

FCC Part 15C and ISED TEST REPORT

Report Number	568/23/03709/FCC	Rev. 00
Date of document	2024-01-16	
Total number of pages	Pag. 52	
OBJECT	FCC Part15C and ISED RSS-247 Issue 3	
CUSTOMER	SIA ASPIRED	
EQUIPMENT UNDER TEST - DESCRIPTION	Air quality monitor	
MODEL	AIRVALENT	
SUMMARY		
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Verified by (Name + Signature)	ANDREA CUPIDO Lab Manager	
Approved and issued by (Name + Signature)	ALESSANDRO ZUCCATO Lab Director	

History sheet of test Report

Report Number	Rev.	Date	Description of modification
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1 OBJECT OF THE TESTS

The objective of the tests is the evaluation of the conformity of the EUT to the requirements of the standards and test methods specified on par. 4 of present Test Report.

2 IDENTIFICATION

2.1 Laboratory

Name : Kiwa Creiven S.r.l.
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FCC Designation

number: IT0016

ISED CAB Identifier: IT0007

2.2 Customer

Customer: SIA ASPIRED
Street: Ganibu street 99, Ventspils, Latvia, LV-3601
City: Ventspils
Phone: +37120289889
Refer to : Ms Dana Klestrova

3 EQUIPMENT UNDER TEST (EUT)

3.1 EUT identification (declared under responsibility of the customer)

EUT Description: Air quality monitor
Model: AIRVALENT
Code: AIRVALENT
Serial N°: AA-GA-92
Software release: v1.35
Size: 50 x 50 x 14 [mm]
Manufacturer: Aspired Ltd.
Supply voltage: +5 Vdc
Rated Electrical Power: 1 W
Rated input current: 200 mA
FCC ID: 2BDSL-AIRV1 & IC: 31681-AIRV1

3.2 EUT classifications

The manufacture declared the following classification:

Object	Descriptions
Operating Frequency	2402 – 2480 MHz
Equipment type	Bluetooth Low Energy
Channel spacing	1 MHz
Number of Channels	40
Antenna Type	Integrated antenna
Antenna Peak Gain	1.6 dBi
Frequency Hopping Spread Spectrum	NO
Listen Before Talk	YES
Extreme Temperature Range	0°C ÷ +40°C
Receiver category	Category 2
Manufacturer declaration	03710LP
The type of modulation used by the equipment	☐ FHSS ☒ other forms of modulation
Adaptive / non-adaptive equipment	☒ non-adaptive Equipment ☐ adaptive Equipment without the possibility to switch to a non-adaptive mode ☐ adaptive Equipment which can also operate in a non-adaptive mode

3.3 EUT additional information

Object	Descriptions
Classification of installation and use	☐ Stand-alone ☒ Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment) ☐ Plug-in radio device (Equipment intended for a variety of host systems) ☐ Other
Means for connection to the supply:	☐ Supply cord fitted with a plug ☐ Supply cord without plug (for permanently connection to fixed wiring) ☒ Appliance inlet ☐ Appliance provided with a set of terminals allowing the connection of cables or fixed wiring
Date of receipt of test item	2023-12-07
Date(s) of performance of tests	See the data specified in test results details

3.4 EUT cables

None.

3.5 EUT Auxiliary Equipments (AEs)

None.

3.6 Sampling and adopted criteria

Equipment used for testing was selected by the customer. Sampling criteria adopted by the customer is unknown to Kiwa Creiven laboratory.

3.7 EUT documents

The following documentations have been provided by the customer

Kiwa Creiven document reference	Descriptions
03710LP	Manufacturer declaration

4 STANDARDS AND TEST METHODS

4.1 Reference standards

DOCUMENT	DATE	OBJECT
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

4.1.1 Test summary

The following table specifies the tests required by the reference standard and test performed on EUT.

TEST	FCC Rule	ISED Rule	Note	Results
Channel Separation	§15.247 (a)(1)	RSS-247 Issue 3	NOT APPLICABLE (NO FHSS device)	---
Minimum Hopping Channel	§15.247 (a)(1)(iii)	RSS-247 Issue 3	NOT APPLICABLE (NO FHSS device)	---
6 dB (DTS) & 20 dB Bandwidth & 99% of power	§15.247 (a)(2) §15.215 (c)	RSS-247 Issue 3	---	Complies
Dwell Time	§15.247 (a)(1)(iii)	RSS-247 Issue 3	NOT APPLICABLE (NO FHSS device)	---
Peak Output Power (Conduction)	§15.247 (b)(3)	RSS-247 Issue 3	---	Complies
AC Power Line Conducted Emissions	§15.207	RSS-247 Issue 3	---	Complies
Spurious Emissions (Radiation)	§15.209	RSS-247 Issue 3	---	Complies
Band edge measurement	§15.247 (d)	RSS-247 Issue 3	---	Complies
Power spectral density	§15.247 (e)	RSS-247 Issue 3	---	Complies

4.2 Test methods

DOCUMENT	DATE	METHOD	ACCREDIA accreditation	Test Sequence (See Note 1)
C63.10	2013	Occupied Bandwidth	Yes	05
C63.10	2013	Peak Output Power (Conduction)	Yes	04
C63.10	2013	Spurious Emissions (Radiation)	Yes	01
C63.10	2013	Band edge measurement	Yes	02
C63.10	2013	Power spectral density	Yes	03

Note :

1) The tests have been carried out in the order specified in this column

4.3 Deviation from test methods

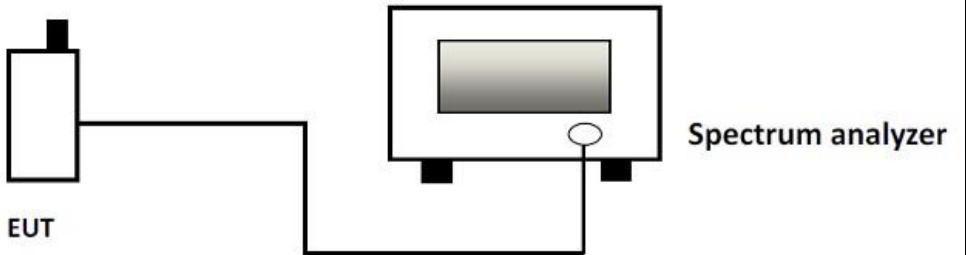
None.

5 EUT OPERATING CONDITIONS DURING TESTS

The EUT was set to function as indicated in Table 1, in compliance with the manufacturer's prescriptions and with that which is stated in the applied standards, test methods and procedures.

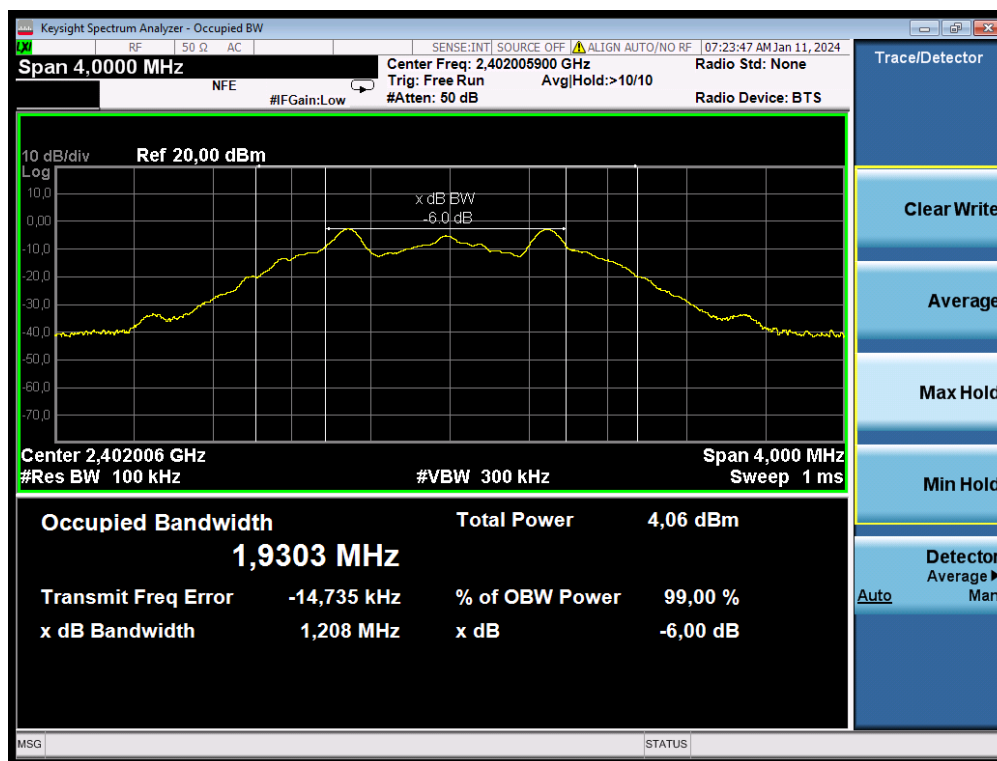
OPERATING CONDITION	DESCRIPTION OF FUNCTIONING
TX01	<u>EUT details : during the test the EUT</u> - was powered at 5 Vdc with internal battery - was in continuous working state/ Device operated in standard continuous transmit mode (Cont TX function) Lowest frequency activated (2402 MHz) – BLE Was set TX power to 0 dBm - No modulation
TX02	<u>EUT details : during the test the EUT</u> - was powered at 5 Vdc with internal battery - was in continuous working state/ Device operated in standard continuous transmit mode (Cont TX function) Medium frequency activated (2441 MHz) – BLE Was set TX power to 0 dBm - No modulation
TX03	<u>EUT details : during the test the EUT</u> - was powered at 5 Vdc with internal battery - was in continuous working state/ Device operated in standard continuous transmit mode (Cont TX function) Highest frequency activated (2480 MHz) – BLE Was set TX power to 0 dBm - No modulation
TX04	<u>EUT details : during the test the EUT</u> - was powered at 5 Vdc with internal battery - was in continuous working state/ Device operated in standard continuous transmit mode (Cont TX function) Lowest frequency activated (2402 MHz) – BLE Was set TX power to 0 dBm - Was settled the transmitting modulated → PN9 stream
TX05	<u>EUT details : during the test the EUT</u> - was powered at 5 Vdc with internal battery - was in continuous working state/ Device operated in standard continuous transmit mode (Cont TX function) Medium frequency activated (2441 MHz) – BLE Was set TX power to 0 dBm - Was settled the transmitting modulated → PN9 stream
TX06	<u>EUT details : during the test the EUT</u> - was powered at 5 Vdc with internal battery - was in continuous working state/ Device operated in standard continuous transmit mode (Cont TX function) Highest frequency activated (2480 MHz) – BLE Was set TX power to 0 dBm - Was settled the transmitting modulated → PN9 stream
OC01	<u>EUT details : during the test the EUT</u> - was in recharge mode (AE N°01 powered with 120V @60Hz) <u>AE details : during the test the Auxiliary Equipment (AE), connected to EUT, was :</u> EUT connected via USB to AE N°01

6 TEST RESULTS

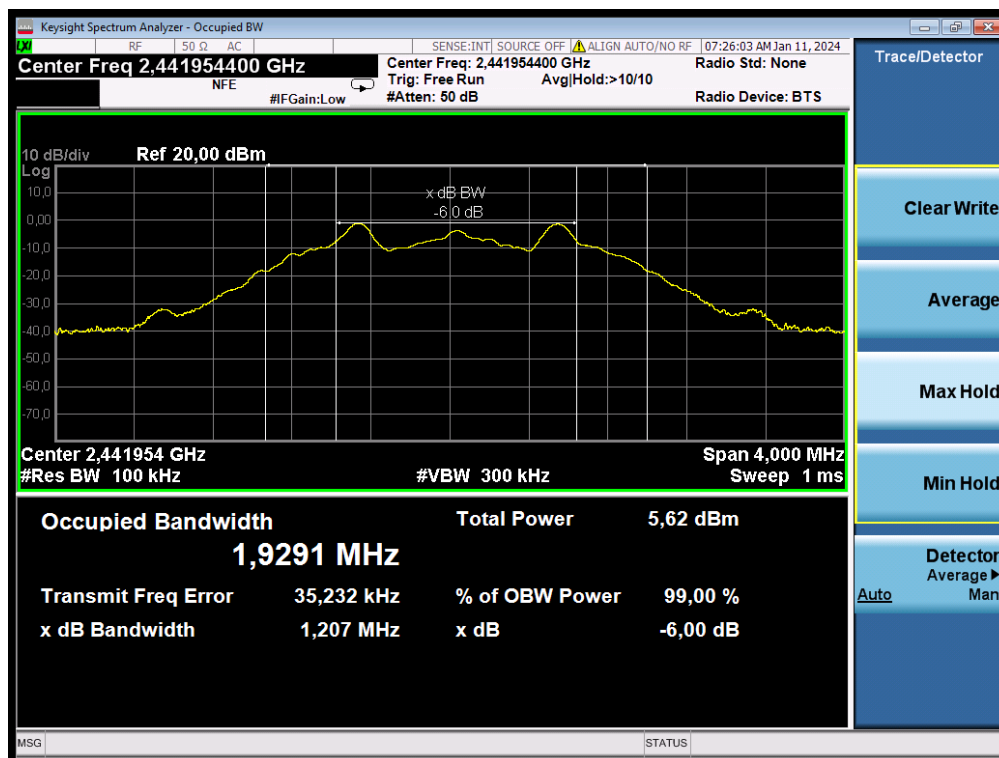
Test method:	FCC part 15 C - §15.247 (a)(2) & §15.215 (c) ISED RSS-247 Issue 3 Occupied Bandwidth For details see par. 4 of this report	
Operator	Marco Nicolè	
Test Date	2024-01-11	
Test Temperature	21 °C	
Test Humidity	30 %	
Test Pressure	1020 hPa	
Electrical wiring	Cable	Length [m]
	---	---
Operating conditions	TX04; TX05; T06 See par. 5 of this report	
Auxiliary equipment (AE)	See par. 3.5 of this report	
Limits	The minimum 6 dB and 20 dB bandwidth (for FCC part 15 C - §15.247 (a)(2) & §15.215 (c)) and 99% of band (for ISED RSS-247 Issue 3) shall be at least 500 kHz.	
Test set up	 The diagram illustrates the test setup. On the left, a rectangular box labeled 'EUT' (Equipment Under Test) is shown. A horizontal line connects the EUT to a larger rectangular box on the right labeled 'Spectrum analyzer'. The Spectrum analyzer box contains a smaller rectangle representing a screen and a small circle at the bottom right, representing a connector or port. A line extends from this port to the right, ending in a small circle. The entire setup is enclosed in a larger rectangular frame.	
Test instrumentations	See Annex B	
Measurement Uncertainty (k=2)	See Annex F	

Operating condition	6 dB bandwidth	LIMIT	RESULT
TX01	1.208 MHz	At least 500 kHz	COMPLIES
TX02	1.207 MHz	At least 500 kHz	COMPLIES
TX03	1.203 MHz	At least 500 kHz	COMPLIES
Test Procedure Use the following spectrum analyser settings: Span = approximately 2 to 3 times the 6 dB or 20 dB bandwidth, centred on a channel RBW = 100 kHz VBW = 300 kHz Sweep = auto Detector function = peak Trace = max hold 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 6 dB or 20 dB down 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 6 dB or 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. (ISED RSS-247 Issue 3 verified 99% of the band.)			
EUT modification during this test	None		

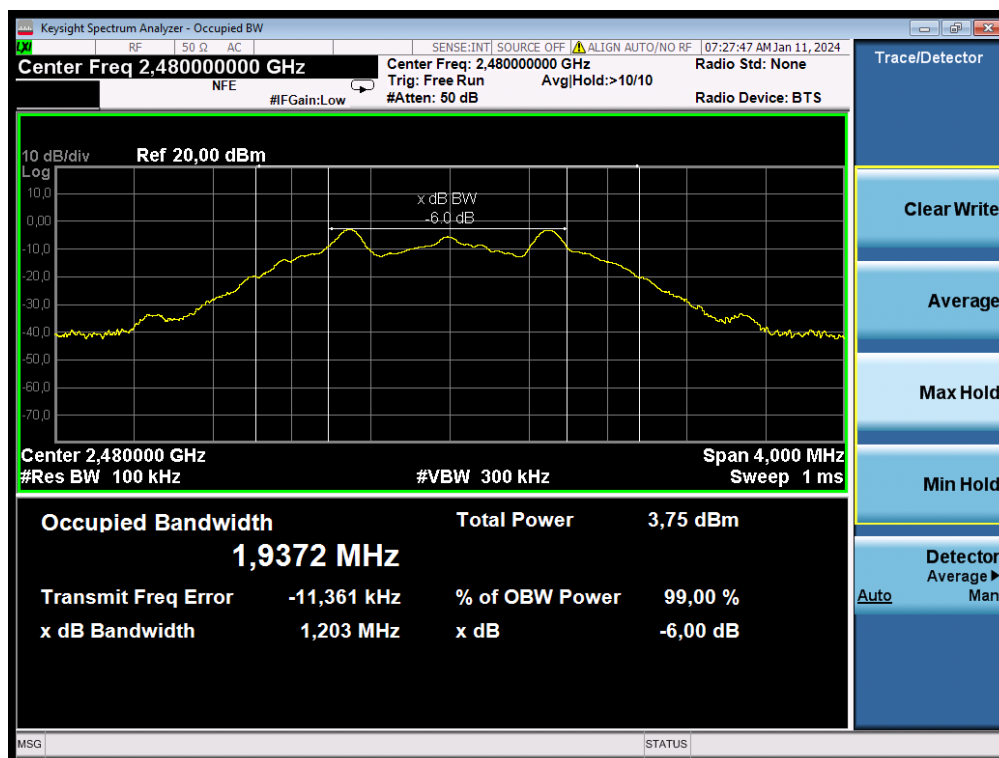
Test result TX01

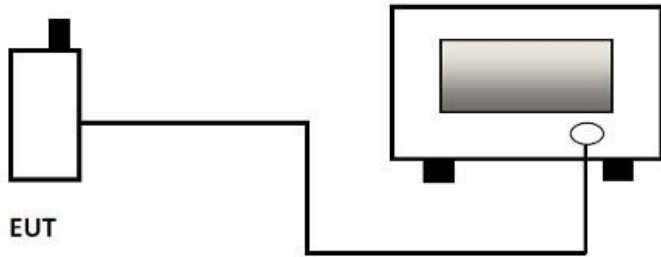


Test result TX02

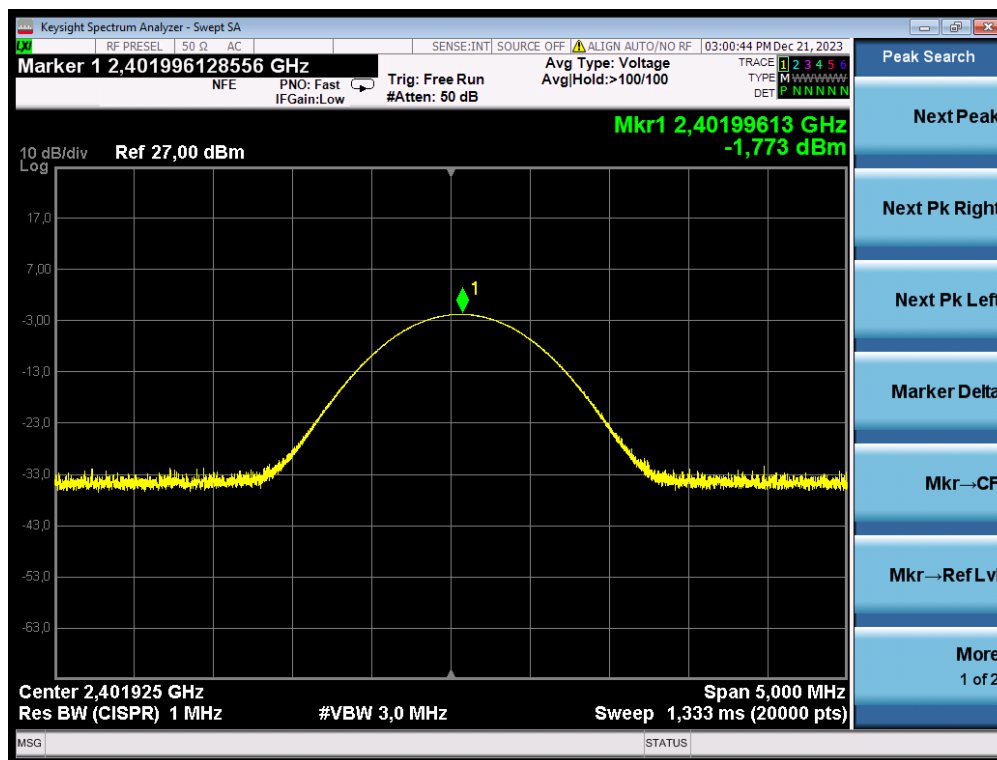


Test result TX03

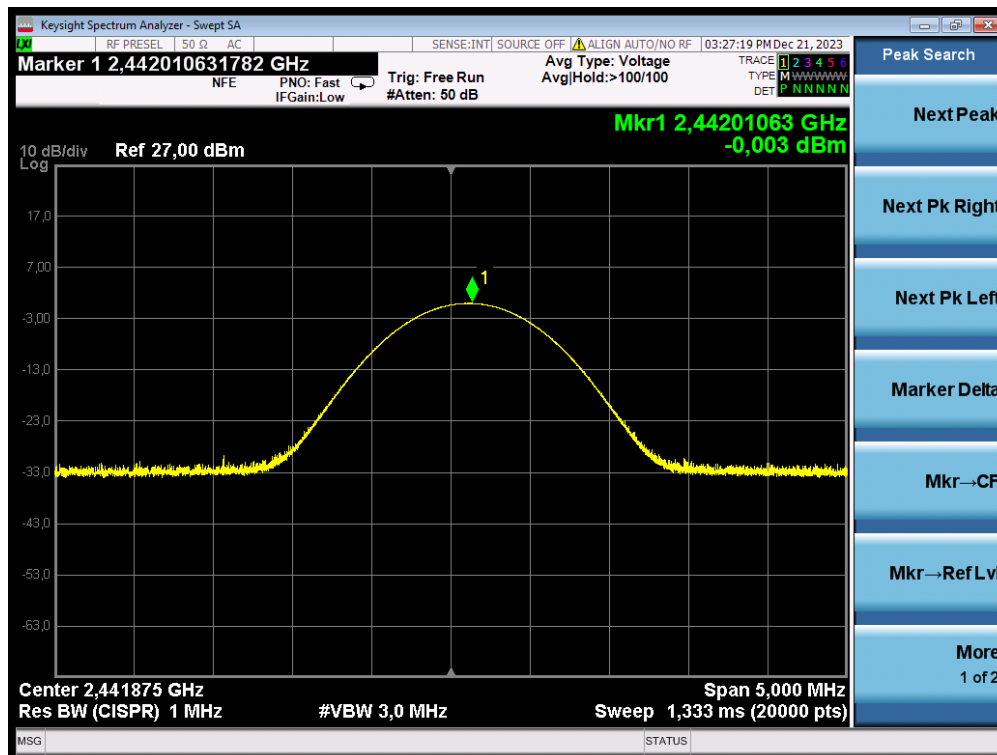


Test method:	FCC part 15 C - §15.247 (b)(3) ISED RSS-247 Issue 3 Peak Output Power For details see par. 4 of this report						
Operator	Marco Nicolè						
Test Date	2023-12-21						
Test Temperature	22 °C						
Test Humidity	39 %						
Test Pressure	1001 hPa						
Electrical wiring	Cable			Length [m]			
	---			---			
Operating conditions	TX01; TX02; TX03 See par. 5 of this report						
Auxiliary equipment (AE)	See par. 3.5 of this report						
Limits	For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt						
Test set up	 Spectrum analyzer						
Test instrumentations	See Annex B						
Measurement Uncertainty (k=2)	See Annex F						
FCC part 15 C							
OPERATING CONDITION	FREQUENCY [MHz]	Peak Power [dBm]	LIMIT [dBm]	LIMIT [W]	RESULT		
TX01	2402	-1.773	+30	1	COMPLIES		
TX02	2442	-0.003	+30	1	COMPLIES		
TX03	2480	-2.032	+30	1	COMPLIES		
ISED RSS-247 Issue 3							
OPERATING CONDITION	FREQUENCY [MHz]	Peak Power [dBm]	Antenna Gain [dBi]	EIRP [dBm]	EIRP [W]	LIMIT [W]	RESULT
TX01	2402	-1.773	1.6	-0.17	0.00096	4	COMPLIES
TX02	2442	-0.003	1.6	1.60	0.0014	4	COMPLIES
TX03	2480	-2.032	1.6	-0.43	0.00091	4	COMPLIES
Test Procedure	The measurement will be conducted at three channels: BLE: Low, middle and High, Set the spectrum analyzer as RBW ≥ DTS Bandwidth, VBW ≥ [3 × RBW], Set span ≥ [3 × RBW], Sweep time = auto couple, Detector = Peak, Trace mode = max hold						
EUT modification during this test	None						

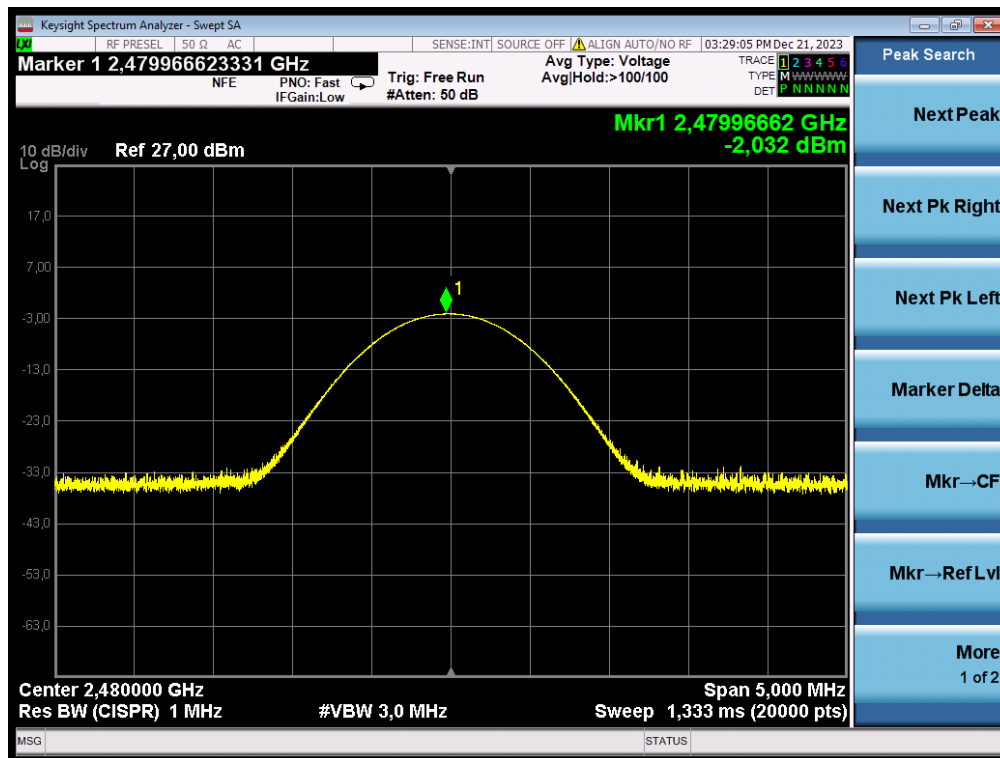
Test result TX01

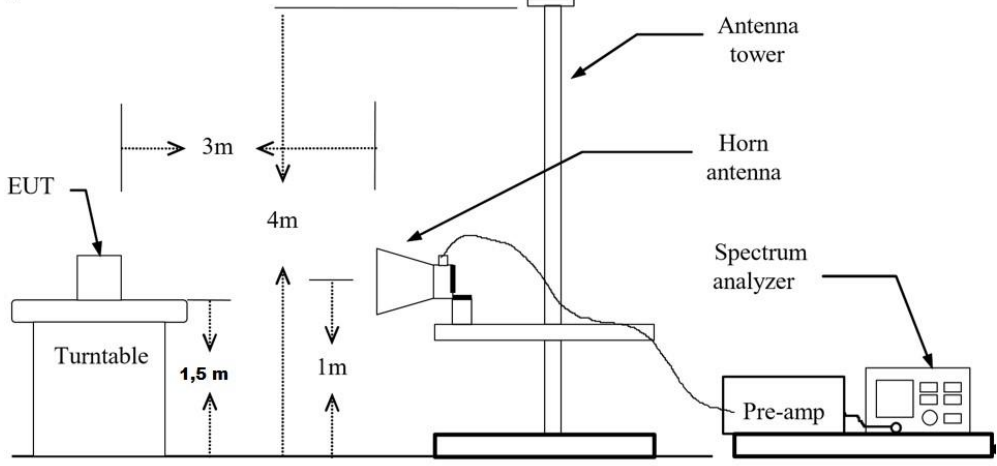


Test result TX02

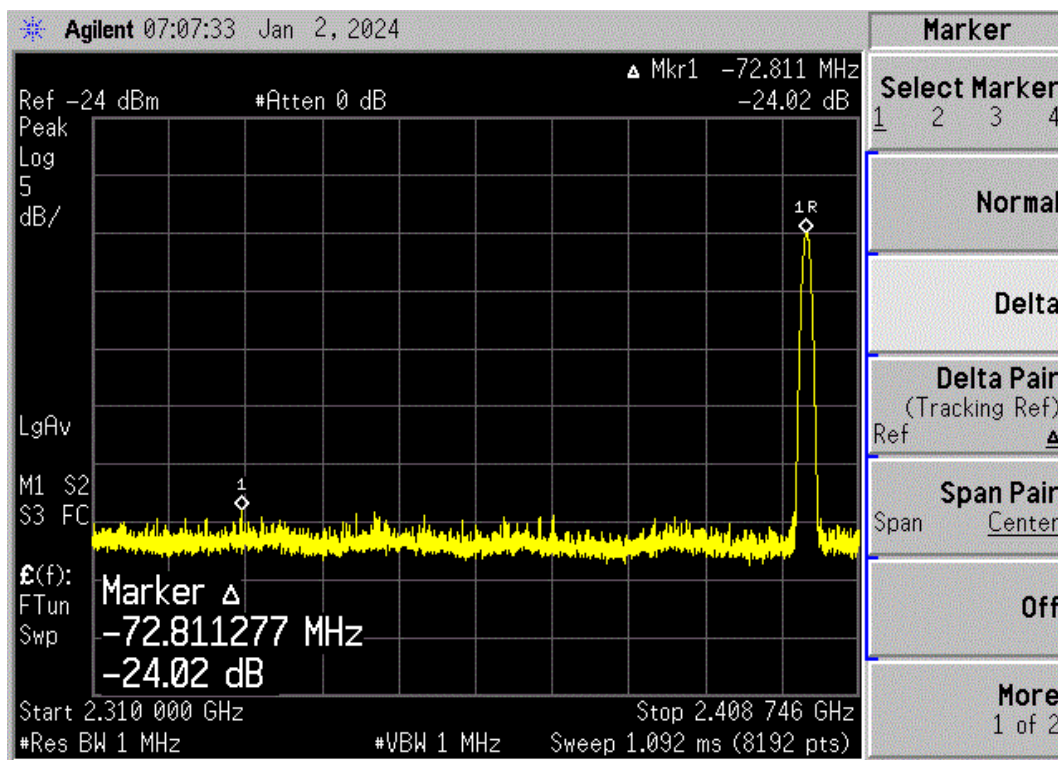


Test result TX03

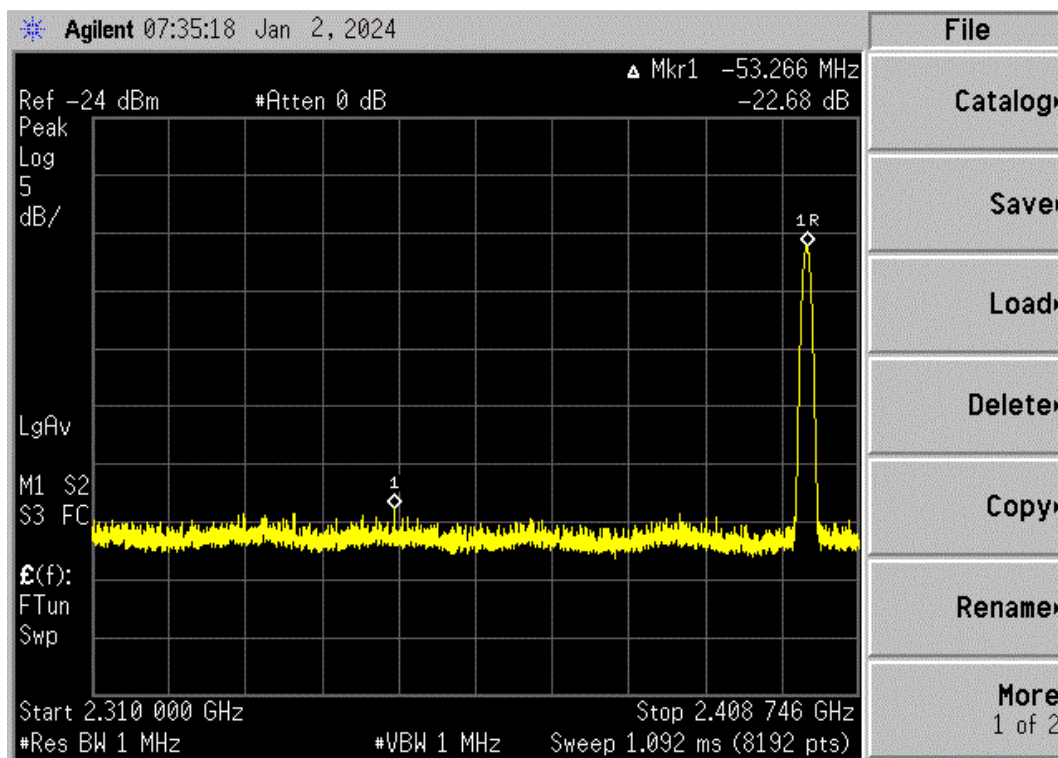


Test method:	FCC part 15 C - §15.247 (d) ISED RSS-247 Issue 3 Band Edge measurement For details see par. 4 of this report	
Operator	Marco Nicolè	
Test Date	2024-01-02	
Test Temperature	20 °C	
Test Humidity	33 %	
Test Pressure	1005 hPa	
Electrical wiring	Cable	Length [m]
	---	---
Operating conditions	TX01; TX03 See par. 5 of this report	
Auxiliary equipment (AE)	See par. 3.5 of this report	
Limits	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. In addition, radiated emissions which fall in the restricted bands, as defined in <u>§ 15.205(a)</u> , must also comply with the radiated emission limits specified in <u>§ 15.209(a)</u> .	
Test set up		
Measuring distance in the anechoic chamber	3 m	
Test instrumentations	See Annex B	
Measurement Uncertainty (k=2)	See Annex F	
Result	COMPLIES	
Test Procedure	The EUT is placed on a turntable, which is 1.5 m above the ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission. Set the spectrum analyser in the following setting in order to capture the lower and upper band-edges of the emission: RBW=VBW=1MHz / Sweep=AUTO Repeat the procedures in the other POLARIZATION.	
Note	---	
EUT modification during this test	None	

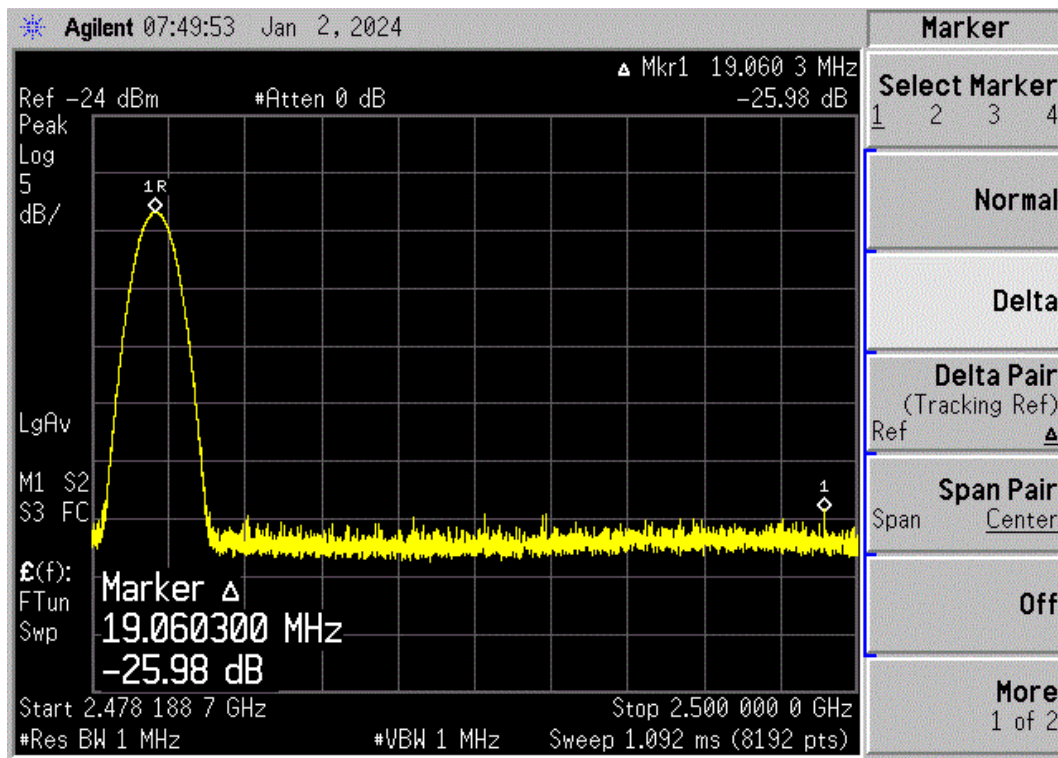
Test result TX01 – BAND EDGE LEFT SIDE
Vertical polarization



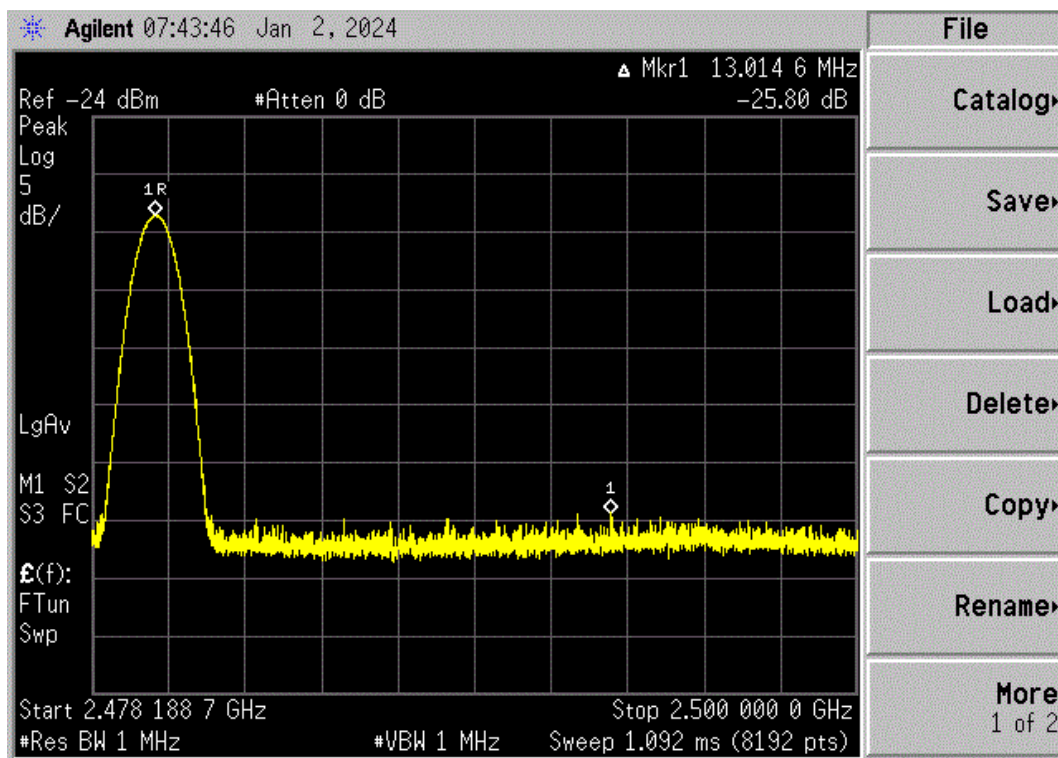
Test result TX01 – BAND EDGE LEFT SIDE
Horizontal polarization



Test result TX03 – BAND EDGE RIGHT SIDE
Vertical polarization



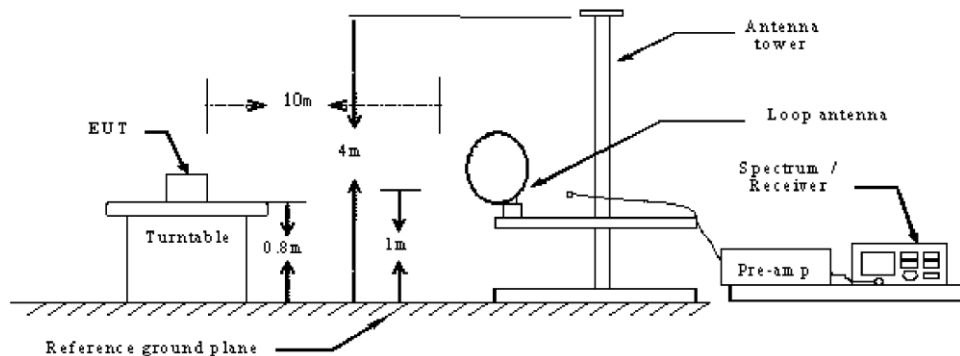
Test result TX03 – BAND EDGE RIGHT SIDE
Horizontal polarization



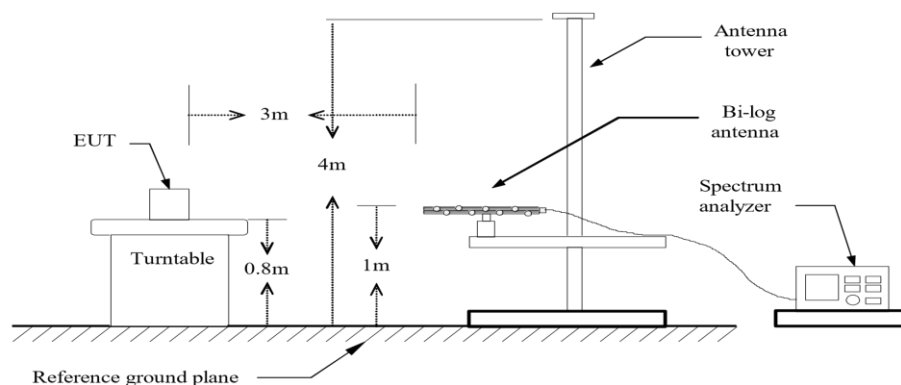
Test method:	FCC part 15 C - § 15.209 ISED RSS-247 Issue 3 Spurious Emission (Radiation) For details see par. 4 of this report			
Operator	Marco Nicolè			
Test Date	2024-01-03			
Test Temperature	21 °C			
Test Humidity	30 %			
Test Pressure	1009 hPa			
EUT Classification	None.			
Electrical wiring	Cable	Length [m]		
	---	---		
Operating conditions	TX01; TX02; TX03 See par. 5 of this report			
Auxiliary equipment (AE)	See par. 3.5 of this report			
Limits				
	Frequency (MHz)	Limits (dBuV/m)	Detector	Measured distance (m)
	30~88	40	PK	3
	88~216	43.5	PK	
	216-960	46	PK	
	Above 960	54	PK	
	Frequency (GHz)	Limits (dBuV/m)	Detector	Measured distance (m)
	1 - 40	54	AVG	3
	1-40	74	PK	3

Test set up

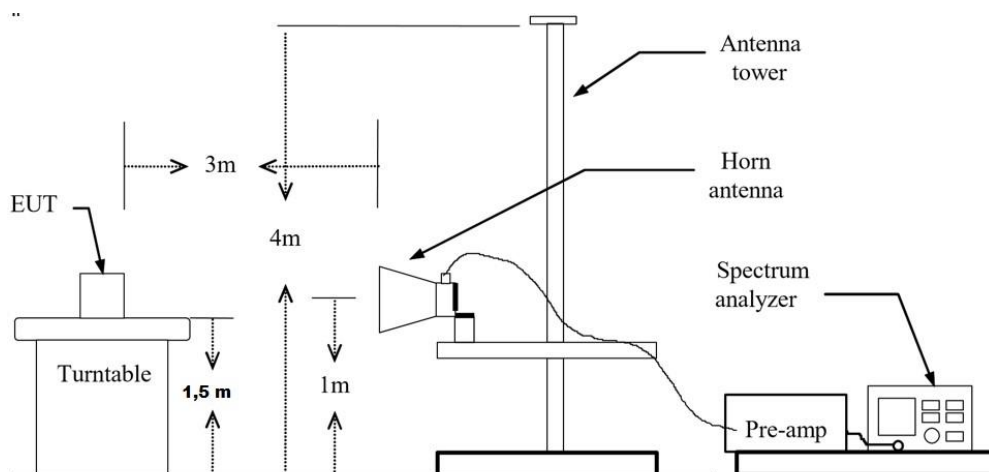
Radiated Spurious Measurement: below 30MHz



Radiated Spurious Measurement: below 1GHz



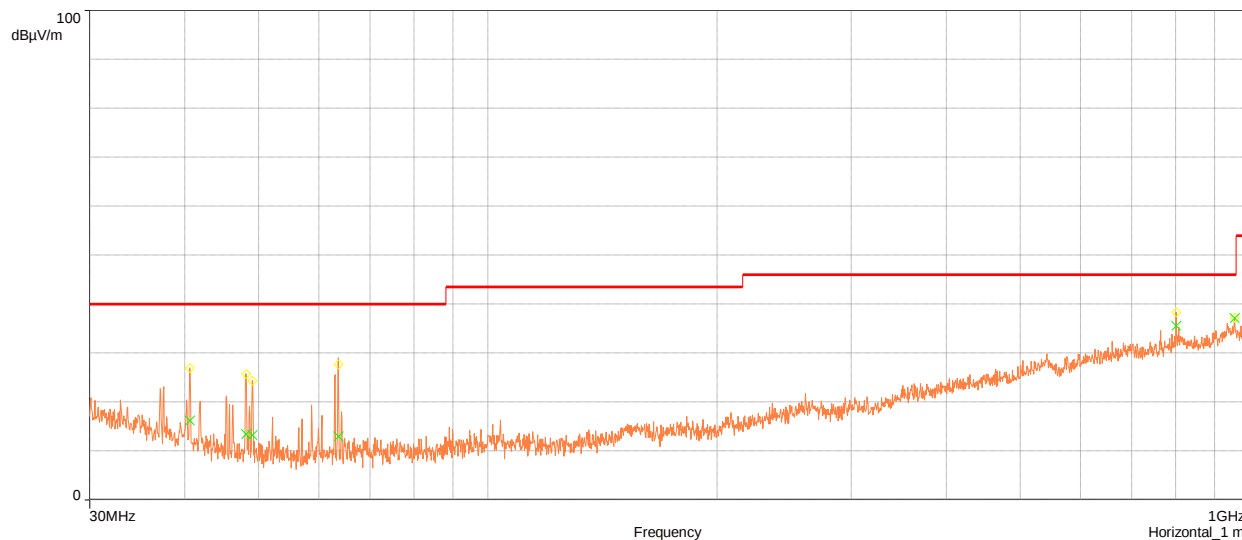
Radiated Spurious Measurement: above 1GHz



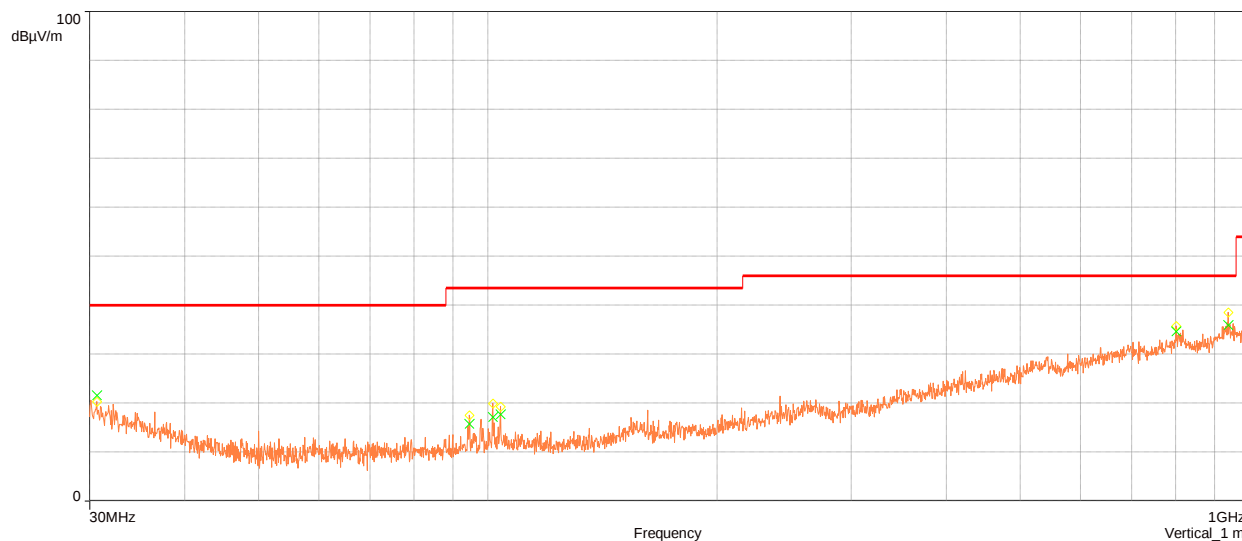
Frequency range	from 30 MHz up through the 10th harmonic
Measuring distance in the anechoic chamber	3 m
Test instrumentations	See Annex B
Measurement Uncertainty (k=2)	See Annex F

Test Procedure	Radiated Emission (30 MHz – 1000 MHz) : The preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT. The EUT configuration (in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements. The measurement is carried out using a spectrum analyser or receiver. The Quasi-peak detector is used and RBW is set to 120kHz .The antenna height and turn table rotation is adjusted until the maximum power value is founded on spectrum analyser or receiver. Radiated Emission (Above 1 GHz) : The preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT. The EUT configuration (in X, Y and Z axis), cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements. The measurement is carried out using a spectrum analyser or receiver. The spectrum analyser scans from 1GHz to 25GHz (higher than the 10th harmonic of the carrier). The peak detector is used for Peak limit and RBW is set to 1MHz ,VBW $\geq$ 3RBW. The peak detector is used for Average limit and RBW is set to 1MHz ,VBW is not smaller than 1/T, T = to the shortest pulse width. The antenna height and turn table rotation is adjusted until the maximum power value is founded on spectrum analyser or receiver.
Note	---
EUT modification during this test	None

BLE
Horizontal polarization
TX01
Range 30 MHz – 1 GHz

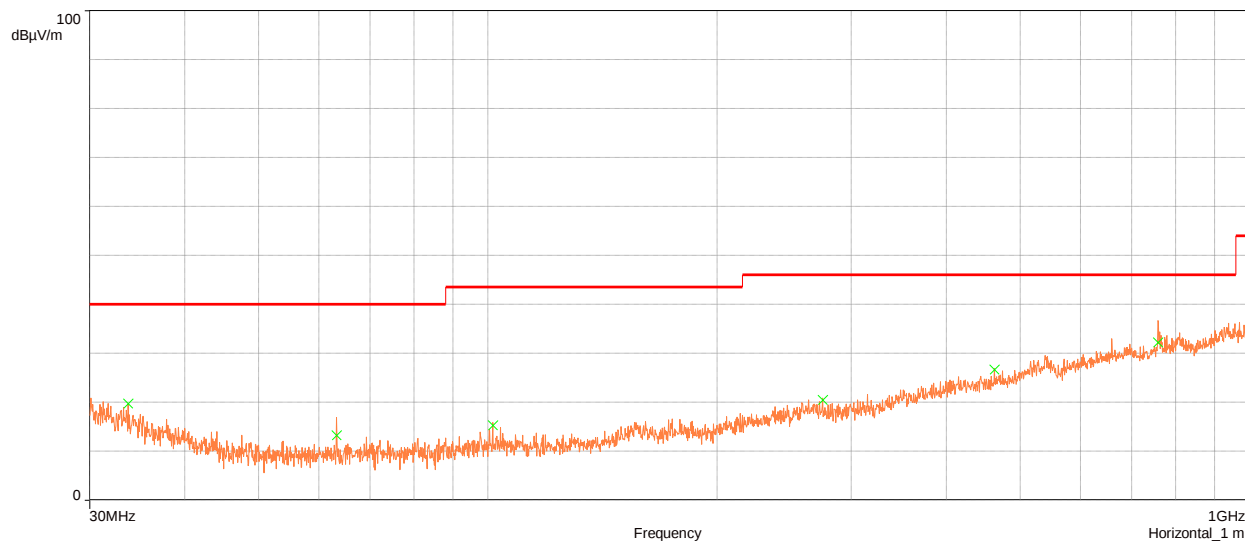


BLE
Vertical polarization
TX01
Range 30 MHz – 1 GHz

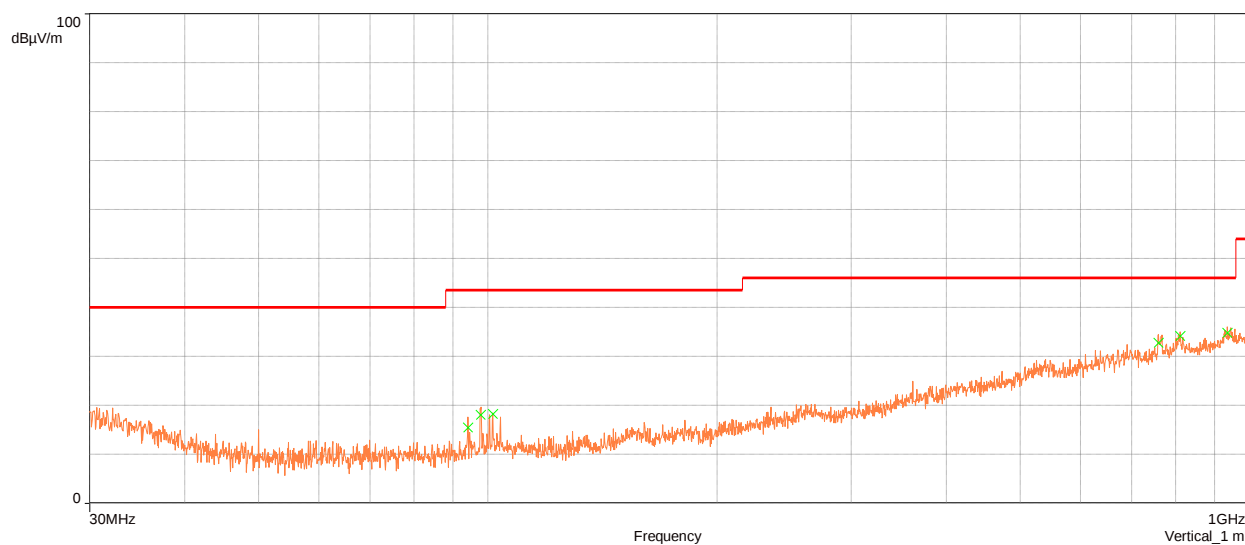


Frequency (MHz)	SR	Peak (dBμV/m)	QPeak (dBμV/m)	LimQPeak (dBμV/m)	Delta (dB)	Polarization	Height (m)	Angle (deg)	Conversion Factor
40.615	1	26.91	16.18	40.00	-23.82	Horizontal	1.00	119.90	14.71
48.1155	1	25.73	13.39	40.00	-26.61	Horizontal	1.00	210.50	11.89
49.075	1	24.39	13.24	40.00	-26.76	Horizontal	1.00	210.50	11.77
63.655	1	27.71	13.00	40.00	-27.00	Horizontal	1.00	329.90	11.62
801.415	1	38.34	35.53	46.00	-10.47	Horizontal	1.00	300.50	31.30
955.7955	1	37.20	37.10	46.00	-8.90	Horizontal	1.00	119.90	32.92
442.8555	1	40.33	25.75	46.00	-20.25	Horizontal	3.00	300.50	23.88
30.655	2	20.29	21.60	40.00	-18.40	Vertical	1.00	180.70	20.04
94.5555	2	17.49	15.77	43.52	-27.75	Vertical	1.00	270.70	12.37
101.5155	2	19.93	17.17	43.52	-26.35	Vertical	1.00	120.50	13.08
103.855	2	19.30	17.70	43.52	-25.82	Vertical	1.00	180.70	13.18
801.3555	2	35.74	34.66	46.00	-11.34	Vertical	1.00	300.10	31.30
937.795	2	38.57	35.95	46.00	-10.05	Vertical	1.00	29.80	33.18

BLE
Horizontal polarization
TX02
Range 30 MHz – 1 GHz

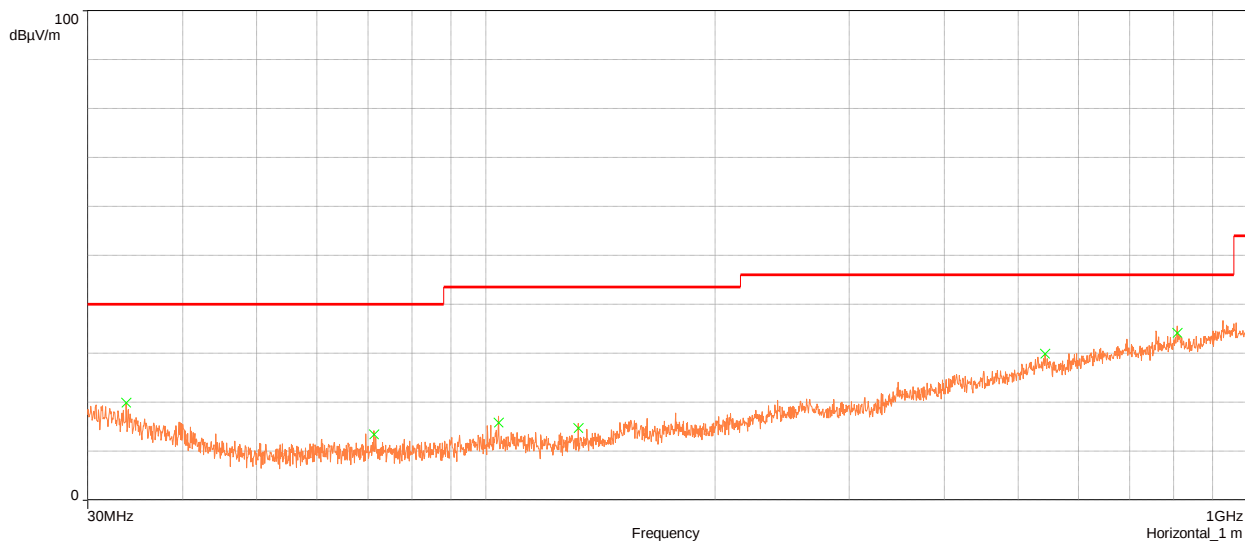


BLE
Vertical polarization
TX02
Range 30 MHz – 1 GHz

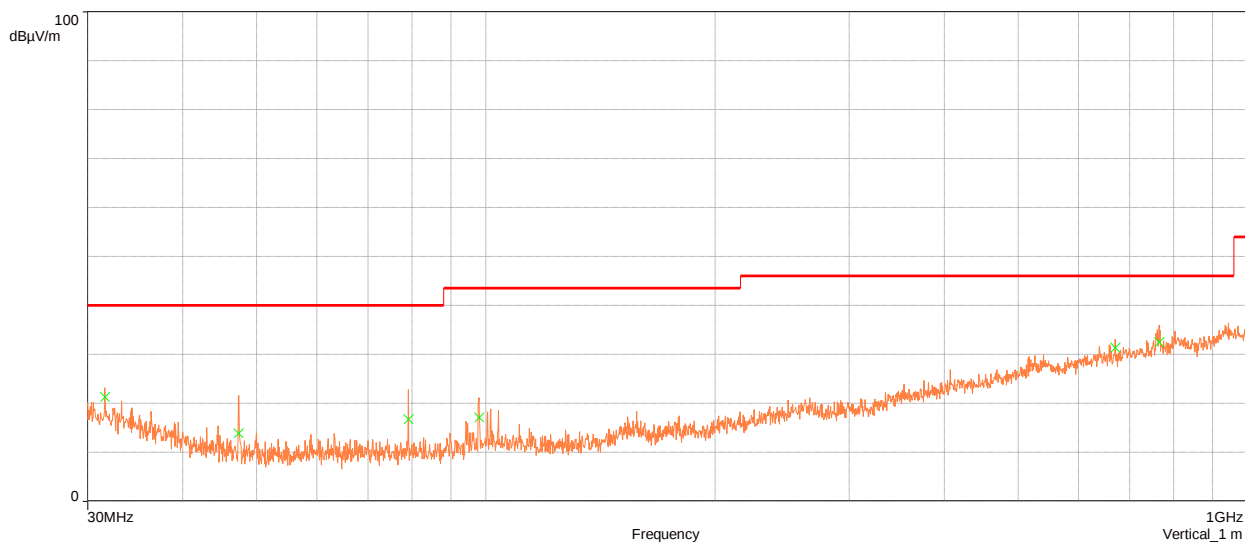


Frequency (MHz)	SR	Peak (dBμV/m)	QPeak (dBμV/m)	LimQPeak (dBμV/m)	Delta (dB)	Polarization	Height (m)	Angle (deg)	Conversion Factor
33.7155	1	19.66	19.69	40.00	-20.31	Horizontal	1.00	29.80	18.17
63.2955	1	16.89	13.28	40.00	-26.72	Horizontal	1.00	269.90	11.59
101.455	1	15.81	15.32	43.52	-28.20	Horizontal	1.00	60.20	13.08
275.3355	1	20.80	20.44	46.00	-25.56	Horizontal	1.00	240.10	19.01
462.3555	1	26.90	26.64	46.00	-19.36	Horizontal	1.00	60.20	24.50
758.515	1	36.67	32.20	46.00	-13.80	Horizontal	1.00	29.80	30.10
94.135	2	17.58	15.49	43.52	-28.03	Vertical	1.00	180.70	12.35
97.8555	2	18.96	18.04	43.52	-25.48	Vertical	1.00	59.90	12.75
101.455	2	18.45	18.21	43.52	-25.31	Vertical	1.00	150.30	13.08
759.535	2	34.47	32.80	46.00	-13.20	Vertical	1.00	120.80	30.19
811.3155	2	35.03	34.19	46.00	-11.81	Vertical	1.00	240.20	31.62
935.0955	2	36.07	34.85	46.00	-11.15	Vertical	1.00	59.90	31.83

BLE
Horizontal polarization
TX03
Range 30 MHz – 1 GHz

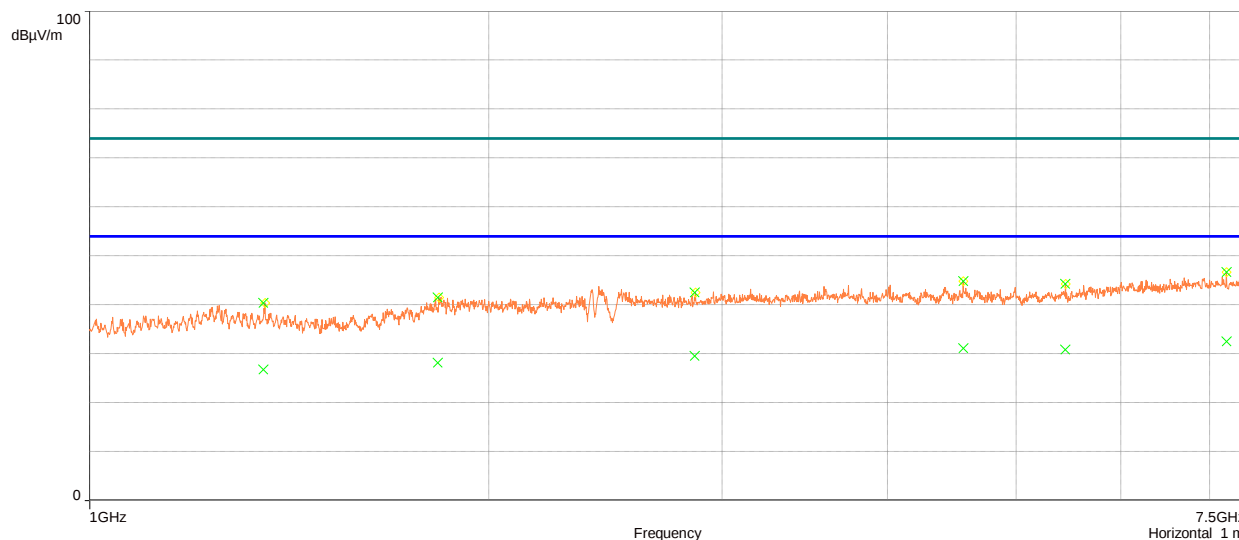


BLE
Vertical polarization
TX03
Range 30 MHz – 1 GHz

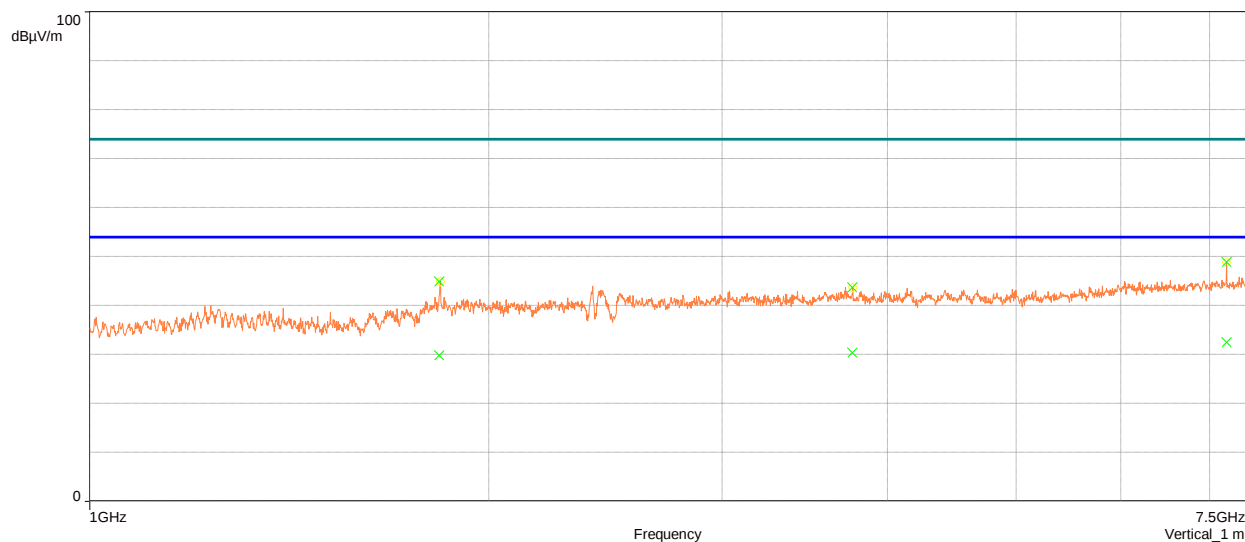


Frequency (MHz)	SR	Peak (dBμV/m)	QPeak (dBμV/m)	LimQPeak (dBμV/m)	Delta (dB)	Polarization	Height (m)	Angle (deg)	Conversion Factor
33.7155	1	19.69	19.91	40.00	-20.09	Horizontal	1.00	150.20	18.17
71.2755	1	14.16	13.41	40.00	-26.59	Horizontal	1.00	330.40	11.87
103.855	1	17.13	15.86	43.52	-27.66	Horizontal	1.00	59.90	13.18
132.2355	1	15.66	14.75	43.52	-28.77	Horizontal	1.00	330.40	13.22
542.2755	1	29.70	29.94	46.00	-16.06	Horizontal	1.00	59.90	27.93
808.435	1	35.52	34.17	46.00	-11.83	Horizontal	1.00	120.20	31.60
31.6155	2	23.18	21.33	40.00	-18.67	Vertical	1.00	300.60	19.45
47.335	2	21.31	13.94	40.00	-26.06	Vertical	1.00	270.30	12.07
79.135	2	22.76	16.75	40.00	-23.25	Vertical	1.00	59.90	11.71
97.9155	2	21.16	17.13	43.52	-26.39	Vertical	1.00	29.80	12.75
670.0755	2	33.08	31.43	46.00	-14.57	Vertical	1.00	300.60	29.27
765.9555	2	35.98	32.55	46.00	-13.45	Vertical	1.00	180.70	30.17

BLE
Horizontal polarization
TX01
Range 1 GHz – 7.5 GHz

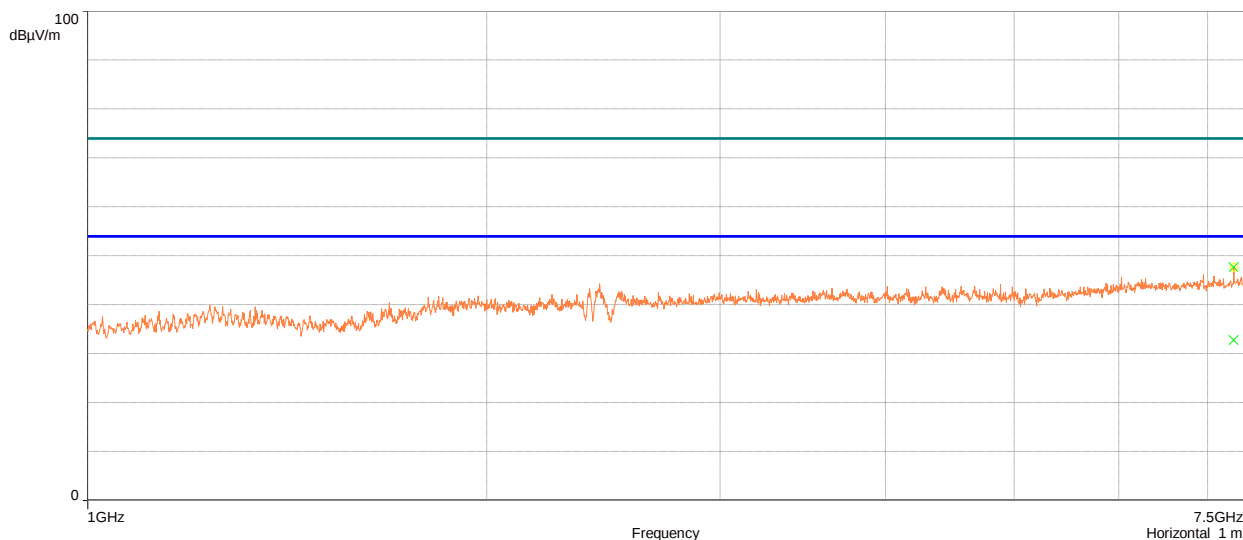


BLE
Vertical polarization
TX01
Range 1 GHz – 7.5 GHz

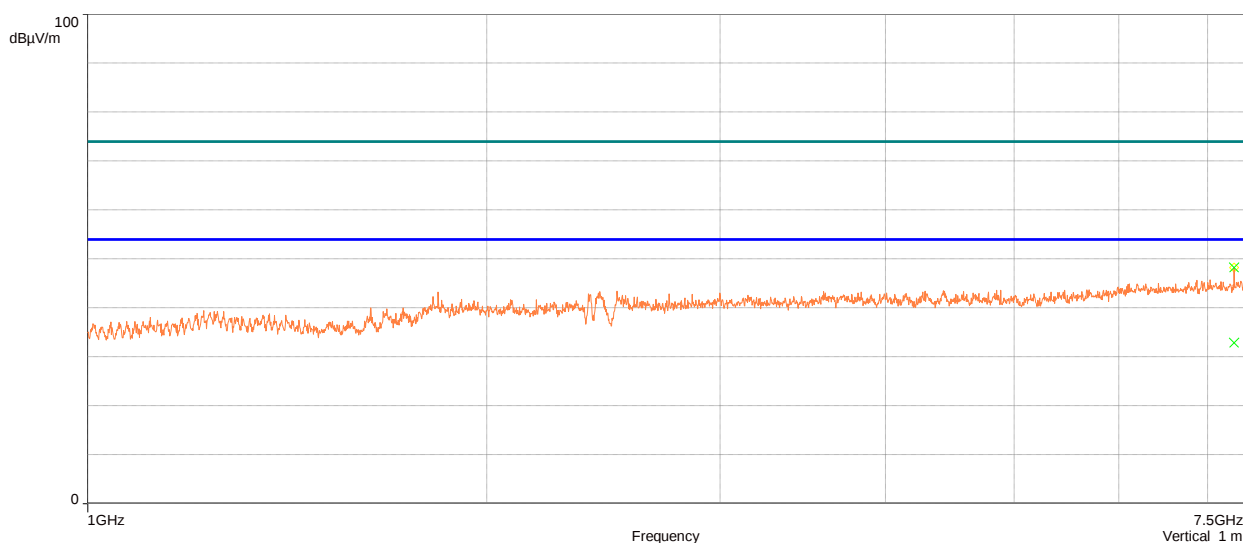


Frequency (MHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
1352.05	1	40.39	74.00	33.84	26.80	54.00	27.20	359.90	Horizontal
1830.3	1	41.49	74.00	32.24	28.12	54.00	25.88	240.50	Horizontal
2859.55	1	42.50	74.00	31.39	29.57	54.00	24.43	209.80	Horizontal
4559.05	1	44.84	74.00	29.21	31.08	54.00	22.92	270.20	Horizontal
5443.8	1	44.26	74.00	30.15	30.86	54.00	23.14	330.40	Horizontal
7202.55	1	46.69	74.00	28.10	32.49	54.00	21.51	330.40	Horizontal
1835.3	2	44.93	74.00	29.71	29.78	54.00	24.22	150.70	Vertical
3760.75	2	43.75	74.00	30.37	30.42	54.00	23.58	359.90	Vertical
7202.55	2	48.87	74.00	27.51	32.51	54.00	21.49	29.90	Vertical
7202.3	2	48.71	74.00	27.91	32.62	54.00	21.38	60.20	Vertical

BLE
Horizontal polarization
TX02
Range 1 GHz – 7.5 GHz

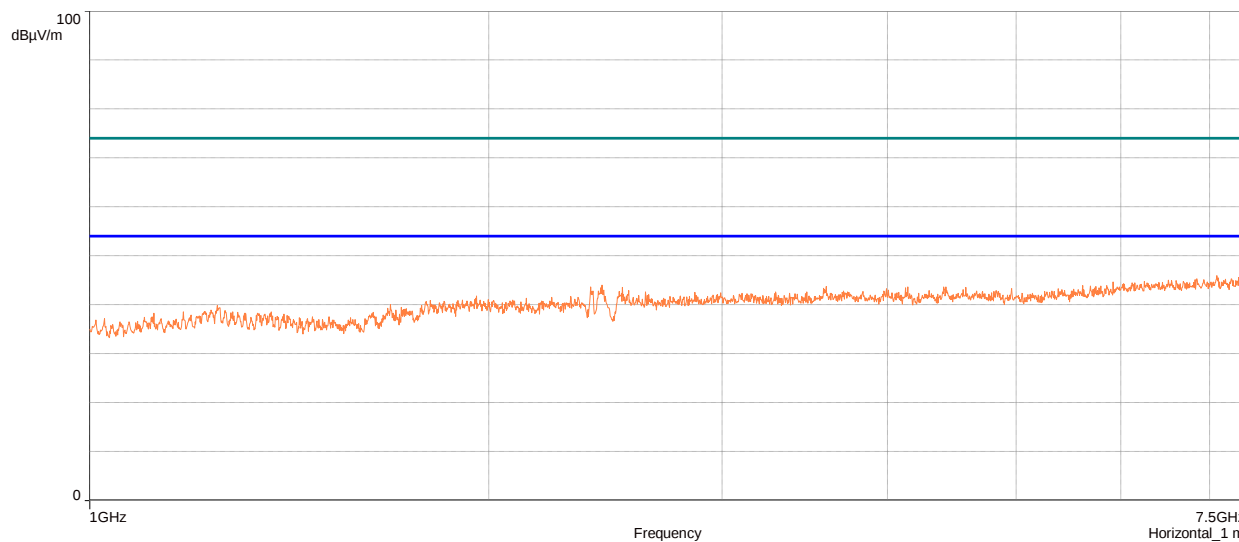


BLE
Vertical polarization
TX02
Range 1 GHz – 7.5 GHz

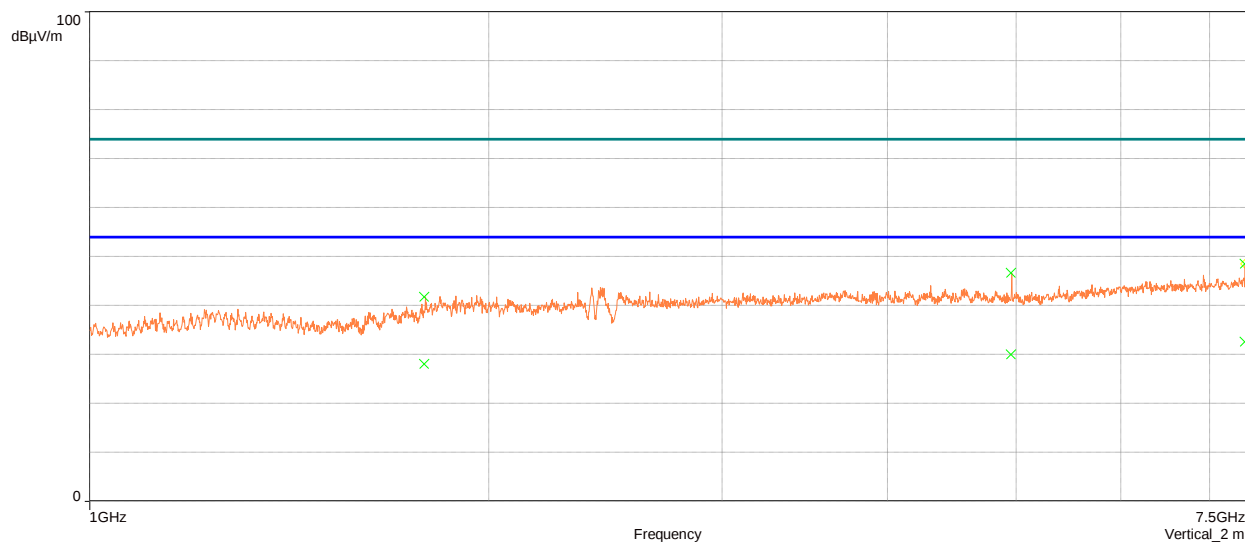


Frequency (MHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
7322.05	1	47.67	74.00	27.71	32.76	54.00	21.24	29.90	Horizontal
7322.55	1	50.03	74.00	28.03	32.82	54.00	21.18	29.90	Horizontal
7322.8	2	48.27	74.00	27.83	32.83	54.00	21.17	300.50	Vertical
7322.05	2	49.27	74.00	27.42	32.82	54.00	21.18	330.80	Vertical

BLE
Horizontal polarization
TX03
Range 1 GHz – 7.5 GHz

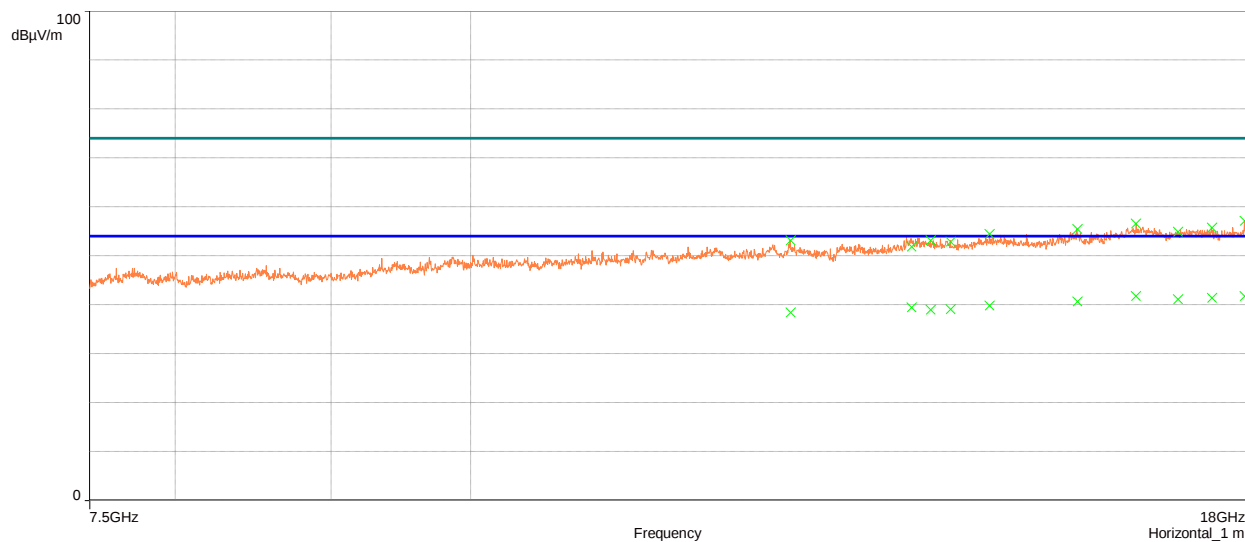


BLE
Vertical polarization
TX03
Range 1 GHz – 7.5 GHz

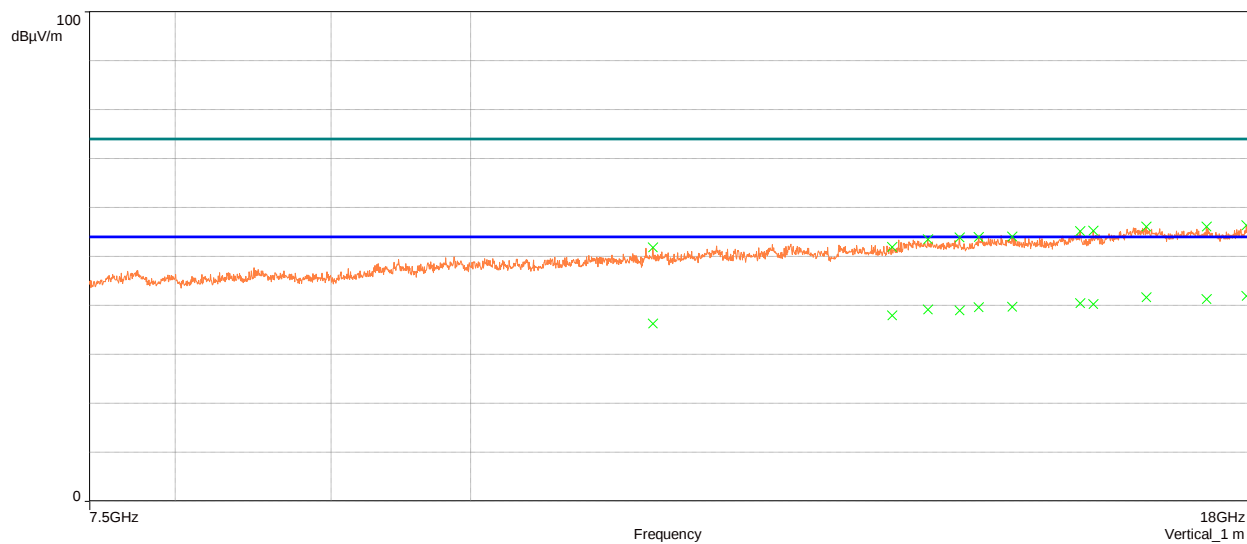


Frequency (MHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
7435.55	1	48.30	74.00	27.94	32.74	54.00	21.26	330.30	Horizontal
4956.3	1	45.28	74.00	30.37	29.94	54.00	24.06	60.20	Horizontal
7436.3	1	47.01	74.00	28.03	32.69	54.00	21.31	359.70	Horizontal
7435.55	2	48.79	74.00	28.30	32.73	54.00	21.27	29.90	Vertical
1788.25	2	41.78	74.00	32.78	28.10	54.00	25.90	120.30	Vertical
4954.8	2	46.69	74.00	30.14	29.97	54.00	24.03	29.80	Vertical
7436.8	2	48.50	74.00	28.06	32.60	54.00	21.40	29.80	Vertical
4960.17	2	44.98	74.00	34.48	39.29	54.00	14.71	29.70	Vertical
6362.84	2	46.30	74.00	41.78	32.22	54.00	21.78	330.70	Vertical

BLE
Horizontal polarization
TX01
Range 7.5 GHz – 18 GHz

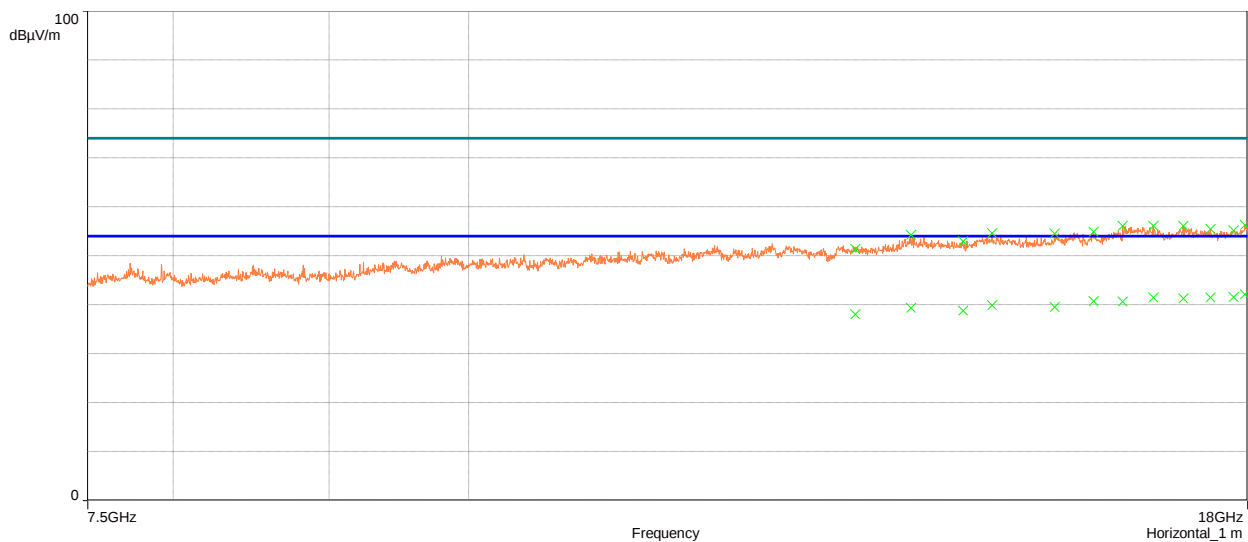


BLE
Vertical polarization
TX01
Range 7.5 GHz – 18 GHz

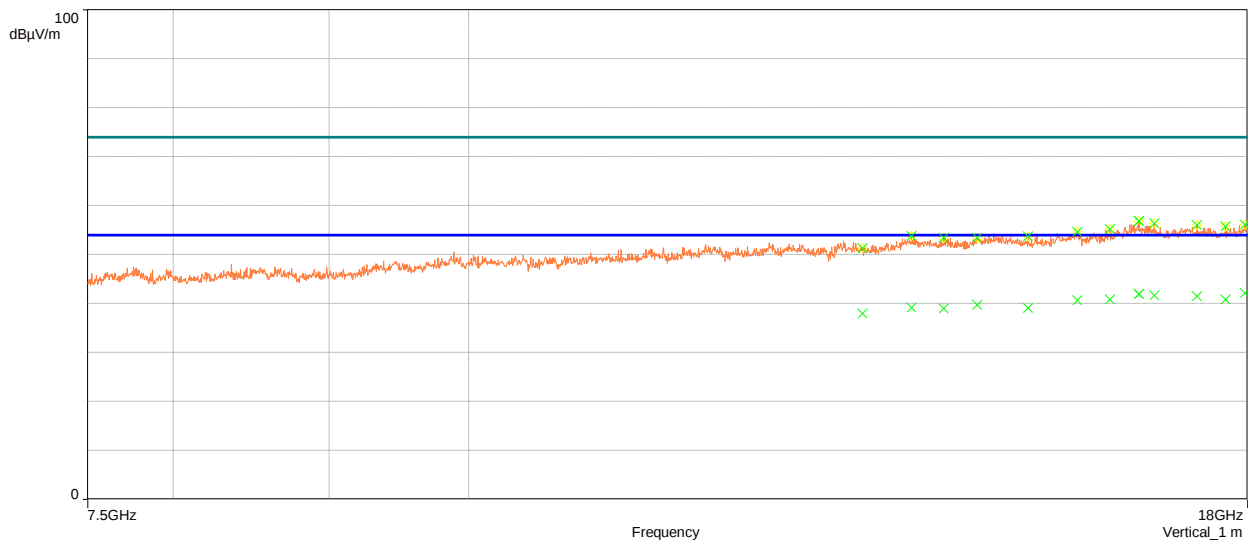


Frequency (MHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
12731.3	1	53.19	74.00	35.60	38.40	54.00	15.60	330.10	Horizontal
13949.15	1	51.89	74.00	34.58	39.42	54.00	14.58	300.30	Horizontal
14146.69	1	53.14	74.00	35.01	38.99	54.00	15.01	120.20	Horizontal
14361.83	1	52.89	74.00	34.91	39.09	54.00	14.91	120.20	Horizontal
14791.58	1	54.47	74.00	34.18	39.82	54.00	14.18	359.80	Horizontal
15804.84	1	55.45	74.00	33.36	40.64	54.00	13.36	270.20	Horizontal
16521.14	1	56.63	74.00	32.20	41.80	54.00	12.20	270.20	Horizontal
17052.57	1	54.94	74.00	32.93	41.07	54.00	12.93	59.90	Horizontal
17496.53	1	55.73	74.00	32.61	41.39	54.00	12.61	90.70	Horizontal
17933.81	1	57.11	74.00	32.20	41.80	54.00	12.20	210.50	Horizontal
12945.57	1	52.13	74.00	37.15	36.85	54.00	17.15	240.20	Horizontal
14164.36	1	53.43	74.00	34.93	39.07	54.00	14.93	300.60	Horizontal
14338.66	1	53.55	74.00	34.74	39.26	54.00	14.74	180.60	Horizontal
14701.39	1	54.23	74.00	34.12	39.86	54.00	14.14	90.10	Horizontal
15170.73	1	53.45	74.00	34.87	39.13	54.00	14.87	270.20	Horizontal
15801.98	1	55.42	74.00	33.34	40.66	54.00	13.34	270.20	Horizontal
16052.21	1	56.15	74.00	33.67	40.33	54.00	13.67	300.60	Horizontal
16515.07	1	55.96	74.00	32.05	41.95	54.00	12.05	29.80	Horizontal
16709.01	1	55.44	74.00	32.22	41.78	54.00	12.22	120.30	Horizontal
17219.32	1	55.36	74.00	32.27	41.73	54.00	12.27	29.80	Horizontal
17625.55	1	55.84	74.00	32.93	41.07	54.00	12.93	180.60	Horizontal
17934.01	1	56.44	74.00	32.18	41.82	54.00	12.18	330.70	Horizontal
17934.74	1	56.44	74.00	32.13	41.87	54.00	12.13	330.70	Horizontal
11473.37	2	51.82	74.00	37.68	36.32	54.00	17.68	300.10	Vertical
13744.54	2	51.99	74.00	36.07	37.93	54.00	16.07	60.70	Vertical
14117.99	2	53.56	74.00	34.83	39.17	54.00	14.83	210.40	Vertical
14462.19	2	53.88	74.00	35.03	38.97	54.00	15.03	240.50	Vertical
14671.41	2	53.95	74.00	34.32	39.68	54.00	14.32	240.50	Vertical
15048.89	2	54.09	74.00	34.31	39.69	54.00	14.31	120.30	Vertical
15839.62	2	55.19	74.00	33.54	40.46	54.00	13.54	240.50	Vertical
15997.85	2	55.25	74.00	33.69	40.31	54.00	13.69	359.80	Vertical
16650.34	2	56.16	74.00	32.32	41.68	54.00	12.32	210.40	Vertical
17423.16	2	56.09	74.00	32.67	41.33	54.00	12.67	120.30	Vertical
17957.26	2	56.36	74.00	32.04	41.96	54.00	12.04	180.70	Vertical
13896.3	2	53.62	74.00	34.88	39.12	54.00	14.88	149.90	Vertical
14182.23	2	53.50	74.00	35.04	38.96	54.00	15.04	29.80	Vertical
14457.33	2	53.64	74.00	34.99	39.01	54.00	14.99	149.90	Vertical
14764.93	2	54.01	74.00	34.33	39.67	54.00	14.33	29.80	Vertical
15033.2	2	54.14	74.00	34.07	39.93	54.00	14.07	210.10	Vertical
15459.51	2	53.88	74.00	34.47	39.53	54.00	14.47	240.30	Vertical
15768.49	2	54.58	74.00	33.58	40.42	54.00	13.58	120.30	Vertical
16038.05	2	55.23	74.00	33.37	40.63	54.00	13.37	120.30	Vertical
16482.35	2	56.84	74.00	32.10	41.90	54.00	12.10	29.80	Vertical
17298.04	2	55.68	74.00	32.53	41.47	54.00	12.53	240.30	Vertical
17737.3	2	55.28	74.00	32.89	41.11	54.00	12.89	89.80	Vertical

BLE
Horizontal polarization
TX02
Range 7.5 GHz – 18 GHz

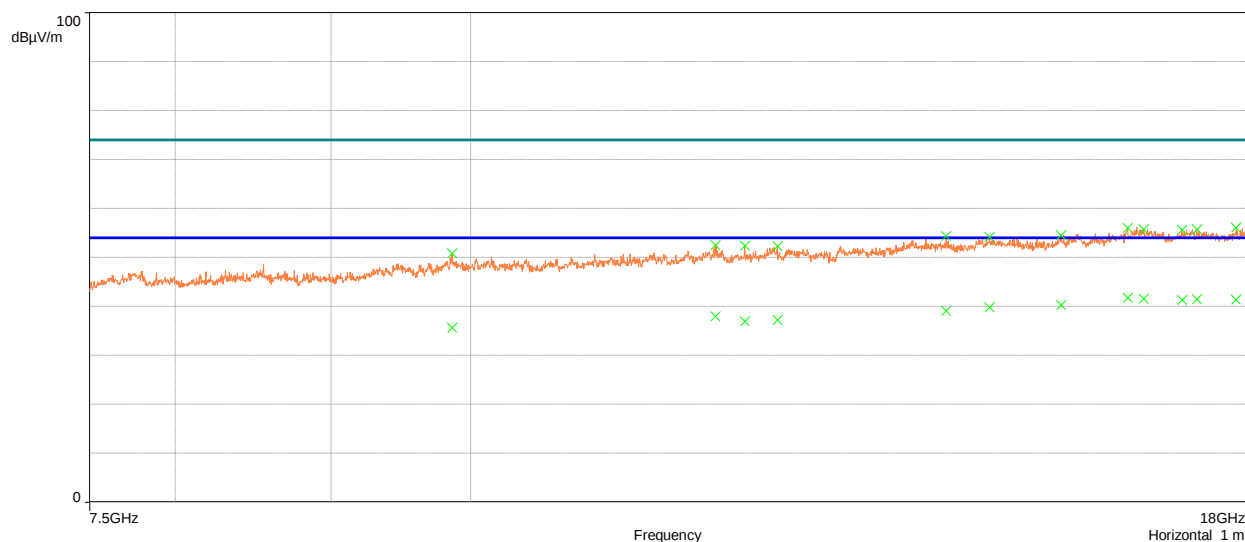


BLE
Vertical polarization
TX02
Range 7.5 GHz – 18 GHz

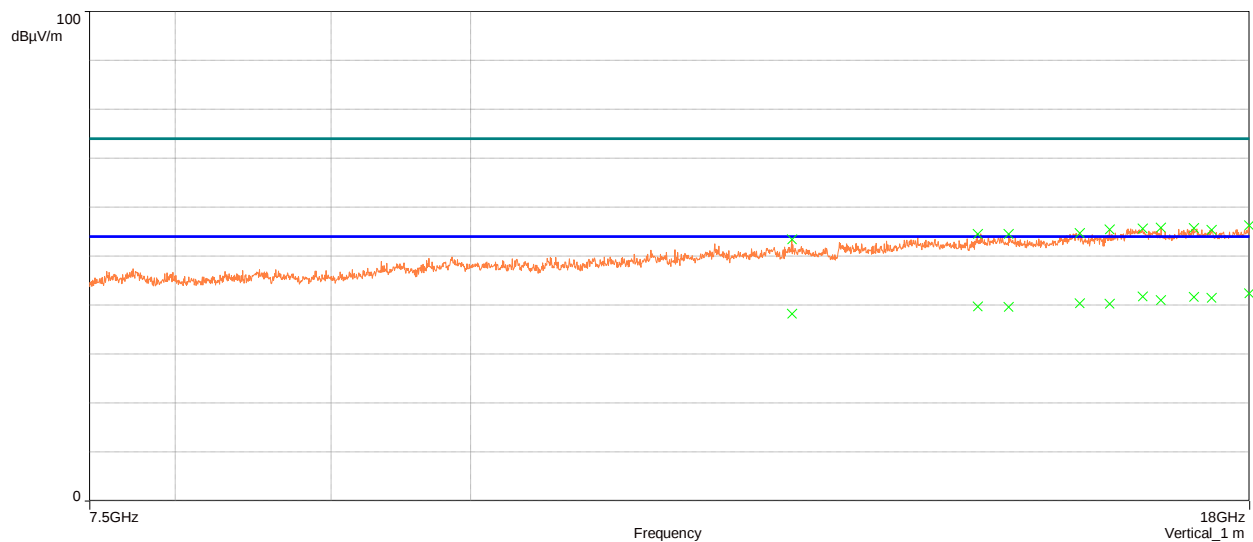


Frequency (MHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
13385.73	1	51.36	74.00	35.90	38.10	54.00	15.90	150.60	Horizontal
13963.25	1	54.26	74.00	34.67	39.33	54.00	14.67	120.10	Horizontal
14521.26	1	53.01	74.00	35.19	38.81	54.00	15.19	120.10	Horizontal
14844.16	1	54.61	74.00	34.09	39.91	54.00	14.09	270.20	Horizontal
15559.65	1	54.51	74.00	34.43	39.57	54.00	14.43	359.90	Horizontal
16026.21	1	54.92	74.00	33.27	40.73	54.00	13.27	359.90	Horizontal
16379.3	1	56.15	74.00	33.37	40.63	54.00	13.37	29.80	Horizontal
16762.45	1	56.15	74.00	32.53	41.47	54.00	12.53	150.60	Horizontal
17148.58	1	56.11	74.00	32.73	41.27	54.00	12.73	60.70	Horizontal
17501.53	1	55.48	74.00	32.55	41.45	54.00	12.55	330.10	Horizontal
17810.57	1	55.18	74.00	32.43	41.57	54.00	12.43	270.20	Horizontal
17964.68	1	56.31	74.00	31.88	42.12	54.00	11.88	210.50	Horizontal
13208.09	1	52.67	74.00	35.48	38.52	54.00	15.48	120.00	Horizontal
13750.33	1	52.60	74.00	35.87	38.13	54.00	15.87	240.50	Horizontal
14132.28	1	54.51	74.00	34.85	39.15	54.00	14.85	359.80	Horizontal
14696.94	1	54.29	74.00	34.10	39.90	54.00	14.10	180.10	Horizontal
15010.25	1	54.74	74.00	34.33	39.67	54.00	14.33	210.10	Horizontal
15540.48	1	54.85	74.00	34.40	39.60	54.00	14.40	29.80	Horizontal
15841.13	1	55.50	74.00	33.56	40.44	54.00	13.56	240.50	Horizontal
16493.28	1	56.63	74.00	32.19	41.81	54.00	12.19	29.80	Horizontal
17145.25	1	55.85	74.00	32.79	41.21	54.00	12.79	90.70	Horizontal
17432.73	1	55.33	74.00	32.56	41.44	54.00	12.56	270.20	Horizontal
17786.16	1	55.16	74.00	32.79	41.21	54.00	12.79	60.70	Horizontal
13459.61	2	51.30	74.00	36.01	37.98	54.00	16.02	300.50	Vertical
13967.27	2	53.76	74.00	34.78	39.22	54.00	14.78	330.80	Vertical
14307.89	2	53.41	74.00	35.04	38.96	54.00	15.04	89.90	Vertical
14677.42	2	53.46	74.00	34.25	39.75	54.00	14.25	330.80	Vertical
15251.35	2	53.69	74.00	34.96	39.04	54.00	14.96	210.10	Vertical
15828.15	2	54.60	74.00	33.30	40.70	54.00	13.30	150.50	Vertical
16220.93	2	55.23	74.00	33.17	40.83	54.00	13.17	240.50	Vertical
16579.34	2	56.85	74.00	32.05	41.95	54.00	12.05	359.70	Vertical
16583.98	2	56.85	74.00	32.04	41.96	54.00	12.04	359.70	Vertical
16773.25	2	56.39	74.00	32.35	41.65	54.00	12.35	120.60	Vertical
17321.91	2	56.00	74.00	32.51	41.49	54.00	12.51	300.50	Vertical
17699.23	2	55.73	74.00	33.13	40.87	54.00	13.13	359.70	Vertical
17962.73	2	56.12	74.00	31.82	42.18	54.00	11.82	150.50	Vertical
13417.51	2	53.07	74.00	36.05	37.95	54.00	16.05	29.90	Vertical
13587.11	2	53.13	74.00	36.24	37.76	54.00	16.24	29.90	Vertical
13860.83	2	53.40	74.00	35.41	38.59	54.00	15.41	180.20	Vertical
14135.83	2	53.27	74.00	34.88	39.12	54.00	14.88	210.20	Vertical
14694.99	2	53.94	74.00	34.14	39.86	54.00	14.14	300.50	Vertical
14913.75	2	54.73	74.00	34.13	39.87	54.00	14.13	149.80	Vertical
15275.1	2	54.08	74.00	34.74	39.26	54.00	14.74	300.50	Vertical
15609.38	2	54.50	74.00	33.57	40.43	54.00	13.57	210.20	Vertical
15854.4	2	54.77	74.00	33.69	40.31	54.00	13.69	240.60	Vertical
16248.66	2	55.87	74.00	33.44	40.56	54.00	13.44	120.80	Vertical
16596.89	2	56.20	74.00	32.05	41.95	54.00	12.05	270.20	Vertical
17203.52	2	55.70	74.00	32.19	41.81	54.00	12.19	29.90	Vertical
17669.99	2	56.01	74.00	33.17	40.83	54.00	13.17	149.80	Vertical

BLE
Horizontal polarization
TX03
Range 7.5 GHz – 18 GHz



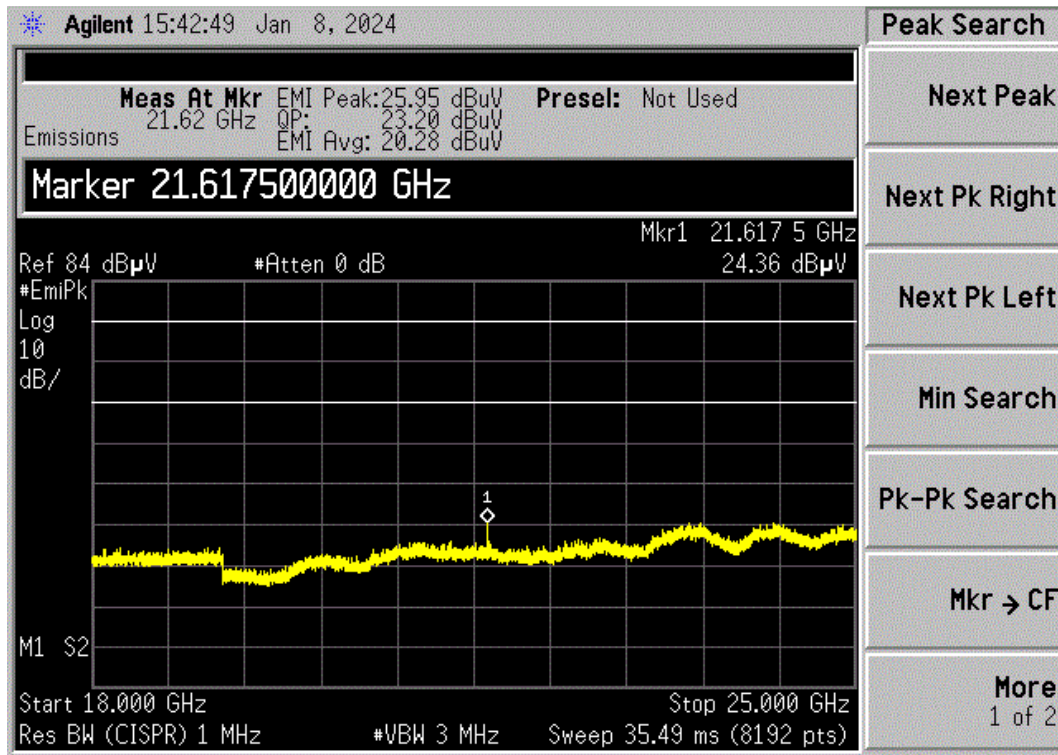
BLE
Vertical polarization
TX03
Range 7.5 GHz – 18 GHz



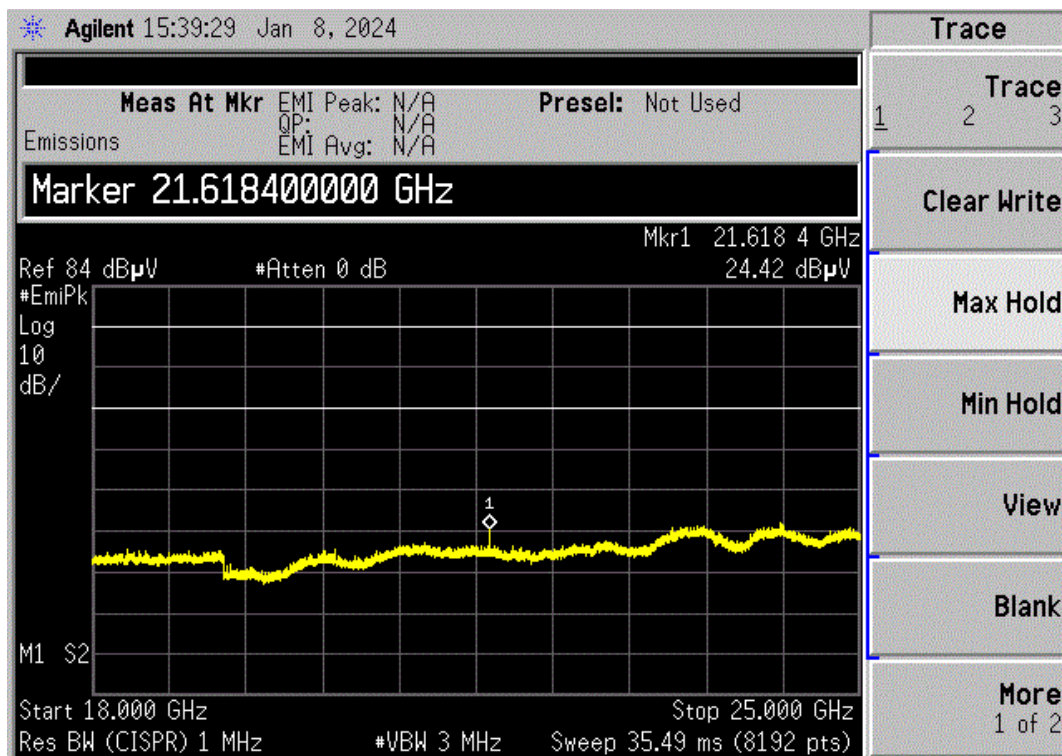
Frequency (MHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
9858.82	1	50.86	74.00	38.36	35.64	54.00	18.36	59.90	Horizontal
12027.05	1	52.49	74.00	36.03	37.97	54.00	16.03	240.20	Horizontal
12296.86	1	52.41	74.00	37.07	36.93	54.00	17.07	359.90	Horizontal
12605.5	1	52.32	74.00	36.73	37.27	54.00	16.73	89.80	Horizontal
14316.71	1	54.33	74.00	34.95	39.05	54.00	14.95	359.90	Horizontal
14789.25	1	54.16	74.00	34.21	39.79	54.00	14.21	120.30	Horizontal
15614.39	1	54.54	74.00	33.70	40.30	54.00	13.70	180.10	Horizontal
16419.28	1	56.00	74.00	32.23	41.77	54.00	12.23	210.50	Horizontal
16616.93	1	55.78	74.00	32.46	41.54	54.00	12.46	149.80	Horizontal
17103.45	1	55.64	74.00	32.70	41.30	54.00	12.70	29.80	Horizontal
17297.26	1	55.73	74.00	32.51	41.49	54.00	12.51	149.80	Horizontal
17817.02	1	56.16	74.00	32.56	41.44	54.00	12.56	359.90	Horizontal
13959.69	1	53.59	74.00	34.60	39.40	54.00	14.60	0.00	Horizontal
14388.91	1	53.71	74.00	35.19	38.81	54.00	15.19	300.30	Horizontal
14854.15	1	53.87	74.00	33.98	40.02	54.00	13.98	330.00	Horizontal
15159.88	1	53.55	74.00	34.78	39.22	54.00	14.78	330.00	Horizontal
15843.45	1	55.97	74.00	33.84	40.16	54.00	13.84	330.00	Horizontal
16009.26	1	55.31	74.00	33.82	40.18	54.00	13.82	269.90	Horizontal
16431.76	1	55.25	74.00	32.36	41.64	54.00	12.36	149.80	Horizontal
16720.57	1	55.70	74.00	32.56	41.44	54.00	12.56	60.70	Horizontal
17189.98	1	55.48	74.00	32.54	41.46	54.00	12.54	269.90	Horizontal
17470.62	1	55.56	74.00	32.79	41.21	54.00	12.79	29.90	Horizontal
17986.14	1	56.20	74.00	31.71	42.29	54.00	11.71	60.70	Horizontal
13286.65	1	52.33	74.00	36.46	37.54	54.00	16.46	180.20	Horizontal
13938.66	1	53.50	74.00	34.75	39.25	54.00	14.75	180.20	Horizontal
14221.63	1	53.42	74.00	35.10	38.90	54.00	15.10	89.80	Horizontal
14800.56	1	53.81	74.00	34.26	39.74	54.00	14.26	270.30	Horizontal
15575.65	1	54.40	74.00	34.16	39.84	54.00	14.16	120.80	Horizontal
15766.54	1	55.47	74.00	33.67	40.33	54.00	13.67	270.30	Horizontal
16036.49	1	55.43	74.00	33.41	40.59	54.00	13.41	29.80	Horizontal
16573	1	56.44	74.00	32.17	41.83	54.00	12.17	210.20	Horizontal
17071.36	1	55.22	74.00	32.89	41.11	54.00	12.89	180.20	Horizontal
17386.61	1	55.67	74.00	32.83	41.17	54.00	12.83	210.20	Horizontal
17991.12	1	55.86	74.00	31.59	42.41	54.00	11.59	329.80	Horizontal
13201.95	1	53.01	74.00	35.67	38.33	54.00	15.67	29.80	Horizontal
13905.93	1	53.40	74.00	35.09	38.91	54.00	15.09	240.40	Horizontal
14659.23	1	54.06	74.00	34.45	39.55	54.00	14.45	210.10	Horizontal
15168.67	1	53.66	74.00	34.89	39.11	54.00	14.89	29.80	Horizontal
15759.38	1	54.41	74.00	33.77	40.23	54.00	13.77	60.70	Horizontal
16172.94	1	55.33	74.00	33.51	40.49	54.00	13.51	300.20	Horizontal
16529.3	1	55.90	74.00	32.17	41.83	54.00	12.17	120.10	Horizontal
16862.32	1	55.84	74.00	32.84	41.16	54.00	12.84	120.10	Horizontal
17121.72	1	55.37	74.00	32.75	41.25	54.00	12.75	210.10	Horizontal
17738.56	1	55.27	74.00	32.97	41.03	54.00	12.97	120.10	Horizontal
12742.58	2	53.46	74.00	35.73	38.27	54.00	15.73	239.80	Vertical
14660.01	2	54.59	74.00	34.30	39.70	54.00	14.30	90.60	Vertical
15007.19	2	54.51	74.00	34.34	39.66	54.00	14.34	29.80	Vertical
15835.88	2	54.72	74.00	33.65	40.35	54.00	13.65	60.20	Vertical
16195.3	2	55.46	74.00	33.69	40.31	54.00	13.69	90.60	Vertical
16601.93	2	55.69	74.00	32.19	41.81	54.00	12.19	120.20	Vertical
16835.3	2	55.81	74.00	32.95	41.05	54.00	12.95	239.80	Vertical
17258.34	2	55.76	74.00	32.35	41.65	54.00	12.35	180.70	Vertical
17490.22	2	55.36	74.00	32.53	41.47	54.00	12.53	210.40	Vertical
17994.25	2	56.33	74.00	31.59	42.41	54.00	11.59	210.40	Vertical
14880.13	2	54.32	74.00	31.38	42.62	54.00	11.38	30.20	Vertical

15625.74	2	54.54	74.00	33.76	40.24	54.00	13.76	149.80	Vertical
16037	2	55.71	74.00	33.48	40.52	54.00	13.48	60.00	Vertical
16549.02	2	55.55	74.00	32.37	41.63	54.00	12.37	180.10	Vertical
17202.79	2	55.67	74.00	32.37	41.63	54.00	12.37	330.10	Vertical
17552.62	2	55.92	74.00	33.12	40.88	54.00	13.12	149.80	Vertical
17968.44	2	56.30	74.00	31.85	42.15	54.00	11.85	30.20	Vertical
11844.99	2	51.89	74.00	37.47	36.53	54.00	17.47	270.80	Vertical
13950.77	2	53.67	74.00	34.57	39.43	54.00	14.57	180.70	Vertical
14132.73	2	53.57	74.00	34.90	39.10	54.00	14.90	149.80	Vertical
14612.68	2	53.69	74.00	35.18	38.82	54.00	15.18	149.80	Vertical
15013.36	2	53.55	74.00	34.34	39.66	54.00	14.34	210.10	Vertical
15828.07	2	55.45	74.00	33.45	40.55	54.00	13.45	300.20	Vertical
16021.43	2	55.16	74.00	33.39	40.61	54.00	13.39	29.80	Vertical
16579.06	2	56.28	74.00	32.19	41.76	54.00	12.24	240.10	Vertical
16753.47	2	56.26	74.00	32.58	41.42	54.00	12.58	120.20	Vertical
17223.67	2	56.27	74.00	32.38	41.61	54.00	12.39	149.80	Vertical
17660.17	2	55.95	74.00	33.16	40.84	54.00	13.16	120.20	Vertical
14340.13	2	53.81	74.00	34.74	39.26	54.00	14.74	59.90	Vertical
15810.56	2	54.74	74.00	33.35	40.65	54.00	13.35	59.90	Vertical
16004.1	2	54.71	74.00	33.67	40.33	54.00	13.67	359.80	Vertical
16481.27	2	56.43	74.00	32.07	41.93	54.00	12.07	90.10	Vertical
16983.81	2	55.63	74.00	33.11	40.89	54.00	13.11	180.20	Vertical
17155.1	2	55.55	74.00	32.65	41.35	54.00	12.65	359.80	Vertical
17326.56	2	55.43	74.00	32.67	41.33	54.00	12.67	210.20	Vertical
17912.31	2	56.32	74.00	32.62	41.38	54.00	12.62	59.90	Vertical

BLE
Horizontal polarization
TX01
Range 18 GHz – 25 GHz

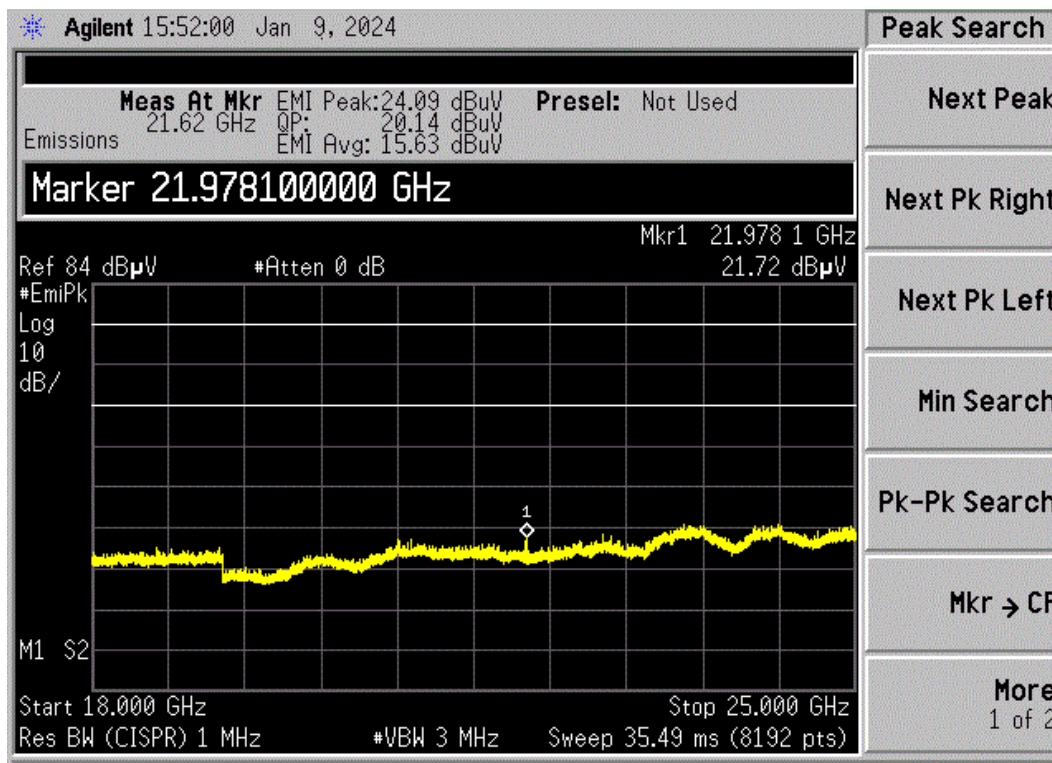


BLE
Vertical polarization
TX01
Range 18 GHz – 25 GHz

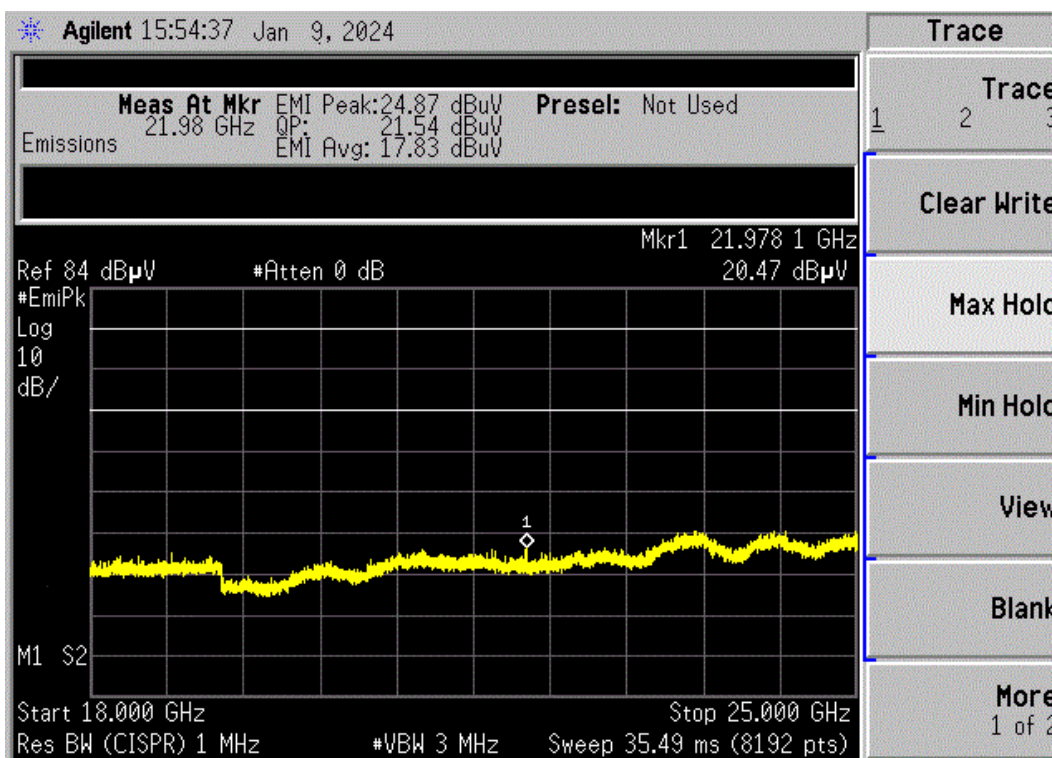


Frequency (GHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
21.62	1	24.09	74.00	49.91	15.63	54.00	38.37	59.90	Horizontal
21.62	2	25.95	74.00	48.05	20.28	54.00	33.72	240.20	Vertical

BLE
Horizontal polarization
TX02
Range 18 GHz – 25 GHz

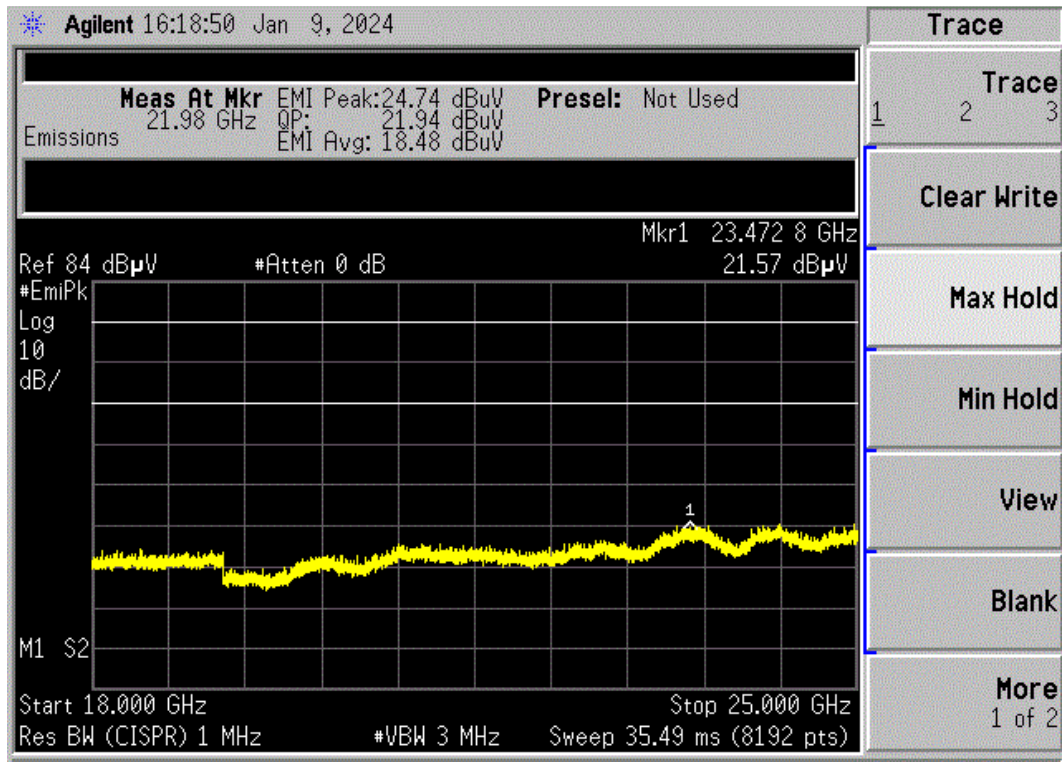


BLE
Vertical polarization
TX02
Range 18 GHz – 25 GHz

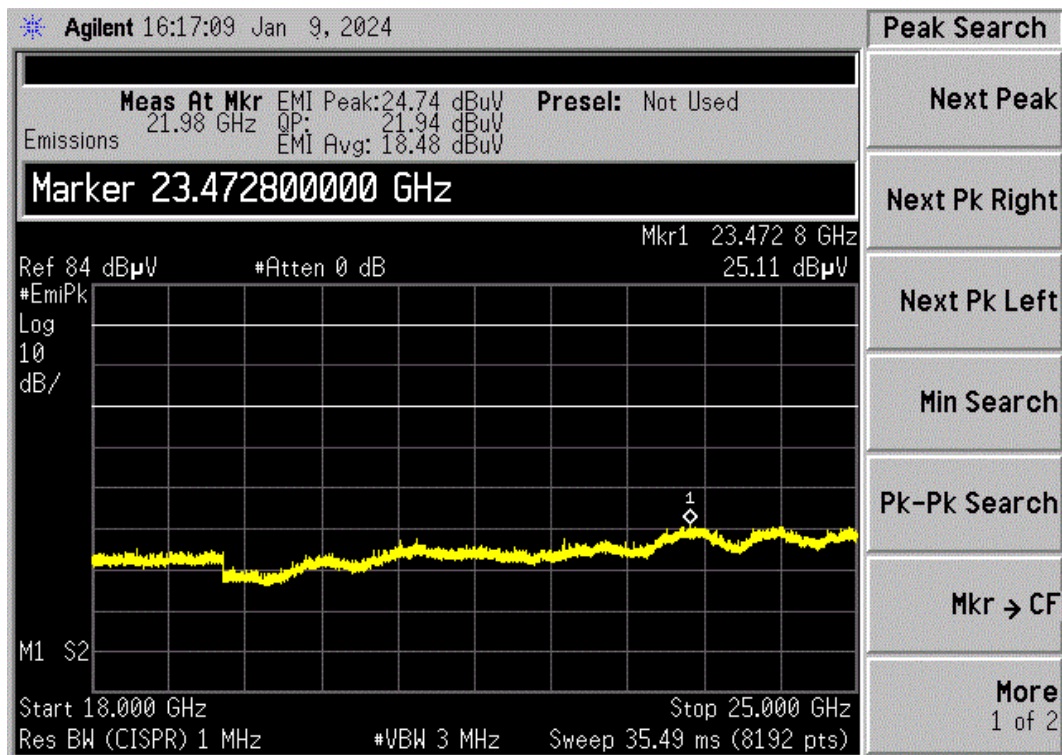


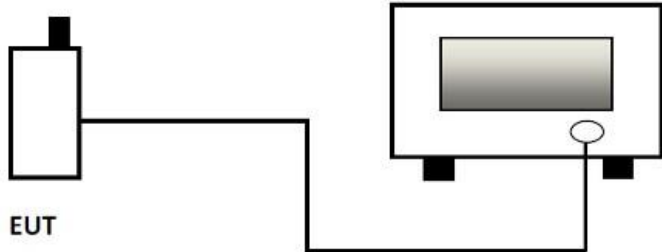
Frequency (GHz)	SR	Peak (dBμV/m)	LimPeak (dBμV/m)	Delta (dB)	CISPR AVG (dBμV/m)	Lim AVG (dBμV/m)	Delta AVG (dB)	Angle (deg)	Polarization
21.98	1	24.87	74.00	49.13	17.83	54.00	36.17	20.36	Horizontal
21.98	2	24.74	74.00	49.26	18.48	54.00	35.52	240.20	Vertical

BLE
Horizontal polarization
TX03
Range 18 GHz – 25 GHz



BLE
Vertical polarization
TX03
Range 18 GHz – 25 GHz



Test method:	FCC part 15 C - §15.247 (e) ISED RSS-247 Issue 3 Power spectral density For details see par. 4 of this report				
Operator	Marco Nicolè				
Test Date	2023-12-20				
Test Temperature	21 °C				
Test Humidity	31 %				
Test Pressure	1009 hPa				
Electrical wiring	Cable ---				Length [m] ---
Operating conditions	TX04; TX05; TX06 See par. 5 of this report				
Auxiliary equipment (AE)	See par. 3.5 of this report				
Limits	For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission				
Test set up	 Spectrum analyzer				
Test instrumentations	See Annex B				
Measurement Uncertainty (k=2)	See Annex F				
Test result	Operative condition	Frequency [MHz]	Amplitude [dBm]	Limit [dBm]	RESULT
1	TX04	2401	-6.438	+8	COMPLIES
2	TX05	2441	-4.773	+8	COMPLIES
3	TX0	2479	-6.762	+8	COMPLIES
Test Procedure	Use the following spectrum analyser settings: Span = 1.5* DTS Bandwidth RBW = 3 kHz ≤ RBW ≤ 100 kHz. VBW ≥ [3 × RBW] Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the peak marker function to determine the maximum amplitude level within the RBW. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.				
EUT modification during this test	None				

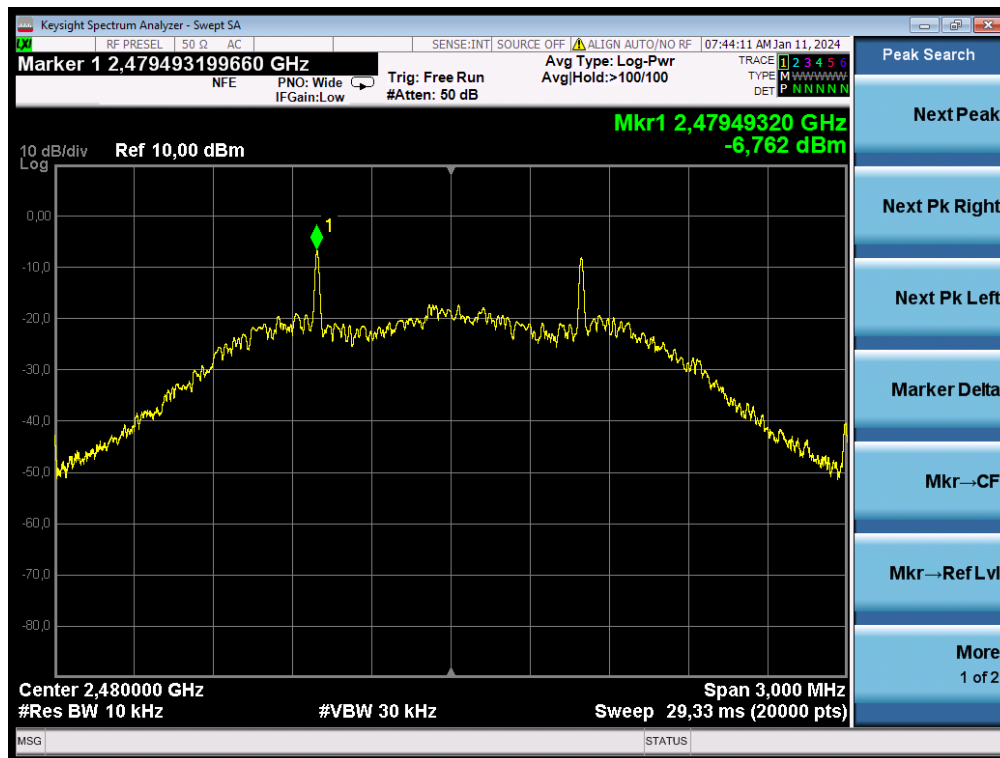
Test result TX01



Test result TX02



Test result TX03



Test method:	FCC part 15, subpart B, sez. 15.207 ISED RSS-247 Issue 3 ANSI C63.4 Measurement of disturbance voltage For details see par. 5 of this report	
Operator	Marco Nicolè	
Test Date	2023-12-22	
EUT Classification	Class: B	
Electrical wiring	Cable	Length [m]
	USB cable	1.0
Operating conditions	OC01 See par. 6 of this report	
Additional information	None	
Auxiliary equipment (AE)	See par. 3.4 of this report	
Frequency range	150 kHz ÷ 30 MHz	
Test set up	☐ Floor standing set up ☒ Table top set up	
Limits	In compliance with reference standard	
Port	DC. Input - LISN measurements	
Test instrumentations	See Annex B	
Measurement Uncertainty (k=2)	See Annex F	
EUT modification during this test	None	
Result	COMPLIES	
Note	---	

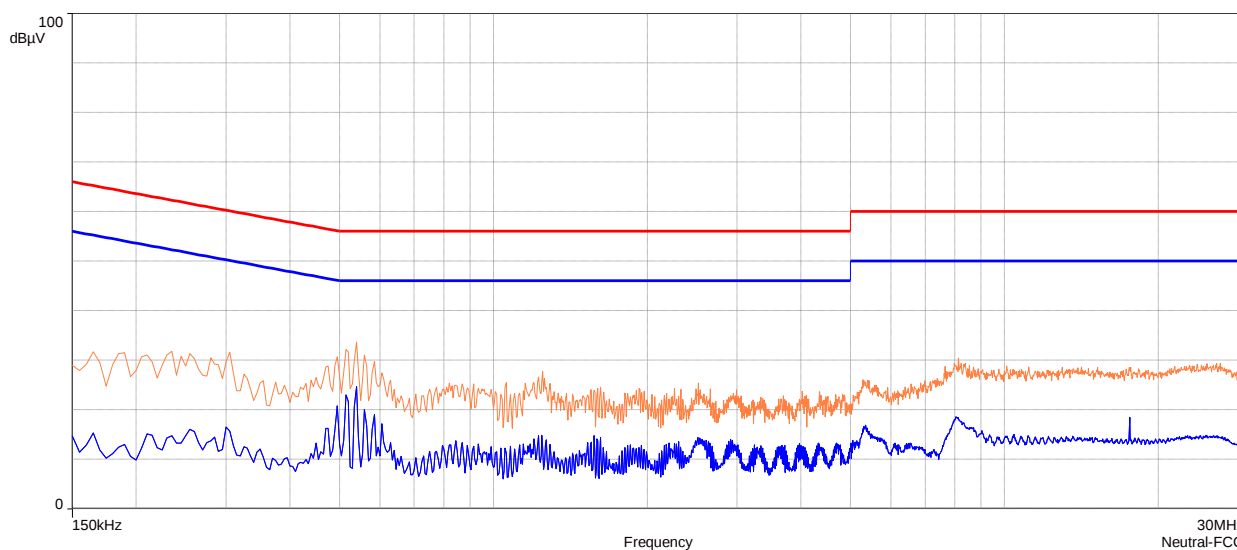
TEST GRAPHS AND MEASUREMENTS

All traces have been acquired with PK Peak detector (orange trace) and AVG Average detector (blue trace)
If PK trace exceeds QP Quasi-Peak limit, QP measurements are performed at discrete frequencies where the limit is exceeded. Measurement time for QP measurements is 15 s.

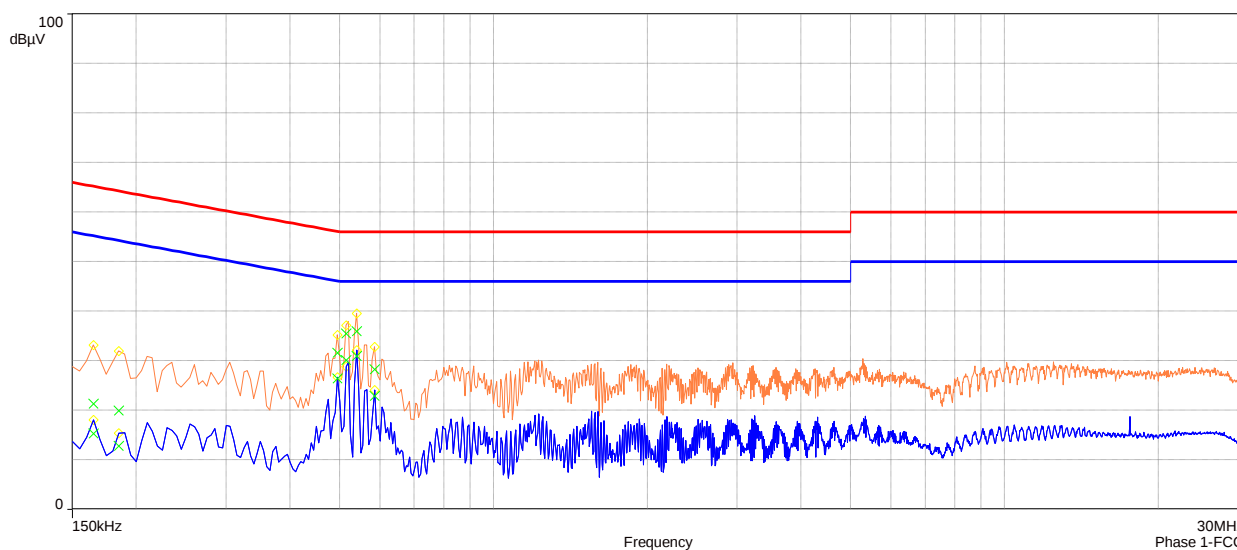
If the general level of the disturbance is not steady, also the AVG disturbance voltage level is observed for 15 s per frequency; results are reported in a specific table below the graph.

The final measurements are obtain consider the value read in the receiver minus the value of the column "Conversion Factor".

Measurement 01 A.C. Input - LISN measurements Line: Neutral Operating Condition: OC01



Measurement 02 A.C. Input - LISN measurements Line: Phase 1 Operating Condition: OC01



Frequency (MHz)	SR	AVG (dBμV)	QPeak (dBμV)	Lim AVG (dBμV)	Lim QPeak (dBμV)	AVG Margin (dB)	QPeak Margin (dB)	Line	Conversion Factor
0.165	2	15.32	21.31	55.21	65.21	-39.89	-43.90	Neutral	12.90
0.185	2	12.76	19.93	54.26	64.26	-41.50	-44.33	Neutral	12.58
0.495	2	26.39	31.60	46.08	56.08	-19.69	-24.48	Neutral	10.60
0.515	2	30.14	35.46	46.00	56.00	-15.86	-20.54	Neutral	10.58
0.54	2	30.94	35.96	46.00	56.00	-15.06	-20.04	Neutral	10.56
0.585	2	22.92	28.21	46.00	56.00	-23.08	-27.79	Neutral	10.52

7 EUT MODIFICATIONS

None.

Annex B Test instrumentations

FCC Part15

Description	Manufacturer	Model	Identifier	Cal data	Cal due
Software BAT-EMC	Nexio	BAT-EMC	1910/LAB --	--	--
Antenna - Horn Antenna 18 GHz ÷ 40 GHz	ETS-LINDGREN	3116	779/LAB	2023-10-18	2026-10-17
			Rapporto 6278		
Antenna - Horn Antenna 1 GHz ÷ 18 GHz	ETS-LINDGREN	3117	778/LAB	2023-10-12	2026-10-11
			Rapporto 6277		
EMI Receiver - PSA Spectrum Analyzer	Agilent Technologies	E4446A	740/LAB	2023-09-26	2024-09-25
			Rapporto 6190		
EMI Receiver	ROHDE&SCHWARZ	ESHS10 9kHz...30MHz	030L/CS	2023-06-06	2024-06-05
			Rapporto 6110		
Signal Generator	HEWLETT PACKARD	83640B	1388/LAB	2023-05-09	2025-05-08
			Rapporto 6093		
Pre-Amplifier 18 GHz ÷ 40 GHz	Spin Electronics	PRE-1840-35	759/LAB	2023-05-15	2025-05-14
			Rapporto 6090		
RF Cable - set of RF cables 769/LAB + 791/LAB + 938/LAB + Pre-Amplifier 758/LAB with cables			803/LAB	2023-04-06	2024-04-05
			Rapporto 6053		
Semianechoic Chamber	Albatross Projects GmbH		739/CA	2023-02-06	2025-02-05
			Rapporto 6030		
Semianechoic Chamber	Albatross Projects GmbH		739/CA	2023-02-02	2025-02-01
			Rapporto 6029		



Kiwa Creiven

Code 568/23/03709/RED



LAB N° 0259 L

Annex B Test instrumentations

RF cable - set of RF cables
(771/LAB + 791/LAB +
937/LAB)

802/LAB 2023-01-27 2024-01-27

Rapporto 5990

EMI Receiver - MXE

Keysight Technologies

N9038A

1444/LAB 2023-03-01 2024-02-29

Rapporto 5985



Kiwa Creiven



LAB N° 0259 L

Code 568/23/03709/RED

Annex D Auxiliary instrumentations

<i>Application</i>	<i>Description</i>	<i>Manufacturer</i>	<i>Model</i>	<i>Identifier</i>	<i>Cal. data</i>	<i>Cal. due</i>
Monitoring of environmental conditions	Climatic Sensor (pri site) - 739/LAB Emission Anec	HW group	HWg-STE	1299/LAB	2023-08-10	2024-08-09
Monitoring of environmental conditions	Climatic Sensor (pri site) - EMC Laboratory - ECAT	HW group	HWg-STE	1301/LAB	2023-08-10	2024-08-09
Monitoring of environmental conditions	Pressure Transducer	COMET	T7410	1530/LAB	2023-10-06	2025-10-05
Distance monitoring	Metro Laser	Leica	DISTO A2	1094/LAB	2023-11-10	2025-11-09

Annex F Compliance Decision Rule and measurements uncertainty

F1: Decision Rule

- A decision rule defines the role of uncertainty in assessing the conformity of measured values with respect to specification limits.
- The KIWA Creiven decision uses the “simple acceptance” rule, then the measure is assessed compliant with specifications if it is less or equal to the specification limit.
- The rule of simple acceptance is also called “shared risk” because the probability to be over the tolerance limit may be as high as 50% in the case when a measurement result is exactly on the tolerance limit (assuming a symmetric normal distribution of the measurements).
- This rule results in accordance with :
 - IEC Guide 115 Application of uncertainty of measurement to conformity assessment activities in the electrotechnical sector
 - ILAC-G8 Guidelines on the Reporting of Compliance with Specification
 - JGCM guide 106

F.2 Measurements uncertainty

	<i>Uncertainty (k=2)</i>
Frequency Readout – Conducted Test	
Test Uncertainty [kHz]	10.3
Frequency Readout – Radiated Test	
Test Uncertainty [kHz]	10.6
Effective radiated power ERP (30 MHz to 1000 MHz)	
Test Uncertainty [dB]	6.4
Effective radiated power EIRP (above 1 GHz)	
Test Uncertainty [dB]	6.6
Radiated receiver blocking tests (above 1 GHz)	
Test Uncertainty [dB]	4.9
Conducted spurious emissions	
Test Uncertainty [dB]	3.3
Radiated spurious emissions	
Test Uncertainty [dB]	5.8
Channel power	
Test Uncertainty [dB]	2.6
Adjacent channel power	
Test Uncertainty [dB]	2.2
RF Output power (EIRP)	
Test Uncertainty [dB]	2.3
Occupied Channel Bandwidth	
Test Uncertainty [Hz]	[span/600]

--- End of test report ---