

	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

DECLARATION OF COMPLIANCE		FCC PART 95(A/B)		IC RSS-210 (Issue 8)			
Test Lab Information	Name	CELLTECH LABS INCORPORATED					
	Address	21-364 Lougheed Road, Kelowna, British Columbia V1X 7R8 Canada					
Test Lab Accreditation(s)	ISO 17025	A2LA Test Lab Certificate No. 2470.01					
Test Site Registration No.(s)	IC	3874A-1					
Applicant Information	Name	UNIDEN AMERICA CORPORATION					
	Address	4700 Amon Carter Boulevard, Fort Worth, Texas 76155 United States					
Standard(s) & Procedure(s)	FCC	47 CFR Part 2	47 CFR Part 95 Subpart A	47 CFR Part 95 Subpart B			
	IC	RSS-210 Issue 8		RSS-Gen Issue 3			
	ANSI	TIA/EIA-603-C-2004		C63.4-2003			
Device Classification(s)	FCC	Licensed Non-Broadcast Transmitter Held to Face (TNF) - GMRS Part 95 Family Radio Face Held Transmitter (FRF) - FRS		47 CFR §95 (Subpart A) 47 CFR §95 (Subpart B)			
	IC	Low-power Licence-exempt Radiocommunication Device (GMRS/FRS)		RSS-210 Issue 8			
RF Exposure Category	FCC/IC	General Population / Uncontrolled					
Application Type(s)	FCC/IC	TCB Certification	IC	CB Certification			
Device Identifier(s)	FCC ID:	AMWUT064					
	IC:	513C-UT064					
Device Under Test (DUT)	Portable FRS/GMRS Push-To-Talk (PTT) Radio Transceiver (GMRS/FRS Band)						
Date of Sample Receipt	November 08, 2011		Date(s) of Evaluation	November 08-15, 2011			
Device Model(s)	GMR4099 (Base Model)						
	GMR4040 (electrically & mechanically identical to GMR4099 - front panel color difference only)						
Test Sample Serial No.(s)	TA Sample No.2 (Conducted) - Identical Prototype			TA Sample No.3 (Radiated) - Identical Prototype			
Test Sample Revision No.(s)	EPP Stage (Hardware & Firmware)						
Transmit Frequency Range(s)	462.5500 - 462.7250 MHz		Channels 15-22	GMRS Mode	Hi Power & Boost mode		
	462.5625 - 462.7125 MHz		Channels 1-7	GMRS Mode	Hi Power & Boost mode		
	467.5625 - 467.7125 MHz		Channels 8-14	FRS Mode	Lo Power only		
Max. RF Output Power Tested	Mode	Power Mode	Frequency	Channel	dBm	Watts	Method
	GMRS	Boost	462.5625 MHz	1	29.64	0.92	ERP
	GMRS	Hi	462.5625 MHz	1	28.13	0.65	ERP
	FRS	Lo	467.5625 MHz	8	25.91	0.39	ERP
Modulation Type(s)	FM						
Emission Designator(s)	11K0F3E						
Antenna Type(s) Tested	Permanent (Non-detachable)						
Antenna Gain	+1.72 dBi						
Power Source(s) Tested	Ni-MH Battery Pack (3.6V, 650mAh) Model: BP-1029						
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 Part 2, Part 95 Subpart A, Part 95 Subpart B; Industry Canada RSS-210 Issue 8, RSS-Gen Issue 3; ANSI TIA/EIA-603-C-2004 and ANSI C63.4-2003.							
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.							
The results and statements contained in this report pertain only to the device(s) evaluated.							
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Test Report Approved By			Sean Johnston	Lab Manager	Celltech Labs Inc.		

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

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	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

TEST SUMMARY						
Referenced Standard(s):		FCC CFR Title 47 Parts 2, 95(A/B)				
Appendix	Description of Test	Procedure Reference	Limit Reference	Test Start	Test End	Result
A	Effective Radiated Power (ERP)	ANSI/TIA/EIA-603-C	§95.639	Nov 15	Nov 15	Pass
B	Modulation Limiting	ANSI/TIA/EIA-603-C	§2.1047, §95.637	Nov 8	Nov 9	Pass
C	Audio Frequency Response	ANSI/TIA/EIA-603-C	§2.1047	Nov 8	Nov 9	Pass
D	Low-Pass Filter Response	ANSI/TIA/EIA-603-C	§2.1047, §95.637	Nov 8	Nov 9	Pass
E	Occupied Bandwidth and Emission Mask	ANSI/TIA/EIA-603-C	§2.1049, §95.633, §95.635	Nov 8	Nov 9	Pass
F	Radiated TX Spurious Emissions	ANSI/TIA/EIA-603-C	§2.1053, §95.635 (b) (7)	Nov 15	Nov 15	Pass
G	Frequency Stability	ANSI/TIA/EIA-603-C	§2.1055, §95.621, §95.627	Nov 10	Nov 10	Pass
Referenced Standard(s):		Industry Canada RSS-210 Issue 8; RSS-Gen Issue 3				
Appendix	Description of Test	Procedure Reference	Limit Reference	Test Start	Test End	Result
A	Effective Radiated Power (ERP)	ANSI/TIA/EIA-603-C	RSS-210 A6.1.4 RSS-210 A6.2.4	Nov 15	Nov 15	Pass
B	Modulation Limiting	ANSI/TIA/EIA-603-C	RSS-210 A6.1.2 RSS-210 A6.2.2	Nov 8	Nov 9	Pass
C	Audio Frequency Response	ANSI/TIA/EIA-603-C	N/A	Nov 8	Nov 9	Pass
D	Low-Pass Filter Response	ANSI/TIA/EIA-603-C	RSS-210 A6.2.2	Nov 8	Nov 9	Pass
E	Occupied Bandwidth and Emission Mask	RSS-Gen 4.6.1	RSS-210 A6.1.3, A6.2.3 A6.1.5, A6.2.5	Nov 8	Nov 9	Pass
F	Radiated TX Spurious Emissions	RSS-Gen 4.9	RSS-210 A6.1.5, A6.2.5	Nov 15	Nov 15	Pass
G	Frequency Stability	RSS-Gen 4.7	RSS-210 A6.1.6 RSS-210 A6.2.6	Nov 10	Nov 10	Pass

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

REVISION LOG

Revision	Description	Implemented By	Implementation Date
1.0	1st Release	Jon Hughes	December 08, 2011
1.1	2nd Release	Jon Hughes	December 15, 2011
	Corrected antenna gain listing on page 1 and page 6		
1.2	3rd Release	Jon Hughes	January 10, 2012
	Revised frequency ranges and modes on Page 1 & Section 5.4		

Test Report Prepared By	Date	QA Review By	Date
Sean Johnston	December 05, 2011	Jon Hughes	December 08, 2011

	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
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					Test Lab Certificate No. 2470.01

1.0 SCOPE

This report outlines the measurements made and results collected during electromagnetic emissions testing of the Uniden America Corporation Model: GMR4099 Portable FM GMRS/FRS Push-To-Talk (PTT) Radio Transceiver. The measurement results were applied against the applicable EMC 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 95 Subpart A and Subpart B; and Industry Canada Radio Standards Specification RSS-210 Issue 8 and RSS-Gen Issue 3.

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 95	Code of Federal Regulations Title 47: Telecommunication Part 95: Personal Radio Services Subpart A - General Mobile Radio Service (GMRS) Subpart B - Family Radio Service (FRS)
IC Spectrum Management & Telecommunications Policy	Radio Standards Specification RSS-210 Issue 8 - Low-Power Licence-Exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment RSS-Gen Issue 3 - General Requirements and Information for the Certification of Radiocommunication Equipment

3.0 PASS/FAIL CRITERIA

Unless otherwise noted in the Appendices, the pass/fail criteria is 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.

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

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 Industry Canada under File Number IC 3874A-1. Celltech test site is listed with the FCC as an accredited test facility.

5.0 GENERAL INFORMATION

5.1 Applicant Information

Company Name	UNIDEN AMERICA CORPORATION
Address	4700 Amon Carter Boulevard Fort Worth, Texas 76155 United States

5.2 DUT Description

Device Type	Portable FRS/GMRS Push-To-Talk Radio Transceiver (GMRS/FRS Band)
Device Model(s)	GMR4099 (Base Model) GMR4040 (electrically & mechanically identical to GMR4099 - front panel color difference only)
Test Sample Serial No.(s)	TA Sample No.2 (Conducted) - Identical Prototype TA Sample No.3 (Radiated) - Identical Prototype
Device Identifier(s)	FCC ID: AMWUT064 IC: 513C-UT064
Power Source Tested	Ni-MH Battery Pack (3.6V, 650mAh) Model: BT-1029
Antenna Type Tested	Permanent (Non-detachable)
Antenna Gain	+1.72 dBi

5.3 Rule Part(s) & Classification(s)

Rule Part(s) Applied	FCC	47 CFR §2; §95(A), §95(B)
	IC	RSS-210 Issue 8, RSS-Gen Issue 3
Device Classification(s)	FCC	Licensed Non-Broadcast Transmitter Held to Face (TNF) - GMRS (Part 95A) Part 95 Family Radio Face Held Transmitter (FRF) - FRS (Part 95B)
	IC	Low-Power Licence-Exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment (RSS-210) - GMRS/FRS

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

5.4 Mode(s) of Operation Tested

5.4.1 FRS/GMRS PTT Radio Transceiver

5.4.1.1 FRS

Transmitter Frequency Range(s)	467.5625 - 467.7125 MHz (Chan. 8-14)
Transmitter Test Channel(s)	467.5625 MHz (Channel 8)
Transmitter Test Mode(s)	Enter TX Test Mode (keypad entry) - Select Channel (keypad entry); Continuous Transmit with PTT constantly depressed
Modulation Type(s)	FM

5.4.1.2 GMRS

Transmitter Frequency Range(s)	462.5625 - 462.7125 MHz (Chan. 1-7)	462.5500 - 462.7250 MHz (Chan. 15-22)
Transmitter Test Channel(s)	462.5625 MHz (Channel 1)	
Transmitter Test Mode(s)	Enter TX Test Mode (keypad entry) - Select Channel (keypad entry); Continuous Transmit with PTT constantly depressed (Boost button for max. power)	
Modulation Type(s)	FM	

5.5 Modification(s)

None

6.0 ANTENNA REQUIREMENT (FCC §95.647 & IC RSS-210 A6.1.4)

Complies

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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					Test Lab Certificate No. 2470.01

Appendix A RF Output Power Measurement

A.1 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1046(a), §2.1046(b), 2.1033(c)(6)(7), §95.639; IC RSS-210
Procedure Reference	The RF output power measurements were performed in accordance with TIA/EIA Standard 603 using the substitution method.

A.2 LIMITS

FCC CFR 47 §95.639	Power output shall not exceed 0.50 Watts effective radiated power for the FRS channels. There can be no provisions for increasing the power or varying the power. No GMRS channel, under any condition of modulation, shall exceed: 1. 50W Carrier power (average TP during one modulated RF cycle) when transmitting emissions type A1D, F1D, G1D, A3E, F3E, or G3E. 2. 50W peak envelope TP when transmitting emission type H1D, J1D, R1D, H3E, J3E or R3E.
RSS-210 A6.1.4	The maximum permissible transmitter output power under any operating conditions is 0.5 W effective radiated power (e.r.p.). The radio shall be equipped with an integral antenna.
RSS-210 A6.2.4	A GMRS transmitter may transmit with a maximum power of 2 W e.r.p.

A.3 ENVIRONMENTAL CONDITIONS

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

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00015	HP	E4408B	Spectrum Analyzer	03-May-12
00007	Gigatronics	8652A	Power Meter	04-May-12
00014	Gigatronics	80701A	Power Sensor	04-May-12
00072	EMCO	2075	Mini-mast	cnr
00073	EMCO	2080	Turn Table	cnr
00071	EMCO	2090	Multi-Device Controller	cnr
00015	HP	E4408B	Spectrum Analyzer	03-May-12
00050	Chase	CBL-6111A	Bilog Antenna	06-May-13
00055	EMCO	3121C	Dipole Antenna	27-Aug-12
00034	ETS	3115	Double Ridged Guide Horn	29-May-13

cnr = calibration not required

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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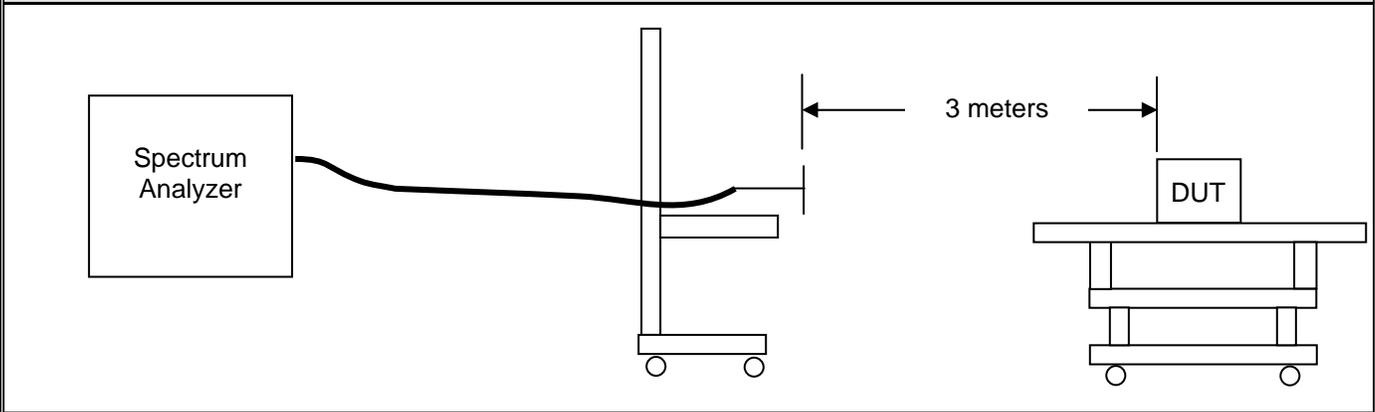
	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
Test Lab Certificate No. 2470.01					

A.4 MEASUREMENT EQUIPMENT SETUP

MEASUREMENT EQUIPMENT CONNECTIONS	For the field strength measurements the measurement equipment was connected as shown in A.6. For the final substitutions the DUT was replaced with a dipole antenna and fed from a CW signal source sufficient to replicate the received field strength of the emission being investigated.			
	Frequency Range	RX Antenna	TX Antenna	
	30 MHz - 1GHz	Bilog	Dipole	
MEASUREMENT EQUIPMENT SETTINGS	For measuring the radiated field strength of the fundamental, the spectrum analyzer was set to the following settings:			
	Mode	RBW	VBW	Detector
		MHz	MHz	
	GMRS (Hi Power)	1	3	Peak
FRS (Lo Power)	1	3	Peak	

A.5 SETUP DRAWING

Figure A.5-1 - Setup Drawing – RF Output Power



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					Test Lab Certificate No. 2470.01

A.6 TEST RESULTS

Measured Frequency (MHz)	Output Power (ERP) (Watts)
462.5625 (GMRS - Boost mode)	0.92
462.5625 (GMRS - Hi Power)	0.65
467.5625 (FRS - Lo Power)	0.39

Note(s):

- Measured ERP Carrier Level (dBm) = Power Applied to Antenna (dBm) + Antenna Gain (dBd)
- The DUT was measured in 3 orientations with respect to the receive antenna and the orientation with the highest Radiated Power results is shown (Vertical Polarization).

FCC Rule Part 2.1033 (C)(8) DC Input into final amplifier

Frequency (MHz)	Voltage V	Current A
462.5625 (GMRS Boost)	3.6	0.99
462.5625 (GMRS Hi Power)	3.6	0.52
467.5625 (FRS Lo Power)	3.6	0.38

A.7 PASS/FAIL

In reference to the results outlined in A.6, the DUT passes the requirements as stated in the reference standards.

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.



Sean Johnston
Lab Manager
Celltech Labs Inc.

Nov 15, 2011

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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Appendix B Modulation Characteristics (Modulation Limiting)

B.1 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1047, §95.637; IC RSS-210
Procedure Reference	TIA-603-C

B.2 LIMITS

§95.637 (a)	(a) A GMRS transmitter that transmits emission types F1D, G1D, or G3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A GMRS transmitter that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A FRS unit that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 2.5 kHz, and the audio frequency response must not exceed 3.125 kHz.
RSS-210 A6.1.2	(c) The peak frequency deviation shall not exceed ± 2.5 kHz. The limiter shall be followed by a low-pass filter to remove unwanted harmonics.
RSS-210 A6.2.2	(b) For emission types F1D, G1D, G3E, F3E or F2D, the peak frequency deviation shall not exceed ± 5 kHz. GMRS transmitters must include an audio frequency low-pass filter, unless they comply with the appropriate emission masks in Section A6.2.5, below. The filter must be between the modulation limiter and the modulated stage of the transmitter. The filter attenuation must be as follows: for 3 kHz $\leq f < 20$ kHz, the attenuation is at least 60 log ₁₀ (f, kHz/3) dB greater than the attenuation at 1 kHz, and for f > 20 kHz, the attenuation is at least 50 dB greater than the attenuation at 1 kHz.

B.3 ENVIRONMENTAL CONDITIONS

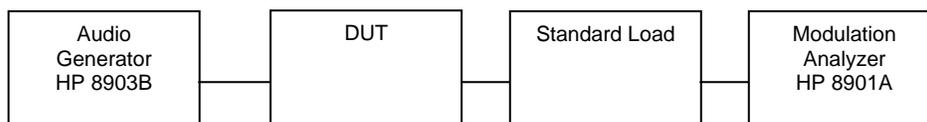
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa

B.4 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00028	HP	8901A	Modulation Analyzer	21Jul12
00027	HP	8903B	Audio Generator/Analyzer	21Jul12

B.5 SETUP DRAWING

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

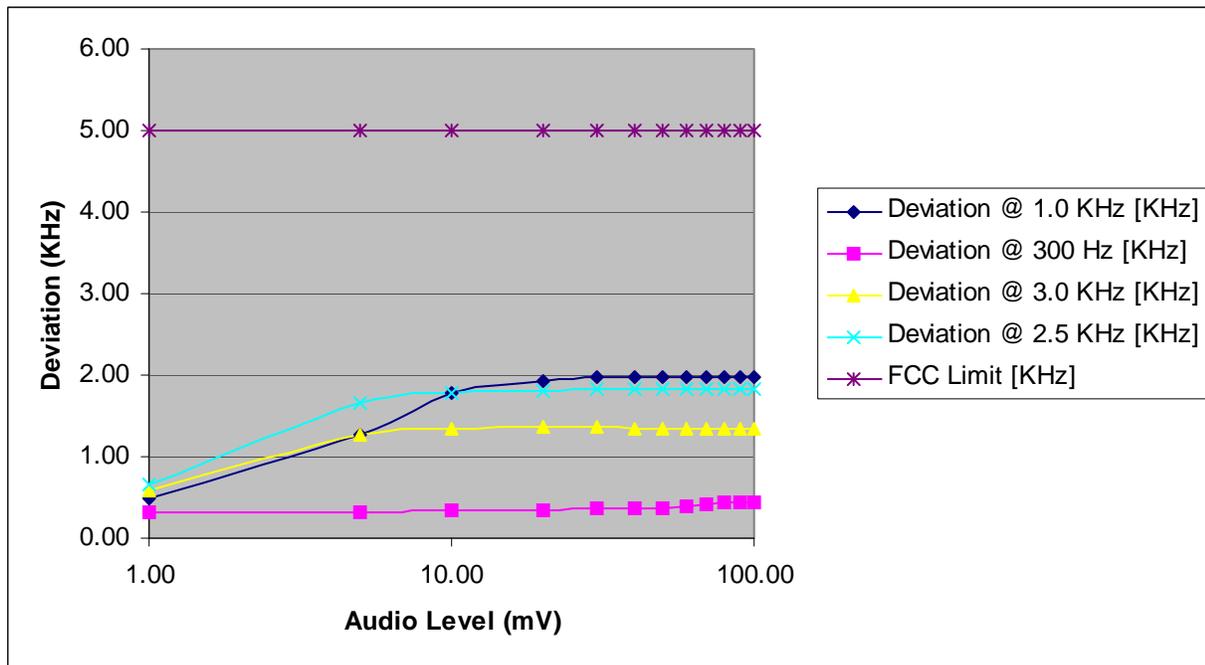


Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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B.6 TEST RESULTS

B.6.1 GMRS

Audio Level	Deviation @ 1.0 KHz	Deviation @ 300 Hz	Deviation @ 3.0 KHz	Deviation @ 2.5 KHz	FCC Limit
mV	[KHz]	[KHz]	[KHz]	[KHz]	[KHz]
1.00	0.48	0.32	0.59	0.67	5.00
5.00	1.27	0.32	1.27	1.67	5.00
10.00	1.78	0.33	1.33	1.78	5.00
20.00	1.93	0.35	1.36	1.80	5.00
30.00	1.97	0.36	1.36	1.82	5.00
40.00	1.97	0.37	1.35	1.82	5.00
50.00	1.97	0.37	1.35	1.82	5.00
60.00	1.97	0.39	1.35	1.82	5.00
70.00	1.97	0.41	1.35	1.82	5.00
80.00	1.97	0.43	1.35	1.82	5.00
90.00	1.97	0.44	1.35	1.82	5.00
100.00	1.98	0.45	1.35	1.82	5.00



B.7 PASS/FAIL

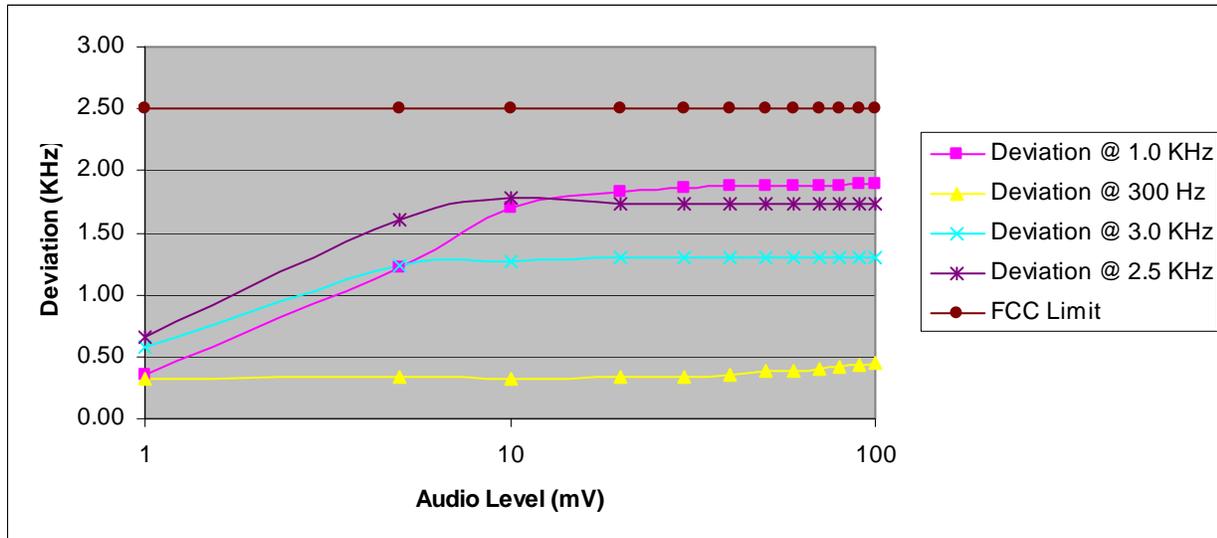
In reference to the results outlined in B.6.1 the DUT passes the requirements as stated in the reference standards.

Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012
Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)
Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B	Test Site Registration:	FCC Accredited Site
	IC RSS-210 (8), RSS-Gen (3)		IC Site File #: 3874A-1

B.8 TEST RESULTS

B.8.1 FRS

Audio Level	Deviation @ 1.0 KHz	Deviation @ 300 Hz	Deviation @ 3.0 KHz	Deviation @ 2.5 KHz	FCC
mV	[KHz]	[KHz]	[KHz]	[KHz]	[KHz]
1	0.36	0.32	0.58	0.65	2.50
5	1.22	0.33	1.23	1.61	2.50
10	1.70	0.32	1.27	1.78	2.50
20	1.83	0.33	1.30	1.73	2.50
30	1.86	0.34	1.30	1.74	2.50
40	1.88	0.36	1.30	1.74	2.50
50	1.88	0.38	1.30	1.74	2.50
60	1.88	0.39	1.30	1.74	2.50
70	1.88	0.40	1.30	1.74	2.50
80	1.88	0.42	1.30	1.74	2.50
90	1.90	0.43	1.30	1.74	2.50
100	1.90	0.45	1.30	1.74	2.50



B.9 PASS/FAIL

In reference to the results outlined in B.8.1 the DUT passes the requirements as stated in the reference standards.

	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

B.10 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.



Sean Johnston
Lab Manager
Celltech Labs Inc.

Nov 9, 2011

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

Appendix C Modulation Characteristics (Audio Frequency Response)

C.1 REFERENCES

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

C.2 LIMITS

§2.1047	a) <i>Voice modulated communication equipment.</i> 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. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.
---------	--

C.3 ENVIRONMENTAL CONDITIONS

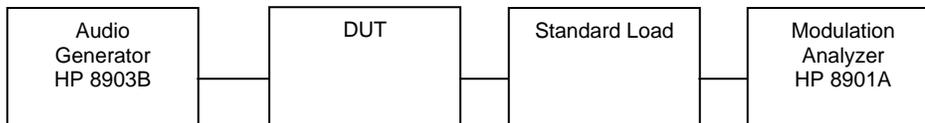
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa

C.4 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00028	HP	8901A	Modulation Analyzer	21Jul12
00027	HP	8903B	Audio Generator/Analyzer	21Jul12

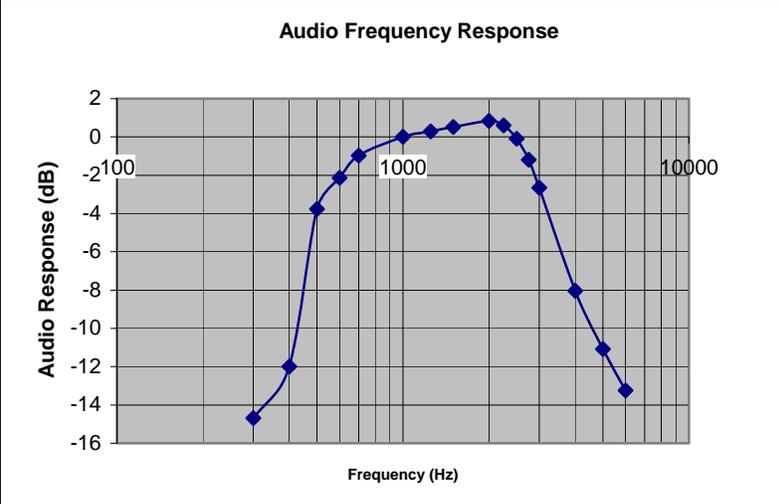
C.5 SETUP DRAWING

Figure C.5-1 - Setup Drawing – Audio Frequency Response



C.6 TEST RESULTS

Audio Frequency	Deviation
[Hz]	[dB]
300	0.33
400	0.45
500	1.16
600	1.4
700	1.6
1000	1.79
1250	1.85
1500	1.9
2000	1.97
2250	1.92
2500	1.77
2750	1.56
3000	1.32
4000	0.71
5000	0.5
6000	0.39



C.7 PASS/FAIL

In reference to the results outlined in C.6 the DUT passes the requirements as stated in the reference standards.

C.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.


 Sean Johnston
 Lab Manager
 Celltech Labs Inc.
 Nov. 9, 2011
 Date

	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

Appendix D Modulation Characteristics (Low-pass Filter Response)

D.1 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1047, §95.637; IC RSS-210
Procedure Reference	TIA-603-C

D.2 LIMITS

§95.637 & RSS-210 A6.2.2	(b) Each GMRS transmitter, except a mobile station transmitter with a power output of 2.5 W or less, must automatically prevent a greater than normal audio level from causing overmodulation. The transmitter also must include audio frequency low-pass filtering, unless it complies with the applicable paragraphs of §95.631 (without filtering.) The filter must be between the modulation limiter and the modulated stage of the transmitter. At any frequency (f in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least $60 \log_{10}(f/3)$ dB greater than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB greater than the attenuation at 1 kHz.
--------------------------	---

D.3 ENVIRONMENTAL CONDITIONS

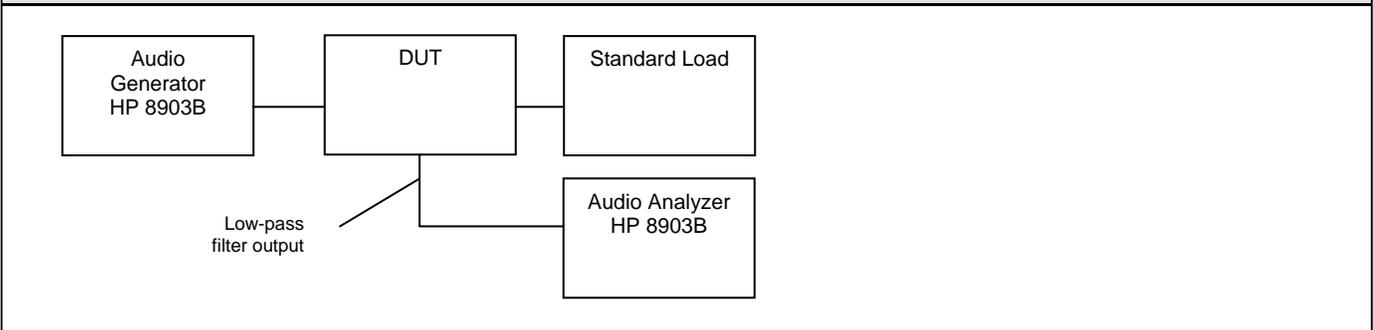
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa

D.4 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00027	HP	8903B	Audio Generator/Analyzer	21Jul12

D.5 SETUP DRAWING

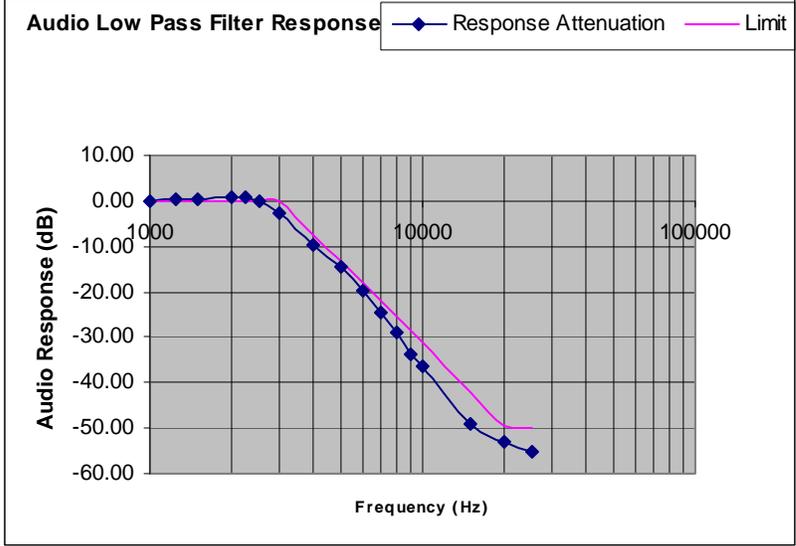
Figure D.5-1 - Setup Drawing – Low-pass Filter Response



Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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D.6 TEST RESULTS

Audio Frequency	Response Attenuation	Limit
[Hz]	[dB]	[dB]
1000	0.00	0
1250	0.30	0
1500	0.50	0
2000	0.83	0
2250	0.61	0
2500	-0.10	0
3000	-2.60	0
4000	-9.50	-7.4
5000	-14.40	-13.3
6000	-19.63	-18
7000	-24.53	-22
8000	-29.13	-25.5
9000	-33.73	-28.6
10000	-36.33	-31.3
15000	-49.00	-41.9
20000	-53.00	-49.4
25000	-55.00	-50



D.7 PASS/FAIL

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

D.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.

Sean Johnston

Sean Johnston
Lab Manager
Celltech Labs Inc.

Nov. 9, 2011

Date

	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

Appendix E Occupied Bandwidth and Emission Mask

E.1 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1049, §95.633, §95.635; IC RSS-210
Procedure Reference / Description	Occupied bandwidth was performed by connecting the output of the DUT to the input of a spectrum analyzer. The unit was supplied a 2500Hz audio signal and the 20dB bandwidth was measured for both the FRS and GMRS modes.

E.2 LIMITS

§95.633 & RSS-210 A6.1.3, A6.2.3	The <i>authorized bandwidth</i> (maximum permissible bandwidth of a transmission) for emission type H1D, J1D, R1D, H3E, J3E or R3E is 4 kHz. The authorized bandwidth for emission type A1D or A3E is 8 kHz. The authorized bandwidth for emission type F1D, G1D, F3E or G3E is 20 kHz. The authorized bandwidth for emission type F3E or F2D transmitted by a FRS unit is 12.5 kHz.
§95.635 & RSS-210 A6.1.5, A6.2.5	At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth. At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth. At least 43 + 10 log ₁₀ (T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

E.3 ENVIRONMENTAL CONDITIONS

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

E.4 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00051	HP	8566B	Spectrum Analyzer RF Section	03-May-12
00047	HP	85685A	RF Preselector	05-May-12
00027	HP	8903B	Audio Generator/Analyzer	21-Jul-12

E.5 SETUP DRAWING

Figure E.5-1 - Setup Drawing – Occupied Bandwidth & Emission Mask



Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

E.6 EMISSION DESIGNATOR & FREQUENCIES

2.1033(c) (4) Type of Emission: 11K0F3E

95.631

$B_n = 2M + 2DK$

$M = 3000$

$D = 2.5K$

$B_n = 2(3000) + 2(2500) = 11K$

GMRS Authorized Bandwidth 20.0 kHz

2.1033(c)(5) GMRS Frequency Range (MHz):

95.621

1. 462.5500 13. 462.7000
2. 462.5625 14. 462.7125
3. 462.5750 15. 462.7250
4. 462.5875
5. 462.6000
6. 462.6125
7. 462.6250
8. 462.6375
9. 462.6500
10. 462.6625
11. 462.6750
12. 462.6875

FRS Authorized Bandwidth 12.5 kHz

2.1033(c)(5) FRS Frequency Range (MHz):

95.627

1. 462.5625 8. 467.5625
2. 462.5875 9. 467.5875
3. 462.6125 10. 467.6125
4. 462.6375 11. 467.6375
5. 462.6625 12. 467.6625
6. 462.6875 13. 467.6875
7. 462.7125 14. 467.7125

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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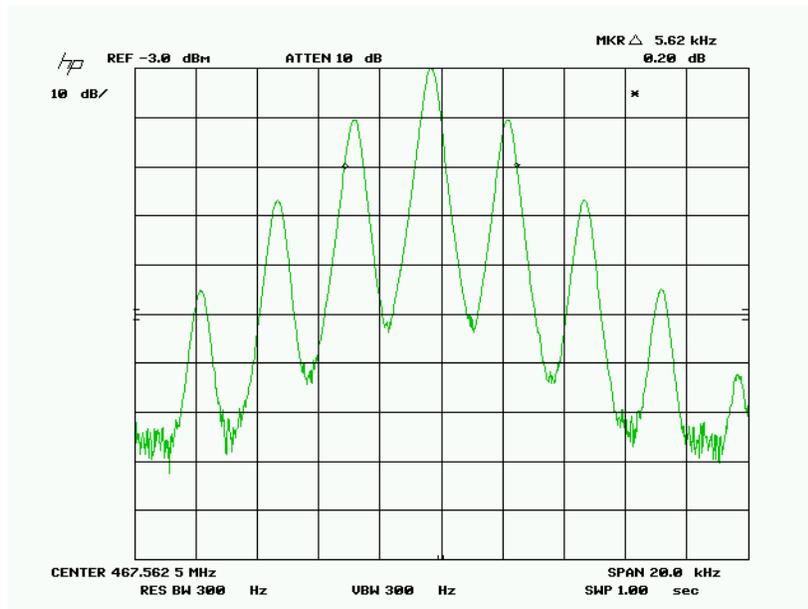
Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012
Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)
Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B	Test Site Registration:	FCC Accredited Site
	IC RSS-210 (8), RSS-Gen (3)		IC Site File #: 3874A-1



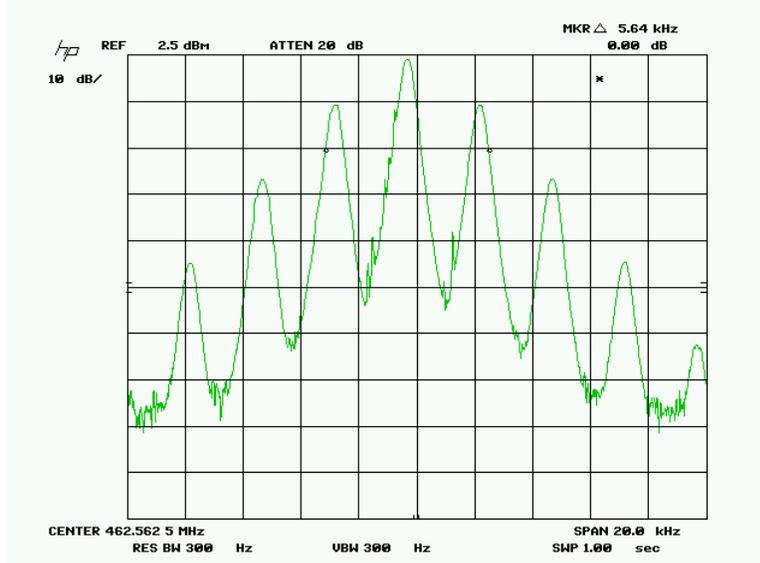
E.7 TEST RESULTS

E.7.1 Occupied Bandwidth

E.7.1.1 FRS



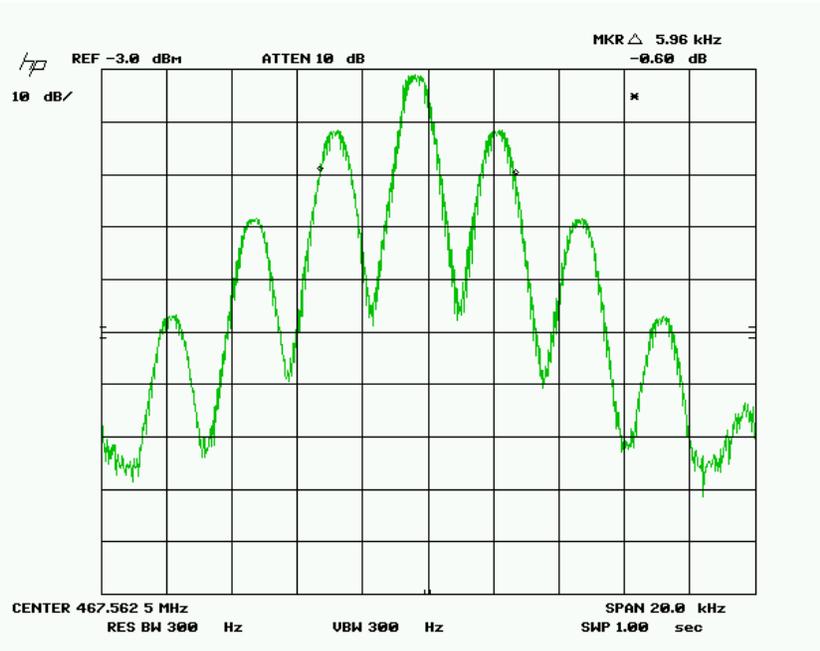
E.7.1.2 GMRS



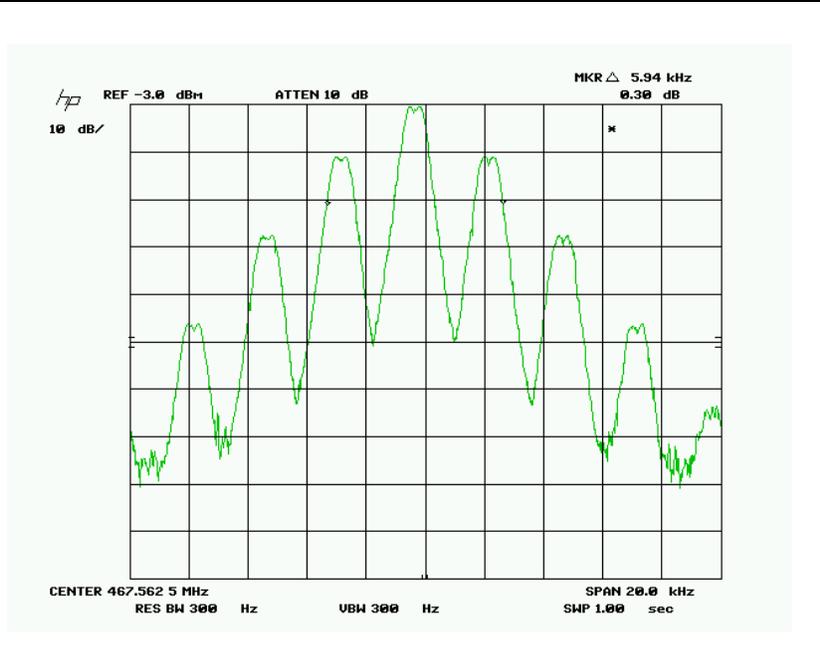
Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012
Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)
Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B	Test Site Registration:	FCC Accredited Site
	IC RSS-210 (8), RSS-Gen (3)		IC Site File #: 3874A-1

E.7.1.3 FRS CTCSS 38

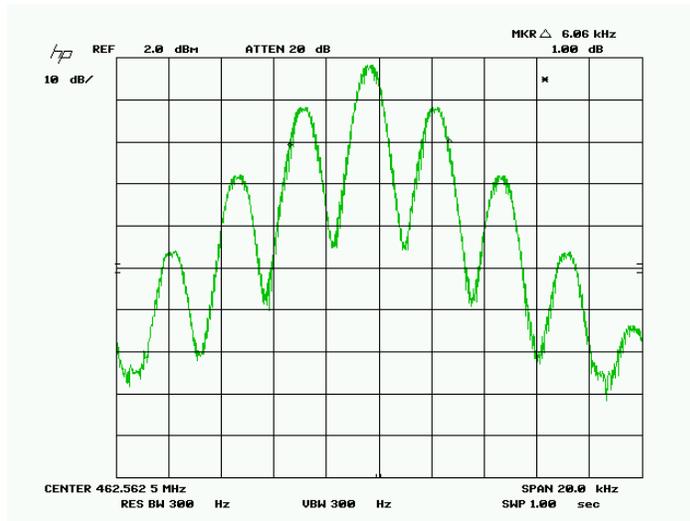


E.7.1.4 FRS DCS

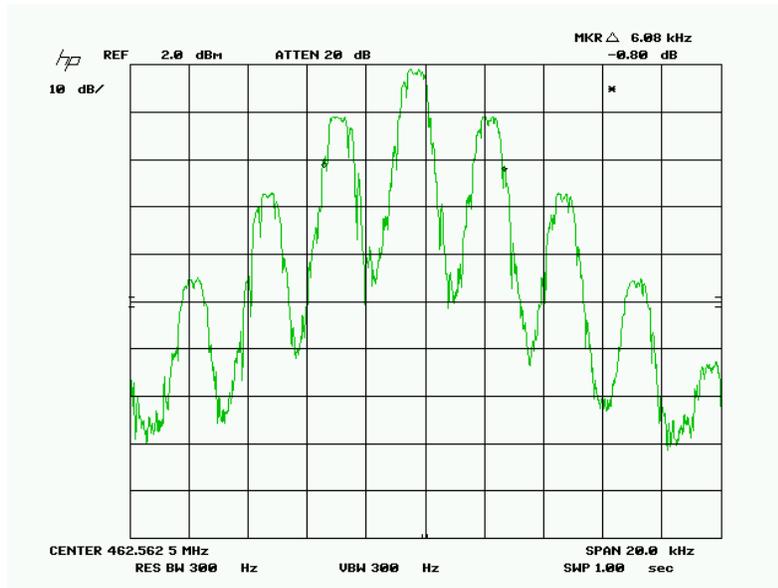


Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012
Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)
Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B	Test Site Registration:	FCC Accredited Site
	IC RSS-210 (8), RSS-Gen (3)		IC Site File #: 3874A-1

E.7.1.5 GMRS CTCSS 38



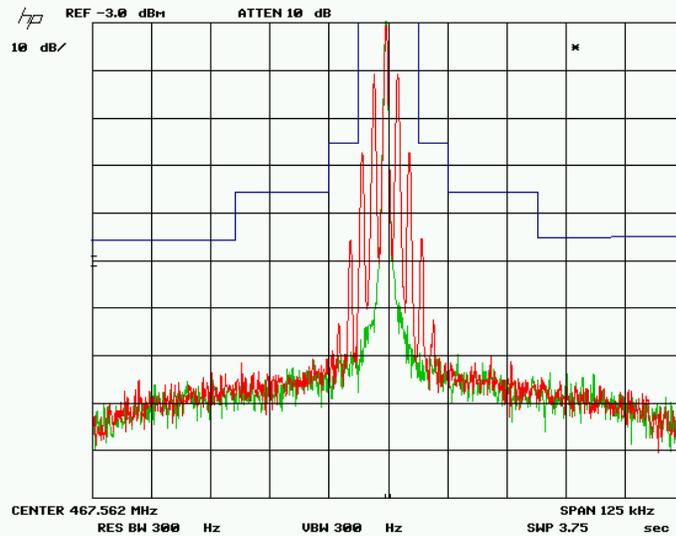
E.7.1.6 GMRS DCS



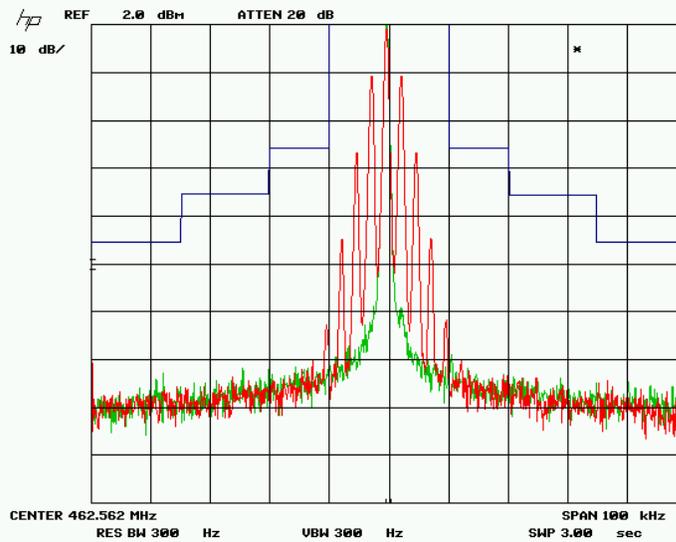
Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012
Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)
Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B	Test Site Registration:	FCC Accredited Site
	IC RSS-210 (8), RSS-Gen (3)		IC Site File #: 3874A-1

E.7.2 Emission Mask

E.7.2.1 FRS

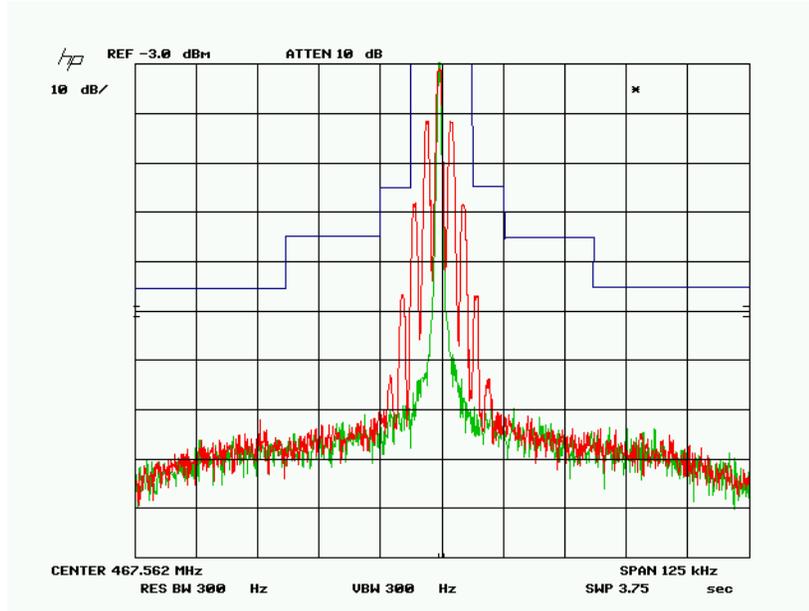


E.7.2.2 GMRS

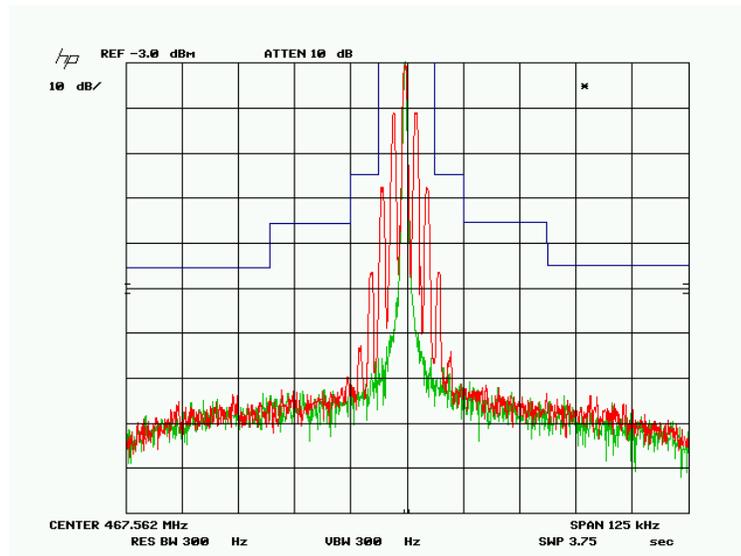


Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012
Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)
Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B	Test Site Registration:	FCC Accredited Site
	IC RSS-210 (8), RSS-Gen (3)		IC Site File #: 3874A-1

E.7.2.3 FRS CTCSS



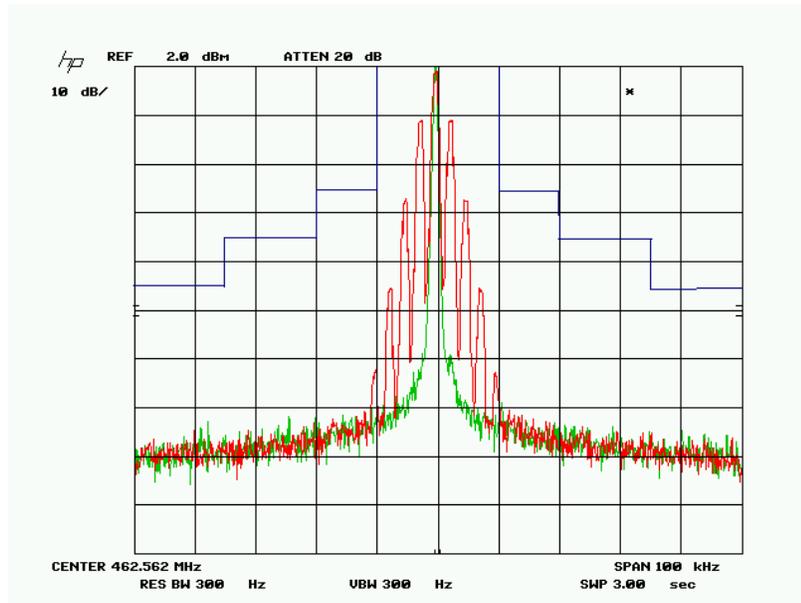
E.7.2.4 FRS DCS



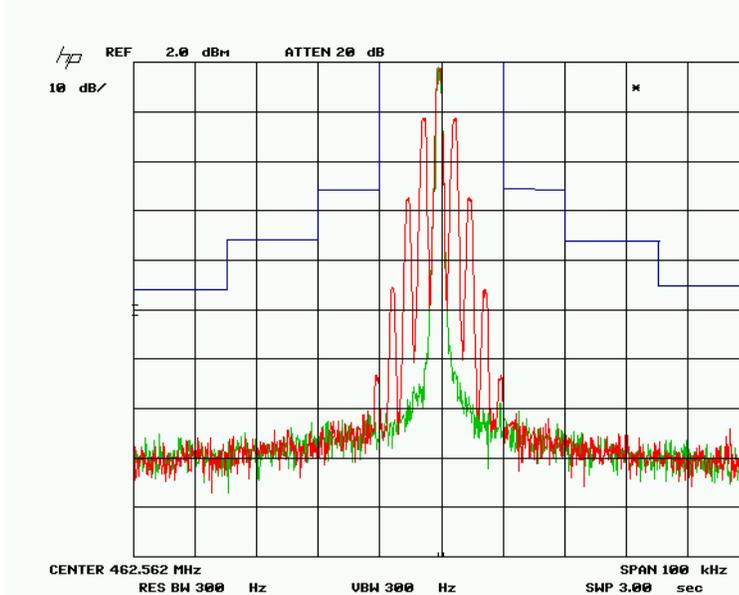
Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012
Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)
Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B	Test Site Registration:	FCC Accredited Site
	IC RSS-210 (8), RSS-Gen (3)		IC Site File #: 3874A-1

E.7.2.5 GMRS CTCSS

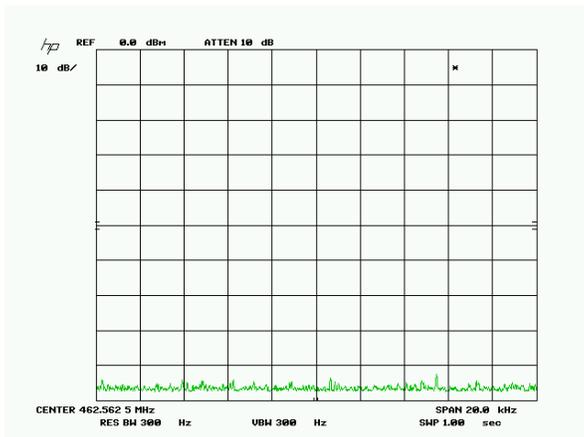


E.7.2.6 GMRS DCS

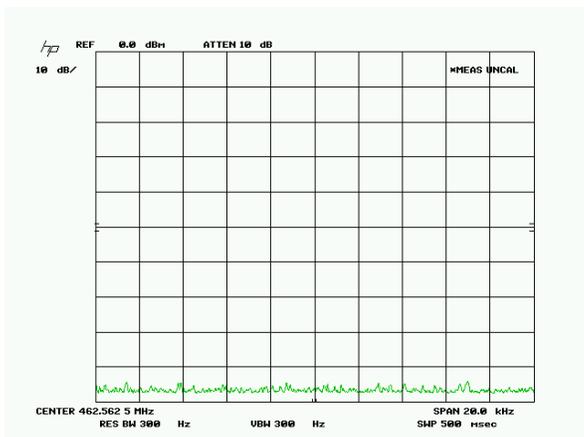


	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

Note:
The asterisk appears on the occupied bandwidth plots (Section E.7.1) and emission mask plots (Section E.7.2) due to a plotter emulator program used to capture data. During the read process an asterisk appears on the SA screen indicating a data transfer. This is different from an un-calibrated measurement, as indicated in the plots below. Auto sweep time selected for measurements.



Data capture



Uncalibrated measurement

E.8 PASS/FAIL
In reference to the results outlined in E.7, the DUT passes the requirements as stated in the reference standards.
E.9 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.
 <hr/> Sean Johnston Lab Manager Celltech Labs Inc. Nov. 9, 2011 <hr/> Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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	Test Report Serial No.:	110811AMW-T1131-E95U	Test Report Issue Date:	January 10, 2012	 
	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

Appendix F Radiated Spurious Emissions - TX

F.1 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1053, §95.635 (b) (7); IC RSS-210
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).

F.2 LIMITS

§95.635 & RSS-210 A6.1.5, A6.2.5	(7) At least 43 + 10 log ₁₀ (T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.
--	---

F.3 ENVIRONMENTAL CONDITIONS

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

F.4 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
00072	EMCO	2075	Mini-mast	cnr
00073	EMCO	2080	Turn Table	cnr
00071	EMCO	2090	Multi-Device Controller	cnr
00015	HP	E4408B	Spectrum Analyzer	03-May-12
00050	Chase	CBL-6111A	Bilog Antenna	03-May-13
00055	EMCO	3121C	Dipole Antenna	27-Aug-12
00034	ETS	3115	Double Ridged Guide Horn	29-May-12
00035	ETS	3115	Double Ridged Guide Horn	29-May-12
00051	HP	8566B	Spectrum Analyzer RF Section	03-May-12
00049	HP	85650A	Quasi-peak Adapter	06-May-12
00047	HP	85685A	RF Preselector	05-May-12
00006	R & S	SMR 20	Signal Generator (10MHz-40GHz)	30-Apr-12
00114	Amplifier Research	DC7154	Directional Coupler (0.8-4.2 GHz)	cnr
00078	Pasternack	PE2214-20	Directional Coupler (1-18 GHz)	cnr
00106	Amplifier Research	5S1G4	Power Amplifier (5W, 800MHz-4.2GHz)	cnr
00041	Amplifier Research	10W1000C	Power Amplifier (0.5 - 1 GHz)	cnr
00007	Gigatronics	8652A	Power Meter	04-May-12
00014	Gigatronics	80701A	Power Sensor	04-May-12

cnr = calibration not required

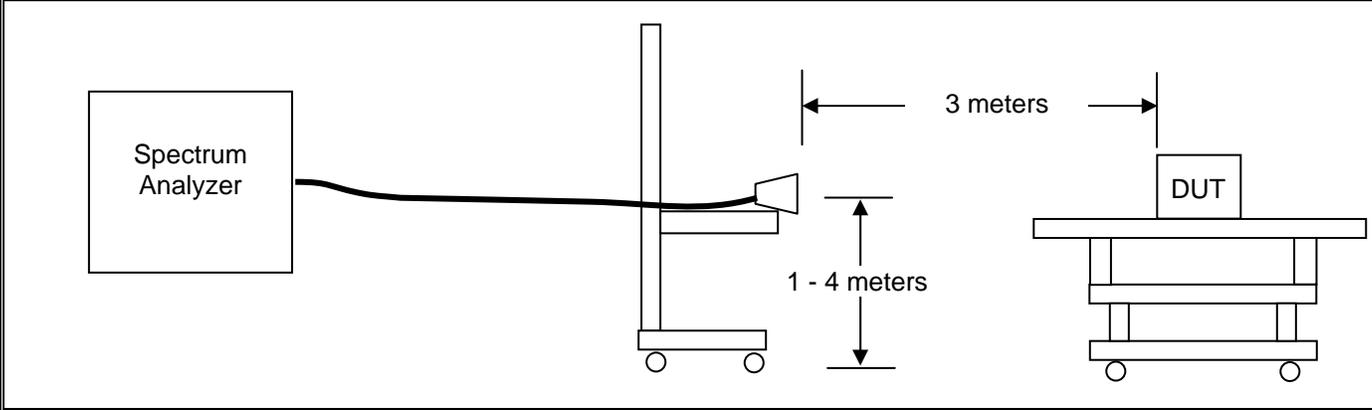
Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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F.5 MEASUREMENT EQUIPMENT SETUP

MEASUREMENT EQUIPMENT CONNECTIONS	For the field strength measurements, the measurement equipment was connected as shown in F.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.			
	Frequency Range	RX Antenna	TX Antenna	
	30 MHz - 1GHz	Bilog	Dipole	
	1 GHz - 18 GHz	ETS 3115 Horn	ETS 3115 Horn	
MEASUREMENT EQUIPMENT SETTINGS	For measuring the radiated field strength of the fundamental, the spectrum analyzer was set to the following settings:			
	Mode	RBW	VBW	Detector
		MHz	MHz	
	GMRS (Hi Power)	1	3	Peak
	FRS (Lo Power)	1	3	Peak

F.6 SETUP DRAWING

Figure F.6-1 - Setup Drawing – Radiated TX Spurious Emissions



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	Measurement Dates:	November 08-15, 2011	Test Report Revision:	Rev. 1.2 (3rd Release)	
	Rule Part(s) Applied:	FCC 47 CFR §2, §95A, §95B IC RSS-210 (8), RSS-Gen (3)	Test Site Registration:	FCC Accredited Site IC Site File #: 3874A-1	
					Test Lab Certificate No. 2470.01

F.7 TEST RESULTS

GMRS Boost TX: 462.5625 MHz

Measured Output Power: 0.92 W, Limit: $43+10\log(W)$ = 42.6dBc

Emissions (MHz)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
462.5625	-	-	-
925.125	59.1	42.6	16.5
1387.6875	57.3	42.6	14.7
1850.25	61.8	42.6	19.2

GMRS Normal TX: 462.5625 MHz

Measured Output Power: 0.65 W, Limit: $43+10\log(W)$ = 41.1dBc

Emissions (MHz)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
462.5625	-	-	-
925.125	53.8	41.1	12.7
1387.6875	52.2	41.1	11.1
1850.25	64.7	41.1	23.6

FRS Normal TX: 467.5625 MHz

Measured Output Power: 0.39 W, Limit: $43+10\log(W)$ = 38.9dBc

Emissions (MHz)	Attenuation (dBc)	Limit (dBc)	Margin (dB)
467.5625	-	-	-
935.125	55.4	38.9	16.5
1402.6875	57.1	38.9	18.2
1870.25	58.1	38.9	19.2

Note(s):

1. Measured ERP Carrier Level (dBm) = Power Applied to Antenna (dBm) + Antenna Gain (dBd)
2. The DUT was measured in 3 orientations with respect to the receive antenna and the orientation with the highest Radiated Power results is shown (Vertical Polarization).
3. The DUT was measured with and without an audio accessory connected to the audio jack of the DUT, and the worst-case configuration is reported (without audio accessory).

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					Test Lab Certificate No. 2470.01

F.8 PASS/FAIL

In reference to the results outlined in F.7 the DUT passes the requirements as stated in the reference standards.

F.9 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.

Sean Johnston

Sean Johnston
Lab Manager
Celltech Labs Inc.

Nov. 15, 2011

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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					Test Lab Certificate No. 2470.01

F.10 TEST SETUP PHOTOGRAPH



Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
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					Test Lab Certificate No. 2470.01

Appendix G Frequency Stability

G.1 REFERENCES

Normative Reference Standard	FCC CFR 47 §2.1055, §95.621, §95.627; IC RSS-210
Procedure Reference / Description	<p>§95.621 (a) The frequency stability shall be measured with variation of ambient temperature as follows:</p> <p>(1) From -30° to +50° centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.</p> <p>(2) From -20° to +50° Family Radio Service under part 95 of this chapter.</p>

G.2 LIMITS

§95.621	(b) Each GMRS transmitter for mobile station, small base station and control station operation must be maintained within a frequency tolerance of 0.0005%. Each GMRS transmitter for base station (except small base), mobile relay station or fixed station operation must be maintained within a frequency tolerance of 0.00025%.
§95.627	(b) Each FRS unit must be maintained within a frequency tolerance of 0.00025%.
RSS-210 A6.1.6	FRS Devices: Carrier frequency tolerance shall be better than ± 5 ppm
RSS-210 A6.2.6	GMRS Devices: Carrier frequency tolerance shall be better than ± 5 ppm

G.3 ENVIRONMENTAL CONDITIONS

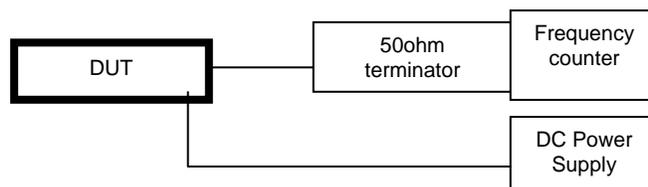
Temperature	25 +/- 5 °C
Humidity	40 +/- 10 %
Barometric Pressure	101 +/- 3 kPa

G.4 EQUIPMENT LIST

ASSET NUMBER	MANUFACTURER	MODEL	DESCRIPTION	CAL DUE
na	ESPEC	ECT-2	Heater/Refrigerator	na
0003	HP	53181A	Frequency Counter	09-Apr-12
na	HP	E3611A	DC Power Supply	Na
00207	VWR	na	Temperature Humidity Monitor	09-Apr-12

G.5 SETUP DRAWING

Figure G.5-1 - Setup Drawing – Frequency Stability



Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
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G.6 TEST RESULTS

Channel: 1
GMRS

Temperature (degrees C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (%)	Frequency tolerance with reference to value @ 20 °C (ppm)
-30	462.5625000	462.5614005	-0.000238%	-1.673288571
-20	462.5625000	462.5622548	-0.000053%	0.173598285
-10	462.5625000	462.5628963	0.000086%	1.560438877
0	462.5625000	462.5630013	0.000108%	1.787435388
10	462.5625000	462.5626542	0.000033%	1.037049777
20	462.5625000	462.5621745	-0.000070%	0
30	462.5625000	462.5621199	-0.000082%	-0.118038186
40	462.5625000	462.5618107	-0.000149%	-0.786488866
50	462.5625000	462.5619151	-0.000126%	-0.560789477

Channel: 8
FRS

Temperature (degrees C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Deviation (%)	Frequency tolerance with reference to value @ 20 °C (ppm)
-30	467.5625000	467.5613003	-0.000257%	-1.715707915
-20	467.5625000	467.5622345	-0.000057%	0.282315439
-10	467.5625000	467.5629006	0.000086%	1.707003189
0	467.5625000	467.5631013	0.000129%	2.136186818
10	467.5625000	467.5625933	0.000020%	1.049700131
20	467.5625000	467.5621025	-0.000085%	0
30	467.5625000	467.5620059	-0.000106%	-0.206603571
40	467.5625000	467.5617994	-0.000150%	-0.648256132
50	467.5625000	467.5617221	-0.000166%	-0.813581764

GMRS

Voltage (V)	Frequency (MHz)	% Deviation	PPM to reference
3.06	462.5625243	0.000005%	0.0525
4.14	462.5625504	0.000011%	0.1090

FRS

Voltage (V)	Frequency (MHz)	% Deviation	PPM to reference
3.06	467.5625678	0.000015%	0.1450
4.14	467.5625699	0.000015%	0.1495

G.7 PASS/FAIL

In reference to the results outlined in G.6 the DUT passes the requirements as stated in the reference standards.

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					Test Lab Certificate No. 2470.01

G.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.



Sean Johnston
Lab Manager
Celltech Labs Inc.

Nov. 10, 2011

Date

Applicant:	Uniden America Corporation	FCC ID:	AMWUT064	IC:	513C-UT064	
DUT Type:	Portable FRS/GMRS UHF PTT Radio Transceiver	DUT Model(s):	GMR4099 / GMR4040			
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END OF DOCUMENT

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