FCC PART 15.247

TEST REPORT

For

PO FUNG ELECTRONIC (HK) INTERNATONAL GROUP COMPANY LIMITED

Room 1508, 15/F,Office Tower II, Grand Plaza, 625 Nathan Road, Kowloon, HongKong

FCC ID: 2AJGM-RD-55PRO

Report Type:	**Product Name:**
Original Report	Amateur Radio

Report Number:	2507U05487E-RF-02
Report Date:	2025-09-28
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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2507U05487E-RF-02	R1V1	2025-09-28	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:		PO FUNG ELECTRONIC (HK) INTERNATONAL GROUP COMPANY LIMITED
Product Name:		Amateur Radio
Tested Model:		RD-55 PRO
Multiple Model(s):		UV-5R Hup,RD-55M, RD-55 MAX, 16 Pro Max,VBT-UV68, UV-5R Plus, UV-9R Plus
Trade Mark:		BAOFENG, VBTER FREEDOMGO
Power Supply:		DC 5V from adapter or DC 7.4V from battery
Adapter information:	Model:	A318-050100W-US2
	Input:	AC 100-240V, 50-60Hz, 0.2A
	Output:	DC 5V, 1A
Maximum Conducted Output Peak Power:		-8.41dBm
Frequency Range:		2402-2480MHz
Modulation Technique:		GFSK
Antenna Type:		PCB antenna
★Maximum Antenna Gain:		1dBi
EUT Received Status:		Good

Note:
1. The Maximum Antenna Gain was declared by manufacturer.
2. The test model is identify with the series model except for the model name , trade name and color, please refer to declaration letter for more detail.
3. All measurement and test data in this report was gathered from production sample serial number: 38K0-1(RF conducted), 38K0-2(Conducted Emission and Radiated Spurious Emission) (Assigned by the BACL (Xiamen). The EUT supplied by the applicant was received on 2025-07-28)

Objective

This report is prepared on behalf of *PO FUNG ELECTRONIC (HK) INTERNATONAL GROUP COMPANY LIMITED* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules.

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

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Xiamen).

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on the Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen.

Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN1384.

Measurement Uncertainty

Item		U_{lab}
Conducted Emission	150kHz-30MHz	2.45 dB
Radiated Spurious Emission	9kHz-150kHz	2.82 dB
	150kHz-30MHz	2.74 dB
	30MHz~1GHz	4.68 dB
	1GHz~18GHz	5.00 dB
	18GHz~26.5GHz	4.90 dB
	26.5GHz~40GHz	4.90 dB
Occupied Channel Bandwidth		2%
Transmitter Conducted Power(Conducted RF power)		1.49 dB
Conducted Spurious Emission		2.92 dB
Power Spectral Density		2.52dB
Duty Cycle		1%
Temperature		1℃
Humidity		5%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

SYSTEM TEST CONFIGURATION

Test Mode and Voltage

The system was configured for testing in a typical mode (as normally used by a typical user).	
Test mode:	Transmitting
Test voltage:	DC 5V from the Adapter (AC 120V/60Hz)
Remark:	During all emission tests, the EUT was configured to measure its highest possible emission level and the worst case's test data was presented in this test report.

Description of Test Configuration

For BLE mode, 40 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

EUT was tested with Channel 0, 19 and 39.

Equipment Modifications

No modification was made to the EUT tested.

★EUT Exercise Software

RF Test Tool: WxKit

Mode	Power level		
	Low channel	Middle channel	High channel
BLE 1Mbps	5	5	5

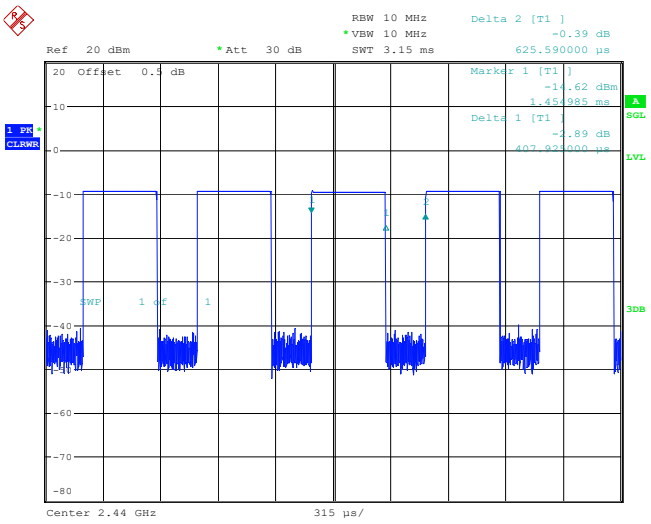
Note: the applicant declared the power level.

Duty cycle

Test Mode:	Transmitting	Test Engineer:	Apollo Luo
Test Date:	2025-08-14	Environment:	Temp.: 24.3°C Humi.: 60% Atm :100.2kPa

Test Modes	Test Frequency (MHz)	Ton (ms)	Ton+off (ms)	Duty cycle (%)	1/T (Hz)	VBW Setting (kHz)
BLE 1Mbps	2440	0.408	0.626	65.18	2451	5.00

BLE 1Mbps: Middle Channel



ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:20:56

Support Equipment List and Details

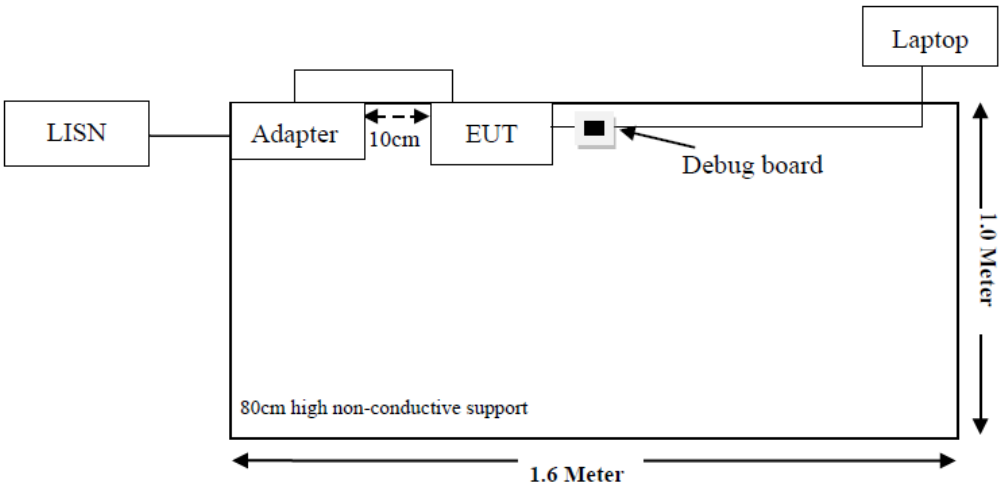
Manufacturer	Description	Model	Serial Number
Lenovo	Laptop	T480	PF1P5K4F
Unknown	Debug board	Unknown	Unknown

External I/O Cable

Cable Description	Length (m)	From Port	To
USB Cable	10	Debug board	Laptop
Dupont cable	0.2	Debug board	EUT

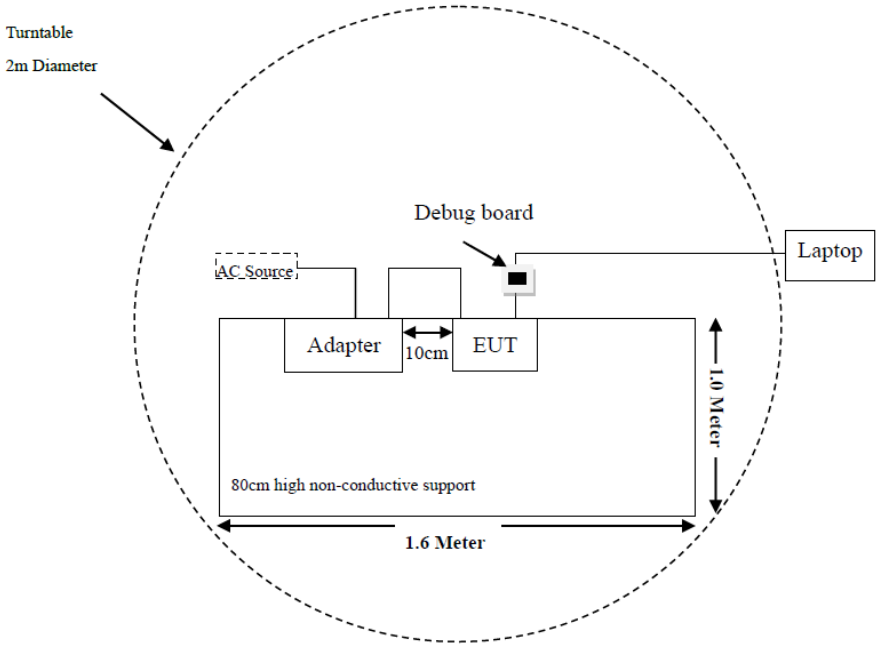
Block Diagram of Test Setup

Conducted Emission:

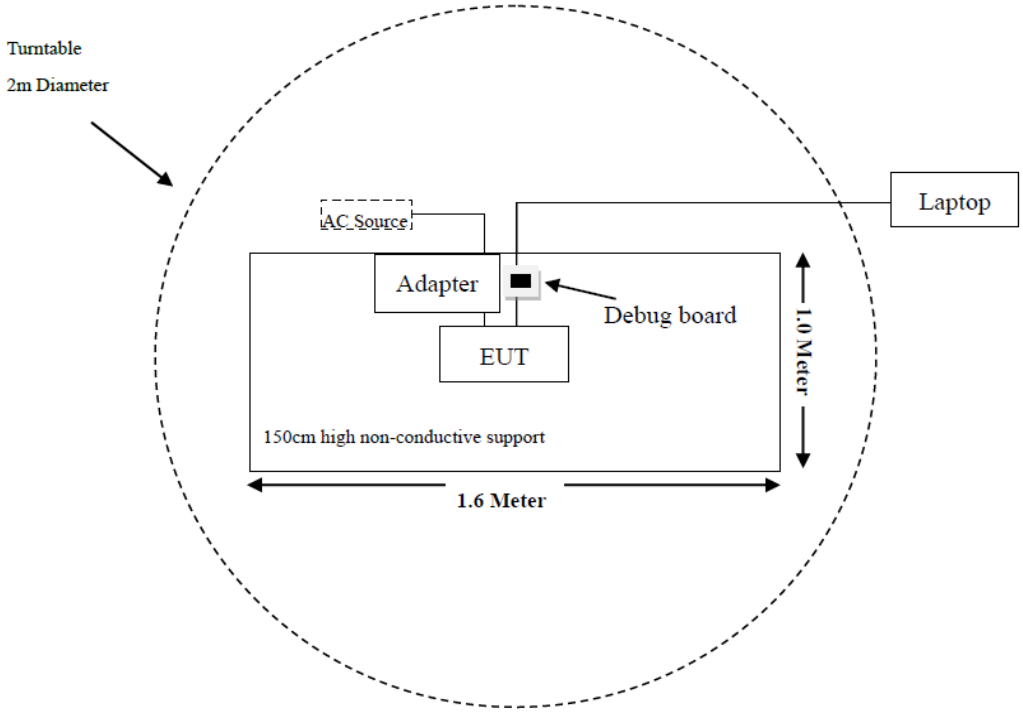


Radiated Emission

Below 1GHz:



Above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliant
§15.207(a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Radiated Emissions & Restricted Bands Emissions & Antenna-port conducted emission	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

TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions					
EMI Test Receiver	Rohde & Schwarz	ESR	103105	2025/02/20	2026/02/19
LISN	Rohde & Schwarz	ENV216	100129	2025/02/20	2026/02/19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	0357.8810.54	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC001	2025/02/20	2026/02/19
EMI Test software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESR	103103	2025/02/20	2026/02/19
Loop Antenna	Rohde & Schwarz	HFH2-Z2	830749/001	2023/07/27	2026/07/26
Antenna	Sunol Sciences	JB6	A122022-5	2023/07/27	2026/07/26
Amplifier	Sonoma	310B	120903	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC002	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	XH460B-N-2M	CC006	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	XH460B-N-12M	CC007	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	HFH2-CC	335.3609	2025/02/20	2026/02/19
Test Software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Above 1 GHz					
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102051	2025/02/20	2026/02/19
Filter Switch Unit	Decentest	DT7220FSU	DS79904	2025/02/21	2026/02/20
Multiplex Switch Test Control Set	Decentest	DT7220SCU	DS79901	2025/02/21	2026/02/20
Horn Antenna	EMCO	3115	9002-3355	2024/11/19	2027/11/18
Preamplifier	GLOBAL	1313-A100M18G	4121301	2025/01/16	2026/01/15
Coaxial Cable	XINHANGWEIBO	XH800A-N-6M	CC003	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	XH800A-N-1M	CC005	2025/02/20	2026/02/19
Horn Antenna	EMCO	3116	9407-2232	2023/07/31	2026/07/30
Preamplifier	A.H.Systems	PAM-1840	200	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-3M	CC008	2025/02/20	2026/02/19
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-1M	CC009	2025/02/20	2026/02/19
Test Software	Audix	E3	18621a	N/A	N/A
RF Conducted Test					
Spectrum Analyzer	Rohde & Schwarz	FSU	100405	2025/2/20	2026/2/19
Coaxial Cable	Lianxun	RF133	N/A	Each time	N/A

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

RF EXPOSURE EVALUATION

Applicable Standard

According to§2.1093, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline

According to KDB447498 D01 General RF Exposure Guidance v06

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances < 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] - [√f(GHz)] < 3.0 for 1-g SAR and < 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation
The result is rounded to one decimal place for comparison
3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is <5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Measurement Result

The max conducted power including tune-up tolerance is -8dBm (0.16 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
=0.16/5*(√2.480) = 0.05< 3.0

Result: Compliant. The stand-alone SAR evaluation is not necessary

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.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.
And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has one PCB antenna arrangement for BLE, which was permanently attached and the antenna gain is 1dBi, fulfill the requirement of this section. Please refer to the EUT photos.

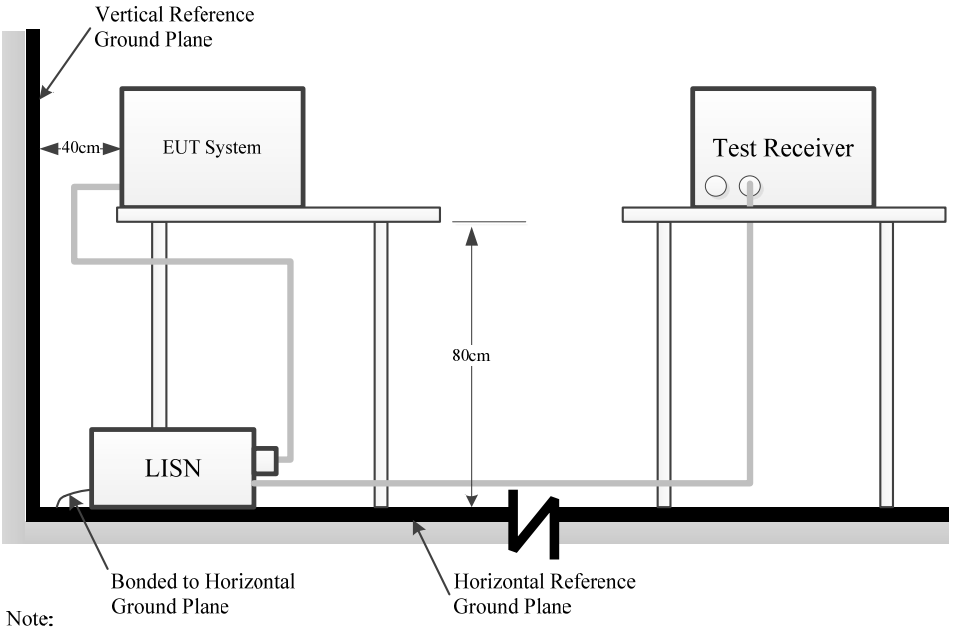
Result: Compliant

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 least 80 cm from other units and oter metal planes support units.

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with 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 was connected to the outlet of the LISN.

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

If the maximum peak value of the emissions is below the average limit, the QP value and average value measurement will not need to be performed and only record the maximum peak measured value to meet the requirements.

Result &Margin Calculation

The Result is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Result (dBμV) = Reading (dBμV) + Factor (dB)

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 (dB) = Limit (dBμV) –Result (dBμV)

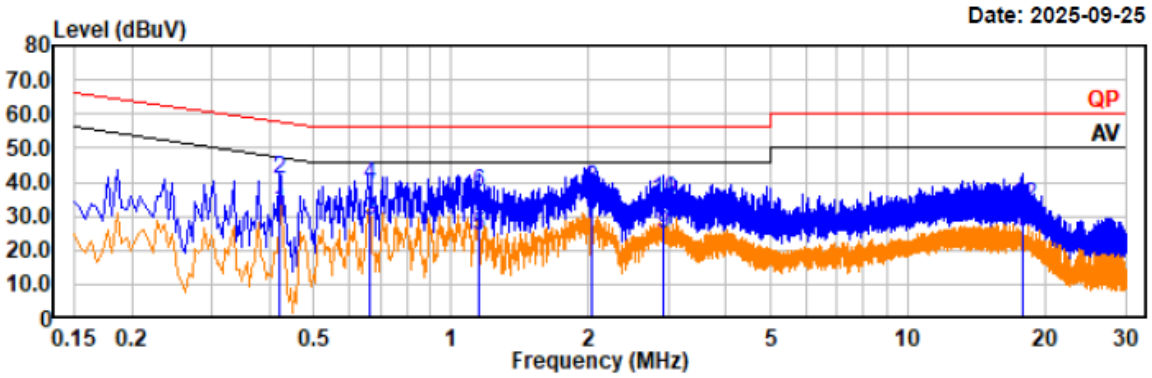
Test Data

Frequency Range:	150kHz~30MHz
Temperature:	21.5℃
Relative Humidity:	57%
ATM Pressure:	100.1kPa
Test Date:	2025-09-25
Test Engineer:	Wlif Wu

Note: The maximum output power mode: BLE 1Mbps high channel was tested.

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO

Temp/Humi/ATM: 21.5℃/57%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

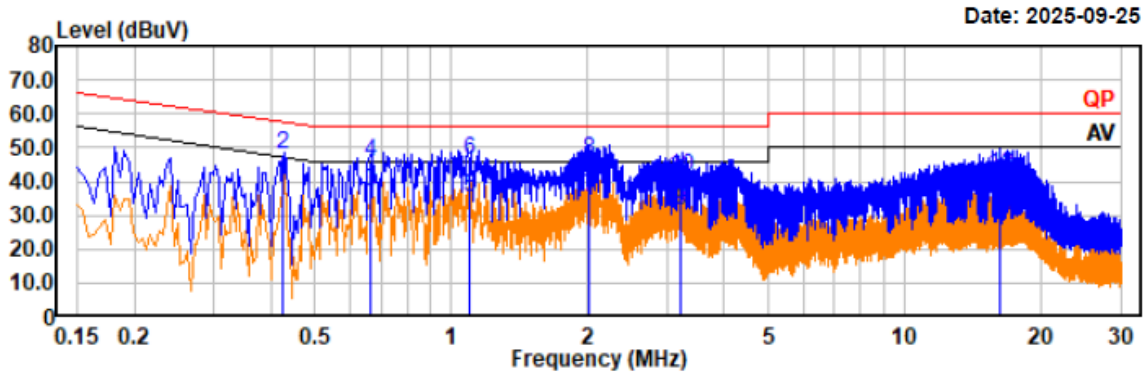


Trace: 1
Condition: IF B/W 9kHz PK/AV

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.421	11.01	20.34	31.35	47.42	16.07	Line	Average
0.421	20.33	20.34	40.67	57.42	16.75	Line	QP
0.664	8.32	20.47	28.79	46.00	17.21	Line	Average
0.664	18.89	20.47	39.36	56.00	16.64	Line	QP
1.147	3.49	20.96	24.45	46.00	21.55	Line	Average
1.147	15.84	20.96	36.80	56.00	19.20	Line	QP
2.041	6.31	21.12	27.43	46.00	18.57	Line	Average
2.041	17.14	21.12	38.26	56.00	17.74	Line	QP
2.918	4.20	20.88	25.08	46.00	20.92	Line	Average
2.918	13.93	20.88	34.81	56.00	21.19	Line	QP
17.910	4.22	21.16	25.38	50.00	24.62	Line	Average
17.910	11.79	21.16	32.95	60.00	27.05	Line	QP

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO

Temp/Humi/ATM: 21.5℃/57%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Trace: 1
Condition: IF B/W 9kHz PK/AV

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.425	19.69	20.43	40.12	47.35	7.23	Neutral	Average
0.425	27.66	20.43	48.09	57.35	9.26	Neutral	QP
0.666	16.47	20.31	36.78	46.00	9.22	Neutral	Average
0.666	25.68	20.31	45.99	56.00	10.01	Neutral	QP
1.093	14.45	20.93	35.38	46.00	10.62	Neutral	Average
1.093	25.23	20.93	46.16	56.00	9.84	Neutral	QP
2.006	14.22	21.03	35.25	46.00	10.75	Neutral	Average
2.006	25.25	21.03	46.28	56.00	9.72	Neutral	QP
3.215	10.37	20.84	31.21	46.00	14.79	Neutral	Average
3.215	20.64	20.84	41.48	56.00	14.52	Neutral	QP
16.282	8.69	21.13	29.82	50.00	20.18	Neutral	Average
16.282	20.54	21.13	41.67	60.00	18.33	Neutral	QP

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

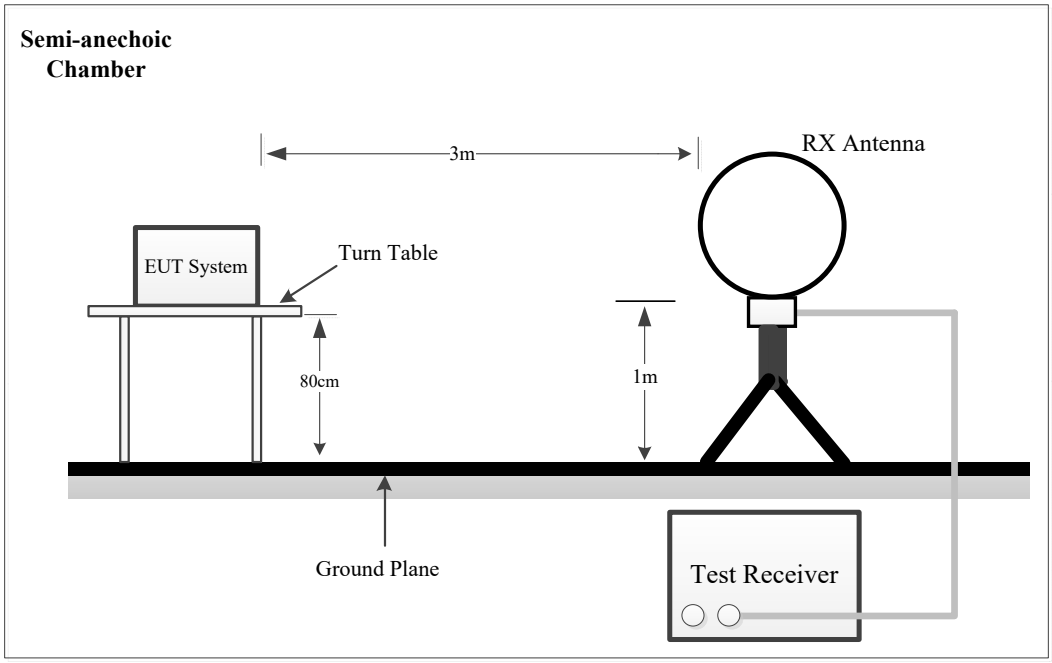
Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

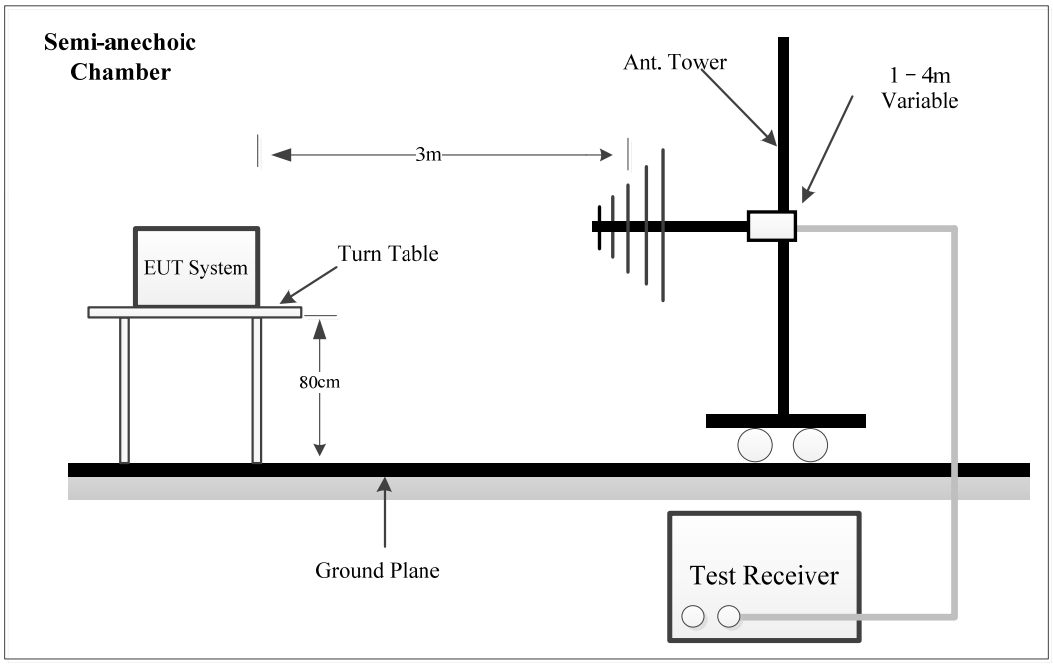
(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrumor digitally modulated intentional radiator is operating, the radio frequency power that isproduced by the intentional radiator shall be at least 20 dB below that in the 100 kHzbandwidth within the band that contains the highest level of the desired power, based oneither an RF conducted or a radiated measurement, provided the transmitter demonstratescompliance with the peak conducted power limits. If the transmitter complies with theconducted power limits based on the use of RMS averaging over a time interval, as permittedunder paragraph (b)(3) of this section, the attenuation required under this paragraph shall be30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is notrequired. 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)).

EUT Setup

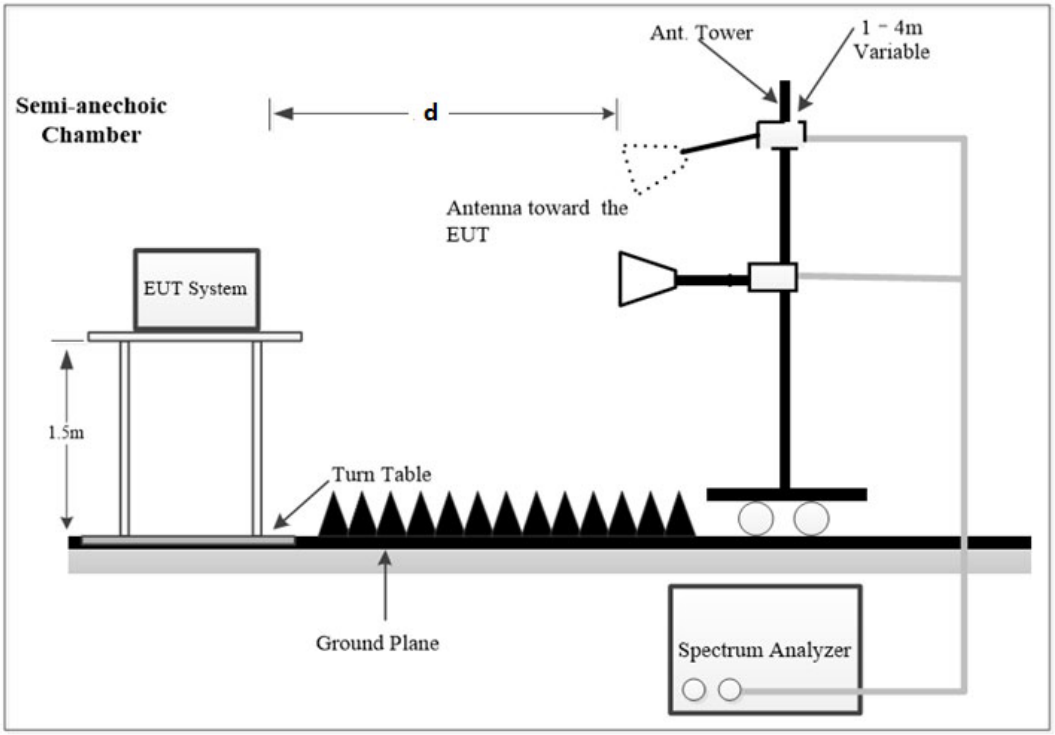
9 kHz-30MHz:



30MHz -1 GHz:



Above 1GHz:



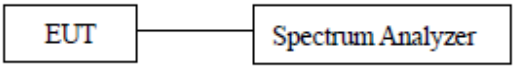
The radiated emission tests using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209, and FCC 15.247 limits.

NOTE: d is testing distance;
For Radiated Emission test (1GHz-18GHz) and Bandedge Emission test, which was performed at 3 m distance.

For Radiated Emission test (18GHz-25GHz), which was performed at 1.5 m distance, according to ANSI C63.10-2020, the test result shall be extrapolated to the specified distance using an extrapolation Factor of 20dB/decade from 3m to 1.5m.

Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1.5m]) dB= 6.0 dB

Antenna-port conducted emission:



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was TDF into the setting of test equipment:
TDF = Insert loss of RF cable
★ The Insert loss was declared by manufacturer.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Below 1GHz:

Frequency Range	RBW	VBW	Measurement
9 kHz – 150 kHz	300Hz	1 kHz	PK
	200Hz	/	QP
150 kHz – 30 MHz	10 kHz	30 kHz	PK
	9kHz	/	QP
30 MHz – 1000 MHz	100 kHz	300 kHz	PK
	120kHz	/	QP

Above 1GHz:
Pre-scan:

Measurement	Duty Cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3MHz	PK
Ave.	＞98%	1MHz	5kHz	PK
	＜98%	1MHz	1/T, not less than 5kHz	PK

Final measurement for emission identified during the pre-scan:

Measurement	Duty Cycle	RBW	Video B/W	Detector
PK	Any	1MHz	3MHz	PK
Ave.	＞98%	1MHz	10Hz	PK
	＜98%	1MHz	1/T	PK

Note: T is minimum transmission duration

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

If the maximized peak measured value complies with under the Average limit, then it is unnecessary to perform an Average measurement.

Test Procedure

Radiated Emissions:

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

For each measurement antenna alignment, the EUT shall be rotated through 0°to 360°on a turntable. The report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground parallel) unless the margin is greater than 20 dB, then the following statement shall be made: “all emissions were greater than 20 dB below the limit.”

Below 1GHz, if the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 6 dB below the QP emission limit, there's no need to record the measured QP level of the emissions in the report.

Above 1GHz, if the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is below the AV emission limit, there's no need to record the measured AV level of the emissions in the report.

Antenna-port conducted emission:

Connect the primary 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 frequency range of testing shall span 30 MHz to 10 times the operating frequency and this may be done in a single sweep or, to aid resolution, across a number of sweeps. The resolution bandwidth shall be 100 kHz, video bandwidth 300 kHz, and a coupled sweep time with a peak detector.

The limit is based on the highest in-band level across all channels measured using the same instrument settings (resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector). To help clearly demonstrate compliance a display line may be set at the required offset (typically 20 dB) below the highest in-band level. Where the highest in-band level is not clearly identified in the out-of-band measurements a separate spectral plot showing the in-band level shall be provided. When conducted measurements cannot be made (for example a device with integrated, non-removable antenna) radiated measurements shall be used. The reference level for determining the limit shall be established by maximizing the field strength from the highest power channel and measuring using the resolution and video bandwidth settings and peak detector as described above. The field strength limit for spurious emissions outside of restricted-bands shall then be set at the required offset (typically 20 dB) below the highest in-band level. Radiated measurements will follow the standards measurement procedures described in Clause 6 with the exception that the resolution bandwidth shall be 100 kHz, video bandwidth 300 kHz, and a coupled sweep time with a peak detector. Note that use of wider measurement bandwidths are acceptable for measuring the spurious emissions provided that the peak detector is used and that the measured value of spurious emissions are compared to the highest in-band level measured with the 100 kHz / 300 kHz bandwidth settings to determine compliance.

Result &Margin Calculation

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

For 9 kHz to 18GHz Radiated emission test and Bandedge emissions test
Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

For 18GHz to 25GHz Radiated emission test
Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB) - Extrapolation factor (dB)

Extrapolation factor=6dB (distance=1.5m)

Result (dBμV/m) = Reading (dBμV) + Factor (dB/m)

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 (dB) = Limit (dBμV/m) –Result (dBμV/m)

Test Data

Please refer to the below table and plots.

Frequency Range:	Below 1 GHz	Above 1 GHz	Antenna-port conducted emission
Temperature:	24.5℃	24.5℃	24.3℃
Relative Humidity:	59 %	59 %	60 %
ATM Pressure:	100.1kPa	100.1kPa	100.2kPa
Test Date:	2025-09-24	2025-09-24	2025-08-14
Test Engineer:	Wlif Wu	Wlif Wu	Apollo Luo

Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.

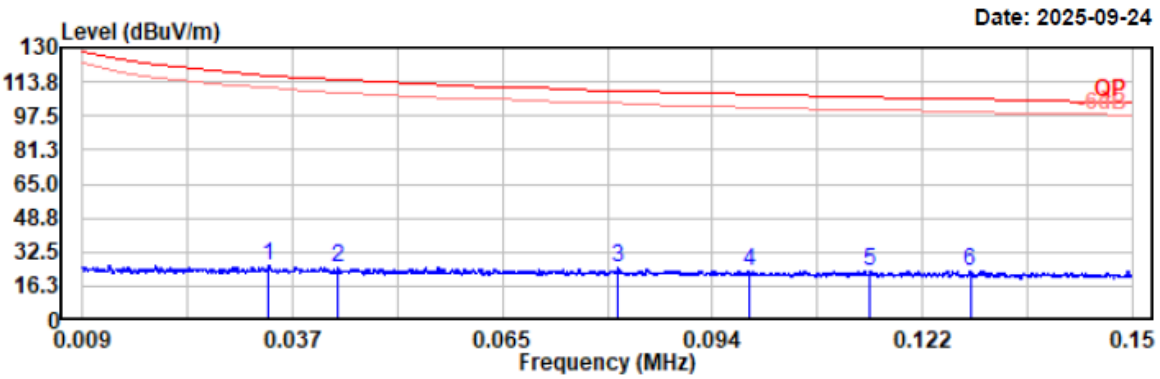
1) 9 kHz~30MHz

Pre-scan in parallel, ground-parallel and perpendicular of orientation of loop antenna, parallel is worst case.

Note: The maximum output power mode: BLE 1Mbps high channel was tested.

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

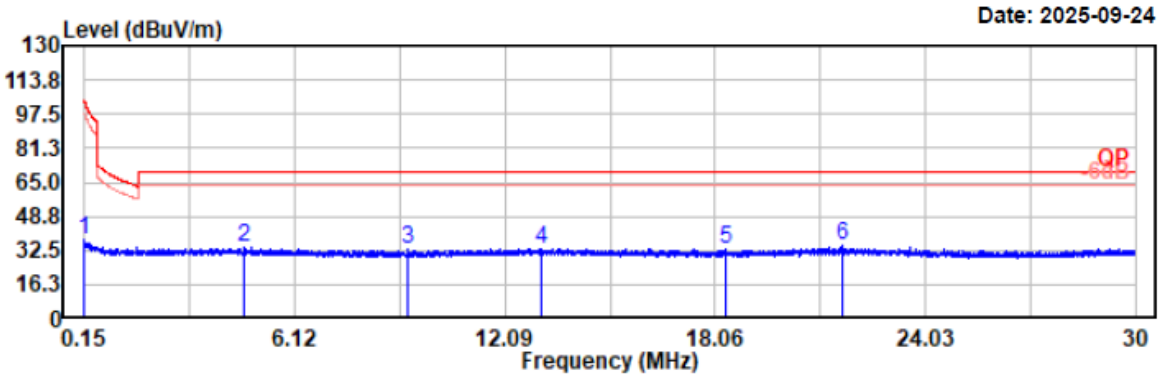


Condition: PK RBW:300Hz VBW:1kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
0.034	6.09	19.91	26.00	116.96	90.96	Peak
0.043	4.92	19.91	24.83	114.89	90.06	Peak
0.081	5.18	19.72	24.90	109.45	84.55	Peak
0.098	3.46	19.75	23.21	107.74	84.53	Peak
0.115	3.96	19.73	23.69	106.40	82.71	Peak
0.128	3.81	19.73	23.54	105.45	81.91	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Condition: PK RBW:10kHz VBW:30kHz SWT:auto

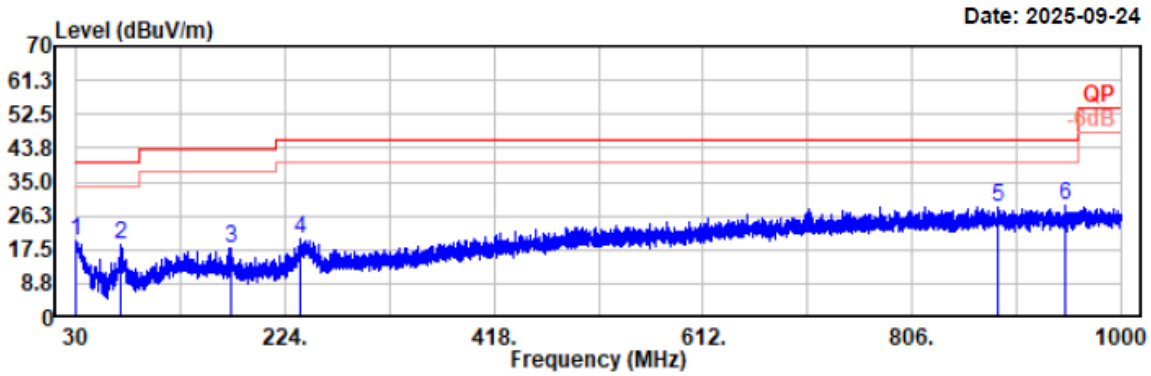
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.150	17.64	19.72	37.36	104.08	66.72	Peak
4.708	14.03	19.70	33.73	69.54	35.81	Peak
9.350	13.42	19.70	33.12	69.54	36.42	Peak
13.147	13.80	19.74	33.54	69.54	36.00	Peak
18.338	13.06	19.98	33.04	69.54	36.50	Peak
21.666	14.89	20.13	35.02	69.54	34.52	Peak

2) 30MHz-1GHz

Note: The maximum output power mode: BLE 1Mbps high channel was tested.

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

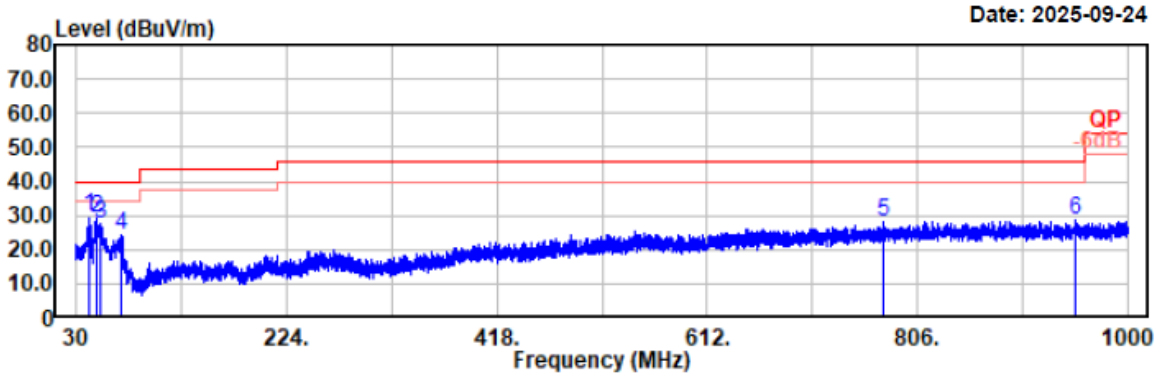


Condition: PK RBW:100kHz VBW:300kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
30.10	25.48	-5.63	19.85	40.00	20.15	Horizontal	Peak
71.13	36.08	-17.05	19.03	40.00	20.97	Horizontal	Peak
174.24	30.15	-12.13	18.02	43.50	25.48	Horizontal	Peak
238.84	32.04	-11.77	20.27	46.00	25.73	Horizontal	Peak
885.83	26.31	2.40	28.71	46.00	17.29	Horizontal	Peak
948.40	25.79	3.13	28.92	46.00	17.08	Horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



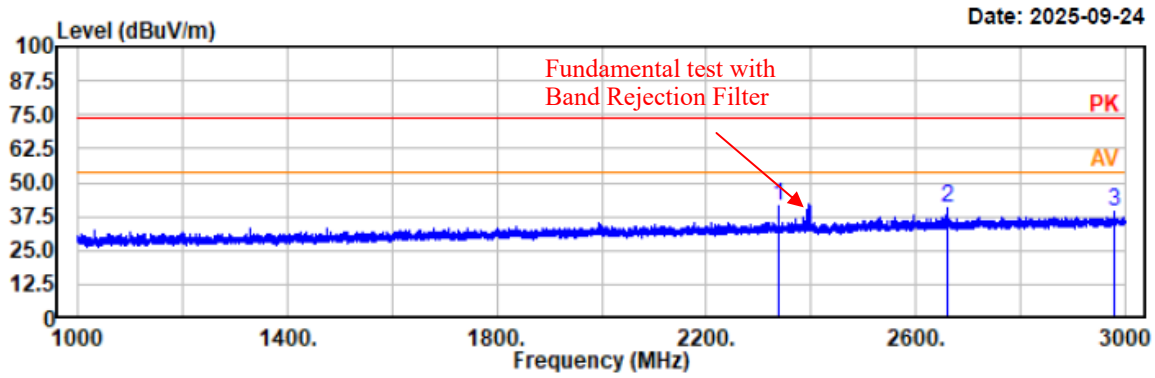
Condition: PK RBW:100kHz VBW:300kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
41.54	42.26	-12.74	29.52	40.00	10.48	Vertical	Peak
48.62	46.58	-17.09	29.49	40.00	10.51	Vertical	Peak
52.02	45.27	-17.72	27.55	40.00	12.45	Vertical	Peak
71.52	41.46	-17.05	24.41	40.00	15.59	Vertical	Peak
775.15	27.39	0.96	28.35	46.00	17.65	Vertical	Peak
951.60	25.72	3.18	28.90	46.00	17.10	Vertical	Peak

3) 1GHz~3GHz

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

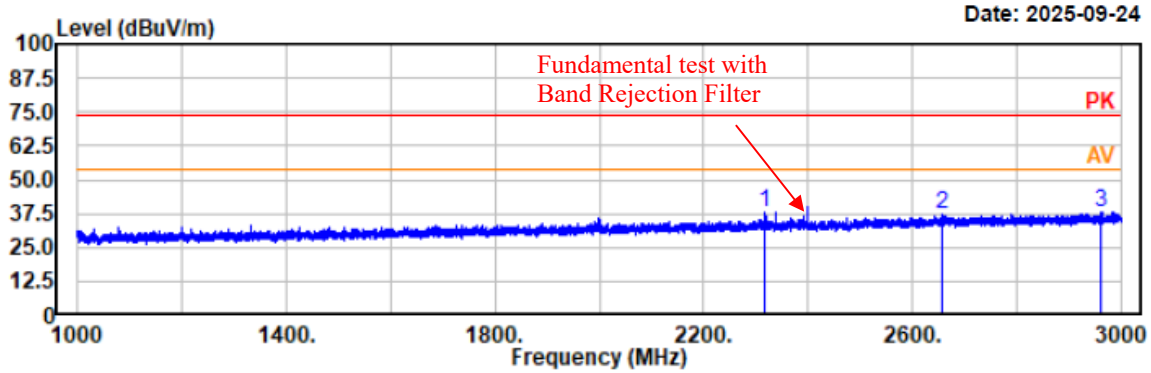


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2337.80	52.49	-11.34	41.15	74.00	32.85	horizontal	Peak
2660.40	50.76	-10.16	40.60	74.00	33.40	horizontal	Peak
2979.60	48.10	-9.05	39.05	74.00	34.95	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

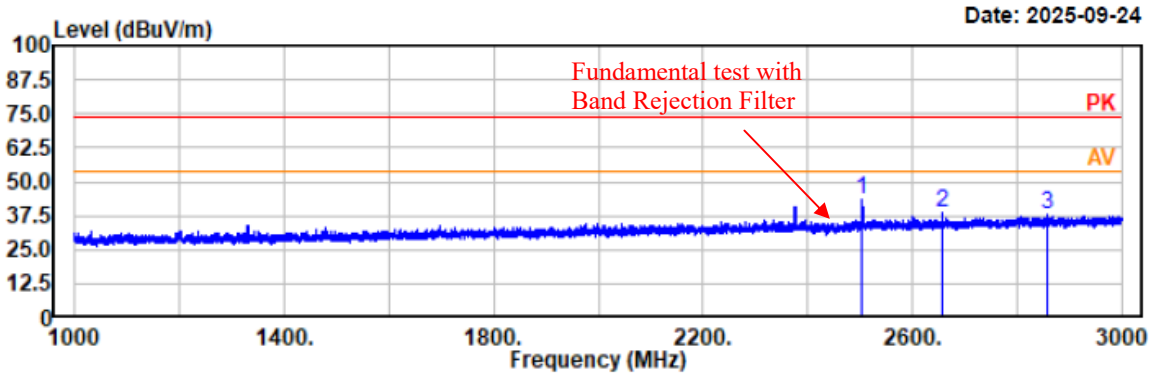


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2318.60	49.55	-11.38	38.17	74.00	35.83	vertical	Peak
2657.80	47.40	-10.17	37.23	74.00	36.77	vertical	Peak
2961.60	46.97	-9.14	37.83	74.00	36.17	vertical	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

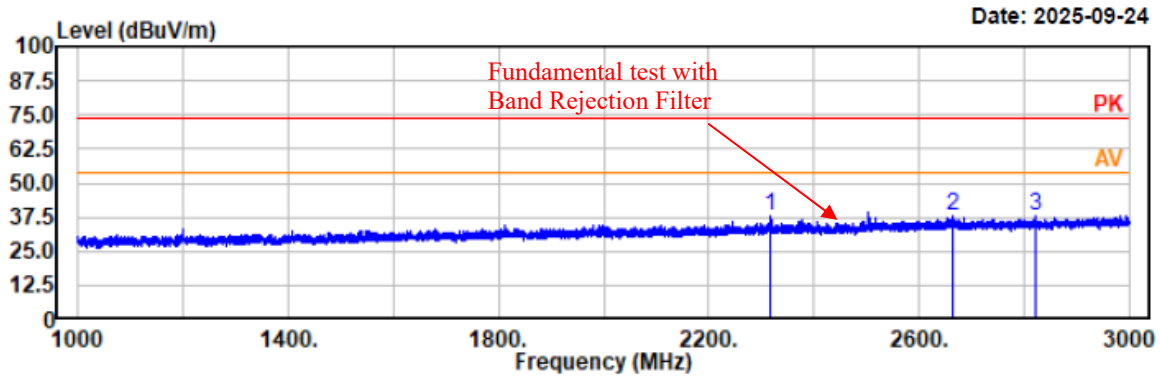


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2504.40	54.35	-10.69	43.66	74.00	30.34	horizontal	Peak
2658.40	49.10	-10.17	38.93	74.00	35.07	horizontal	Peak
2855.80	47.27	-9.61	37.66	74.00	36.34	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

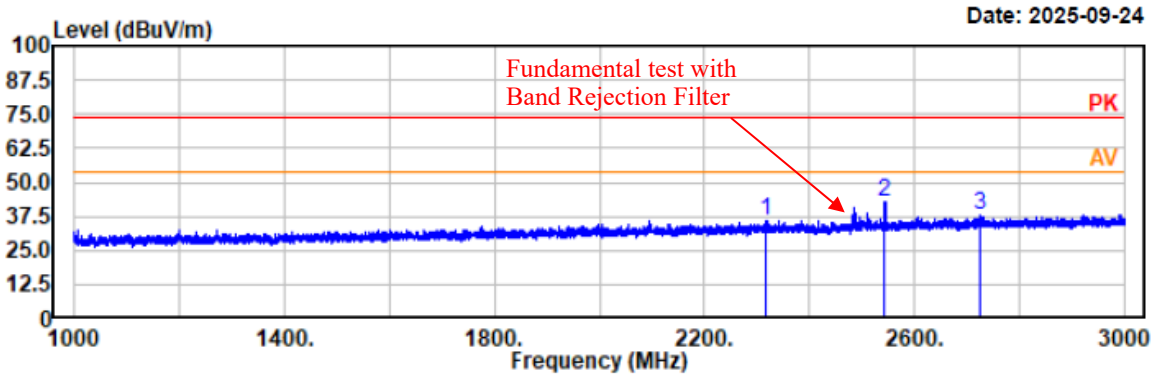


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2318.60	49.49	-11.38	38.11	74.00	35.89	vertical	Peak
2665.80	48.35	-10.14	38.21	74.00	35.79	vertical	Peak
2820.60	47.55	-9.73	37.82	74.00	36.18	vertical	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

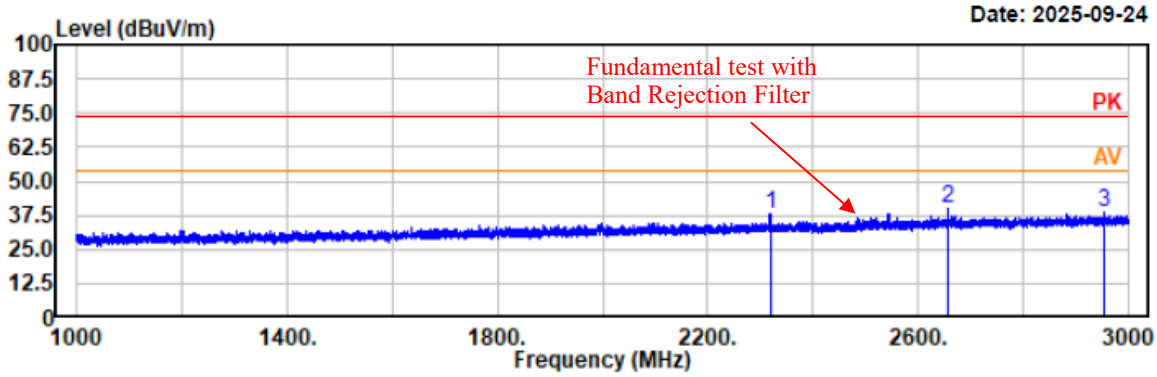


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2318.60	47.57	-11.38	36.19	74.00	37.81	horizontal	Peak
2543.80	53.44	-10.60	42.84	74.00	31.16	horizontal	Peak
2726.40	47.76	-9.98	37.78	74.00	36.22	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



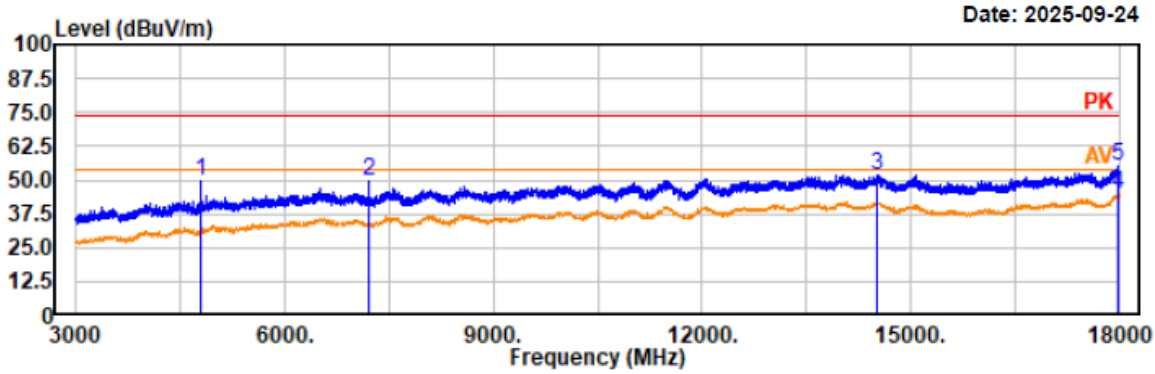
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2318.80	49.38	-11.38	38.00	74.00	36.00	vertical	Peak
2655.60	50.26	-10.18	40.08	74.00	33.92	vertical	Peak
2954.60	47.66	-9.18	38.48	74.00	35.52	vertical	Peak

4) 3 GHz ~18 GHz

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

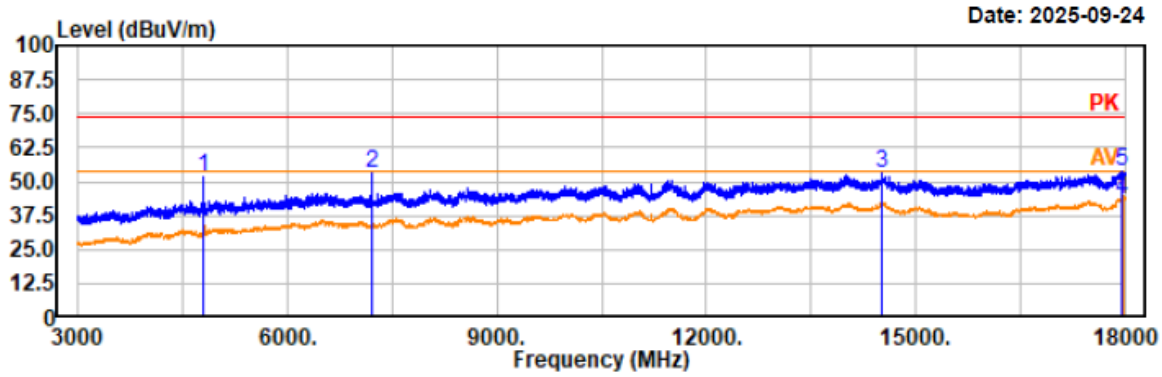


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4803.00	55.00	-5.24	49.76	74.00	24.24	horizontal	Peak
7206.00	52.09	-2.55	49.54	74.00	24.46	horizontal	Peak
14505.00	46.68	5.06	51.74	74.00	22.26	horizontal	Peak
17976.00	37.96	6.89	44.85	54.00	9.15	horizontal	Average
17976.00	48.42	6.89	55.31	74.00	18.69	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

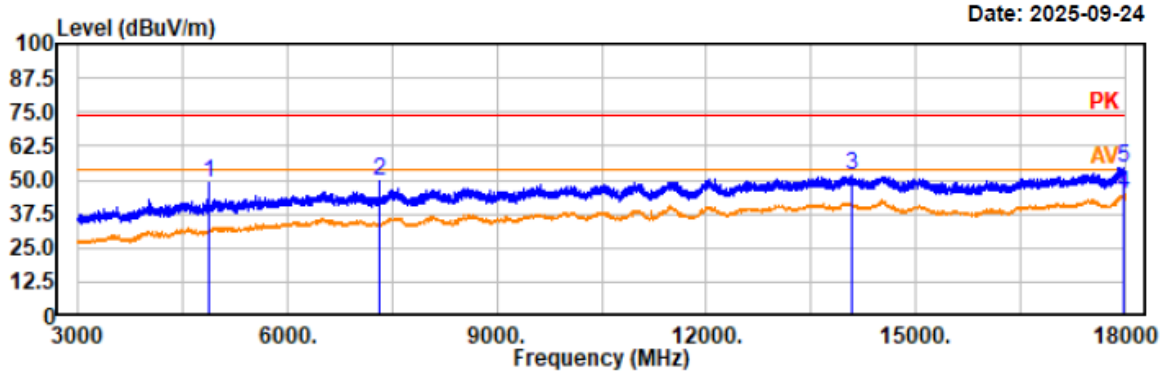


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4804.50	56.98	-5.24	51.74	74.00	22.26	vertical	Peak
7206.00	55.47	-2.55	52.92	74.00	21.08	vertical	Peak
14518.50	47.80	5.06	52.86	74.00	21.14	vertical	Peak
17940.00	36.73	6.84	43.57	54.00	10.43	vertical	Average
17940.00	46.72	6.84	53.56	74.00	20.44	vertical	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

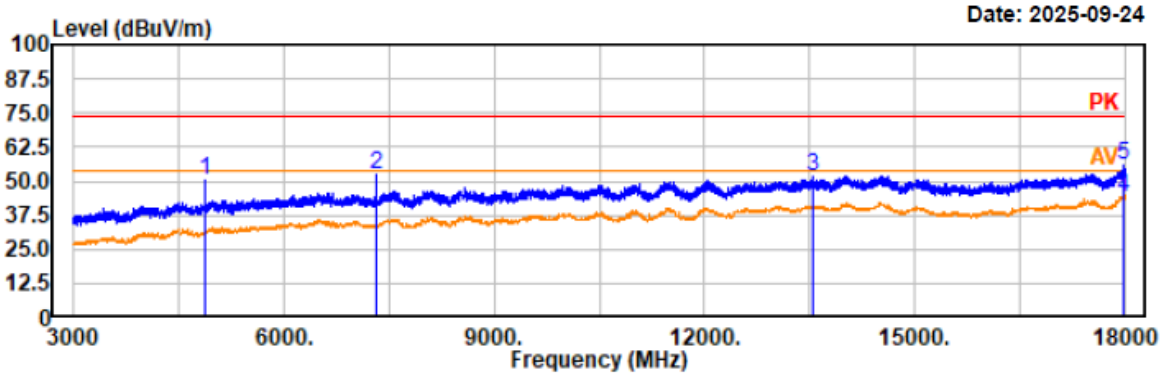


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4879.50	54.48	-5.30	49.18	74.00	24.82	horizontal	Peak
7320.00	52.12	-2.25	49.87	74.00	24.13	horizontal	Peak
14080.50	46.14	5.31	51.45	74.00	22.55	horizontal	Peak
17988.00	37.64	6.89	44.53	54.00	9.47	horizontal	Average
17988.00	47.75	6.89	54.64	74.00	19.36	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

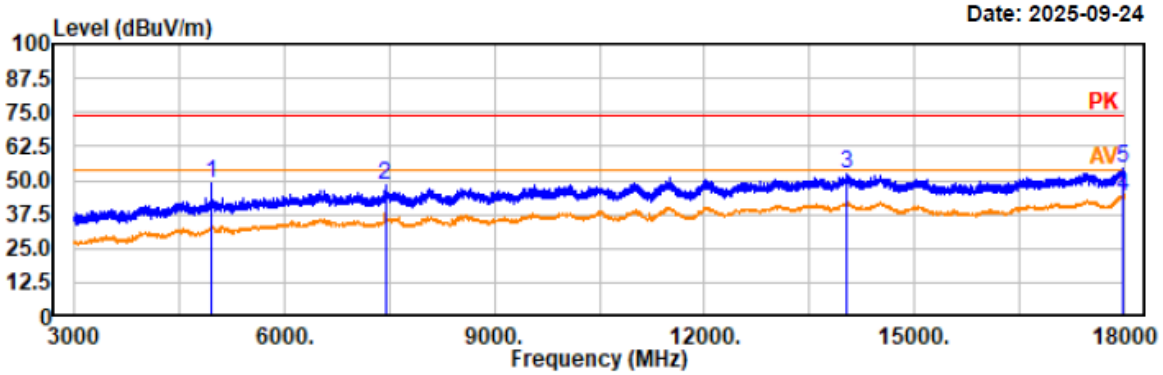


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4879.50	55.47	-5.30	50.17	74.00	23.83	vertical	Peak
7320.00	54.50	-2.25	52.25	74.00	21.75	vertical	Peak
13558.50	47.25	4.67	51.92	74.00	22.08	vertical	Peak
17967.00	37.13	6.88	44.01	54.00	9.99	vertical	Average
17967.00	48.70	6.88	55.58	74.00	18.42	vertical	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

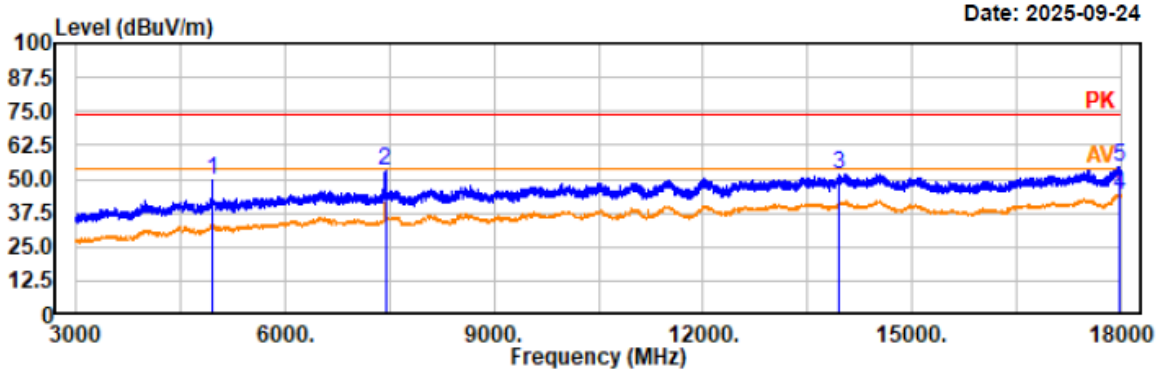


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.50	54.30	-5.11	49.19	74.00	24.81	horizontal	Peak
7440.00	50.32	-2.03	48.29	74.00	25.71	horizontal	Peak
14028.00	46.97	5.24	52.21	74.00	21.79	horizontal	Peak
17986.50	37.45	6.89	44.34	54.00	9.66	horizontal	Average
17986.50	47.31	6.89	54.20	74.00	19.80	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

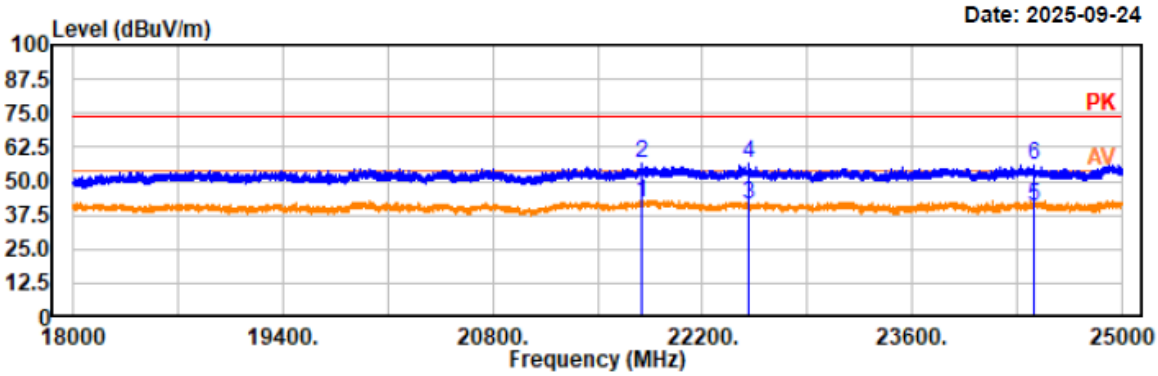
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4959.00	54.83	-5.11	49.72	74.00	24.28	vertical	Peak
7440.00	55.35	-2.03	53.32	74.00	20.68	vertical	Peak
13951.50	46.62	5.19	51.81	74.00	22.19	vertical	Peak
17971.50	37.25	6.88	44.13	54.00	9.87	vertical	Average
17971.50	47.46	6.88	54.34	74.00	19.66	vertical	Peak

5) Above 18 GHz

Note: The maximum output power mode: BLE 1Mbps high channel was tested.

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 1.5m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

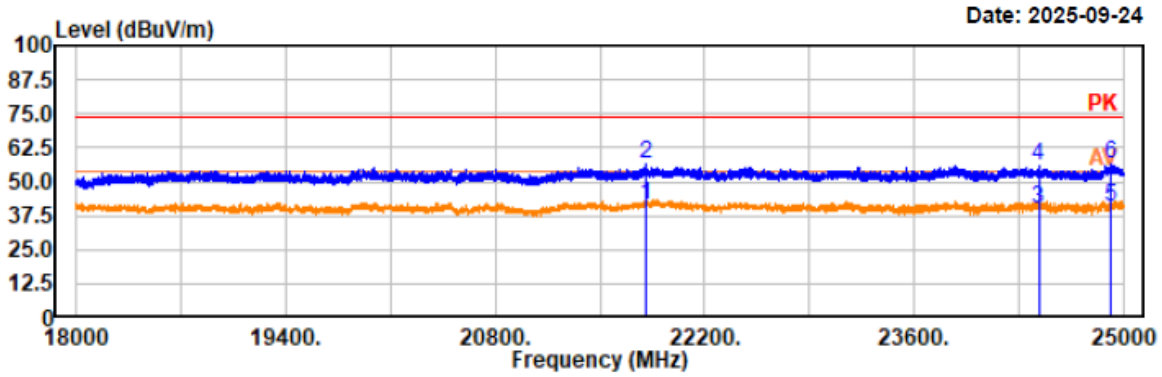


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
21798.90	37.37	5.01	42.38	54.00	11.62	horizontal	Average
21798.90	51.39	5.01	56.40	74.00	17.60	horizontal	Peak
22508.70	36.40	5.09	41.49	54.00	12.51	horizontal	Average
22508.70	51.13	5.09	56.22	74.00	17.78	horizontal	Peak
24412.70	34.55	6.09	40.64	54.00	13.36	horizontal	Average
24412.70	49.91	6.09	56.00	74.00	18.00	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 1.5m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



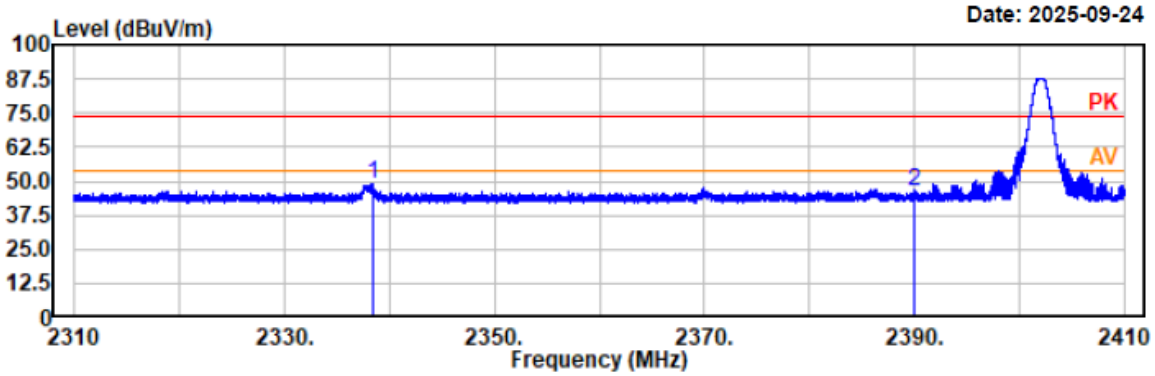
Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
21804.50	36.62	5.02	41.64	54.00	12.36	vertical	Average
21804.50	51.38	5.02	56.40	74.00	17.60	vertical	Peak
24432.30	33.87	6.13	40.00	54.00	14.00	vertical	Average
24432.30	49.90	6.13	56.03	74.00	17.97	vertical	Peak
24916.00	34.22	6.31	40.53	54.00	13.47	vertical	Average
24916.00	49.93	6.31	56.24	74.00	17.76	vertical	Peak

Restricted Bands Emissions:

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

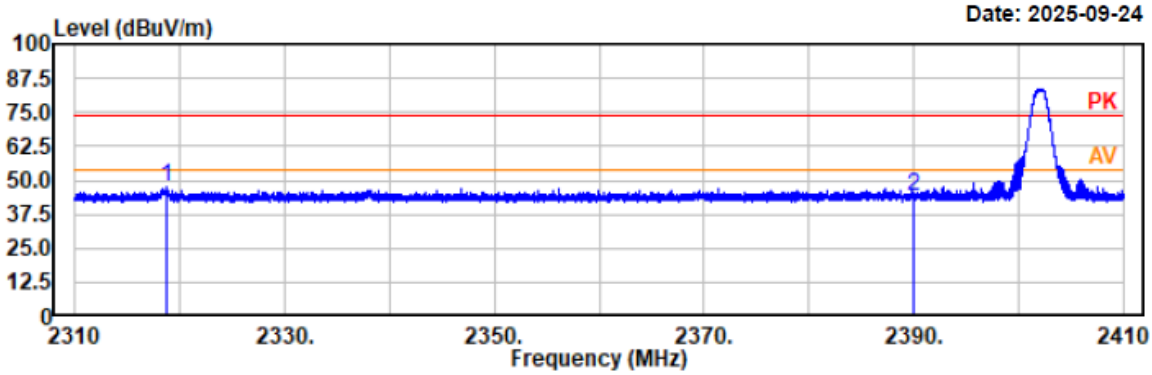


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2338.36	50.16	-1.34	48.82	74.00	25.18	horizontal	Peak
2390.00	47.12	-1.15	45.97	74.00	28.03	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

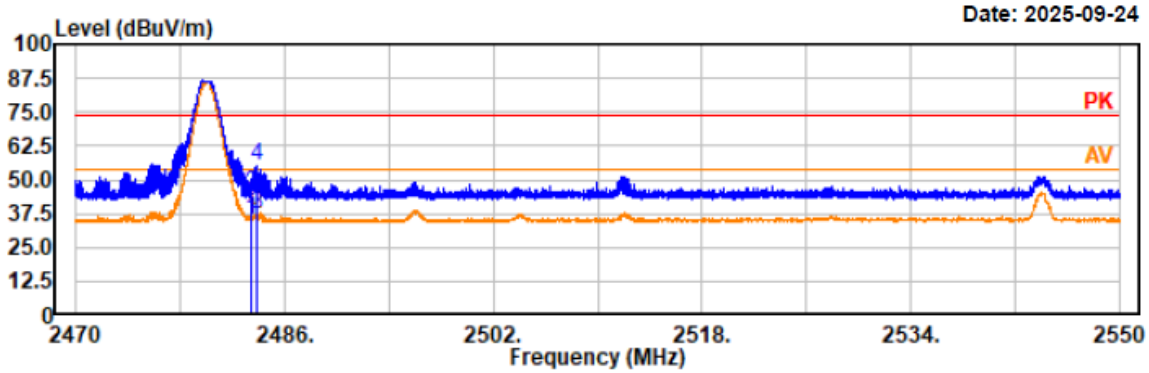


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2318.80	48.70	-1.38	47.32	74.00	26.68	vertical	Peak
2390.00	45.08	-1.15	43.93	74.00	30.07	vertical	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

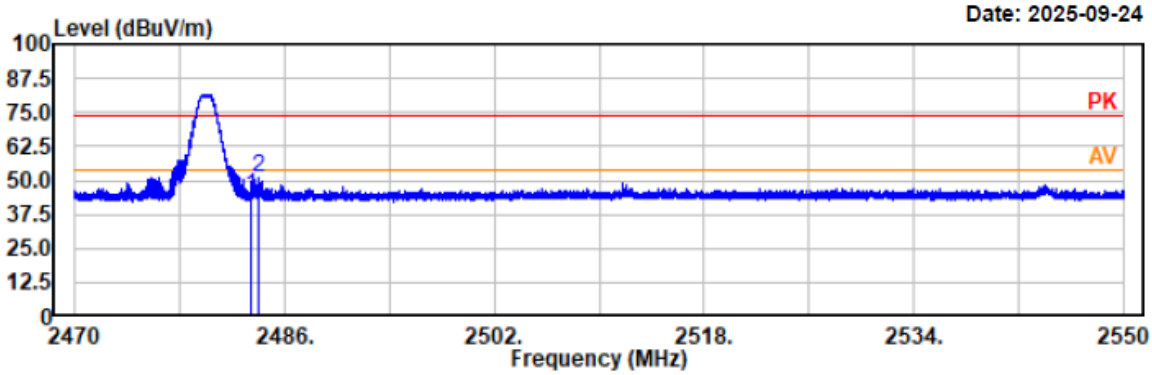


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	36.09	-0.77	35.32	54.00	18.68	horizontal	Average
2483.50	45.52	-0.77	44.75	74.00	29.25	horizontal	Peak
2483.90	38.03	-0.76	37.27	54.00	16.73	horizontal	Average
2483.90	55.65	-0.76	54.89	74.00	19.11	horizontal	Peak

Project No.: 2507U05487E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: RD-55 PRO
Test distance: 3m

Temp/Humi/ATM: 24.5℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

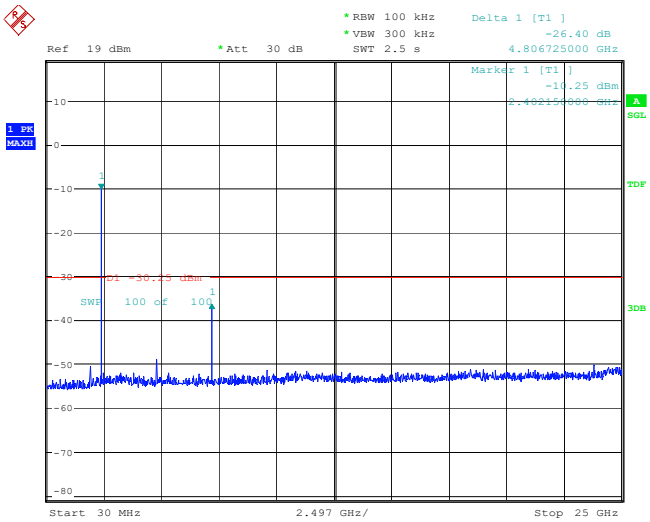


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	45.21	-0.77	44.44	74.00	29.56	vertical	Peak
2483.96	51.70	-0.76	50.94	74.00	23.06	vertical	Peak

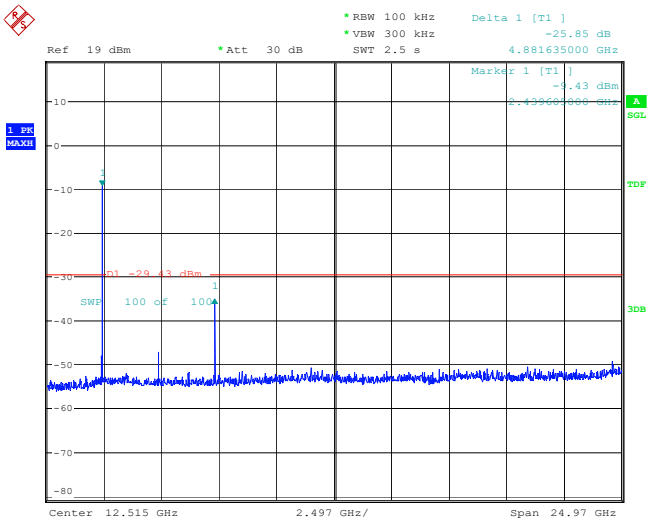
Antenna-port conducted emission

BLE_1M_Low_Channel



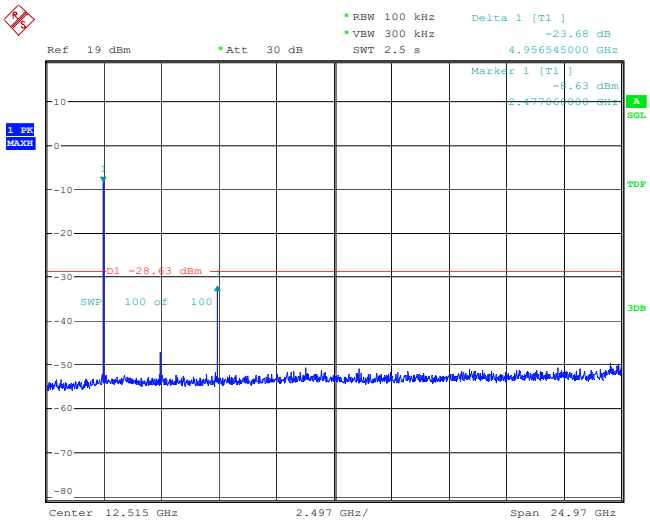
ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 19:48:04

BLE_1M_Middle_Channel



ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 19:53:14

BLE_1M_High_Channel



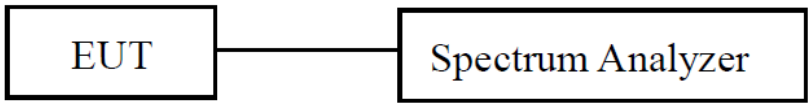
ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 20:09:31

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, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was Offset into the setting of test equipment:
Offset = Insert loss of RF cable
★The Insert loss was declared by manufacturer.

Test Procedure

According to ANSI C63.10-2020 Section 11.8

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.

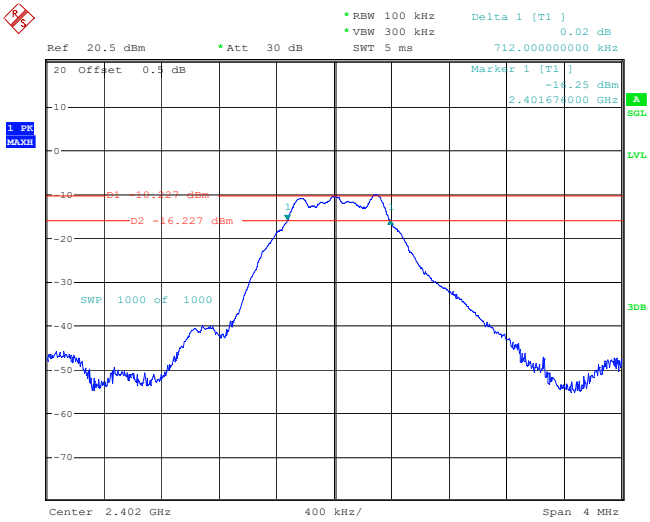
Test Data

Test Mode:	Transmitting	**Test Engineer:**	Apollo Luo
Test Date:	2025-08-14	**Environment:**	Temp.: 24.3℃ Humi.: 60% Atm :100.2 kPa

Test Result: Compliant

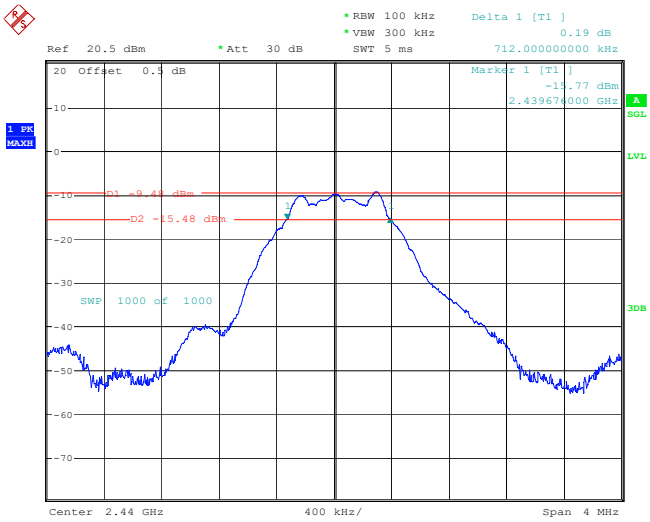
Test Modes	Test Channel	Test Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
BLE 1Mbps	Lowest	2402	0.712	≥0.5
	Middle	2440	0.712	≥0.5
	Highest	2480	0.724	≥0.5

1Mbps_Lowest



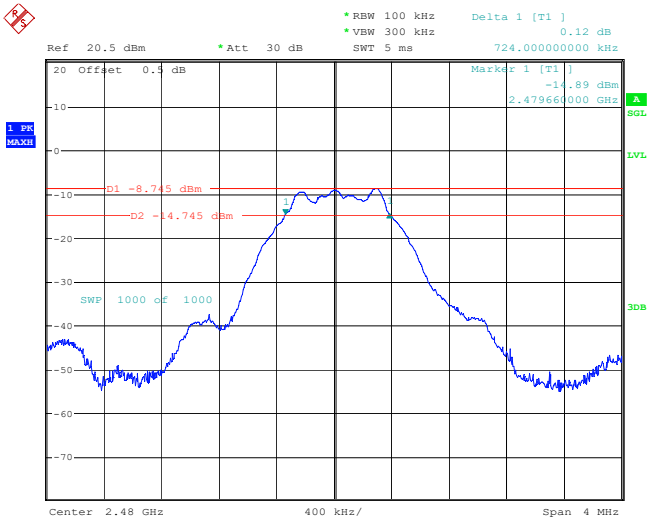
ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:22:08

1Mbps_Middle



ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:25:10

1Mbps_Highest



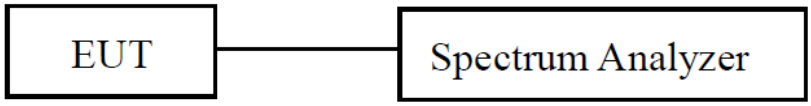
ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:27:23

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.

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was Offset into the setting of test equipment:
Offset = Insert loss of RF cable
★The Insert loss was declared by manufacturer.

Test Procedure

According to ANSI C63.10-2020 Section 11.9.1.1

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.

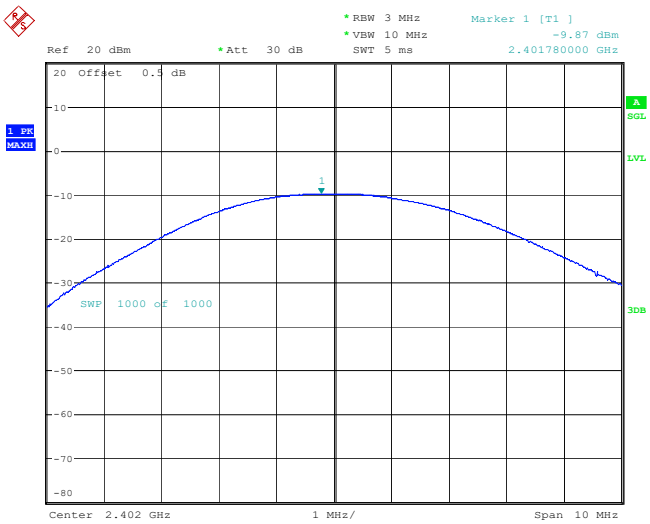
Test Data

Test Mode:	Transmitting	Test Engineer:	Apollo Luo
Test Date:	2025-08-14	Environment:	Temp.: 24.3℃ Humi.: 60% Atm :100.2 kPa

Test Result: Compliant

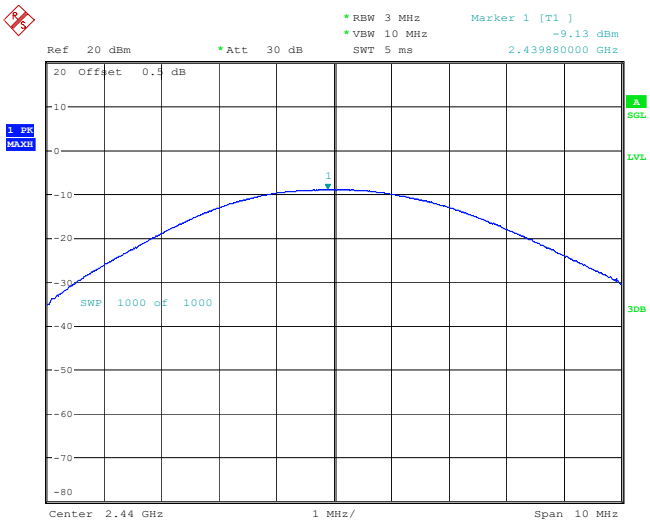
Test Modes	Test Channel	Test Frequency (MHz)	Maximum Conducted Peak Output Power(dBm)	Limit (dBm)
BLE 1Mbps	Lowest	2402	-9.87	≤30
	Middle	2440	-9.13	≤30
	Highest	2480	-8.41	≤30

1Mbps_Lowest



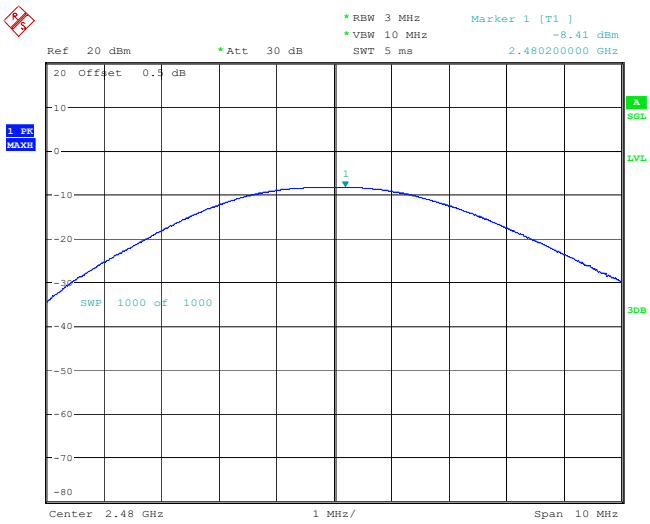
ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:22:43

1Mbps_Middle



ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:25:43

1Mbps_Highest



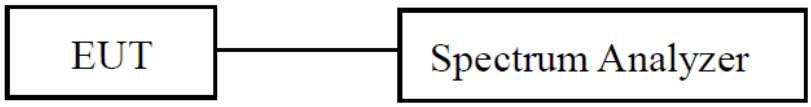
ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:27:57

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)).

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was Offset into the setting of test equipment:
Offset = Insert loss of RF cable
★The Insert loss was declared by manufacturer.

Test Procedure

According to ANSI C63.10-2020 Section 11.11

a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.
NOTE—the number of points can also be increased for large spans to retain frequency resolution
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 amplitude level.

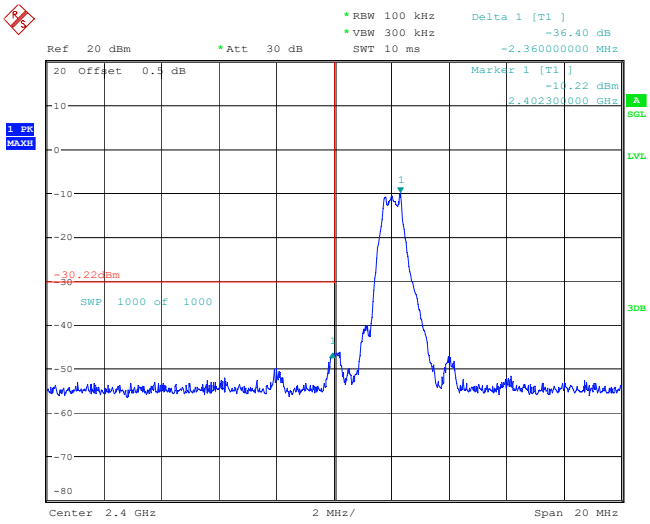
Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

Test Data

Test Mode:	Transmitting	**Test Engineer:**	Apollo Luo
Test Date:	2025-08-14	**Environment:**	Temp.: 24.3℃ Humi.: 60% Atm :100.2 kPa

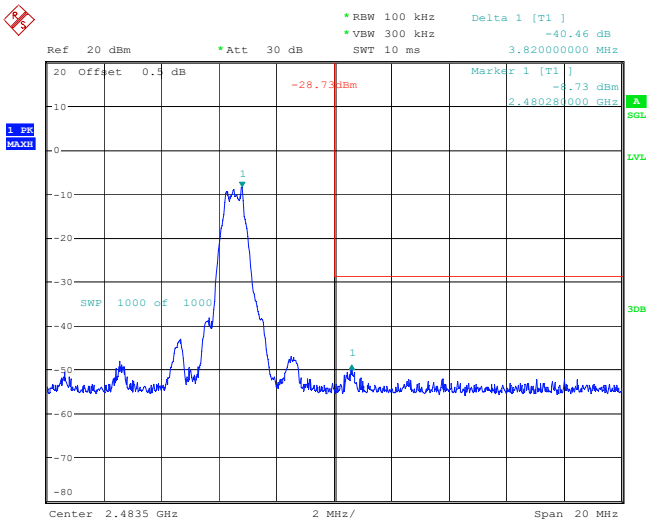
Test Result: Compliant

BLE 1Mbps_Lowest



ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:23:40

BLE 1Mbps_Highest



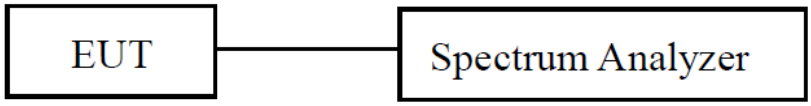
ProjectNo.:2507U05487E-RF Tester:Apollo Luo
Date: 14.AUG.2025 16:28:56

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.

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was Offset into the setting of test equipment:
Offset = Insert loss of RF cable
★The Insert loss was declared by manufacturer.

Test Procedure

According to ANSI C63.10-2020 Section 11.10.2

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.

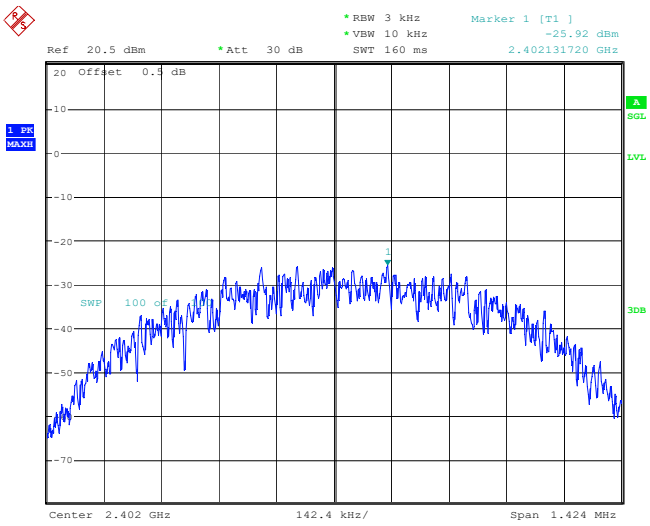
Test Data

Test Mode:	Transmitting	**Test Engineer:**	Apollo Luo
Test Date:	2025-08-14	**Environment:**	Temp.: 24.3℃ Humi.: 60% Atm :100.2 kPa

Test Result: Compliant

Test Modes	Test Channel	Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
BLE 1Mbps	Lowest	2402	-25.92	≤8.00
	Middle	2440	-25.12	≤8.00
	Highest	2480	-24.22	≤8.00

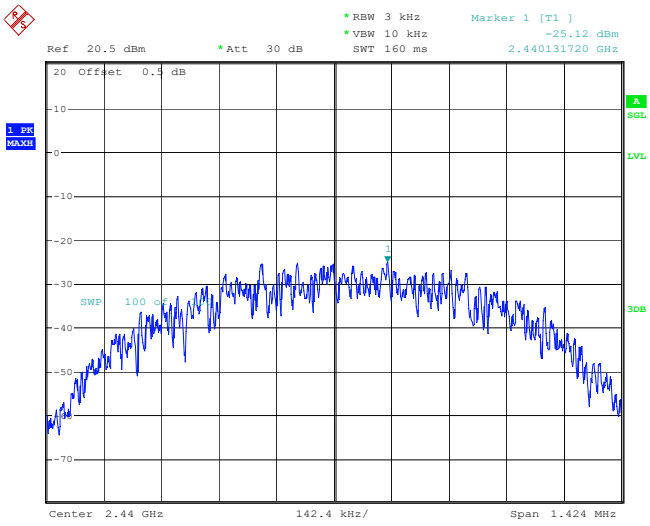
BLE 1Mbps_Lowest



ProjectNo.:2507U05487E-RF Tester:Apollo Luo

Date: 14.AUG.2025 16:24:03

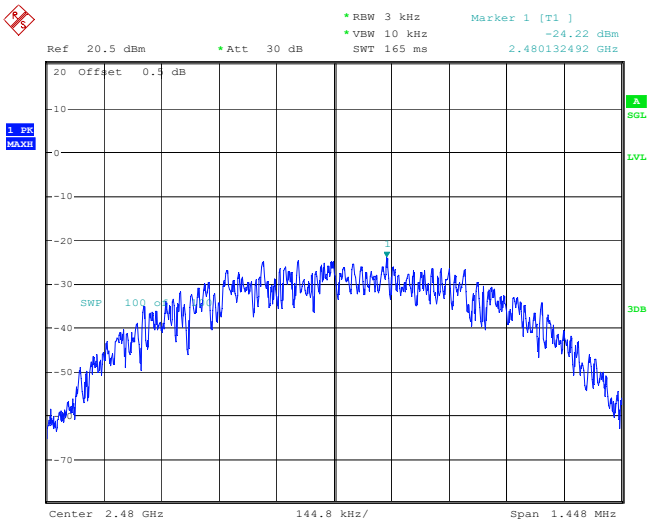
BLE 1Mbps_Middle



ProjectNo.:2507U05487E-RF Tester:Apollo Luo

Date: 14.AUG.2025 16:26:06

BLE 1Mbps_Highest



ProjectNo.:2507U05487E-RF Tester:Apollo Luo

Date: 14.AUG.2025 16:29:21

EUT PHOTOGRAPHS

Please refer to the attachment 2507U05487E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2507U05487E-RF-INP EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2507U05487E-RF-TSP-02 TEST SETUP PHOTOGRAPHS_PART 15.247

Declarations

1. Bay Area Compliance Laboratories Corp. (Xiamen) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk "★".

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

3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.

4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95% confidence interval.

5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Xiamen).

6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

******* END OF REPORT *******