

	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

DECLARATION OF COMPLIANCE		FCC PART 80, 95A, 95B	IC RSS-182, RSS-119.
Test Lab Information	Name	CELLTECH LABS INCORPORATED	
	Address	21-364 Lougheed Road, Kelowna, British Columbia V1X 7R8 Canada	
Test Site Registration No.(s)	FCC	Accredited Site (ISO 17025:2005 - A2LA Test Lab Certificate No. 2470.01)	
	IC	3874A-1	
Applicant Information	Name	UNIDEN AMERICA CORPORATION	
	Address	3001 Gateway Drive, Suite 130, Irving TX, 75063	
Standard(s) & Procedure(s)	FCC	47 CFR Part 2; Part 80, Part 95A, 95B.	
	IC	RSS-182; RSS-119.	
	ANSI	TIA/EIA-603-C-2004	C63.4-2003
Device Classification(s)	FCC	Licensed Non-Broadcast Transmitter Held to Face (TNF)	
	IC	Maritime Radio Transceiver	
Application Type(s)	FCC/IC	New Certification	
Device Identifier(s)	FCC ID:	AMWUT650	
	IC:	513C-UT650	
Device Under Test (DUT)	Portable Push-To-Talk (PTT) VHF/GMRS/FRS Marine Radio Transceiver, WX		
Device Model(s)	ATLANTIS290, ATLANTIS295, VHF95DB		
Test Sample Serial No.(s)	None (Identical Prototype)		
Transmit Frequency Range(s)	VHF: 156.050 - 157.425 MHz GMRS: 462.5500 - 462.7250 MHz FRS: 462.5625 - 467.7125 MHz		
Authorized Bandwidth	20kHz (US), 16kHz (Can)		
Manuf. Rated Output Power	VHF: 6W / 2.5W / 1W GMRS: 3W / 1.5W / 0.5W FRS: 0.5W		
Modulation Type(s)	FM		
Emission Designator(s)	VHF: 16K0F3E GMRS: 11K0F3E FRS: 11K0F3E		
Power Source(s) Tested	Lithium-ion, 7.4 V		
<p>This wireless device has demonstrated compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in FCC 47 CFR Rule Parts 2 and Part 80; Industry Canada RSS-182, and RSS-Gen.; ANSI TIA/EIA-603-C-2004 and ANSI C63.4-2003.</p> <p>I attest to the accuracy of data. All measurements were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.</p> <p>The results and statements contained in this report pertain only to the device(s) evaluated.</p> <p>This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc.</p>			
Test Report Approved By		Glen Westwell	Lab Manager
			Celltech Labs Inc.

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

<u>Section</u>	<u>Description of Test</u>	<u>Procedure Reference</u>	<u>Result</u>
6	Modulation Limiting	ANSI/TIA/EIA-603-C	Pass
7	Audio Frequency Response	ANSI/TIA/EIA-603-C	Pass
8	RF Output Power	ANSI/TIA/EIA-603-C	Pass
9	Spurious Emissions at the antenna terminals (Conducted)	ANSI/TIA/EIA-603-C	Pass
10	Occupied Bandwidth and Emission Mask	ANSI/TIA/EIA-603-C	Pass
11	Radiated TX Spurious Emissions	ANSI/TIA/EIA-603-C	Pass
12	Frequency Stability	ANSI/TIA/EIA-603-C	Pass

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

REVISION LOG

Revision	Description	Implemented By	Release Date
1.0	1st Release	Glen Westwell	Dec. 16, 2014
1.1	Corrected Freq. Range pg1.		

TEST REPORT SIGN-OFF

Test Report Prepared By	Date	QA Review By	Date
Glen Westwell	Dec.16, 2014	Art Voss	Dec. 16, 2014

	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

1.0 SCOPE

This report outlines the results collected during RF radiated and conducted measurements of the Uniden America Corporation Atlantis Marine Radio. The measurement results were applied against the applicable requirements and limits outlined in the technical rules and regulations set forth in the Federal Communication's Commission Code of Federal Regulations Title 47 Part 2; Part 80; Part 95 and Industry Canada Radio Standards Specification RSS-182; and RSS-119.

2.0 REFERENCES

2.1 Normative References


ANSI/ISO 17025:2005	General Requirements for competence of testing and calibration laboratories
IEEE/ANSI C63.4:2003	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI/TIA/EIA-603-C:2004	Land Mobile FM or PM Communication Equipment Measurement and Performance Standards
CFR Title 47 Part 2	Code of Federal Regulations Title 47: Telecommunication Part 2: Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
CFR Title 47 Part 80	Code of Federal Regulations Title 47: Telecommunication Part 80: Station in the Maritime Services
CFR Title 47 Part 95	Code of Federal Regulations Title 47: Telecommunication Part 95: Personnel Radio Services
IC Spectrum Management & Telecommunications Policy	Radio Standards Specification RSS-182 Issue 5 - Maritime Radio Transmitters and Receivers in the Band 156-162.5 MHz RSS-1119, Issue 11 - Transmitters and Receivers Operating in the Land Mobile and Fixed Services in the Freq. Range 27.41-960 MHz. RSS-Gen Issue 3 - General Requirements and Information for the Certification of Radiocommunication Equipment
SRSP-501	Technical Requirements for Land Mobile & Fixed Radio Services Operating in the Bands 406.1-430 MHz and 450-470MHz


3.0 PASS/FAIL CRITERIA

Unless otherwise noted in the Appendices, the pass/fail criteria are the limit set forth in the reference standards. The DUT is considered to have passed the requirements if the data collected during the described measurement procedure is no greater than the specified limits as defined. The pass/fail statements made in this report only apply to the unit tested.

4.0 FACILITIES AND ACCREDITATIONS

The facilities used in collecting the test results outlined in this report are located at 21-364 Lougheed Road, Kelowna, British Columbia, Canada V1X 7R8. The radiated emissions site conforms to the requirements set forth in ANSI C63.4 and is filed and listed with the FCC as an accredited test facility and Industry Canada under File Number IC 3874A-1.

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

5.0 MODE(S) OF OPERATION AND FUNCTIONAL DETAIL

VHF / GMRS /FRS Marine Radio Transceiver with WX.

Transmitter Frequency Range(s)	VHF: 156.025 - 157.425 MHz GMRS: 462.5500 - 462.7250 MHz FRS: 462.5500 - 467.7125 MHz
Transmitter Power	VHF: 6W / 2.5W / 1W GMRS: 3W / 1.5W / 0.5W FRS: 0.5W
Emission Designator(s)	VHF: 16K0F3E GMRS: 11K0F3E FRS: 11K0F3E
FCC ID: IC ID:	AMWUT650 513C-UT650
Model Numbers:	ATLANTIS290, ATLANTIS295, VHF95DB
Modulation Type(s)	FM

Emission Designator(s):

11K0F3E: GMRS/FRS


$B_n = 2M + 2DK$
 $M = 3000$
 $D = 2.50K$
 $B_n = 2(3000) + 2(2500) = 11.0K$


16K0F3E: VHF

$B_n = 2M + 2DK$
 $M = 3000$
 $D = 4.6KHz$
 $K = 1$
 $B_n = 2(3000) + 2(4.6)(1) = 16K0$

Modification(s):

Test software was provided for continuous transmit.

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

6.0 MODULATION CHARACTERISTICS (MODULATION LIMITING)

A.1 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1047,
Procedure Reference	ANSI TIA-603-C

A.2 LIMITS

§2.1047(b), RSS 182, 7.7 RSS-119, 5.2	±5 KHz deviation
---	------------------

A.3 ENVIRONMENTAL CONDITIONS

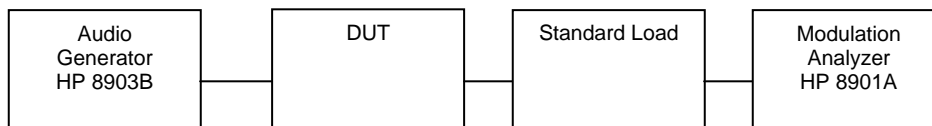
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa


A.4 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL - CAL DUE
00028	HP	8901A	Modulation Analyzer	20 Dec 2012 - 20 Dec 2014
00027	HP	8903B	Audio Generator/Analyzer	20 Dec 2012 - 20 Dec 2014

A.5 SETUP DRAWING

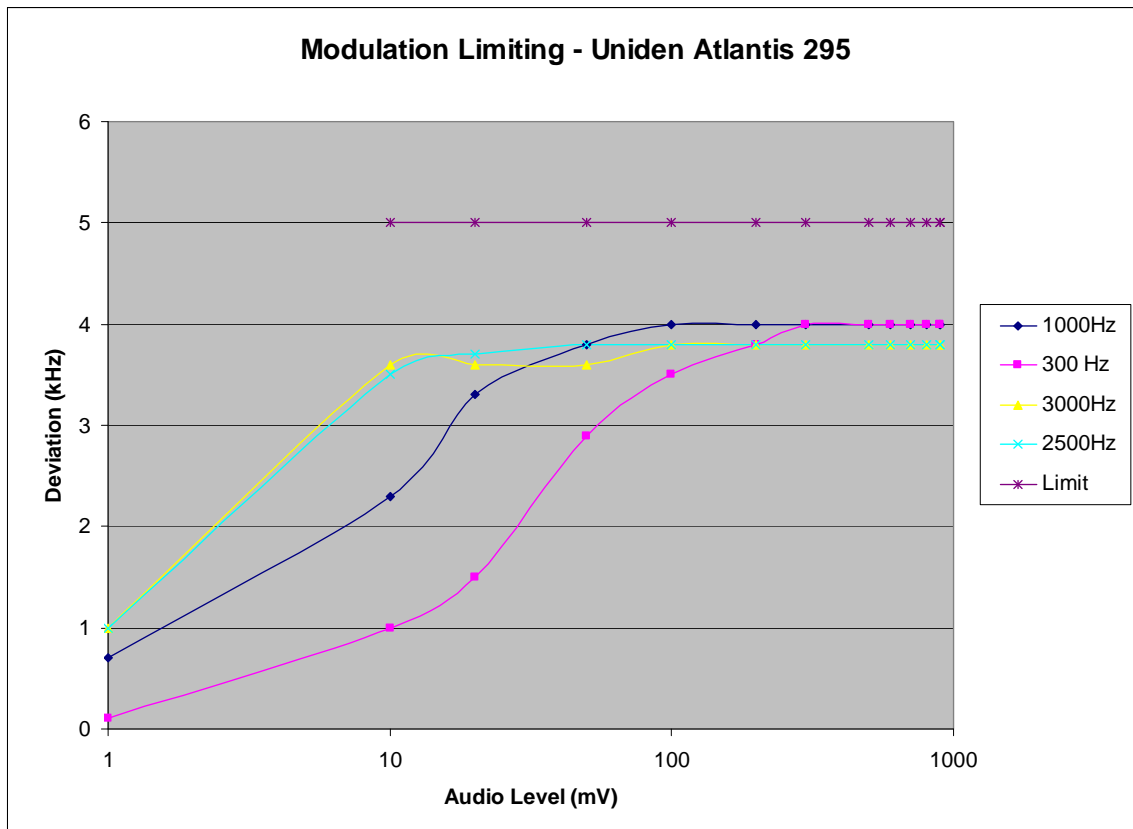
Figure A.5-1 - Setup Drawing – Modulation Characteristics



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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


A.6 TEST RESULTS


A.6.1



A.7 PASS/FAIL

In reference to the results outlined in C.6.1 the DUT meets the requirements as stated in the reference standards.

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.8 SIGN-OFF


I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.




Glen Westwell
Lab Manager
Celltech Labs Inc.

Dec 9, 2014

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

7.0 MODULATION CHARACTERISTICS (AFR, ALPF)

A.9 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1047, §80.213; IC RSS-182, 7.8
Procedure Reference	ANSI TIA-603-C

A.10 LIMITS

§2.1047(a) 80.213(a)(2), (a)(3)(d)	a) Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted.
---------------------------------------	--

A.11 ENVIRONMENTAL CONDITIONS

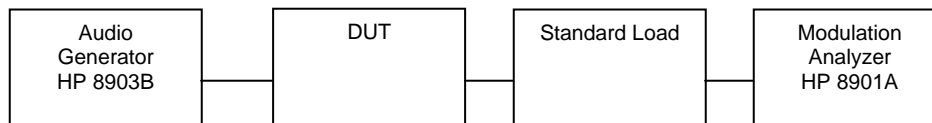
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa


A.12 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL - CAL DUE
00028	HP	8901A	Modulation Analyzer	20 Dec 2012 - 20 Dec 2014
00027	HP	8903B	Audio Generator/Analyzer	20 Dec 2012 - 20 Dec 2014

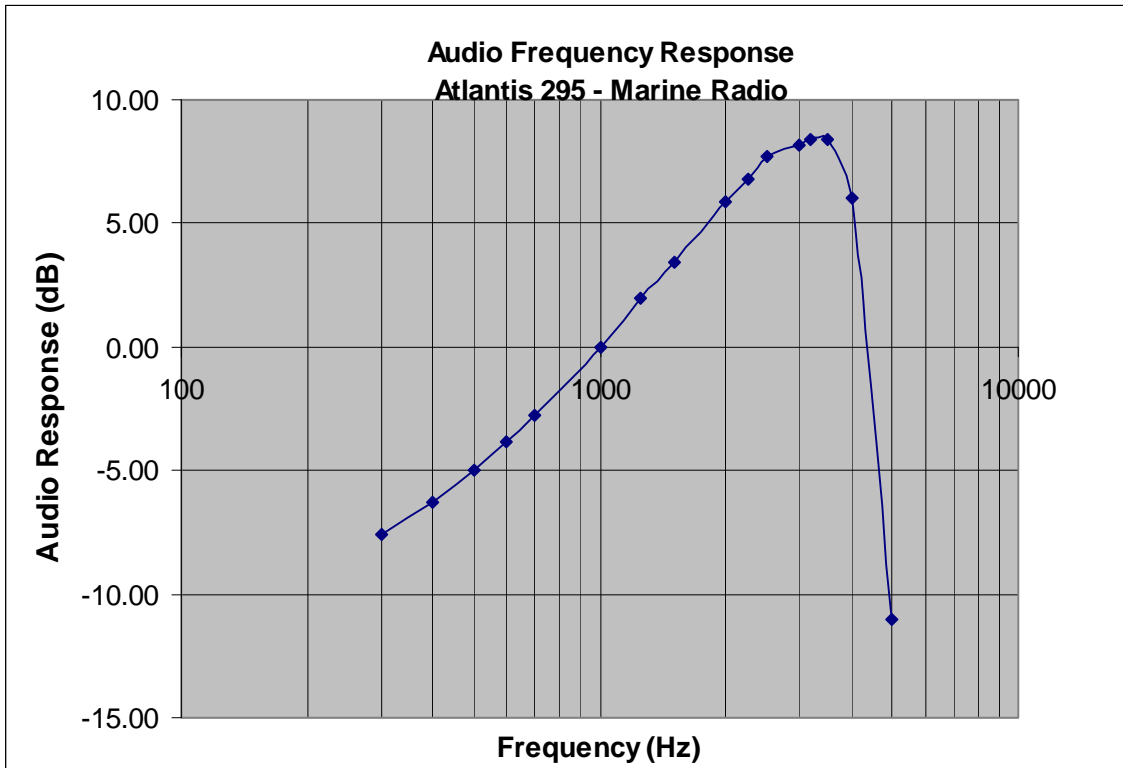
A.13 SETUP DRAWING


Figure A.13-1 - Setup Drawing – Audio Frequency Response




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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

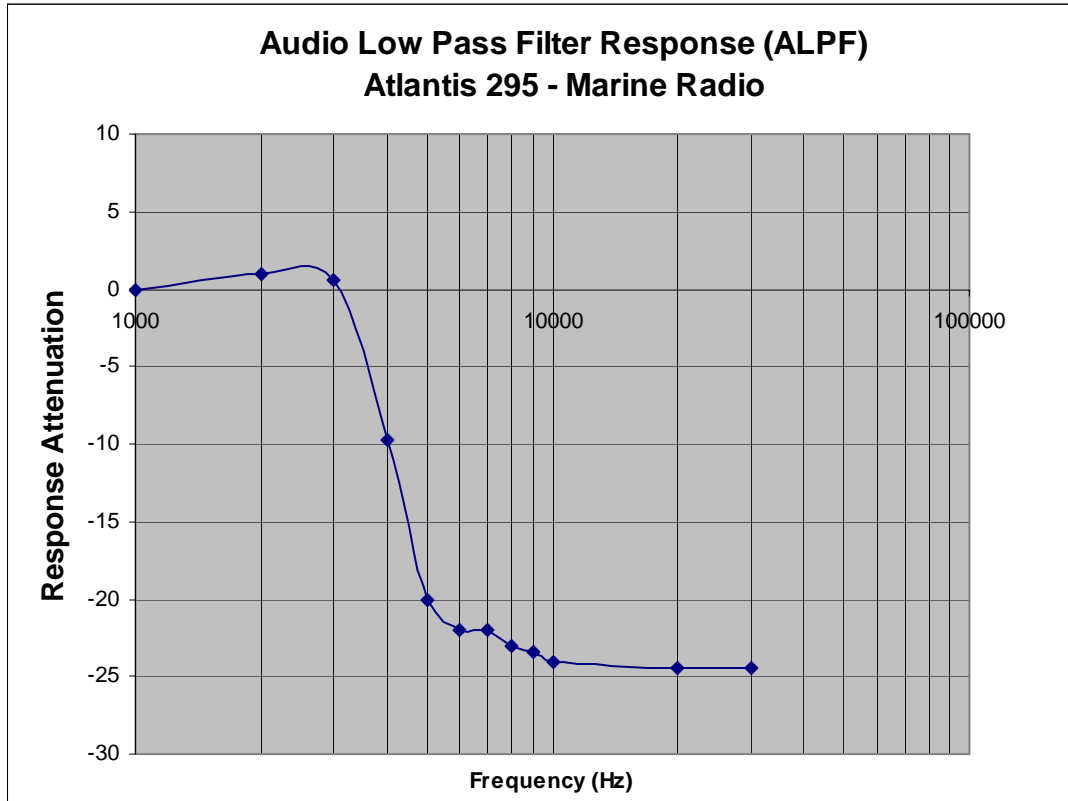
A.14 TEST RESULTS



Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.15 TEST RESULTS



A.16 PASS/FAIL

In reference to the results outlined in D.6 the DUT meets the requirements as stated in the reference standards.

A.17 SIGN-OFF


I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.




Glen Westwell
Lab Manager
Celltech Labs Inc.

Dec 7 2014

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

8.0 RF OUTPUT POWER MEASUREMENT

A.18 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1046, §80.215; §95.639. IC RSS-182, RSS-119
Procedure Reference	The RF output power measurements were performed in accordance with ANSI TIA/EIA Standard 603.

A.19 LIMITS

FCC CFR 47 §80.215 §95.639	10W GMRS = 50W, FRS = 0.5W ERP.
RSS-182 7.5 RSS-119, 4.1	The output power shall be within ± 1.0 dB of the manufacturers rated power, hand-held portable transmitters 5W (Typical)

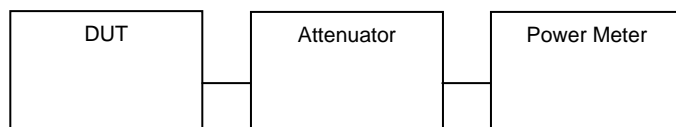
A.20 ENVIRONMENTAL CONDITIONS

Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL - CAL DUE
00007	Gigatronics	8652A	Power Meter	17-May-12 - 17-May-14
00249	Gigatronics	80701A	Power Sensor	17-Feb-12 - 17-Feb-14
00065	Pasternack	PE7015-30	30dB attenuator	COU

A.21 SETUP DRAWING

Figure A.21-1 - Setup Drawing – RF Output Power



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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.22 TEST RESULTS, PART 80 / RSS-182; PART 95 / RSS-119

TX Power, Uniden Atlantis - Marine Radio						
	Lo (dBm)		Mid (dBm)		High (dBm)	
	Measured	Rated	Measured	Rated	Measured	Rated
Part 80, VHF 156.700 MHz	29.2	30.0 (1W)	34.2	34.0 (2.5W)	37.5	37.8 (6W)
Part 95A, GMRS 462.5625 MHz	27.1	27.0 (0.5W)	31.9	31.8 (1.5W)	34.2	34.8 (3W)
Part 95B, FRS 462.5625 MHz	27.1	27.0 (0.5W)	-----	-----	-----	-----


A.23 SIGN-OFF


I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.



Glen Westwell
Lab Manager
Celltech Labs Inc.
12 Dec. 2014

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

9.0 SPURIOUS EMISSIONS AT THE ANTENNA TERMINAL

A.24 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1051, §80.211; §95.635; IC RSS-182, RSS-119, 4.2
Procedure Reference	<p>The spurious emissions measurements at the antenna terminal were performed in accordance with ANSI TIA/EIA Standard 603.</p> <p>The emission search was performed across all required ranges. The worst case performance has been presented.</p>

A.25 LIMITS

FCC CFR 47 §80.211 §95.635	43 + 10 Log (Tp)
RSS182, Para. 7.9, 7.11 RSS-119, 4.2	43 + 10 Log (Tp)

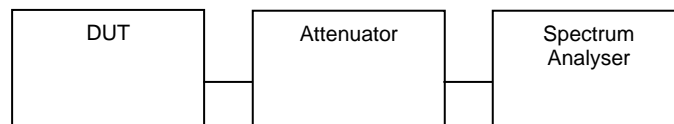
A.26 ENVIRONMENTAL CONDITIONS

Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00065	Pasternack	PE7015-30	30dB attenuator	COU
00241	R&S	FSP 40	Spectrum Analyzer	05-Nov-2013

A.27 SETUP DRAWING

Figure A.27-1 - Setup Drawing – Spurious Emissions at the Antenna Terminal

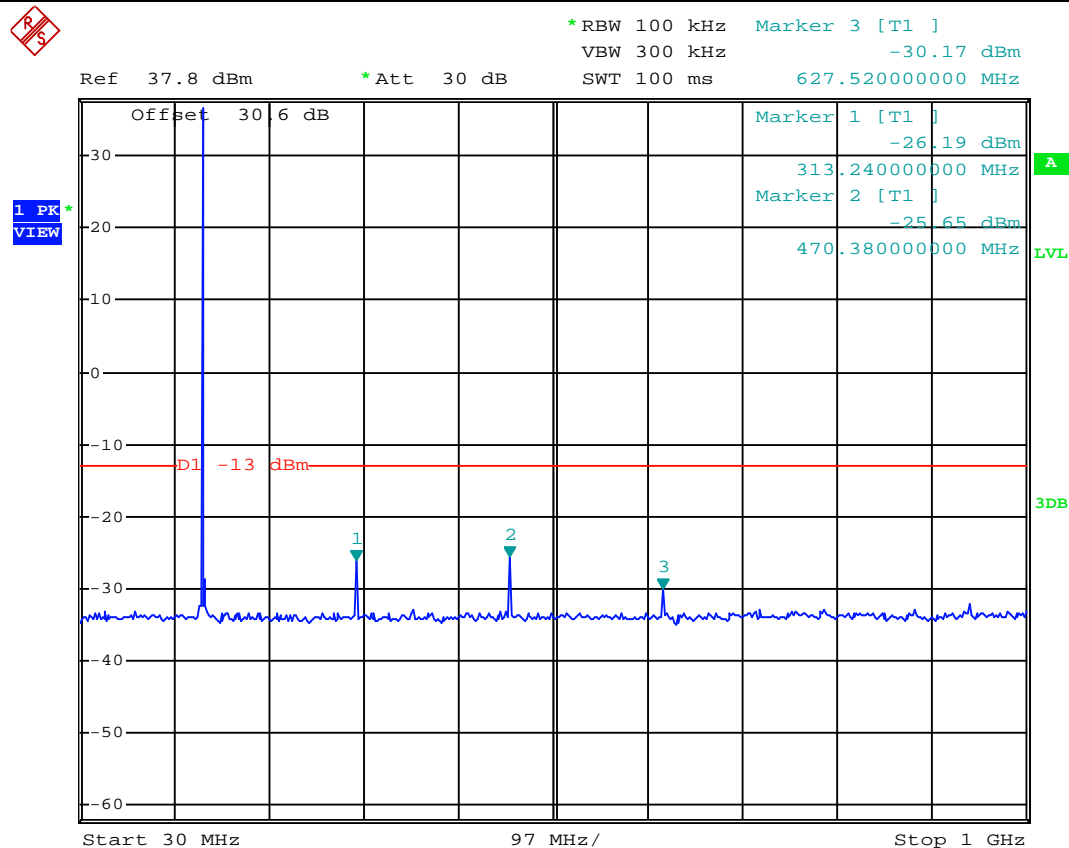


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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


Conducted Spurious Emissions.


Emission (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
Part 80; VHF, RSS-182			
313.4	-27.9	-13	-14.9
470.1	-25.5	-13	-12.5
626.8	-31.6	-13	-18.6
940.2	-31.8	-13	-18.8
Part 95; GMRS/FRS, RSS-119			
925.125	-21.0	-13	-8.0
1387.68	-36.3	-13	-23.3
1850.35	-38.4	-13	-25.4

A.28 TEST RESULTS: PART 80, VHF, RSS-182

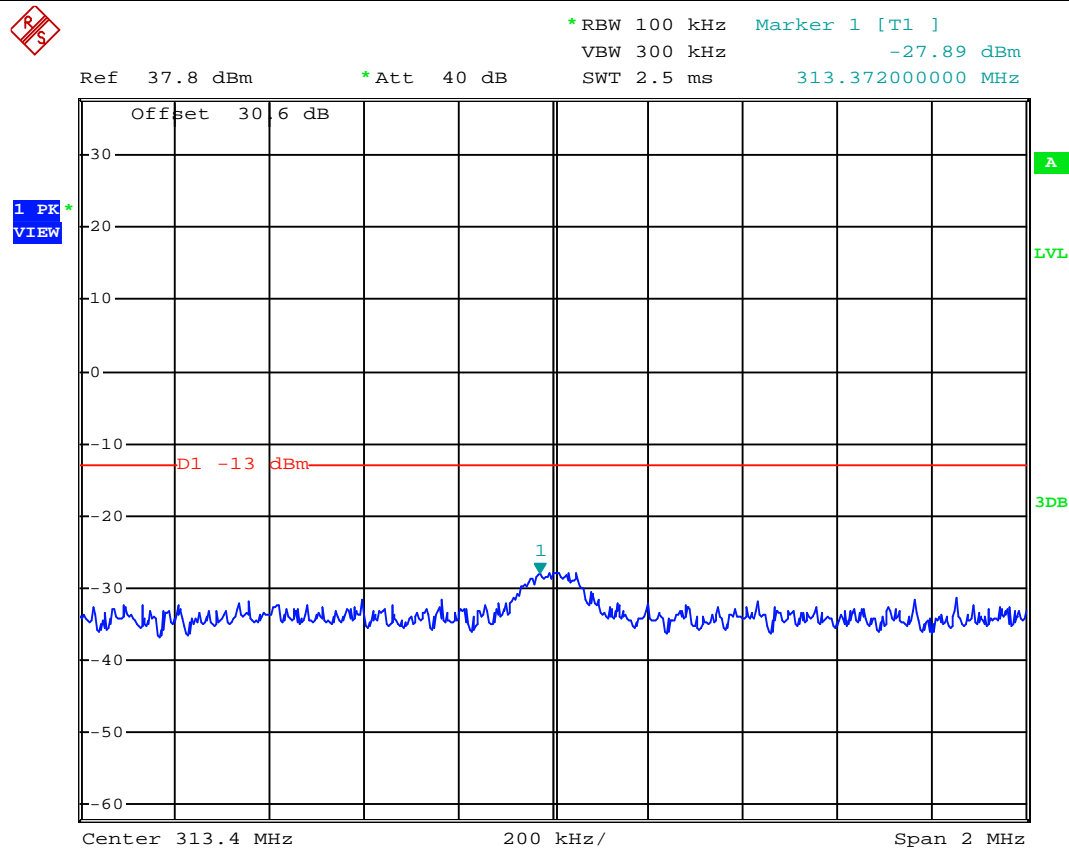


Date: 15.DEC.2014 15:27:21


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.29 TEST RESULTS: PART 80, VHF, RSS-182

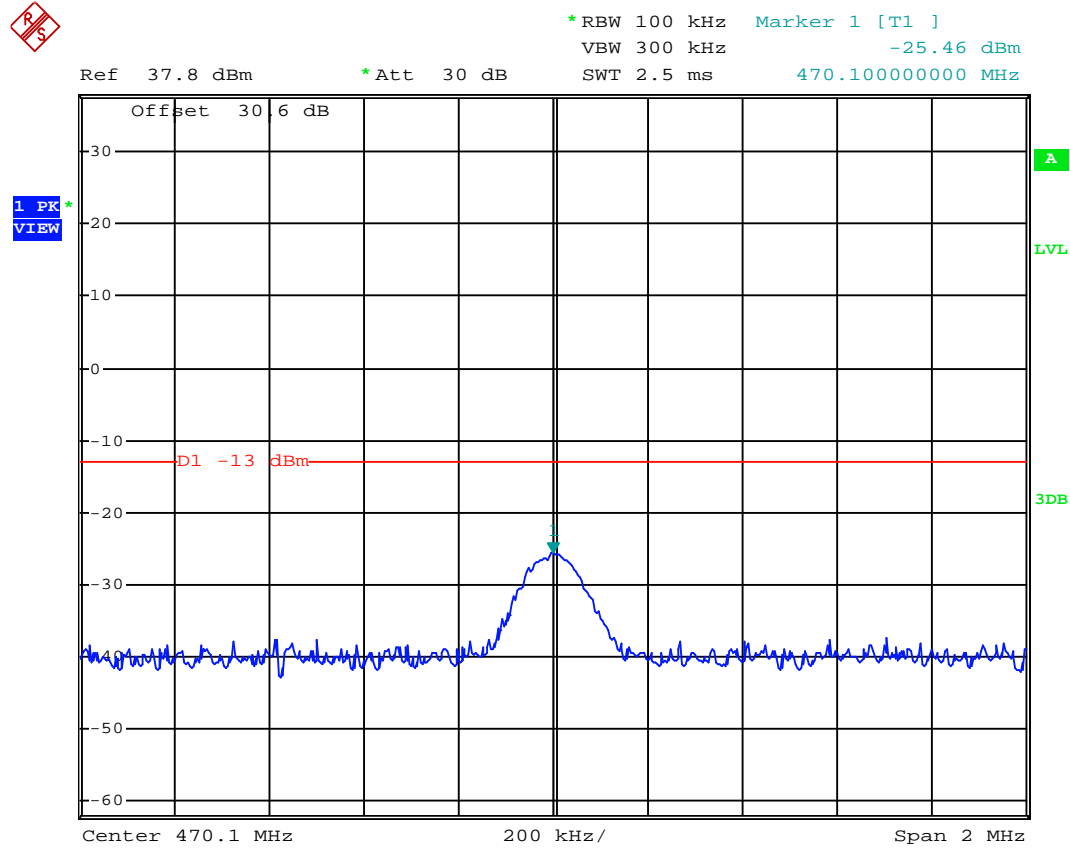


Date: 15.DEC.2014 15:19:22


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.30 TEST RESULTS: PART 80, VHF, RSS-182

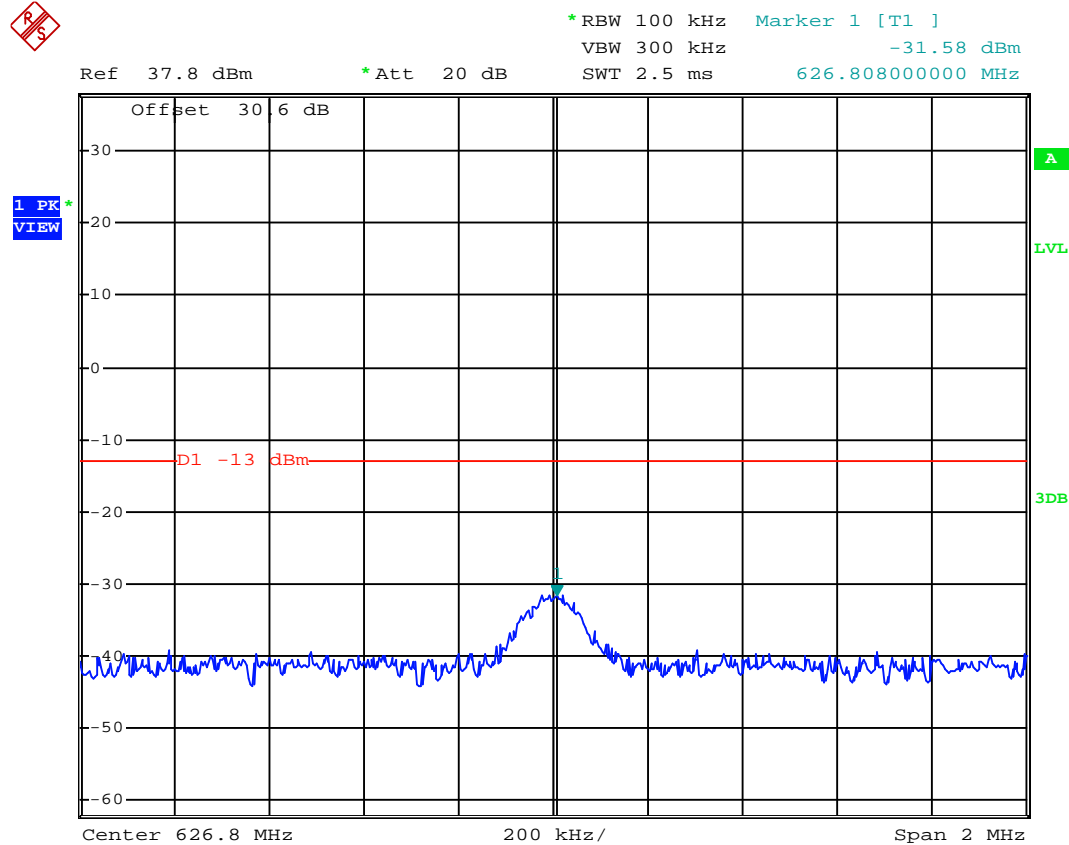


Date: 15.DEC.2014 15:24:40


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.31 TEST RESULTS: PART 80, VHF, RSS-182

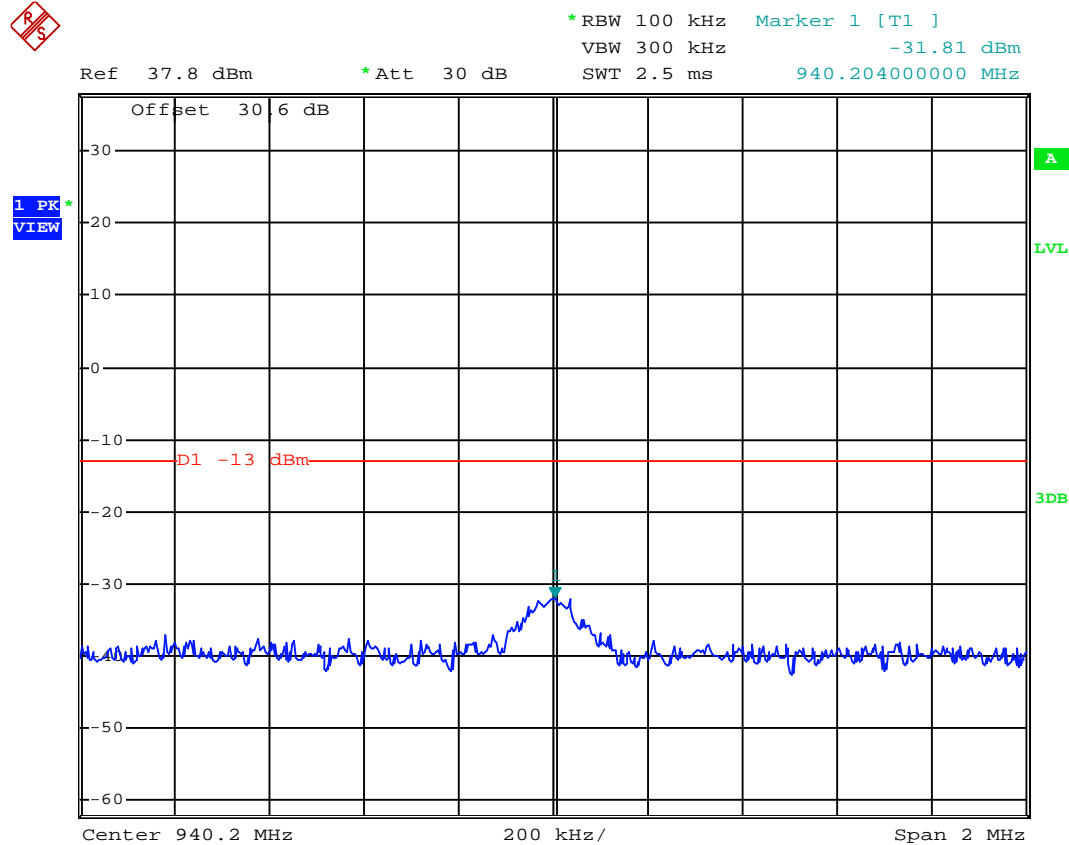


Date: 15.DEC.2014 15:23:17


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.32 TEST RESULTS: PART 80, VHF, RSS-182

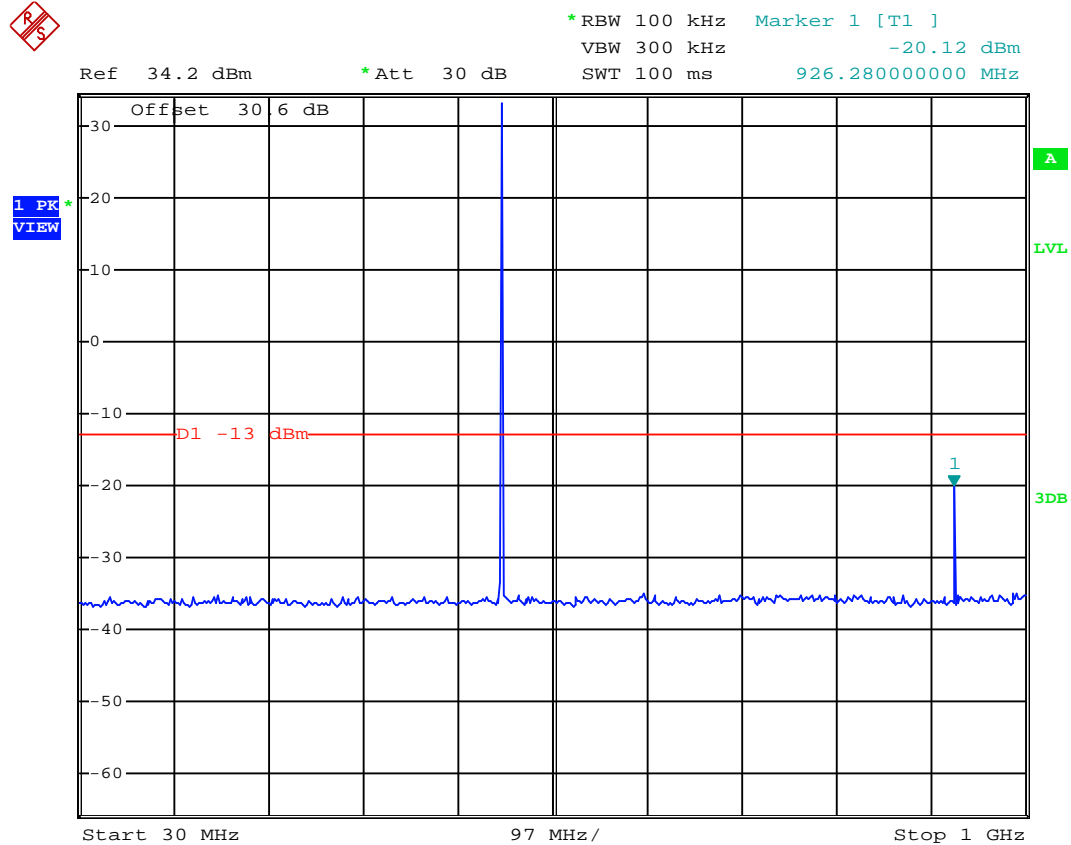


Date: 15.DEC.2014 15:25:24


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.33 TEST RESULTS: PART 95, GMRS/FRS, RSS-119

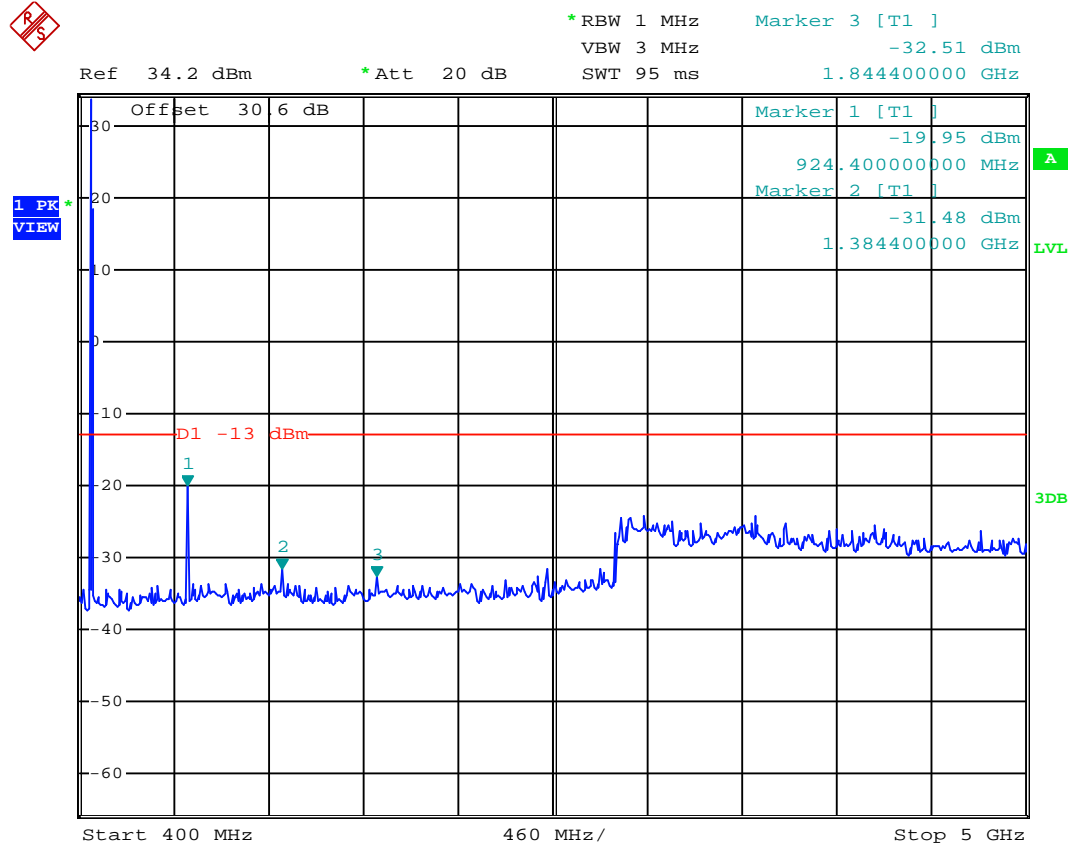


Date: 15.DEC.2014 19:47:11


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.34 TEST RESULTS: PART 95, GMRS/FRS, RSS-119

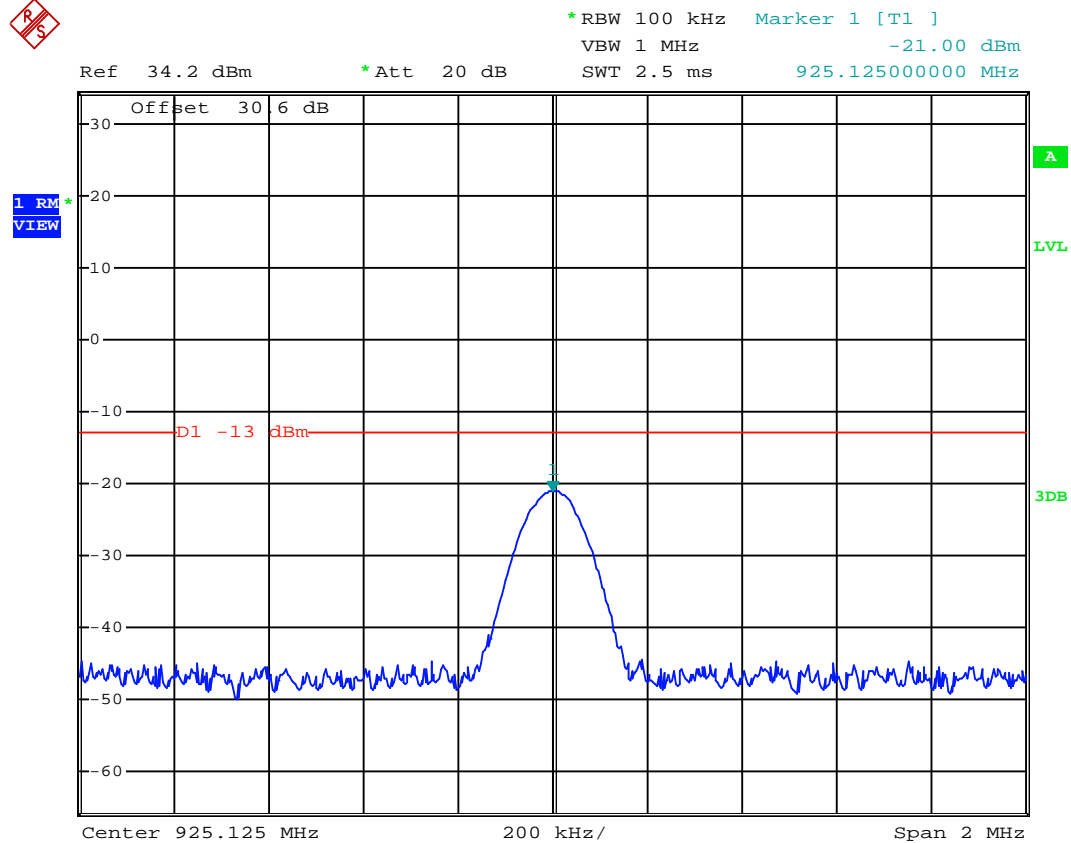


Date: 15.DEC.2014 19:50:11


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.35 TEST RESULTS: PART 95, GMRS/FRS, RSS-119

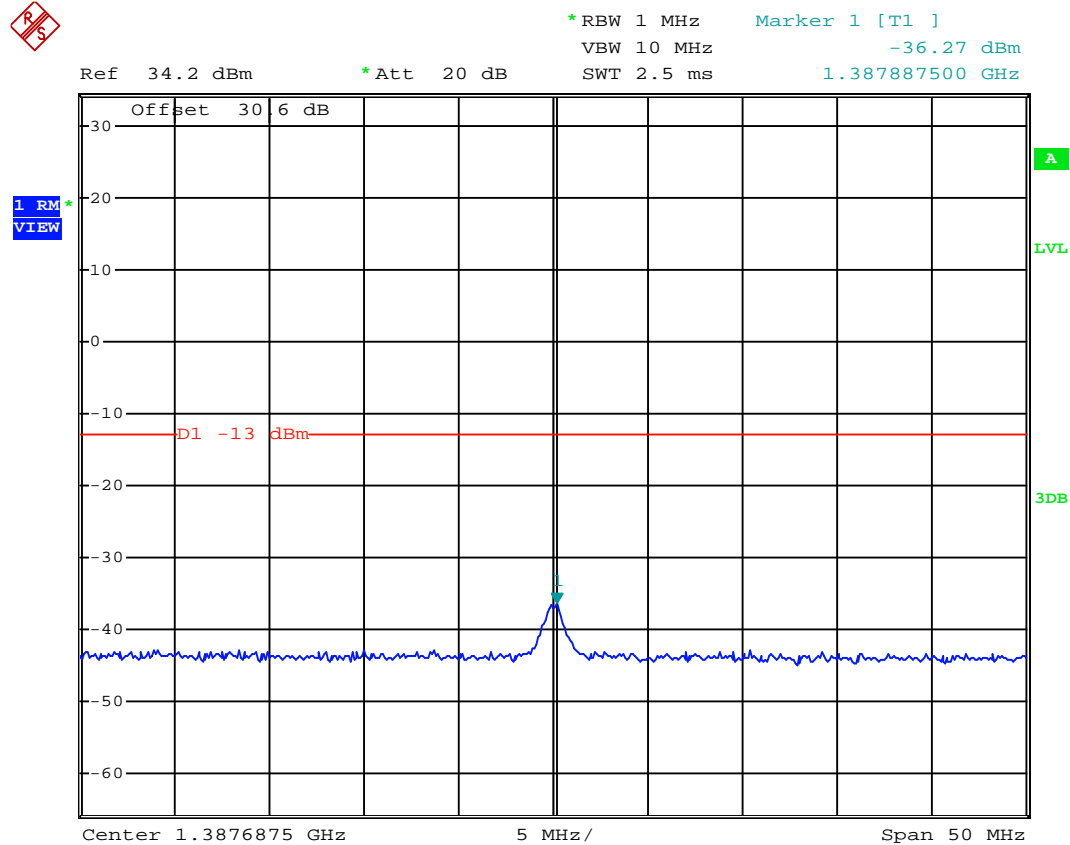


Date: 15.DEC.2014 19:52:50


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.36 TEST RESULTS: PART 95, GMRS/FRS, RSS-119

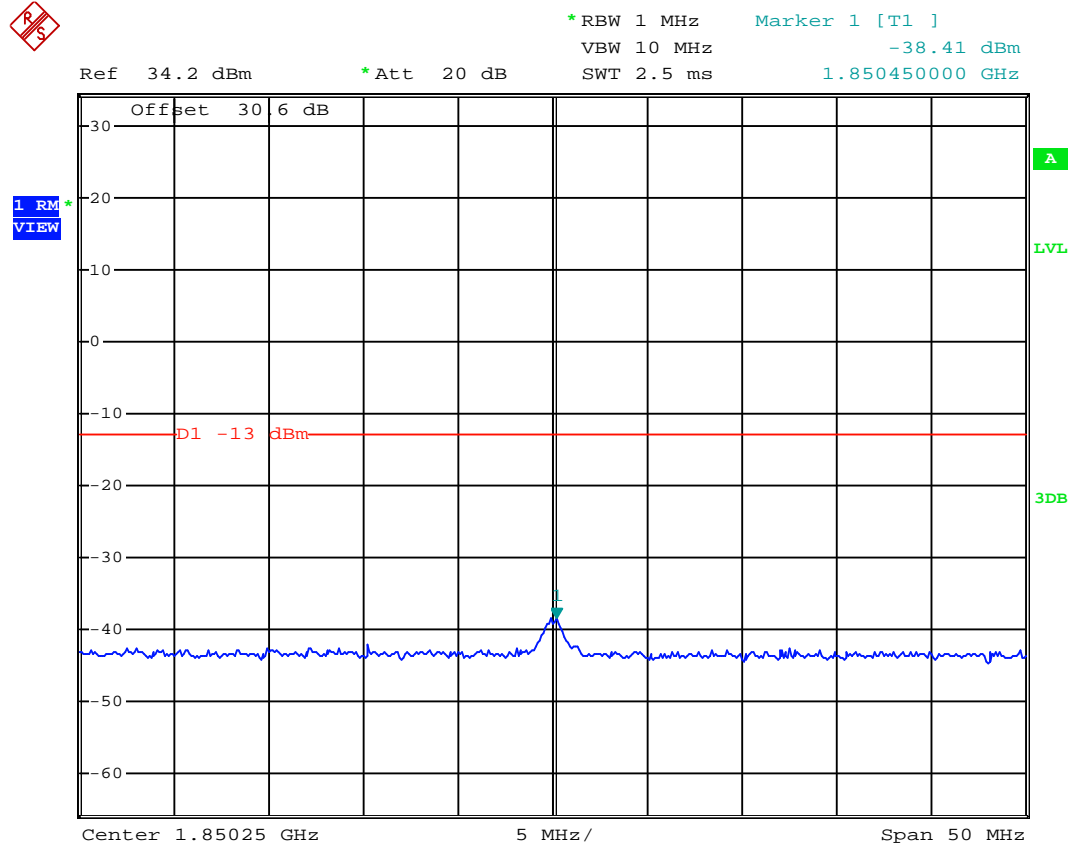


Date: 15.DEC.2014 20:00:37

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.37 TEST RESULTS: PART 95, GMRS/FRS, RSS-119



Date: 15.DEC.2014 20:01:09

A.38 SIGN-OFF


I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.




Glen Westwell.
Lab Manager
Celltech Labs Inc.

Dec 11, 2012

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

10.0 OCCUPIED BANDWIDTH, EMISSION MASK

A.39 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1049, §80.211; §95.635; RSS-182, RSS-119
Procedure Reference / Description	Occupied bandwidth was performed by connecting the output of the DUT to the input of a spectrum analyzer.

A.40 LIMITS

§80.211 §95.635	
RSS-182, 7.9 RSS-119, 4.2	The nominal authorized channel bandwidth for voice is 16 kHz, for data an authorized bandwidth of 20 KHz is permitted.

A.41 ENVIRONMENTAL CONDITIONS

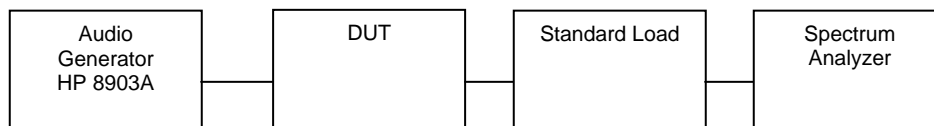
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa


A.42 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00065	Pasternack	PE7015-30	30dB attenuator	COU
00241	R&S	FSP 40	Spectrum Analyzer	05-Nov-2013
00027	HP	8903B	Audio Generator/Analyzer	21-Jul-2013

A.43 SETUP DRAWING

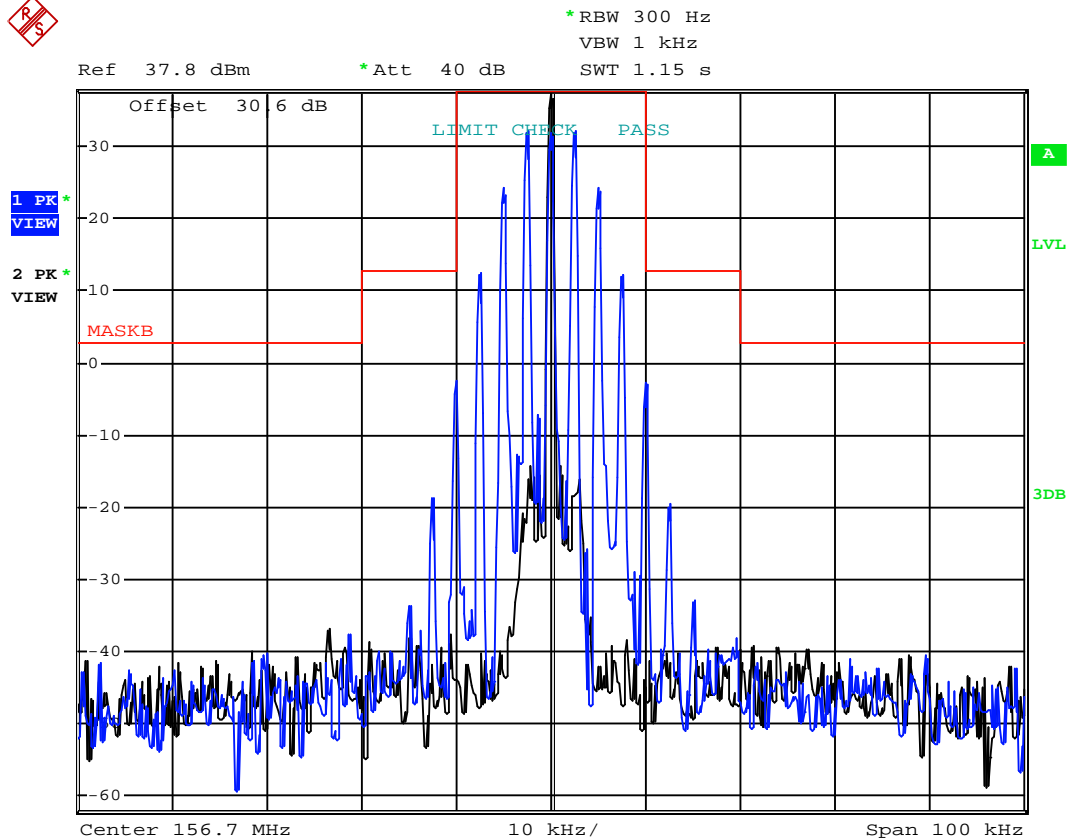
Figure A.43-1 - Setup Drawing – Occupied Bandwidth & Emission Mask




	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No.	3874A-1

A.44 TEST RESULTS: PART 80; VHF, RSS-182

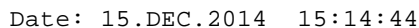
Emission Mask TX Power = 6W




Date: 15.DEC.2014 14:38:11

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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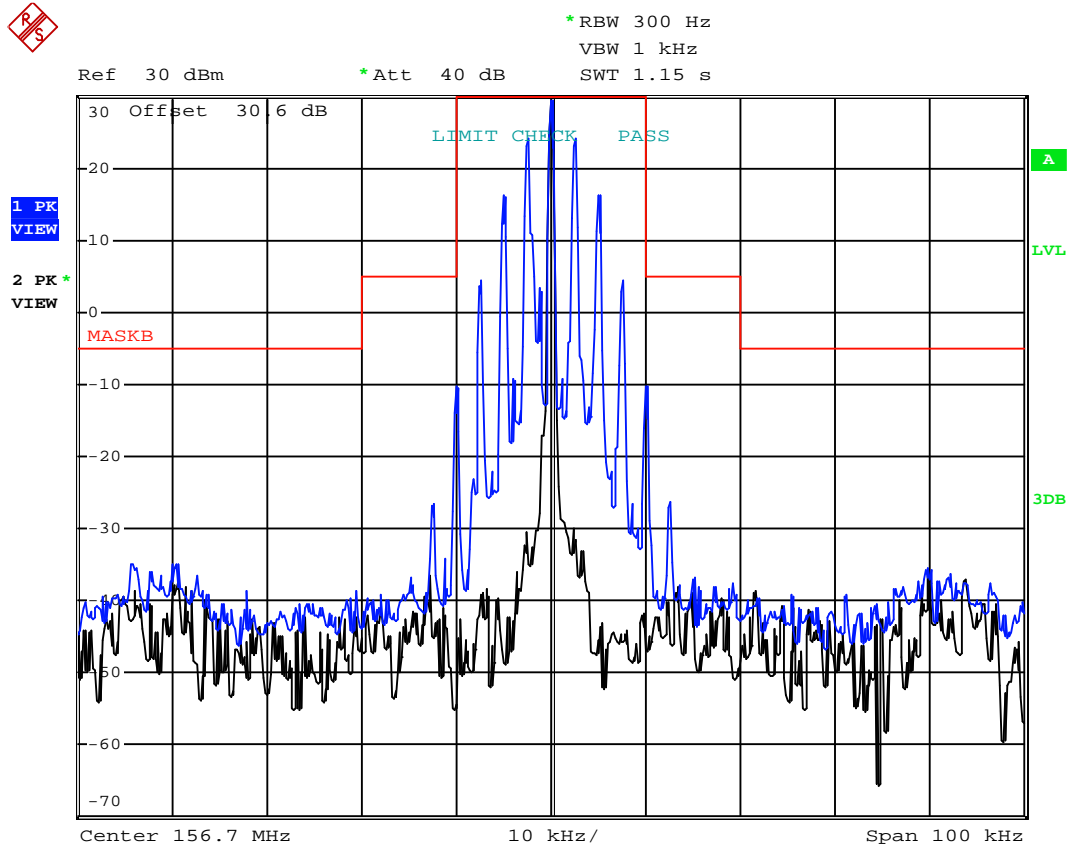
Emission Mask TX Power = 2.5W




	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


A.46 TEST RESULTS: PART 80; VHF, RSS-182

Emission Mask TX Power = 1.0W



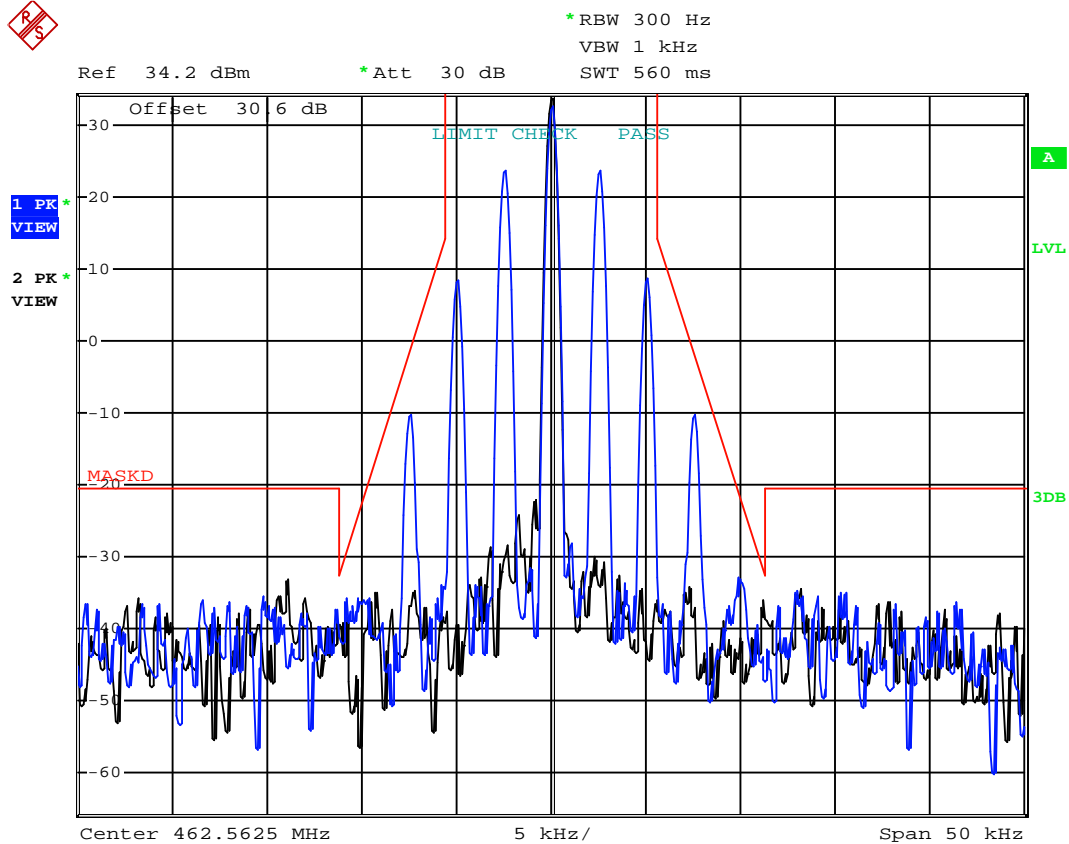
Date: 15.DEC.2014 14:36:40

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


A.47 TEST RESULTS: PART 95A; GMRS, RSS-119

Emission Mask TX Power = 3.0W



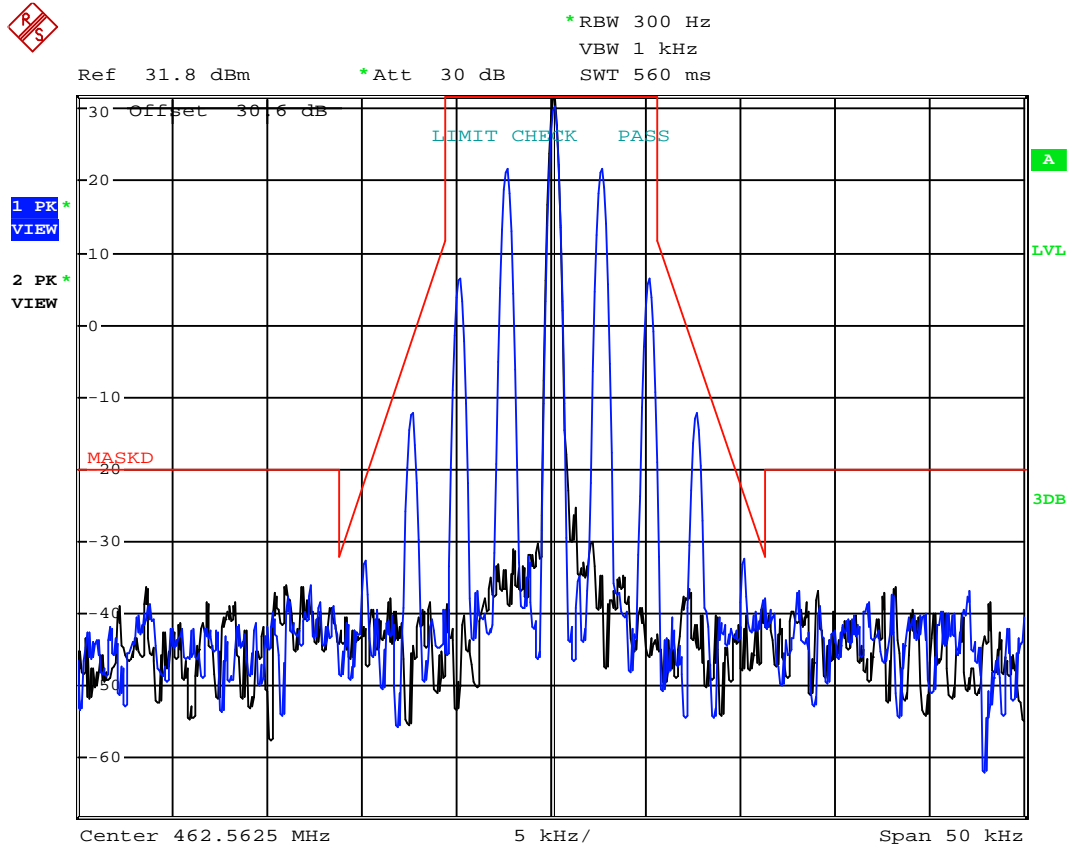
Date: 15.DEC.2014 19:44:34

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


A.48 TEST RESULTS: PART 95A; GMRS, RSS-119,

Emission Mask TX Power = 1.5W



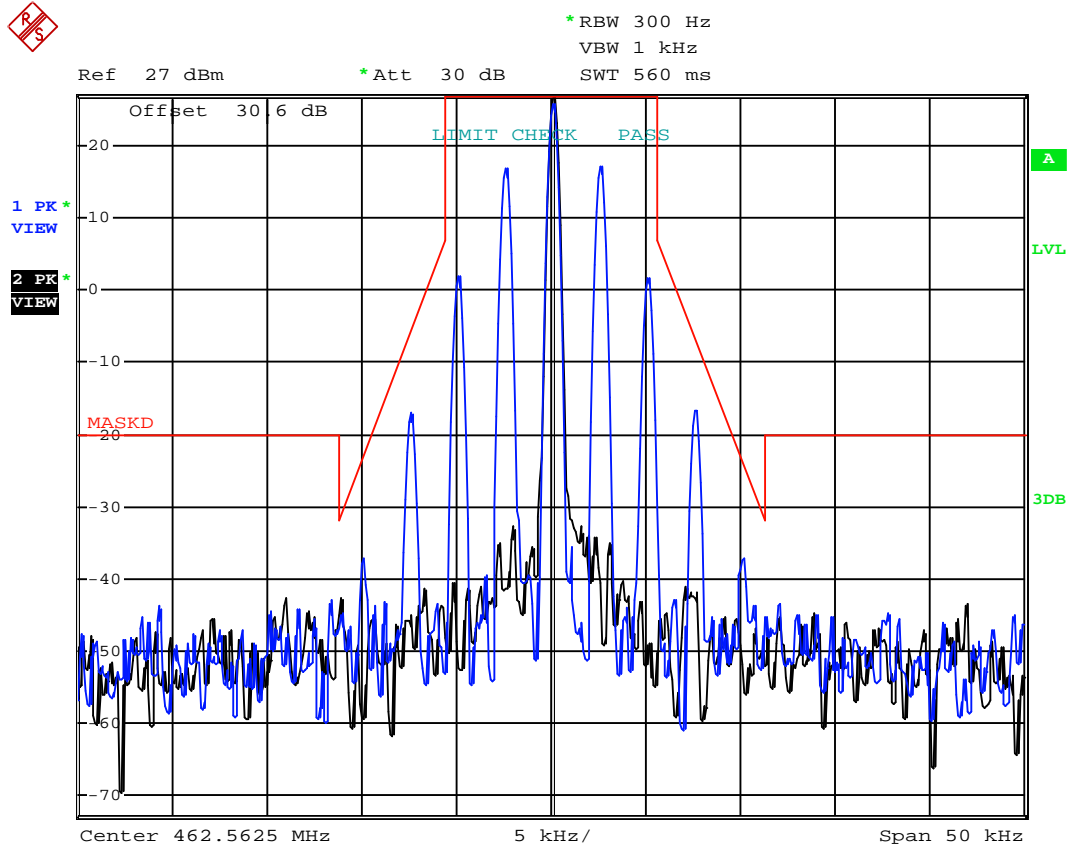
Date: 15.DEC.2014 18:59:15

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


A.49 TEST RESULTS: PART 95A; GMRS, RSS-119

Emission Mask TX Power = 0.5W



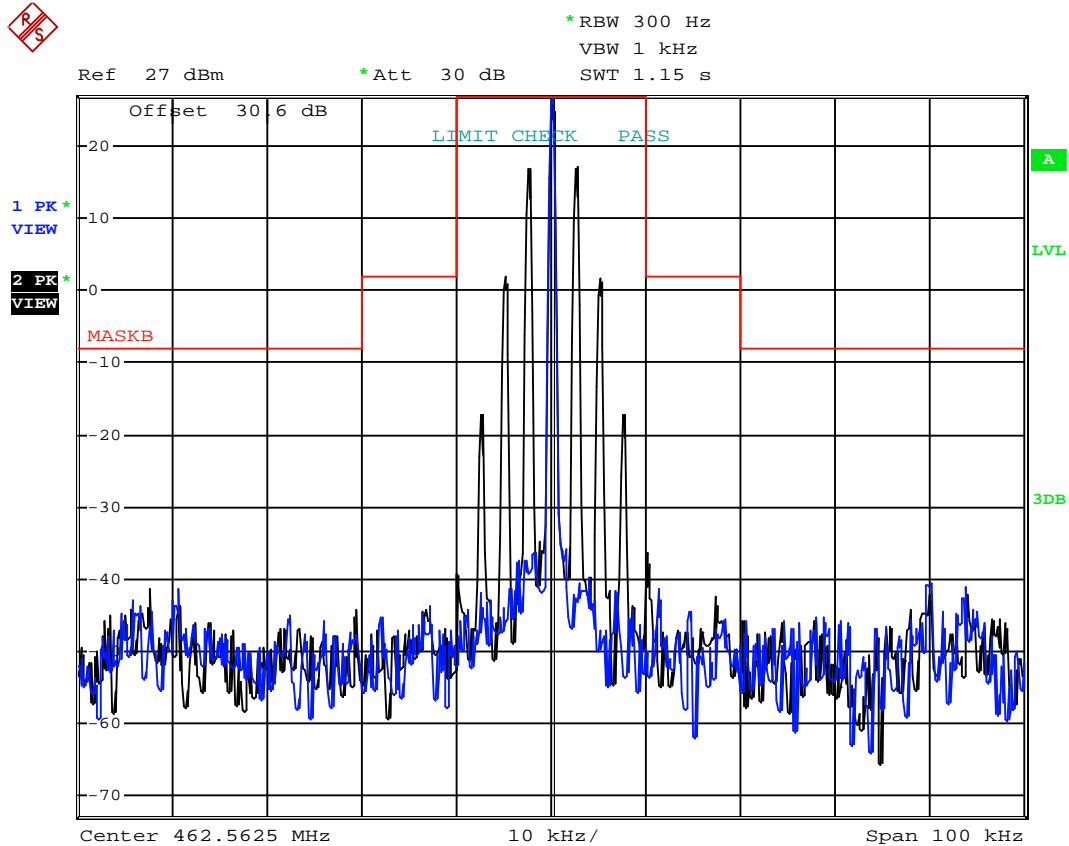
Date: 15.DEC.2014 18:55:44

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No.	3874A-1


A.50 TEST RESULTS: PART 95B; FRS, RSS-119

Emission Mask TX Power = 0.5W



Date: 15.DEC.2014 18:28:07

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

11.0 RADIATED SPURIOUS EMISSIONS - TX

A.51 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1053; IC RSS-182, RSS-119.
Procedure Reference	The transmitter spurious emissions were measured in accordance with TIA/EIA Standard 603 using the substitution method on a 3-meter open area test site (OATS).

A.52 LIMITS


§80.211, RSS-182,7.9 Rss-119, 4.2	Emissions must be at least $43 + 10 \log_{10} (P)$ dB below the mean power output of the transmitter.
--------------------------------------	---


A.53 ENVIRONMENTAL CONDITIONS

Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa

A.54 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL - CAL DUE
00072	EMCO	2075	Mini-mast	n/a
00073	EMCO	2080	Turn Table	n/a
00071	EMCO	2090	Multi-Device Controller	n/a
00034	EMCO	3115	Horn Antenna	6-Dec-12 - 6 Dec-14
00050	Chase	CBL-6111A	Bilog Antenna	25-Apr-14 - 25-Apr-16
00054	EMCO	3121C	Dipole Antenna(s)	30-Apr-14 - 30 Apr-16
00006	R & S	SMR 20	Signal Generator (10MHz-40GHz)	8-May-14 - 8-May-16
00241	R&S	FSP 40	Spectrum Analyzer	05-Nov-13 - 5 Nov-15

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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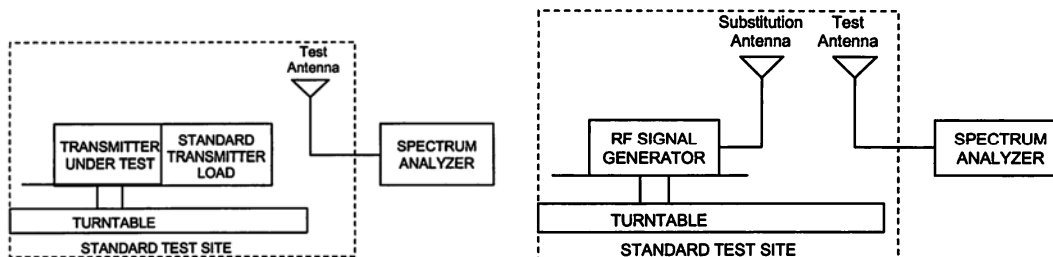
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	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


A.55 MEASUREMENT EQUIPMENT SETUP


MEASUREMENT EQUIPMENT CONNECTIONS	For the field strength measurements, the measurement equipment was connected as shown in G.6. A number of antennas were used to cover the applicable frequency range tested. The ranges in which each antenna was used are as follows. For the final substitutions, the DUT was replaced with the appropriate antenna and fed from a CW signal source sufficient to replicate the received field strength of the emission being investigated. Worst case performance is presented.		
	Frequency Range	RX Antenna	TX Antenna
	30 MHz - 1GHz	Bilog	Dipole
	1 GHz - 18 GHz	ETS 3115 Horn	ETS 3115 Horn
MEASUREMENT EQUIPMENT SETTINGS	Measurement Settings.		
	RBW	VBW	Detector
	MHz	MHz	
	10 kHz < 1GHz 1 MHz >1 GHz	300 kHz < 1 GHz 3 MHz > 1 GHz	Peak

A.56 SETUP DRAWING

Figure A.56-1 - Setup Drawing – Radiated TX Spurious Emissions



Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.57 TEST RESULTS

TX: 156.700 MHz - Part 80 VHF., RSS 182

Emissions (MHz)	Antenna Pol.	Emission Level (dB)	Substitution Level (dB)	Antenna Gain (dBd)	Corrected Level (dBm)	Limit (dBm)	Margin (dB)
313.4	H	-40.9	-20.6	3.85	-16.75	-13	-3.75
470.1	V	-58.1	-33.9	4.05	-29.85	-13	-16.85
626.8	V	-53.5	-29.7	3.45	-26.25	-13	-13.25
783.5	V	-55.3	-32.1	3.65	-28.45	-13	-15.45
940.2	V	-56.4	-34.9	2.85	-32.05	-13	-19.05

TX: 462.5625 MHz - Part 95 GMRS/FRS., RSS-119

Emissions (MHz)	Antenna Pol.	Emission Level (dB)	Substitution Level (dB)	Antenna Gain (dBd)	Corrected Level (dBm)	Limit (dBm)	Margin (dB)
925.125	V	-61.3	-25.7	3.15	22.55	-13	-9.55
1387.68	V	-61.6	-28.1	5.45	22.65	-13	-9.65

Note(s):

1. DUT antenna replaced with non-radiating load and fresh batteries used.
2. The DUT was measured in 3 orientations with respect to the receive antenna and the orientation with the highest Radiated Power results are shown.
3. Worst case data is presented.

A.58 SIGN-OFF


I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.




Glen Westwell
Lab Manager
Celltech Labs Inc.

Dec. 2th 2014

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

12.0 FREQUENCY STABILITY

A.59 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1055, §80.209; IC RSS-182
Procedure Reference / Description	§2.1055(a)(2) The frequency stability shall be measured with variation of ambient temperature as follows: (1) From -20° to +50° centigrade for equipment to be licensed for use in the Maritime Services under part 80

A.60 LIMITS

§80.209 & RSS-182, RSS-119, 5.3	2.5ppm
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A.61 ENVIRONMENTAL CONDITIONS

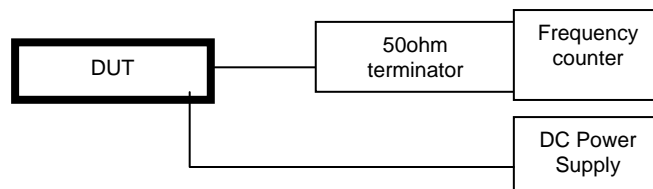
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa


A.62 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LAST CAL - CAL DUE
na	ESPEC	ECT-2	Heater/Refrigerator	na
00003	HP	53181A	Frequency Counter	28-Apr-14 - 28-Apr-16
00207	VWR	na	Temperature Humidity Monitor	8-May-14 - 8-May-16

A.63 SETUP DRAWING

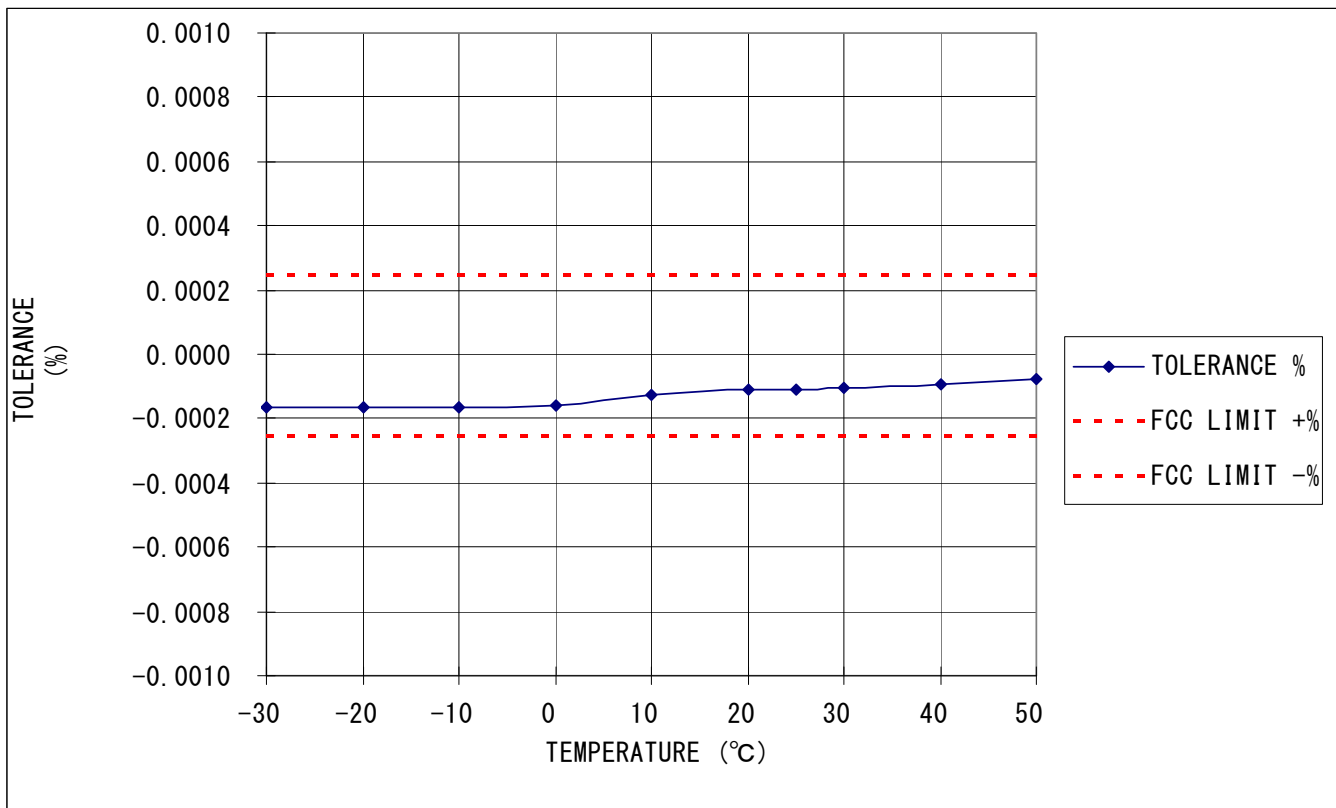
Figure A.63-1 - Setup Drawing – Frequency Stability




	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.64 TEST RESULTS: PART 80, VHF., RSS-182

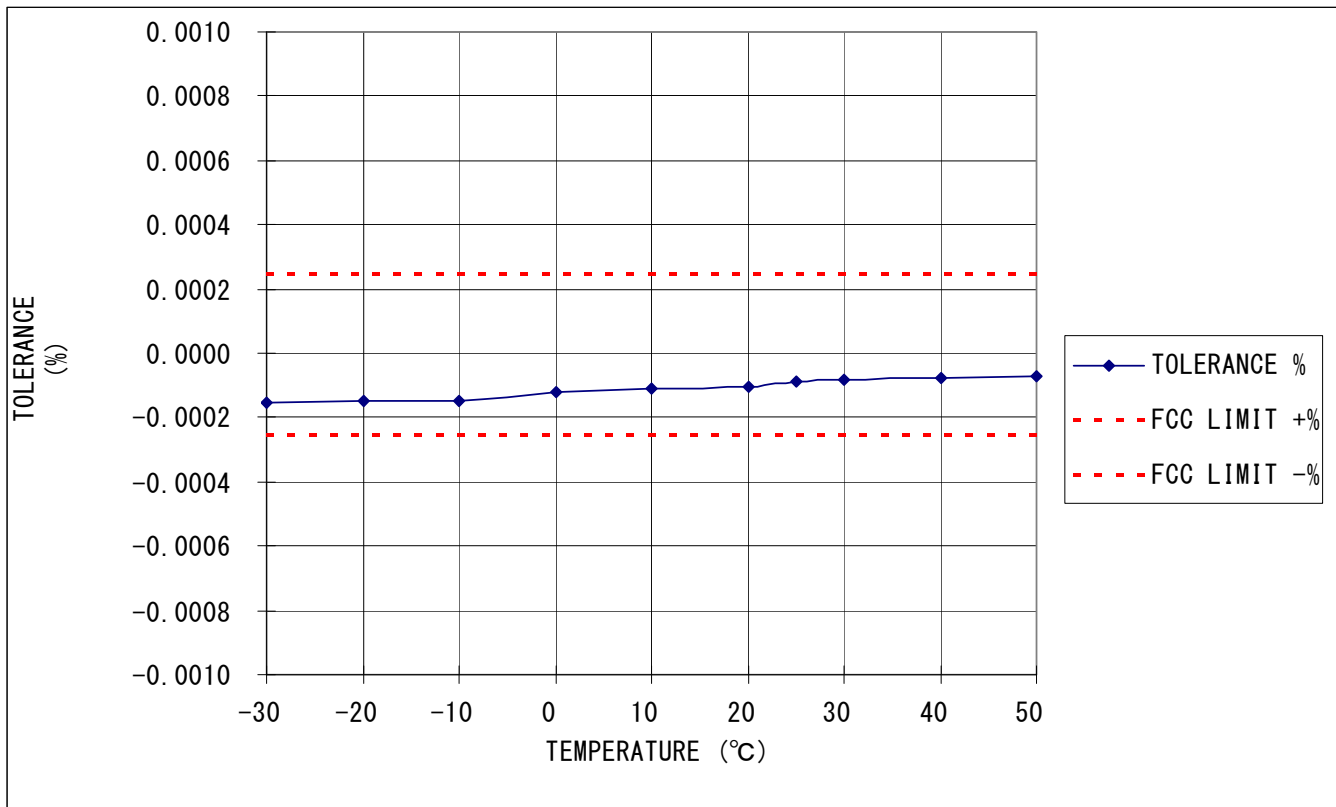
Temperature (degrees C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (Hz)	Frequency tolerance (ppm)
-30	156.050000	156.049740	-260	-1.66613265
-20	156.050000	156.049743	-257	-1.646908042
-10	156.050000	156.049742	-258	-1.653316245
0	156.050000	156.049751	-249	-1.595642422
10	156.050000	156.049802	-198	-1.268824095
20	156.050000	156.049829	-171	-1.095802628
30	156.050000	156.049832	-168	-1.07657802
40	156.050000	156.049836	-164	-1.05094521
50	156.050000	156.049850	-150	-0.961230375
20 +end point	156.050000	156.049829	-171	-1.095802628
20 -end point	156.050000	156.049829	-171	-1.095802628




	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
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	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.65 TEST RESULTS: PART 95, GMRS/FRS, RSS-119

Temperature (degrees C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (Hz)	Frequency tolerance (ppm)
-30	462.5500	462.549299	-701	-1.515511837
-20	462.5500	462.549305	-695	-1.502540266
-10	462.5500	462.549307	-693	-1.498216409
0	462.5500	462.549445	-555	-1.199870284
10	462.5500	462.549484	-516	-1.115555075
20	462.5500	462.549511	-489	-1.057183007
30	462.5500	462.549590	-410	-0.88639066
40	462.5500	462.549616	-384	-0.830180521
50	462.5500	462.549641	-359	-0.77613231
20 +end point	462.5500	462.549511	-489	-1.057183007
20 -end point	462.5500	462.549511	-489	-1.057183007



	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
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	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

A.66 SIGN-OFF


I attest to the accuracy of the data. All measurements reported herein were performed by me and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements.




Glen Westwell
Lab Manager
Celltech Labs Inc.

Dec. 16, 2014


Date


Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	


13.0 TEST SETUP PHOTOGRAPH



Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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	Test Report Serial No.:	121614AMW-T1313E80	Test Report Issue Date:	Jan. 16 th 2014
	Measurement Date(s):	1-16, Dec 2014	Test Report Revision No.:	Rev. 1.1
	Rule Part(s) Applied:	FCC 47 CFR §2, §80, §95	Industry Canada RSS-182, RSS-119. .	
	Test Site Registration(s):	FCC Accredited Site	Industry Canada Test Site Registration No. 3874A-1	

END OF DOCUMENT

Applicant:	Uniden America Corporation	FCC ID:	AMWUT650	IC:	513C-UT650	
DUT Type:	Portable PTT Marine Radio Transceiver			Freq.:	VHF/GMRS/FRS	
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