Product Integrity Laboratory

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Certification Test Report

CFR 47 FCC Part 15, Subpart C Section 15.247
Industry Canada RSS 210, Issue 6

Axiom Manufacturing's AXM0367
FCC ID # TAK50200040
IC #6007A-50200040

Project Code CG-145

(Report CG-145-1)
Revision: 1

December 14, 2005

Prepared for: Point Inc

Author: Glen Moore
EMC Manager

Approved by: Nick Kobrosly
Lab Manager

Report Summary

NTS Canada

Product Integrity Laboratory
5151-47th Street, N.E. Calgary Alberta T3J 3R2

Accreditation Numbers: FCC 101386
IC 46405-3978 File # IC3978-2
Standards Council of Canada Accredited Laboratory No. 440

Applicant: Point Inc
1120 – 68th Avenue N.E
Calgary, Alberta
Canada, T2E 8S5
Tel: 403-295-4500

Customer Representative: Fraser Smith

EUT Description:

EUT Description	Manufacturer	Model	Revision	Serial Number
2.4 GHz Bluetooth compatible Transceiver integrated in host GPS RX system	Novatel Inc	GSR2700	1.00	NZH05330006

Test Summary

Appendix	Test/Requirement Description	Deviations* from:			Pass / Fail	Applicable Rule Parts
		Base Standard	Test Basis	NTS Procedure		
A	TX 6 dB Bandwidth	No	No	No	PASS	15.247
B	TX Peak Power Output	No	No	No	PASS	15.247
C	TX Peak Power Density	No	No	No	PASS	15.247
D	TX Conducted Spurious Emissions	No	No	No	PASS	15.247, 15.205
E	TX Conducted Spurious Emissions Band edge	No	No	No	PASS	15.247, 15.205
F	TX Radiated Spurious Emissions 30 MHz- 25 GHz ,RSS 210 Issue 5 RX Spurious Emissions	No	No	No	PASS	15.247, 15.205, RSS 210
G	AC Power line Conducted Emissions	No	No	No	PASS	15.207
H	Test Equipment List	No	No	No	PASS	NA

Test Result: The product presented for testing complied with test requirements as shown above.

Prepared By:

Digitally signed by gmoore
DN: cn=gmoore, c=US, o=nts, email=glen.moore@ntscorp.com
Date: 2005.12.14 17:08:30 -07'00'

Glen Moore
EMC Manager

Reviewed By:

Kuganesan Pararajasingam
2005.12.14 17:04:53 -07'00'

Kuganesan Pararajasingam
EMC Engineer

Table of Contents

Register of revisions

Revision	Date	Description of Revisions
0	December 6, 2005	Draft release for review
1	December 14, 2005	Final draft

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this document is to describe the tests applied by NTS Canada to demonstrate compliance of the GSR2700 from Point Inc to FCC Part 15 Subpart C section 15.247 for DTS transmitter and the equivalent sections of Industry Canada's RSS 210, Issue 6

2.0 EUT DESCRIPTION

2.1 CONFIGURATION

Description of EUT

	Name	Model	Revision	Serial Number
EUT	GPS RX with Bluetooth capability	GSR2700	B	TxCI2-0-94V-0-1605
Classification	Mobile			
Channels/Frequency Range	78 channels, 2402 MHz -2480 MHz			
Power	14.4 vdc			
Functional Description	GPS Survey Receiver with Bluetooth capability			

2.1.1 EUT POWER

Voltage	14.4 VDC
Number of Feeds	1 (1 Hot, 1 Return)

2.2 EUT CABLES

Quantity	Model/Type	Routing		Shielded / Unshielded	Description	Cable Length (m)
		From	To			
1	Power	Power Supply	EUT	Unsheilded	Permanent connection to power supply	1.85
1	Power	Power Supply	AC Mains	Shielded		1.8
1	Serial Data	EUT	PC		DB9 connectors	1.8

2.3 MODE OF OPERATION DURING TESTS

The GSR2700 was tested while in a continuous transmit mode. The EUT was tuned to a low, middle, and high channel to perform power, occupied bandwidth, and spurious/harmonic tests. For conducted emissions the device was tuned to its center frequency. The EUT continuously transmitted an unpulsed modulated packet with payload. While transmitting the EUT was setup to operate at the intended maximum power output available to the end user. For all test cases pre-scans were completed in all modes to determine worst case levels.

3.0 SUPPORT EQUIPMENT

3.1 CONFIGURATION

NA

3.2 TEST BED/PERIPHERAL CABLES

NA

APPENDICES

APPENDIX A: 6 DB BANDWIDTH

A.1. Base Standard & Test Basis

Base Standard	FCC PART 15.247 (A)
Test Basis	RF conducted as per FCC Publication 558074
Test Method	RF conducted as per FCC Publication 558074

A.2. Specifications

15.247 2) Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

A.3. Measurement Uncertainty

Expanded Uncertainty (K=2)
1.11/-1.22

A.4. Deviations

Deviation Number	Time & Date	Description and Justification of Deviation	Deviation Reference			Approval
			Base Standard	Test Basis	NTS Procedure	
none						

A.5. Test Procedure

RF conducted as per FCC Publication 558074

A.6. Test Results

The EUT is in compliance with the limits as specified above

Channel	6 dB Bandwidth (MHz)
2402 MHz	571.14
2441 MHz	561.12
2480 MHz	561.12

A.7. Operating Mode During Test

The GSR2700 was tested while in a continuous transmit mode. The EUT was tuned to a low, middle, and high channel to perform power, occupied bandwidth, and spurious/harmonic tests. For conducted emissions the device was tuned to its center frequency. The EUT continuously transmitted a pulsed modulated packet with a payload. While transmitting the EUT was setup to operate at maximum power.

A.8. Sample Calculation

NA

A.9. Test Data

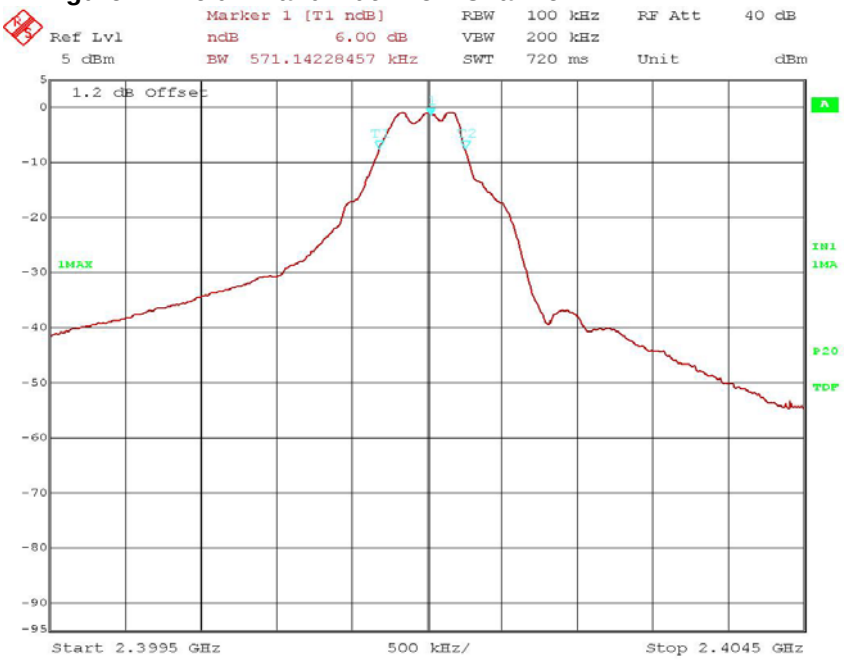
See plots on following pages

A.10. Tested By

This testing was conducted in accordance with the ISO 17025:1999 scope of accreditation, table 1; Quality Manual.

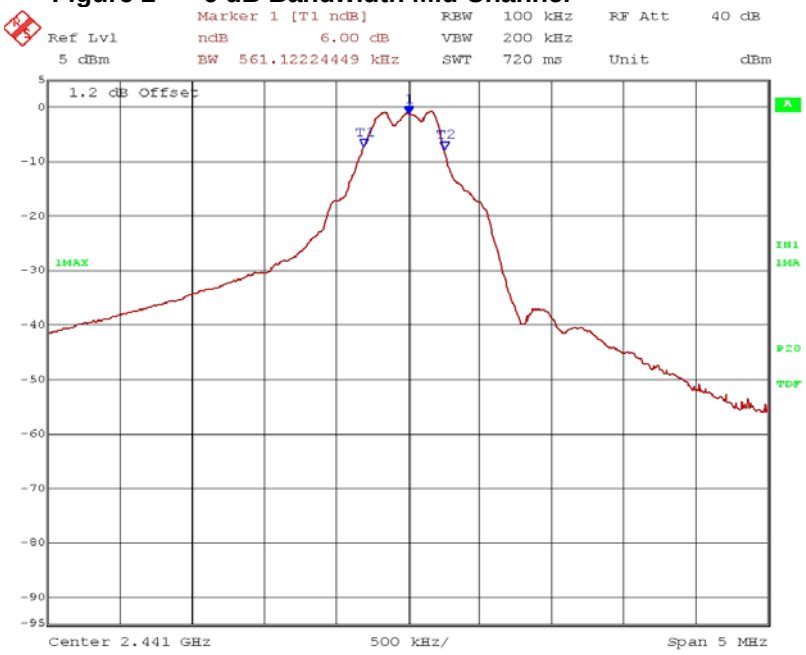
Name: Glen Moore
Function: EMC Manager

Figure 1 6 dB Bandwidth Low Channel



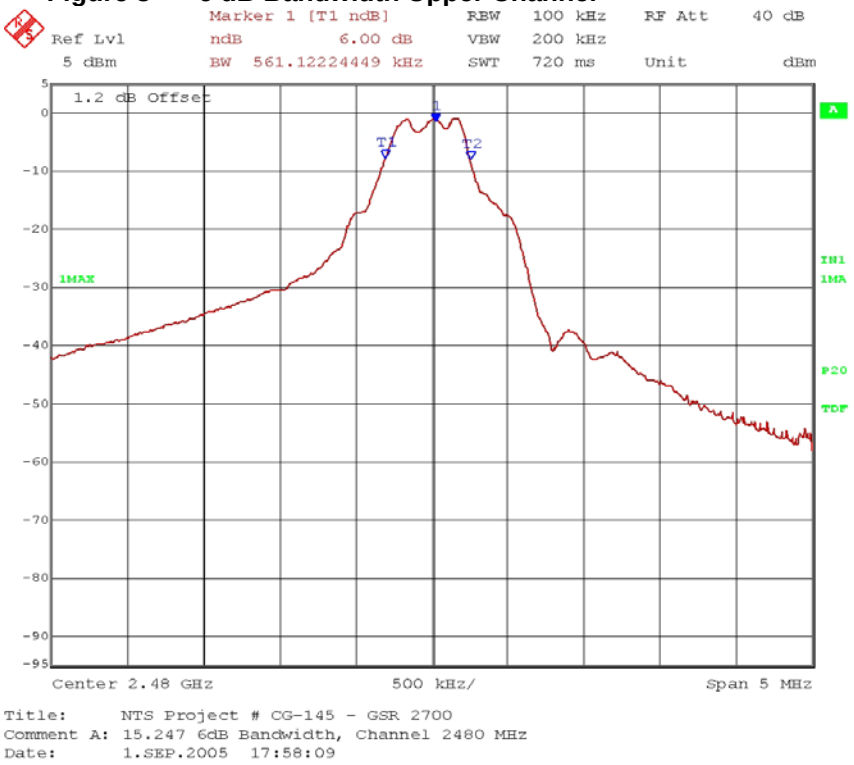
Title: NTS Project # CG-145 - GSR 2700
Comment A: 15.247 6dB Bandwidth, Channel 2402 MHz
Date: 1.SEP.2005 17:25:26

Figure 2 6 dB Bandwidth Mid Channel



Title: NTS Project # CG-145 - GSR 2700
Comment A: 15.247 6dB Bandwidth, Channel 2441 MHz
Date: 1.SEP.2005 17:36:02

Figure 3 6 dB Bandwidth Upper Channel



APPENDIX B: PEAK POWER OUTPUT

B.1. Base Standard & Test Basis

Base Standard	FCC 15.247
Test Basis	FCC 15.247 RF conducted as per FCC Publication 558074
Test Method	RF conducted as per FCC Publication 558074

B.2. Specifications

The maximum peak output power shall not exceed 30 dBM in the 2400 MHz- 2483.5 MHz band

B.3. Measurement Uncertainty

Expanded Uncertainty (K=2)
1.11/-1.22

B.4. Deviations

Deviation Number	**Time & Date**	**Description and Justification of Deviation**	**Deviation Reference**			**Approval**
			Base Standard	**Test Basis**	**NTS Procedure**	
none						

B.5. Test Method

RF conducted as per FCC Publication 558074

B.6. Test Results

Compliant – The maximum conducted peak power was -.85 dBm

B.7. Sample Calculation

None.

B.8. Test Data Summary

EUT Transmit Channel	Measured Output Power (dBM)
2402 MHz	-0.85
2440 MHz	-1.16
2480 MHz	-1.41

B.9. Tested By

This testing was conducted in accordance with the ISO 17025:1999 scope of accreditation, table 1; Quality Manual.

Name: Glen Moore
Function: EMC Manager

Figure 4 2402 MHz

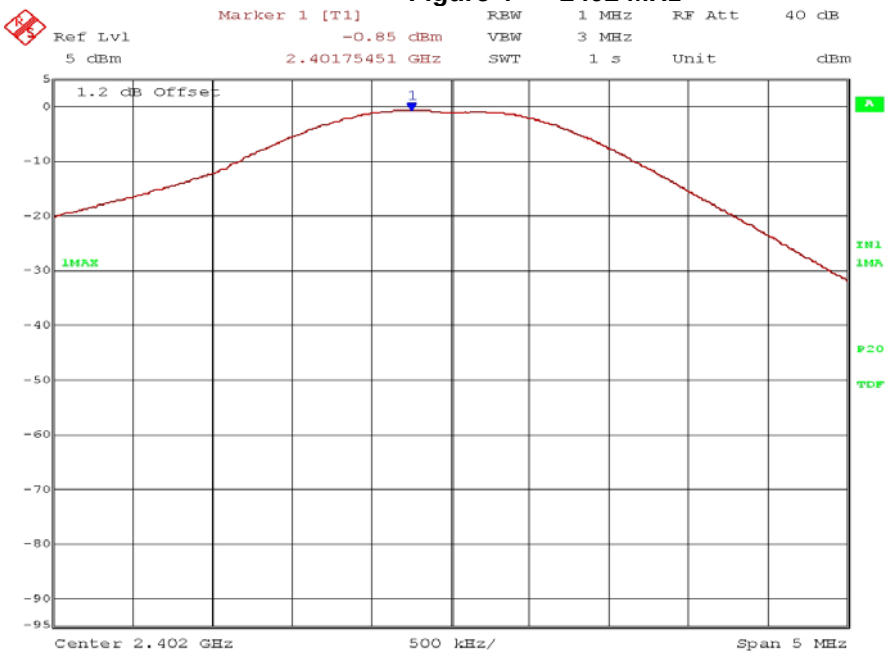


Figure 5 2440 MHz

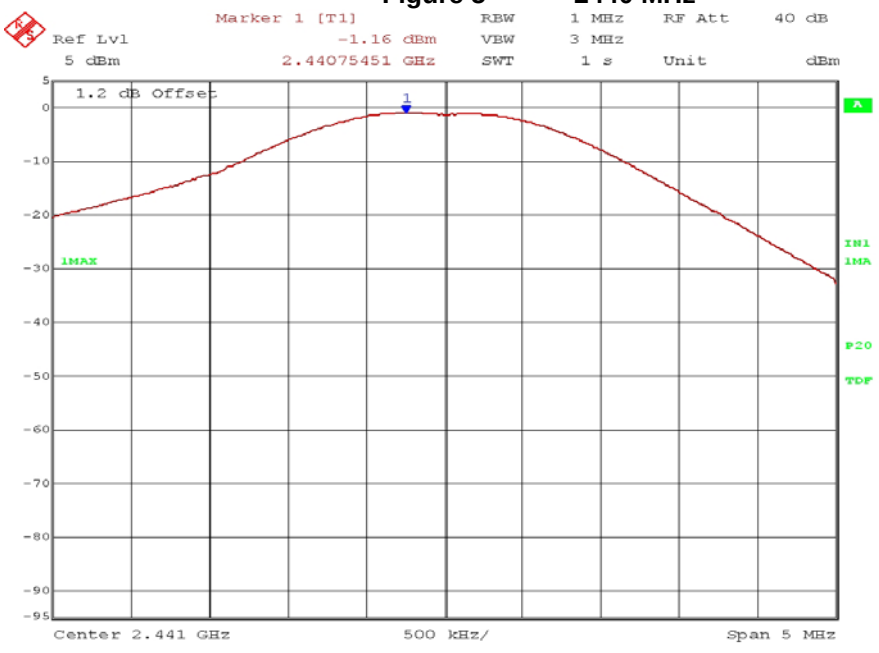
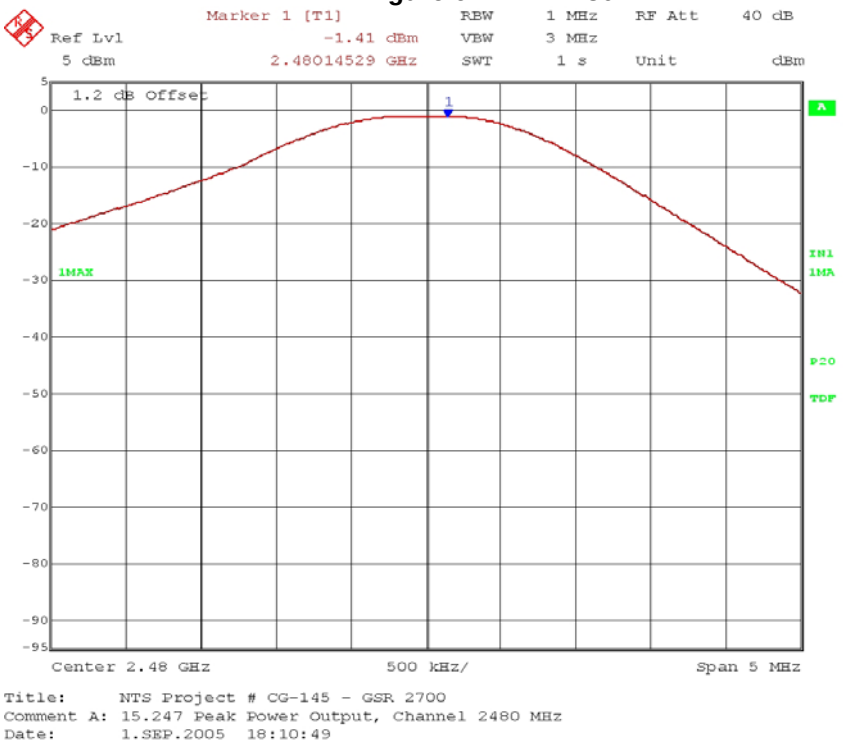


Figure 6 2480 MHz



APPENDIX C: PEAK POWER DENSITY

C.1. Base Standard & Test Basis

Base Standard	CFR Title 47 – Telecommunications, Chapter I - FCC Part 15.247 – Radio Frequency Devices - Subpart C– intentional Radiators
Test Basis	RF conducted as per FCC Publication 558074
Test Method	RF conducted as per FCC Publication 558074

C.2. Specifications

15.247 e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

C.3. Measurement Uncertainty

Expanded Uncertainty (K=2)
+1.11/-1.22

C.4. Deviations

Deviation Number	Time & Date	Description and Justification of Deviation	Deviation Reference			Approval
			Base Standard	Test Basis	NTS Procedure	
none						

C.5. Test Method

RF conducted as per FCC Publication 558074

C.6. Test Results

Compliant. The maximum measured Peak Power Density was -.90 dBM

C.7. Deviations from Normal Operating Mode During Test

None.

C.8. Sample Calculation

None.

C.9. Test Data

EUT Transmit Channel	Peak Power Density (dBM)
2402 MHz	-1.12
2440 MHz	-1.16
2480 MHz	-0.90

See plots below.

C.10. Tested By

This testing was conducted in accordance with the ISO 17025:1999 scope of accreditation, table 1; Quality Manual.
Name: Glen Moore
Function: EMC Manager

Figure 7 Power Density – 2405 MHz Horizontal

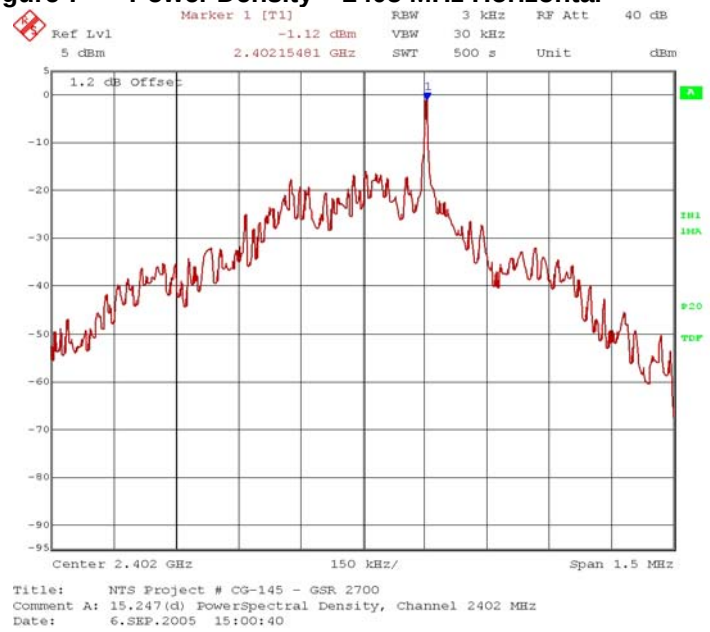


Figure 8 Power Density – 2440 MHz Horizontal

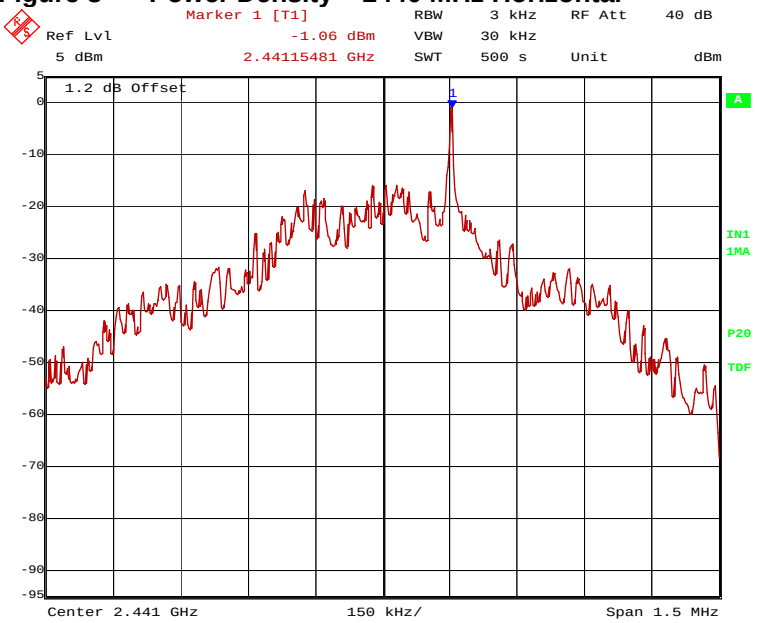
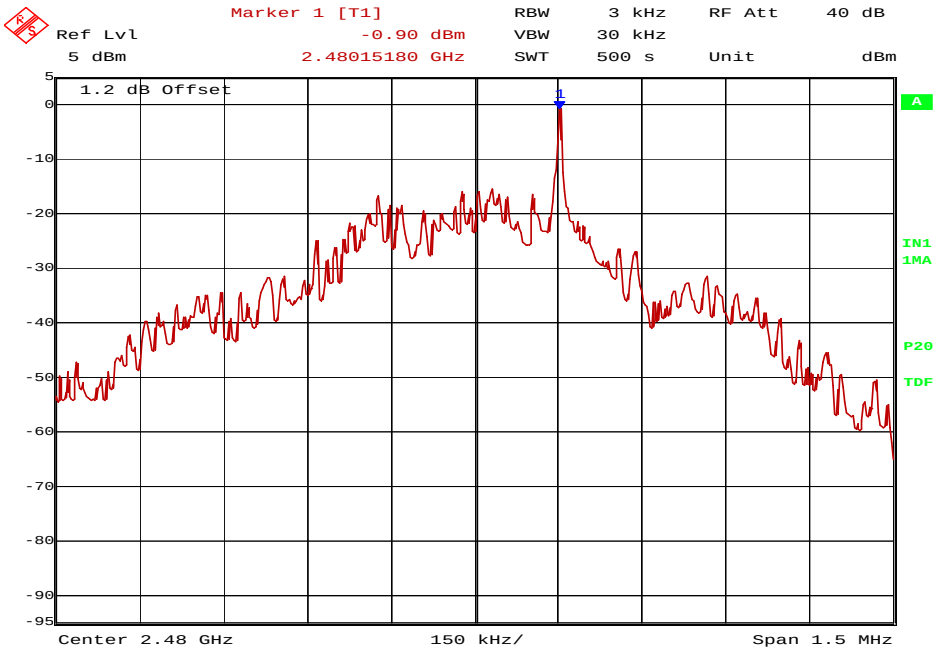


Figure 9 Power Density – 2480 MHz Horizontal



Title: NTS Project # CG-145 - GSR 2700
Comment A: 15.247(d) Power Spectral Density, Channel 2480 MHz
Date: 6.SEP.2005 16:00:20

APPENDIX D: 15.247 CONDUCTED SPURIOUS EMISSIONS

D.1. Base Standard & Test Basis

Base Standard	CFR Title 47 – Telecommunications, Chapter I – FCC Part 15.247 – Radio Frequency Devices - Subpart C– intentional Radiators FCC Part 15.205 Restricted Bands of Operation
Test Basis	RF conducted as per FCC Publication 558074
Test Method	RF conducted as per FCC Publication 558074

D.2. Specifications

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

D.3. Measurement Uncertainty

Expanded Uncertainty (K=2)
1.11/-1.22

D.4. Deviations

Deviation Number	Time & Date	Description and Justification of Deviation	Deviation Reference			Approval
			Base Standard	Test Basis	NTS Procedure	
none						

D.5. Test Results

Compliant. All peak emissions were more than 20 dB below the inband power.

D.6. Test Data & Photographs

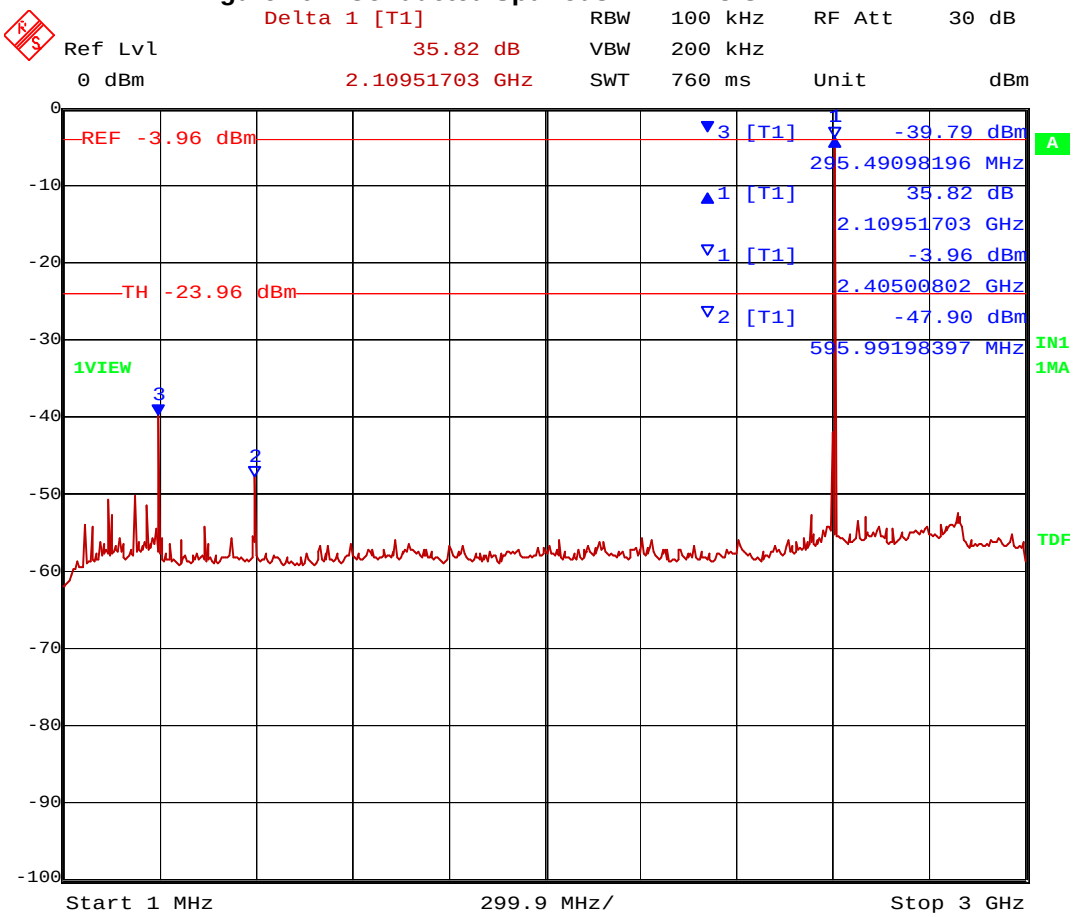
See following pages.

D.7. Tested By

This testing was conducted in accordance with the ISO 17025:1999 scope of accreditation, table 1; Quality Manual.

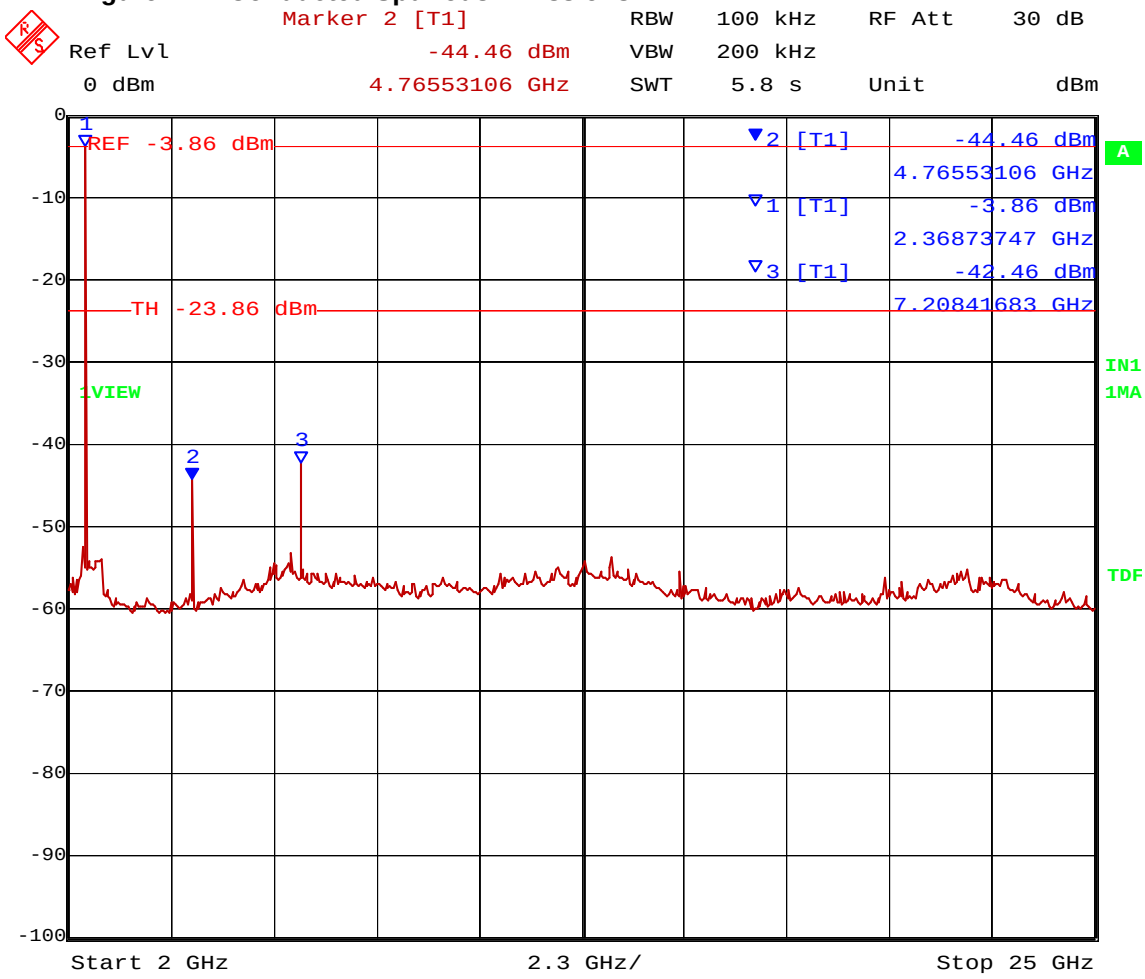
Name: Glen Moore
Function: EMC Manager

Figure 10 Conducted Spurious 1 MHz- 3 GHz



Title: NTS Project # CG-145- GSR 2700
Comment A: 15.247 (C) Antenna Conducted Spurious Emissions,
Channel 2402 MHz
Date: 8.SEP.2005 16:43:14

Figure 11 Conducted Spurious Emissions



Title: NTS Project # CG-145- GSR 2700
Comment A: 15.247 (C) Antenna Conducted Spurious Emissions,
Channel 2402 MHz
Date: 8.SEP.2005 16:55:03

APPENDIX E: CONDUCTED SPURIOUS EMISSIONS BAND EDGE MEASUREMENTS

E.1. Base Standard & Test Basis

Base Standard	CFR Title 47 – Telecommunications, Chapter I – FCC Part 15.247 – Radio Frequency Devices - Subpart C– intentional Radiators.
Test Basis	RF conducted as per FCC Publication 558074
Test Method	RF conducted as per FCC Publication 558074

E.2. Limits

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

E.3. Measurement Uncertainty

Expanded Uncertainty (K=2)
+1.11/-1.22

E.4. Test Results

Compliant. All out of band spurious emissions are more than 20 dB below the in band power of the fundamental.

E.5. Deviations from Normal Operating Mode During Test

None.

E.6. Sample Calculation

NA.

E.7. Test Data

See plots on following pages.

E.8. Tested By

This testing was conducted in accordance with the ISO 17025:1999 scope of accreditation, table 1; Quality Manual.
Name: Glen Moore
Function: EMC Manager

Figure 12 2402 MHz Band edge Measurement

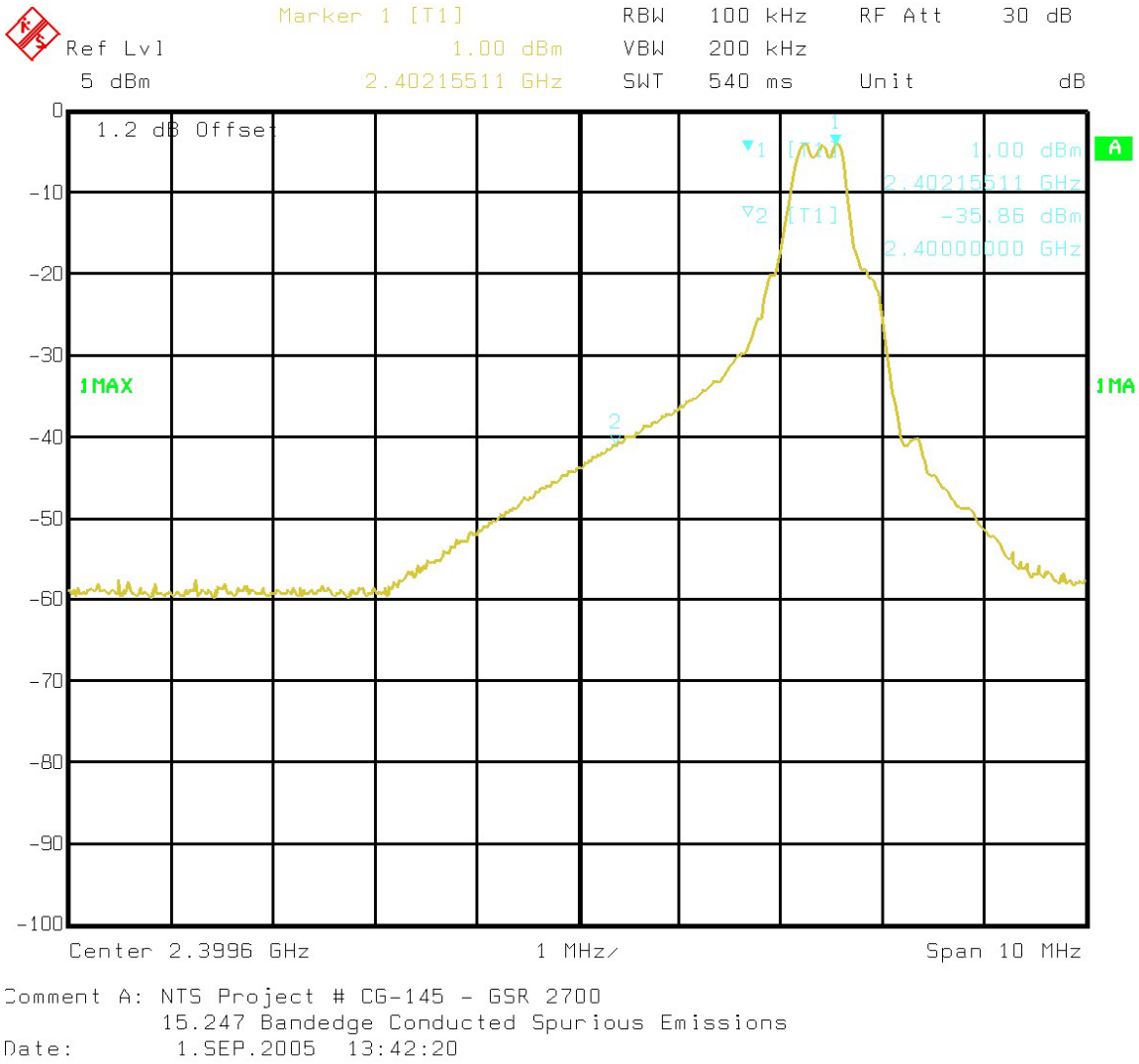
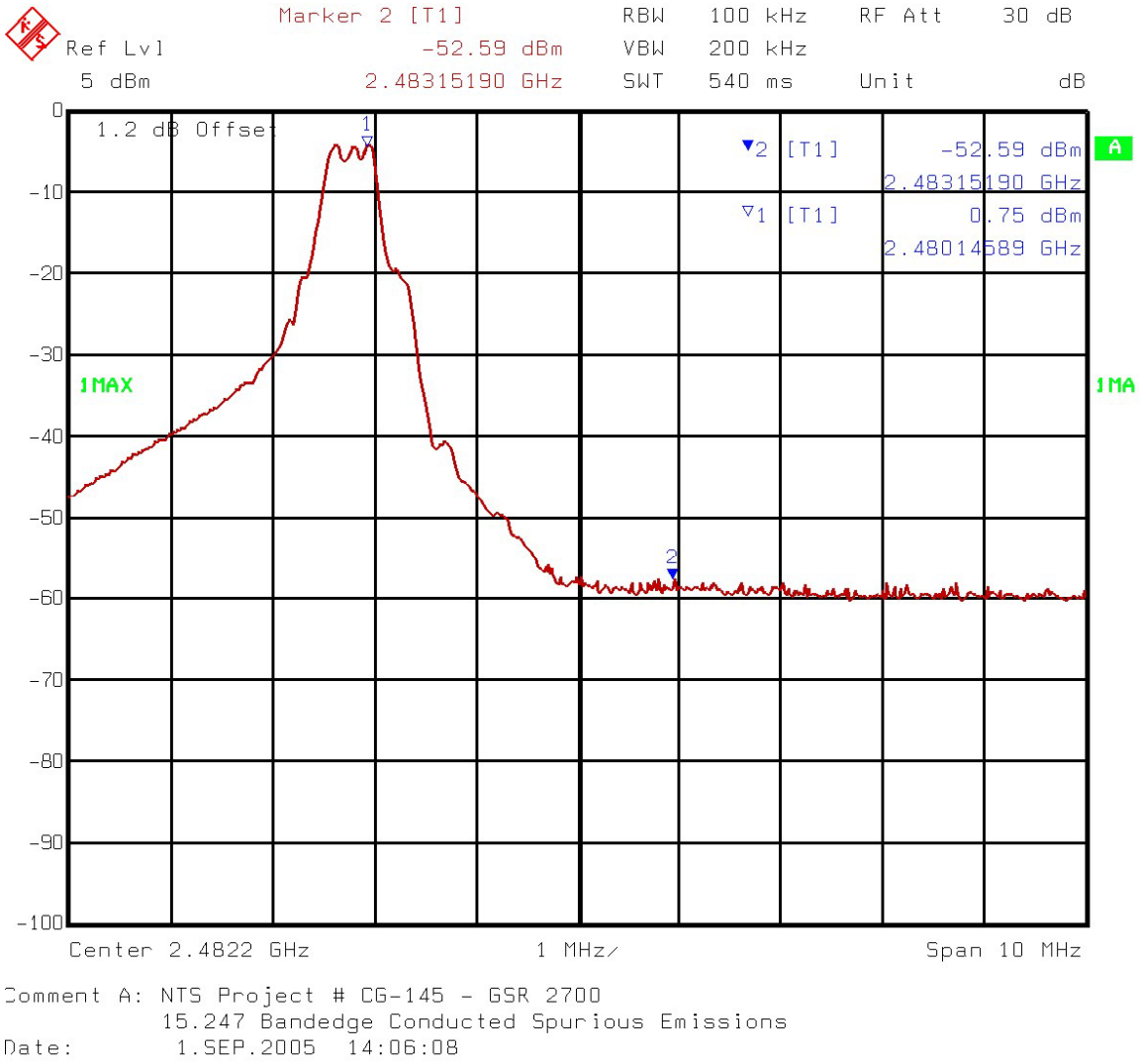


Figure 13 2480 MHz Band edge Measurement



APPENDIX F: RADIATED SPURIOUS EMISSIONS 30 MHZ – 25 GHZ (TX AND RX)

F.1. Base Standard & Test Basis

Base Standard	CFR Title 47 – Telecommunications, Chapter I - FCC Part 15.209 – Radio Frequency Devices
Test Basis	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
Test Method	NTS Radiated Emissions Test Method E001R7

Specifications

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
\1\ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(\2\)
13.36-13.41			

\1\ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
\2\ Above 38.6

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

F.2. Measurement Uncertainty

Radiated Emissions 30 MHz – 1 GHz	Measurement Uncertainty	Expanded Uncertainty (K=2)
(dB)	+2.32/-2.36	+4.65/-4.72

F.3. Deviations

Deviation Number	Time & Date	Description and Justification of Deviation	Deviation Reference			Approval
			Base Standard	Test Basis	NTS Procedure	
none						

F.4. Test Results

Product Integrity Laboratory **V2.5**	**Project Number:**	CG-145	**Tester:**	Stephen Ching
	Model:	GSR 2700 (NovAtel Inc.)	**Test ID:**	RE02c-10m-145
	Comments:	Conf12: AC charger used; 120VAC; Bluetooth set to 2.48GHz; logging to Compact Flash; logging data thru COM2		

Standard	FCC15_B	Measurement Distance	10	meters

Antenna	CL	Frequency	AF	CL+LNA	Total CF	Detector	Measured Value	Corrected Value	Limit	Margin	Mast Height	Turntable Angle
Horizontal		MHz	dB/m	dB	dB/m		dBuV	dBuV/m	dBuV/m	dB	cm	degrees
2261 RX BiCon Hpol	10M Total Link Factor	134.31	11.70	-24.63	-12.93	QP	25.51	12.58	33.06	**20.48**	393.8	84.6
2261 RX BiCon Hpol	10M Total Link Factor	270.33	13.11	-23.23	-10.12	QP	39.25	29.13	35.56	**6.44**	356.0	61.7
2261 RX BiCon Hpol	10M Total Link Factor	319.49	13.40	-23.06	-9.66	QP	36.51	26.85	35.56	**8.71**	275.0	69.7
Vertical												
2261 RX BiCon Vpol	10M Total Link Factor	196.36	9.55	-23.93	-14.38	QP	34.93	20.55	33.06	**12.51**	214.4	48.2
2261 RX BiCon Vpol	10M Total Link Factor	270.35	13.90	-23.23	-9.32	QP	37.73	28.41	35.56	**7.16**	94.3	168.7
2261 RX BiCon Vpol	10M Total Link Factor	319.50	13.77	-23.06	-9.29	QP	37.55	28.26	35.56	**7.30**	100.6	97.3

Positive Margin indicates a Pass

The EUT is in compliance with FCC CFR47 Part 15.205/15209 Radiated emission limits. The worst case emission was 29.13 dBμV/m @10 meters @ 270.33 MHz, a pass margin of 6.44 dB. The EUT was operating in RX and TX mode during this test.

F.5. Observations

No emissions were detected above 1 GHz.

F.6. Deviations from Normal Operating Mode During Test

None.

F.7. Sample Calculation

Emission Level = Measured Level + Correction Factors.
Margin = Limit – Emission Level.

F.8. Test Data & Photographs

Plots were not provided in order to reduce file size.

F.9. Tested By

This testing was conducted in accordance with the ISO 17025:1999 scope of accreditation, table 1; Quality Manual.
Name: Stephen Ching
Function: Regulatory Specialist

APPENDIX G: FCC PART 15.207 CONDUCTED VOLTAGE EMISSIONS 150 KHZ – 30 MHZ

G.1. Base Standard & Test Basis

Base Standard	CFR Title 47 – Telecommunications, Chapter I - FCC Part 15.207 – Radio Frequency Devices - Subpart C – Unintentional Radiators
Test Basis	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
Test Method	NTS Radiated Emissions Test Method E011R1

G.2. Specifications

Frequency	☐	**Class A**	☒	**Class B**
Limit	**Quasi-Peak**	**Average**	**Quasi-Peak**	**Average**
MHz	**dBµV**	**dBµV**	**dBµV**	**dBµV**
0.150 – 0.500	79.00	66.00	66 to 56[1]	56 to 46[1]
0.500 – 5.00	73.00	60.00	56	46
5.00 – 30.00	73.00	60.00	60	50

Note 1: decrease with the logarithm of the frequency.

G.3. Measurement Uncertainty

Conducted Current Emissions 150 kHz – 30 MHz	**Measurement Uncertainty**	**Expanded Uncertainty (K=2)**
(dB)	+1.21/-1.33	+2.41/-2.66

G.4. Deviations

Deviation Number	**Time & Date**	**Description and Justification of Deviation**	**Deviation Reference**			**Approval**
			Base Standard	**Test Basis**	**NTS Procedure**	
none						

G.5. Special Considerations

None.

G.6. Test Results

Product Integrity Laboratory **V2.5**

Project Number: CG-145 **Tester:** Stephen Ching
Model: GSR 2700 (NovAtel Inc.) **Test ID:** CE02tc-10m-145
Comments: Conf02: 120VAC; Bluetooth transmitting;; logging to Compact Flash; logging data through COM2

Standard: FCC15_B

Voltage/Line	LISN/Lead	Frequency	Measurement Detector	Measured Value	CF	Corrected Value	Limit Detector Type	Limit	Margin
		MHz		dBuV	dB	dBuV		dBuV	dB
Phase1	TT LISN A1	0.16	QP	35.19	12.33	47.52	QP	65.66	**18.15**
Phase1	TT LISN A1	0.16	QP	34.94	12.29	47.23	QP	65.57	**18.34**
Phase1	TT LISN A1	0.17	QP	33.59	12.12	45.71	QP	65.06	**19.35**
Neutral	TT LISN A4	0.15	QP	36.54	12.23	48.77	QP	65.90	**17.13**
Neutral	TT LISN A4	0.15	QP	36.23	12.17	48.40	QP	65.74	**17.34**
Neutral	TT LISN A4	0.17	QP	34.1	11.84	45.94	QP	64.75	**18.81**
Neutral	TT LISN A4	7.51	Avg	17.72	11.12	28.84	Avg	50.00	**21.16**

Positive Margin indicates a Pass

Compliant. The worst case emission level was 48.77 dBμV at 150 kHz with a 17.13 dB margin, to the limits.

G.7. Deviations from Normal Operating Mode During Test

None.

G.8. Sample Calculation

Correction Factor = LISN Correction Factor + Cable Loss
Corrected Value = Measurement + Correction Factor
Margin = Limit – Corrected Emission Level

G.9. Test Data & Photographs

The test data and photographs collected during this test appear following this page.

G.10. Tested By

This testing was conducted in accordance with the ISO 17025:1999 scope of accreditation, table 1; Quality Manual.

Name: Stephen Ching
Function: EMC Technician

APPENDIX H: TEST EQUIPMENT LIST

H.1. Conducted Emissions 150 kHz – 30 MHz Measurement Equipment

Description		Manufacturer	Type/Model	Serial #	Cal Due	Cal Date
10m ANECHOIC CHAMBER						
A LISN Link					07JAN06	07JAN04
-LISN A Switch	☒ A	NA	NA	263177		
-Cable Switch to Limiter	☒ A	NA	NA	263164		
- Cable LISN to Switch	☒ A1	Succoflex	NA	263168	07JAN06	07JAN04
	☐ A2	Succoflex	NA	263169	07JAN06	07JAN04
	☐ A3	Succoflex	NA	263170	07JAN06	07JAN04
	☒ A4	Succoflex	NA	263171	07JAN06	07JAN04
- LISN	☐ A1	EMCO	38100/1SPEC	260454	07JAN06	07JAN04
- LISN	☐ A2	EMCO	38100/1SPEC	260268	07JAN06	07JAN04
- LISN	☐ A3	EMCO	38100/1SPEC	260458	07JAN06	07JAN04
- LISN	☐ A4	EMCO	38100/1SPEC	260265	07JAN06	07JAN04
- Table Top LISN	☒ TT	EMCO	3825	260354	08JAN06	08JAN04
CONTROL ROOM						
Test Receiver		Rohde & Schwarz	ESAI	260110 / 260111	02FEB06	02FEB05
Mast Controller		EMCO	2090	260166	N/A	N/A
Switch Matrix		TDL	SMC-002	260162	07JAN06	07JAN04
Cable Switch Matrix to Receiver		NA	NA	263166	07JAN06	07JAN04
A LISN Link					07JAN06	07JAN04
-LISN A Limiter	☒ A	NA	NA	263178		
-Cable Switch to Limiter	☒ A	NA	NA	263164		

H.2. Radiated Emissions 30 MHz – 1 GHz Measurement Equipment

Description	Manufacturer	Type/Model	Asset #	Cal Due	Cal Date
10m ANECHOIC CHAMBER					
Bilog Antenna	☐ Chase	CBL 6111B	260398	09JULY06	09JULY04
	☒ Chase	CBL 6112B	260301		
RF Cable	Suhner Succoflex	Ferrite bead loaded cable	260388	07JAN06	07JAN04
CONTROL ROOM					
Test Receiver	☒ Rohde & Schwarz	ESAI	260110 / 260111	2FEB06	2FEB05
Mast Controller	EMCO	2090	260165	N/A	N/A
Multi Device Controller TT1 (Turntable)	07JAN06	07JAN04		N/A	N/A
RF 10m East site Link				Suhner Succoflex	NA
- Cable 1	Suhner Succoflex	NA	263135		
- Cable 2	Suhner Succoflex	NA	263161		
- Cable 3	Suhner Succoflex	NA	263162		
- Cable 4	TDL	SMC-002	260162		
- Switch Matrix Controller	Hewlett Packard	8447F	260164		
- Amplifier					

H.3. Radiated Emissions 1 GHz – 25 GHz Measurement Equipment

Description	Manufacturer	Type/Model	Asset #	Cal Due	Cal Date
10m ANECHOIC CHAMBER					
Horn Antenna (Rx) 1 GHz – 18 GHz	EMCO	3115	260092	16Jun06	16JUN04
High pass filter	K&L	11SH10-3860	263124	08JAN06	08JAN04
High frequency Link				07JAN06	07JAN04
Step Attenuator/Switch (0dB & 10 dB)	HP	11713A	260048 260097		
LNA	Miteq	JSD000121	260477		
Cable from LNA to SA	Succoflex	101PEA	263187		
Spectrum Analyzer 9k-40GHz	Rohde & Schwarz	FSEK	260104	05APR06	05APR05
LNA DC Power Supply	Xantrex	LXO 30-2	260483	NA	NA
HPIB Extender	HP	37204	260096	N/A	N/A
CONTROL ROOM					
PC with FSEK Manual ctrl S/W	N/A	N/A	N/A	N/A	N/A
HPIB Extender	HP	37204	260168	N/A	N/A
Mast Controller	EMCO	2090	260166	N/A	N/A
Multi Device Controller TT1	EMCO	2090	260165	N/A	N/A
Horn Antenna (Tx)	EMCO	3160	260088	N/A	N/A

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