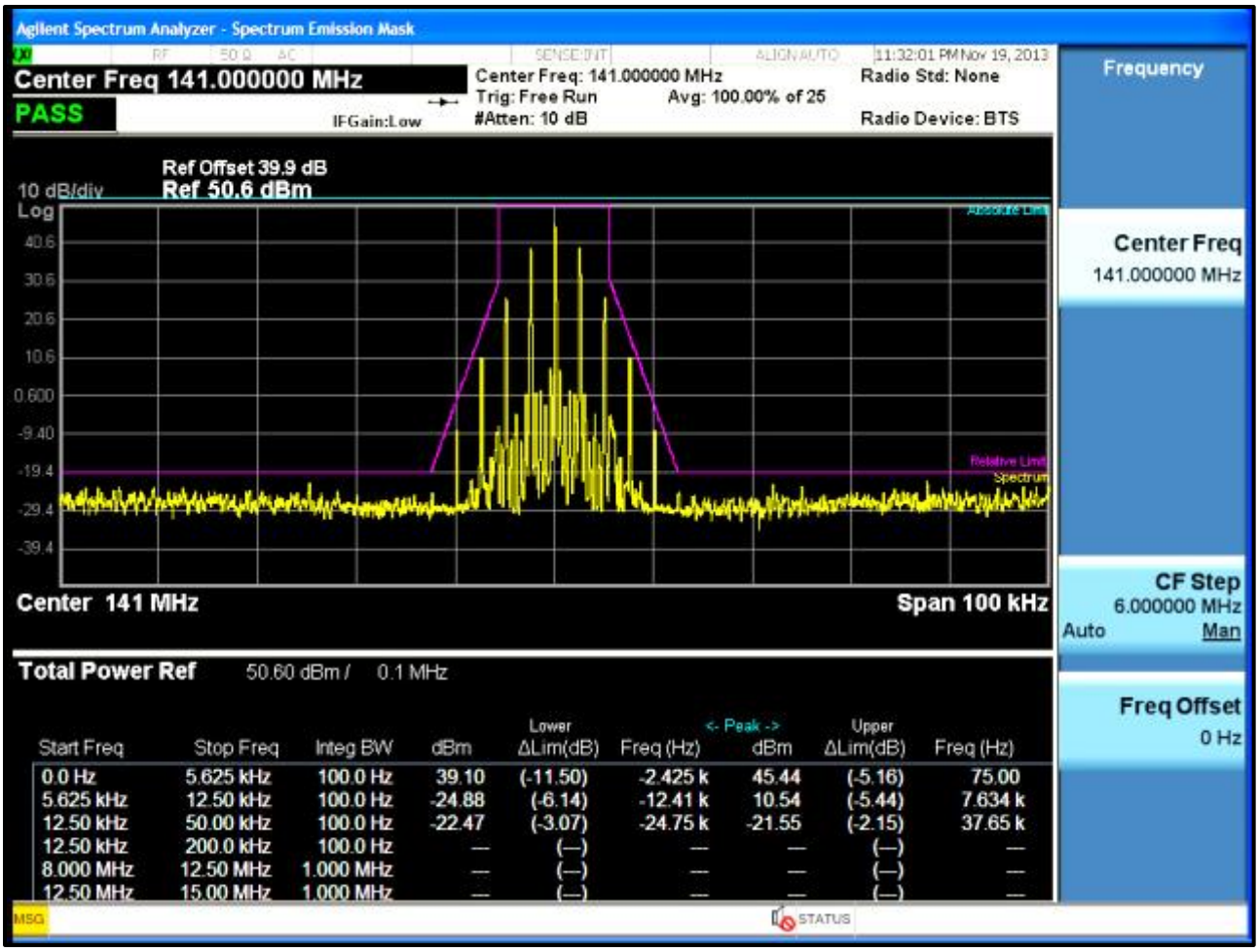
Plot 6-9: Occupied Bandwidth – 136.0125 MHz; NB Analog (Mask D)



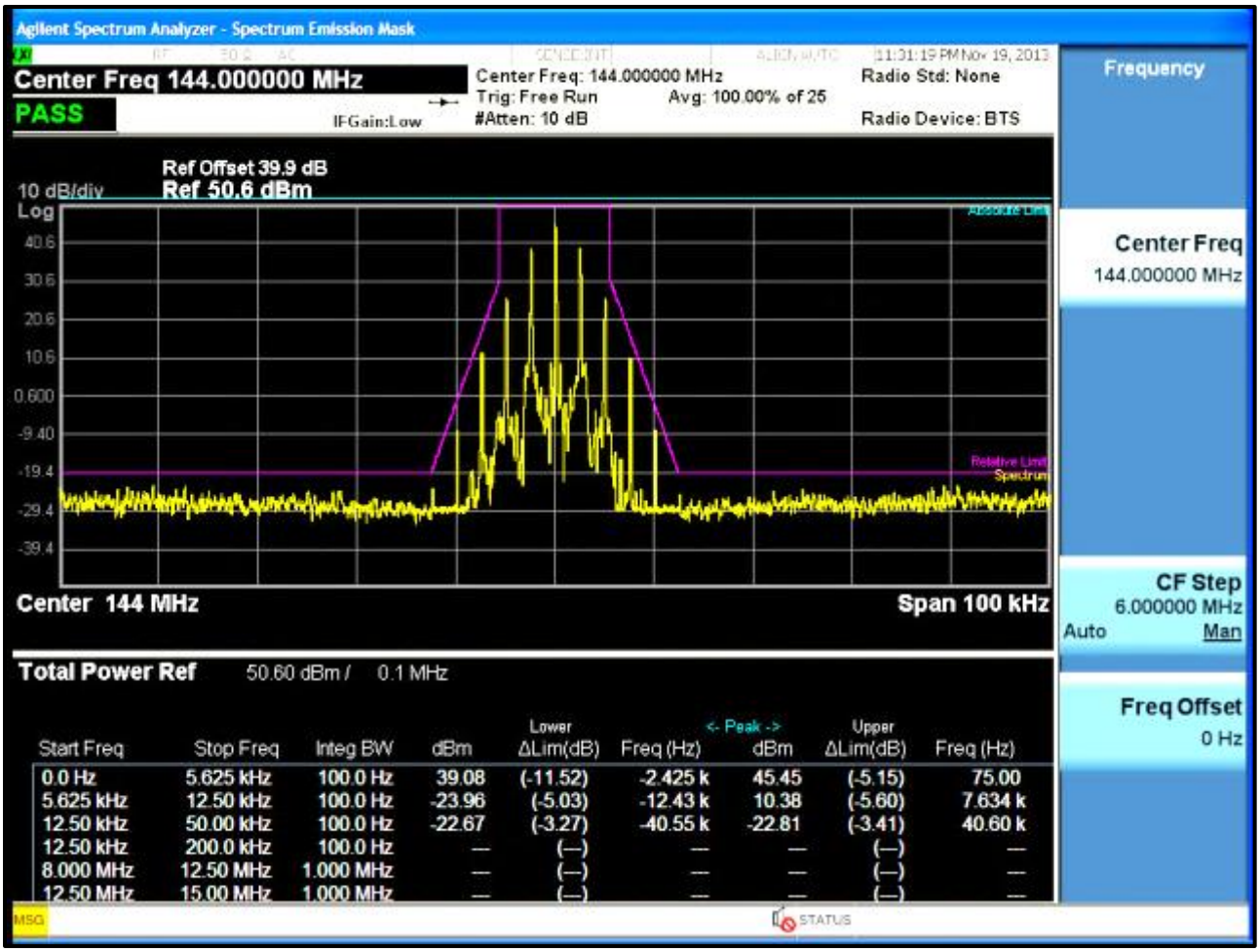
Plot 6-10: Occupied Bandwidth – 138.0 MHz; NB Analog (Mask D)



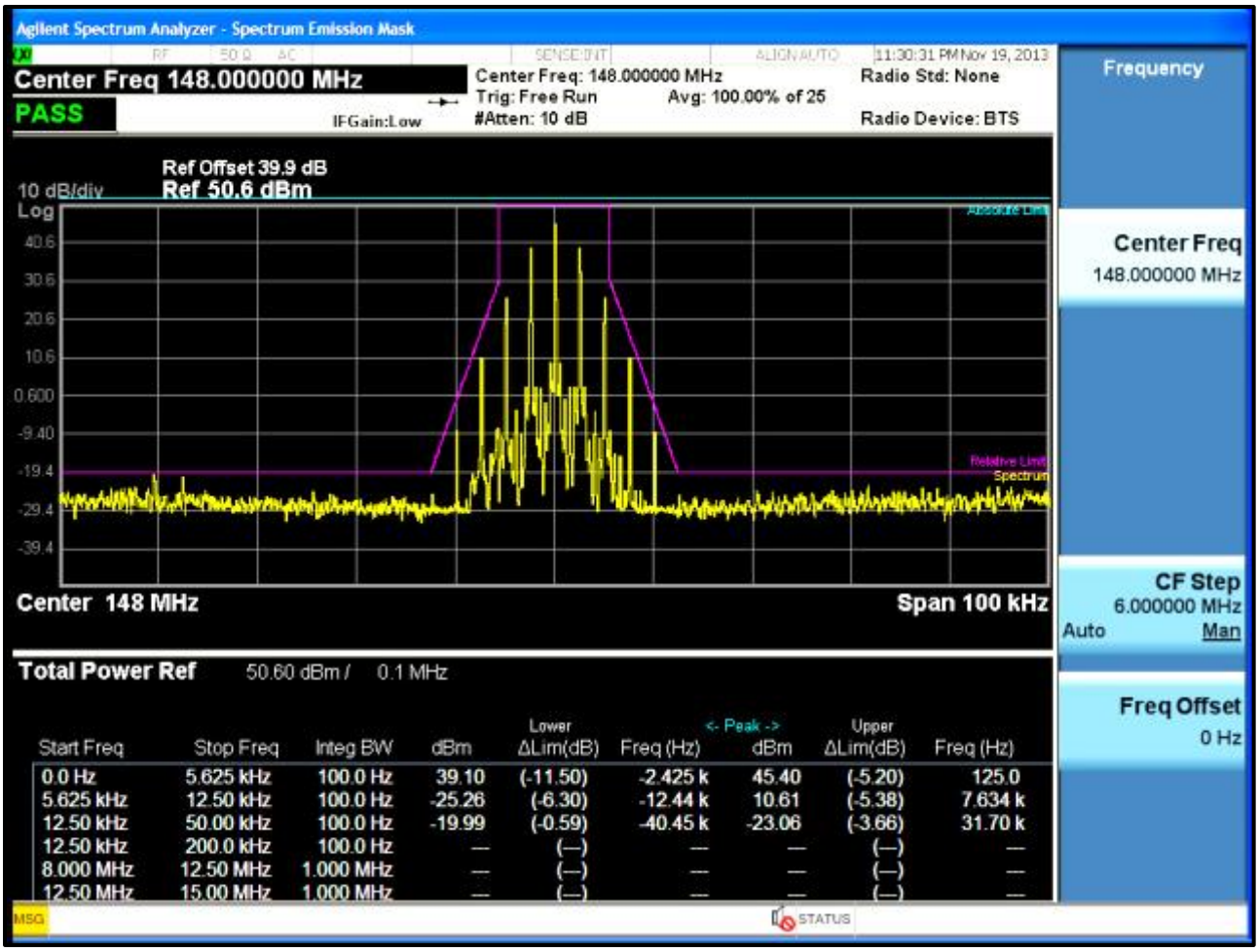
Plot 6-11: Occupied Bandwidth – 141 MHz; NB Analog (Mask D)



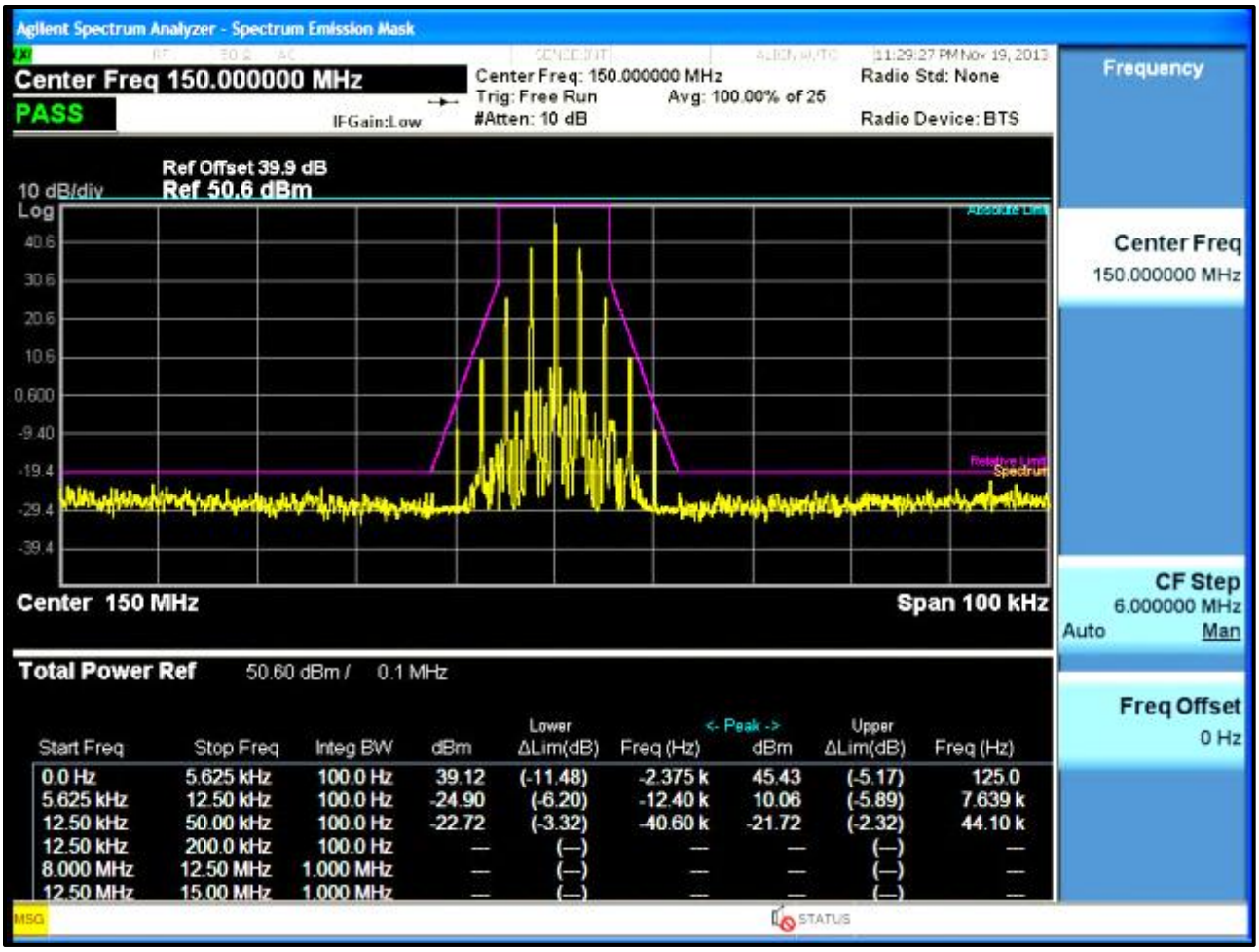
Plot 6-12: Occupied Bandwidth – 144 MHz; NB Analog (Mask D)



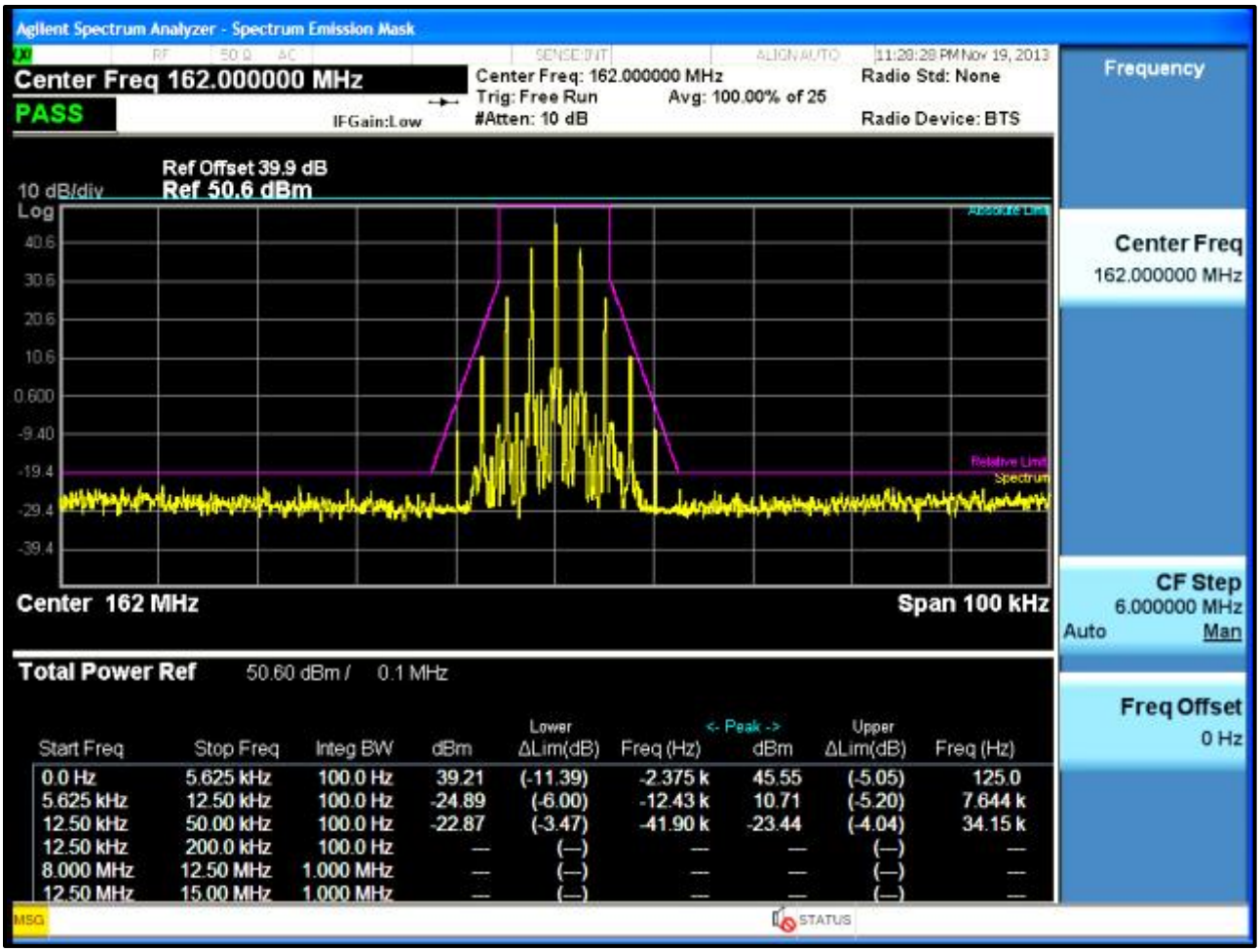
Plot 6-13: Occupied Bandwidth – 148 MHz; NB Analog (Mask D)



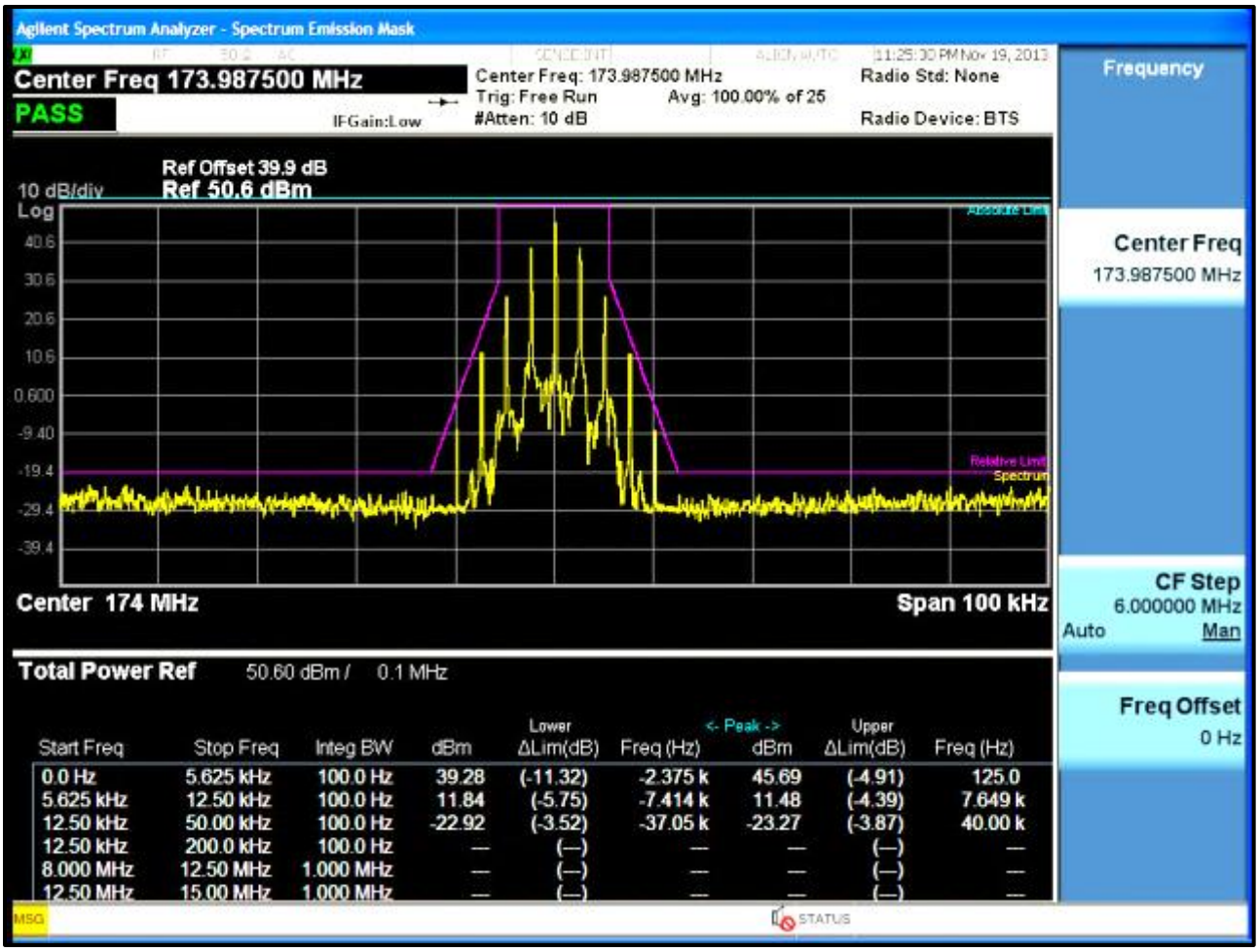
Plot 6-14: Occupied Bandwidth – 150 MHz; NB Analog (Mask D)



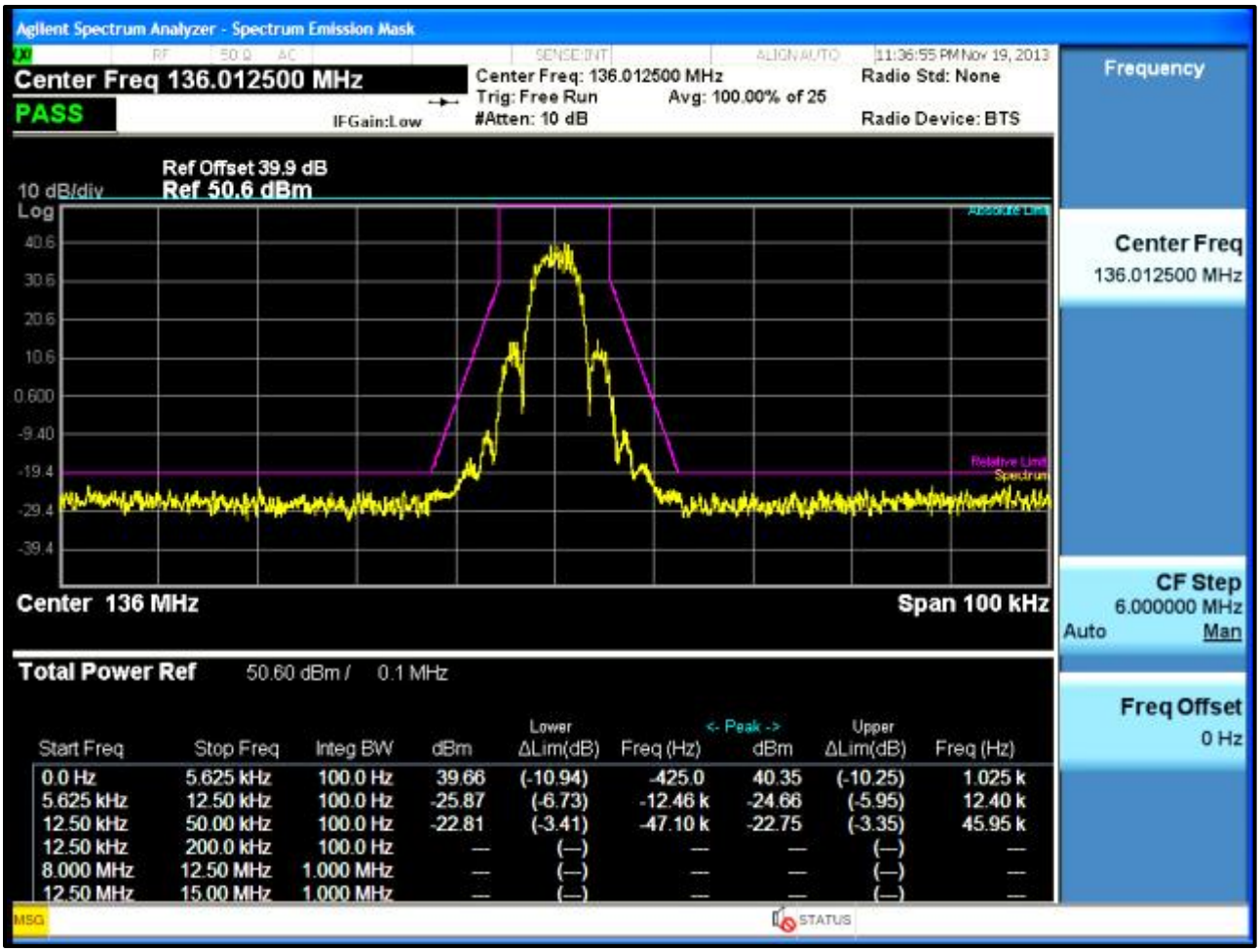
Plot 6-15: Occupied Bandwidth – 162 MHz; NB Analog (Mask D)



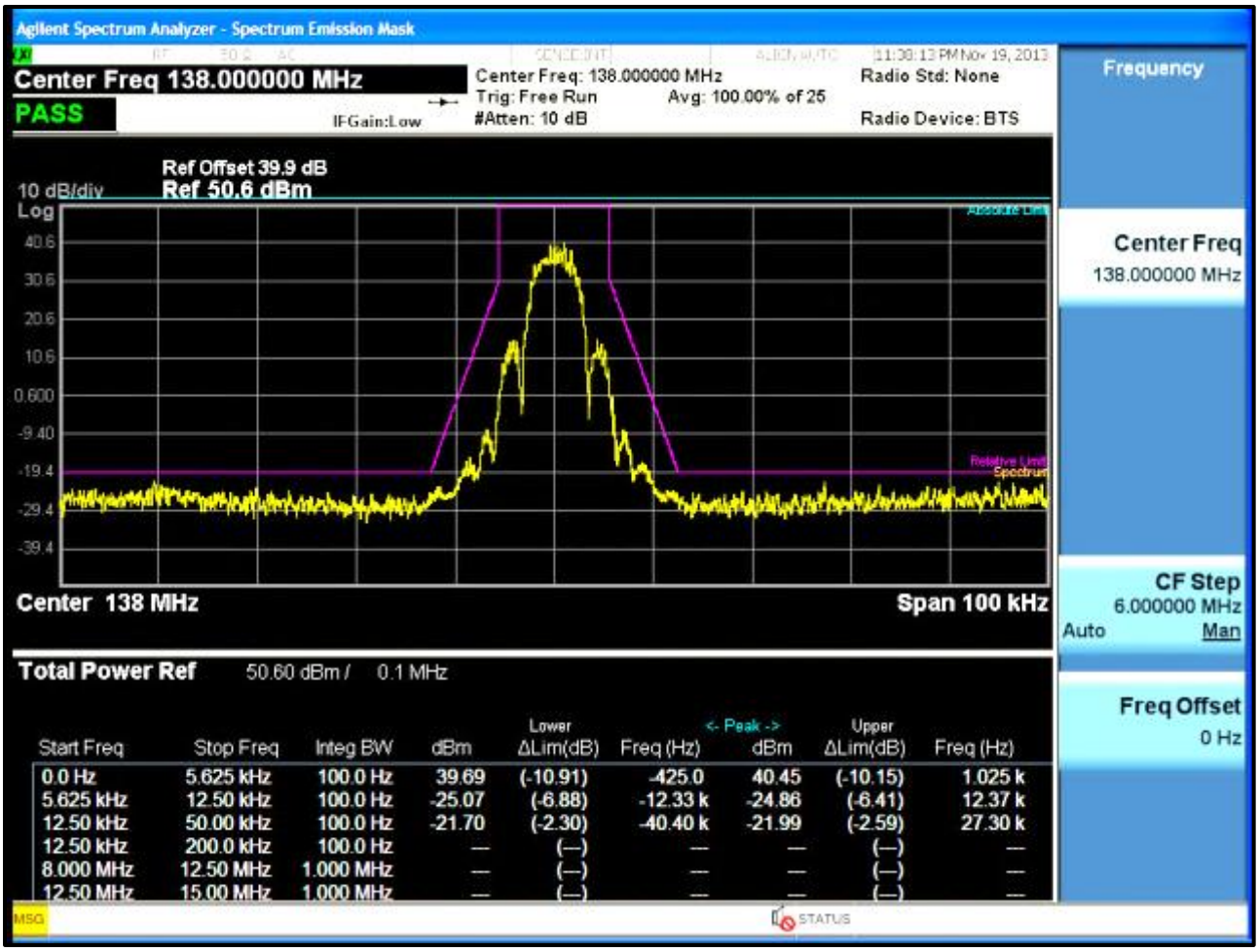
Plot 6-16: Occupied Bandwidth – 173.9875 MHz; NB Analog (Mask D)



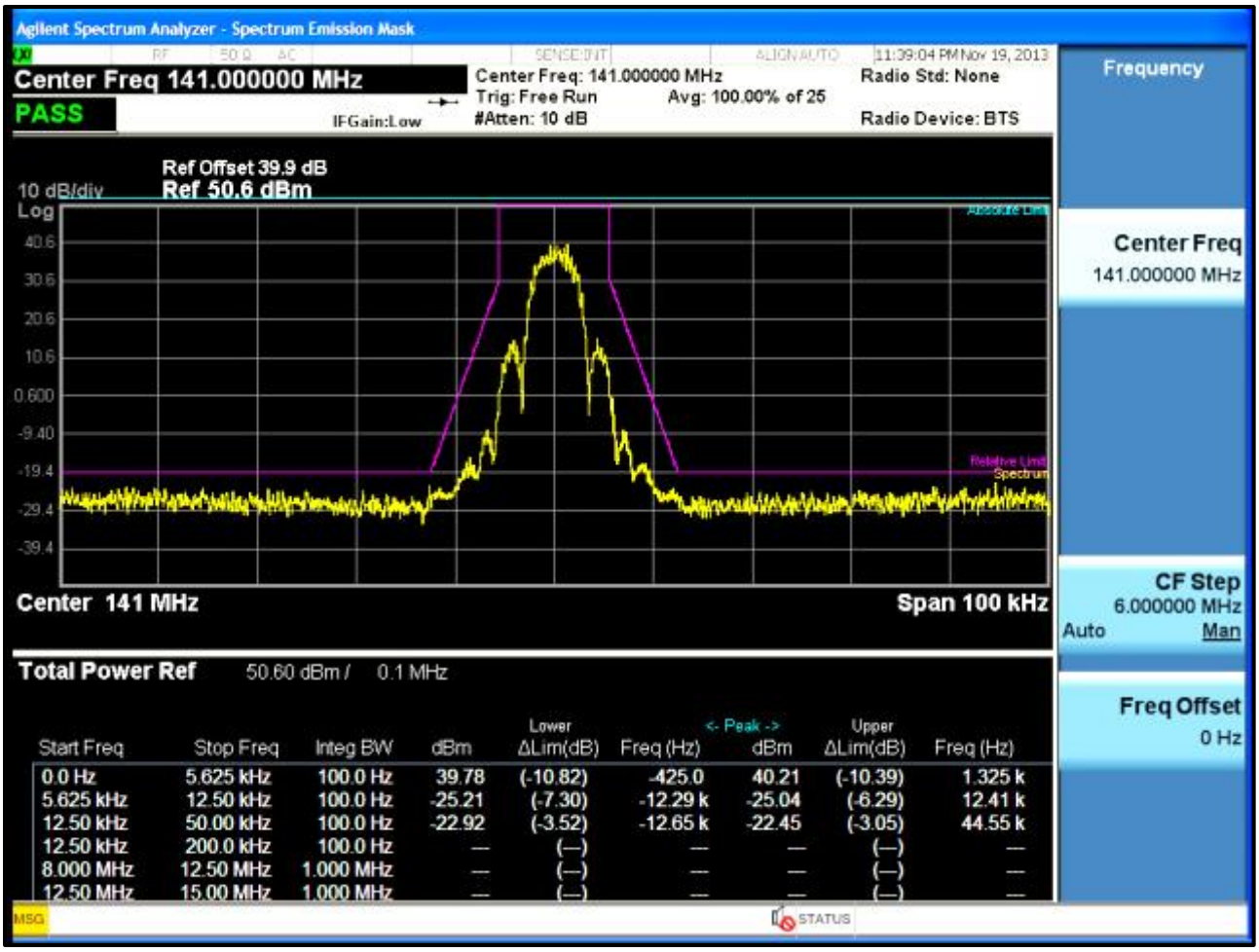
Plot 6-17: Occupied Bandwidth – 136.0125 MHz; 2 level NB 4800 (Mask D)



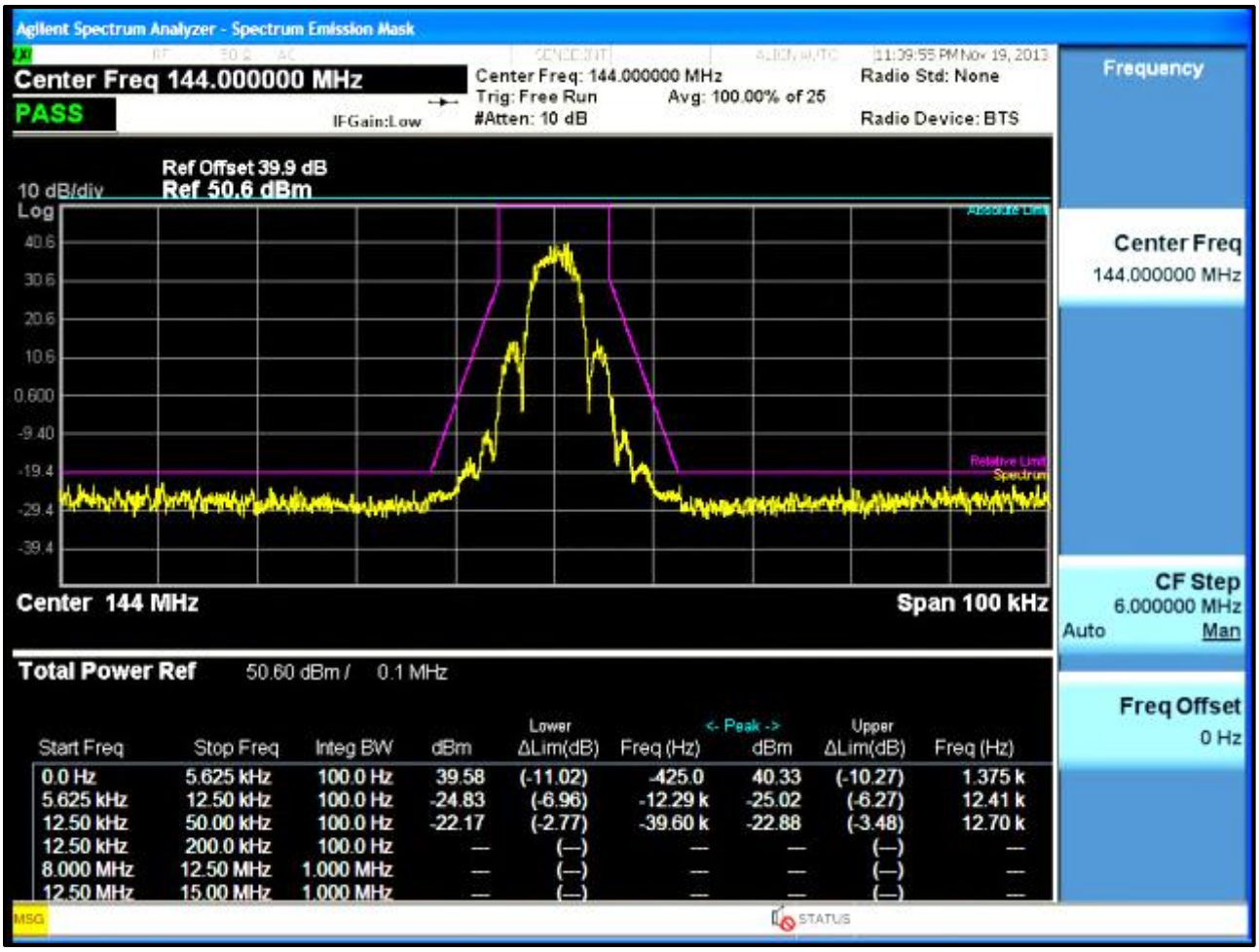
Plot 6-18: Occupied Bandwidth – 138.0 MHz; 2 level NB 4800 (Mask D)



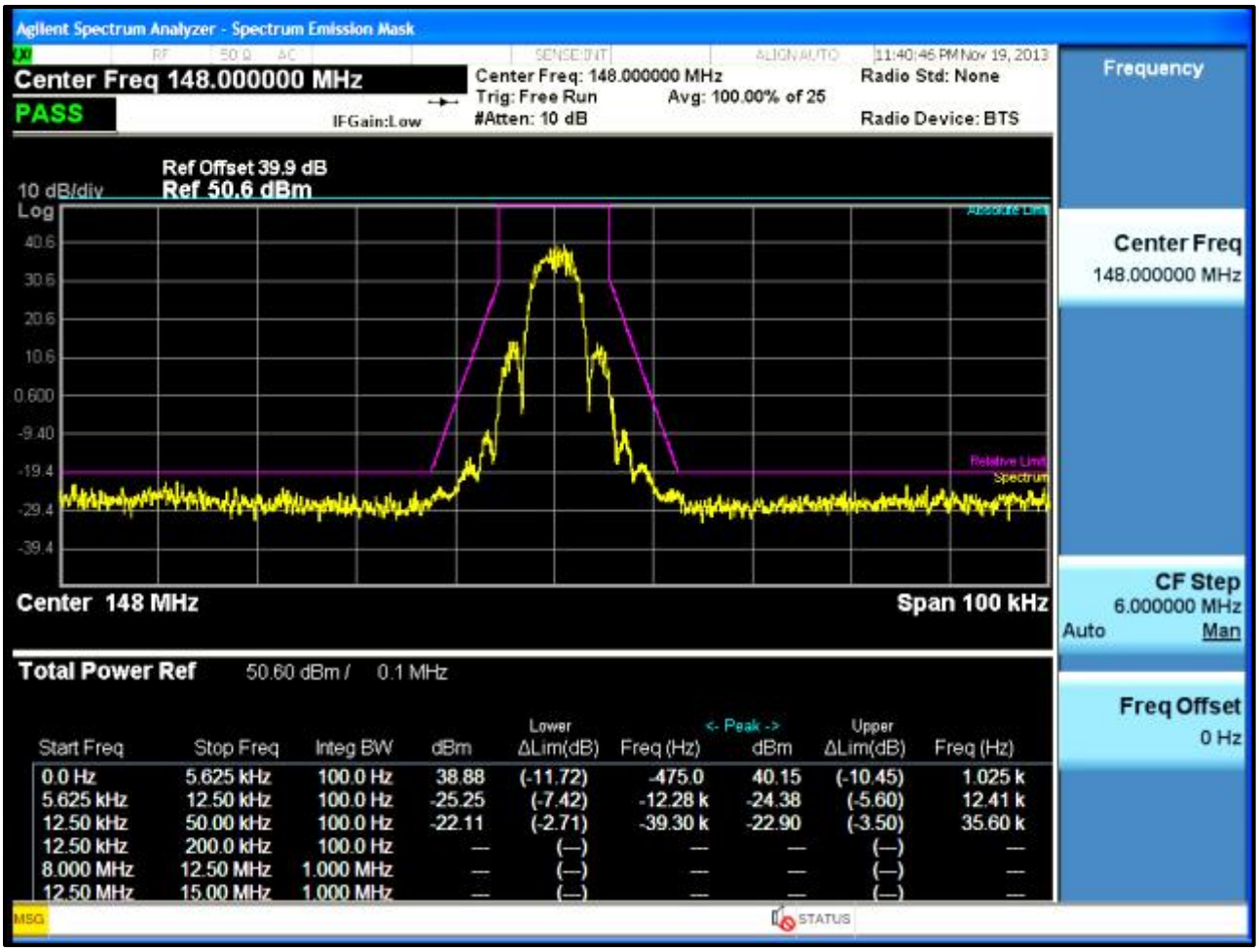
Plot 6-19: Occupied Bandwidth – 141 MHz; 2 level NB 4800 (Mask D)



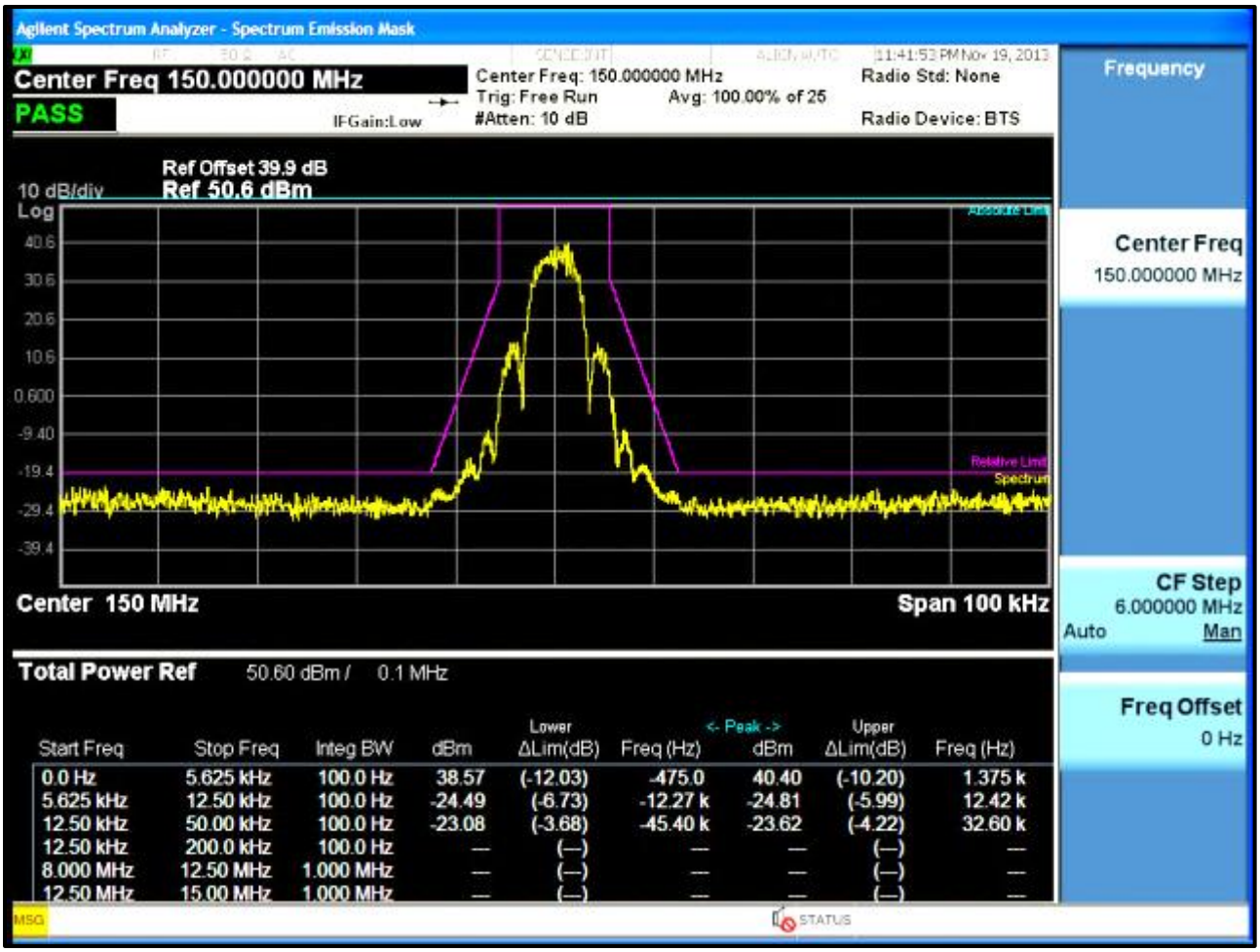
Plot 6-20: Occupied Bandwidth – 144 MHz; 2 level NB 4800 (Mask D)



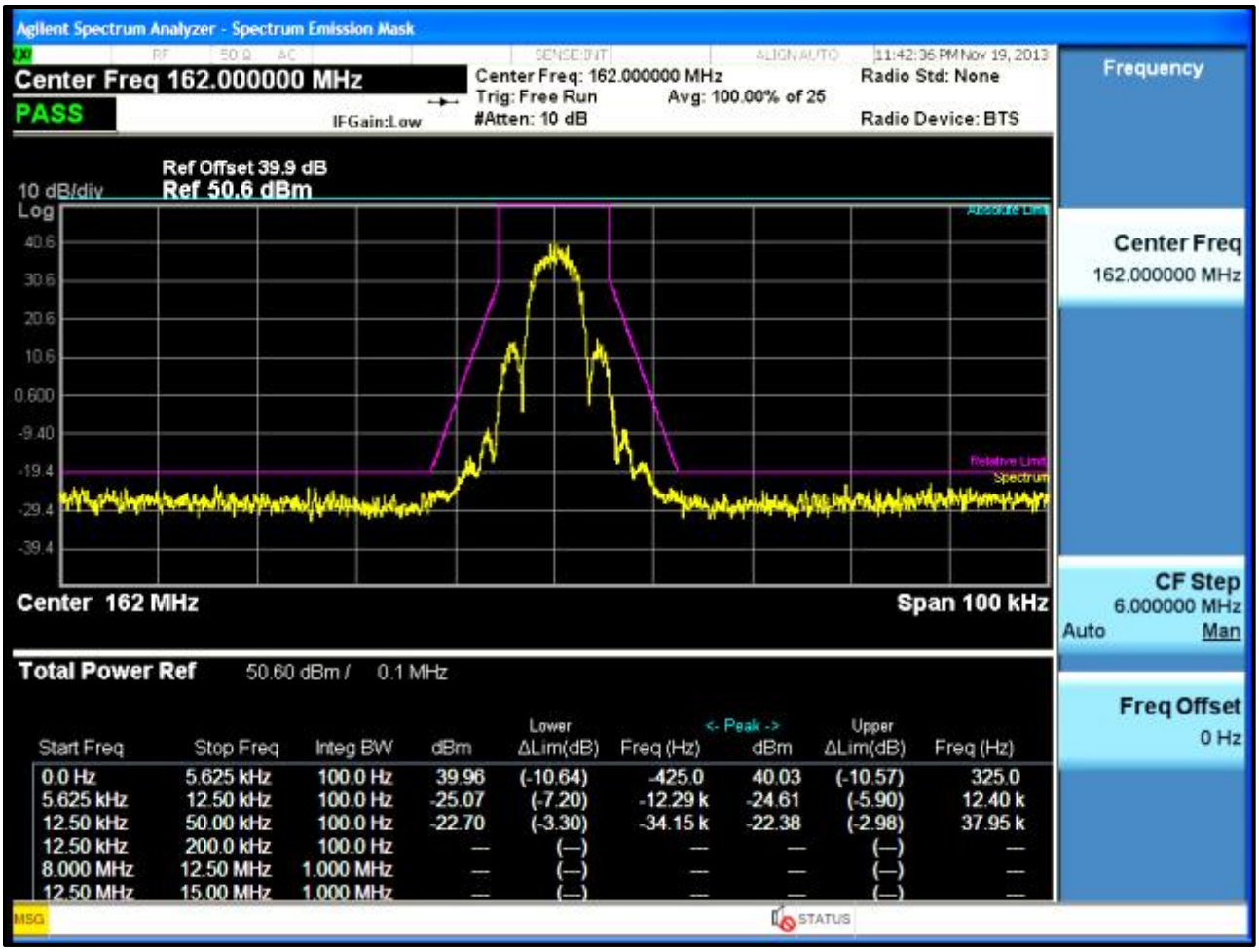
Plot 6-21: Occupied Bandwidth – 148 MHz; 2 level NB 4800 (Mask D)



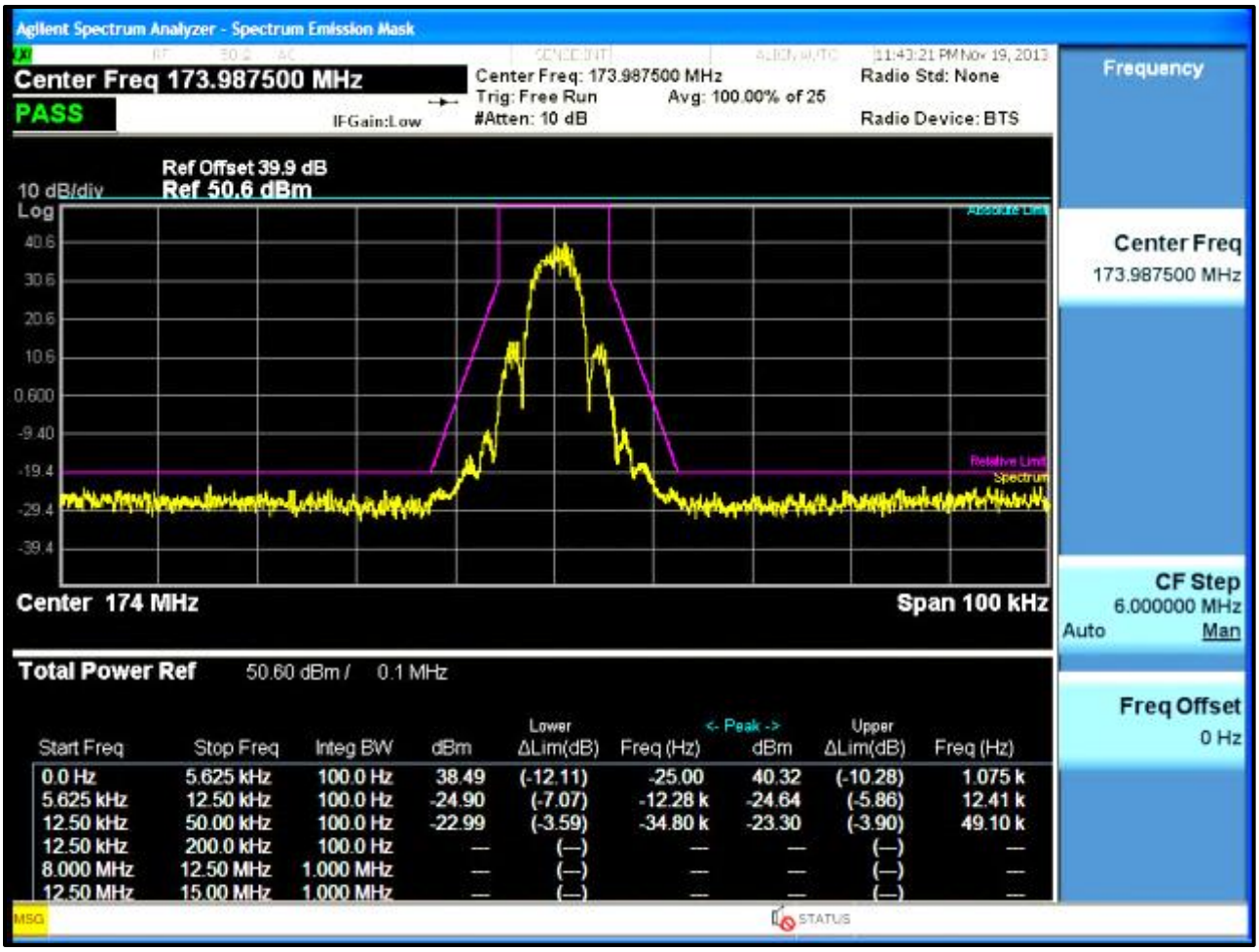
Plot 6-22: Occupied Bandwidth – 150 MHz; 2 level NB 4800 (Mask D)



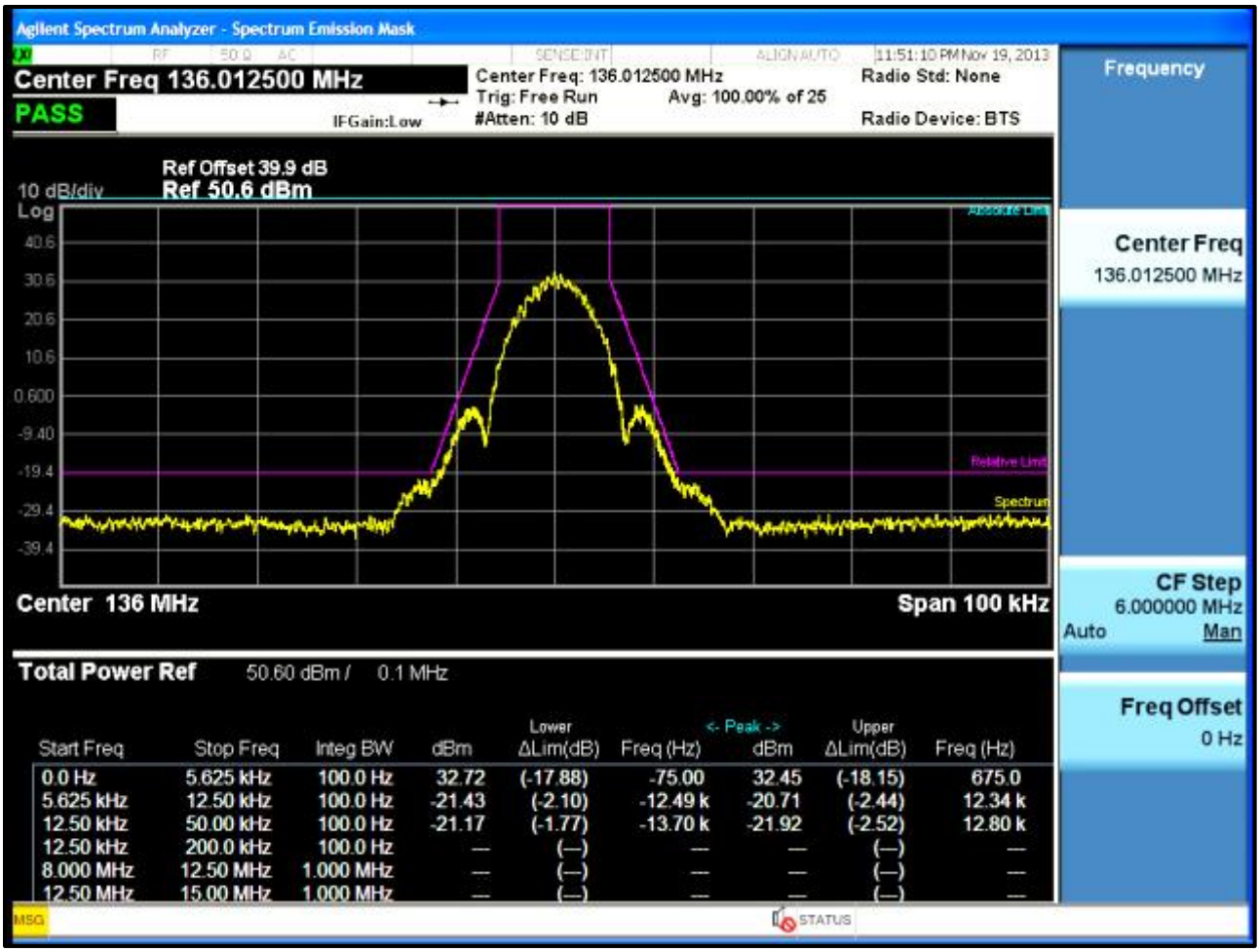
Plot 6-23: Occupied Bandwidth – 162 MHz; 2 level NB 4800 (Mask D)



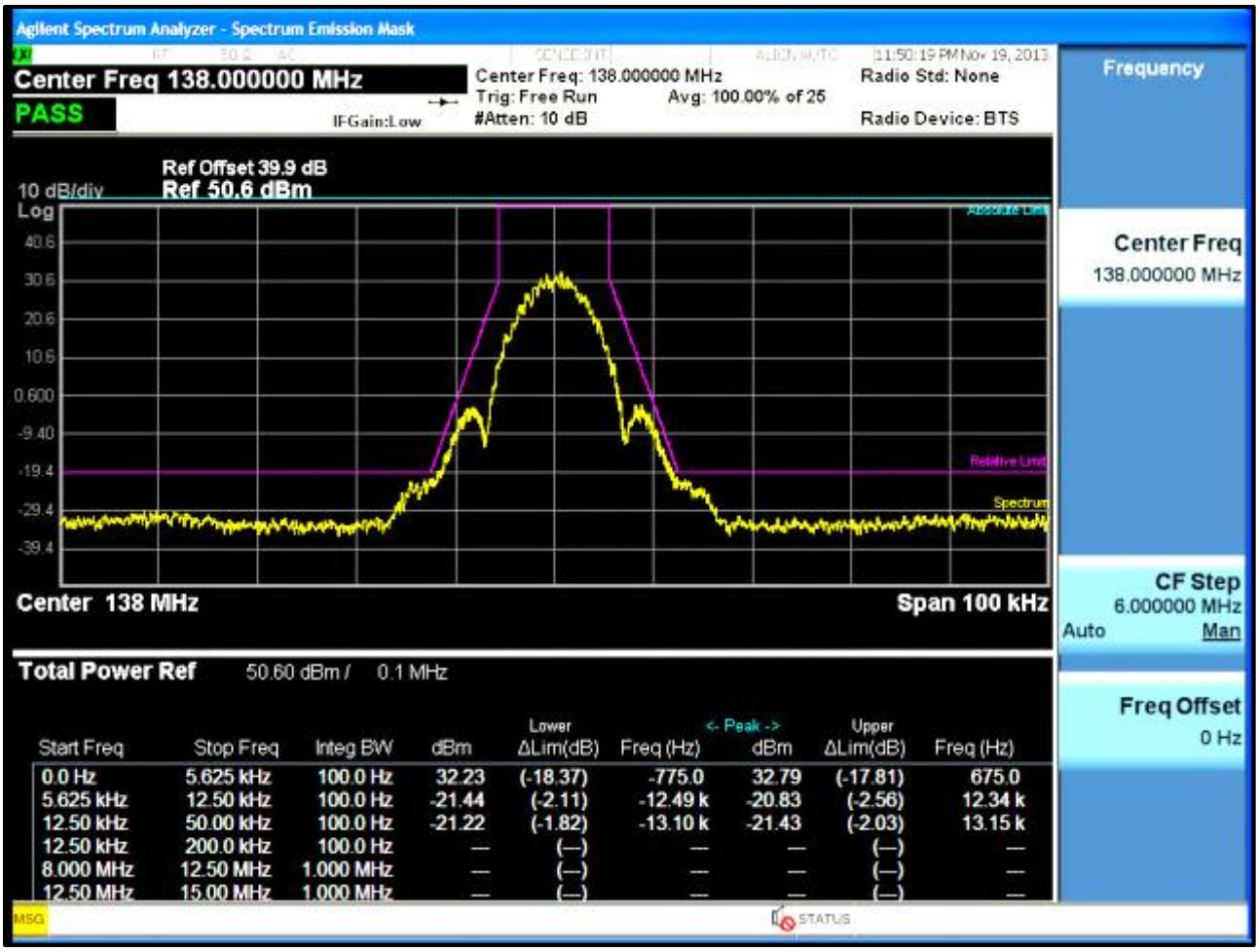
Plot 6-24: Occupied Bandwidth – 173.9875 MHz; 2 level NB 4800 (Mask D)



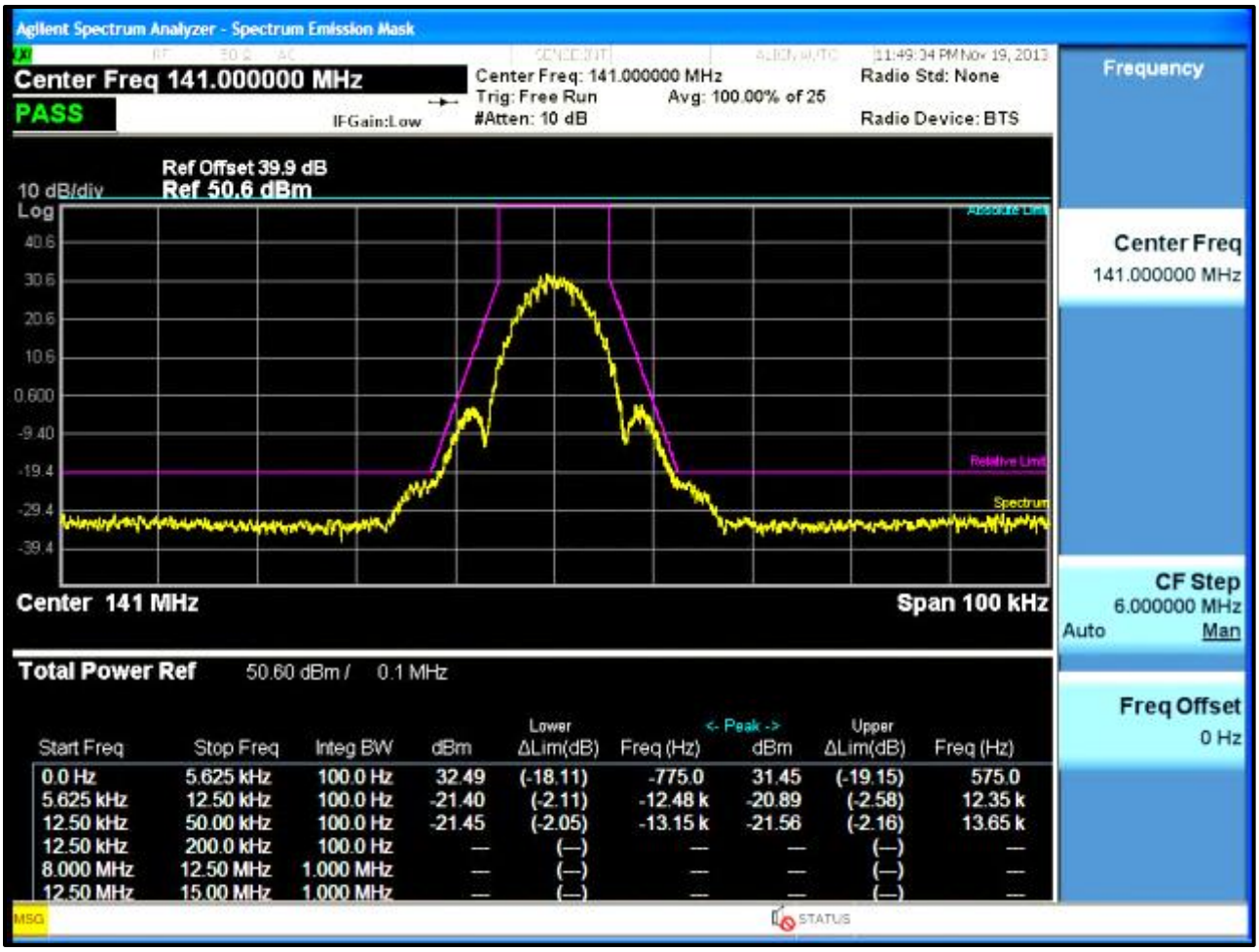
Plot 6-25: Occupied Bandwidth – 136.0125 MHz; 2 level NB 9600 (Mask D)



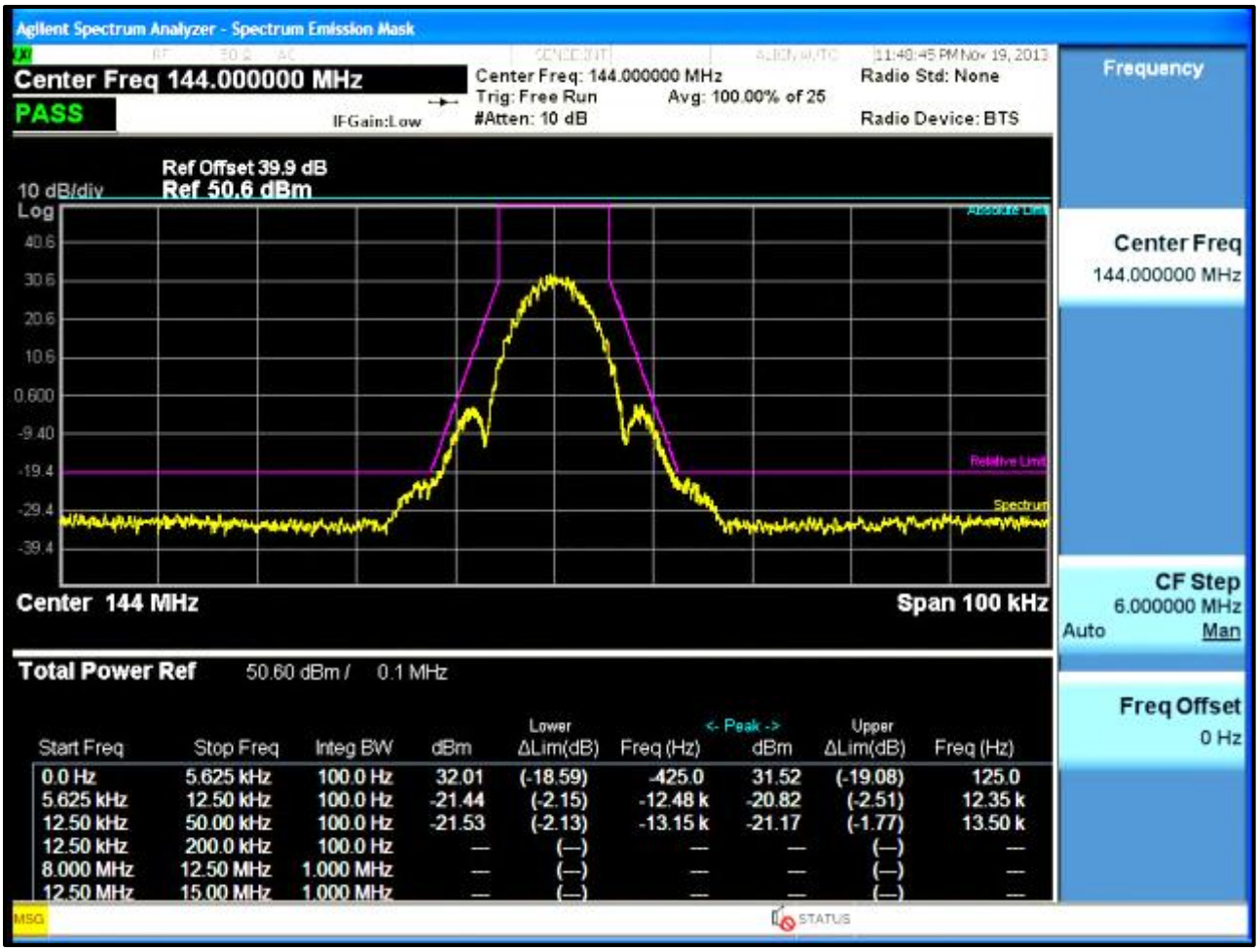
Plot 6-26: Occupied Bandwidth – 138.0 MHz; 2 level NB 9600 (Mask D)



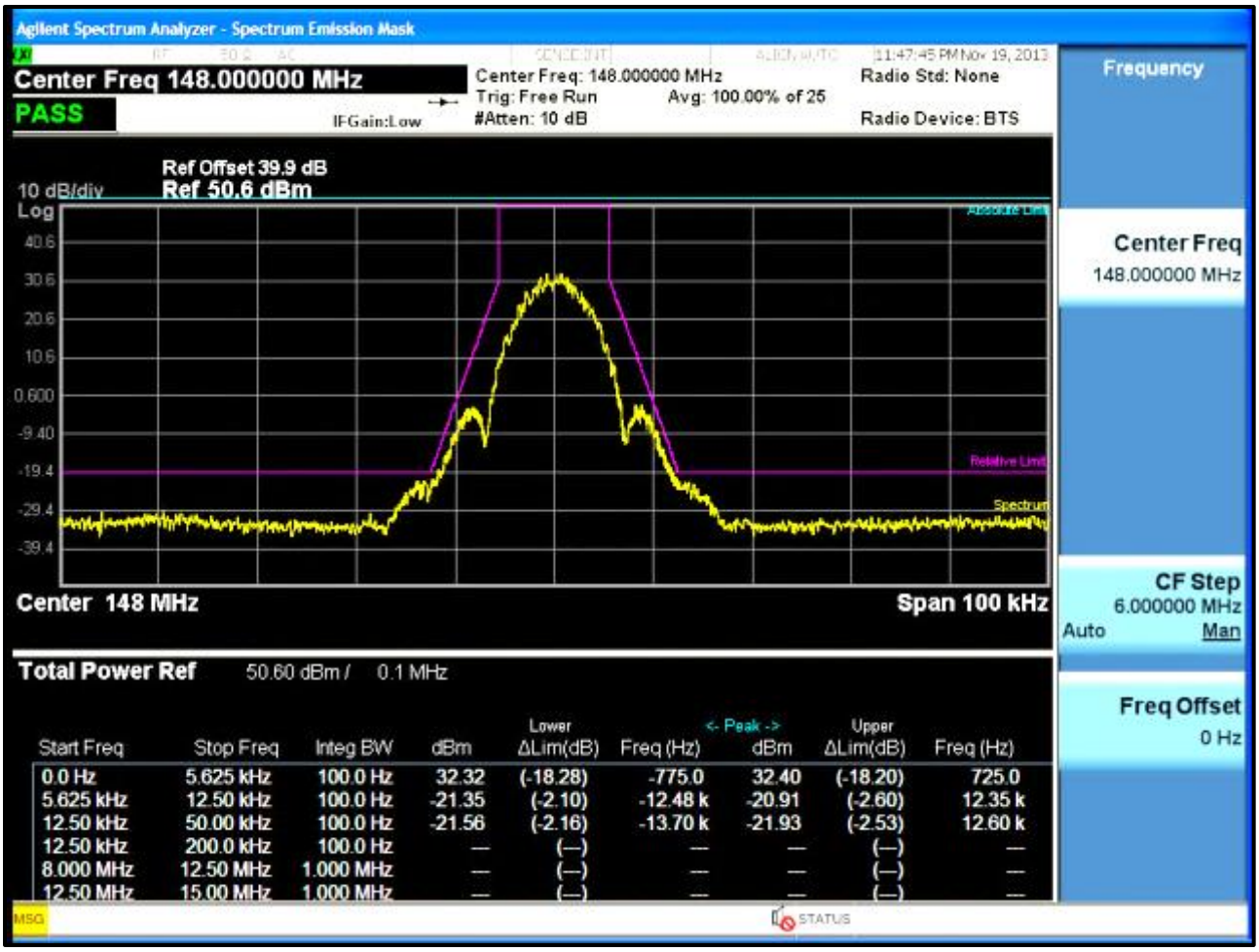
Plot 6-27: Occupied Bandwidth – 141 MHz; 2 level NB 9600 (Mask D)



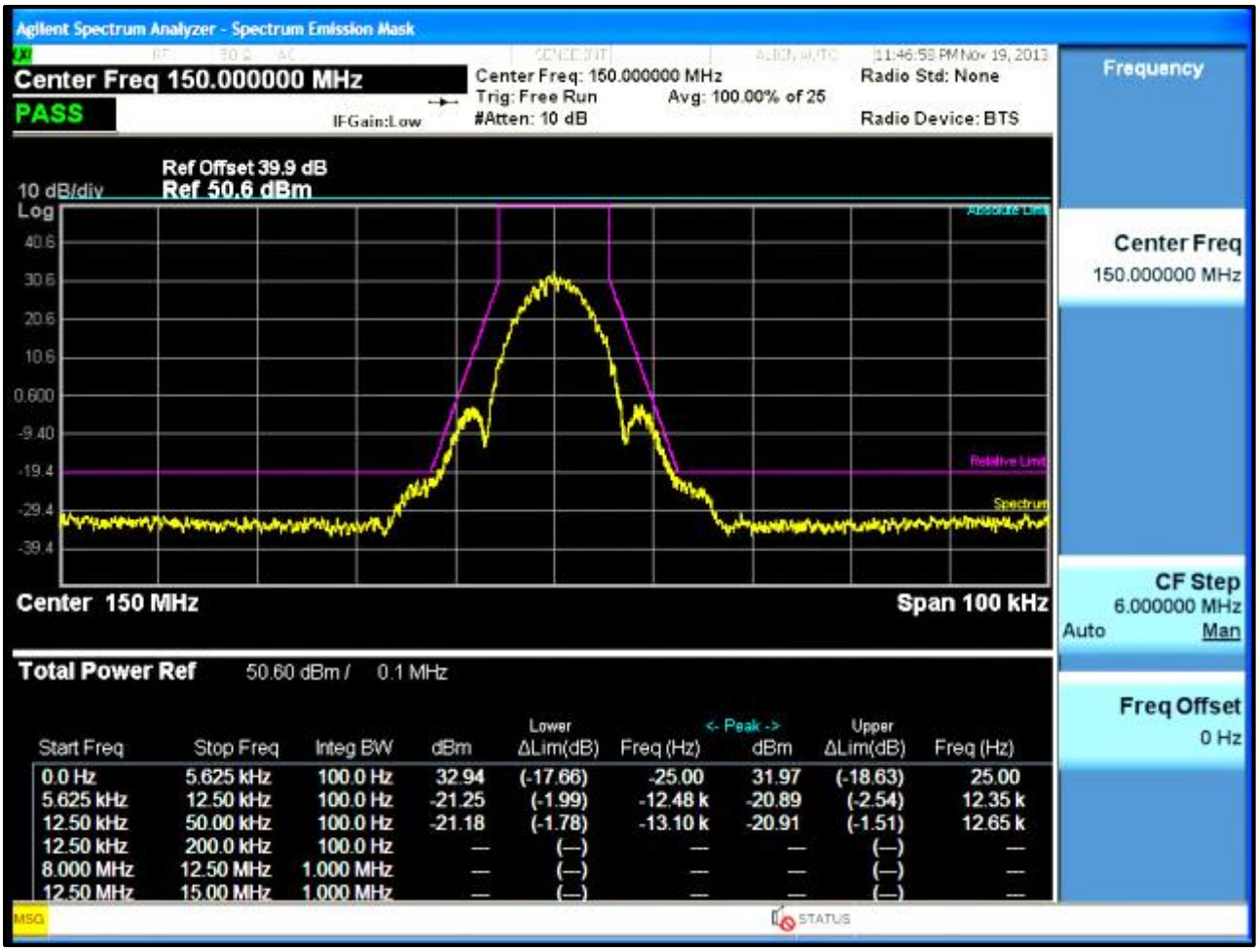
Plot 6-28: Occupied Bandwidth – 144 MHz; 2 level NB 9600 (Mask D)



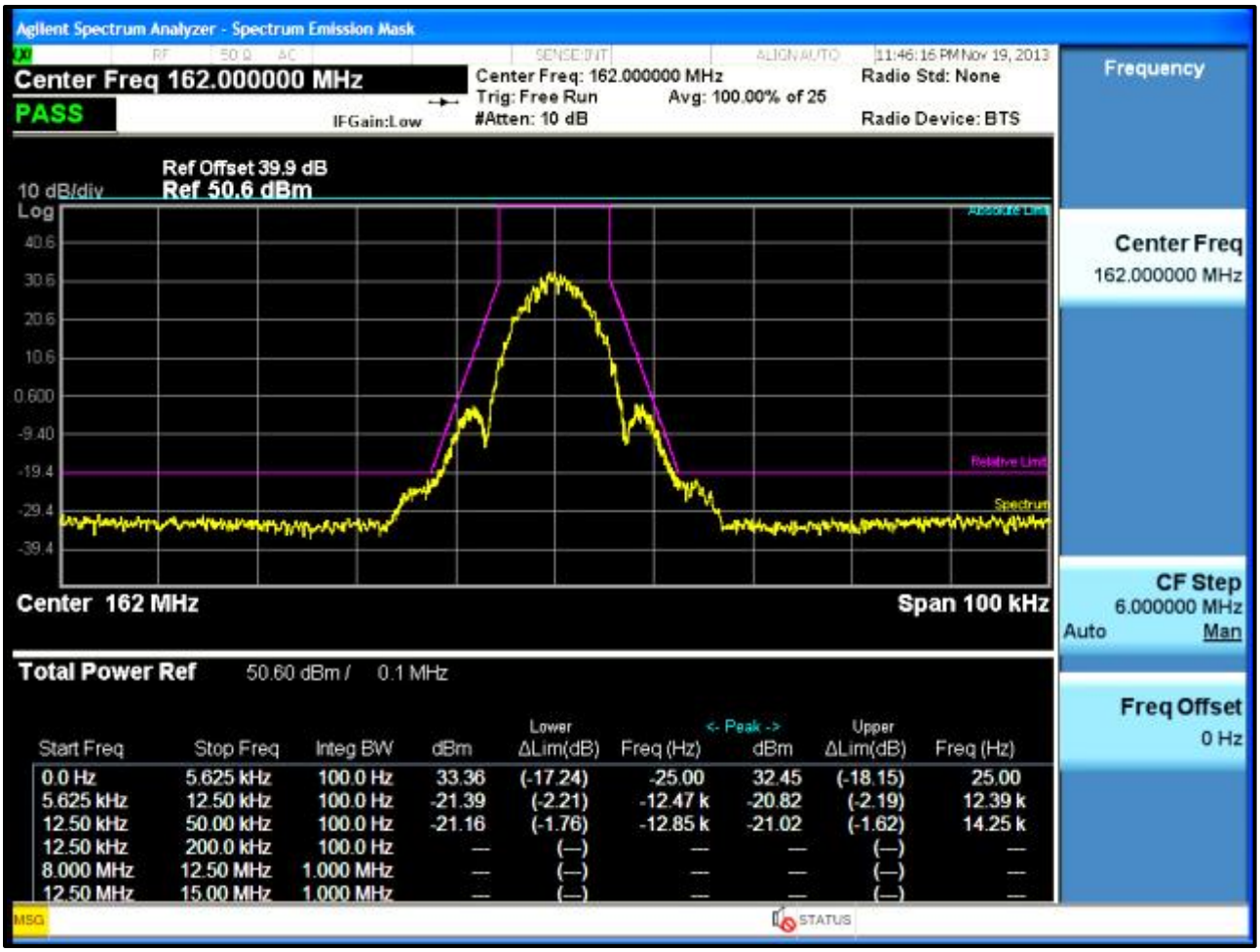
Plot 6-29: Occupied Bandwidth – 148 MHz; 2 level NB 9600 (Mask D)



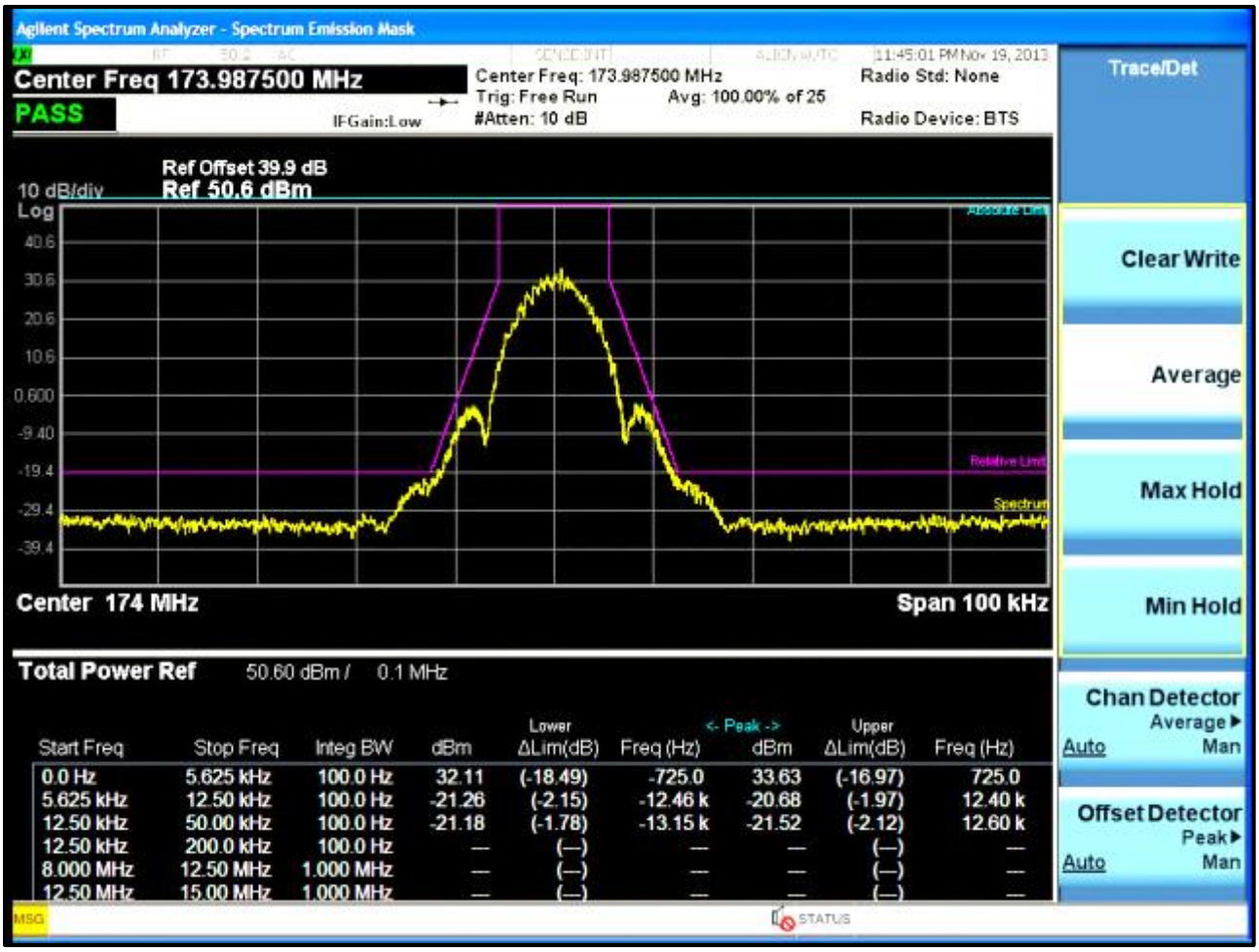
Plot 6-30: Occupied Bandwidth – 150 MHz; 2 level NB 9600 (Mask D)



Plot 6-31: Occupied Bandwidth – 162 MHz; 2 level NB 9600 (Mask D)

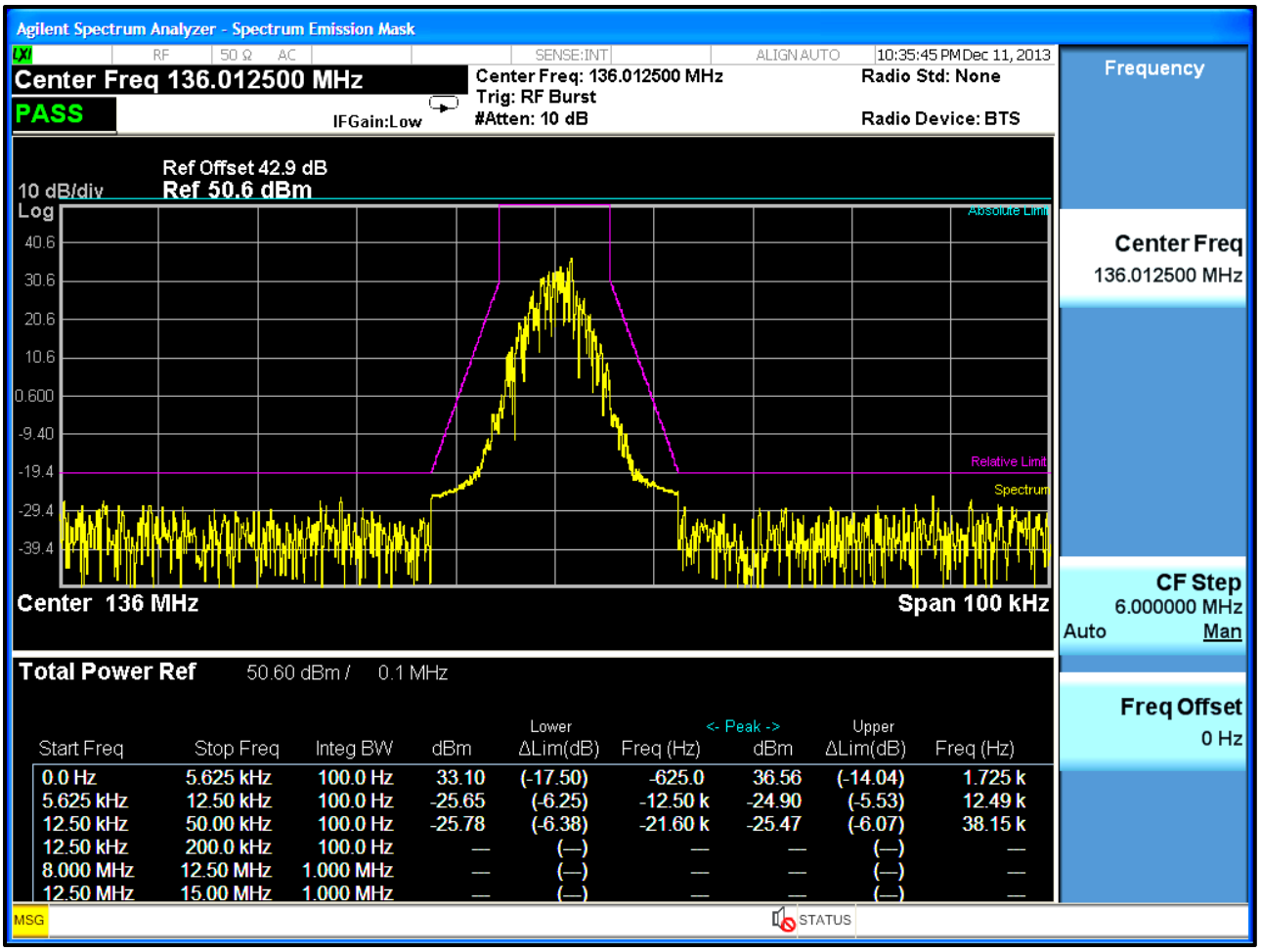


Plot 6-32: Occupied Bandwidth – 173.9875 MHz; 2 level NB 9600 (Mask D)

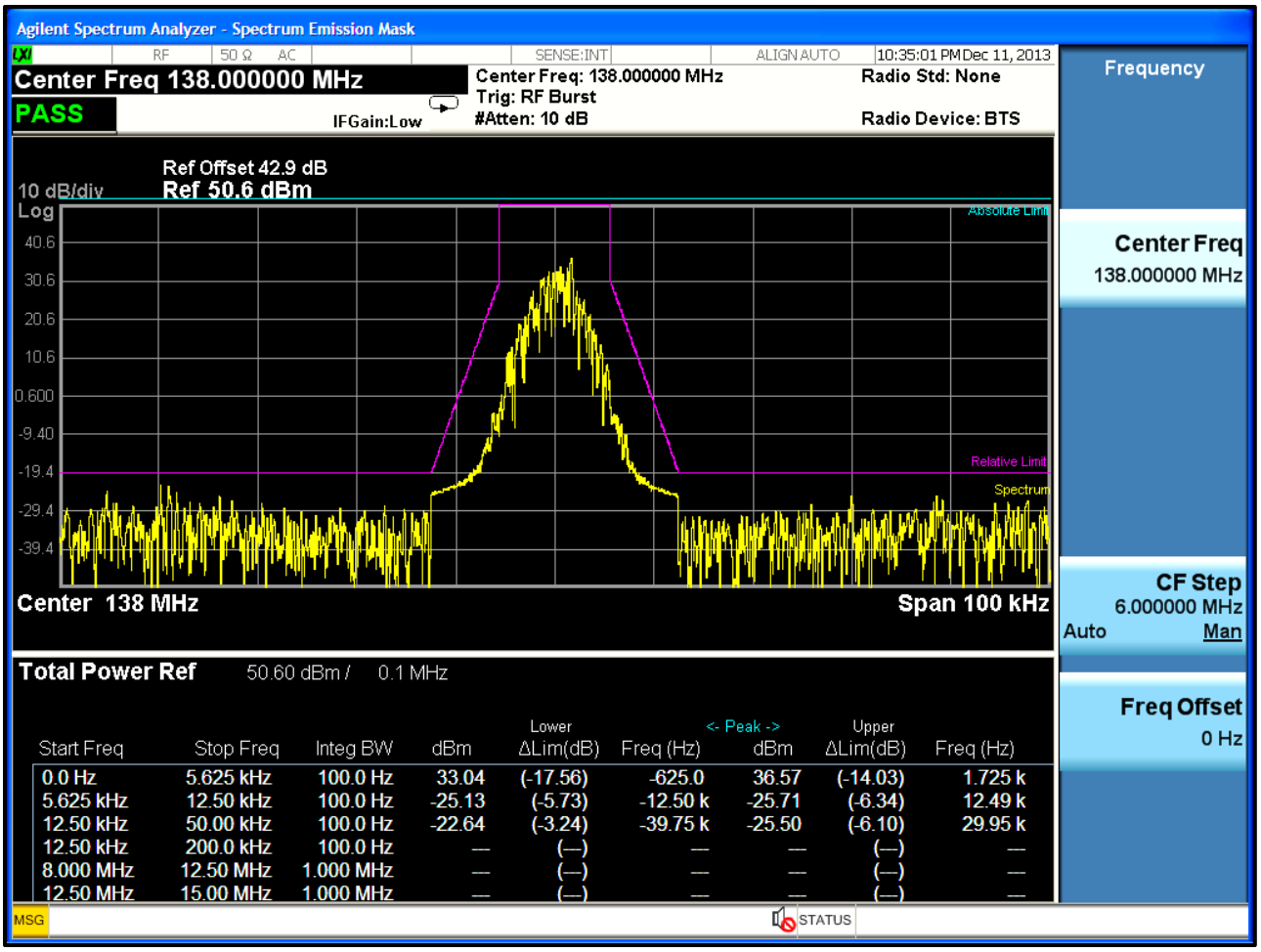


Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	<- Peak -> dBm	Upper ΔLim(dB)	Freq (Hz)
0.0 Hz	5.625 kHz	100.0 Hz	32.11	(-18.49)	-725.0	33.63	(-16.97)	725.0
5.625 kHz	12.50 kHz	100.0 Hz	-21.26	(-2.15)	-12.46 k	-20.68	(-1.97)	12.40 k
12.50 kHz	50.00 kHz	100.0 Hz	-21.18	(-1.78)	-13.15 k	-21.52	(-2.12)	12.60 k
12.50 kHz	200.0 kHz	100.0 Hz	—	(—)	—	—	(—)	—
8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—
12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—

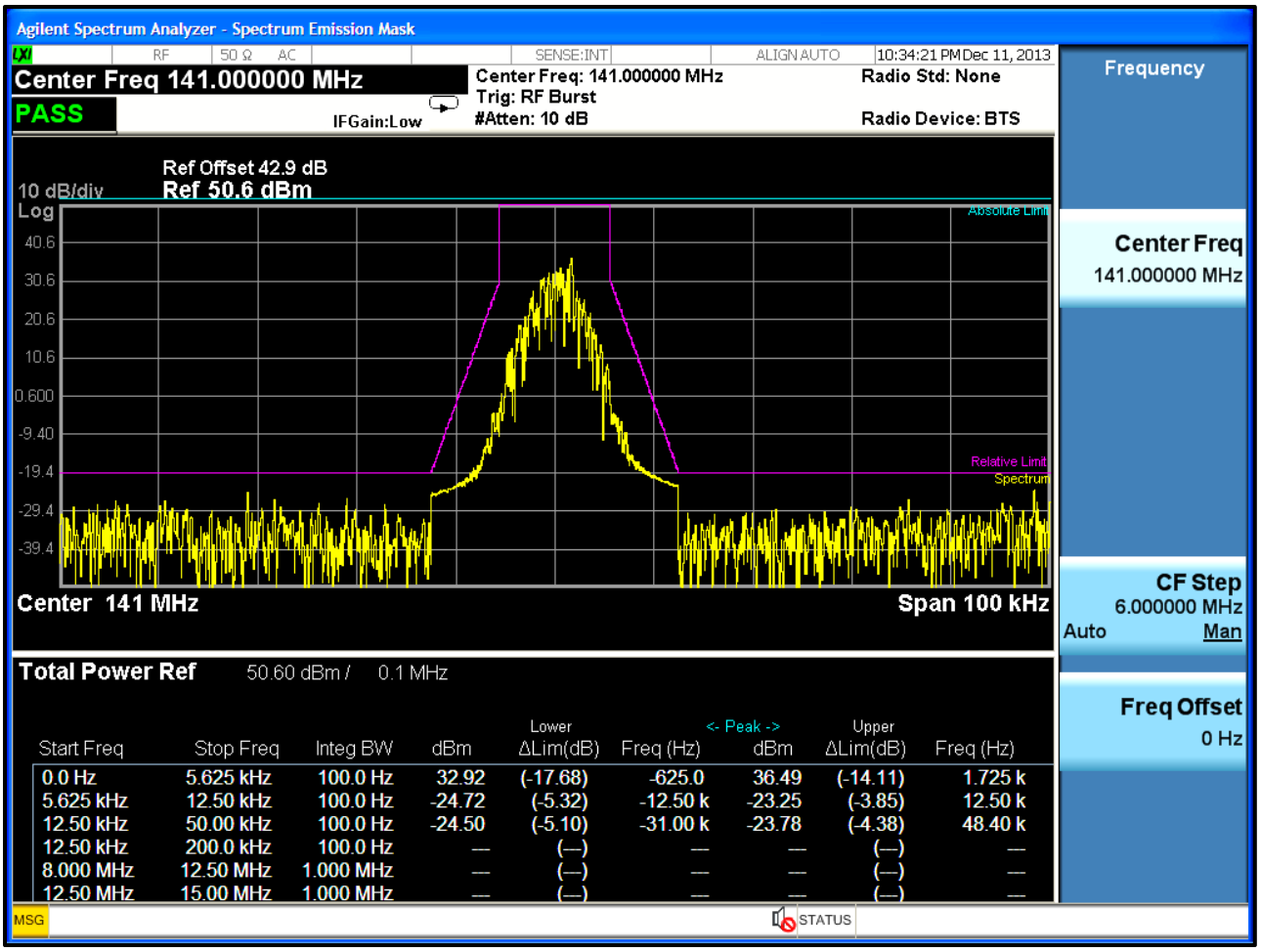
Plot 6-33: Occupied Bandwidth – 136.0125 MHz; H-CPM TDMA (Mask D)



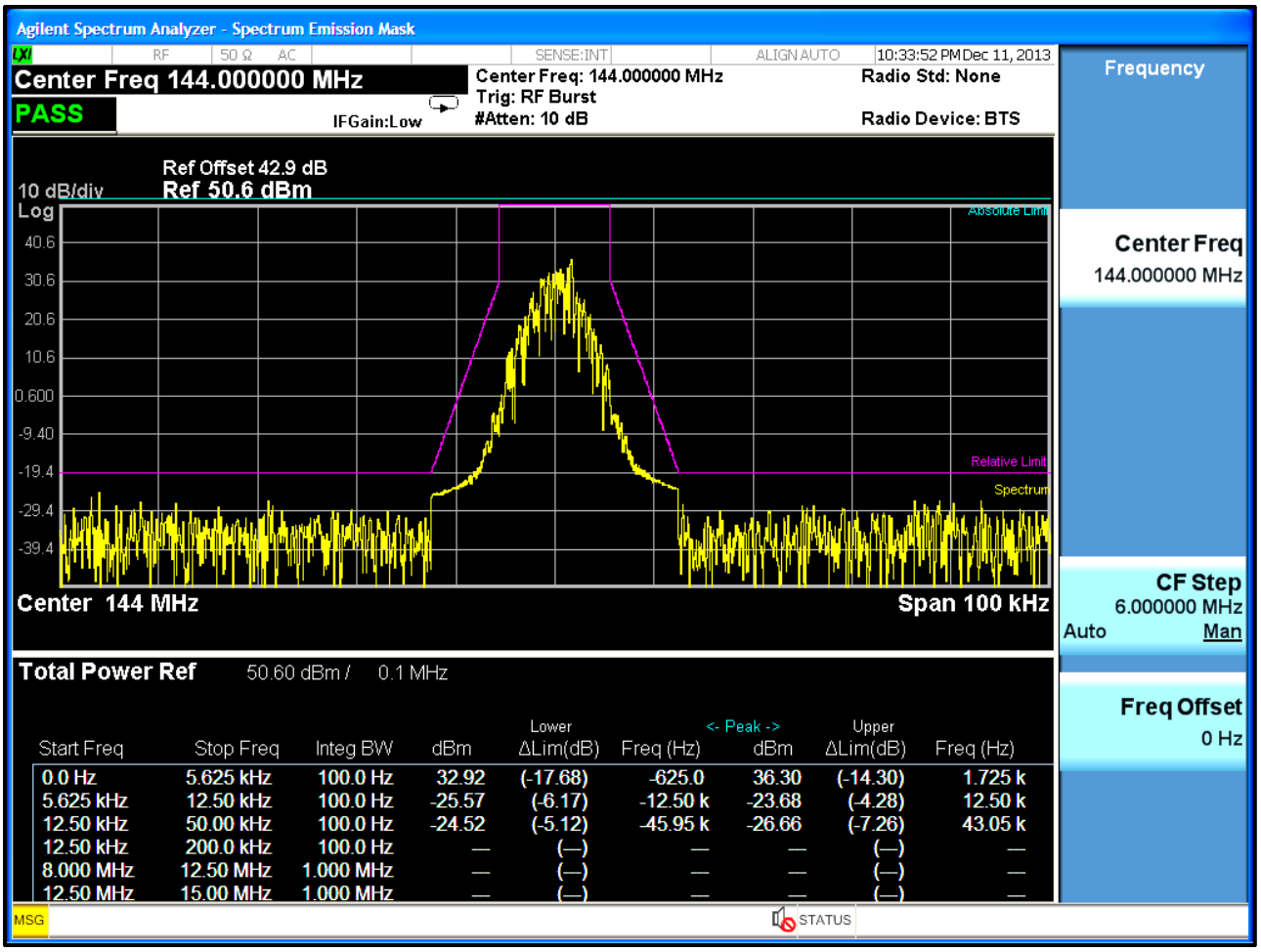
Plot 6-34: Occupied Bandwidth – 138.0 MHz; H-CPM TDMA (Mask D)



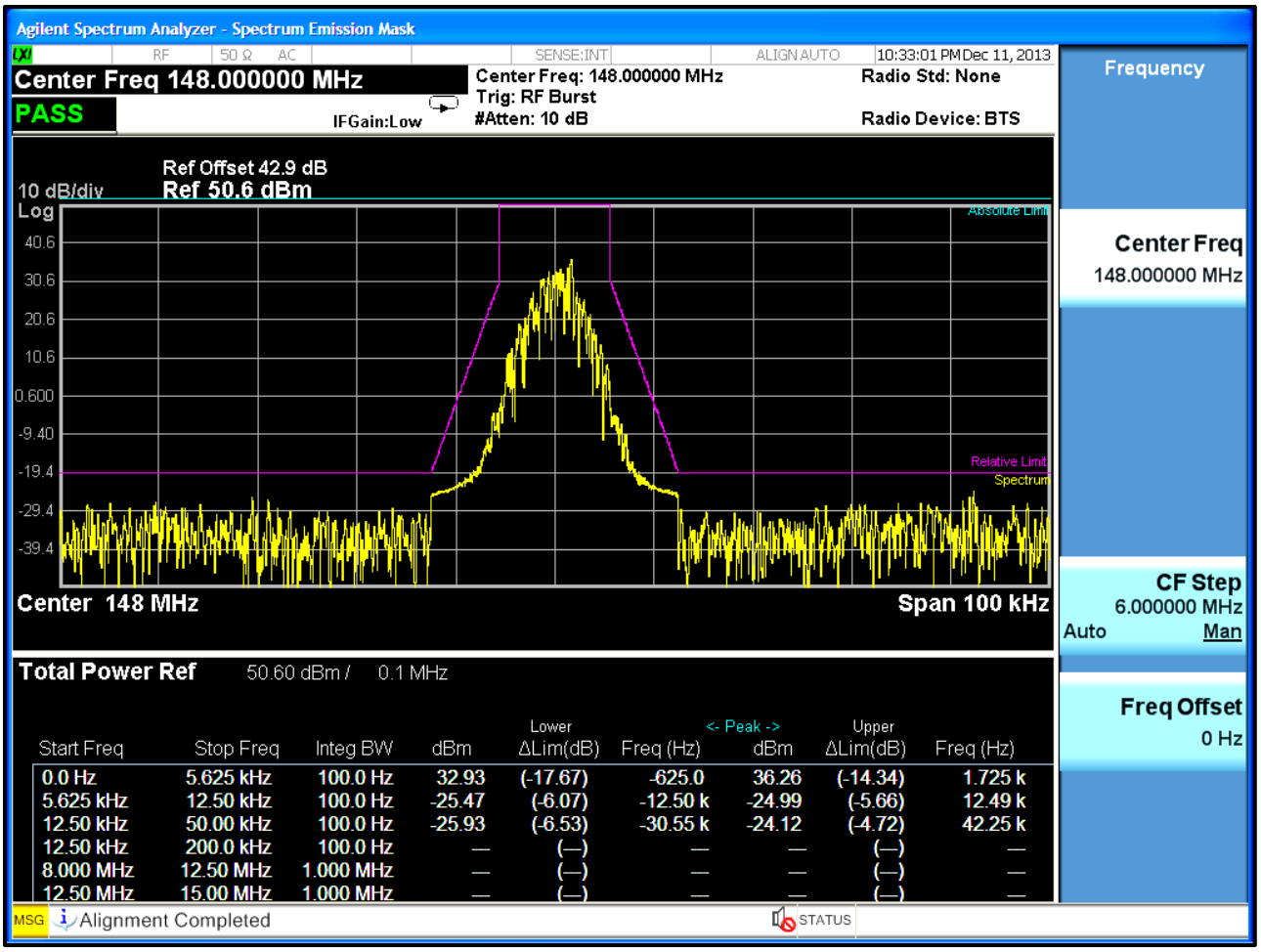
Plot 6-35: Occupied Bandwidth – 141 MHz; H-CPM TDMA (Mask D)



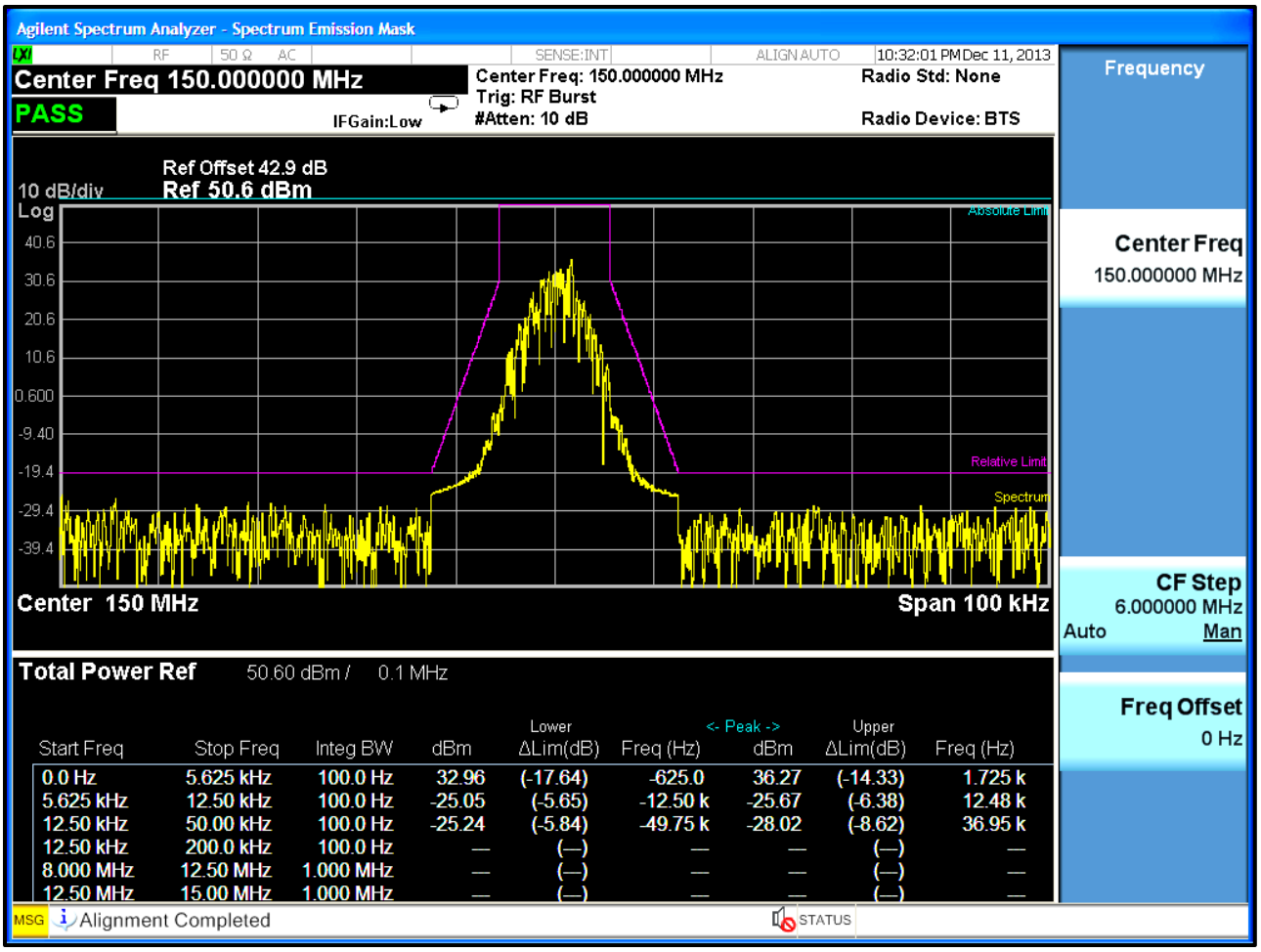
Plot 6-36: Occupied Bandwidth – 144 MHz; H-CPM TDMA (Mask D)



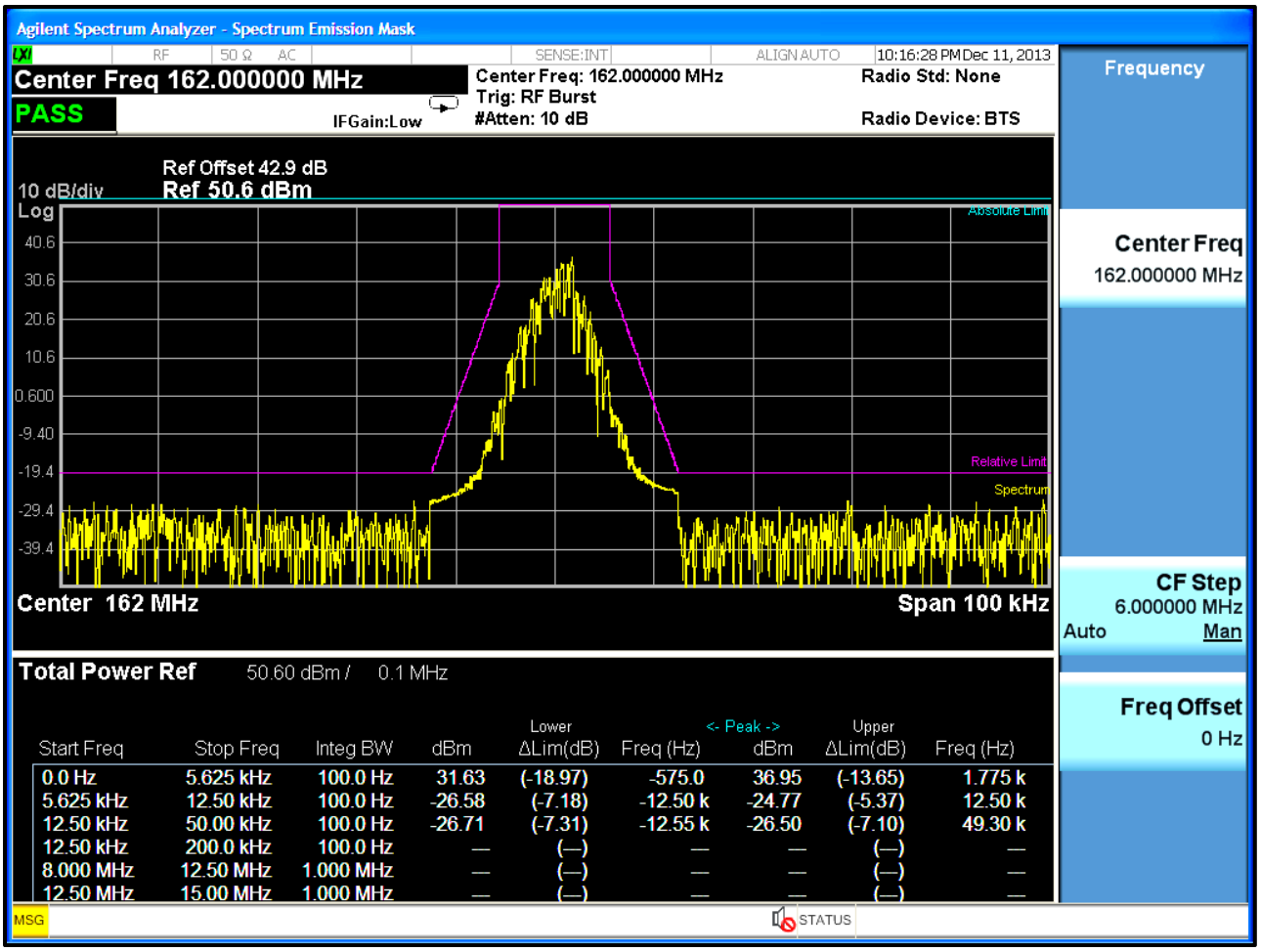
Plot 6-37: Occupied Bandwidth – 148 MHz; H-CPM TDMA (Mask D)



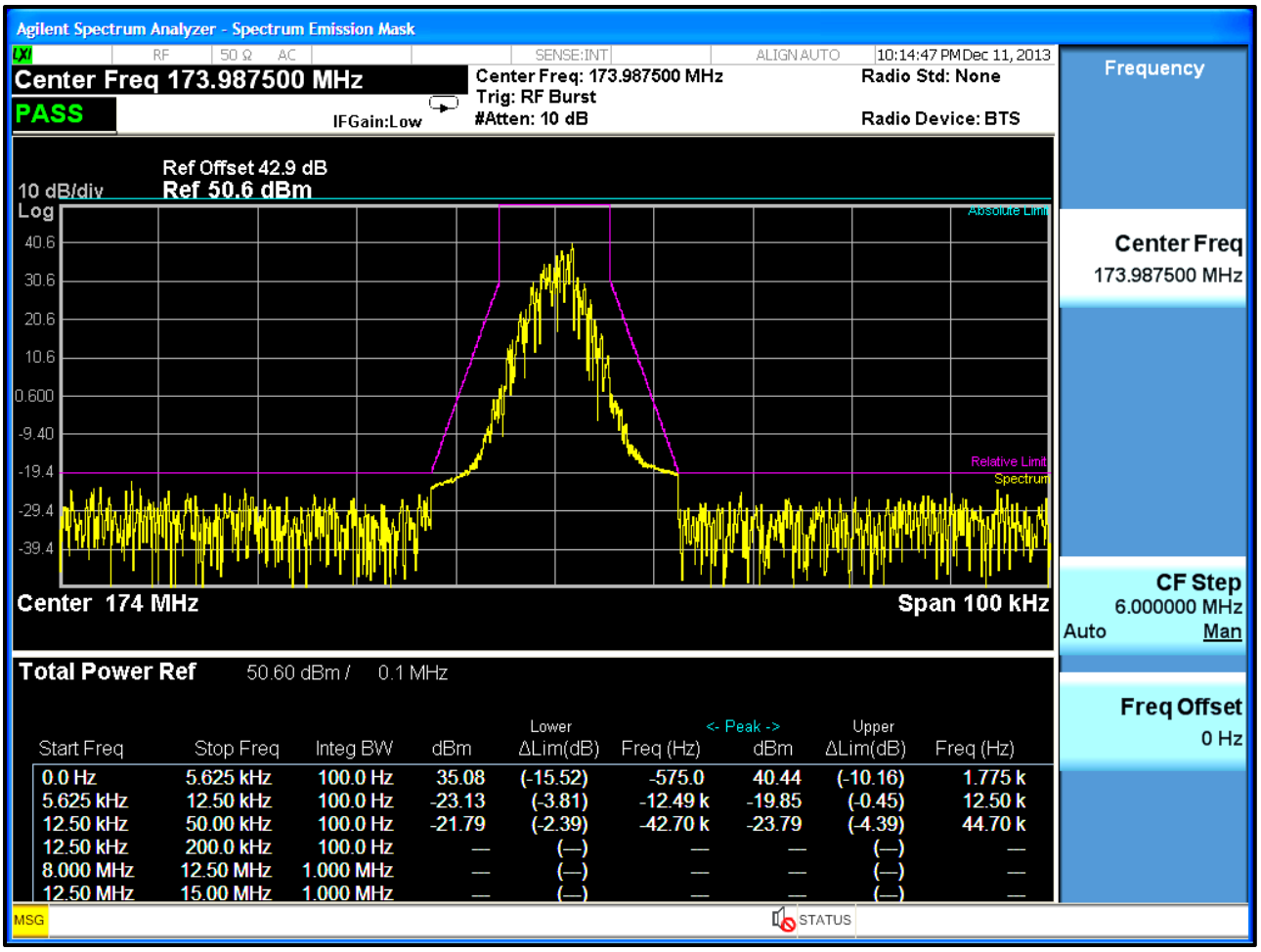
Plot 6-38: Occupied Bandwidth – 150 MHz; H-CPM TDMA (Mask D)



Plot 6-39: Occupied Bandwidth – 162 MHz; H-CPM TDMA (Mask D)

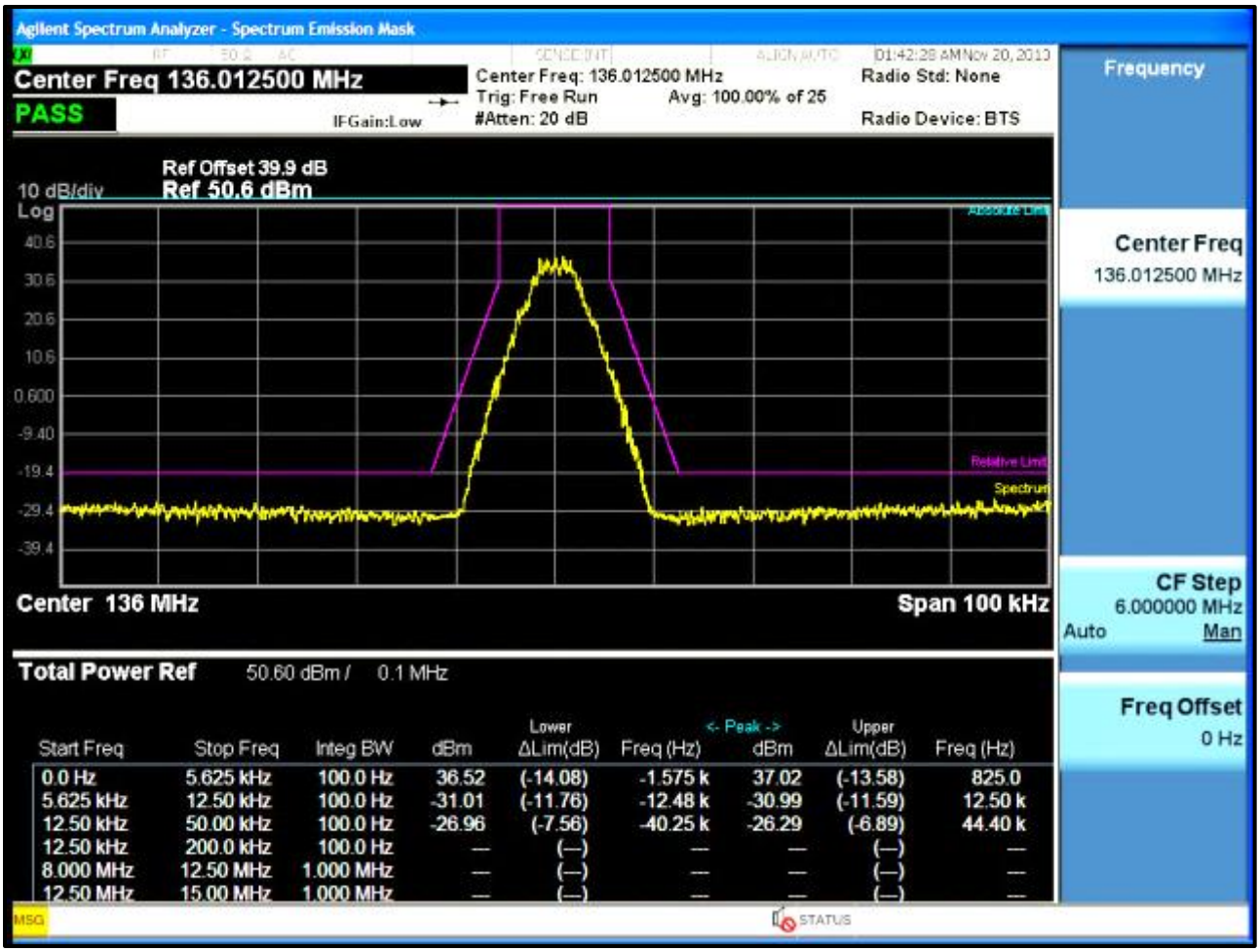


Plot 6-40: Occupied Bandwidth – 173.9875 MHz; H-CPM TDMA (Mask D)

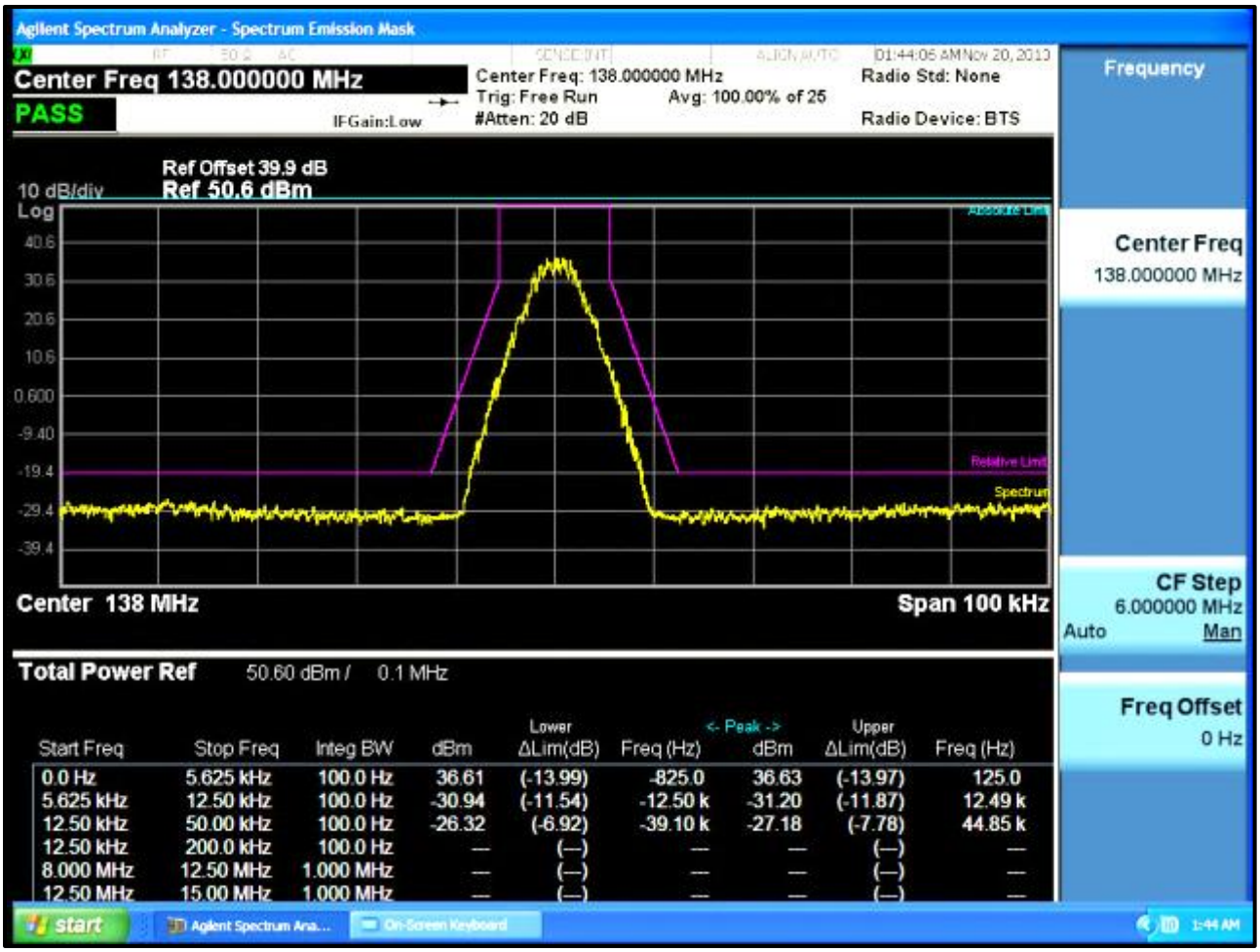


Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Lower Freq (Hz)	<- Peak -> dBm	Upper ΔLim(dB)	Upper Freq (Hz)
0.0 Hz	5.625 kHz	100.0 Hz	35.08	(-15.52)	-575.0	40.44	(-10.16)	1.775 k
5.625 kHz	12.50 kHz	100.0 Hz	-23.13	(-3.81)	-12.49 k	-19.85	(-0.45)	12.50 k
12.50 kHz	50.00 kHz	100.0 Hz	-21.79	(-2.39)	-42.70 k	-23.79	(-4.39)	44.70 k
12.50 kHz	200.0 kHz	100.0 Hz	—	(—)	—	—	(—)	—
8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—
12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—

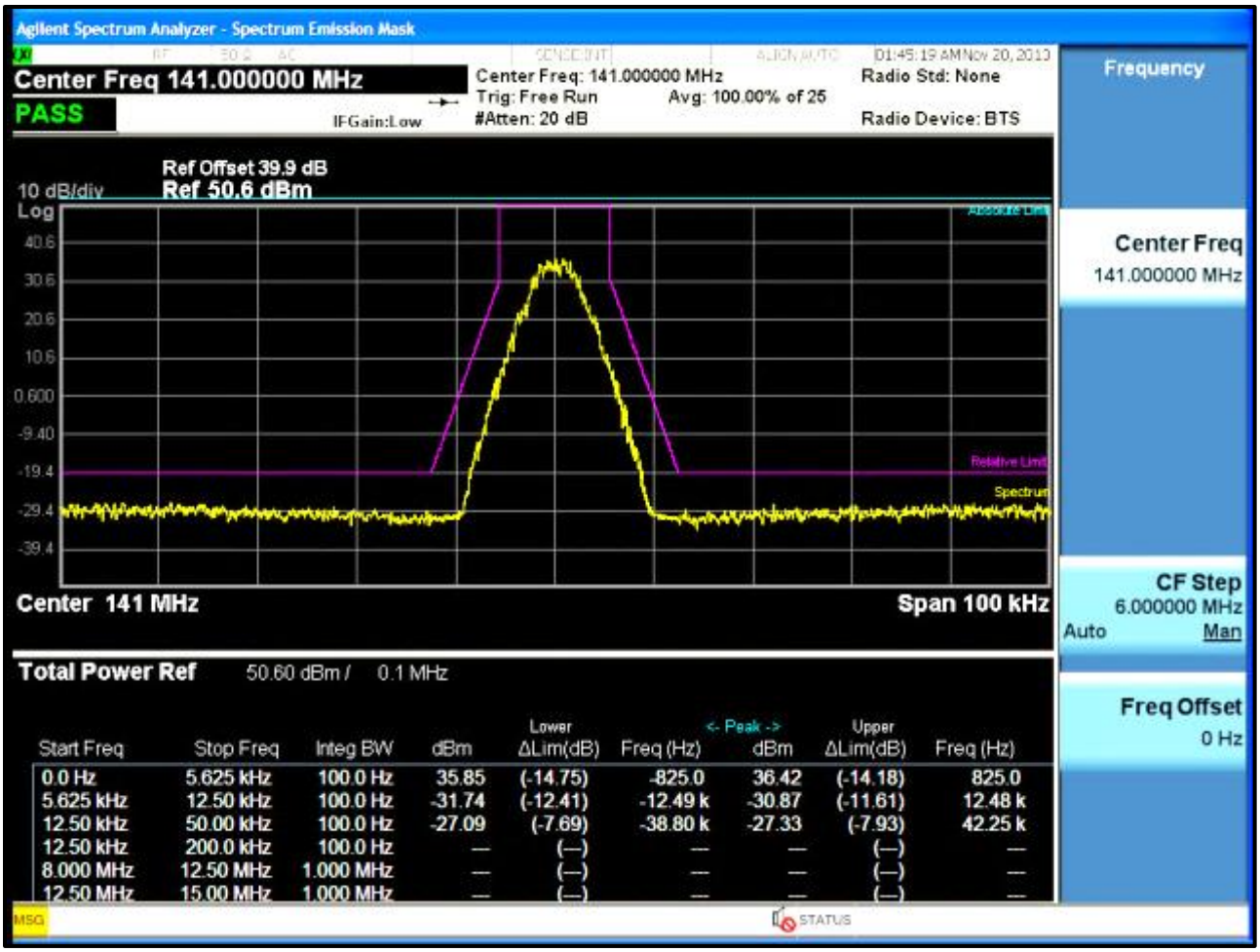
Plot 6-41: Occupied Bandwidth – 136.0125 MHz; P25 (Mask D)



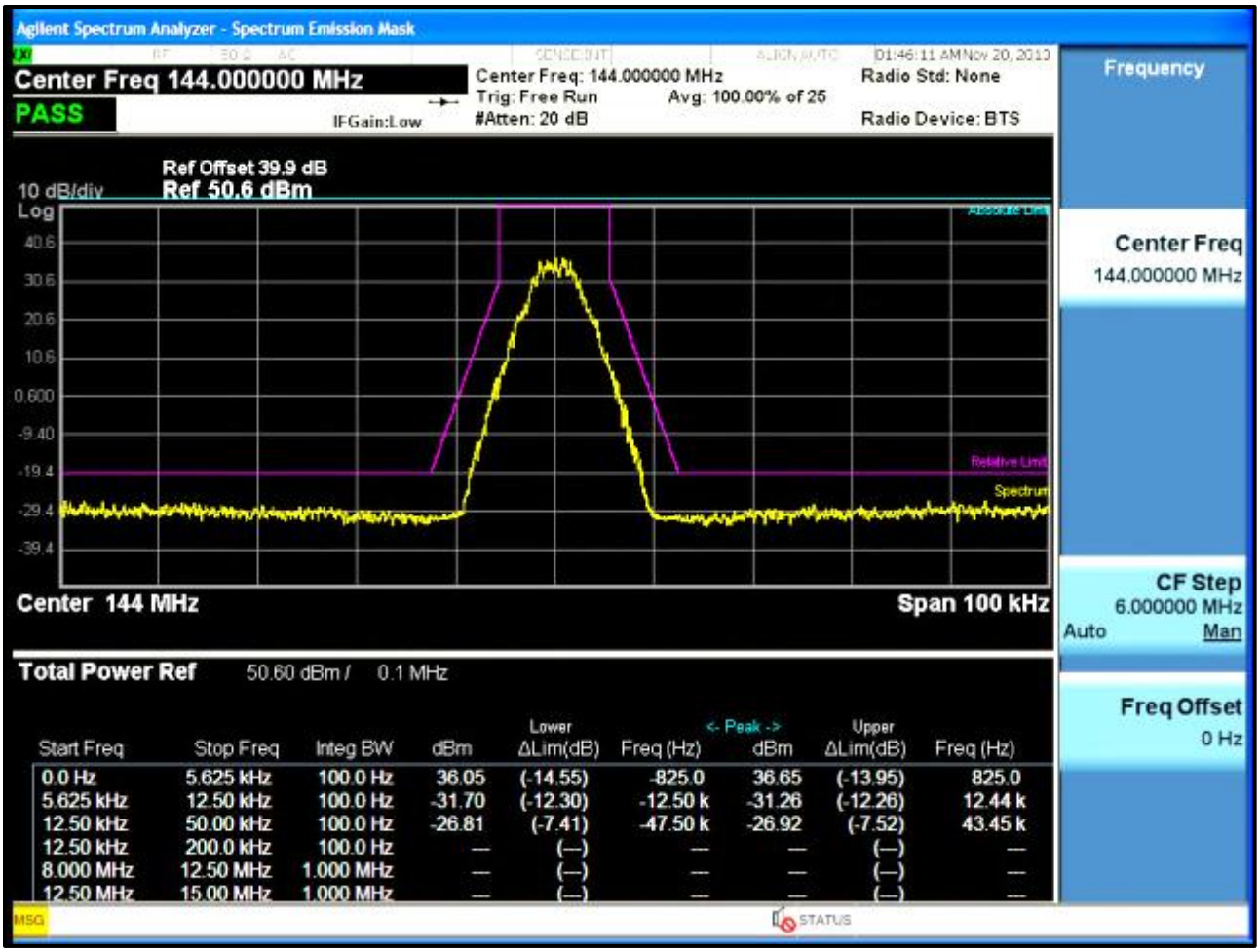
Plot 6-42: Occupied Bandwidth – 138.0 MHz; P25 (Mask D)



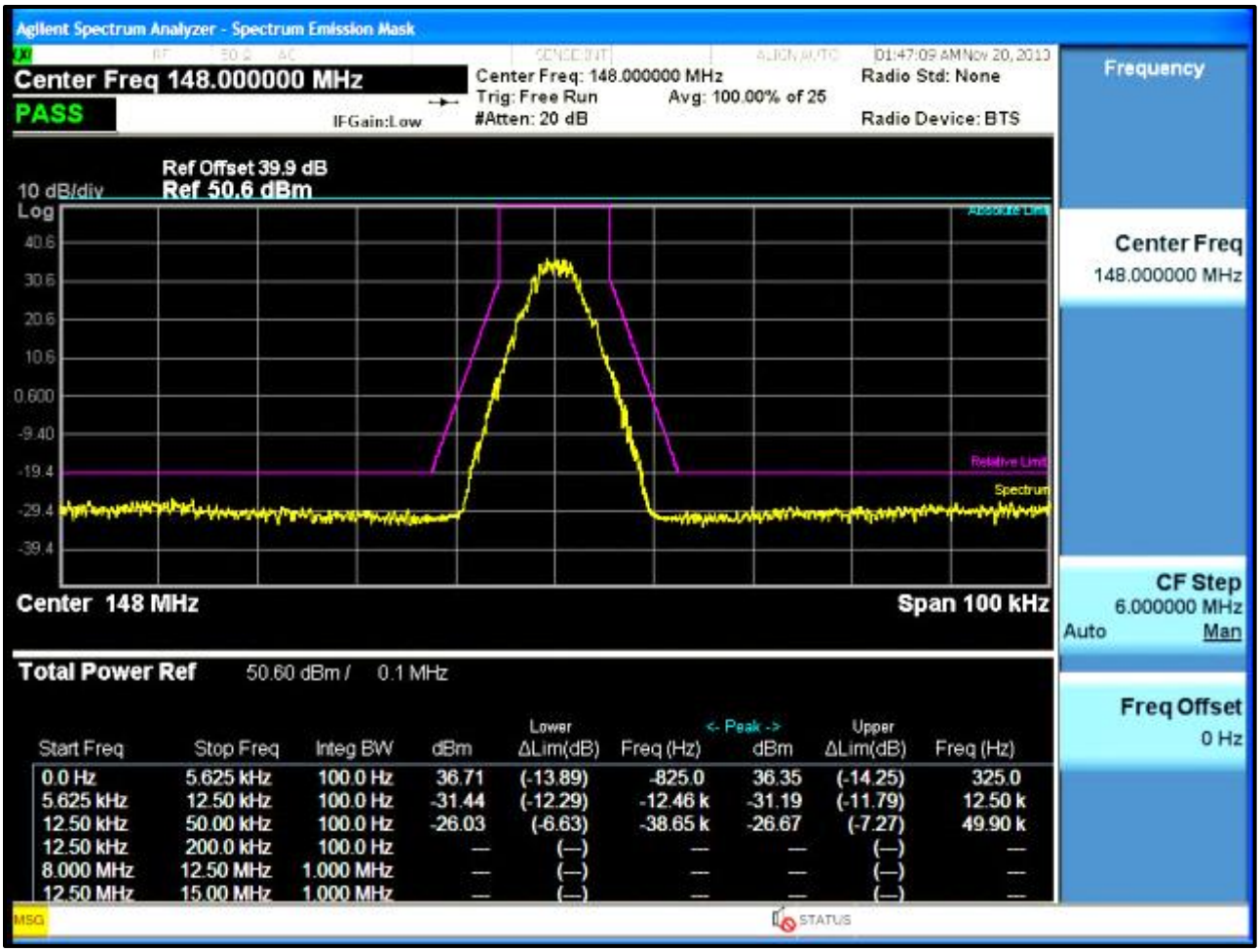
Plot 6-43: Occupied Bandwidth – 141 MHz; P25 (Mask D)



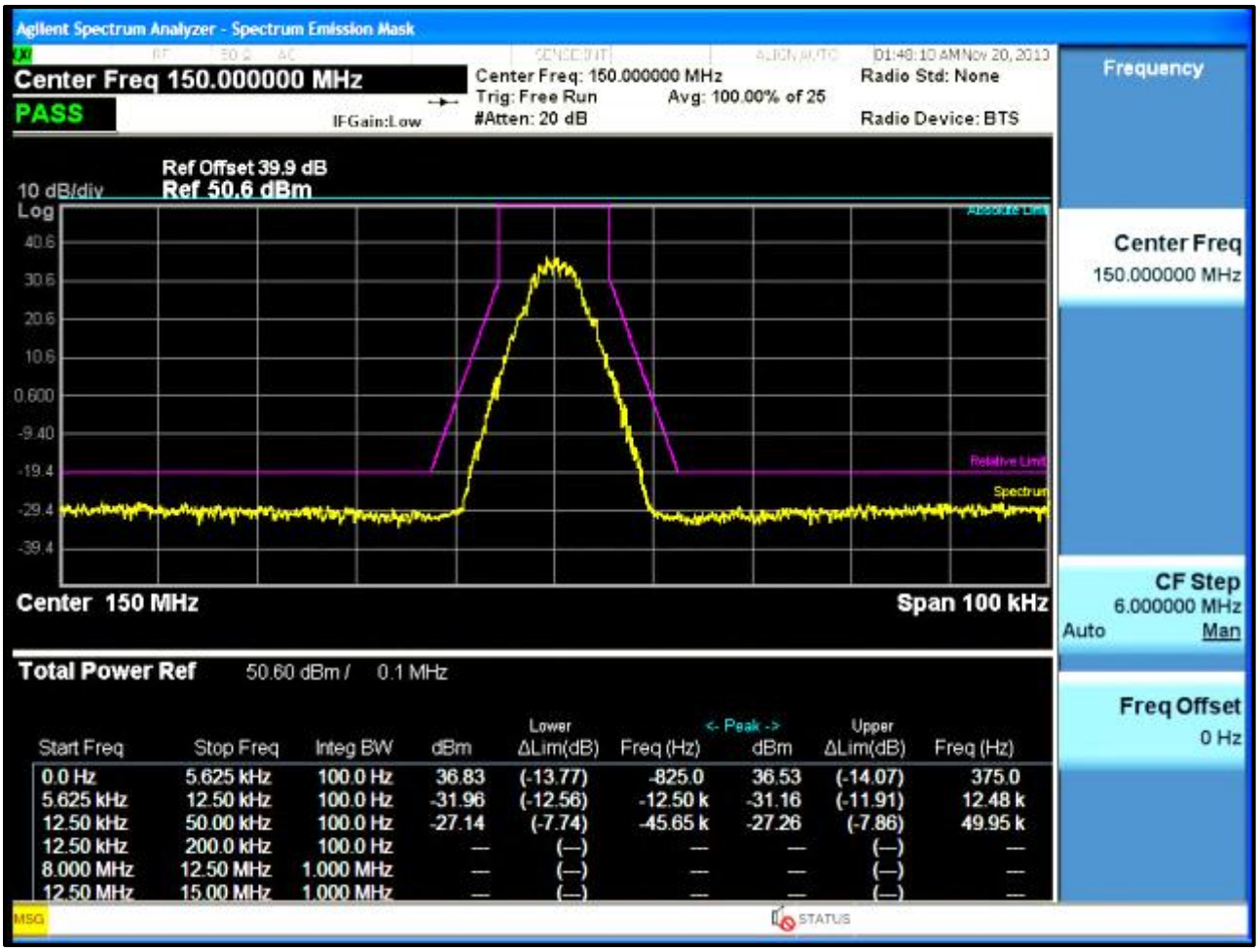
Plot 6-44: Occupied Bandwidth – 144 MHz; P25 (Mask D)



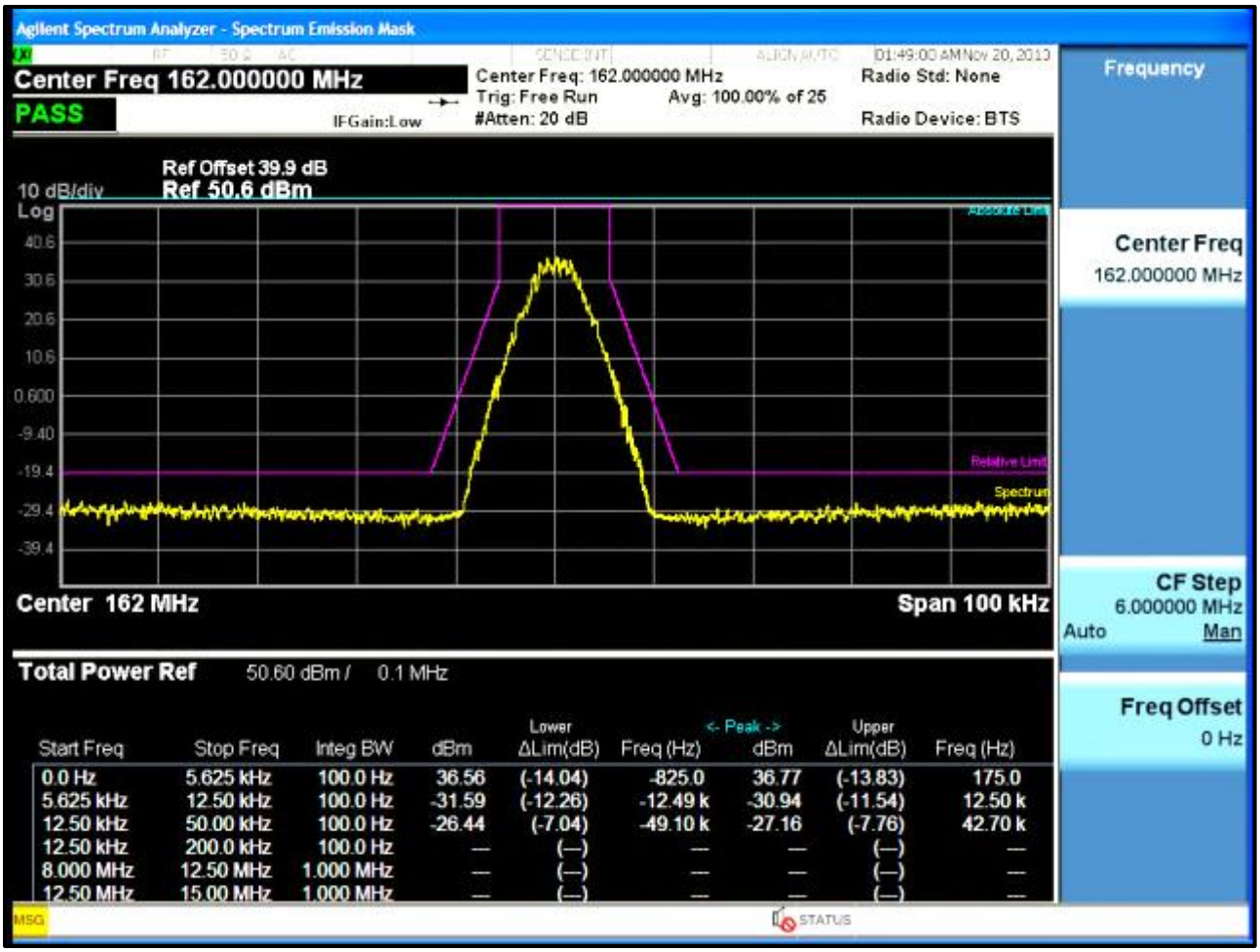
Plot 6-45: Occupied Bandwidth – 148 MHz; P25 (Mask D)



Plot 6-46: Occupied Bandwidth – 150 MHz; P25 (Mask D)



Plot 6-47: Occupied Bandwidth – 162 MHz; P25 (Mask D)



Plot 6-48: Occupied Bandwidth – 173.9875 MHz; P25 (Mask D)

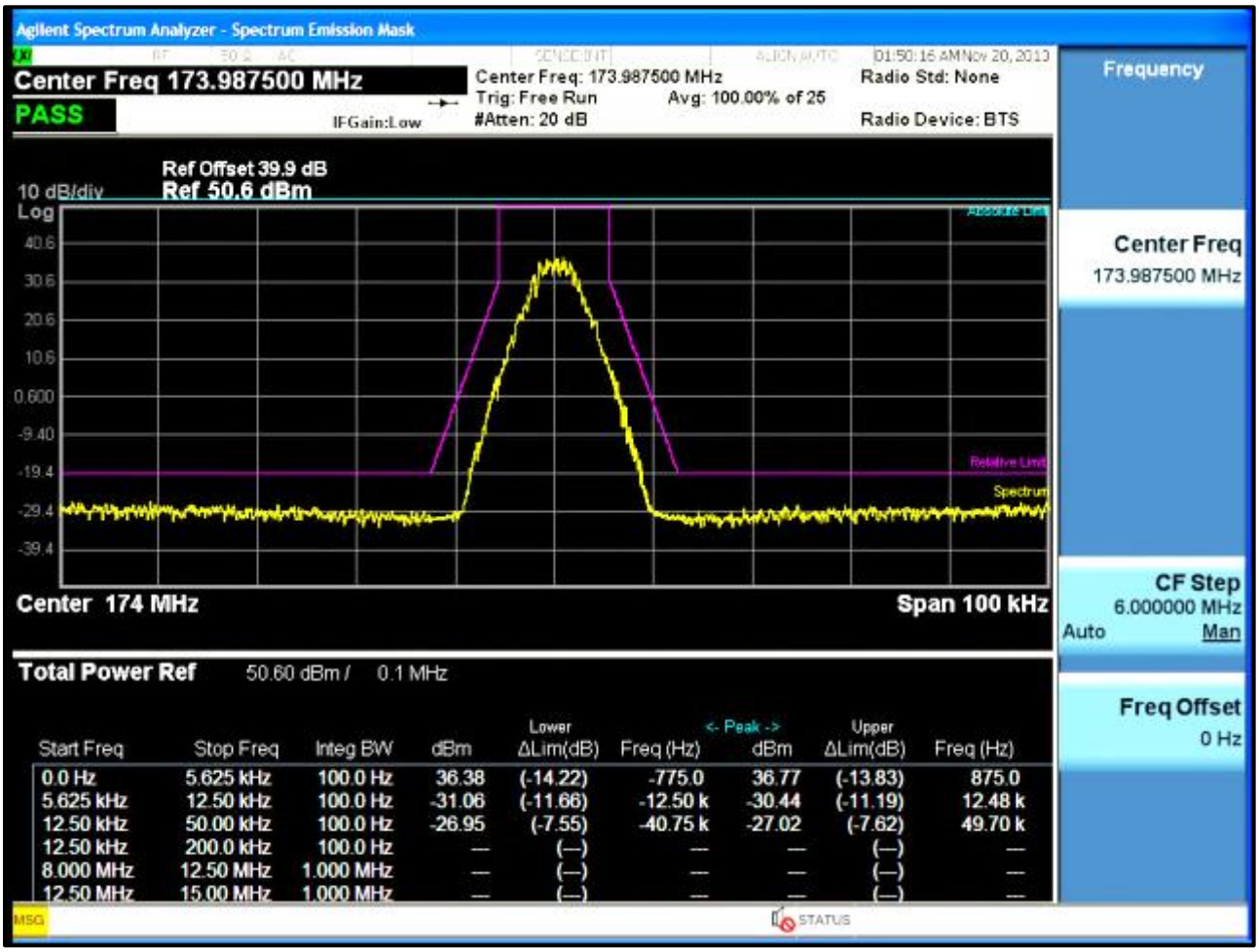


Table 6-1: Test Equipment Used For Testing Occupied Bandwidth

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901583	Agilent Technologies	N9010A	EXA Signal Analyzer (10 Hz - 26.5 GHz)	MY51250846	4/16/14
901537	Weinschel Corp	48-40-34	Attenuator, 40 dB, 100W	CB66628	12/14/13
901355	JFW Industries	50FH-003-300	300W 3DB DC1000 MHz Attenuator	N/A	3/25/16
901594	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36”	NA	8/27/14

Test Personnel:

Daniel Baltzell	Daniel W. Baltzell	November 19-20, December 11, 2013
Test Engineer	Signature	Dates of Test

7 Conclusion

The data in this measurement report shows that the **Harris Corporation** Model **M7300 VHF, FCC ID: OWDTR-0056-E, IC: 3636B-0056,** complies with the applicable requirements of FCC Parts 2, 80 and 90, and Industry Canada RSS-119.