FCC Radio Test Report

FCC ID	:	**COF-WMBACMT63**
Equipment	:	**802.11a/b/g/n/ac dual-band Wi-Fi + BT 5.1 Module**
Brand Name	:	**USI**
Model Name	:	**WM-BAC-MT-63**
Applicant	:	**Universal Global Scientific Industrial Co., Ltd. 141, Lane 351, Sec. 1, Taiping Road., Tsaotuen, Nantou 542007, Taiwan**
Manufacturer	:	**Universal Global Scientific Industrial Co., Ltd. 141, Lane 351, Sec. 1, Taiping Road., Tsaotuen, Nantou 542007, Taiwan**
Standard	:	**47 CFR FCC Part 15.247**

The product was received on Apr. 08, 2021, and testing was started from Apr. 27, 2021 and completed on Jun. 21, 2021. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. Hsinhua Laboratory

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)

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PHOTOGRAPHS OF EUT V01

History of this test report

Report No.	Version	Description	Issued Date
FR133036AD	01	Initial issue of report	Sep. 03, 2021

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	20dB Bandwidth	PASS	-
3.2	15.247(a)	Carrier Frequency Separation	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(a)	Number of Hopping Frequencies and Hopping Bandedge	PASS	-
3.5	15.247(a)	Time of Occupancy (Dwell Time)	PASS	-
3.6	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.7	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and explanations:
None

Reviewed by: Ben Tseng

Report Producer: Jenny Yang

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Version	Ch. Frequency (MHz)	Channel Number
2400-2483.5	BR / EDR	2402-2480	0-78 [79]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-BR(1Mbps)	1	1TX
2.4-2.4835GHz	BT-EDR(2Mbps)	1	1TX
2.4-2.4835GHz	BT-EDR(3Mbps)	1	1TX

Note:
- Bluetooth BR uses a GFSK (1Mbps).
- Bluetooth EDR uses a combination of π/4-DQPSK (2Mbps) and 8DPSK (3Mbps).
- Bluetooth BR/EDR uses as a system using FHSS modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	ARISTOTLE	RFA-25-C53-B32C255V2	Dipole	Reverse SMA
2	ARISTOTLE	RFA-25-C53-B32C255V2	Dipole	Reverse SMA
3	ARISTOTLE	RFA-25-C53-B32C255V2	Dipole	Reverse SMA

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	3.5	5	-
2	2	3.5	5	-
3	1	-	-	3.5

Note 1: The EUT has three antennas.

For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT mode (2TX/2RX)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Only Ant. 3 (port 1) can be used as transmitting/receiving.

For 5GHz function:

For IEEE 802.11 a/n/ac mode (2TX/2RX)

Ant. 1 (port 1) and Ant. 2 (port 2) could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition				
EUT Power Type	From Test Fixture			
EUT Function	☒	Point-to-multipoint	☐	Point-to-point

Type of EUT		
☒	Stand-alone	
☐	Combined (EUT where the radio part is fully integrated within another device)	
	Combined Equipment - Brand Name / Model No.:	…
☐	Plug-in radio (EUT intended for a variety of host systems)	
	Host System - Brand Name / Model No.:	…
☐	Other:	

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-BR(1Mbps)	0.769	1.14	2.884m	1k
BT-EDR(2Mbps)	0.77	1.14	2.887m	1k
BT-EDR(3Mbps)	0.771	1.13	2.889m	1k

Note. If DC < 0.98, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- KDB 558074 D01 v05r02
- KDB 414788 D01 v01r01

1.3 Testing Location Information

Test Lab.：Sporton International Inc. Hsinhua Laboratory				
☒ Hsinhua (**TAF:** 3785)	**ADD:** No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)			
	TEL: 886-3-327-3456		**FAX:** 886-3-327-0973	
Test site Designation No. TW3785 with FCC.				
Test Condition	**Test Site No.**	**Test Engineer**	**Test Environment**	**Test Date**
AC Conduction	CO04-HY	Edward Wang	21.2~22.3°C / 58~63%	28/Apr/2021
RF Conducted	TH06-HY	Johnny Yu	20.1~26.9°C / 50~60%	27/Apr/2021~21/Jun/2021
Radiated	03CH03-HY	Billy Wang	20.1~26.9°C / 50~60%	27/Apr/2021~18/Jun/2021
☐ Wen 33rd.St. (**TAF:** 3785)	**ADD:** No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)			
	TEL: 886-3-318-0787		**FAX:** 886-3-318-0287	
Test site Designation No. TW0008 with FCC.				

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	**Uncertainty**	**Remark**
Conducted Emission (150kHz ~ 30MHz)	0.9 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	2.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.0 dB	Confidence levels of 95%
Temperature	0.41 °C	Confidence levels of 95%
Humidity	3.4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Test Software Version	Dos

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	7
2440MHz	7
2480MHz	7
BT-EDR(2Mbps)	-
2402MHz	7
2440MHz	7
2480MHz	7
BT-EDR(3Mbps)	-
2402MHz	7
2440MHz	7
2480MHz	7

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	CTX
1	Test Fixture mode

The Worst Case Mode for Following Conformance Tests	
Tests Item	20dB Bandwidth Carrier Frequency Separation Maximum Conducted Output Power Number of Hopping Frequencies Hopping Bandedge Time of Occupancy (Dwell Time) Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains ☒ Non-adaptive frequency hopping systems (Non-AFH) ☐ adaptive frequency hopping systems (AFH)

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1	Test Fixture mode
Operating Mode > 1GHz	CTX
Orthogonal Planes of EUT	**Z Plane**

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Operating Mode	CTX
1	Bluetooth+WLAN 2.4GHz
2	Bluetooth+WLAN 5GHz
Refer to Sporton Test Report No.: FA133036 for Co-location RF Exposure Evaluation.	

2.3 Support Equipment

Support Equipment – AC Conduction					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	DC Power Supply	G.W.	GPS-3030DD	-	-
2	DC Power cable(+)	MiSUMi	WTN1227-RED	-	-
3	DC Power cable(-)	MiSUMi	WTN1227-BLACK	-	-
4	DC Power cable(+)	-	-	-	Note 1
5	DC Power cable(-)	-	-	-	Note 1
6	Test Fixture	-	-	-	Note 1

Note 1: Provided by Customer.

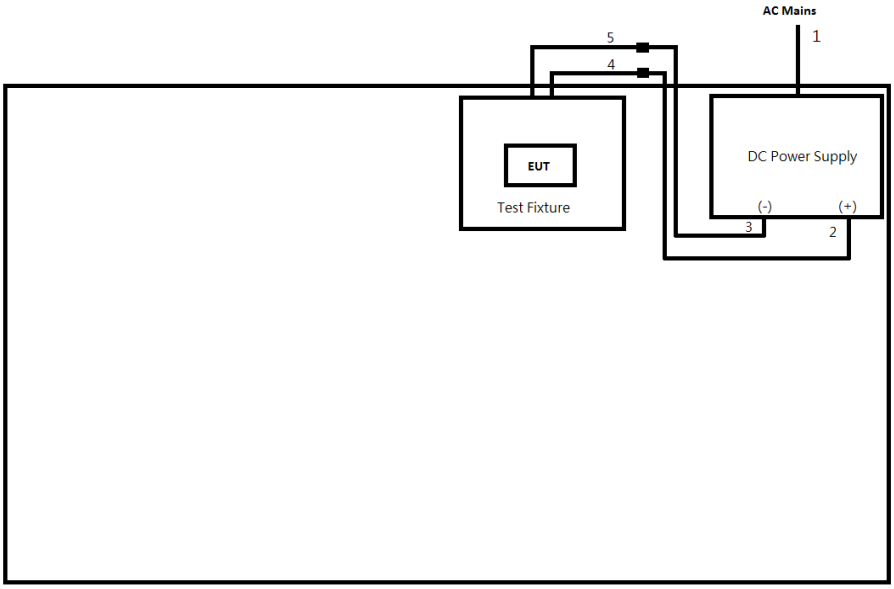
Support Equipment – Conducted					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	Notebook	DELL	E5410	-	-
2	Adapter for NB	DELL	HA65NM130	-	-
3	DC Power Supply	GW	GPS-3030DD	-	-

Support Equipment – Radiated					
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**	**Remark**
1	DC Power Supply	G.W.	GPS-3030DD	-	-
2	DC Power cable(+)	MiSUMi	WTN1227-RED	-	-
3	DC Power cable(-)	MiSUMi	WTN1227-BLACK	-	-
4	DC Power cable(+)	-	-	-	Note 1
5	DC Power cable(-)	-	-	-	Note 1
6	Test Fixture	-	-	-	Note 1

Note 1: Provided by Customer.

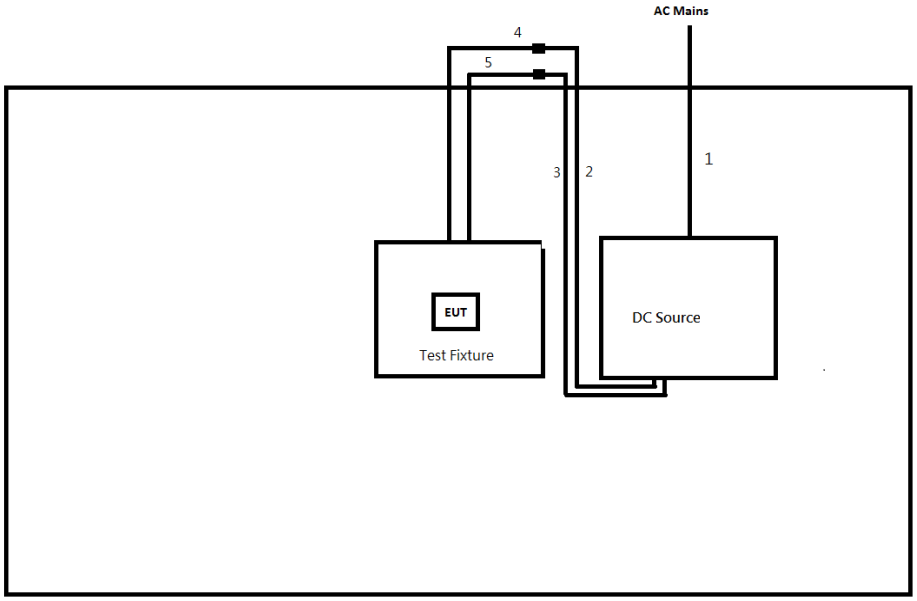
2.4 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.0	-
2	DC Power cable(+)	No	1.0	-
3	DC Power cable(-)	No	1.0	-
4	DC Power cable(+)	No	1.0	-
5	DC Power cable(-)	No	1.0	-

Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.0	-
2	DC Power cable(+)	No	1.0	-
3	DC Power cable(-)	No	1.0	-
4	DC Power cable(+)	No	1.0	-
5	DC Power cable(-)	No	1.0	-

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

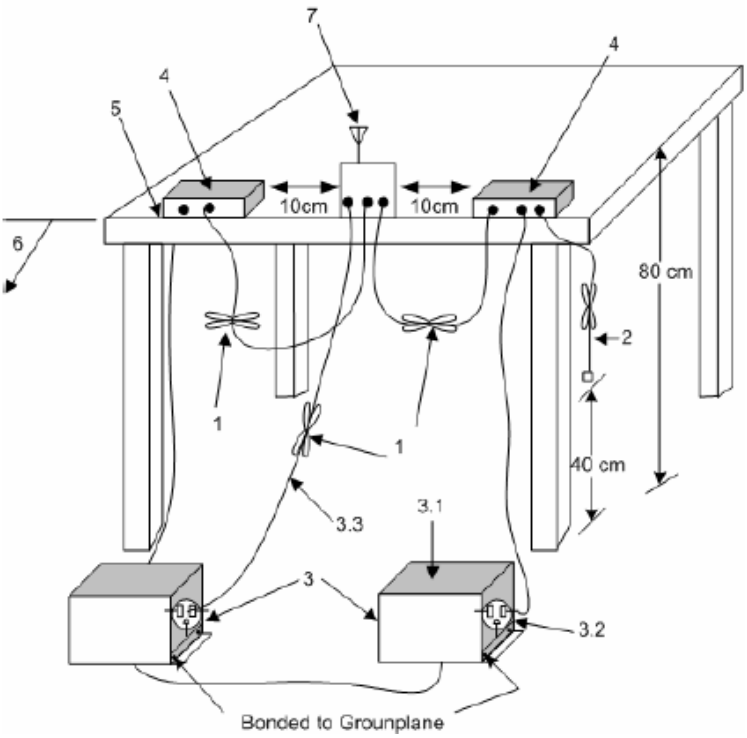
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Raw(Read Level) +LISN(LISN Factor) + CL(Cable Loss) + AT(Attenuator).

3.1.5 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.
2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
3.1—All other equipment powered from additional LISN(s).
3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
3.3—LISN at least 80 cm from nearest part of EUT chassis.
4—Non-EUT components of EUT system being tested.
5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).
	▪ 75>N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).
N:Number of Hopping Frequencies; **ChS**: Hopping Channel Separation	

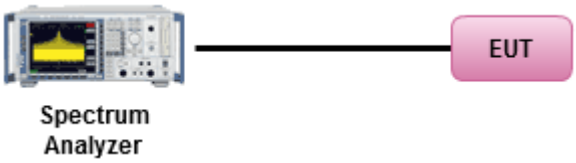
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 6.9.2 for 20 dB bandwidth measurement.
▪ Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement.

3.2.4 Test Setup

20dB Bandwidth and Carrier Frequency Separation


3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75; Power 30dBm; EIRP 36dBm
	▪ 75 >N ≥ 15; Power 21dBm; EIRP 27dBm
N:Number of Hopping Frequencies	

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.5 for output power measurement.

3.3.4 Test Setup

Maximum Conducted Output Power (Peak Power Meter)

3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

Number of Hopping Frequencies Limit	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75 and ChS ≥ MAX (20 dB bandwidth, 25 kHz).
	▪ 75 >N ≥ 15 and ChS ≥ MAX (20 dB bandwidth 2/3,25 kHz).
N:Number of Hopping Frequencies; **ChS** : Hopping Channel Separation	

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

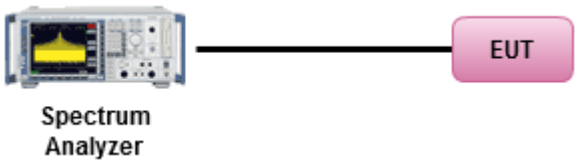
3.4.3 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.4.4 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.3 for number of hopping frequencies measurement.
▪ Refer as ANSI C63.10-2013, clause 7.8.6 for hopping frequencies Bandedge measurement.

3.4.5 Test Setup

Number of Hopping Frequencies and Hopping Frequencies Bandedge


3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

Time of Occupancy (Dwell Time) Limit for Frequency Hopping Systems	
▪ 2400-2483.5 MHz Band:	
	▪ N ≥ 75; 0.4s in N x 0.4 period
	▪ 75 >N ≥ 15; 0.4s in N x 0.4 period
N:Number of Hopping Frequencies	

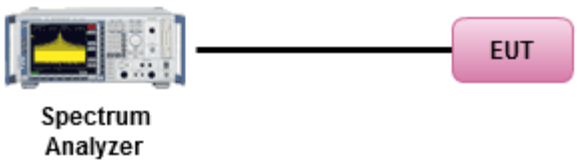
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
▪ Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement.	
▪ Bluetooth ACL packets can be 1, 3, or 5 time slots. Following as dwell time. Operate DH5 at maximum dwell time and maximum duty cycle.	
	▪ The DH5 packet can cover up to 5 time slots. Operate DH5 at maximum dwell time and maximum duty cycle. A maximum length packet has duration of 5 time slots. The hopping rate is 1600 hops/second so the maximum dwell time is 5/1600 seconds, or 3.125ms.DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel.

3.5.4 Test Setup

Time of Occupancy (Dwell Time)


3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	**Limit (dB)**
Peak output power procedure	20
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.	

3.6.2 Measuring Instruments

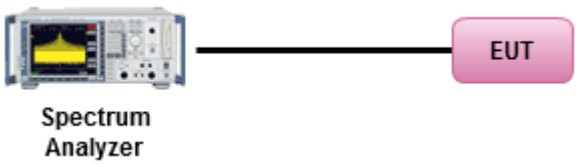
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 7.8.8 for unwanted emissions into non-restricted bands.

3.6.4 Test Setup

Emissions in Non-restricted Frequency Bands



3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F

3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.7.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

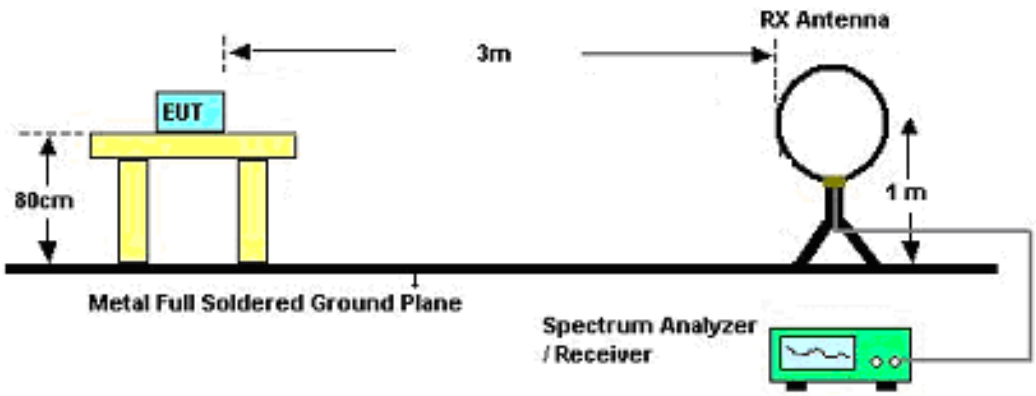
Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.
▪	KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.
	▪ Based on FCC 15.31(f)(2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	▪ Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

3.7.4 Measurement Results Calculation

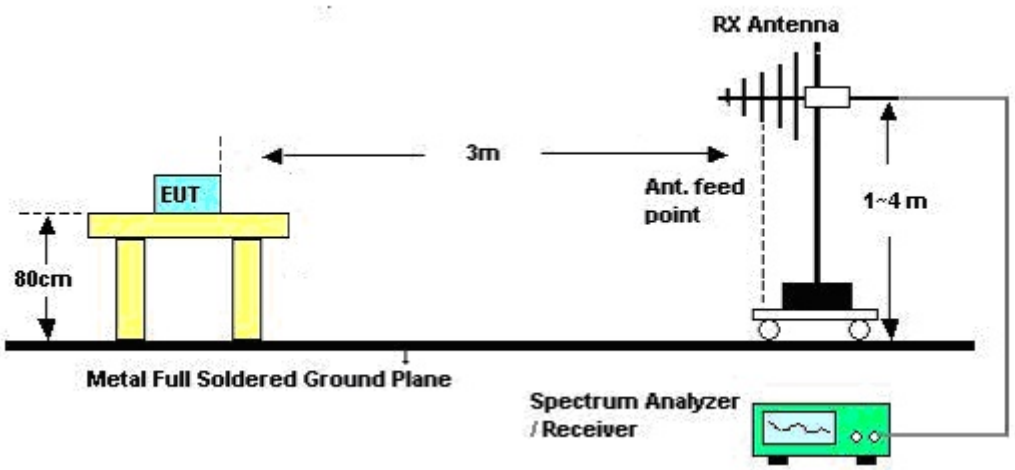
The measured Level is calculated using:
Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamp Factor)

3.7.5 Test Setup

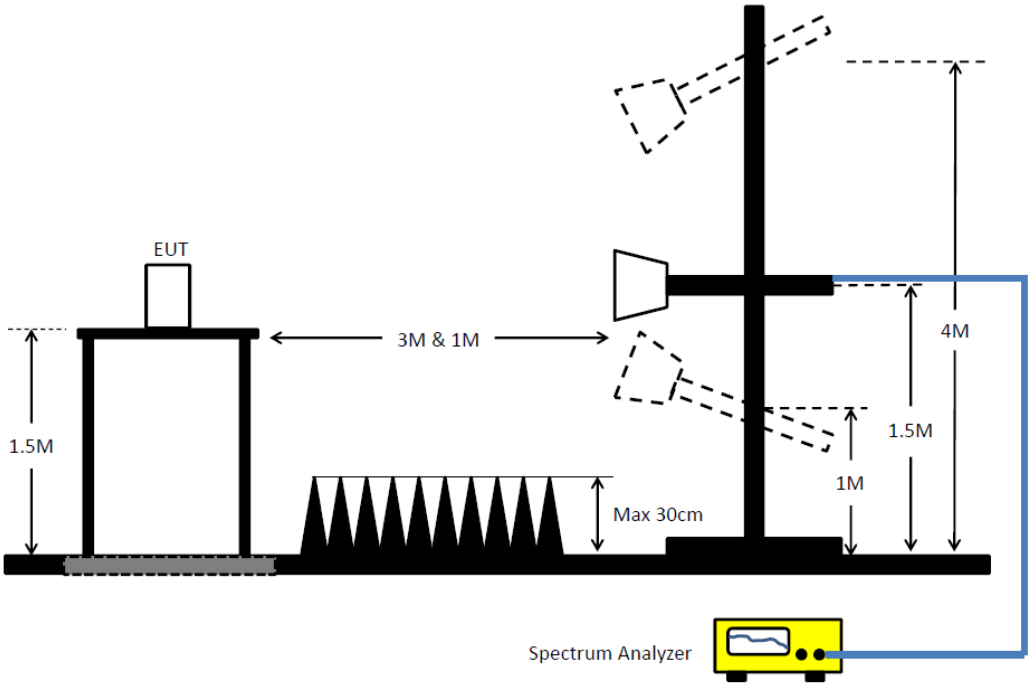
Emissions in Restricted Frequency Bands
9kHz ~30MHz



30MHz~1GHz



Above 1GHz



3.7.6 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.7.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR3	102051	9kHz ~ 3.6GHz	29/May/2020	28/May/2021
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	11/Nov/2020	10/Nov/2021
RF Cable 5m	TITAN	TITAN	CO04-cable-01	0.1MHz~200MHz	03/Mar/2021	02/Mar/2022
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9kHz ~ 30MHz	21/Sep/2020	20/Sep/2021

Instrument for Conducted Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV 40	101013	10Hz~40GHz	30/Mar/2021	29/Mar/2022
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	20/Oct/2020	19/Oct/2021
Pulse Sensor	Anritsu	MA2411B	0917017	300MHz~40GHz	23/Feb/2021	22/Feb/2022
Power Meter	Anritsu	ML2495A	0949003	300MHz~40GHz	23/Feb/2021	22/Feb/2022

Instrument for Radiated Test

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	06/Aug/2020	05/Aug/2021
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz~18GHz 3m	04/Aug/2020	03/Aug/2021
Signal Analyzer	R&S	FSV40	101500	10Hz~40GHz	19/Aug/2020	18/Aug/2021
Amplifier	HP	8447D	2944A08033	10kHz~1.3GHz	13/Apr/2021	12/Apr/2022
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz~26.5GHz	06/Oct/2020	05/Oct/2021
Bilog Antenna & 5dB Attenuator	SCHAFFNER / MTJ	CBL 6112B / MTJ6102-05	2723 / 2	30MHz~1GHz	06/Sep/2020	05/Sep/2021
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz~18GHz	24/Mar/2021	23/Mar/2022
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz~30MHz	19/Jun/2020	18/Jun/2021
RF Cable-R03m	Jye Bao	RG142	MY37335/4+CB021 -1+CB021-2	30MHz~1GHz	17/Mar/2021	16/Mar/2022
RF CABLE 5+6m	HUBER+ SUHNER	SUOFLEX 104	SN MY38596/4+SN 804300/4	1GHz~40GHz	04/Aug/2020	03/Aug/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	15GHz~40GHz	11/Mar/2021	10/Mar/2022
Microwave Premplifier	EMC INSTRUMENTS	EM18G40G	060604	18GHz ~ 40GHz	09/Mar/2021	08/Mar/2022
Loop Antenna	TESEQ	HLA 6120	31244	9kHz~30MHz	16/Mar/2021	15/Mar/2022
EMI Test Receiver	R&S	ESR3	102051	9kHz~3.6GHz	29/May/2020	28/May/2021

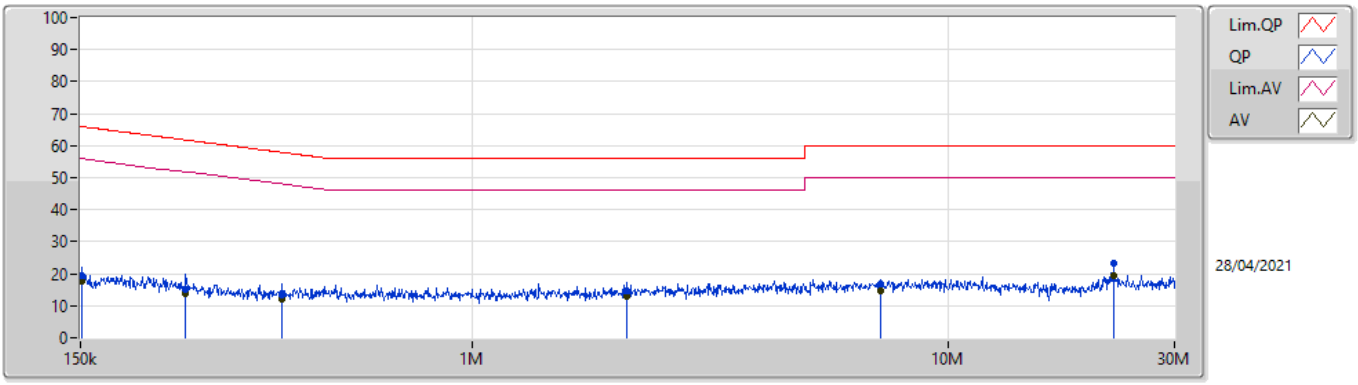
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	22.396M	19.57	50.00	-30.43	Neutral

Result

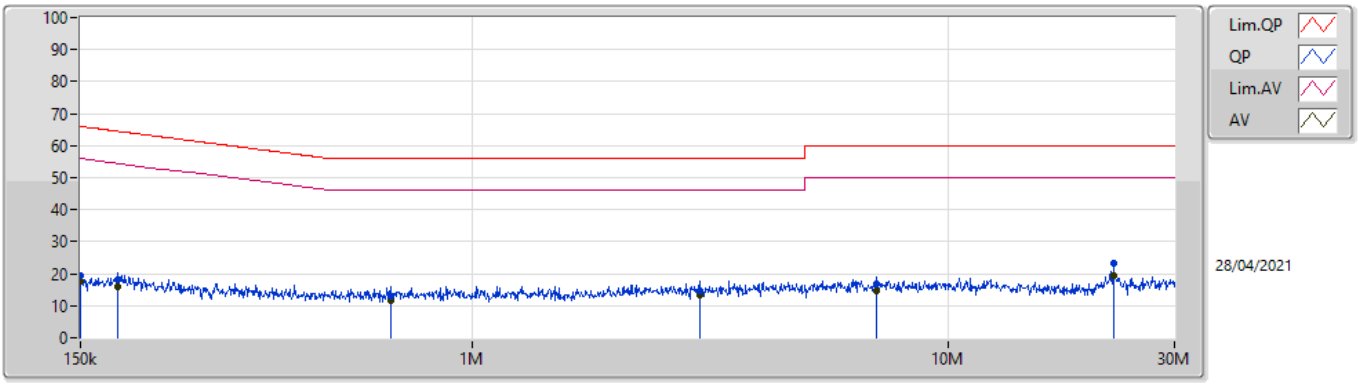
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	150.6k	19.29	65.96	-46.67	Line	-
Mode 1	Pass	AV	150.6k	17.54	55.96	-38.42	Line	-
Mode 1	Pass	QP	250.038k	15.23	61.76	-46.53	Line	-
Mode 1	Pass	AV	250.038k	13.76	51.76	-38.00	Line	-
Mode 1	Pass	QP	398.888k	13.34	57.87	-44.53	Line	-
Mode 1	Pass	AV	398.888k	12.21	47.87	-35.66	Line	-
Mode 1	Pass	QP	2.116M	14.57	56.00	-41.43	Line	-
Mode 1	Pass	AV	2.116M	12.82	46.00	-33.18	Line	-
Mode 1	Pass	QP	7.236M	16.98	60.00	-43.02	Line	-
Mode 1	Pass	AV	7.236M	14.74	50.00	-35.26	Line	-
Mode 1	Pass	QP	22.396M	23.16	60.00	-36.84	Line	-
Mode 1	Pass	AV	22.396M	19.41	50.00	-30.59	Line	-
Mode 1	Pass	QP	150k	19.32	66.00	-46.68	Neutral	-
Mode 1	Pass	AV	150k	17.62	56.00	-38.38	Neutral	-
Mode 1	Pass	QP	180.236k	18.14	64.47	-46.33	Neutral	-
Mode 1	Pass	AV	180.236k	15.79	54.47	-38.68	Neutral	-
Mode 1	Pass	QP	672.926k	13.02	56.00	-42.98	Neutral	-
Mode 1	Pass	AV	672.926k	11.84	46.00	-34.16	Neutral	-
Mode 1	Pass	QP	3.007M	14.87	56.00	-41.13	Neutral	-
Mode 1	Pass	AV	3.007M	13.19	46.00	-32.81	Neutral	-
Mode 1	Pass	QP	7.093M	17.01	60.00	-42.99	Neutral	-
Mode 1	Pass	AV	7.093M	14.78	50.00	-35.22	Neutral	-
Mode 1	Pass	QP	22.396M	23.17	60.00	-36.83	Neutral	-
Mode 1	Pass	AV	22.396M	19.57	50.00	-30.43	Neutral	-

Conducted Emissions at Powerline_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150.6k	19.29	65.96	-46.67	19.63	Line	-	-0.34	9.69	0.04	9.90
AV	150.6k	17.54	55.96	-38.42	19.63	Line	-	-2.09	9.69	0.04	9.90
QP	250.038k	15.23	61.76	-46.53	19.63	Line	-	-4.40	9.68	0.05	9.90
AV	250.038k	13.76	51.76	-38.00	19.63	Line	-	-5.87	9.68	0.05	9.90
QP	398.888k	13.34	57.87	-44.53	19.63	Line	-	-6.29	9.67	0.06	9.90
AV	398.888k	12.21	47.87	-35.66	19.63	Line	-	-7.42	9.67	0.06	9.90
QP	2.116M	14.57	56.00	-41.43	19.59	Line	-	-5.02	9.68	0.10	9.81
AV	2.116M	12.82	46.00	-33.18	19.59	Line	-	-6.77	9.68	0.10	9.81
QP	7.236M	16.98	60.00	-43.02	19.79	Line	-	-2.81	9.71	0.18	9.90
AV	7.236M	14.74	50.00	-35.26	19.79	Line	-	-5.05	9.71	0.18	9.90
QP	22.396M	23.16	60.00	-36.84	19.84	Line	-	3.32	9.63	0.31	9.90
AV	22.396M	19.41	50.00	-30.59	19.84	Line	-	-0.43	9.63	0.31	9.90

Conducted Emissions at Powerline_Mode 1



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	LISN	CL	AT
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)
QP	150k	19.32	66.00	-46.68	19.63	Neutral	-	-0.31	9.69	0.04	9.90
AV	150k	17.62	56.00	-38.38	19.63	Neutral	-	-2.01	9.69	0.04	9.90
QP	180.236k	18.14	64.47	-46.33	19.62	Neutral	-	-1.48	9.68	0.04	9.90
AV	180.236k	15.79	54.47	-38.68	19.62	Neutral	-	-3.83	9.68	0.04	9.90
QP	672.926k	13.02	56.00	-42.98	19.58	Neutral	-	-6.56	9.67	0.07	9.84
AV	672.926k	11.84	46.00	-34.16	19.58	Neutral	-	-7.74	9.67	0.07	9.84
QP	3.007M	14.87	56.00	-41.13	19.67	Neutral	-	-4.80	9.69	0.12	9.86
AV	3.007M	13.19	46.00	-32.81	19.67	Neutral	-	-6.48	9.69	0.12	9.86
QP	7.093M	17.01	60.00	-42.99	19.80	Neutral	-	-2.79	9.72	0.18	9.90
AV	7.093M	14.78	50.00	-35.22	19.80	Neutral	-	-5.02	9.72	0.18	9.90
QP	22.396M	23.17	60.00	-36.83	19.95	Neutral	-	3.22	9.74	0.31	9.90
AV	22.396M	19.57	50.00	-30.43	19.95	Neutral	-	-0.38	9.74	0.31	9.90

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-BR(1Mbps)	800k	767.116k	767KF1D	797.5k	762.119k
BT-EDR(2Mbps)	1.241M	1.182M	1M18G1D	1.233M	1.179M
BT-EDR(3Mbps)	1.244M	1.194M	1M19G1D	1.243M	1.191M

Max-N dB = Maximum 20dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

Result

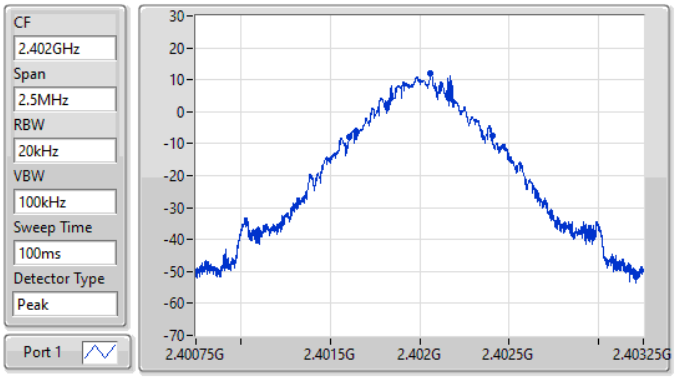
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	798.75k	767.116k
2440MHz	Pass	Inf	800k	763.368k
2480MHz	Pass	Inf	797.5k	762.119k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.24M	1.182M
2440MHz	Pass	Inf	1.233M	1.179M
2480MHz	Pass	Inf	1.241M	1.179M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.244M	1.191M
2440MHz	Pass	Inf	1.244M	1.194M
2480MHz	Pass	Inf	1.243M	1.192M

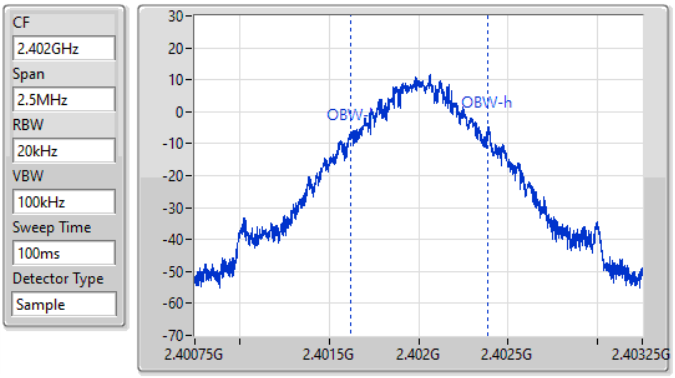
Port X-N dB = Port X 20dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

BT-BR(1Mbps) EBW-FS

2402MHz

28/04/2021



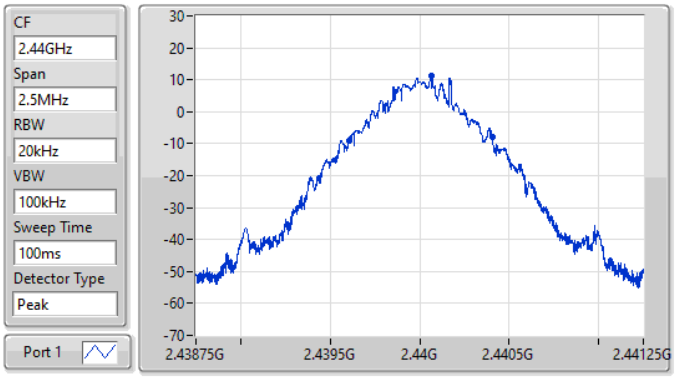


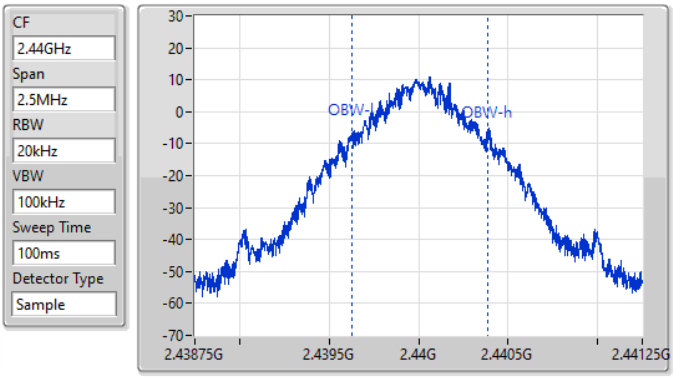
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
798.75k	2.401608G	2.402406G	767.116k	2.401623G	2.40239G	Inf	1

BT-BR(1Mbps) EBW-FS

2440MHz

28/04/2021



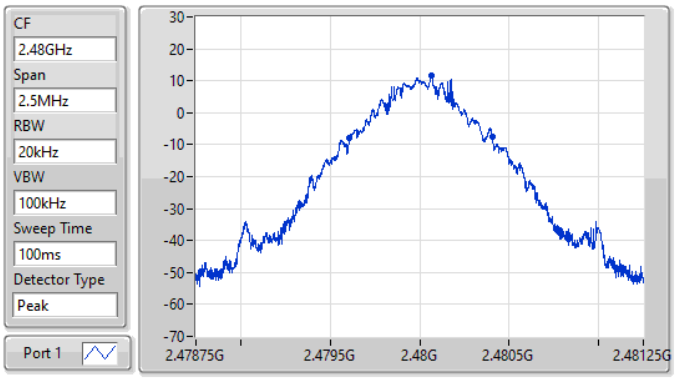


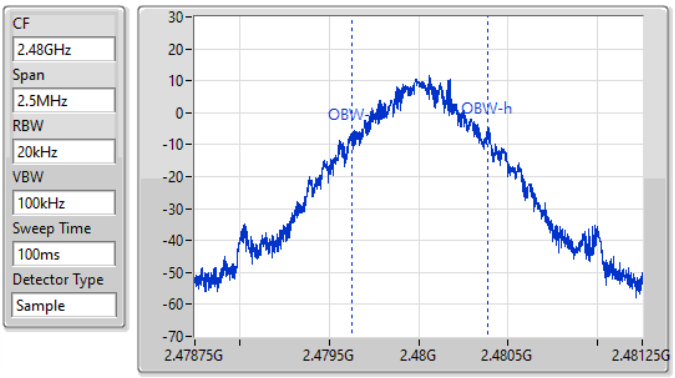
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
800k	2.439606G	2.440406G	763.368k	2.439625G	2.440389G	Inf	1

BT-BR(1Mbps) EBW-FS

2480MHz

28/04/2021



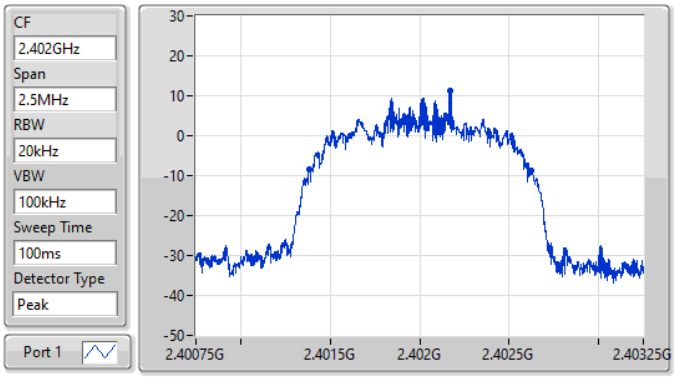


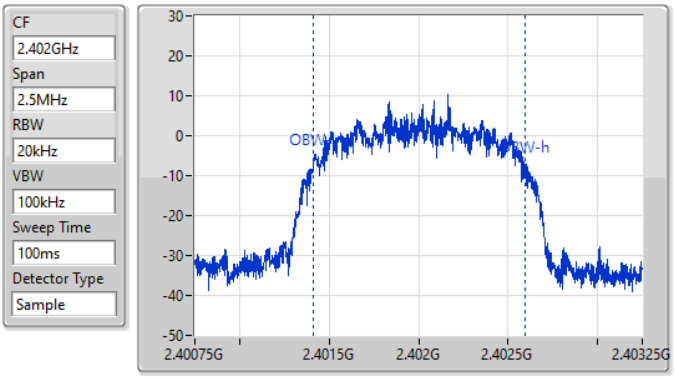
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
797.5k	2.479609G	2.480406G	762.119k	2.479625G	2.480387G	Inf	1

BT-EDR(2Mbps) EBW-FS

2402MHz

28/04/2021



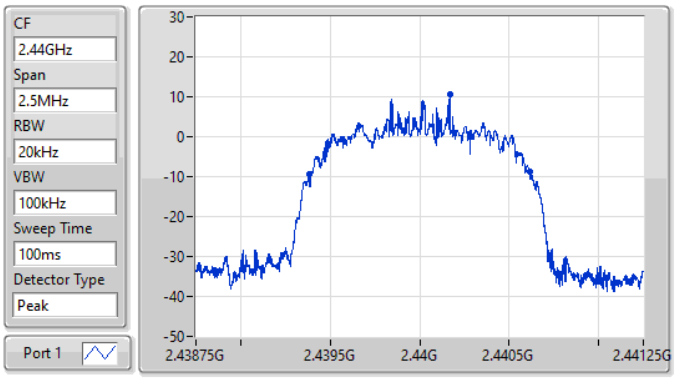


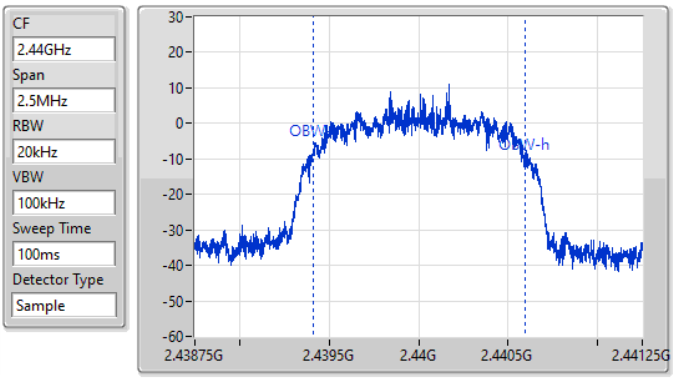
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.24M	2.401381G	2.402621G	1.182M	2.401412G	2.402593G	Inf	1

BT-EDR(2Mbps) EBW-FS

2440MHz

28/04/2021



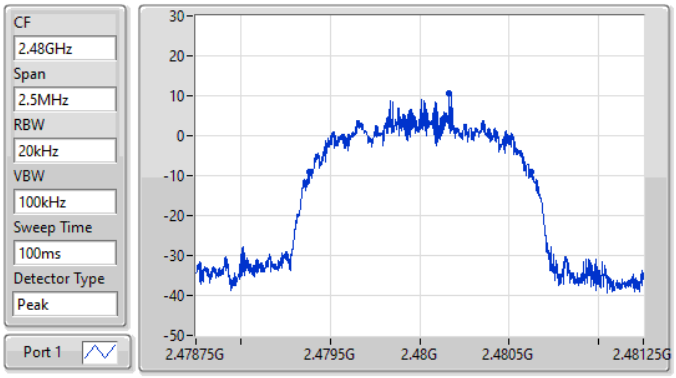


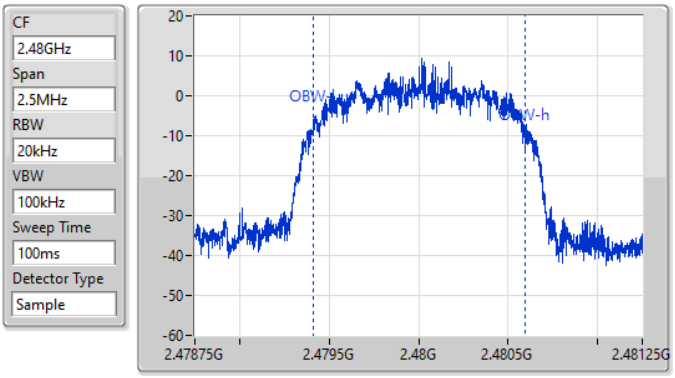
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.233M	2.439381G	2.440614G	1.179M	2.439413G	2.440592G	Inf	1

BT-EDR(2Mbps) EBW-FS

2480MHz

28/04/2021



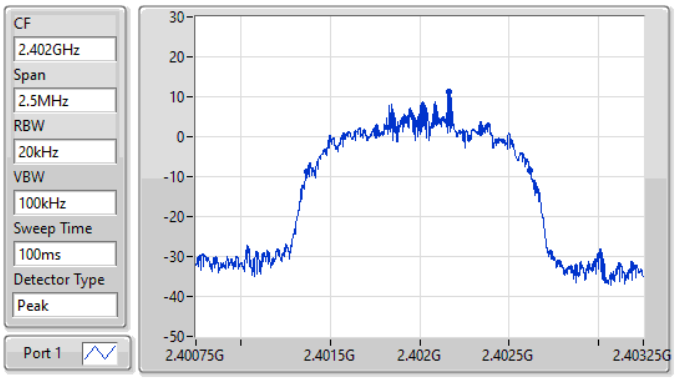


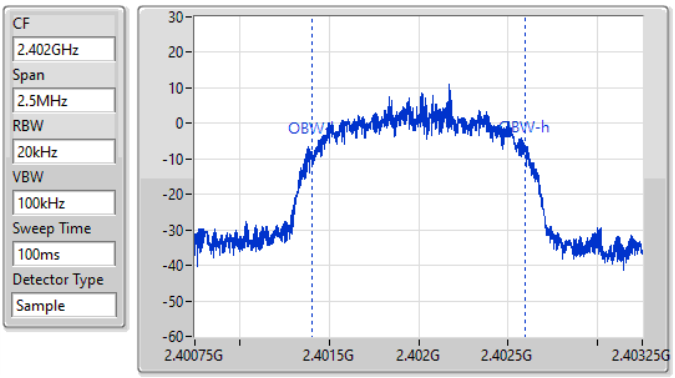
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.241M	2.479381G	2.480623G	1.179M	2.479413G	2.480592G	Inf	1

BT-EDR(3Mbps) EBW-FS

2402MHz

28/04/2021



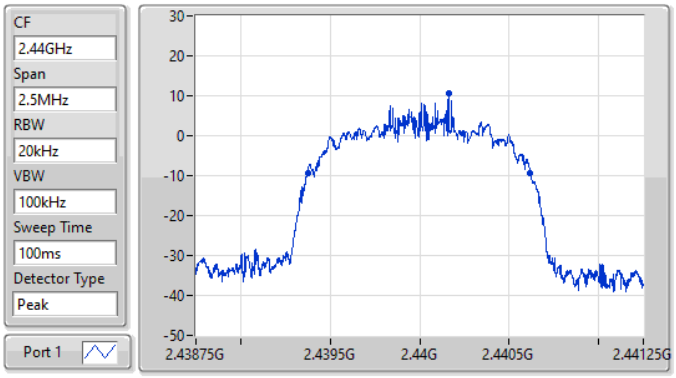


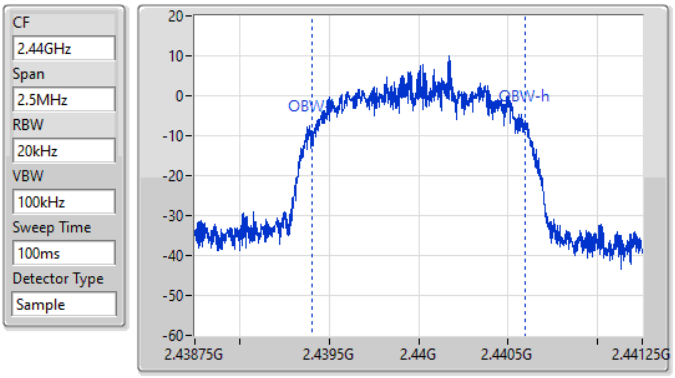
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.244M	2.401373G	2.402616G	1.191M	2.401405G	2.402596G	Inf	1

BT-EDR(3Mbps) EBW-FS

2440MHz

28/04/2021



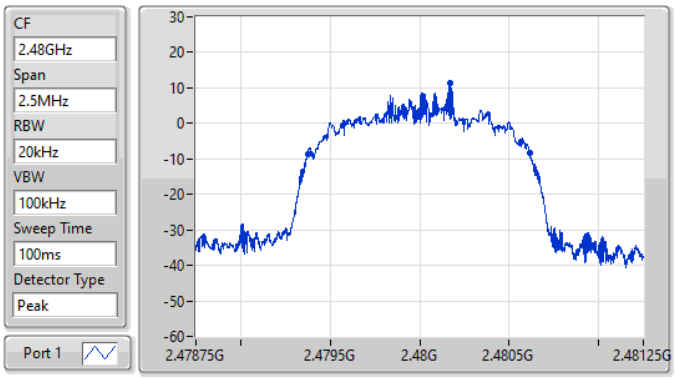


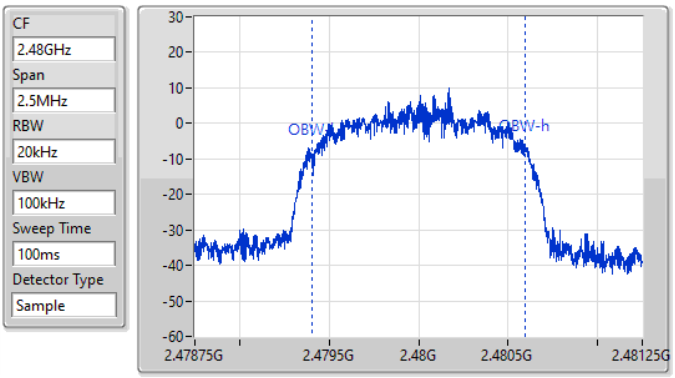
20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.244M	2.439374G	2.440618G	1.194M	2.439403G	2.440597G	Inf	1

BT-EDR(3Mbps) **EBW-FS**

2480MHz

28/04/2021





20dB(Hz)	Fl-20dB(Hz)	Fh-20dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.243M	2.479374G	2.480616G	1.192M	2.479404G	2.480596G	Inf	1

Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.0005M	1.0005M
BT-EDR(2Mbps)	1.0005M	999k
BT-EDR(3Mbps)	1.0005M	1.0005M

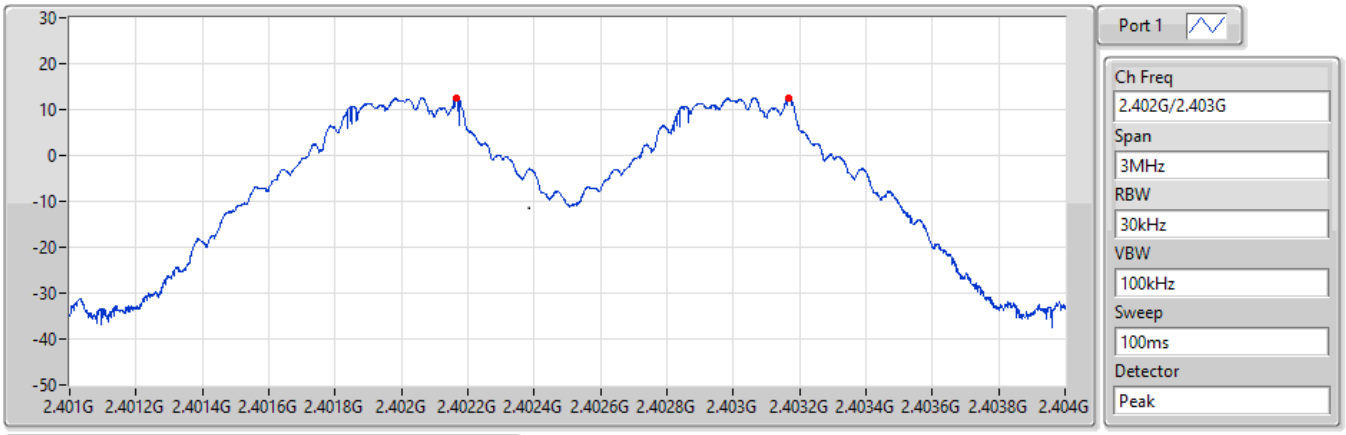
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402167G	2.403168G	1.0005M	531.9675k
2440MHz	Pass	2.440169G	2.441169G	1.0005M	532.8k
2480MHz	Pass	2.479169G	2.480169G	1.0005M	531.135k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.40217G	2.403169G	999k	825.84k
2440MHz	Pass	2.44017G	2.441169G	999k	821.178k
2480MHz	Pass	2.47917G	2.480171G	1.0005M	826.506k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402167G	2.403168G	1.0005M	828.504k
2440MHz	Pass	2.440167G	2.441168G	1.0005M	828.504k
2480MHz	Pass	2.479167G	2.480168G	1.0005M	827.838k

BT-BR(1Mbps) Channel Separation-FS

2.402G/2.403GHz

28/04/2021



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402167G	2.403168G	1.0005M	531.9675k

BT-BR(1Mbps) Channel Separation-FS

2.44G/2.441GHz

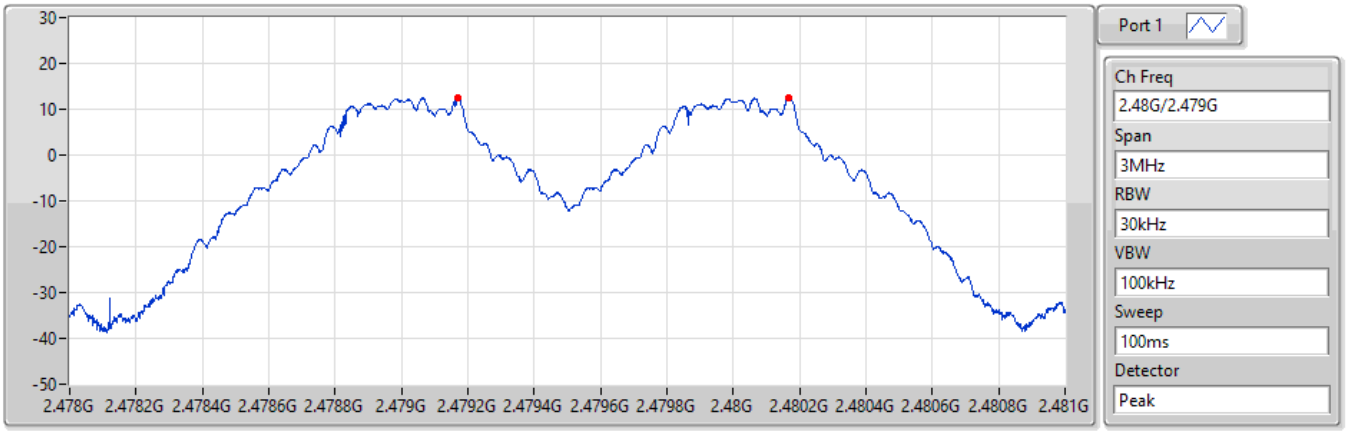
28/04/2021

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440169G	2.441169G	1.0005M	532.8k

BT-BR(1Mbps) Channel Separation-FS

2.48G/2.479GHz

28/04/2021

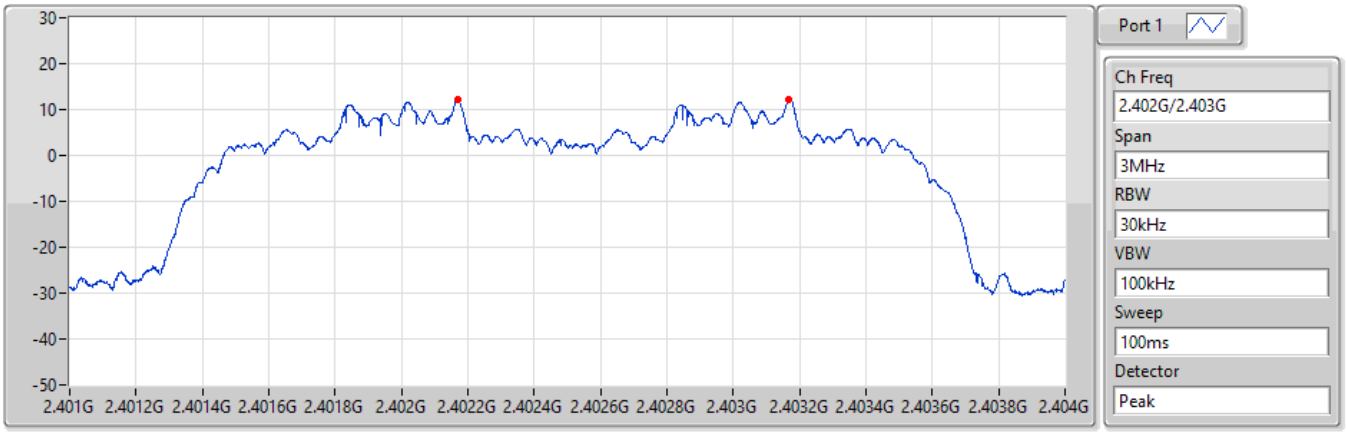


Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479169G	2.480169G	1.0005M	531.135k

BT-EDR(2Mbps) Channel Separation-FS

2.402G/2.403GHz

28/04/2021

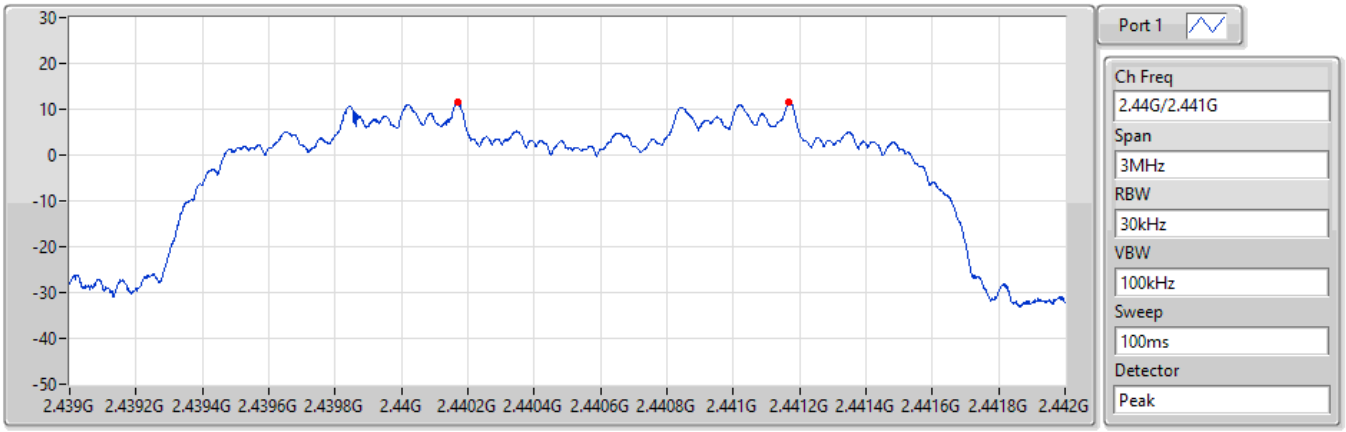


Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.40217G	2.403169G	999k	825.84k

BT-EDR(2Mbps) Channel Separation-FS

2.44G/2.441GHz

28/04/2021

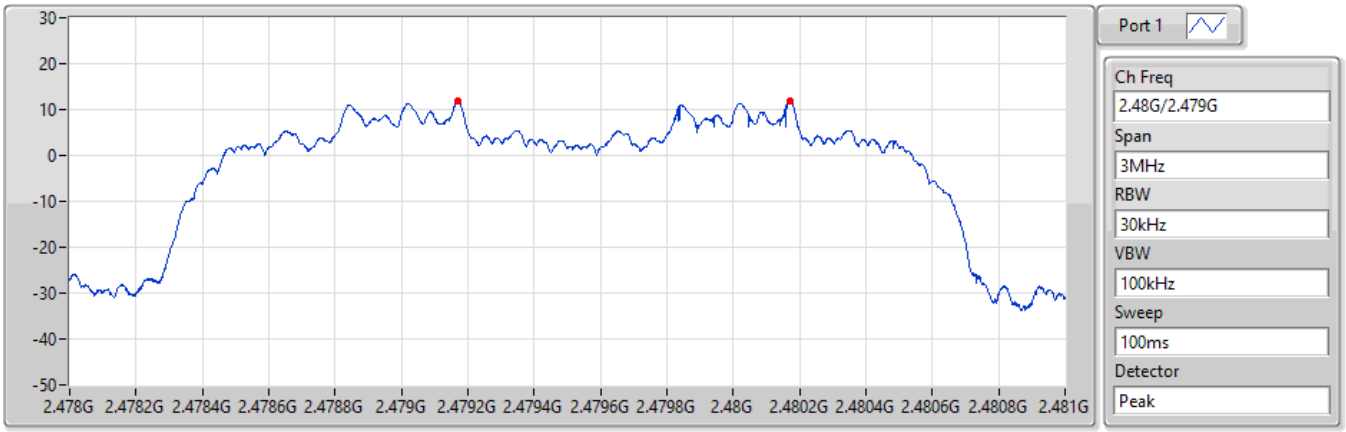


Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.44017G	2.441169G	999k	821.178k

BT-EDR(2Mbps) Channel Separation-FS

2.48G/2.479GHz

28/04/2021

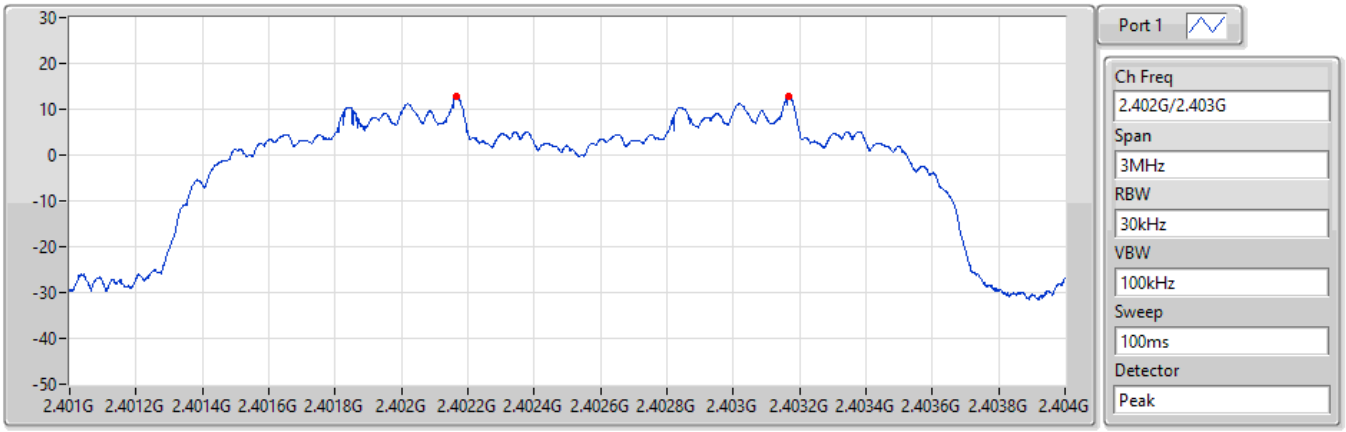


Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.47917G	2.480171G	1.0005M	826.506k

BT-EDR(3Mbps) Channel Separation-FS

2.402G/2.403GHz

28/04/2021



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402167G	2.403168G	1.0005M	828.504k

BT-EDR(3Mbps) Channel Separation-FS

2.44G/2.441GHz

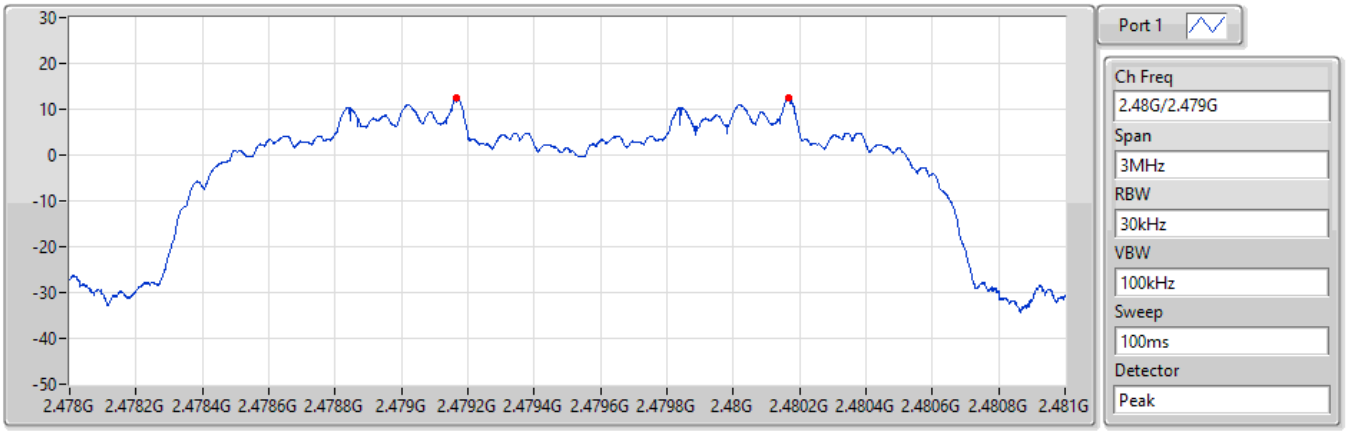
28/04/2021

Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440167G	2.441168G	1.0005M	828.504k

BT-EDR(3Mbps) Channel Separation-FS

2.48G/2.479GHz

28/04/2021



Fl(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479167G	2.480168G	1.0005M	827.838k

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	15.40	0.03467
BT-EDR(2Mbps)	15.27	0.03365
BT-EDR(3Mbps)	15.42	0.03483

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	15.40	21.00
2440MHz	Pass	3.50	14.76	21.00
2480MHz	Pass	3.50	15.23	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.50	15.27	21.00
2440MHz	Pass	3.50	14.78	21.00
2480MHz	Pass	3.50	15.10	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.50	15.42	21.00
2440MHz	Pass	3.50	14.98	21.00
2480MHz	Pass	3.50	15.25	21.00

DG = Directional Gain; Port X = Port X output power

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	15.04	0.03192
BT-EDR(2Mbps)	12.61	0.01824
BT-EDR(3Mbps)	12.55	0.01799

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.50	15.04	21.00
2440MHz	Pass	3.50	14.37	21.00
2480MHz	Pass	3.50	15.01	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.50	12.52	21.00
2440MHz	Pass	3.50	11.99	21.00
2480MHz	Pass	3.50	12.61	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.50	12.55	21.00
2440MHz	Pass	3.50	11.96	21.00
2480MHz	Pass	3.50	12.54	21.00

DG = Directional Gain; Port X = Port X output power

Summary

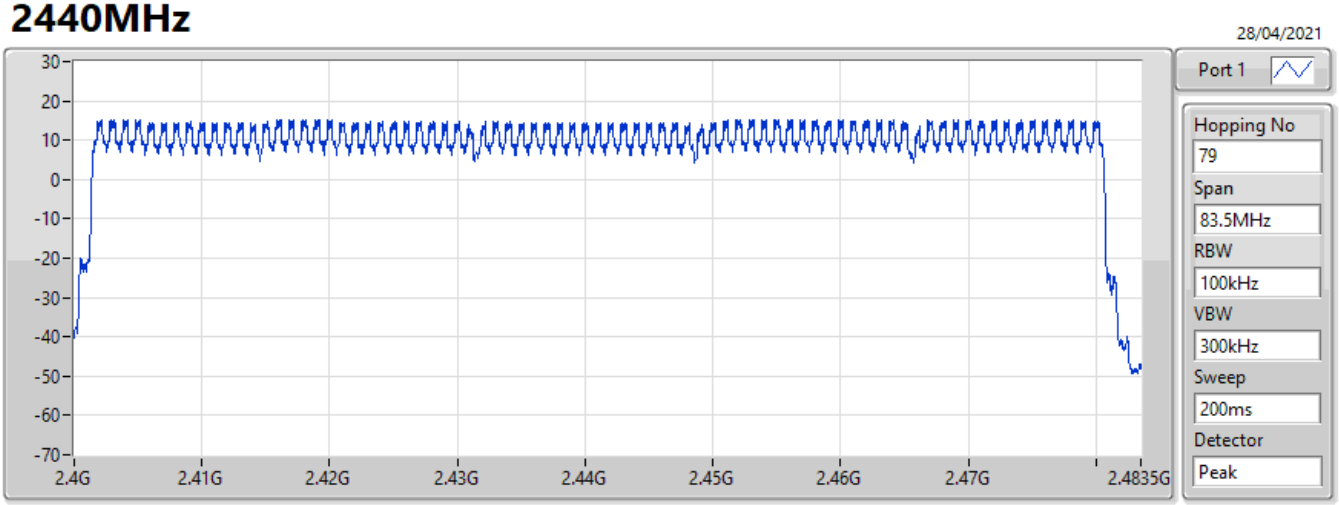
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

Mode	Result	Hopping No	Limit
BT-BR(1Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(2Mbps)	-	-	-
2440MHz	Pass	79	15
BT-EDR(3Mbps)	-	-	-
2440MHz	Pass	79	15

BT-BR(1Mbps) Hopping-FS

2440MHz

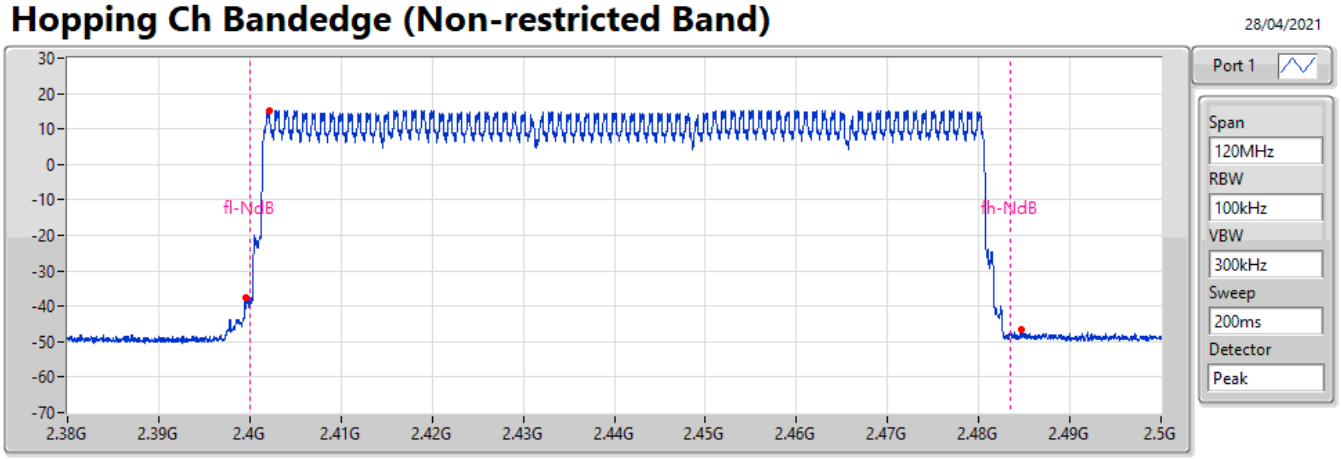


Hopping No	Limit
79	15

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

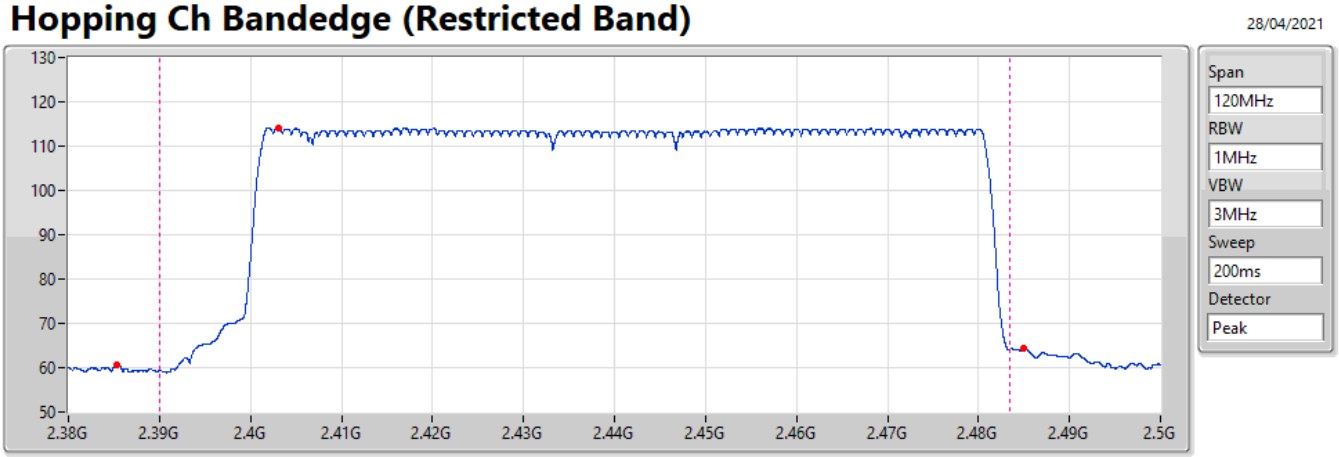


Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-4.75	2.402155G	15.25	2.399515G	-37.69	2.48464G	-46.73

BT-BR(1Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

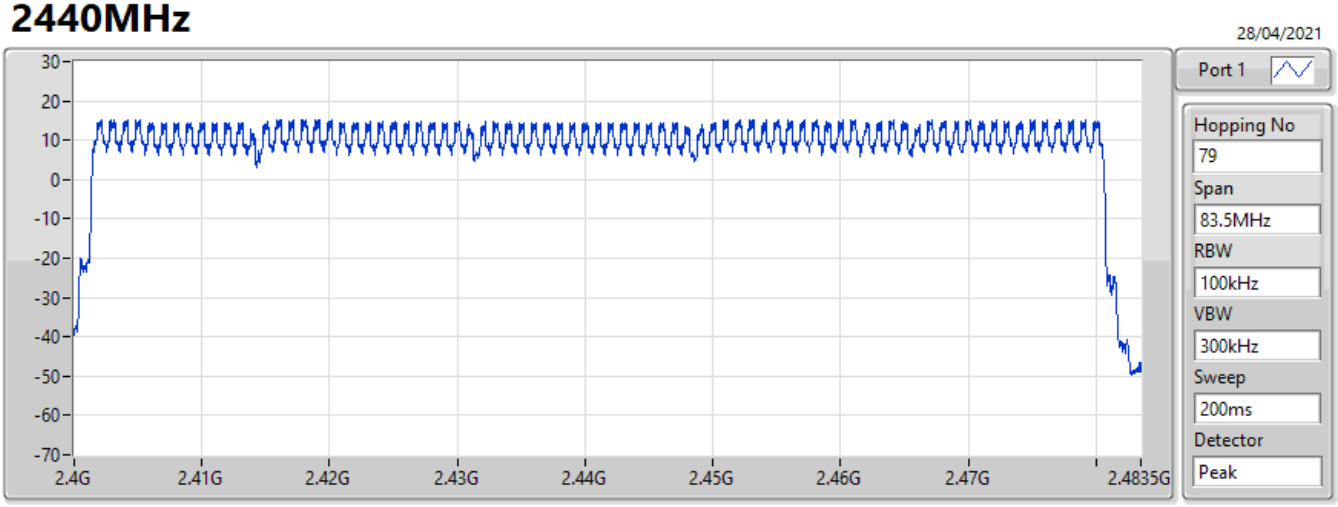


Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.40307G	114.03	2.38531G	60.72	30.62	2.48503G	64.27	34.17	74	54	3.125	-30.1

BT-EDR(2Mbps)

Hopping-FS

2440MHz



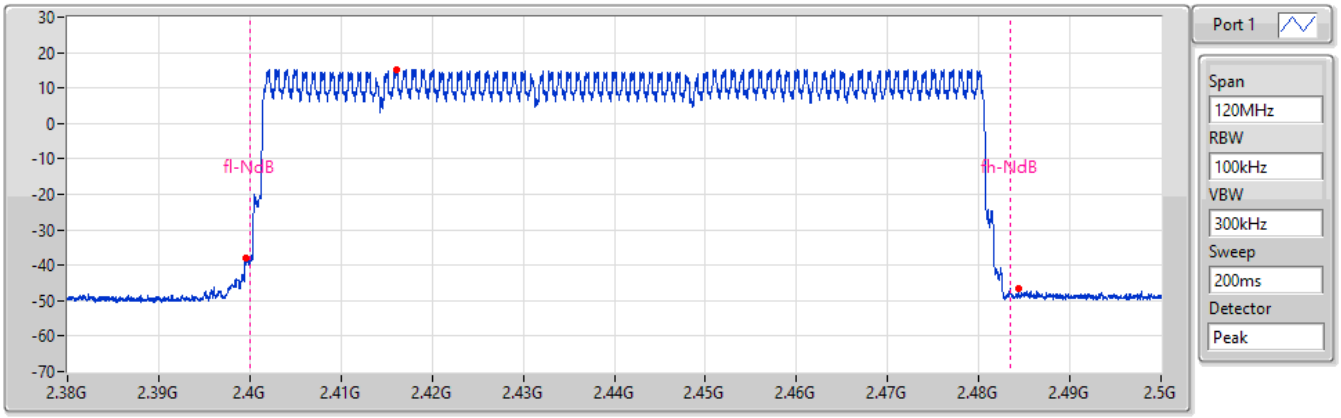
Hopping No	Limit
79	15

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)

28/04/2021



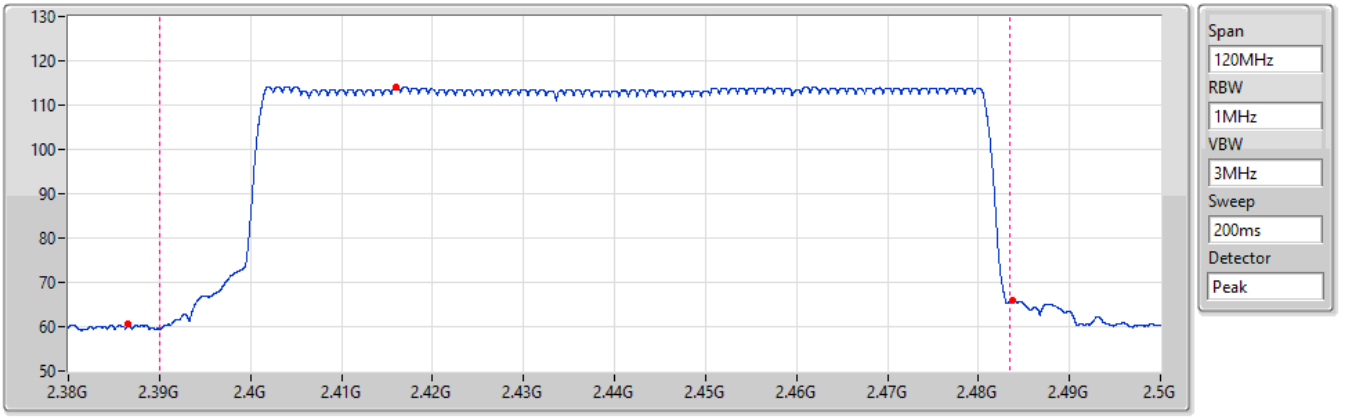
Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-4.71	2.416165G	15.29	2.3995G	-38.06	2.48437G	-46.71

BT-EDR(2Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

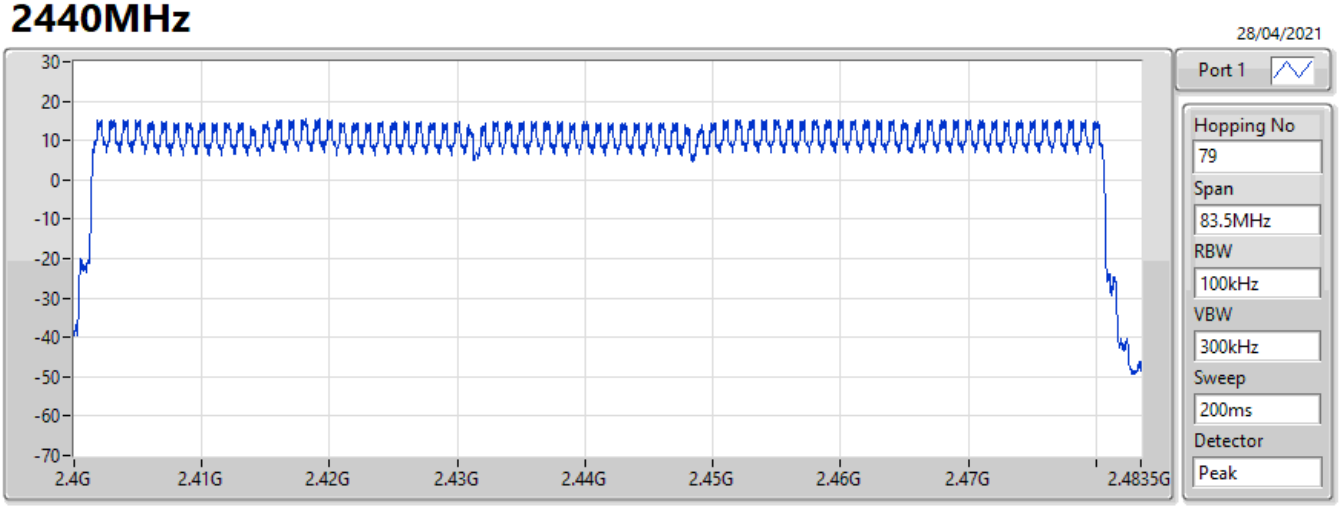
28/04/2021



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.415925G	114.11	2.386585G	60.53	30.43	2.483725G	65.98	35.88	74	54	3.125	-30.1

BT-EDR(3Mbps) Hopping-FS

2440MHz

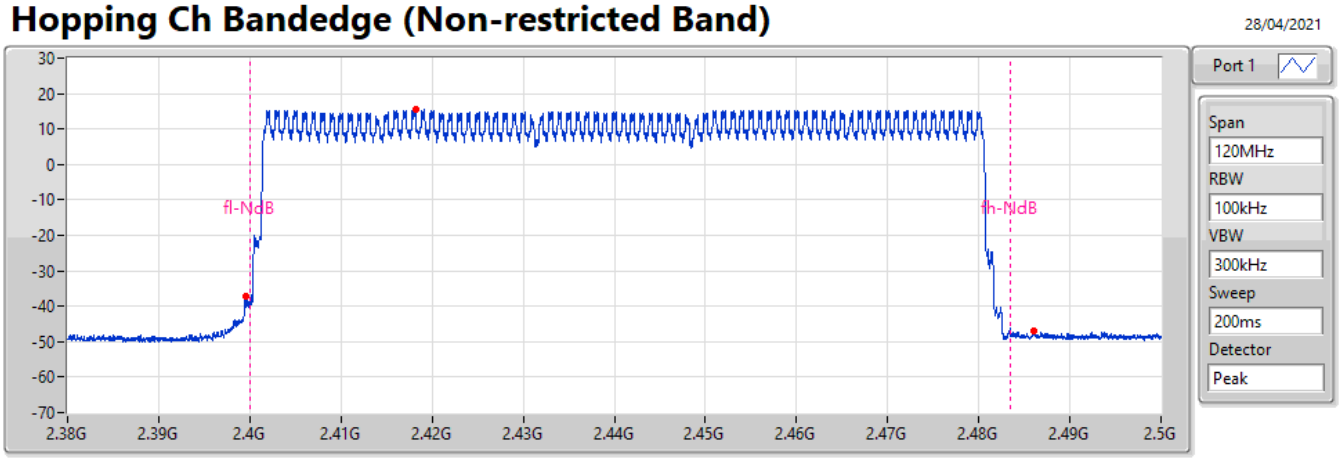


Hopping No	Limit
79	15

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Non-restricted Band)



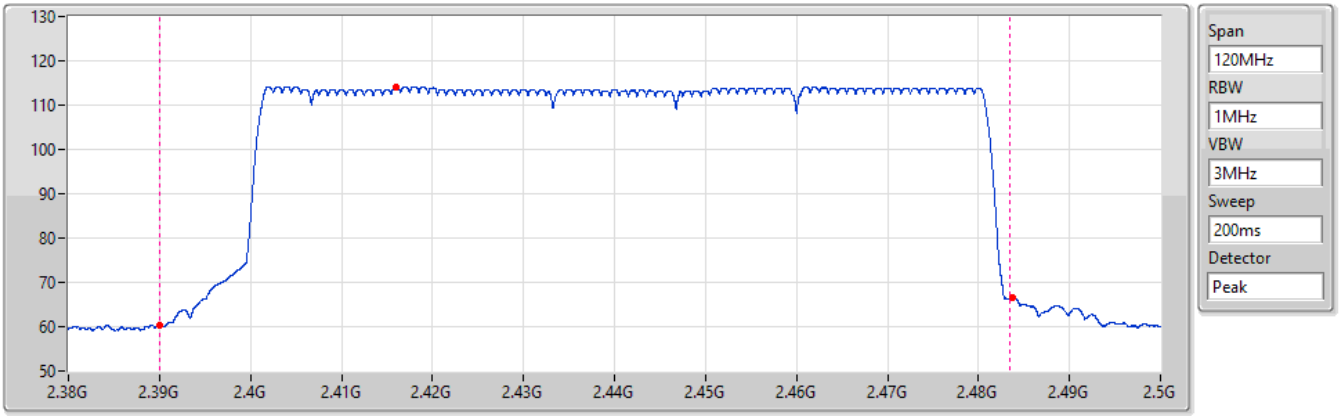
Limit(dBm)	Ref(Hz)	Ref(dBm)	BE-l(Hz)	BE-l(dBm)	BE-h(Hz)	BE-h(dBm)
-4.62	2.41816G	15.38	2.3995G	-37.24	2.485975G	-46.87

BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)

28/04/2021



Ref(Hz)	Ref(dBuV/m)	BE-l(Hz)	PK(dBuV/m)	AV(dBuV/m)	BE-h(Hz)	PK(dBuV/m)	AV(dBuV/m)	LimPK(dBuV/	LimAV(dBuV/	Tx On(ms)	DCF(dB)
2.415985G	114.1	2.38996G	60.38	30.28	2.48374G	66.56	36.46	74	54	3.125	-30.1

Summary

Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	307.72755m_DH5
BT-EDR(2Mbps)	308.04735m_DH5
BT-EDR(3Mbps)	308.2339m_DH5

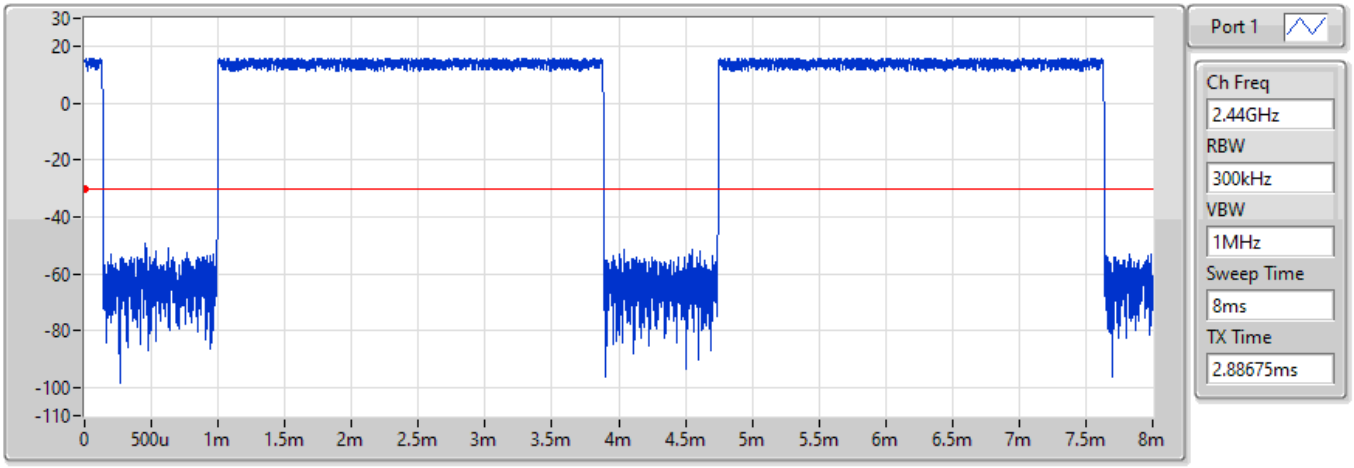
Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	307.72755m_DH5	400m	2.88675m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.04735m_DH5	400m	2.88975m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.2339m_DH5	400m	2.8915m

BT-BR(1Mbps) Dwell-FS

2440MHz

28/04/2021



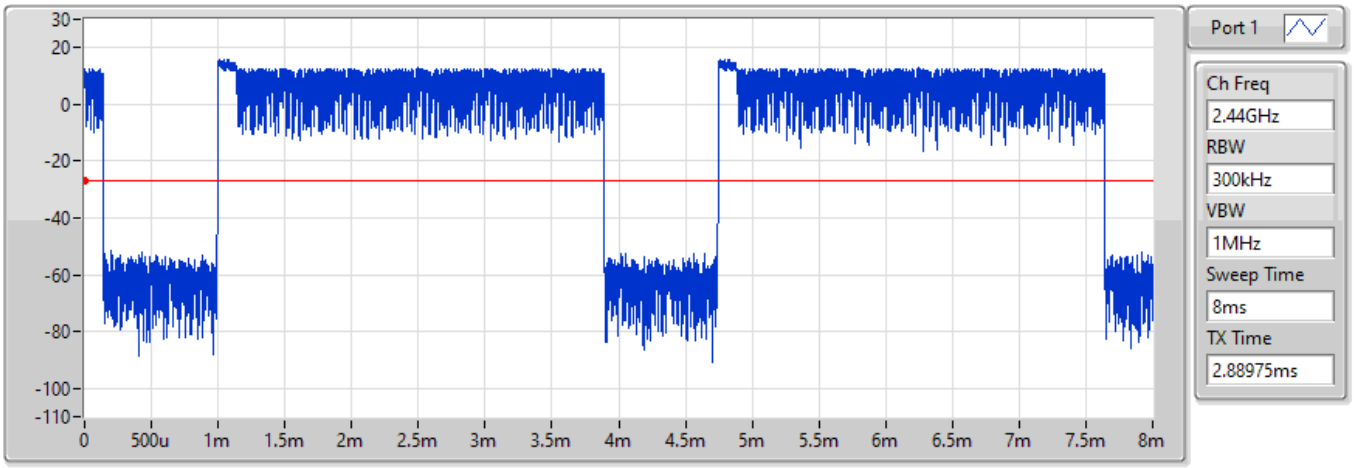
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	307.72755m_DH5	400m	2.88675m

DH5

BT-EDR(2Mbps) Dwell-FS

2440MHz

28/04/2021



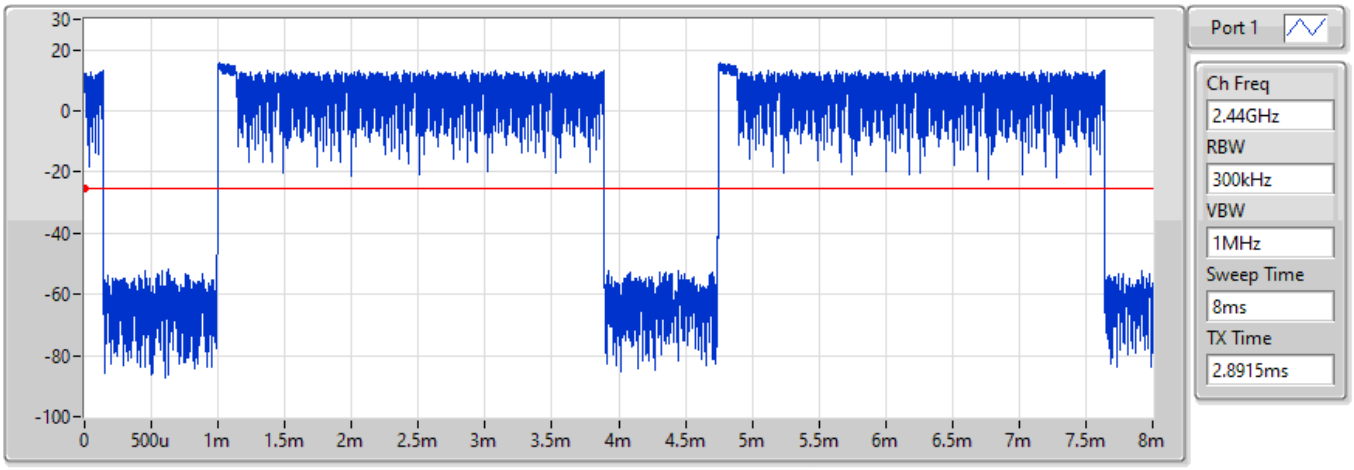
Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.04735m_DH5	400m	2.88975m

DH5

BT-EDR(3Mbps) Dwell-FS

2440MHz

28/04/2021



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.2339m_DH5	400m	2.8915m

DH5

Summary

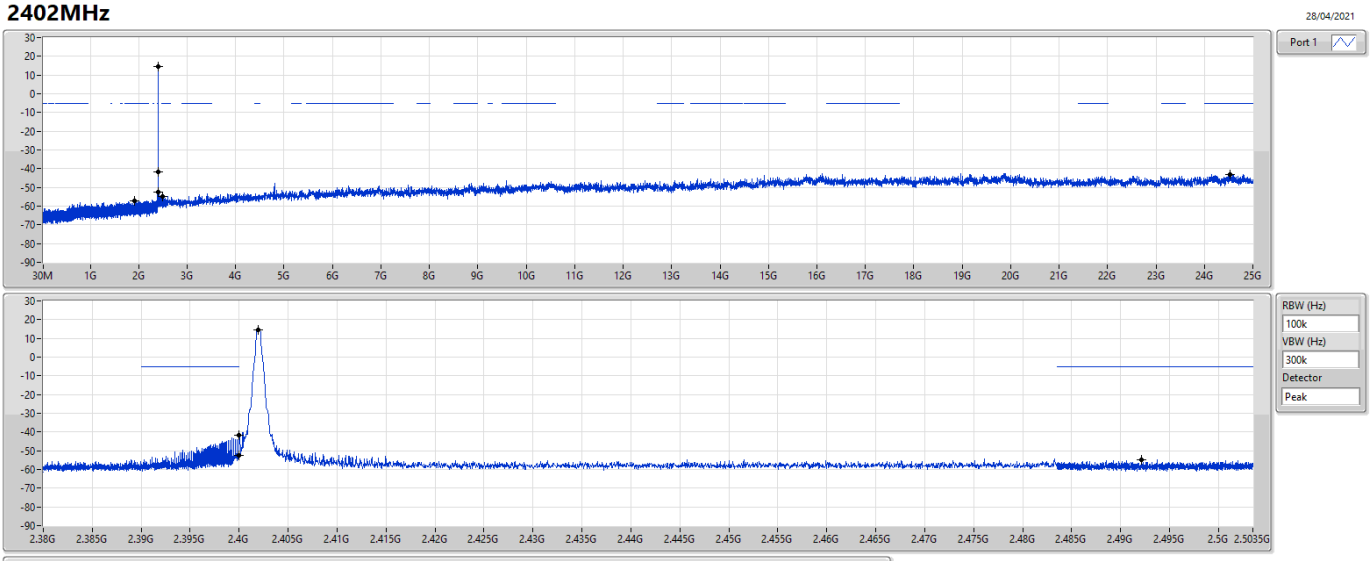
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	2.40196G	14.67	-5.33	1.90677G	-57.12	2.39995G	-41.62	2.4G	-52.60	2.49216G	-54.95	24.52476G	-43.00	1
BT-EDR(2Mbps)	Pass	2.40213G	14.91	-5.09	1.99225G	-56.63	2.39996G	-38.88	2.4G	-38.99	2.49237G	-54.08	24.09733G	-42.91	1
BT-EDR(3Mbps)	Pass	2.40196G	14.32	-5.68	2.17526G	-56.70	2.39965G	-38.05	2.4G	-39.16	2.49863G	-54.47	23.46461G	-42.62	1

Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	14.67	-5.33	1.90677G	-57.12	2.39995G	-41.62	2.4G	-52.60	2.49216G	-54.95	24.52476G	-43.00	1
2440MHz	Pass	2.44004G	13.93	-6.07	1.96904G	-56.93	2.39036G	-55.80	2.4835G	-57.85	2.501G	-54.49	24.22387G	-43.14	1
2480MHz	Pass	2.48008G	14.61	-5.39	2.17232G	-56.24	2.39235G	-55.41	2.4835G	-54.30	2.48428G	-50.84	24.20981G	-42.80	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40213G	14.91	-5.09	1.99225G	-56.63	2.39996G	-38.88	2.4G	-38.99	2.49237G	-54.08	24.09733G	-42.91	1
2440MHz	Pass	2.44016G	14.40	-5.60	2.10564G	-55.51	2.39931G	-55.30	2.4G	-55.66	2.49714G	-54.33	24.79191G	-42.10	1
2480MHz	Pass	2.48016G	14.19	-5.81	2.12121G	-56.14	2.39698G	-55.95	2.4835G	-50.80	2.48576G	-50.85	23.13841G	-42.11	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40196G	14.32	-5.68	2.17526G	-56.70	2.39965G	-38.05	2.4G	-39.16	2.49863G	-54.47	23.46461G	-42.62	1
2440MHz	Pass	2.44G	14.03	-5.97	2.11974G	-56.84	2.39193G	-55.81	2.4835G	-57.80	2.49654G	-54.84	21.84768G	-42.51	1
2480MHz	Pass	2.48016G	14.90	-5.10	2.14735G	-56.58	2.39143G	-55.42	2.4835G	-49.32	2.48434G	-49.58	24.53882G	-42.65	1

BT-BR(1Mbps) **CSENdB-FS**

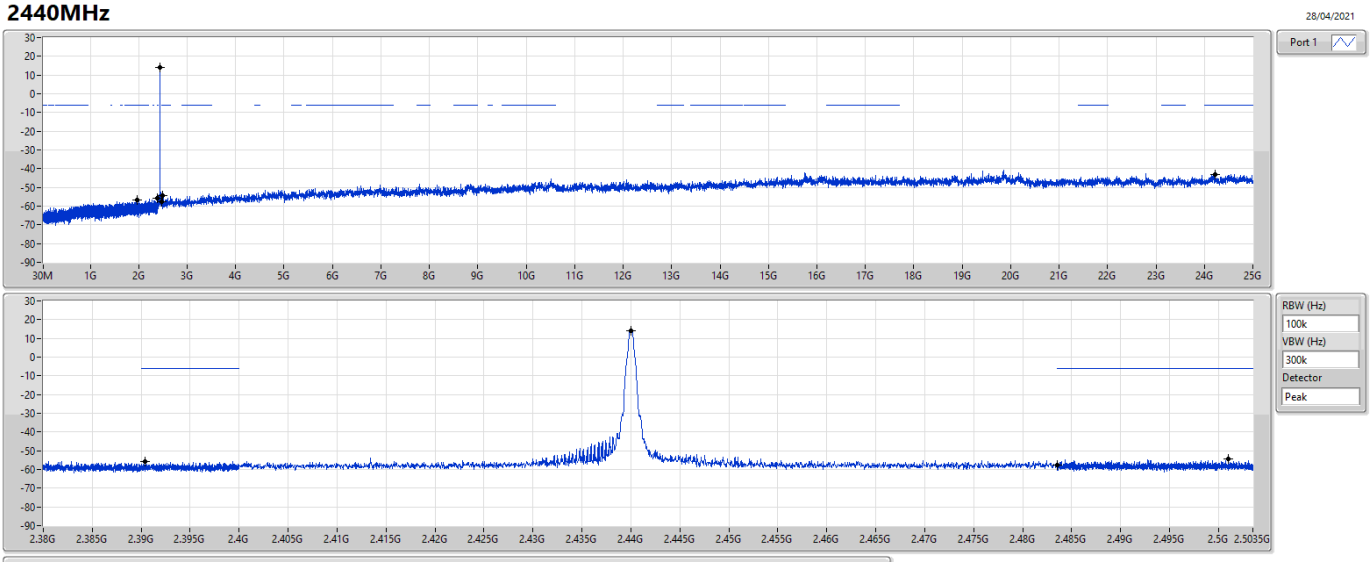
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	14.67	-5.33	1.90677G	-57.12	2.39995G	-41.62	2.4G	-52.60	2.49216G	-54.95	24.52476G	-43.00	1

BT-BR(1Mbps) **CSENdB-FS**

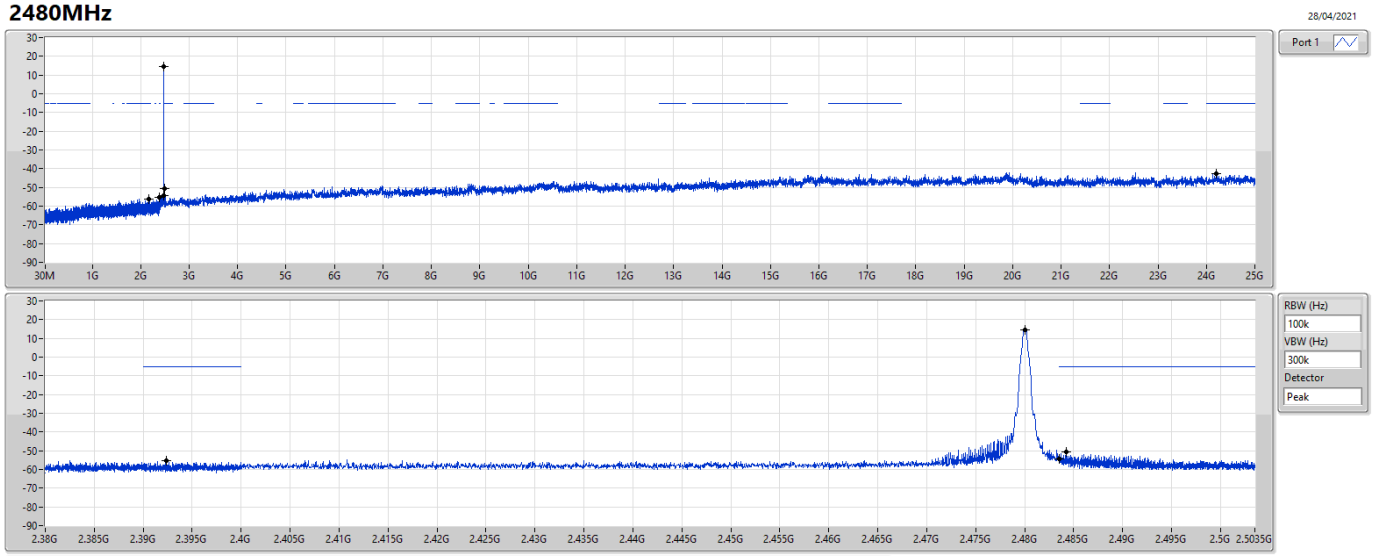
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44004G	13.93	-6.07	1.96904G	-56.93	2.39036G	-55.80	2.4835G	-57.85	2.501G	-54.49	24.22387G	-43.14	1

BT-BR(1Mbps) **CSENdB-FS**

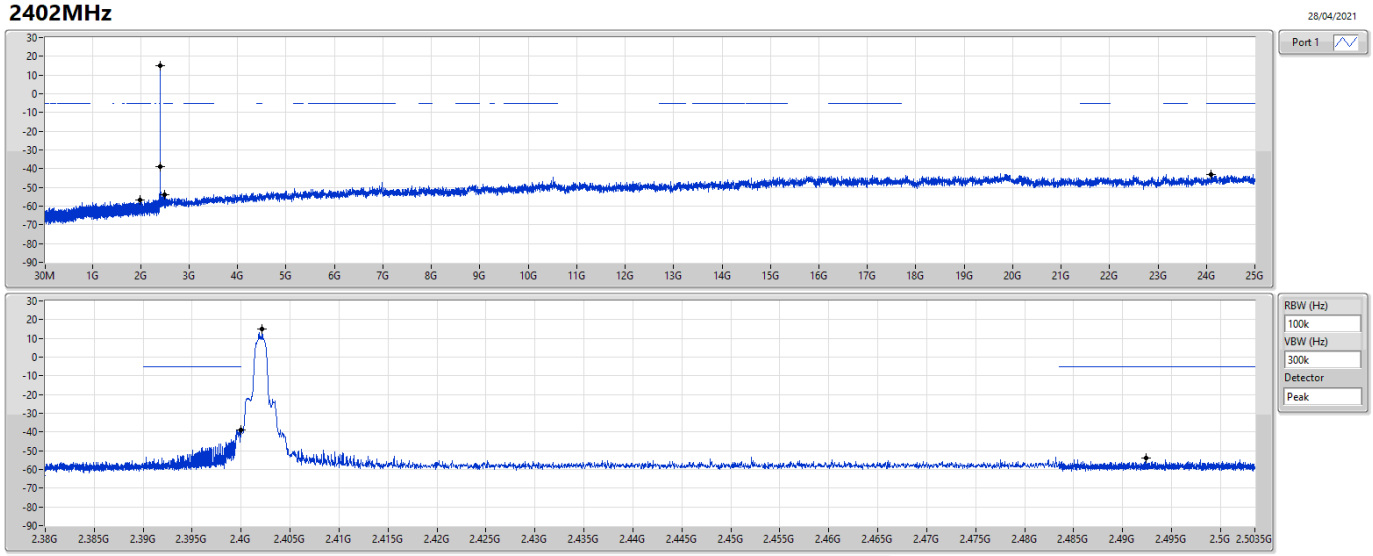
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48008G	14.61	-5.39	2.17232G	-56.24	2.39235G	-55.41	2.4835G	-54.30	2.48428G	-50.84	24.20981G	-42.80	1

BT-EDR(2Mbps) **CSENdB-FS**

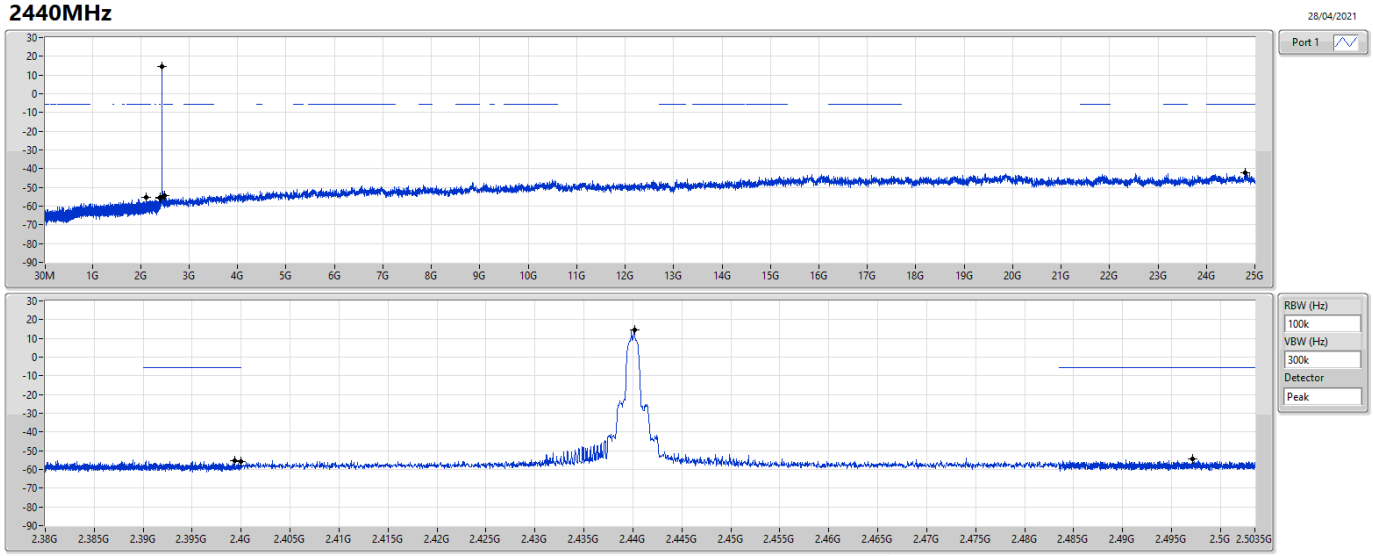
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40213G	14.91	-5.09	1.99225G	-56.63	2.39996G	-38.88	2.4G	-38.99	2.49237G	-54.08	24.09733G	-42.91	1

BT-EDR(2Mbps) **CSENdB-FS**

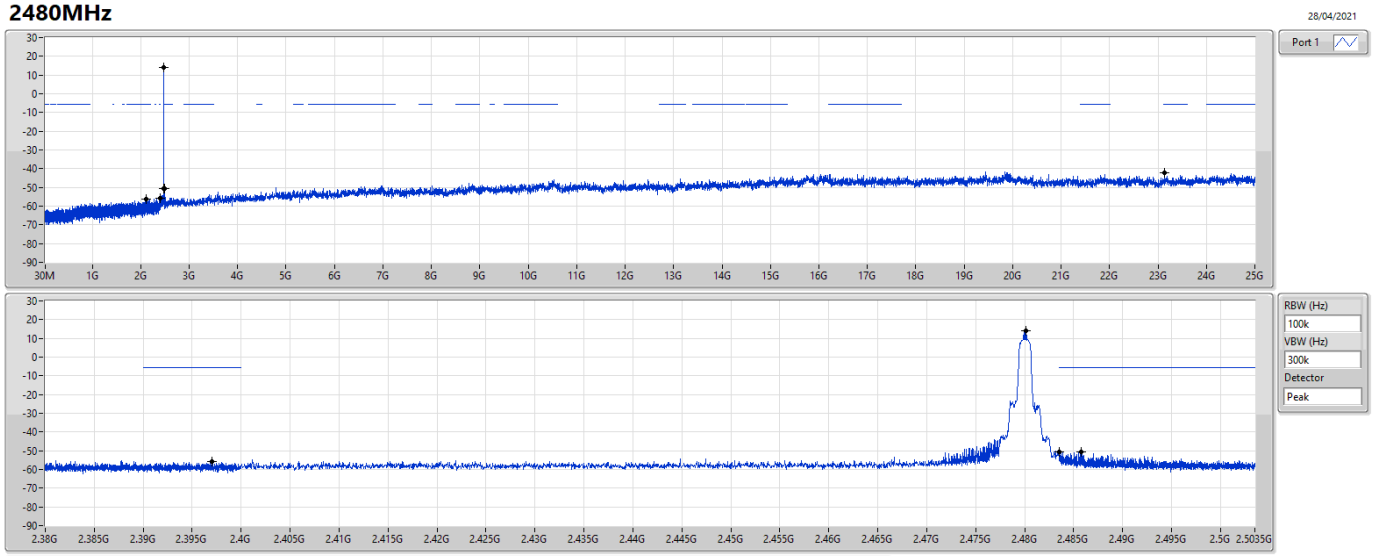
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44016G	14.40	-5.60	2.10564G	-55.51	2.39931G	-55.30	2.4G	-55.66	2.49714G	-54.33	24.79191G	-42.10	1

BT-EDR(2Mbps) **CSENdB-FS**

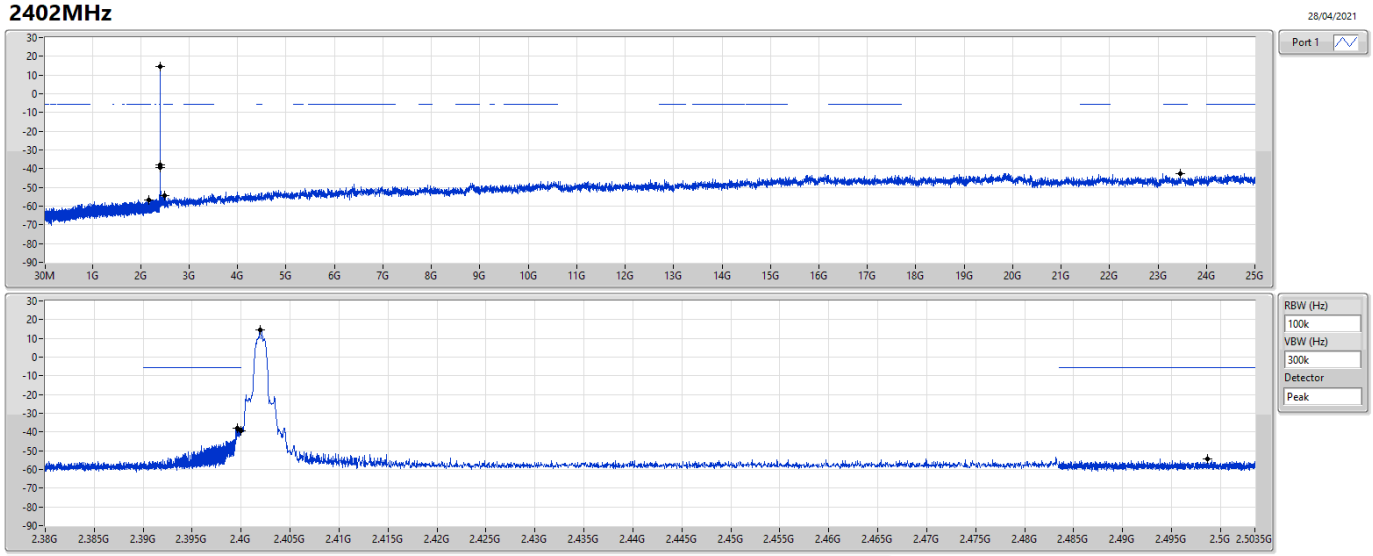
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48016G	14.19	-5.81	2.12121G	-56.14	2.39698G	-55.95	2.4835G	-50.80	2.48576G	-50.85	23.13841G	-42.11	1

BT-EDR(3Mbps) **CSENdB-FS**

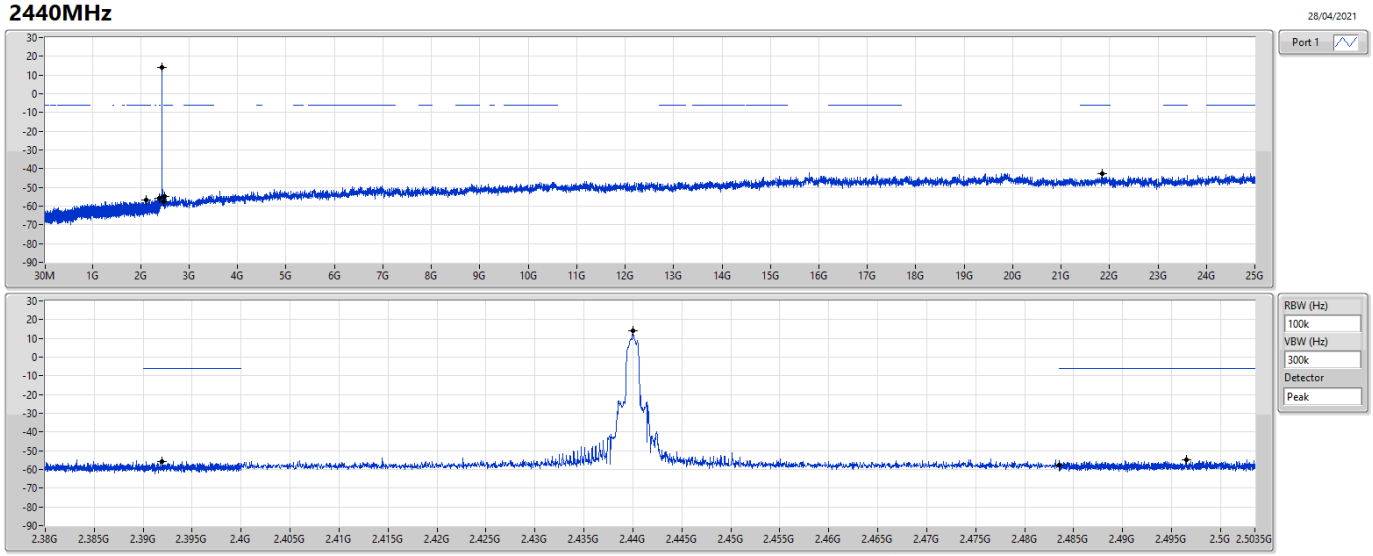
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.40196G	14.32	-5.68	2.17526G	-56.70	2.39965G	-38.05	2.4G	-39.16	2.49863G	-54.47	23.46461G	-42.62	1

BT-EDR(3Mbps) **CSENdB-FS**

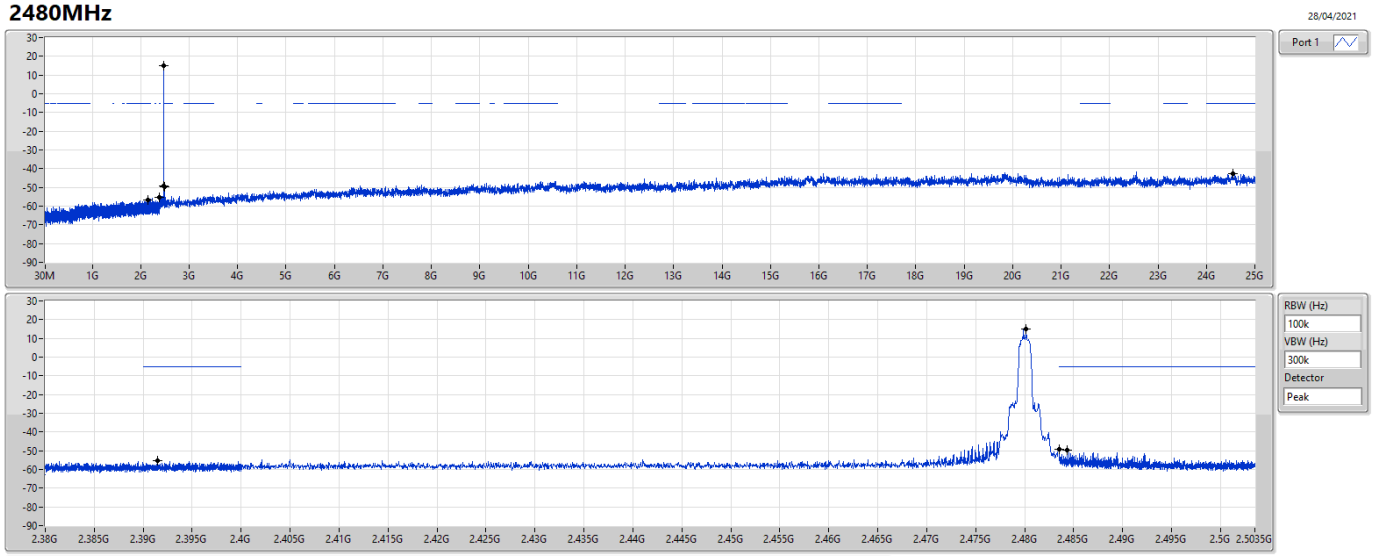
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	14.03	-5.97	2.11974G	-56.84	2.39193G	-55.81	2.4835G	-57.80	2.49654G	-54.84	21.84768G	-42.51	1

BT-EDR(3Mbps) **CSENdB-FS**

2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.48016G	14.90	-5.10	2.14735G	-56.58	2.39143G	-55.42	2.4835G	-49.32	2.48434G	-49.58	24.53882G	-42.65	1

Summary

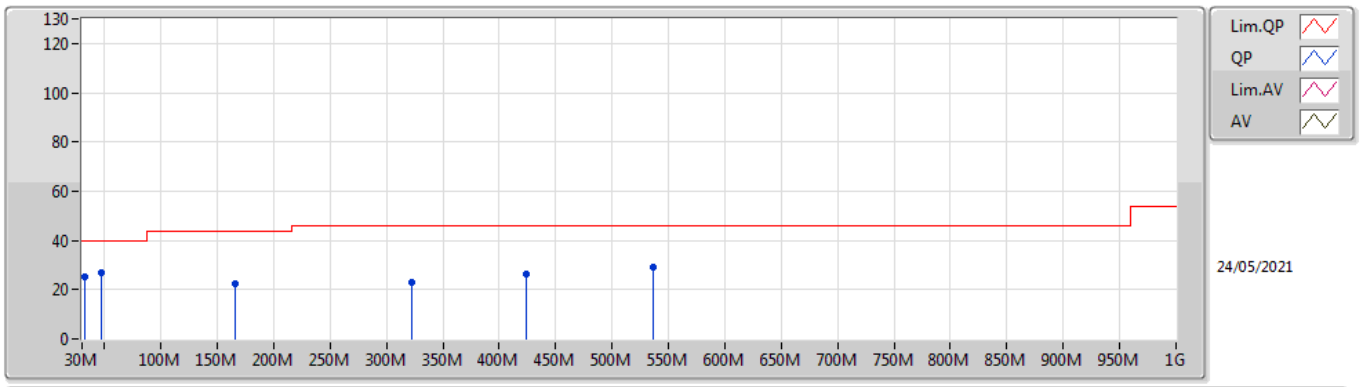
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	47.46M	26.87	40.00	-13.13	3	Vertical	360	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	31.94M	25.29	40.00	-14.71	3	Vertical	360	1.00	-
2440MHz	Pass	PK	47.46M	26.87	40.00	-13.13	3	Vertical	360	1.00	-
2440MHz	Pass	PK	165.8M	22.15	43.50	-21.35	3	Vertical	360	1.00	-
2440MHz	Pass	PK	322.94M	23.09	46.00	-22.91	3	Vertical	360	1.00	-
2440MHz	Pass	PK	423.82M	26.49	46.00	-19.51	3	Vertical	360	1.00	-
2440MHz	Pass	PK	536.34M	29.03	46.00	-16.97	3	Vertical	360	1.00	-
2440MHz	Pass	PK	31.94M	26.04	40.00	-13.96	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	97.9M	24.30	43.50	-19.20	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	256.98M	21.79	46.00	-24.21	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	315.18M	22.35	46.00	-23.65	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	416.06M	26.74	46.00	-19.26	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	546.04M	29.15	46.00	-16.85	3	Horizontal	0	1.00	-

BT-BR(1Mbps)

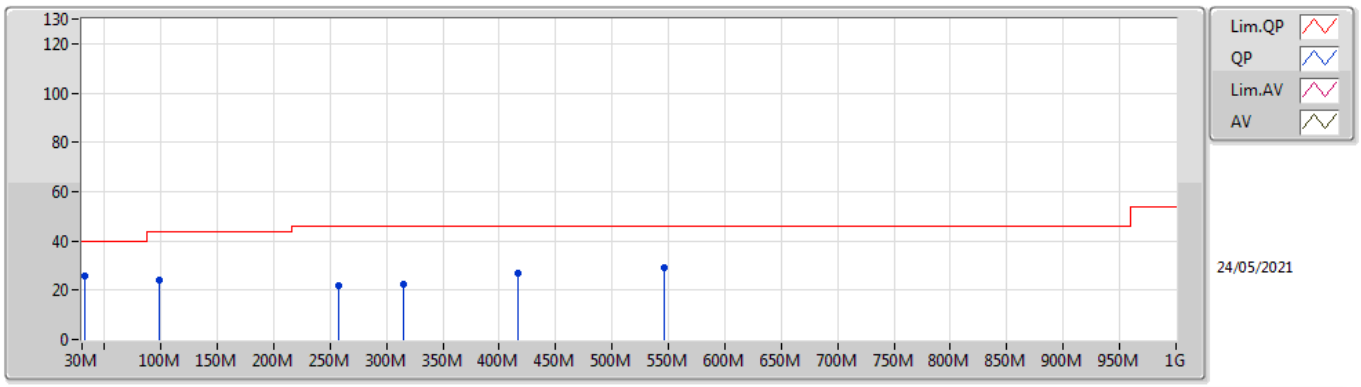
2440MHz_Test Fixture



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	31.94M	25.29	40.00	-14.71	-4.67	3	Vertical	360	1.00	-	29.96	22.03	0.93	27.63
PK	47.46M	26.87	40.00	-13.13	-12.45	3	Vertical	360	1.00	-	39.32	14.05	1.11	27.61
PK	165.8M	22.15	43.50	-21.35	-10.10	3	Vertical	360	1.00	-	32.25	14.92	2.16	27.18
PK	322.94M	23.09	46.00	-22.91	-4.99	3	Vertical	360	1.00	-	28.08	18.80	3.08	26.87
PK	423.82M	26.49	46.00	-19.51	-1.97	3	Vertical	360	1.00	-	28.46	21.96	3.56	27.49
PK	536.34M	29.03	46.00	-16.97	-0.89	3	Vertical	360	1.00	-	29.92	23.10	4.02	28.01

BT-BR(1Mbps)

2440MHz_Test Fixture



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
PK	31.94M	26.04	40.00	-13.96	-4.67	3	Horizontal	0	1.00	-	30.71	22.03	0.93	27.63
PK	97.9M	24.30	43.50	-19.20	-10.04	3	Horizontal	0	1.00	-	34.34	15.70	1.68	27.42
PK	256.98M	21.79	46.00	-24.21	-5.66	3	Horizontal	0	1.00	-	27.45	18.37	2.70	26.73
PK	315.18M	22.35	46.00	-23.65	-5.04	3	Horizontal	0	1.00	-	27.39	18.78	3.02	26.84
PK	416.06M	26.74	46.00	-19.26	-2.05	3	Horizontal	0	1.00	-	28.79	21.84	3.52	27.41
PK	546.04M	29.15	46.00	-16.85	-0.31	3	Horizontal	0	1.00	-	29.46	23.73	4.06	28.10

Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-BR(1Mbps)	Pass	PK	2.4856G	65.90	74.00	-8.10	3	Vertical	205	1.50	-
BT-EDR(3Mbps)	Pass	PK	2.485G	66.48	74.00	-7.52	3	Vertical	206	1.50	-

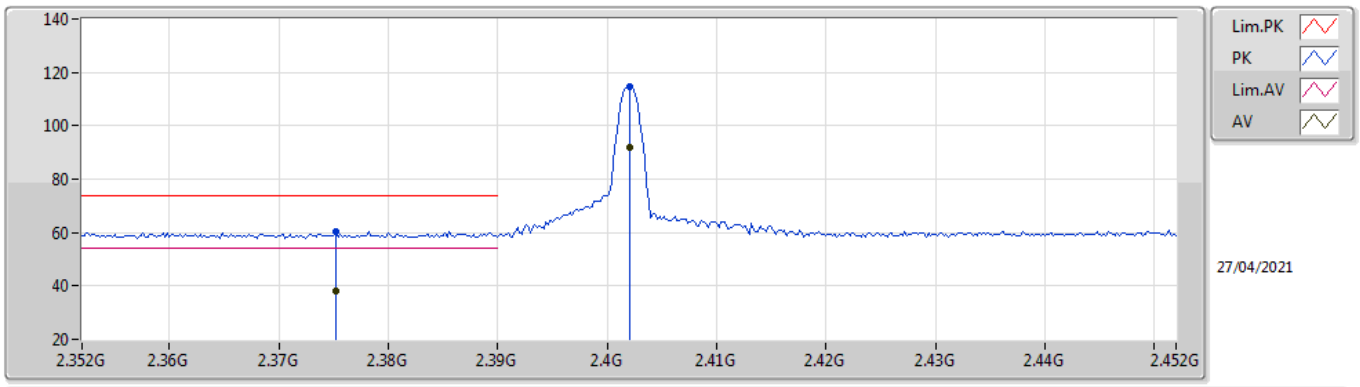
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3752G	38.03	54.00	-15.97	3	Vertical	30	2.40	-
2402MHz	Pass	AV	2.402G	91.91	Inf	-Inf	3	Vertical	30	2.40	-
2402MHz	Pass	PK	2.3752G	60.53	74.00	-13.47	3	Vertical	30	2.40	-
2402MHz	Pass	PK	2.402G	114.41	Inf	-Inf	3	Vertical	30	2.40	-
2402MHz	Pass	AV	4.80396G	33.99	54.00	-20.01	3	Vertical	227	1.10	-
2402MHz	Pass	PK	4.80396G	56.49	74.00	-17.51	3	Vertical	227	1.10	-
2402MHz	Pass	AV	4.80387G	25.16	54.00	-28.84	3	Horizontal	209	1.50	-
2402MHz	Pass	PK	4.80387G	47.66	74.00	-26.34	3	Horizontal	209	1.50	-
2440MHz	Pass	AV	2.38G	37.70	54.00	-16.30	3	Vertical	233	1.57	-
2440MHz	Pass	AV	2.44G	91.71	Inf	-Inf	3	Vertical	233	1.57	-
2440MHz	Pass	AV	2.4944G	38.11	54.00	-15.89	3	Vertical	233	1.57	-
2440MHz	Pass	PK	2.38G	60.20	74.00	-13.80	3	Vertical	233	1.57	-
2440MHz	Pass	PK	2.44G	114.21	Inf	-Inf	3	Vertical	233	1.57	-
2440MHz	Pass	PK	2.4944G	60.61	74.00	-13.39	3	Vertical	233	1.57	-
2440MHz	Pass	AV	4.87996G	33.87	54.00	-20.13	3	Vertical	290	1.06	-
2440MHz	Pass	AV	7.32033G	32.37	54.00	-21.63	3	Vertical	288	1.72	-
2440MHz	Pass	PK	4.87996G	56.37	74.00	-17.63	3	Vertical	290	1.06	-
2440MHz	Pass	PK	7.32033G	54.87	74.00	-19.13	3	Vertical	288	1.72	-
2440MHz	Pass	AV	4.87977G	25.58	54.00	-28.42	3	Horizontal	18	1.99	-
2440MHz	Pass	AV	7.32134G	29.97	54.00	-24.03	3	Horizontal	211	1.42	-
2440MHz	Pass	PK	4.87977G	48.08	74.00	-25.92	3	Horizontal	18	1.99	-
2440MHz	Pass	PK	7.32134G	52.47	74.00	-21.53	3	Horizontal	211	1.42	-
2480MHz	Pass	AV	2.48G	92.69	Inf	-Inf	3	Vertical	205	1.50	-
2480MHz	Pass	AV	2.4856G	43.40	54.00	-10.60	3	Vertical	205	1.50	-
2480MHz	Pass	PK	2.48G	115.19	Inf	-Inf	3	Vertical	205	1.50	-
2480MHz	Pass	PK	2.4856G	65.90	74.00	-8.10	3	Vertical	205	1.50	-
2480MHz	Pass	AV	4.95999G	34.48	54.00	-19.52	3	Vertical	289	1.02	-
2480MHz	Pass	AV	7.44034G	33.00	54.00	-21.00	3	Vertical	181	1.12	-
2480MHz	Pass	PK	4.95999G	56.98	74.00	-17.02	3	Vertical	289	1.02	-
2480MHz	Pass	PK	7.44034G	55.50	74.00	-18.50	3	Vertical	181	1.12	-
2480MHz	Pass	AV	4.95971G	26.20	54.00	-27.80	3	Horizontal	187	1.98	-
2480MHz	Pass	AV	7.44007G	29.90	54.00	-24.10	3	Horizontal	222	1.49	-
2480MHz	Pass	PK	4.95971G	48.70	74.00	-25.30	3	Horizontal	187	1.98	-
2480MHz	Pass	PK	7.44007G	52.40	74.00	-21.60	3	Horizontal	222	1.49	-
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.352G	38.03	54.00	-15.97	3	Vertical	203	1.71	-
2402MHz	Pass	AV	2.4018G	91.85	Inf	-Inf	3	Vertical	203	1.71	-
2402MHz	Pass	PK	2.352G	60.53	74.00	-13.47	3	Vertical	203	1.71	-
2402MHz	Pass	PK	2.4018G	114.35	Inf	-Inf	3	Vertical	203	1.71	-
2402MHz	Pass	AV	4.80396G	33.56	54.00	-20.44	3	Vertical	279	1.00	-
2402MHz	Pass	PK	4.80396G	56.06	74.00	-17.94	3	Vertical	279	1.00	-
2402MHz	Pass	AV	4.80404G	26.64	54.00	-27.36	3	Horizontal	281	1.16	-
2402MHz	Pass	PK	4.80404G	49.14	74.00	-24.86	3	Horizontal	281	1.16	-
2440MHz	Pass	AV	2.3588G	37.35	54.00	-16.65	3	Vertical	204	1.81	-
2440MHz	Pass	AV	2.44G	92.05	Inf	-Inf	3	Vertical	204	1.81	-
2440MHz	Pass	AV	2.4904G	38.58	54.00	-15.42	3	Vertical	204	1.81	-
2440MHz	Pass	PK	2.3588G	59.85	74.00	-14.15	3	Vertical	204	1.81	-
2440MHz	Pass	PK	2.44G	114.55	Inf	-Inf	3	Vertical	204	1.81	-
2440MHz	Pass	PK	2.4904G	61.08	74.00	-12.92	3	Vertical	204	1.81	-
2440MHz	Pass	AV	4.87995G	32.52	54.00	-21.48	3	Vertical	289	1.04	-
2440MHz	Pass	AV	7.32022G	30.48	54.00	-23.52	3	Vertical	239	1.47	-
2440MHz	Pass	PK	4.87995G	55.02	74.00	-18.98	3	Vertical	289	1.04	-
2440MHz	Pass	PK	7.32022G	52.98	74.00	-21.02	3	Vertical	239	1.47	-
2440MHz	Pass	AV	4.87979G	24.86	54.00	-29.14	3	Horizontal	134	1.94	-
2440MHz	Pass	AV	7.32023G	29.65	54.00	-24.35	3	Horizontal	358	1.32	-
2440MHz	Pass	PK	4.87979G	47.36	74.00	-26.64	3	Horizontal	134	1.94	-
2440MHz	Pass	PK	7.32023G	52.15	74.00	-21.85	3	Horizontal	358	1.32	-
2480MHz	Pass	AV	2.4798G	92.57	Inf	-Inf	3	Vertical	206	1.50	-
2480MHz	Pass	AV	2.485G	43.98	54.00	-10.02	3	Vertical	206	1.50	-
2480MHz	Pass	PK	2.4798G	115.07	Inf	-Inf	3	Vertical	206	1.50	-

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2480MHz	Pass	PK	2.485G	66.48	74.00	-7.52	3	Vertical	206	1.50	-
2480MHz	Pass	AV	4.95988G	33.57	54.00	-20.43	3	Vertical	289	1.02	-
2480MHz	Pass	AV	7.43995G	31.70	54.00	-22.30	3	Vertical	175	1.11	-
2480MHz	Pass	PK	4.95988G	56.07	74.00	-17.93	3	Vertical	289	1.02	-
2480MHz	Pass	PK	7.43995G	54.20	74.00	-19.80	3	Vertical	175	1.11	-
2480MHz	Pass	AV	4.95988G	25.61	54.00	-28.39	3	Horizontal	187	1.97	-
2480MHz	Pass	AV	7.43809G	28.85	54.00	-25.15	3	Horizontal	244	1.96	-
2480MHz	Pass	PK	4.95988G	48.11	74.00	-25.89	3	Horizontal	187	1.97	-
2480MHz	Pass	PK	7.43809G	51.35	74.00	-22.65	3	Horizontal	244	1.96	-

BT-BR(1Mbps)

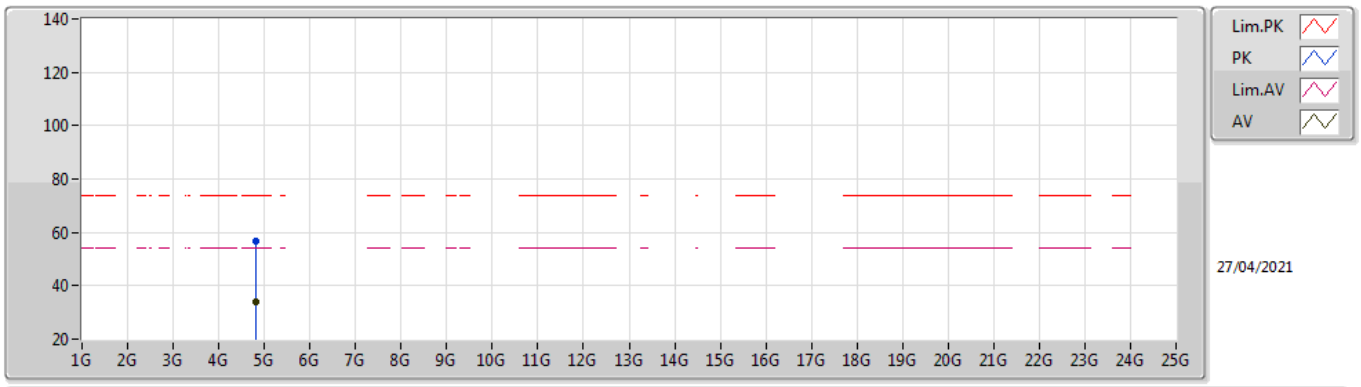
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3752G	38.03	54.00	-15.97	31.98	3	Vertical	30	2.40	-	6.05	27.70	4.28	-
AV	2.402G	91.91	Inf	-Inf	31.90	3	Vertical	30	2.40	-	60.01	27.60	4.30	-
PK	2.3752G	60.53	74.00	-13.47	31.98	3	Vertical	30	2.40	-	28.55	27.70	4.28	-
PK	2.402G	114.41	Inf	-Inf	31.90	3	Vertical	30	2.40	-	82.51	27.60	4.30	-

BT-BR(1Mbps)

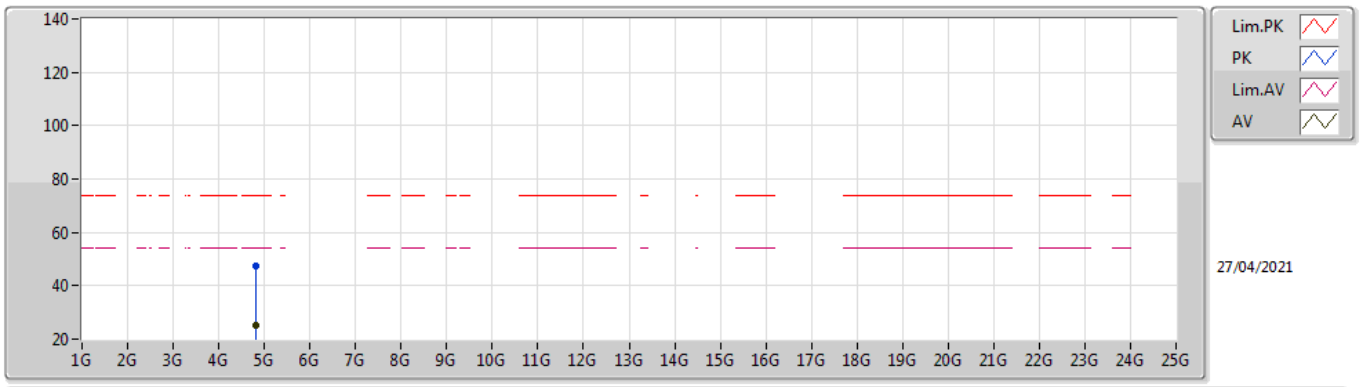
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80396G	33.99	54.00	-20.01	8.38	3	Vertical	227	1.10	-	25.61	31.11	6.50	29.23
PK	4.80396G	56.49	74.00	-17.51	8.38	3	Vertical	227	1.10	-	48.11	31.11	6.50	29.23

BT-BR(1Mbps)

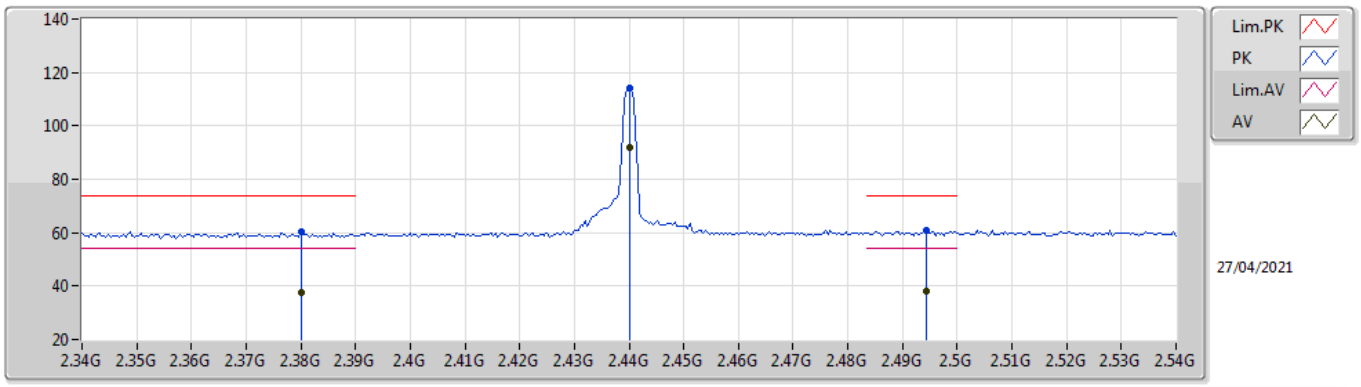
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80387G	25.16	54.00	-28.84	8.38	3	Horizontal	209	1.50	-	16.78	31.11	6.50	29.23
PK	4.80387G	47.66	74.00	-26.34	8.38	3	Horizontal	209	1.50	-	39.28	31.11	6.50	29.23

BT-BR(1Mbps)

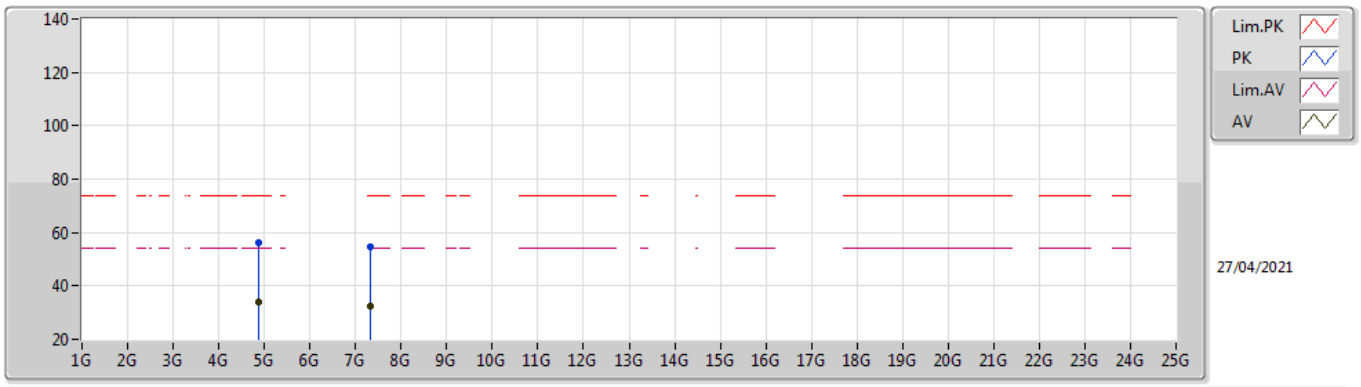
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.38G	37.70	54.00	-16.30	31.96	3	Vertical	233	1.57	-	5.74	27.68	4.28	-
AV	2.44G	91.71	Inf	-Inf	31.94	3	Vertical	233	1.57	-	59.77	27.60	4.34	-
AV	2.4944G	38.11	54.00	-15.89	32.08	3	Vertical	233	1.57	-	6.03	27.69	4.39	-
PK	2.38G	60.20	74.00	-13.80	31.96	3	Vertical	233	1.57	-	28.24	27.68	4.28	-
PK	2.44G	114.21	Inf	-Inf	31.94	3	Vertical	233	1.57	-	82.27	27.60	4.34	-
PK	2.4944G	60.61	74.00	-13.39	32.08	3	Vertical	233	1.57	-	28.53	27.69	4.39	-

BT-BR(1Mbps)

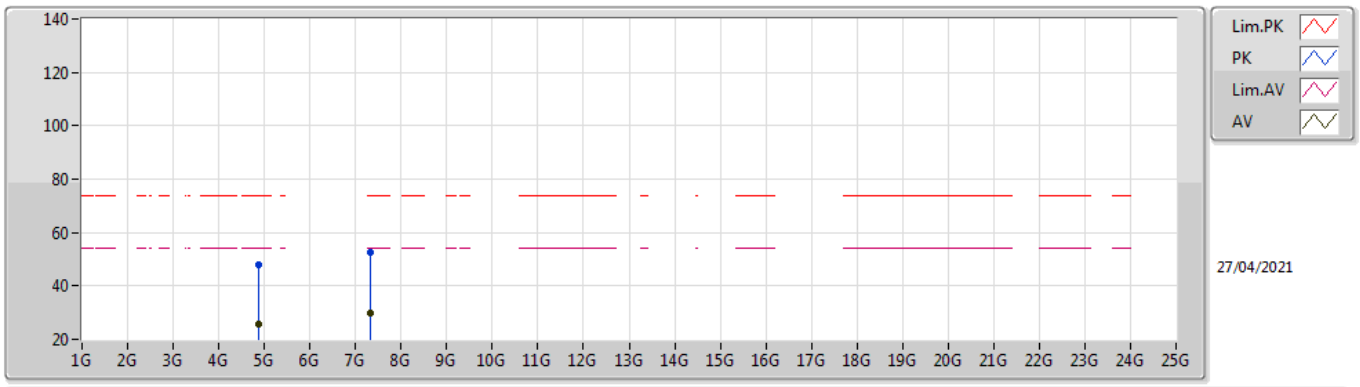
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87996G	33.87	54.00	-20.13	8.57	3	Vertical	290	1.06	-	25.30	31.20	6.58	29.21
AV	7.32033G	32.37	54.00	-21.63	13.69	3	Vertical	288	1.72	-	18.68	36.26	7.60	30.17
PK	4.87996G	56.37	74.00	-17.63	8.57	3	Vertical	290	1.06	-	47.80	31.20	6.58	29.21
PK	7.32033G	54.87	74.00	-19.13	13.69	3	Vertical	288	1.72	-	41.18	36.26	7.60	30.17

BT-BR(1Mbps)

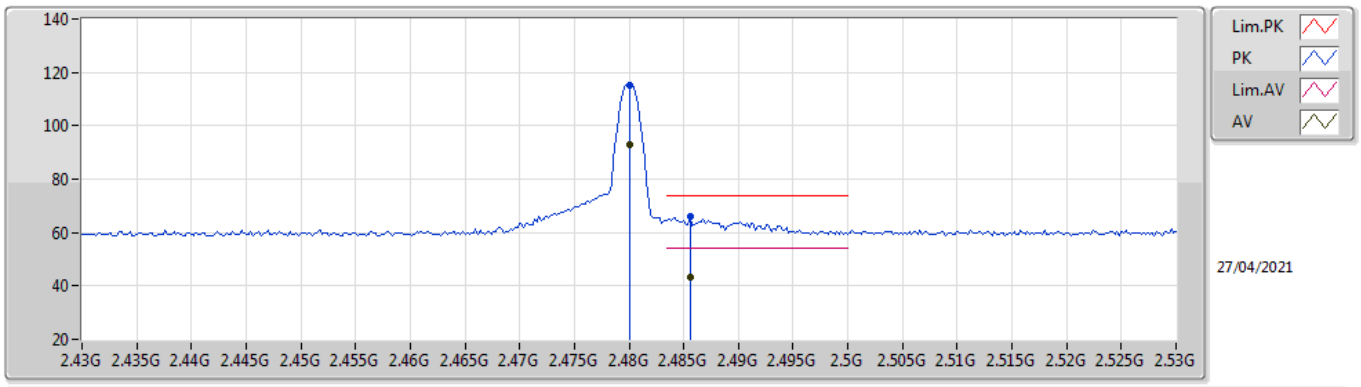
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87977G	25.58	54.00	-28.42	8.57	3	Horizontal	18	1.99	-	17.01	31.20	6.58	29.21
AV	7.32134G	29.97	54.00	-24.03	13.69	3	Horizontal	211	1.42	-	16.28	36.26	7.60	30.17
PK	4.87977G	48.08	74.00	-25.92	8.57	3	Horizontal	18	1.99	-	39.51	31.20	6.58	29.21
PK	7.32134G	52.47	74.00	-21.53	13.69	3	Horizontal	211	1.42	-	38.78	36.26	7.60	30.17

BT-BR(1Mbps)

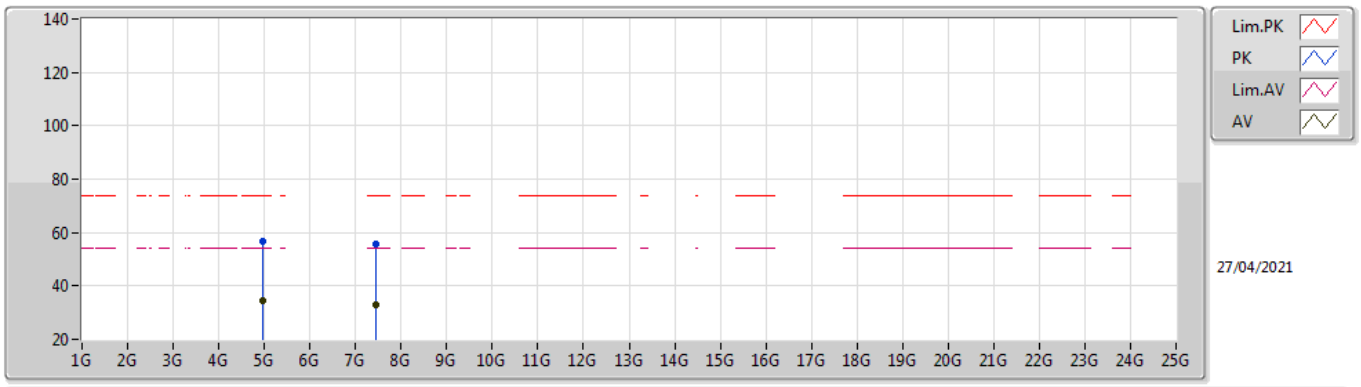
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.48G	92.69	Inf	-Inf	32.04	3	Vertical	205	1.50	-	60.65	27.66	4.38	-
AV	2.4856G	43.40	54.00	-10.60	32.06	3	Vertical	205	1.50	-	11.34	27.67	4.39	-
PK	2.48G	115.19	Inf	-Inf	32.04	3	Vertical	205	1.50	-	83.15	27.66	4.38	-
PK	2.4856G	65.90	74.00	-8.10	32.06	3	Vertical	205	1.50	-	33.84	27.67	4.39	-

BT-BR(1Mbps)

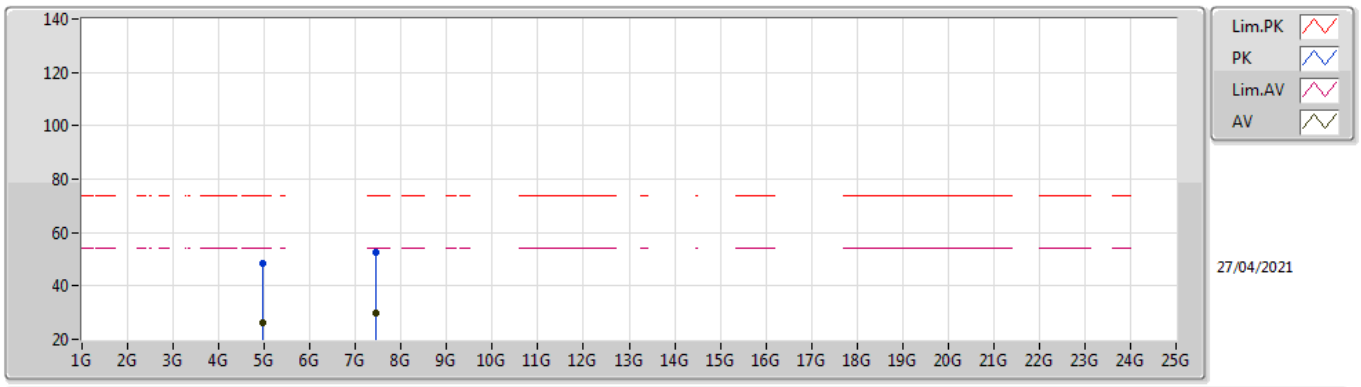
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95999G	34.48	54.00	-19.52	8.82	3	Vertical	289	1.02	-	25.66	31.34	6.66	29.18
AV	7.44034G	33.00	54.00	-21.00	13.64	3	Vertical	181	1.12	-	19.36	36.26	7.64	30.26
PK	4.95999G	56.98	74.00	-17.02	8.82	3	Vertical	289	1.02	-	48.16	31.34	6.66	29.18
PK	7.44034G	55.50	74.00	-18.50	13.64	3	Vertical	181	1.12	-	41.86	36.26	7.64	30.26

BT-BR(1Mbps)

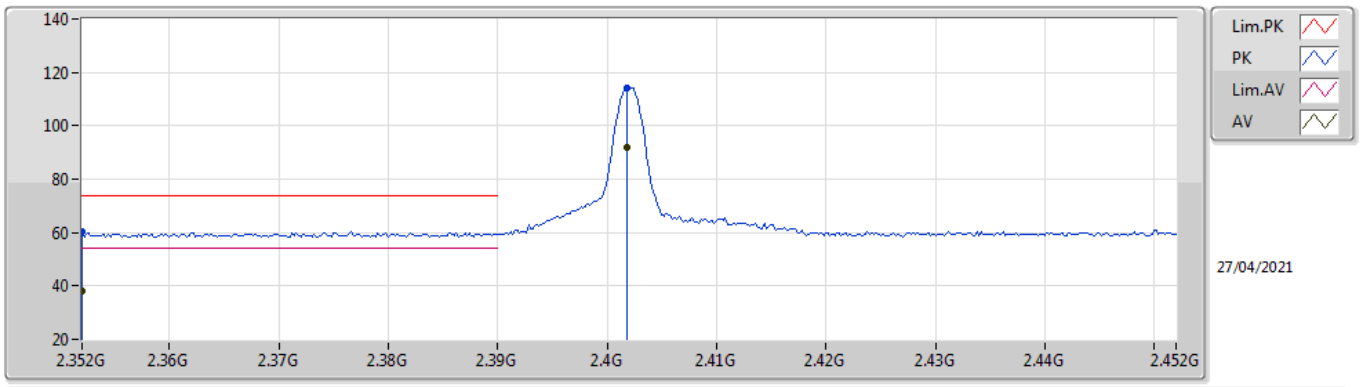
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95971G	26.20	54.00	-27.80	8.82	3	Horizontal	187	1.98	-	17.38	31.34	6.66	29.18
AV	7.44007G	29.90	54.00	-24.10	13.64	3	Horizontal	222	1.49	-	16.26	36.26	7.64	30.26
PK	4.95971G	48.70	74.00	-25.30	8.82	3	Horizontal	187	1.98	-	39.88	31.34	6.66	29.18
PK	7.44007G	52.40	74.00	-21.60	13.64	3	Horizontal	222	1.49	-	38.76	36.26	7.64	30.26

BT-EDR(3Mbps)

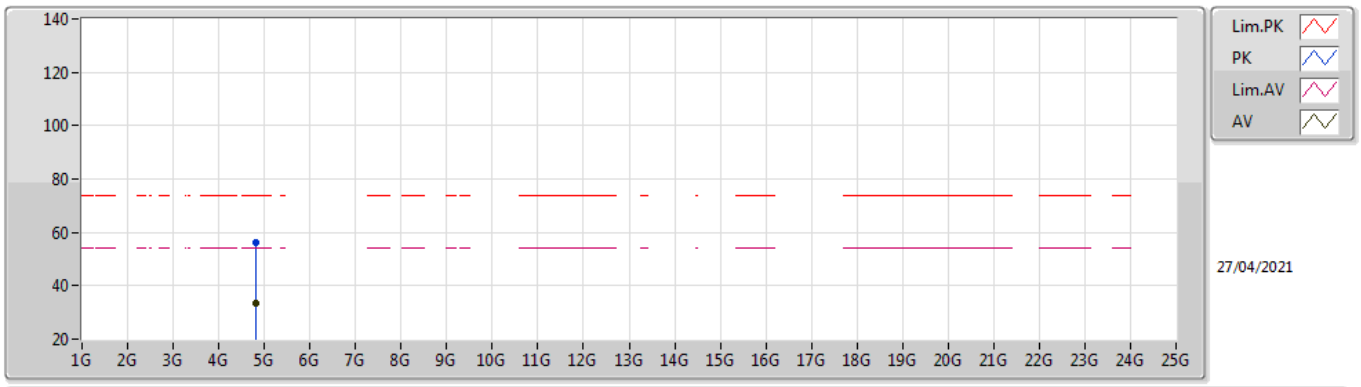
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.352G	38.03	54.00	-15.97	32.04	3	Vertical	203	1.71	-	5.99	27.79	4.25	-
AV	2.4018G	91.85	Inf	-Inf	31.90	3	Vertical	203	1.71	-	59.95	27.60	4.30	-
PK	2.352G	60.53	74.00	-13.47	32.04	3	Vertical	203	1.71	-	28.49	27.79	4.25	-
PK	2.4018G	114.35	Inf	-Inf	31.90	3	Vertical	203	1.71	-	82.45	27.60	4.30	-

BT-EDR(3Mbps)

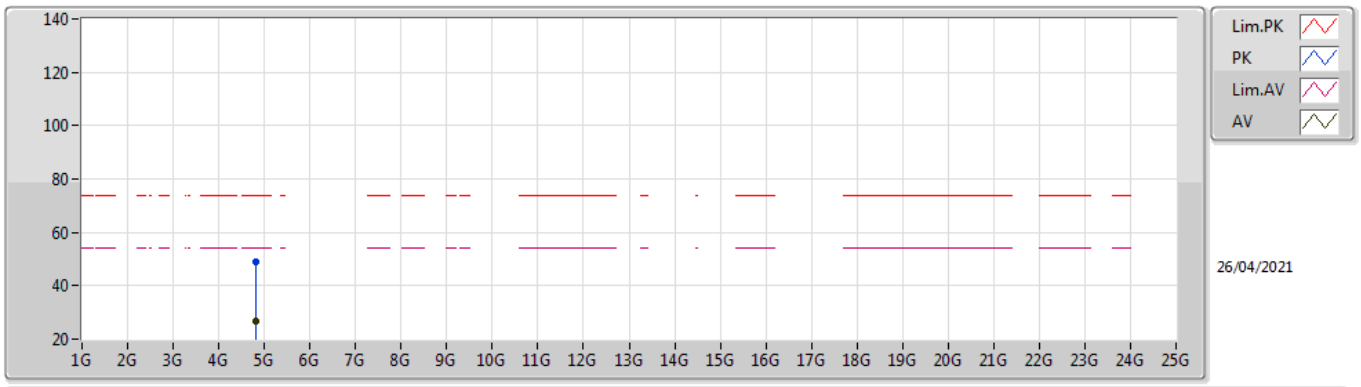
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80396G	33.56	54.00	-20.44	8.38	3	Vertical	279	1.00	-	25.18	31.11	6.50	29.23
PK	4.80396G	56.06	74.00	-17.94	8.38	3	Vertical	279	1.00	-	47.68	31.11	6.50	29.23

BT-EDR(3Mbps)

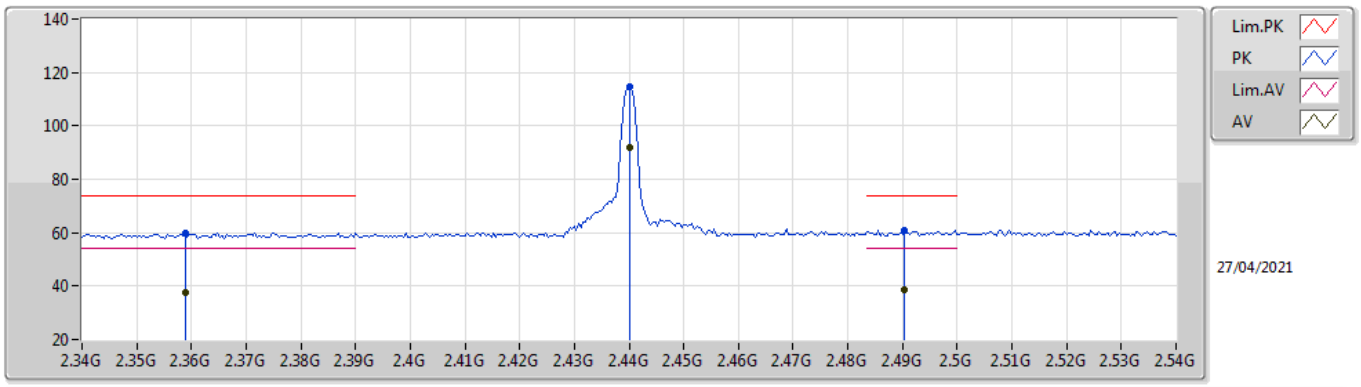
2402MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.80404G	26.64	54.00	-27.36	8.38	3	Horizontal	281	1.16	-	18.26	31.11	6.50	29.23
PK	4.80404G	49.14	74.00	-24.86	8.38	3	Horizontal	281	1.16	-	40.76	31.11	6.50	29.23

BT-EDR(3Mbps)

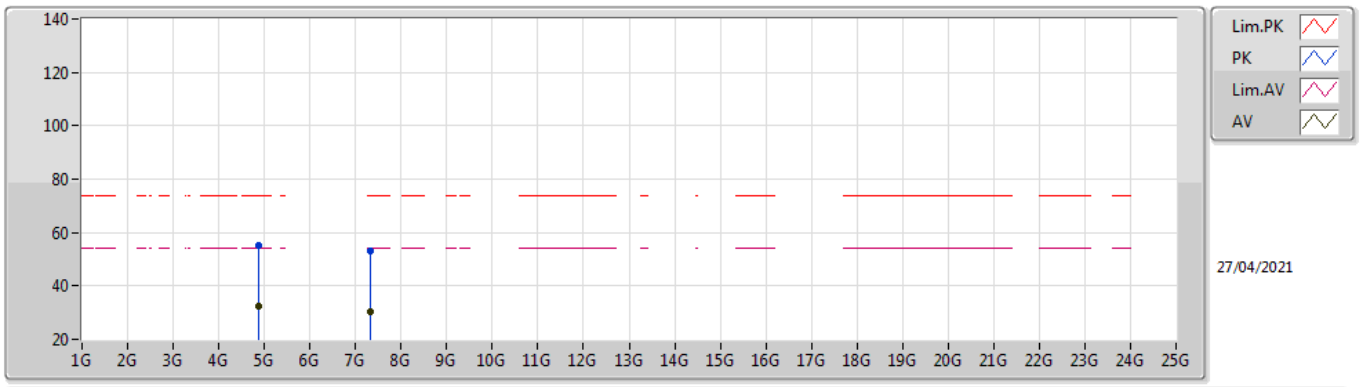
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.3588G	37.35	54.00	-16.65	32.02	3	Vertical	204	1.81	-	5.33	27.76	4.26	-
AV	2.44G	92.05	Inf	-Inf	31.94	3	Vertical	204	1.81	-	60.11	27.60	4.34	-
AV	2.4904G	38.58	54.00	-15.42	32.07	3	Vertical	204	1.81	-	6.51	27.68	4.39	-
PK	2.3588G	59.85	74.00	-14.15	32.02	3	Vertical	204	1.81	-	27.83	27.76	4.26	-
PK	2.44G	114.55	Inf	-Inf	31.94	3	Vertical	204	1.81	-	82.61	27.60	4.34	-
PK	2.4904G	61.08	74.00	-12.92	32.07	3	Vertical	204	1.81	-	29.01	27.68	4.39	-

BT-EDR(3Mbps)

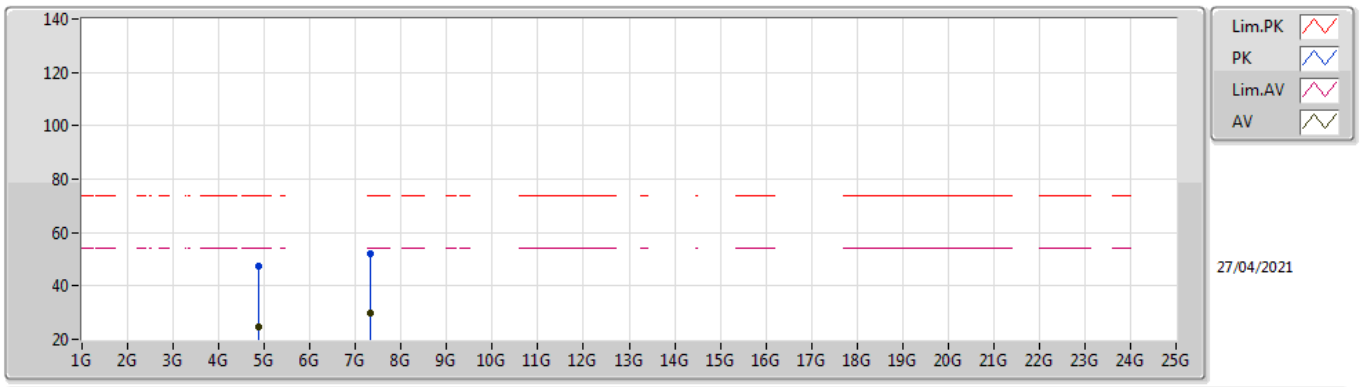
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87995G	32.52	54.00	-21.48	8.57	3	Vertical	289	1.04	-	23.95	31.20	6.58	29.21
AV	7.32022G	30.48	54.00	-23.52	13.69	3	Vertical	239	1.47	-	16.79	36.26	7.60	30.17
PK	4.87995G	55.02	74.00	-18.98	8.57	3	Vertical	289	1.04	-	46.45	31.20	6.58	29.21
PK	7.32022G	52.98	74.00	-21.02	13.69	3	Vertical	239	1.47	-	39.29	36.26	7.60	30.17

BT-EDR(3Mbps)

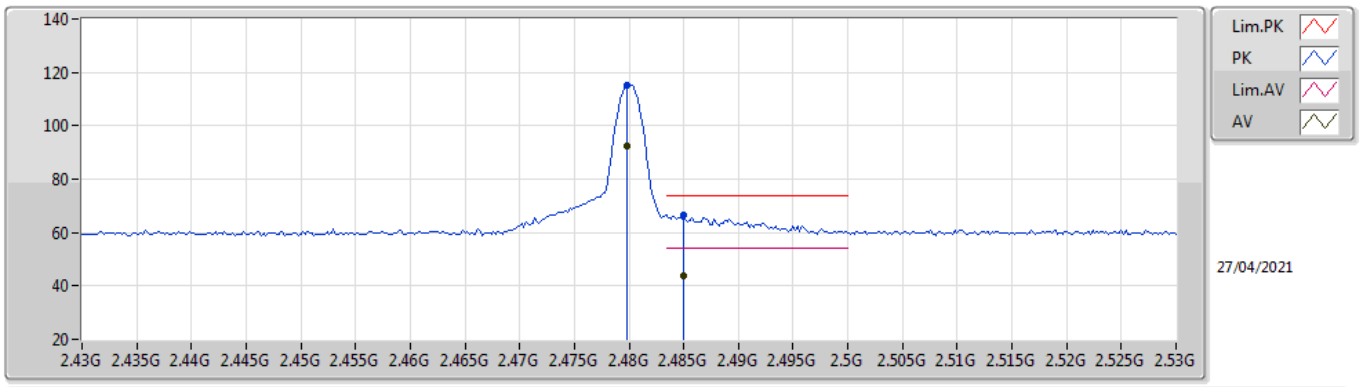
2440MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.87979G	24.86	54.00	-29.14	8.57	3	Horizontal	134	1.94	-	16.29	31.20	6.58	29.21
AV	7.32023G	29.65	54.00	-24.35	13.69	3	Horizontal	358	1.32	-	15.96	36.26	7.60	30.17
PK	4.87979G	47.36	74.00	-26.64	8.57	3	Horizontal	134	1.94	-	38.79	31.20	6.58	29.21
PK	7.32023G	52.15	74.00	-21.85	13.69	3	Horizontal	358	1.32	-	38.46	36.26	7.60	30.17

BT-EDR(3Mbps)

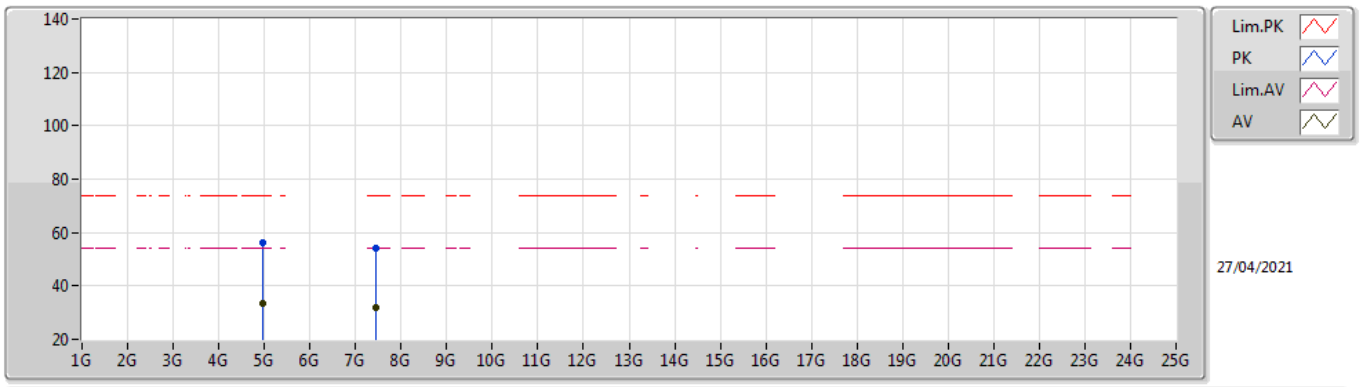
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	2.4798G	92.57	Inf	-Inf	32.04	3	Vertical	206	1.50	-	60.53	27.66	4.38	-
AV	2.485G	43.98	54.00	-10.02	32.05	3	Vertical	206	1.50	-	11.93	27.67	4.38	-
PK	2.4798G	115.07	Inf	-Inf	32.04	3	Vertical	206	1.50	-	83.03	27.66	4.38	-
PK	2.485G	66.48	74.00	-7.52	32.05	3	Vertical	206	1.50	-	34.43	27.67	4.38	-

BT-EDR(3Mbps)

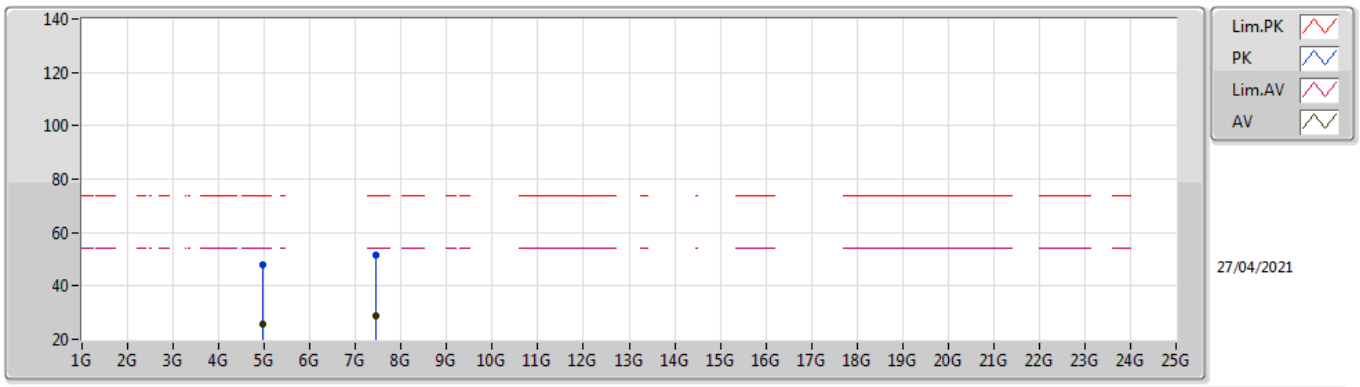
2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95988G	33.57	54.00	-20.43	8.82	3	Vertical	289	1.02	-	24.75	31.34	6.66	29.18
AV	7.43995G	31.70	54.00	-22.30	13.64	3	Vertical	175	1.11	-	18.06	36.26	7.64	30.26
PK	4.95988G	56.07	74.00	-17.93	8.82	3	Vertical	289	1.02	-	47.25	31.34	6.66	29.18
PK	7.43995G	54.20	74.00	-19.80	13.64	3	Vertical	175	1.11	-	40.56	36.26	7.64	30.26

BT-EDR(3Mbps)

2480MHz_TX



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)
AV	4.95988G	25.61	54.00	-28.39	8.82	3	Horizontal	187	1.97	-	16.79	31.34	6.66	29.18
AV	7.43809G	28.85	54.00	-25.15	13.63	3	Horizontal	244	1.96	-	15.22	36.25	7.64	30.26
PK	4.95988G	48.11	74.00	-25.89	8.82	3	Horizontal	187	1.97	-	39.29	31.34	6.66	29.18
PK	7.43809G	51.35	74.00	-22.65	13.63	3	Horizontal	244	1.96	-	37.72	36.25	7.64	30.26