



FCC PART 15.247 TEST REPORT

For

SHANTOU SUBOTECH TOY CO., LTD.

XIN XINGHUA ROAD, CHENGHUA DISTRICT, CHENGHAI OF SHANTOU, CHINA

FCC ID: 2A4PA-BG1544BT

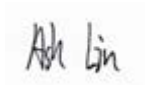
Report Type: Original Report	Product Name: Remote control robot dog
Report Number:	2507S22818E-RF-01
Report Date:	2025-06-12
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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2507S22818E-RF-01	R1V1	2025-06-12	Initial Release

GENERAL INFORMATION**Product Description for Equipment under Test (EUT)**

Product Name:	Remote control robot dog
Tested Model:	BG1544
Multiple Model(s):	N/A
Power Supply:	DC 3.7V from Battery
Maximum Peak Output Power:	3.68dBm
RF Function:	Classic BT
Operating Band/Frequency:	2402-2480 MHz
Channel Number:	79
Channel Separation:	1 MHz
Modulation Type:	GFSK, $\pi/4$ -DQPSK, 8DPSK
Antenna Type:	PCB Antenna
★Maximum Antenna Gain:	2.499 dBi
EUT Received Status:	Good
<i>Note:</i> 1. The Maximum Antenna Gain was declared by manufacturer. 2. The product comes in four colors: Dark Gray, Light Gray, White and Orange. 3. All measurement and test data in this report was gathered from production sample serial number: 31Z1-4 (Assigned by the BACL(Xiamen). The EUT supplied by the applicant was received on 2025-04-25)	

Objective

This test report is prepared for *SHANTOU SUBOTECH TOY CO., LTD.* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules.

The tests were performed in order to determine Compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 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.

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

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the product as specified in CISPR 16-4-2. This uncertainty represents expanded uncertainty expressed at 95% confidence level using a coverage factor of k=2.

$$u_c(y) = \sqrt{\sum_i c_i^2 u^2(x_i)}$$

Item	Frequency Range	$U_{lab} = 2 u_c(y)$ (Confidence of 95%)
Conducted Emissions	150kHz-30MHz	2.45 dB
Radiated Spurious Emission	9kHz-150kHz	2.82 dB
	150kHz-30MHz	2.74 dB
	30MHz~200MHz	3.47 dB
	200MHz~1GHz	4.86 dB
	1GHz~6GHz	4.88 dB
	6GHz~18GHz	4.95 dB
	18GHz~26.5GHz	4.45 dB
Transmitter Conducted Power		1.49 dB
Occupy Bandwidth		2%
Voltage (DC)		0.4%
Temperature		1°C
Humidity		5%

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 3.7V from Battery
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

Channel list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	40	2442
1	2403	...	...
...	...	...	...
...	...	78	2480
39	2441	/	/

EUT was tested with Channel 0, 39 and 78.

★EUT Exercise Software

BT test in the engineer mode.

RF Test Tool: FCC_assist 1.0.2.2

Test Modes	Power Level Setting		
	Lowest Channel	Middle Channel	Highest Channel
GFSK	10	10	10
$\pi/4$ -DQPSK	10	10	10
8DPSK	10	10	10

Note: The power level was declared by the applicant.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

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

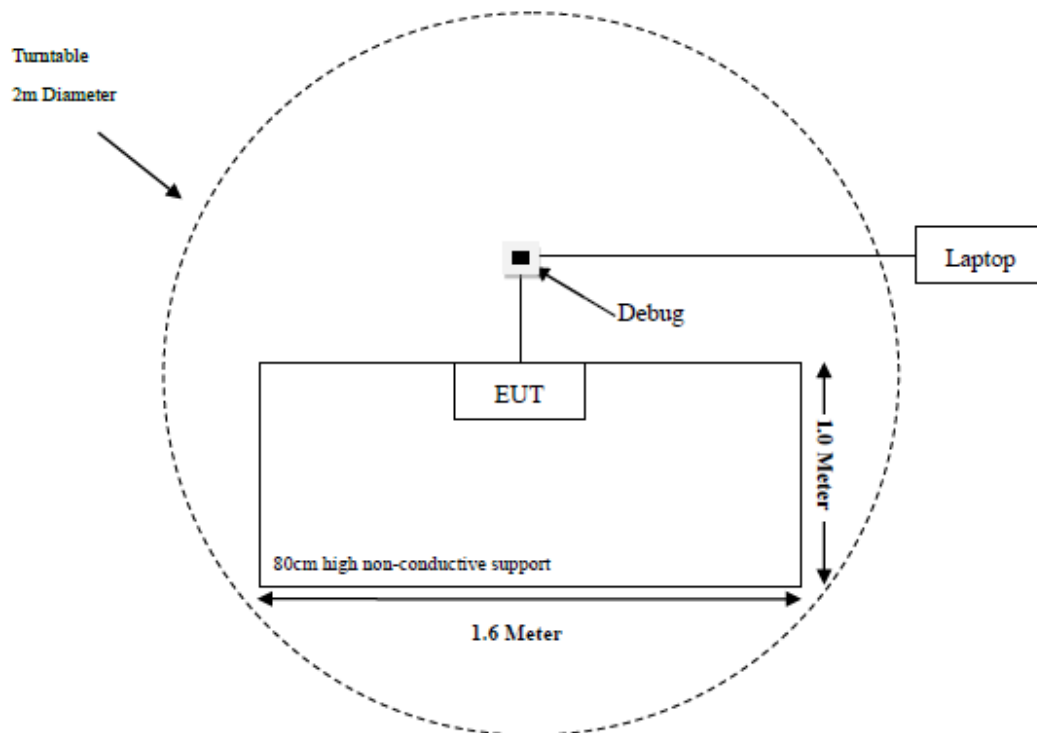
External I/O Cable

Cable Description	Length (m)	From Port	To
Cable	0.1	Debug	EUT
USB Cable	10	Laptop	Debug

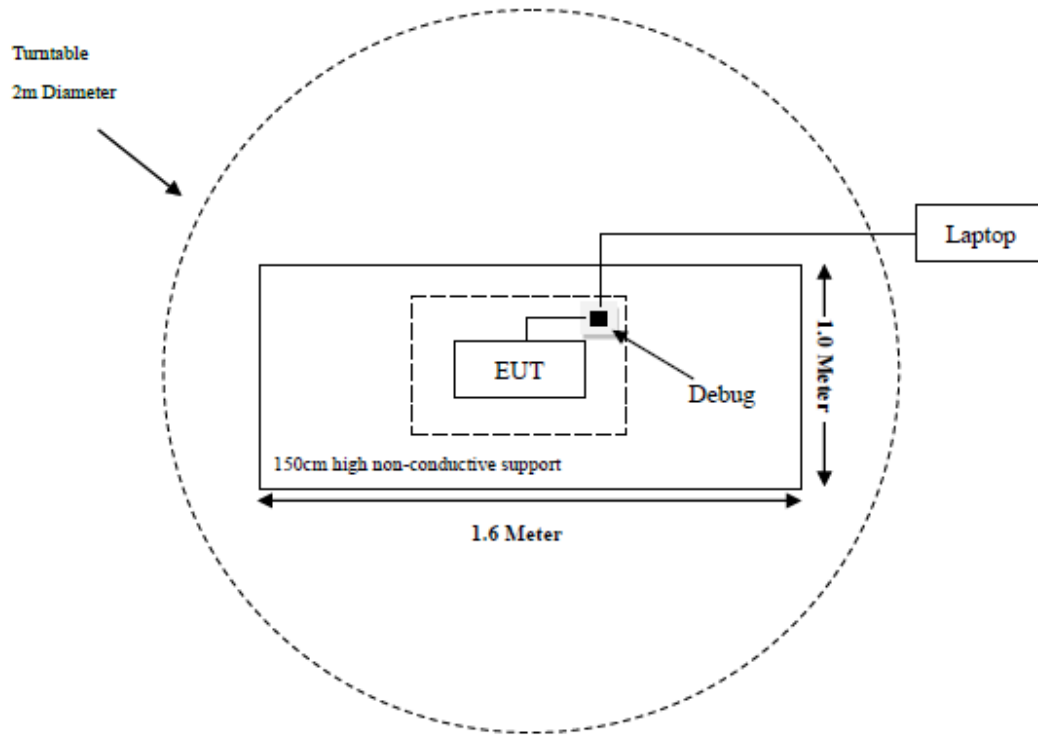
Block Diagram of Test Setup

Radiated Emission:

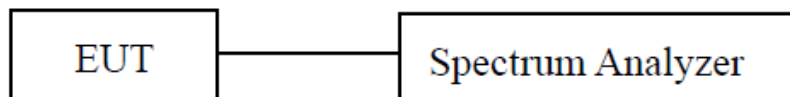
Below 1GHz



Above 1GHz



RF Conduction:



Note: The cable assembly insertion loss of 0.5dB was entered as an offset in the spectrum analyzer. (Actual cable loss was unavailable at the time of testing, therefore loss of 0.5dB was assumed as worst case.) This was later verified to be true by laboratory.

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 15.203	Antenna Requirement	Compliant
§ 15.207(a)	AC Line Conducted Emissions	Not Applicable (See note 1)
§ 15.205, § 15.209 & § 15.247(d)	Radiated Emissions & Restricted Bands Emissions	Compliant
§ 15.247(a)(1)	20 dB Emission Bandwidth	Compliant
§ 15.247(a)(1)	Channel Separation Test	Compliant
§ 15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliant
§ 15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliant
§ 15.247(b)(1)	Peak Output Power Measurement	Compliant
§ 15.247(d)	Band edges	Compliant

Note 1: The EUT is powered by battery.

TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
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 Aantenna	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	FSV40-N	102051	2025/02/20	2026/02/19
Coaxial Cable	Lianxun	RF113	N/A	Each time	Each time

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).

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to FCC § 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 use 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. 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 for Bluetooth, which was permanently attached and the Max. antenna gain is 2.499dBi, fulfill the requirement of this section. Please refer to the EUT photos.

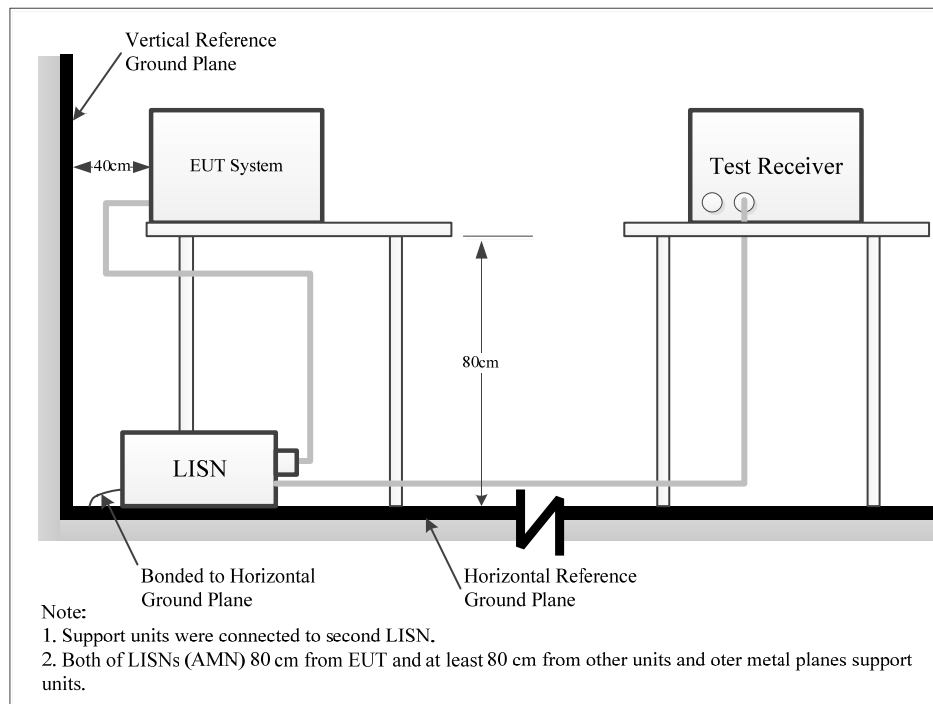
Result: Compliance

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

Test System Setup



The measurement procedure of EUT setup is according with ANSI C63.10-2020. The related limit was specified in FCC Part 15.207.

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

ANSI C63.10-2020 clause 6.2

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:

$$\begin{aligned}\text{Factor (dB)} &= \text{LISN VDF (dB)} + \text{Cable Loss (dB)} + \text{Transient Limiter Attenuation (dB)} \\ \text{Result (dB}\mu\text{V)} &= \text{Reading (dB}\mu\text{V)} + \text{Factor (dB)}\end{aligned}$$

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:

$$\text{Margin (dB)} = \text{Limit (dB}\mu\text{V)} - \text{Result (dB}\mu\text{V)}$$

Test Data

Test result: N/A

Note: The EUT is powered by battery.

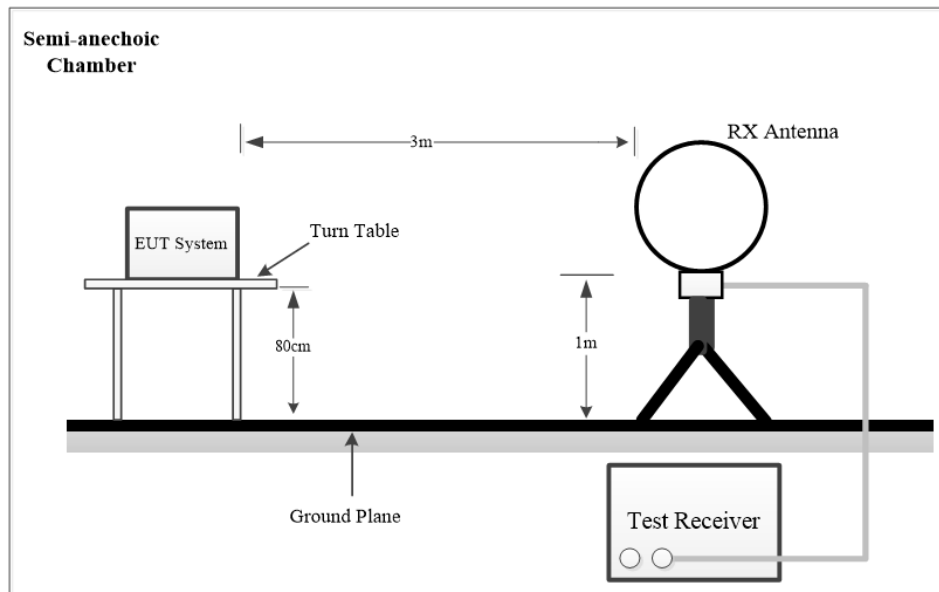
FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

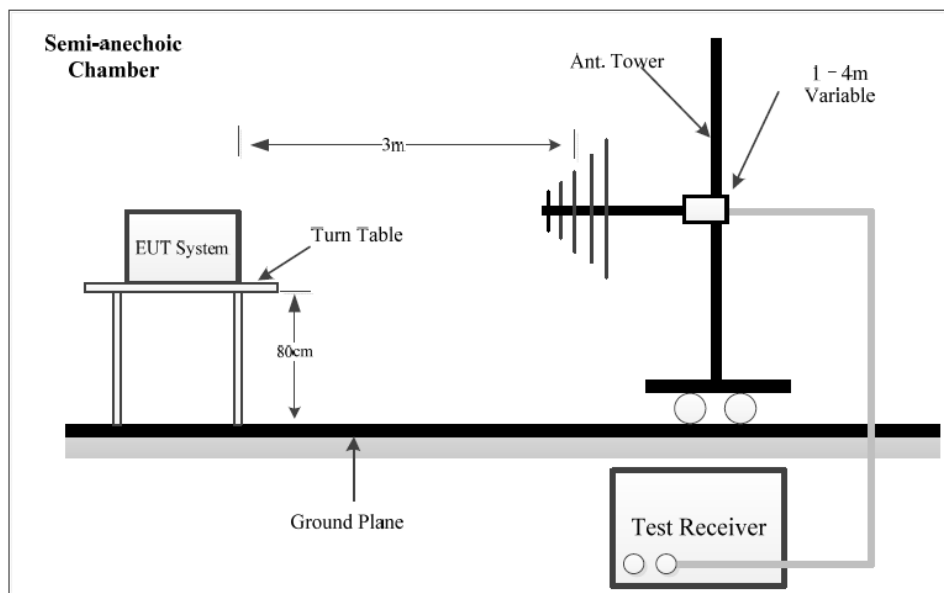
FCC §15.205; §15.209; §15.247(d)

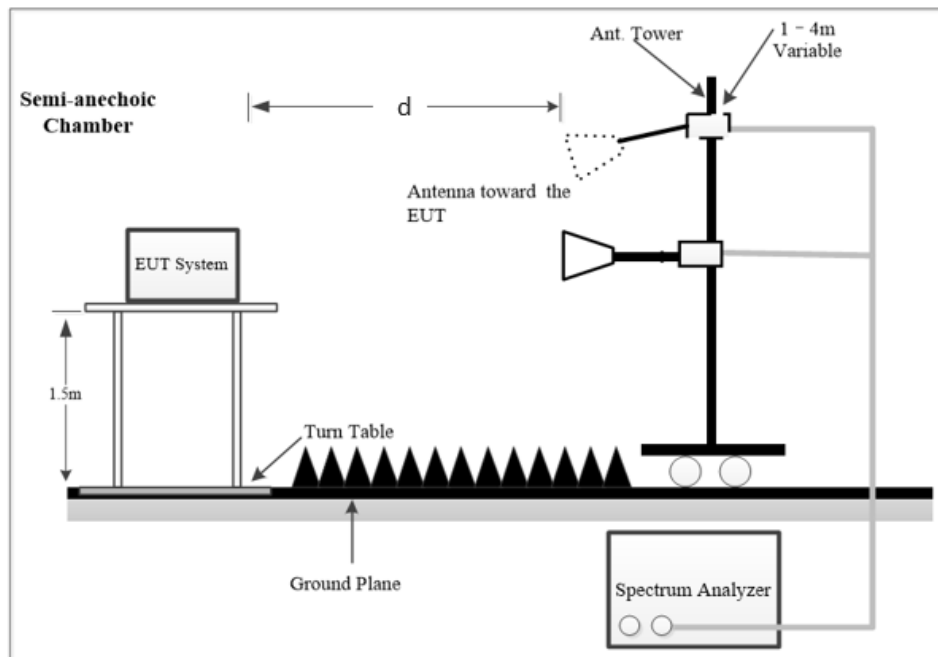
Test System Setup

9 kHz-30MHz



Below 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 = $20 \log (\text{specific distance [3m]}/\text{test distance [1.5m]})$ dB = 6 dB

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 was set with the following configurations:

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

1GHz~25GHz:

Pre-scan:

Measurement	RBW	Video B/W	Detector
PK	1MHz	3MHz	PK
AV	1MHz	5kHz	PK

Final measurement for emission identified during the pre-scan:

Measurement	RBW	Video B/W	Detector
PK	1MHz	3MHz	PK
AV	1MHz	10Hz	PK

Test Procedure

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.

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

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

For 18GHz to 25GHz Radiated emission test and Bandedged emissions 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
Temperature:	23.1°C	23.1°C
Relative Humidity:	53 %	53 %
ATM Pressure:	100.1kPa	100.1kPa
Test Date:	2025-05-09	2025-05-09
Test Engineer:	Wlif Wu	Wlif Wu

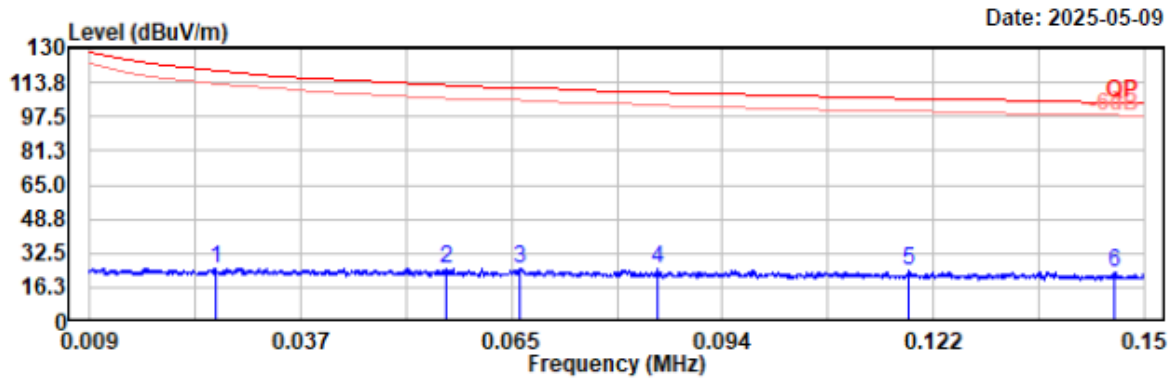
1) 9 kHz ~30MHz

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

Note: The maximum output power mode: EDR(8DPSK) Low channel was tested.

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



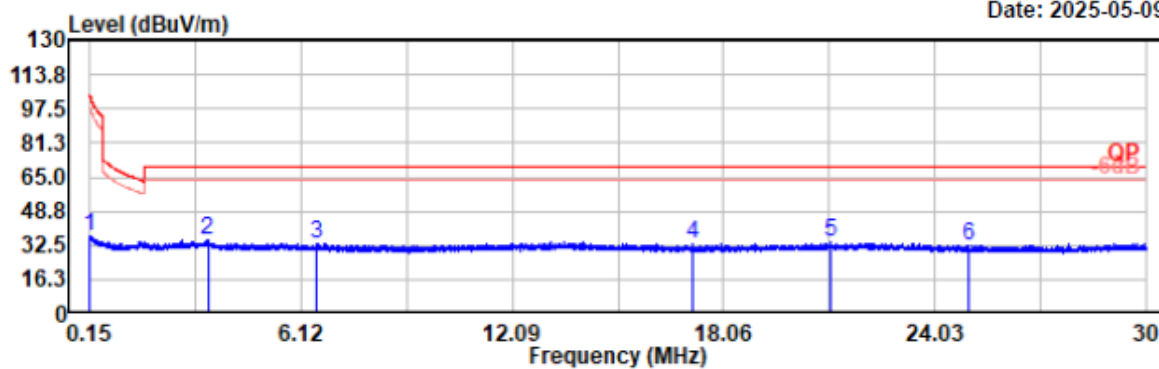
Condition: PK RBW:300Hz VBW:1kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.026	5.57	19.87	25.44	119.40	93.96	Peak
0.057	5.33	19.91	25.24	112.54	87.30	Peak
0.067	5.52	19.84	25.36	111.15	85.79	Peak
0.085	5.71	19.76	25.47	109.03	83.56	Peak
0.119	4.58	19.73	24.31	106.13	81.82	Peak
0.146	3.95	19.73	23.68	104.32	80.64	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

Date: 2025-05-09



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

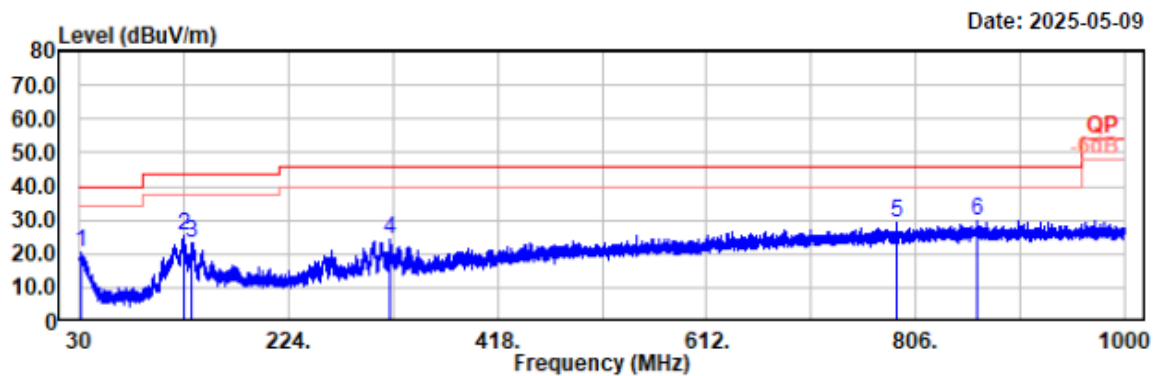
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.165	17.18	19.72	36.90	103.26	66.36	Peak
3.481	15.07	19.80	34.87	69.54	34.67	Peak
6.577	13.38	19.73	33.11	69.54	36.43	Peak
17.209	13.24	19.90	33.14	69.54	36.40	Peak
21.081	13.56	20.12	33.68	69.54	35.86	Peak
24.979	12.44	20.22	32.66	69.54	36.88	Peak

2) 30MHz-1GHz

Note: The maximum output power mode: EDR(8DPSK) Low channel was tested.

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

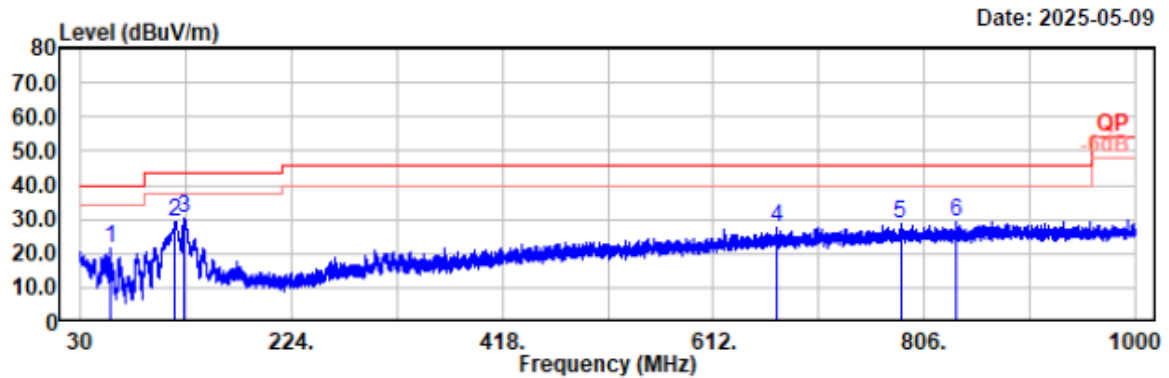


Condition: PK RBW:100kHz VBW:300kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
31.16	26.09	-5.94	20.15	40.00	19.85	Horizontal	Peak
127.19	35.33	-10.01	25.32	43.50	18.18	Horizontal	Peak
134.66	33.49	-10.31	23.18	43.50	20.32	Horizontal	Peak
317.90	32.84	-8.82	24.02	46.00	21.98	Horizontal	Peak
789.12	28.12	1.10	29.22	46.00	16.78	Horizontal	Peak
862.65	27.64	2.15	29.79	46.00	16.21	Horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



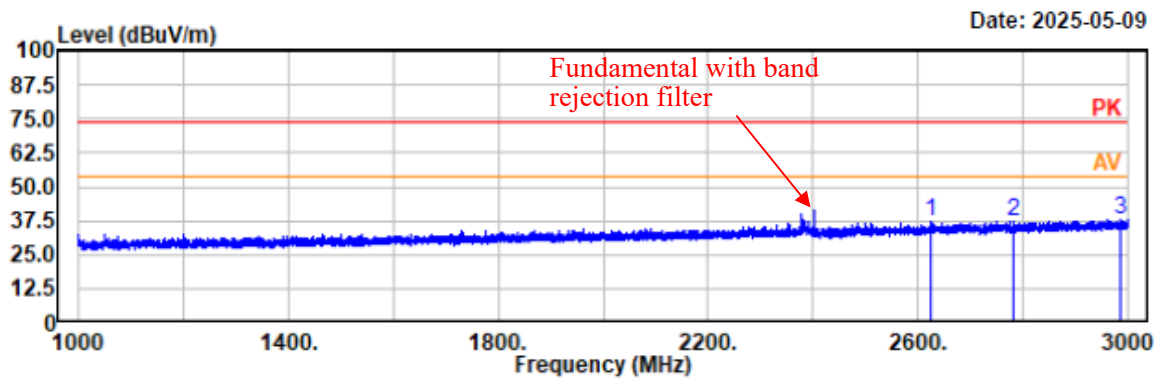
Condition: PK RBW:100kHz VBW:300kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
57.74	39.34	-17.63	21.71	40.00	18.29	Vertical	Peak
117.11	40.00	-10.67	29.33	43.50	14.17	Vertical	Peak
125.64	40.05	-9.94	30.11	43.50	13.39	Vertical	Peak
670.39	28.02	-0.62	27.40	46.00	18.60	Vertical	Peak
784.18	27.37	1.09	28.46	46.00	17.54	Vertical	Peak
835.00	27.28	1.79	29.07	46.00	16.93	Vertical	Peak

3) 1 GHz-3 GHz

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

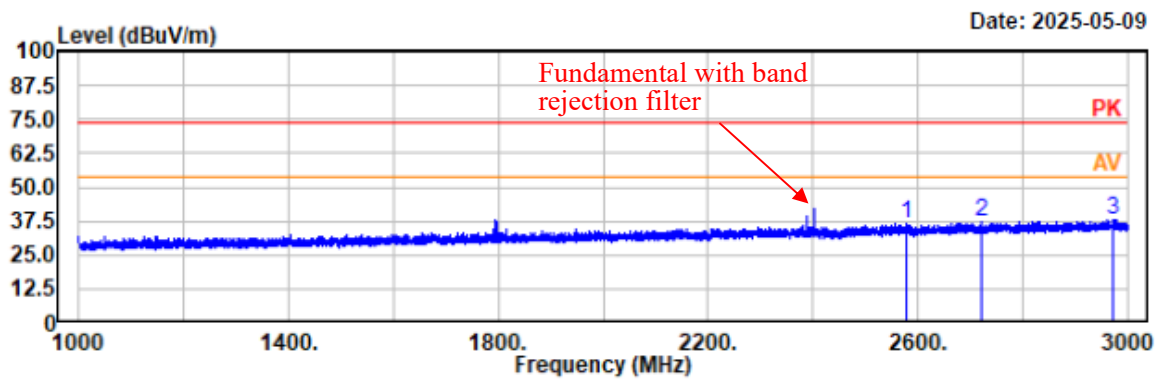


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2624.40	47.32	-10.29	37.03	74.00	36.97	horizontal	Peak
2783.60	46.96	-9.84	37.12	74.00	36.88	horizontal	Peak
2986.40	46.91	-9.01	37.90	74.00	36.10	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

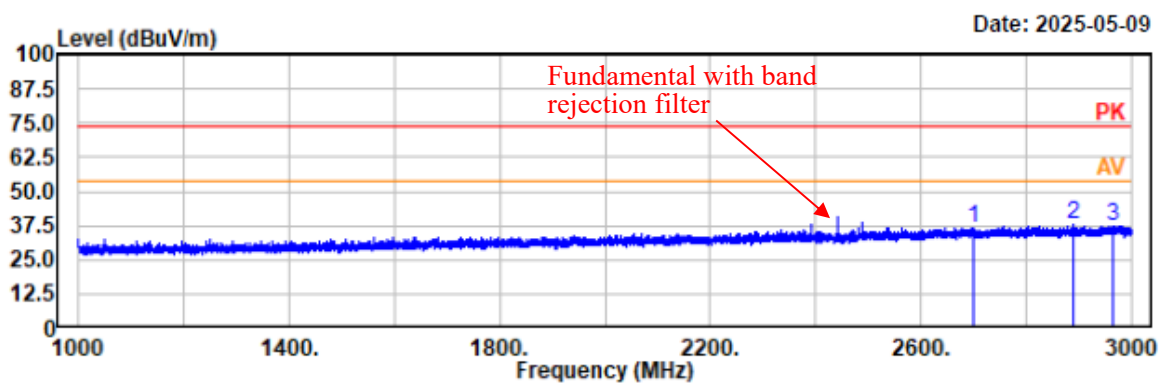


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2579.00	47.30	-10.48	36.82	74.00	37.18	vertical	Peak
2722.00	47.00	-9.98	37.02	74.00	36.98	vertical	Peak
2973.00	47.20	-9.08	38.12	74.00	35.88	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

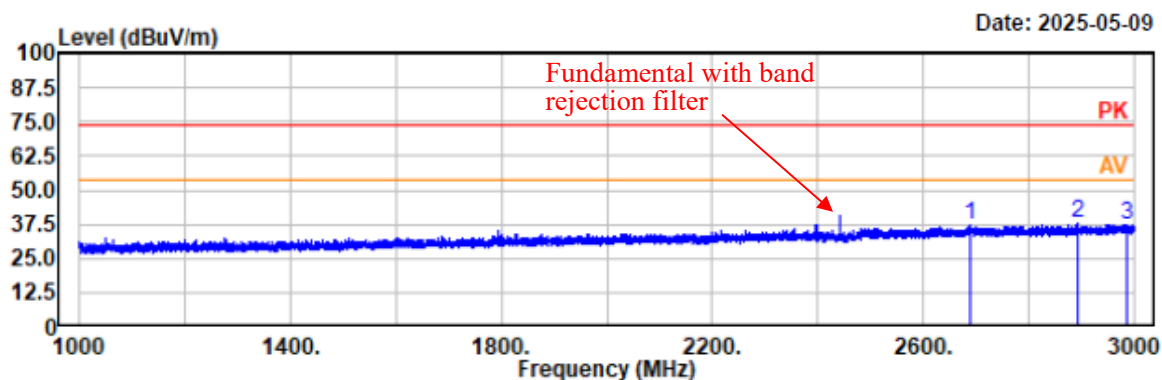


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2699.40	46.76	-10.00	36.76	74.00	37.24	horizontal	Peak
2888.20	47.73	-9.57	38.16	74.00	35.84	horizontal	Peak
2964.20	46.60	-9.13	37.47	74.00	36.53	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

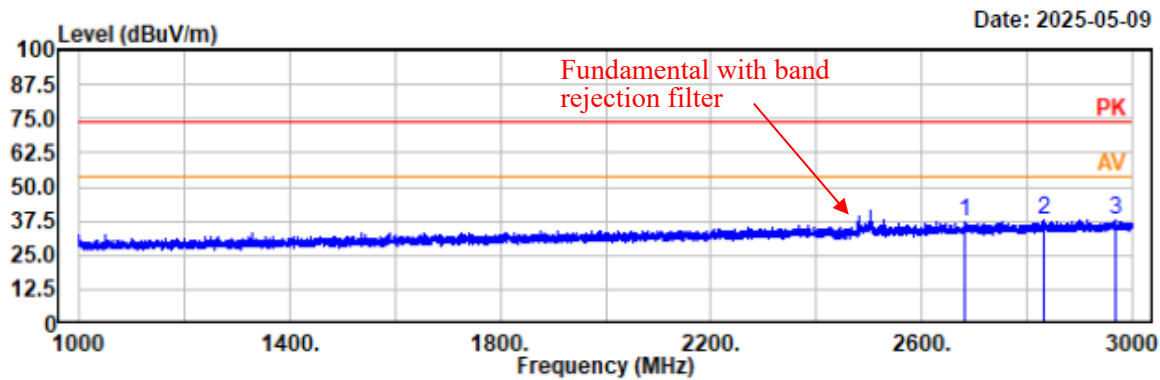


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2689.40	47.08	-10.04	37.04	74.00	36.96	vertical	Peak
2895.00	47.29	-9.56	37.73	74.00	36.27	vertical	Peak
2986.60	46.48	-9.01	37.47	74.00	36.53	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

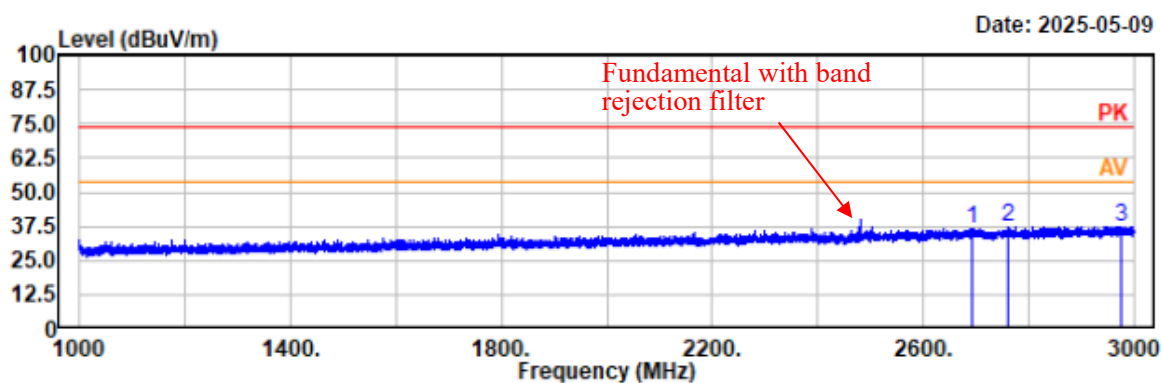


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2681.80	47.22	-10.07	37.15	74.00	36.85	horizontal	Peak
2832.40	47.42	-9.68	37.74	74.00	36.26	horizontal	Peak
2969.00	47.34	-9.10	38.24	74.00	35.76	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

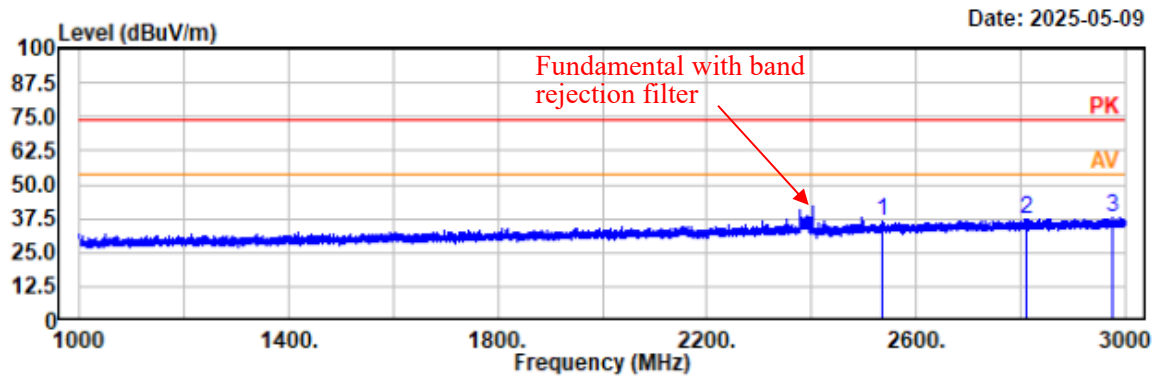


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2692.80	46.71	-10.03	36.68	74.00	37.32	vertical	Peak
2760.60	47.21	-9.91	37.30	74.00	36.70	vertical	Peak
2975.60	46.60	-9.07	37.53	74.00	36.47	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

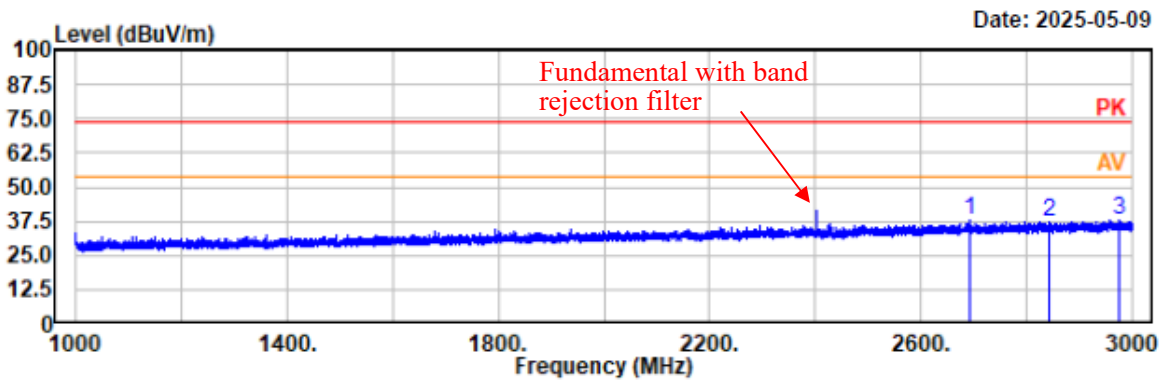


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2535.60	47.23	-10.63	36.60	74.00	37.40	horizontal	Peak
2810.80	47.14	-9.76	37.38	74.00	36.62	horizontal	Peak
2975.60	47.20	-9.07	38.13	74.00	35.87	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

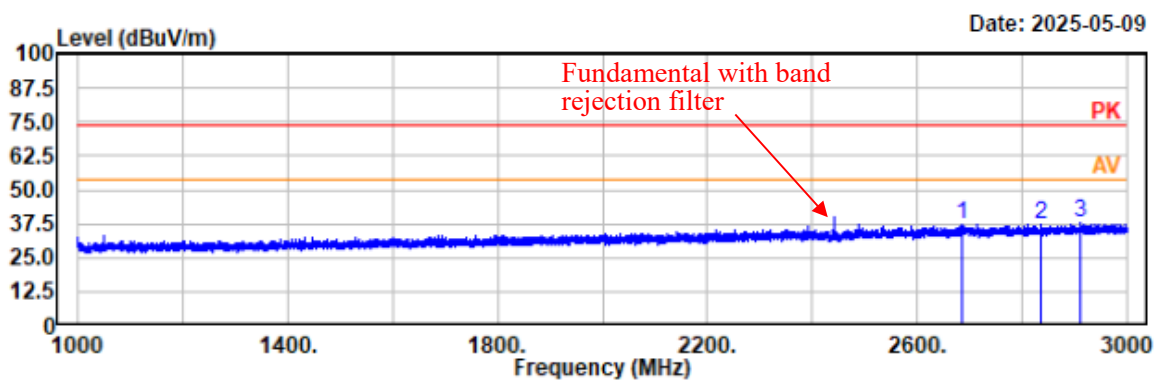


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2691.80	48.26	-10.03	38.23	74.00	35.77	vertical	Peak
2843.80	47.10	-9.64	37.46	74.00	36.54	vertical	Peak
2976.20	47.32	-9.07	38.25	74.00	35.75	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

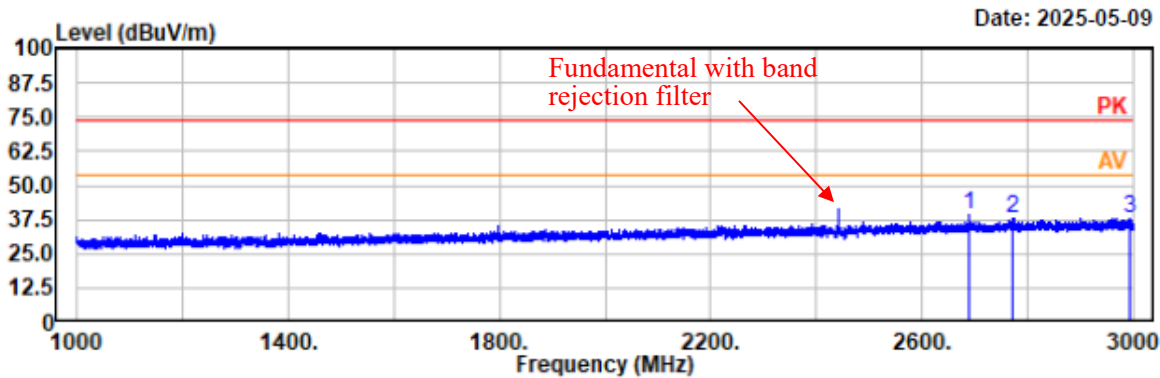


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2685.60	47.56	-10.06	37.50	74.00	36.50	horizontal	Peak
2836.20	46.81	-9.67	37.14	74.00	36.86	horizontal	Peak
2910.40	47.66	-9.48	38.18	74.00	35.82	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



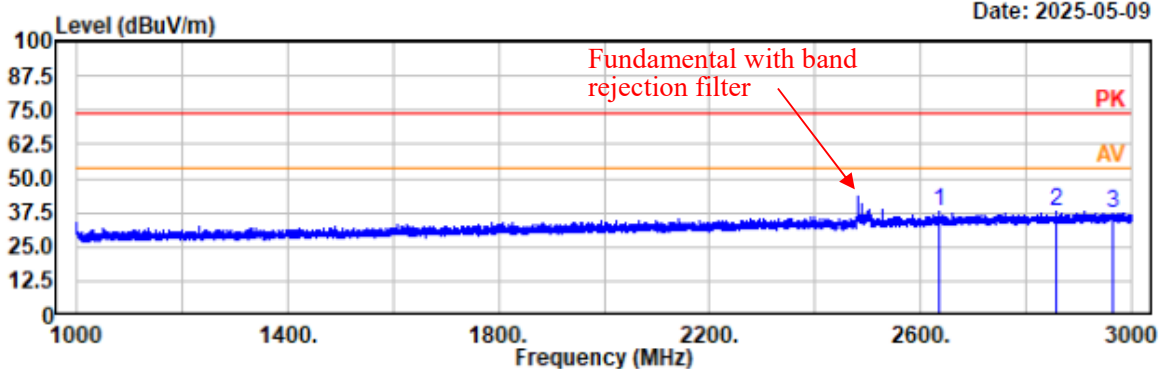
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2690.40	49.12	-10.04	39.08	74.00	34.92	vertical	Peak
2772.40	47.89	-9.87	38.02	74.00	35.98	vertical	Peak
2993.80	47.01	-8.98	38.03	74.00	35.97	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

Date: 2025-05-09

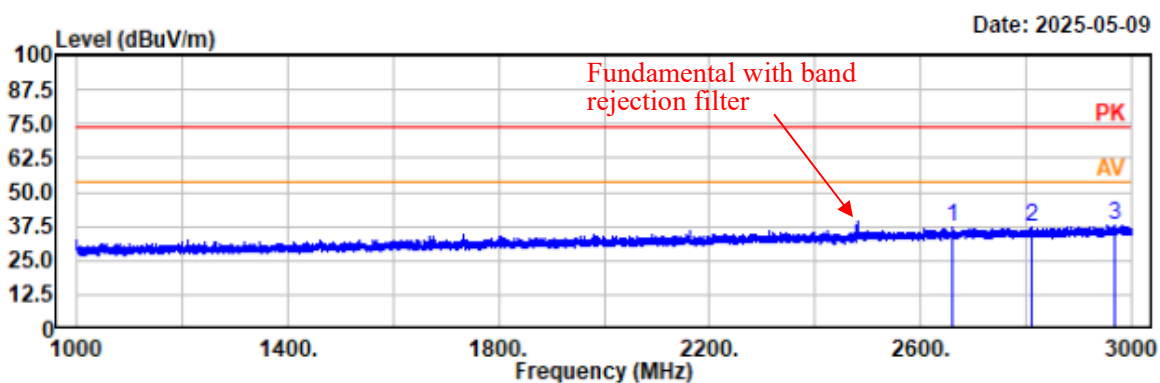


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2635.80	48.26	-10.26	38.00	74.00	36.00	horizontal	Peak
2859.00	47.28	-9.61	37.67	74.00	36.33	horizontal	Peak
2963.80	46.46	-9.13	37.33	74.00	36.67	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

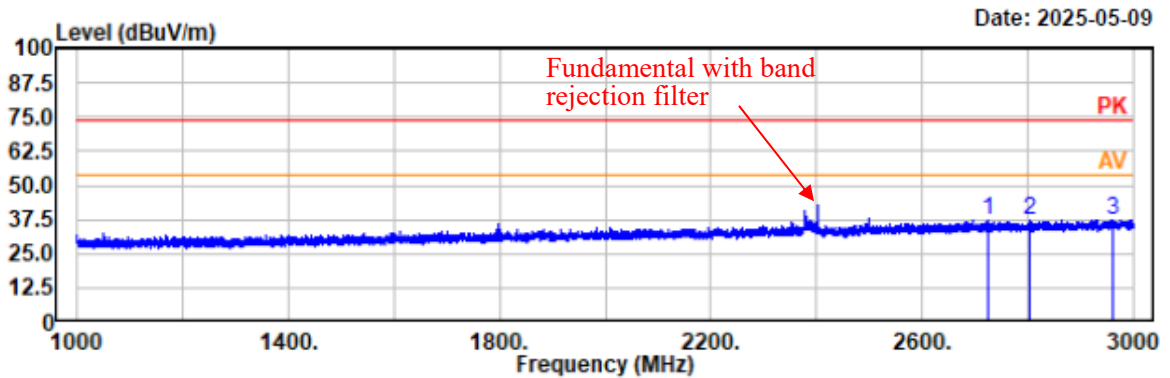


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2661.40	47.63	-10.15	37.48	74.00	36.52	vertical	Peak
2810.80	46.82	-9.76	37.06	74.00	36.94	vertical	Peak
2969.80	47.17	-9.10	38.07	74.00	35.93	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

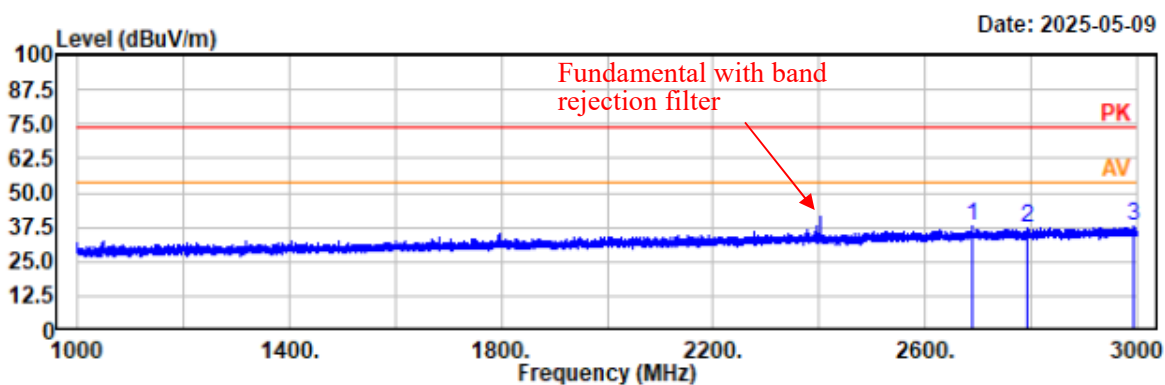


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2725.20	47.29	-9.98	37.31	74.00	36.69	horizontal	Peak
2805.40	47.23	-9.77	37.46	74.00	36.54	horizontal	Peak
2962.60	46.61	-9.14	37.47	74.00	36.53	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

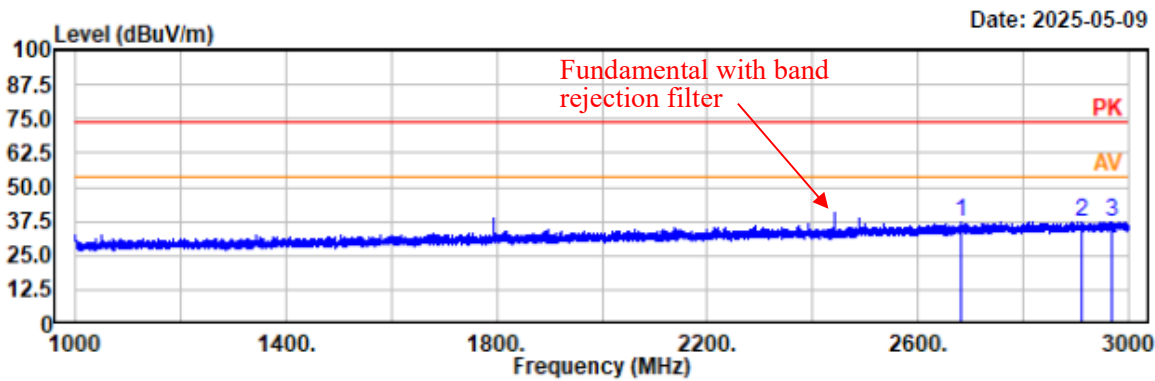


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2688.00	47.68	-10.05	37.63	74.00	36.37	vertical	Peak
2792.00	46.99	-9.81	37.18	74.00	36.82	vertical	Peak
2992.20	47.00	-8.99	38.01	74.00	35.99	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

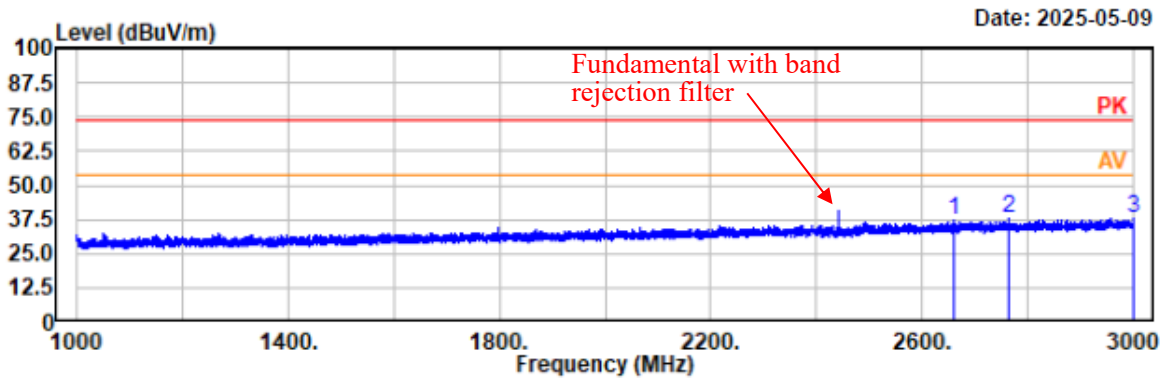


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2681.20	47.35	-10.08	37.27	74.00	36.73	horizontal	Peak
2912.20	46.98	-9.47	37.51	74.00	36.49	horizontal	Peak
2969.40	46.43	-9.10	37.33	74.00	36.67	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

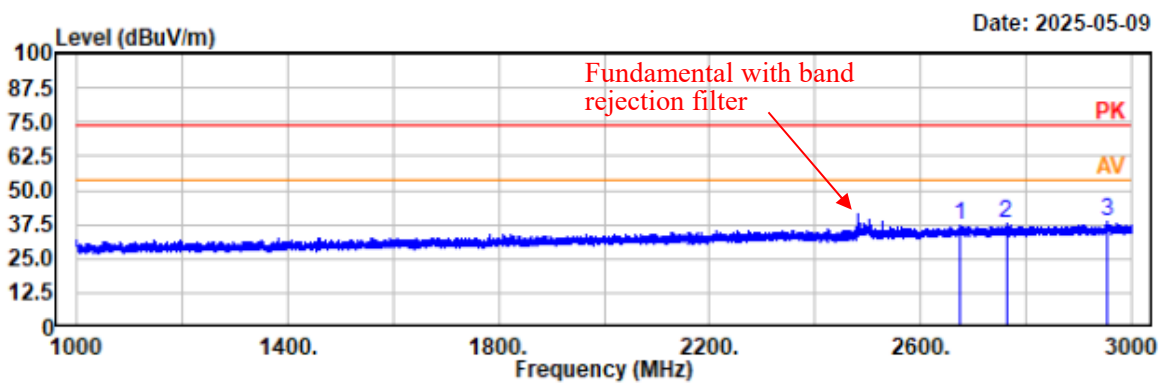


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2660.40	47.25	-10.16	37.09	74.00	36.91	vertical	Peak
2764.60	47.51	-9.89	37.62	74.00	36.38	vertical	Peak
2999.40	46.69	-8.95	37.74	74.00	36.26	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

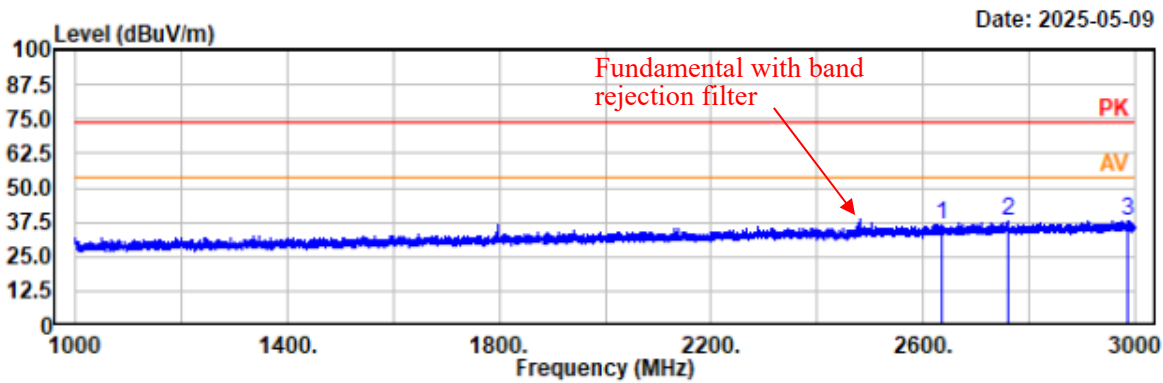


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2676.20	47.27	-10.11	37.16	74.00	36.84	horizontal	Peak
2762.60	47.83	-9.90	37.93	74.00	36.07	horizontal	Peak
2953.20	47.77	-9.19	38.58	74.00	35.42	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



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

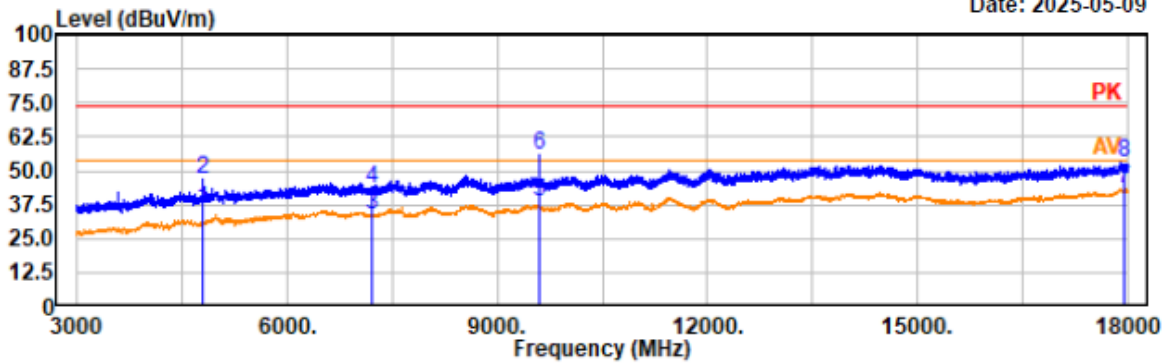
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2636.80	46.88	-10.25	36.63	74.00	37.37	vertical	Peak
2762.20	48.17	-9.90	38.27	74.00	35.73	vertical	Peak
2985.60	46.98	-9.02	37.96	74.00	36.04	vertical	Peak

4) 3 GHz-18 GHz

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

Date: 2025-05-09



Trace: 1

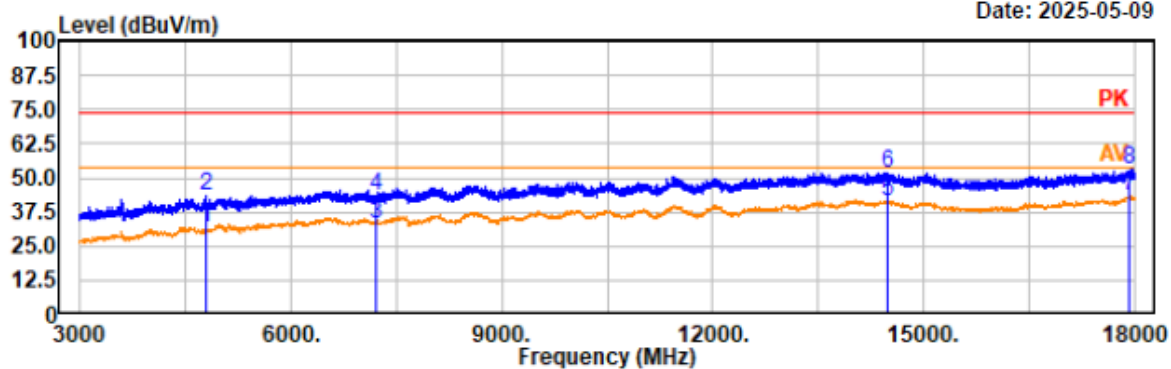
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	40.78	-5.24	35.54	54.00	18.46	horizontal	Average
4804.00	52.19	-5.24	46.95	74.00	27.05	horizontal	Peak
7206.00	36.17	-2.55	33.62	54.00	20.38	horizontal	Average
7206.00	46.27	-2.55	43.72	74.00	30.28	horizontal	Peak
9606.00	40.82	1.01	41.83	54.00	12.17	horizontal	Average
9606.00	54.66	1.01	55.67	74.00	18.33	horizontal	Peak
17956.50	36.49	6.87	43.36	54.00	10.64	horizontal	Average
17956.50	46.36	6.87	53.23	74.00	20.77	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

Date: 2025-05-09



Trace: 1

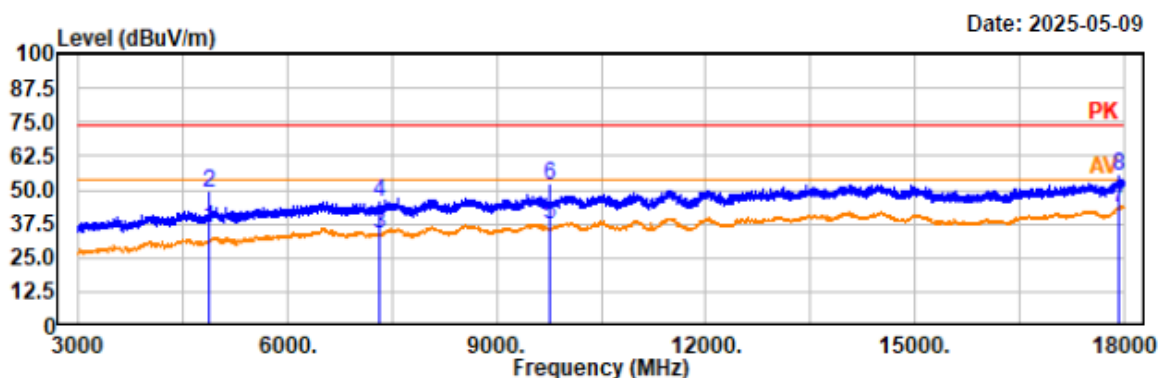
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	36.86	-5.24	31.62	54.00	22.38	vertical	Average
4804.00	48.39	-5.24	43.15	74.00	30.85	vertical	Peak
7206.00	35.94	-2.55	33.39	54.00	20.61	vertical	Average
7206.00	45.76	-2.55	43.21	74.00	30.79	vertical	Peak
14490.00	35.97	5.08	41.05	54.00	12.95	vertical	Average
14490.00	46.67	5.08	51.75	74.00	22.25	vertical	Peak
17929.50	36.58	6.84	43.42	54.00	10.58	vertical	Average
17929.50	46.02	6.84	52.86	74.00	21.14	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



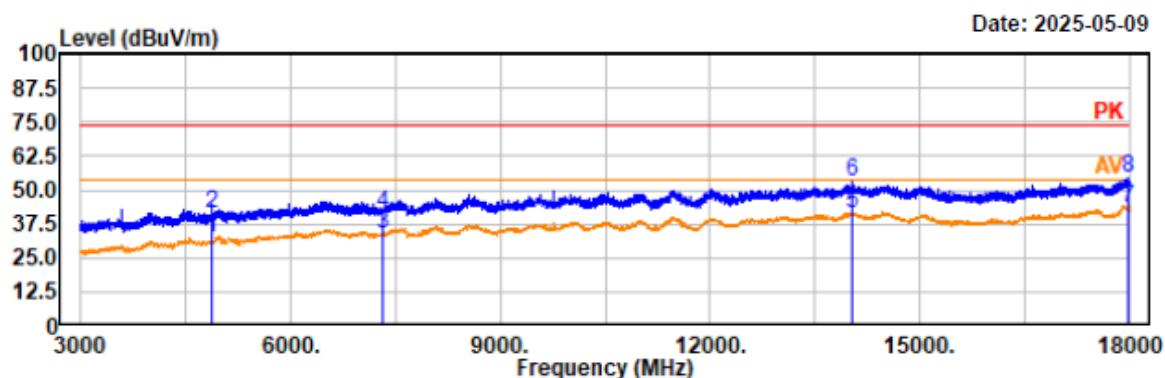
Trace: 1

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
4882.00	41.84	-5.31	36.53	54.00	17.47	horizontal	Average
4882.00	54.42	-5.31	49.11	74.00	24.89	horizontal	Peak
7323.00	35.98	-2.24	33.74	54.00	20.26	horizontal	Average
7323.00	47.65	-2.24	45.41	74.00	28.59	horizontal	Peak
9765.00	38.29	1.19	39.48	54.00	14.52	horizontal	Average
9765.00	50.75	1.19	51.94	74.00	22.06	horizontal	Peak
17931.00	36.69	6.83	43.52	54.00	10.48	horizontal	Average
17931.00	48.12	6.83	54.95	74.00	19.05	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

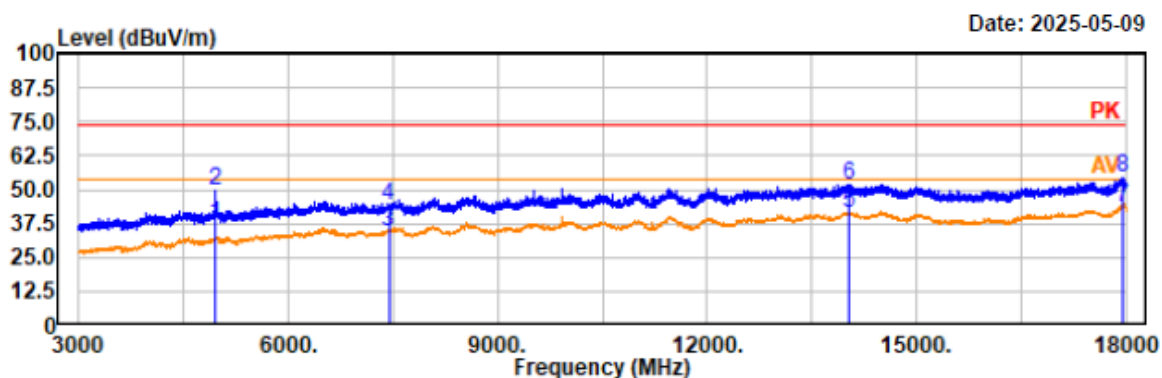
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	37.48	-5.31	32.17	54.00	21.83	vertical	Average
4882.00	46.68	-5.31	41.37	74.00	32.63	vertical	Peak
7323.00	35.82	-2.24	33.58	54.00	20.42	vertical	Average
7323.00	43.86	-2.24	41.62	74.00	32.38	vertical	Peak
14019.00	36.02	5.23	41.25	54.00	12.75	vertical	Average
14019.00	47.65	5.23	52.88	74.00	21.12	vertical	Peak
17980.50	36.71	6.89	43.60	54.00	10.40	vertical	Average
17980.50	47.30	6.89	54.19	74.00	19.81	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

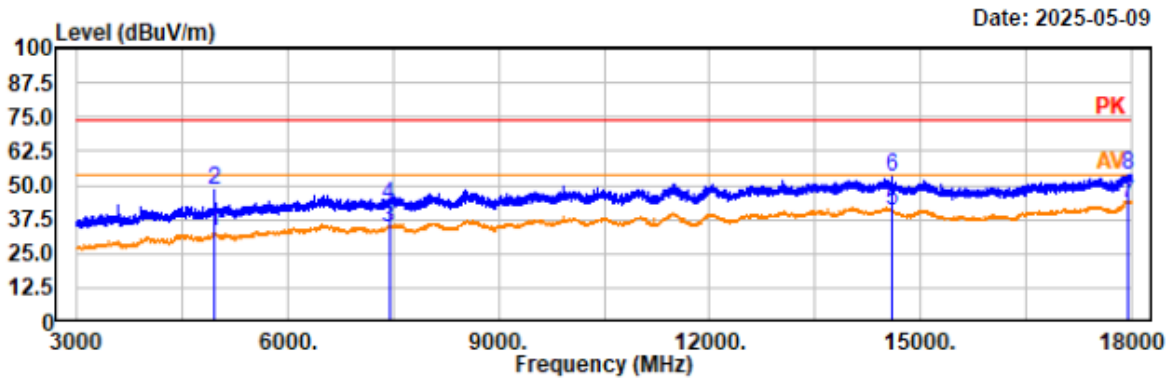
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	42.15	-5.11	37.04	54.00	16.96	horizontal	Average
4960.00	54.52	-5.11	49.41	74.00	24.59	horizontal	Peak
7440.00	36.55	-2.03	34.52	54.00	19.48	horizontal	Average
7440.00	46.03	-2.03	44.00	74.00	30.00	horizontal	Peak
14041.50	35.98	5.25	41.23	54.00	12.77	horizontal	Average
14041.50	46.68	5.25	51.93	74.00	22.07	horizontal	Peak
17944.50	36.76	6.85	43.61	54.00	10.39	horizontal	Average
17944.50	47.48	6.85	54.33	74.00	19.67	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

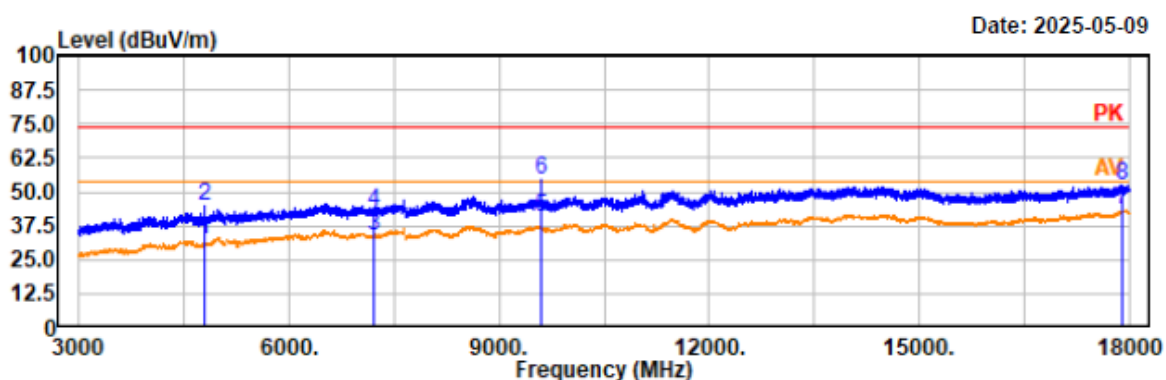
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	40.11	-5.11	35.00	54.00	19.00	vertical	Average
4960.00	53.26	-5.11	48.15	74.00	25.85	vertical	Peak
7440.00	36.55	-2.03	34.52	54.00	19.48	vertical	Average
7440.00	44.57	-2.03	42.54	74.00	31.46	vertical	Peak
14583.00	35.64	5.03	40.67	54.00	13.33	vertical	Average
14583.00	47.79	5.03	52.82	74.00	21.18	vertical	Peak
17947.50	36.87	6.86	43.73	54.00	10.27	vertical	Average
17947.50	46.89	6.86	53.75	74.00	20.25	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

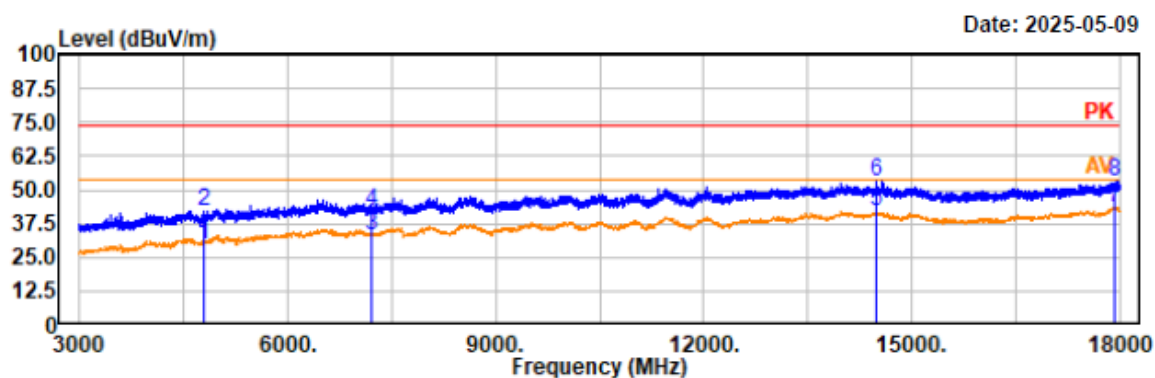
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	37.83	-5.24	32.59	54.00	21.41	horizontal	Average
4804.00	49.90	-5.24	44.66	74.00	29.34	horizontal	Peak
7206.00	36.39	-2.55	33.84	54.00	20.16	horizontal	Average
7206.00	45.07	-2.55	42.52	74.00	31.48	horizontal	Peak
9606.00	41.55	1.01	42.56	54.00	11.44	horizontal	Average
9606.00	53.68	1.01	54.69	74.00	19.31	horizontal	Peak
17901.00	36.37	6.81	43.18	54.00	10.82	horizontal	Average
17901.00	45.81	6.81	52.62	74.00	21.38	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



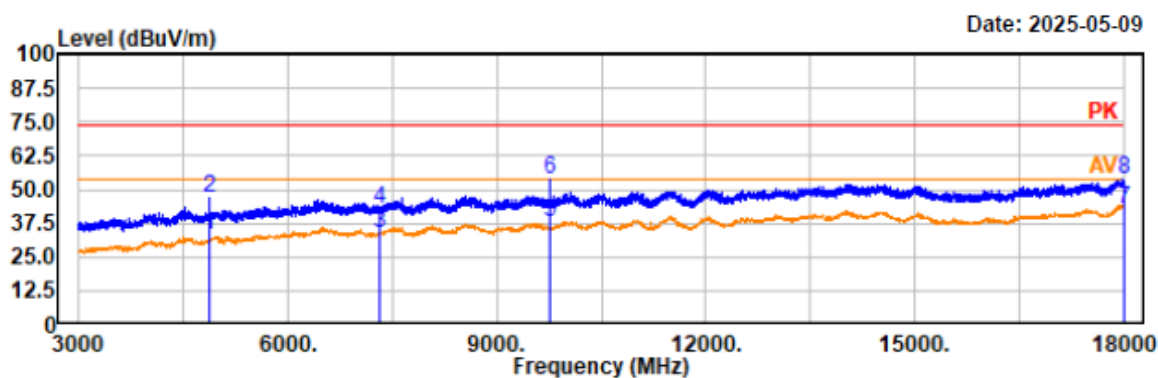
Trace: 1

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
4804.00	35.18	-5.24	29.94	54.00	24.06	vertical	Average
4804.00	47.23	-5.24	41.99	74.00	32.01	vertical	Peak
7206.00	35.96	-2.55	33.41	54.00	20.59	vertical	Average
7206.00	44.71	-2.55	42.16	74.00	31.84	vertical	Peak
14500.50	36.66	5.07	41.73	54.00	12.27	vertical	Average
14500.50	48.26	5.07	53.33	74.00	20.67	vertical	Peak
17919.00	36.75	6.82	43.57	54.00	10.43	vertical	Average
17919.00	46.47	6.82	53.29	74.00	20.71	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



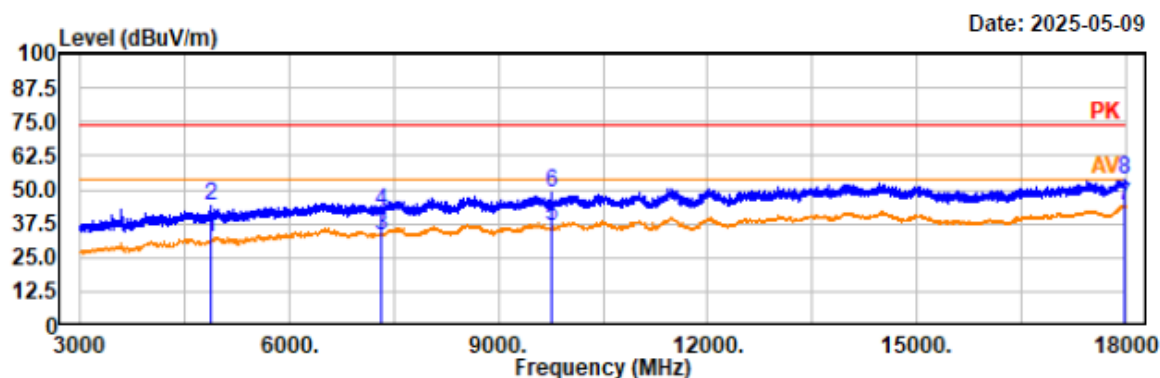
Trace: 1

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
4882.00	40.23	-5.31	34.92	54.00	19.08	horizontal	Average
4882.00	52.53	-5.31	47.22	74.00	26.78	horizontal	Peak
7323.00	35.80	-2.24	33.56	54.00	20.44	horizontal	Average
7323.00	45.19	-2.24	42.95	74.00	31.05	horizontal	Peak
9765.00	39.64	1.19	40.83	54.00	13.17	horizontal	Average
9765.00	52.45	1.19	53.64	74.00	20.36	horizontal	Peak
17998.50	35.65	6.91	42.56	54.00	11.44	horizontal	Average
17998.50	47.20	6.91	54.11	74.00	19.89	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

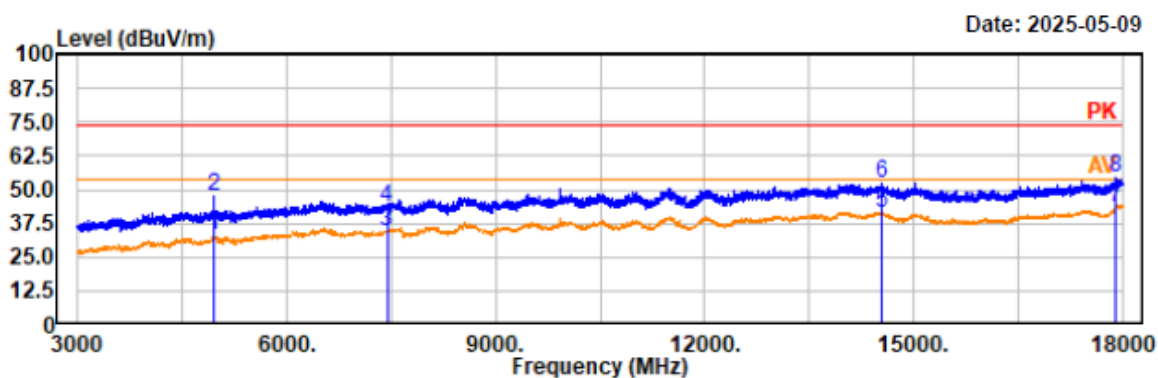
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	37.51	-5.31	32.20	54.00	21.80	vertical	Average
4882.00	49.21	-5.31	43.90	74.00	30.10	vertical	Peak
7323.00	35.55	-2.24	33.31	54.00	20.69	vertical	Average
7323.00	44.29	-2.24	42.05	74.00	31.95	vertical	Peak
9765.00	35.60	1.19	36.79	54.00	17.21	vertical	Average
9765.00	47.90	1.19	49.09	74.00	24.91	vertical	Peak
17971.50	36.98	6.88	43.86	54.00	10.14	vertical	Average
17971.50	46.67	6.88	53.55	74.00	20.45	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



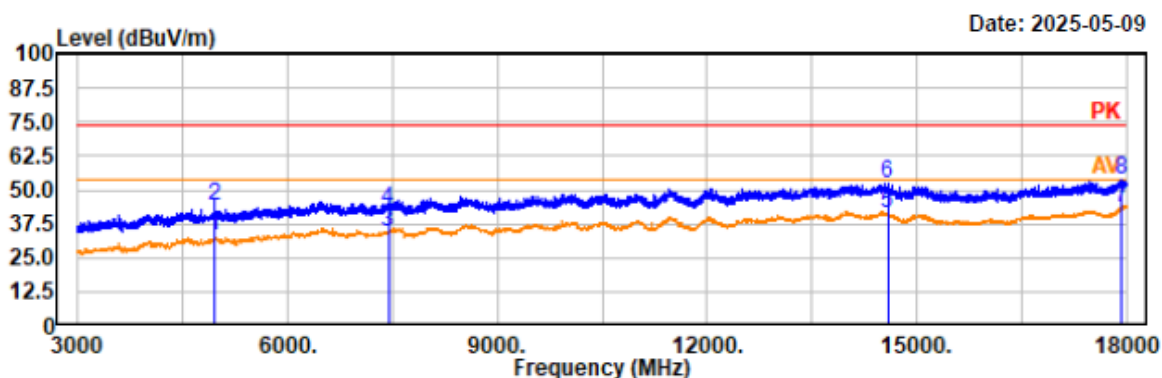
Trace: 1

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
4960.00	40.26	-5.11	35.15	54.00	18.85	horizontal	Average
4960.00	52.94	-5.11	47.83	74.00	26.17	horizontal	Peak
7440.00	36.63	-2.03	34.60	54.00	19.40	horizontal	Average
7440.00	45.58	-2.03	43.55	74.00	30.45	horizontal	Peak
14547.00	36.03	5.04	41.07	54.00	12.93	horizontal	Average
14547.00	47.04	5.04	52.08	74.00	21.92	horizontal	Peak
17895.00	36.41	6.79	43.20	54.00	10.80	horizontal	Average
17895.00	47.69	6.79	54.48	74.00	19.52	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

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

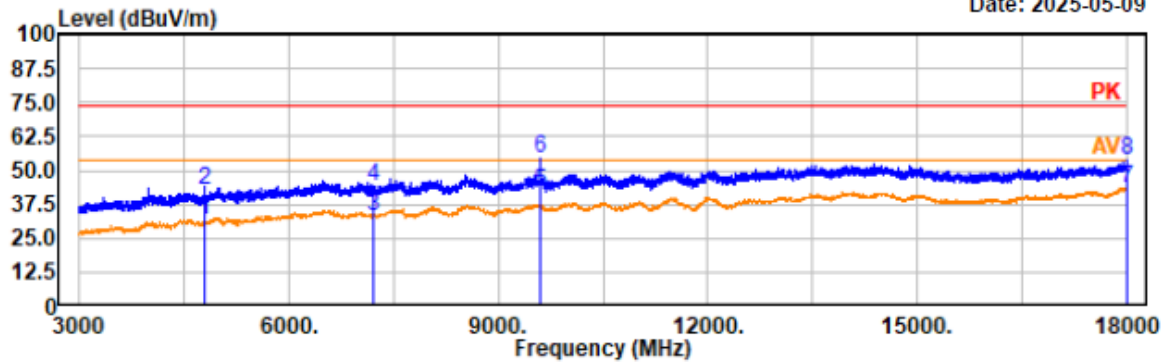
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	37.99	-5.11	32.88	54.00	21.12	vertical	Average
4960.00	49.16	-5.11	44.05	74.00	29.95	vertical	Peak
7440.00	36.27	-2.03	34.24	54.00	19.76	vertical	Average
7440.00	44.52	-2.03	42.49	74.00	31.51	vertical	Peak
14581.50	36.01	5.03	41.04	54.00	12.96	vertical	Average
14581.50	47.17	5.03	52.20	74.00	21.80	vertical	Peak
17932.50	36.50	6.83	43.33	54.00	10.67	vertical	Average
17932.50	46.78	6.83	53.61	74.00	20.39	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

Date: 2025-05-09



Trace: 1

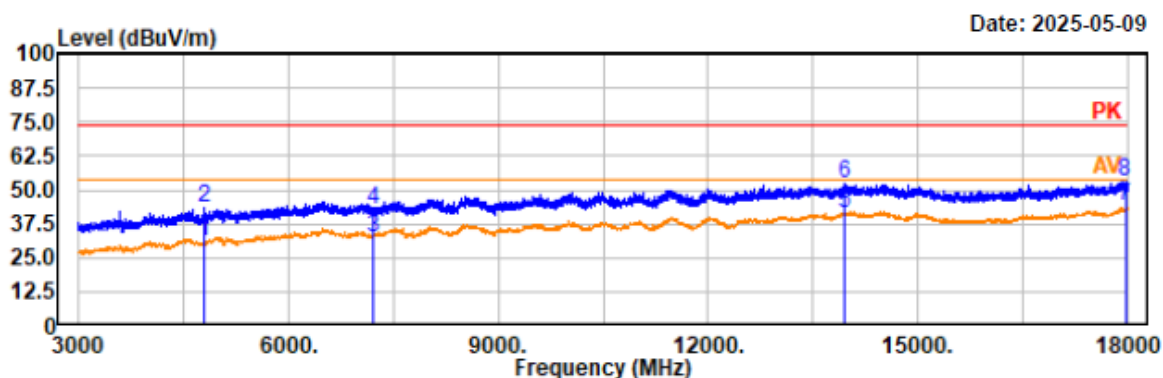
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	37.21	-5.24	31.97	54.00	22.03	horizontal	Average
4804.00	47.88	-5.24	42.64	74.00	31.36	horizontal	Peak
7206.00	35.92	-2.55	33.37	54.00	20.63	horizontal	Average
7206.00	46.95	-2.55	44.40	74.00	29.60	horizontal	Peak
9606.00	41.82	1.01	42.83	54.00	11.17	horizontal	Average
9606.00	53.60	1.01	54.61	74.00	19.39	horizontal	Peak
17995.50	36.82	6.91	43.73	54.00	10.27	horizontal	Average
17995.50	46.64	6.91	53.55	74.00	20.45	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

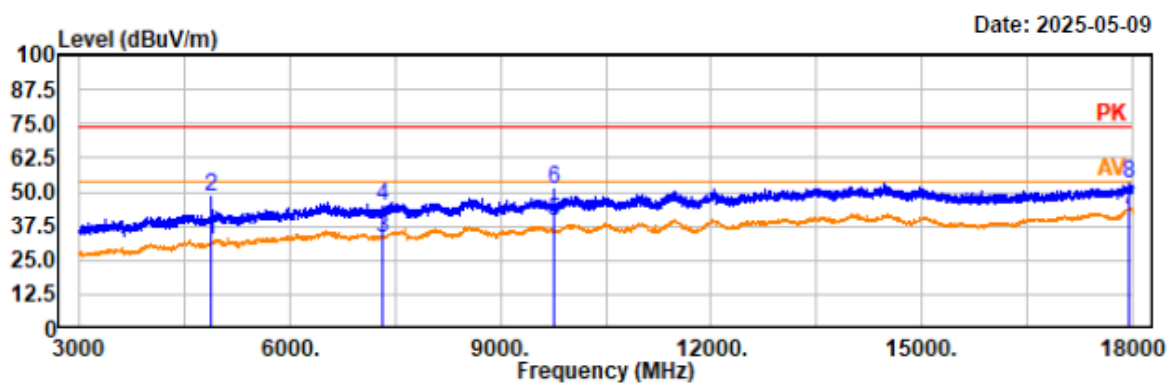
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	36.48	-5.24	31.24	54.00	22.76	vertical	Average
4804.00	48.44	-5.24	43.20	74.00	30.80	vertical	Peak
7206.00	35.30	-2.55	32.75	54.00	21.25	vertical	Average
7206.00	45.17	-2.55	42.62	74.00	31.38	vertical	Peak
13963.50	35.98	5.19	41.17	54.00	12.83	vertical	Average
13963.50	46.97	5.19	52.16	74.00	21.84	vertical	Peak
17965.50	37.12	6.87	43.99	54.00	10.01	vertical	Average
17965.50	46.54	6.87	53.41	74.00	20.59	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

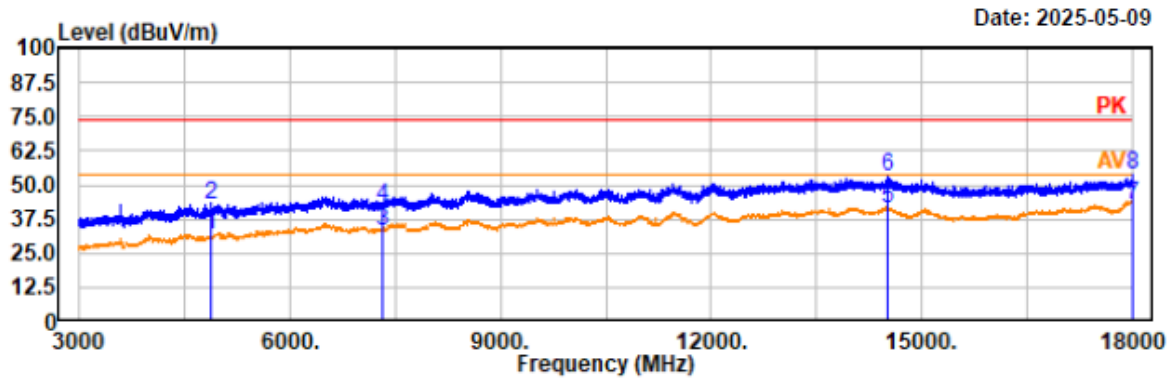
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	40.64	-5.31	35.33	54.00	18.67	horizontal	Average
4882.00	53.51	-5.31	48.20	74.00	25.80	horizontal	Peak
7323.00	35.67	-2.24	33.43	54.00	20.57	horizontal	Average
7323.00	46.74	-2.24	44.50	74.00	29.50	horizontal	Peak
9763.50	38.27	1.19	39.46	54.00	14.54	horizontal	Average
9763.50	49.90	1.19	51.09	74.00	22.91	horizontal	Peak
17944.50	36.66	6.85	43.51	54.00	10.49	horizontal	Average
17944.50	45.97	6.85	52.82	74.00	21.18	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2441MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

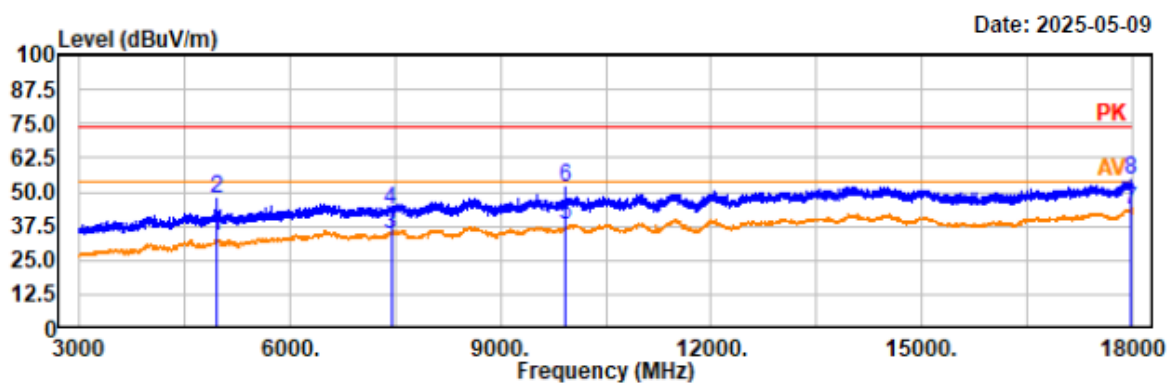
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	37.02	-5.31	31.71	54.00	22.29	vertical	Average
4882.00	48.19	-5.31	42.88	74.00	31.12	vertical	Peak
7323.00	35.67	-2.24	33.43	54.00	20.57	vertical	Average
7323.00	44.64	-2.24	42.40	74.00	31.60	vertical	Peak
14508.00	36.32	5.06	41.38	54.00	12.62	vertical	Average
14508.00	48.03	5.06	53.09	74.00	20.91	vertical	Peak
17998.50	35.91	6.91	42.82	54.00	11.18	vertical	Average
17998.50	46.89	6.91	53.80	74.00	20.20	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

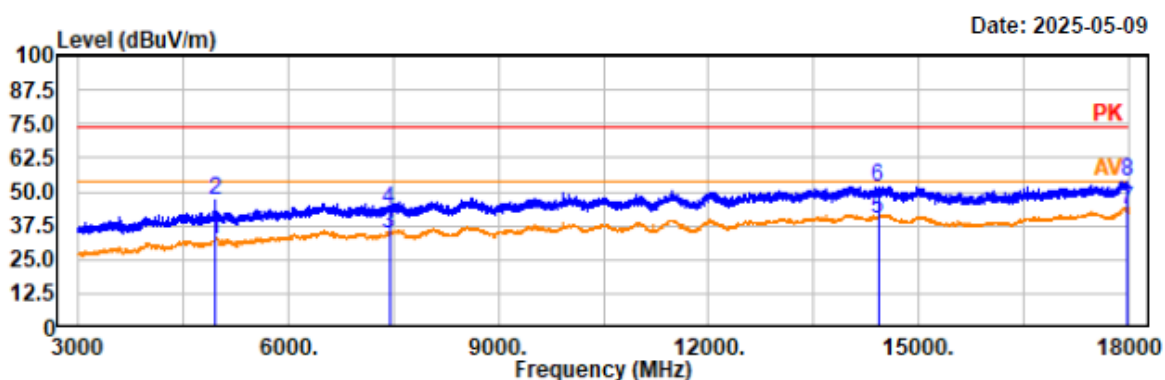
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	40.89	-5.11	35.78	54.00	18.22	horizontal	Average
4960.00	52.93	-5.11	47.82	74.00	26.18	horizontal	Peak
7440.00	36.75	-2.03	34.72	54.00	19.28	horizontal	Average
7440.00	45.22	-2.03	43.19	74.00	30.81	horizontal	Peak
9921.00	38.45	1.36	39.81	54.00	14.19	horizontal	Average
9921.00	50.41	1.36	51.77	74.00	22.23	horizontal	Peak
17982.00	36.88	6.89	43.77	54.00	10.23	horizontal	Average
17982.00	47.71	6.89	54.60	74.00	19.40	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

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

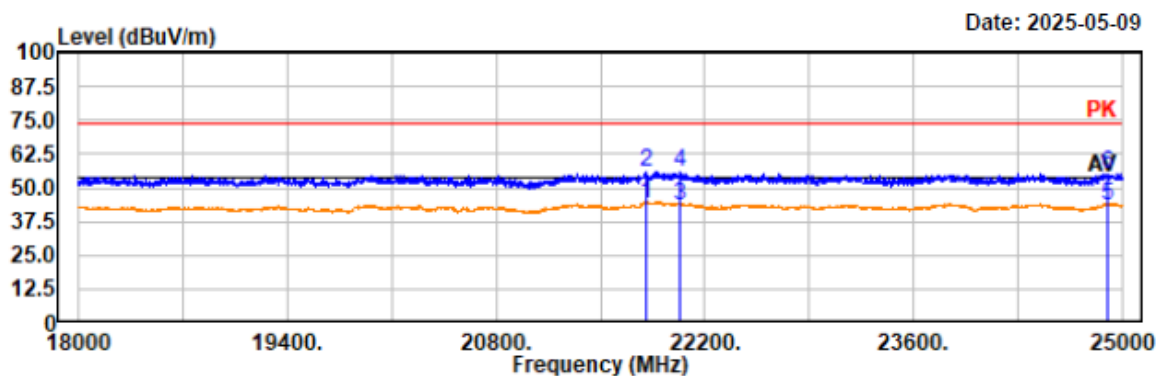
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	39.85	-5.11	34.74	54.00	19.26	vertical	Average
4960.00	52.01	-5.11	46.90	74.00	27.10	vertical	Peak
7440.00	36.84	-2.03	34.81	54.00	19.19	vertical	Average
7440.00	45.61	-2.03	43.58	74.00	30.42	vertical	Peak
14421.00	35.13	5.20	40.33	54.00	13.67	vertical	Average
14421.00	46.83	5.20	52.03	74.00	21.97	vertical	Peak
17971.50	36.39	6.88	43.27	54.00	10.73	vertical	Average
17971.50	47.13	6.88	54.01	74.00	19.99	vertical	Peak

5) 18 GHz-25 GHz

Note: The maximum output power mode: EDR(8DPSK) Low channel was tested.

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 1.5m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



Trace: 1

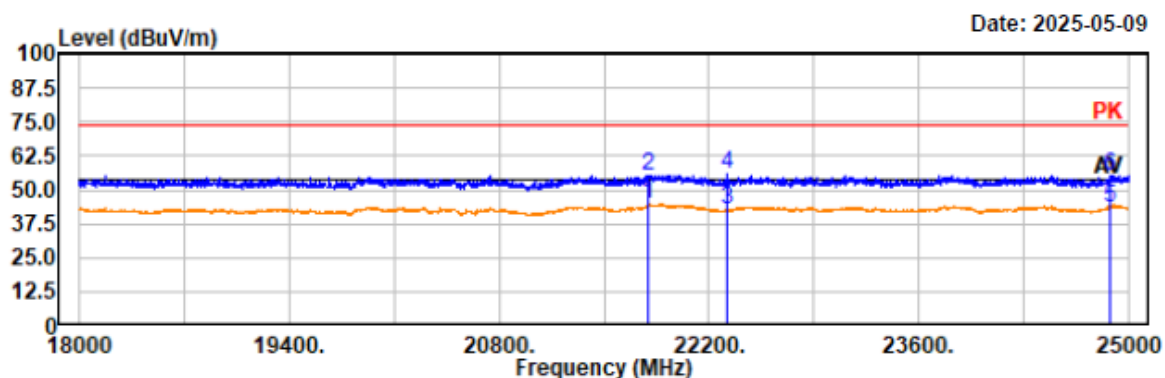
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
21806.00	39.41	5.02	44.43	54.00	9.57	horizontal	Average
21806.00	50.76	5.02	55.78	74.00	18.22	horizontal	Peak
22037.00	38.47	5.16	43.63	54.00	10.37	horizontal	Average
22037.00	50.97	5.16	56.13	74.00	17.87	horizontal	Peak
24908.00	37.24	6.31	43.55	54.00	10.45	horizontal	Average
24908.00	48.86	6.31	55.17	74.00	18.83	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 1.5m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



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
21792.80	39.54	4.95	44.49	54.00	9.51	vertical	Average
21792.80	50.53	4.95	55.48	74.00	18.52	vertical	Peak
22323.00	37.91	4.52	42.43	54.00	11.57	vertical	Average
22323.00	51.02	4.52	55.54	74.00	18.46	vertical	Peak
24879.40	37.46	6.30	43.76	54.00	10.24	vertical	Average
24879.40	49.11	6.30	55.41	74.00	18.59	vertical	Peak

Restricted Bands Emissions:

Project No.: 2507S22818E-RF

Test Mode: BDR DH1 2402MHz

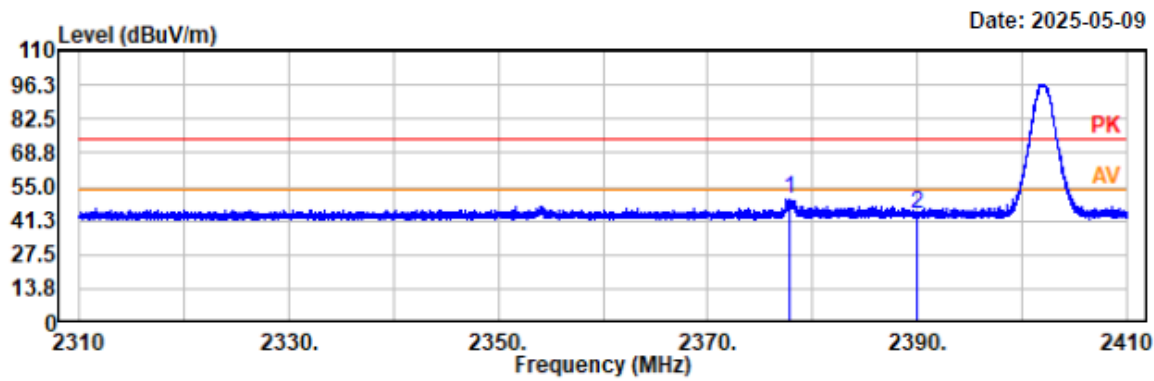
EUT Model: BG1544

Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa

Tested by: Wlif Wu

Power Source: DC 3.7V

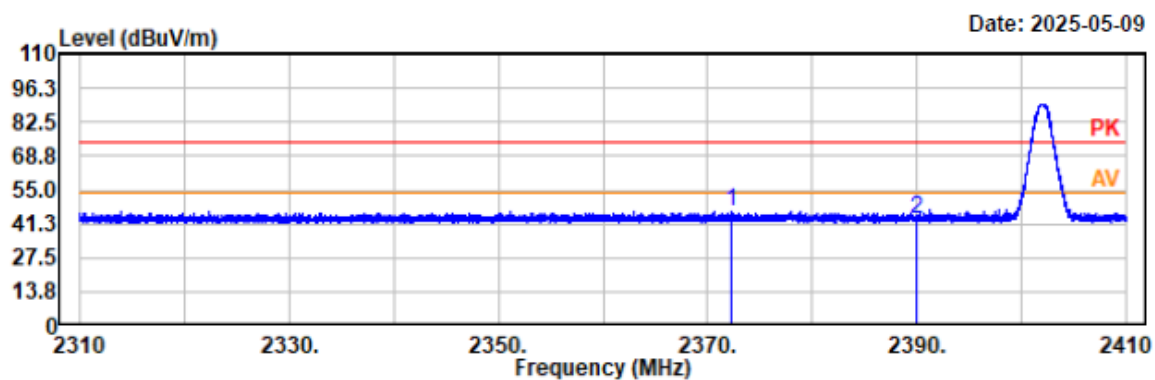


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2377.85	51.29	-1.21	50.08	74.00	23.92	horizontal	Peak
2390.00	45.24	-1.15	44.09	74.00	29.91	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

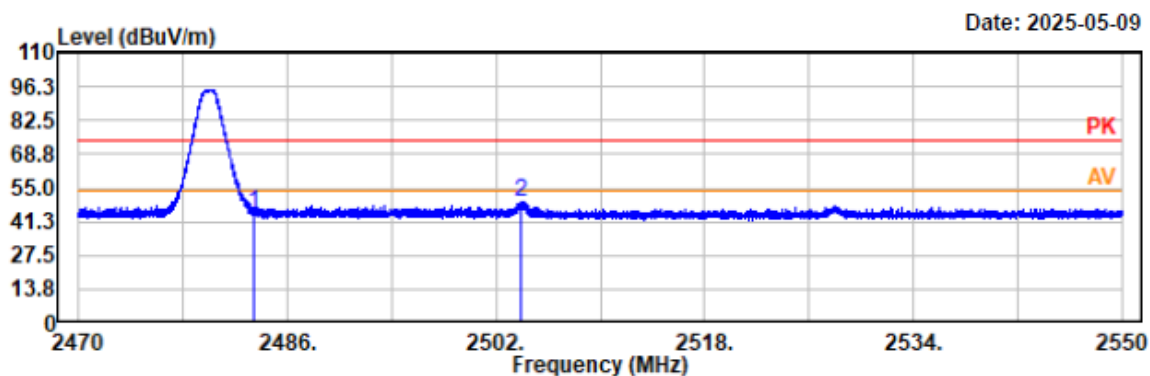


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2372.31	47.77	-1.23	46.54	74.00	27.46	vertical	Peak
2390.00	44.29	-1.15	43.14	74.00	30.86	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

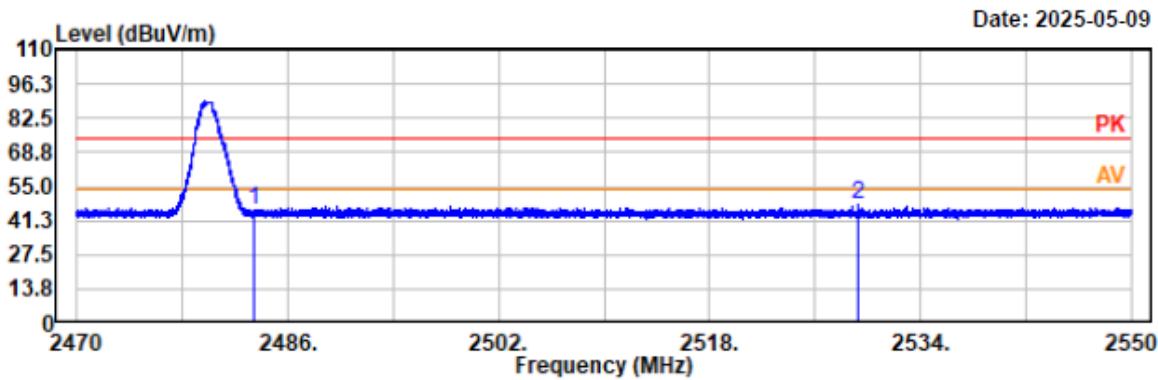


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	45.68	-0.77	44.91	74.00	29.09	horizontal	Peak
2503.86	49.87	-0.69	49.18	74.00	24.82	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: BDR DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

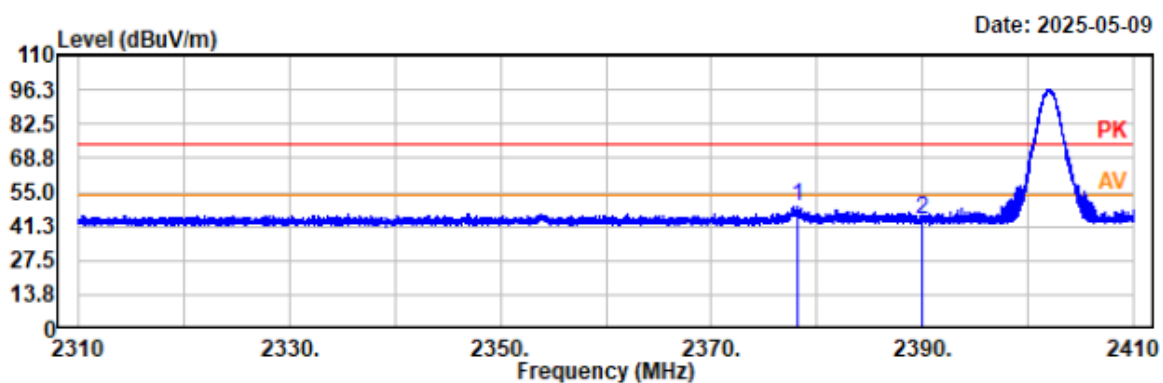


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	46.60	-0.77	45.83	74.00	28.17	vertical	Peak
2529.22	48.19	-0.64	47.55	74.00	26.45	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

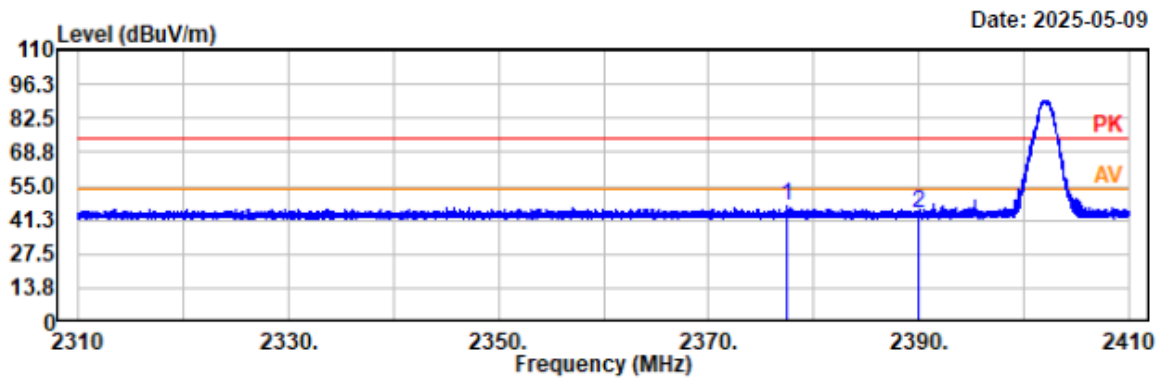


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2378.18	50.82	-1.21	49.61	74.00	24.39	horizontal	Peak
2390.00	45.11	-1.15	43.96	74.00	30.04	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

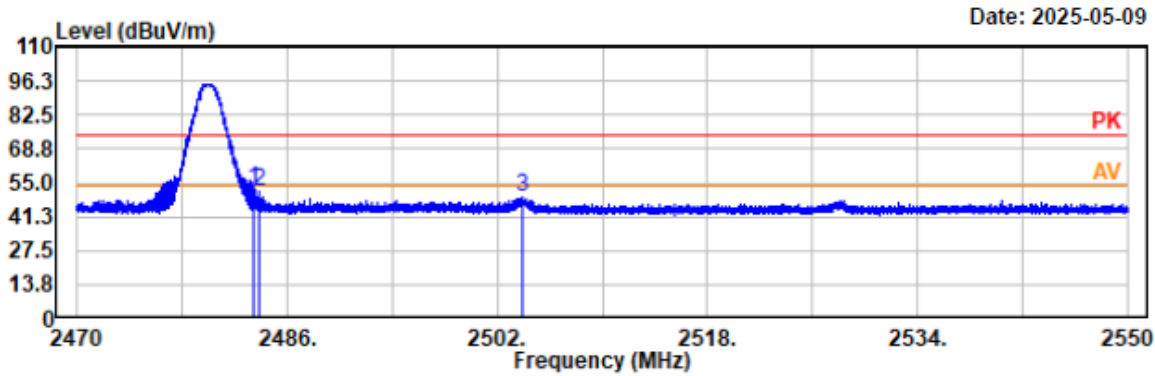


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2377.47	48.03	-1.21	46.82	74.00	27.18	vertical	Peak
2390.00	44.88	-1.15	43.73	74.00	30.27	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

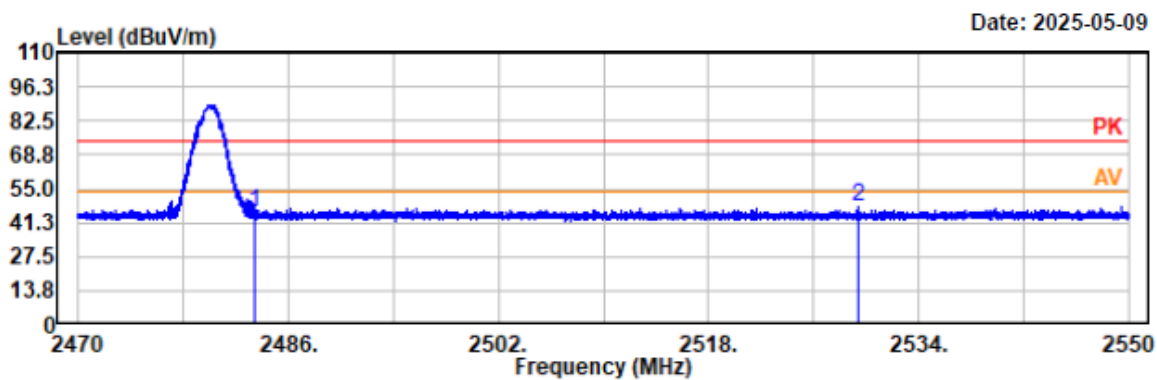


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	53.36	-0.77	52.59	74.00	21.41	horizontal	Peak
2483.82	52.66	-0.76	51.90	74.00	22.10	horizontal	Peak
2503.92	49.70	-0.69	49.01	74.00	24.99	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 2DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

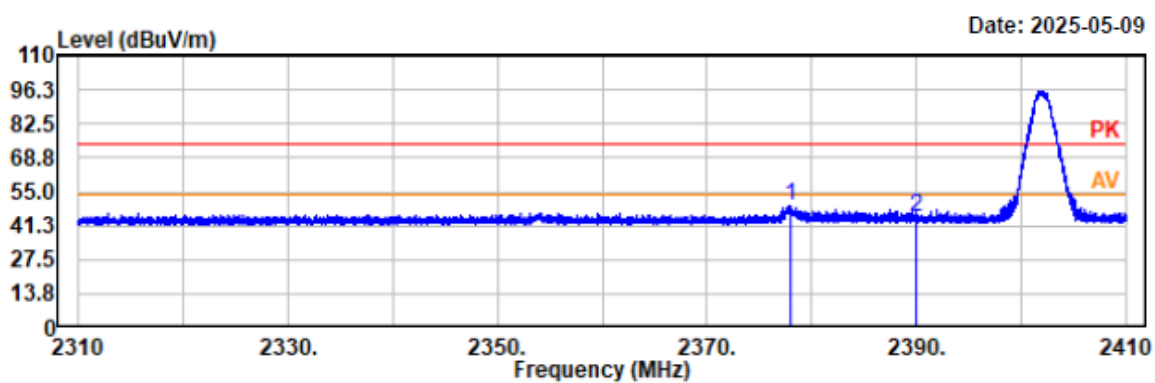


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	46.54	-0.77	45.77	74.00	28.23	vertical	Peak
2529.47	48.23	-0.64	47.59	74.00	26.41	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

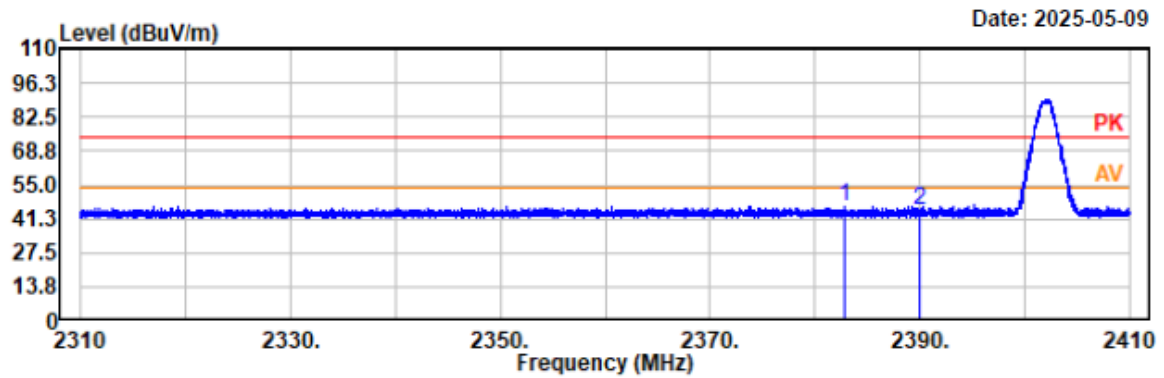


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2377.99	50.68	-1.21	49.47	74.00	24.53	horizontal	Peak
2390.00	45.97	-1.15	44.82	74.00	29.18	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2402MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

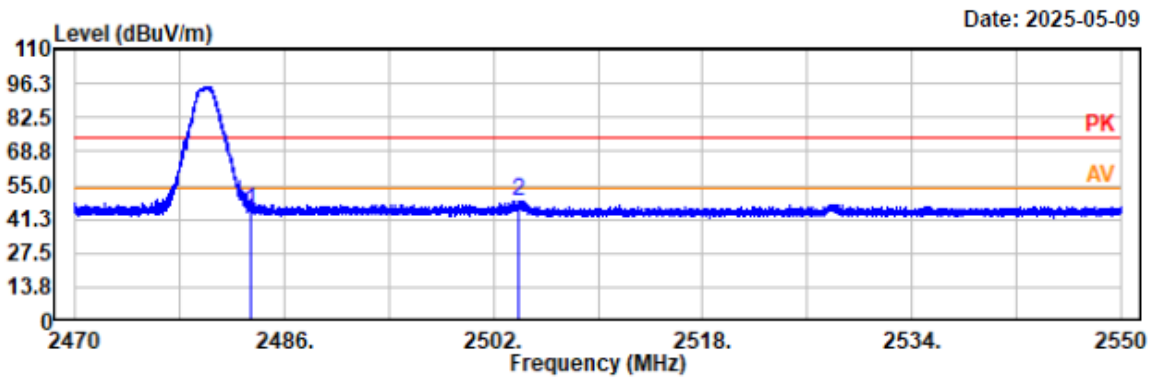


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2382.90	47.42	-1.19	46.23	74.00	27.77	vertical	Peak
2390.00	46.13	-1.15	44.98	74.00	29.02	vertical	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V

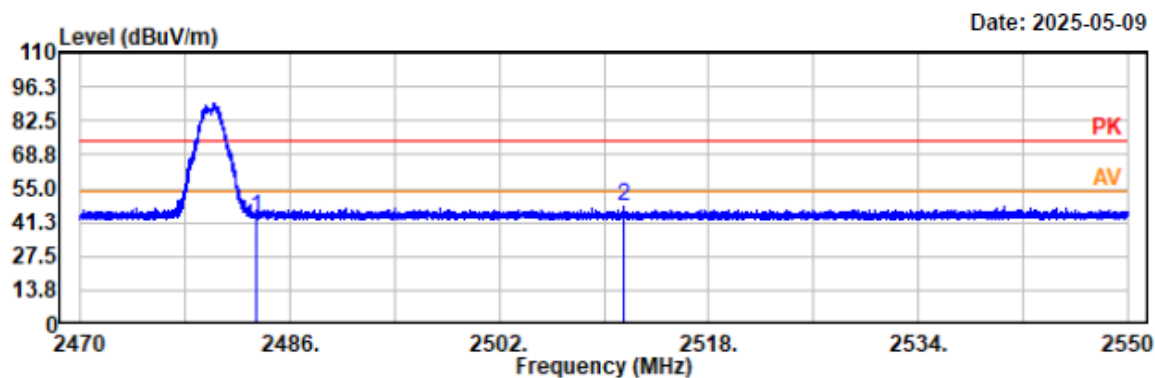


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	45.28	-0.77	44.51	74.00	29.49	horizontal	Peak
2503.90	49.52	-0.69	48.83	74.00	25.17	horizontal	Peak

Project No.: 2507S22818E-RF
Test Mode: EDR 3DH1 2480MHz
EUT Model: BG1544
Test distance: 3m

Temp/Humi/ATM: 23.1°C/53%/100.1kPa
Tested by: Wlif Wu
Power Source: DC 3.7V



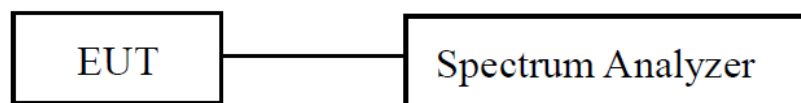
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	44.19	-0.77	43.42	74.00	30.58	vertical	Peak
2511.51	48.44	-0.68	47.76	74.00	26.24	vertical	Peak

FCC §15.247(a) (1) –CHANNEL SEPARATION TEST

Applicable Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

EUT Setup**Test Procedure**

According to ANSI C63.10-2020 Section 7.8.2

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span: Wide enough to capture the peaks of two adjacent channels.
- b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- c) Video (or average) bandwidth (VBW) $\geq$ RBW.
- d) Sweep: No faster than coupled (auto) time.
- e) Detector function: Peak.
- f) Trace: Max-hold.
- g) Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A plot of the data shall be included in the test report.

Where the device shares the same channel plan (carrier frequencies and number of channels) across multiple data rates or modulation schemes then the carrier separation need only be measured for one of those modulation schemes or data rates.

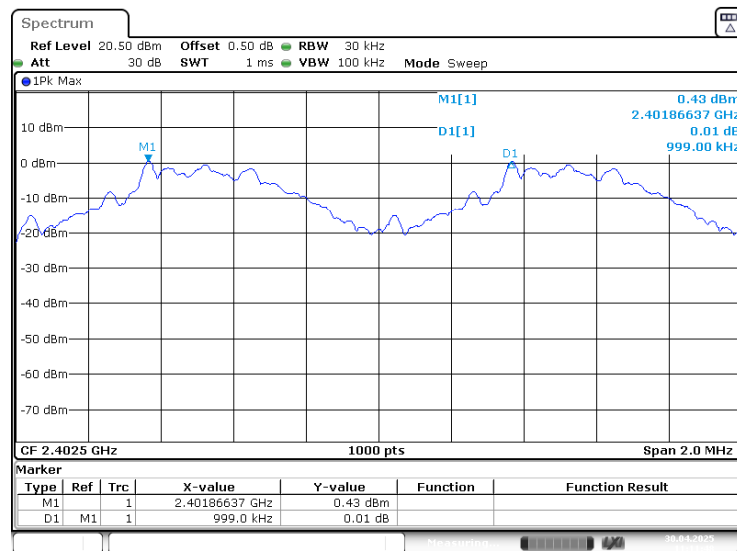
Test Data

Test Mode:		Transmitting		Test Engineer:		Braylon Ma	
Test Date:		2025-04-30		Environment:		Temp.: 23.6°C Humi.: 58% Atm.: 100.6kPa	
Mode	Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)		Result	
BDR (GFSK)	Low	2402	0.999	0.861		Pass	
	Middle	2441	1.001	0.861		Pass	
	High	2480	1.003	0.879		Pass	

Note:

1. Limit = 20 dB bandwidth*2/3
2. Only BDR(GFSK) mode result is reported since EDR($\pi/4$ -DQPSK, 8DPSK) has the same channel plan.

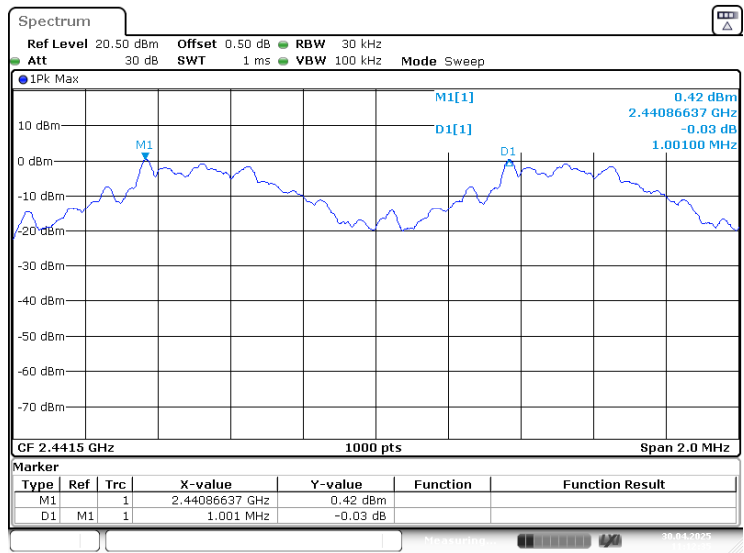
BDR (GFSK): Low Channel



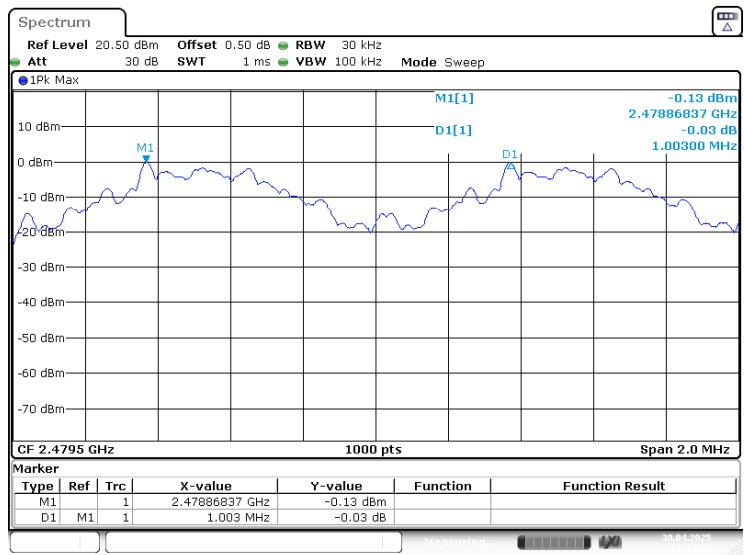
ProjectNo.:2507S22818E-RF Tester:Braylon Ma

Date: 30.APR.2025 11:11:48

BDR (GFSK): Middle Channel



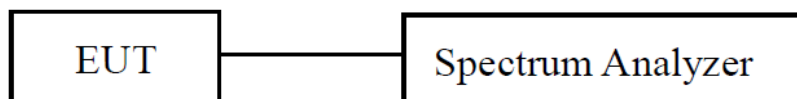
BDR (GFSK): High Channel



FCC §15.247(a) (1) – 20 dB EMISSION BANDWIDTH

Applicable Standard

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

EUT Setup**Test Procedure**

According to ANSI C63.10-2020 Section 6.9.2

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be at least three times RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.6.2
- d) Steps a) through c) might require iteration to adjust within the specified tolerances.
- e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “–xx dB down” requirement; that is, if the requirement calls for measuring the –20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.
- f) Set detection mode to peak and trace mode to max-hold.
- g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
- h) Determine the “–xx dB down amplitude” using [(reference value) – xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.
- i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).

j) Place 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 “-xx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers.

Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

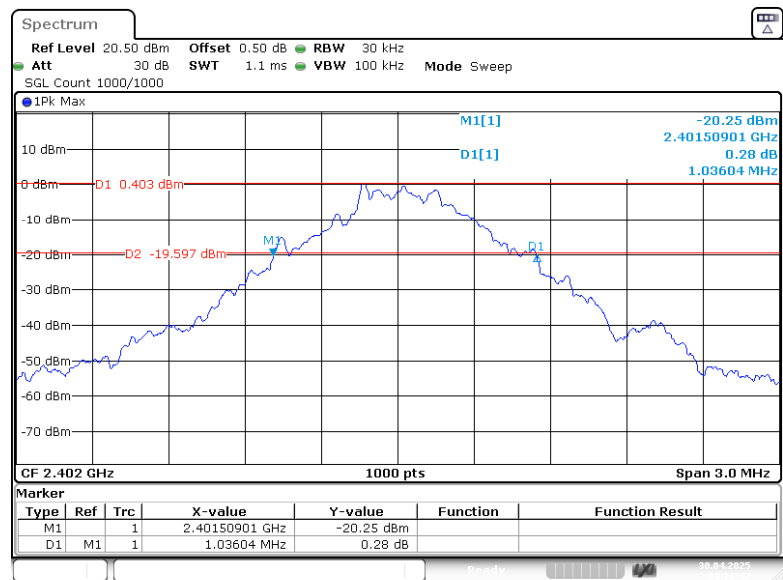
k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Test Data

Test Mode:	Transmitting	Test Engineer:	Braylon Ma
Test Date:	2025-04-30	Environment:	Temp.: 23.6°C Humi.: 58% Atm.: 100.6kPa
Mode	Channel	Frequency (MHz)	20 dB Emission Bandwidth (MHz)
BDR (GFSK)	Low	2402	1.036
	Middle	2441	1.039
	High	2480	1.033
EDR ($\pi/4$-DQPSK)	Low	2402	1.291
	Middle	2441	1.291
	High	2480	1.318
EDR (8DPSK)	Low	2402	1.258
	Middle	2441	1.264
	High	2480	1.261

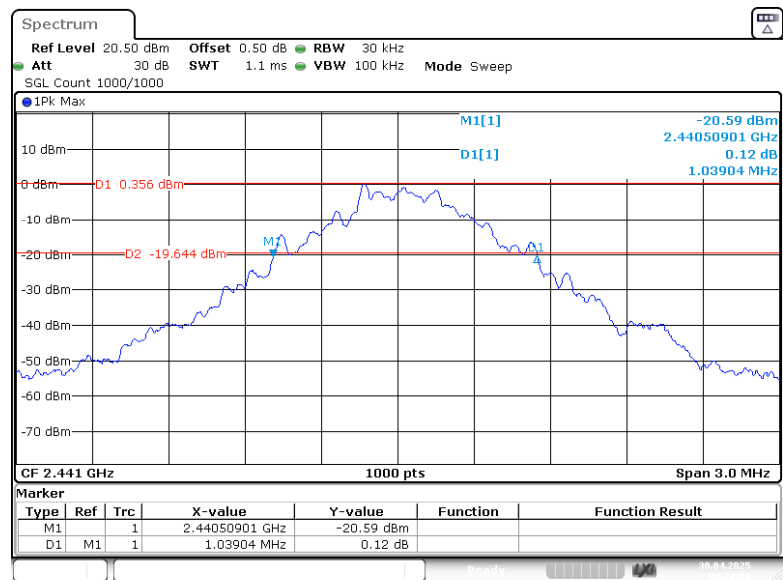
Please refer to below plots:

BDR (GFSK): Low Channel



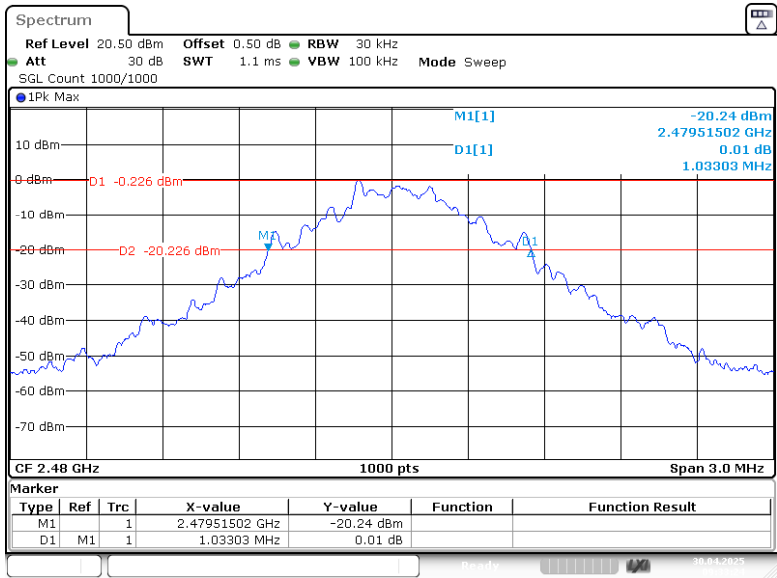
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:28:47

BDR (GFSK): Middle Channel

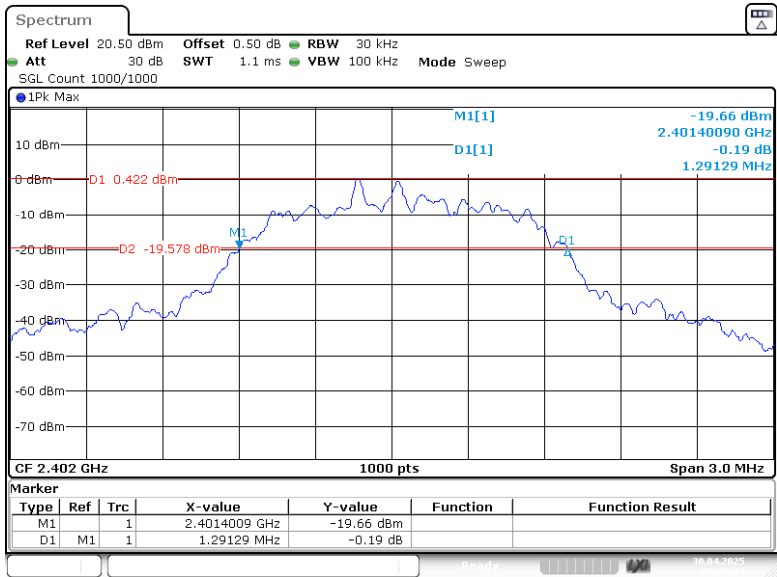


ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:32:30

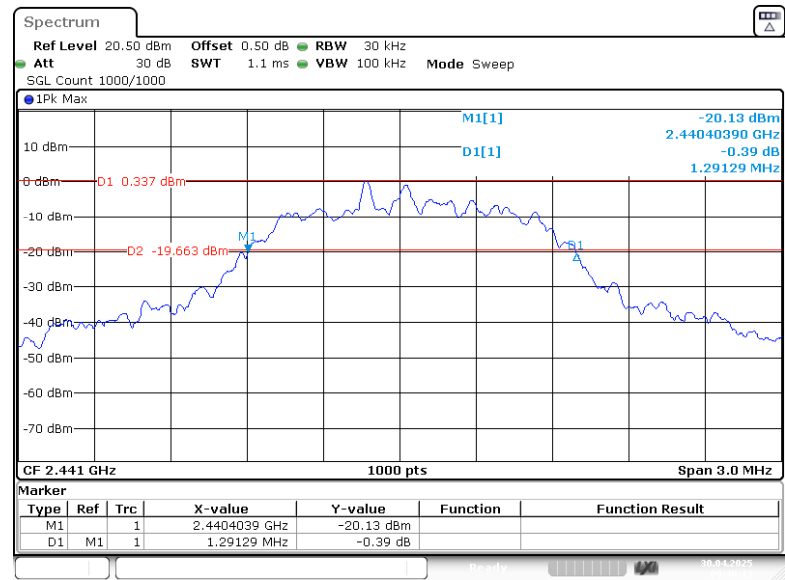
BDR (GFSK): High Channel



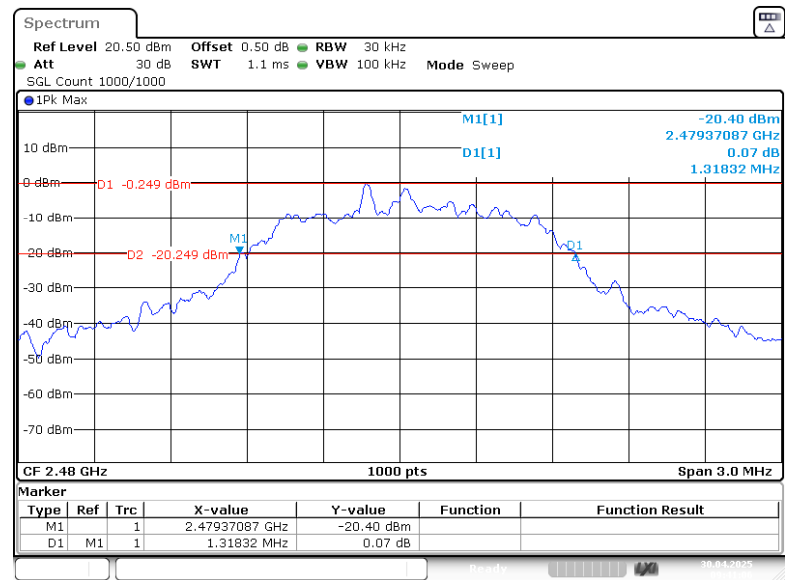
EDR ($\pi/4$ -DQPSK): Low Channel



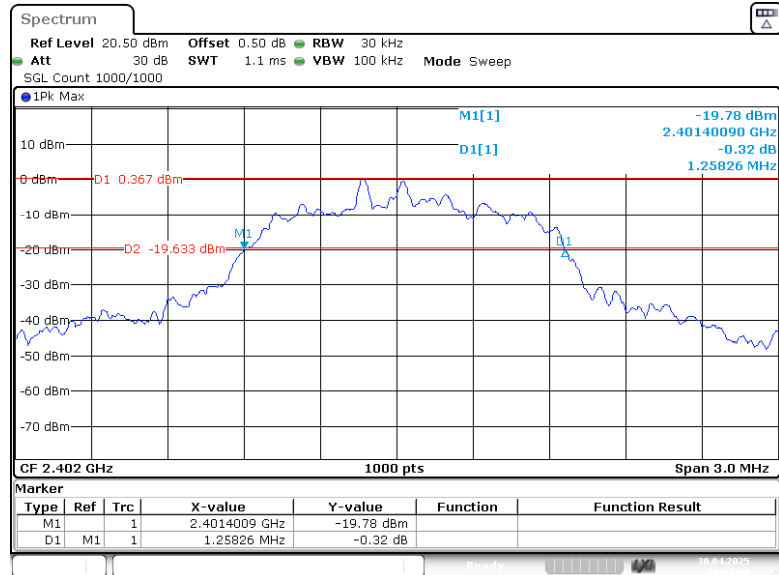
EDR($\pi/4$ -DQPSK): Middle Channel



EDR ($\pi/4$ -DQPSK): High Channel

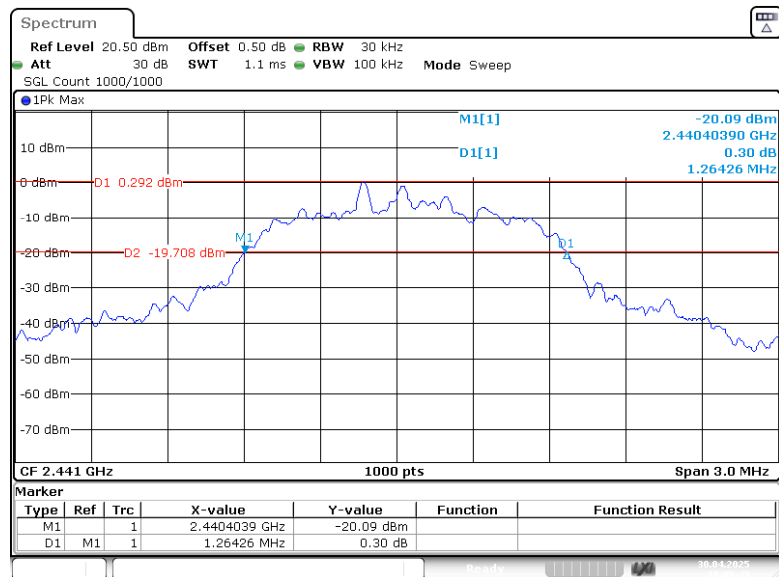


EDR (8DPSK): Low Channel



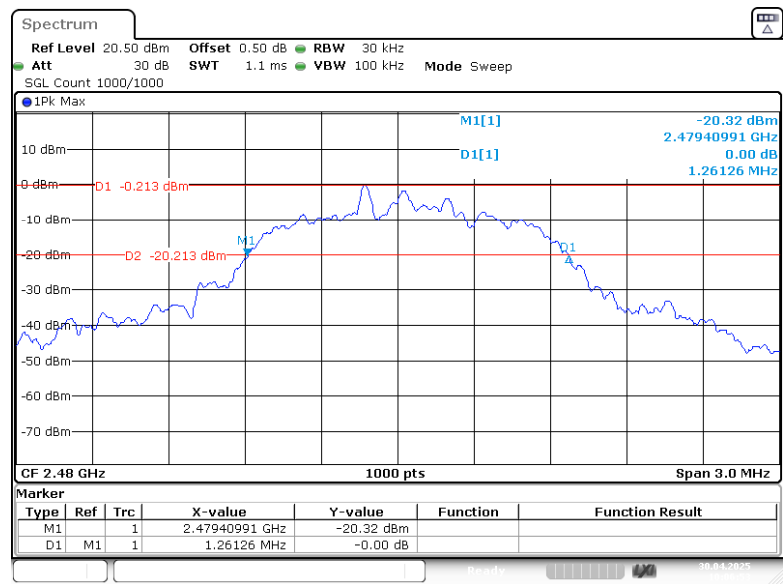
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:02:00

EDR (8DPSK): Middle Channel



ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:05:43

EDR (8DPSK): High Channel



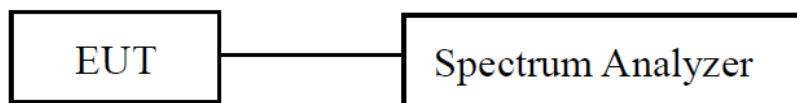
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:06:53

FCC §15.247(a) (1) (iii)-QUANTITY OF HOPPING CHANNEL TEST

Applicable Standard

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

EUT Setup



Test Procedure

According to ANSI C63.10-2020 Section 7.8.3

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
- b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- c) VBW $\geq$ RBW.
- d) Sweep: No faster than coupled (auto) time.
- e) Detector function: Peak.
- f) Trace: Max-hold.
- g) Allow the trace to stabilize

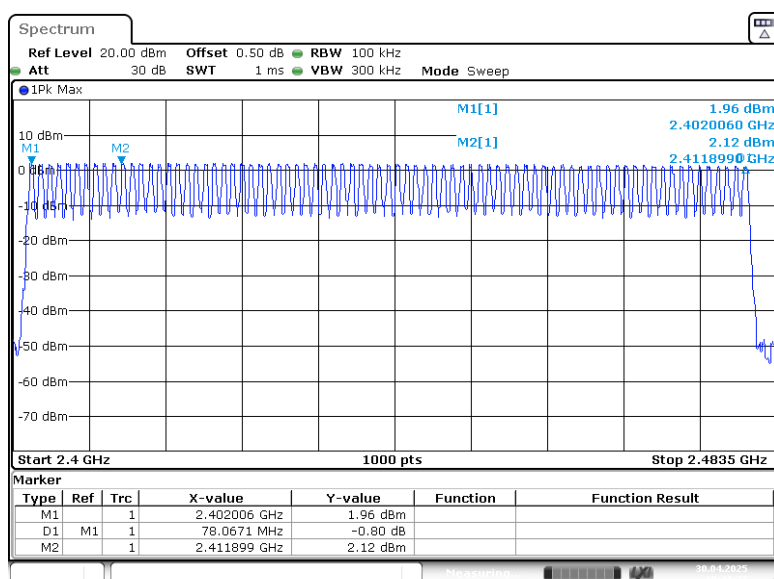
It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies. Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A plot of the data shall be included in the test report.

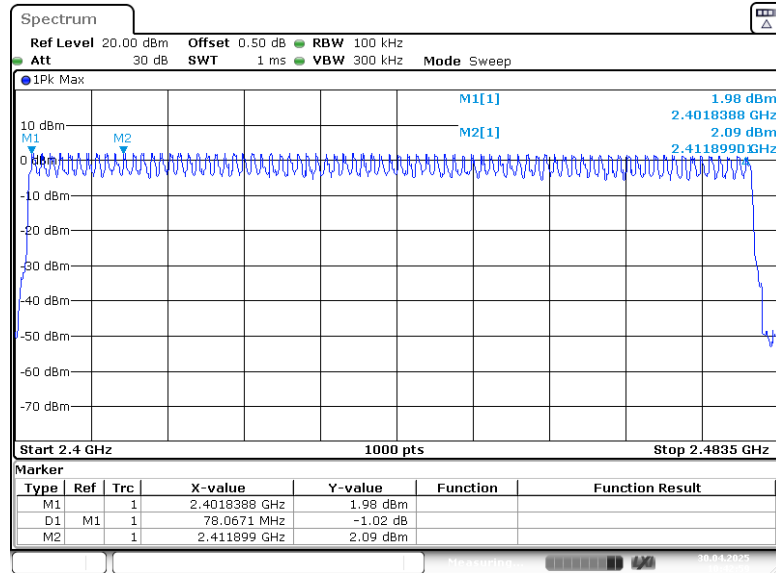
Where the device shares the same channel plan (carrier frequencies and number of channels) across multiple data rates or modulation schemes then the number of channels need only be measured for one of those modulation schemes or data rates.

Test Data

Test Mode:	Transmitting	Test Engineer:	Braylon Ma
Test Date:	2025-04-30	Environment:	Temp.: 23.6°C Humi.: 58% Atm.: 100.6kPa
Mode	Frequency Range (MHz)	Number of Hopping Channel (CH)	Limit (CH)
BDR (GFSK)	2400-2483.5	79	≥15
EDR (π/4-DQPSK)	2400-2483.5	79	≥15
EDR (8DPSK)	2400-2483.5	79	≥15

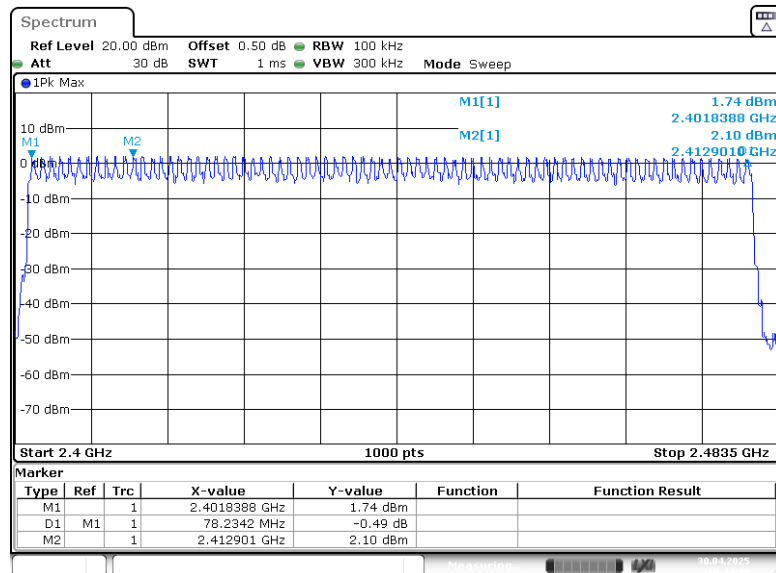
BDR (GFSK): Number of Hopping Channels



EDR ($\pi/4$ -DQPSK): Number of Hopping Channels

ProjectNo.:2507S22818E-RF Tester:Braylon Ma

Date: 30.APR.2025 10:42:58

EDR (8DPSK): Number of Hopping Channels

ProjectNo.:2507S22818E-RF Tester:Braylon Ma

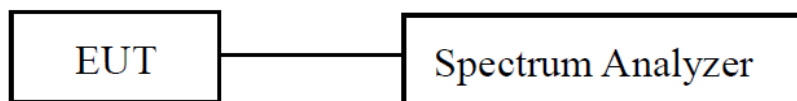
Date: 30.APR.2025 10:44:19

FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

EUT Setup



Test Procedure

According to ANSI C63.10-2020 Section 7.8.4

Use the following spectrum analyzer settings to determine the dwell time per hop:

- a) Span: Zero span, centered on a hopping channel.
- b) RBW shall be $\leq$ channel spacing and where possible RBW should be set $\gg 1 / T$, where T is the expected transmission time per hop.
- c) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. Setting the sweep time to be slightly longer than the hopping period per channel (hopping period = $1/\text{hopping rate}$) should achieve this.
- d) Use a video trigger, where possible with a trigger delay, so that the start of the transmission is clearly observed. The trigger level might need adjustment to reduce the chance of triggering when the system hops on an adjacent channel.
- e) Detector function: Peak.
- f) Trace: Clear-write, single sweep.
- g) Place markers at the start of the first transmission on the channel and at the end of the last transmission. The dwell time per hop is the time between these two markers.

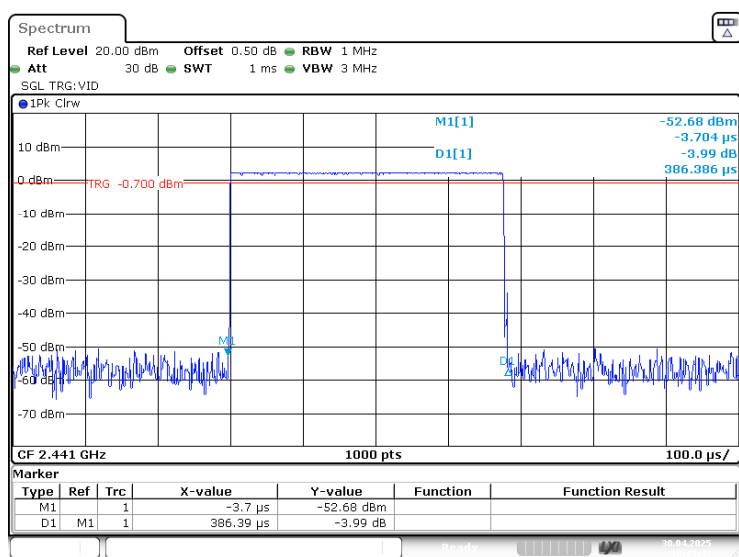
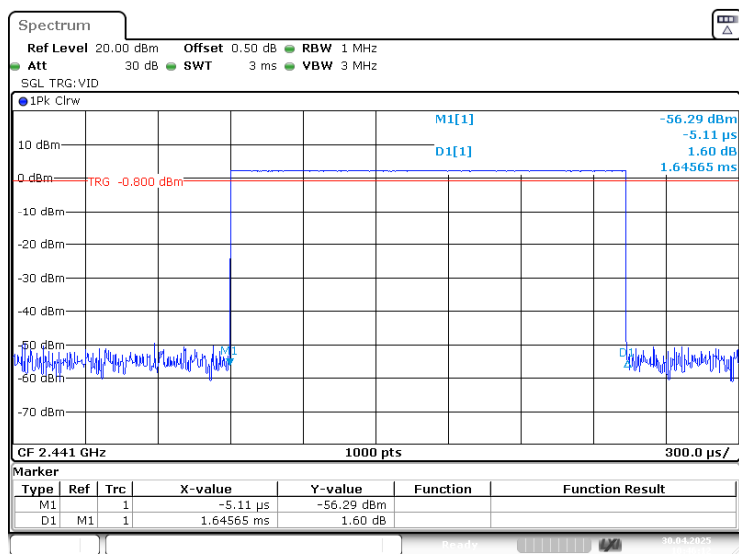
To determine the number of hops on a channel in the regulatory observation period repeat the measurement using a longer sweep time. When the device uses a single hopping sequence the period of measurement should be sufficient to capture at least 2 hops. When the device uses a dynamic hopping sequence, or the sequence varies, the period of measurement may need to capture multiple hops to better determine the average time of occupancy. Count the number of hops on the channel across the sweep time.

The average number of hops on the same channel within the regulatory observation period is calculated from the number of hops on the channel divided by the spectrum analyzer sweep time multiplied by the regulatory observation period. For example, if three hops are counted with an analyzer sweep time of 500 ms and the regulatory observation period is 10 s, then the number of hops in that ten seconds is $3 / 0.5 \times 10$, or 60 hops.

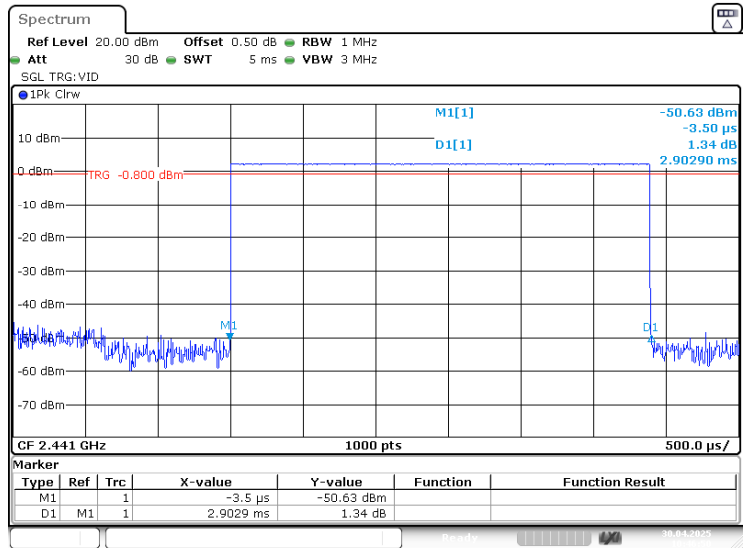
The average time of occupancy is calculated by multiplying the dwell time per hop by the number of hops in the observation period.

Test Data

Test Mode:		Transmitting		Test Engineer:		Braylon Ma
Test Date:		2025-04-30		Environment:		Temp.: 23.6°C Humi.: 58% Atm.: 100.6kPa
Mode		Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
BDR (GFSK)	DH1	Hopping	0.386	0.124	0.400	Pass
	DH3	Hopping	1.646	0.263	0.400	Pass
	DH5	Hopping	2.903	0.310	0.400	Pass
EDR ($\pi/4$ -DQPSK)	2DH1	Hopping	0.396	0.127	0.400	Pass
	2DH3	Hopping	1.658	0.265	0.400	Pass
	2DH5	Hopping	2.908	0.310	0.400	Pass
EDR (8DPSK)	3DH1	Hopping	0.397	0.127	0.400	Pass
	3DH3	Hopping	1.655	0.265	0.400	Pass
	3DH5	Hopping	2.908	0.310	0.400	Pass
Note: DH1, 2DH1, 3DH1:Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s DH3, 2DH3, 3DH3:Dwell time=Pulse time (ms) $\times$ (1600/4/79) $\times$ 31.6 s DH5, 2DH5, 3DH5:Dwell time=Pulse time (ms) $\times$ (1600/6/79) $\times$ 31.6 s						

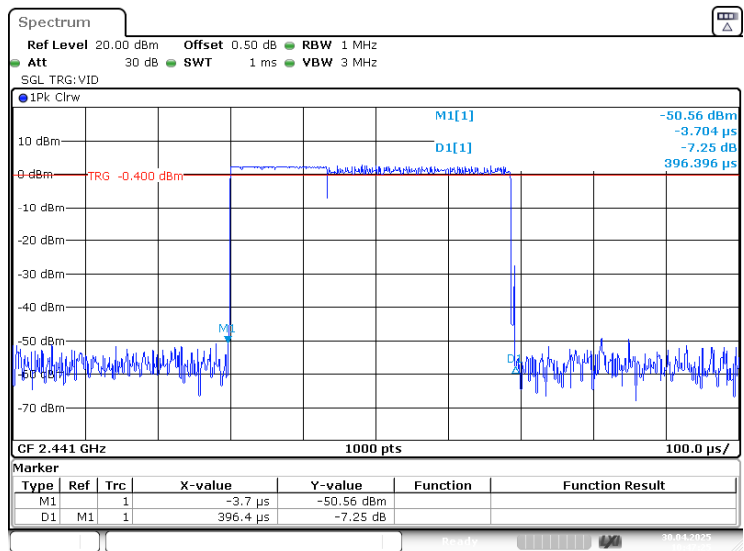
BDR (GFSK): Pulse time, Middle Channel, DH1**BDR (GFSK): Pulse time, Middle Channel, DH3**

BDR (GFSK): Pulse time, Middle Channel, DH5



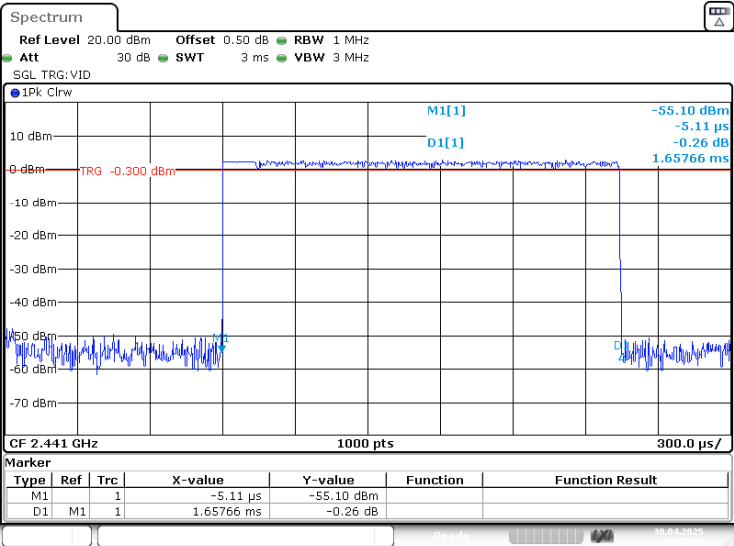
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:46:50

EDR ($\pi/4$ -DQPSK): Pulse time, Middle Channel, 2DH1



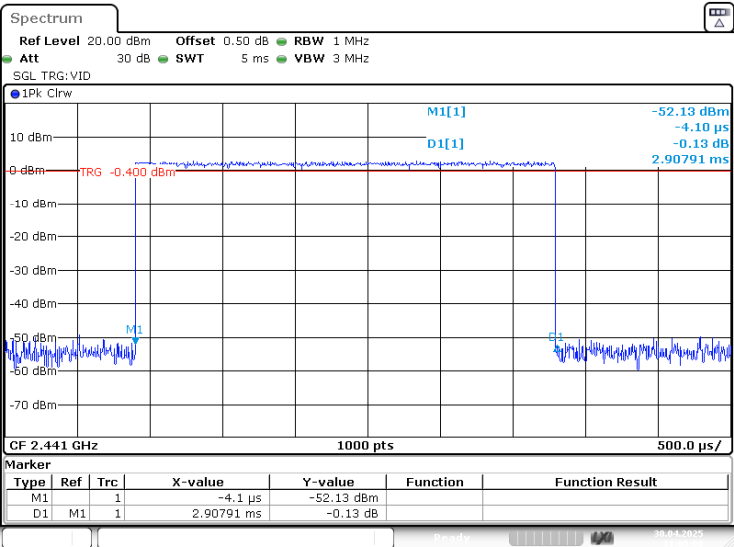
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:47:26

EDR ($\pi/4$ -DQPSK):Pulse time, Middle Channel, 2DH3

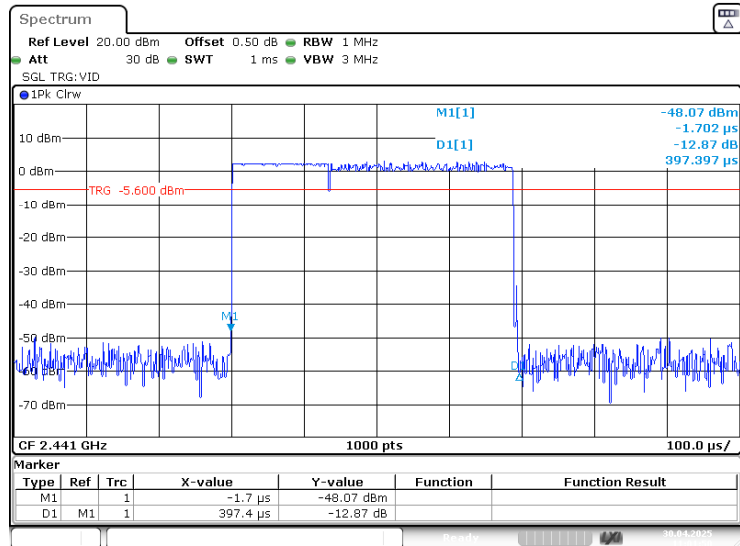


ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:58:45

EDR ($\pi/4$ -DQPSK):Pulse time, Middle Channel, 2DH5

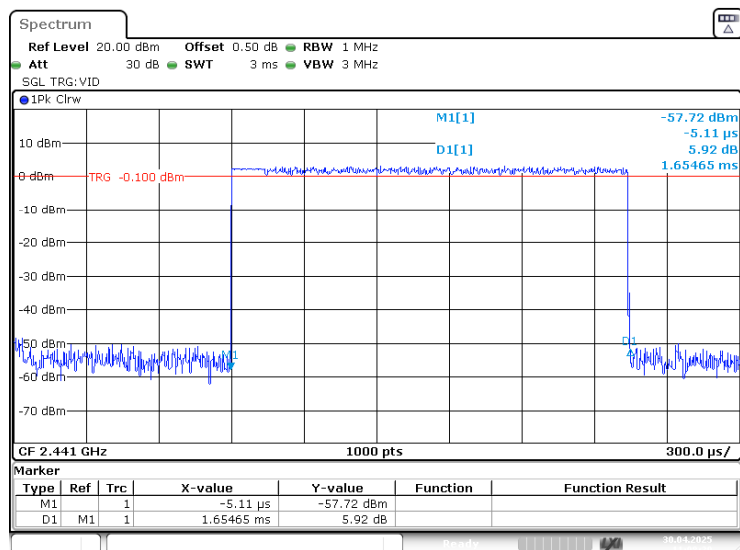


ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 11:00:08

EDR (8DPSK): Pulse time, Middle Channel, 3DH1

ProjectNo.:2507S22818E-RF Tester:Braylon Ma

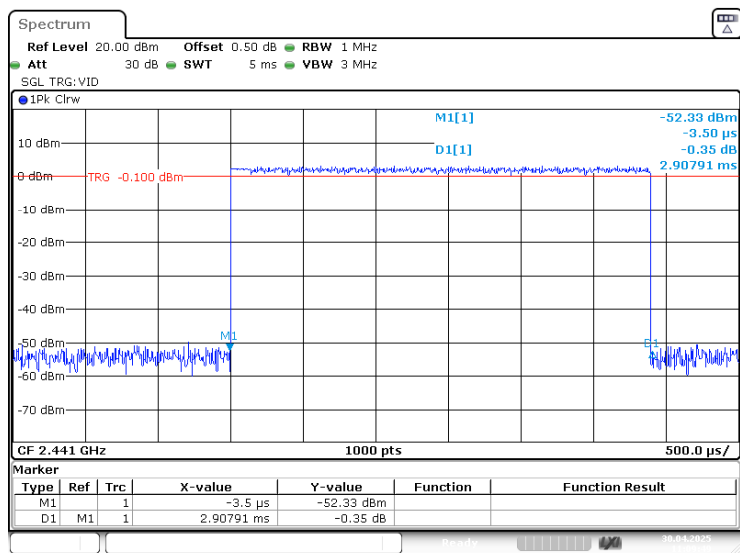
Date: 30.APR.2025 11:01:50

EDR (8DPSK): Pulse time, Middle Channel, 3DH3

ProjectNo.:2507S22818E-RF Tester:Braylon Ma

Date: 30.APR.2025 11:08:29

EDR (8DPSK): Pulse time, Middle Channel, 3DH5

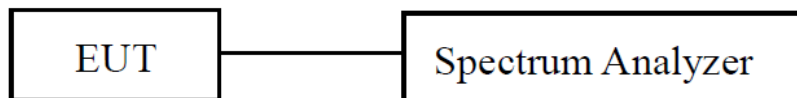


ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 11:09:49

FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. And for all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

EUT Setup**Test Procedure**

According to ANSI C63.10-2020 Section 7.8.5

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. Frequency hopping shall be disabled for this test. Use the following spectrum analyzer setting:

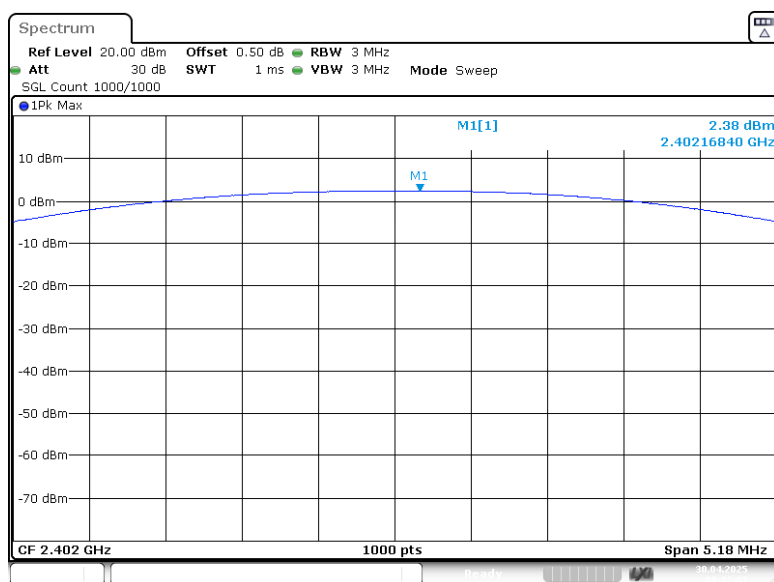
- a) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
- b) RBW > 20 dB bandwidth of the emission being measured.
- c) VBW $\geq$ RBW.
- d) Sweep: No faster than coupled (auto) time.
- e) Detector function: Peak.
- f) Trace: Max-hold.
- g) Allow trace to stabilize.
- h) Use the marker-to-peak function to set the marker to the peak of the emission.
- i) The indicated level is the peak output power, after any corrections for external attenuators and cables.
- j) A plot of the test results and setup description shall be included in the test report.

Test Data

Test Mode:	Transmitting	Test Engineer:	Braylon Ma
Test Date:	2025-04-30	Environment:	Temp.: 23.6°C Humi.: 58% Atm.: 100.6kPa
Mode	Frequency (MHz)	Peak Conducted Output Power (dBm)	Limit (dBm)
BDR (GFSK)	2402	2.38	21
	2441	2.22	21
	2480	1.66	21
EDR ($\pi/4$ -DQPSK)	2402	3.18	21
	2441	3.01	21
	2480	2.46	21
EDR (8DPSK)	2402	3.68	21
	2441	3.48	21
	2480	2.93	21

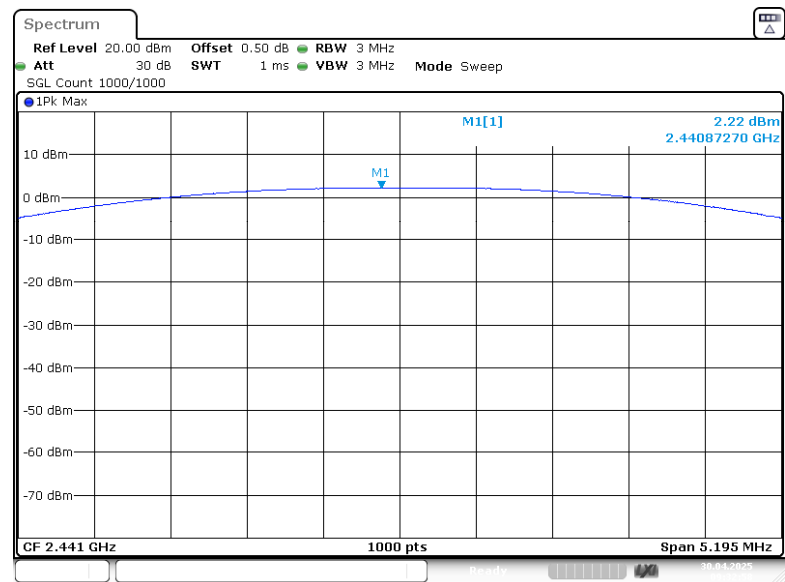
Please refer to below plots:

BDR (GFSK): 2402MHz



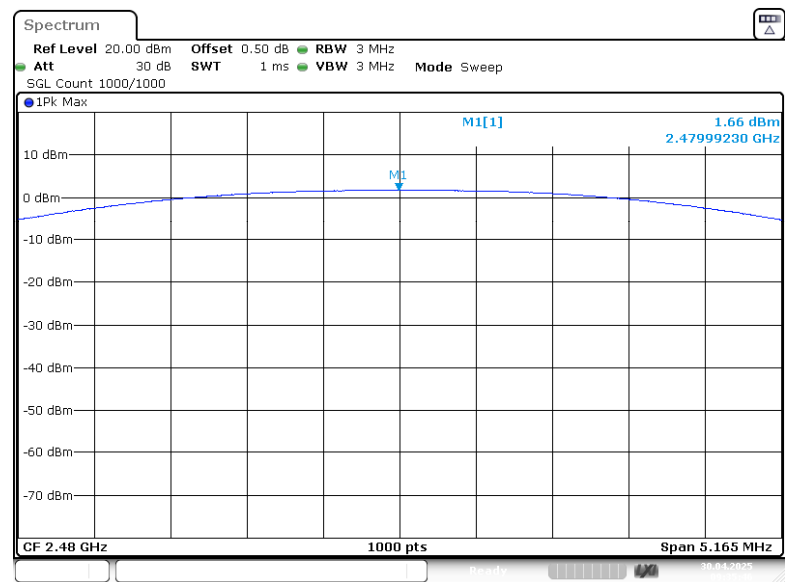
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:32:03

BDR (GFSK): 2441MHz



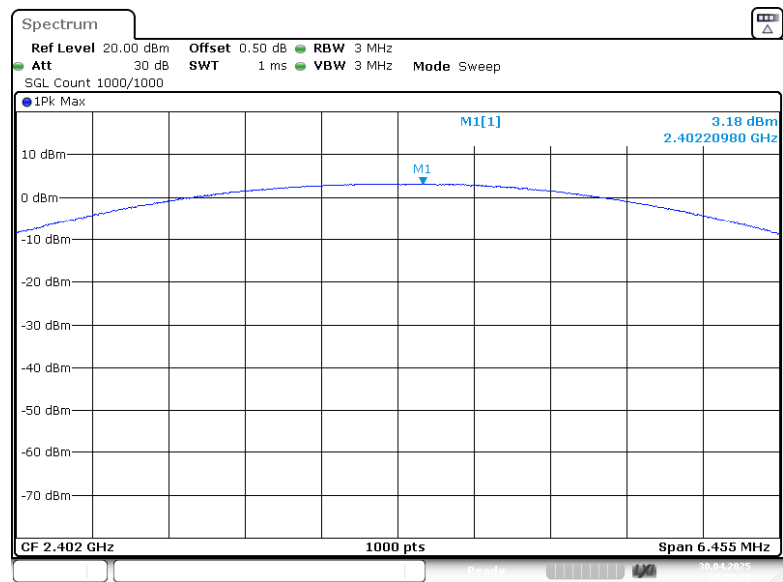
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:32:58

BDR (GFSK): 2480MHz



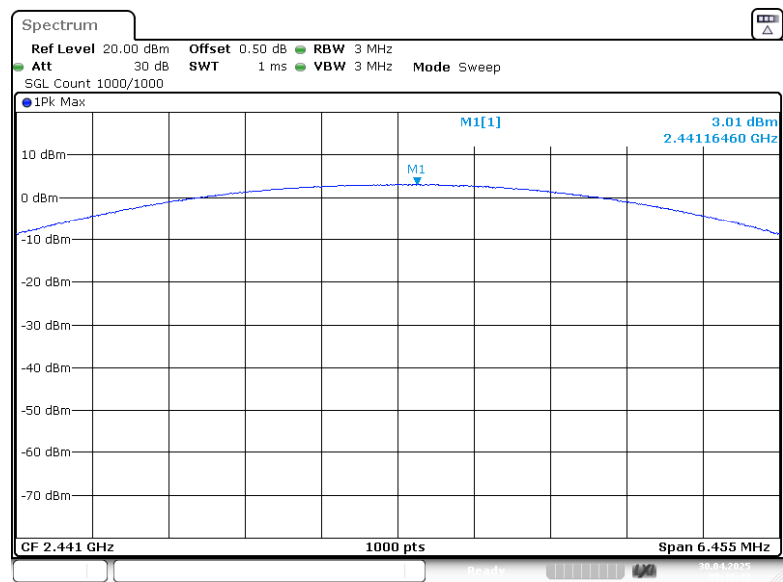
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:35:46

EDR($\pi/4$ -DQPSK): 2402MHz



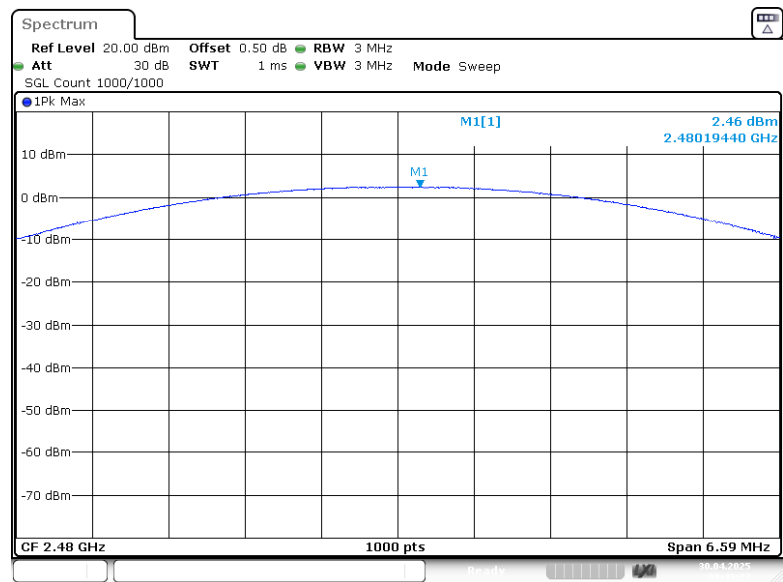
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:39:36

EDR($\pi/4$ -DQPSK): 2441MHz



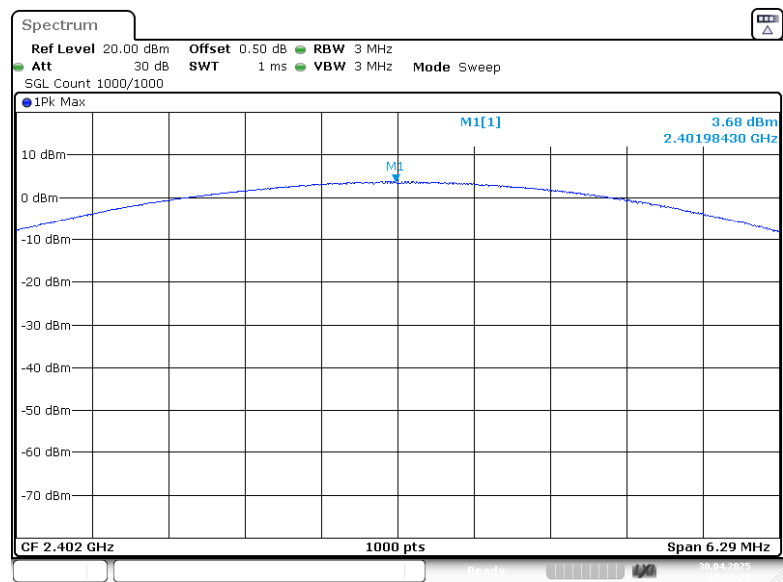
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:40:43

EDR($\pi/4$ -DQPSK): 2480MHz



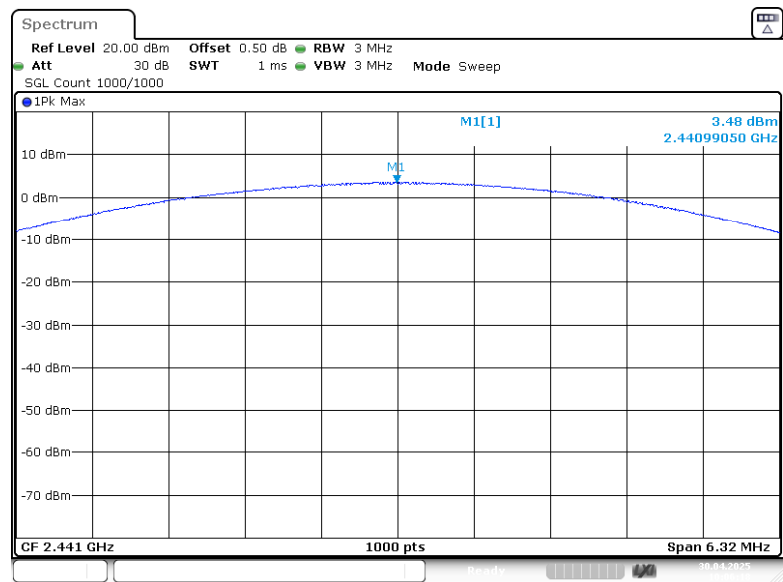
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:43:27

EDR(8DPSK): 2402MHz



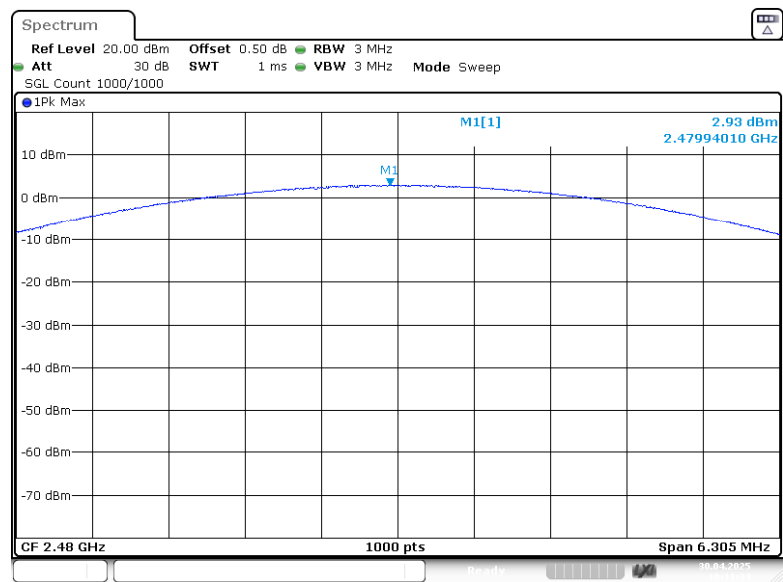
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:05:19

EDR(8DPSK): 2441MHz



ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:06:18

EDR(8DPSK): 2480MHz



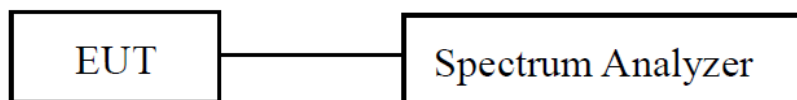
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:11:33

FCC §15.247(d) - BAND EDGES TESTING

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



Test Procedure

According to ANSI C63.10-2020 Section 7.8.7.2 & Claus 6.10

- 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products that fall outside of the authorized band of operation.
- 2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW/RBW})]$ below the reference level. Specific guidance is given in 4.1.6.2.
- 3) Attenuation: Auto (at least 10 dB preferred).
- 4) Sweep time: No faster than coupled (auto) time.
- 5) Resolution bandwidth: 100 kHz.
- 6) Video bandwidth: 300 kHz.
- 7) Detector: Peak.
- 8) Trace: Max-hold.

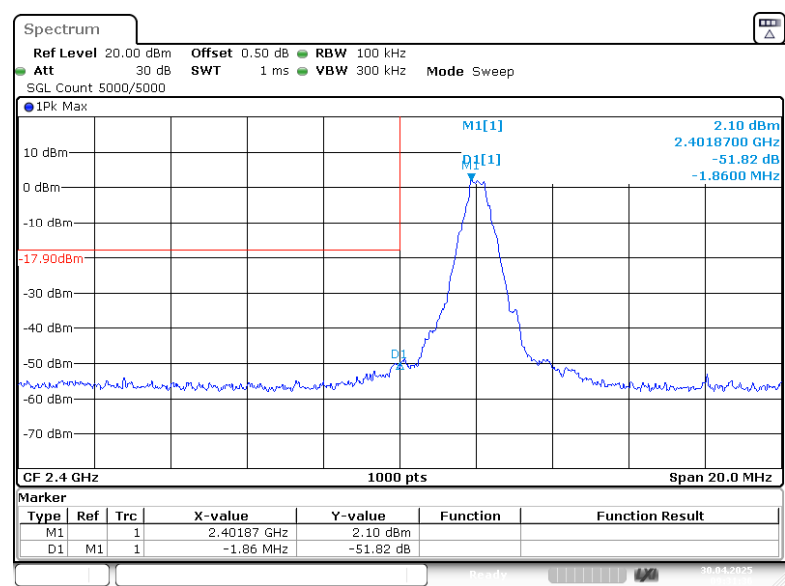
Test Data

Test Mode:	Transmitting	Test Engineer:	Braylon Ma
Test Date:	2025-04-30	Environment:	Temp.: 23.6°C Humi.: 58% Atm.: 100.6kPa

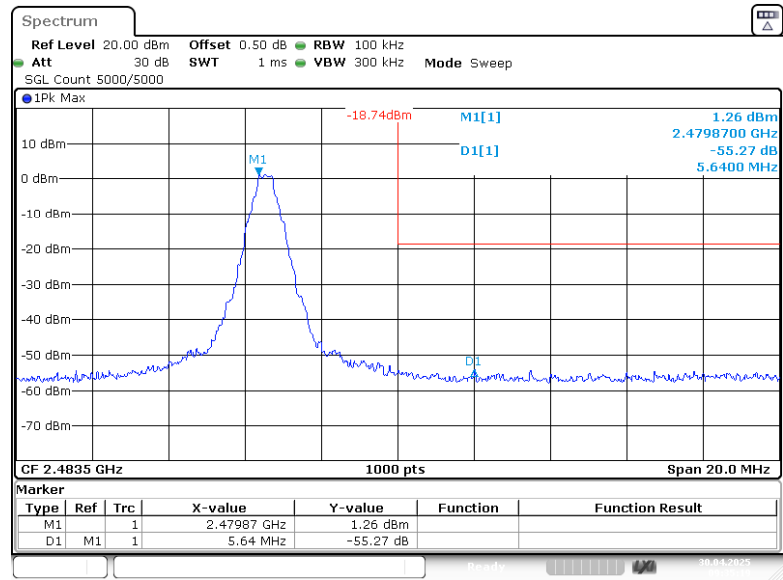
Please refer to the below plots:

Band Edge

BDR (GFSK): Left Side

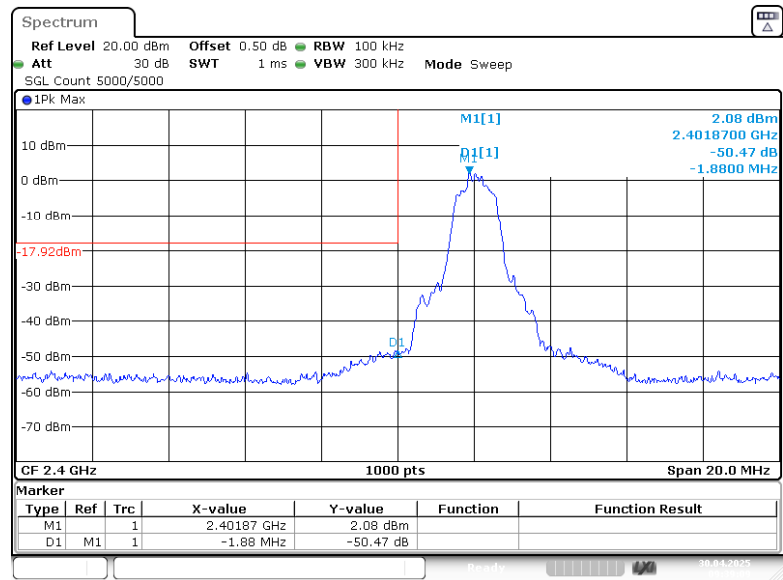


BDR (GFSK): Right Side

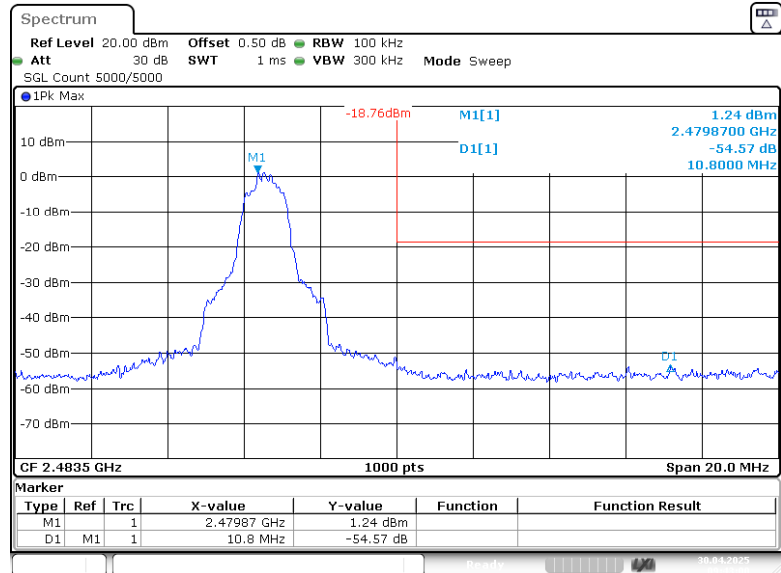


ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:35:18

EDR ($\pi/4$ -DQPSK): Left Side



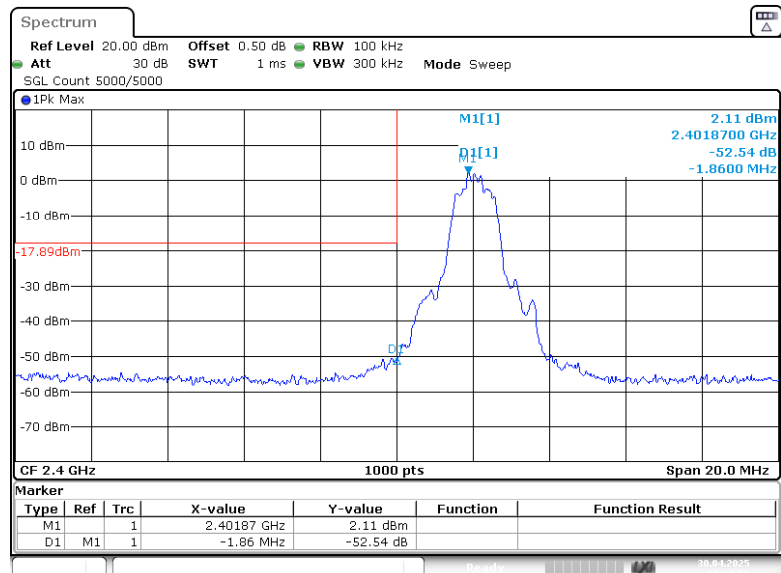
ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 09:39:09

EDR ($\pi/4$ -DQPSK): Right Side

ProjectNo.:2507S22818E-RF Tester:Braylon Ma

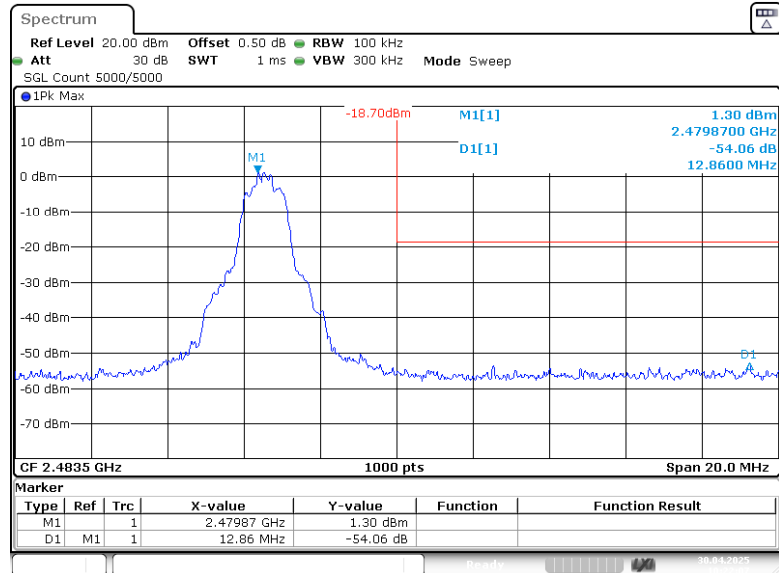
Date: 30.APR.2025 09:43:00

EDR (8DPSK): Left Side



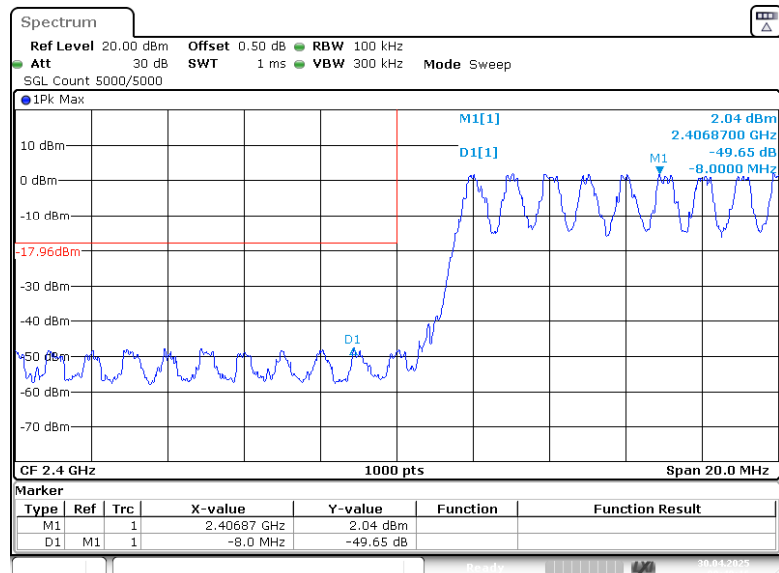
ProjectNo.:2507S22818E-RF Tester:Braylon Ma

Date: 30.APR.2025 10:19:56

EDR (8DPSK): Right Side

ProjectNo.:2507S22818E-RF Tester:Braylon Ma

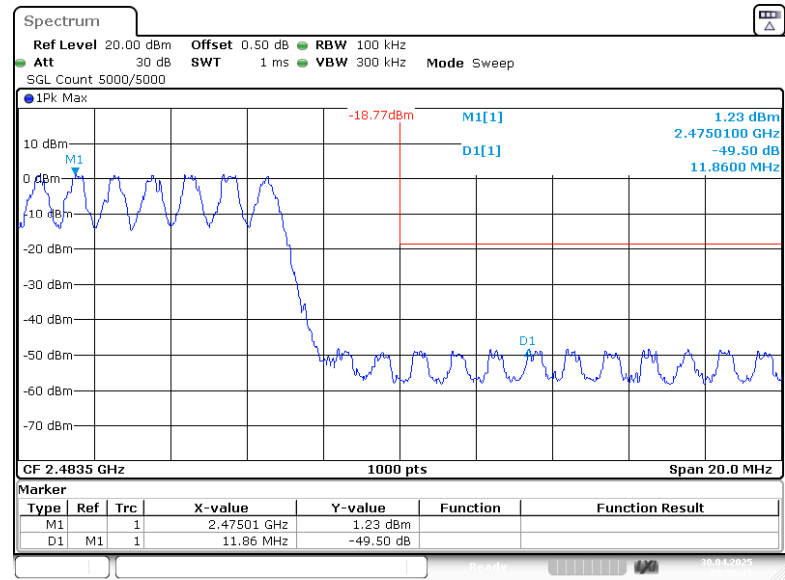
Date: 30.APR.2025 10:22:07

BDR (GFSK): Left Side - Hopping

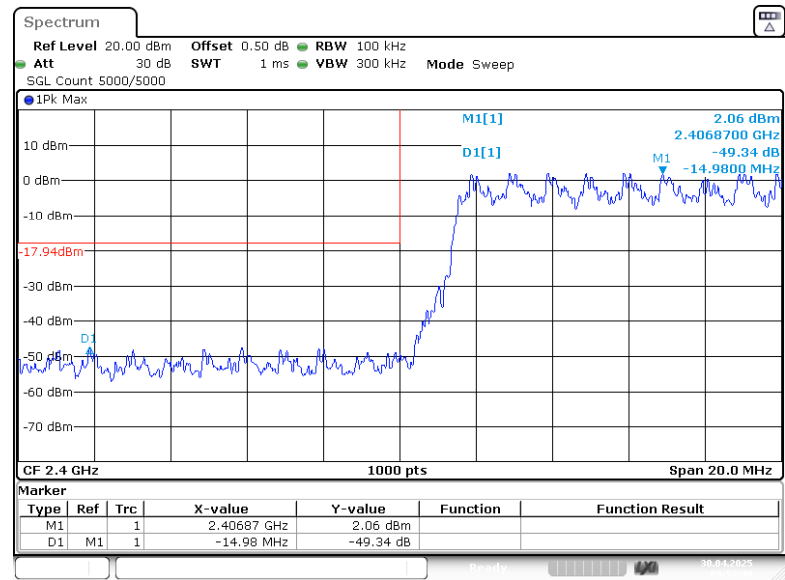
ProjectNo.:2507S22818E-RF Tester:Braylon Ma

Date: 30.APR.2025 09:48:16

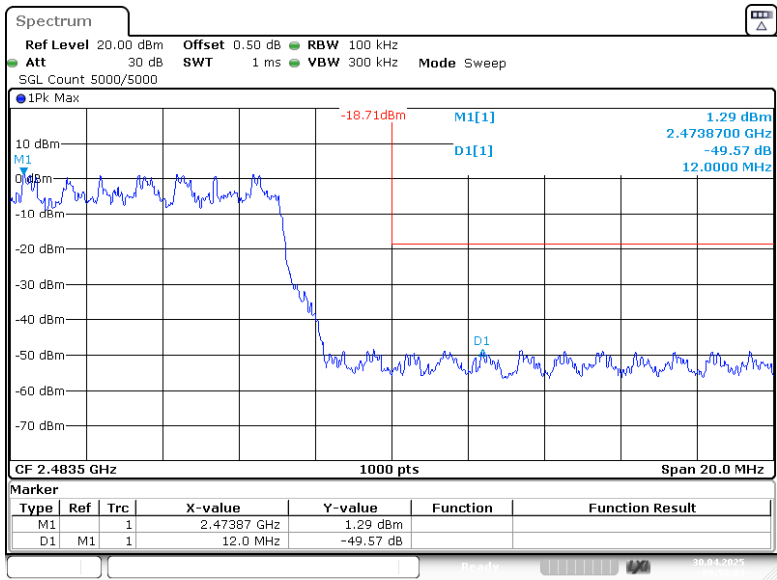
BDR (GFSK): Right Side - Hopping



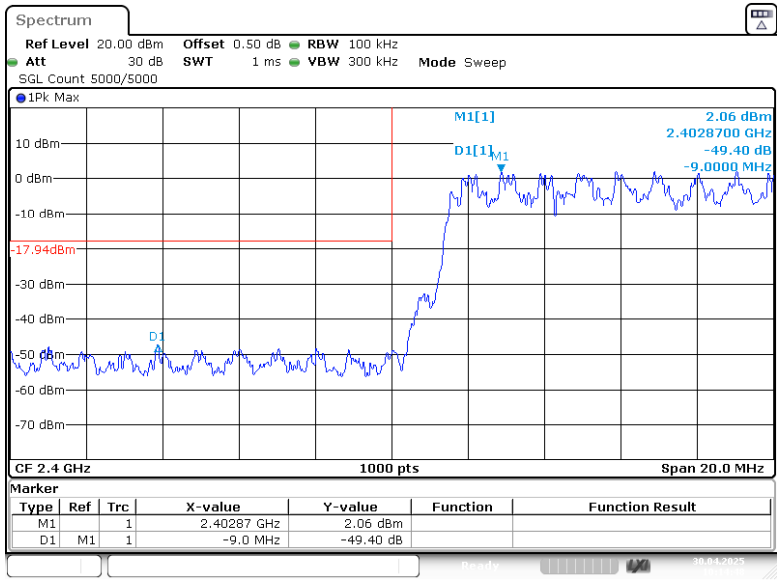
EDR ($\pi/4$ -DQPSK): Left Side - Hopping



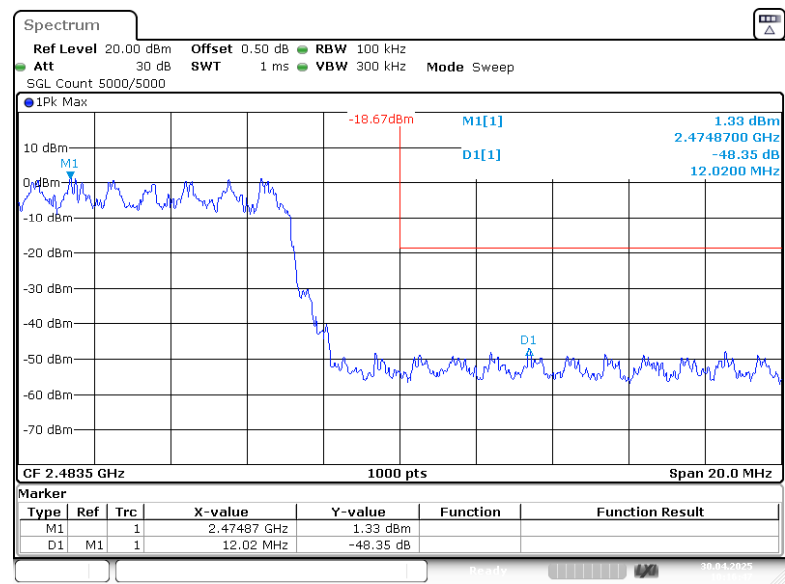
EDR ($\pi/4$ -DQPSK): Right Side - Hopping



EDR (8DPSK): Left Side - Hopping



EDR (8DPSK): Right Side - Hopping



ProjectNo.:2507S22818E-RF Tester:Braylon Ma
Date: 30.APR.2025 10:16:47

EUT PHOTOGRAPHS

Please refer to the attachment 2507S22818E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2507S22818E-RF-INP EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2507S22818E-RF-TSP TEST SETUP PHOTOGRAPHS.

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 *******