FCC PART 15.247

TEST REPORT

For

Chengdu Ebyte Electronic Technology Co., Ltd

Building B2, Mould Industrial Park, 199# Xi-Qu Ave, West High-tech Zone, Chengdu, 611731, Sichuan, China

Tested Model: E104-BT52X
FCC ID: 2A8C3-E104BT52X

Report Type:	**Product Name:**
Original Report	Bluetooth module

Report Number:	RSC250715002-0
Date of Report Issue:	2025-08-11
Reviewed By:	Sula Huang
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Chengdu) No.5040, Huilongwan Plaza, No. 1, Shawan Road, Jinniu District, Chengdu, Sichuan, China Tel: +86-28-65525123 Fax: +86-28-65525125 www.baclcorp.com

TABLE OF CONTENTS

GENERAL INFORMATION **4**
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) 4
OBJECTIVE 4
MEASUREMENT UNCERTAINTY 5
TEST METHODOLOGY 5
TEST FACILITY 5
SYSTEM TEST CONFIGURATION **6**
DESCRIPTION OF TEST CONFIGURATION* 6
EQUIPMENT MODIFICATIONS 6
EUT EXERCISE SOFTWARE* 6
SUPPORT TEST DEVICES DESCRIPTION 7
SUPPORT TEST CABLE DESCRIPTION 7
BLOCK DIAGRAM OF TEST SETUP 8
SUMMARY OF TEST RESULTS **10**
TEST EQUIPMENTS LIST **11**
FCC §15.247(i), §1.1307(b)(3)(i) - RF Exposure **13**
APPLICABLE STANDARD 13
RF EXPOSURE EVALUATION RESULT 13
FCC §15.203 - ANTENNA REQUIREMENT **14**
APPLICABLE STANDARD 14
ANTENNA INFORMATION* 14
FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS **15**
APPLICABLE STANDARD 15
EUT SETUP 15
EMI TEST RECEIVER SETUP 15
TEST PROCEDURE 16
CORRECTED AMPLITUDE & MARGIN CALCULATION 16
TEST DATA 16
FCC §15.209, §15.205 & §15.247(d) - RADIATED SPURIOUS EMISSIONS & BAND EDGE & CONDUCTED SPURIOUS EMISSION AT ANTENNA PORT **19**
APPLICABLE STANDARD 19
EUT SETUP 19
EMI TEST RECEIVER & SIGNAL ANALYZER SETUP 20
TEST PROCEDURE 21
CORRECTED AMPLITUDE & MARGIN CALCULATION 21
CONDUCTED SPURIOUS EMISSION AT ANTENNA PORT: 21
TEST SETUP BLOCK 21
TEST DATA 22
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH **50**
APPLICABLE STANDARD 50
TEST PROCEDURE 50
TEST SETUP BLOCK 50
TEST DATA 51
FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER **53**
APPLICABLE STANDARD 53
TEST PROCEDURE 53
TEST SETUP BLOCK 53

TEST DATA 54

FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE 56

APPLICABLE STANDARD 56
TEST PROCEDURE 56
TEST SETUP BLOCK 56
TEST DATA 56

FCC §15.247(e) - POWER SPECTRAL DENSITY 58

APPLICABLE STANDARD 58
TEST PROCEDURE 58
TEST SETUP BLOCK 58
TEST DATA 59

DUTY CYCLE 61

TEST PROCEDURE 61
TEST SETUP BLOCK 61
TEST DATA 61

LABELLING AND LOCATION 63

TEST SETUP PHOTOGRAPHS 64

EUT PHOTOGRAPHS 65

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Chengdu Ebyte Electronic Technology Co., Ltd
Address	Building B2, Mould Industrial Park, 199# Xi-Qu Ave, West High-tech Zone, Chengdu, 611731, Sichuan, China
Email	157768495@qq.com
Product	Bluetooth module
Tested Model	E104-BT52X
FCC ID	2A8C3-E104BT52X
Frequency*	2402-2480 MHz
Modulation Type*	GFSK
Antenna Gain*	4.41dBi
RF peak output power	-0.99 dBm
Voltage*	DC 2.1V – 3.6V (Typical: 3.3V)
Measure approximately	10mm (L) × 10mm (W) × 2.4mm (H)
Sample serial number	250715002/01 (AC Line Conducted Emissions&RF Radiated Test&RF Conducted Test)(assigned by the BACL, Chengdu)
Sample/EUT Status	The test sample was in good condition and received: 2025-07-15

Note: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Objective

This report is prepared on behalf of **Chengdu Ebyte Electronic Technology Co., Ltd** in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communications Commission's rules.

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Measurement Uncertainty

Item			Measurement Uncertainty	U_{cispr}
AC power line conducted emission			2.65dB	3.4dB
Radiated Emission	9kHz-30MHz		4.47dB	-
	30MHz-1GHz	H	6.08dB	6.3 dB
		V	7.81dB	6.3 dB
	1GHz-6GHz		5.83dB	5.2 dB
	6GHz-18GHz		6.01dB	5.5 dB
	18GHz-40GHz		6.60dB	-

Item	Measurement Uncertainty
RF output power, conducted	±0.61dB
Occupied Bandwidth	±1.69%
Power Spectrum Density, conducted	±2.52dB
Humidity	±5%
Temperature	±1℃
Voltage(DC)	±0.4%
Time	1%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the corresponding inclusion factor K when the inclusion probability is about 95%.

Test Methodology

All measurements contained in this report were conducted with:

1. ANSI C63.10-2020 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.
2. KDB558074 D01 15.247 Meas Guidance v05r02.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Chengdu) to collect test data is located No.5040, Huilongwan Plaza, No. 1, Shawan Road, Jinniu District, Chengdu, Sichuan, China.

Bay Area Compliance Laboratories Corp. (Chengdu) lab is accredited to ISO/IEC 17025 by NVLAP (Lab code: 600346-0) and the FCC designation No.: CN5056.

SYSTEM TEST CONFIGURATION

Description of Test Configuration*

The system was configured in testing mode, which was provided by manufacturer.

For Bluetooth LE, 40 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	…	…
…	…	…	…
…	…	…	…
..	…	38	2478
19	2440	39	2480

Tested with channel 0, 19 and 39.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software*

The setting by the software as following table:

Test Mode	Test Software	XCOM V2.6 & E28_RF_Setting V2.0		
BLE 1M	Test Frequency	2402 MHz	2440 MHz	2480 MHz
	Data Rate	1Mbps	1Mbps	1Mbps
	Power Level	0	0	0

Support Test Devices Description

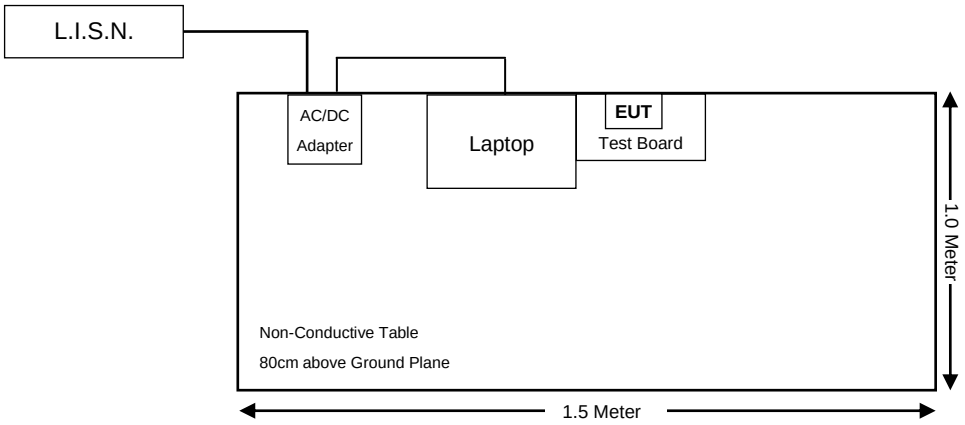
Manufacturer	Device Name	Model	Serial Number
Local			
Ebyte	Test Board	V1.0	10837
Lenovo	Laptop	Lenovo idea pad 110-15ISK	MP16ZUWP
Lenovo	AC/DC Adapter	ADLX45NDC2A	SA10E75790

Support Test Cable Description

Cable Description	Length (m)	From / Port	To
Unshielded AC Power Cable	1.5	L.I.S.N.	AC/DC Adapter
Unshielded DC Power Cable	1.5	AC/DC Adapter	Laptop
Unshielded USB Cable	1.1	Test Board	Laptop

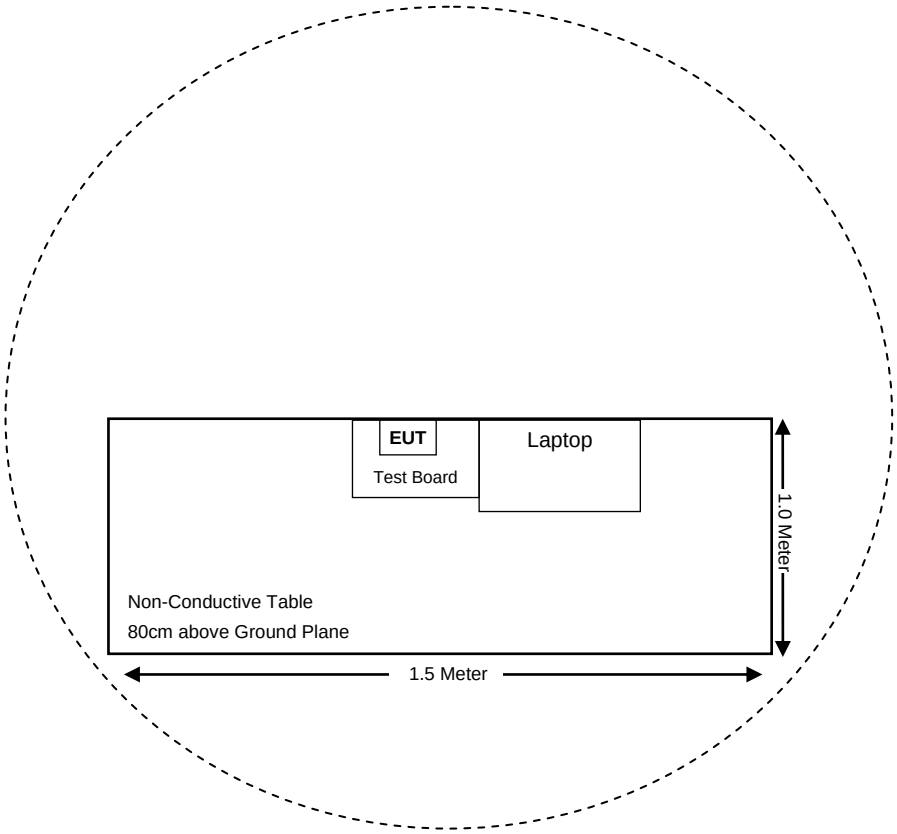
Block Diagram of Test Setup

Conducted Emissions:

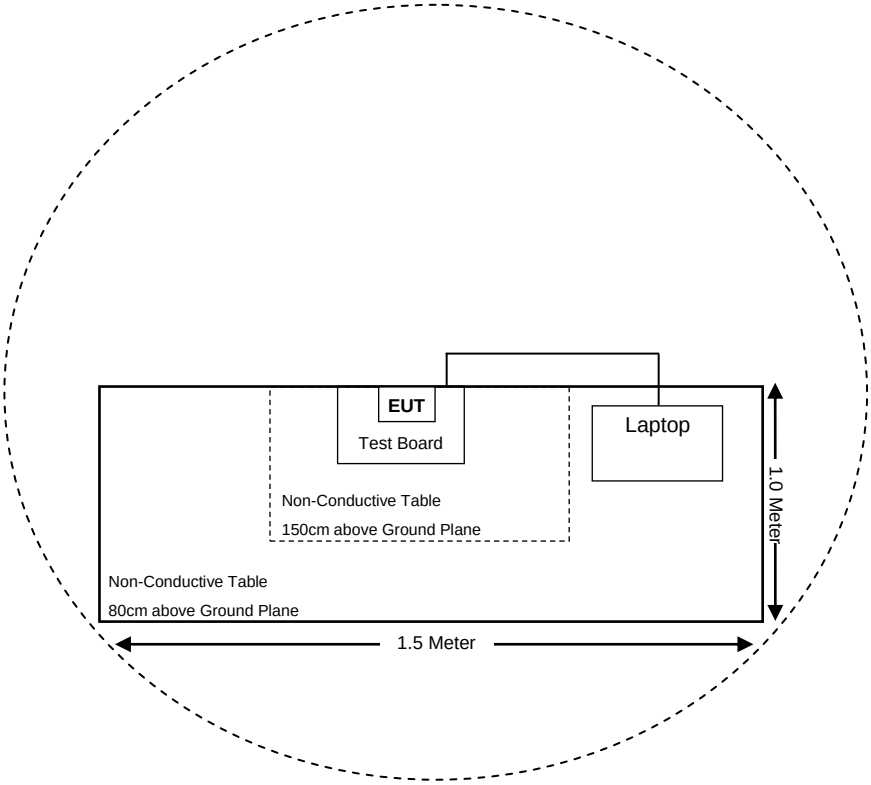


Radiated Emissions

Below 1GHz:



Above 1GHz:


EUT
Test Board
Laptop
Non-Conductive Table
150cm above Ground Plane
Non-Conductive Table
80cm above Ground Plane
1.0 Meter
1.5 Meter

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247(i), §1.1307(b)(3)(i)	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Raidated Spurious Emissions	Compliant
§15.247(d)	Conducted Spurious Emissions at Antenna Terminal	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	Maximum conducted output power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

TEST EQUIPMENTS LIST

Manufacturer	Description	Model Number	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions					
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2025-03-27	2026-03-26
Rohde & Schwarz	L.I.S.N.	ENV216	101112	2025-03-27	2026-03-26
HP	RF Limiter	11947A	3107A01270	2024-08-03	2025-08-02
UTIFLEX	Conducted Cable	L-E-003	000003	2024-08-03	2025-08-02
Rohde & Schwarz	EMC32	EMC32	V 8.52.0	NCR	NCR
Radiated Emissions (9kHz-30MHz)					
EMCT	Semi-Anechoic Chamber	966	001	2023-04-15	2026-04-14
Rohde & Schwarz	EMI Test Receiver	ESR3	102456	2025-03-27	2026-03-26
BACL CORP	Active Loop Antenna	1313-1A	4031411	2025-06-09	2026-06-08
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J-N/J-2M-A	T-E271	2024-11-18	2025-11-17
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J-N/J-7M-A	T-E268	2024-11-18	2025-11-17
Rohde & Schwarz	EMC32	EMC32	V9.10.00	NCR	NCR
Radiated Emissions (30MHz-1GHz)					
EMCT	Semi-Anechoic Chamber	966	001	2023-04-15	2026-04-14
Sonoma Instrument	Pre-Amplifier	310 N	185444	2025-03-27	2026-03-26
Sunol Sciences	Broadband Antenna	JB3	A121808	2025-01-16	2026-01-15
INMET	Attenuator	18N-6dB	64671	2025-01-16	2026-01-15
Rohde & Schwarz	EMI Test Receiver	ESR3	102456	2025-03-27	2026-03-26
Huber+Suhener	RF Cable (Below 1GHz)	L-E-015	MY4345/EA	2024-11-18	2025-11-17
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J-N/J-2M-A	T-E271	2024-11-18	2025-11-17
Xin Hang Xun Wei Bo	RF Cable (Below 1GHz)	XH500A-N/J-N/J-7M-A	T-E268	2024-11-18	2025-11-17
Rohde & Schwarz	EMC32	EMC32	V9.10.00	NCR	NCR

Manufacturer	Description	Model Number	Serial Number	Calibration Date	Calibration Due Date
Radiated Emissions (1GHz-18GHz)					
EMCT	Semi-Anechoic Chamber	966	001	2023-04-15	2026-04-14
Rohde & Schwarz	Signal Analyzer	FSV40	101943	2025-03-26	2026-03-25
Rohde & Schwarz	EMI Test Receiver	ESIB40	100215	2025-03-27	2026-03-26
ETS	Horn Antenna	3115	003-6076	2024-08-16	2025-08-15
A.H. Systems, inc.	Pre-Amplifier	PAM-0118P	509	2024-08-07	2025-08-06
Xin Hang Xun Wei Bo	RF Cable (Above 1GHz)	XH500A-SMA/J-N/J-2M-A	L-E-016	2024-12-12	2025-12-11
Xin Hang Xun Wei Bo	RF Cable (Above 1GHz)	XH500A-SMA/J-N/J-5M-A	L-E-017	2024-12-12	2025-12-11
MICRO-TRONICS	2.4GHz Notch Filter	BRM50702	G396	2025-05-17	2026-05-16
Rohde & Schwarz	EMC32	EMC32	V9.10.00	NCR	NCR
Radiated Emissions (18GHz-25GHz)					
EMCT	Semi-Anechoic Chamber	966	001	2023-04-15	2026-04-14
Rohde & Schwarz	Signal Analyzer	FSV40	101943	2025-03-26	2026-03-25
Rohde & Schwarz	EMI Test Receiver	ESIB40	100215	2025-03-27	2026-03-26
A.H. Systems, inc.	Hom-Antenna	SAS-574	505	2024-08-19	2025-08-18
BACL	Pre-Amplifier	BACL-1313-A1840	4051711	2024-12-04	2025-12-03
Xin Hang Xun Wei Bo	RF Cable (Above 18GHz)	XH360A-2.92/J-2.92/J-1.5M-A	T-E302	2025-06-02	2026-06-01
Rohde & Schwarz	EMC32	EMC32	V9.10.00	NCR	NCR
RF Conducted Test					
Rohde & Schwarz	Signal Analyzer	FSV40	101943	2025-03-26	2026-03-25
MIDWEST	6dB Attenuator	219	AA4305	2025-02-28	2026-02-27
Astrolab	RF Coaxial Cable	MINIREND-5	1206	2024-10-18	2025-10-17

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Chengdu) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.247(i), §1.1307(b)(3)(i) - RF Exposure

Applicable Standard

According to §1.1307(b)(3)(i), 447498 D04 Interim General RF Exposure Guidance v01

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C)—Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3–1.34	1,920 R^2.
1.34–30	3,450 R^2/f^2.
30–300	3.83 R^2.
300–1,500	0.0128 R^2f.
1,500–100,000	19.2R^2.

RF Exposure Evaluation Result

Frequency (MHz)	Tune-up Conducted Power* (dBm)	Ant Gain* (dBi)	Evaluation Distance (mm)	ERP		ERP Limit (mW)	Exemption
				(dBm)	(mW)		
2402-2480	0.50	4.41	200	2.76	1.89	768	Compliant

Note: dBi=dBd+2.15

Result: The device meets the Exemption at 20cm distances.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, 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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. The unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Information*

The EUT has one ROD antenna with SMA-K connector and the maximum antenna gain is 4.41dBi, which fulfill the requirement of this section. Please refer to the EUT photos.

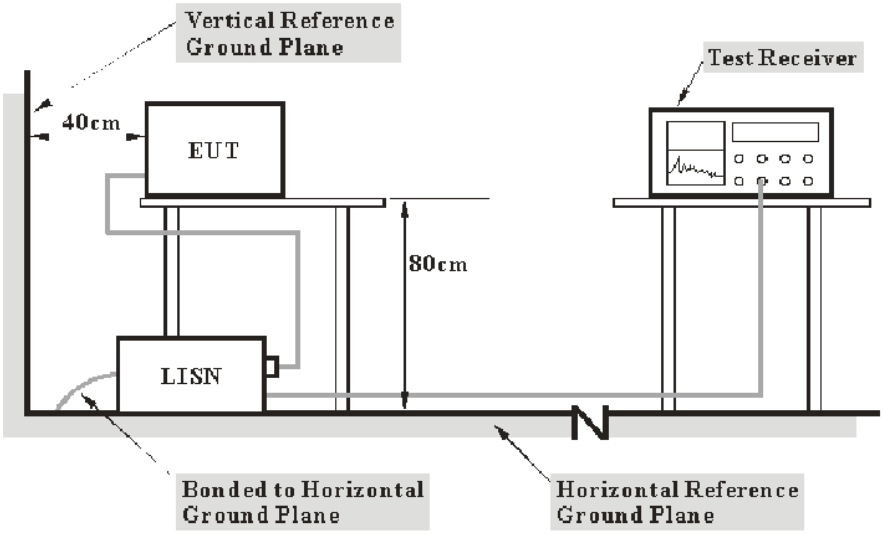
Result: Compliance

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter of laptop was connected to the first L.I.S.N.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Data

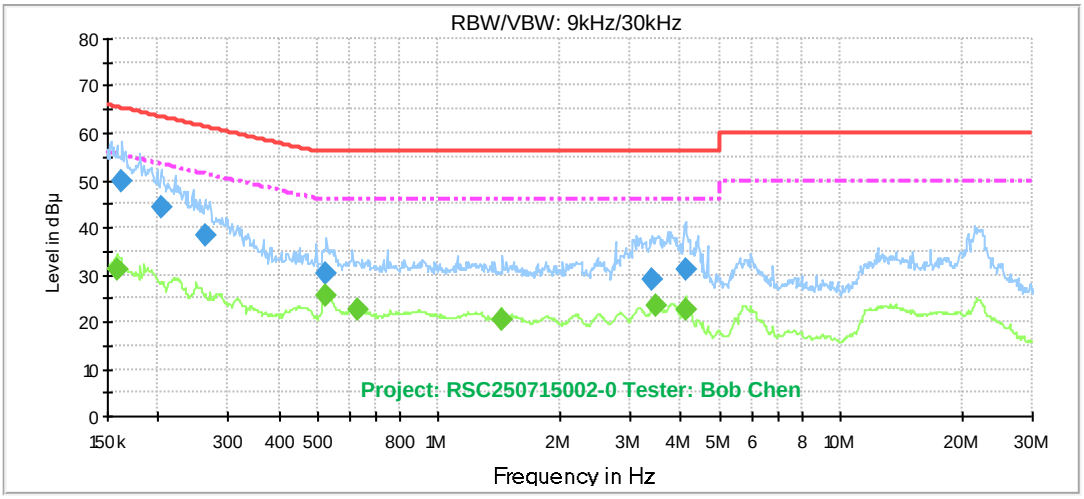
Test Environment Conditions

Temperature:	27 °C
Relative Humidity:	55 %
ATM Pressure:	94.0 kPa

The testing was performed by Bob Chen on 2025-07-17.

Test Mode: Transmitting_ low channel_maximum transmitting power mode

AC120V/60Hz, Line:

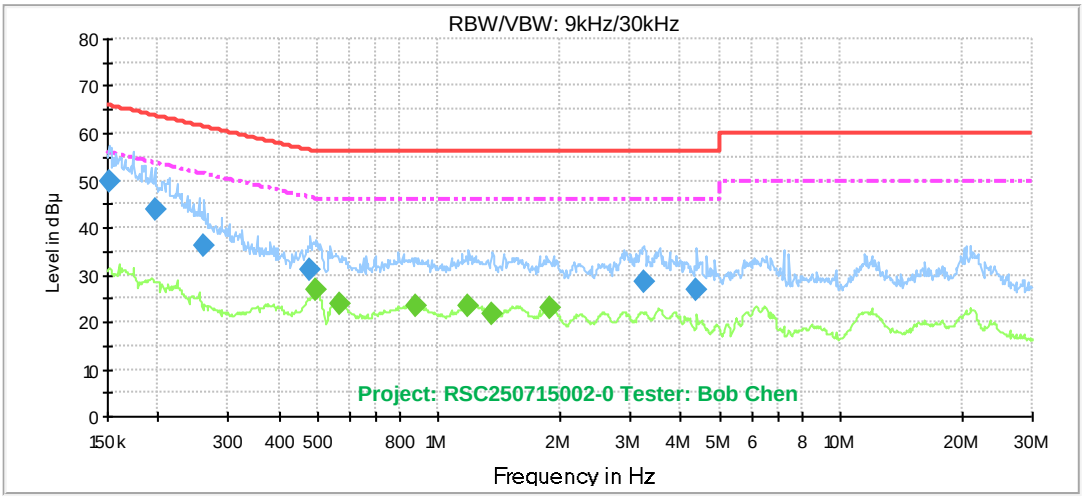


Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.163273	49.9	5000.0	9.000	On	L1	20.7	15.4	65.3
0.203339	44.4	5000.0	9.000	On	L1	20.8	19.1	63.5
0.262235	38.4	5000.0	9.000	On	L1	20.8	22.9	61.4
0.524533	30.4	5000.0	9.000	On	L1	20.8	25.6	56.0
3.387507	29.1	5000.0	9.000	On	L1	20.8	26.9	56.0
4.114874	31.2	5000.0	9.000	On	L1	20.7	24.8	56.0

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158459	31.0	5000.0	9.000	On	L1	20.7	24.6	55.5
0.524533	25.5	5000.0	9.000	On	L1	20.8	20.5	46.0
0.627699	22.5	5000.0	9.000	On	L1	20.8	23.5	46.0
1.436539	20.5	5000.0	9.000	On	L1	20.8	25.5	46.0
3.473045	23.6	5000.0	9.000	On	L1	20.8	22.4	46.0
4.114874	22.6	5000.0	9.000	On	L1	20.7	23.4	46.0

Note:
1) Corrected Amplitude = Reading + Correction Factor
2) Correction Factor =LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter
3) Margin = Limit – Corrected Amplitude

AC120V/60Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.151504	49.7	5000.0	9.000	On	N	20.8	16.2	65.9
0.197344	43.9	5000.0	9.000	On	N	20.8	19.8	63.7
0.260930	36.0	5000.0	9.000	On	N	20.7	25.4	61.4
0.479495	31.2	5000.0	9.000	On	N	20.7	25.2	56.3
3.238811	28.3	5000.0	9.000	On	N	20.9	27.7	56.0
4.390514	26.9	5000.0	9.000	On	N	20.8	29.1	56.0

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.496531	26.6	5000.0	9.000	On	N	20.7	19.4	46.1
0.565280	24.0	5000.0	9.000	On	N	20.7	22.0	46.0
0.876753	23.4	5000.0	9.000	On	N	20.8	22.6	46.0
1.188522	23.6	5000.0	9.000	On	N	20.8	22.4	46.0
1.359849	21.6	5000.0	9.000	On	N	20.9	24.4	46.0
1.889953	22.8	5000.0	9.000	On	N	20.9	23.2	46.0

Note:
1) Corrected Amplitude = Reading + Correction Factor
2) Correction Factor =LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter
3) Margin = Limit – Corrected Amplitude

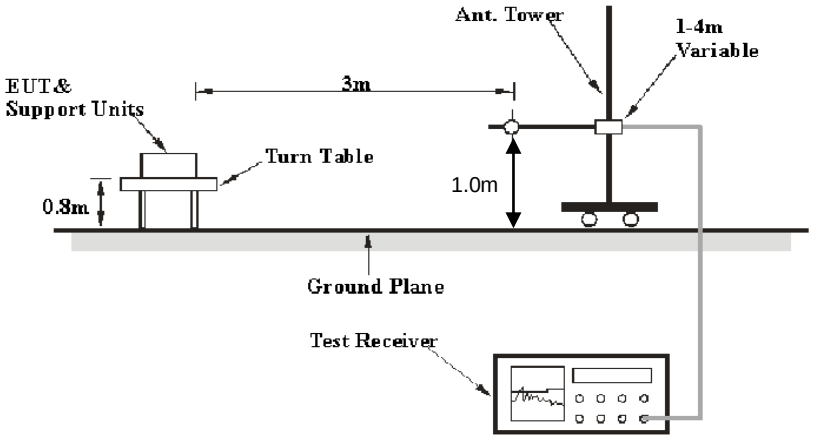
FCC §15.209, §15.205 & §15.247(d) - RADIATED SPURIOUS EMISSIONS & BAND EDGE & CONDUCTED SPURIOUS EMISSION AT ANTENNA PORT

Applicable Standard

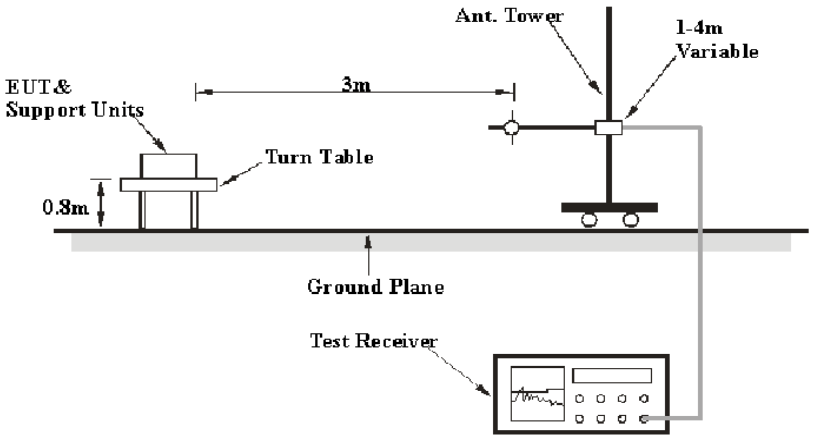
FCC §15.247 (d); §15.209; §15.205

EUT Setup

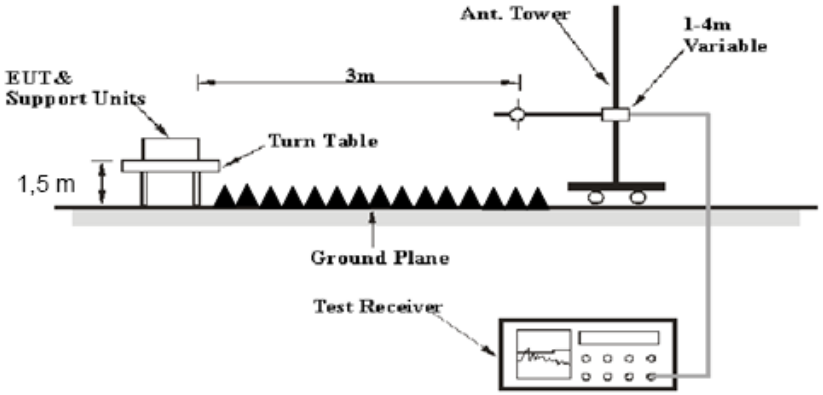
9kHz - 30MHz:



30MHz - 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209, and FCC 15.247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

EMI Test Receiver & Signal Analyzer Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver or Signal Analyzer was set with the following configurations:

Frequency Range	RBW	Video B/W	Measurement	Detector
9 kHz – 150 kHz	200 Hz	1 kHz	PK	PK
	200 Hz	/	QP	QP
150 kHz – 30 MHz	9 kHz	30 kHz	PK	PK
	9 kHz	/	QP	QP
30 MHz – 1000 MHz	120 kHz	500 kHz	PK	PK
	120 kHz	/	QP	QP

Mode	Frequency Range	Duty Cycle	RBW	Video B/W	Measurement	Detector
SPA	Above 1GHz	Any	1 MHz	3 MHz	PK	PK
		＞98%	1 MHz	10Hz	AV	PK
		＜98%	1 MHz	≥1/T_{on}	AV	PK
EMI	Above 1GHz	Pre-scan				
		Any	1 MHz	3 MHz	PK	PK
		Any	1 MHz	3 MHz	AV	AV
		Final measurement				
		Any	1 MHz	/	PK	PK
		Any	1 MHz	/	AV	CAV

Note: T_{on} is minimum transmission duration.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1GHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

If the peak detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude (MaxPeak or QuasiPeak)= Meter Reading + Antenna Loss + Cable Loss- Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

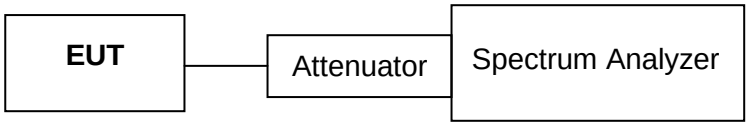
Margin = Limit –Corrected Amplitude

Conducted Spurious Emission At Antenna Port:

Connect the antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The instrument shall span 30 MHz to 10 times the operating frequency in GHz, with a resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector.

a) Set the center frequency and span to encompass frequency range to be measured.
b) Set the RBW = 100 kHz.
c) Set the VBW ≥ [3 × RBW].
d) Detector = peak.
e) Sweep time = No faster than coupled (auto) time.
f) Trace mode = max-hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum unwanted emissions amplitude level.

Test Setup Block



Note: Offset (6.5dB) = 6dB Attenuator(6dB) + RF cable loss(0.5dB)

Test Data

Test Environment Conditions

Temperature:	27 °C
Relative Humidity:	55 °C
ATM Pressure:	94.0 kPa

The testing was performed by Bob Chen on 2025-07-17.

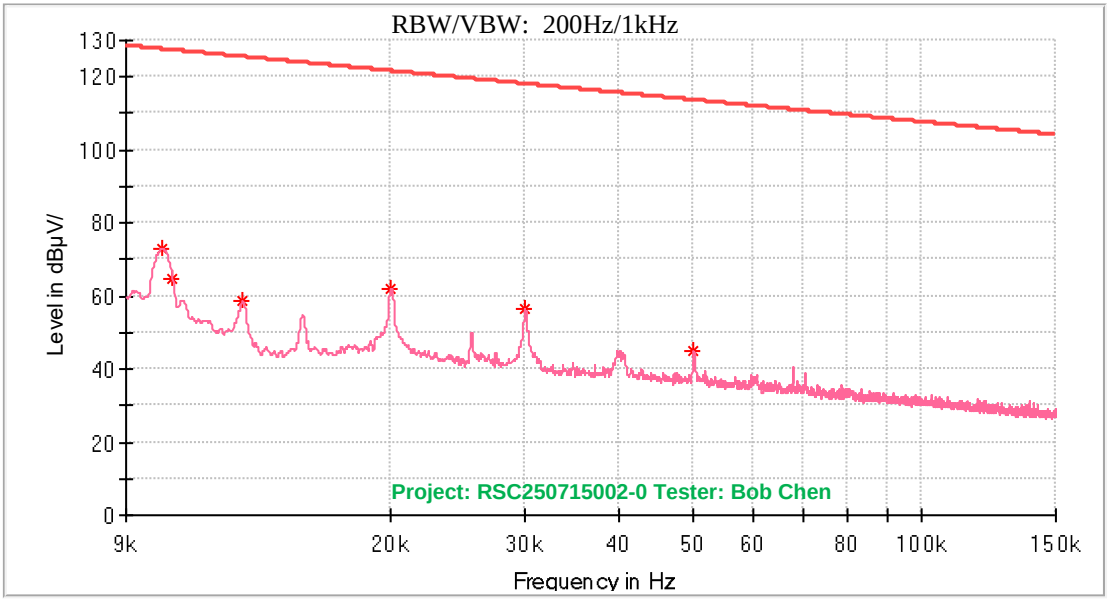
Test Mode: Transmitting

Note: Pre-scan and configuration EUT with X, Y and Z-axis, the Y-axis is the worst case.

Radiated Spurious Emissions:

1) 9 kHz to 150 kHz_low channel_ maximum transmitting power mode

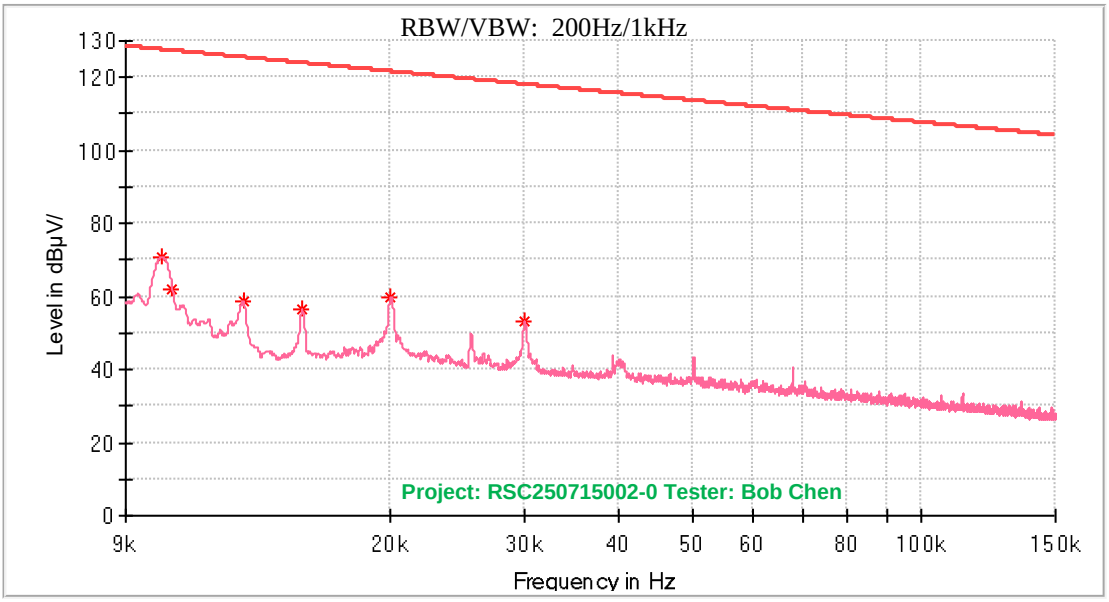
Parallel



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB)
0.010058	73.21	127.54	54.33	25.4
0.010375	64.50	127.27	62.76	25.1
0.012807	58.52	125.44	66.92	22.9
0.020068	62.04	121.54	59.49	23.2
0.030132	56.33	118.01	61.68	22.2
0.050207	44.77	113.58	68.81	19.3

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

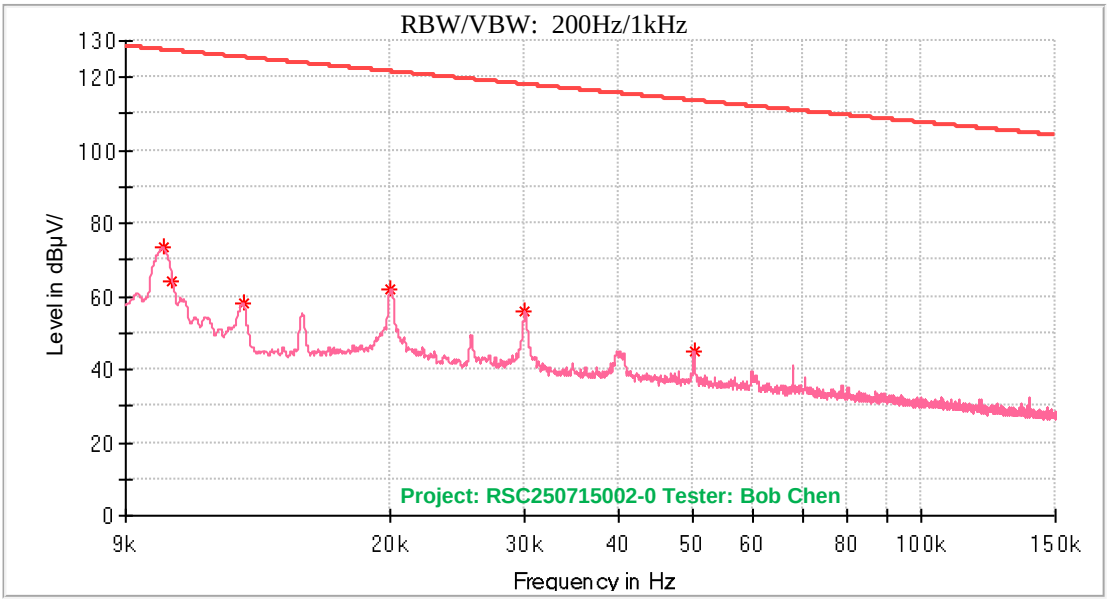
Perpendicular



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB)
0.010040	71.01	127.55	56.54	25.5
0.010375	62.07	127.27	65.19	25.1
0.012842	58.49	125.41	66.93	22.8
0.015345	56.25	123.87	67.62	22.6
0.020086	59.74	121.53	61.79	23.2
0.030115	53.34	118.01	64.68	22.2

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

Ground Parallel

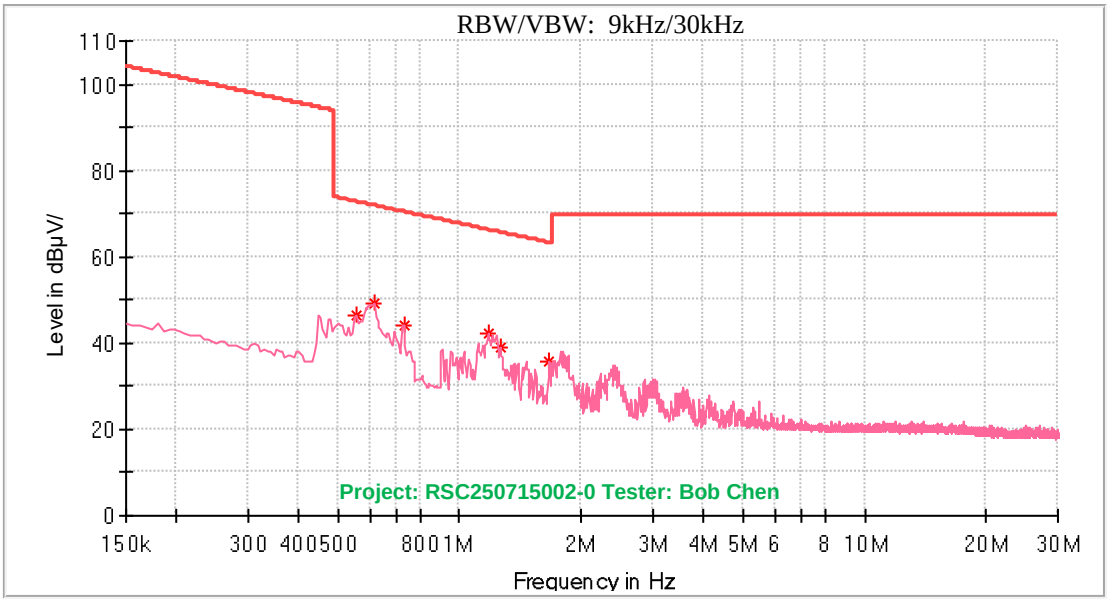


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB)
0.010075	73.38	127.52	54.14	25.4
0.010375	64.17	127.27	63.10	25.1
0.012842	58.29	125.41	67.13	22.8
0.020086	62.18	121.53	59.35	23.2
0.030132	56.02	118.01	61.99	22.2
0.050225	45.04	113.57	68.54	19.3

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

2) 150 kHz to 30 MHz_low channel_ maximum transmitting power mode

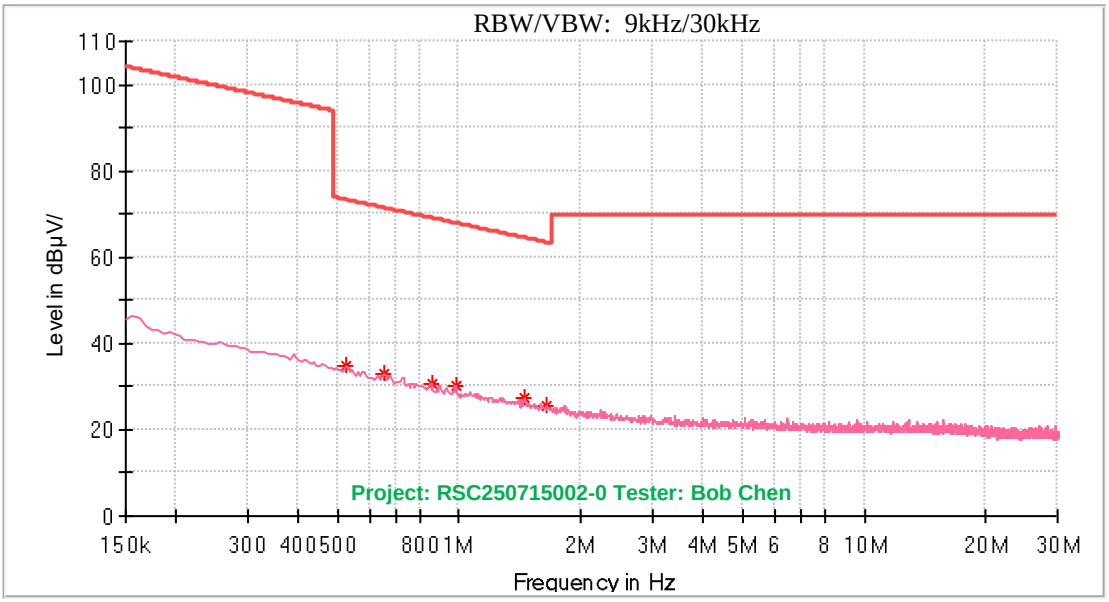
Perpendicular



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB)
0.555960	46.26	72.71	26.45	-0.3
0.615660	49.05	71.82	22.77	-1.0
0.729090	44.09	70.36	26.27	-2.3
1.176840	42.25	66.21	23.96	-5.1
1.260420	38.88	65.62	26.74	-5.4
1.666380	35.72	63.20	27.48	-6.7

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

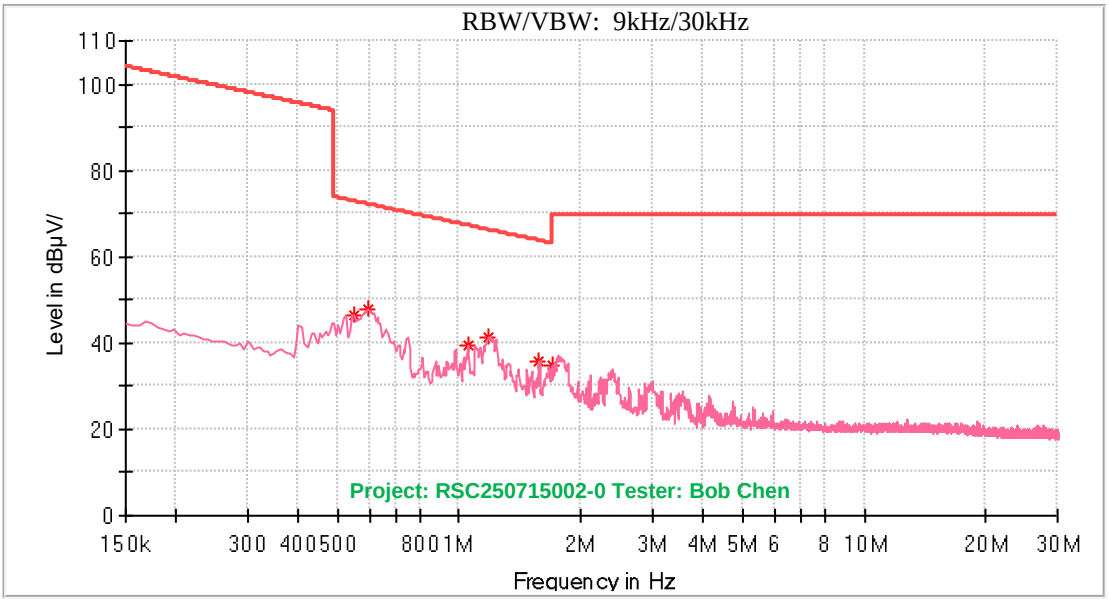
Parallel



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB)
0.526110	34.62	73.18	38.57	0.1
0.651480	33.11	71.33	38.23	-1.5
0.854460	30.55	68.98	38.43	-3.4
0.979830	30.26	67.80	37.54	-4.2
1.451460	27.55	64.39	36.85	-6.1
1.642500	25.32	63.32	38.00	-6.7

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

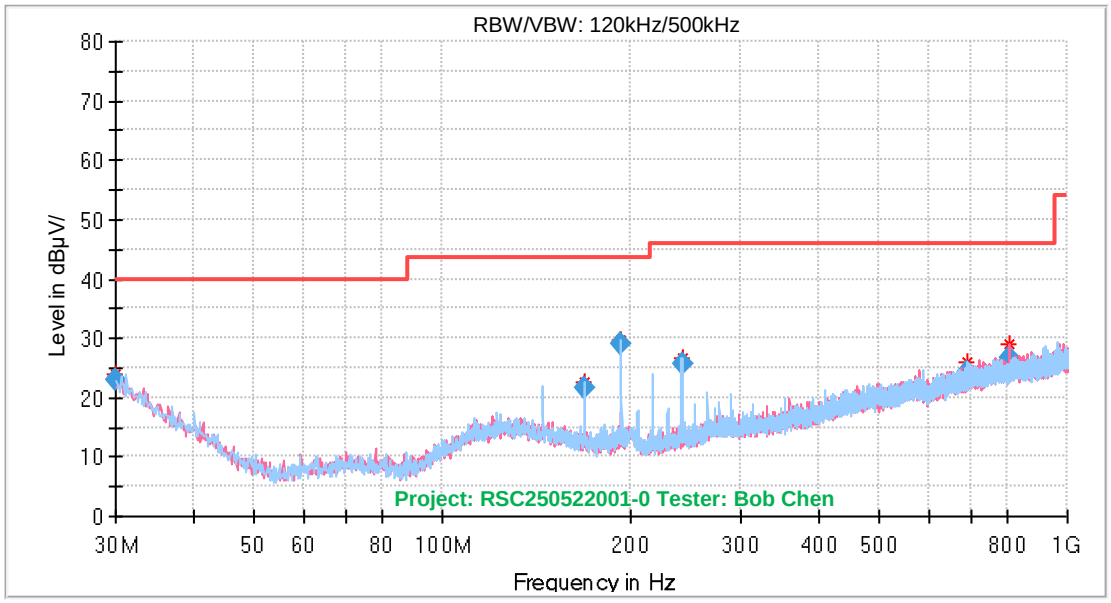
Ground Parallel



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Corr. (dB)
0.549990	46.54	72.80	26.26	-0.2
0.597750	47.93	72.08	24.14	-0.8
1.051470	39.58	67.19	27.60	-4.6
1.182810	41.52	66.17	24.65	-5.1
1.576830	35.96	63.68	27.72	-6.5
1.690260	34.70	63.08	28.38	-6.8

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

3) 30 MHz to 1 GHz_low channel_ maximum transmitting power mode



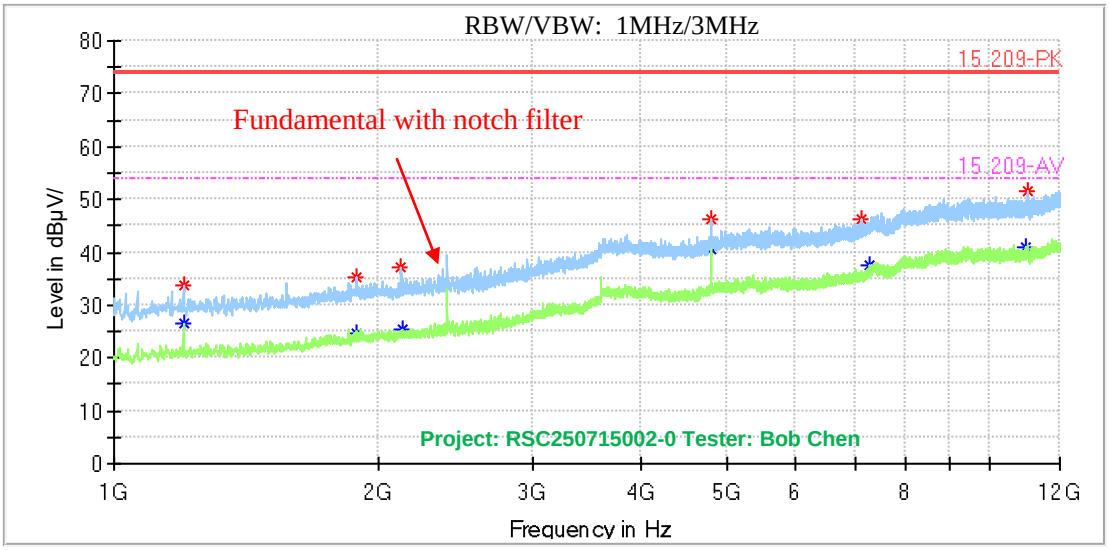
Frequency (MHz)	QuasiPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.092900	22.84	40.00	17.16	1000.0	120.000	102.0	H	346.0	-4.8
169.106580	21.57	43.50	21.93	1000.0	120.000	124.0	H	208.0	-14.1
193.129250	28.95	43.50	14.55	1000.0	120.000	124.0	H	202.0	-13.9
241.526430	25.76	46.00	20.24	1000.0	120.000	123.0	H	0.0	-13.3
689.486440	24.37	46.00	21.63	1000.0	120.000	108.0	H	174.0	-4.0
807.668180	26.77	46.00	19.23	1000.0	120.000	104.0	V	167.0	-2.2

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

4) 1GHz-12GHz

Note: If the peak detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

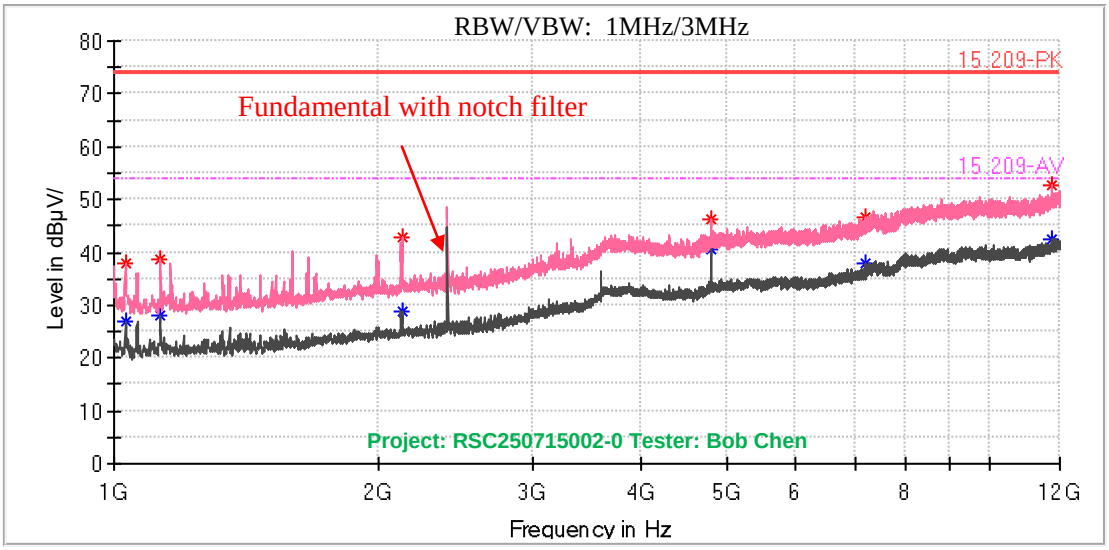
Low Channel_Horizontal



Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
1200.200000	---	26.65	54.00	27.35	H	-17.6
1200.200000	33.70	---	74.00	40.30	H	-17.6
1886.600000	---	24.52	54.00	29.48	H	-14.2
1891.000000	35.33	---	74.00	38.67	H	-14.1
2128.600000	37.28	---	74.00	36.72	H	-13.7
2129.700000	---	25.27	54.00	28.73	H	-13.7
4803.800000	46.14	---	74.00	27.86	H	-5.1
4803.800000	---	40.56	54.00	13.44	H	-5.1
7121.500000	46.07	---	74.00	27.93	H	-2.5
7283.200000	---	37.45	54.00	16.55	H	-1.8
10952.800000	---	41.10	54.00	12.90	H	2.3
11023.200000	51.66	---	74.00	22.34	H	2.3

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

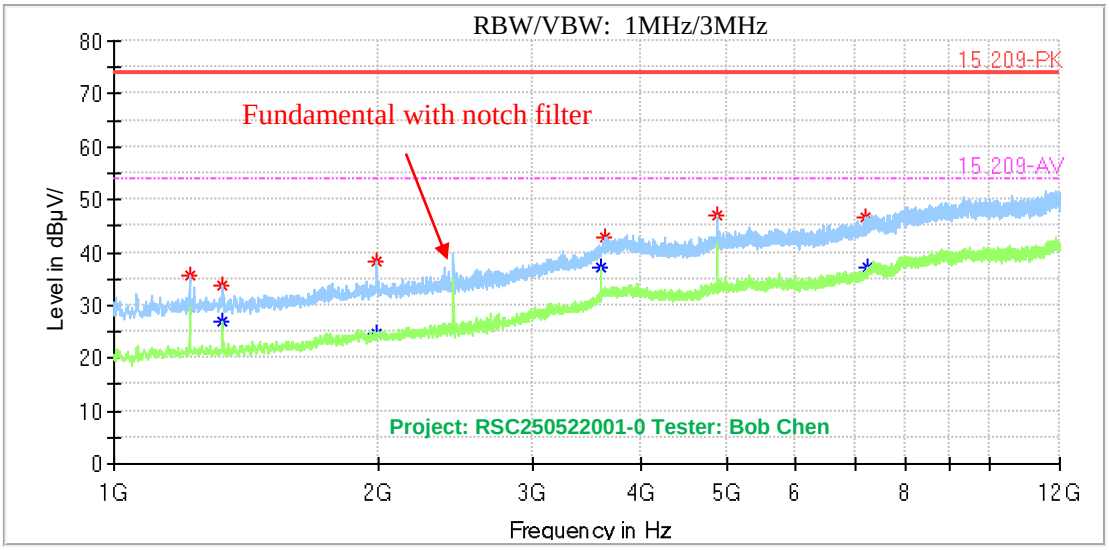
Low Channel_Vertical



Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
1029.700000	---	26.98	54.00	27.02	V	-18.9
1029.700000	37.78	---	74.00	36.22	V	-18.9
1129.800000	---	27.89	54.00	26.11	V	-17.8
1129.800000	38.79	---	74.00	35.21	V	-17.8
2130.800000	---	28.75	54.00	25.25	V	-13.7
2131.900000	42.97	---	74.00	31.03	V	-13.7
4803.800000	---	40.59	54.00	13.41	V	-5.1
4803.800000	46.22	---	74.00	27.78	V	-5.1
7205.100000	---	37.82	54.00	16.18	V	-2.2
7206.200000	46.62	---	74.00	27.38	V	-2.2
11750.300000	52.59	---	74.00	21.41	V	3.9
11760.200000	---	42.55	54.00	11.45	V	3.8

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

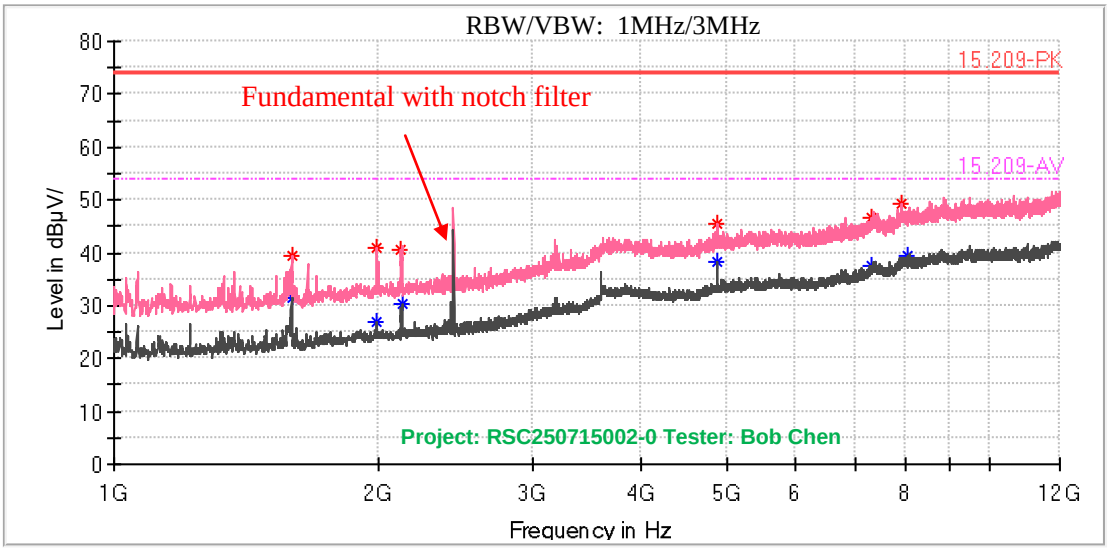
Middle Channel_Horizontal



Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
1220.000000	35.74	---	74.00	38.26	H	-17.5
1220.000000	---	29.51	54.00	24.49	H	-17.5
1327.800000	33.68	---	74.00	40.32	H	-17.3
1327.800000	---	26.77	54.00	27.23	H	-17.3
1991.100000	---	24.66	54.00	29.34	H	-13.8
1991.100000	38.26	---	74.00	35.74	H	-13.8
3599.300000	---	37.08	54.00	16.92	H	-6.2
3641.100000	42.82	---	74.00	31.18	H	-6.1
4879.700000	46.85	---	74.00	27.15	H	-5.1
4879.700000	---	41.69	54.00	12.31	H	-5.1
7216.100000	46.70	---	74.00	27.30	H	-2.2
7234.800000	---	37.16	54.00	16.84	H	-2.1

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor= Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

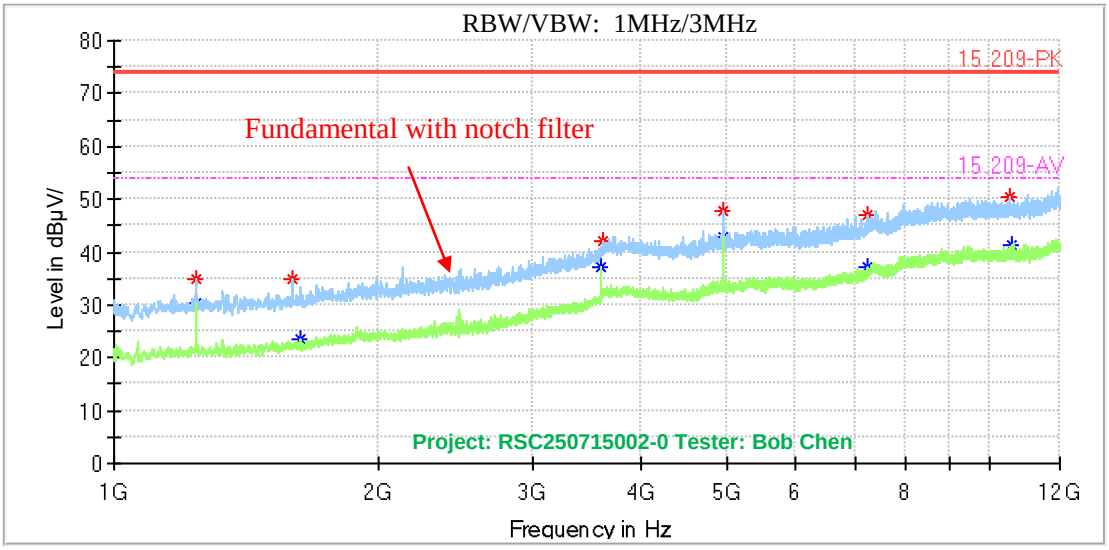
Middle Channel_Vertical



Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
1596.200000	---	31.60	54.00	22.40	V	-16.3
1596.200000	39.50	---	74.00	34.50	V	-16.3
1994.400000	40.86	---	74.00	33.14	V	-13.7
1995.500000	---	27.10	54.00	26.90	V	-13.7
2126.400000	40.40	---	74.00	33.60	V	-13.7
2129.700000	---	30.21	54.00	23.79	V	-13.7
4877.500000	45.44	---	74.00	28.56	V	-5.1
4879.700000	---	38.28	54.00	15.72	V	-5.1
7320.600000	46.66	---	74.00	27.34	V	-1.5
7323.900000	---	37.43	54.00	16.57	V	-1.5
7928.900000	49.45	---	74.00	24.55	V	0.1
8023.500000	---	39.58	54.00	14.42	V	0.1

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

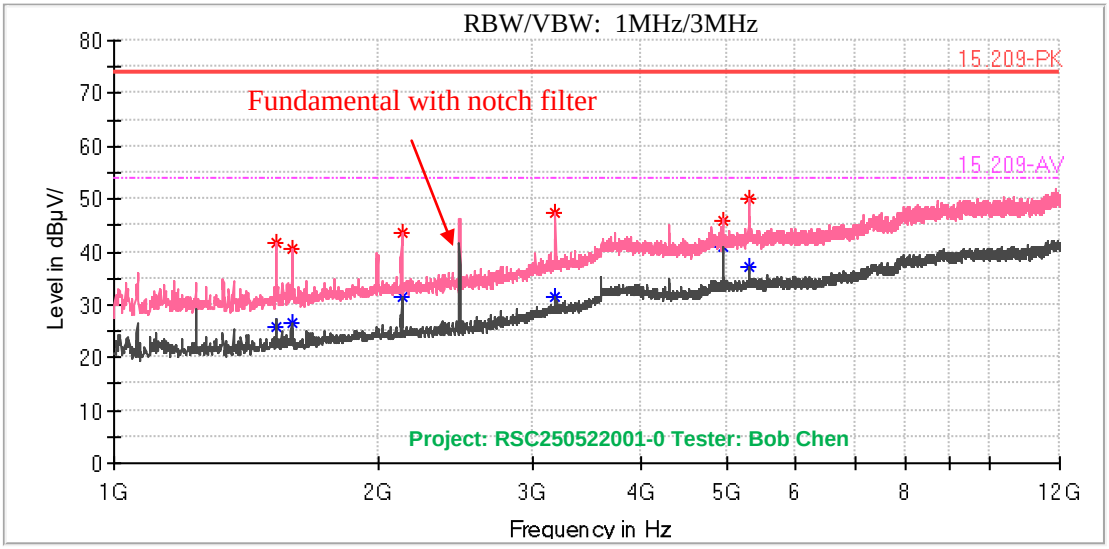
High Channel_Horizontal



Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
1239.800000	---	30.40	54.00	23.60	H	-17.3
1239.800000	34.78	---	74.00	39.22	H	-17.3
1595.100000	34.88	---	74.00	39.12	H	-16.3
1630.300000	---	23.48	54.00	30.52	H	-16.4
3599.300000	---	37.28	54.00	16.72	H	-6.2
3615.800000	42.03	---	74.00	31.97	H	-6.2
4960.000000	---	42.85	54.00	11.15	H	-4.7
4960.000000	47.96	---	74.00	26.04	H	-4.7
7242.500000	46.91	---	74.00	27.09	H	-2.0
7245.800000	---	37.30	54.00	16.70	H	-2.0
10538.100000	50.40	---	74.00	23.60	H	2.0
10571.100000	---	41.49	54.00	12.51	H	1.9

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

High Channel_Vertical



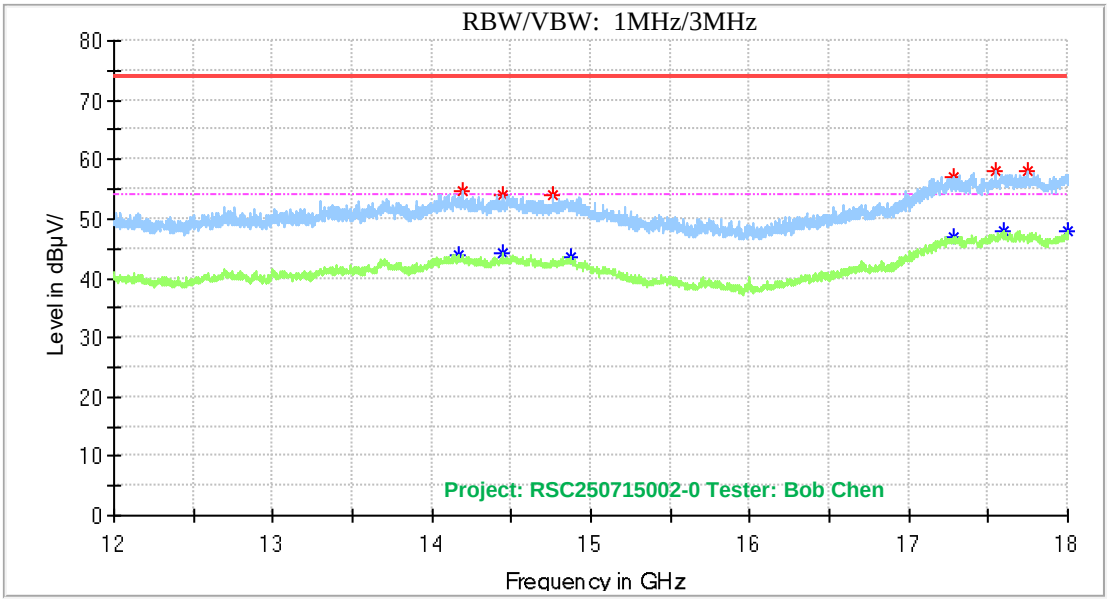
Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
1530.200000	41.56	---	74.00	32.44	V	-16.7
1530.200000	---	25.81	54.00	28.19	V	-16.7
1594.000000	---	26.48	54.00	27.52	V	-16.3
1600.600000	40.46	---	74.00	33.54	V	-16.3
2129.700000	---	31.49	54.00	22.51	V	-13.7
2131.900000	43.49	---	74.00	30.51	V	-13.7
3192.300000	---	31.38	54.00	22.62	V	-9.0
3192.300000	47.57	---	74.00	26.43	V	-9.0
4958.900000	45.82	---	74.00	28.18	V	-4.7
4960.000000	---	40.83	54.00	13.17	V	-4.7
5318.600000	---	37.01	54.00	16.99	V	-4.1
5318.600000	49.96	---	74.00	24.04	V	-4.1

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

5) 12GHz-18GHz_low channel_ maximum transmitting power mode

Note: If the peak detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

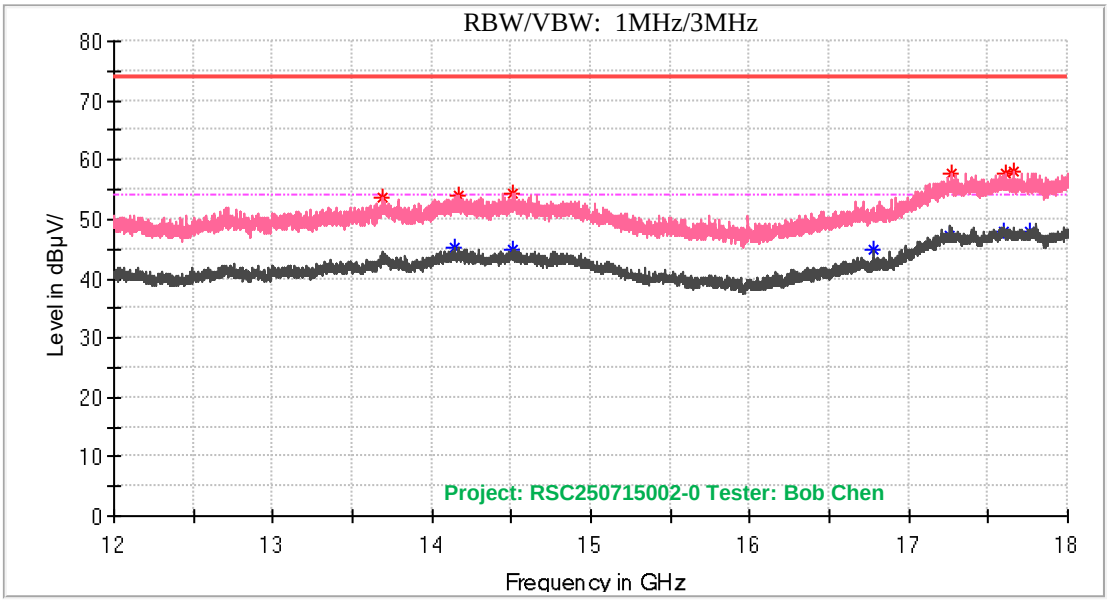
Horizontal



Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
14162.400000	---	43.89	54.00	10.11	H	7.2
14192.400000	54.67	---	74.00	19.33	H	7.2
14450.400000	---	44.08	54.00	9.92	H	7.2
14451.600000	54.16	---	74.00	19.84	H	7.2
14760.000000	54.07	---	74.00	19.93	H	7.3
14868.000000	---	43.65	54.00	10.35	H	7.0
17277.600000	---	46.87	54.00	7.13	H	10.4
17283.600000	57.02	---	74.00	16.98	H	10.5
17544.000000	57.96	---	74.00	16.04	H	10.3
17601.600000	---	47.91	54.00	6.09	H	10.8
17742.000000	58.16	---	74.00	15.84	H	10.4
17996.400000	---	47.93	54.00	6.07	H	11.1

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

Vertical



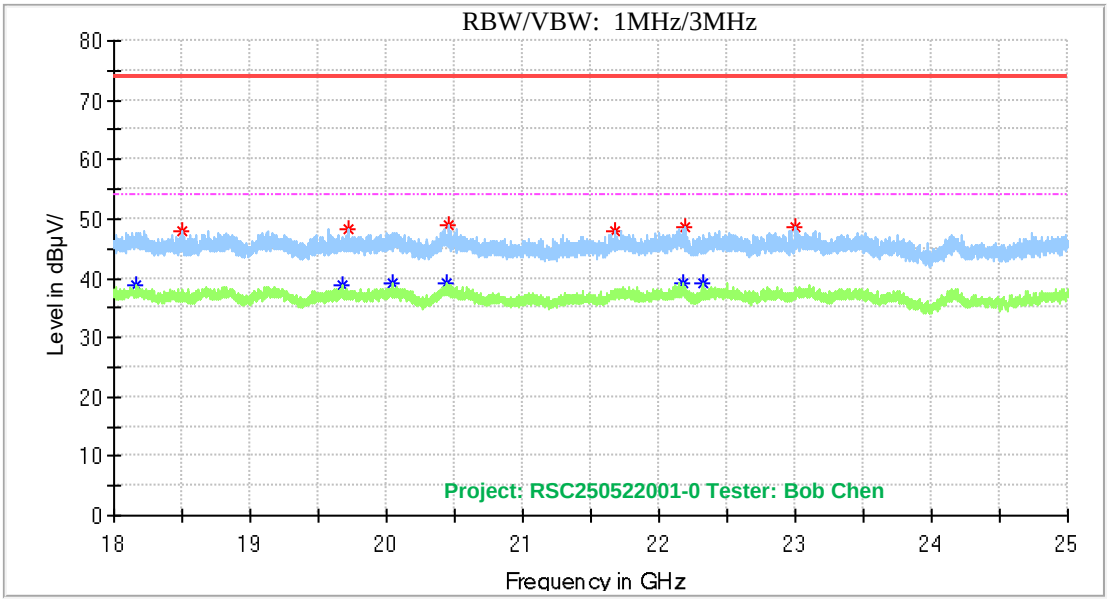
Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
13686.000000	53.84	---	74.00	20.16	V	6.7
14144.400000	---	45.32	54.00	8.68	V	7.2
14165.400000	54.04	---	74.00	19.96	V	7.2
14503.800000	---	44.94	54.00	9.06	V	7.5
14510.400000	54.28	---	74.00	19.72	V	7.5
16776.000000	---	44.78	54.00	9.22	V	5.5
17259.000000	---	47.19	54.00	6.81	V	10.3
17272.800000	57.82	---	74.00	16.18	V	10.4
17593.200000	---	47.99	54.00	6.01	V	10.8
17605.200000	57.69	---	74.00	16.31	V	10.8
17656.800000	58.05	---	74.00	15.95	V	10.3
17765.400000	---	47.95	54.00	6.05	V	10.5

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

6) 18GHz-25GHz_low channel_ maximum transmitting power mode

Note: If the peak detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

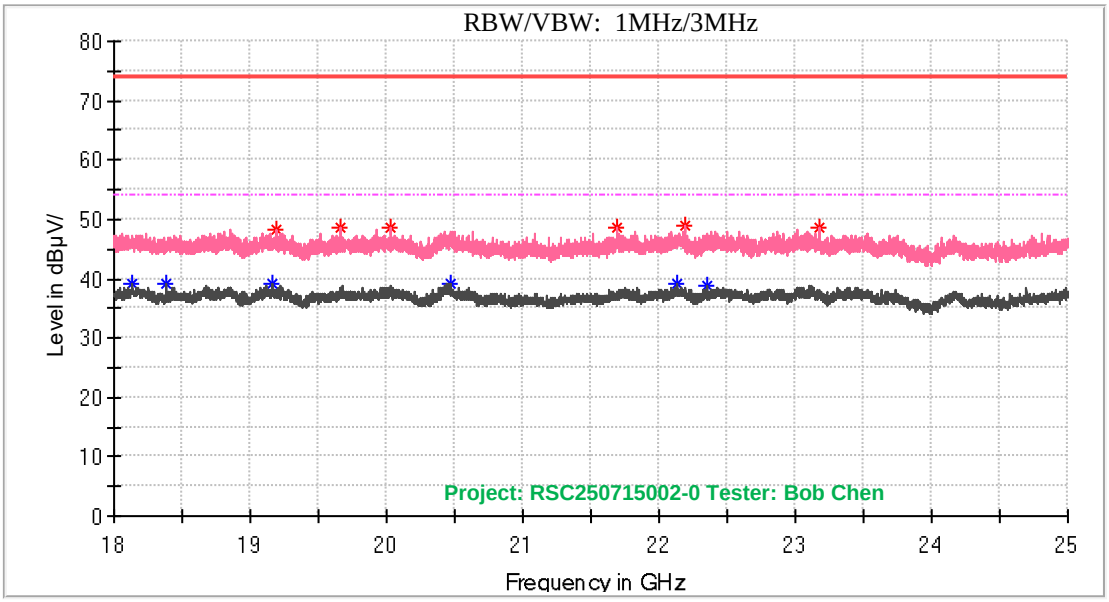
Horizontal



Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
18165.900000	---	38.75	54.00	15.25	H	-11.1
18493.500000	48.07	---	74.00	25.93	H	-11.8
19678.600000	---	38.93	54.00	15.07	H	-9.8
19721.300000	48.14	---	74.00	25.86	H	-9.7
20037.700000	---	39.14	54.00	14.86	H	-9.1
20438.100000	---	39.07	54.00	14.93	H	-9.5
20450.000000	48.79	---	74.00	25.21	H	-9.5
21673.600000	48.01	---	74.00	25.99	H	-8.8
22173.400000	---	39.06	54.00	14.94	H	-8.5
22186.000000	48.50	---	74.00	25.50	H	-8.5
22316.200000	---	39.17	54.00	14.83	H	-8.7
23000.800000	48.50	---	74.00	25.50	H	-7.6

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

Vertical

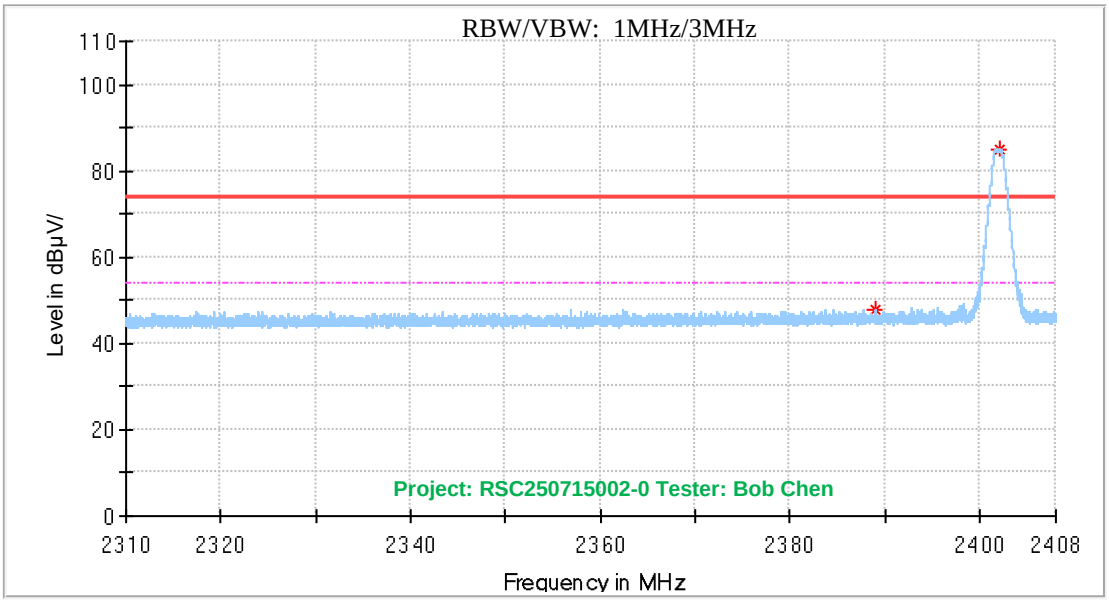


Frequency (MHz)	MaxPeak (dBµ V/m)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
18132.300000	---	39.16	54.00	14.84	V	-11.2
18387.800000	---	39.24	54.00	14.76	V	-11.4
19159.200000	---	39.21	54.00	14.79	V	-11.2
19198.400000	48.26	---	74.00	25.74	V	-11.2
19663.900000	48.50	---	74.00	25.50	V	-9.8
20025.100000	48.45	---	74.00	25.55	V	-9.0
20476.600000	---	39.16	54.00	14.84	V	-9.5
21696.000000	48.52	---	74.00	25.48	V	-8.8
22137.000000	---	39.22	54.00	14.78	V	-8.5
22186.700000	48.99	---	74.00	25.01	V	-8.5
22354.700000	---	38.89	54.00	15.11	V	-8.8
23175.800000	48.62	---	74.00	25.38	V	-8.1

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

7) Band Edge

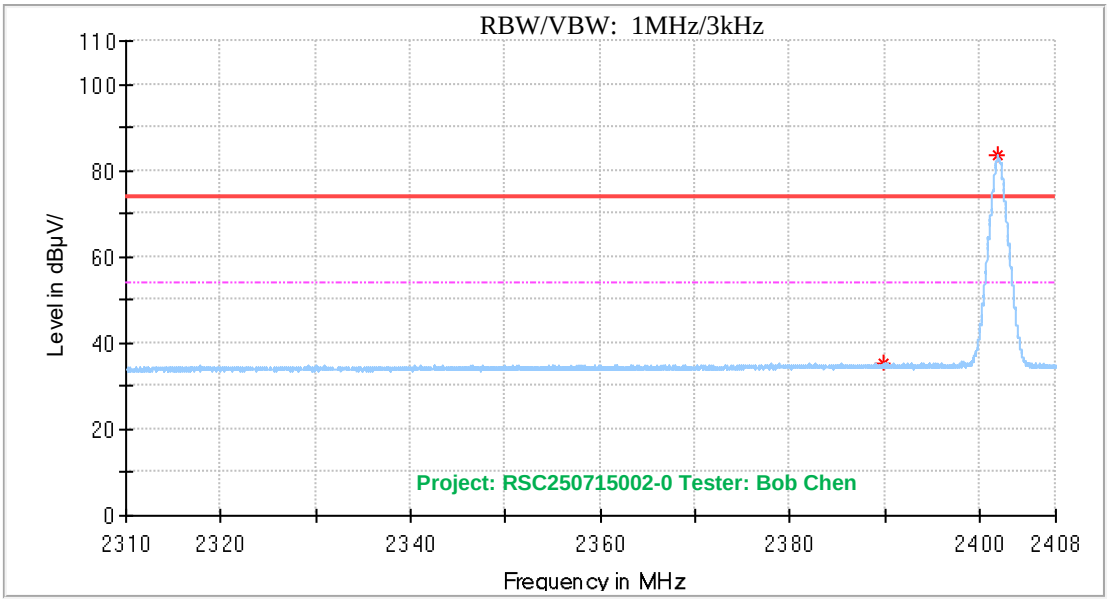
Left_ Horizontal_Peak



Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2388.948800	47.65	74.00	26.35	H	-3.0
2402.090600	85.17	-	-	H	-2.9

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

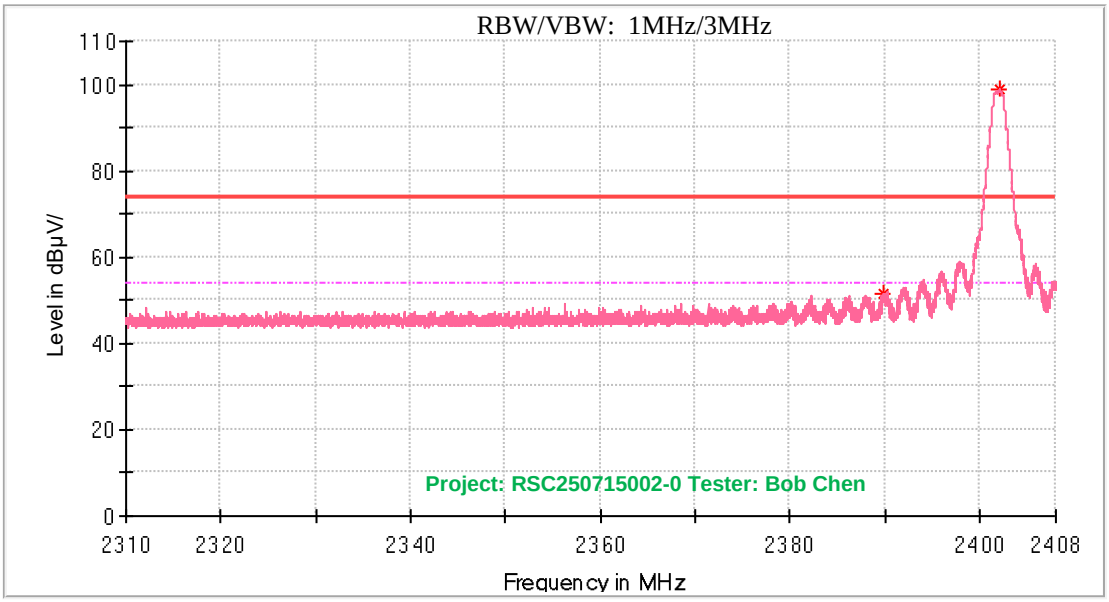
Left_ Horizontal_Average



Frequency (MHz)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2389.938600	35.30	54.00	18.70	H	-3.0
2401.933800	83.59	-	-	H	-2.9

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

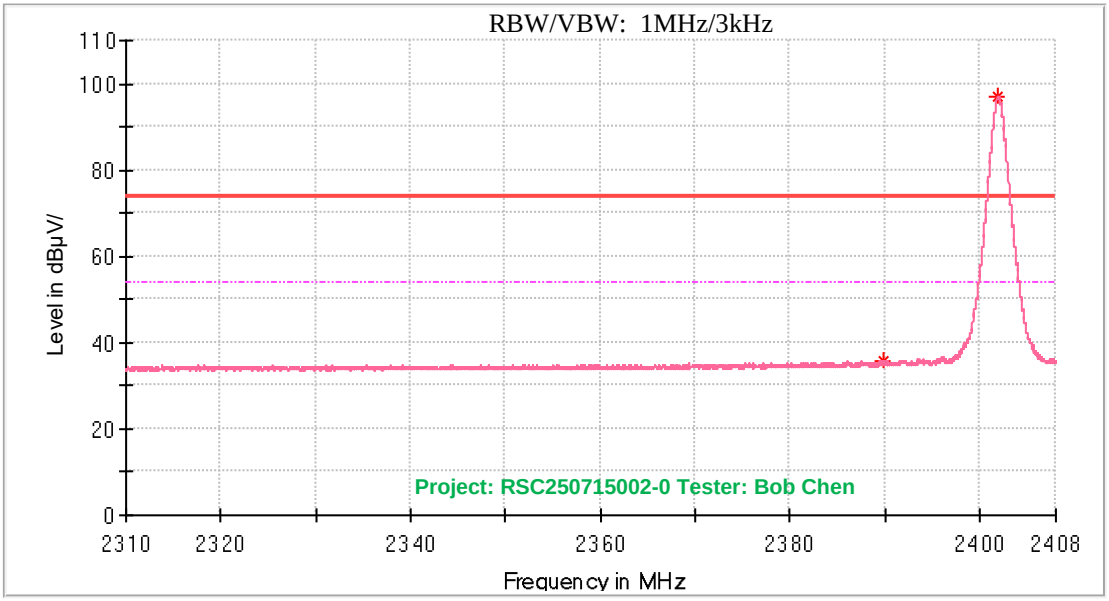
Left_Vertical_Peak



Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2389.870000	51.55	74.00	22.45	V	-3.0
2402.100400	98.66	-	-	V	-2.9

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

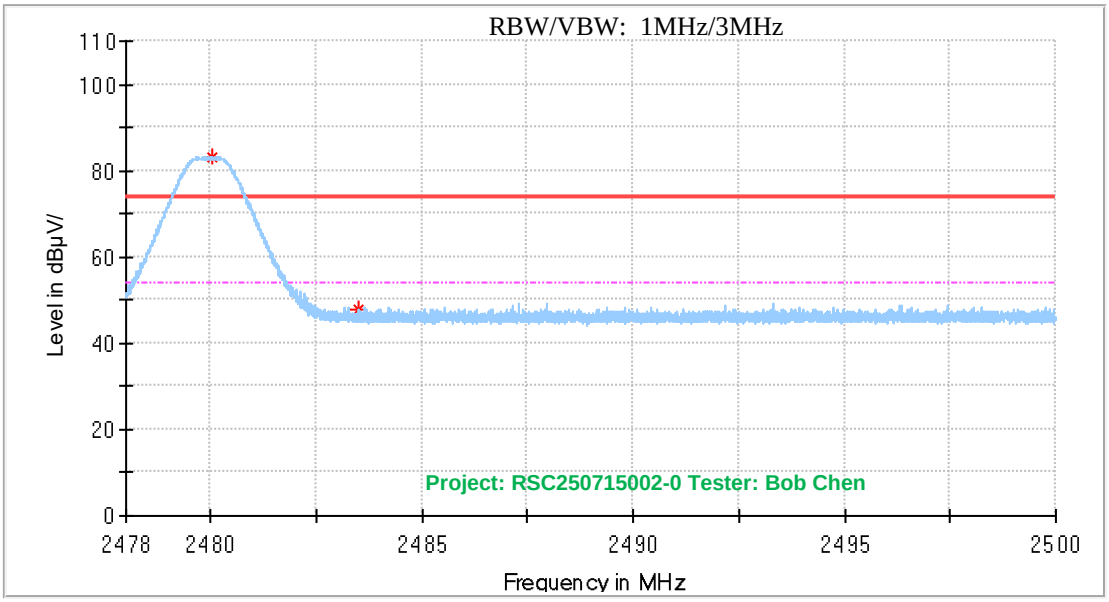
Left_Vertical_Average



Frequency (MHz)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2389.791600	35.93	54.00	18.07	V	-3.0
2401.933800	97.19	-	-	V	-2.9

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

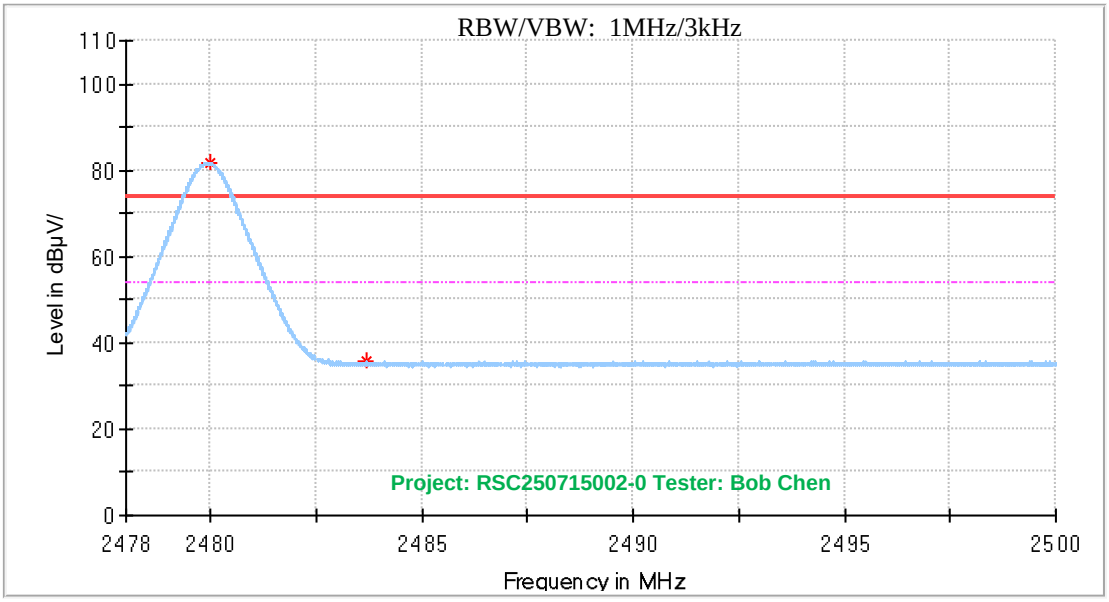
Right_ Horizontal_Peak



Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2480.048200	83.12	-	-	H	-3.0
2483.502200	47.60	74.00	26.40	H	-3.0

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

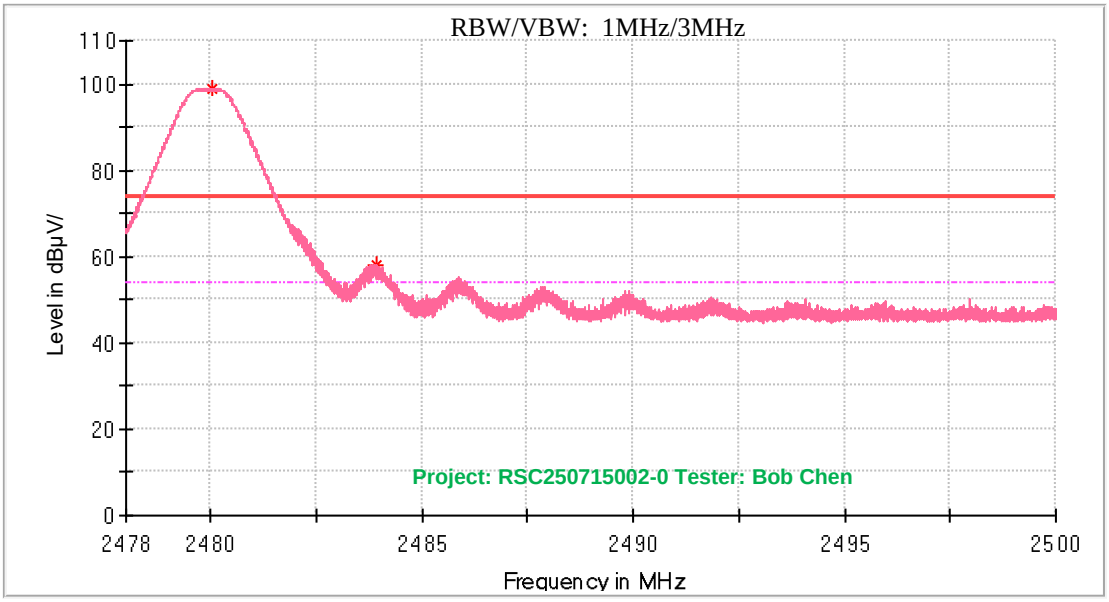
Right_ Horizontal_Average



Frequency (MHz)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2479.991000	81.71	-	-	H	-3.0
2483.669400	35.51	54.00	18.49	H	-3.0

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

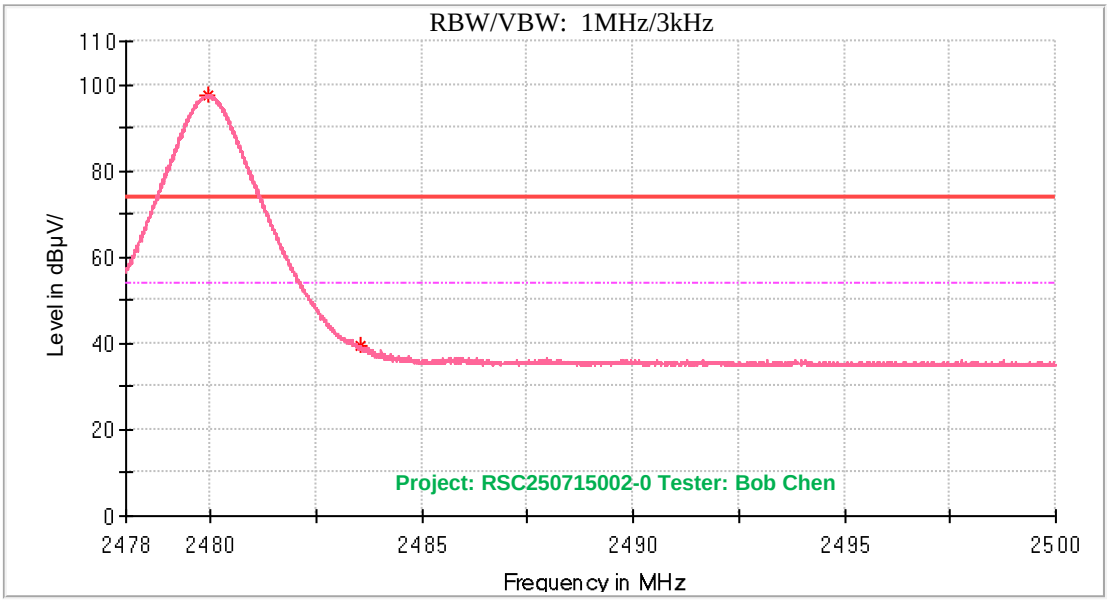
Right_Vertical_Peak



Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2480.057000	98.93	-	-	V	-3.0
2483.907000	58.16	74.00	15.84	V	-3.0

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

Right_Vertical_Average

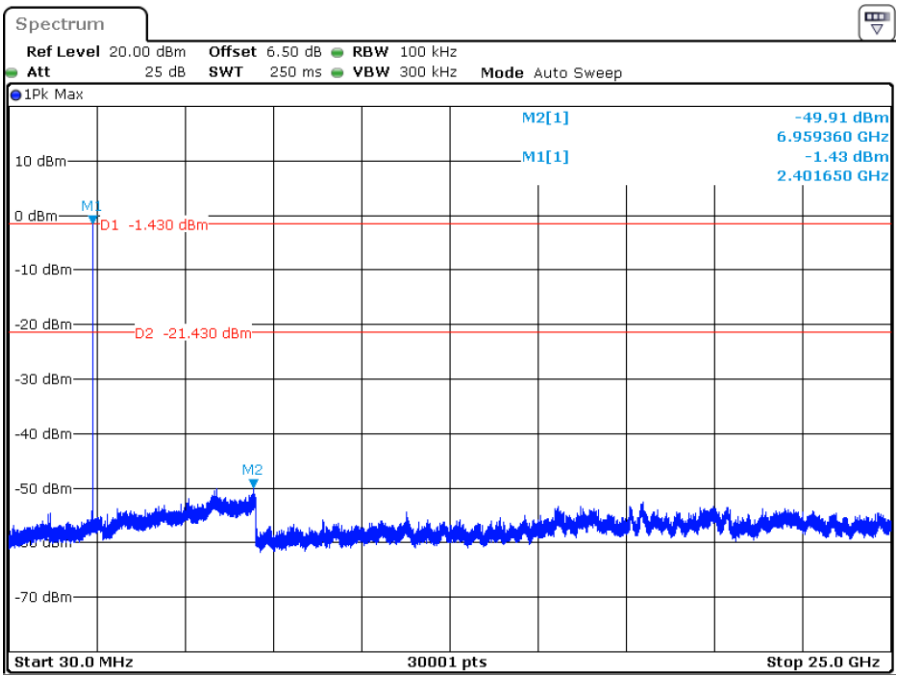


Frequency (MHz)	Average (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB)
2479.966800	97.48	-	-	V	-3.0
2483.530800	39.27	54.00	14.73	V	-3.0

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude

Conducted Spurious Emission At Antenna Port:

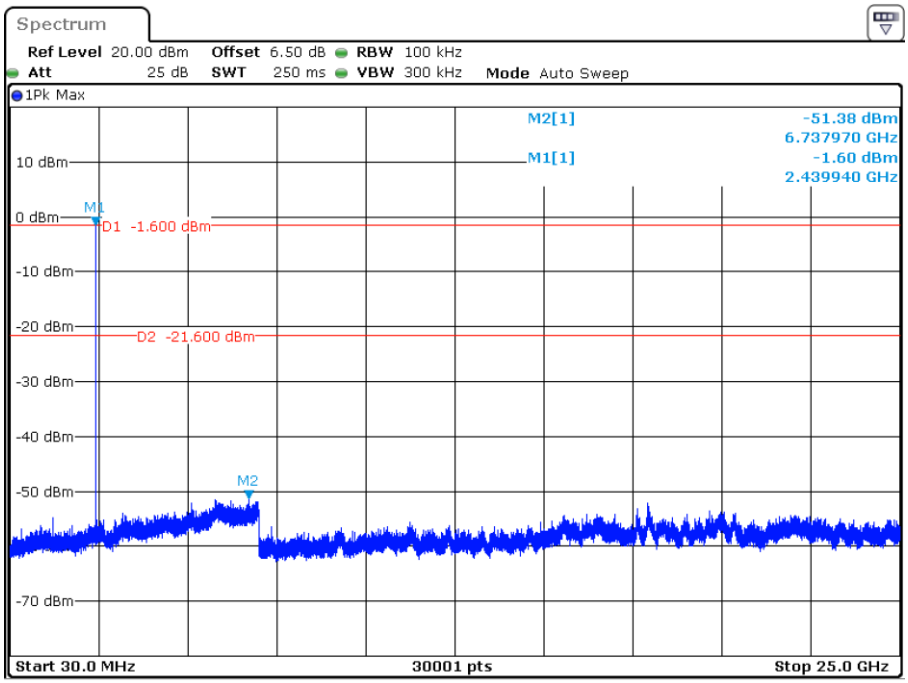
Low Channel



Project:RSC250715002-0 Tester:Bob Chen

Date: 17.JUL.2025 14:58:28

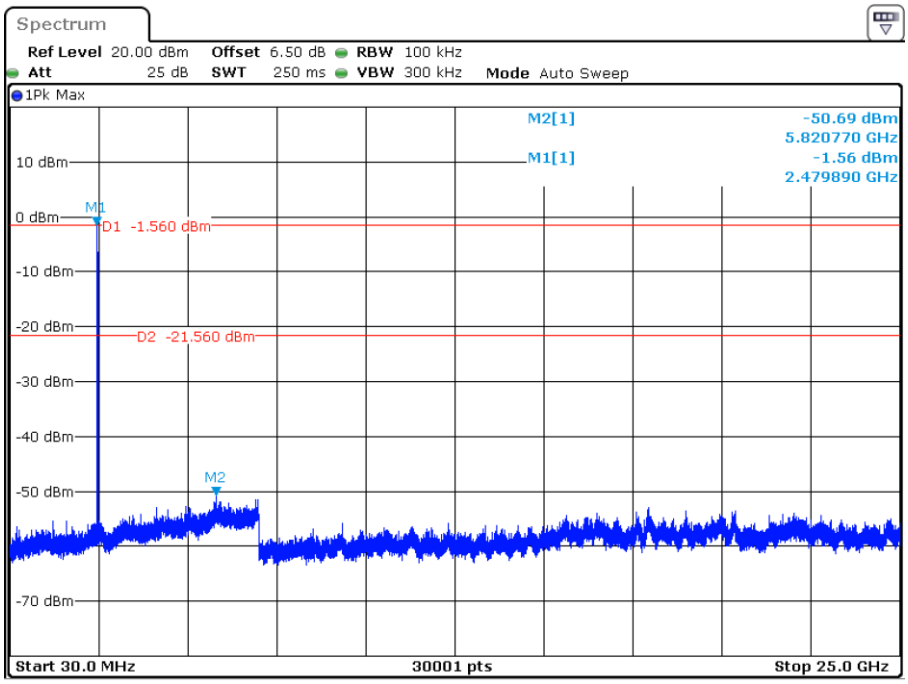
Middle Channel



Project:RSC250715002-0 Tester:Bob Chen

Date: 17.JUL.2025 15:03:29

High Channel



Project:RSC250715002-0 Tester:Bob Chen
Date: 17.JUL.2025 15:05:54

FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

Applicable Standard

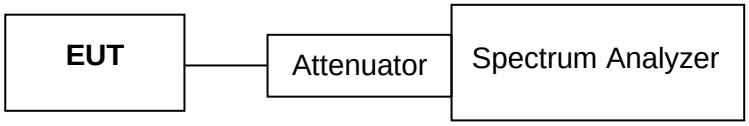
Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, 5725–5850 MHz bands.
The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

ANSI C63.10-2020 Clause 11.8.1 Option 1

The steps for the first option are as follows:
a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
b) Set the VBW ≥ [3 × RBW].
c) Detector = peak.
d) Trace mode = max-hold.
e) Sweep = No faster than coupled (auto) time.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "−6 dB down amplitude". If a marker is below this "−6 dB down amplitude" value, then it shall be as close as possible to this value.

Test Setup Block



Note: Offset (6.5dB) = 6dB Attenuator(6dB) + RF cable loss(0.5dB)

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	55 %
ATM Pressure:	94 kPa

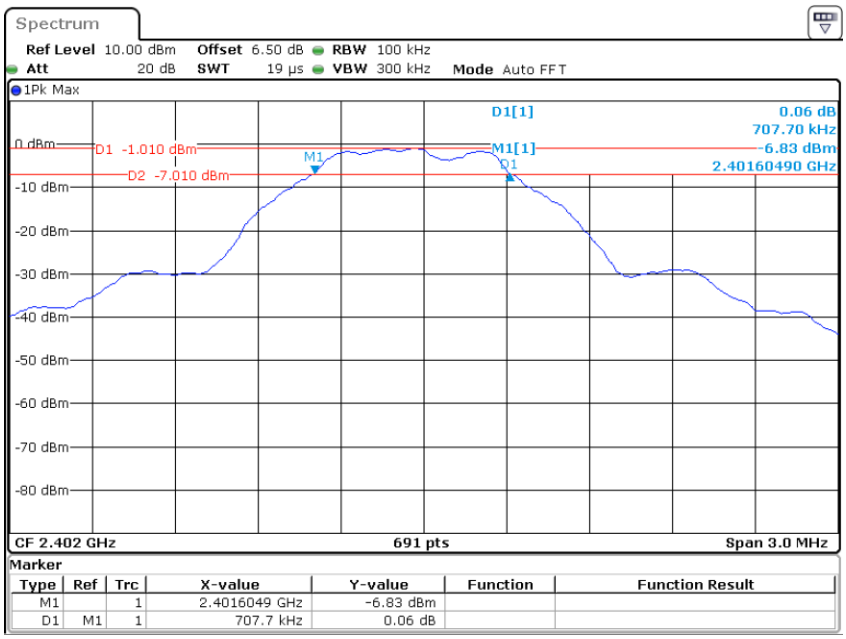
The testing was performed by Bob Chen on 2025-07-17.

Test Mode: Transmitting

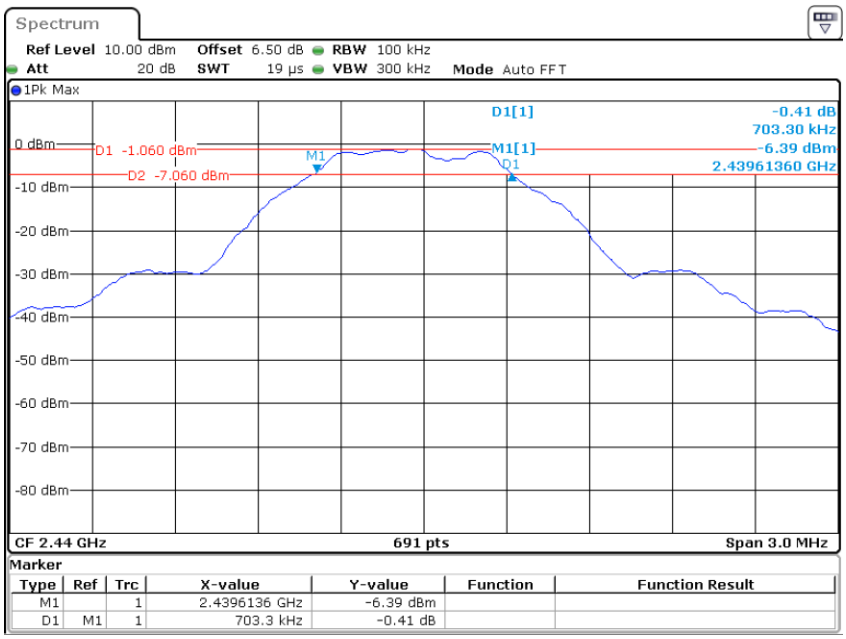
Test Result: Compliance. Please refer to the following table and plots.

Mode	Channel	Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
BLE 1M	Low	2402	707.70	≥500
	Middle	2440	703.30	≥500
	High	2480	720.70	≥500

Low Channel



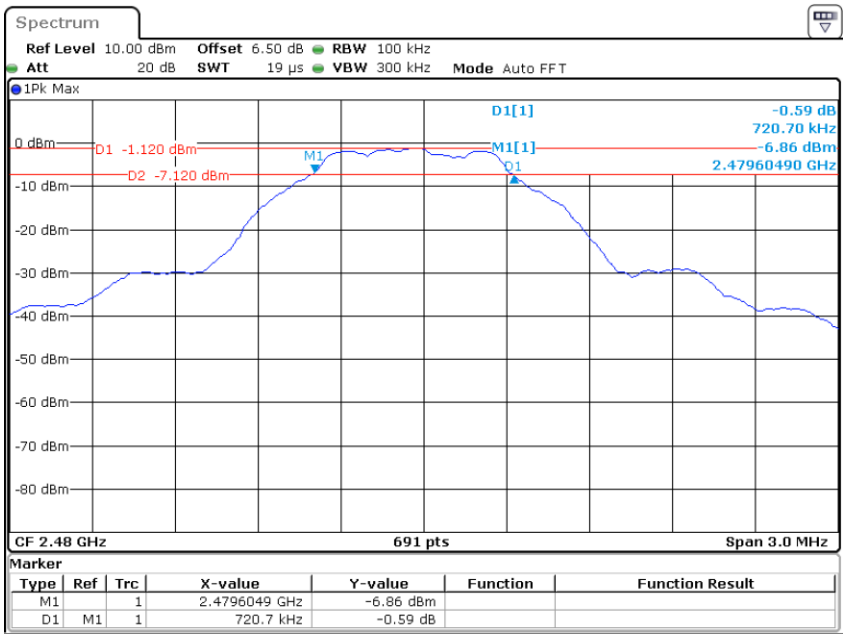
Middle Channel



Project:RSC250715002-0 Tester:Bob Chen

Date: 17.JUL.2025 14:00:02

High Channel



Project:RSC250715002-0 Tester:Bob Chen

Date: 17.JUL.2025 14:02:51

FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §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 signaling 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.

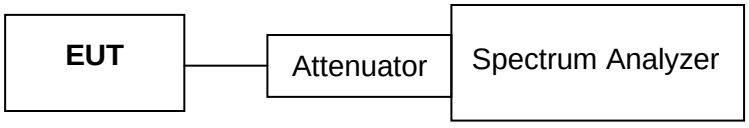
Test Procedure

ANSI C63.10-2020 Clause 11.9.1.1 RBW ≥ DTS bandwidth

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

a) Set the RBW ≥ DTS bandwidth.
b) Set VBW ≥ [3 × RBW].
c) Set span ≥ [3 × RBW].
d) Sweep time = No faster than coupled (auto) time.
e) Detector = peak.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use peak marker function to determine the peak amplitude level.

Test Setup Block



Note: Offset (6.5dB) = 6dB Attenuator(6dB) + RF cable loss(0.5dB)

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	55 %
ATM Pressure:	94 kPa

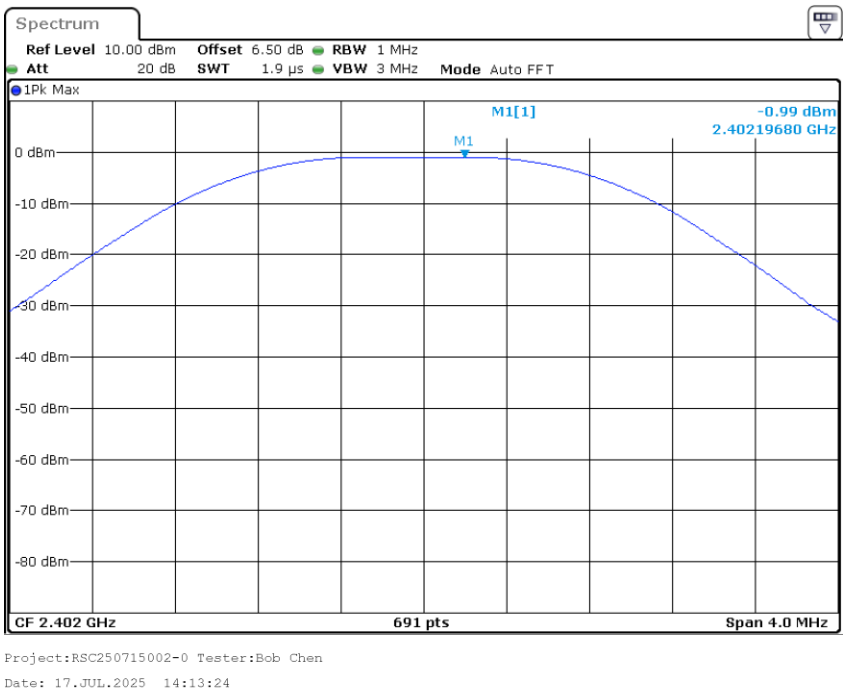
The testing was performed by Bob Chen on 2025-07-17.

Test Mode: Transmitting

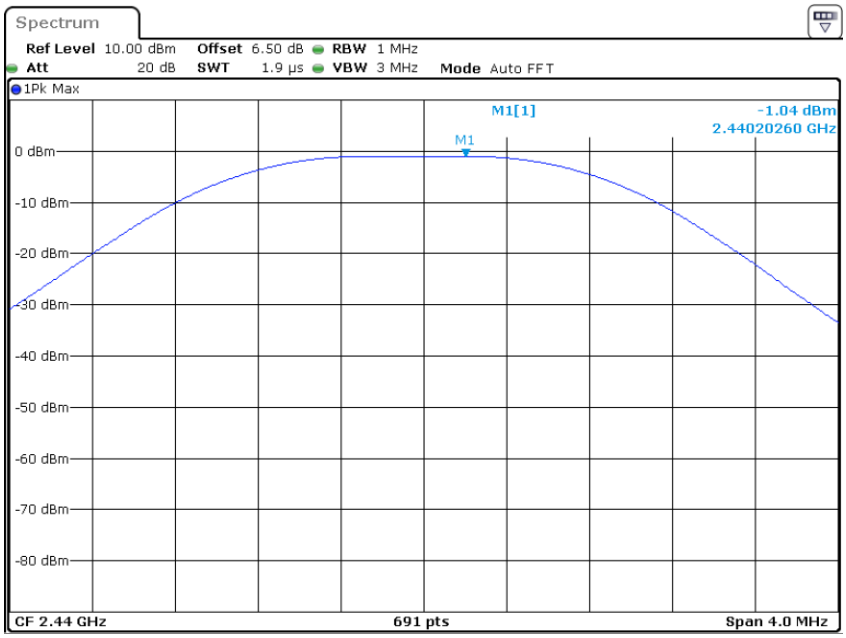
Test Result: Compliance. Please refer to the following table and plots.

Mode	Channel	Frequency (MHz)	Conducted Peak Output Power (dBm)	Limit (dBm)
BLE 1M	Low	2402	-0.99	≤30
	Middle	2440	-1.04	≤30
	High	2480	-1.08	≤30

Low Channel

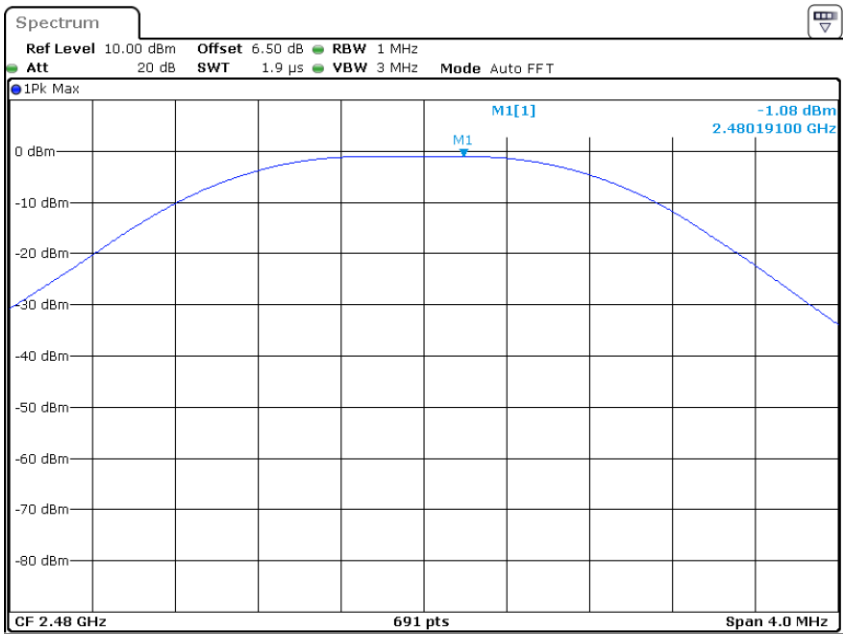


Middle Channel



Project:RSC250715002-0 Tester:Bob Chen
Date: 17.JUL.2025 14:13:56

High Channel



Project:RSC250715002-0 Tester:Bob Chen
Date: 17.JUL.2025 14:14:48

FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

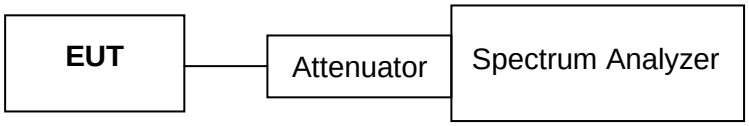
Applicable Standard

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 Procedure

1. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including100 kHz bandwidth from band edge.
2. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
3. Repeat above procedures until all measured frequencies were complete.

Test Setup Block



Note: Offset (6.5dB) = 6dB Attenuator(6dB) + RF cable loss(0.5dB)

Test Data

Environmental Conditions

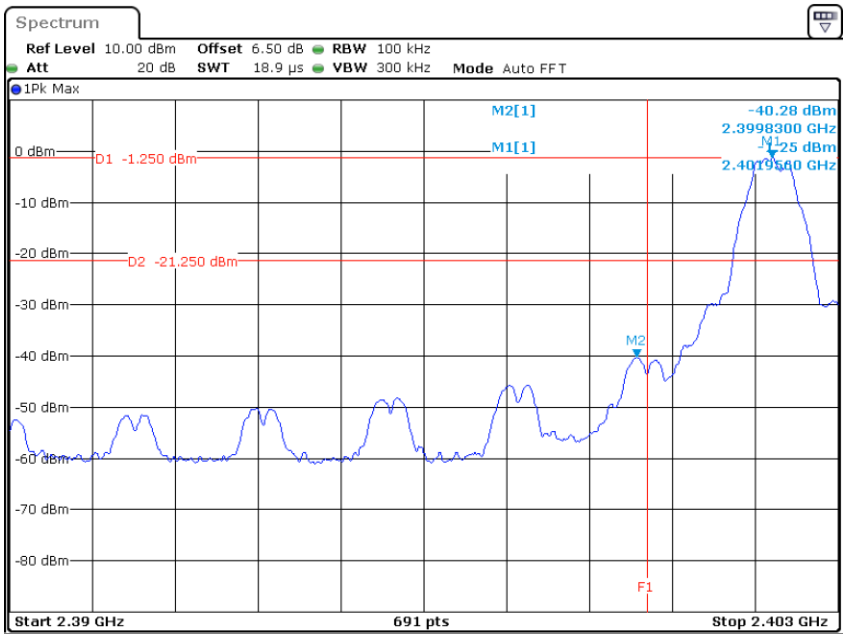
Temperature:	27 °C
Relative Humidity:	55 %
ATM Pressure:	94 kPa

The testing was performed by Bob Chen on 2025-07-17.

Test mode: Transmitting

Test Result: Compliance. Please refer to following plots.

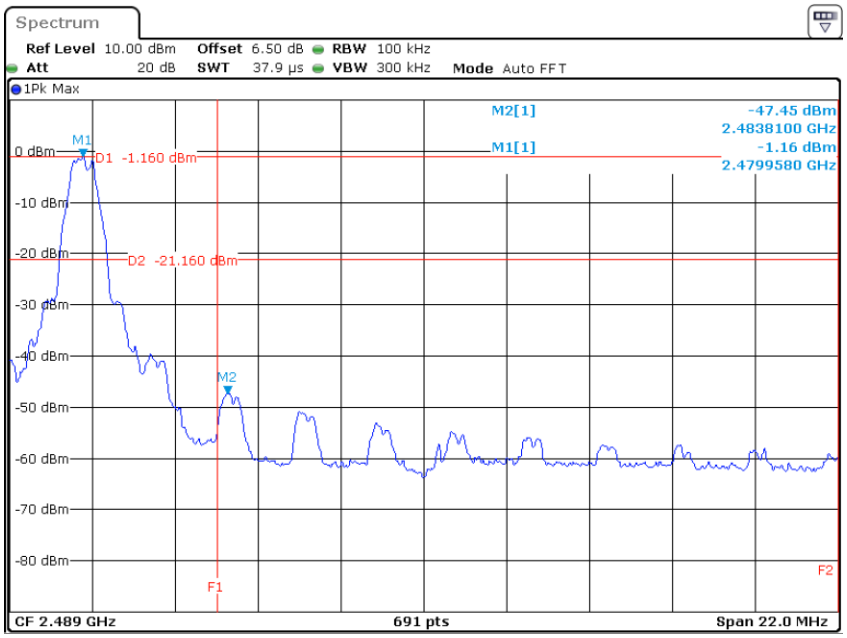
Band Edge, Left Side



Project:RSC250715002-0 Tester:Bob Chen

Date: 17.JUL.2025 14:30:22

Band Edge, Right Side



Project:RSC250715002-0 Tester:Bob Chen

Date: 17.JUL.2025 14:34:46

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

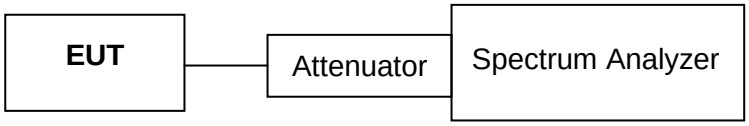
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of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

Test Procedure

ANSI C63.10-2020 Clause 11.10.2(PKPSD)

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span >1.5 times the DTS bandwidth.
c) Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ [3 × RBW].
e) Detector = peak.
f) Sweep time = No faster than coupled (auto) time.
g) Trace mode = max-hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.
j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

Test Setup Block



Note: Offset (6.5dB) = 6dB Attenuator(6dB) + RF cable loss(0.5dB)

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	55 %
ATM Pressure:	94 kPa

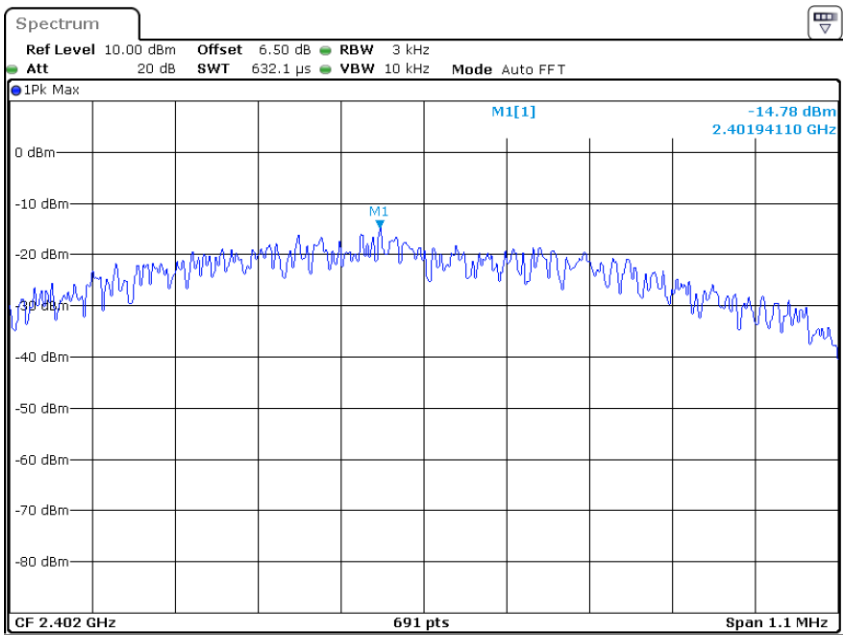
The testing was performed by Bob Chen on 2025-07-17.

Test Mode: Transmitting

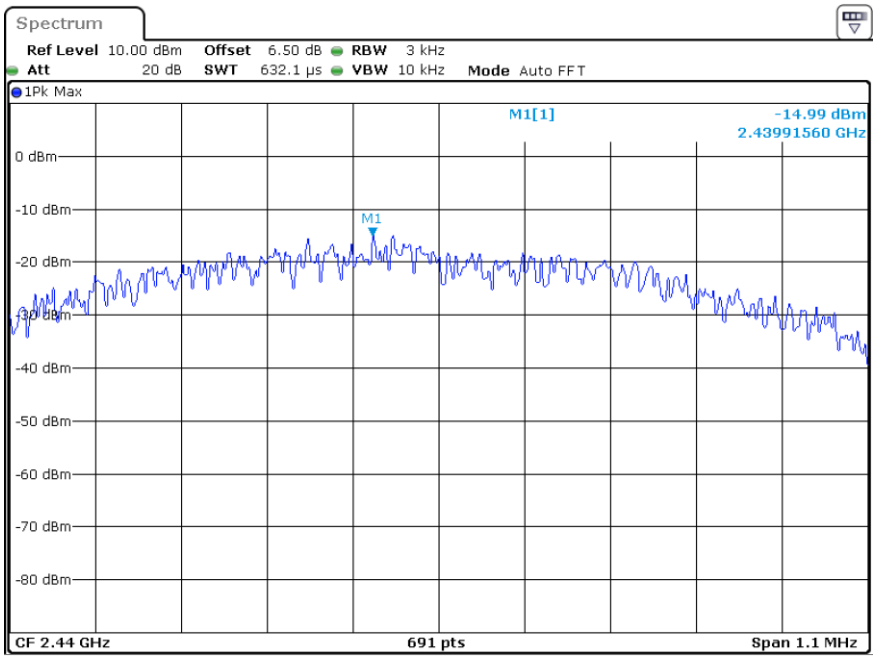
Test Result: Compliance. Please refer to the following table and plots.

Mode	Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
BLE 1M	Low	2402	-14.78	≤8
	Middle	2440	-14.99	≤8
	High	2480	-14.93	≤8

Power Spectral Density, Low Channel

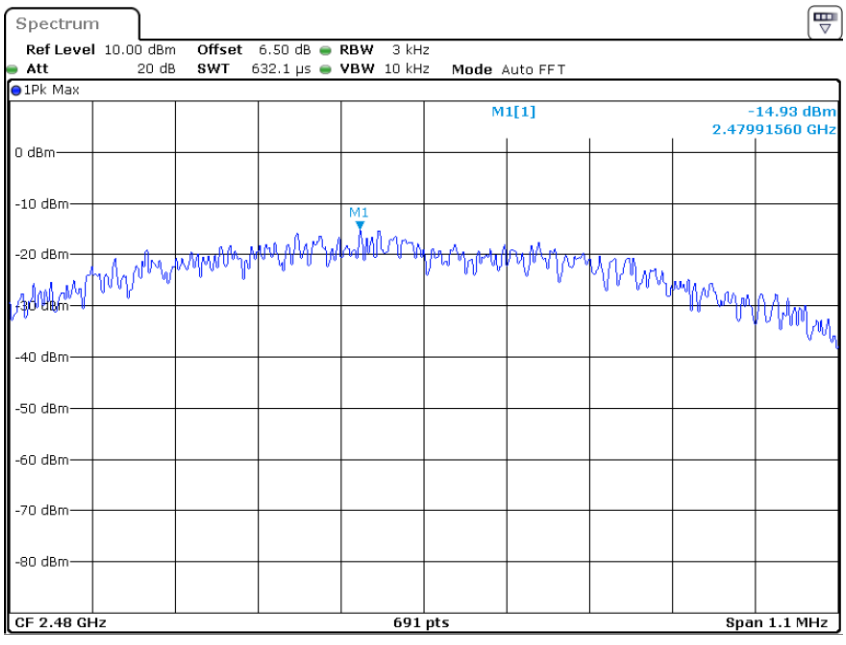


Power Spectral Density, Middle Channel



Project:RSC250715002-0 Tester:Bob Chen
Date: 17.JUL.2025 14:20:24

Power Spectral Density, High Channel



Project:RSC250715002-0 Tester:Bob Chen
Date: 17.JUL.2025 14:21:13

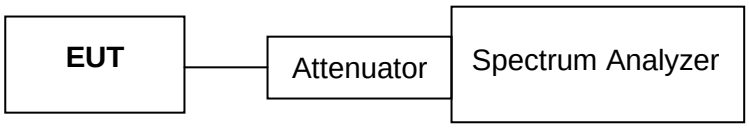
DUTY CYCLE

Test Procedure

ANSI C63.10-2020 Clause 11.6

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:
a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
1) Set the center frequency of the instrument to the center frequency of the transmission.
2) Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.
3) Set VBW ≥ RBW. Set detector = peak or average.
4) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if T ≤ 16.7 μs.)

Test Setup Block



Note: Offset (6.5dB) = 6dB Attenuator(6dB) + RF cable loss(0.5dB)

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	55 %
ATM Pressure:	94 kPa

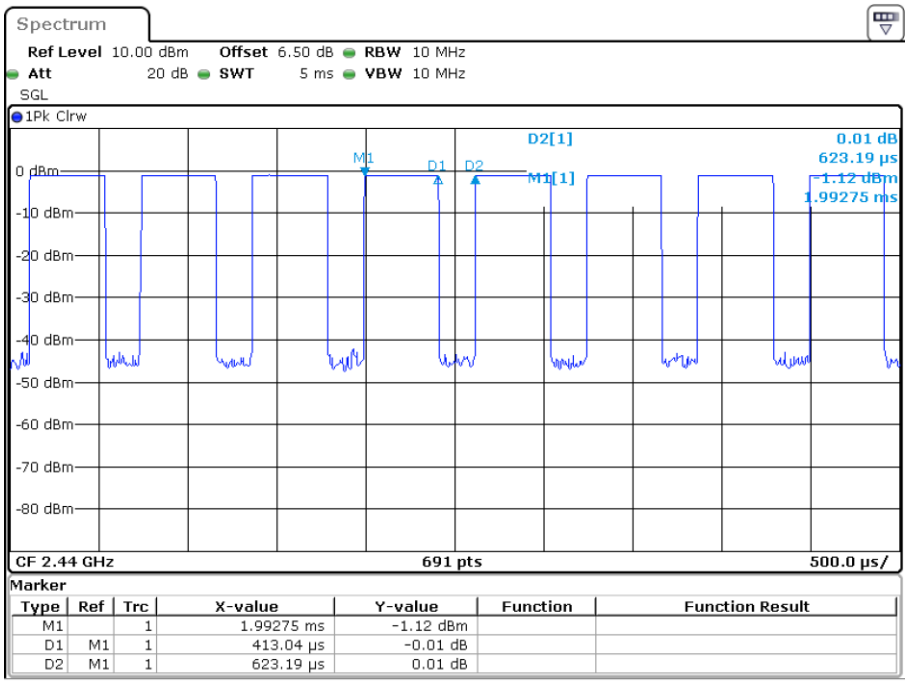
The testing was performed by Bob Chen on 2025-07-17.

Test Mode: Transmitting

Test Result: Compliance. Please refer to the following table and plots.

Mode	T_{on}	T_p	Duty Cycle	1/ T_{on}	VBW Setting
	(ms)	(ms)	(%)	(kHz)	(kHz)
BLE 1M	0.413	0.623	66.29	2.42	3.0

Duty Cycle



Project:RSC250715002-0 Tester:Bob Chen

Date: 17.JUL.2025 14:37:43

LABELLING AND LOCATION

Refer to EXHIBIT A.

TEST SETUP PHOTOGRAPHS

Refer to EXHIBIT D.

EUT PHOTOGRAPHS

Refer to EXHIBIT B & C.

END OF REPORT