Test Report Serial Number:	**45461523 R2.0**
Test Report Date:	**10 September 2019**
Project Number:	**1452**

EMC Test Report - New Filing

Applicant:

Myriota

Myriota Pty Ltd.
Lot 14
Frome Road
Adelaide, Australia 5000

Myriota

Myriota Canada Inc.
c/o PwC Law LLP
18 York Street, Suite 2500-C
Toronto, ON, M5J 0B2

FCC ID:	IC Registration Number
2ATKL-SL2-1	**25148-SL21**
Product Model Number / HVIN	Product Name / PMN
SL2-1	**Sense&Locate**

In Accordance With:

FCC 47 CFR Part 15 SubPart C
Intentional Radiators

RSS-GEN, RSS-210 Issue 9
Licence-Exempt Radio Apparatus:
Category I Equipment

Approved By:

Ben Hewson, President
Celltech Labs Inc.
21-364 Lougheed Rd.
Kelowna, BC, V1X 7R8
Canada

ilac-MRA ACCREDITED

Test Lab Certificate: 2470.01

Industry Canada

IC Registration 3874A-1

FCC Registration: CA3874

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1.0 DOCUMENT CONTROL

Revision History				
Samples Tested By:	Art Voss, P.Eng.	**Date(s) of Evaluation:**		May 31 - June 13, 2019
Report Prepared By:	Art Voss, P.Eng.	**Report Reviewed By:**		Ben Hewson
Report Revision	**Description of Revision**	**Revised Section**	**Revised By**	**Revision Date**
0.1	Draft Release	n/a	Art Voss	29 August 2019
1.0	Initial Release	n/a	Art Voss	29 August 2019
2.0	Corrected Plots 7.5, 7.6, ppg. 17,18 Corrected Table 7.1, pg. 20	7.0	Art Voss	10 September 2019

2.0 CLIENT AND DUT INFORMATION

Client Information	
Applicant Name	**Myriota Pty Ltd**
Applicant Address (FCC)	Lot 14
	Frome Road
	Adelaide, Australia 5000
Applicant Address (ISED)	Myriota Canada Inc.
	c/o PwC Law LLP
	18 York Street, Suite 2500-C
	Toronto, ON, M5J 0B2
DUT Information	
Device Identifier(s):	**FCC ID:** 2ATKL-SL2-1
	IC: 25148-SL21
Device Type:	Asset Tracking Device
Equipment Class (FCC):	Low Power Communication Device Transmitter (DXX)
Equipment Class (ISED):	Low Power Transmitter General Field Limits above 30 MHz
Device Model(s) / HVIN:	SL2-1
Device Marketing Name / PMN:	Sense&Locate
Firmware Version ID Number / FVIN:	n/a
Host Marketing Name / HMN:	n/a
Test Sample Serial No.:	T/A Sample - Identical Prototype
Transmit Frequency Range:	433.5 - 434.5MHz
Number of Channels:	n/a
Manuf. Max. Rated Output Power:	0.5W
Manuf. Max. Rated BW/Data Rate:	7kHz
Antenna Make and Model:	n/a
Antenna Type and Gain:	Dipole - Helical Coil w/ Ground Plane, -2.5dBi (UHF)
Modulation:	MSK
Mode:	n/a
Emission Designator:	n/a
DUT Power Source:	3.6VDC Alkaline
Deviation(s) from standard/procedure:	None
Modification of DUT:	None

3.0 SCOPE

This Certification Report was prepared on behalf of:

Myriota Pty Ltd

,(the '*Applicant*"), in accordance with the applicable Federal Communications Commission (FCC) CFR 47 and Innovation, Scientific and Economic Development (ISED) Canada rules parts and regulations (the '*Rules*'). The scope of this investigation was limited to only the equipment, devices and accessories (the '*Equipment*') supplied by the *Applicant*. The tests and measurements performed on this *Equipment* were only those set forth in the applicable *Rules* and/or the Test and Measurement Standards they reference. The *Rules* applied and the Test and Measurement Standards used during this evaluation appear in the Normative References section of this report. The limits set forth in the technical requirements of the applicable *Rules* were applied to the measurement results obtained during this evaluation and ,unless otherwise noted, these limits were used as the Pass/Fail criteria. The Pass/Fail statements made in this report apply to only the tests and measurements performed on only the *Equipment* tested during this evaluation. Where applicable and permissible, information including test and measurement data and/or results from previous evaluations of same or similar equipment, devices and/or accessories may be cited in this report.

As per FCC 47 CFR Part §2.1091 and §2.1093, an RF Exposure evaluation report is required for this *Equipment* and the results of the RF Exposure evaluation appear in a separate exhibit from this report.

The Receiver of this *Equipment* is subject to Equipment Certification or Supplier's Declaration of Conformity (SDoC) in accordance with 47 CFR Part §15.101. The Receiver was evaluated in accordance with 47 CFR Part §15 Subpar B and ICES-003. A statement of the application of the SDoC procedure appears in a separate exhibit from this report.

Application: This is an application for a new FCC and ISED certification.

4.0 TEST RESULT SUMMARY

TEST SUMMARY

Section	Description of Test	Procedure Reference	Applicable Rule Part(s) FCC	Applicable Rule Part(s) ISED	Test Date	Result
7.0	Field Strength (Fundamental)	ANSI C63.10-2013	§2.1046 §15.240	RSS-Gen RSS-210 Annex D	12 June 2019	Complies
8.0	Band Edge	ANSI C63.10-2013	§15.215		13 June 2019	Complies
9.0	Radiated TX Spurious Emissions	ANSI C63.10-2013	§15.240(c) §15.209	RSS-Gen RSS-210 Annex D	13 June 2019	Complies

Test Station Day Log

Date	Ambient Temp (°C)	Relative Humidity (%)	Barometric Pressure (kPa)	Test Station	Tests Performed Section(s)
31 May 2019	28.6	14	101.7	**SAC**	**9**
31 May 2019	29.6	13	101.1	**OATS**	**9**
3 June 2019	25.1	31	101.1	**OATS**	**9**
3 June 2019	23.6	16	101.1	**EMC**	**8**
12 June 2019	25.4	18	101.9	**OATS**	**7**
13 June 2019	27.0	43	100.7	**OATS**	**9**

EMC - EMC Test Bench
SAC - Semi-Anechoic Chamber
OATS - Open Area Test Site
TC - Temperature Chamber
LISN - LISN Test Area
ESD - ESD Test Bench
IMM - Immunity Test Area
RI - Radiated Immunity Chamber

I attest that the data reported herein is true and accurate within the tolerance of the Measurement Instrument Uncertainty; that all tests and measurements were performed in accordance with accepted practices or procedures; and that all tests and measurements were performed by me or by trained personnel under my direct supervision. The results of this investigation are based solely on the test sample(s) provided by the client which were not adjusted, modified or altered in any manner whatsoever, except as required to carry out specific tests or measurements. This test report has been completed in accordance with ISO/IEC 17025.

Art Voss, P.Eng.
Technical Manager
Celltech Labs Inc.

29 August 2019
Date

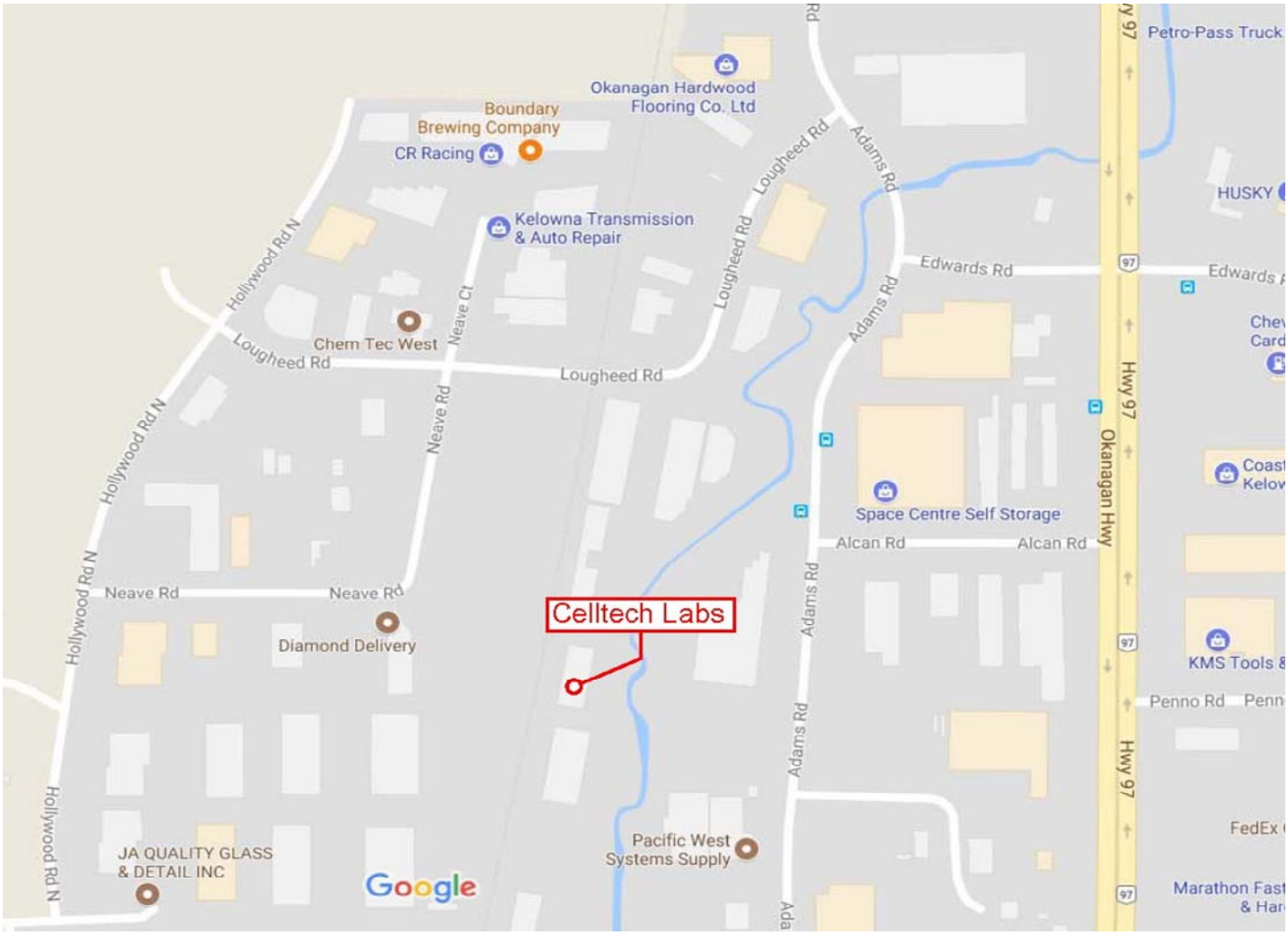
5.0 NORMATIVE REFERENCES

Normative References	
ISO/IEC 17025:2017	General requirements for the competence of testing and calibration laboratories
ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
CFR Title 47: Part 2:	Code of Federal Regulations Telecommunication Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
CFR Title 47: Part 15: Subpart C:	Code of Federal Regulations Telecommunication Radio Fequency Devices Intentional Radiators
ISED RSS-Gen Issue 5:	Innovation, Science and Economic Development Canada Spectrum Management and Telecommunications Radio Standards Specification General Requirements and Information for the Certification of Radiocommunication Equipment
ISED RSS-210 Issue 9:	Innovation, Science and Economic Development Canada Spectrum Management and Telecommunications Radio Standards Specification Licence-Exempt Radio Apparatus: Category I Equipment

6.0 FACILITIES AND ACCREDITATIONS

Facility and Accreditation:

The facilities used to evaluate this device outlined in this report are located at 21-364 Lougheed Road, Kelowna, British Columbia, Canada V1X 7R8. The radiated emissions site (OATS) conforms to the requirements set forth in ANSI C63.4 and is filed and listed with the FCC under Test Firm Registration Number CA3874 and Innovation, Science and Economic Development Canada under Test Site File Number ISED 3874A-1. Celltech is accredited to ISO 17025, through accrediting body A2LA and with certificate 2470.01.



7.0 RADIATED FIELD STRENGTH

Test Procedure	
Normative Reference	FCC 47 CFR §2.1046, §15.240, RSS-Gen (6.12), RSS-210 ANSI C63.10

Limits	
47 CFR §15.240	**Operation in the band 433.5-434.5 MHz.** (b) The field strength of any emissions radiated within the specified frequency band shall not exceed 11,000 microvolts per meter measured at a distance of 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The peak level of any emissions within the specified frequency band shall not exceed 55,000 microvolts per meter measured at a distance of 3 meters.
RSS-210	**Annex D - Radio Frequency Identification (RFID) Devices in the Band 433.5-434.5 MHz** (b) The field strength of any emissions radiated within the band 433.5-434.5 MHz shall not exceed 11,000 µV/m measured at 3 m with an average detector. The peak level of any emission within this specified frequency band shall not exceed 55,000 µV/m measured at 3m

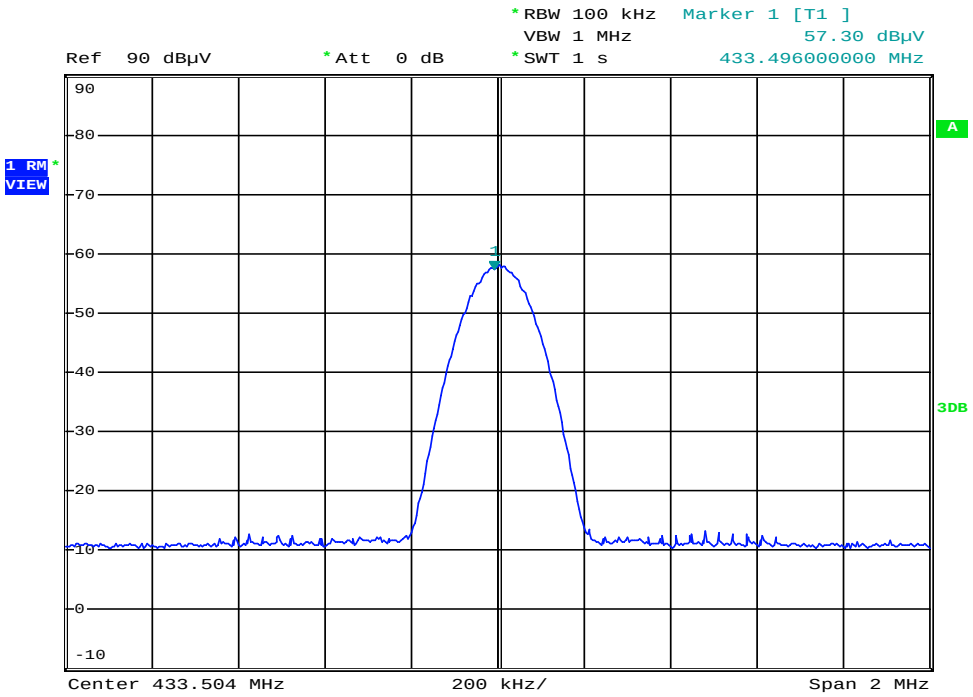
Test Setup	Appendix A - Figure A2

Measurement Procedure

The DUT was place on an 80cm turntable on an Open Area Test Site (OATS) at a test distance of 3m. The output power of the DUT was set to the manufacturer's highest output power setting. The DUT was set to transmit at its maximum Duty Cycle. Emissions were evaluated while the DUT was rotated from 0^{O} through 360^{O} with the receive antenna elevated from 1 to 4 meters in both horizontal and vertical polarizations.

Plot 7.1 – Radiated Field Strength – Lower Band Edge, Horizontal, Average

Field Strenght Measurement @ 3m

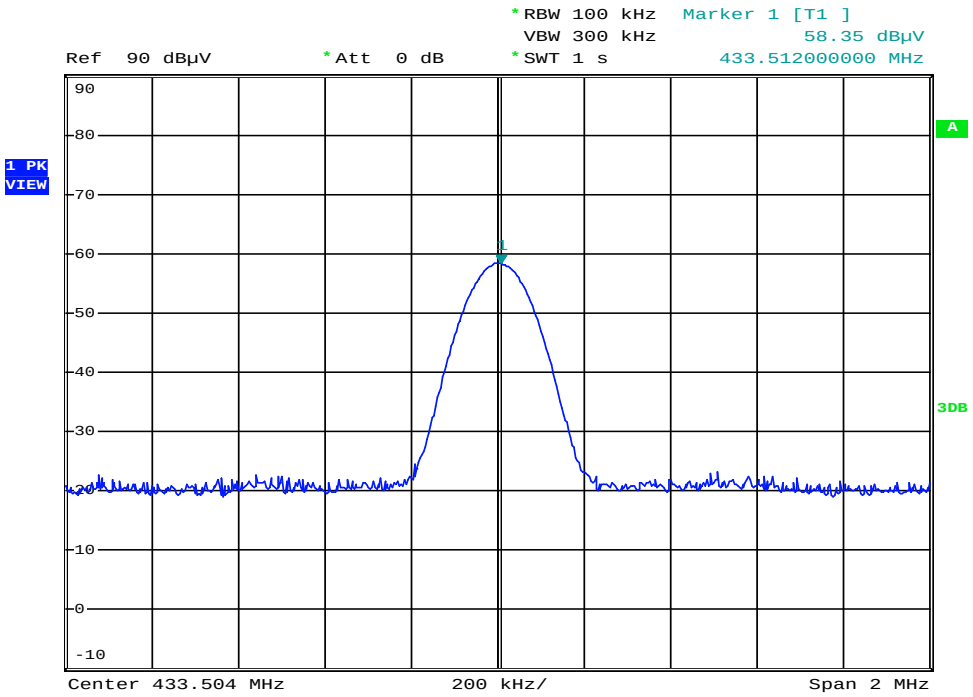


Date: 12.JUN.2019 16:50:22

Channel Frequency: **433.50** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**	Detector: **RMS**	Measured Emission Level: **57.3** dBuV @ 3m

Plot 7.2 – Radiated Field Strength – Lower Band Edge, Horizontal, Peak

Field Strenght Measurement @ 3m

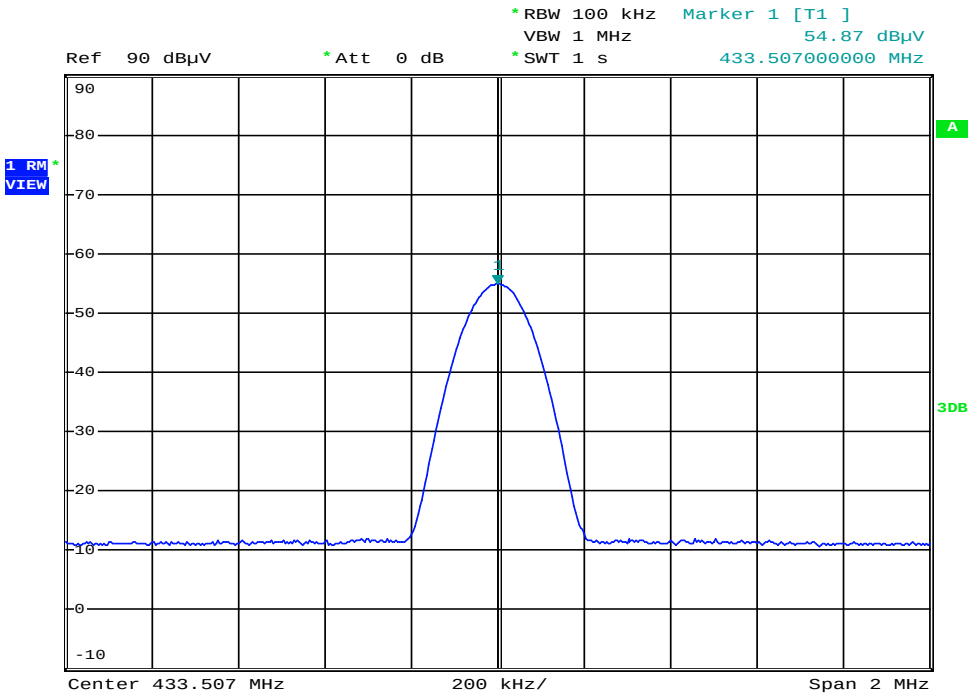


Date: 12.JUN.2019 16:49:20

Channel Frequency: **433.50** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**	Detector: **Peak**	Measured Emission Level: **58.35** dBuV @ 3m

Plot 7.3 – Radiated Field Strength – Lower Band Edge, Vertical, Average

Field Strenght Measurement @ 3m

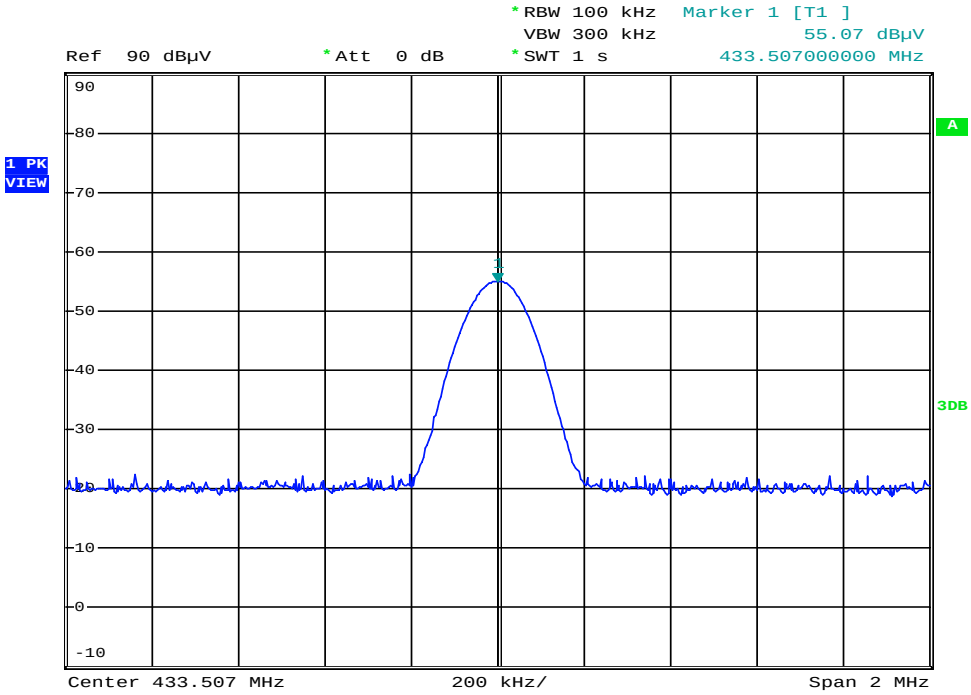


Date: 12.JUN.2019 16:42:19

Channel Frequency: **433.50** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Vertical**	Detector: **RMS**	Measured Emission Level: **54.87** dBuV @ 3m

Plot 7.4 – Radiated Field Strength – Lower Band Edge, Vertical, Peak

Field Strenght Measurement @ 3m

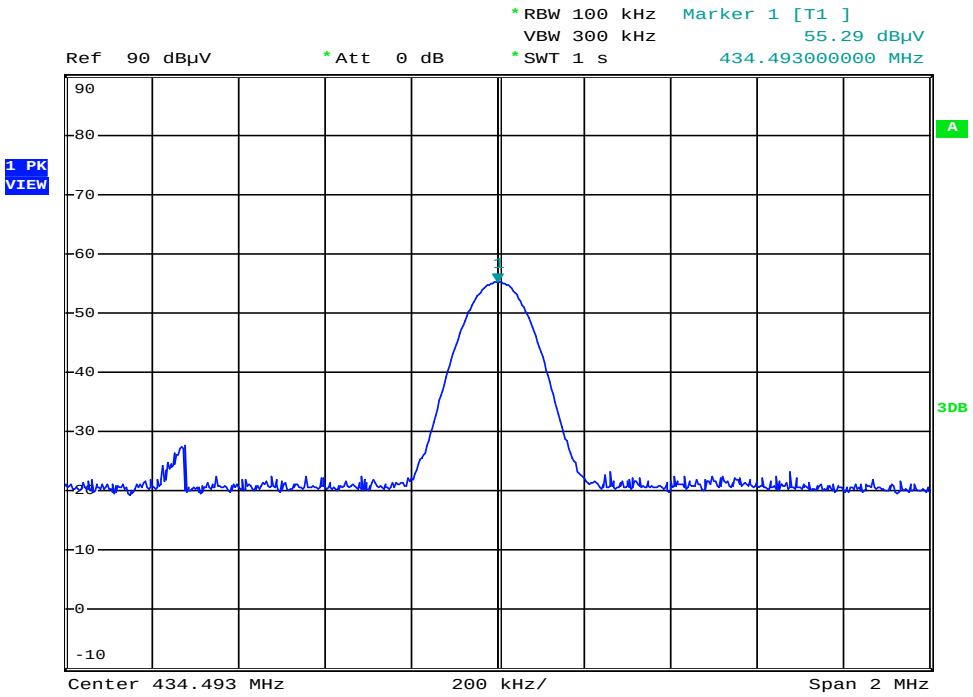


Date: 12.JUN.2019 16:42:52

Channel Frequency: **433.50** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Vertical**	Detector: **Peak**	Measured Emission Level: **55.07** dBuV @ 3m

Plot 7.5 – Radiated Field Strength – Upper Band Edge, Horizontal, Average

Field Strenght Measurement @ 3m

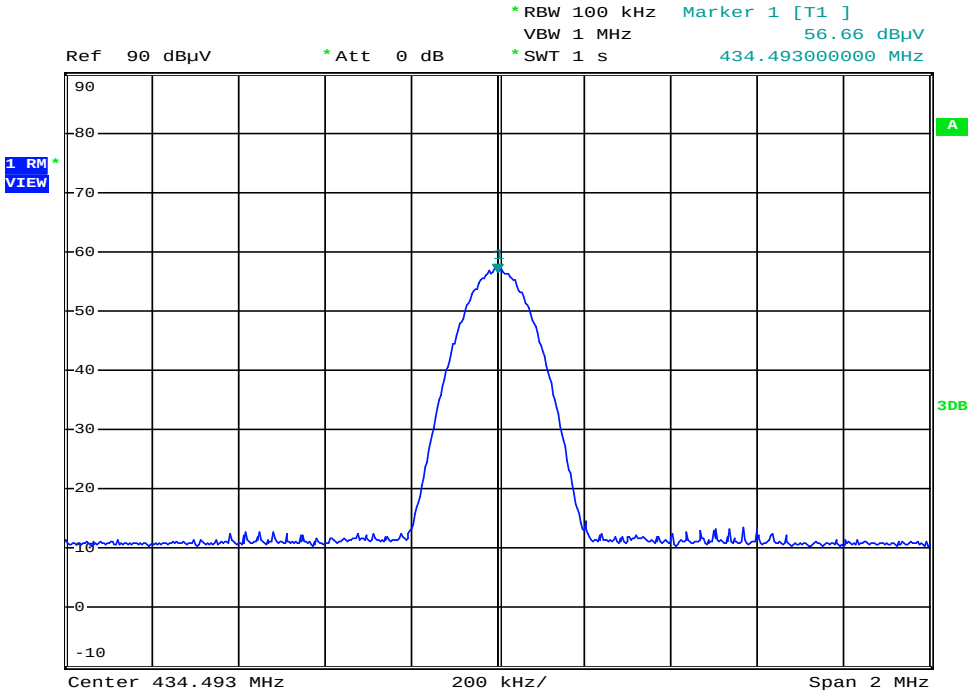


Date: 12.JUN.2019 16:32:04

Channel Frequency: **433.50** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**	Detector: **RMS**	Measured Emission Level: **55.29** dBuV @ 3m

Plot 7.6 – Radiated Field Strength – Upper Band Edge, Horizontal, Peak

Field Strenght Measurement @ 3m

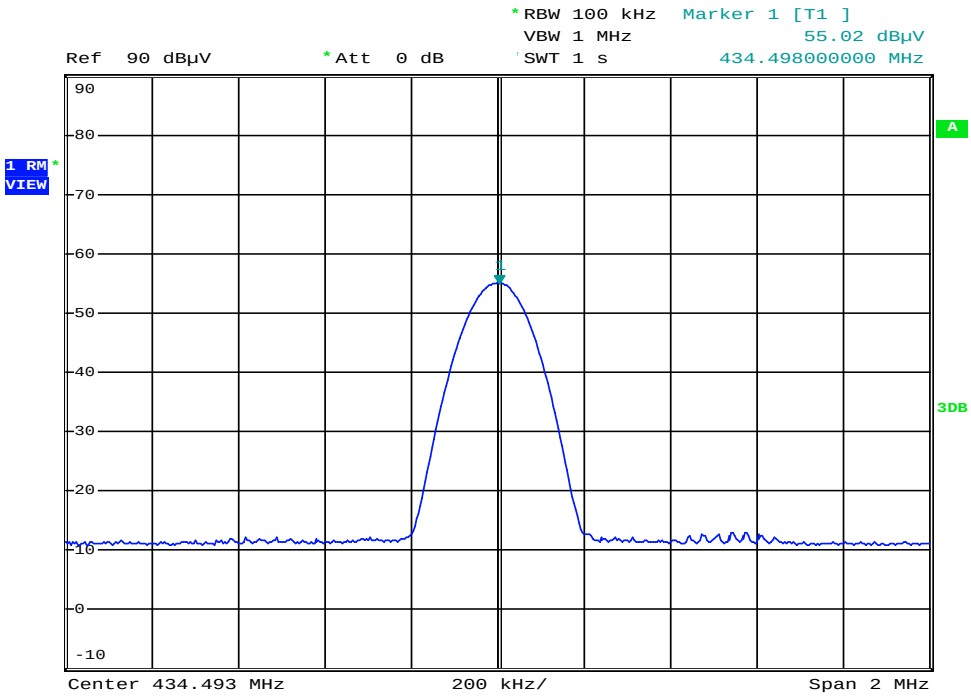


Date: 12.JUN.2019 16:35:08

Channel Frequency: **434.49** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**	Detector: **Peak**	Measured Emission Level: **56.66** dBuV @ 3m

Plot 7.7 – Radiated Field Strength – Upper Band Edge, Vertical, Average

Field Strenght Measurement @ 3m

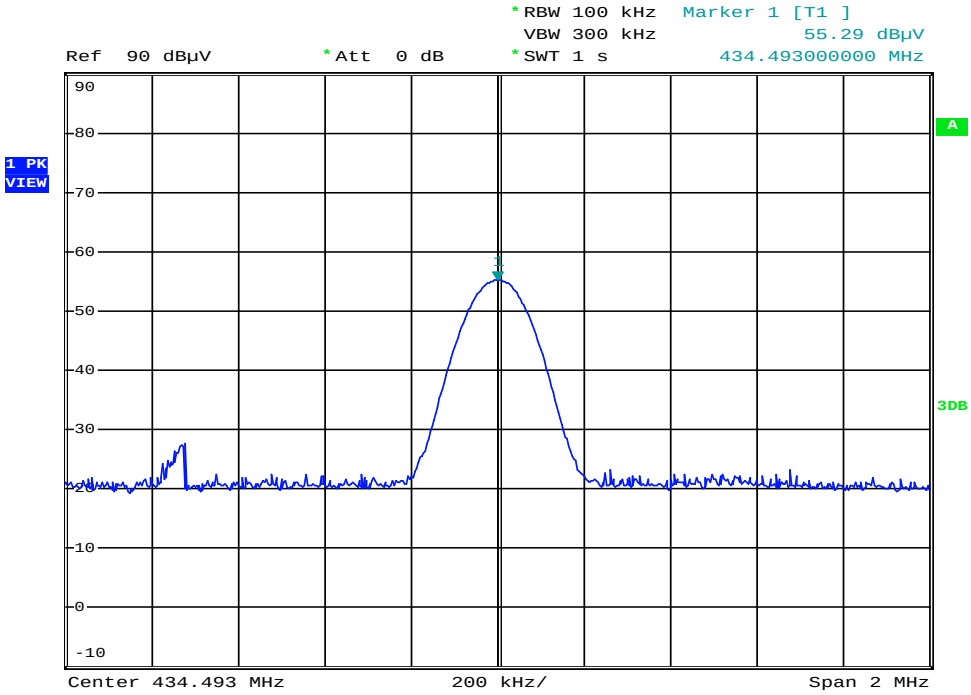


Date: 12.JUN.2019 16:31:28

Channel Frequency: **434.49** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Vertical**	Detector: **RMS**	Measured Emission Level: **55.02** dBuV @ 3m

Plot 7.8 – Radiated Field Strength – Upper Band Edge, Vertical, Peak

Field Strenght Measurement @ 3m



Date: 12.JUN.2019 16:32:04

Channel Frequency: **433.50** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Vertical**	Detector: **Peak**	Measured Emission Level: **55.29** dBuV @ 3m

Table 7.1 – Summary of Radiated Field Strength

Field Strength of Fundamental												
Frequency (MHz)	BW (kHz)	Modulation	Power Setting (dBm)	Transmit Duty Cycle (%)	Polarization	Measured Emission [E_{MEAS}] (dBuV @ 3m)	Cable Loss [L_C] (dB)	Antenna Correction Factor [AFC] (dB)	Field Strength [E] (dBuV/m@3m)	Field Strength Limit [E_L] (uV/m)	Field Strength Limit [E_L] (dBuV/m)	Margin (dBm)
Average (RMS) Measurement												
433.504	7	MSK	Max	100	Horizontal	57.30	1.25	22.00	80.55	11000.00	80.83	0.28
433.504	7	MSK	Max	100	Vertical	54.87	1.25	22.00	78.12		80.83	2.71
434.493	7	MSK	Max	100	Horizontal	55.29	1.25	22.00	78.54		80.83	2.29
434.493	7	MSK	Max	100	Vertical	55.02	1.25	22.00	78.27		80.83	2.56
Peak Measurement												
433.504	7	MSK	Max	100	Horizontal	58.35	1.25	22.00	81.60	55000.00	94.81	13.21
433.504	7	MSK	Max	100	Vertical	55.07	1.25	22.00	78.32		94.81	16.49
434.493	7	MSK	Max	100	Horizontal	56.66	1.25	22.00	79.91		94.81	14.90
434.493	7	MSK	Max	100	Vertical	55.29	1.25	22.00	78.54		94.81	16.27
									Result:		**Complies**	

$E = E_{MEAS} + L_C + AFC$

Margin = $E_L - E$

A Negative Margin (-) indicates non-compliance

8.0 BAND EDGE EVALUATION

Test Procedure	
Normative Reference	FCC 47 CFR §2.1046, §15.215 ANSI C63.10

Limits	
47 CFR §15.215	**Additional provisions to the general radiated emission limitations.** (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

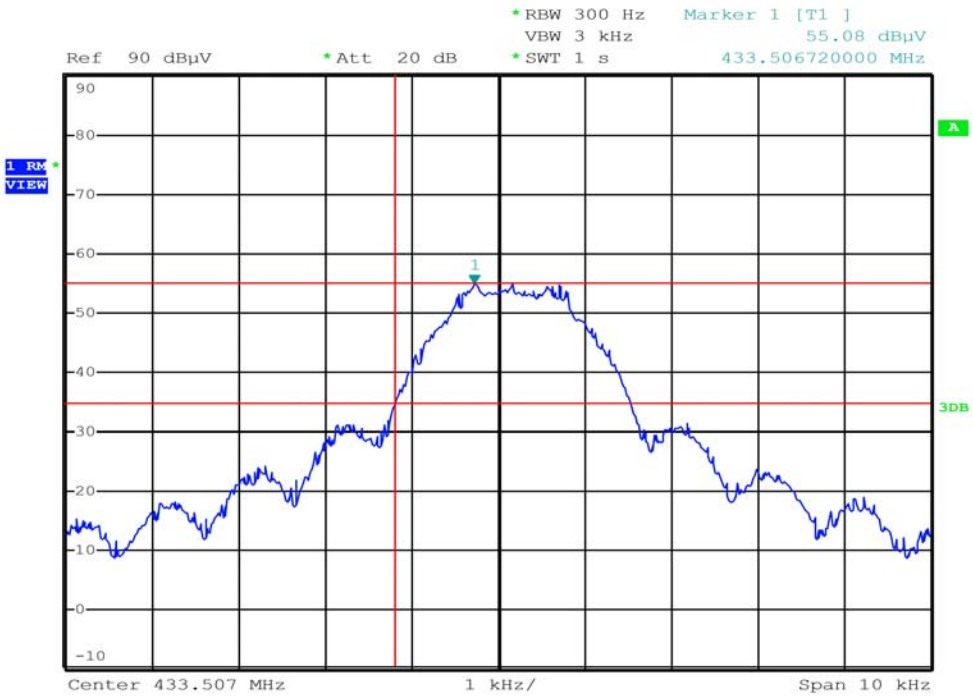
Test Setup	Appendix A - Figure A.1

Measurement Procedure

The DUT was place on an 80cm turntable on an Open Area Test Site (OATS) at a test distance of 3m. The output power of the DUT was set to the manufacturer's highest output power setting. The DUT was set to transmit at its maximum Duty Cycle. Emissions were evaluated while the DUT was rotated from 0^{O} through 360^{O} with the receive antenna elevated from 1 to 4 meters in both horizontal and vertical polarizations.

Plot 8.1 – Lower Band Edge

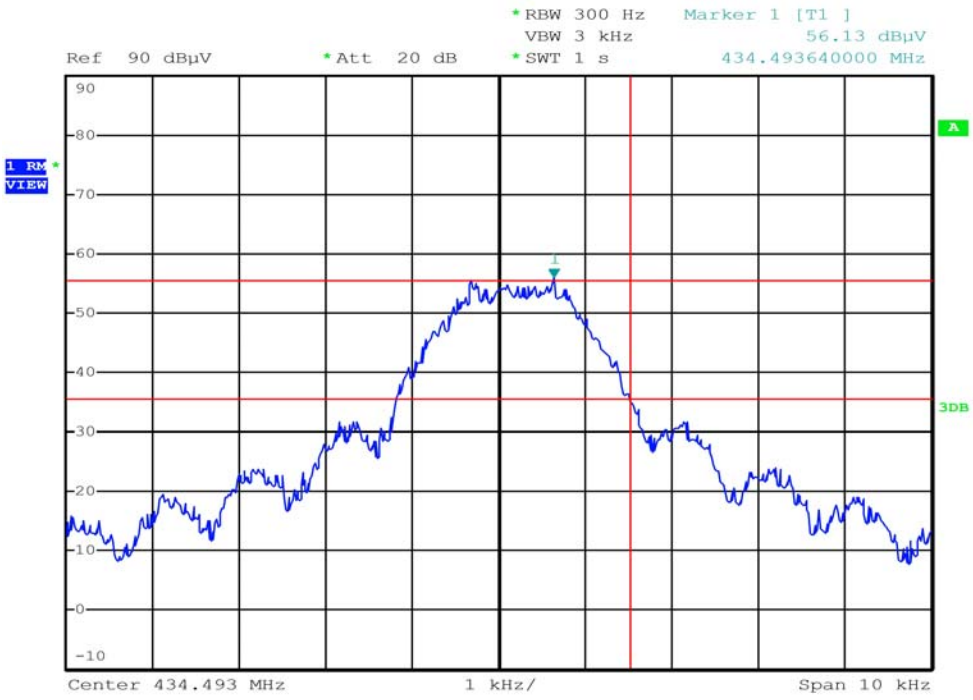
Lower Band Edge @ 20dBc



Channel Frequency: **433.507** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**	Band Edge: **433.5057** MHz	Result: **Complies**

Plot 8.1 – Upper Band Edge

Upper Band Edge @ 20dBc



Date: 12.JUN.2019 16:21:58

Channel Frequency: **434.493** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**	Band Edge: **434.4945** MHz	Result: **Complies**

9.0 RADIATED OUT OF BAND SPURIOUS EMISSIONS

Test Procedure	
Normative Reference	FCC 47 CFR §2.1046, §15.240, RSS-Gen (6.12), RSS-210 ANSI C63.10

Limits	
47 CFR §15.240	**Operation in the band 433.5-434.5 MHz.** (c) The field strength of emissions radiated on any frequency outside of the specified band shall not exceed the general radiated emission limits in §15.209.
RSS-210	**Annex D - Radio Frequency Identification (RFID) Devices in the Band 433.5-434.5 MHz** (c) The field strength of emissions on any frequencies outside this specified band shall not exceed the general field strength limits specified in RSS-Gen.

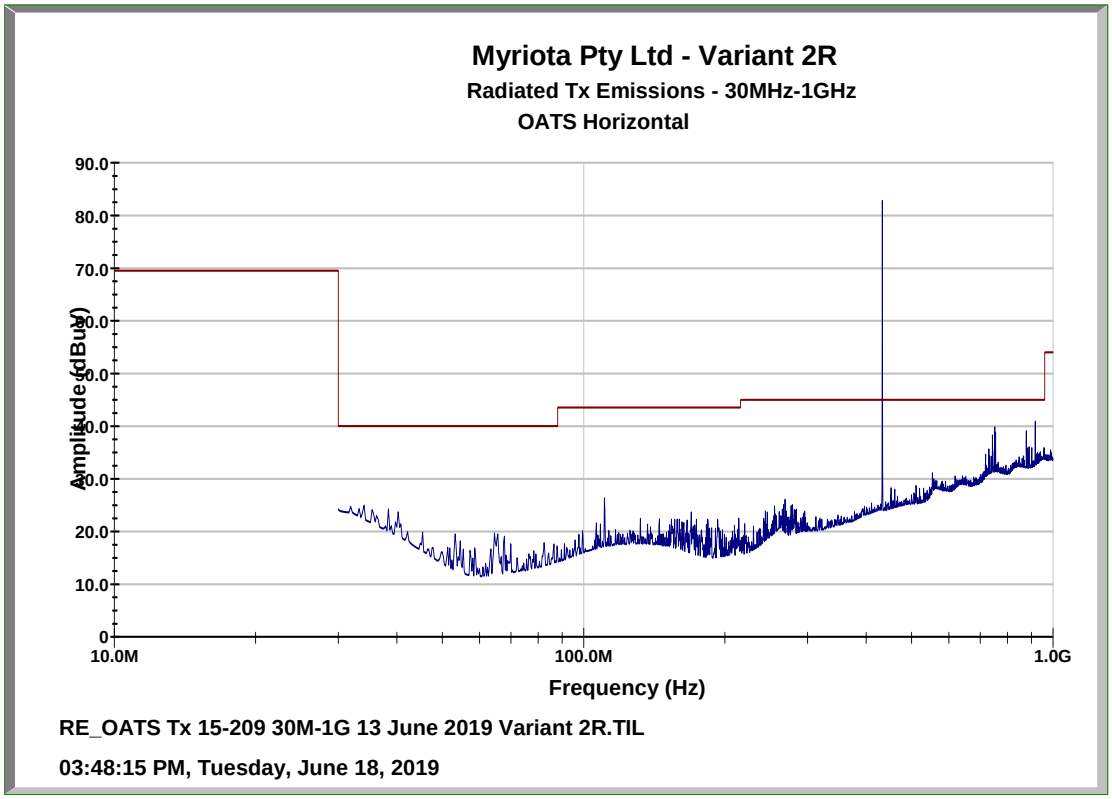
Test Setup	Appendix A - Figure A.2

Measurement Procedure

The DUT was place on an 80cm turntable on an Open Area Test Site (OATS) at a test distance of 3m. The output power of the DUT was set to the manufacturer's highest output power setting. The DUT was set to transmit at its maximum Duty Cycle. Emissions were evaluated while the DUT was rotated from 0^{O} through 360^{O} with the receive antenna elevated from 1 to 4 meters in both horizontal and vertical polarizations.

Plot 9.1 – Radiated Spurious Emissions 30-1000Mhz, Horizontal

Radiated Spurios Emissions (30-1000MHz)

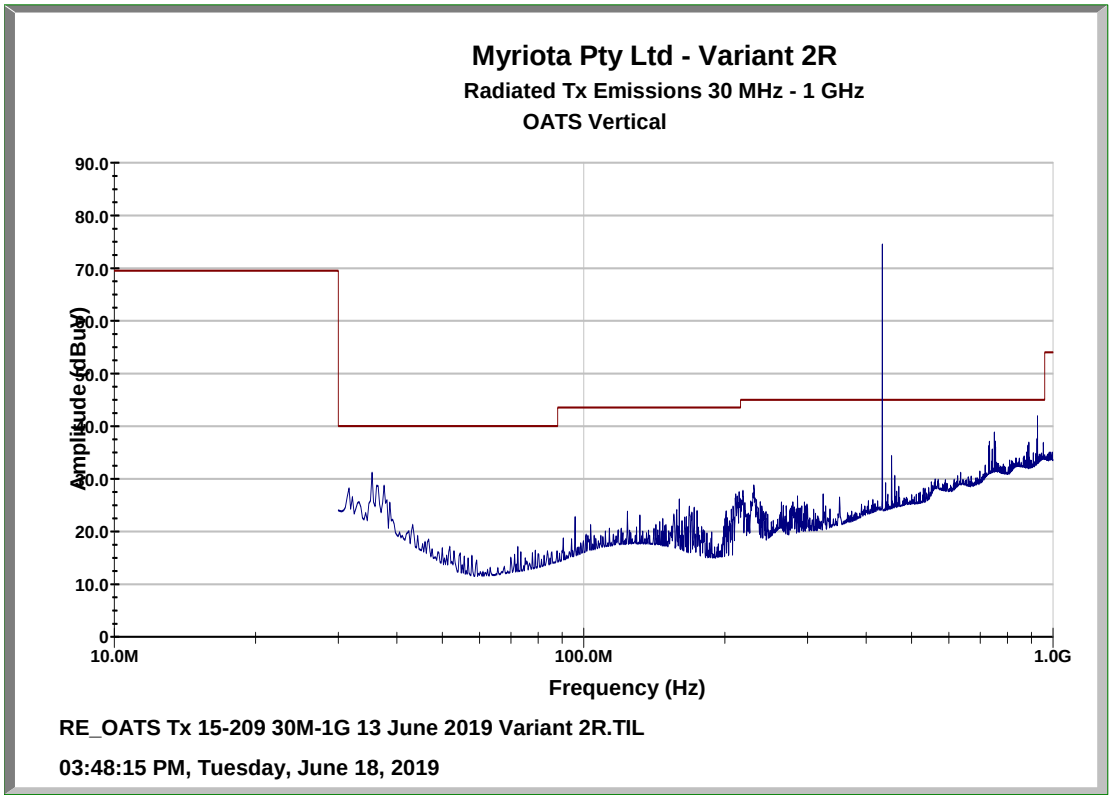


Emission at 433MHz is Fundamental

Channel Frequency:	Channel Bandwidth:	Transmit Duty Cycle:
434.493 MHz	**7.00** kHz	**100** %
Modulation Setting:	**Channel Power Setting:**	**Nominal Input Voltage:**
MSK	**Max** dBm	**3.6** VDC
Antenna Polarization:		**Measured Emission Level:**
Horizontal		**40.89** dBuV @ 3m

Plot 9.2 – Radiated Spurious Emissions 30-1000Mhz, Vertical

Radiated Spurios Emissions (30-1000MHz)

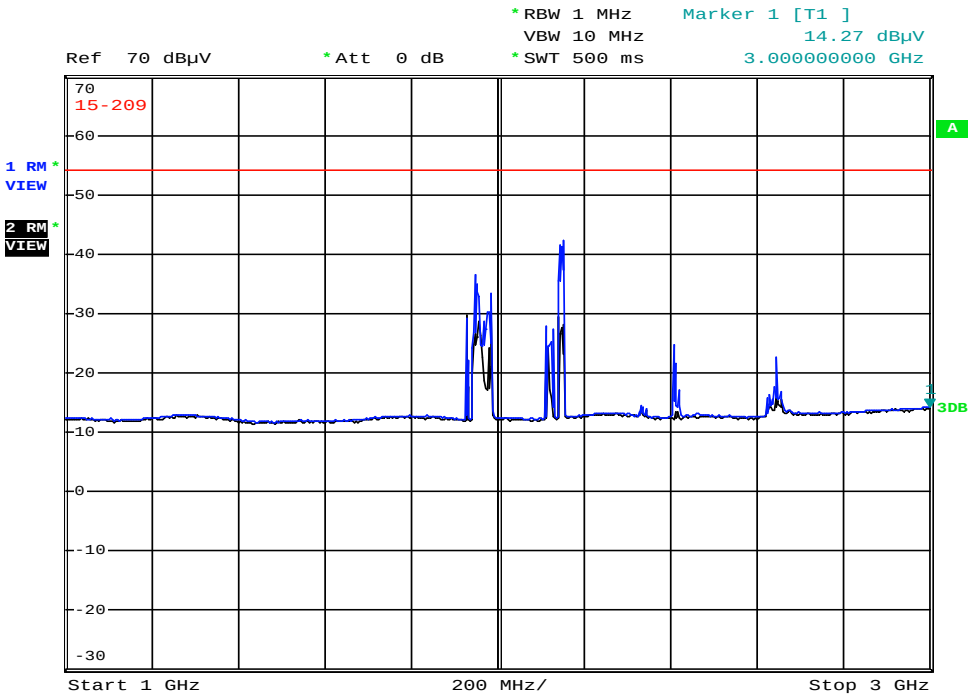


Emission at 433MHz is Fundamental

Channel Frequency: **434.493** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Vertical**		Measured Emission Level: **41.88** dBuV @ 3m

Plot 9.3 – Radiated Spurious Emissions 1-3Ghz, Horizontal

Radiated Spurios Emissions (1-3GHz)



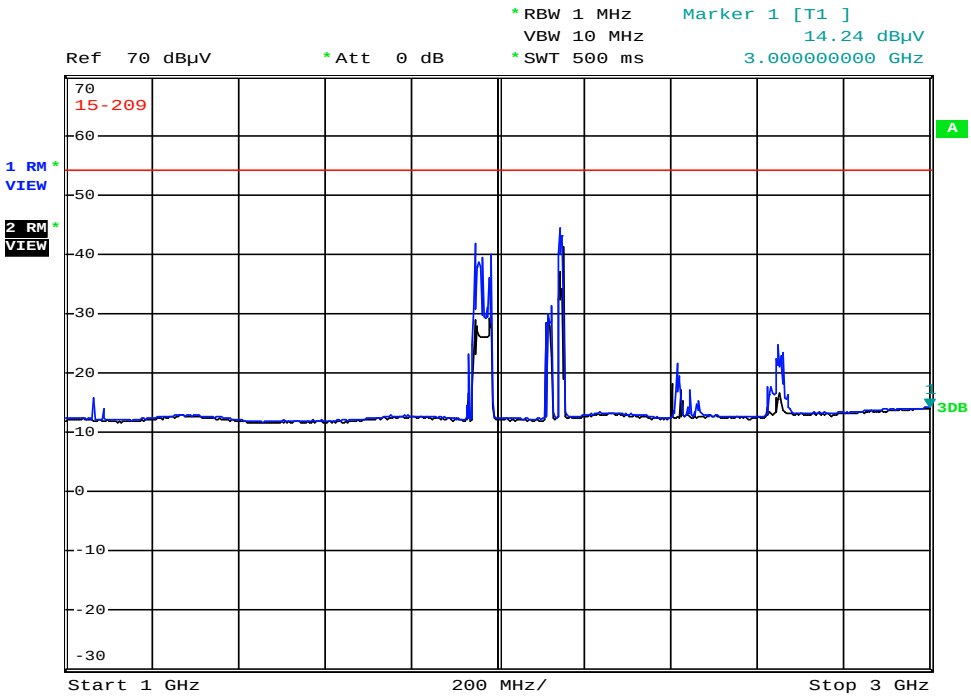
Date: 13.JUN.2019 16:09:29

Trace 1: Ambient, Trace 2: DUT

Channel Frequency: **434.493** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**		Measured Emission Level: **14.27** dBuV @ 3m

Plot 9.4 – Radiated Spurious Emissions 1-3Ghz, Vertical

Radiated Spurios Emissions (1-3GHz)



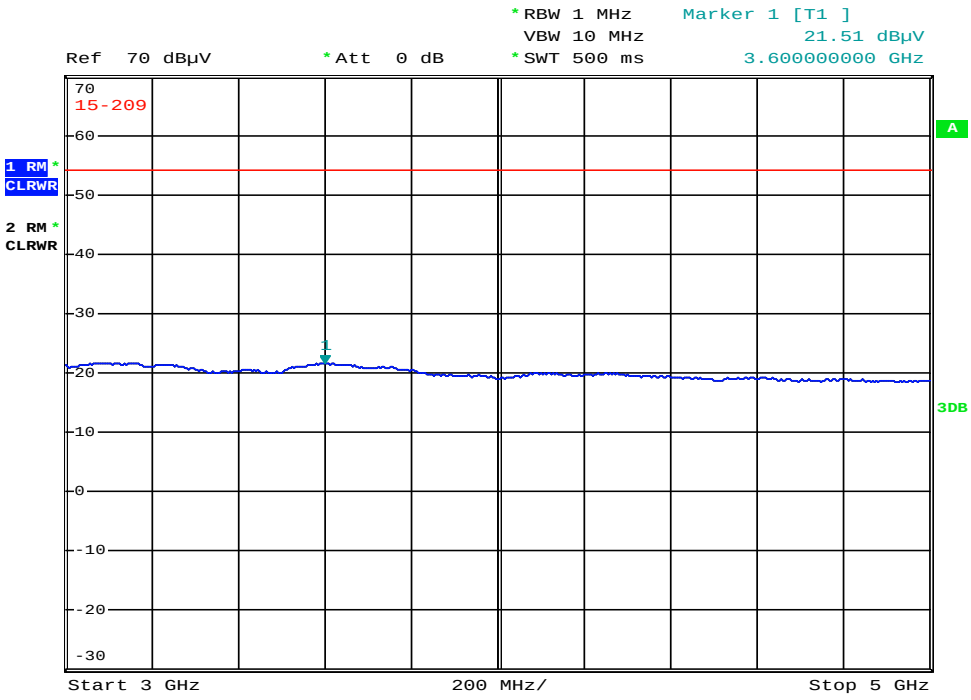
Date: 13.JUN.2019 16:07:40

Trace 1: Ambient, Trace 2: DUT

Channel Frequency: **434.493** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Vertical**		Measured Emission Level: **14.24** dBuV @ 3m

Plot 9.5 – Radiated Spurious Emissions 3-5Ghz, Horizontal

Radiated Spurios Emissions (3-5GHz)



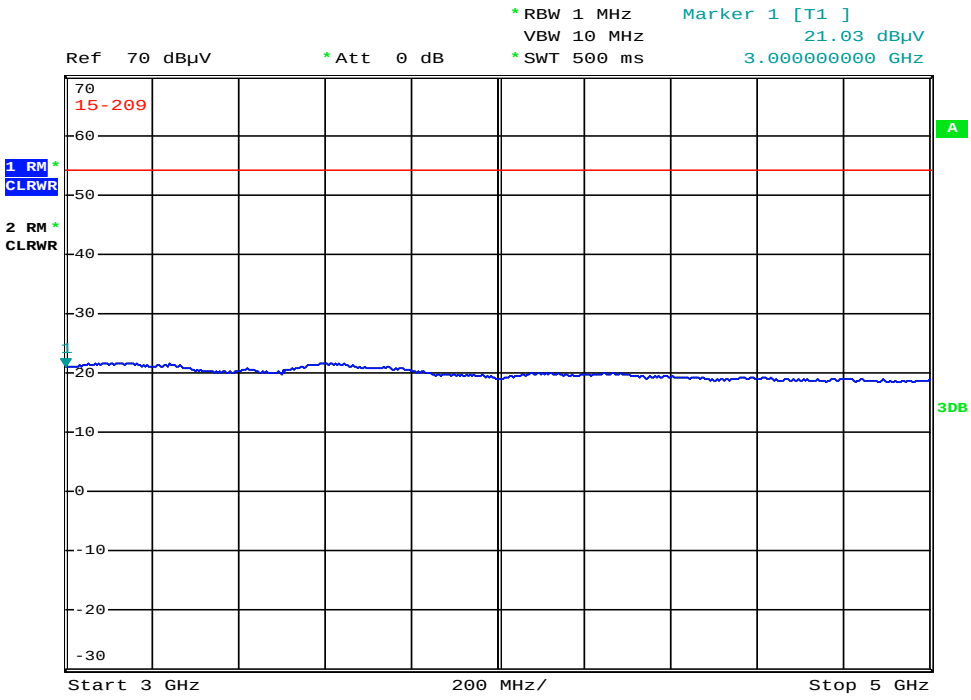
Date: 13.JUN.2019 16:04:26

Trace 1: Ambient, Trace 2: DUT

Channel Frequency: **434.493** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Horizontal**		Measured Emission Level: **21.51** dBuV @ 3m

Plot 9.6 – Radiated Spurious Emissions 3-5Ghz, Vertical

Radiated Spurios Emissions (3-5GHz)



Date: 13.JUN.2019 16:06:49

Trace 1: Ambient, Trace 2: DUT

Channel Frequency: **434.493** MHz	Channel Bandwidth: **7.00** kHz	Transmit Duty Cycle: **100** %
Modulation Setting: **MSK**	Channel Power Setting: **Max** dBm	Nominal Input Voltage: **3.6** VDC
Antenna Polarization: **Vertical**		Measured Emission Level: **14.24** dBuV @ 3m

Table 9.1 – Summary of Radiated Spurious Emissions

Radiated Spurious Emissions									
Emission Frequency (MHz)	BW (kHz)	Modulation	Power Setting (dBm)	Transmit Duty Cycle (%)	Polarization	Measured Emission (dBuV/m @ 3m)	Corrected Emission (dBuV/m @ 3m)	Limit (dBuV)	Margin (dBm)
916.7**	7	MSK	Max	100	Horizontal	40.89	40.89	46.00	5.11
927.2**	7	MSK	Max	100	Vertical	41.88	41.88	46.00	4.12
3000*	7	MSK	Max	100	Horizontal	14.27	44.36	54.00	9.64
3000*	7	MSK	Max	100	Vertical	14.24	44.33	54.00	9.67
3600*	7	MSK	Max	100	Horizontal	21.51	52.70	54.00	1.30
3000*	7	MSK	Max	100	Vertical	21.03	51.12	54.00	2.88
							Result:		Complies

* Noise Floor

** Measurement automatically corrected for Antenna Correction Factor and Cable Loss

APPENDIX A – TEST SETUP DRAWINGS AND EQUIPMENT

Table A.1 – Setup - Conducted Measurements Equipment

Equipment List			
Asset Number	Manufacturer	Model Number	Description
00241	R&S	FSU40	Spectrum Analyzer

Figure A.1 – Test Setup Conducted Measurements

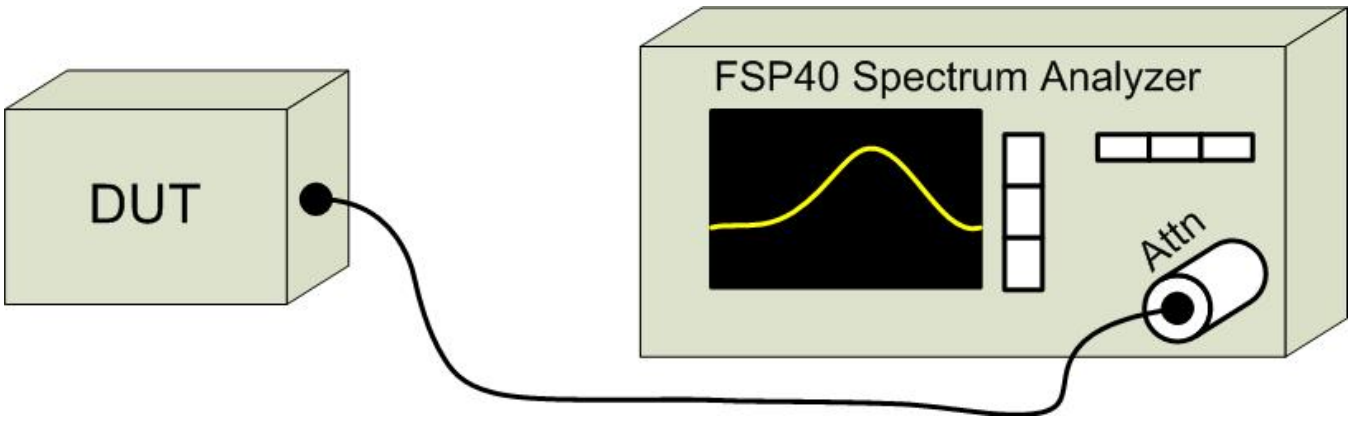
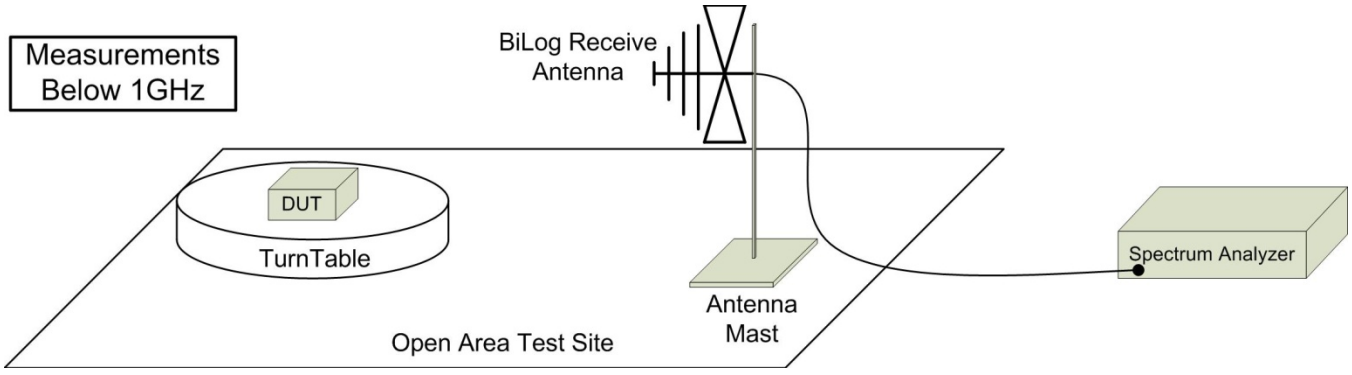


Table A.2 – Setup - Radiated Emissions Equipment

Equipment List			
Asset Number	**Manufacturer**	**Model Number**	**Description**
00051	HP	8566B	Spectrum Analyzer
00049	HP	85650A	Quasi-peak Adapter
00047	HP	85685A	RF Preselector
00072	EMCO	2075	Mini-mast
00073	EMCO	2080	Turn Table
00071	EMCO	2090	Multi-Device Controller
00265	Miteq	JS32-00104000-58-5P	Microwave L/N Amplifier
00241	R&S	FSU40	Spectrum Analyzer
00050	Chase	CBL-6111A	Bilog Antenna
00275	Coaxis	LMR400	25m Cable
00276	Coaxis	LMR400	4m Cable
00278	TILE	34G3	TILE Test Software
00034	ETS	3115	Double Ridged Guide Horn

CNR: Calibration Not Required
COU: Calibrate On Use

Figure A.3 – Test Setup Radiated Emissions Measurements



APPENDIX B – EQUIPMENT LIST AND CALIBRATION

Equipment List								
(*)	Asset Number	Manufacturer	Model Number	Serial Number	Description	Last Calibrated	Calibration Interval	Calibration Due
*	00050	Chase	CBL-6111A	1607	Bilog Antenna	3 Jan 2019	Triennial	3 Jan 2022
*	00034	ETS	3115	6267	Double Ridged Guide Horn	26 Nov 2018	Triennial	26 Nov 2021
	00035	ETS	3115	6276	Double Ridged Guide Horn	22 Mar 2019	Triennial	21 Mar 2022
*	00085	EMCO	6502	9203-2724	Loop Antenna	11 Jun 2019	Triennial	11 Jun 2022
*	00161	Waveline Inc.	889		Standard Gain Horn 18-26GHz	NCR	n/a	NCR
	00162	Waveline Inc.	889		Standard Gain Horn 18-26GHz	NCR	n/a	NCR
	00163	Waveline Inc.	1099		Standard Gain Horn 26-40GHz	NCR	n/a	NCR
	00164	Waveline Inc.	1099		Standard Gain Horn 26-40GHz	NCR	n/a	NCR
*	00165	Waveline Inc.	801-KF		Waveguide Adapter 18-26GHz	NCR	n/a	NCR
	00166	Waveline Inc.	801-KF		Waveguide Adapter 18-26GHz	NCR	n/a	NCR
	00167	Waveline Inc.	1001-KF		Waveguide Adapter 26-40GHz	NCR	n/a	NCR
	00168	Waveline Inc.	1001-KF		Waveguide Adapter 26-40GHz	NCR	n/a	NCR
*	00047	HP	85685A	2837A00826	RF Preselector	23 Jun 2017	Triennial	23 Jun 2020
*	00049	HP	85650A	2043A00162	Quasi-peak Adapter	23 Jun 2017	Triennial	23 Jun 2020
*	00051	HP	8566B	2747A05510	Spectrum Analyzer	23 Jun 2017	Triennial	23 Jun 2020
	00223	HP	8901A	3749A07154	Modulation Analyzer	27 Dec 2017	Triennial	27 Dec 2020
	00224	HP	8903B	3729A18691	Audio Analyzer	28 Dec 2017	Triennial	28 Dec 2020
*	00241	R&S	FSU40	100500	Spectrum Analyzer	15 May 2018	Triennial	15 May 2021
*	00005	HP	8648D	3847A00611	Signal Generator	21 Jun 2017	Triennial	21 Jun 2020
	00006	R&S	SMR20	100104	Signal Generator	29 May 2017	Triennial	29 May 2020
	00243	Rigol	DS1102E	DS1ET150502164	Oscilloscope	7 Nov 2017	Triennial	7 Nov 2020
	00254	LeCroy	WM8600A	532	Oscilloscope	NCR	n/a	NCR
	00110	Gigatronics	8652A	1875801	Power Meter	26 Mar 2019	Triennial	26 Mar 2022
	00237	Gigatronics	80334A	1837001	Power Sensor	26 Mar 2019	Triennial	26 Mar 2022
	00232	ETS Lindgren	HI-6005	91440	Isotropic E-Field Probe	18 Dec 2017	Triennial	18 Dec 2020
	00003	HP	53181A	3736A05175	Frequency Counter	21 Jun 2017	Triennial	21 Jun 2020
	00257	Com-Power	LI-215A	191934	LISN	5 Jan 2018	Triennial	5 Jan 2021
	00041	AR	10W1000C	27887	Power Amplifier	NCR	n/a	NCR
	00106	AR	5SIG4	26235	Power Amplifier	NCR	n/a	NCR
	00280	AR	25A250AM6	22702	Power Amplifier	NCR	n/a	NCR
*	00265	Miteq	JS32-00104000-58-5P	1939850	Microwave L/N Amplifier	COU	n/a	COU
	00071	EMCO	2090	9912-1484	Multi-Device Controller	n/a	n/a	n/a
*	00072	EMCO	2075	0001-2277	Mini-mast	n/a	n/a	n/a
*	00073	EMCO	2080	0002-1002	Turn Table	n/a	n/a	n/a
	00081	ESPEC	ECT-2	0510154-B	Environmental Chamber	NCR	n/a	CNR
*	00234	VWR	61161-378	140320430	Temp/Humidity Meter	New	Triennial	New
	00236	Nokia	-	236	ESD Table	NCR	n/a	NCR
	00255	Expert ESD	A4001	A4001-155	ESD Target	COU	n/a	COU
	00064	NARDA	3020A	n/a	Bi-Directional Coupler	COU	n/a	COU
	00263	Koaxis	KP10-1.00M-TD	263	1m Armoured Cable	COU	n/a	COU
*	00263B	Koaxis	KP10-1.00M-TD	263B	1m Armoured Cable	COU	n/a	COU
*	00264	Koaxis	KP10-7.00M-TD	264	7m Armoured Cable	COU	n/a	COU
*	00275	TMS	LMR400	n/a	25m Cable	COU	n/a	COU
*	00276	TMS	LMR400	n/a	4m Cable	COU	n/a	COU
*	00277	TMS	LMR400	n/a	4m Cable	COU	n/a	COU
*	00278	TILE	34G3	n/a	TILE Test Software	NCR	n/a	NCR
Rented Equipment								

* Used during the course of this investigation
NCR: No Calibration Required
COU: Calibrate On Use

APPENDIX C – MEASUREMENT INSTRUMENT UNCERTAINTY

CISPR 16-4 Measurement Uncertainty (U_{LAB})	
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence interval using a coverage factor of k=2	
30MHz - 200MHz	
U_{LAB} = 5.14dB U_{CISPR} = 6.3dB	
200MHz - 1000MHz	
U_{LAB} = 5.90dB U_{CISPR} = 6.3dB	
1GHz - 6GHz	
U_{LAB} = 4.80dB U_{CISPR} = 5.2dB	
6GHz - 18GHz	
U_{LAB} = 5.1dB U_{CISPR} = 5.5dB	
If the calculated uncertainty **U_{lab}** is **less** than **U_{CISPR}** then:	
1	Compliance is deemed to occur if **NO** measured disturbance exceeds the disturbance limit
2	Non-Compliance is deemed to occur if **ANY** measured disturbance **EXCEEDS** the disturbance limit
If the calculated uncertainty **U_{lab}** is **greater** than **U_{CISPR}** then:	
3	Compliance is deemed to occur if **NO** measured disturbance, increased by (**U_{lab} - U_{CISPR}**), exceeds the disturbance limit
4	Non-Compliance is deemed to occur if **ANY** measured disturbance, increased by (**U_{lab} - U_{CISPR}**), **EXCEEDS** the disturbance limit

