



Engineering Solutions & Electromagnetic Compatibility Services

FCC & IC Class 2 Permissive Change Report

Harris Corporation
221 Jefferson Ridge Parkway
Lynchburg, VA 24501

Model: XG-25P VHF Portable Radio

FCC ID: OWDTR-0072-E
IC: 3636B-0072

March 28, 2013

Standards Referenced for this Report	
Part 2: 2012	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
Part 90: 2012	Private Land Portable 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 Portable 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 Portable and Fixed Services in the Frequency Range 27.41-960 MHz

Frequency Range (MHz)	Rated Transmit Power (W) (Conducted)	Frequency Tolerance (ppm)	Emission Designator (Transmit Mode)
136 – 174 138 – 174 (IC)	5.0	0.53	8K10DXW

Report Prepared By: Daniel Baltzell

Document Number: 2012379

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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
Conducted Spurious Emissions	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 XG-25P VHF Radio family; FCC ID: OWDTR-0072-E, IC: 3636B-0072.

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 and IC certifications were granted on February 10, 2012. The model names as registered with IC are DPXG-PFV1B and DPXG-PBV1B.

2.3 Grant Notes

Power is continuously variable from 0.5 - 5 W. The grant listed power is rated power.

2.4 Tested System Details

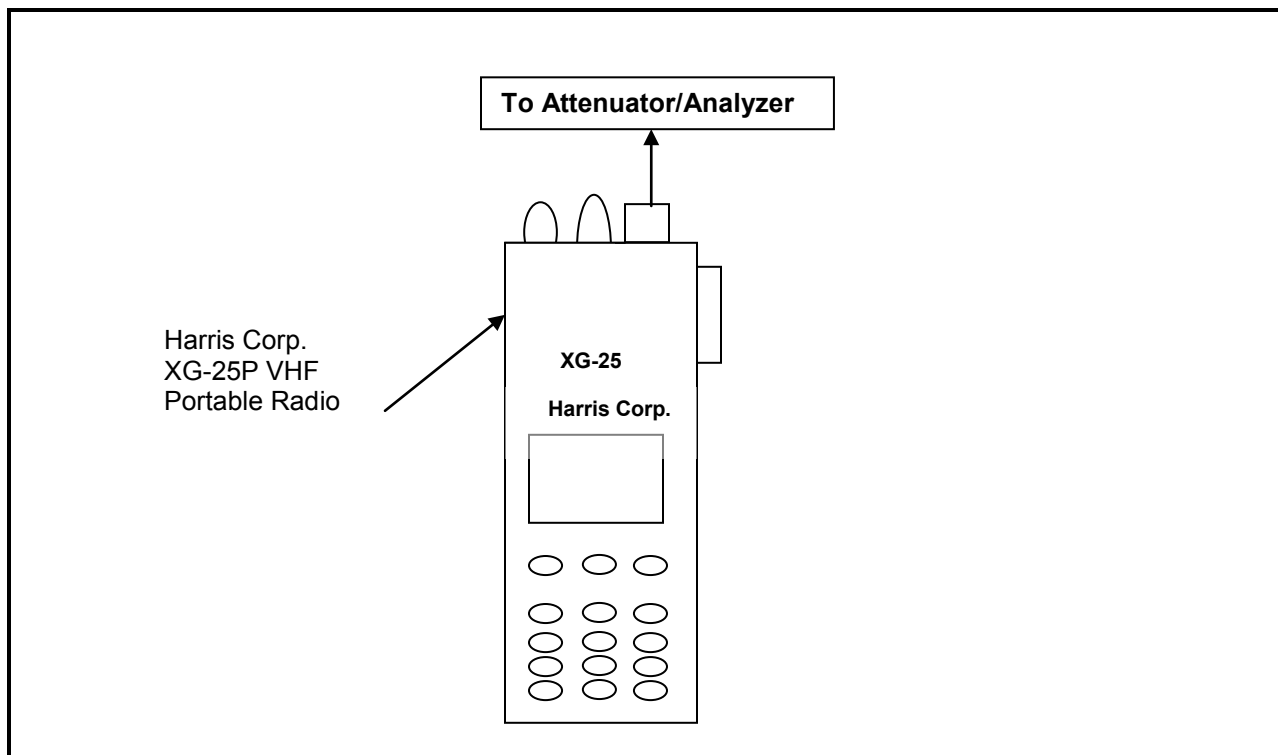
The test sample was received on March 22, 2013. Listed below are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable.

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

Table 2-1: Equipment Under Test (EUT)

Part	Manufacturer	Model	PN/SN	FCC ID	RTL Bar Code
VHF Radio	Harris Corporation	XG-25P	A40135001275	OWDTR-0072-E	20880

Figure 2-1: Configuration of Tested System



3 FCC §2.1046(a); §90.1215(a); IC RSS-119 5.4: Peak Output Power

3.1 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.

3.2 Test Data

Table 3-1: RF Power Output: Modulated Carrier Output Power

Frequency (MHz)	High Power (dBm)	High Power (W)
136.0125	37.3	5.4
138.0125	37.3	5.4
141.0000	37.2	5.2
143.9875	37.2	5.2
148.0125	37.3	5.4
162.0000	37.1	5.1
173.9875	37.0	5.0

Table 3-2: RF Power Output (Rated Power)

Frequency (MHz)	High Power Rated (W)
136-174	5.0

Table 3-3: 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
901536	Aeroflex	48-40-34	40 dB Attenuator	CB6627	10/14/13

Test Personnel:

Daniel Baltzell
EMC Test Engineer



Signature

March 27, 2013
Date of Test

4 FCC §2.1051: Conducted Spurious Emissions; §90.210: Emissions Masks; RSS-119 §4.2: Transmitter Unwanted Emissions

4.1 Test Procedure

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

The transmitter was interfaced with a spectrum analyzer through an appropriate 50 ohm attenuator. The transmitter was operated at maximum power. Attenuator losses were accounted for.

4.2 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. Per FCC 2.1051, the magnitude of emissions attenuated more than 20 dB below the FCC limit need not be recorded.

No spurious emissions were found to be within 20 dB of the limit; therefore, no data is reported.

Table 4-1: 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
901131	Par Electronics	118-174 (25W)	VHF Notch Filter	N/A	2/29/14
901536	Aeroflex	48-40-34	40 dB Attenuator	CB6627	10/14/13

Test Personnel:

Daniel Baltzell
EMC Test Engineer



Signature

March 27, 2013
Date of Test

5 FCC §2.1049(c)(1); §90.210; RSS-119 §5.8: Bandwidth

5.1 Test Procedure

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

Notes: FCC 90.210, RSS-119 and TIA-102.CCAB October 2011 section 3.2.5.1 all specify mask D

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.

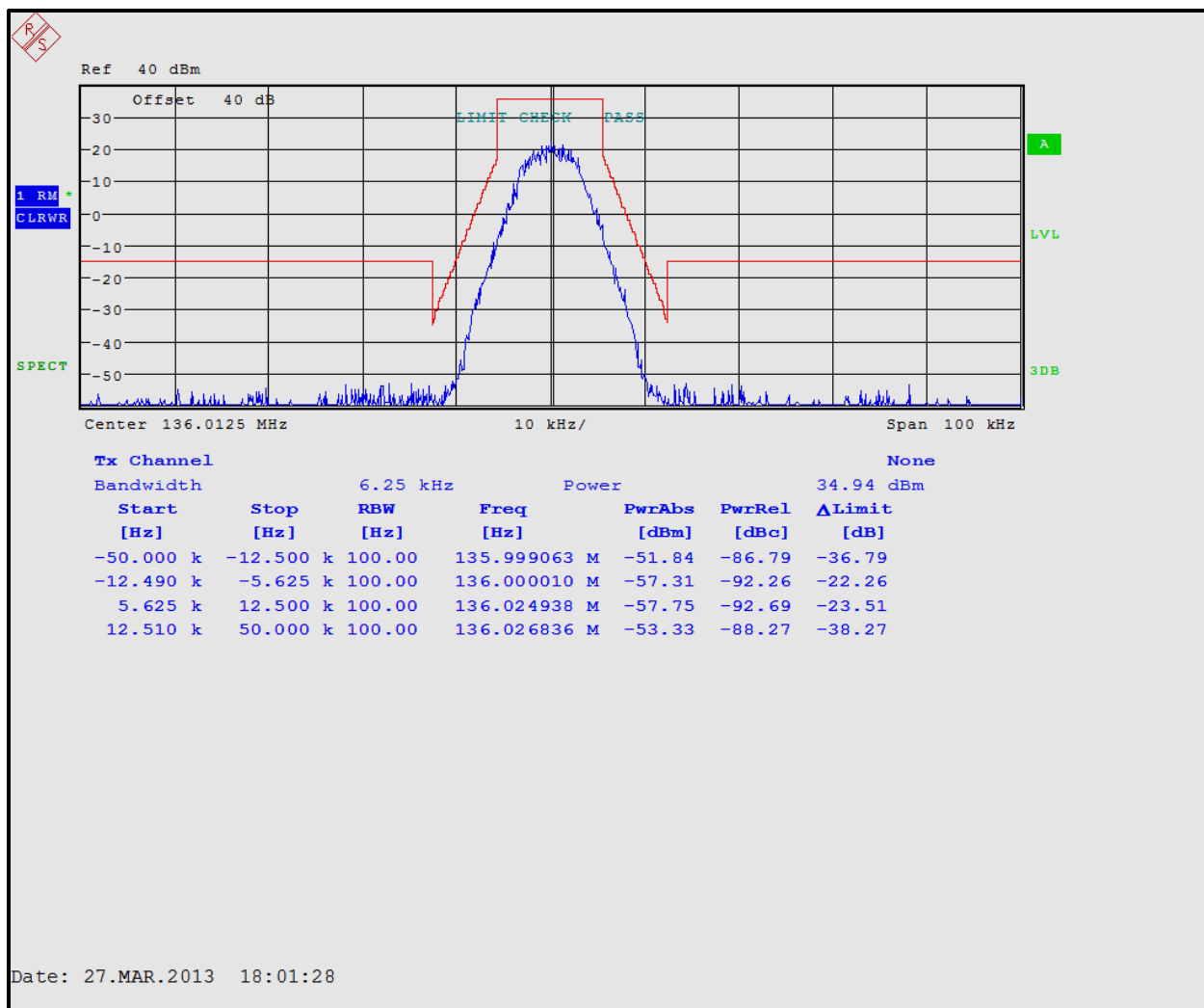
² Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask B or C, as applicable. Equipment designed to operate with a 12.5 kHz channel bandwidth must meet the requirements of Emission Mask D, and equipment designed to operate with a 6.25 kHz channel bandwidth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

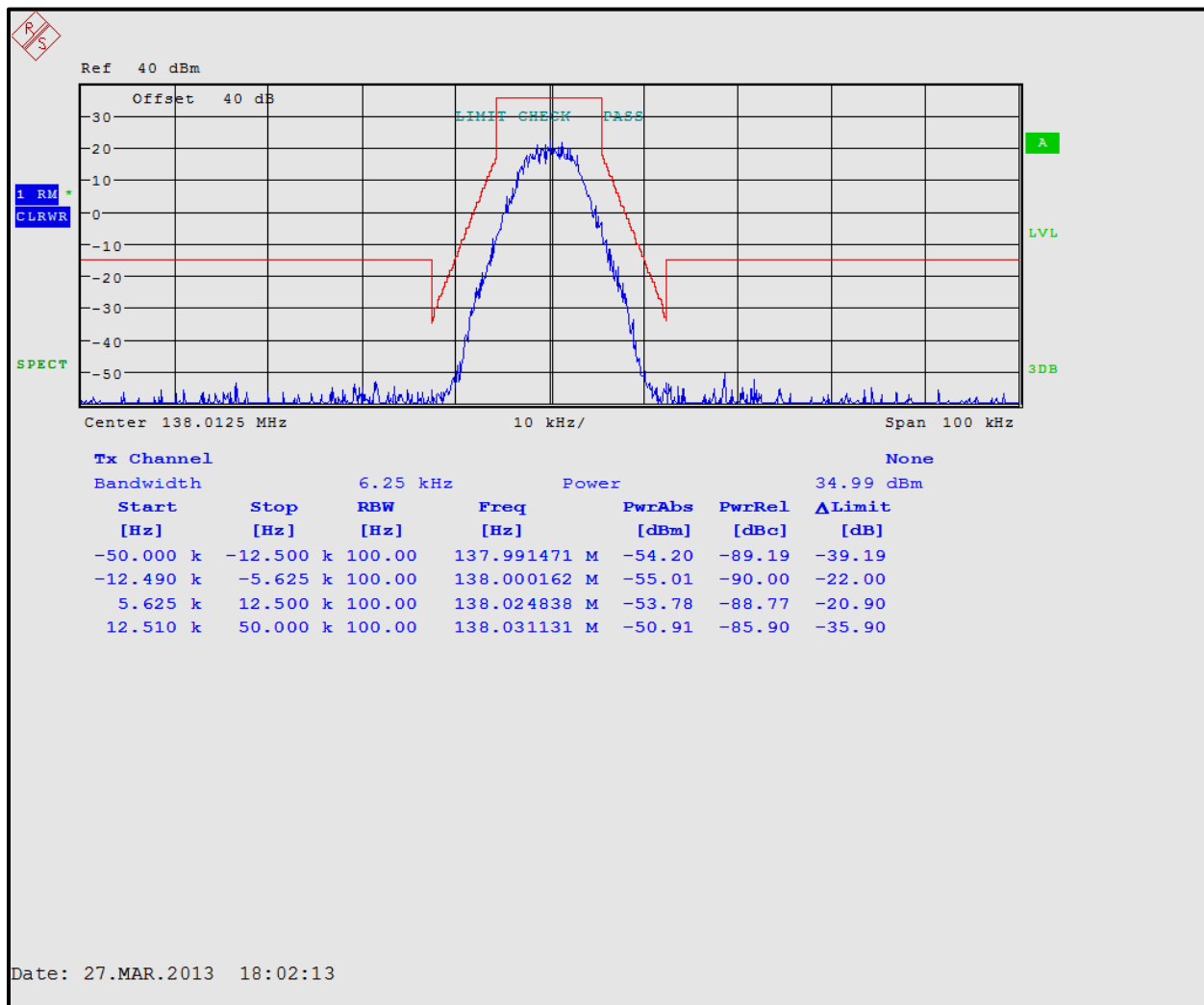
⁴ DSRCS Roadside Unit equipment in the 5850–5925 MHz band is governed under subpart M of this part.

5.2 Test Data

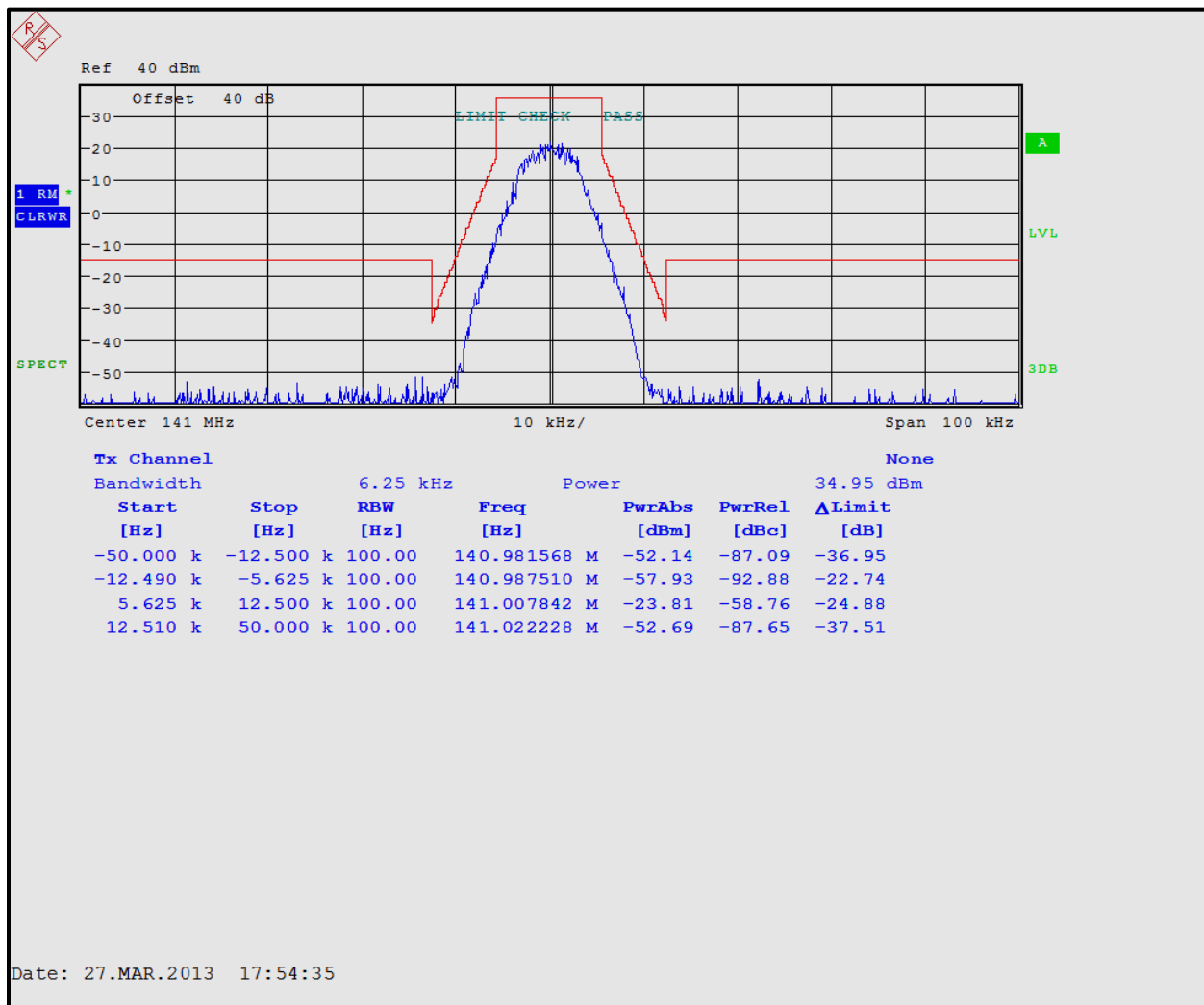
Plot 5-1: Occupied Bandwidth – 136.0125 MHz; H-CPM TDMA (Mask D)



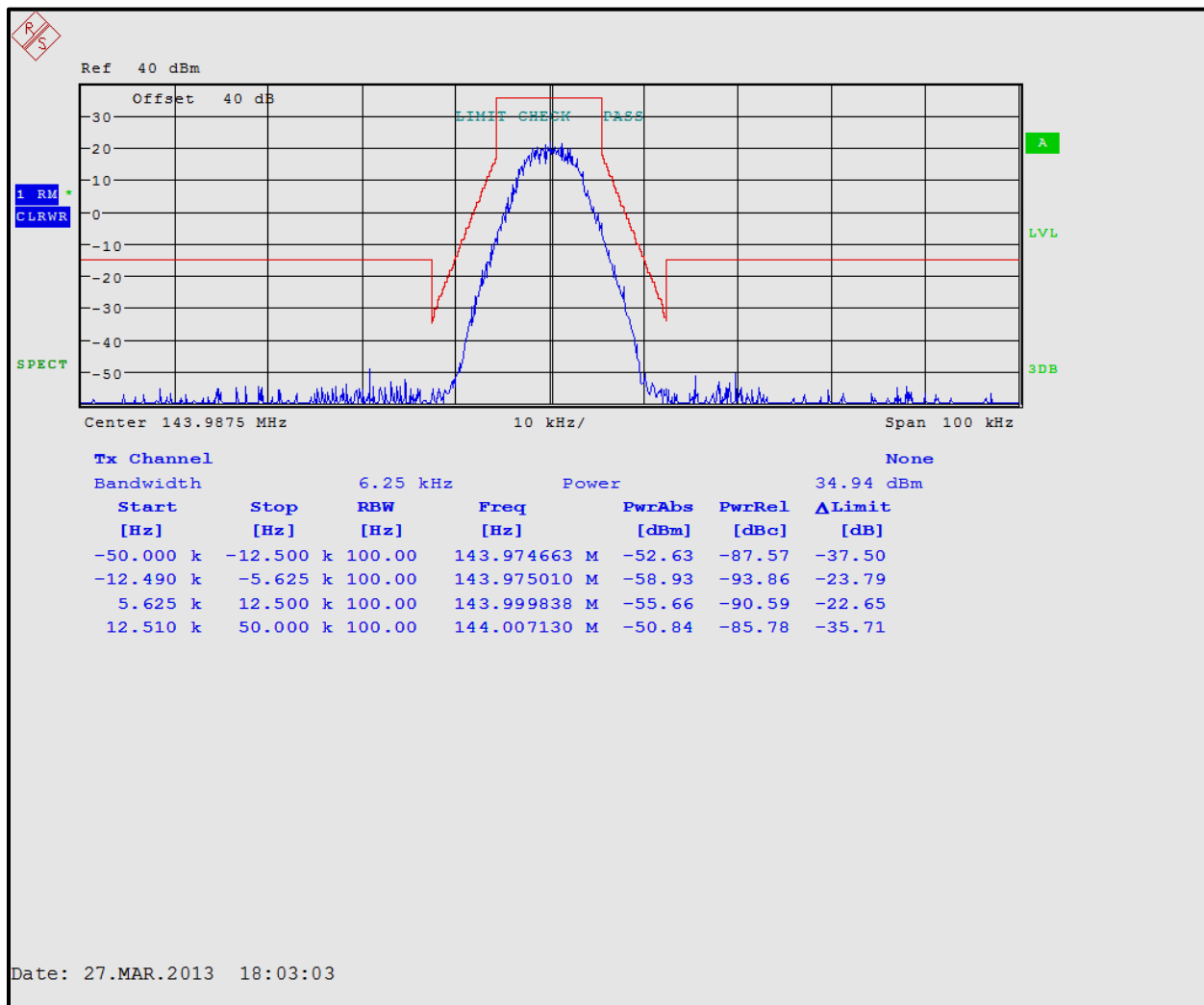
Plot 5-2: Occupied Bandwidth – 138.0125 MHz; H-CPM TDMA (Mask D)



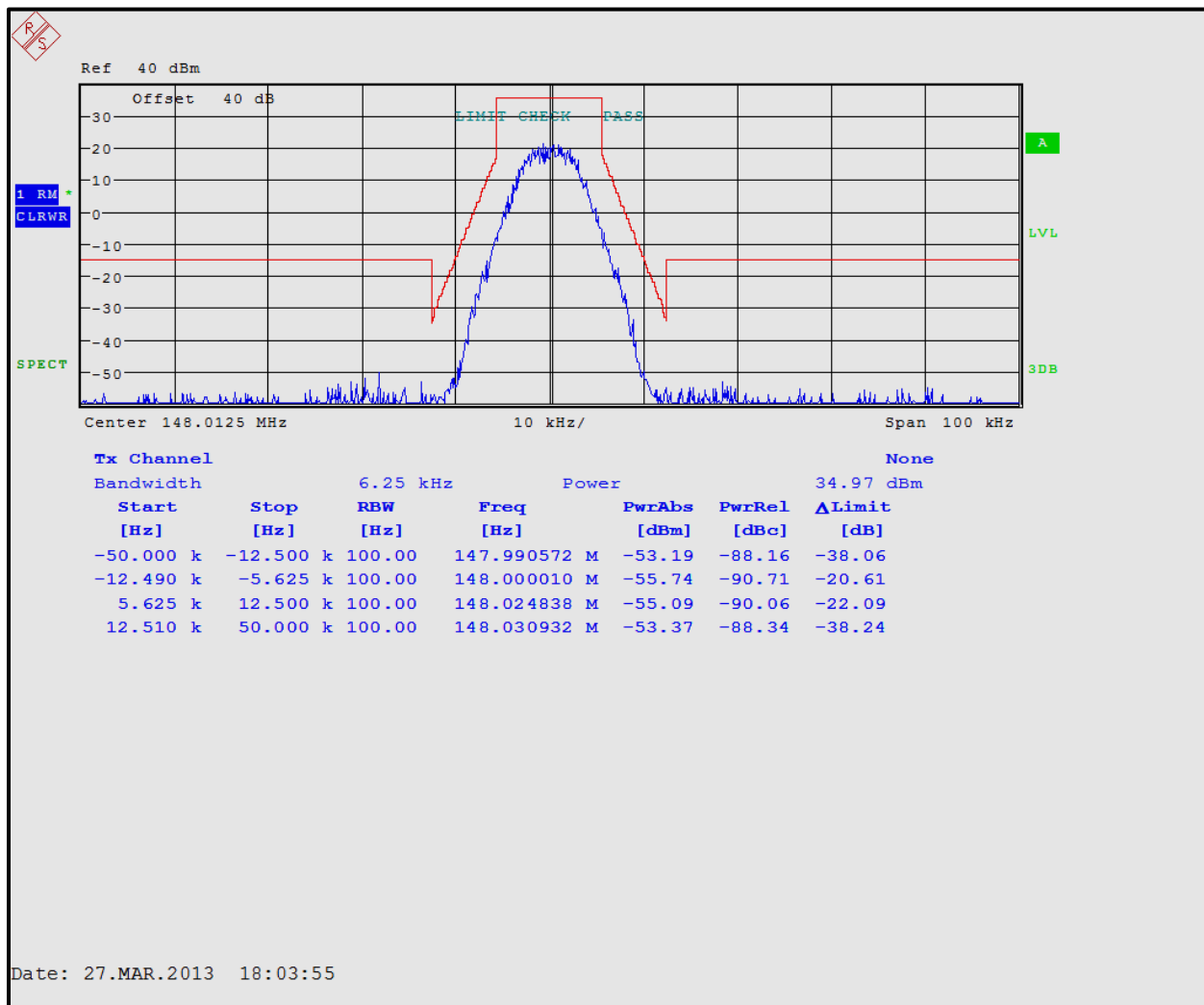
Plot 5-3: Occupied Bandwidth – 141.0000 MHz; H-CPM TDMA (Mask D)



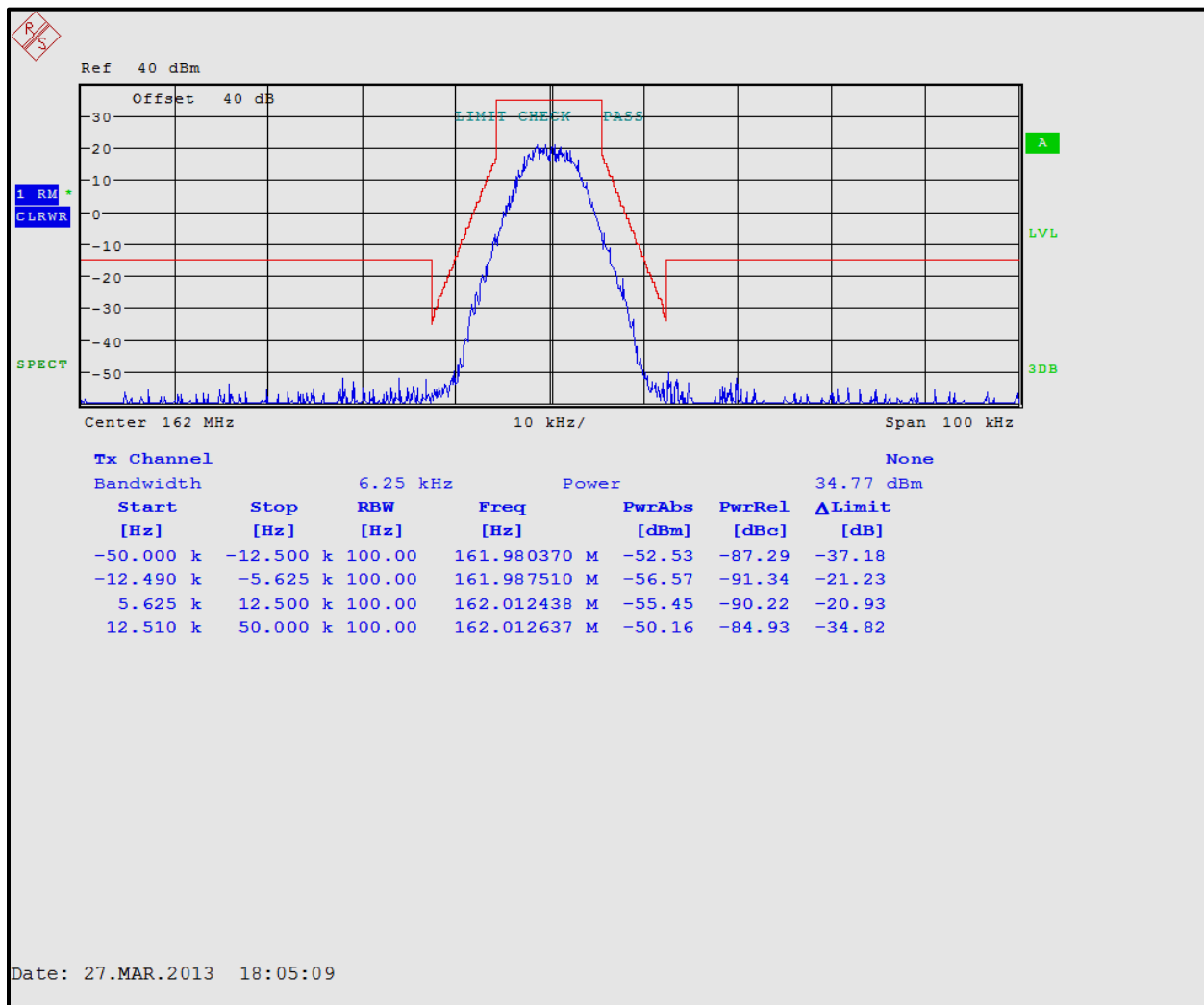
Plot 5-4: Occupied Bandwidth – 143.9875 MHz; H-CPM TDMA (Mask D)



Plot 5-5: Occupied Bandwidth – 148.0125 MHz; H-CPM TDMA (Mask D)



Plot 5-6: Occupied Bandwidth – 162.0000 MHz; H-CPM TDMA (Mask D)



Plot 5-7: Occupied Bandwidth – 173.0125 MHz; H-CPM TDMA (Mask D)

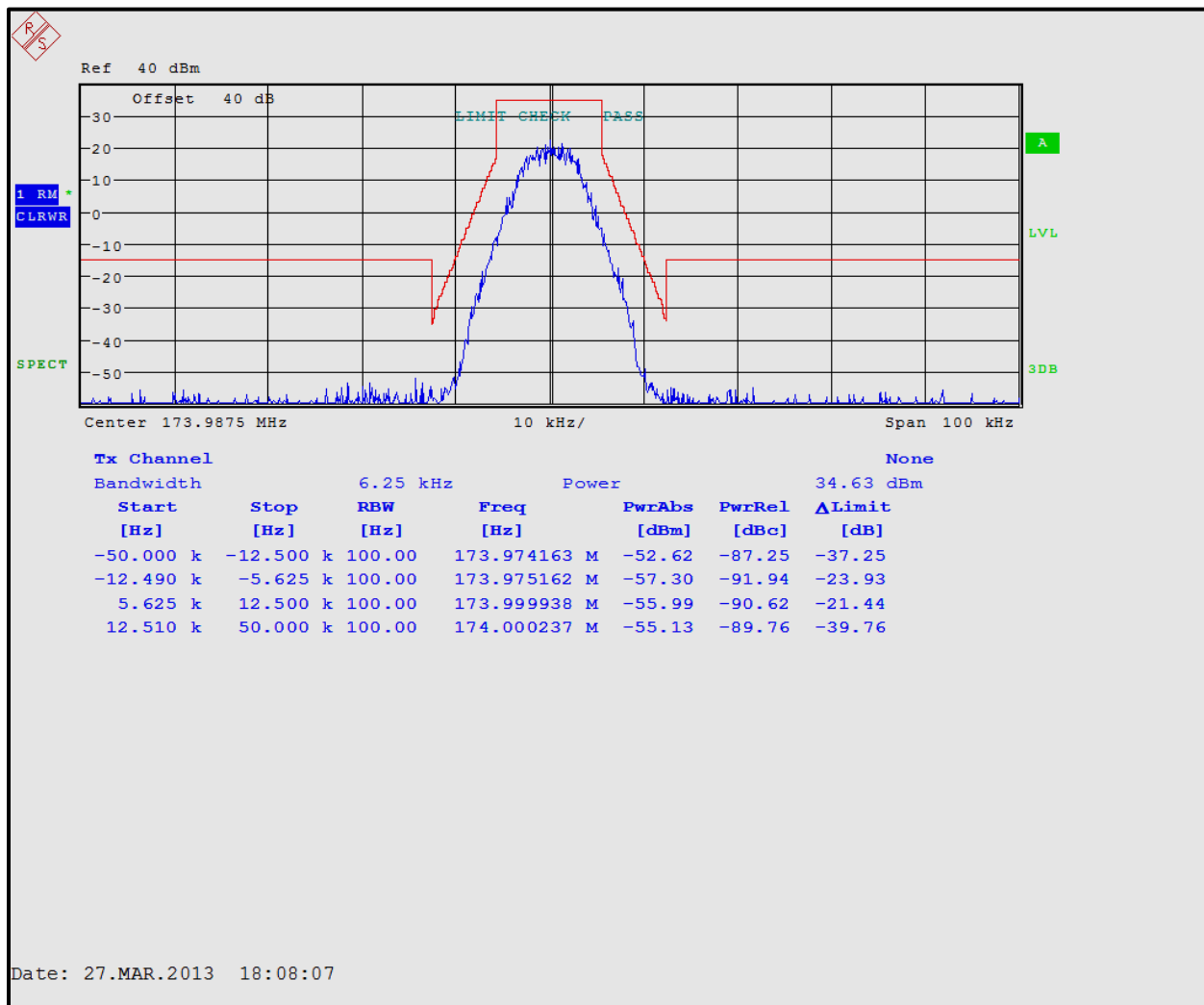
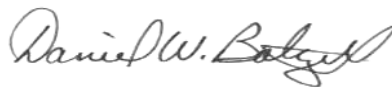


Table 5-1: Test Equipment Used for Testing Occupied Bandwidth

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

Test Personnel:

Daniel Baltzell
Test Engineer



Signature

March 27, 2013
Date of Test

6 Conclusion

The data in this Class 2 report shows that the Harris Corporation Model XG-25P VHF; FCC ID: OWDTR-0072-E, IC: 3636B-0072, complies with all the applicable requirements of FCC Parts 2 and 90, and Industry Canada RSS-119.