FCC PART 15.247
TEST REPORT

For

Hangzhou YuShu Technology Co., Ltd.

306 Room, Building 1, 88 Dongliu Rd, XiXing Street, Binjiang District, Hangzhou, ZheJiang, China

FCC ID: 2A5PE-YUSHU006

Report Type:	**Product Name:**
Original Report	Quadruped Robot

Report Number:	RKSA240325003-00F
Report Date:	2024-10-14
Reviewed By:	Bard Liu
Approved By:	Oscar Ye
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu Province, China Tel: +86-512-86175000 Fax: +86-512-88934268 www.baclcorp.com.cn

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	RKSA240325003-00F	R1V1	2024-10-14	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Hangzhou YuShu Technology Co., Ltd.
Tested Model:	B2
Product Name:	Quadruped Robot
Power Supply:	DC 50.4V from battery
RF Function:	Classic BT
Operating Band/Frequency:	2402-2480 MHz
Maximum Output Power:	GFSK: 2.17 dBm π/4-DQPSK: 4.35 dBm 8DPSK: 5.15 dBm
Channel Number:	79
Channel Separation:	1 MHz
Modulation Type:	GFSK, π/4-DQPSK, 8DPSK
Antenna Type:	Omni antenna
★Maximum Antenna Gain:	2.49 dBi

Note: The maximum antenna gain is provided by the applicant.

All measurement and test data in this report was gathered from production sample serial number: RKSA240325003-1 (Assigned by the BACL (Kunshan). The EUT supplied by the applicant was received on 2024-03-25.)

Objective

This test report is prepared for *Hangzhou YuShu Technology 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 C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and 558074 D01 15.247 Meas Guidance v05r02.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	9 kHz~150 kHz	3.8dB
	150 kHz~30 MHz	3.4dB
	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu Province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) is accredited in accordance with ISO/IEC 17025:2017 by NVLAP (Lab code: 600338-0), and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN5055.

SYSTEM TEST CONFIGURATION

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: QRCT

★Power level: default

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

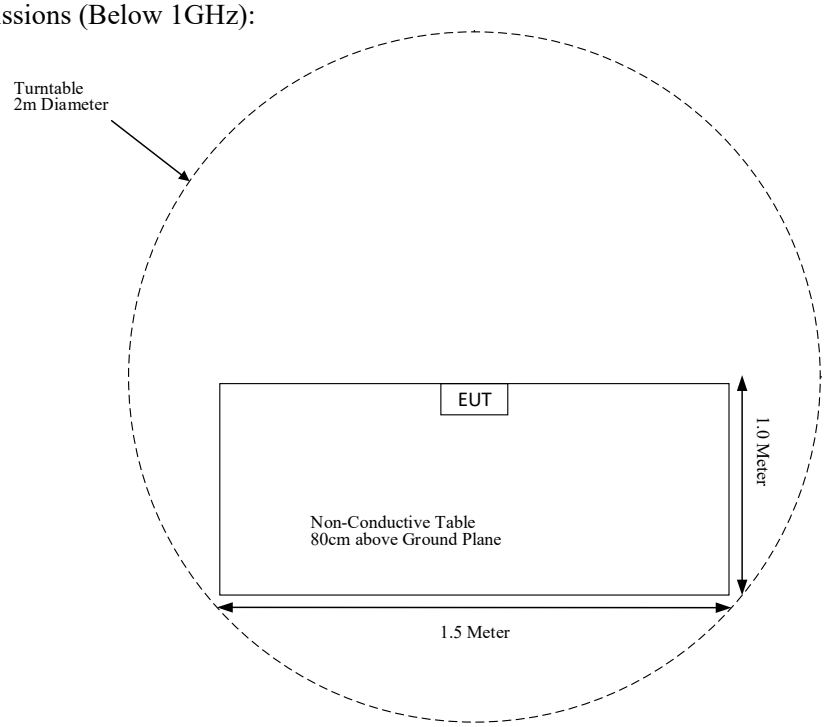
Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

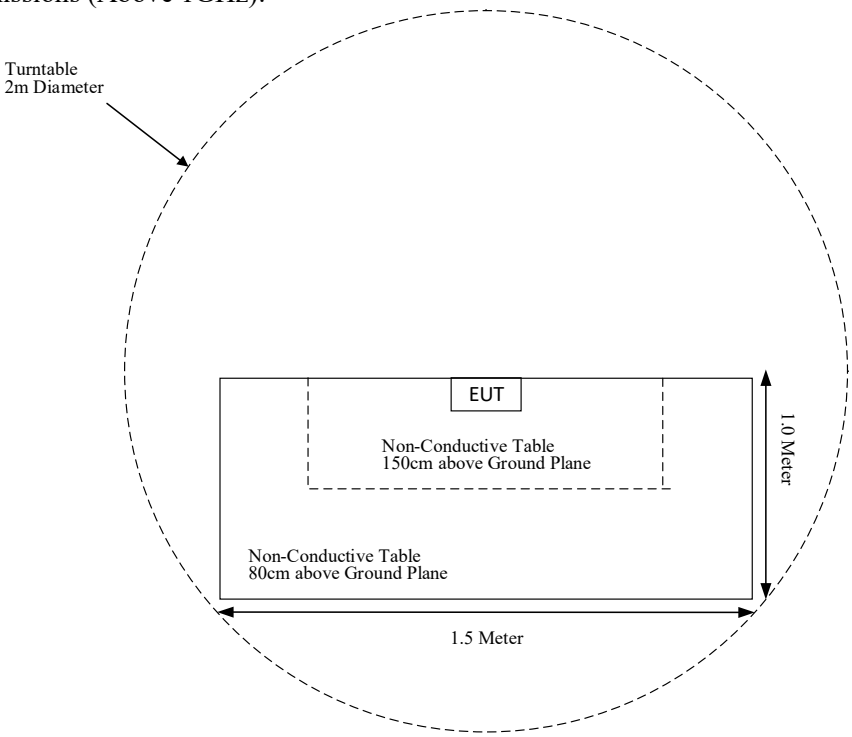
Cable Description	Length (m)	From Port	To
/	/	/	/

Block Diagram of Test Setup

For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliant
§15.203	Antenna Requirement	Compliant
§15.207(a)	AC Line Conducted Emissions	Not Applicable (See Note)
§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: The EUT powered by battery.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber #1)					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2024-04-23	2025-04-22
Sunol Sciences	Broadband Antenna	JB3	A090314-1	2023-11-11	2024-11-10
Narda	6dB Attenuator	773-6	10690812-2-1	2023-11-11	2024-11-10
ETS-LINDGREN	Loop Antenna	6512	108100	2023-11-09	2024-11-08
Sonoma Instrument	Pre-amplifier	310N	171205	2024-04-23	2025-04-22
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-9	009	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-10	010	2024-04-23	2025-04-22
Radiated Emission Test (Chamber #2)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2024-04-25	2025-04-24
ETS-LINDGREN	Horn Antenna	3115	9207-3900	2024-06-27	2025-06-26
ETS-LINDGREN	Horn Antenna	3116	2516	2023-12-08	2024-12-07
A.H.Systems, inc	Amplifier	PAM-0118P（2641-1）	512	2024-04-25	2025-04-24
SELECTOR	Amplifier	EM18G40G	060726	2024-04-25	2025-04-24
MICRO-TRONICS	Band Reject Filter	BRM50702	G024	2024-04-23	2025-04-22
Narda	Attenuator	10dB	010	2024-04-23	2025-04-22
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2024-04-23	2025-04-22
MICRO-COAX	Coaxial Cable	Cable-11	011	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-12	012	2024-04-25	2025-04-24
MICRO-COAX	Coaxial Cable	Cable-13	013	2024-04-25	2025-04-24
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200103	2024-04-24	2025-04-23
Narda	Attenuator	10dB	N/A	2024-04-23	2025-04-22
XHFDZ	RG316 Coaxial Cable	SMA-316	XHF-1175	Each time	N/A

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

FCC §1.1310 & §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §2.1091 and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

Mode	Frequency Range (MHz)	Antenna Gain		★Tune-up Output Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)	MPE ratio
		(dBi)	(numeric)	(dBm)	(mW)				
SRD	2400.8-2480	2.49	1.77	8.5	7.08	20	0.0025	1.0	0.0025
2.4G Wi-Fi	2412-2462	2.49	1.77	30	1000.00	20	0.3521	1.0	0.3521
5G Wi-Fi	5150-5250	2.72	1.87	22.0	158.49	20	0.0590	1.0	0.0590
	5250-5350	2.93	1.96	21.0	125.89	20	0.0491	1.0	0.0491
	5470-5725	3.01	2.00	20.0	100.00	20	0.0398	1.0	0.0398
	5725-5850	3.11	2.05	21.5	141.25	20	0.0576	1.0	0.0576
BLE	2402-2480	2.49	1.77	3.0	2.00	20	0.0007	1.0	0.0007
Classic BT	2402-2480	2.49	1.77	5.5	3.55	20	0.0012	1.0	0.0012

Note:
1. For the above tune up power were declared by the manufacturer.
2. SRD and 2.4G Wi-Fi/5G WIFI/BT/BLE can transmit simultaneously.

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$= S_{SRD}/S_{limitSRD} + S_{2.4G\ Wi\text{-}Fi}/S_{limit2.4G\ Wi\text{-}Fi}$

$=0.0025+0.3521$

$=0.3546$

< 1.0

Result: The device meet FCC MPE at 20 cm distance.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine Compliant 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 an Omni antenna which was permanently attached, and the antenna gain is 2.49 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant.

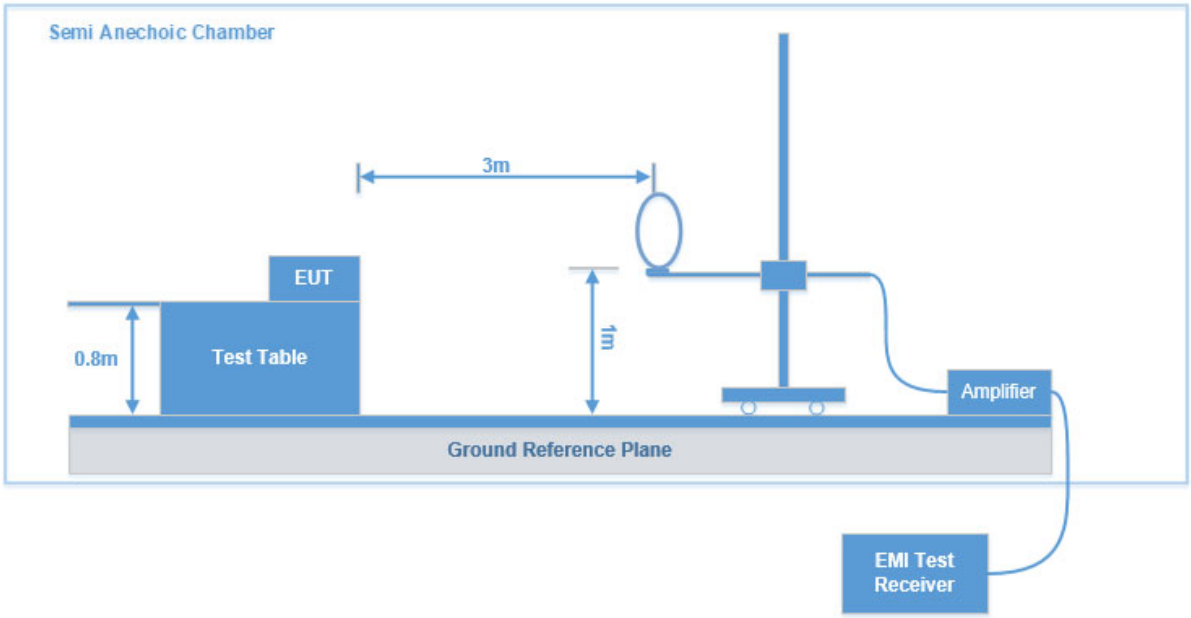
FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

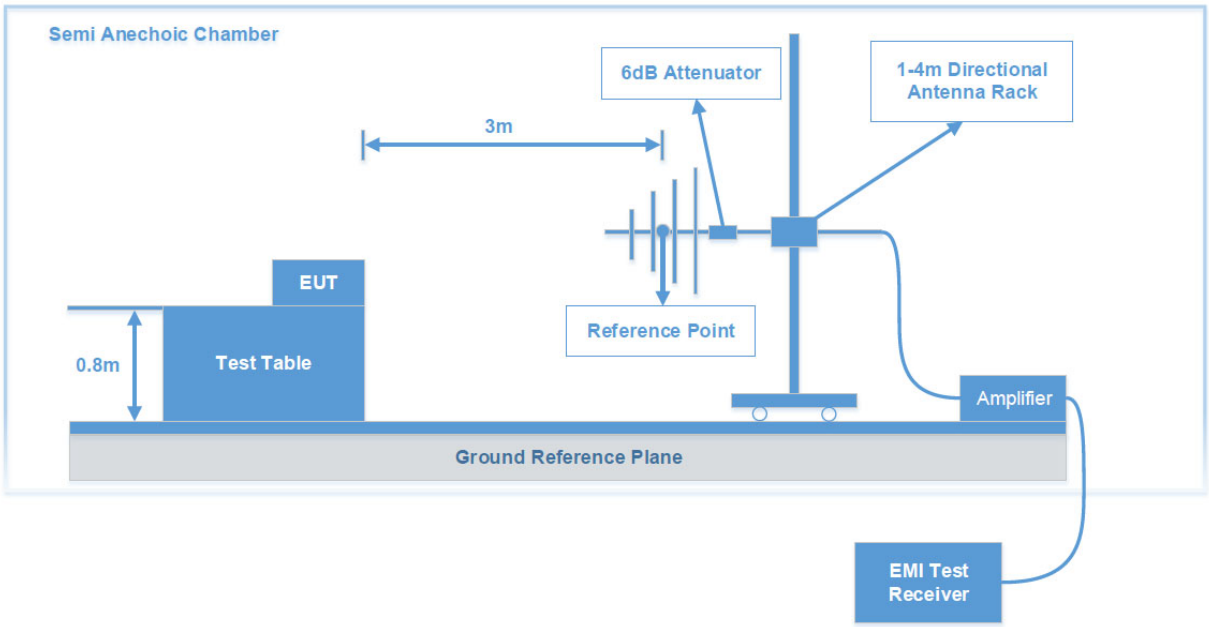
FCC §15.205; §15.209; §15.247(d)

Test System Setup

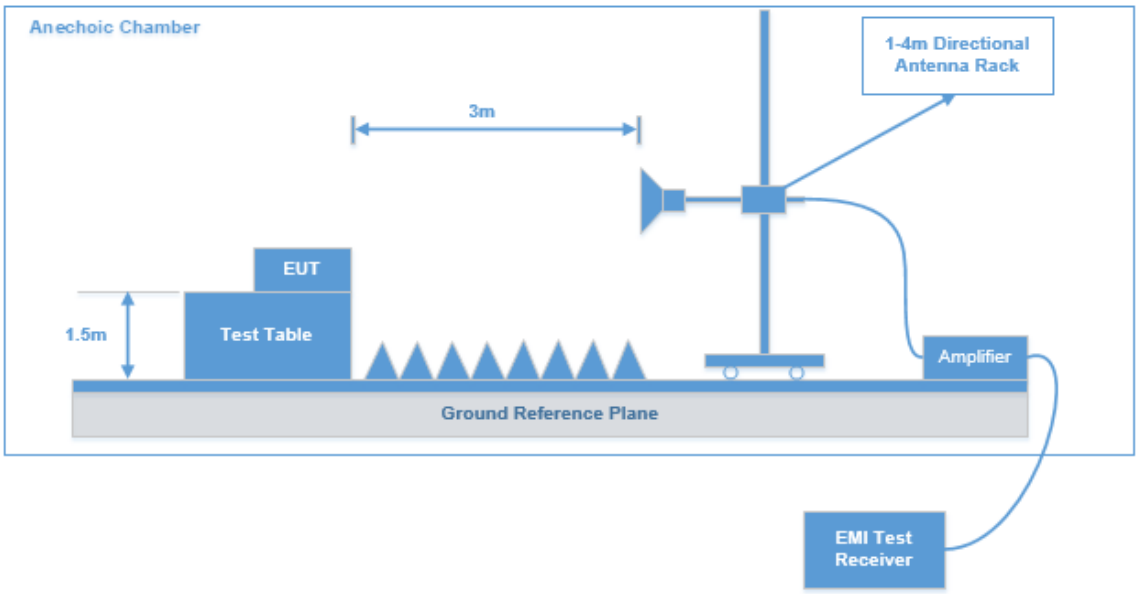
9 kHz-30 MHz:



30 MHz-1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.247 limits.

EMI Test Receiver Setup

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

Frequency Range	RBW	VBW	IF B/W	Measurement
9 kHz – 150 kHz	200 Hz	1 kHz	200 Hz	QP/Average
150 kHz – 30 MHz	9 kHz	30 kHz	9 kHz	QP/ Average
30 MHz – 1000 MHz	100 kHz	300 kHz	/	Peak
	/	/	120 kHz	QP
Above 1GHz	1MHz	3 MHz	/	Peak
	1MHz	3 MHz	/	Average

Test Procedure

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

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.

For 9 kHz-30MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude 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:

Corrected Amplitude (dBμV/m) = Meter Reading (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (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/m) – Corrected Amplitude (dBμV/m)

Note: The QuasiPeak (dBμV/m), MaxPeak (dBμV/m), Average (dBμV/m) which shown in the data table are all Corrected Amplitude.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

Test Data: See Appendix

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

Applicable Standard

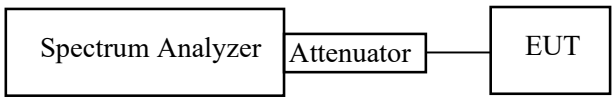
Frequency hopping systems shall have hoping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that 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.

Test Procedure

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.



Test Data: See Appendix

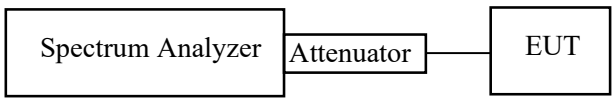
FCC §15.247(a) (1) – 20 dB EMISSION BANDWIDTH

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.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Data: See Appendix

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

Applicable Standard

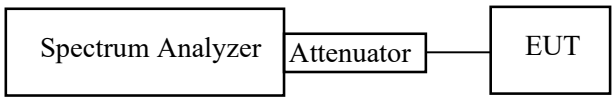
Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress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

Test Procedure

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 ≥ RBW.
d. Sweep: Auto.
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.



Test Data: See Appendix

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

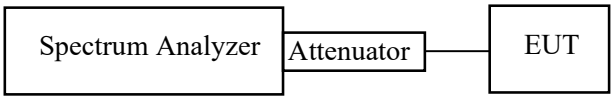
Applicable Standard

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.

Test Procedure

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

a. Span: Zero span, centered on a hopping channel.
b. RBW shall be ≤ channel spacing and where possible RBW should be set ≥ 1 / T, where T is the expected dwell time per channel.
c. Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.
d. Detector function: Peak.
e. Trace: Max hold.



Test Data: See Appendix

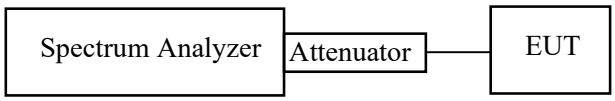
FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

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.

Test Procedure

a. Use the following spectrum analyzer settings:
1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
2) RBW > 20 dB bandwidth of the emission being measured.
3) VBW ≥ RBW.
4) Sweep: Auto.
5) Detector function: Peak.
6) Trace: Max hold.
b. Allow trace to stabilize.
c. Use the marker-to-peak function to set the marker to the peak of the emission.
d. The indicated level is the peak output power, after any corrections for external attenuators and cables.
e. A plot of the test results and setup description shall be included in the test report.



Test Data: See Appendix

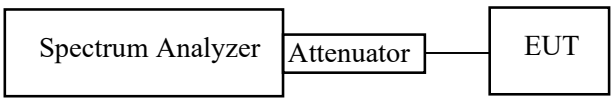
FCC §15.247(d) - BAND EDGES TESTING

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)).

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Test Data: See Appendix

APPENDIX - TEST DATA

Environmental Conditions & Test Information

Test Item:	RADIATED EMISSIONS		
	9kHz - 1GHz	1 GHz - 18 GHz	18 GHz - 25 GHz
Test Date:	2024-07-17	2024-07-20	2024-07-24
Temperature:	23.4 ℃	22.8 ℃	23.9 ℃
Relative Humidity:	52 %	53 %	55 %
ATM Pressure:	100.9 kPa	100.5kPa	100.1kPa
Test Result:	Pass	Pass	Pass
Test Engineer:	Grace Luo	Hugh Wu	Hugh Wu

Test Item:	20 DB BANDWIDTH TEST	CHANNEL SEPARATION TEST	QUANTITY OF HOPPING CHANNEL TEST	TIME OF OCCUPANCY (DWELL TIME)
Test Date:	2024-07-22	2024-07-22	2024-07-22	2024-07-22
Temperature:	23.3 ℃	23.3 ℃	23.3 ℃	23.3 ℃
Relative Humidity:	55 %	55 %	55 %	55 %
ATM Pressure:	100.3kPa	100.3kPa	100.3kPa	100.3kPa
Test Result:	Pass	Pass	Pass	Pass
Test Engineer:	Bard Liu	Bard Liu	Bard Liu	Bard Liu

Test Item:	TRANSMITTER OUTPUT POWER MEASUREMENT	OUT OF BAND EMISSIONS
Test Date:	2024-07-22	2024-07-22
Temperature:	23.3 ℃	23.3 ℃
Relative Humidity:	55 %	55 %
ATM Pressure:	100.3kPa	100.3kPa
Test Result:	Pass	Pass
Test Engineer:	Bard Liu	Bard Liu

RADIATED EMISSIONS & RESTRICTED BANDS EMISSIONS

EUT operation mode: Transmitting
After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

9 kHz - 30 MHz: *(Transmitting in maximum output power 8DPSK mode and low channel)*

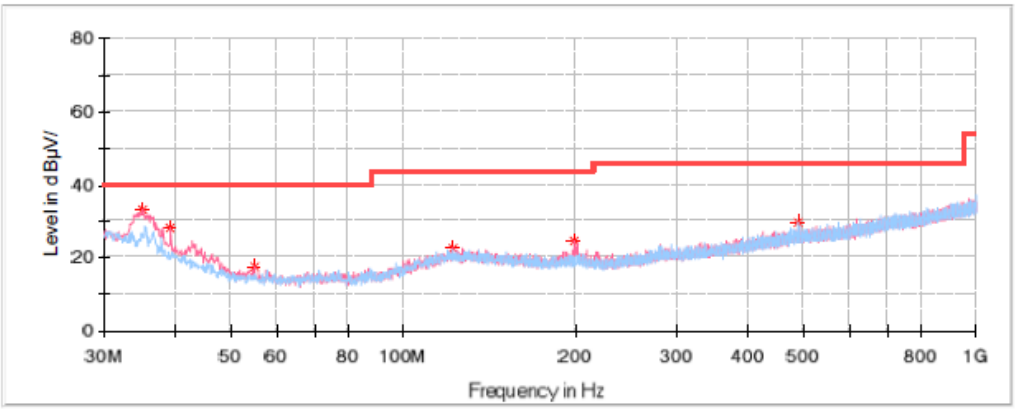
The amplitude of spurious emissions attenuated more than 20 dB below the limit was not be recorded.

30MHz-1GHz:
EUT operation mode: Transmitting in 8DPSK mode (maximum output power mode)

Low Channel: 2402 MHz

Common Information

Project No:	RKSA240325003
EUT Model:	B2
Test Mode:	BT
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	23.4℃
Humidity:	52%
Barometric Pressure:	100.9kPa
Test Engineer:	Grace Luo
Test Date:	2024/7/17



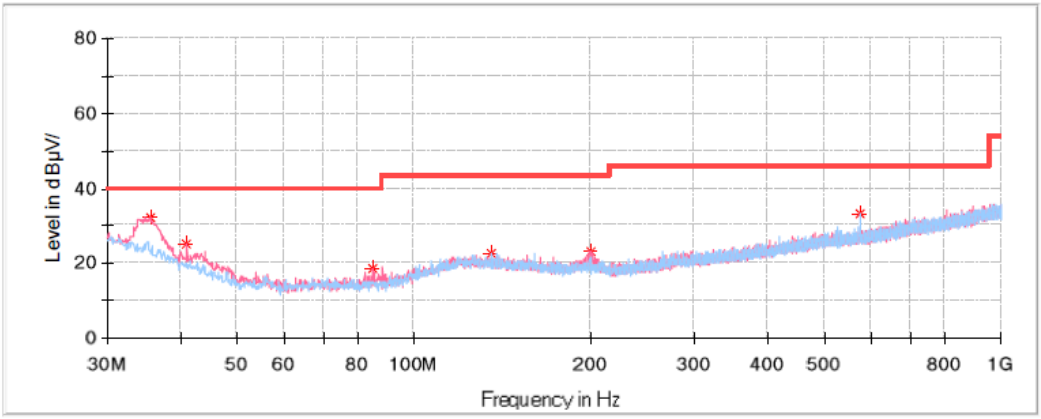
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
35.092500	33.10	40.00	6.90	V	-8.2
39.215000	28.29	40.00	11.71	V	-10.9
54.977500	17.42	40.00	22.58	V	-17.2
121.786250	22.61	43.50	20.89	V	-10.9
199.143750	24.58	43.50	18.92	V	-12.2
489.173750	29.69	46.00	16.31	H	-5.7

Middle Channel: 2441 MHz

Common Information

Project No:	RKSA240325003
EUT Model:	B2
Test Mode:	BT
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	23.4℃
Humidity:	52%
Barometric Pressure:	100.9kPa
Test Engineer:	Grace Luo
Test Date:	2024/7/17



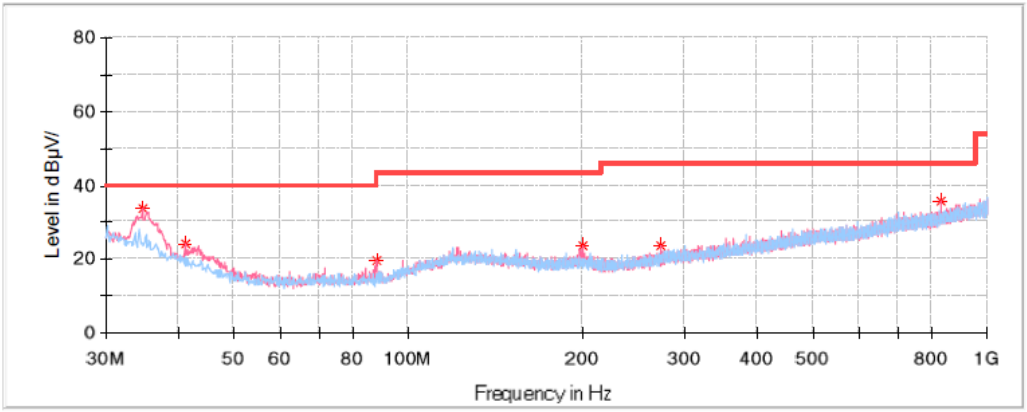
Critical_Freqs

Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
35.456250	32.34	40.00	7.66	V	-8.4
41.033750	25.24	40.00	14.76	V	-12.0
85.168750	18.70	40.00	21.30	V	-17.1
135.730000	22.77	43.50	20.73	H	-11.3
200.477500	23.29	43.50	20.21	V	-12.2
575.988750	33.45	46.00	12.55	H	-4.5

High Channel: 2480 MHz

Common Information

Project No:	RKSA240325003
EUT Model:	B2
Test Mode:	BT
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Equipment:	ESCI, JB3, 310N
Temperature:	23.4℃
Humidity:	52%
Barometric Pressure:	100.9kPa
Test Engineer:	Grace Luo
Test Date:	2024/7/17



Critical_Freqs

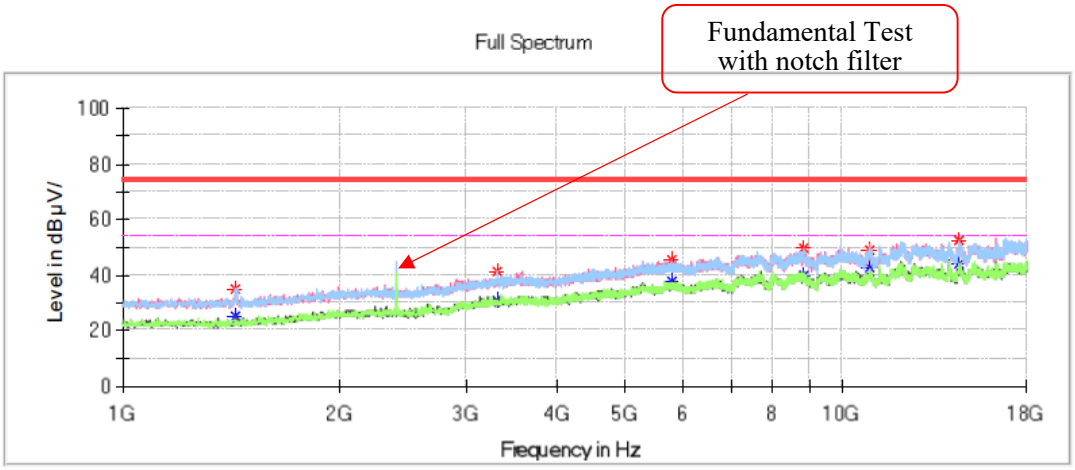
Frequency (MHz)	MaxPeak (dBµ V/m)	Limit (dBµ V/m)	Margin (dB)	Pol	Corr. (dB/m)
34.728750	33.63	40.00	6.37	V	-7.9
41.155000	24.03	40.00	15.97	V	-12.1
87.836250	19.38	40.00	20.62	V	-17.0
199.750000	23.57	43.50	19.93	V	-12.2
272.378750	23.60	46.00	22.40	V	-11.1
830.977500	35.57	46.00	10.43	V	-0.2

1 GHz - 18 GHz:
GFSK:

Low Channel: 2402 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of low channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



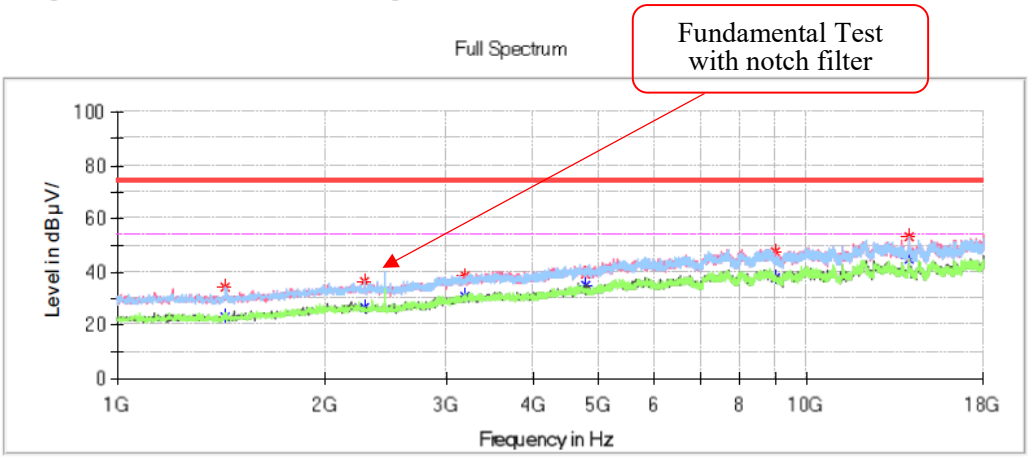
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1436.900000	---	24.94	54.00	29.06	H	-14.8
1436.900000	34.85	---	74.00	39.15	H	-14.8
3303.500000	---	30.73	54.00	23.27	H	-7.2
3303.500000	40.94	---	74.00	33.06	H	-7.2
5780.400000	---	38.10	54.00	15.90	V	-0.1
5780.400000	45.49	---	74.00	28.51	V	-0.1
8797.900000	---	39.65	54.00	14.35	V	5.4
8797.900000	49.45	---	74.00	24.55	V	5.4
10861.700000	48.80	---	74.00	25.20	V	7.3
10861.700000	---	42.83	54.00	11.17	V	7.3
14489.500000	---	44.16	54.00	9.84	V	9.4
14489.500000	52.70	---	74.00	21.30	V	9.4

Middle Channel: 2441 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of middle channel
Standard:	FCC Part 15.205& FCC Part 15.209& FCC Part 15.247
Test Engineer:	Hugh Wu



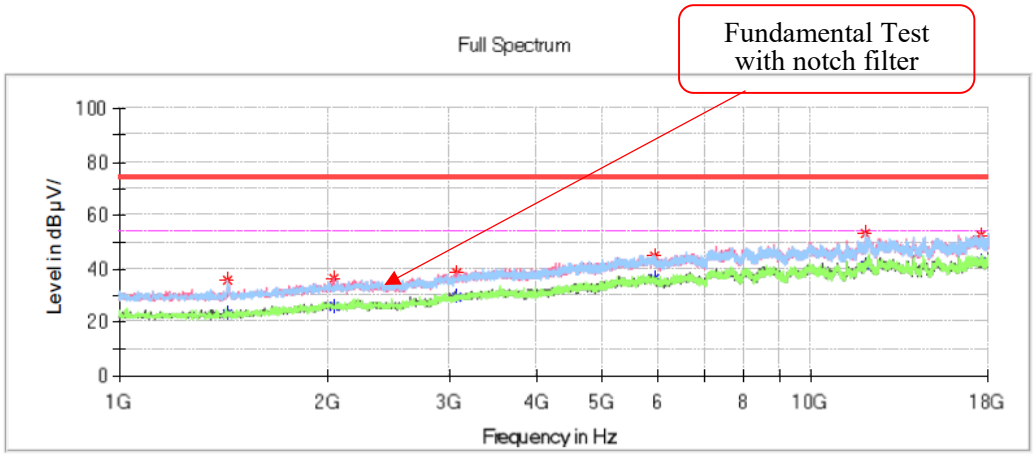
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1436.900000	---	23.36	54.00	30.64	H	-14.8
1436.900000	34.01	---	74.00	39.99	H	-14.8
2276.700000	---	26.63	54.00	27.37	H	-10.9
2276.700000	36.62	---	74.00	37.38	H	-10.9
3181.100000	---	30.57	54.00	23.43	V	-7.7
3181.100000	38.44	---	74.00	35.56	V	-7.7
4765.500000	38.86	---	74.00	35.14	V	-3.3
4765.500000	---	34.97	54.00	19.03	V	-3.3
8986.600000	---	37.78	54.00	16.22	V	5.4
8986.600000	47.87	---	74.00	26.13	V	5.4
14005.000000	---	44.57	54.00	9.43	H	9.8
14005.000000	53.17	---	74.00	20.83	H	9.8

High Channel: 2480 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of high channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



Critical_Freqs

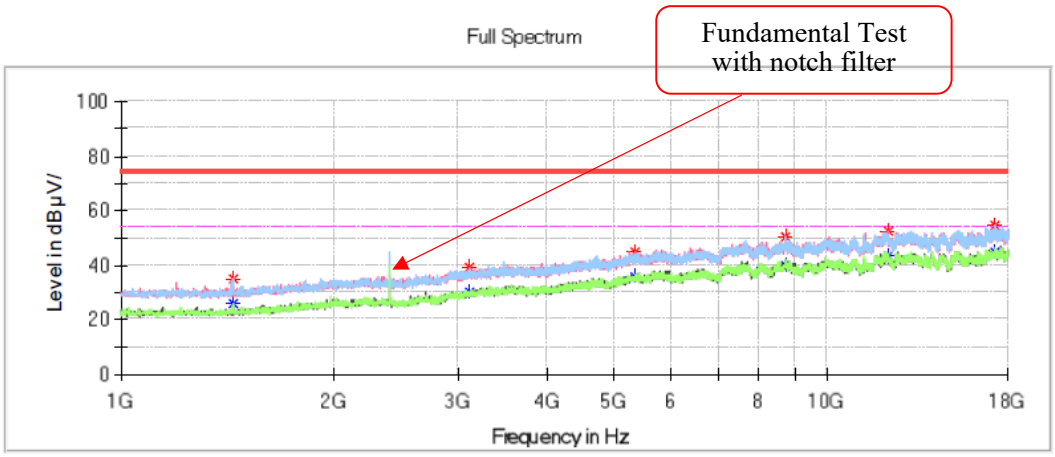
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1435.200000	---	23.12	54.00	30.88	H	-14.8
1435.200000	35.44	---	74.00	38.56	H	-14.8
2035.300000	---	25.69	54.00	28.31	H	-11.6
2035.300000	36.07	---	74.00	37.93	H	-11.6
3075.700000	---	29.71	54.00	24.29	V	-8.1
3075.700000	38.73	---	74.00	35.27	V	-8.1
5948.700000	---	36.41	54.00	17.59	H	0.0
5948.700000	44.93	---	74.00	29.07	H	0.0
11934.400000	---	41.22	54.00	12.78	H	9.0
11934.400000	53.20	---	74.00	20.80	H	9.0
17583.500000	---	42.49	54.00	11.51	H	11.6
17583.500000	52.31	---	74.00	21.69	H	11.6

π/4-DQPSK:

Low Channel: 2402 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of low channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



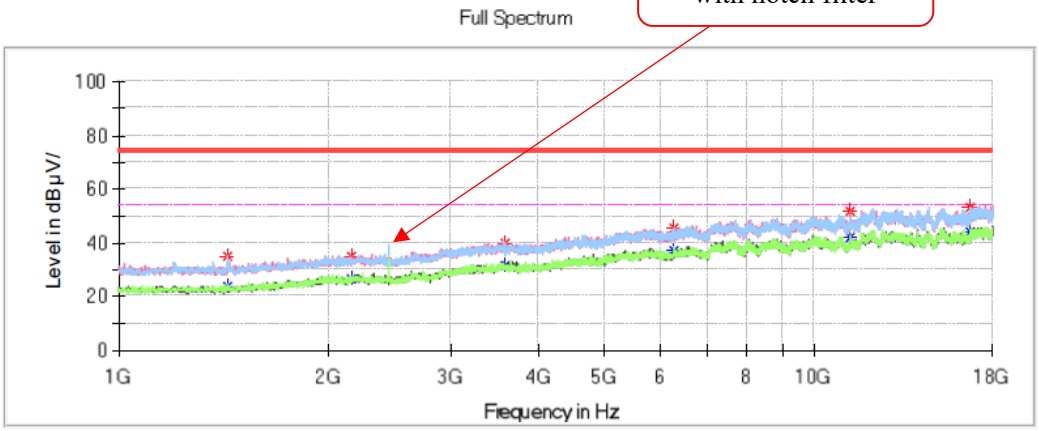
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1438.600000	---	25.95	54.00	28.05	H	-14.8
1438.600000	34.79	---	74.00	39.21	H	-14.8
3114.800000	---	29.97	54.00	24.03	V	-8.0
3114.800000	39.39	---	74.00	34.61	V	-8.0
5341.800000	---	35.73	54.00	18.27	V	-1.0
5341.800000	44.88	---	74.00	29.12	V	-1.0
8707.800000	---	39.94	54.00	14.06	H	5.4
8707.800000	50.56	---	74.00	23.44	H	5.4
12163.900000	---	43.38	54.00	10.62	H	9.2
12163.900000	52.65	---	74.00	21.35	H	9.2
17190.800000	---	44.44	54.00	9.56	H	12.0
17190.800000	54.79	---	74.00	19.21	H	12.0

Middle Channel: 2441 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of middle channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



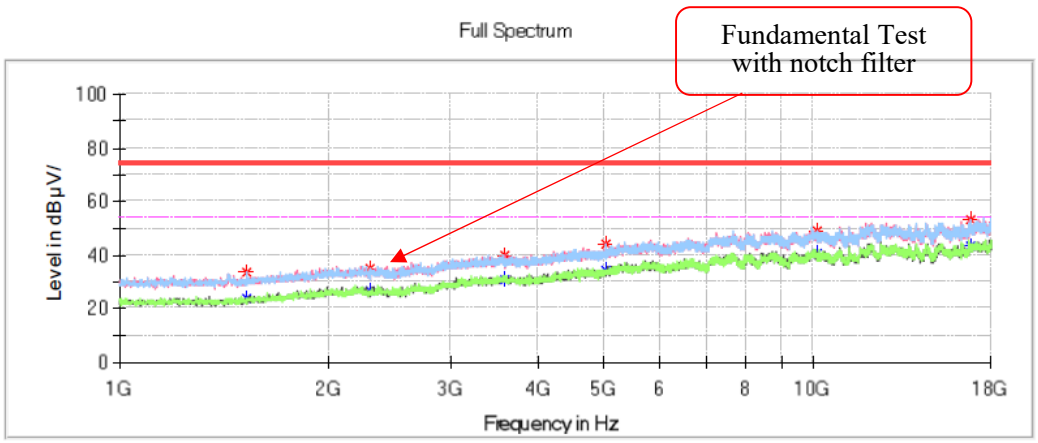
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1433.500000	---	23.63	54.00	30.37	H	-14.8
1433.500000	35.00	---	74.00	39.00	H	-14.8
2156.000000	---	26.26	54.00	27.74	V	-11.2
2156.000000	35.19	---	74.00	38.81	V	-11.2
3597.600000	---	31.27	54.00	22.73	H	-6.3
3597.600000	39.85	---	74.00	34.15	H	-6.3
6261.500000	---	37.21	54.00	16.79	H	0.3
6261.500000	45.77	---	74.00	28.23	H	0.3
11210.200000	---	42.22	54.00	11.78	H	8.0
11210.200000	51.50	---	74.00	22.50	H	8.0
16755.600000	---	44.00	54.00	10.00	H	11.5
16755.600000	53.21	---	74.00	20.79	H	11.5

High Channel: 2480 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of high channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



Critical_Freqs

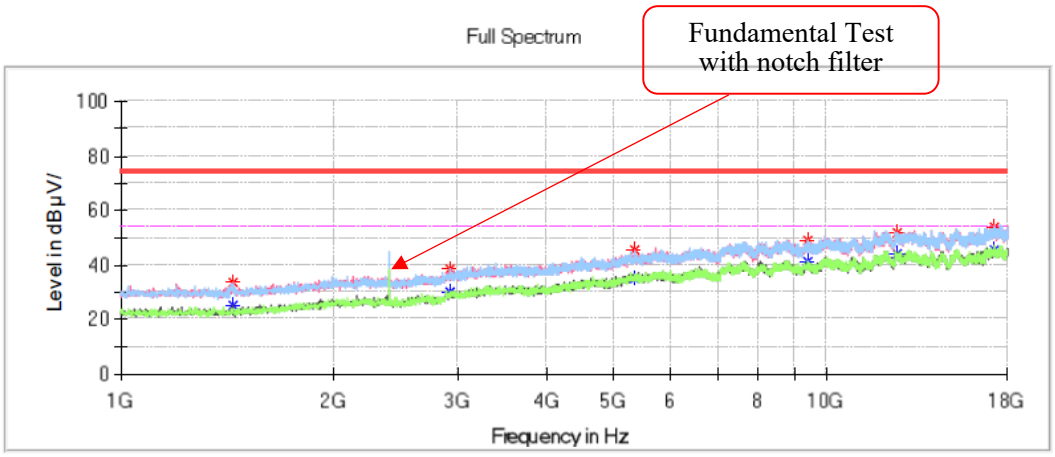
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1523.600000	---	23.65	54.00	30.35	H	-14.6
1523.600000	33.60	---	74.00	40.40	H	-14.6
2290.300000	---	26.55	54.00	27.45	H	-10.8
2290.300000	35.06	---	74.00	38.94	H	-10.8
3592.500000	---	30.84	54.00	23.16	V	-6.3
3592.500000	39.87	---	74.00	34.13	V	-6.3
5003.500000	---	34.01	54.00	19.99	H	-2.4
5003.500000	44.37	---	74.00	29.63	H	-2.4
10117.100000	---	40.34	54.00	13.66	H	7.1
10117.100000	49.19	---	74.00	24.81	H	7.1
16774.300000	---	43.60	54.00	10.40	H	11.6
16774.300000	53.47	---	74.00	20.53	H	11.6

8DPSK:

Low Channel: 2402 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of low channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



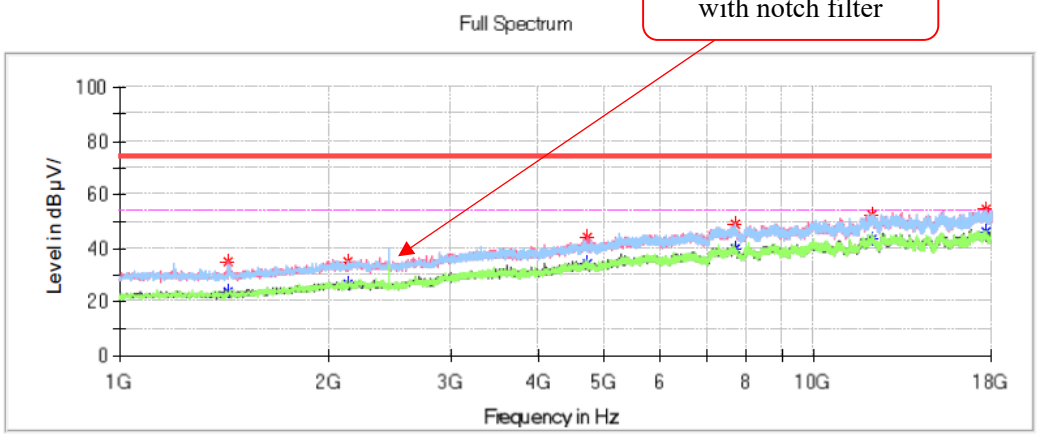
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1438.600000	---	25.28	54.00	28.72	V	-14.8
1438.600000	33.43	---	74.00	40.57	V	-14.8
2929.500000	---	29.74	54.00	24.26	V	-8.7
2929.500000	38.72	---	74.00	35.28	V	-8.7
5350.300000	---	35.27	54.00	18.73	V	-1.0
5350.300000	45.58	---	74.00	28.42	V	-1.0
9358.900000	---	41.24	54.00	12.76	H	5.4
9358.900000	48.72	---	74.00	25.28	H	5.4
12573.600000	---	43.78	54.00	10.22	H	9.7
12573.600000	51.96	---	74.00	22.04	H	9.7
17235.000000	---	45.53	54.00	8.47	H	11.9
17235.000000	53.69	---	74.00	20.31	H	11.9

Middle Channel: 2441 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of middle channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



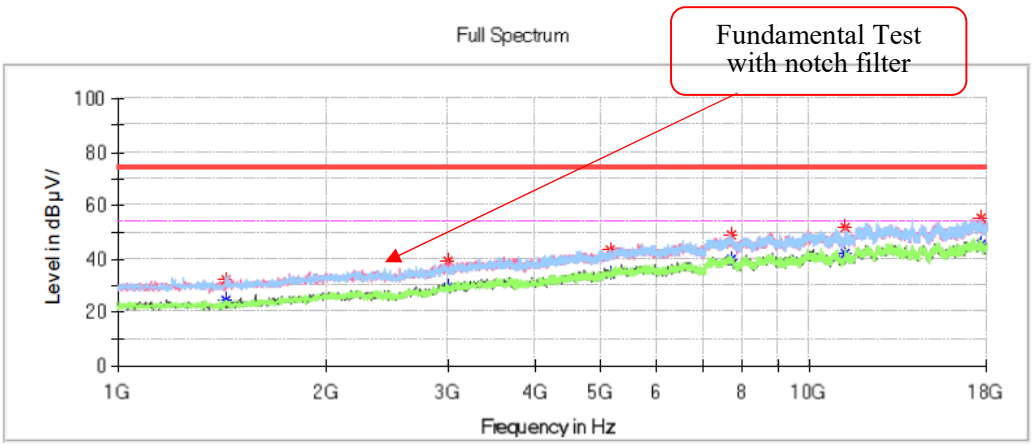
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1436.900000	---	23.48	54.00	30.52	V	-14.8
1436.900000	34.69	---	74.00	39.31	V	-14.8
2128.800000	---	26.49	54.00	27.51	V	-11.3
2128.800000	34.66	---	74.00	39.34	V	-11.3
4723.000000	---	34.59	54.00	19.41	V	-3.4
4723.000000	43.81	---	74.00	30.19	V	-3.4
7704.800000	---	39.62	54.00	14.38	H	3.9
7704.800000	48.98	---	74.00	25.02	H	3.9
12116.300000	---	43.03	54.00	10.97	H	9.1
12116.300000	52.70	---	74.00	21.30	H	9.1
17646.400000	---	45.94	54.00	8.06	H	11.7
17646.400000	54.72	---	74.00	19.28	H	11.7

High Channel: 2480 MHz

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of high channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



Critical_Freqs

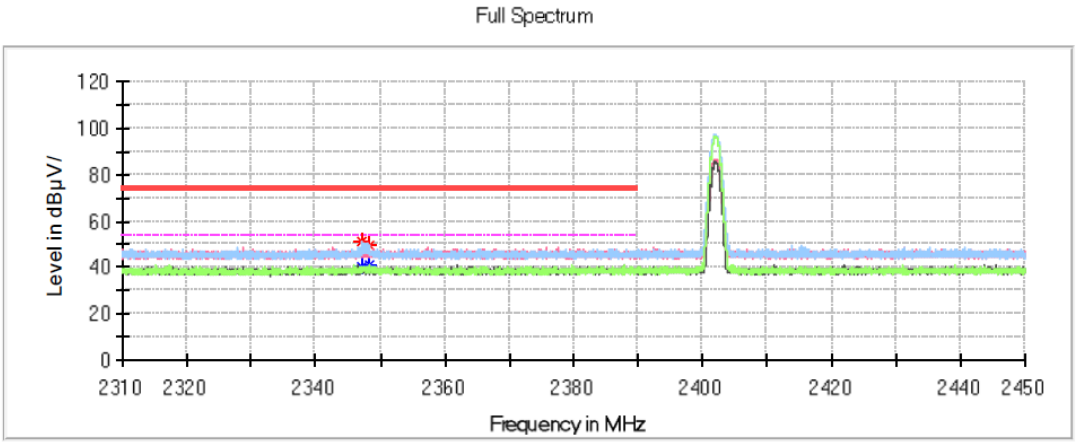
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1436.900000	32.06	---	74.00	41.94	H	-14.8
1436.900000	---	24.35	54.00	29.65	H	-14.8
2992.400000	---	29.02	54.00	24.98	H	-8.5
2992.400000	38.87	---	74.00	35.13	H	-8.5
5127.600000	---	34.51	54.00	19.49	H	-1.9
5127.600000	43.51	---	74.00	30.49	H	-1.9
7706.500000	---	40.00	54.00	14.00	V	3.9
7706.500000	48.84	---	74.00	25.16	V	3.9
11256.100000	---	42.10	54.00	11.90	V	8.1
11256.100000	51.78	---	74.00	22.22	V	8.1
17687.200000	---	45.24	54.00	8.76	V	11.7
17687.200000	54.90	---	74.00	19.10	V	11.7

Band Edge:
GFSK:

Left Side

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of low channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



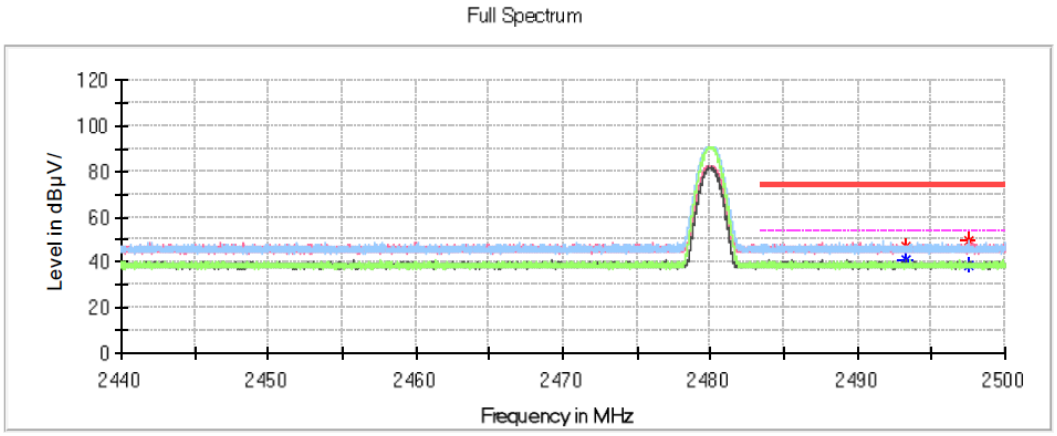
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2347.212000	50.80	---	74.00	23.20	H	0.0
2347.212000	---	40.04	54.00	13.96	H	0.0
2348.192000	49.70	---	74.00	24.30	H	0.0
2348.192000	---	41.24	54.00	12.76	H	0.0

Right Side

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of high channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



Critical_Freqs

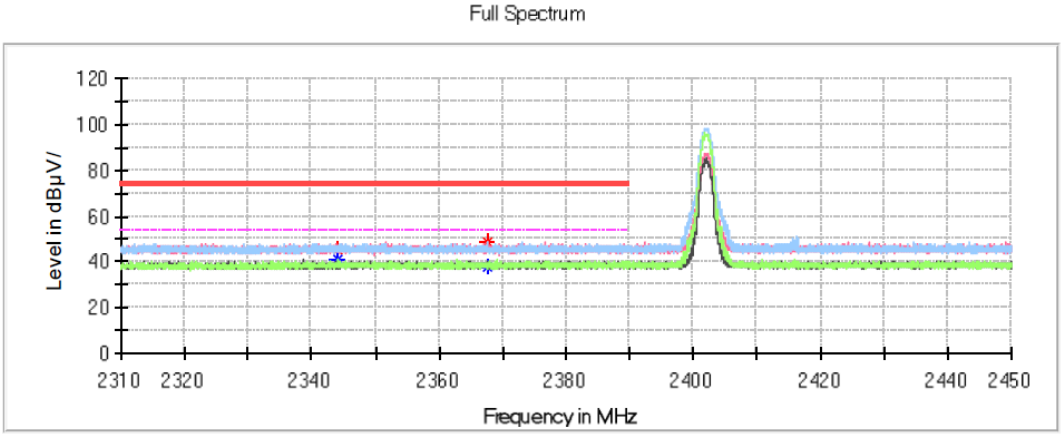
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2493.304000	46.94	---	74.00	27.06	H	0.2
2493.304000	---	41.19	54.00	12.81	H	0.2
2497.510000	---	38.28	54.00	15.72	H	0.2
2497.510000	49.36	---	74.00	24.64	H	0.2

π/4-DQPSK:

Left Side

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of low channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



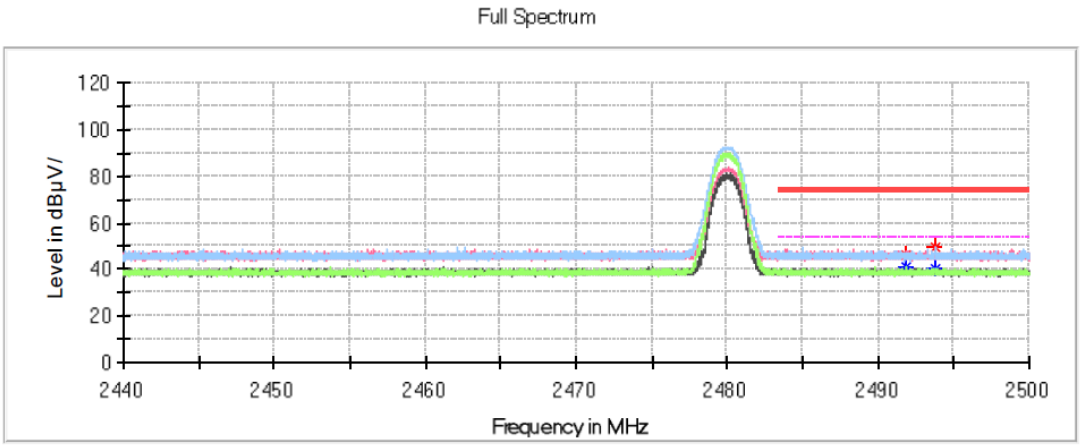
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2344.090000	---	41.31	54.00	12.69	H	0.0
2344.090000	45.08	---	74.00	28.92	H	0.0
2367.526000	---	37.89	54.00	16.11	H	0.0
2367.526000	48.68	---	74.00	25.32	H	0.0

Right Side

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of high channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



Critical_Freqs

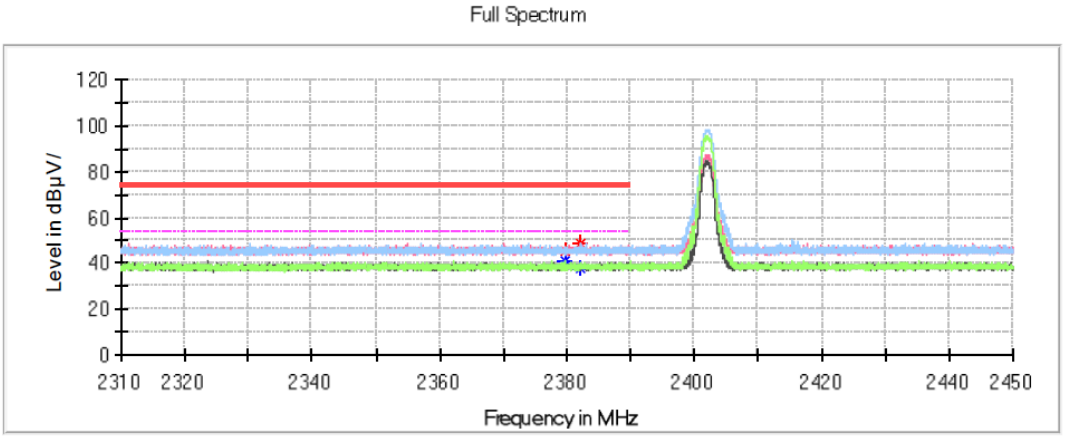
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2491.876000	---	41.12	54.00	12.88	H	0.2
2491.876000	46.16	---	74.00	27.84	H	0.2
2493.784000	---	40.39	54.00	13.61	H	0.2
2493.784000	49.37	---	74.00	24.63	H	0.2

8DPSK:

Left Side

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of low channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu



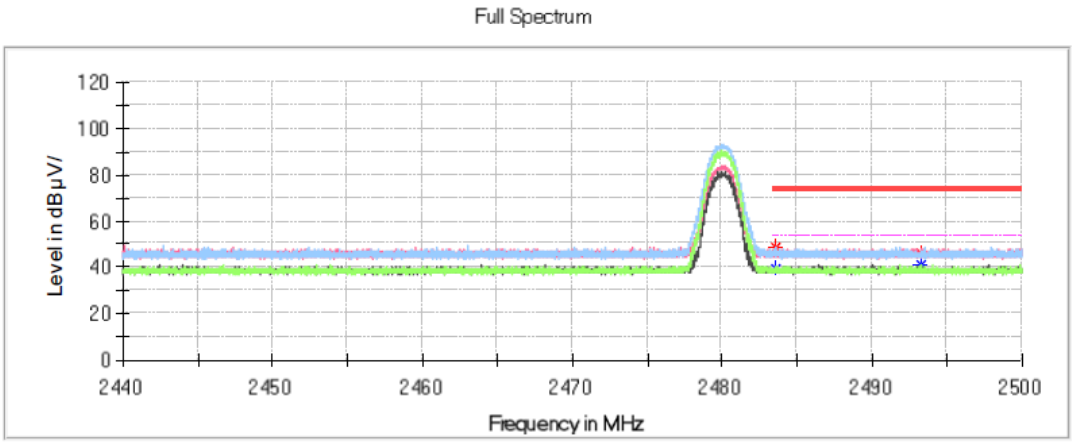
Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2379.566000	---	40.78	54.00	13.22	H	0.0
2379.566000	45.07	---	74.00	28.93	H	0.0
2382.254000	---	37.94	54.00	16.06	H	0.0
2382.254000	49.08	---	74.00	24.92	H	0.0

Right Side

Common Information

Project No.:	RKSA240325003
Test Mode:	BT mode of high channel
Standard:	FCC Part 15.205 & FCC Part 15.209 & FCC Part 15.247
Test Engineer:	Hugh Wu

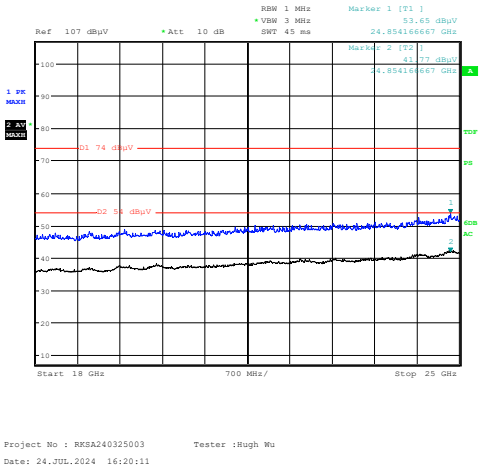


Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.566000	48.97	---	74.00	25.03	H	0.2
2483.566000	---	39.22	54.00	14.78	H	0.2
2493.214000	45.86	---	74.00	28.14	H	0.2
2493.214000	---	41.23	54.00	12.77	H	0.2

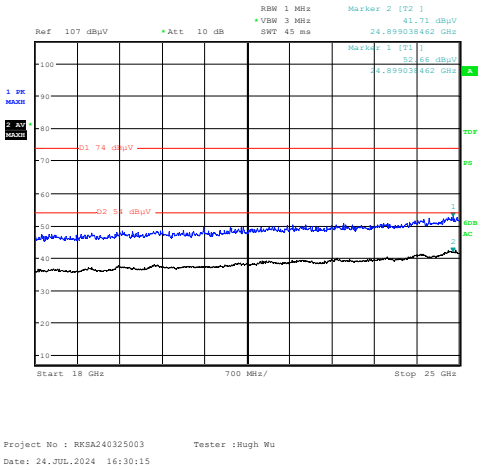
18GHz-25GHz: *EUT operation mode: Transmitting in Low channel of 8DPSK mode (Worst case)*

Horizontal



Project No : RKSA240325003 Tester :Hugh Wu
Date: 24.JUL.2024 16:20:11

Vertical



Project No : RKSA240325003 Tester :Hugh Wu
Date: 24.JUL.2024 16:30:15

Note: The test distance is 3m. The limit is 74dBµV/m(Peak) and 54dBµV/m(Average).

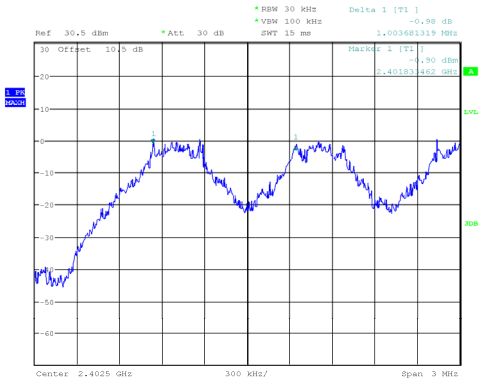
CHANNEL SEPARATION TEST

EUT operation mode: Transmitting

Mode	Channel	Channel frequency (MHz)	Result (MHz)	Limit (MHz)
GFSK	Low	2402-2403	1.004	0.644
	Middle	2441-2442	1.005	0.650
	High	2480-2479	1.000	0.682
π/4 DQPSK	Low	2402-2403	1.005	0.916
	Middle	2441-2442	1.000	0.916
	High	2480-2479	1.005	0.916
8DPSK	Low	2402-2403	1.005	0.900
	Middle	2441-2442	1.000	0.904
	High	2480-2479	1.000	0.904

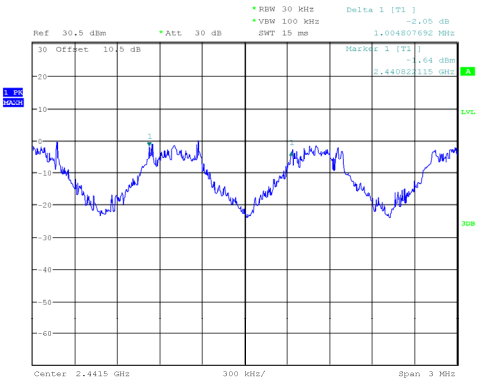
Note: Limit = 20 dB bandwidth*2/3

BDR (GFSK): Low Channel



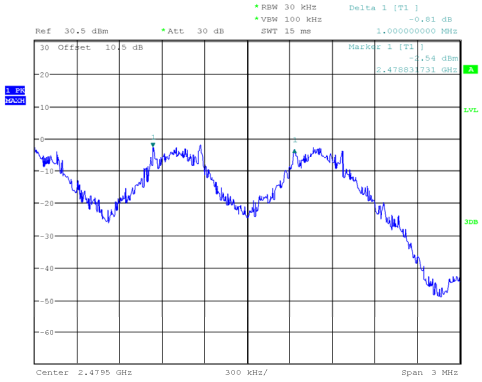
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 14:52:41

BDR (GFSK): Middle Channel



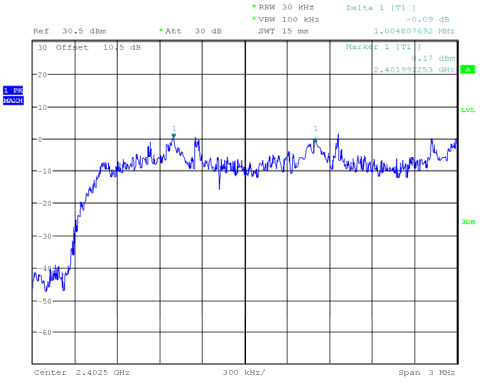
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:00:08

BDR (GFSK): High Channel



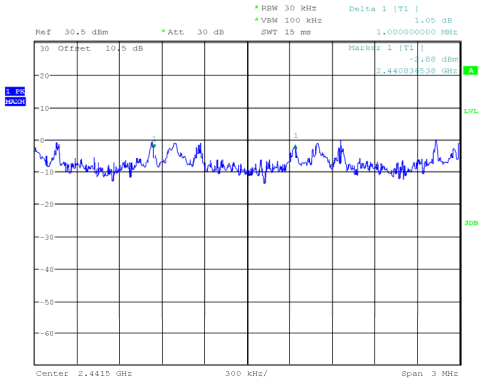
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:05:07

EDR (π/4-DQPSK): Low Channel



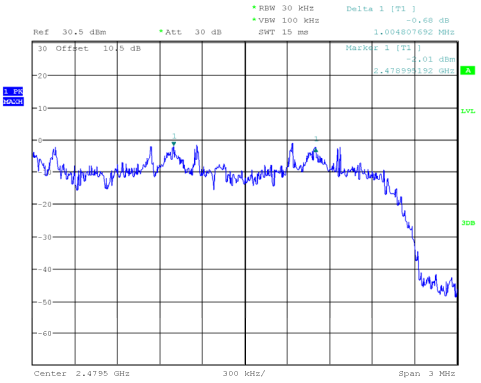
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:17:43

EDR (π/4-DQPSK): Middle Channel



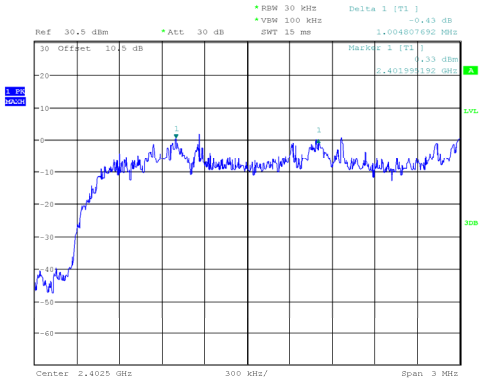
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:23:49

EDR (π/4-DQPSK): High Channel



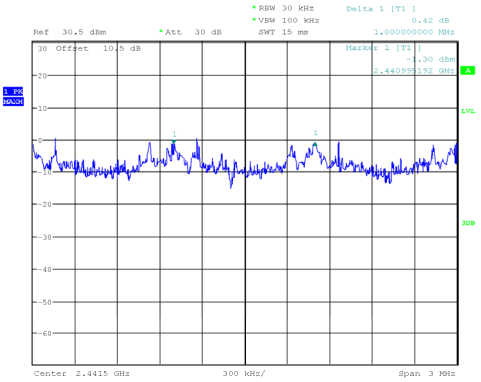
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:29:26

EDR (8DPSK): Low Channel



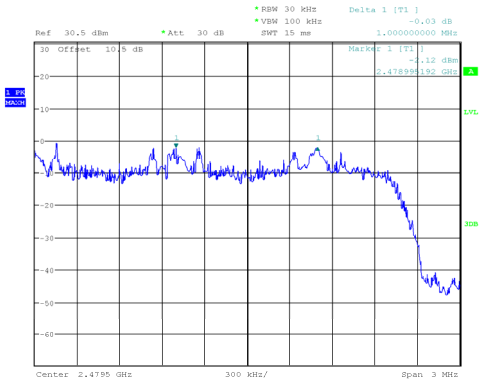
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:35:15

EDR (8DPSK): Middle Channel



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:44:59

EDR (8DPSK): High Channel



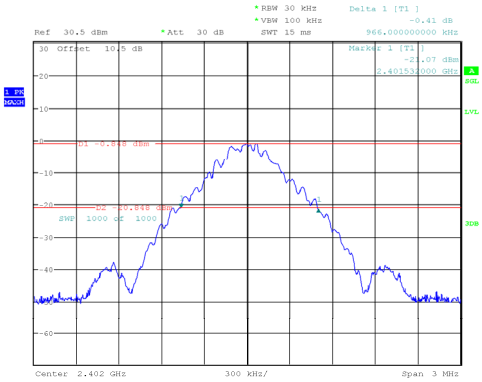
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 15:51:07

20 dB BANDWIDTH TEST

EUT operation mode: Transmitting

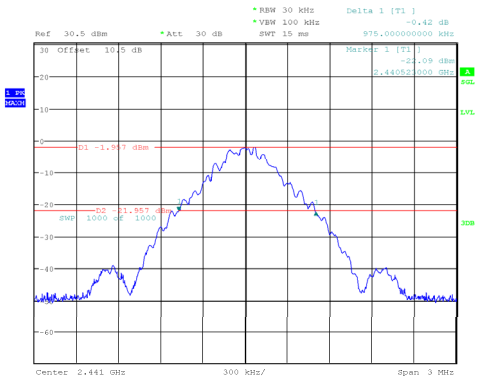
Mode	Channel	Frequency (MHz)	20 dB Emission Bandwidth (MHz)
BDR (GFSK)	Low	2402	0.966
	Middle	2441	0.975
	High	2480	1.023
EDR (π/4-DQPSK)	Low	2402	1.374
	Middle	2441	1.374
	High	2480	1.374
EDR (8DPSK)	Low	2402	1.350
	Middle	2441	1.356
	High	2480	1.356

BDR (GFSK): Low Channel



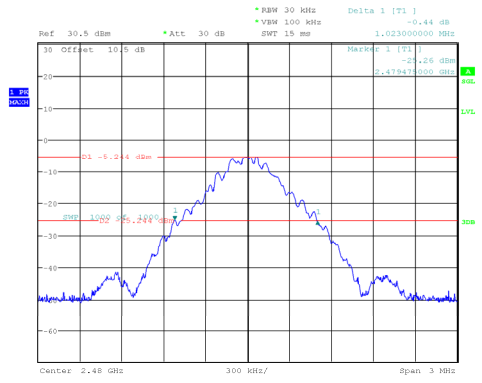
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:17:36

BDR (GFSK): Middle Channel



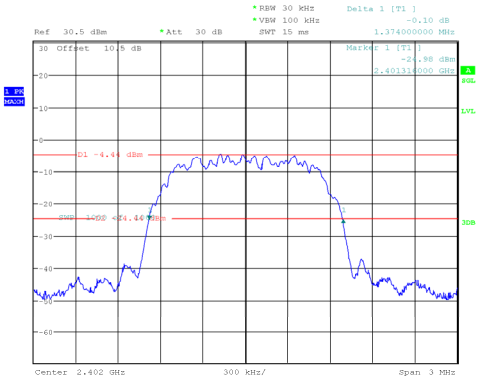
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:24:23

BDR (GFSK): High Channel



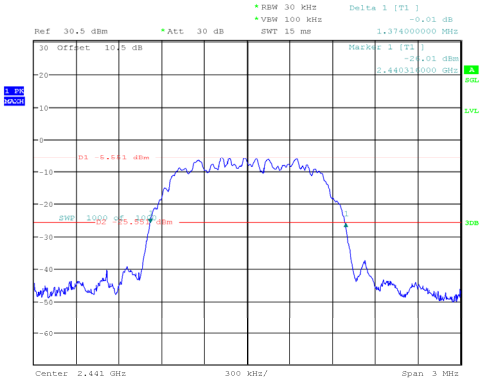
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:41:20

EDR (π/4-DQPSK): Low Channel



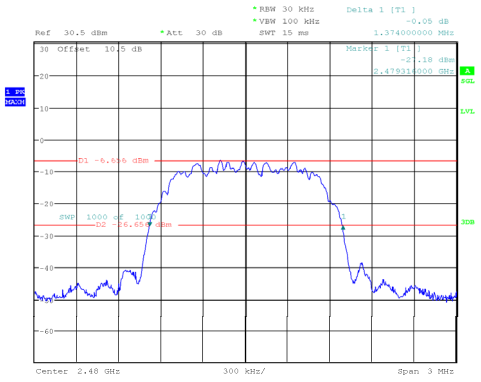
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:58:56

EDR(π/4-DQPSK): Middle Channel



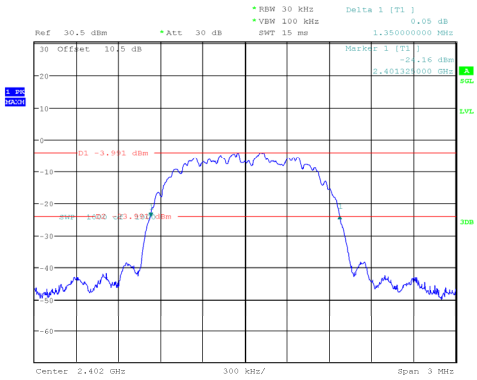
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:06:24

EDR (π/4-DQPSK): High Channel



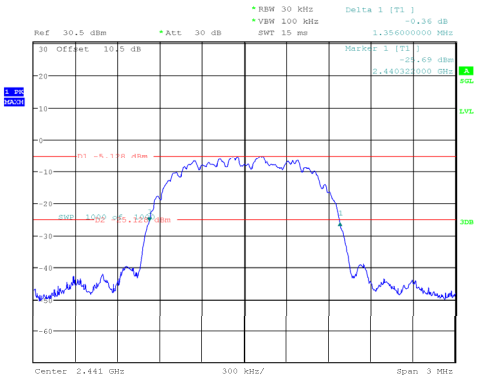
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:11:29

EDR (8DPSK): Low Channel



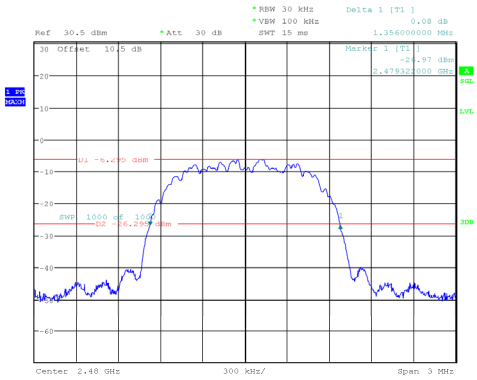
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 13:15:26

EDR (8DPSK): Middle Channel



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:41:26

EDR (8DPSK): High Channel



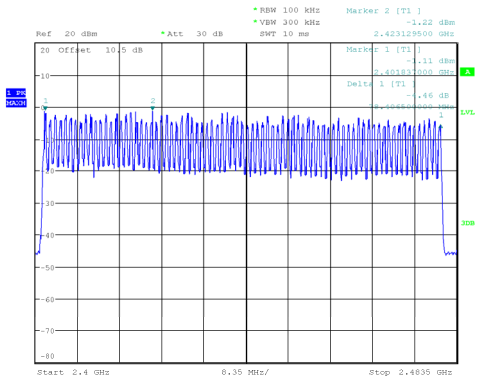
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:46:25

QUANTITY OF HOPPING CHANNEL TEST

EUT operation mode: Hopping

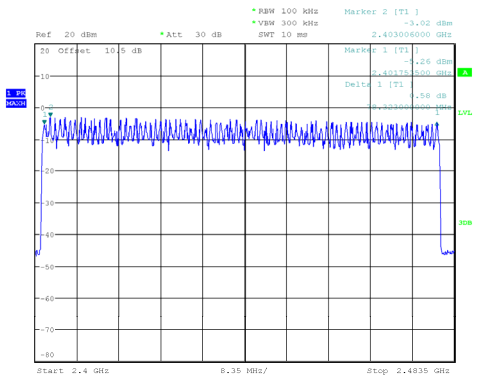
Mode	Frequency Range (MHz)	Number of Hopping Channel (CH)	Limit (CH)
BDR (GFSK)	2400-2483.5	79	≥15
EDR (π/4-DQPSK)	2400-2483.5	79	≥15
EDR (8DPSK)	2400-2483.5	79	≥15

BDR (GFSK):Number of Hopping Channels



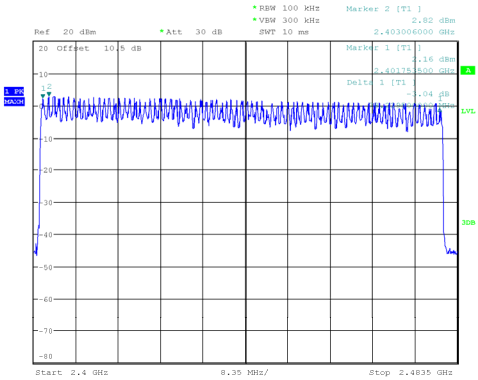
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:51:11

EDR (π/4-DQPSK): Number of Hopping Channels



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:29:01

EDR (8DPSK): Number of Hopping Channels



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 12:00:45

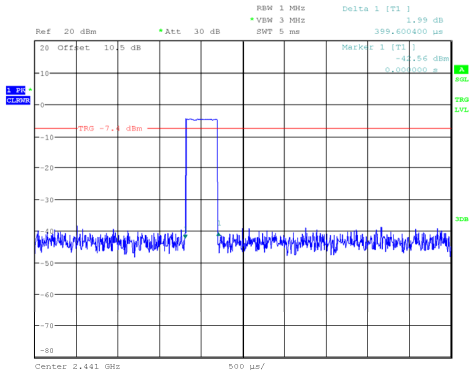
TIME OF OCCUPANCY (DWELL TIME)

EUT operation mode: Hopping

Mode		Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
BDR (GFSK)	DH1	Middle	0.400	0.128	0.4	Pass
	DH3	Middle	1.658	0.265	0.4	Pass
	DH5	Middle	2.925	0.312	0.4	Pass
EDR (π/4-DQPSK)	2DH1	Middle	0.410	0.131	0.4	Pass
	2DH3	Middle	1.663	0.266	0.4	Pass
	2DH5	Middle	2.922	0.312	0.4	Pass
EDR (8DPSK)	3DH1	Middle	0.410	0.131	0.4	Pass
	3DH3	Middle	1.674	0.268	0.4	Pass
	3DH5	Middle	2.930	0.313	0.4	Pass

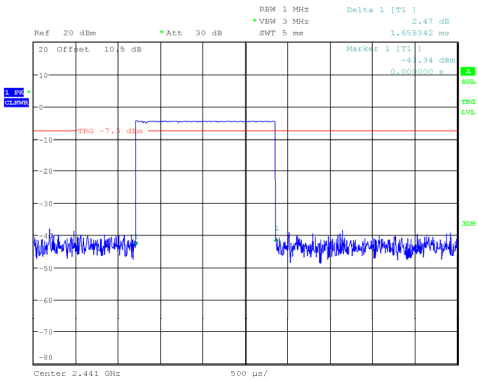
Note:
DH1: Dwell time = Pulse time*(1600/2/79)*31.6S
DH3: Dwell time = Pulse time*(1600/4/79)*31.6S
DH5: Dwell time = Pulse time*(1600/6/79)*31.6S
2DH1: Dwell time = Pulse time*(1600/2/79)*31.6S
2DH3: Dwell time = Pulse time*(1600/4/79)*31.6S
2DH5: Dwell time = Pulse time*(1600/6/79)*31.6S
3 DH1: Dwell time = Pulse time*(1600/2/79)*31.6S
3DH3: Dwell time = Pulse time*(1600/4/79)*31.6S
3DH5: Dwell time = Pulse time*(1600/6/79)*31.6S

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



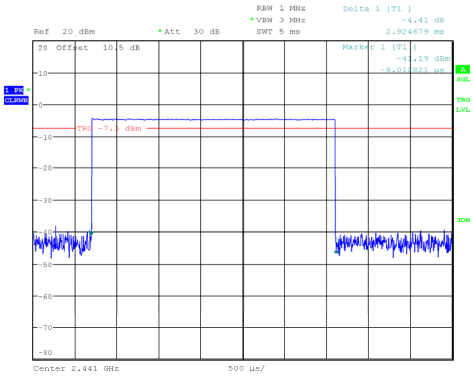
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:53:19

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



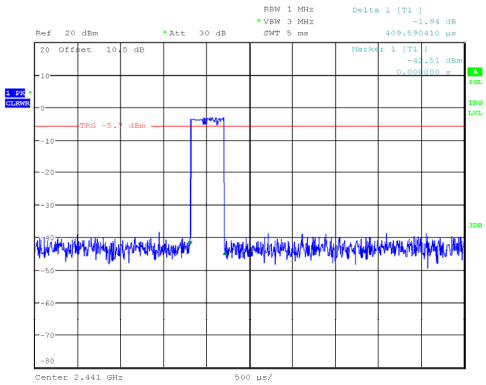
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:54:43

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



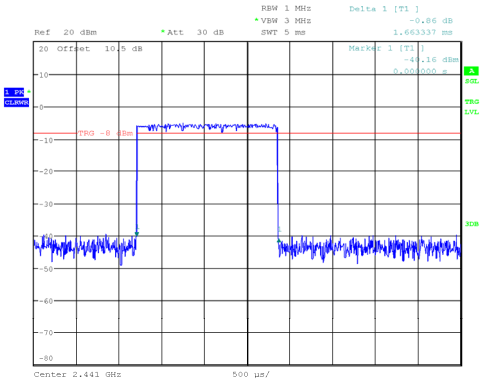
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:56:38

EDR (π/4-DQPSK): Pulse time, Middle Channel, 2DH1



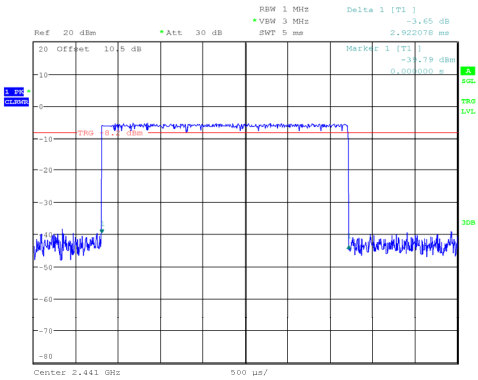
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:29:47

EDR (π/4-DQPSK): Pulse time, Middle Channel, 2DH3



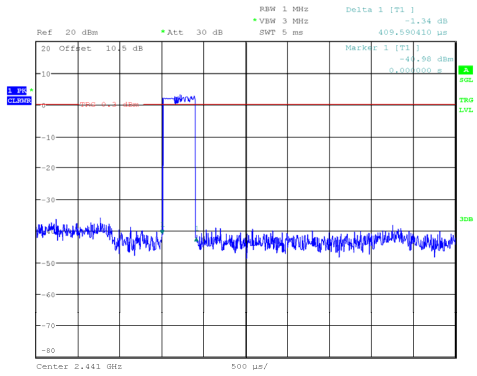
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:31:56

EDR (π/4-DQPSK): Pulse time, Middle Channel, 2DH5



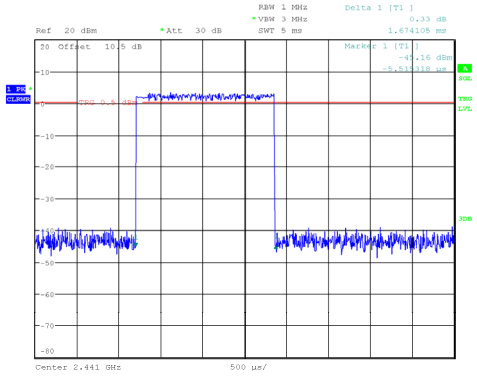
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:33:17

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



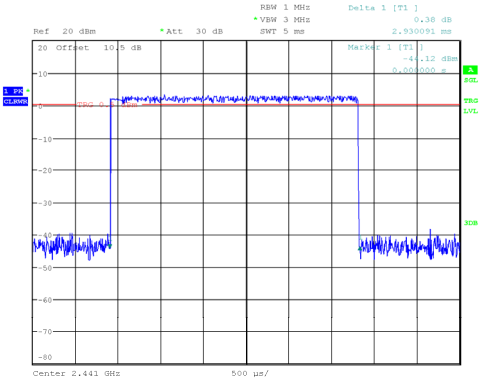
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 12:01:38

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



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 13:11:38

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



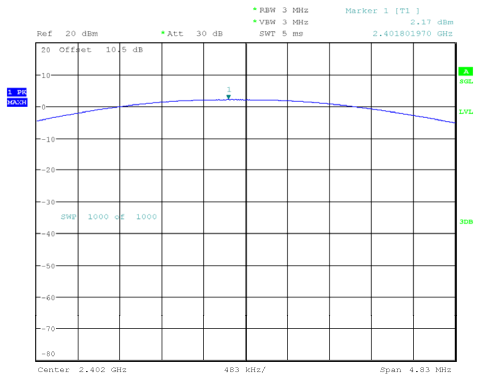
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 13:13:14

PEAK OUTPUT POWER MEASUREMENT

EUT operation mode: Transmitting

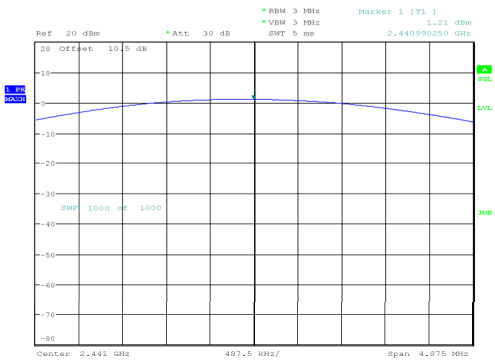
Mode	Channel	Frequency (MHz)	Result (dBm)	Limit (dBm)
GFSK	Low	2402	2.17	21
	Middle	2441	1.21	
	High	2480	1.26	
π/4 DQPSK	Low	2402	4.35	
	Middle	2441	3.35	
	High	2480	2.22	
8DPSK	Low	2402	5.15	
	Middle	2441	4.00	
	High	2480	2.88	

BDR (GFSK): 2402MHz



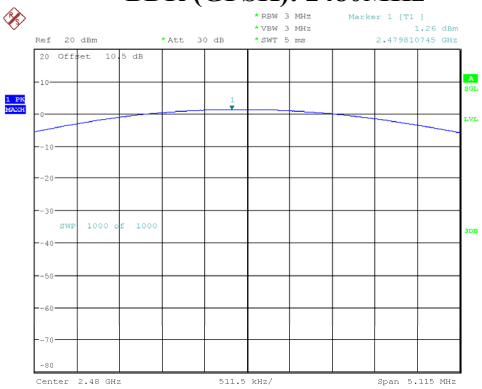
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:21:25

BDR (GFSK): 2441MHz



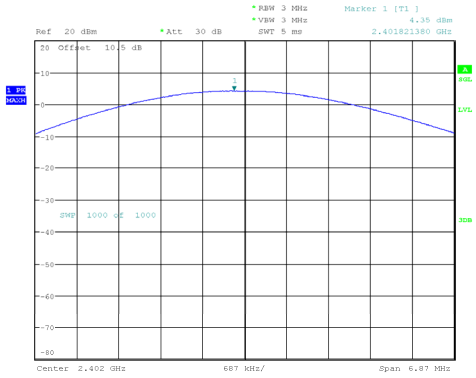
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 13:31:08

BDR (GFSK): 2480MHz



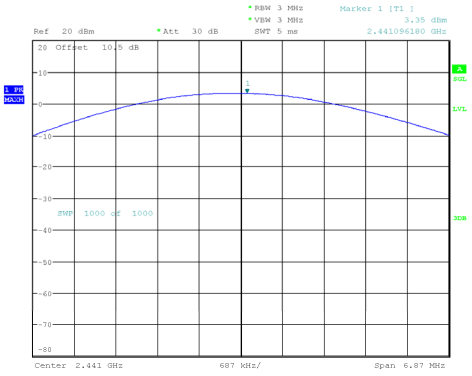
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 13:35:24

EDR(π/4-DQPSK): 2402MHz



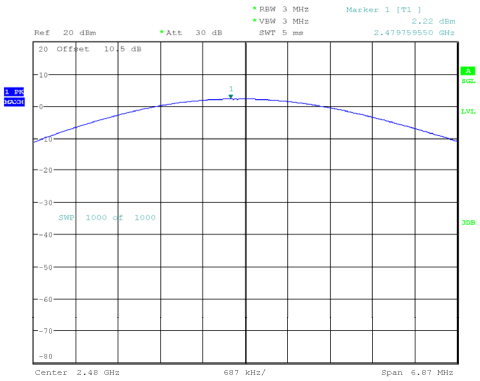
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:02:44

EDR(π/4-DQPSK): 2441MHz



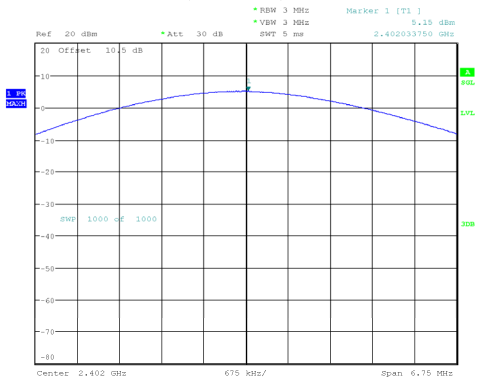
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:08:39

EDR(π/4-DQPSK): 2480MHz



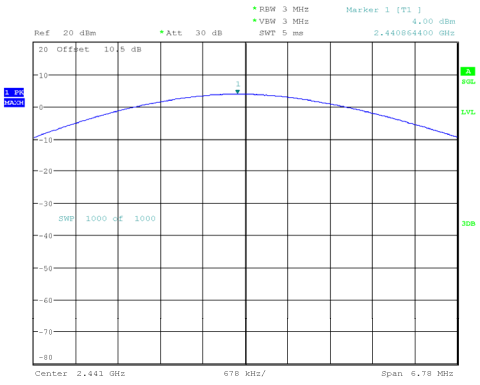
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:16:21

EDR(8DPSK): 2402MHz



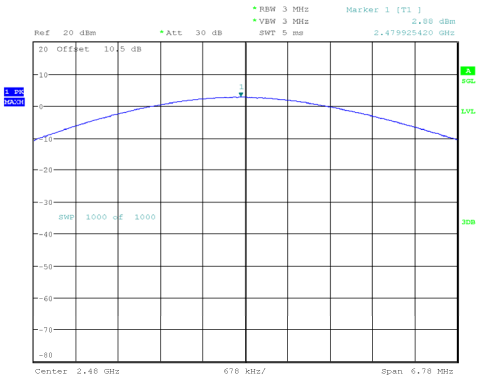
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 13:19:19

EDR(8DPSK):2441MHz



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:43:42

EDR(8DPSK): 2480MHz



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:50:53

BAND EDGES

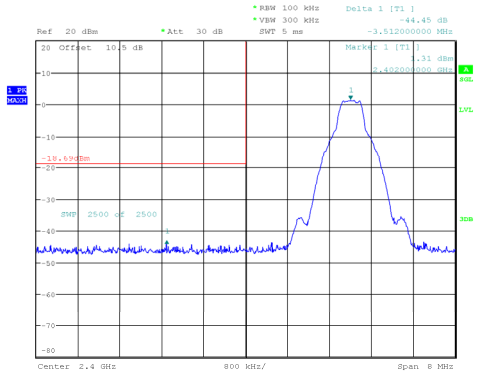
EUT operation mode: Transmitting & Hopping

Test Result: Compliant.

Mode	Channel	Frequency (MHz)	Result (dBc)	Limit (dBc)
GFSK	Low	2402	44.45	20
	High	2480	42.19	
π/4 DQPSK	Low	2402	44.02	
	High	2480	41.78	
8DPSK	Low	2402	44.28	
	High	2480	42.14	
GFSK (Hopping)	Low	2402	44.12	
	High	2480	41.53	
π/4 DQPSK (Hopping)	Low	2402	46.30	
	High	2480	44.66	
8DPSK (Hopping)	Low	2402	46.54	
	High	2480	44.72	

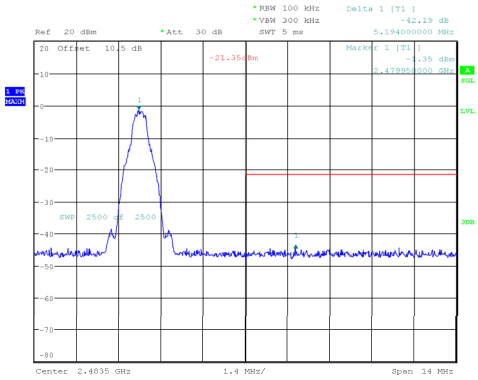
Band Edge

BDR (GFSK): Left Side



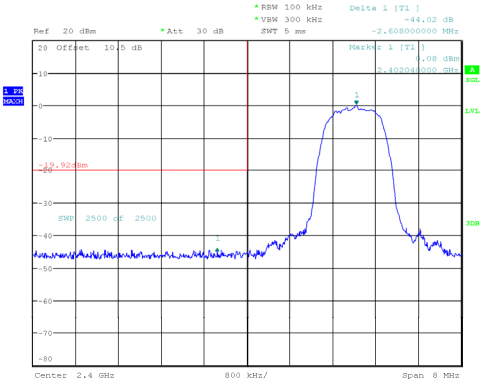
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:19:08

BDR (GFSK): Right Side



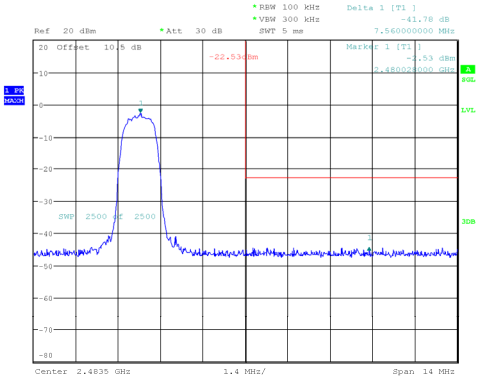
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:31:55

EDR (π/4-DQPSK): Left Side



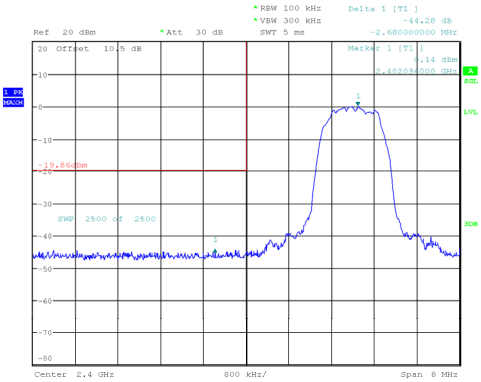
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:00:28

EDR (π/4-DQPSK): Right Side



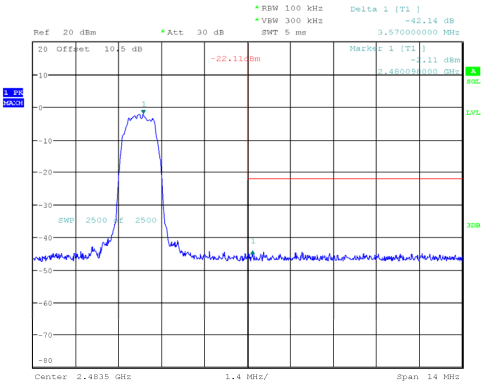
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:13:39

EDR (8DPSK): Left Side



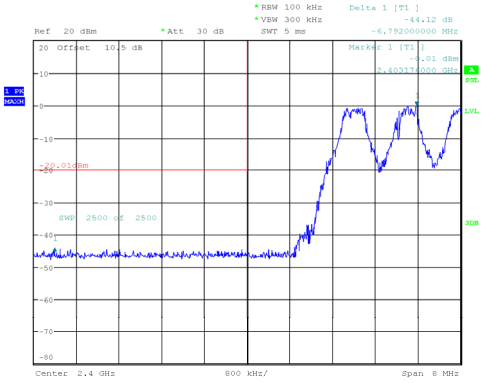
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 13:16:59

EDR (8DPSK): Right Side



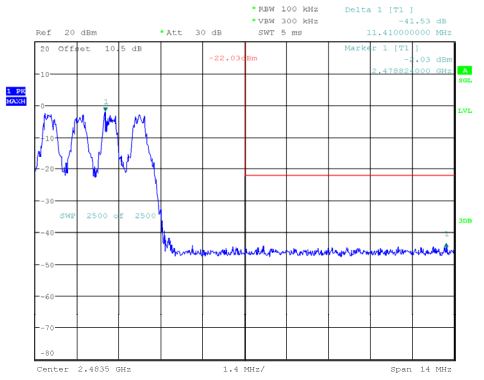
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:48:35

BDR (GFSK): Left Side - Hopping



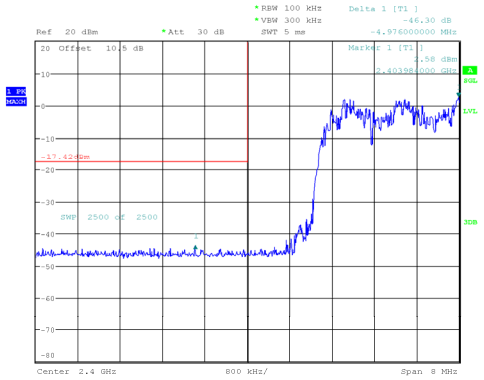
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:44:16

BDR (GFSK): Right Side- Hopping



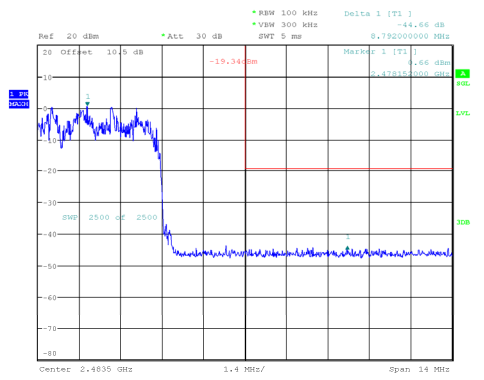
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 10:46:49

EDR (π/4-DQPSK): Left Side- Hopping



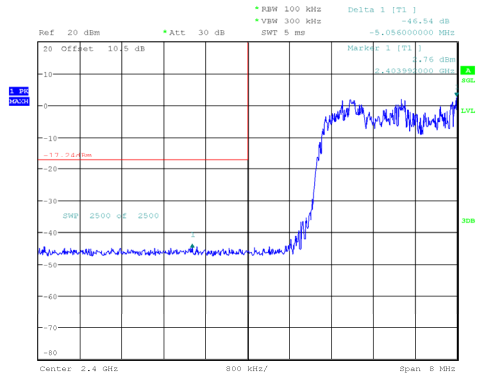
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:20:52

EDR (π/4-DQPSK): Right Side- Hopping



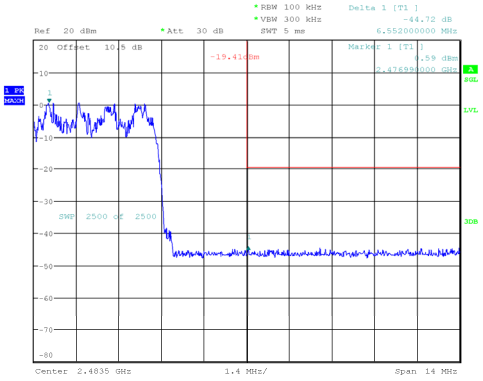
ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:23:08

EDR (8DPSK): Left Side- Hopping



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:54:32

EDR (8DPSK): Right Side- Hopping



ProjectNo.:RKSA240325003 Tester:Bard Liu
Date: 22.JUL.2024 11:56:51

EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT A - E UT EXTERNAL PHOTOGRAPHS and EXHIBIT B - EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT C - TEST SETUP PHOTOGRAPHS.

Declarations

1. The laboratory is not responsible for the authenticity of any information provided by the applicant. Information from the applicant that may affect test results is marked with "★".

2. The test data was only valid for the test sample(s).

3. 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.

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

5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.

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