FCC PART 15.247
RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT2
RSS-247 ISSUE 3, AUGUST 2023

TEST REPORT

For

FCC: FUJIAN YESOUL HEALTH TECHNOLOGY CO.,LTD

RM-B616, BLDG., NO.1, STRAIT ECONOMIC AND TRADE PLAZA, FUZHOU FREE TRADE ZONE, FUZHOU, FUJIAN, China

IC: Fujian YESOUL Health Technology Co., Ltd.

Rm-B616, Bldg., No.1, Strait Economic and Trade Plaza, Fuzhou Free Trade Zone Fuzhou 350000 China

FCC ID: 2A3YB-YS-R1PLUS
IC: 30451-YSR1PLUS

Report Type:	**Product Name:**
Original Report	YESOUL ROWING MACHINE

Report Number:	2407X56114E-RF-02
Report Date:	2025-01-21
Reviewed By:	Ash Lin
Approved By:	Miles Chen
Prepared By:	Bay Area Compliance Laboratories Corp. (Xiamen) Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen Tel: +86-592-3200111 www.baclcorp.com.cn

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2407X56114E-RF-02	R1V1	2025-01-21	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:		FCC: FUJIAN YESOUL HEALTH TECHNOLOGY CO.,LTD IC: Fujian YESOUL Health Technology Co., Ltd.
Product Name:		YESOUL ROWING MACHINE
Tested Model:		YS-R1PLUS
HVIN:		YS-R1PLUS
Multiple Model(s):		N/A
Power Supply:		AC 100-240V, 50/60Hz
Adapter information	Model:	J482-2402000DI
	Input:	AC 100-240V, 50/60Hz, 1.5A
	Output:	DC 24V, 2.0A, 48W
Maximum Peak Output Power (Conducted):		6.02 dBm
RF Function:		Classic BT
Operating Band/Frequency:		2402-2480 MHz
Channel Number:		79
Channel Separation:		1 MHz
Modulation Type:		GFSK, π/4-DQPSK, 8DPSK
Antenna Type:		PCB Antenna
★Maximum Antenna Gain:		3.71dBi
EUT Received Status:		Good

Note:
1. The Maximum Antenna Gain was declared by manufacturer.
2. All measurement and test data in this report was gathered from production sample serial number: 2RG2-2 (Assigned by the BACL (Xiamen). The EUT supplied by the applicant was received on 2024-09-09)

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.

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 IC accredited lab under the KDB 974614 D01, the IC Designation No. : CN0176.

Measurement Uncertainty

Item		U_{lab}
AC Power Lines Conducted Emissions	150kHz-30MHz	2.33 dB
Radiated emission	9kHz-30MHz	2.59 dB
	30MHz~200MHz	4.38 dB
	200MHz~1GHz	4.50 dB
	1GHz~6GHz	4.6 dB
	6GHz~18GHz	5.42 dB
	18GHz~26.5GHz	5.37 dB
Occupied Bandwidth		0.053kHz
Transmitter Conducted Power		0.624 dB
Conducted Spurious Emission		2.52 dB
Temperature		1 ℃
Humidity		5 %
Supply voltages		1 %

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:	Test mode 1: Transmitting
Test voltage:	Test mode 1: 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

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

RF Test Tool: EspRFTestTool_v3.6_Manual.exe

Test Modes	Power Level Setting		
	Lowest Channel	Middle Channel	Highest Channel
GFSK	5	5	5
π/4-DQPSK	5	5	5
8DPSK	5	5	5

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

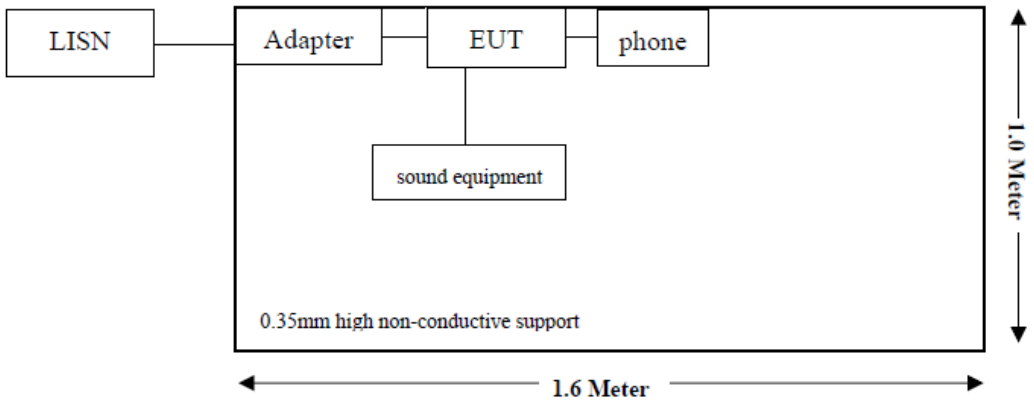
Manufacturer	Description	Model	Serial Number
Apple	mobile phone	MLDU3CH/A	KY4D4MP4YC
YESOUL	sound equipment	BT-2020:06.26.0012	Unknown

External I/O Cable

Cable Description	Length (m)	From Port	To
USB Cable	1	mobile phone	EUT
3.5mm audio cable	0.5	sound equipment	EUT
USB Cable	0.5	sound equipment	EUT

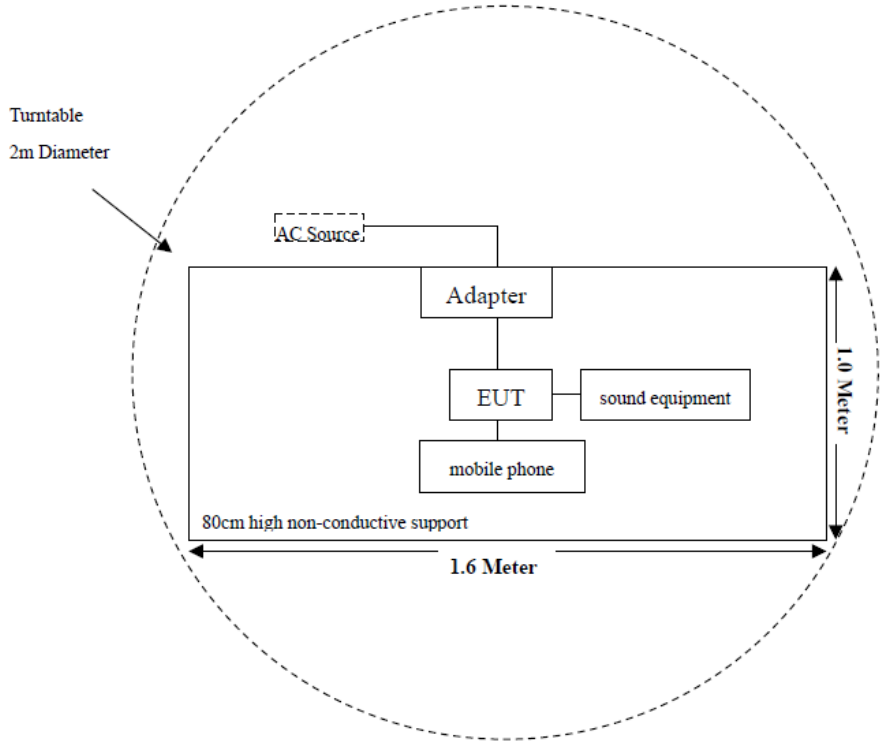
Block Diagram of Test Setup

Conducted Emission:



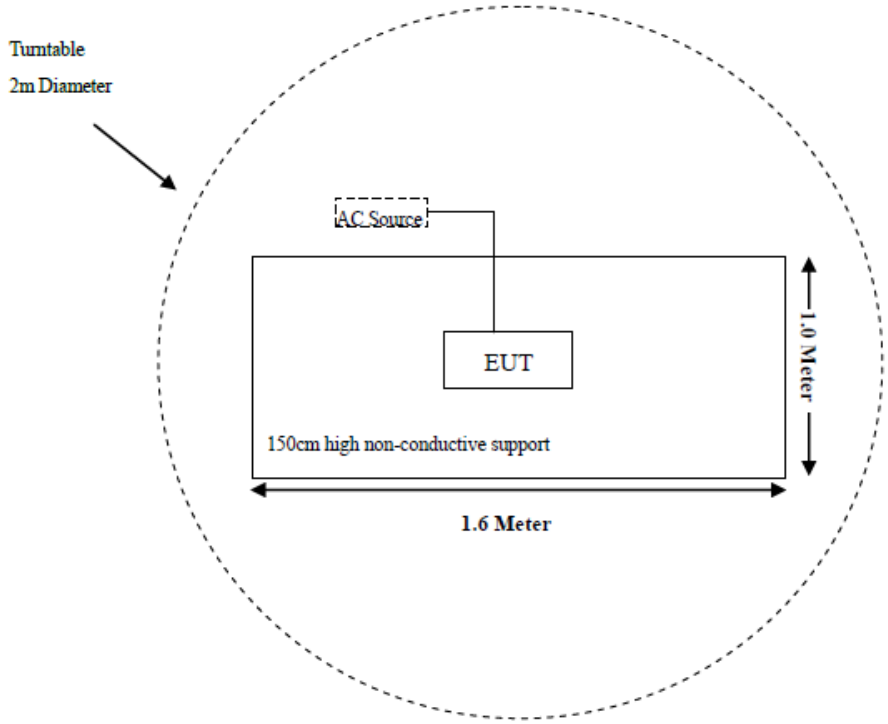
Radiated Emission:

Below 1GHz:



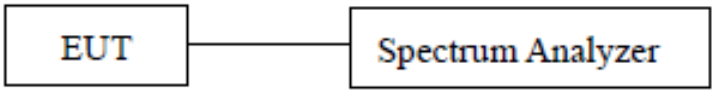
Note: Antenna is 0.8m above ground.

Above 1GHz:



Note: Antenna is 1.5m above ground.

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

Standard(s)/Rule(s)	Description of Test	Result
FCC§15.203 RSS-Gen Clause 6.8	Antenna Requirement	Compliant
FCC§15.207(a) RSS-Gen Clause 8.8	AC Line Conducted Emissions	Compliant
FCC§15.205, §15.209 & §15.247(d) RSS-Gen Clause 8.10	Radiated Emissions & Restricted Bands Emissions	Compliant
FCC§15.247(a)(1) RSS-247 Clause 5.1 b)	20 dB Emission Bandwidth	Compliant
RSS-Gen Clause 6.7	99% Occupied Bandwidth	Compliant
FCC§15.247(a)(1) RSS-247 Clause 5.1 b)	Channel Separation Test	Compliant
FCC§15.247(a)(1)(iii) RSS-247 Clause 5.1 d)	Time of Occupancy (Dwell Time)	Compliant
FCC§15.247(a)(1)(iii) RSS-247 Clause 5.1 d)	Quantity of hopping channel Test	Compliant
FCC§15.247(b)(1) RSS-247 Clause 5.4 b)	Peak Output Power Measurement	Compliant
FCC§15.247(d) RSS-247 Clause 5.5	Band edges	Compliant

TEST EQUIPMENT LIST

Description	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
EMI Test Receiver	Rohde & Schwarz	ESR	103105	2024/03/29	2025/03/28
LISN	Rohde & Schwarz	ENV216	100129	2024/03/29	2025/03/28
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	0357.8810.54	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC001	2024/03/29	2025/03/28
Test Software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESR	103103	2024/03/29	2025/03/28
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	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC002	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-2M	CC006	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH460B-N-12M	CC007	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	HFH2-CC	335.3609	2024/03/29	2025/03/28
Test Software	Audix	E3	18621a	N/A	N/A
Radiated Emission Above 1 GHz					
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102051	2024/03/29	2025/03/28
Double Ridge Guide Horn Antenna	A.H.Systems	SAS-571	1980	2023/07/28	2026/07/27
Horn Antenna	EMCO	3116	9407-2232	2023/07/31	2026/07/30
Horn Antenna	EMCO	3115	9002-3355	2024/11/19	2027/11/18
Preamplifier	A.H.Systems	PAM-0118P	489	2024/03/29	2025/03/28
Preamplifier	A.H.Systems	PAM-1840	200	2024/03/29	2025/03/28
Filter Switch Unit	Decentest	DT7220FSU	DS79904	2024/02/23	2025/02/22
Multiplex Switch Test Control Set	Decentest	DT7220SCU	DS79901	2024/02/23	2025/02/22
Coaxial Cable	XINHANGWEIBO	XH800A-N-6M	CC003	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH800A-N-1M	CC005	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-3M	CC008	2024/03/29	2025/03/28
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-1M	CC009	2024/03/29	2025/03/28
Test Software	Audix	E3	18621a	N/A	N/A
RF Conducted Test					
Spectrum Analyzer	Rohde & Schwarz	FSU	100405	2024/03/29	2025/03/28
Coaxial Cable	N/A	N/A	N/A	2024/03/29	2025/03/28

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 & RSS-Gen Clause 6.8 – 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.

According to RSS-Gen Clause 6.8 The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent is otropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.
For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).
When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.
For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:
This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.
Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Antenna Connector Construction

The EUT has one PCB antenna for Bluetooth, which was permanently attached and the antenna gain is 3.71 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

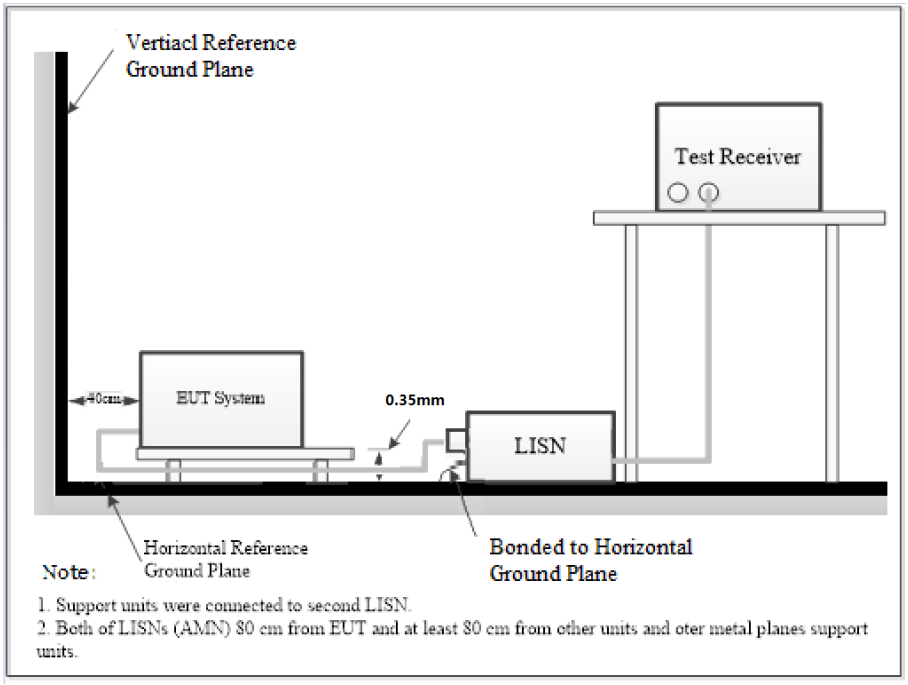
Result: Compliance

FCC §15.207 (a) & RSS-Gen Clause 8.8 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), RSS-Gen Clause 8.8

Test System Setup



The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207, RSS-Gen limits.

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 C63.10-2013 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:

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)

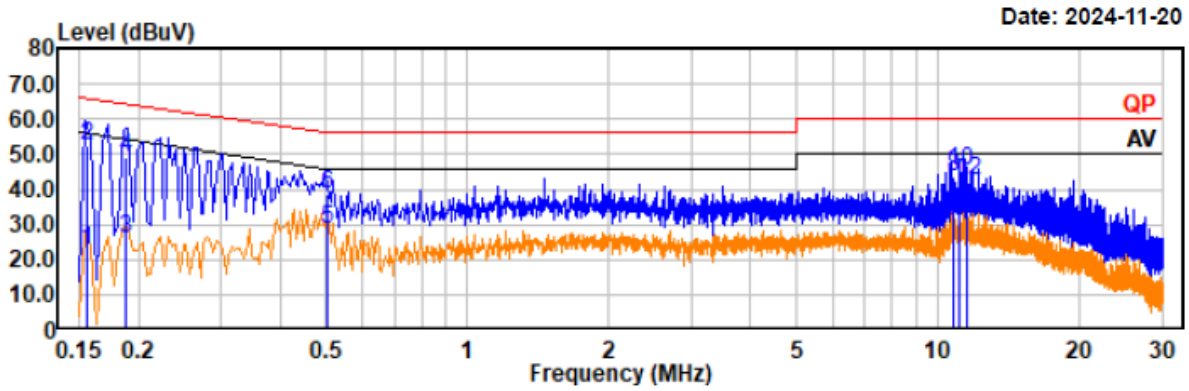
Test Data

Temperature:	25.4℃
Relative Humidity:	55%
ATM Pressure:	100.1kPa
Test Date:	2024-11-20
Test Engineer:	Spike Gao

EUT operation mode: Transmitting in the low channel of EDR (8DPSK) mode (worst case)

Project No.: 2407X56114E-RF
Test Mode: 3DH1 2402
EUT Model: YS-R1PLUS

Temp/Humi/ATM: 25.4℃/55%/100.1kPa
Tested by: Spike Gao
Power Source: AC 120V/60Hz

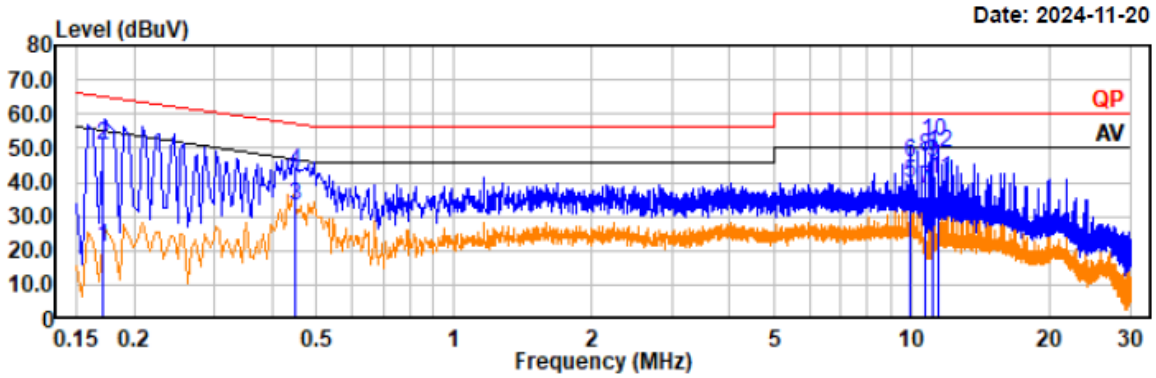


Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.16	2.85	19.50	22.35	55.73	33.38	Line	Average
0.16	33.17	19.50	52.67	65.73	13.06	Line	QP
0.19	5.86	19.94	25.80	54.10	28.30	Line	Average
0.19	29.13	19.94	49.07	64.10	15.03	Line	QP
0.50	8.96	19.68	28.64	46.00	17.36	Line	Average
0.50	18.75	19.68	38.43	56.00	17.57	Line	QP
10.79	11.02	19.80	30.82	50.00	19.18	Line	Average
10.79	23.81	19.80	43.61	60.00	16.39	Line	QP
11.12	13.82	19.79	33.61	50.00	16.39	Line	Average
11.12	25.66	19.79	45.45	60.00	14.55	Line	QP
11.51	11.80	19.78	31.58	50.00	18.42	Line	Average
11.51	22.79	19.78	42.57	60.00	17.43	Line	QP

Project No.: 2407X56114E-RF
Test Mode: 3DH1 2402
EUT Model: YS-R1PLUS

Temp/Humi/ATM: 25.4℃/55%/100.1kPa
Tested by: Spike Gao
Power Source: AC 120V/60Hz



Trace: 1

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.17	1.84	19.29	21.13	54.92	33.79	Neutral	Average
0.17	31.74	19.29	51.03	64.92	13.89	Neutral	QP
0.45	13.65	19.58	33.23	46.90	13.67	Neutral	Average
0.45	23.38	19.58	42.96	56.90	13.94	Neutral	QP
9.93	20.41	19.43	39.84	50.00	10.16	Neutral	Average
9.93	26.36	19.43	45.79	60.00	14.21	Neutral	QP
10.68	18.39	19.46	37.85	50.00	12.15	Neutral	Average
10.68	28.02	19.46	47.48	60.00	12.52	Neutral	QP
11.06	26.12	19.46	45.58	50.00	4.42	Neutral	Average
11.06	32.45	19.46	51.91	60.00	8.09	Neutral	QP
11.44	21.60	19.47	41.07	50.00	8.93	Neutral	Average
11.44	28.91	19.47	48.38	60.00	11.62	Neutral	QP

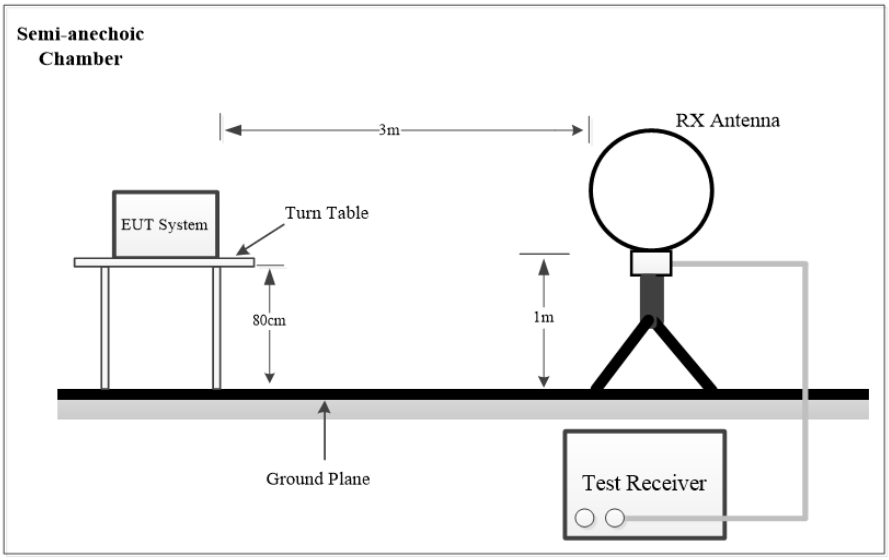
FCC §15.205, §15.209 & §15.247(d) & RSS-247 Clause 5.5, RSS-GEN ISSUE5 Clause 8.10 – RADIATED EMISSIONS

Applicable Standard

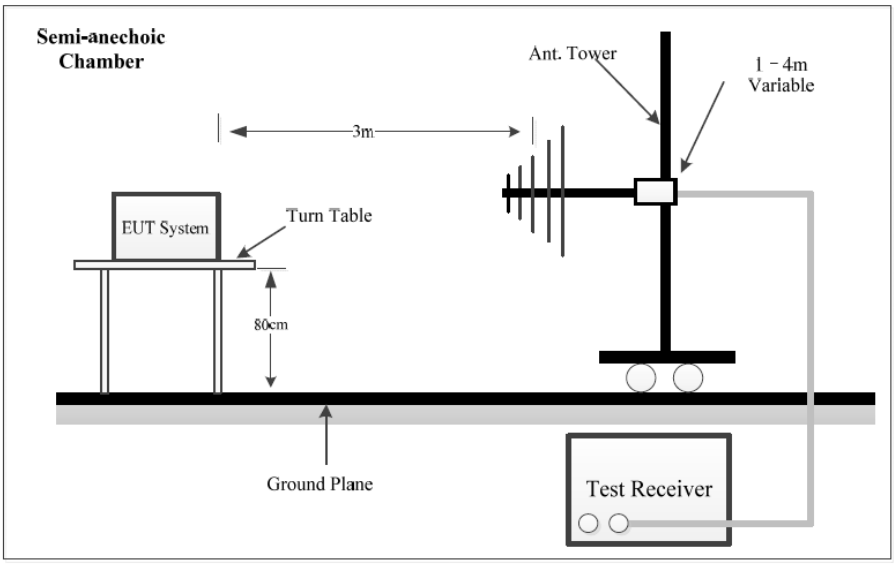
FCC §15.205; §15.209; §15.247(d); RSS-247 Clause 5.5; RSS-GEN ISSUE5 Clause 8.10

Test System Setup

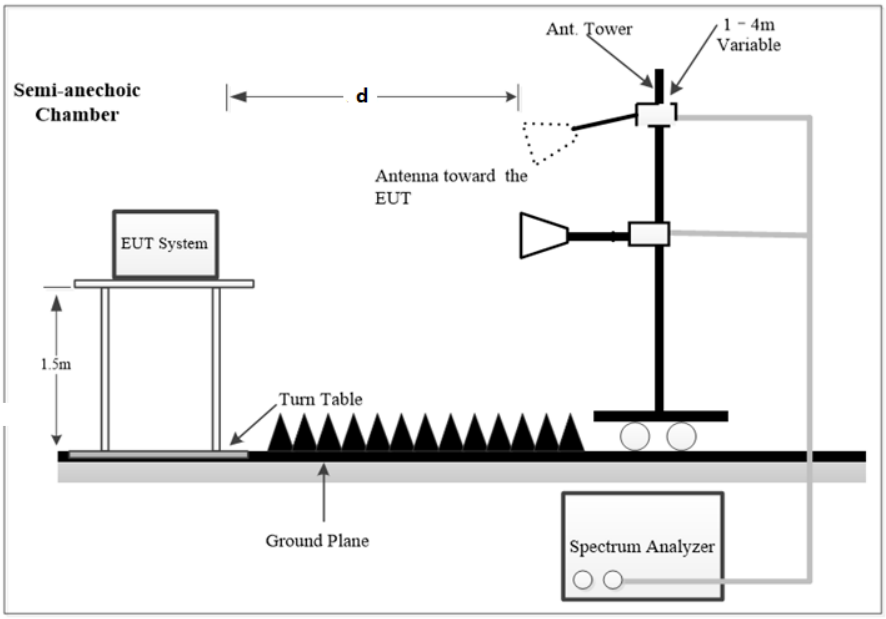
9 kHz-30MHz



Below 1 GHz:



Above 1GHz:



The radiated emission tests using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, FCC 15.247, RSS-247, RSS-Gen 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 1.0 m distance, according to ANSI C63.10-2013, the test result shall be extrapolated to the specified distance using an extrapolation Factor of 20dB/decade from 3m to 1.0m.
Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1.0m]) dB= 9.54 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
PK	1MHz	3MHz
Ave.	1MHz	5kHz

Final measuurement for emission identifed ding the pre-scan:

Measurement	RBW	Video B/W
PK	1MHz	3MHz
Ave.	1MHz	10Hz

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 10 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 Bandedge emissions test
Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB) - Extrapolation factor (dB)

Extrapolation factor=9.54dB (distance=1m)

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)

The spurious emission from 9 kHz-30MHz of IC RSS-Gen standard, the unit of final result on the test plots are dBμV/m, so the limit should be added by 51.5dB from dBμA/m to dBμV/m.

Test Data

Please refer to the below table and plots.

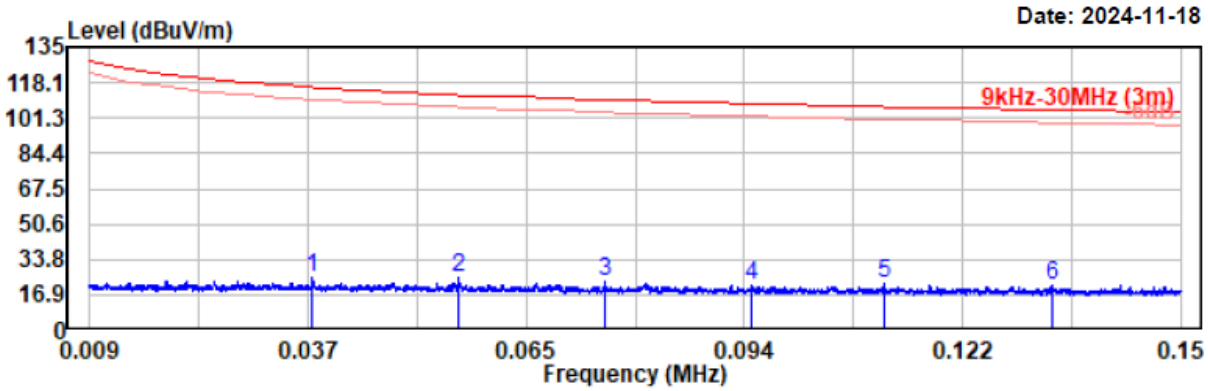
Frequency Range:	Below 1 GHz	Above 1 GHz
Temperature:	21.5℃~24℃	21.5℃~24℃
Relative Humidity:	46%~48%	43%~50%
ATM Pressure:	100.1kPa~100.3kPa	100.1kPa~100.5kPa
Test Date:	2024-11-18~2024-11-29	2024-09-30~2024-12-22
Test Engineer:	Wlif Wu	Wlif Wu

1) 9 kHz ~30 MHz

EUT operation mode: Transmitting in the low channel of EDR (8DPSK) mode in Parallel (worst case)

Project No.: 2407X56114E-RF
Test Mode: 3DH1 2402
EUT Model: YS-R1PLUS
Test distance: 3m

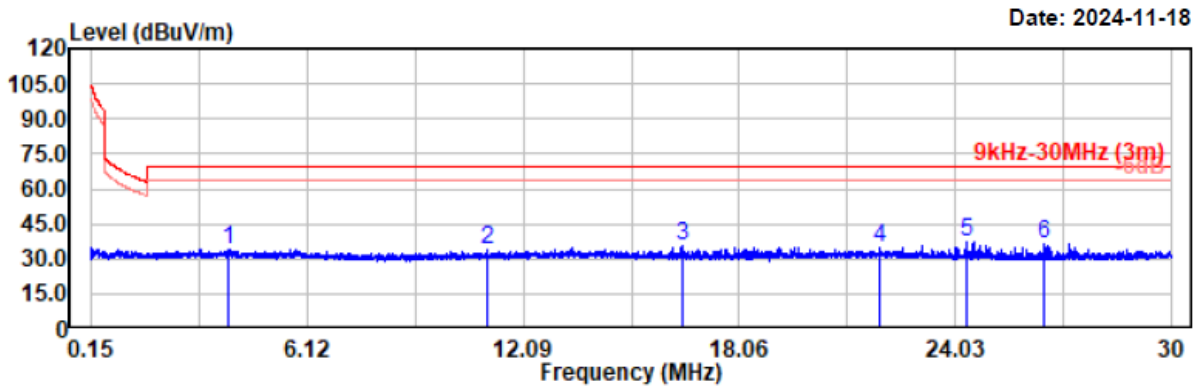
Temp/Humi/ATM: 21.5℃/48%/100.3kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.038	5.08	19.91	24.99	116.07	91.08	Peak
0.057	5.34	19.91	25.25	112.54	87.29	Peak
0.076	3.47	19.75	23.22	110.04	86.82	Peak
0.094	1.45	19.78	21.23	108.10	86.87	Peak
0.112	2.29	19.73	22.02	106.65	84.63	Peak
0.133	1.23	19.73	20.96	105.11	84.15	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1 2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/48%/100.3kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
3.950	14.28	19.77	34.05	69.58	35.53	Peak
11.105	14.14	19.71	33.85	69.58	35.73	Peak
16.472	15.89	19.86	35.75	69.58	33.83	Peak
21.964	14.71	20.14	34.85	69.58	34.73	Peak
24.352	17.25	20.21	37.46	69.58	32.12	Peak
26.490	16.27	20.14	36.41	69.58	33.17	Peak

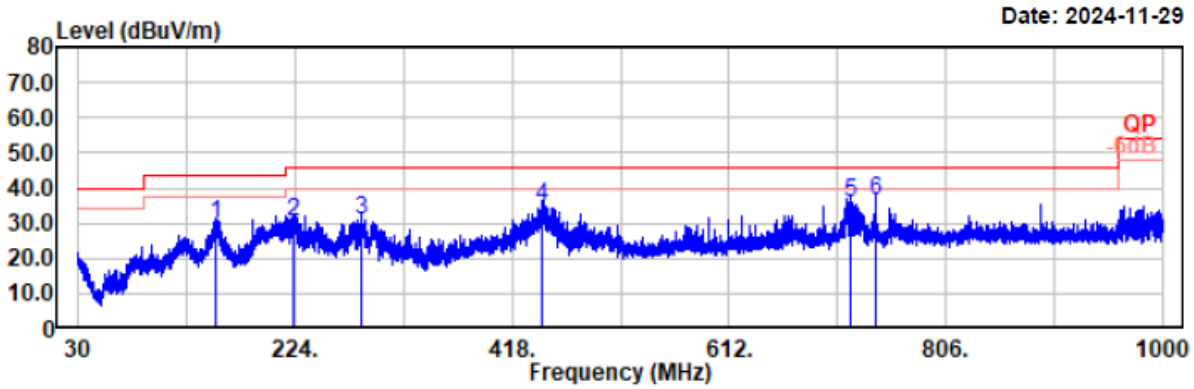
Note: dBuV/m=dBuA/m+51.5dB

2) 30MHz-1GHz

EUT operation mode: Transmitting in the low channel of EDR (8DPSK) mode (worst case)

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 24.0℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

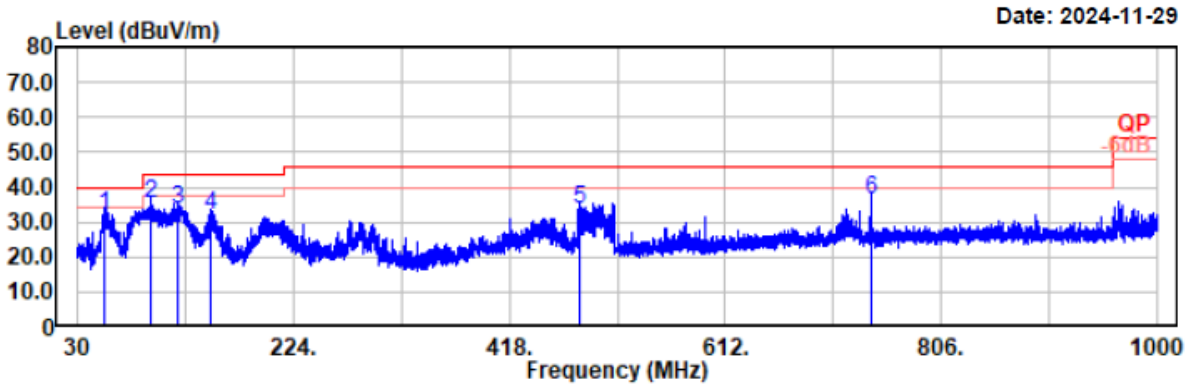


Condition: PK RBW:100kHz VBW:300kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
153.38	40.88	-11.28	29.60	43.50	13.90	Horizontal	QP
221.96	43.08	-12.59	30.49	46.00	15.51	Horizontal	QP
283.95	40.15	-9.28	30.87	46.00	15.13	Horizontal	QP
444.19	39.50	-4.97	34.53	46.00	11.47	Horizontal	QP
720.06	35.72	0.05	35.77	46.00	10.23	Horizontal	QP
742.56	35.84	0.38	36.22	46.00	9.78	Horizontal	QP

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 24.0℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



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

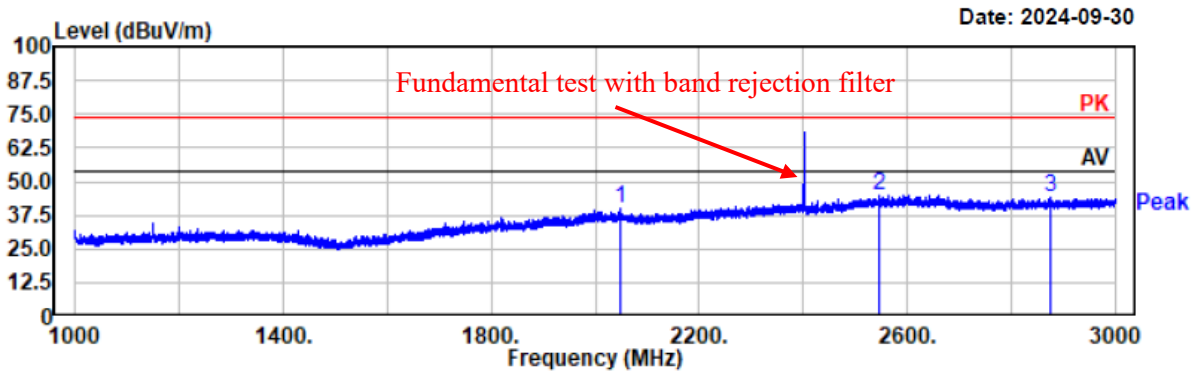
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
54.35	49.78	-17.81	31.97	40.00	8.03	Vertical	QP
95.96	51.28	-16.13	35.15	43.50	8.35	Vertical	QP
120.31	44.18	-10.35	33.83	43.50	9.67	Vertical	QP
150.18	43.02	-11.21	31.81	43.50	11.69	Vertical	QP
480.57	37.38	-3.81	33.57	46.00	12.43	Vertical	QP
742.56	36.12	0.38	36.50	46.00	9.50	Vertical	QP

3) 1 GHz-3 GHz

EUT operation mode: Transmitting in the BDR (GFSK) mode

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

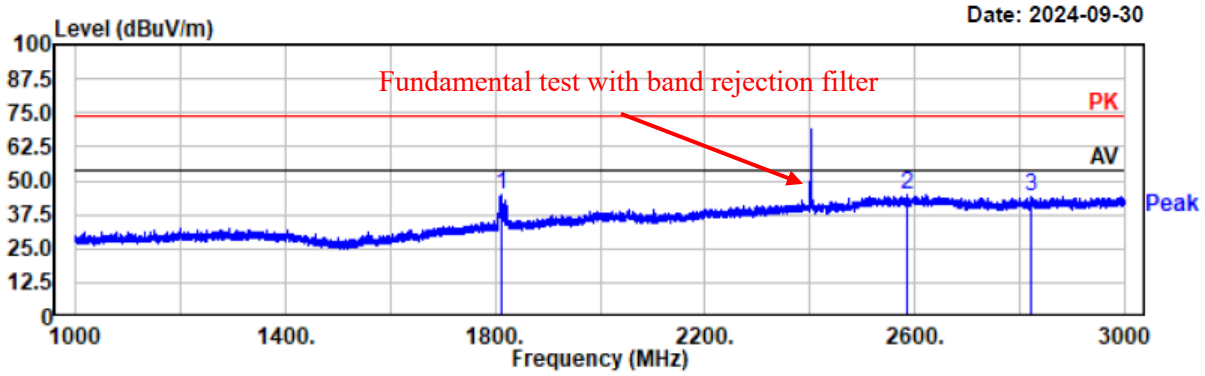
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2046.80	44.69	-4.86	39.83	74.00	34.17	horizontal	Peak
2546.40	47.24	-2.19	45.05	74.00	28.95	horizontal	Peak
2874.20	46.86	-3.05	43.81	74.00	30.19	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

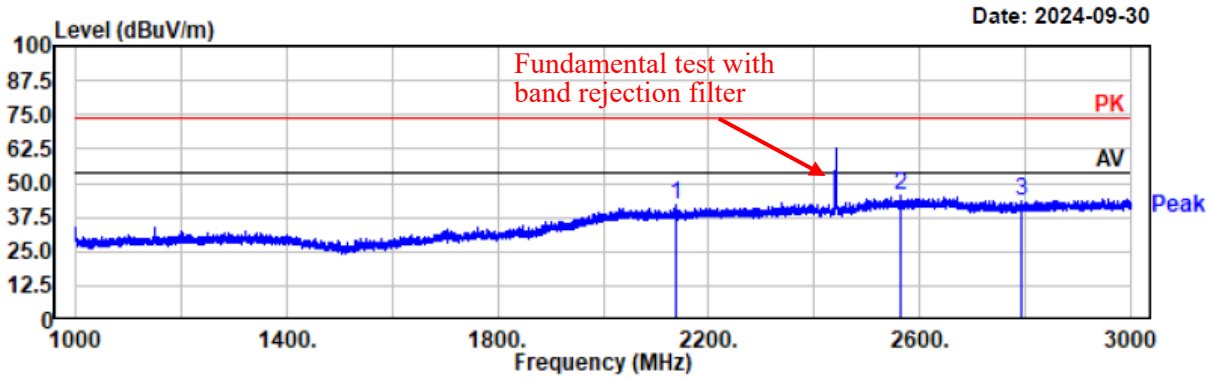
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
1812.00	55.43	-10.41	45.02	74.00	28.98	vertical	Peak
2586.80	46.83	-2.00	44.83	74.00	29.17	vertical	Peak
2823.40	47.29	-3.21	44.08	74.00	29.92	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

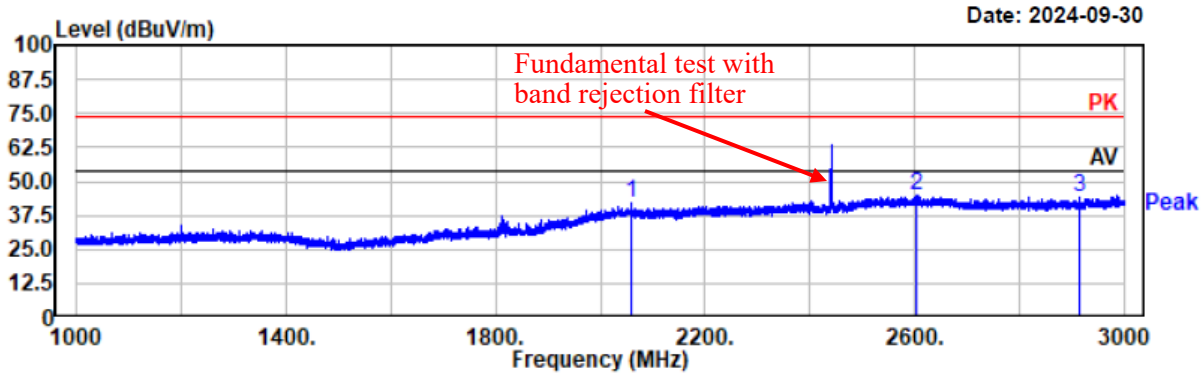
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2136.20	47.75	-5.53	42.22	74.00	31.78	horizontal	Peak
2565.60	47.41	-2.08	45.33	74.00	28.67	horizontal	Peak
2792.40	46.98	-3.32	43.66	74.00	30.34	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

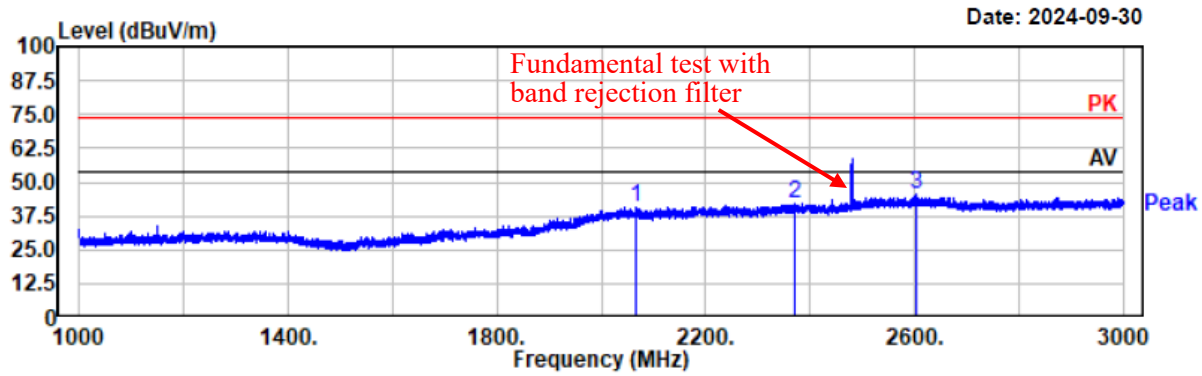
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2060.60	47.22	-4.96	42.26	74.00	31.74	vertical	Peak
2602.80	46.96	-1.96	45.00	74.00	29.00	vertical	Peak
2916.20	46.81	-2.89	43.92	74.00	30.08	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

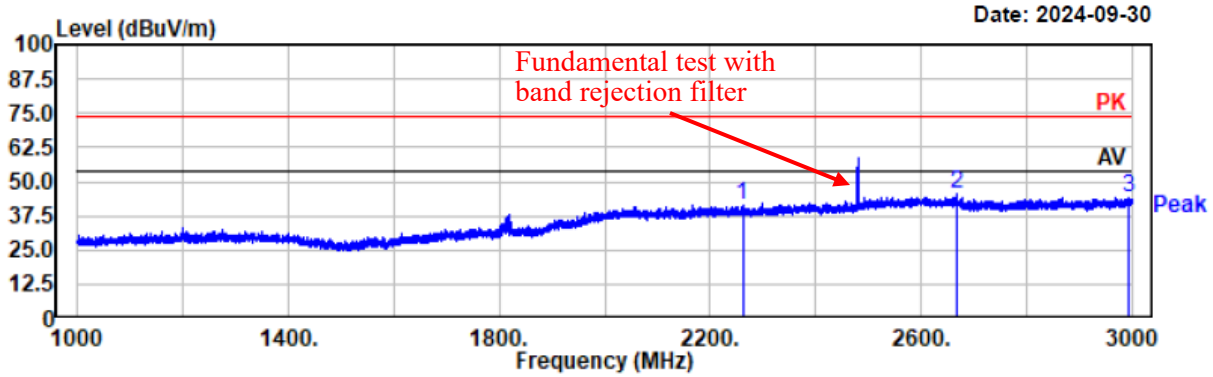
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2066.40	46.04	-5.05	40.99	74.00	33.01	horizontal	Peak
2371.40	46.24	-4.29	41.95	74.00	32.05	horizontal	Peak
2602.60	47.54	-1.96	45.58	74.00	28.42	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

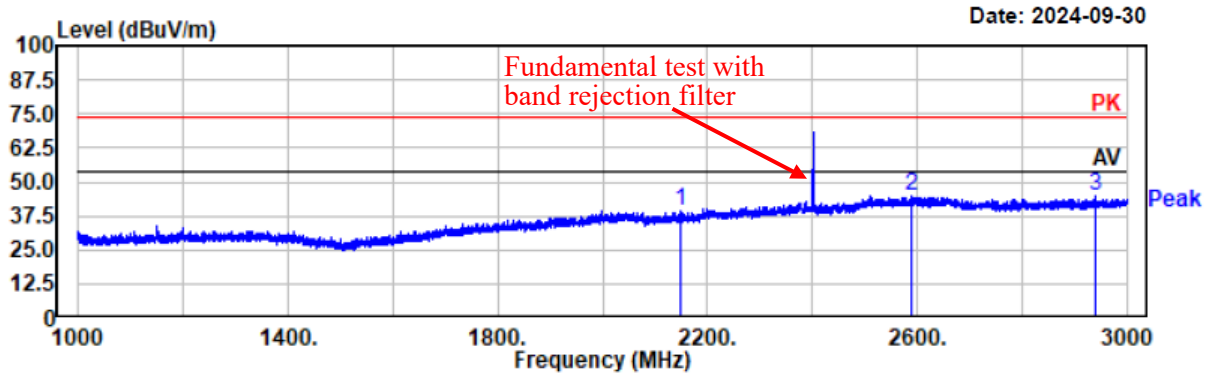


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2261.40	46.23	-5.02	41.21	74.00	32.79	vertical	Peak
2668.00	47.92	-2.46	45.46	74.00	28.54	vertical	Peak
2992.40	46.96	-2.58	44.38	74.00	29.62	vertical	Peak

EUT operation mode: Transmitting in the EDR (π/4-DQPSK) mode

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

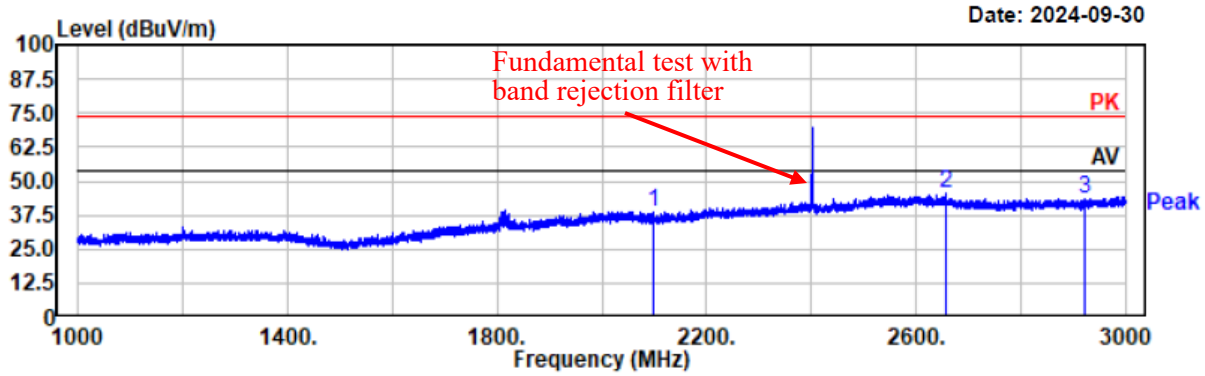
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2149.00	44.96	-5.53	39.43	74.00	34.57	horizontal	Peak
2588.00	46.49	-2.00	44.49	74.00	29.51	horizontal	Peak
2939.80	47.33	-2.80	44.53	74.00	29.47	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

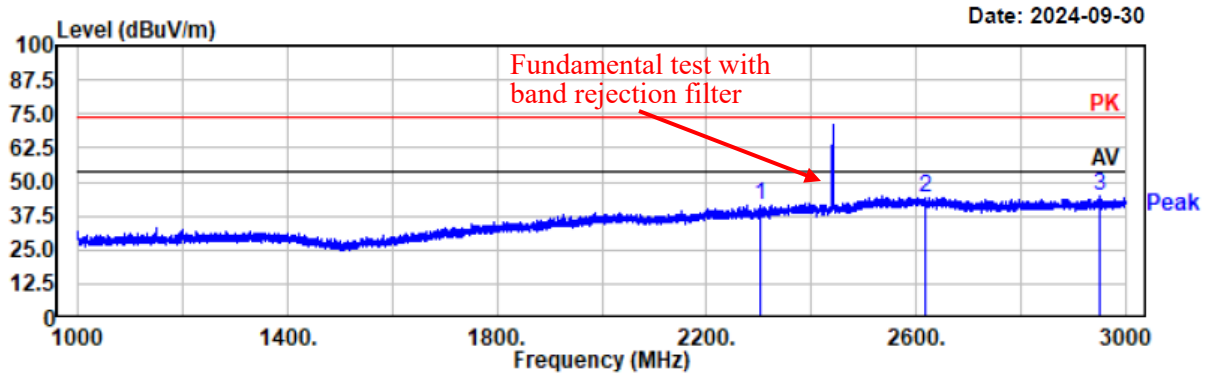
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2099.20	44.43	-5.52	38.91	74.00	35.09	vertical	Peak
2657.40	47.73	-2.20	45.53	74.00	28.47	vertical	Peak
2923.60	46.64	-2.87	43.77	74.00	30.23	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

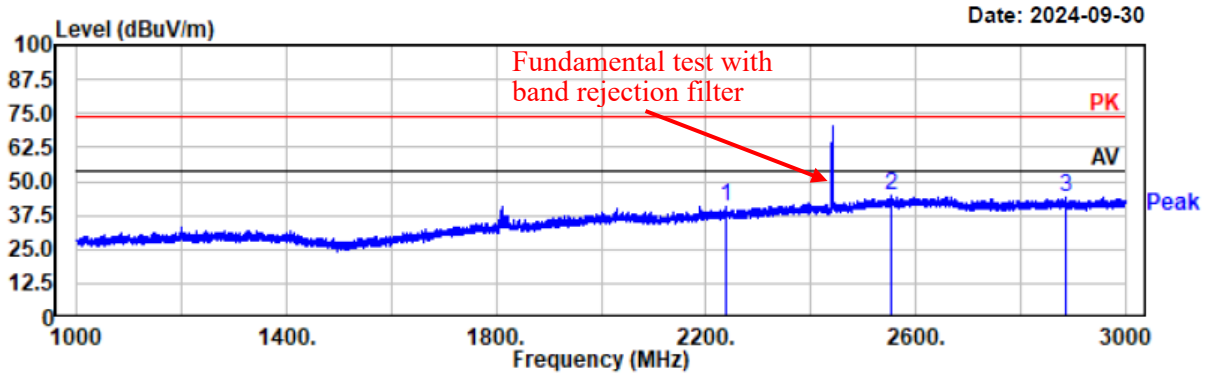
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2303.00	46.38	-5.04	41.34	74.00	32.66	horizontal	Peak
2616.80	46.06	-1.97	44.09	74.00	29.91	horizontal	Peak
2949.40	47.38	-2.76	44.62	74.00	29.38	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

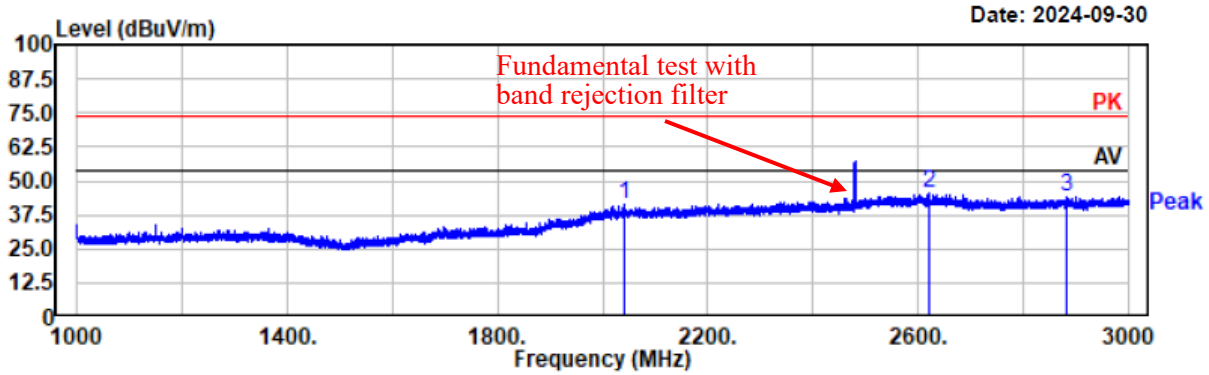
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2238.40	45.62	-5.00	40.62	74.00	33.38	vertical	Peak
2554.80	46.93	-2.11	44.82	74.00	29.18	vertical	Peak
2884.60	47.06	-3.01	44.05	74.00	29.95	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

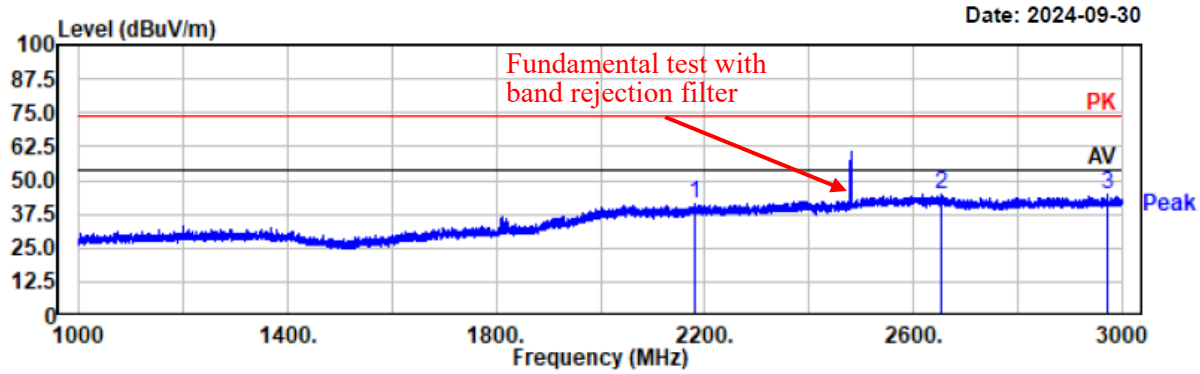
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2042.60	46.41	-4.92	41.49	74.00	32.51	horizontal	Peak
2621.20	47.17	-1.98	45.19	74.00	28.81	horizontal	Peak
2884.20	47.49	-3.01	44.48	74.00	29.52	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

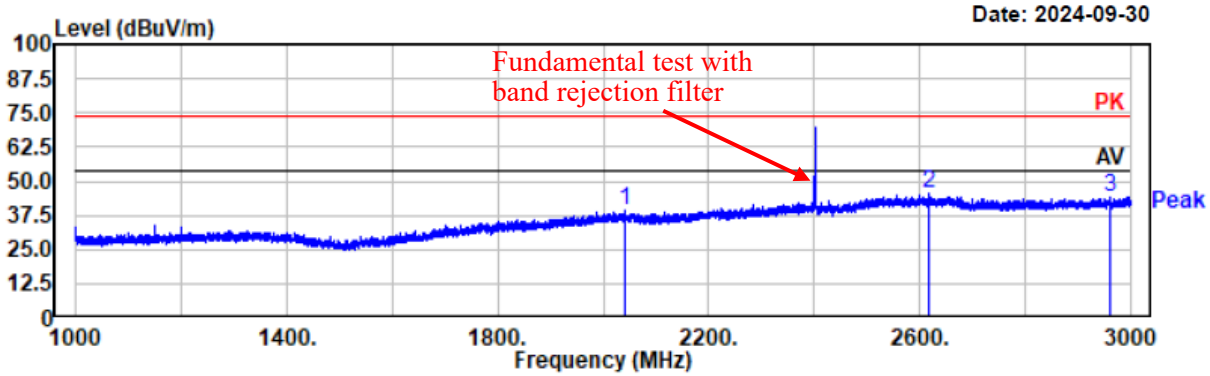


Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2181.00	46.49	-5.21	41.28	74.00	32.72	vertical	Peak
2655.00	46.74	-2.14	44.60	74.00	29.40	vertical	Peak
2972.40	47.59	-2.67	44.92	74.00	29.08	vertical	Peak

EUT operation mode: Transmitting in the EDR (8DPSK) mode

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

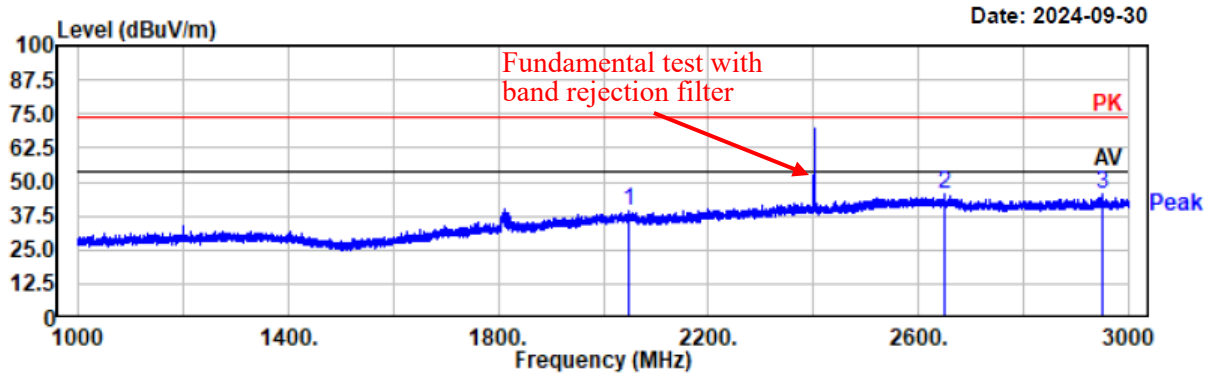
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2042.00	43.92	-4.93	38.99	74.00	35.01	horizontal	Peak
2617.40	47.17	-1.97	45.20	74.00	28.80	horizontal	Peak
2961.40	47.17	-2.71	44.46	74.00	29.54	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

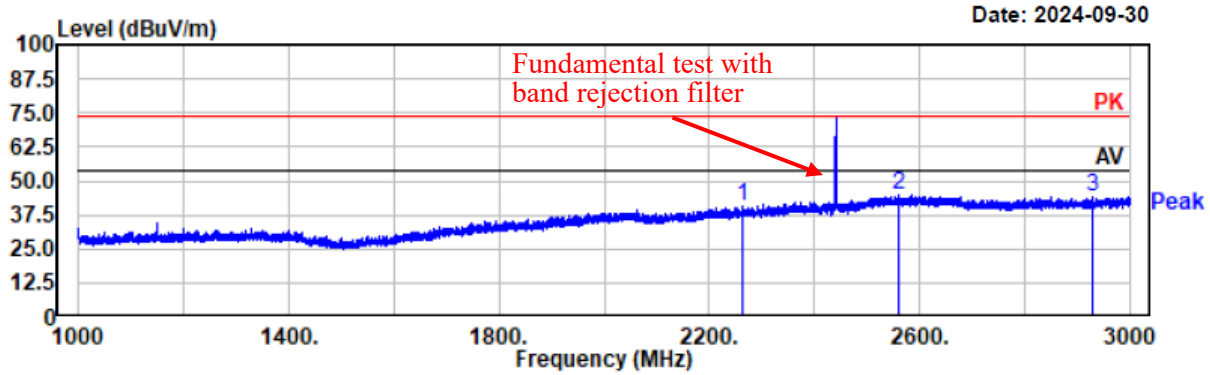
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2049.00	43.87	-4.82	39.05	74.00	34.95	vertical	Peak
2649.40	47.36	-2.01	45.35	74.00	28.65	vertical	Peak
2950.00	48.02	-2.76	45.26	74.00	28.74	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

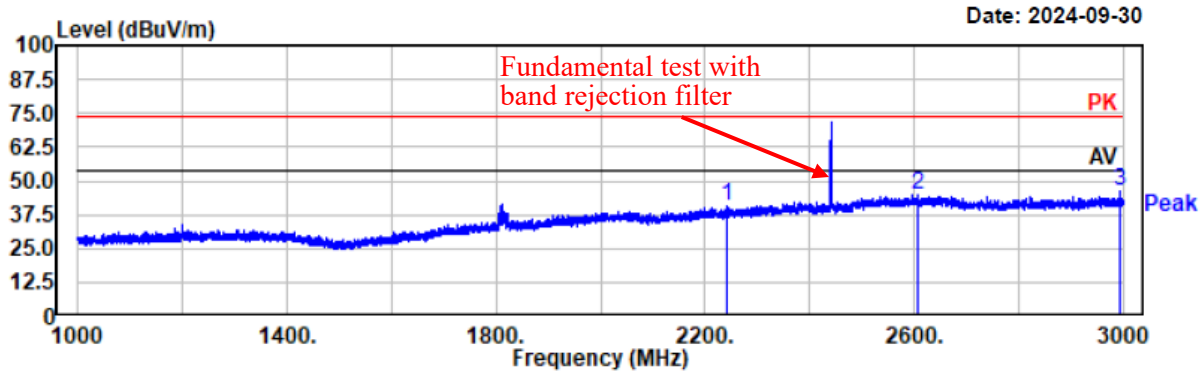
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2263.40	45.51	-5.02	40.49	74.00	33.51	horizontal	Peak
2561.00	47.01	-2.10	44.91	74.00	29.09	horizontal	Peak
2930.80	47.30	-2.84	44.46	74.00	29.54	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

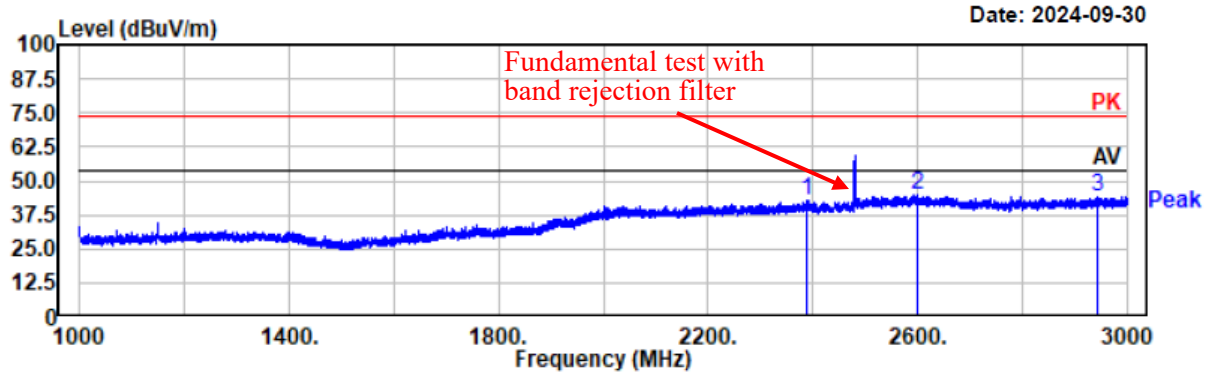
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2243.40	45.75	-5.00	40.75	74.00	33.25	vertical	Peak
2605.40	47.08	-1.96	45.12	74.00	28.88	vertical	Peak
2993.00	48.78	-2.58	46.20	74.00	27.80	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

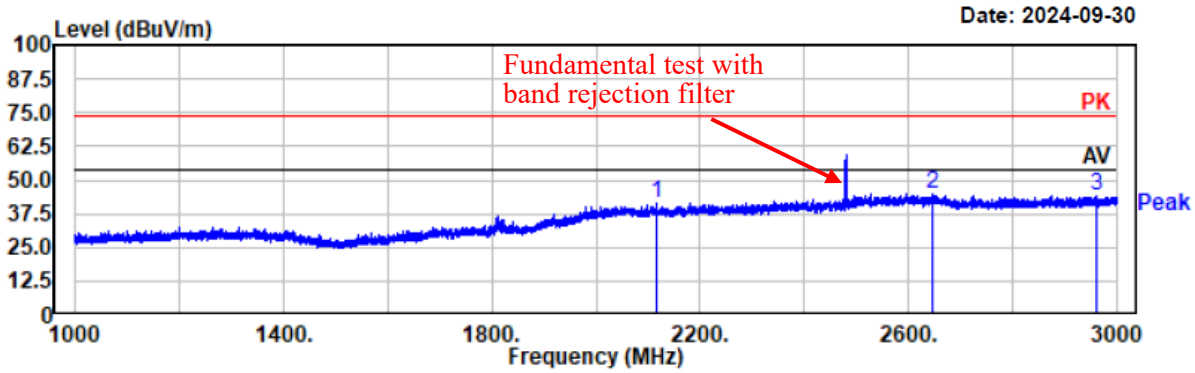
Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2389.40	47.08	-4.05	43.03	74.00	30.97	horizontal	Peak
2599.60	46.46	-1.95	44.51	74.00	29.49	horizontal	Peak
2942.40	47.04	-2.79	44.25	74.00	29.75	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 24.0℃/50%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



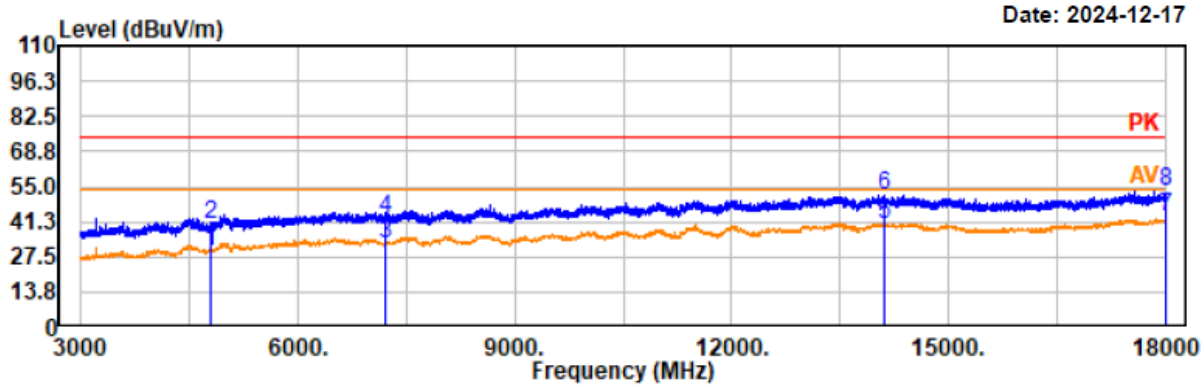
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2116.60	46.64	-5.53	41.11	74.00	32.89	vertical	Peak
2647.20	46.78	-2.00	44.78	74.00	29.22	vertical	Peak
2961.00	46.98	-2.72	44.26	74.00	29.74	vertical	Peak

4) 3 GHz - 18 GHz

EUT operation mode: Transmitting in the BDR (GFSK) mode

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

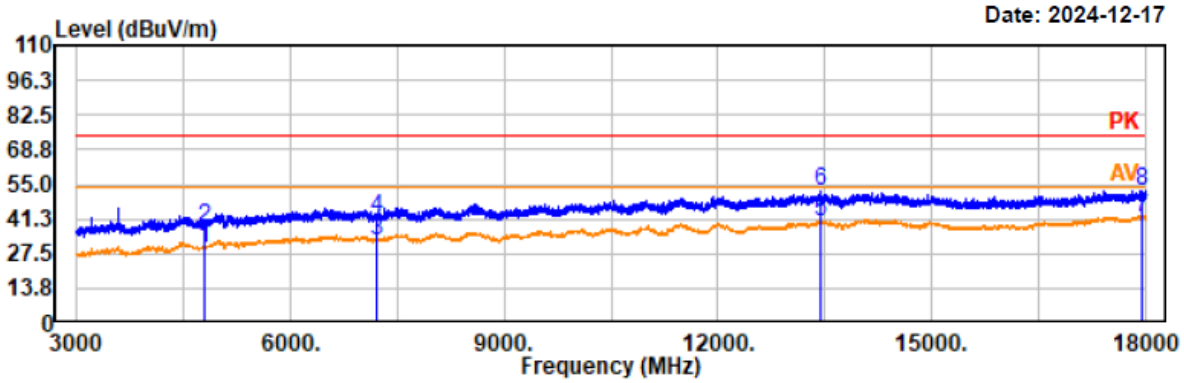


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	34.37	-4.45	29.92	54.00	24.08	horizontal	Average
4804.00	44.97	-4.45	40.52	74.00	33.48	horizontal	Peak
7206.00	34.54	-1.73	32.81	54.00	21.19	horizontal	Average
7206.00	44.39	-1.73	42.66	74.00	31.34	horizontal	Peak
14103.00	34.97	5.22	40.19	54.00	13.81	horizontal	Average
14103.00	46.29	5.22	51.51	74.00	22.49	horizontal	Peak
17999.99	35.30	7.74	43.04	54.00	10.96	horizontal	Average
17999.99	45.38	7.74	53.12	74.00	20.88	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

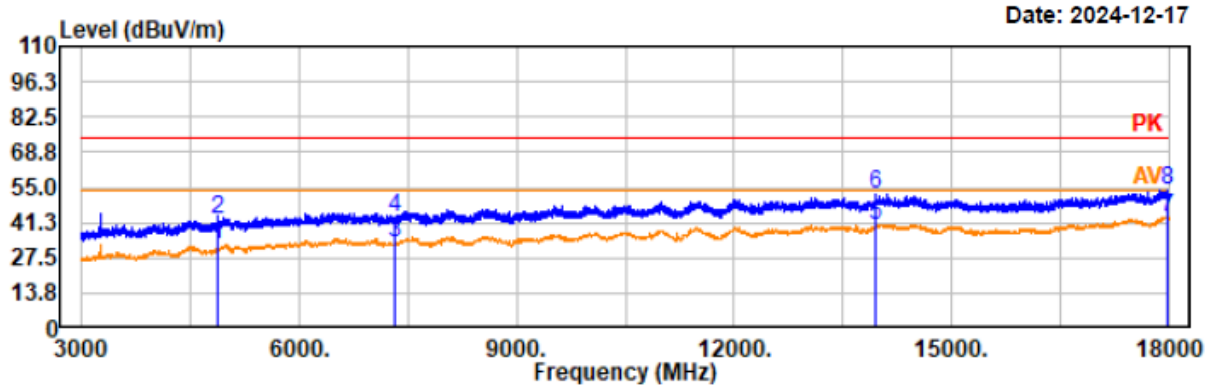


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	34.29	-4.45	29.84	54.00	24.16	vertical	Average
4804.00	42.75	-4.45	38.30	74.00	35.70	vertical	Peak
7206.00	34.58	-1.73	32.85	54.00	21.15	vertical	Average
7206.00	43.28	-1.73	41.55	74.00	32.45	vertical	Peak
13432.50	35.09	4.84	39.93	54.00	14.07	vertical	Average
13432.50	47.16	4.84	52.00	74.00	22.00	vertical	Peak
17950.50	34.11	7.67	41.78	54.00	12.22	vertical	Average
17950.50	45.04	7.67	52.71	74.00	21.29	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

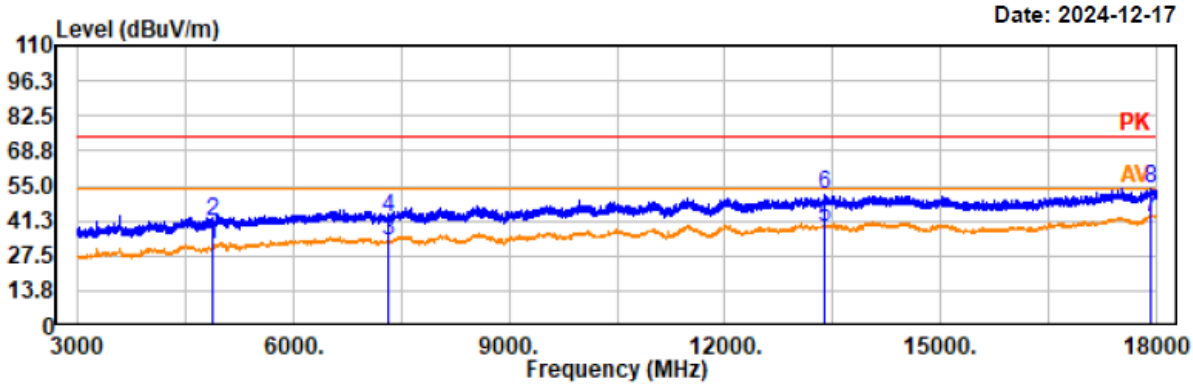


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	36.87	-4.24	32.63	54.00	21.37	horizontal	Average
4882.00	46.47	-4.24	42.23	74.00	31.77	horizontal	Peak
7323.00	34.79	-1.61	33.18	54.00	20.82	horizontal	Average
7323.00	45.22	-1.61	43.61	74.00	30.39	horizontal	Peak
13957.50	35.02	5.10	40.12	54.00	13.88	horizontal	Average
13957.50	47.57	5.10	52.67	74.00	21.33	horizontal	Peak
17973.00	35.68	7.70	43.38	54.00	10.62	horizontal	Average
17973.00	46.26	7.70	53.96	74.00	20.04	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

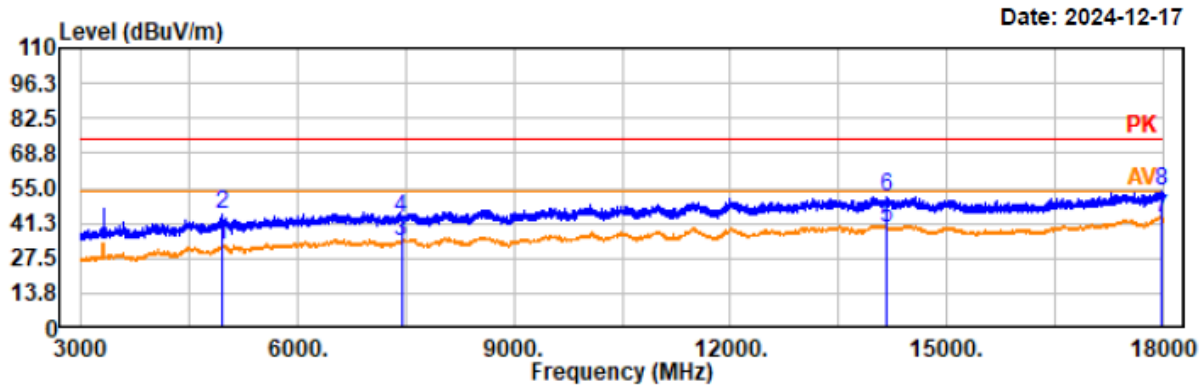


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	36.07	-4.25	31.82	54.00	22.18	vertical	Average
4882.00	45.49	-4.25	41.24	74.00	32.76	vertical	Peak
7323.00	35.08	-1.61	33.47	54.00	20.53	vertical	Average
7323.00	44.46	-1.61	42.85	74.00	31.15	vertical	Peak
13398.00	34.13	4.84	38.97	54.00	15.03	vertical	Average
13398.00	46.79	4.84	51.63	74.00	22.37	vertical	Peak
17928.00	35.09	7.64	42.73	54.00	11.27	vertical	Average
17928.00	46.12	7.64	53.76	74.00	20.24	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

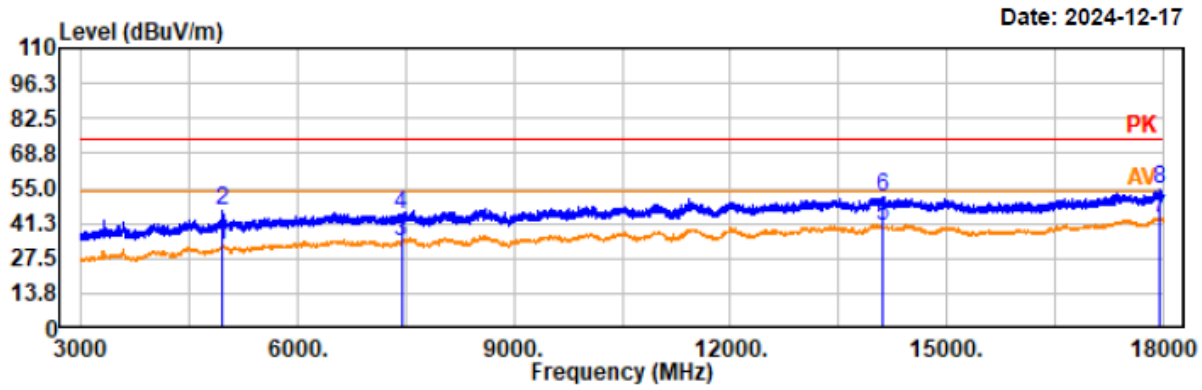


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	37.36	-4.01	33.35	54.00	20.65	horizontal	Average
4960.00	48.64	-4.01	44.63	74.00	29.37	horizontal	Peak
7440.00	35.61	-1.59	34.02	54.00	19.98	horizontal	Average
7440.00	45.19	-1.59	43.60	74.00	30.40	horizontal	Peak
14170.50	34.33	5.26	39.59	54.00	14.41	horizontal	Average
14170.50	46.37	5.26	51.63	74.00	22.37	horizontal	Peak
17971.50	35.36	7.69	43.05	54.00	10.95	horizontal	Average
17971.50	45.86	7.69	53.55	74.00	20.45	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



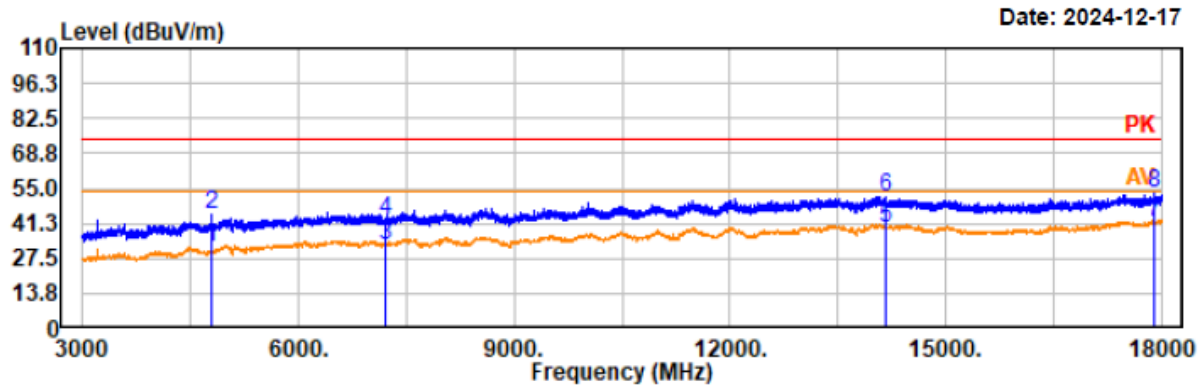
Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	38.34	-4.01	34.33	54.00	19.67	vertical	Average
4960.00	49.95	-4.01	45.94	74.00	28.06	vertical	Peak
7440.00	35.68	-1.59	34.09	54.00	19.91	vertical	Average
7440.00	46.24	-1.59	44.65	74.00	29.35	vertical	Peak
14101.50	34.62	5.22	39.84	54.00	14.16	vertical	Average
14101.50	46.59	5.22	51.81	74.00	22.19	vertical	Peak
17953.50	35.84	7.67	43.51	54.00	10.49	vertical	Average
17953.50	46.79	7.67	54.46	74.00	19.54	vertical	Peak

EUT operation mode: Transmitting in the EDR (π/4-DQPSK) mode

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

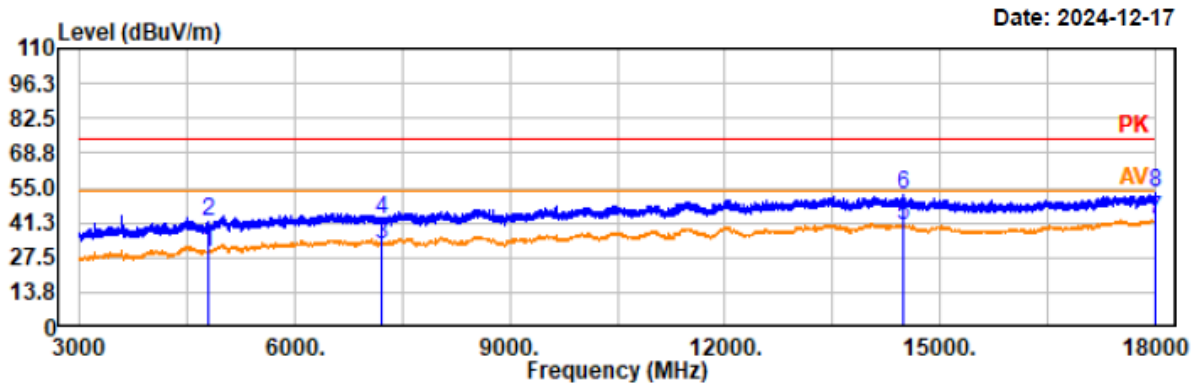


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	39.35	-4.45	34.90	54.00	19.10	horizontal	Average
4804.00	49.58	-4.45	45.13	74.00	28.87	horizontal	Peak
7206.00	34.48	-1.73	32.75	54.00	21.25	horizontal	Average
7206.00	43.97	-1.73	42.24	74.00	31.76	horizontal	Peak
14169.00	34.57	5.26	39.83	54.00	14.17	horizontal	Average
14169.00	46.61	5.26	51.87	74.00	22.13	horizontal	Peak
17896.50	34.02	7.58	41.60	54.00	12.40	horizontal	Average
17896.50	45.33	7.58	52.91	74.00	21.09	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

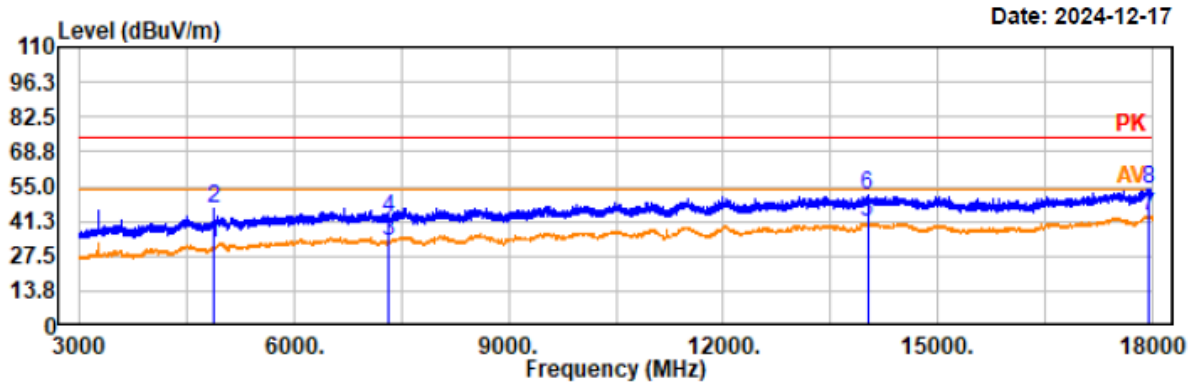


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	35.21	-4.45	30.76	54.00	23.24	vertical	Average
4804.00	46.38	-4.45	41.93	74.00	32.07	vertical	Peak
7206.00	34.45	-1.73	32.72	54.00	21.28	vertical	Average
7206.00	43.85	-1.73	42.12	74.00	31.88	vertical	Peak
14499.00	35.17	4.98	40.15	54.00	13.85	vertical	Average
14499.00	47.21	4.98	52.19	74.00	21.81	vertical	Peak
17997.00	34.82	7.74	42.56	54.00	11.44	vertical	Average
17997.00	45.43	7.74	53.17	74.00	20.83	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

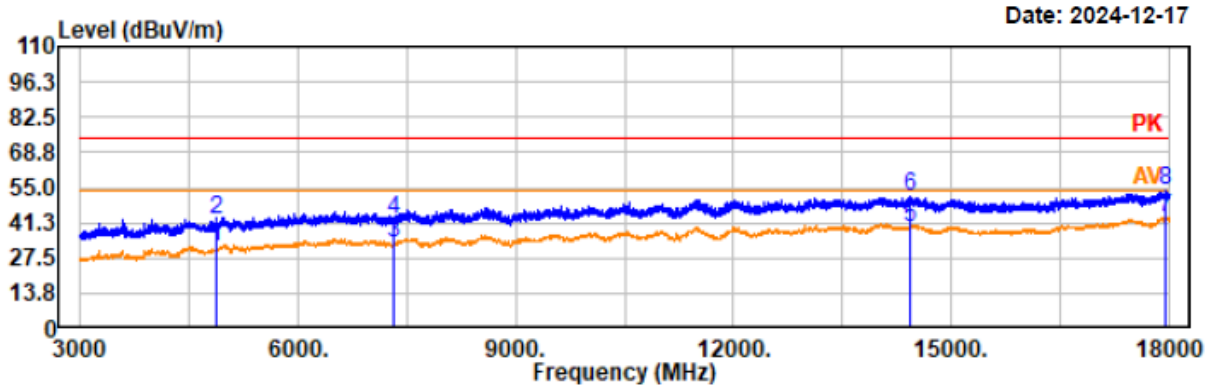


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	40.07	-4.24	35.83	54.00	18.17	horizontal	Average
4882.00	50.69	-4.24	46.45	74.00	27.55	horizontal	Peak
7323.00	34.66	-1.61	33.05	54.00	20.95	horizontal	Average
7323.00	43.72	-1.61	42.11	74.00	31.89	horizontal	Peak
14017.50	35.59	5.11	40.70	54.00	13.30	horizontal	Average
14017.50	46.27	5.11	51.38	74.00	22.62	horizontal	Peak
17964.00	35.59	7.68	43.27	54.00	10.73	horizontal	Average
17964.00	46.18	7.68	53.86	74.00	20.14	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

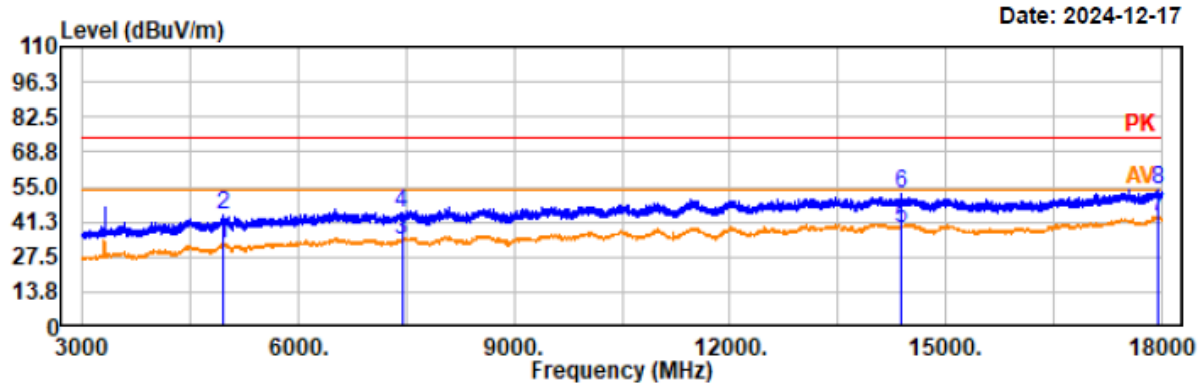


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	36.01	-4.24	31.77	54.00	22.23	vertical	Average
4882.00	46.49	-4.24	42.25	74.00	31.75	vertical	Peak
7323.00	35.00	-1.61	33.39	54.00	20.61	vertical	Average
7323.00	43.78	-1.61	42.17	74.00	31.83	vertical	Peak
14425.50	34.05	5.10	39.15	54.00	14.85	vertical	Average
14425.50	46.35	5.10	51.45	74.00	22.55	vertical	Peak
17952.00	35.81	7.67	43.48	54.00	10.52	vertical	Average
17952.00	45.87	7.67	53.54	74.00	20.46	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

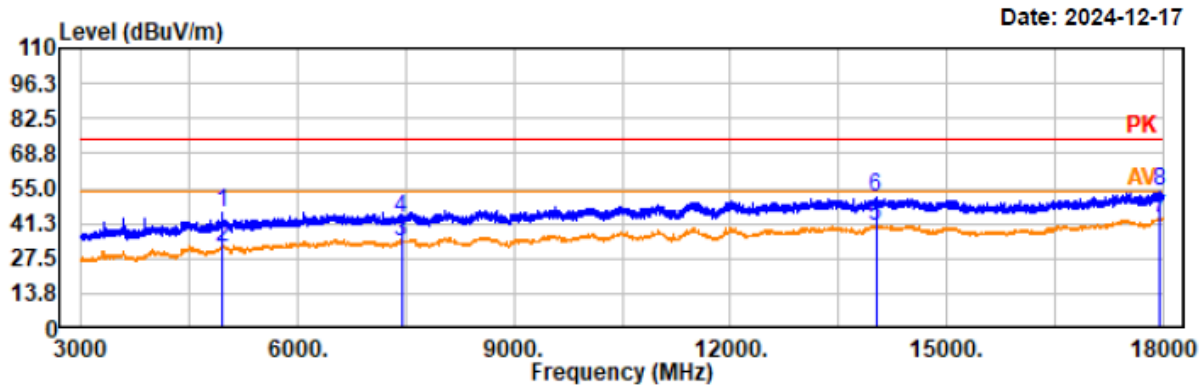


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	36.60	-4.01	32.59	54.00	21.41	horizontal	Average
4960.00	47.68	-4.01	43.67	74.00	30.33	horizontal	Peak
7440.00	35.60	-1.59	34.01	54.00	19.99	horizontal	Average
7440.00	46.40	-1.59	44.81	74.00	29.19	horizontal	Peak
14380.50	33.79	5.15	38.94	54.00	15.06	horizontal	Average
14380.50	46.94	5.15	52.09	74.00	21.91	horizontal	Peak
17953.50	35.71	7.67	43.38	54.00	10.62	horizontal	Average
17953.50	46.25	7.67	53.92	74.00	20.08	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



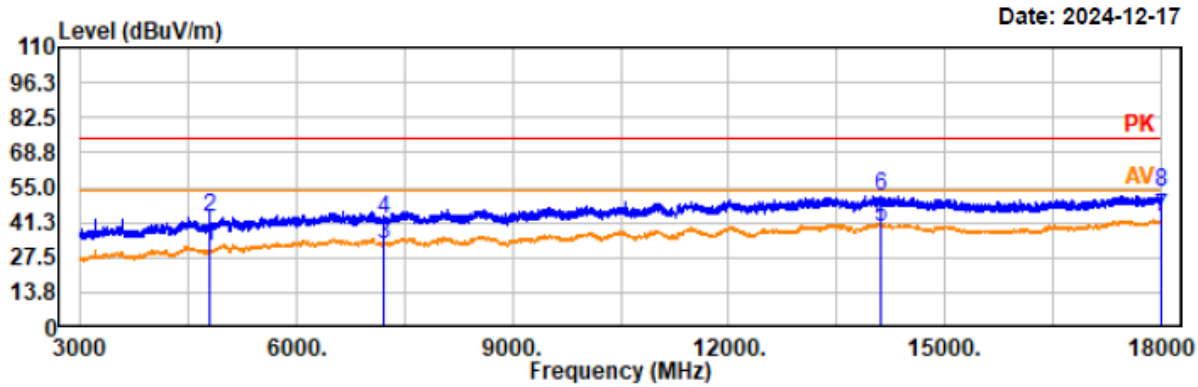
Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	49.43	-4.01	45.42	74.00	28.58	vertical	Peak
4960.00	38.13	-4.01	34.12	54.00	19.88	vertical	Average
7440.00	35.67	-1.59	34.08	54.00	19.92	vertical	Average
7440.00	44.97	-1.59	43.38	74.00	30.62	vertical	Peak
14017.50	34.92	5.11	40.03	54.00	13.97	vertical	Average
14017.50	46.59	5.11	51.70	74.00	22.30	vertical	Peak
17950.50	35.58	7.67	43.25	54.00	10.75	vertical	Average
17950.50	45.84	7.67	53.51	74.00	20.49	vertical	Peak

EUT operation mode: Transmitting in the EDR (8DPSK) mode

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

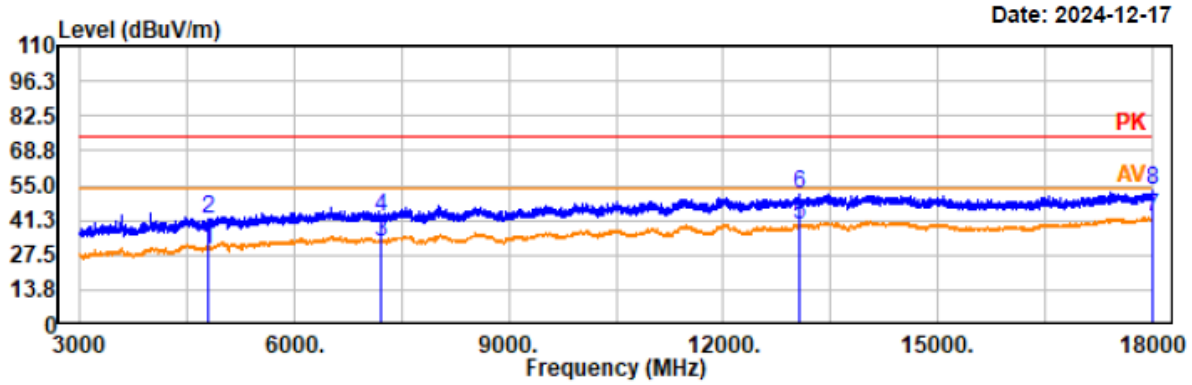


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4804.00	36.16	-4.45	31.71	54.00	22.29	horizontal	Average
4804.00	47.74	-4.45	43.29	74.00	30.71	horizontal	Peak
7206.00	34.50	-1.73	32.77	54.00	21.23	horizontal	Average
7206.00	44.18	-1.73	42.45	74.00	31.55	horizontal	Peak
14115.00	34.57	5.24	39.81	54.00	14.19	horizontal	Average
14115.00	46.43	5.24	51.67	74.00	22.33	horizontal	Peak
17999.00	35.40	7.74	43.14	54.00	10.86	horizontal	Average
17999.00	45.30	7.74	53.04	74.00	20.96	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

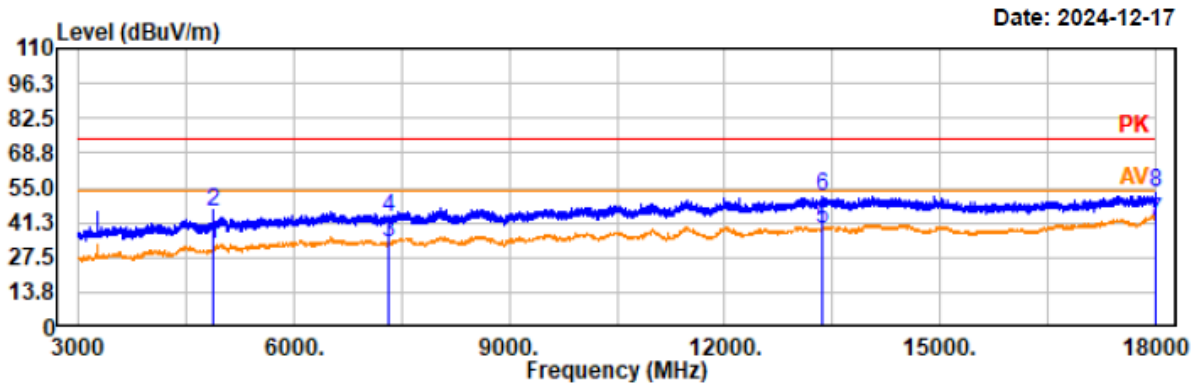


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	34.06	-4.45	29.61	54.00	24.39	vertical	Average
4804.00	45.96	-4.45	41.51	74.00	32.49	vertical	Peak
7206.00	34.65	-1.73	32.92	54.00	21.08	vertical	Average
7206.00	44.24	-1.73	42.51	74.00	31.49	vertical	Peak
13062.00	34.53	5.11	39.64	54.00	14.36	vertical	Average
13062.00	46.53	5.11	51.64	74.00	22.36	vertical	Peak
17997.00	34.52	7.74	42.26	54.00	11.74	vertical	Average
17997.00	45.46	7.74	53.20	74.00	20.80	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

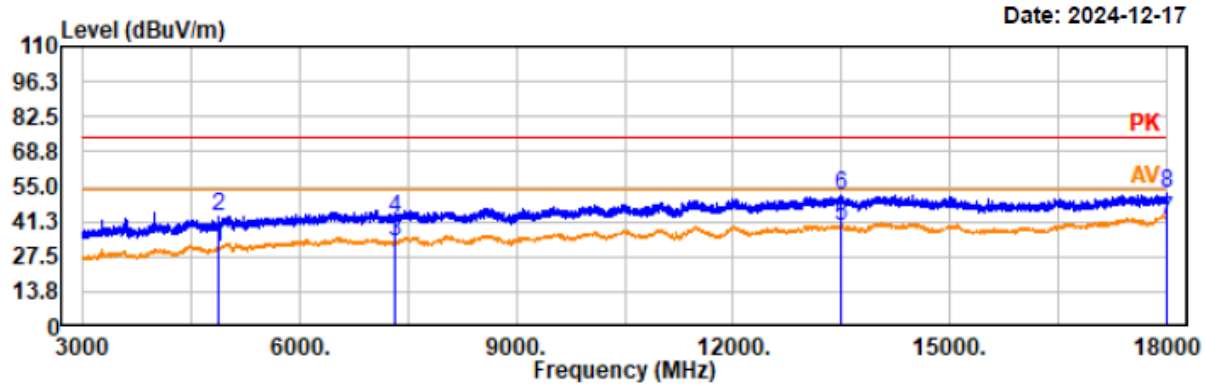


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	39.20	-4.24	34.96	54.00	19.04	horizontal	Average
4882.00	49.82	-4.24	45.58	74.00	28.42	horizontal	Peak
7323.00	35.09	-1.61	33.48	54.00	20.52	horizontal	Average
7323.00	44.96	-1.61	43.35	74.00	30.65	horizontal	Peak
13369.50	34.04	4.90	38.94	54.00	15.06	horizontal	Average
13369.50	46.62	4.90	51.52	74.00	22.48	horizontal	Peak
17997.00	34.05	7.74	41.79	54.00	12.21	horizontal	Average
17997.00	45.42	7.74	53.16	74.00	20.84	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2441
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

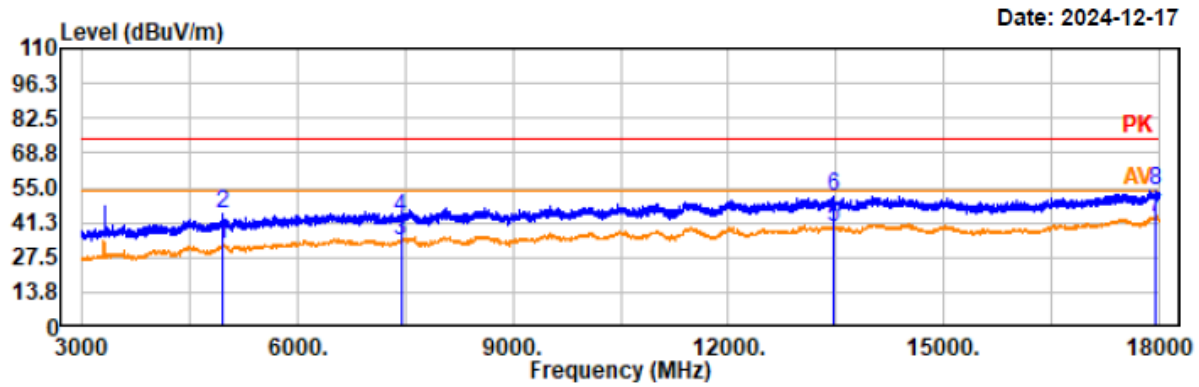


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4882.00	37.23	-4.25	32.98	54.00	21.02	vertical	Average
4882.00	47.46	-4.25	43.21	74.00	30.79	vertical	Peak
7323.00	34.83	-1.61	33.22	54.00	20.78	vertical	Average
7323.00	43.73	-1.61	42.12	74.00	31.88	vertical	Peak
13503.00	34.69	4.82	39.51	54.00	14.49	vertical	Average
13503.00	46.76	4.82	51.58	74.00	22.42	vertical	Peak
17997.00	34.13	7.74	41.87	54.00	12.13	vertical	Average
17997.00	44.82	7.74	52.56	74.00	21.44	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

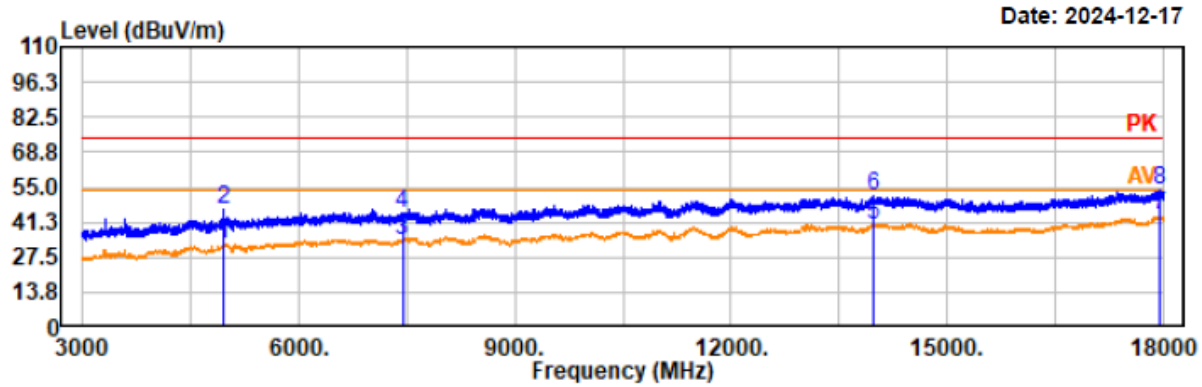


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	37.91	-4.01	33.90	54.00	20.10	horizontal	Average
4960.00	48.53	-4.01	44.52	74.00	29.48	horizontal	Peak
7440.00	36.07	-1.59	34.48	54.00	19.52	horizontal	Average
7440.00	44.96	-1.59	43.37	74.00	30.63	horizontal	Peak
13458.00	34.44	4.83	39.27	54.00	14.73	horizontal	Average
13458.00	46.89	4.83	51.72	74.00	22.28	horizontal	Peak
17940.00	35.52	7.65	43.17	54.00	10.83	horizontal	Average
17940.00	46.40	7.65	54.05	74.00	19.95	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



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

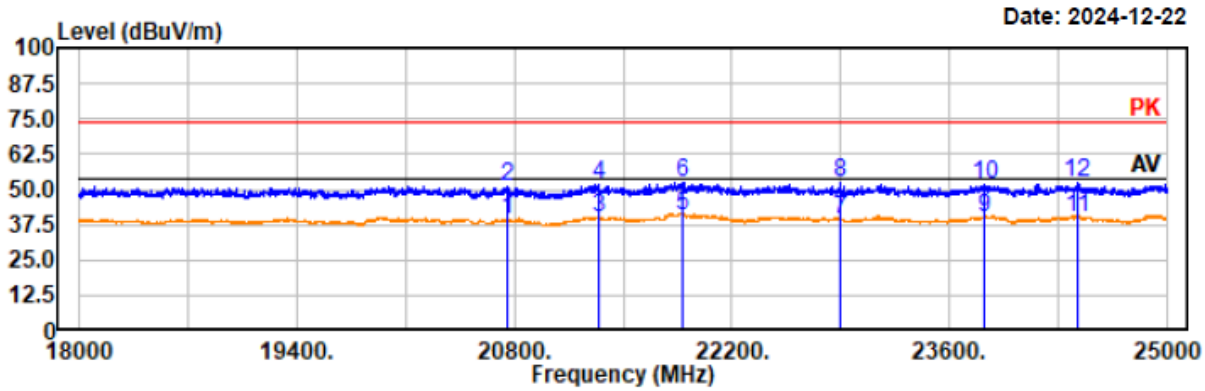
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	38.61	-4.01	34.60	54.00	19.40	vertical	Average
4960.00	49.96	-4.01	45.95	74.00	28.05	vertical	Peak
7440.00	35.69	-1.59	34.10	54.00	19.90	vertical	Average
7440.00	46.08	-1.59	44.49	74.00	29.51	vertical	Peak
13965.00	35.01	5.10	40.11	54.00	13.89	vertical	Average
13965.00	46.23	5.10	51.33	74.00	22.67	vertical	Peak
17944.50	36.35	7.65	44.00	54.00	10.00	vertical	Average
17944.50	46.13	7.65	53.78	74.00	20.22	vertical	Peak

5) 18GHz-25GHz

EUT operation mode: Transmitting in the low channel of EDR (8DPSK) mode (worst case)

Project No.: 2407X56114E-RF
Test Mode: 3DH1 2402
EUT Model: YS-R1PLUS
Test distance: 1m

Temp/Humi/ATM: 22.3℃/43%/100.5kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

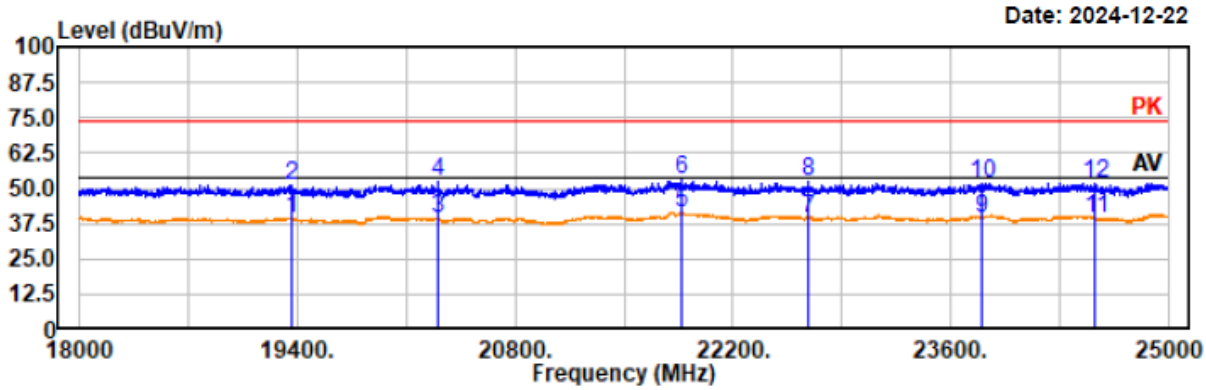


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
20752.20	39.07	0.12	39.19	54.00	14.81	horizontal	Average
20752.20	51.15	0.12	51.27	74.00	22.73	horizontal	Peak
21344.00	39.00	0.84	39.84	54.00	14.16	horizontal	Average
21344.00	50.88	0.84	51.72	74.00	22.28	horizontal	Peak
21887.40	39.22	1.67	40.89	54.00	13.11	horizontal	Average
21887.40	50.77	1.67	52.44	74.00	21.56	horizontal	Peak
22897.20	37.93	1.46	39.39	54.00	14.61	horizontal	Average
22897.20	50.91	1.46	52.37	74.00	21.63	horizontal	Peak
23827.80	38.08	1.73	39.81	54.00	14.19	horizontal	Average
23827.80	49.92	1.73	51.65	74.00	22.35	horizontal	Peak
24419.60	37.29	2.57	39.86	54.00	14.14	horizontal	Average
24419.60	49.96	2.57	52.53	74.00	21.47	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1 2402
EUT Model: YS-R1PLUS
Test distance: 1m

Temp/Humi/ATM: 22.3℃/43%/100.5kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz



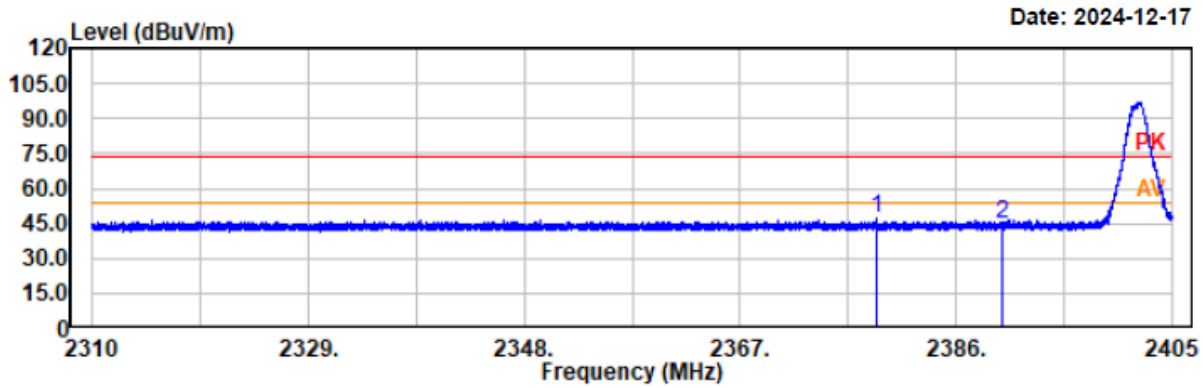
Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
19359.60	39.86	-0.63	39.23	54.00	14.77	vertical	Average
19359.60	51.99	-0.63	51.36	74.00	22.64	vertical	Peak
20305.60	38.59	0.48	39.07	54.00	14.93	vertical	Average
20305.60	51.60	0.48	52.08	74.00	21.92	vertical	Peak
21869.80	39.56	1.65	41.21	54.00	12.79	vertical	Average
21869.80	51.65	1.65	53.30	74.00	20.70	vertical	Peak
22679.40	37.94	1.51	39.45	54.00	14.55	vertical	Average
22679.40	50.66	1.51	52.17	74.00	21.83	vertical	Peak
23803.60	37.79	1.69	39.48	54.00	14.52	vertical	Average
23803.60	50.22	1.69	51.91	74.00	22.09	vertical	Peak
24531.80	36.94	2.69	39.63	54.00	14.37	vertical	Average
24531.80	49.31	2.69	52.00	74.00	22.00	vertical	Peak

Restricted Bands Emissions:

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

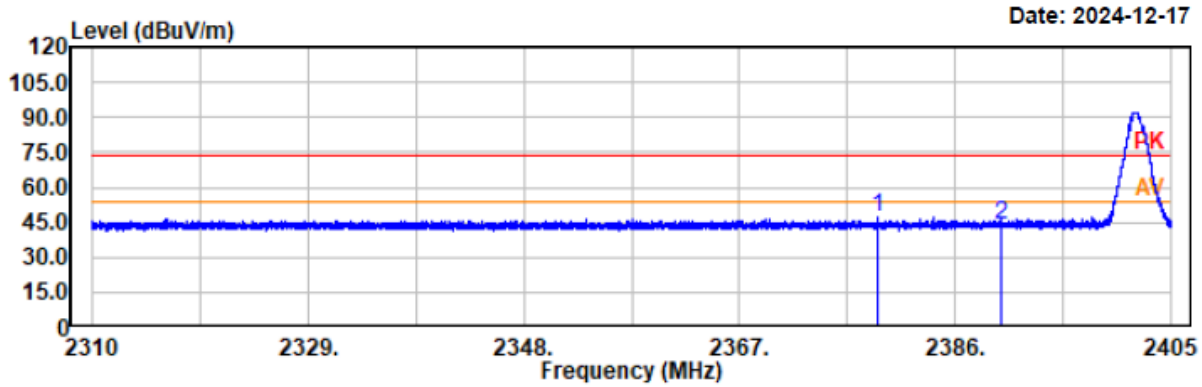


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2378.96	48.09	-0.69	47.40	74.00	26.60	horizontal	Peak
2390.00	44.94	-0.63	44.31	74.00	29.69	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

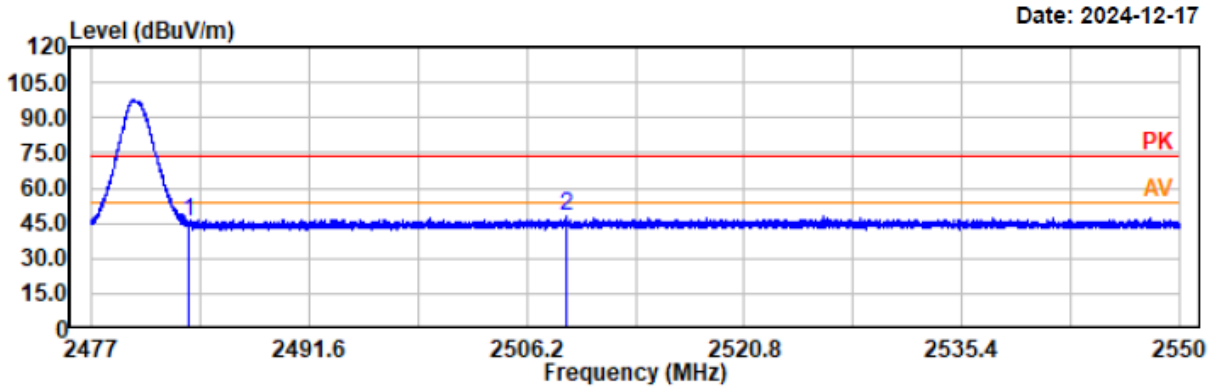


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2379.17	47.77	-0.69	47.08	74.00	26.92	vertical	Peak
2390.00	44.19	-0.63	43.56	74.00	30.44	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

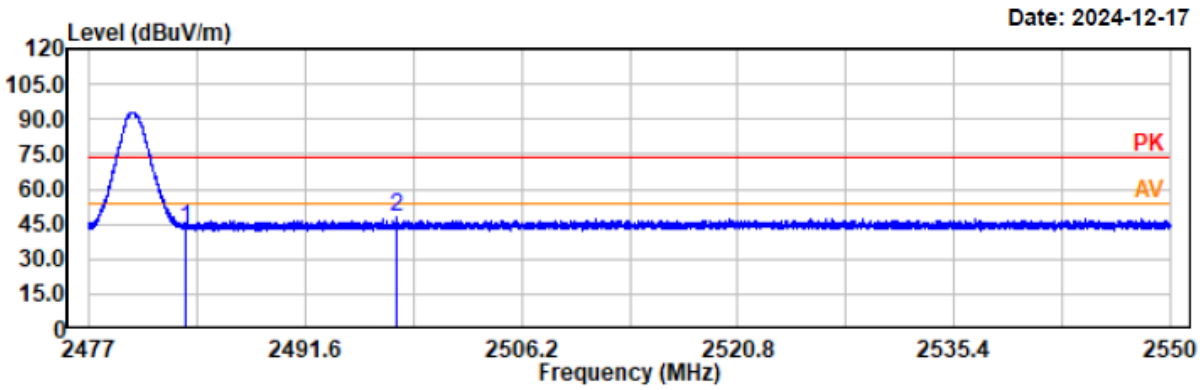


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2483.50	45.41	-0.17	45.24	74.00	28.76	horizontal	Peak
2508.84	48.19	-0.07	48.12	74.00	25.88	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 1DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

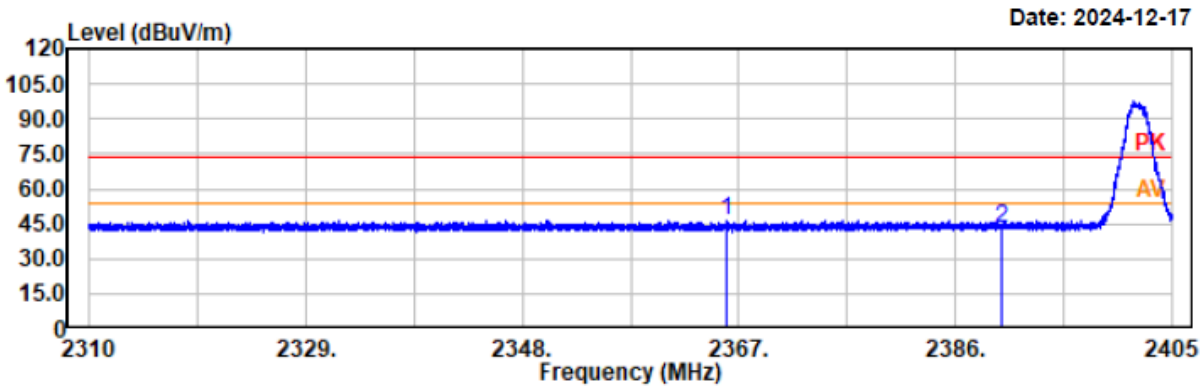


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	43.56	-0.17	43.39	74.00	30.61	vertical	Peak
2497.70	47.82	-0.09	47.73	74.00	26.27	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

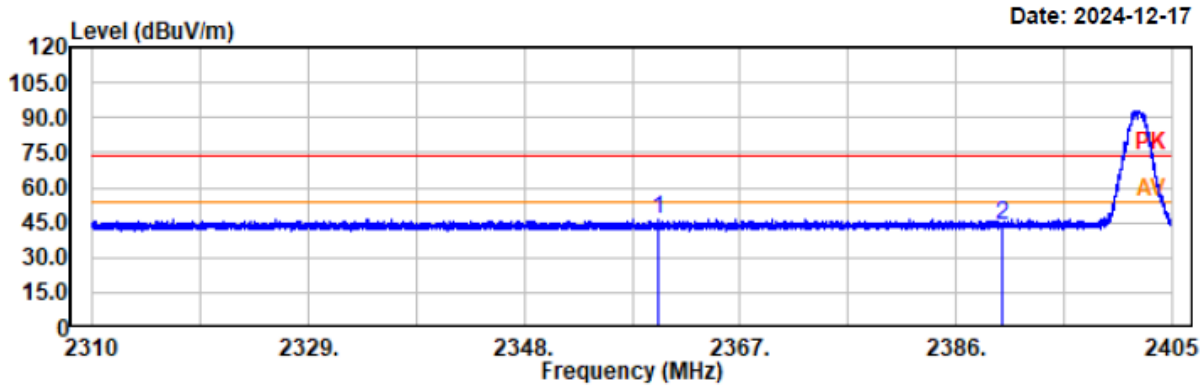


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2365.89	47.09	-0.76	46.33	74.00	27.67	horizontal	Peak
2390.00	43.96	-0.63	43.33	74.00	30.67	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

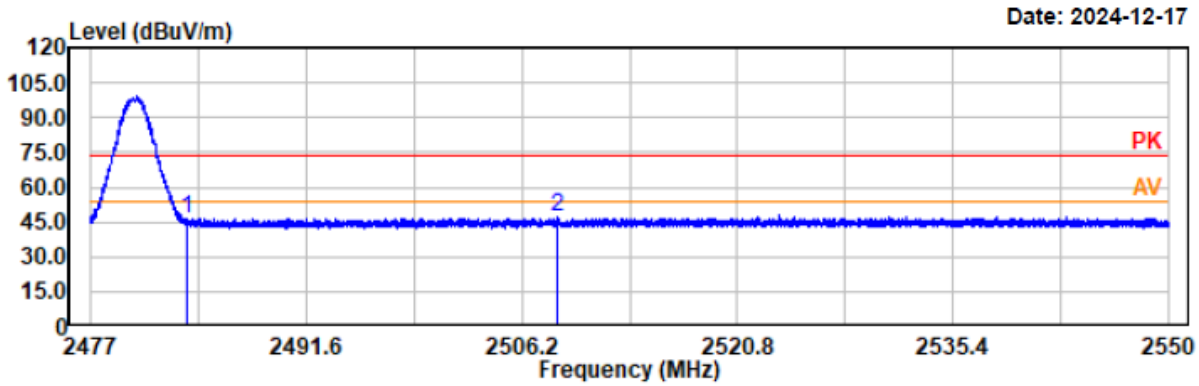


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2359.81	47.37	-0.79	46.58	74.00	27.42	vertical	Peak
2390.00	44.31	-0.63	43.68	74.00	30.32	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

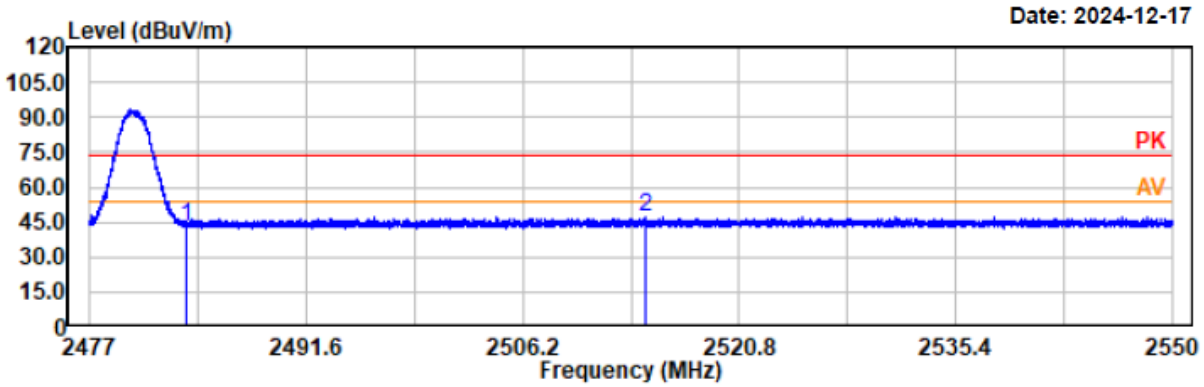


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	46.70	-0.17	46.53	74.00	27.47	horizontal	Peak
2508.60	46.86	-0.07	46.79	74.00	27.21	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 2DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

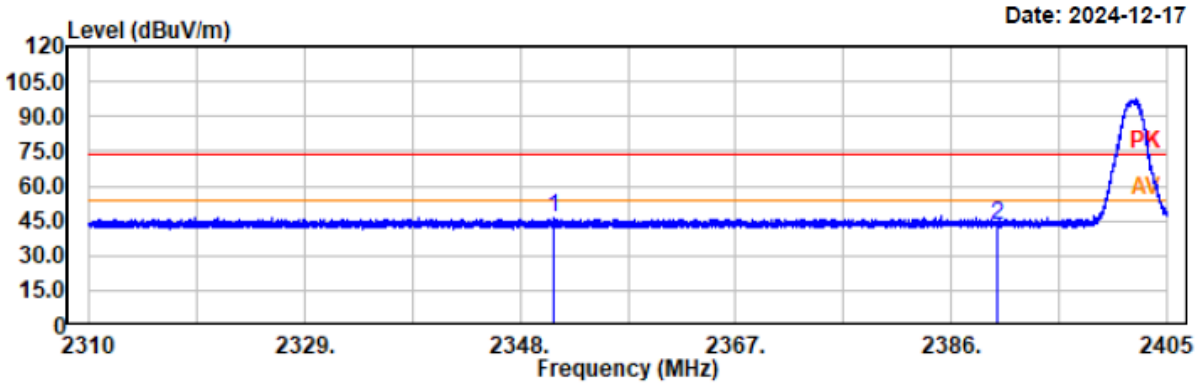


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	43.37	-0.17	43.20	74.00	30.80	vertical	Peak
2514.43	47.64	-0.07	47.57	74.00	26.43	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

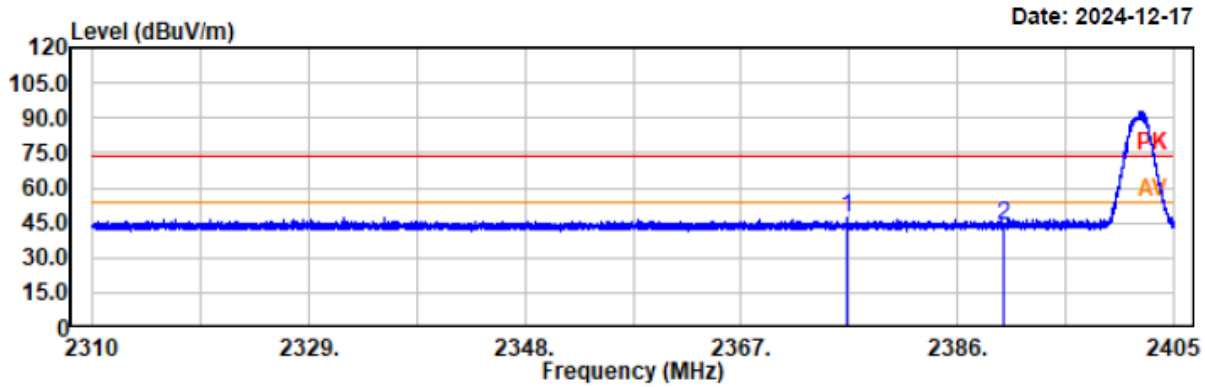


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2351.01	47.57	-0.83	46.74	74.00	27.26	horizontal	Peak
2390.00	43.63	-0.63	43.00	74.00	31.00	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2402
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

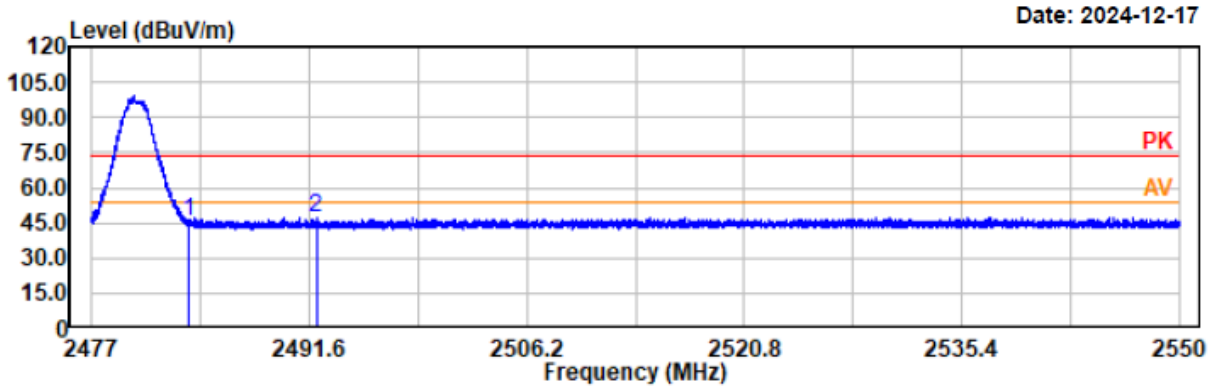


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2376.23	47.49	-0.71	46.78	74.00	27.22	vertical	Peak
2390.00	44.47	-0.63	43.84	74.00	30.16	vertical	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/60Hz

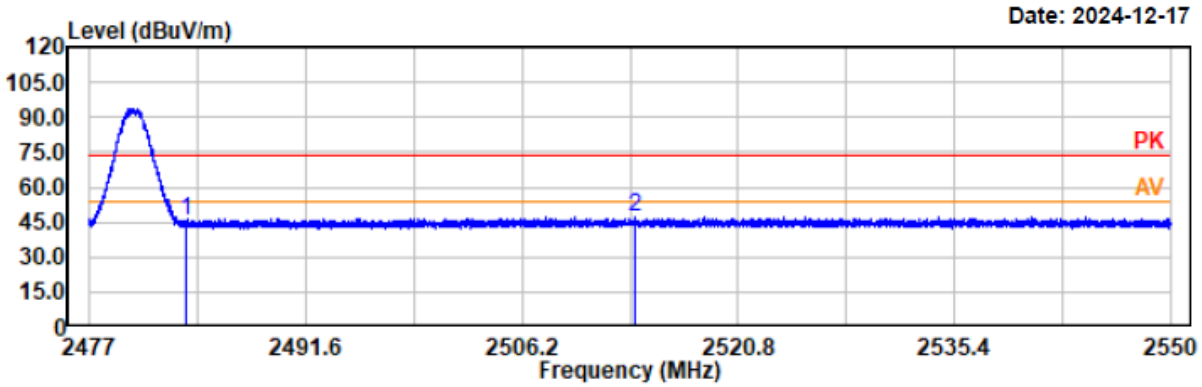


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	45.30	-0.17	45.13	74.00	28.87	horizontal	Peak
2492.07	47.66	-0.11	47.55	74.00	26.45	horizontal	Peak

Project No.: 2407X56114E-RF
Test Mode: 3DH1-2480
EUT Model: YS-R1PLUS
Test distance: 3m

Temp/Humi/ATM: 21.5℃/46%/100.1kPa
Tested by: Wlif Wu
Power Source: AC120V/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		
2483.50	45.34	-0.17	45.17	74.00	28.83	vertical	Peak
2513.86	46.98	-0.07	46.91	74.00	27.09	vertical	Peak

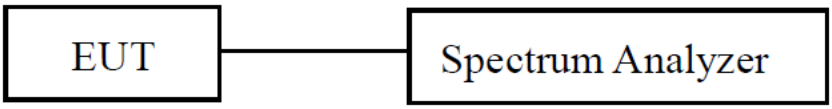
FCC §15.247(a) (1) & RSS-247 ISSUE 3 Clause 5.1 b) -CHANNEL SEPARATION TEST

Applicable Standard

FCC §15.247 (a)(1)
Frequency hopping systems shall have hoping 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.

RSS-247 ISSUE 3 Clause 5.1 b)
Frequency hopping systems shall have hoping 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 C63.10-2013 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) ≥ RBW.
d. Sweep: Auto.
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.

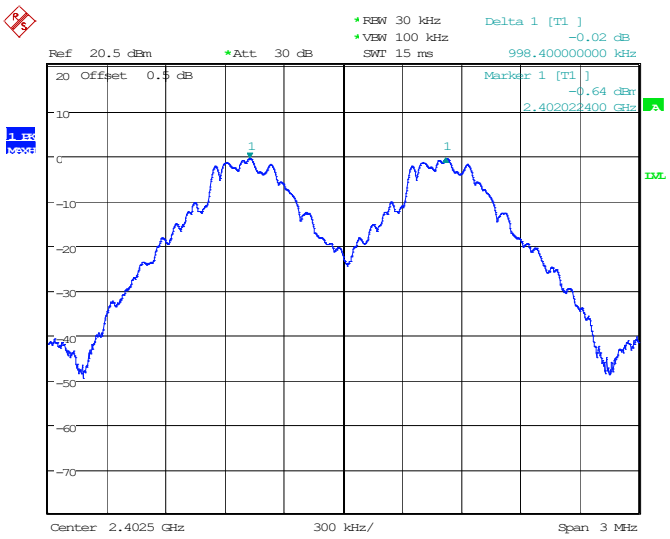
Test Data

Test Mode:	Transmitting	Test Engineer:	Jason Hu
Test Date:	2024-09-13	Environment:	Temp.: 25.9℃ Humi.: 60% Atm :100.2kPa

Mode	Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
BDR (GFSK)	Low	2402	0.998	0.853	Pass
	Middle	2441	0.998	0.864	Pass
	High	2480	0.998	0.865	Pass

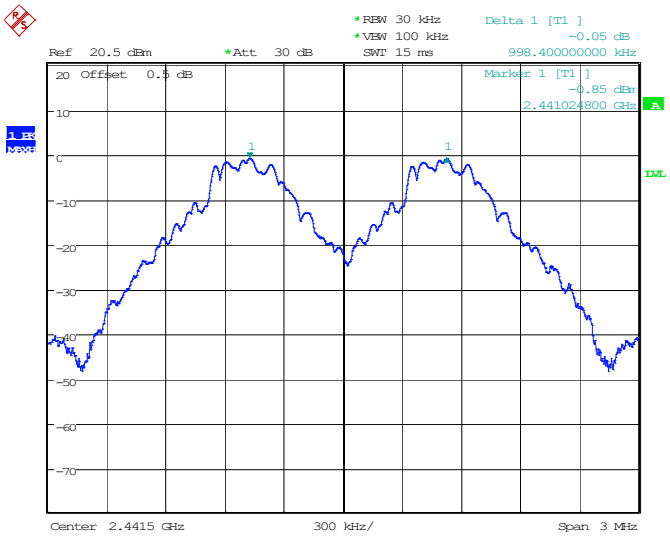
Note:
1. Limit = 20 dB bandwidth*2/3
2. Only BDR (GFSK) mode result is reported since EDR(π/4-DQPSK, 8DPSK) has the same channel plan.

BDR (GFSK): Low Channel



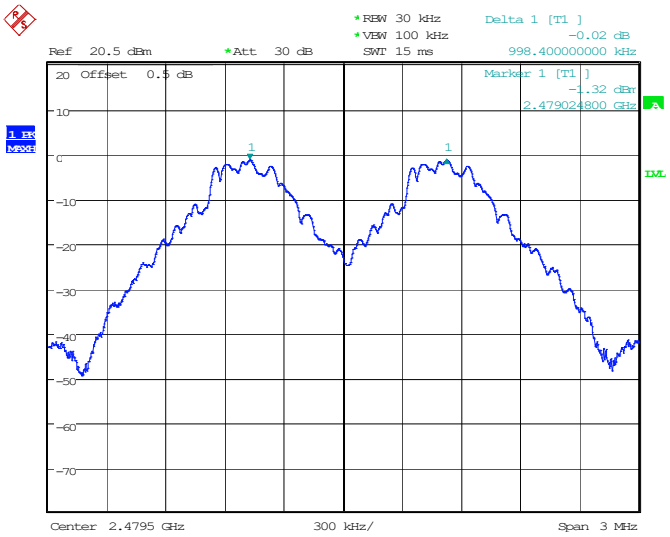
ProjectNo.:2407X56114E-RF Tester:Jason Hu
Date: 13.SEP.2024 16:20:15

BDR (GFSK): Middle Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu
Date: 13.SEP.2024 16:22:48

BDR (GFSK): High Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu
Date: 13.SEP.2024 16:25:05

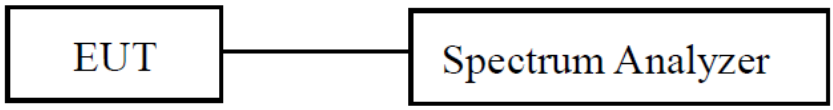
FCC §15.247(a) (1) & RSS-247 ISSUE 3 Clause 5.1 b) – 20 dB EMISSION BANDWIDTH

Applicable Standard

FCC §15.247 (a)(1)
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.

RSS-247 ISSUE 3 Clause 5.1 b)
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

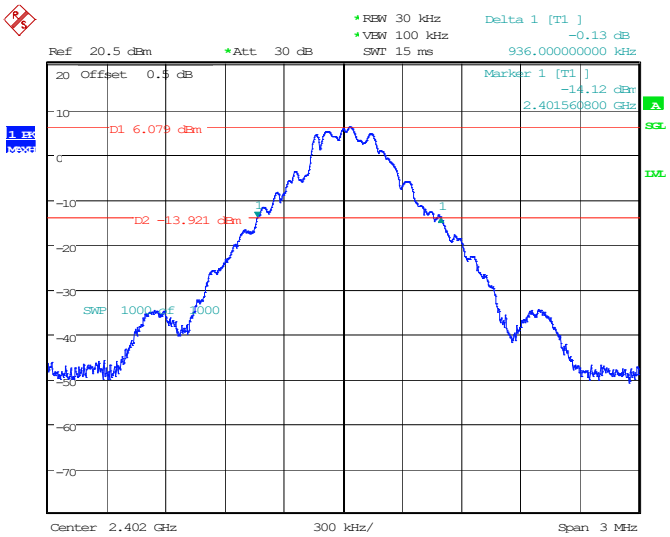
According to ANSI C63.10-2013 Section 6.9.2

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 approximately 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 4.1.5.2
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).

Test Data

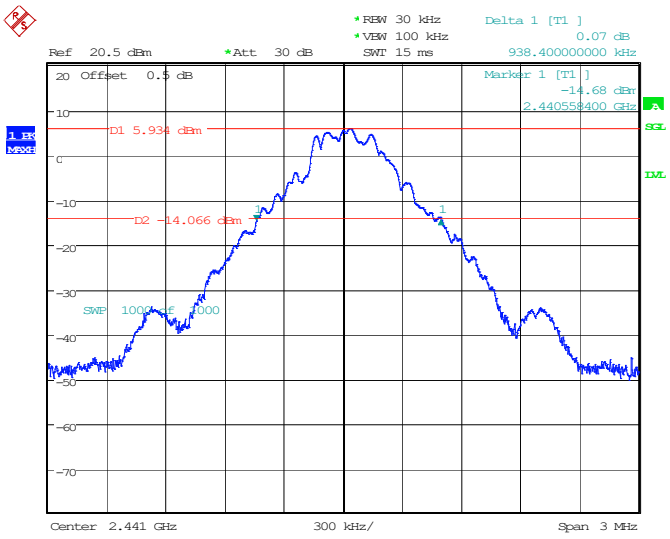
Test Mode:	Transmitting	Test Engineer:	Jason Hu
Test Date:	2024-09-13	Environment:	Temp.: 25.9℃ Humi.: 60% Atm :100.2kPa
Mode	**Channel**	**Frequency (MHz)**	**20 dB Emission Bandwidth (MHz)**
BDR Mode (GFSK)	Low	2402	0.936
	Middle	2441	0.938
	High	2480	0.943
EDR (π/4-DQPSK)	Low	2402	1.277
	Middle	2441	1.296
	High	2480	1.298
EDR (8DPSK)	Low	2402	1.279
	Middle	2441	1.282
	High	2480	1.282

BDR(GFSK) : Low Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu
Date: 13.SEP.2024 14:39:26

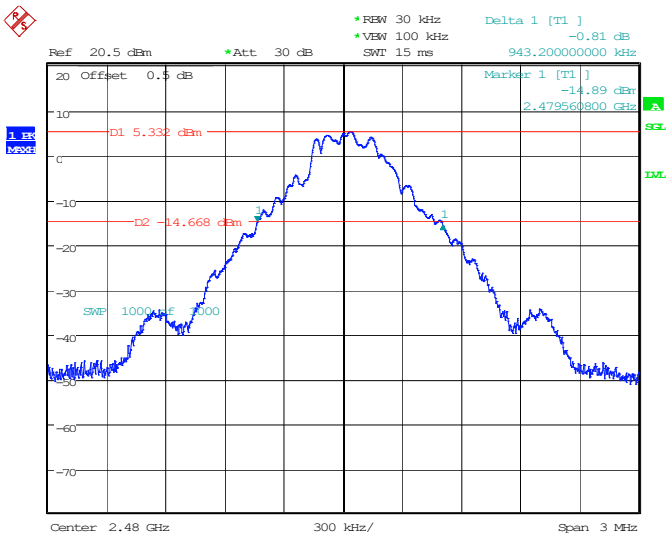
BDR(GFSK) : Middle Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu

Date: 13.SEP.2024 14:41:42

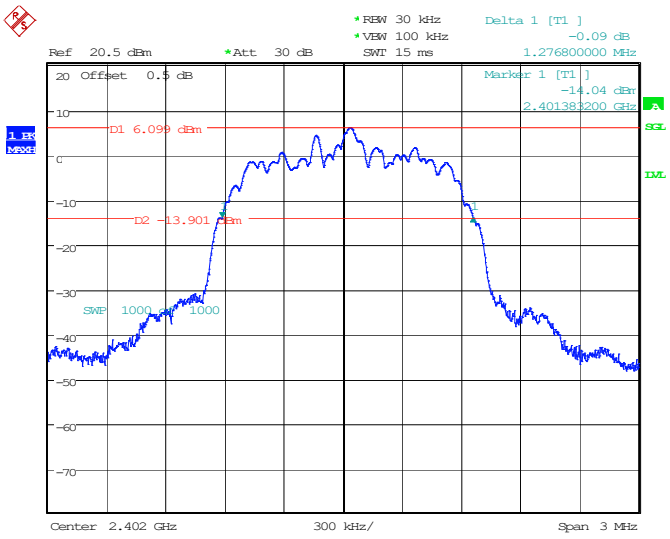
BDR(GFSK) : High Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu

Date: 13.SEP.2024 14:44:08

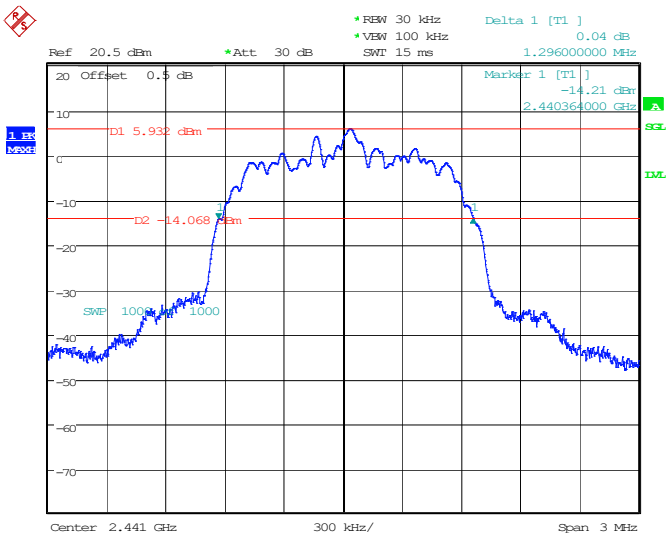
EDR (π/4-DQPSK): Low Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu

Date: 13.SEP.2024 14:48:36

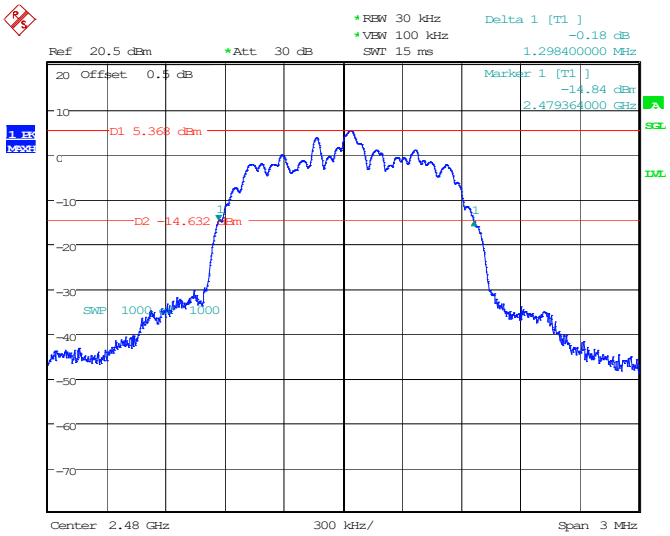
EDR(π/4-DQPSK): Middle Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu

Date: 13.SEP.2024 14:51:51

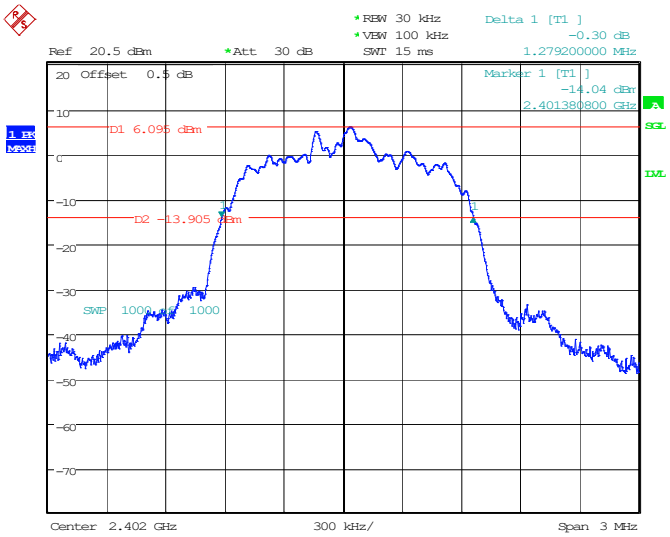
EDR (π/4-DQPSK): High Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu

Date: 13.SEP.2024 14:54:04

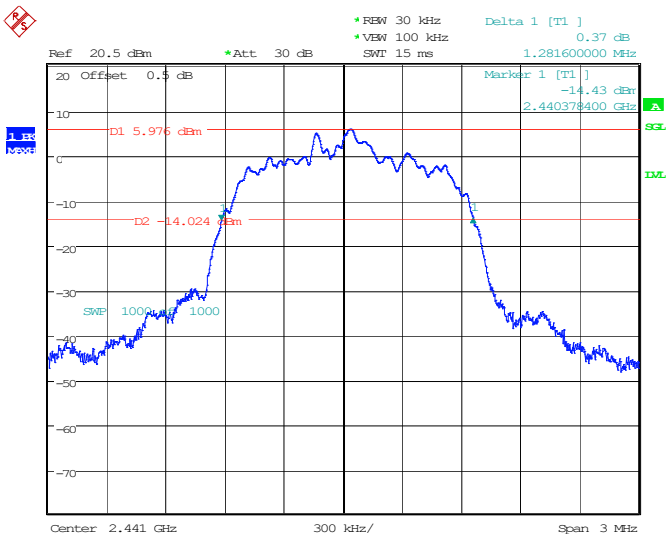
EDR (8DPSK): Low Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu

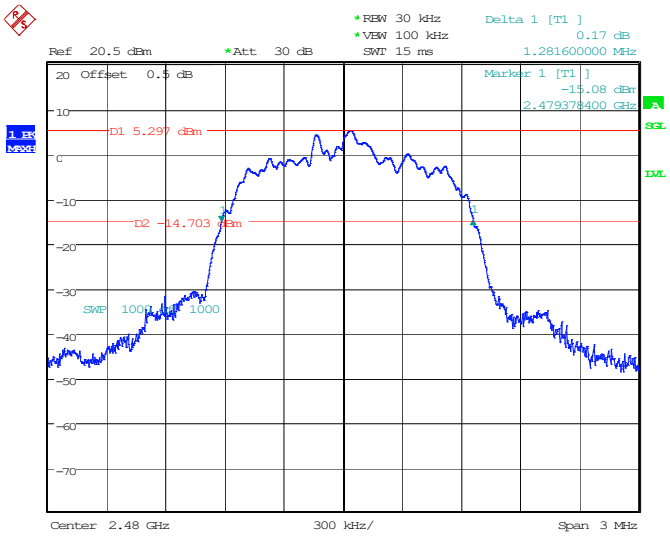
Date: 13.SEP.2024 14:56:16

EDR (8DPSK): Middle Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu
Date: 13.SEP.2024 14:58:27

EDR (8DPSK): High Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu
Date: 13.SEP.2024 15:00:26

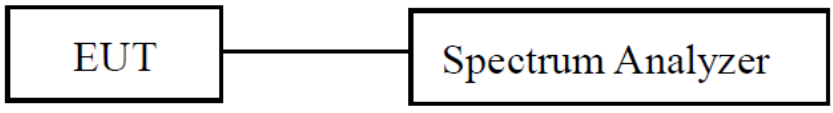
RSS-Gen Clause 6.7 99% Occupied Bandwidth

Applicable Standard

RSS-Gen Clause 6.7

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.
In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.
The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:
The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.
Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.
For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

EUT Setup



Test Procedure

According to ANSI C63.10-2013 Section 6.9.3

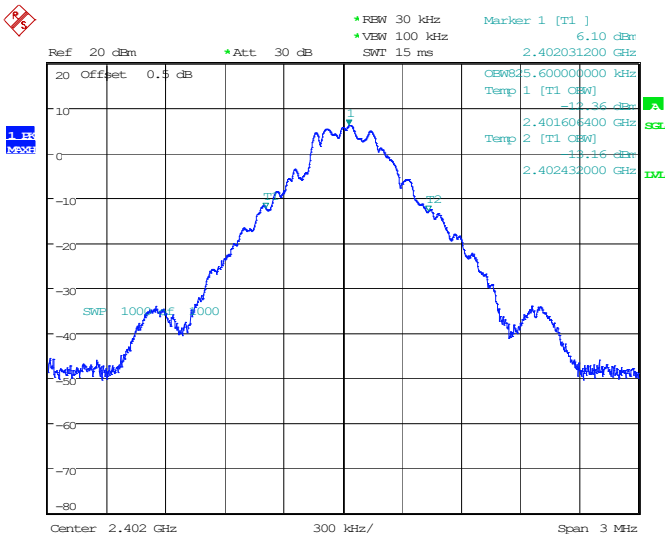
The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 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 VBW shall be approximately three times the 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 4.1.5.2.
d) Step a) through step c) might require iteration to adjust within the specified range.
e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
h) 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:	Jason Hu
Test Date:	2024-09-13	Environment:	Temp.: 25.9℃ Humi.: 60% Atm :100.2kPa
Mode	**Channel**	**Frequency (MHz)**	**99% Emission Bandwidth (MHz)**
BDR (GFSK)	Low	2402	0.826
	Middle	2441	0.83
	High	2480	0.833
EDR (π/4-DQPSK)	Low	2402	1.171
	Middle	2441	1.174
	High	2480	1.174
EDR (8DPSK)	Low	2402	1.164
	Middle	2441	1.164
	High	2480	1.164

BDR (GFSK): Low Channel



ProjectNo.:2407X56114E-RF Tester:Jason Hu
Date: 13.SEP.2024 14:40:26