

FCC and ISED Test Report

PervasID Limited

Security Ranger, Model: SRM 9380 (8-port Master)

Security Ranger, Model: SRS 9380 (8-port Slave)



**Add value.
Inspire trust.**

In accordance with FCC 47 CFR Part 15C, ISED RSS-247
and ISED RSS-GEN
(RFID)

Prepared for: PervasID Limited
St John's Innovation Centre
Cowley Road, Cambridge
CB4 0WS, UNITED KINGDOM

FCC ID: 2AQQWSR9380

IC: Not Applicable

COMMERCIAL-IN-CONFIDENCE

Document 75957241-04 Issue 02

SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Steve Marshall	Senior Engineer	Authorised Signatory	03 May 2024

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15C, ISED RSS-247 and ISED RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Ahmad Javid	03 May 2024	

FCC Accreditation

90987 Octagon House, Fareham Test Laboratory

ISED Accreditation

12669A Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C: 2021, ISED RSS-247: Issue 2 (02-2017) and ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021) for the tests detailed in section 1.3.



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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	15-May-2023
2	Changed FCC ID configuration	03-May-2024

Table 1

1.2 Introduction

Applicant	PervasID Limited
Manufacturer	PervasID Limited
Model Number(s)	SRM 9380 (8-port Master) and SRS 9380 (8-port Slave)
Serial Number(s)	14051278-0046 and 14199633-0010
Hardware Version(s)	Motherboard v6.5.4; FR-DB v1.0 (Slave only); Sync-DB v0.2
Software Version(s)	Software: SR-0.1.0.4; Radio FW: 3.9.0.1; FR-DB FW: 1.0.2 (Slave only)
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 15C: 2021 ISED RSS-247: Issue 2 (02-2017) ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021)
Order Number	PO-0774
Date	09-December-2022
Date of Receipt of EUT	09-February-2023
Start of Test	09-February-2023
Finish of Test	15-April-2023
Name of Engineer(s)	Ahmad Javid
Related Document(s)	ANSI C63.10 (2020) KDB 662911 D01 v02r01 KDB 558074 D01 v03r03 ANSI C63.10 (2013) ANSI C63.4 (2014)



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C, ISSED RSS-247 and ISSED RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration and Mode: RFID Transceiver						
2.1	15.209 and 15.247 (d)	3.3 and 5.5	6.13 and 8.9	Spurious Radiated Emissions	Pass	
Configuration and Mode: RFID Transceiver - SRS 9380						
2.2	15.247 (b)	5.4	6.12	Maximum Conducted Output Power	Pass	
2.3	15.247 (d)	5.5	-	Authorised Band Edges	Pass	
Configuration and Mode: RFID Transceiver - SRM 9380						
2.2	15.247 (b)	5.4	6.12	Maximum Conducted Output Power	Pass	
2.3	15.247 (d)	5.5	-	Authorised Band Edges	Pass	

Table 2



1.4 Application Form

Equipment Description

Technical Description: (Please provide a brief description of the intended use of the equipment including the technologies the product supports)	UHF RFID Distributed Antenna System - intended use detection and monitoring of UHF RFID tags
Manufacturer:	PervasID Ltd
Model:	SRM 9380 (8-port Master) SRS 9380 (8-port Slave)
Part Number:	N/A
Hardware Version:	Motherboard v6.5.4; FR-DB v1.0 (Slave only); Sync-DB v0.2
Software Version:	Software: SR-0.1.0.4; Radio FW: 3.9.0.1; FR-DB FW: 1.0.2 (Slave only)
FCC ID of the product under test – see guidance here	2AQQWSR9380
IC ID of the product under test – see guidance here	Not Applicable

Table 3

Intentional Radiators

Technology	ISM (RFID)					
Frequency Range (MHz to MHz)	902 - 928					
Conducted Declared Output Power (dBm)	33					
Antenna Gain (dBi)	8.5					
Supported Bandwidth(s) (MHz) (e.g. 1 MHz, 20 MHz, 40 MHz)						
Modulation Scheme(s) (e.g. GFSK, QPSK etc)	PR-ASK					
ITU Emission Designator (see guidance here) (not mandatory for Part 15 devices)	TBD					
Bottom Frequency (MHz)	902.75					
Middle Frequency (MHz)	914.75					
Top Frequency (MHz)	927.25					

Table 4

Un-intentional Radiators

Highest frequency generated or used in the device or on which the device operates or tunes	927.25 MHz
Lowest frequency generated or used in the device or on which the device operates or tunes	902.75 MHz
Class A Digital Device (Use in commercial, industrial or business environment) ☒	
Class B Digital Device (Use in residential environment only) ☐	

Table 5



AC Power Source

AC supply frequency:		Hz
Voltage		V
Max current:		A
Single Phase ☐ Three Phase ☐		

Table 6

DC Power Source

Nominal voltage:	24	V
Extreme upper voltage:	25.2	V
Extreme lower voltage:	23.8	V
Max current:	4	A

Table 7

Battery Power Source

Voltage:		V
End-point voltage:		V (Point at which the battery will terminate)
Alkaline ☐ Leclanche ☐ Lithium ☐ Nickel Cadmium ☐ Lead Acid* ☐ *(Vehicle regulated)		
Other ☐	Please detail:	

Table 8

Charging

Can the EUT transmit whilst being charged	Yes ☐ No ☐
---	--

Table 9

Temperature

Minimum temperature:	0	°C
Maximum temperature:	30	°C

Table 10

Cable Loss

Adapter Cable Loss (Conducted sample)		dB
--	--	----

Table 11



Antenna Characteristics

Antenna connector ☒			State impedance	50	Ohm
Temporary antenna connector ☐			State impedance		Ohm
Integral antenna ☐	Type:		Gain		dBi
External antenna ☒	Type:	Circular polarised Directional	Gain	8.5	dBic
For external antenna only: Standard Antenna Jack ☐ If yes, describe how user is prohibited from changing antenna (if not professional installed): Equipment is only ever professionally installed ☒ Non-standard Antenna Jack ☒					

Table 12

Ancillaries (if applicable)

Manufacturer:		Part Number:	
Model:		Country of Origin:	

Table 13

I hereby declare that the information supplied is correct and complete.

Name: Andrew Bell
Position held: VP Engineering
Date: 06 Feb 2023



1.5 Product Information

1.5.1 Technical Description

The EUT is a UHF RFID Distributed Antenna System - intended use detection and monitoring of UHF RFID tags.

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: SRM 9380 (8-port Master), Serial Number: 14051278-0046			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: SRS 9380 (8-port Slave), Serial Number: 14199633-0010			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 14

1.8 Test Location

TÜV SÜD conducted the following tests at our Octagon House Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: RFID Transceiver		
Spurious Radiated Emissions	Ahmad Javid	UKAS
Configuration and Mode: RFID Transceiver - SRS 9380		
Maximum Conducted Output Power	Ahmad Javid	UKAS
Authorised Band Edges	Ahmad Javid	UKAS
Configuration and Mode: RFID Transceiver - SRM 9380		
Maximum Conducted Output Power	Ahmad Javid	UKAS
Authorised Band Edges	Ahmad Javid	UKAS

Table 15

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
United Kingdom



2 Test Details

2.1 Spurious Radiated Emissions

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.209 and 15.247 (d)
ISED RSS-247, Clause 3.3 and 5.5
ISED RSS-GEN, Clause 6.13 and 8.9

2.1.2 Equipment Under Test and Modification State

SRM 9380 (8-port Master), S/N: 14051278-0046 - Modification State 0
SRS 9380 (8-port Slave), S/N: 14199633-0010 - Modification State 0

2.1.3 Date of Test

09-February-2023 to 10-February-2023

2.1.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

For frequencies > 1 GHz, plots for average measurements were taken in accordance with ANSI C63.10, clause 4.1.5.2.6 to characterize the EUT. Where emissions were detected, final average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.2.

The EUT was placed on the non-conducting platform in a manner typical of a normal installation

Ports on the EUT were terminated with loads as described in ANSI C63.4 clause 6.2.4. For EUT's with multiple connectors of the same type.

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (74/54 dBuV/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBuV/m to uV/m:
 $10^{(\text{Field Strength in dBuV/m}/20)}$

Where formal measurements have been necessary, the results have been presented in the emissions table.

2.1.5 Example Test Setup Diagram

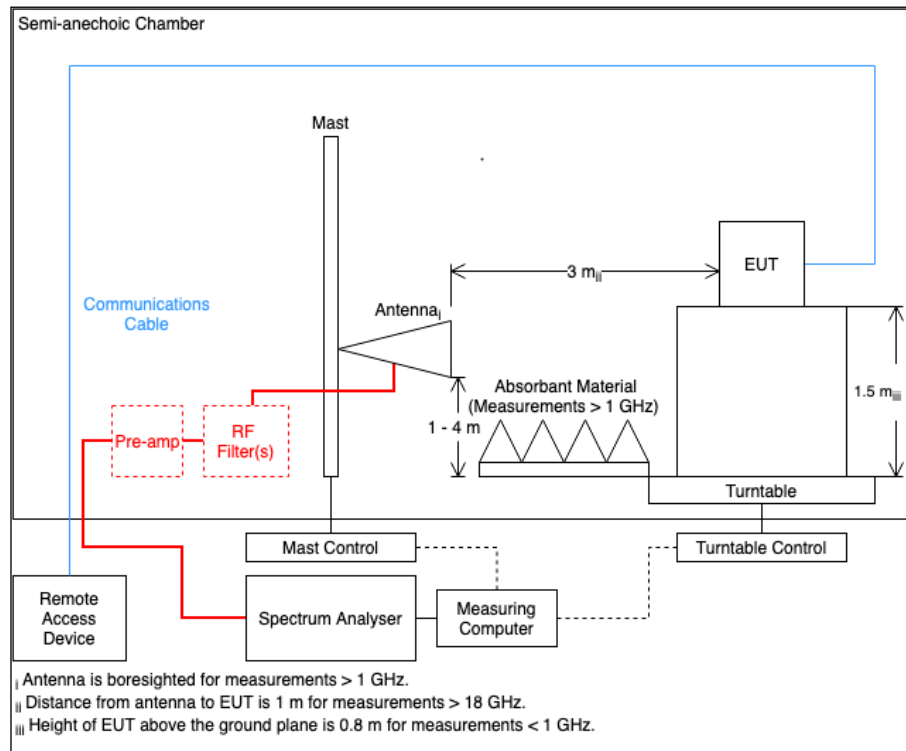


Figure 1

2.1.6 Environmental Conditions

Ambient Temperature	18.6 - 19.6 °C
Relative Humidity	39.5 - 40.2 %

2.1.7 Test Results

RFID Transceiver

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
108.815	38.11	43.52	-5.41	Q-Peak	60	110	Vertical
125.008	40.21	43.52	-3.31	Q-Peak	320	251	Horizontal
125.022	37.64	43.52	-5.88	Q-Peak	178	100	Vertical
1805.420	68.20	73.98	-5.78	Peak	212	201	Vertical
2708.180	47.72	54.00	-6.28	CISPR Avg	196	116	Vertical
3611.059	44.97	54.00	-9.03	CISPR Avg	169	107	Vertical

Table 16 - FHSS, 902.75MHz, 30 MHz to 10 GHz

No other emissions found within 10 dB of the limit.

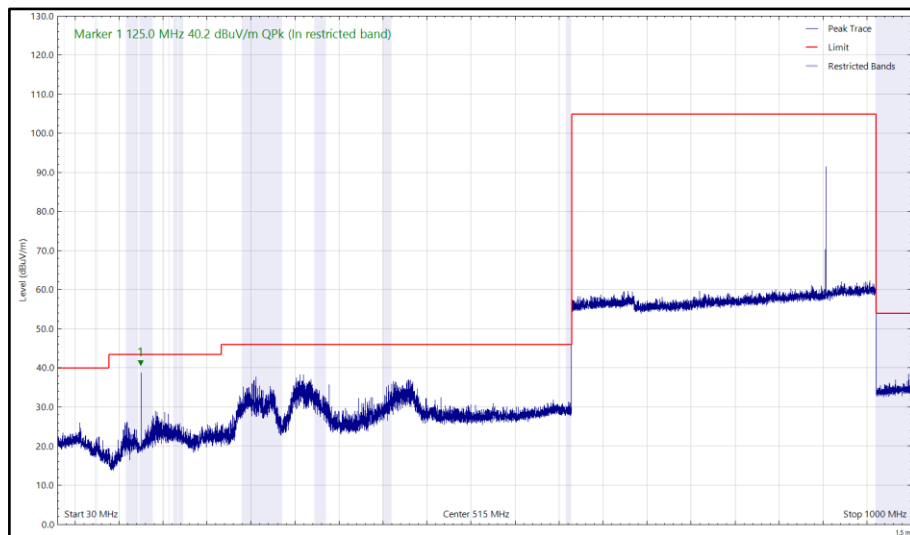


Figure 2 - FHSS, 902.75MHz, 30 MHz to 1 GHz, Horizontal (Peak)

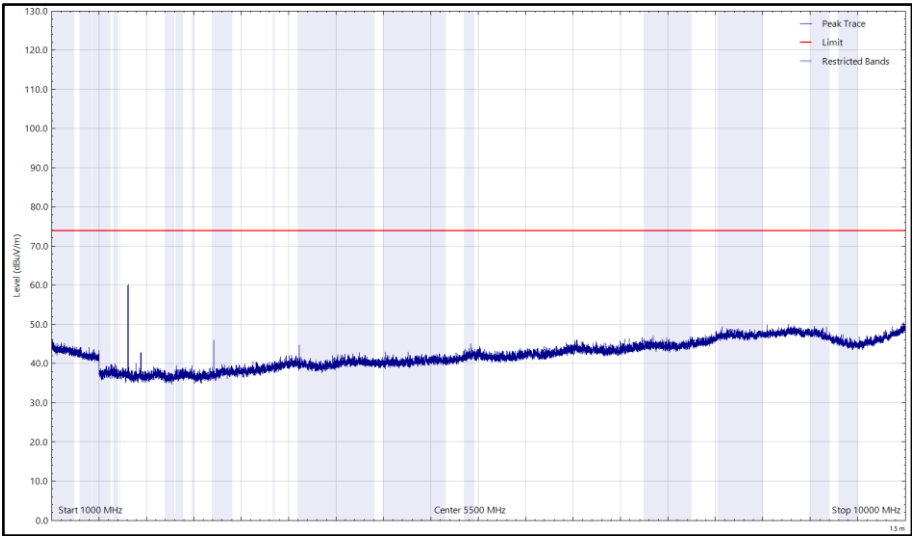


Figure 3 - FHSS, 902.75MHz, 1 GHz to 10 GHz, Horizontal (Peak)

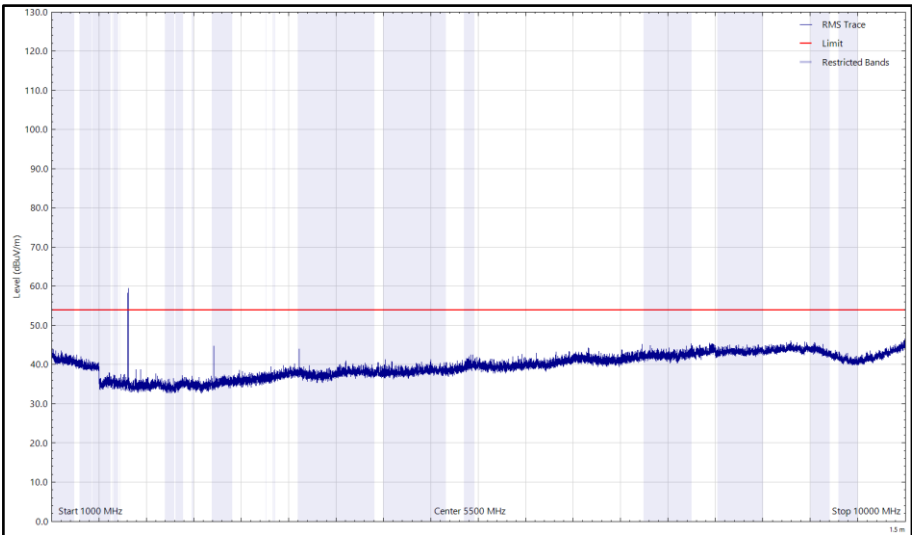


Figure 4 - FHSS, 902.75MHz, 1 GHz to 10 GHz, Horizontal (rms)

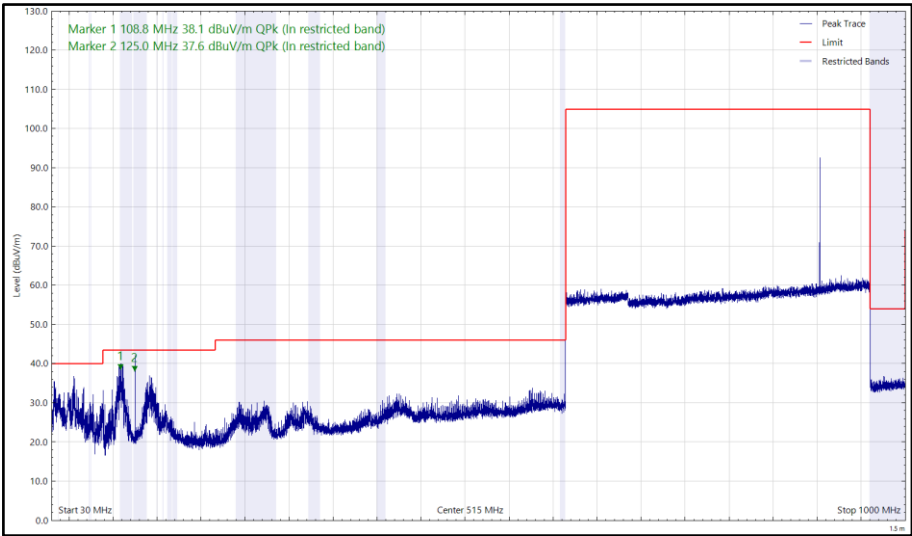


Figure 5 - FHSS, 902.75MHz, 30 MHz to 1 GHz, Vertical (Peak)

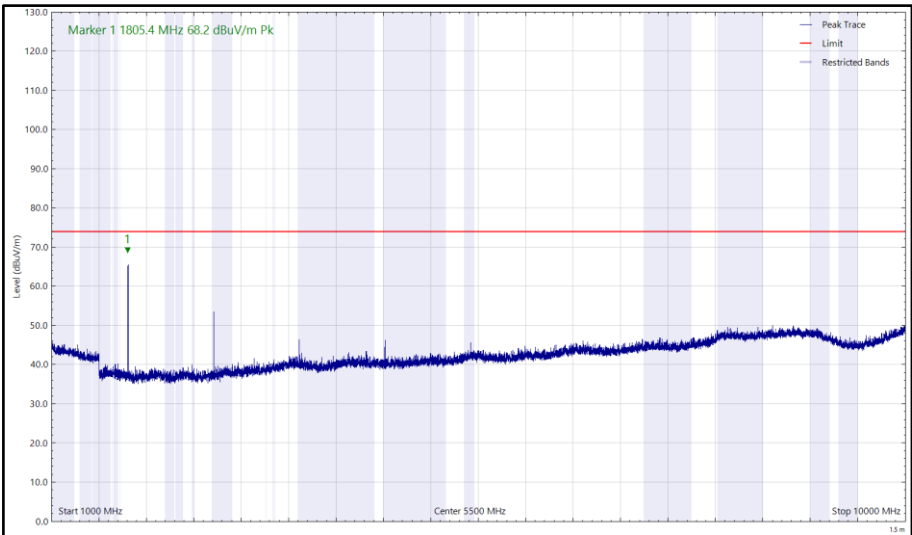


Figure 6 - FHSS, 902.75MHz, 1 GHz to 10 GHz, Vertical (Peak)

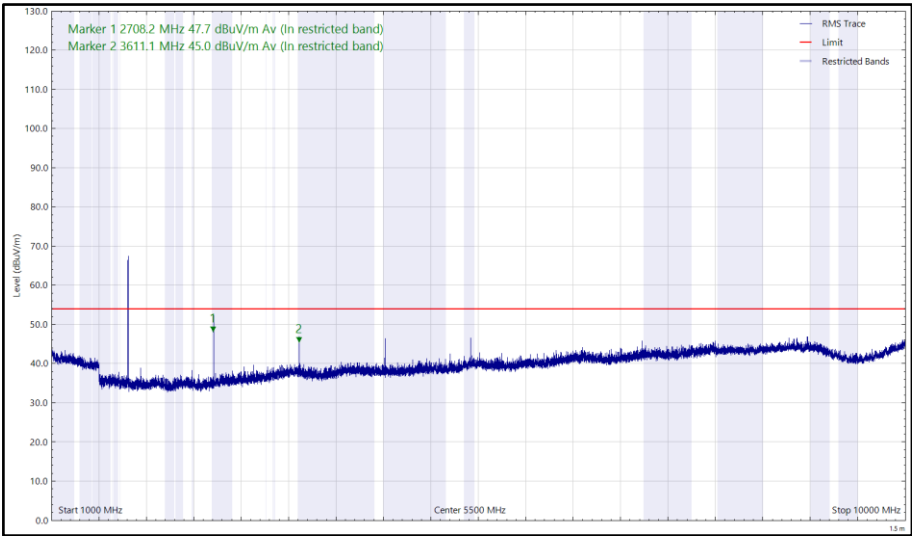


Figure 7 - FHSS, 902.75MHz, 1 GHz to 10 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
108.821	37.86	43.52	-5.66	Q-Peak	94	100	Vertical
125.011	39.85	43.52	-3.67	Q-Peak	182	251	Horizontal
125.013	34.07	43.52	-9.45	Q-Peak	180	103	Vertical
1829.515	70.11	73.98	-3.87	Peak	196	155	Vertical
2744.325	50.55	54.00	-3.45	CISPR Avg	202	104	Vertical

Table 17 - FHSS, 914.75MHz, 30 MHz to 10 GHz

No other emissions found within 10 dB of the limit.

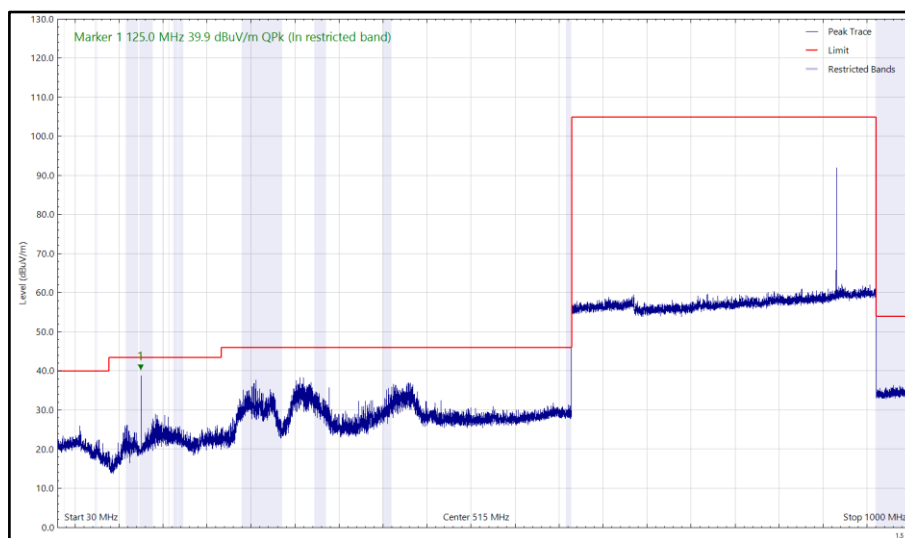


Figure 8 - FHSS, 914.75MHz, 30 MHz to 1 GHz, Horizontal (Peak)

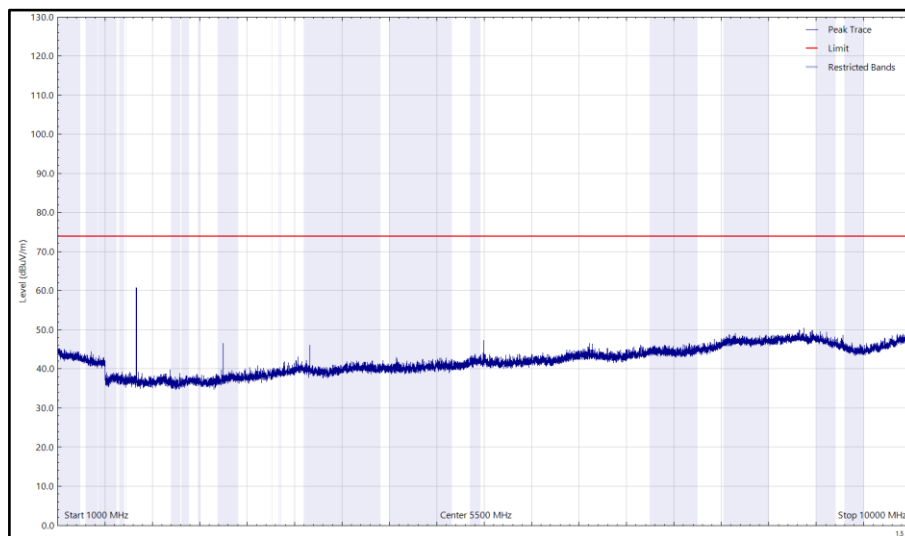


Figure 9 - FHSS, 914.75MHz, 1 GHz to 10 GHz, Horizontal (Peak)

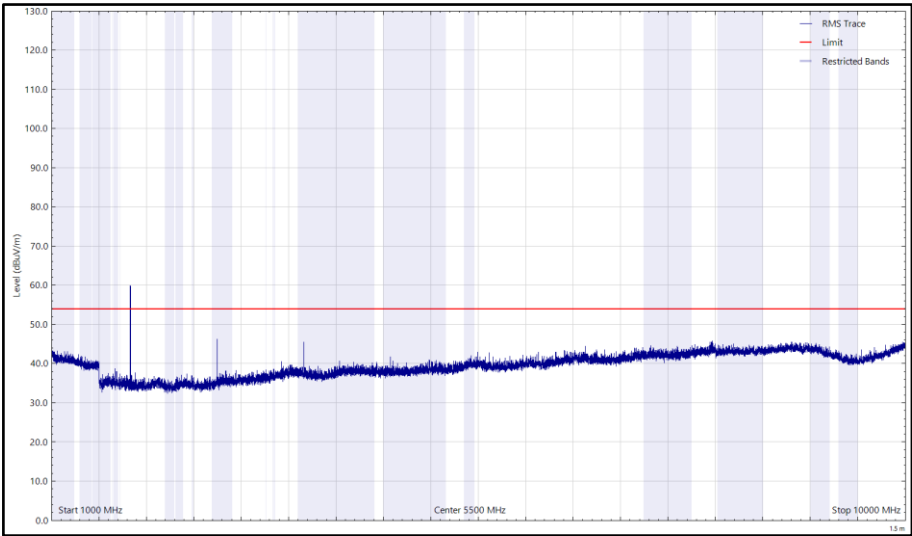


Figure 10 - FHSS, 914.75MHz, 1 GHz to 10 GHz, Horizontal (rms)

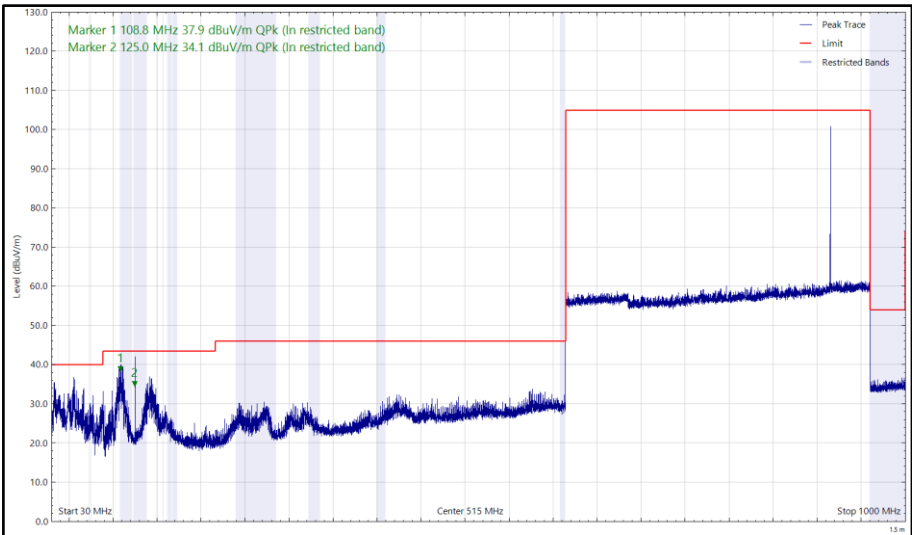


Figure 11 - FHSS, 914.75MHz, 30 MHz to 1 GHz, Vertical (Peak)

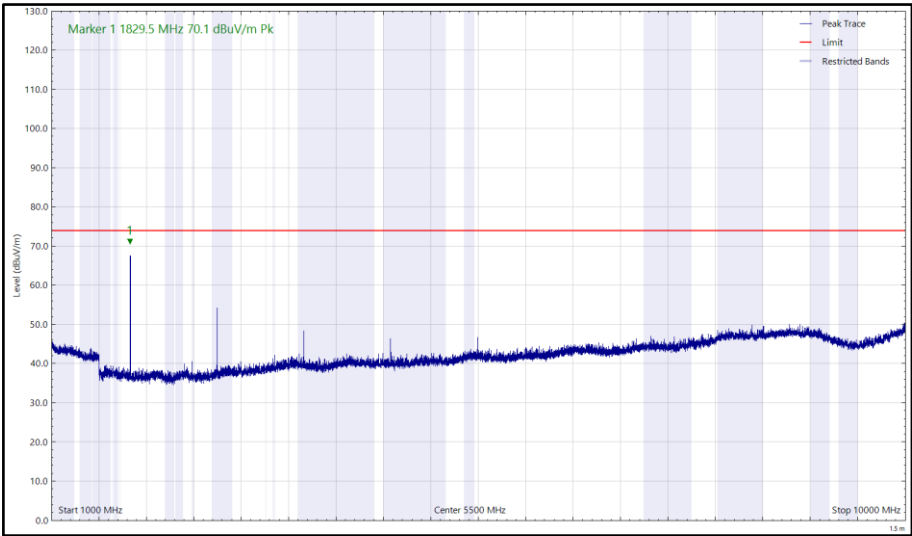


Figure 12 - FHSS, 914.75MHz, 1 GHz to 10 GHz, Vertical (Peak)

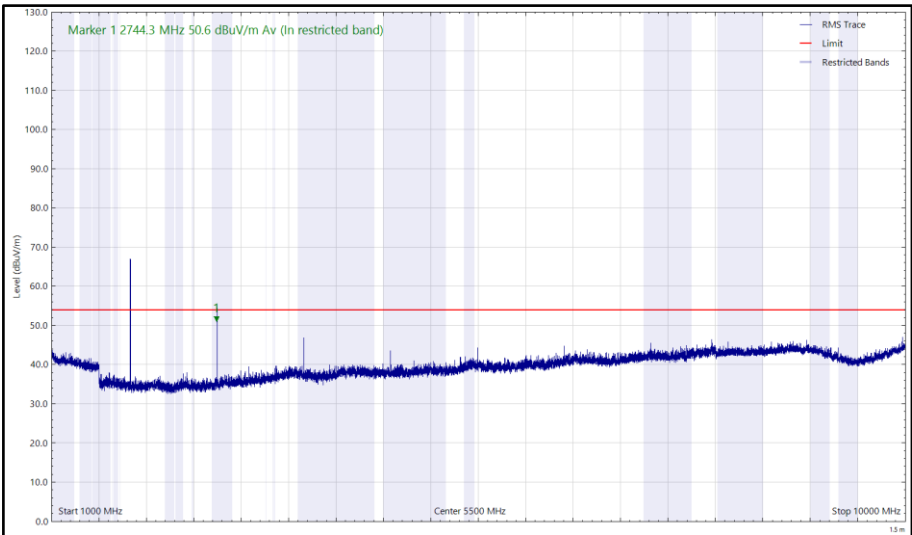


Figure 13 - FHSS, 914.75MHz, 1 GHz to 10 GHz, Vertical (rms)

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
108.814	37.62	43.52	-5.90	Q-Peak	84	100	Vertical
125.008	36.23	43.52	-7.29	Q-Peak	168	103	Vertical
125.014	40.52	43.52	-3.00	Q-Peak	324	242	Horizontal
1854.505	65.74	73.98	-8.24	Peak	197	101	Vertical
2781.735	53.08	54.00	-0.92	CISPR Avg	196	100	Vertical
3709.265	44.48	54.00	-9.52	CISPR Avg	201	155	Vertical

Table 18 - FHSS, 927.25MHz, 30 MHz to 10 GHz

No other emissions found within 10 dB of the limit.

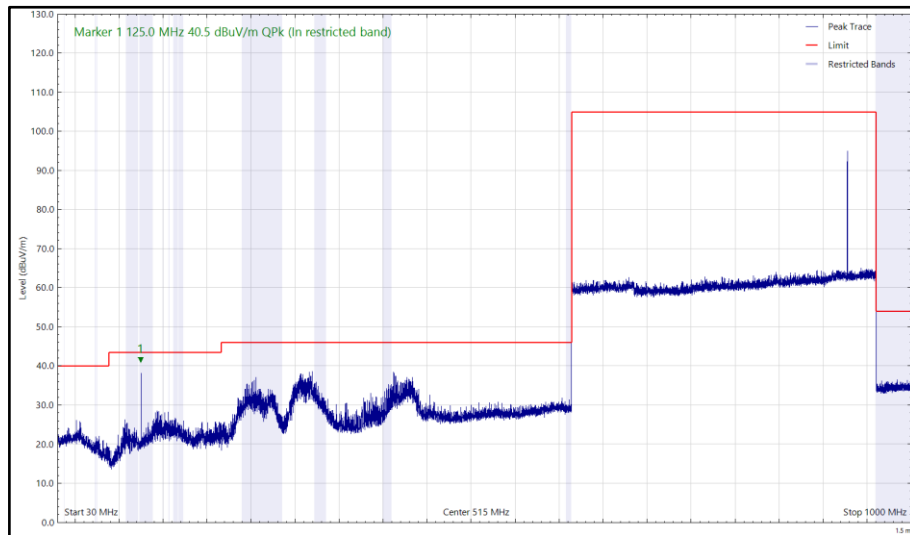


Figure 14 - FHSS, 927.25MHz, 30 MHz to 1 GHz, Horizontal (Peak)

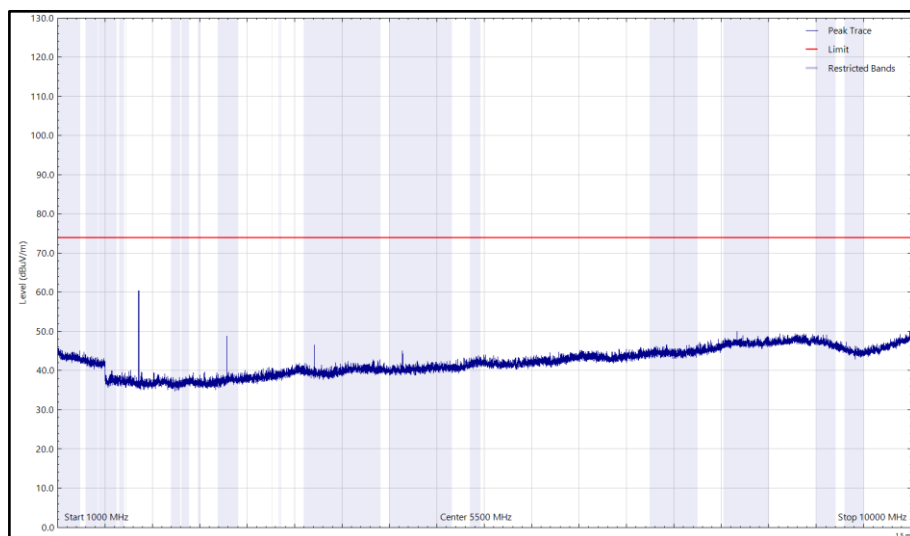


Figure 15 - FHSS, 927.25MHz, 1 GHz to 10 GHz, Horizontal (Peak)

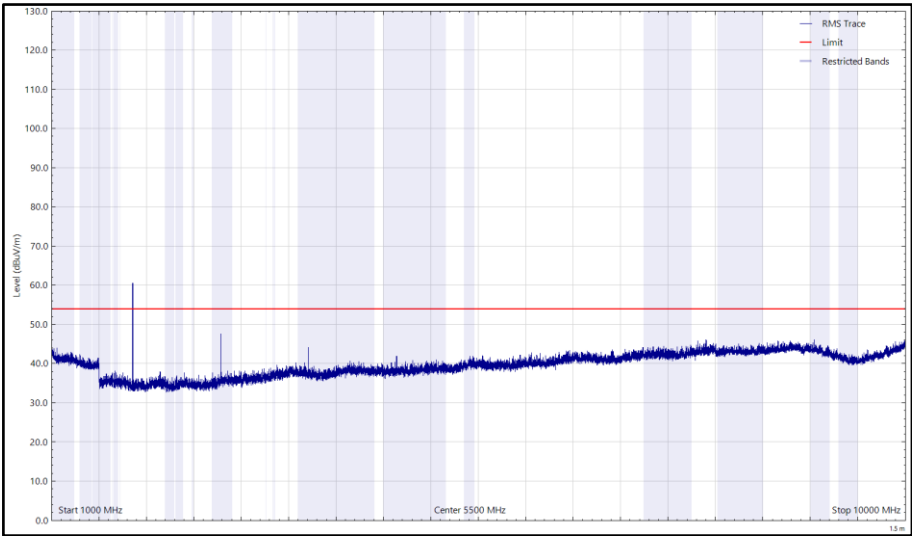


Figure 16 - FHSS, 927.25MHz, 1 GHz to 10 GHz, Horizontal (rms)

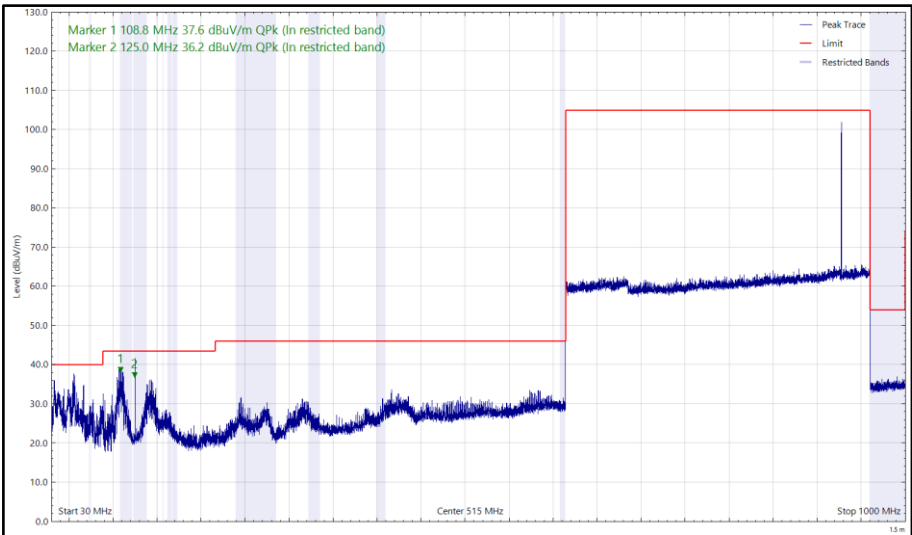


Figure 17 - FHSS, 927.25MHz, 30 MHz to 1 GHz, Vertical (Peak)

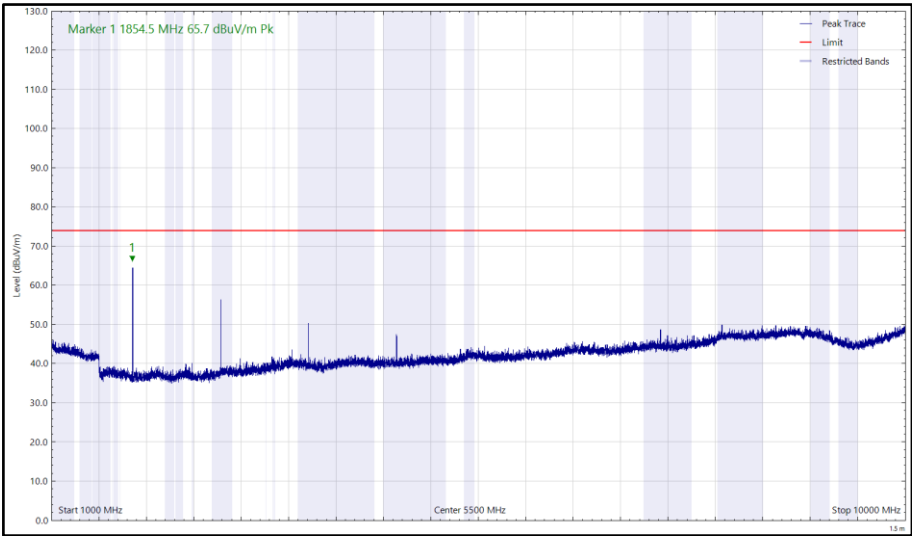


Figure 18 - FHSS, 927.25MHz, 1 GHz to 10 GHz, Vertical (Peak)

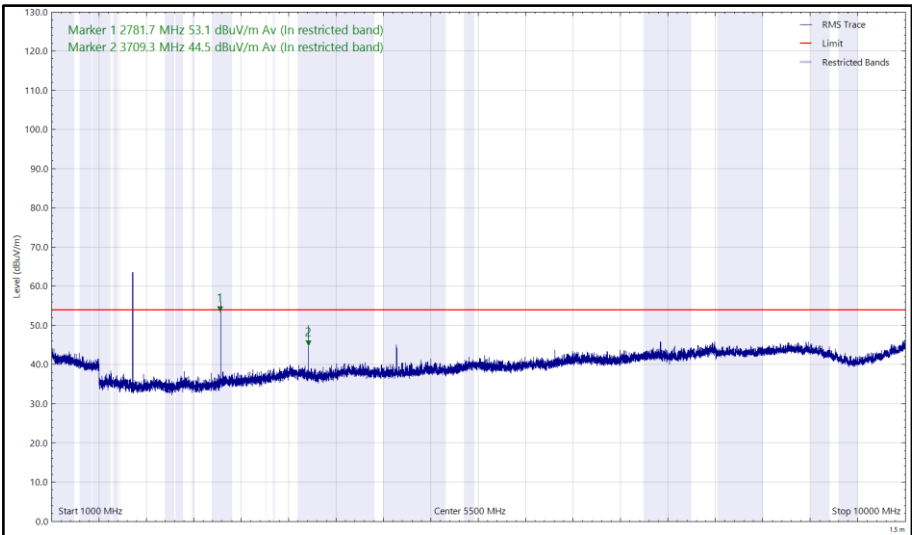


Figure 19 - FHSS, 927.25MHz, 1 GHz to 10 GHz, Vertical (rms)



FCC 47 CFR Part 15, Limit Clause 15.247 (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)

ISED RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

In addition, radiated emissions which fall in the restricted bands, as defined in RSS-GEN, clause 8.10, must also comply with the radiated emission limits specified in RSS-GEN clause 8.9.



2.1.8 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Screened Room (5)	Rainford	Rainford	1545	36	15-Apr-2024
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Mast Controller	Maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	Maturo GmbH	TAM 4.0-P	4811	-	TU
Antenna (DRG 1-10.5GHz)	Schwarzbeck	BBHA9120B	4848	12	28-May-2023
High Pass filter	Wainwright	WHKX12-1290-1500-18000-80SS	4962	12	19-May-2023
Emissions Software	TUV SUD	EmX V3.1.11	5125	-	Software
Pre-amplifier (30 dB, 1GHz to 18GHz)	Schwarzbeck	BBV 9718 C	5261	12	08-Apr-2023
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5476	12	06-Oct-2023
Cable (SMA to SMA 1m)	Junkosha	MWX221-01000AMSAMS/A	5514	12	12-Apr-2023
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5517	12	12-Apr-2023
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/B	5519	12	07-Mar-2023
TRILOG Super Broadband Test Antenna	Schwarzbeck	VULB 9168	5942	24	03-Feb-2024
Attenuator 4dB	Pasternack	PE7074-4	6202	24	16-Jul-2024

Table 19

TU - Traceability Unscheduled



2.2 Maximum Conducted Output Power

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)
ISED RSS-247, Clause 5.4
ISED RSS-GEN, Clause 6.12

2.2.2 Equipment Under Test and Modification State

SRM 9380 (8-port Master), S/N: 14051278-0046 - Modification State 0
SRS 9380 (8-port Slave), S/N: 14199633-0010 - Modification State 0

2.2.3 Date of Test

13-April-2023

2.2.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 7.8.5 using a spectrum analyser.

2.2.5 Environmental Conditions

Ambient Temperature	21.2 °C
Relative Humidity	38.4 %



2.2.6 Test Results

RFID Transceiver - RFID DAS 9380

Frequency (MHz)	Maximum Output Power	
	dBm	mW
902.75	29.79	952.79
914.75	29.79	952.79
927.25	29.89	974.98

Table 20

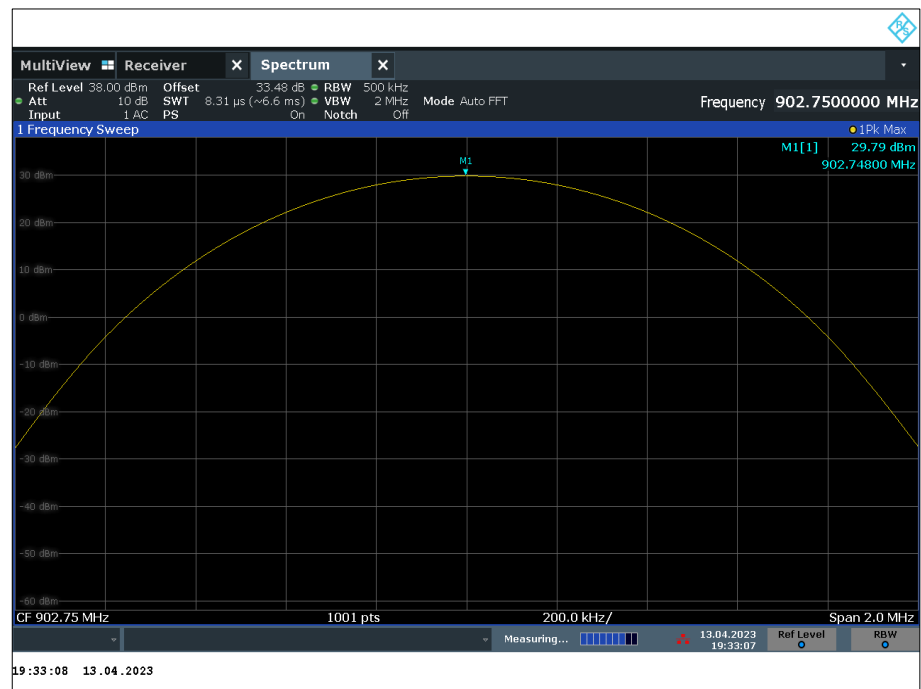


Figure 20 - 902.75

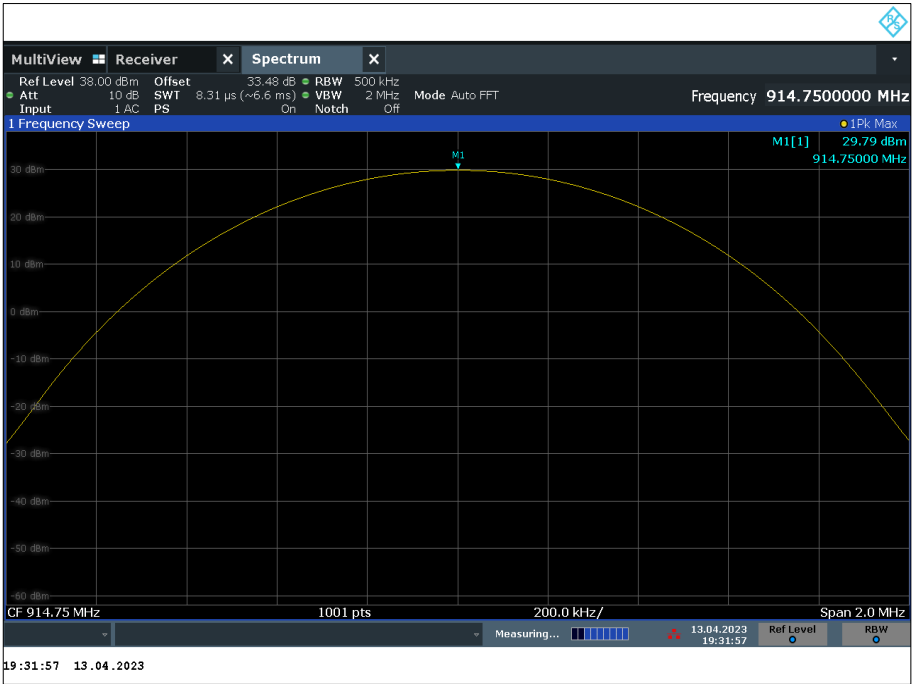


Figure 21 - 914.75

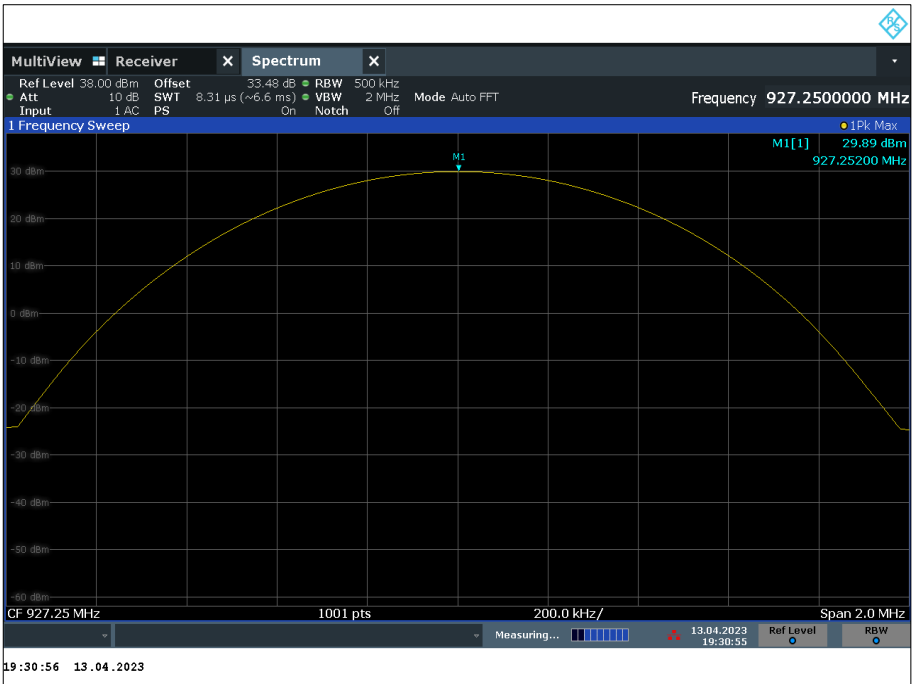


Figure 22 - 927.25



RFID Transceiver - Flow Ranger 9380

Frequency (MHz)	Maximum Output Power	
	dBm	mW
902.75	29.73	939.72
914.75	29.44	879.02
927.25	29.42	874.98

Table 21

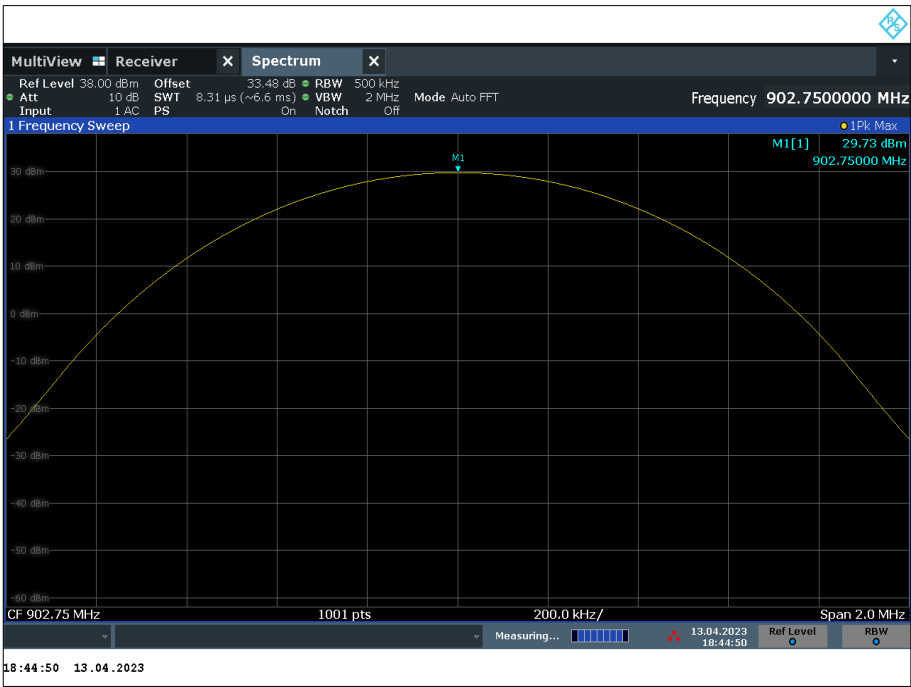


Figure 23 - 902.75

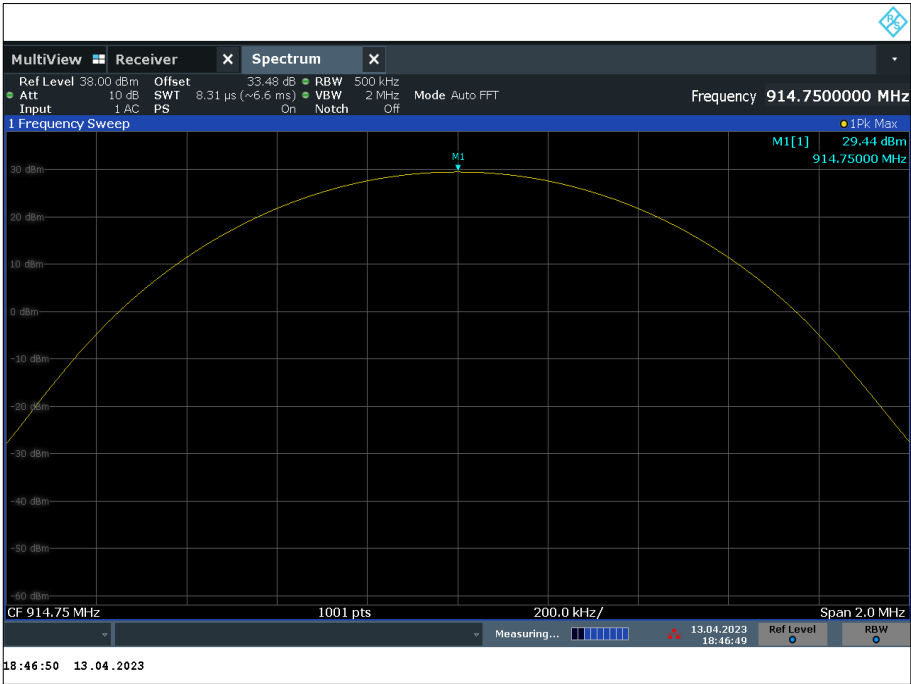


Figure 24 - 914.75

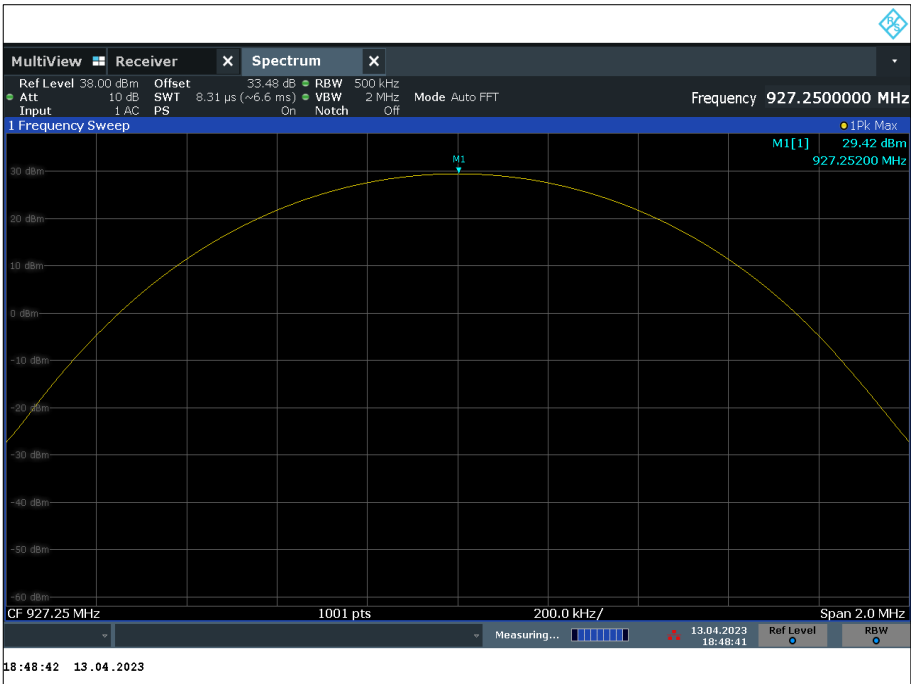


Figure 25 - 927.25



FCC 47 CFR Part 15, Limit Clause 15.247 (b)(2)

For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels.

ISED RSS-247, Limit Clause 5.4 (a)

For FHSs operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1.0 W, and the e.i.r.p. shall not exceed 4 W if the hopset uses 50 or more hopping channels; the maximum peak conducted output power shall not exceed 0.25 W and the e.i.r.p. shall not exceed 1 W if the hopset uses less than 50 hopping channels.

2.2.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Screened Room (5)	Rainford	Rainford	1545	36	15-Apr-2024
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5476	12	06-Oct-2023
Attenuator 5W 10dB DC-18GHz	Aaren	AT40A-4041-D18-10	5495	12	13-Oct-2023
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	04-May-2023
Cable (K-Type to K-Type, 2 m)	Junkosha	MWX241-02000KMSKMS/A	5524	12	24-Oct-2023
EMI Test Receiver	Rohde & Schwarz	ESW44	5527	12	28-Apr-2023

Table 22



2.3 Authorised Band Edges

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d),
ISED RSS-247, Clause 5.5

2.3.2 Equipment Under Test and Modification State

SRM 9380 (8-port Master), S/N: 14051278-0046 - Modification State 0
SRS 9380 (8-port Slave), S/N: 14199633-0010 - Modification State 0

2.3.3 Date of Test

15-April-2023

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

2.3.5 Environmental Conditions

Ambient Temperature	21.2 °C
Relative Humidity	43.5 %

2.3.6 Test Results

RFID Transceiver - RFID DAS 9380

Mode	Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
FHSS	902.75	902	-53.39
FHSS	927.25	928	-52.81

Table 23

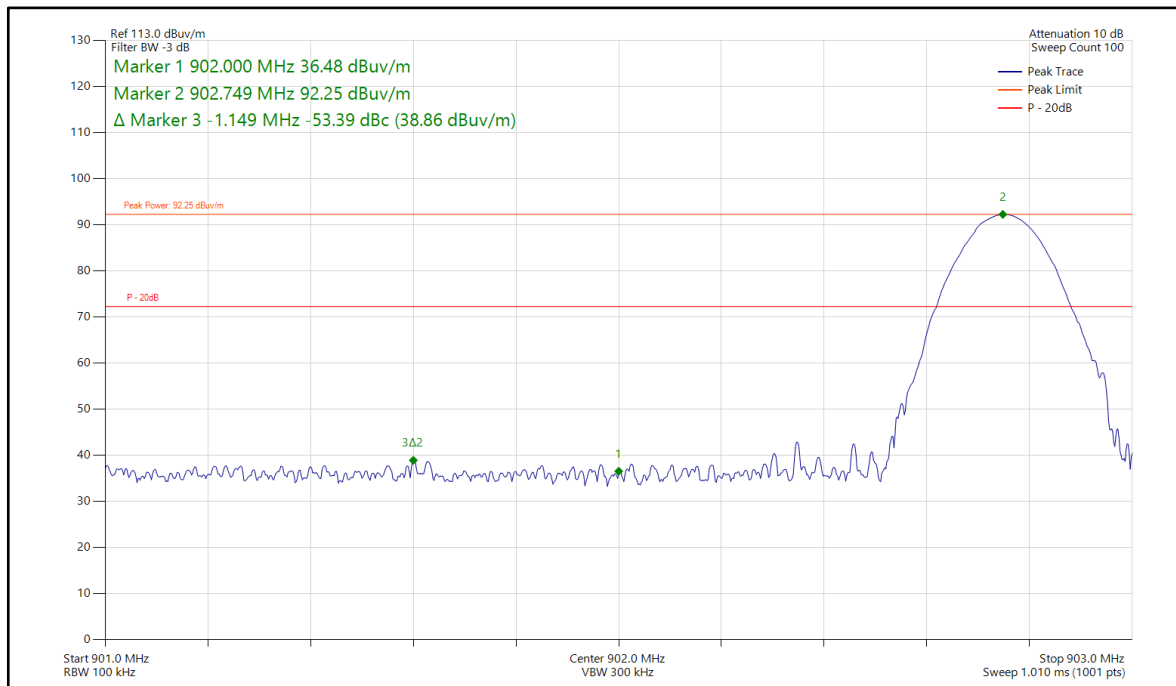


Figure 26 - FHSS, 902.75MHz, Band Edge Frequency 902 MHz

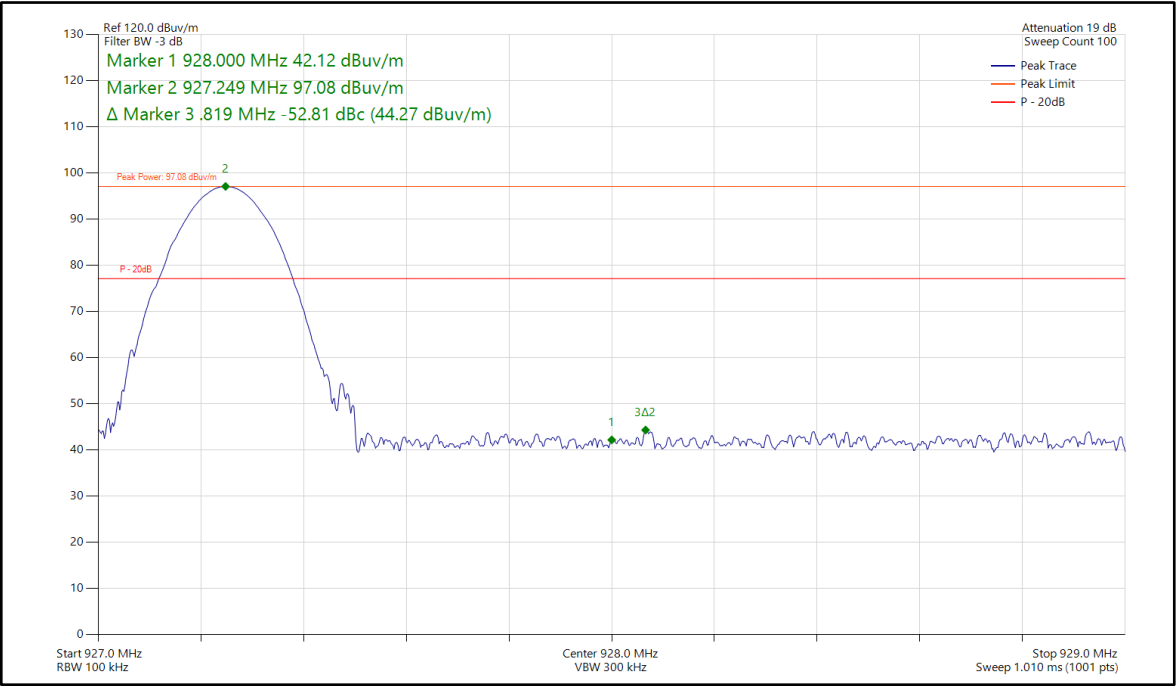


Figure 27 - FHSS, 927.25MHz, Band Edge Frequency 928 MHz



RFID Transceiver - Flow Ranger 9380

Mode	Frequency (MHz)	Band Edge Frequency (MHz)	Level (dBc)
FHSS	902.75	902	-53.04
FHSS	927.25	928	-48.84

Table 24

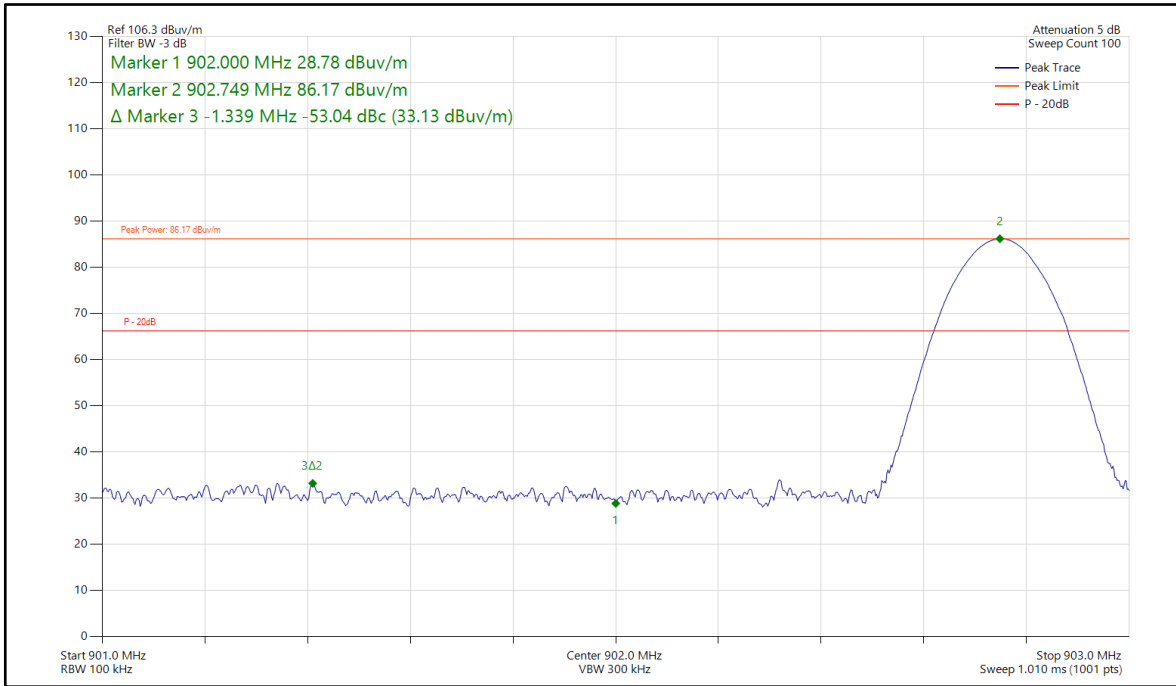


Figure 28 - FHSS, 902.75MHz, Band Edge Frequency 902 MHz

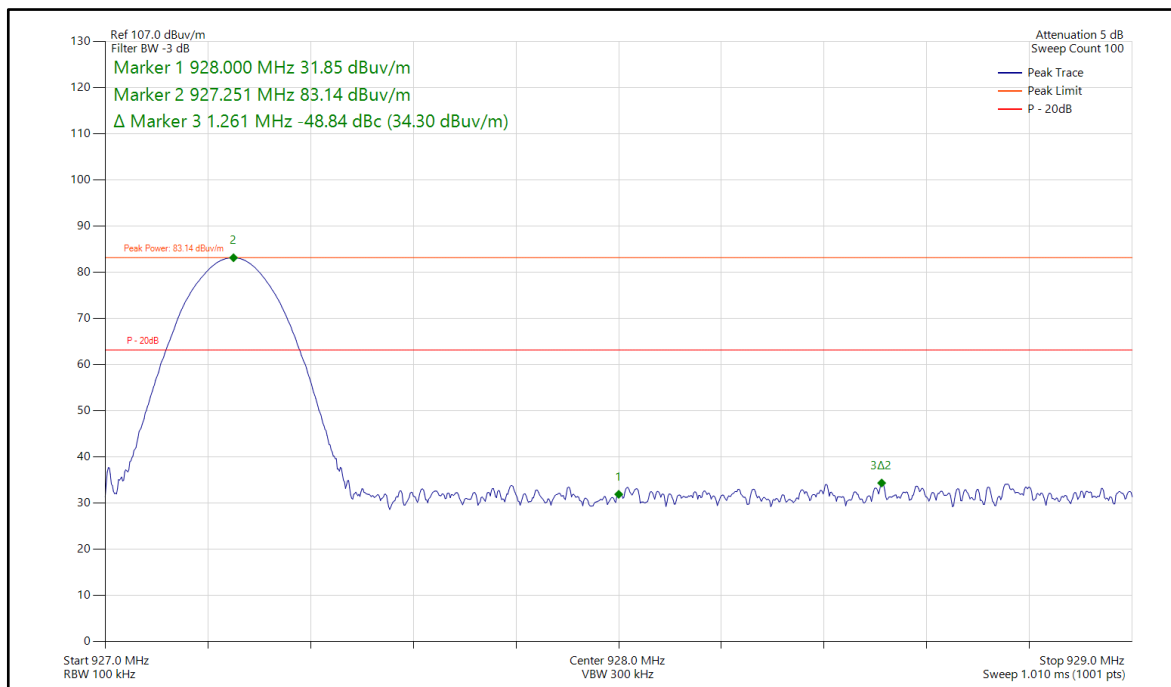


Figure 29 - FHSS, 927.25MHz, Band Edge Frequency 928 MHz

FCC 47 CFR Part 15, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

ISED RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.



2.3.7 Test Location and Test Equipment Used

This test was carried out in EMC Laboratory 5 and EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Screened Room (5)	Rainford	Rainford	1545	36	15-Apr-2024
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Mast Controller	Maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	Maturo GmbH	TAM 4.0-P	4811	-	TU
Cable (18 GHz)	Rosenberger	LU7-071-2000	5107	12	18-Dec-2023
Emissions Software	TUV SUD	EmX V3.1.11	5125	-	Software
Thermo-Hygro-Barometer	PCE Instruments	PCE-THB-40	5476	12	06-Oct-2023
TRILOG Super Broadband Test Antenna	Schwarzbeck	VULB 9168	5942	24	03-Feb-2024
Attenuator 4dB	Pasternack	PE7074-4	6202	24	16-Jul-2024
Cable (N to N 8m)	Junkosha	MWX221-08000NMSNMS/B	6330	12	16-Feb-2024

Table 25

TU - Traceability Unscheduled

3 Photographs

3.1 Test Setup Photographs



Figure 30 - Test Setup - 30 MHz to 1 GHz

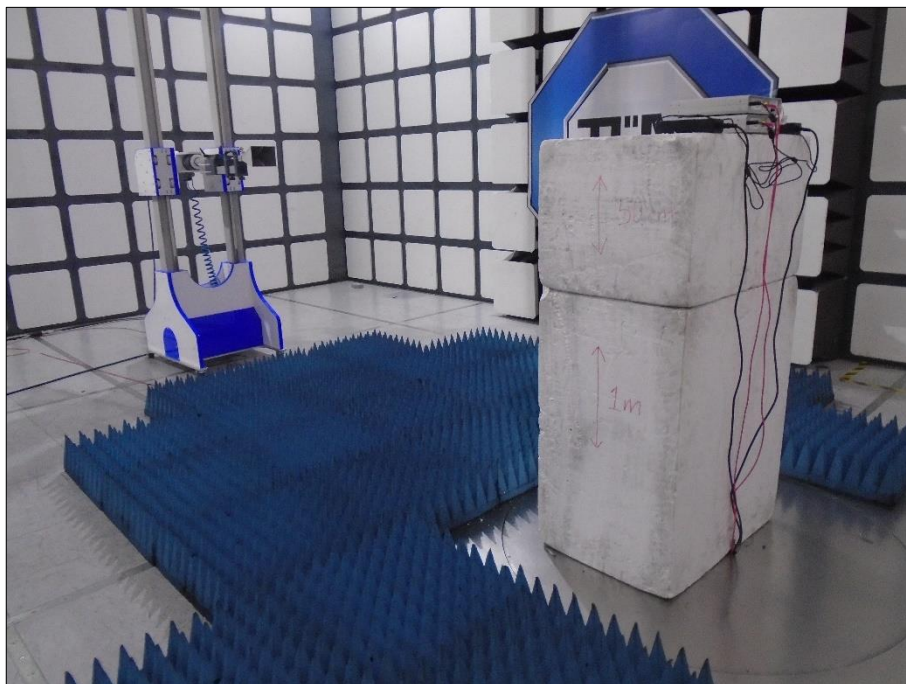


Figure 31 - Test Setup - 1 GHz to 10 GHz

4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Maximum Conducted Output Power	± 1.38 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB

Table 26

Measurement Uncertainty Decision Rule – Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.