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LAB N° 1347 L

RAPPORTO DI PROVA

TEST REPORT

Rif. / Ref. n.	**FCCTR_181513-0**	Data Emissione /Issue Date:	**21/07/2022**	Pagine / Pages:	**54**

Scopo delle prove *Test object*	Prove di tipo in accordo alla Norme *Type test according to Standards* **47 CFR FCC part 15 - Subpart C - §15.247**
Richiedente *Applicant*	**Paradox Engineering SA** Via Passeggiata 7 – 6883 Novazzano – CH Tel.: +41912330100
Marchio commerciale *Trade mark*	MinebeaMitsumi Passion to Create Value through Difference
Fabbricante *Manufacturer*	**MinabeaMitsumi Inc.** 3-9-6 Mita, Minato-ku, Tokyo 108-8330 Tel.: 81-3-6758-6711
Prodotto *Product*	Sub 1-GHz IPv6/6LoWPAN Hardware radio device, compliant within NEMA standard, that operates as: Smart Lighting Node and Gateway for other Nodes
Modello *Model*	**NDLM007US-1**
Identificativo FCC *FCC ID*	**2AKPQNDLM007**
Data ricevimento campioni *Date of test samples receipt*	09/05/2022
Campioni verificati *No. of tested samples*	1 – Sampled by the applicant
Data verifiche *Testing date*	From 23/05/2022 to 07/06/2022
Sito di prova *Testing site*	PRSLAB S.r.l. Unipersonale - Via Campagna 92 - 22020 Faloppio - Como - Italy
Identificativo FCC del sito di prova *FCC designation number*	IT0012
Esito delle valutazioni *Assessment results*	**CONFORME / COMPLIANT**

Verifiche effettuate da *Verifications carried out by*	**Daniele AOSANI** Tecnico Laboratorio *Laboratory Engineer*	Daniele Aosani
Approvato *Approved by*	**Riccardo PFEIFFER** Responsabile Laboratorio *Laboratory Manager*	Riccardo Pfeiffer

I risultati delle prove riportati nel presente rapporto di prova si riferiscono solo ai campioni esaminati.
The test results reported in this test report shall refer only to the samples tested.
Il campione è stato fornito dal cliente ed i risultati si riferiscono al campione così come ricevuto
The sample has been provided by the customer and the results apply to the sample as received

CONTENUTO

TABLE OF CONTENTS

0. RELEASE CONTROL RECORD

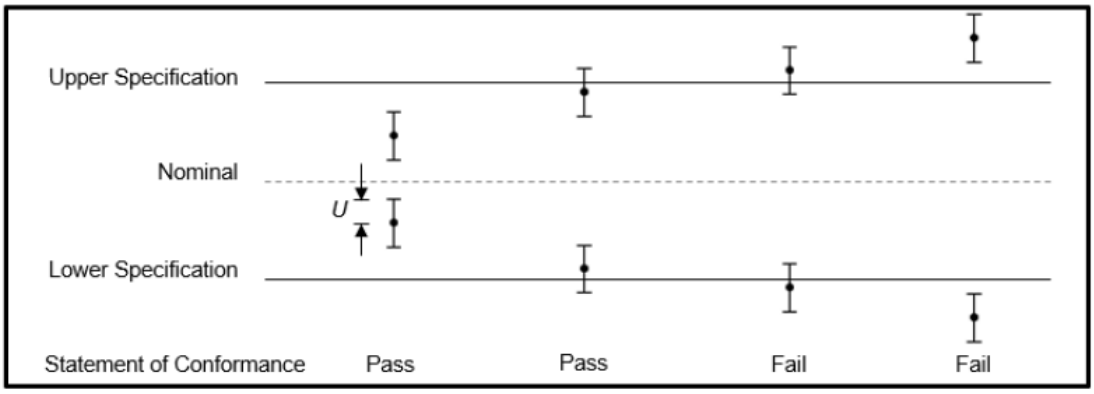
TEST REPORT NUMBER	REASON OF CHANGE	DATE OF ISSUE
FCCTR_181513-0	Original release	21/07/2022

This document is valid in last revision that deletes and replaces the previous one

1. DECISION RULE

PRS LAB specifies that, if the decision rules of conformity of the test results are not indicated in detail in the standard/s object of tests, it takes as a decision rule for the declaration of conformity the simple binary system (w = 0) stated in the ILAC-G8-09:2019 document.

The decision rule is applicable for all parts of standard



U = 95% expanded measurement uncertainty

Statements of conformity are reported as:

- Pass: the measured value is below the acceptance limit, $AL{=}TL$.
- Fail: the measured value is above the acceptance limit, $AL{=}TL$.

Definitions

- Guard Band (w): interval between a tolerance limit and a corresponding acceptance limit where length $w{=}|TL{-}AL|$.
- Tolerance Limit (TL) (Specification Limit): specified upper or lower bound of permissible values of a property.
- Acceptance Limit (AL): specified upper or lower bound of permissible measured quantity values.

2. INFORMATION PROVIDED BY CUSTOMER

Differences between versions declared by manufacturer		
	PRODUCT VERSION	**DIFFERENCE**
Tested Version	**NDLM007US-1**	The difference between the two product versions is the LTE module which is pin to pin compatible. The main version mounts the CAT M1 WP7702 module. The variant mounts the CAT 1 WP7611-1 module.
Variant	**NDLM007US-2**	

According to Manufacturer declaration, the tested model is the most representative and the most complex. The differences between the tested one and his variants are described in the table above and are declared by Manufacturer.

3. GENERAL REMARKS

- None

4. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

4.1 EUT Identification

DESCRIPTION	Sub 1-GHz IPv6/6LoWPAN Hardware radio device, compliant within NEMA standard, that operates as: - Smart Lighting Node - Gateway for other Nodes
COMMERCIAL NAME	PE Smart Lighting Node Hybrid NEMA
MODEL NAME	NDLM007US-1
SERIAL NO.	Prototype
PRSLAB IDENTIFICATION	BC 144/2022 1/4
TRADEMARK	MinebeaMitsumi Passion to Create Value through Difference
MANUFACTURER	MinebeaMitsumi Inc.
COUNTRY OF MANUFACTURER	Japan
SINGLE UNIT OR SYSTEM	Single
FCC CLASSIFICATION	Class B
POWER SOURCE	AC main
SUPPLY VOLTAGE	100 – 277V ~ 50-60Hz
MAX POWER or MAX ABSORBED CURRENT	600W with max load
OPERATING TEMPERATURE	-40°C ÷ +70°C
HW VERSION	PRD-LMN-0058 (-01) NDLM007US-1
FW VERSION	4.6.0
DIMENSIONS	Diameter 84mm; Height 106.9mm
EUT STANDING	Mounted on street lights (NEMA connector)

4.2 Radio module technical data

CHIP MANUFACTURER	life.augmented
CHIP MODEL	**S2-LPQTR**
RADIO CATEGORY	Short Range Device
WORKING FREQUENCY BAND	902.42 – 927.58MHz
CHANNELS	75
CHANNEL SPACING	340kHz
TRANSFER RATE	100kbps
TYPE OF MODULATION	GFSK
SENSITIVITY	-104dBm
ANTENNA TYPE	PCB printed
ANTENNA GAIN	0dBi

4.3 Ports identification

	PORT	DESCRIPTION	CONNECTION	NOTES
☒	Enclosure	Plastic	Snaps	---
☒	AC mains power port	115V ~ 60Hz	Plug	---
☐	DC mains power port	Port not present	---	---
☐	Wired network port	Port not present	---	---
☒	Signal / Control port	Load connection	---	<3m
☐	Antenna port	☒Internal; ☐External	---	---

Note:
During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.

4.4 Modifications incorporated in E.U.T.

The following items are the modifications introduced in the equipment under test:

- None

4.5 Auxiliary equipment

- Personal computer model AH532, manufacturer by Fujitsu, with software Radio Tester 1.12.6, to set channels.

5. REFERENCE STANDARDS

CODE OF FEDERAL REGULATIONS	DESCRIPTION
Title 47 Part 15 Subpart C § 15.209	Radio Frequency Devices – Intentional Radiators Radiated emission limits; general requirements
Title 47 Part 15 Subpart C § 15.247	Radio Frequency Devices – Intentional Radiators Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz
ANSI C63.10:2013	American National Standard for Testing Unlicensed Wireless Devices
Title 47 Part 1 Subpart I § 1.1310	Procedures Implementing the National Environmental Policy Act of 1969. Radiofrequency radiation exposure limits.
Title 47 Part 2 Subpart J § 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.
ANSI C63.4:2014	American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz

6. OPERATING TEST MODES AND TEST CONDITIONS

In the following table there are the operating conditions adopted during tests identified by an indicator (#) at which has been referred the item “Operating condition of the equipment under test”

OPERATING CONDITION	DESCRIPTION
#1	Continuous transmission, modulated carrier, on channel 1
#2	Continuous transmission, modulated carrier, on channel 37
#3	Continuous transmission, modulated carrier, on channel 75
#4	Continuous transmission, pseudorandom modulated, Hopping mode

Special Test Software: Special software by the Applicant to operate the EUT at each channel frequency continuously. For example, the transmitter will be operated at each of the lowest, middle and highest frequencies individually continuously during testing.

Special Hardware Used: None

Transmitter Test Antenna: The EUT has been tested with the antenna fitted in a manner typical of normal intended

7. SUMMARY OF TEST RESULTS

SUMMARY OF TEST RESULTS for Subpart C				
Port	**Test[1]**	**Reference Standard**	**Operating Condition**	**Results**
Enclosure	Transmitter radiated emissions	FCC Part 15 §15.205 §15.209 §15.247 (d)	#1, #2, #3	Within the limits
Antenna port	Antenna requirement	FCC Part 15 §15.203	---	Compliant
	Maximum Peak Output Power	FCC Part 15 §15.247 (b) (2)	#1, #2, #3	Within the limits
	20 dB Bandwidth 99% BW	FCC Part 15 §15.247 (a) (2)	#1, #2, #3	Within the limits
	Band-Edge	FCC Part 15 § 15.247 (d)	#1, #2, #4	Within the limits
	Number of Hopping Frequency	FCC Part 15 § 15.247 (d)	#4	Within the limits
	Channel Separation	FCC Part 15 § 15.247 (d)	#4	Within the limits
	Number of Dwell Time	FCC Part 15 § 15.247 (d)	#4	Within the limits
	RF radiated Spurious Emissions at the Transmitter Antenna Terminal	FCC Part 15 § 15.247 (d)	#1, #2, #3	Within the limits
Note: [1]All tests are performed with the device in position shown in the photographic documentation.				

8. UNITS OF MEASUREMENTS

Conducted EMI Data is in dBµV; dB referenced to one microvolt
Radiated EMI Data is in dBµV/m; dB/m referenced to one microvolt per meter

Sample Calculation:

RFS = Radiated Field Strength,
FSM = Field Strength Measured,
A.F. = Receive antenna factor,
Gain = amplification gains and/or cable losses.

RFS (dBµV/m @ 3m) = FSM (dBµV) + A.F. (dB/m) - Gain (dB)

9. TEST RESULTS

TEST **1.**	**ANTENNA REQUIREMENTS**
REFERENCE DOCUMENT	**According to §15.203 / 15.204** An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sec. 15.211, Sec. 15.213, Sec. 15.217, Sec. 15.219, or Sec. 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Sec. 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded

Antenna Requirements
The EUT has an integrated PCB printed antenna.
RESULT: **COMPLIANT**

TEST **2.**	**MAXIMUM PEAK OUTPUT POWER**
REFERENCE DOCUMENT	**According to §15.247(b) (3)** For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signalling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

• **TEST LOCATION**	Semi-Anechoic Chamber					
• **DISTANCE OF MEASUREMENT**	3m					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
	Semi-Anechoic Chamber	Siemens	B83117-D6019-T232	003-005-134/94C	02/2022	02/2023
	Bi-log antenna	Chase	CBL6111C	2717	04/2022	04/2025
	Software EMC	Rohde & Schwarz	EMC32-E	V 8.40.0	N.A.	
• **TESTED PORT**	Antenna					
• **TEST METHOD**	ANSI C63.10:2013 section 11.9					
• **FREQUENCY RANGE**	Carrier					
• **UNCERTAINTY OF MEASURE**	Level of confidence = 95% (k=2) Expanded uncertainty = 3 dB					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION :**#1, #2, #3**

RESULT: **WITHIN THE LIMITS**

MEASUREMENT PARAMETER	
Resolution bandwidth	RBW ≥ DTS bandwidth
Video bandwidth	VBW ≥ 3 x RBW
Span	span ≥ 3 x RBW
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

TEST DESCRIPTION

Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously - rotating, remotely - controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency.

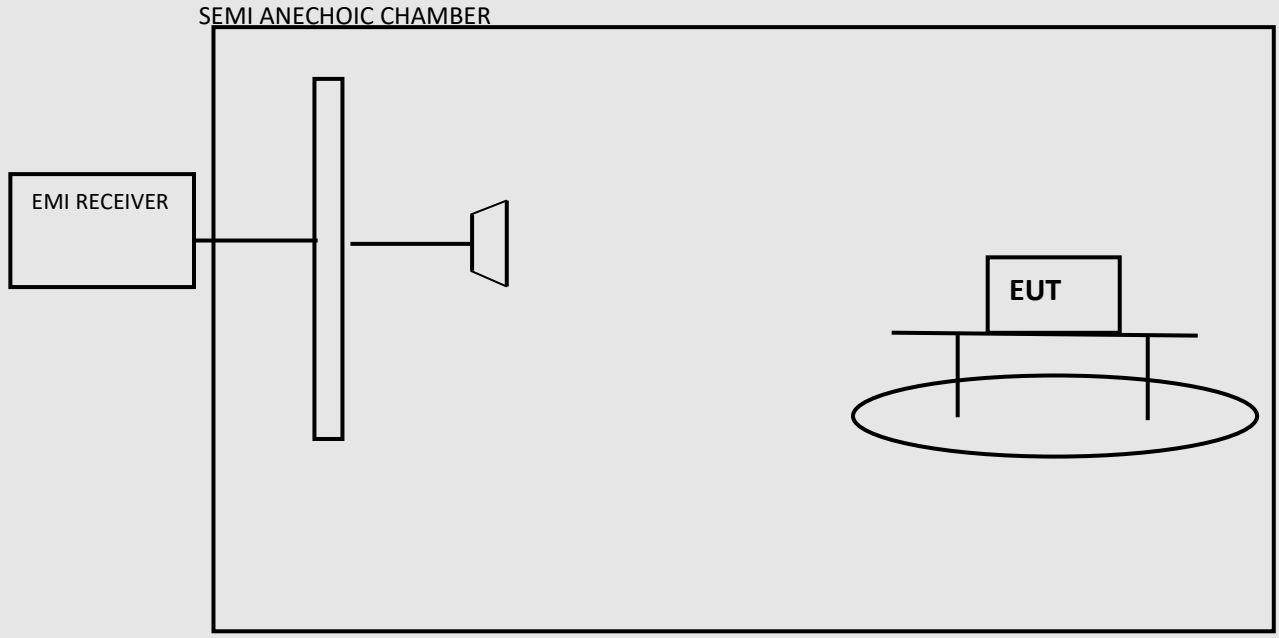
The EUT is placed at test table.

For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m

Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m~4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3m.

This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

TEST SETUP BLOCK DIAGRAM



TEST RESULTS

Channel	Frequency (MHz)	EIRP (dBm)	Antenna Gain	Max Conducted Output power	Limit (dBm)	Result
1	902.42	15.76	+0	15.76	30	WITHIN THE LIMITS
37	915.00	17.40	+0	17.40		
75	927.58	16.71	+0	16.71		
Note: ---						

TEST **3.**	**20dB CHANNEL BANDWIDTH & 99% BANDWIDTH**
REFERENCE DOCUMENT	**According to §15,247(a)(1)(i)** For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

• **TEST LOCATION**	Radio test area					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
• **TESTED PORT**	Antenna					
• **TEST METHOD**	ANSI C63.10:2013 section 7.8.7					
• **FREQUENCY RANGE**	Carrier					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION :**#1, #2, #3**

RESULT: **COMPLIANT**

MEASUREMENT PARAMETER	
Resolution bandwidth	1kHz
Video bandwidth	5kHz
Span	1MHz
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

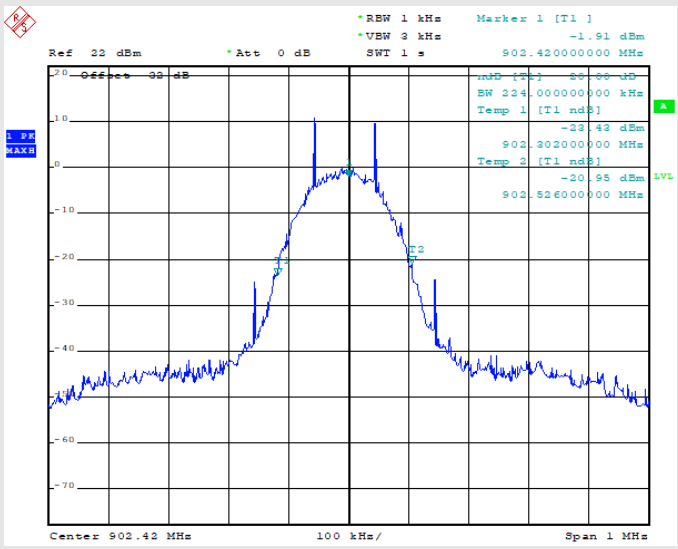
TEST DESCRIPTION
The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down/99%BW one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

MEASUREMENT RESULT

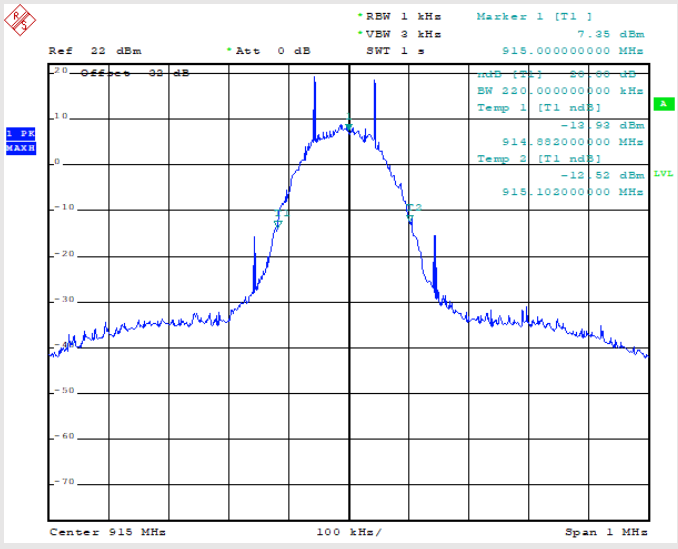
Channel	Frequency (MHz)	20dB Bandwidth (kHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Verdict
1	902.42	224.00	172.00	500	Within the limits
37	915.00	220.00	174.00	500	
75	927.58	224.00	174.00	500	

20dB Bandwidth

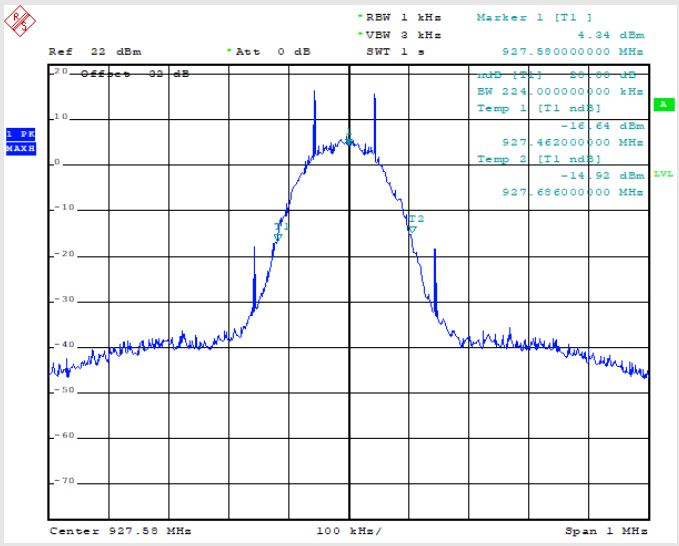
Channel 1



Channel 37

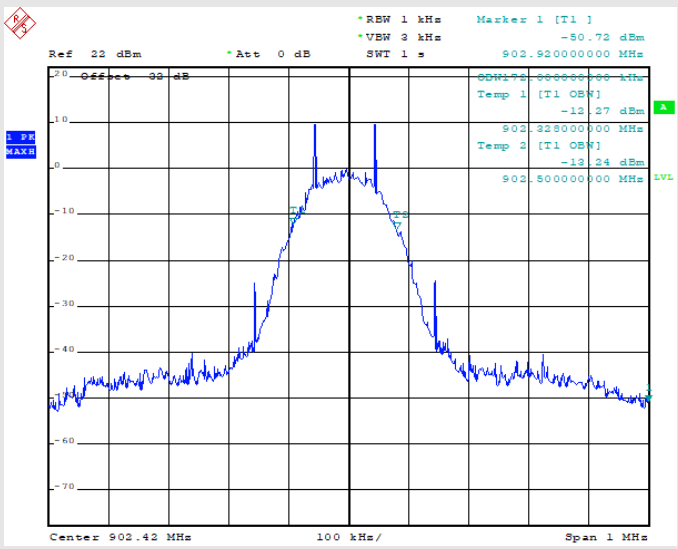


Channel 75

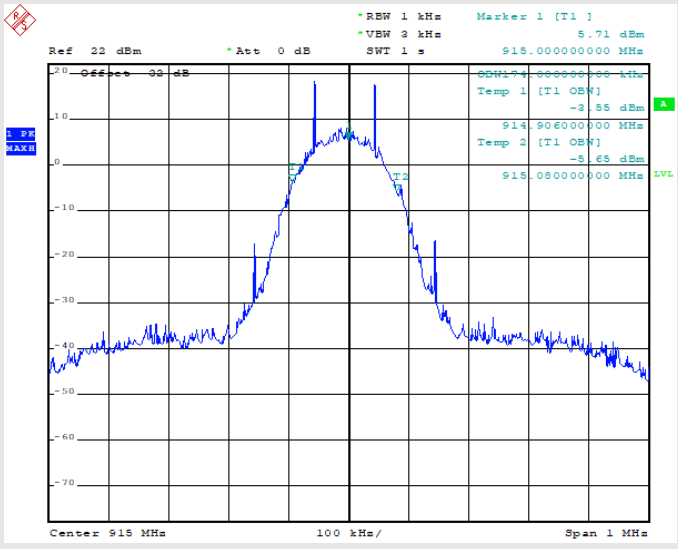


Occupied Bandwidth

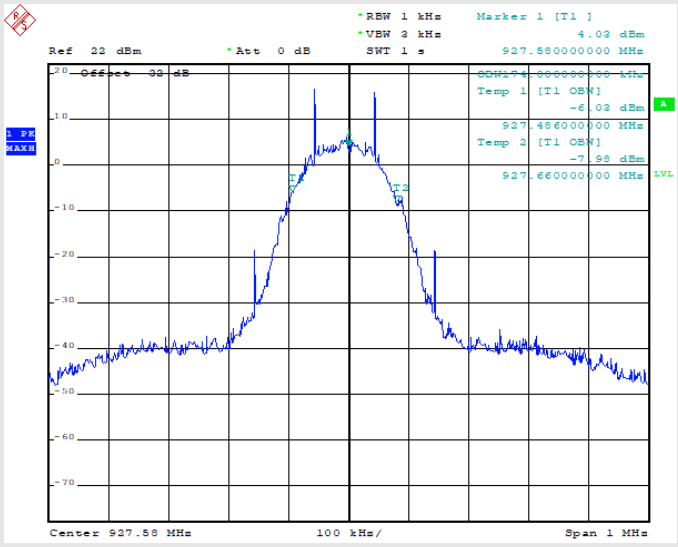
Channel 1



Channel 37



Channel 75



TEST **4.**	**BAND EDGE**
REFERENCE DOCUMENT	**According to §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 Sec, 15,209(a) is not required, In addition, radiated emissions which fall in the restricted bands, as defined in Sec, 15,205(a), must also comply with the radiated emission limits specified in Sec, 15,209(a) (see Sec, 15,205(c)),

• **TEST LOCATION**	Radio test area					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
• **TESTED PORT**	Antenna					
• **TEST METHOD**	ANSI C63.10:2013 section 7.8.6					
• **FREQUENCY RANGE**	Carrier					

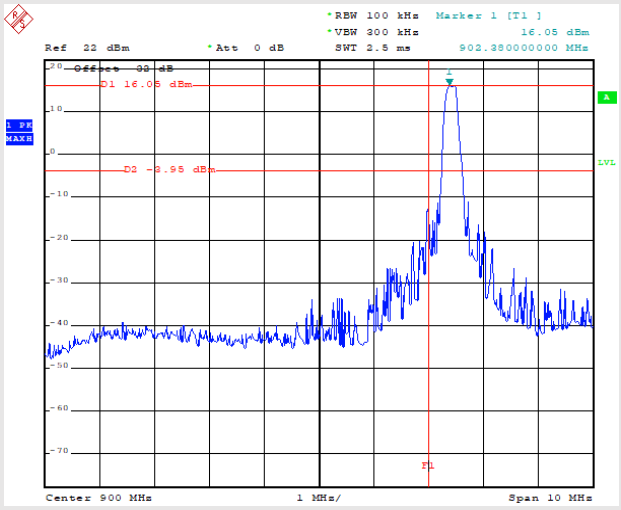
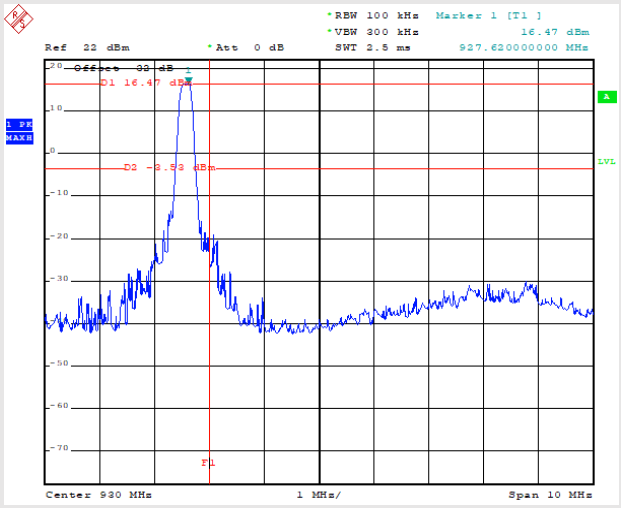
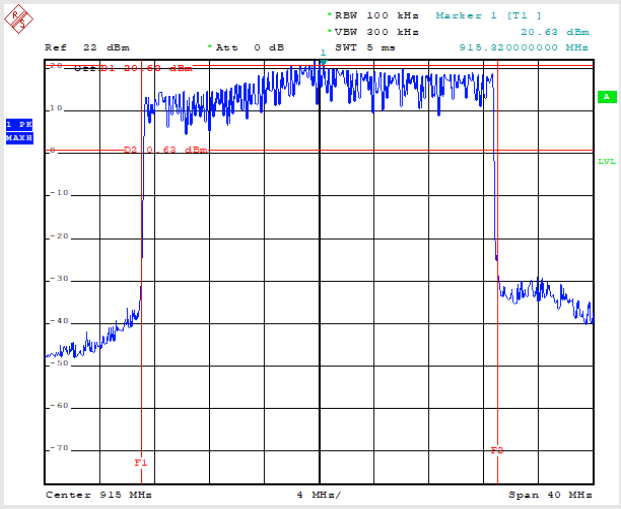
TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION :**#1, #3, #4**

RESULT: **COMPLIANT**

MEASUREMENT PARAMETER	
Resolution bandwidth	100kHz
Video bandwidth	300kHz
Span	10MHz for single channel 40MHz for hopping mode
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

MEASUREMENT RESULT

LOWER BAND-EDGE **CH 1**	
UPPER BAND-EDGE **CH 75**	
HOPPING BAND-EDGE	

NOTE: In this test the Peak detector was used and all emissions detected are below the Quasi-Peak limits.

TEST **5.**	**NUMBER OF HOPPING FREQUENCY**
REFERENCE DOCUMENT	**According to §15,247) (a)(1)(i)** For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz

• **TEST LOCATION**	Radio test area					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
• **TESTED PORT**	Antenna					
• **TEST METHOD**	ANSI C63.10:2013 section 7.8.3					
• **FREQUENCY RANGE**	Carrier					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

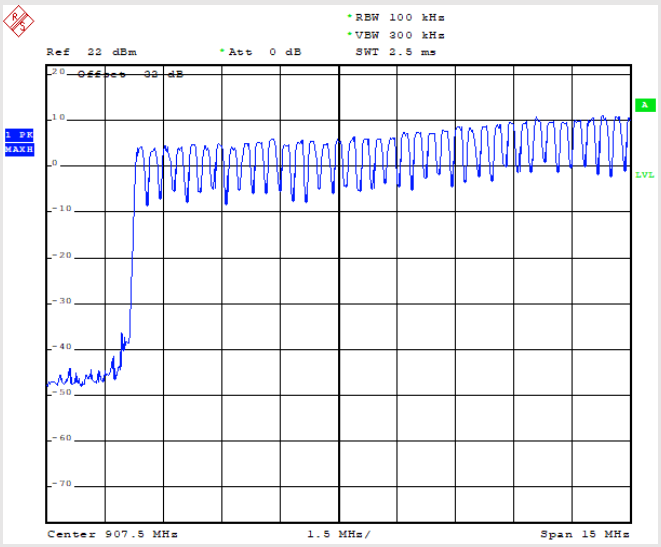
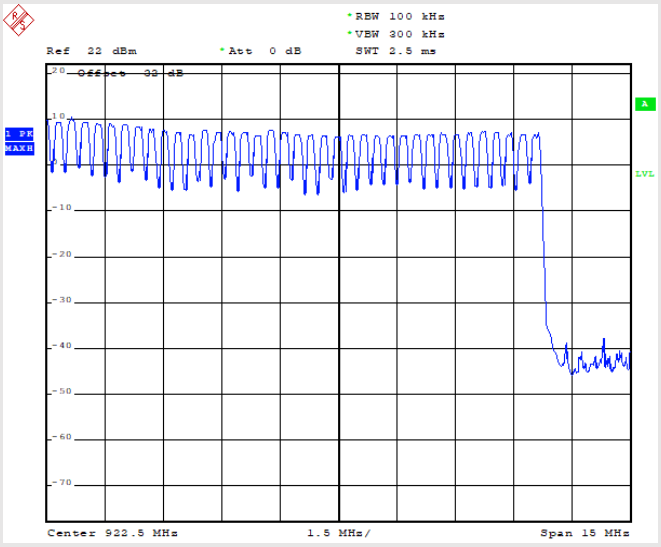
OPERATING CONDITION :**#4**

RESULT: **COMPLIANT**

MEASUREMENT PARAMETER	
Resolution bandwidth	200kHz
Video bandwidth	500kHz
Span	15MHz
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

TEST DESCRIPTION
Allow the trace to stabilize. It may prove necessary to break the span up to sections, in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

MEASUREMENT RESULT

FREQUENCY RANGE 900-915MHz		
FREQUENCY RANGE 915-930MHz		
NUMBER OF HOPPING CHANNELS	75	COMPLIANT

TEST **6.**	**CHANNEL SEPARATION**
REFERENCE DOCUMENT	**According to §15,247) (a) (1)** Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

• **TEST LOCATION**	Radio test area					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
• **TESTED PORT**	Antenna					
• **TEST METHOD**	ANSI C63.10:2013					
• **FREQUENCY RANGE**	Carrier					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION :**#4**

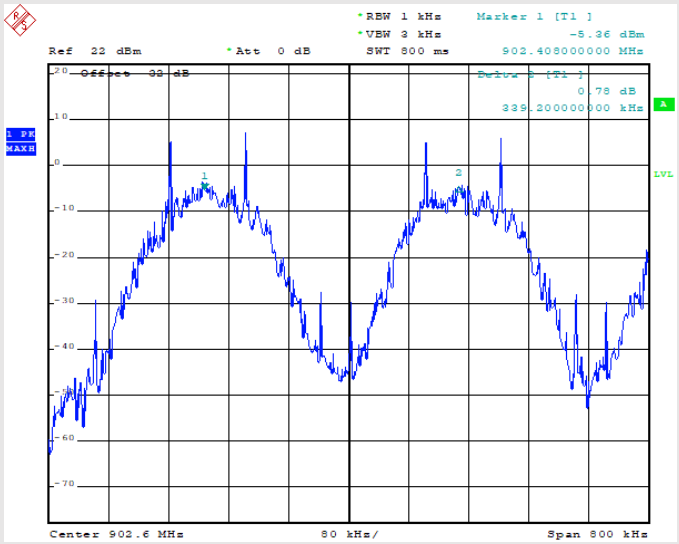
RESULT: **COMPLIANT**

MEASUREMENT PARAMETER	
Resolution bandwidth	1kHz
Video bandwidth	3kHz
Span	800kHz
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

TEST DESCRIPTION
Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

MEASUREMENT RESULT

CHANNEL SEPARATION



MEASURED CHANNEL SEPARATION	339.20kHz	COMPLIANT

TEST **7.**	**NUMBER OF DWELL TIME**
REFERENCE DOCUMENT	**According to §15,247) (a) (1) (III)** For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz

• **TEST LOCATION**	Radio test area					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
• **TESTED PORT**	Antenna					
• **TEST METHOD**	ANSI C63.10:2013 section 7.8.4					
• **FREQUENCY RANGE**	Carrier					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION :**#4**

RESULT: **COMPLIANT**

MEASUREMENT PARAMETER	
Resolution bandwidth	1kHz
Video bandwidth	5kHz
Span	Zero
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

TEST DESCRIPTION
Enable gating and trigger function of spectrum analyzer to measure burst on time.

MEASUREMENT RESULT

Channel	Frequency (MHz)	Length of Transmission Time (ms)	Number of Transmission in 20s	Results (s)	Limit (s)
1	902.42	360	1	0,360	0.4
37	915.00	363	1	0.363	0.4
75	927.58	360	1	0,360	0.4

TEST **8.**	**RF RADIATED SPURIOUS EMISSIONS AT THE TRANSMITTER ANTENNA TERMINAL**
REFERENCE DOCUMENT	**According to $ 15.247 (d) and $ 15.209 (a)** 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)).

• **TEST LOCATION**	Radio test area					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
• **TESTED PORT**	Enclosure					
• **TEST METHOD**	ANSI C63.10:2013 section 7.8.8					
• **FREQUENCY RANGE**	30MHz – 10GHz					
• **LIMITS**	Acc. To ref. Std.					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION :**#1, #2, #3**

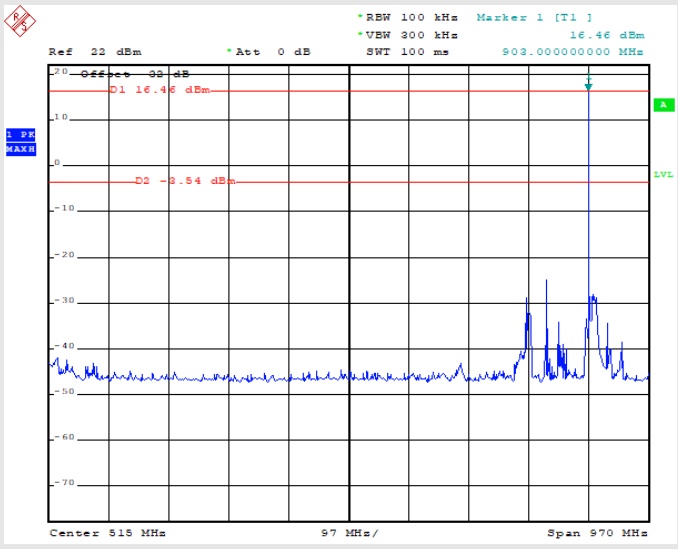
RESULT: **WITHIN THE LIMITS**

MEASUREMENT PARAMETER 9kHz-10GHz	
Resolution bandwidth	100kHz
Video bandwidth	300kHz
Span	See plots below
Sweep time	Auto couple
Detector	Peak
Trace-Mode	Max. hold

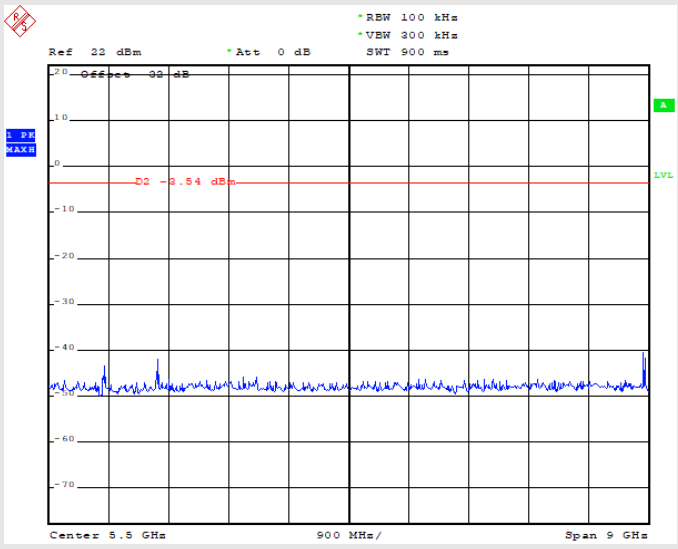
TEST RESULTS

Channel: 1

Frequency range: 30MHz – 1GHz

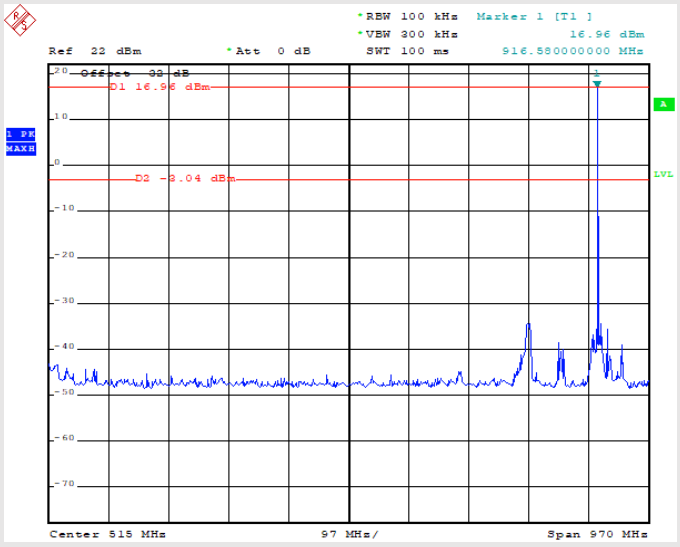


Frequency range: 1GHz – 10GHz

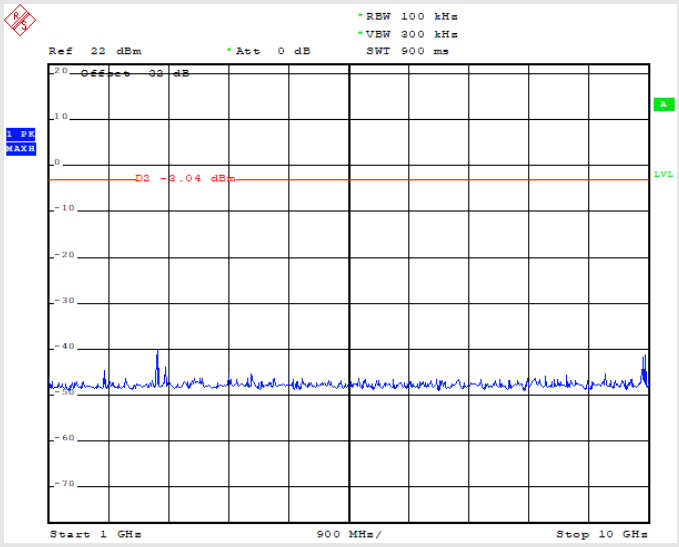


Channel: 37

Frequency range: 30MHz – 1GHz

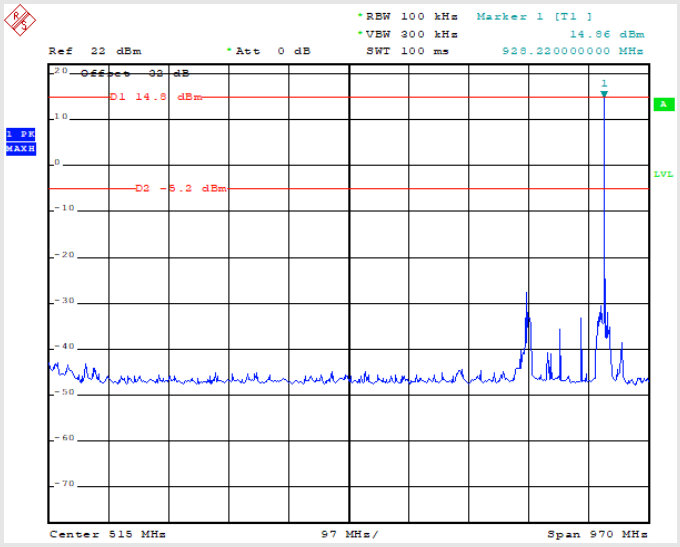


Frequency range: 1GHz – 10GHz

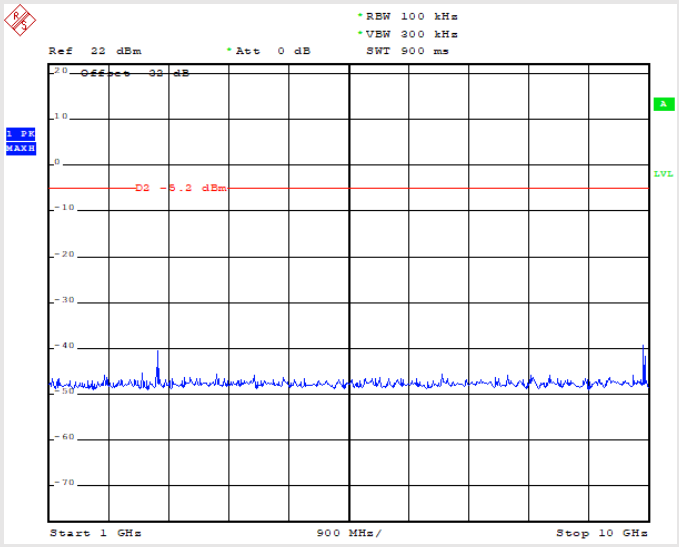


Channel: 75

Frequency range: 30MHz – 1GHz



Frequency range: 1GHz – 10GHz



TEST **9.**	**TRANSMITTER RADIATED EMISSIONS < 1GHZ**
REFERENCE DOCUMENT	**According to $ 15.247 (d) and $ 15.209 (a)** 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)).

• **TEST LOCATION**	Semi-Anechoic Chamber					
• **DISTANCE OF MEASUREMENT**	3m					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
	Semi-Anechoic Chamber	Siemens	B83117-D6019-T232	003-005-134/94C	02/2022	02/2023
	Loop antenna	Rohde & Schwarz	HFH 2-Z2	841801/012	03/2020	03/2023
	Bi-log antenna	Chase	CBL6111C	2717	04/2022	04/2025
	Software EMC	Rohde & Schwarz	EMC32-E	V 8.40.0	N.A.	
• **TESTED PORT**	Enclosure					
• **TEST METHOD**	ANSI C63.10:2013 section 6.5					
• **FREQUENCY RANGE**	9kHz – 1GHz					
• **LIMITS**	Acc. To ref. Std.					
• **UNCERTAINTY OF MEASURE**	Level of confidence = 95% (k=2) Expanded uncertainty 9kHz – 30MHz = 4,24 dB Expanded uncertainty 30MHz – 1GHz = 5,72 dB					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION :**#1, #2, #3**

RESULT: **WITHIN THE LIMITS**

MEASUREMENT PARAMETER		
Frequency Range:	**9kHz – 30MHz**	**30MHz – 1GHz**
Resolution bandwidth:	200Hz	100kHz
Video bandwidth:	1kHz	300kHz
Span:	See plots below	See plots below
Sweep time	Auto couple	Auto couple
Detector:	Peak	Peak
Trace-Mode:	Max. hold	Max. hold

TEST DESCRIPTION

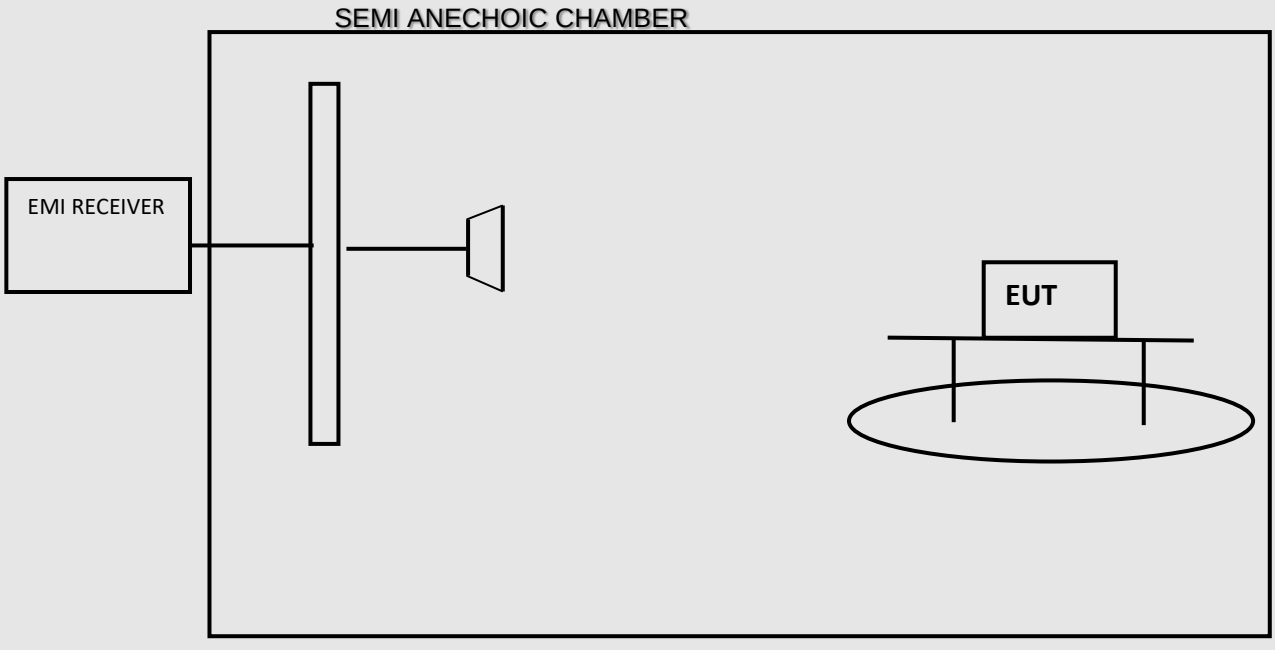
Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously - rotating, remotely - controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency.

The EUT is placed at test table height is 80 cm above the reference ground plane.

Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m~4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3m.

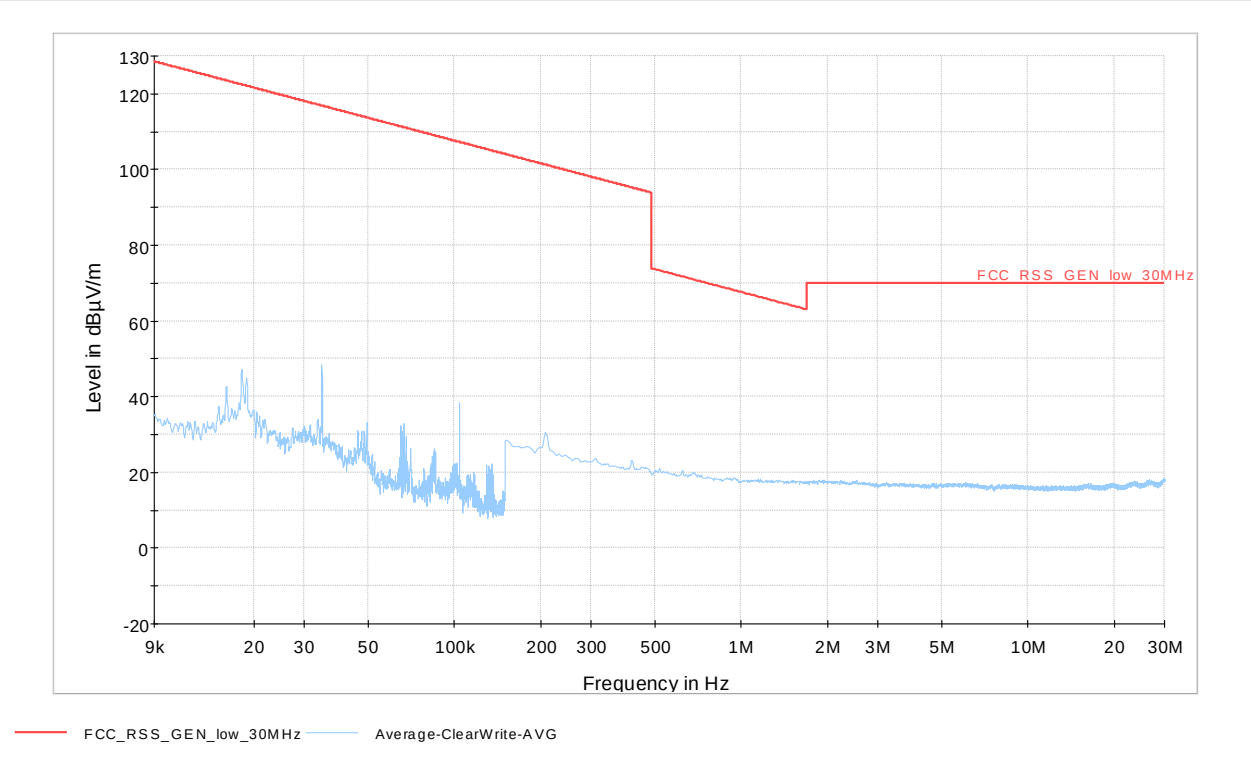
This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

TEST SETUP BLOCK DIAGRAM



TEST RESULTS

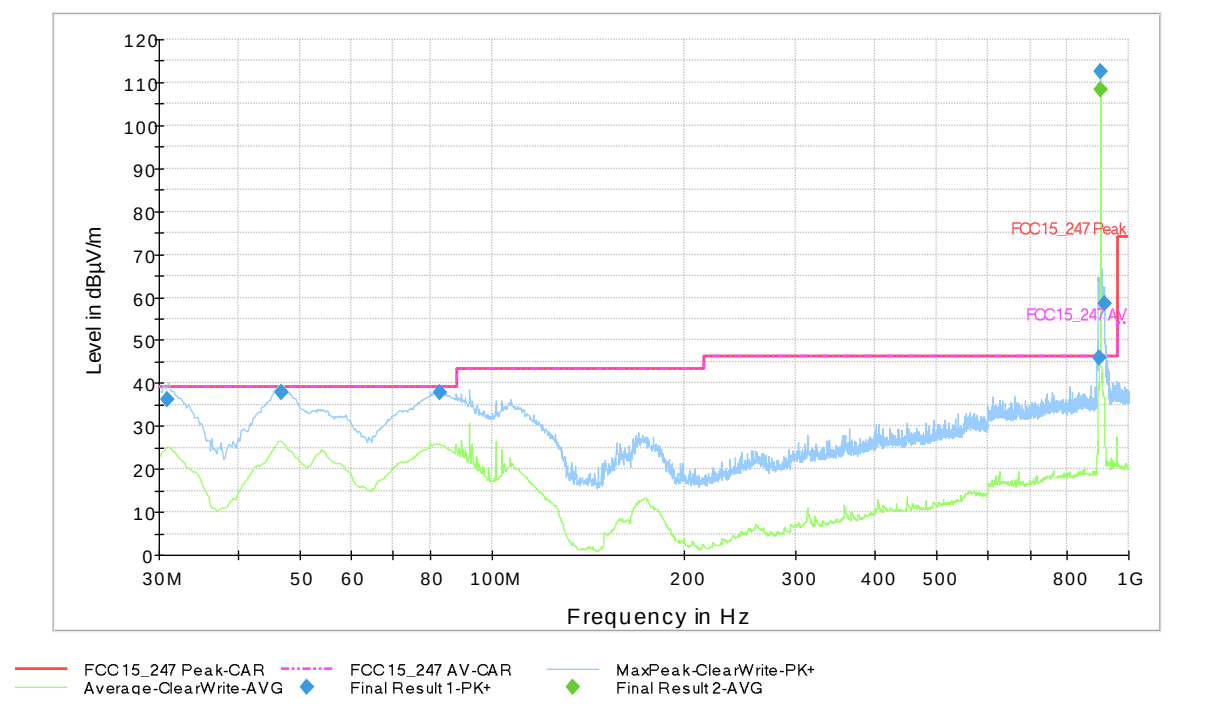
Channel 1	
RX Antenna Polarization: ---	**Frequency Range: 9kHz – 30MHz**



Final Result:

All emissions are below 10dB from the limit, for this reason no further assessments were carried out on the individual points

RX Antenna Polarization: Vertical	Frequency Range: 30MHz – 1GHz



Final Result Quasi Peak:

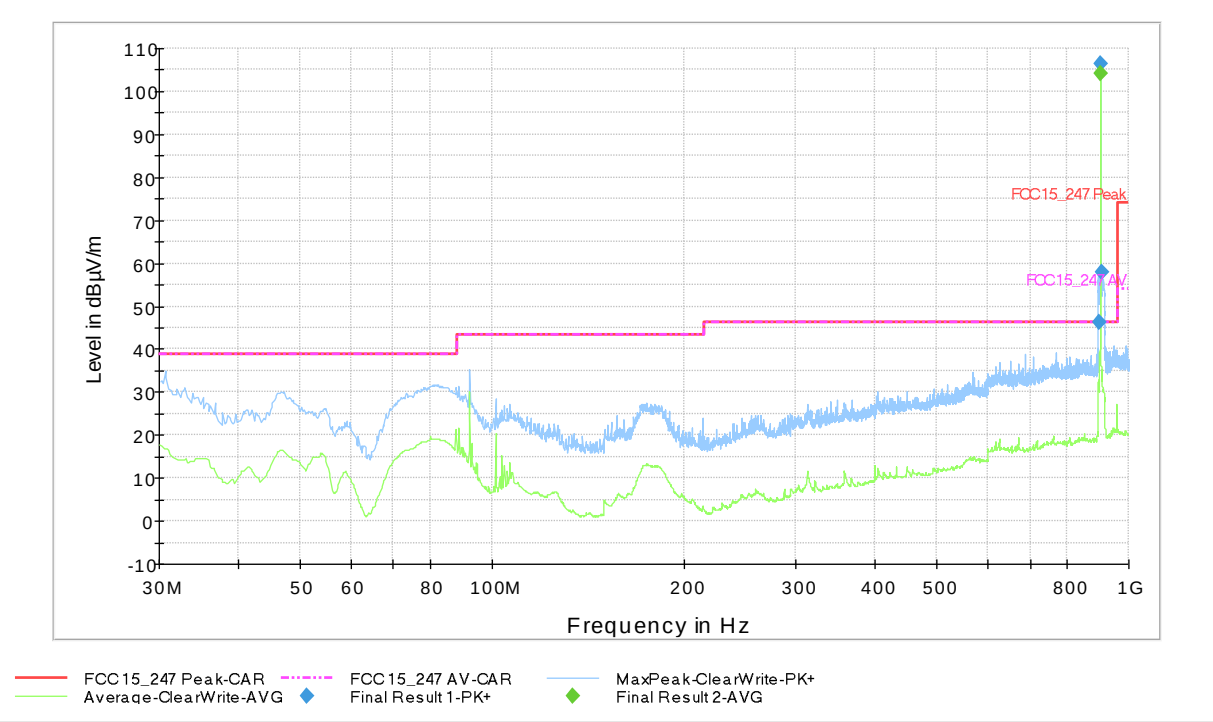
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
30.960000	36.1	299.5	85.0	2.90	39.00
46.680000	38.0	100.9	-8.0	1.00	39.00
82.920000	37.9	100.9	172.0	1.10	39.00
896.970000	46.0	100.6	267.0	0.40	46.40
902.370000	112.6	100.8	267.0	-66.20	46.40
915.300000	58.4	101.2	268.0	-12.00	46.40

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
902.370000	108.5	104.8	265.0	-62.10	46.40

NOTE: Peak out of limits is due to Radio carrier.

RX Antenna Polarization: Horizontal	Frequency Range: 30MHz – 1GHz



Final Result Quasi Peak:

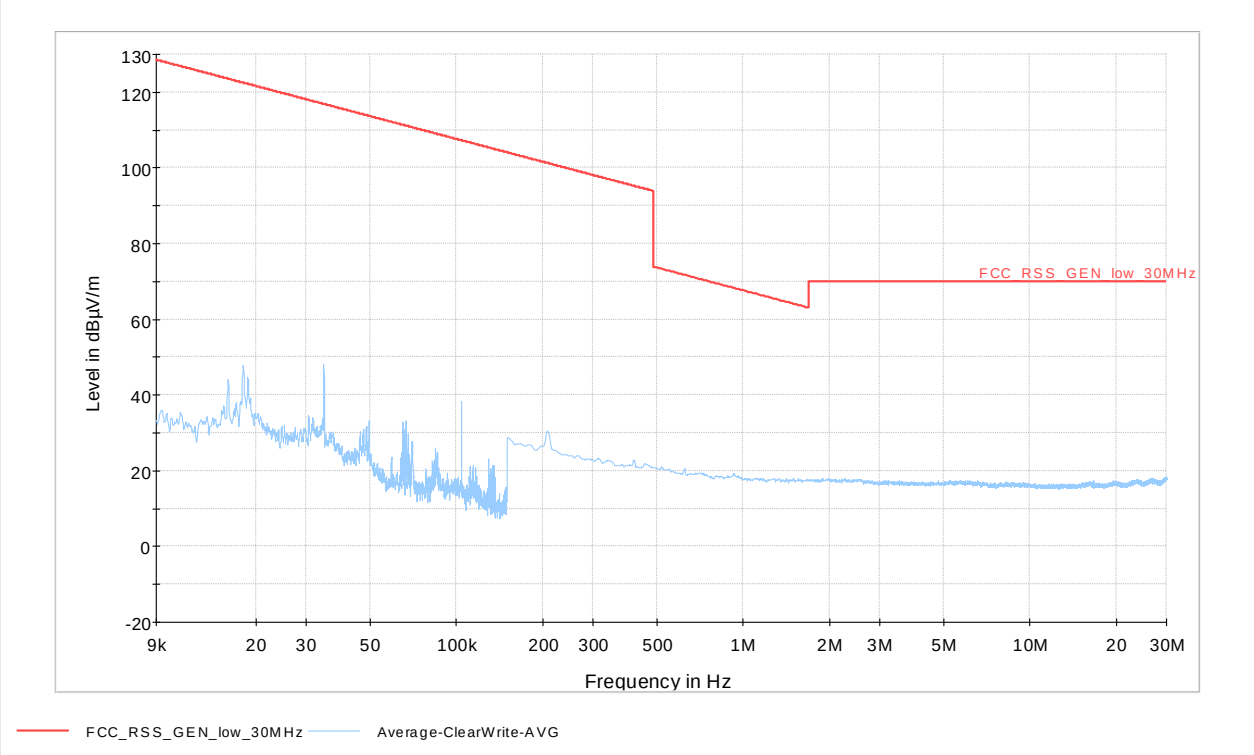
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
896.520000	46.3	99.8	266.0	0.10	46.40
902.460000	106.5	99.8	270.0	-60.10	46.40
907.980000	57.9	99.8	266.0	-11.50	46.40

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
902.400000	104.1	99.9	270.0	-57.70	46.40

NOTE: Peak out of limits is due to Radio carrier.

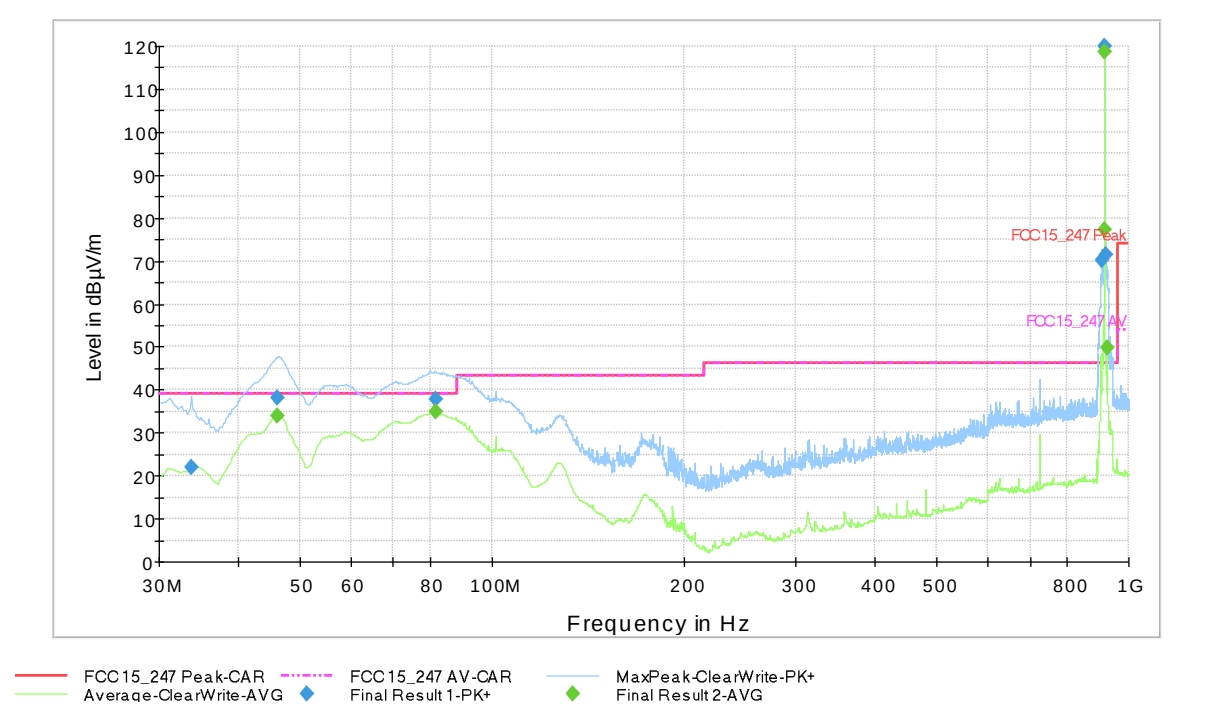
Channel 37	
RX Antenna Polarization: ---	**Frequency Range: 9kHz – 30MHz**



Final Result:

All emissions are below 10dB from the limit, for this reason no further assessments were carried out on the individual points

RX Antenna Polarization: Vertical	Frequency Range: 30MHz – 1GHz



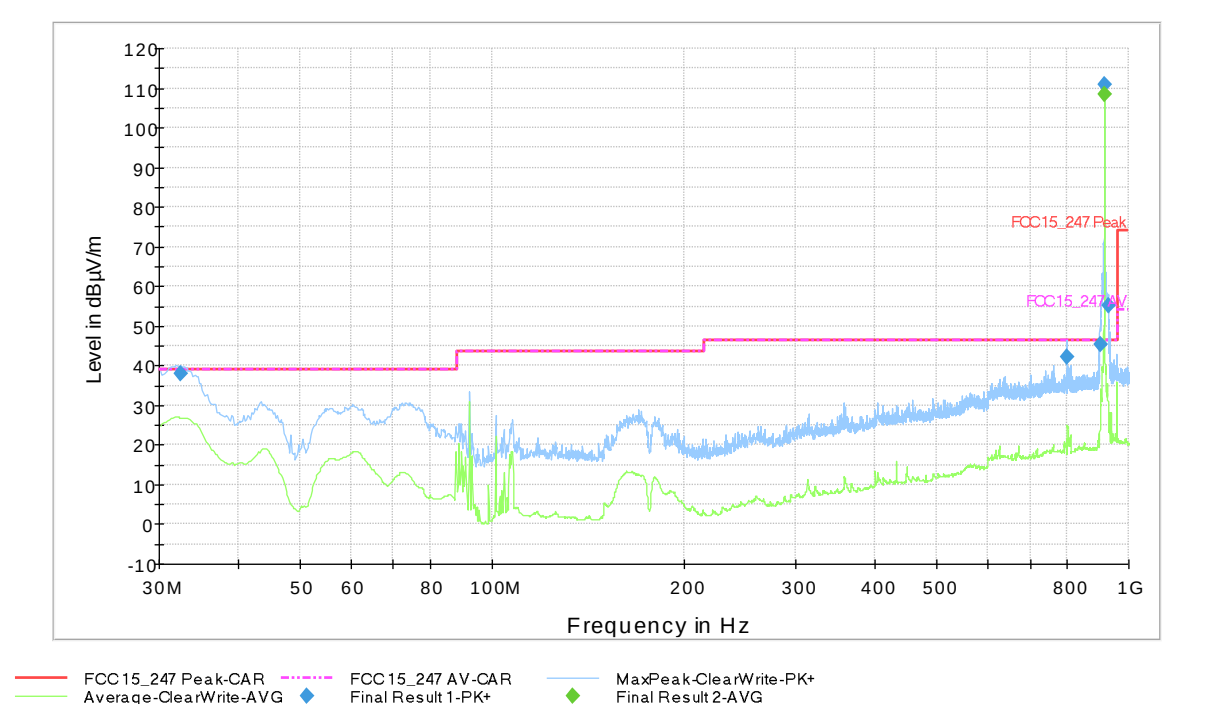
Final Result Quasi Peak:

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
33.660000	22.0	117.5	3.0	17.00	39.00
46.080000	38.2	100.8	97.0	0.80	39.00
81.660000	38.0	100.5	172.0	1.00	39.00
909.420000	70.1	100.5	7.0	-23.70	46.40
915.000000	120.0	100.5	272.0	-73.60	46.40
920.160000	71.4	100.9	272.0	-25.00	46.40

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
46.080000	34.0	100.5	90.0	5.00	39.00
81.660000	35.0	100.4	172.0	4.00	39.00
914.820000	77.3	100.5	277.0	-30.90	46.40
915.000000	118.6	100.9	272.0	-72.20	46.40
924.990000	49.7	100.4	271.0	-3.30	46.40

RX Antenna Polarization: Horizontal	Frequency Range: 30MHz – 1GHz



Final Result Quasi Peak:

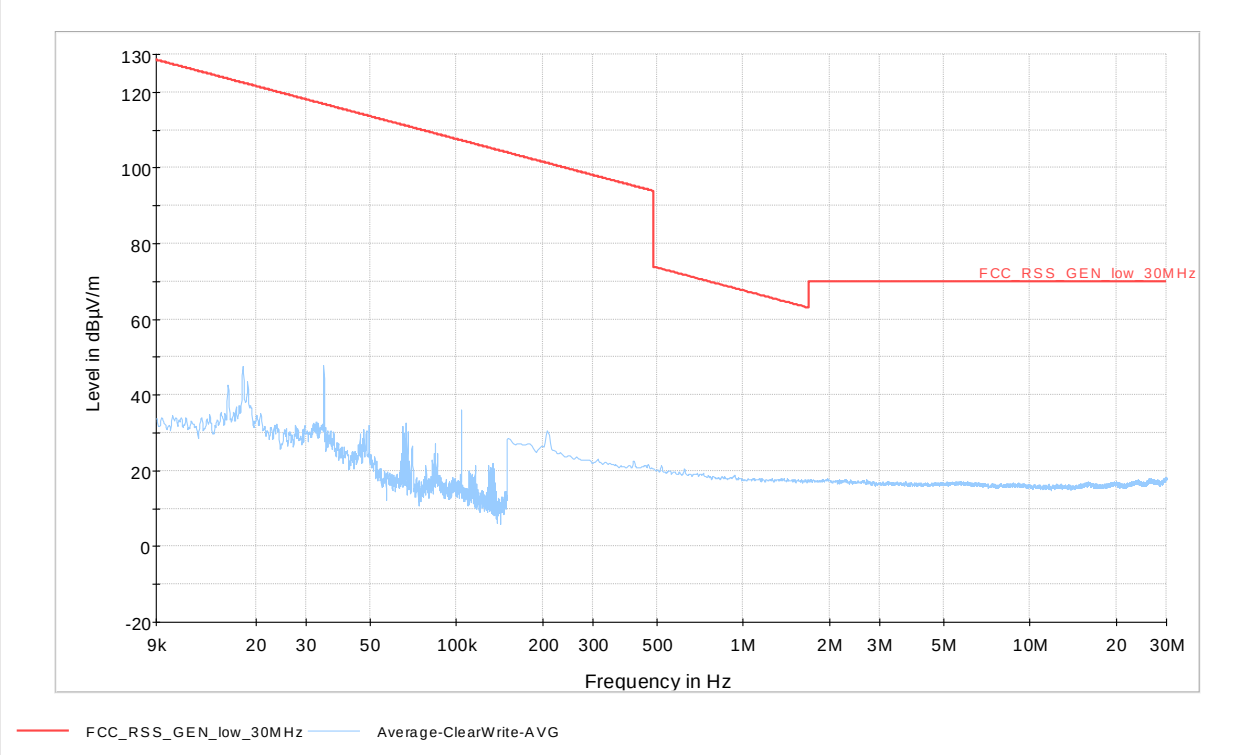
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
32.400000	38.1	230.7	277.0	0.90	39.00
801.420000	42.2	179.7	97.0	4.20	46.40
901.890000	45.2	180.1	266.0	1.20	46.40
914.940000	110.8	99.7	270.0	-64.40	46.40
927.750000	55.3	99.8	267.0	-8.90	46.40

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
915.000000	108.5	99.9	267.0	-62.10	46.40

NOTE: Peak out of limits is due to Radio carrier.

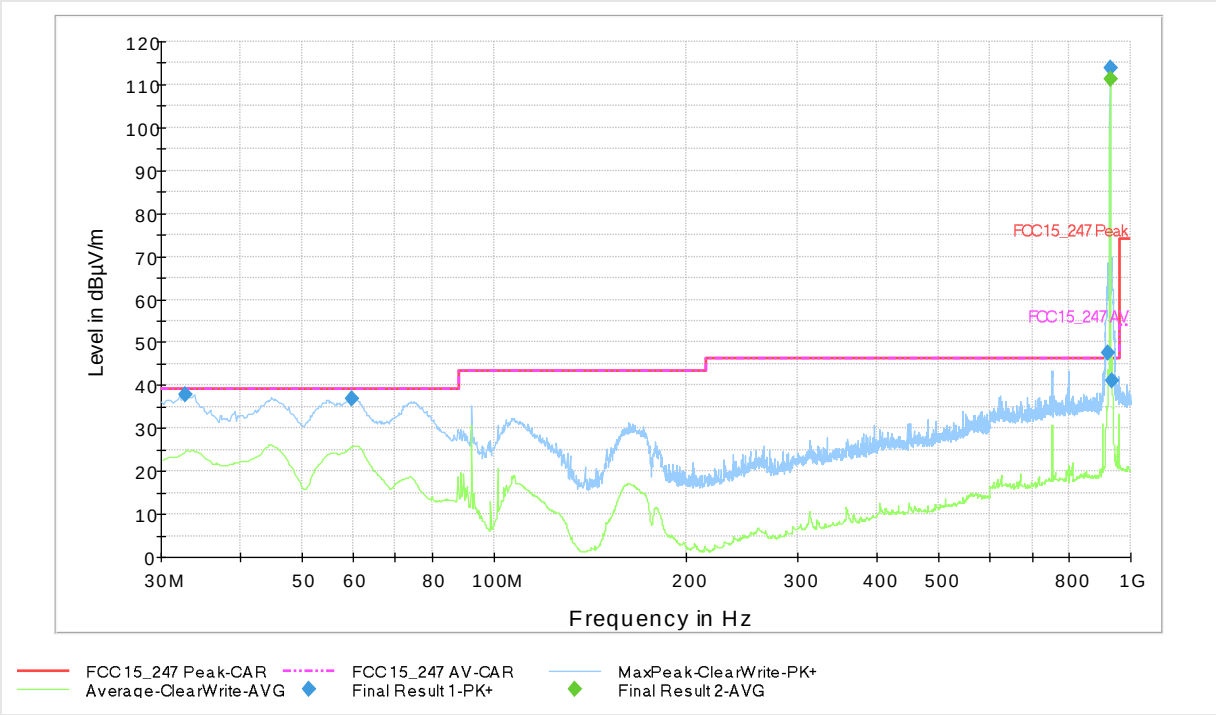
Channel 75	
RX Antenna Polarization: ---	**Frequency Range: 9kHz – 30MHz**



Final Result:

All emissions are below 10dB from the limit, for this reason no further assessments were carried out on the individual points

Channel 39	
RX Antenna Polarization: Vertical	**Frequency Range: 30MHz – 1GHz**



Final Result Quasi Peak:

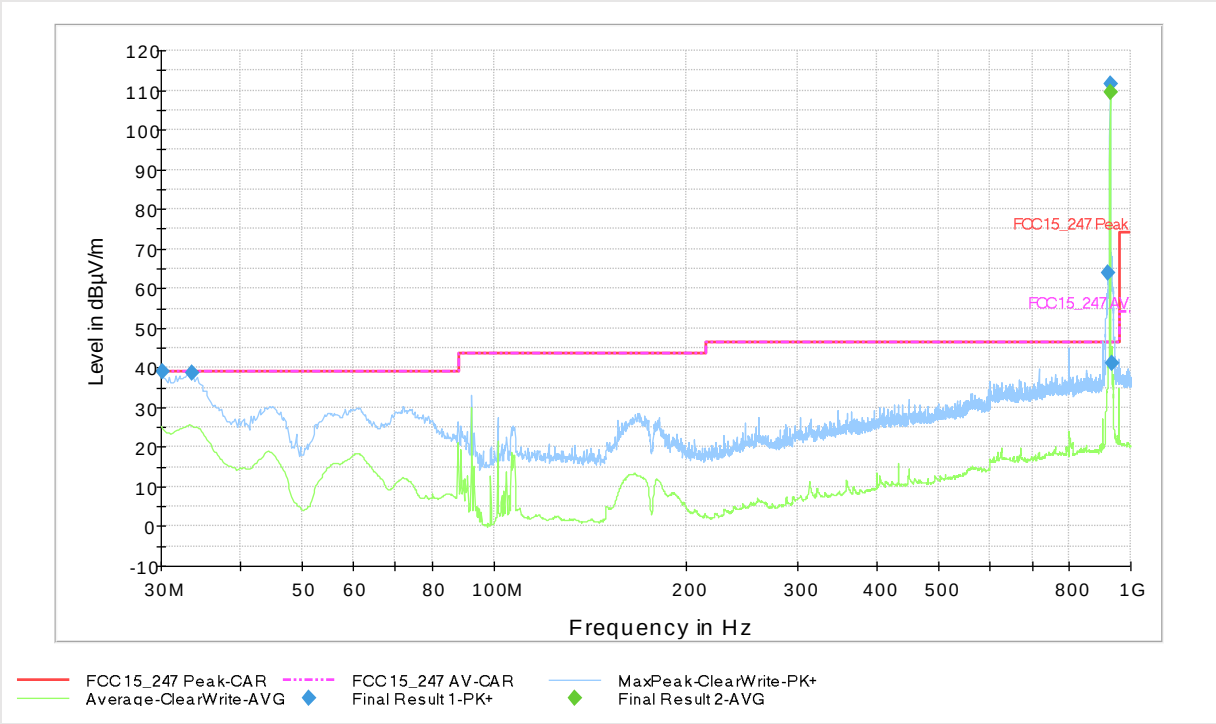
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
32.760000	37.9	99.7	272.0	1.10	39.00
59.730000	36.9	99.8	2.0	2.10	39.00
921.930000	47.5	125.8	82.0	-1.10	46.40
927.630000	114.0	128.8	-4.0	-67.60	46.40
933.090000	41.0	99.7	90.0	5.40	46.40

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
927.570000	111.3	99.8	82.0	-64.90	46.40

NOTE: Peak out of limits is due to Radio carrier.

Channel 39	
RX Antenna Polarization: Horizontal	**Frequency Range: 30MHz – 1GHz**



Final Result Quasi Peak:

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
30.090000	38.9	153.9	7.0	0.10	39.00
33.510000	38.8	291.9	273.0	0.20	39.00
921.360000	64.1	99.7	262.0	-17.70	46.40
927.630000	111.7	99.8	267.0	-65.30	46.40
933.450000	41.3	99.8	262.0	5.10	46.40

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
927.570000	109.4	99.7	262.0	-63.00	46.40

NOTE: Peak out of limits is due to Radio carrier.

TEST **10.**	**TRANSMITTER RADIATED EMISSIONS > 1GHZ**
REFERENCE DOCUMENT	**According to $ 15.247 (d) and $ 15.209 (a)** 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)).

• **TEST SETUP**	Acc. To ref. Std.					
• **TEST LOCATION**	Semi-Anechoic Chamber					
• **DISTANCE OF MEASUREMENT**	3m					
• **TYPE OF MEASUREMENT**	Radiated					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
	Semi-Anechoic Chamber	Siemens	B83117-D6019-T232	003-005-134/94C	02/2022	02/2023
	Horn antenna	Electro Metrics	EM-6961	100437	10/2020	10/2023
	High pass filter	Wainwright	WHK 1,3/15G	9	10/2021	10/2023
	Software EMC	Rohde & Schwarz	EMC32-E	V 8.40.0	N.A.	
• **TESTED PORT**	Antenna					
• **TEST METHOD**	ANSI C63.10:2013 section 6.6					
• **FREQUENCY RANGE**	1GHz – 10GHz					
• **LIMITS**	Acc. To ref. Std.					
• **UNCERTAINTY OF MEASURE**	Level of confidence = 95% (k=2) Expanded uncertainty 1GHz – 10GHz = 5,15 dB					

TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar

OPERATING CONDITION: **#1, #2, #3**

RESULT: **WITHIN THE LIMITS**

MEASUREMENT PARAMETER 1GHz - 10GHz	
Resolution bandwidth:	1MHz
Video bandwidth:	3MHz
Span:	See plots below
Sweep time	Auto couple
Detector:	Peak
Trace-Mode:	Max. hold

TEST DESCRIPTION

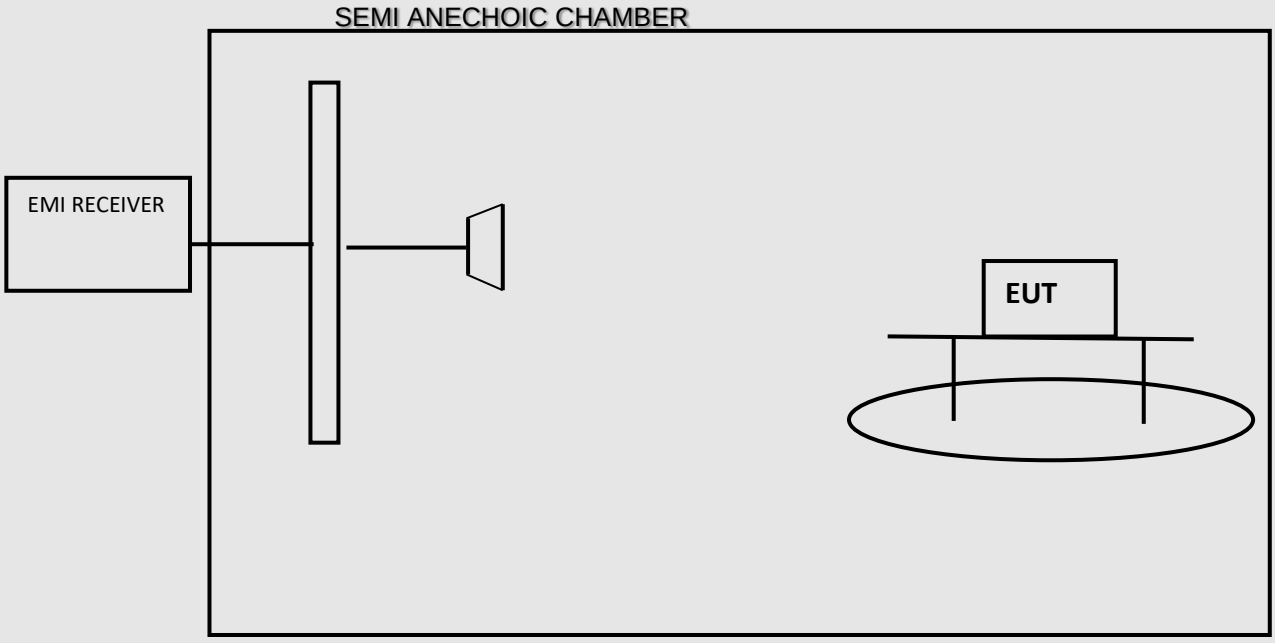
Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously - rotating, remotely - controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency.

The EUT is placed at test table height is 1.5 m

Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m~4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3m.

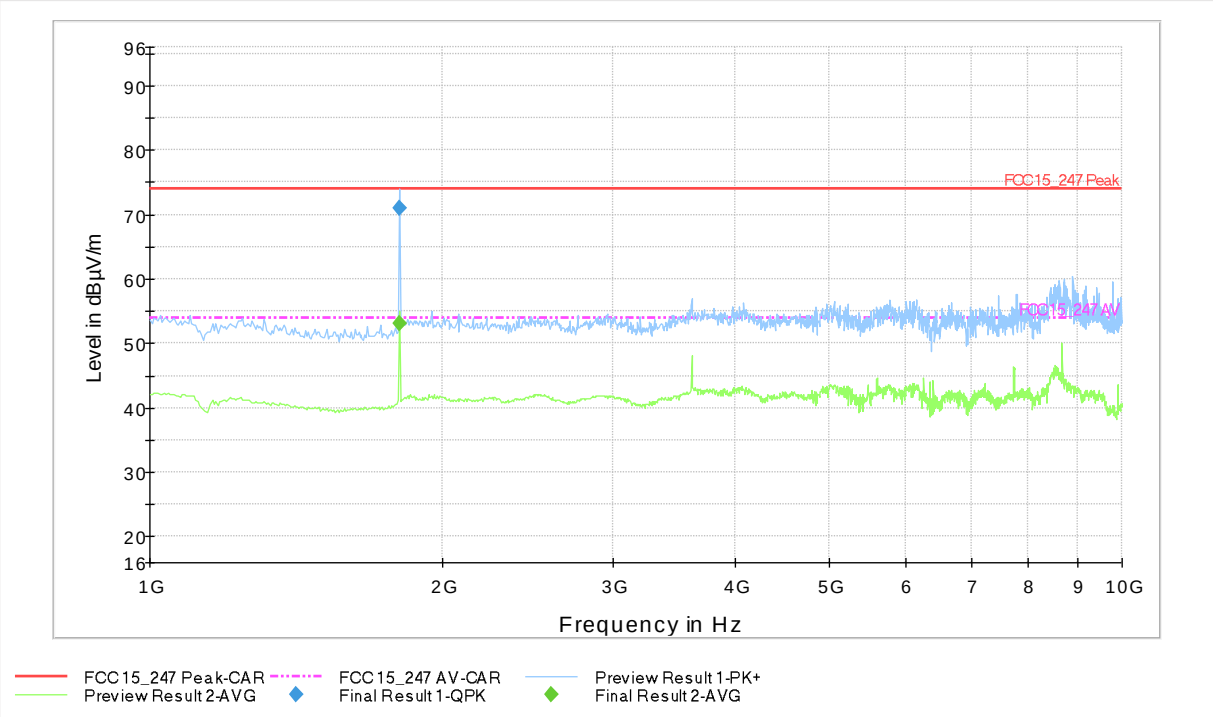
This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

TEST SETUP BLOCK DIAGRAM



TEST RESULTS

Channel 1	
RX Antenna Polarization: Vertical	**Frequency Range: 1GHz – 10GHz**



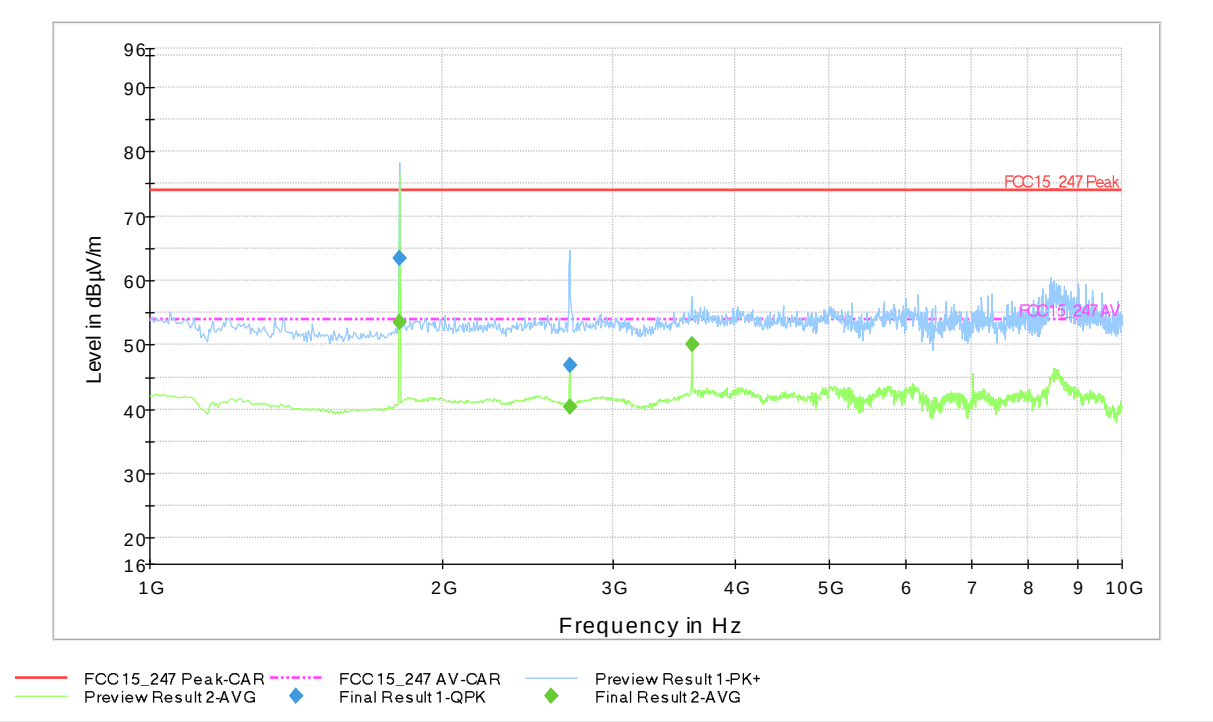
Final Result Peak:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1805.000000	71.1	99.7	7.0	2.90	74.00

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1805.000000	53.0	123.7	0.0	1.00	54.00

RX Antenna Polarization: Horizontal	Frequency Range: 1GHz – 10GHz



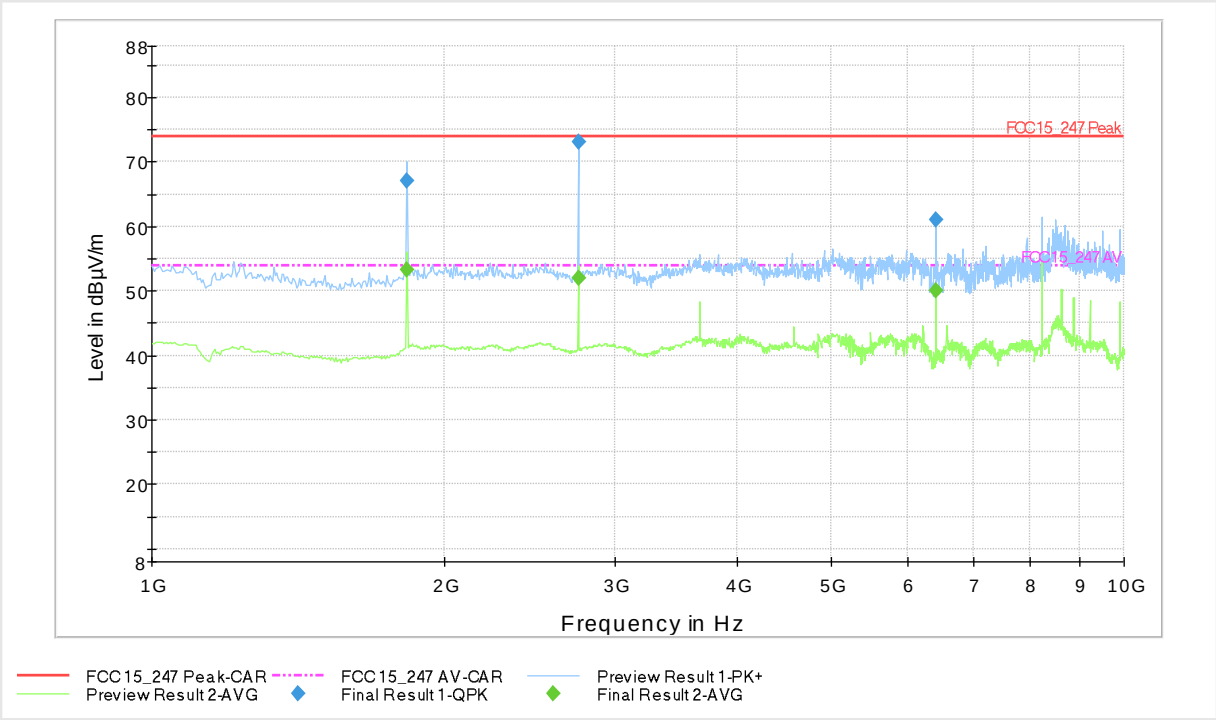
Final Result Peak:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1805.000000	63.4	174.8	172.0	10.60	74.00
2705.000000	46.7	182.2	187.0	27.30	74.00

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1805.000000	53.5	126.2	187.0	0.50	54.00
2705.000000	40.4	107.0	97.0	13.60	54.00
3610.000000	50.1	126.2	177.0	3.90	54.00

Channel 37	
RX Antenna Polarization: Vertical	**Frequency Range: 1GHz – 10GHz**



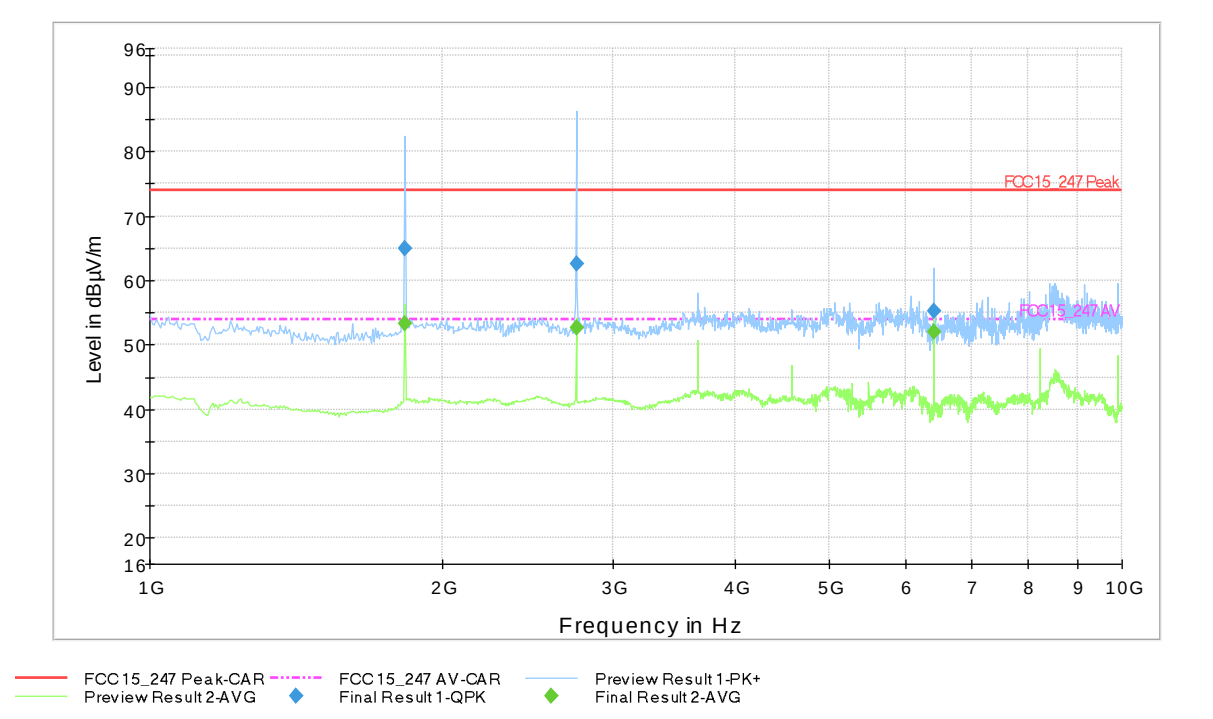
Final Result Peak:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1830.000000	67.0	106.9	271.0	7.00	74.00
2745.000000	73.1	107.0	271.0	0.90	74.00
6405.000000	61.1	254.6	7.0	12.90	74.00

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1830.000000	53.2	182.1	270.0	15.7	54.00
2745.000000	51.9	182.2	271.0	17.3	54.00
6405.000000	50.0	223.6	7.0	27.2	54.00

RX Antenna Polarization: Horizontal	Frequency Range: 1GHz – 10GHz



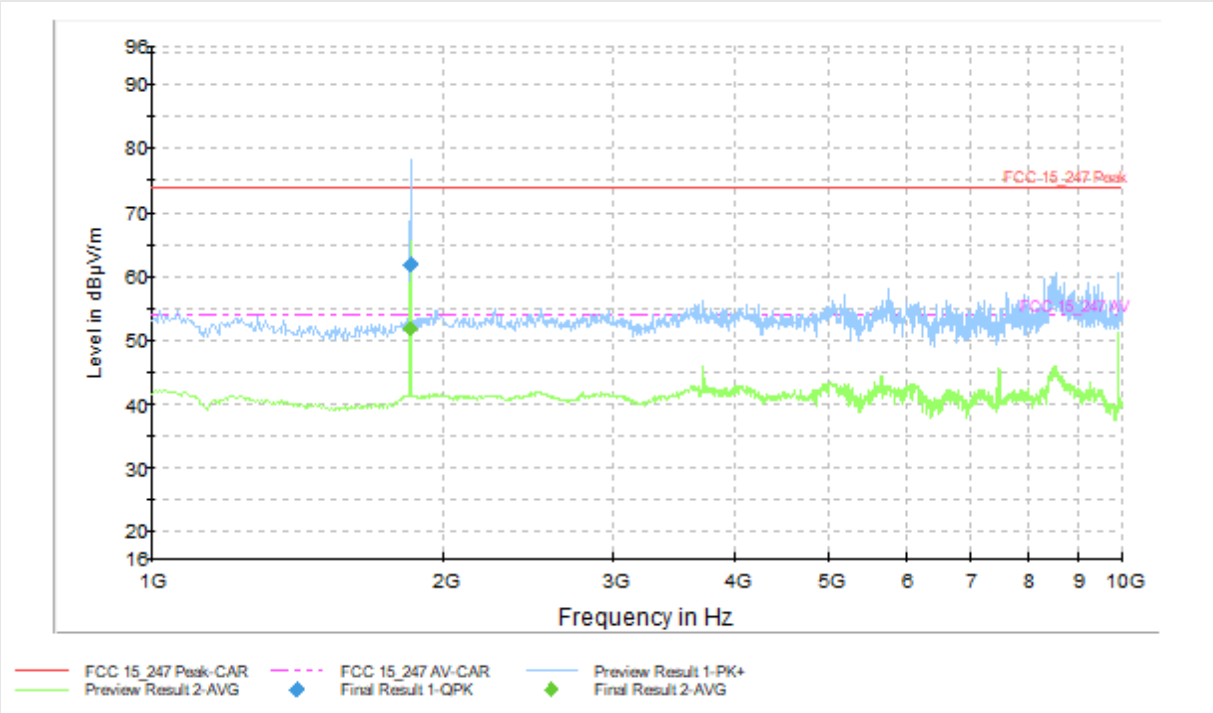
Final Result Peak:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1830.000000	64.9	127.4	172.0	9.10	74.00
2745.000000	62.7	182.0	180.0	11.30	74.00
6405.000000	55.2	201.6	93.0	18.80	74.00

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1830.000000	53.2	107.0	187.0	0.80	54.00
2745.000000	52.7	175.7	172.0	1.30	54.00
6405.000000	52.0	254.6	90.0	2.00	54.00

Channel 75	
RX Antenna Polarization: Vertical	**Frequency Range: 1GHz – 10GHz**



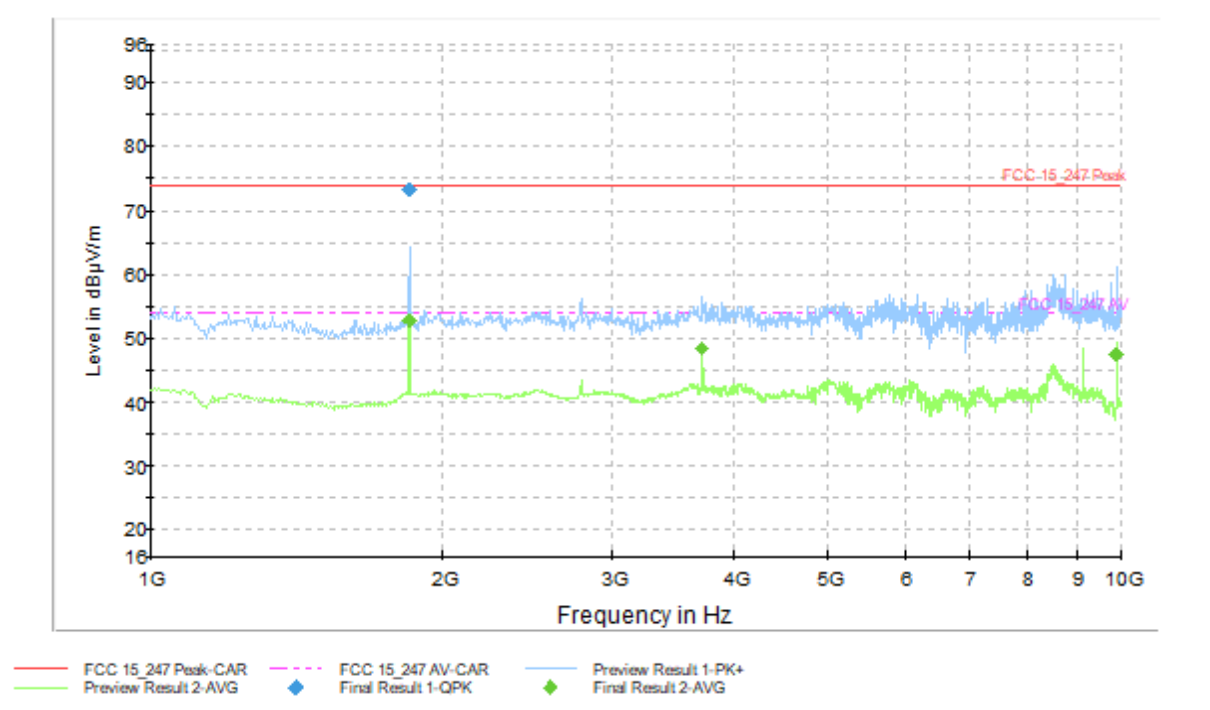
Final Result Peak:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1855.000000	62.0	106.9	172.0	12.00	74.00

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1855.000000	52.5	106.8	183.0	1.50	54.00

RX Antenna Polarization: Horizontal	Frequency Range: 1GHz – 10GHz



Final Result Peak:

Frequency (MHz)	MaxPeak (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1855.000000	73.4	223.6	277.0	0.60	74.00

Final Result Average:

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
1855.000000	53.3	268.6	271.0	0.70	54.00
3710.000000	48.3	106.9	172.0	5.70	54.00
9915.000000	47.6	107.0	271.0	6.40	54.00

TEST **11.**	**CONDUCTED EMISSION TEST**
REFERENCE DOCUMENT	**FCC Cfr 47 part 15 - Subpart C - §15.207**

• **TEST SETUP**	According to ref. std.					
• **TEST LOCATION**	Semi-Anechoic Chamber					
• **TEST EQUIPMENT USED FOR TEST**	**Instrument**	**Manufacturer**	**Model**	**Serial n°**	**Calibrated On**	**Due to**
	MXE Emi Receiver	Keysight	N9038A	MY57290150	07/2021	07/2022
	Semi-Anechoic Chamber	Siemens	B83117-D6019-T232	003-005-134/94C	02/2022	02/2023
	Stabilized Power Supply	Spitzenberger+ Spies	PAS5000	A154201/0059 5	05/2022	05/2024
	LISN	Rohde & Schwarz	ESH3-Z5	838576/009	02/2022	02/2023
	Software EMC	Rohde & Schwarz	EMC32-E/S	V 8.40.0	N.A.	
	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100837	07/2021	07/2023
• **TESTED PORT**	AC power port					
• **FREQUENCY RANGE**	150kHz - 30MHz					
• **LIMITS**	According to ref. std.					
• **UNCERTAINTY OF MEASURE**	Level of confidence = 95% (k=2) Expanded uncertainty 150kHz – 30 MHz = 2,81 dB					

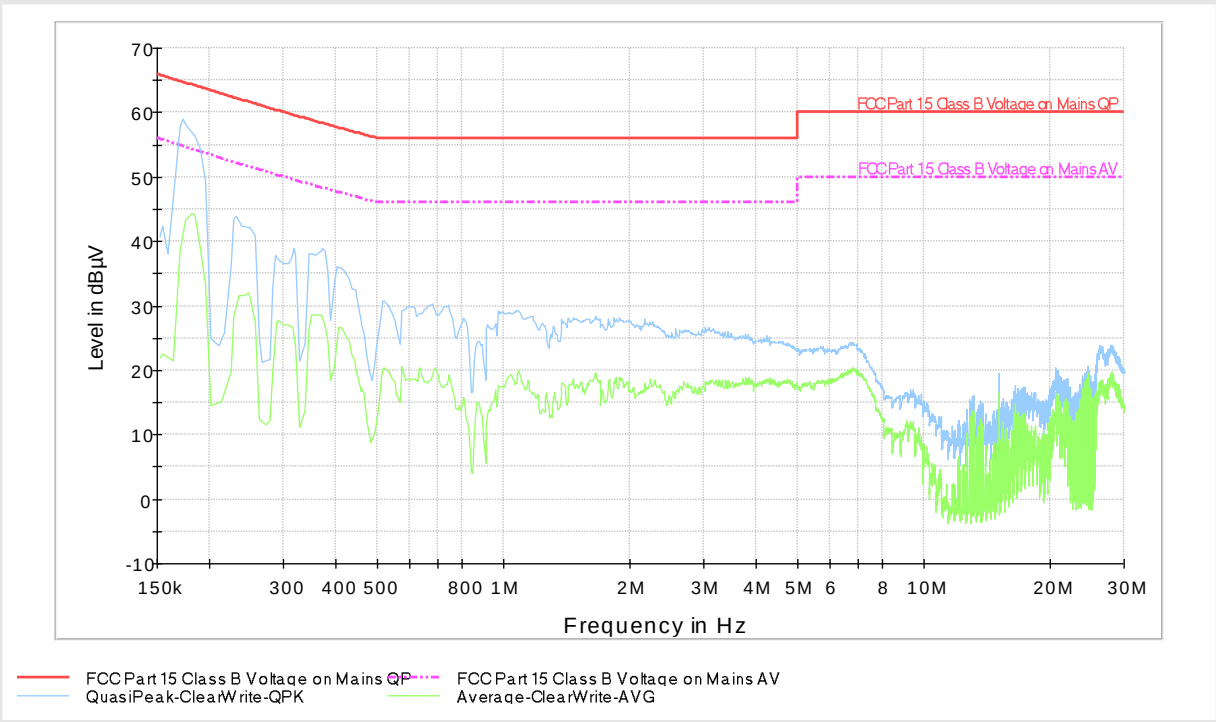
TEST CONDITIONS	REQUIRED	MEASURED
Ambient temperature	**23°C ± 5°C**	24 °C
Ambient humidity	**25 - 75%rH**	45%
Pressure	**85 - 106kPa (860mbar - 1060mbar)**	960 mbar
Voltage		115V ~ 60Hz

OPERATING CONDITION: **#1**

RESULT: **WITHIN THE LIMITS**

TEST RESULTS

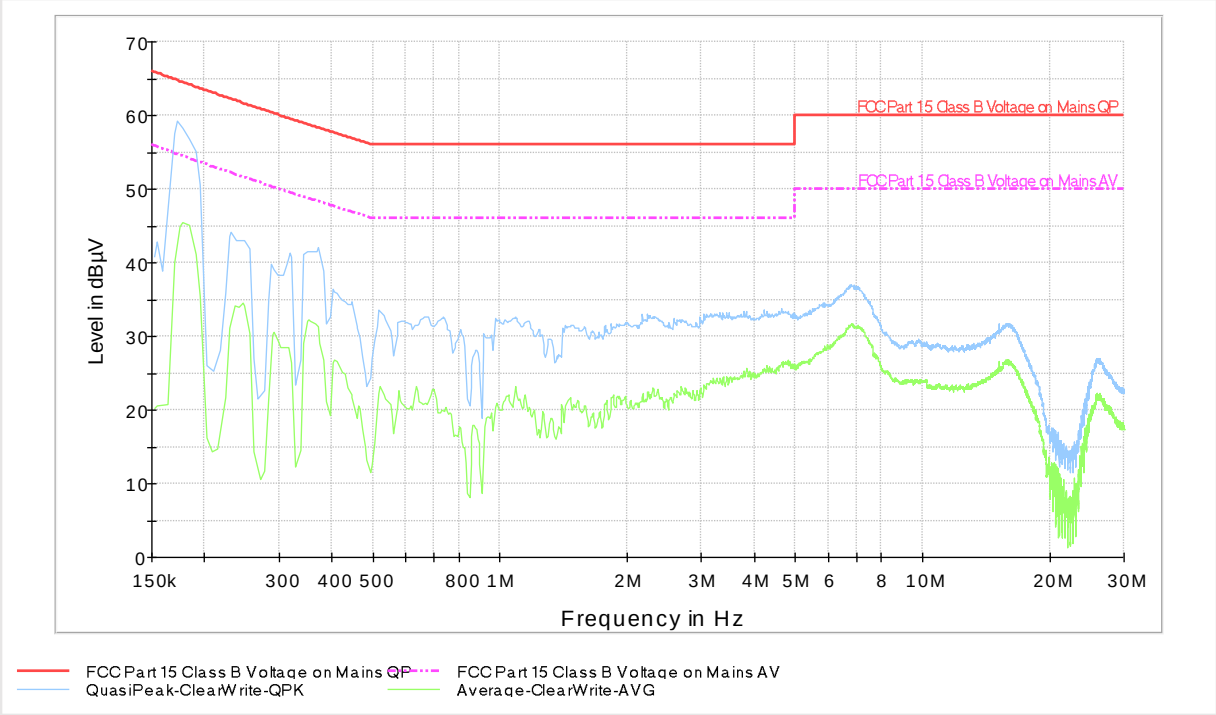
Frequency Range: 150MHz – 30MHz	Line L



Final Result:

Note: All emissions are below 10dB from the limit, for this reason no further assessments were carried out on the individual points

Frequency Range: 150MHz – 30MHz	Line N



Final Result:

Note: All emissions are below 10dB from the limit, for this reason no further assessments were carried out on the individual points

END OF TEST REPORT