

FCC Radio Test Report

FCC ID : 2AY4J-TK20
Contain FCC ID : XMR2020BG95M2
Equipment : Tack GPS Location Tracker
Brand Name : TACK
Model Name : TK20
Applicant : Tack One Private Limited
22 SIN MING LANE #06-76, MIDVIEW CITY
SINGAPORE 573969
Manufacturer : Tack One Private Limited
22 SIN MING LANE #06-76, MIDVIEW CITY
SINGAPORE 573969
Standard : 47 CFR FCC Part 15.247

The product was received on Dec. 28, 2020, and testing was started from Apr. 26, 2021 and completed on Apr. 28, 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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TEL : 886-3-3273456
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Report Template No.: HE1-C10 Ver4.1
FCC ID: 2AY4J-TK20

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)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	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 Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	BT-LE(1Mbps)	1.0	1TX

Note:

- ♦ Bluetooth LE uses a GFSK (1Mbps) modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Tack GPS	TK20	PCB	I-PEX	-7.02

For BT function:

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

Ant. 1 can be used as transmitting/receiving.

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) $\geq 1/T$
BT-LE(1Mbps)	0.775	1.11	2.095m	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	TH07-HY	Justin Pan	20.1~25.2°C / 51.2~60%	26/Apr/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.				
Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
Radiated	03CH09-HY	Lego Lin	23.2~24.5°C / 59~64%	26/Apr/2021

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	ESP_RF_test_tool_v2.5
------------------------------	-----------------------

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	8
2440MHz	8
2480MHz	8

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	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

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	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT	V		

2.3 Accessories

Accessories				
Data Cable	Brand Name	-	Model Name	-
	Manufacturer	-	SN	-
	Signal Line	0.2 meter, non-shielded cable, w/o ferrite core		
Battery	Brand Name	-	Model Name	703035
	Power Rating	3.7 Vdc, 750 mAh	Type	Li-ion

Reminder: Regarding to more detail and other information, please refer to user manual.

2.4 Support Equipment

Support Equipment – AC Conduction					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	PP13S	-	-
2	Fixture	-	-	-	Note 1
3	Adapter for NB	DELL	LA65NM130	-	-

Note 1: Provided by Customer

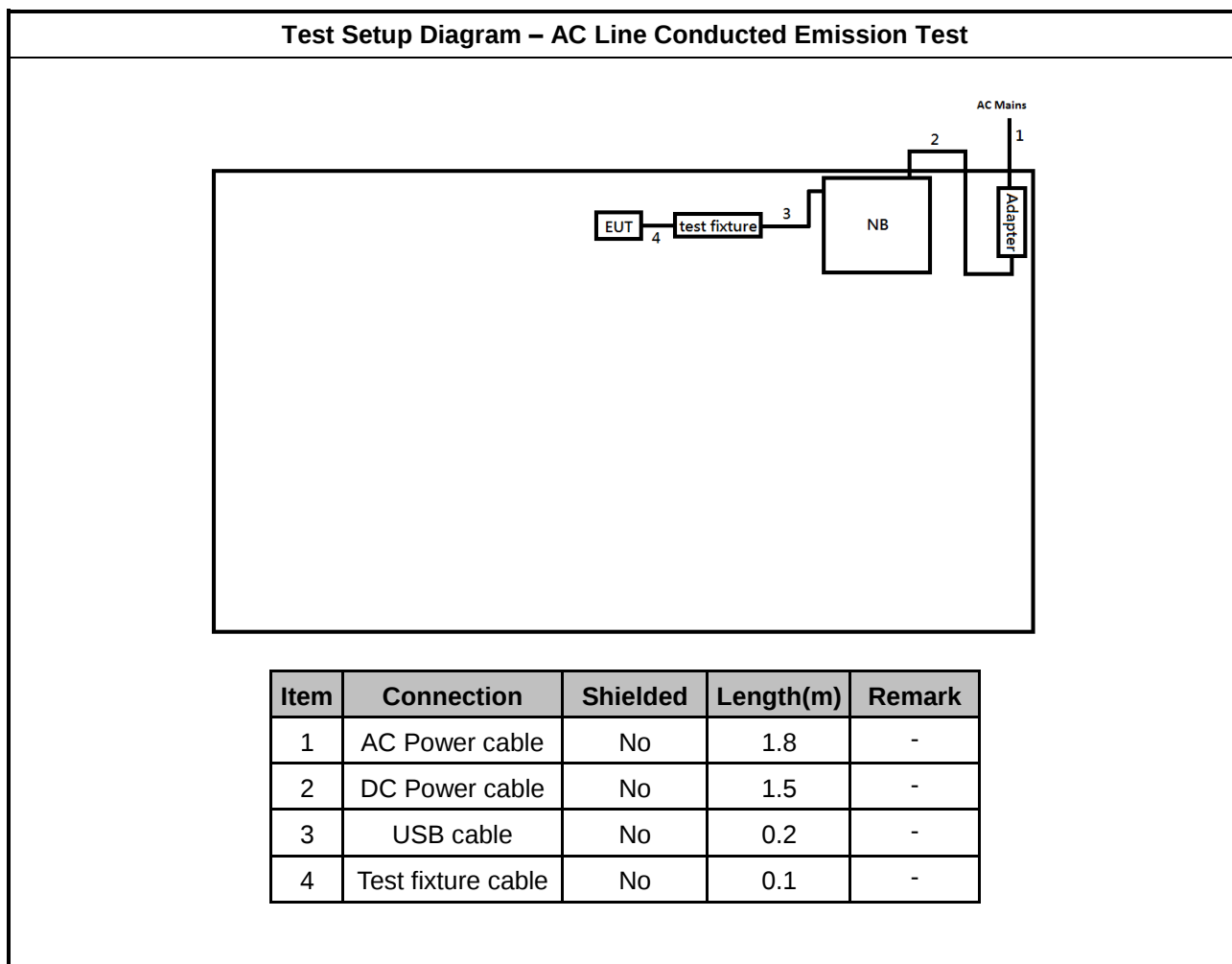
Support Equipment – Conducted					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	HP	5220M	-	-
2	Adapter for NB	HP	PPP012L-E	-	-
3	Fixture	-	-	-	Note 1

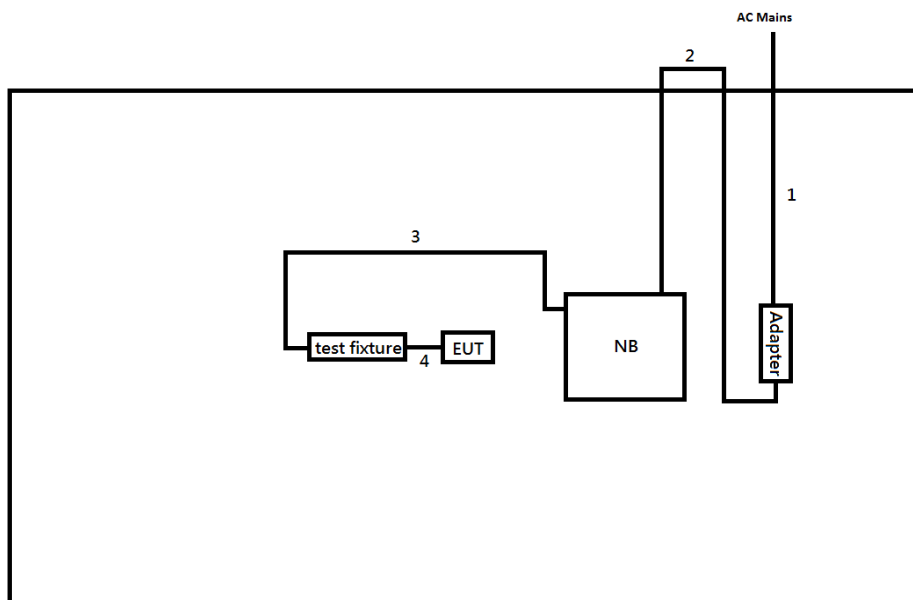
Note 1: Provided by Customer

Support Equipment – Radiated					
No.	Equipment	Brand Name	Model Name	FCC ID	Remark
1	Notebook	DELL	PP13S	-	-
2	Fixture	-	-	-	Note 1
3	Adapter for NB	DELL	LA65NM130	-	-

Note 1: Provided by Customer

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length(m)	Remark
1	AC Power cable	No	1.8	-
2	DC Power cable	No	1.5	-
3	USB cable	No	0.2	-
4	Test fixture cable	No	0.1	-

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

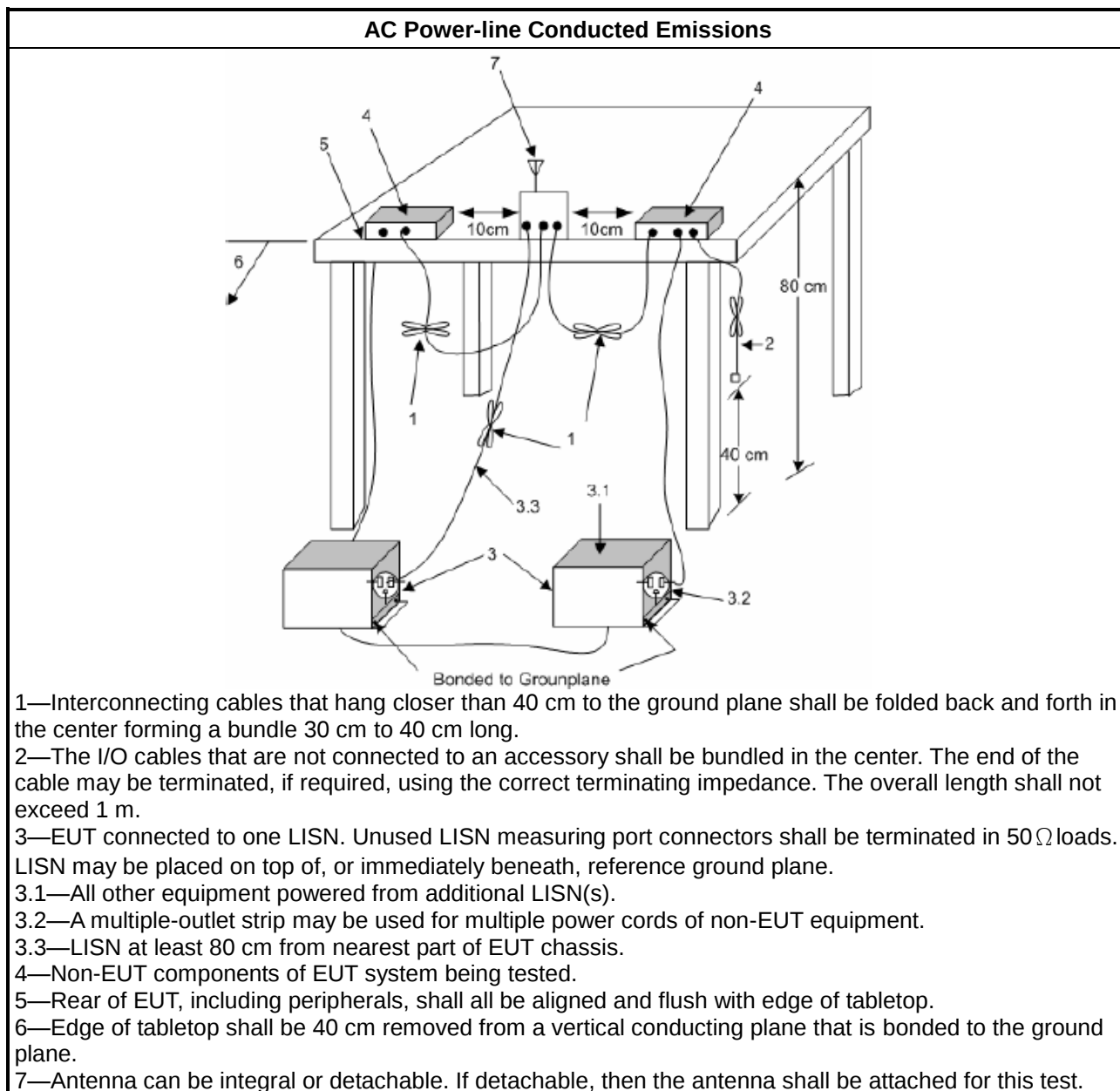
Test Method
▪ Refer as ANSI C63.10-2013, clause 6.2 foray power-line conducted emissions.

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



3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

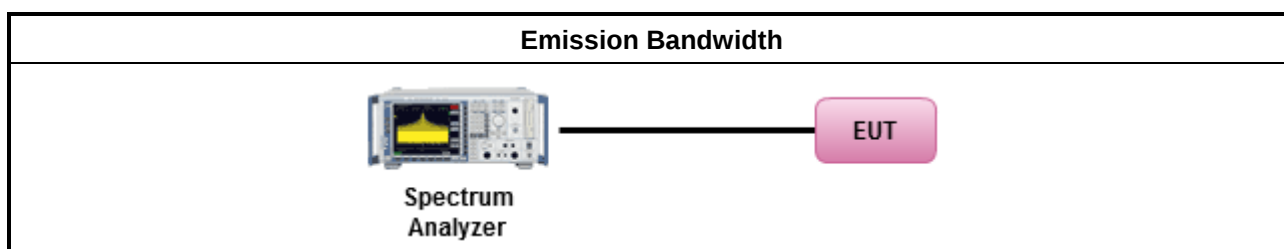
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:	
	2400-2483.5 MHz Band
	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	Smart antenna system (SAS)
	- Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

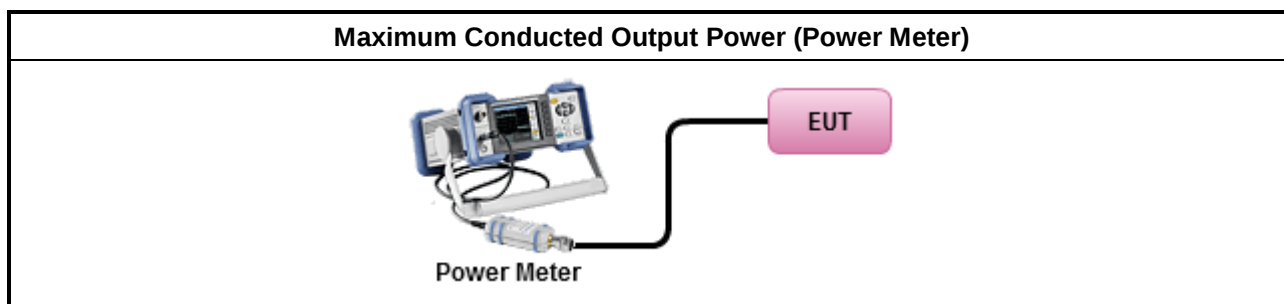
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☐	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit	
▪	Power Spectral Density (PSD) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
▪	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒	Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Max. PSD.
▪	For conducted measurement.
▪	If The EUT supports multiple transmit chains using options given below:
▪	Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30
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 level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.	

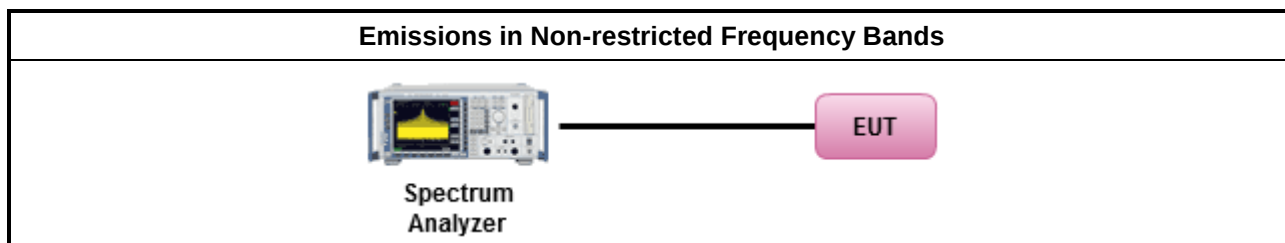
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 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 below 30 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.

3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

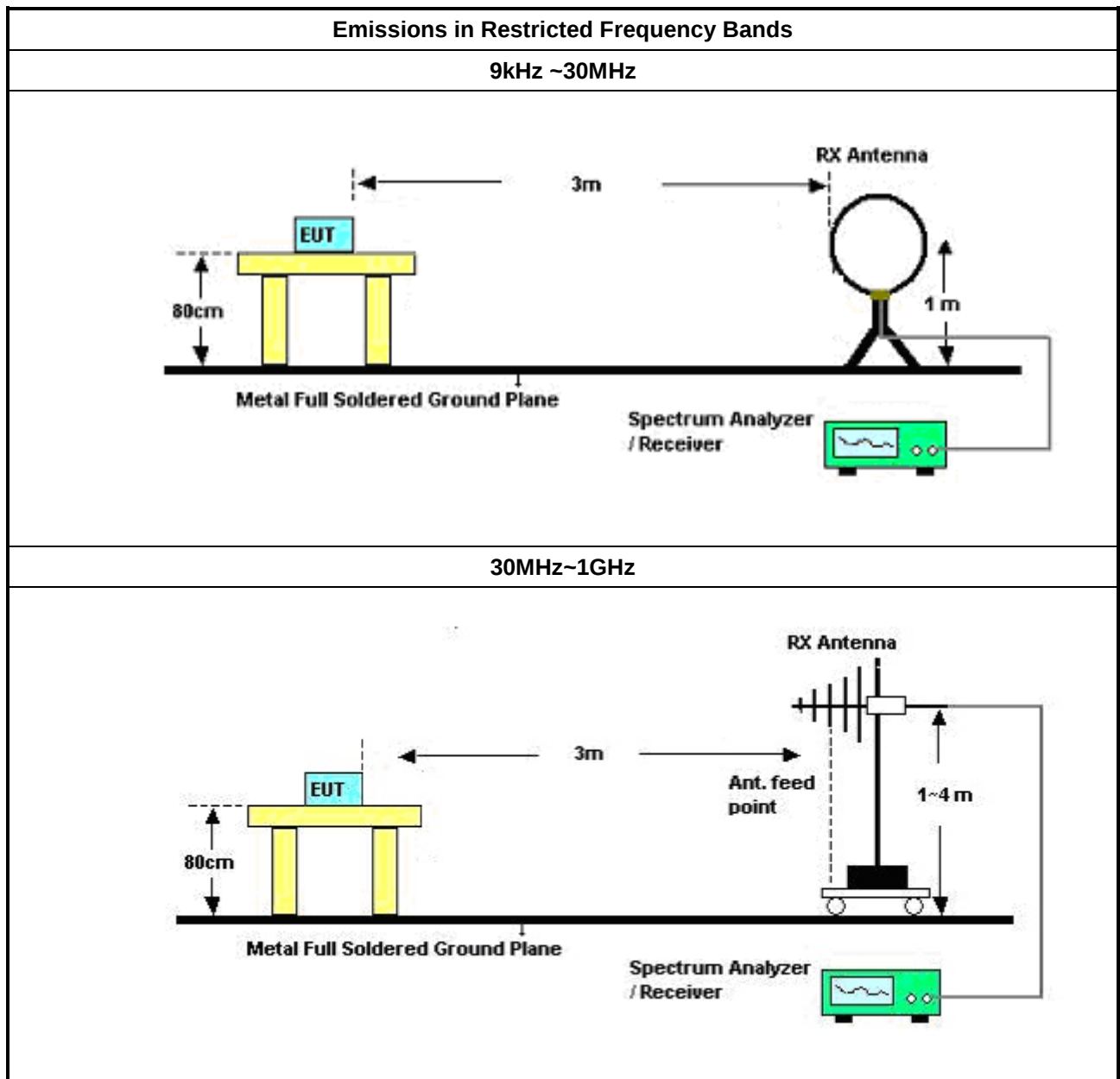
Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
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.

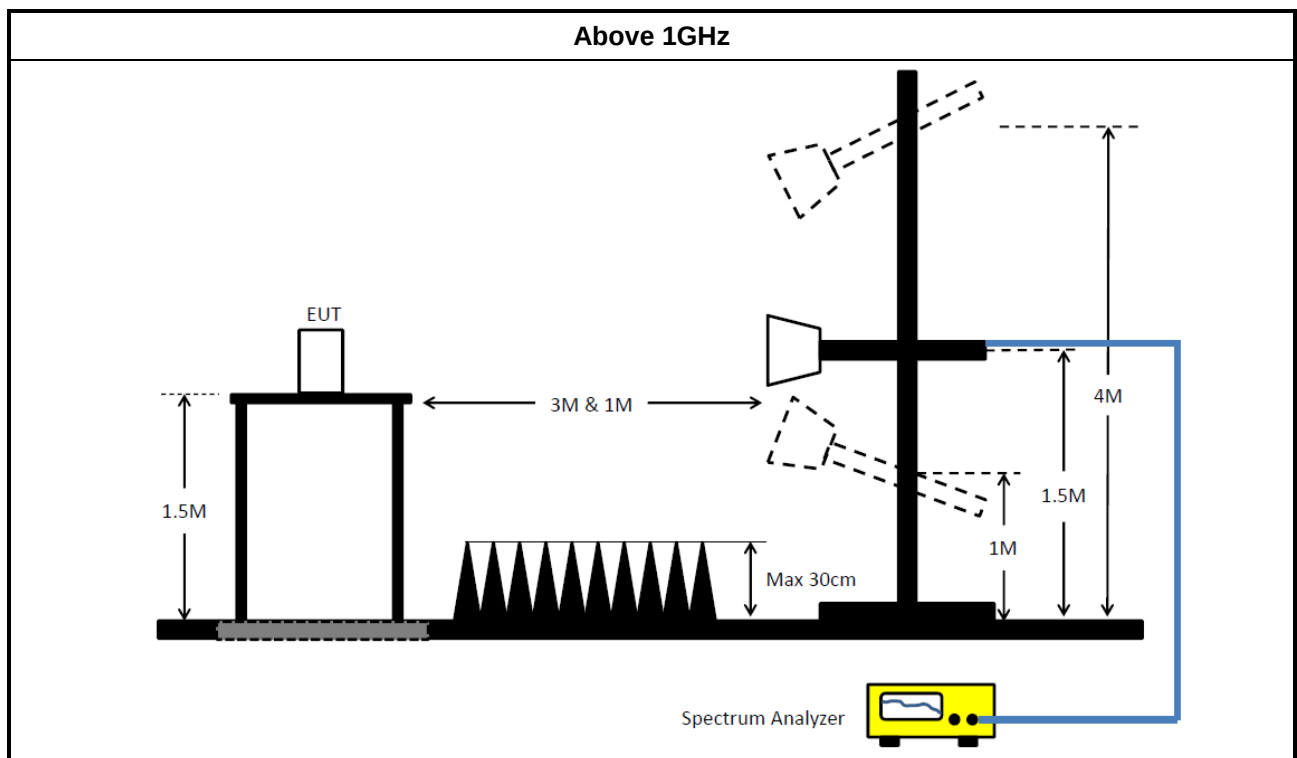
3.6.4 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Raw(Read Level) + AF(Antenna Factor) + CL(Cable Loss) - PA(Preamplifier Factor)

3.6.5 Test Setup





3.6.6 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.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

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	101515	10Hz~40GHz	26/Mar/2021	25/Mar/2022
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	20/Oct/2020	19/Oct/2021
Pulse Sensor	Anritsu	MA2411B	1339407	300MHz~40GHz	27/Nov/2020	26/Nov/2021
Power Meter	Anritsu	ML2495A	1517010	300MHz~40GHz	27/Nov/2020	26/Nov/2021

**Instrument for Radiated Test**

Instrument	Manufacturer /Brand	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz~1GHz 3m	26/Mar/2021	25/Mar/2022
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz~18GHz 3m	18/Mar/2021	17/Mar/2022
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	11/Aug/2020	10/Aug/2021
Amplifier	EMC	EMC9135	980232	9kHz~1GHz	12/Apr/2021	11/Apr/2022
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	24/Jul/2020	23/Jul/2021
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D&MT J6102-05	35418 & 3	30MHz~1GHz	06/Sep/2020	05/Sep/2021
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	28/May/2020	27/May/2021
RF Cable-low	Jye Bao	RG142	CB031+324530/4	9kHz~30MHz	03/Sep/2020	02/Sep/2021
RF Cable-low	Jye Bao	RG142	CB031+324530/4	30MHz~1GHz	09/Feb/2021	08/Feb/2022
RF CABLE 5m+3m+1m	HUBER+ SUHNER	SUCOFLEX104	SN MY25918/4+ SN MY39478/4 + SN 324530/4	1GHz~40GHz	15/Aug/2020	14/Aug/2021
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170221	18GHz~40GHz	11/Mar/2021	10/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



Conducted Emissions at Powerline

Appendix A

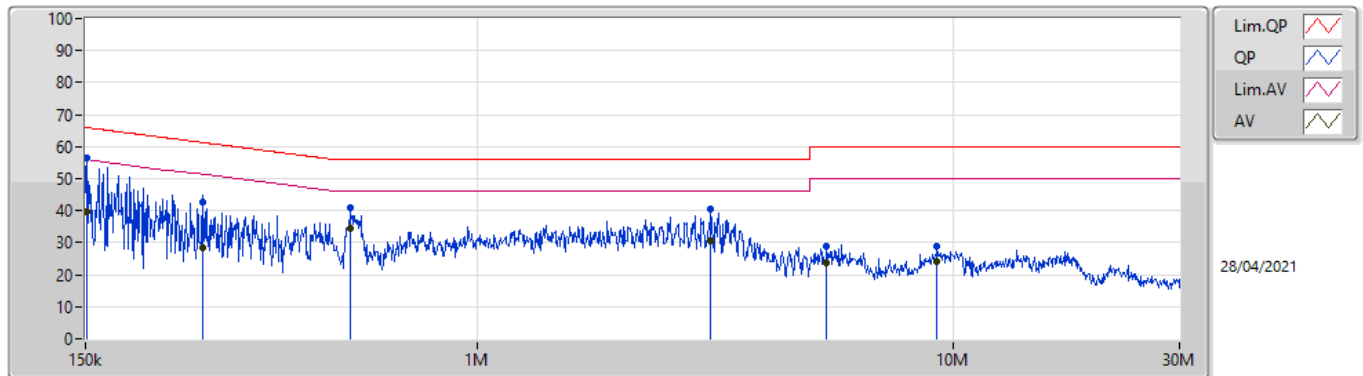
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	151.202k	56.68	65.92	-9.24	Line

Result

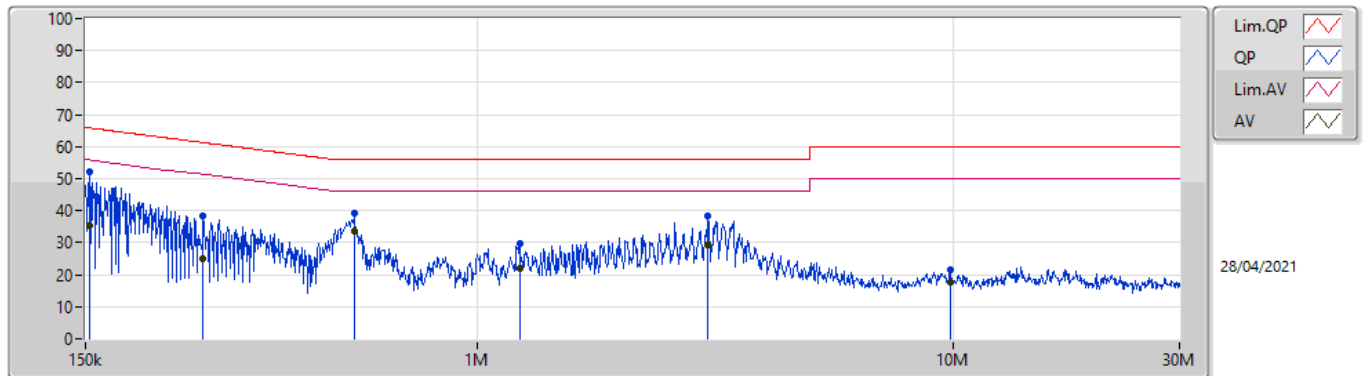
Mode	Result	Type	Freq (Hz)	Level (dBUV)	Limit (dBUV)	Margin (dB)	Condition	Comments
Mode 1	Pass	QP	151.202k	56.68	65.92	-9.24	Line	-
Mode 1	Pass	AV	151.202k	39.59	55.92	-16.33	Line	-
Mode 1	Pass	QP	265.468k	42.50	61.26	-18.76	Line	-
Mode 1	Pass	AV	265.468k	28.30	51.26	-22.96	Line	-
Mode 1	Pass	QP	540.273k	41.10	56.00	-14.90	Line	-
Mode 1	Pass	AV	540.273k	34.66	46.00	-11.34	Line	-
Mode 1	Pass	QP	3.104M	40.60	56.00	-15.40	Line	-
Mode 1	Pass	AV	3.104M	30.47	46.00	-15.53	Line	-
Mode 1	Pass	QP	5.429M	28.88	60.00	-31.12	Line	-
Mode 1	Pass	AV	5.429M	23.50	50.00	-26.50	Line	-
Mode 1	Pass	QP	9.269M	28.67	60.00	-31.33	Line	-
Mode 1	Pass	AV	9.269M	24.20	50.00	-25.80	Line	-
Mode 1	Pass	QP	153.024k	52.08	65.83	-13.75	Neutral	-
Mode 1	Pass	AV	153.024k	35.51	55.83	-20.32	Neutral	-
Mode 1	Pass	QP	265.468k	38.52	61.26	-22.74	Neutral	-
Mode 1	Pass	AV	265.468k	25.03	51.26	-26.23	Neutral	-
Mode 1	Pass	QP	551.165k	39.07	56.00	-16.93	Neutral	-
Mode 1	Pass	AV	551.165k	33.83	46.00	-12.17	Neutral	-
Mode 1	Pass	QP	1.23M	29.61	56.00	-26.39	Neutral	-
Mode 1	Pass	AV	1.23M	22.10	46.00	-23.90	Neutral	-
Mode 1	Pass	QP	3.055M	38.56	56.00	-17.44	Neutral	-
Mode 1	Pass	AV	3.055M	29.15	46.00	-16.85	Neutral	-
Mode 1	Pass	QP	9.88M	21.50	60.00	-38.50	Neutral	-
Mode 1	Pass	AV	9.88M	17.83	50.00	-32.17	Neutral	-

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	151.202k	56.68	65.92	-9.24	19.63	Line	-	37.05	9.69	0.04	9.90			
AV	151.202k	39.59	55.92	-16.33	19.63	Line	-	19.96	9.69	0.04	9.90			
QP	265.468k	42.50	61.26	-18.76	19.63	Line	-	22.87	9.68	0.05	9.90			
AV	265.468k	28.30	51.26	-22.96	19.63	Line	-	8.67	9.68	0.05	9.90			
QP	540.273k	41.10	56.00	-14.90	19.61	Line	-	21.49	9.67	0.07	9.87			
AV	540.273k	34.66	46.00	-11.34	19.61	Line	-	15.05	9.67	0.07	9.87			
QP	3.104M	40.60	56.00	-15.40	19.68	Line	-	20.92	9.69	0.13	9.86			
AV	3.104M	30.47	46.00	-15.53	19.68	Line	-	10.79	9.69	0.13	9.86			
QP	5.429M	28.88	60.00	-31.12	19.76	Line	-	9.12	9.70	0.16	9.90			
AV	5.429M	23.50	50.00	-26.50	19.76	Line	-	3.74	9.70	0.16	9.90			
QP	9.269M	28.67	60.00	-31.33	19.82	Line	-	8.85	9.72	0.20	9.90			
AV	9.269M	24.20	50.00	-25.80	19.82	Line	-	4.38	9.72	0.20	9.90			

Conducted Emissions at Powerline_Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	153.024k	52.08	65.83	-13.75	19.63	Neutral	-	32.45	9.69	0.04	9.90			
AV	153.024k	35.51	55.83	-20.32	19.63	Neutral	-	15.88	9.69	0.04	9.90			
QP	265.468k	38.52	61.26	-22.74	19.63	Neutral	-	18.89	9.68	0.05	9.90			
AV	265.468k	25.03	51.26	-26.23	19.63	Neutral	-	5.40	9.68	0.05	9.90			
QP	551.165k	39.07	56.00	-16.93	19.61	Neutral	-	19.46	9.67	0.07	9.87			
AV	551.165k	33.83	46.00	-12.17	19.61	Neutral	-	14.22	9.67	0.07	9.87			
QP	1.23M	29.61	56.00	-26.39	19.56	Neutral	-	10.05	9.67	0.09	9.80			
AV	1.23M	22.10	46.00	-23.90	19.56	Neutral	-	2.54	9.67	0.09	9.80			
QP	3.055M	38.56	56.00	-17.44	19.67	Neutral	-	18.89	9.69	0.12	9.86			
AV	3.055M	29.15	46.00	-16.85	19.67	Neutral	-	9.48	9.69	0.12	9.86			
QP	9.88M	21.50	60.00	-38.50	19.83	Neutral	-	1.67	9.73	0.20	9.90			
AV	9.88M	17.83	50.00	-32.17	19.83	Neutral	-	-2.00	9.73	0.20	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-LE(1Mbps)	642.5k	1.019M	1M02F1D	635k	1.014M

Max-N dB = Maximum 6dB down bandwidth; Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth; Min-OBW = Minimum 99% occupied bandwidth

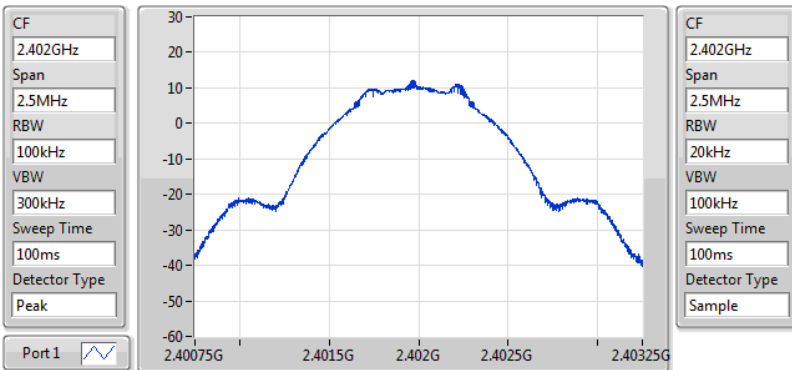
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom-DTS	Pass	500k	642.5k	1.014M
2440MHz_TnomVnom-DTS	Pass	500k	635k	1.019M
2480MHz_TnomVnom-DTS	Pass	500k	638.75k	1.018M

Port X-N dB = Port X 6dB down bandwidth;
Port X-OBW = Port X 99% occupied bandwidth

BT-LE(1Mbps)

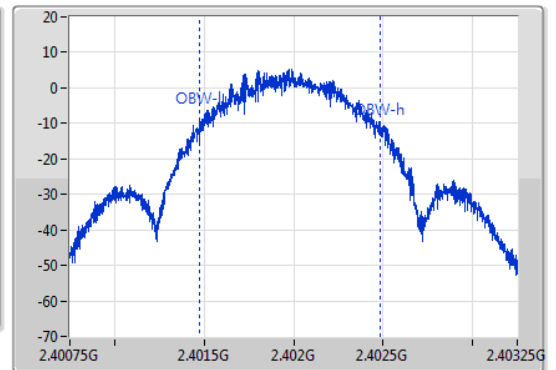
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
642.5k	2.401654G	2.402296G	1.014M	2.401473G	2.402487G	500k	1

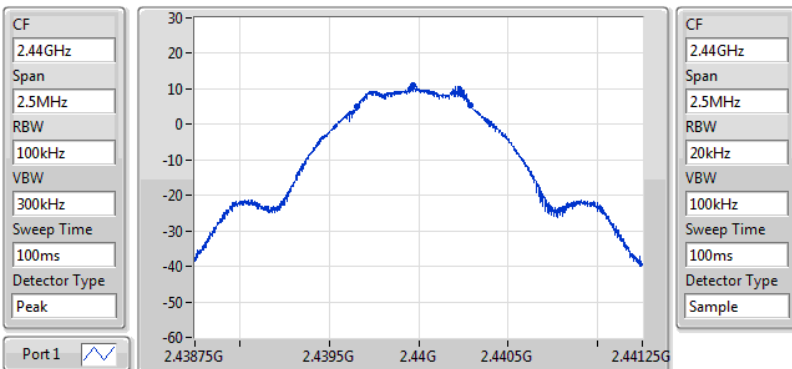
EBW-DTS

26/04/2021



BT-LE(1Mbps)

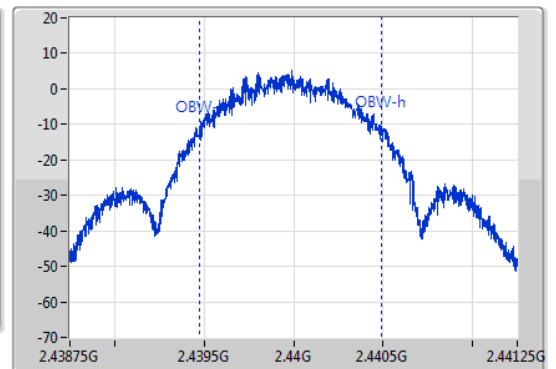
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
635k	2.439656G	2.440291G	1.019M	2.439474G	2.440494G	500k	1

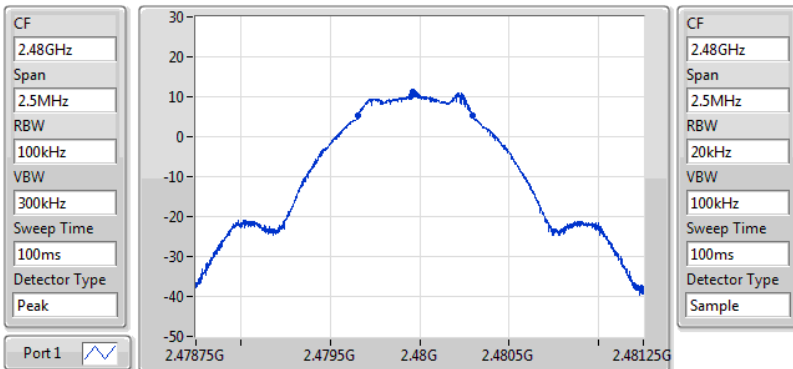
EBW-DTS

26/04/2021



BT-LE(1Mbps)

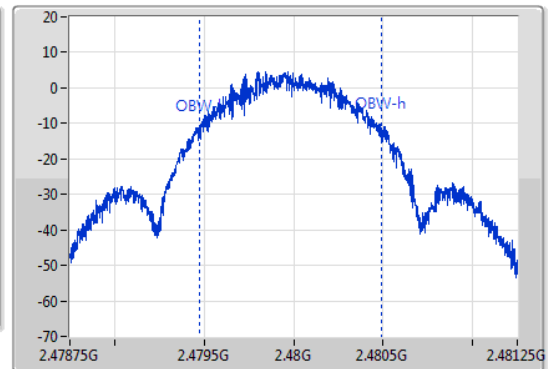
2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
638.75k	2.479655G	2.480294G	1.018M	2.479472G	2.48049G	500k	1

EBW-DTS

26/04/2021





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	11.00	0.01259



Average Power-DTS

Appendix C

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom-DTS	Pass	-7.02	11.00	30.00
2440MHz_TnomVnom-DTS	Pass	-7.02	10.62	30.00
2480MHz_TnomVnom-DTS	Pass	-7.02	10.93	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-5.14

RBW = 3kHz;



Result

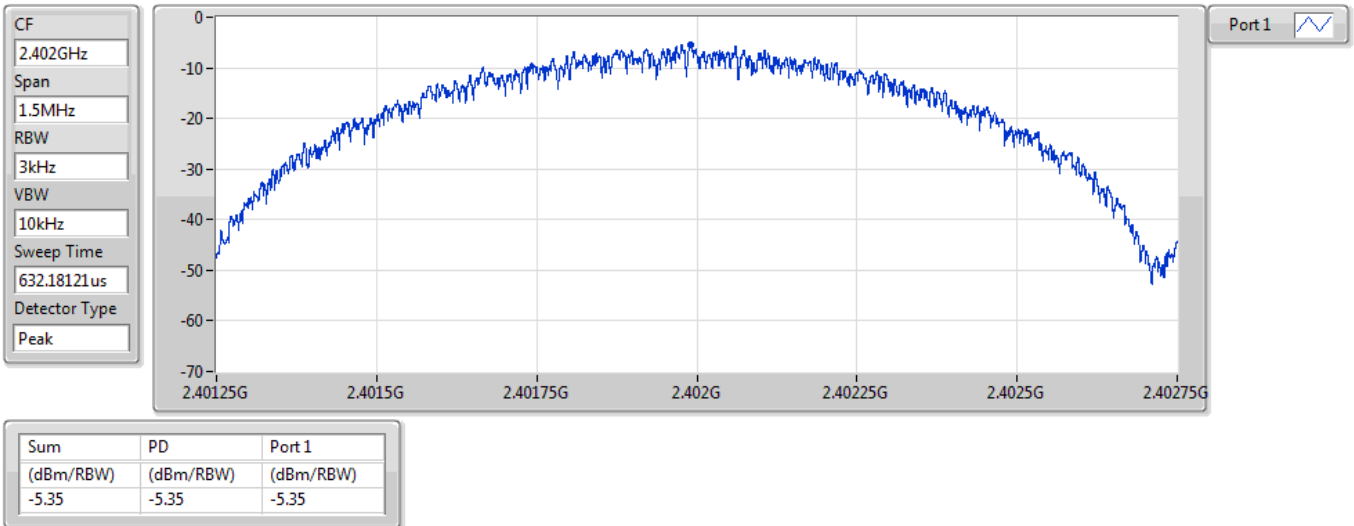
Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom-DTS	Pass	-7.02	-5.35	8.00
2440MHz_TnomVnom-DTS	Pass	-7.02	-5.98	8.00
2480MHz_TnomVnom-DTS	Pass	-7.02	-5.14	8.00

DG = Directional Gain; RBW = 3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

BT-LE(1Mbps)

2402MHz

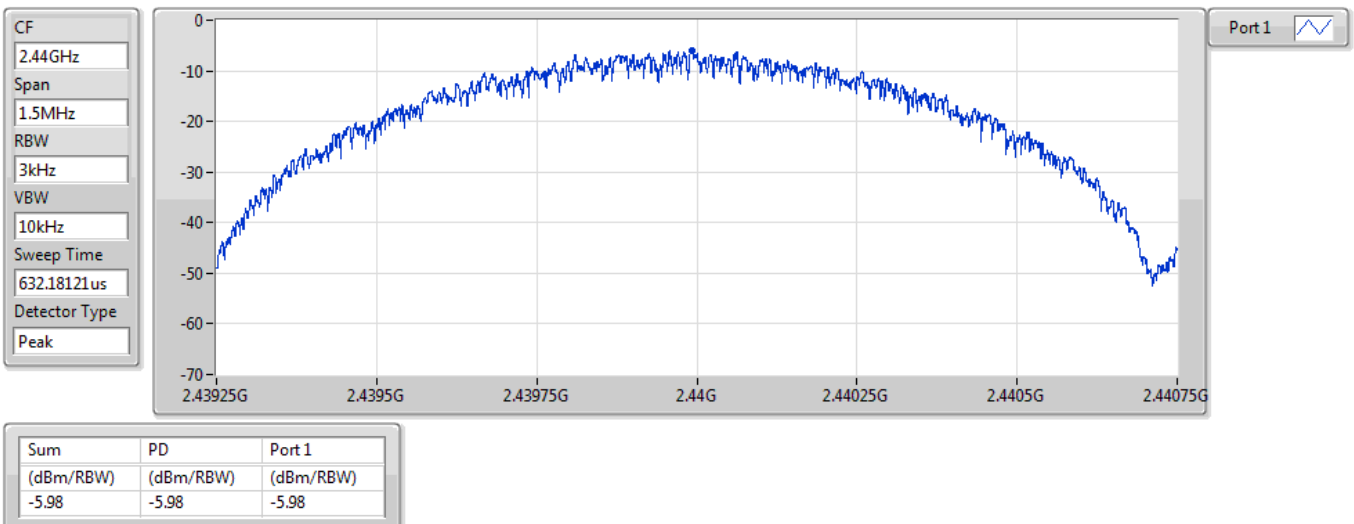
26/04/2021



BT-LE(1Mbps)

2440MHz

26/04/2021

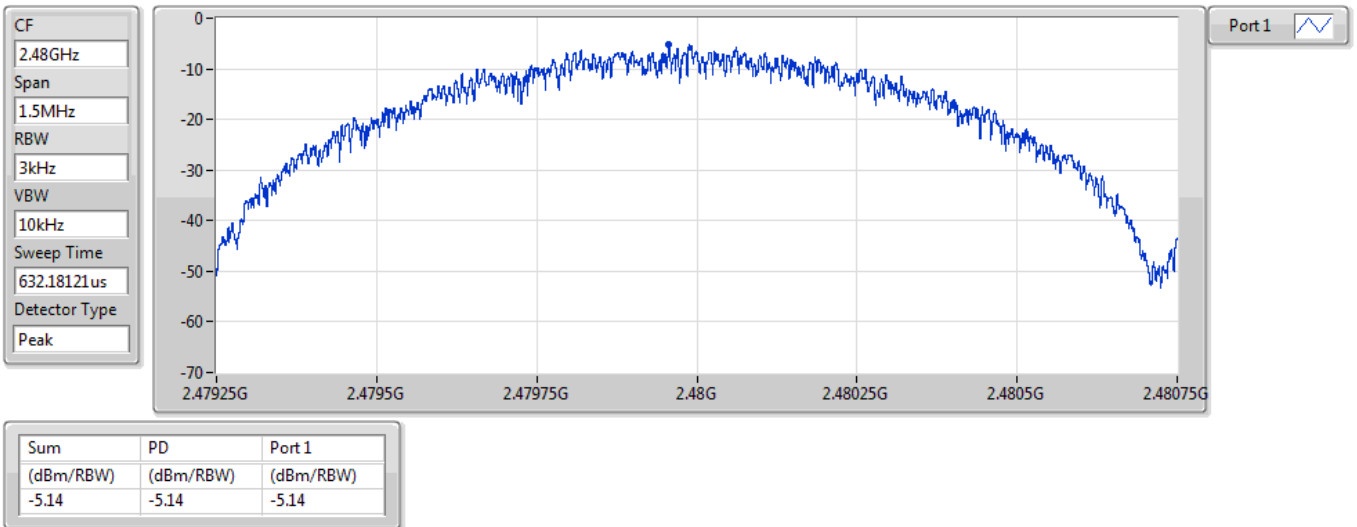


BT-LE(1Mbps)

2480MHz

PSD

26/04/2021





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-LE(1Mbps)	Pass	2.40196G	11.24	-18.76	826.65M	-42.35	2.3979G	-51.14	2.4835G	-52.65	2.48363G	-50.15	3.30494G	-35.72	1

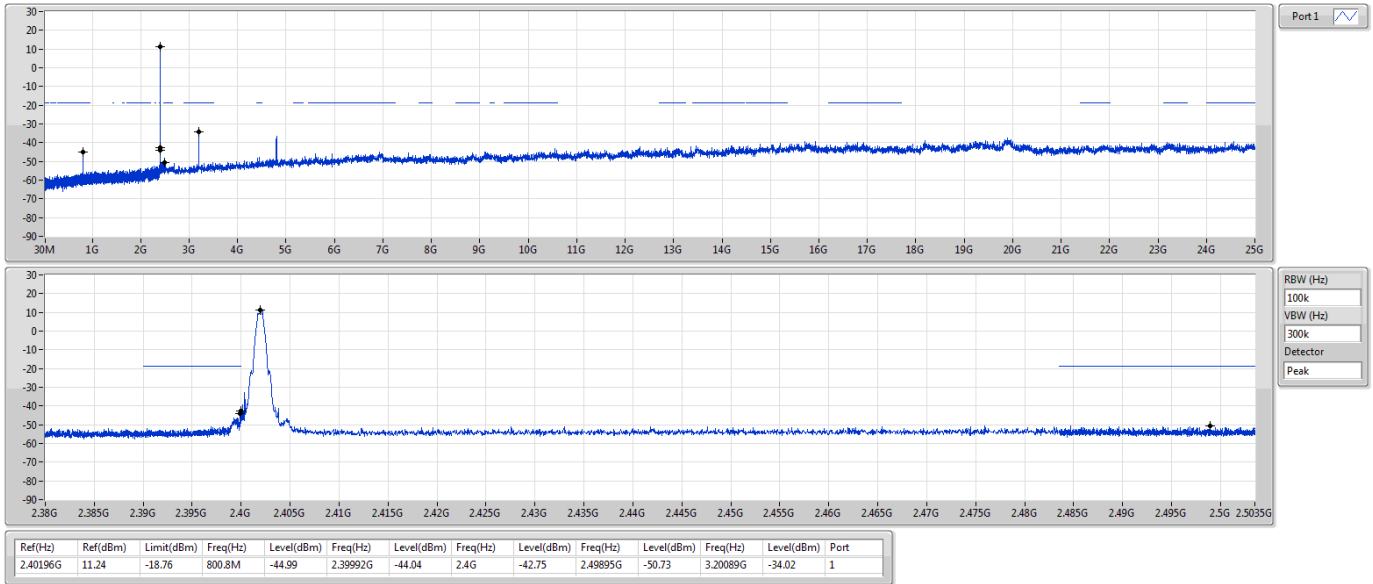
Result

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-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom-DTS	Pass	2.40196G	11.24	-18.76	800.8M	-44.99	2.39992G	-44.04	2.4G	-42.75	2.49895G	-50.73	3.20089G	-34.02	1
2440MHz_TnomVnom-DTS	Pass	2.40196G	11.24	-18.76	813.43M	-43.57	2.39996G	-51.70	2.4835G	-52.88	2.49974G	-50.55	3.25151G	-34.71	1
2480MHz_TnomVnom-DTS	Pass	2.40196G	11.24	-18.76	826.65M	-42.35	2.3979G	-51.14	2.4835G	-52.65	2.48363G	-50.15	3.30494G	-35.72	1

BT-LE(1Mbps)

CSEndB-DTS

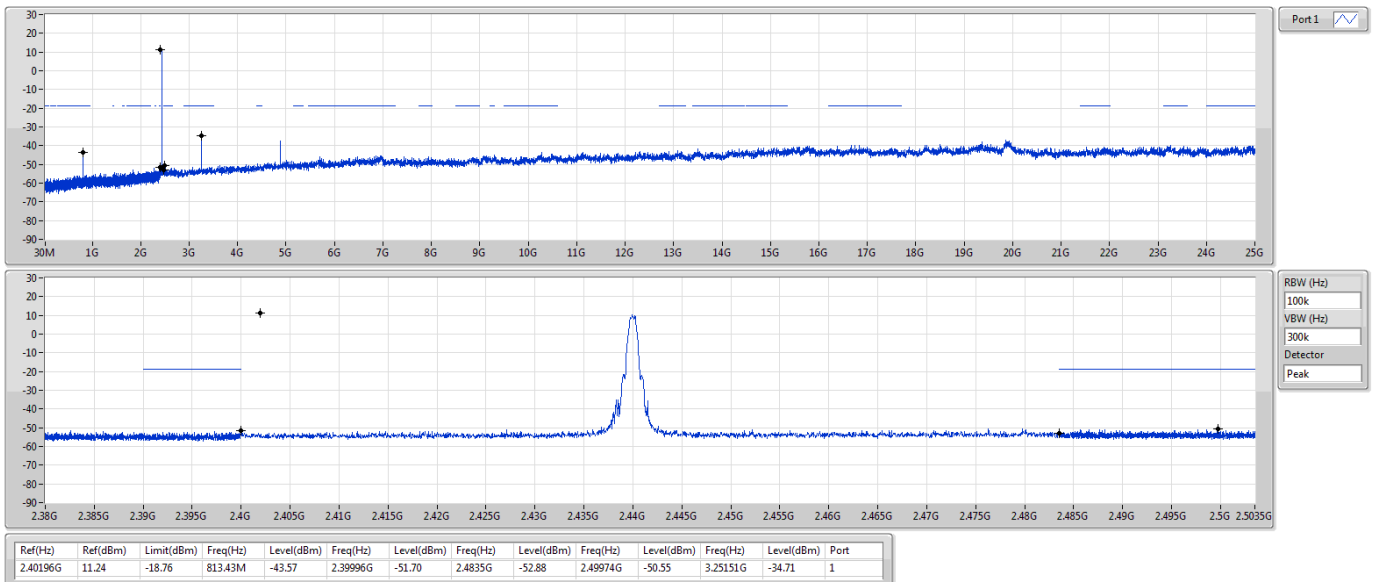
2402MHz



BT-LE(1Mbps)

CSEndB-DTS

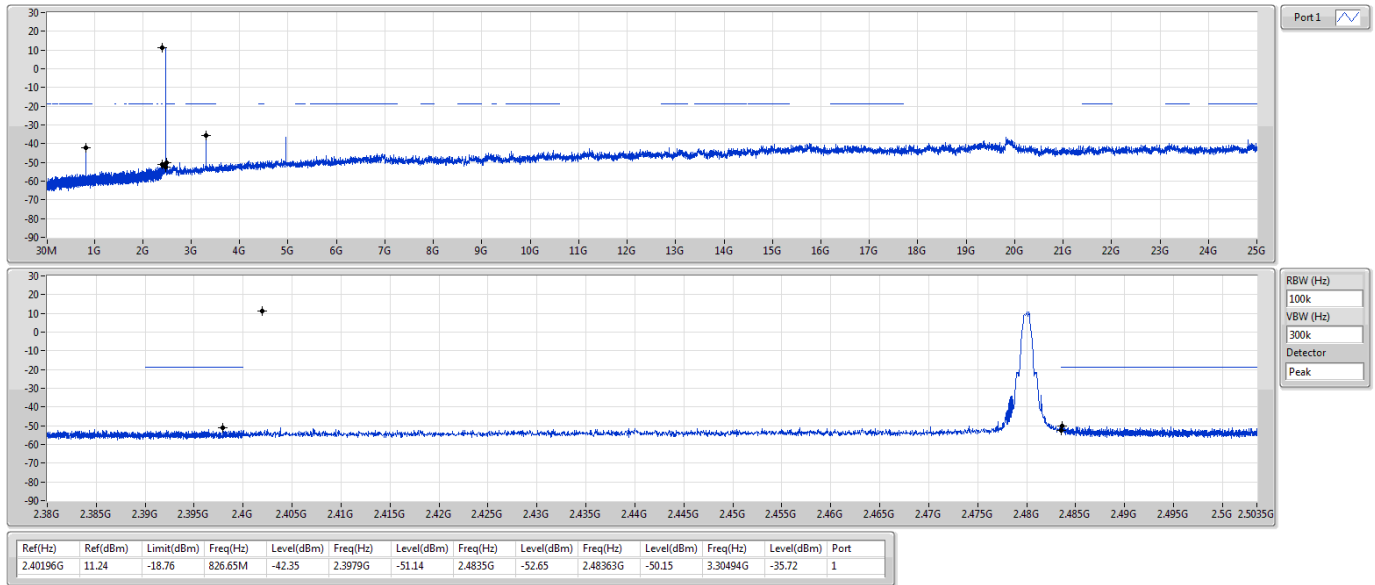
2440MHz



BT-LE(1Mbps)

CSEndB-DTS

2480MHz





Summary

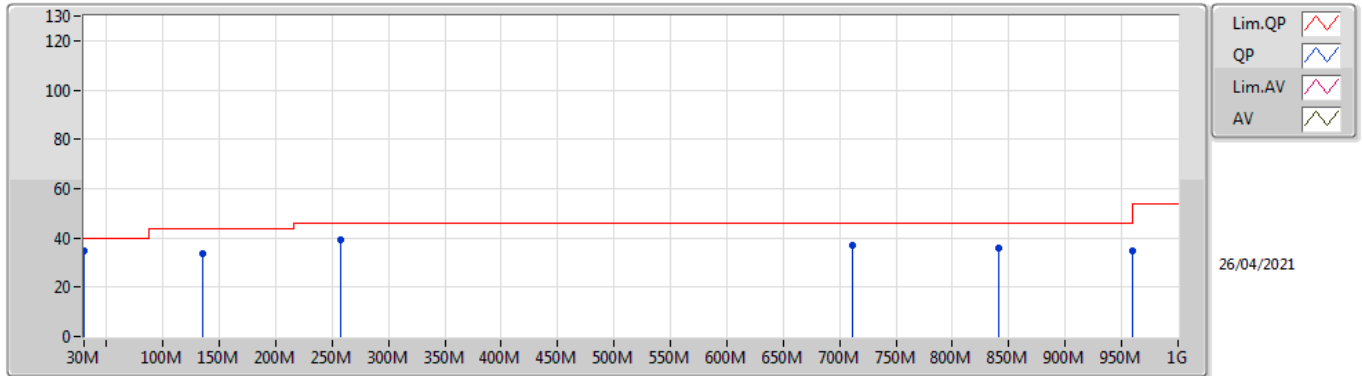
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	532.46M	41.66	46.00	-4.34	3	Horizontal	0	1.00	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	30M	34.98	40.00	-5.02	3	Vertical	360	1.00	-
2440MHz	Pass	PK	134.76M	33.54	43.50	-9.96	3	Vertical	360	1.00	-
2440MHz	Pass	PK	256.98M	39.32	46.00	-6.68	3	Vertical	360	1.00	-
2440MHz	Pass	PK	710.94M	36.85	46.00	-9.15	3	Vertical	360	1.00	-
2440MHz	Pass	PK	840.92M	36.12	46.00	-9.88	3	Vertical	360	1.00	-
2440MHz	Pass	PK	960M	34.78	46.00	-11.22	3	Vertical	360	1.00	-
2440MHz	Pass	PK	330.7M	39.98	46.00	-6.02	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	532.46M	41.66	46.00	-4.34	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	596.48M	38.93	46.00	-7.07	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	960M	36.14	46.00	-9.86	3	Horizontal	0	1.00	-
2440MHz	Pass	QP	132.82M	32.71	43.50	-10.79	3	Horizontal	125	1.15	-
2440MHz	Pass	QP	278.32M	30.58	46.00	-15.42	3	Horizontal	278	1.32	-

BT-LE(1Mbps)

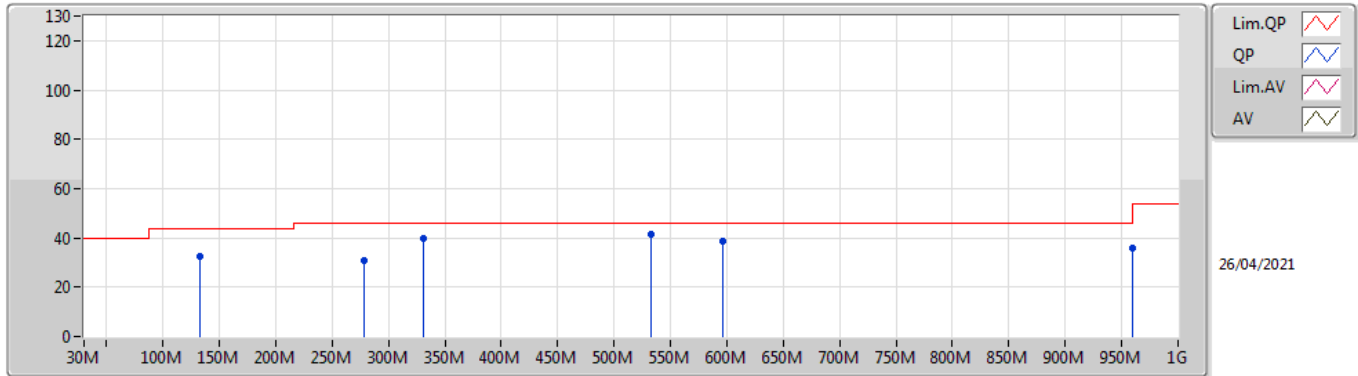
2440MHz_Test Fixture



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	30M	34.98	40.00	-5.02	-13.08	3	Vertical	360	1.00	-	48.06	23.51	0.56	37.15
PK	134.76M	33.54	43.50	-9.96	-18.53	3	Vertical	360	1.00	-	52.07	16.80	1.15	36.48
PK	256.98M	39.32	46.00	-6.68	-16.19	3	Vertical	360	1.00	-	55.51	18.69	1.52	36.40
PK	710.94M	36.85	46.00	-9.15	-8.71	3	Vertical	360	1.00	-	45.56	25.95	2.70	37.36
PK	840.92M	36.12	46.00	-9.88	-6.49	3	Vertical	360	1.00	-	42.61	28.20	2.91	37.60
PK	960M	34.78	46.00	-11.22	-4.11	3	Vertical	360	1.00	-	38.89	30.25	3.11	37.47

BT-LE(1Mbps)

2440MHz_Test Fixture



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	330.7M	39.98	46.00	-6.02	-15.73	3	Horizontal	0	1.00	-	55.71	19.04	1.73	36.50
PK	532.46M	41.66	46.00	-4.34	-11.48	3	Horizontal	0	1.00	-	53.14	23.24	2.33	37.05
PK	596.48M	38.93	46.00	-7.07	-9.91	3	Horizontal	0	1.00	-	48.84	24.75	2.46	37.12
PK	960M	36.14	46.00	-9.86	-4.11	3	Horizontal	0	1.00	-	40.25	30.25	3.11	37.47
QP	132.82M	32.71	43.50	-10.79	-18.54	3	Horizontal	125	1.15	-	51.25	16.83	1.14	36.51
QP	278.32M	30.58	46.00	-15.42	-16.97	3	Horizontal	278	1.32	-	47.55	17.85	1.60	36.42



Summary

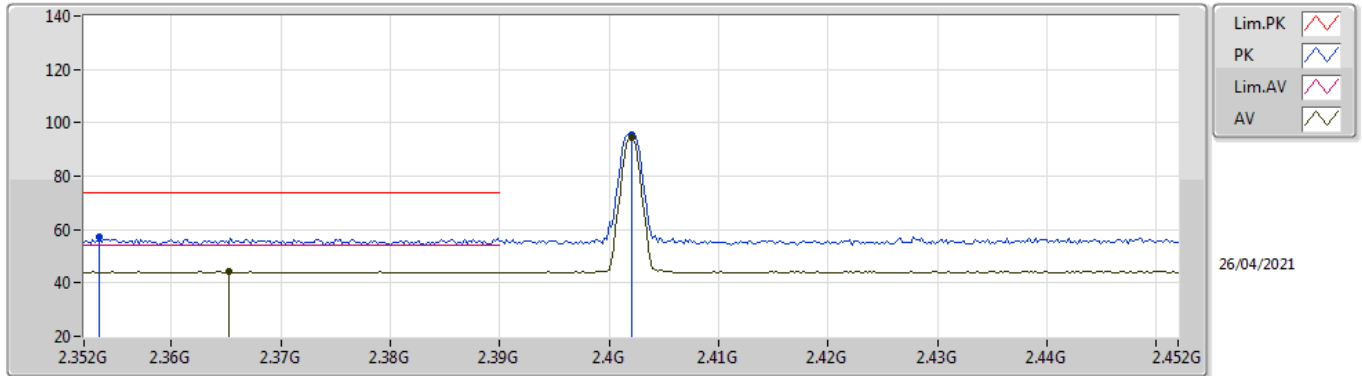
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LTE(1Mbps)	Pass	AV	4.95997G	50.00	54.00	-4.00	3	Vertical	285	1.02	-

Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3652G	44.20	54.00	-9.80	3	Vertical	67	2.69	-
2402MHz	Pass	AV	2.402G	94.28	Inf	-Inf	3	Vertical	67	2.69	-
2402MHz	Pass	PK	2.3534G	57.08	74.00	-16.92	3	Vertical	67	2.69	-
2402MHz	Pass	PK	2.402G	95.35	Inf	-Inf	3	Vertical	67	2.69	-
2402MHz	Pass	AV	2.3692G	44.23	54.00	-9.77	3	Horizontal	202	1.32	-
2402MHz	Pass	AV	2.402G	91.68	Inf	-Inf	3	Horizontal	202	1.32	-
2402MHz	Pass	PK	2.381G	56.97	74.00	-17.03	3	Horizontal	202	1.32	-
2402MHz	Pass	PK	2.4018G	92.74	Inf	-Inf	3	Horizontal	202	1.32	-
2402MHz	Pass	AV	4.80394G	47.38	54.00	-6.62	3	Vertical	175	1.50	-
2402MHz	Pass	PK	4.80344G	53.30	74.00	-20.70	3	Vertical	175	1.50	-
2402MHz	Pass	AV	4.80398G	42.28	54.00	-11.72	3	Horizontal	46	2.66	-
2402MHz	Pass	PK	4.80366G	50.31	74.00	-23.69	3	Horizontal	46	2.66	-
2440MHz	Pass	AV	2.36G	44.43	54.00	-9.57	3	Vertical	79	3.00	-
2440MHz	Pass	AV	2.44G	92.58	Inf	-Inf	3	Vertical	79	3.00	-
2440MHz	Pass	AV	2.4852G	44.76	54.00	-9.24	3	Vertical	79	3.00	-
2440MHz	Pass	PK	2.3736G	56.49	74.00	-17.51	3	Vertical	79	3.00	-
2440MHz	Pass	PK	2.44G	93.59	Inf	-Inf	3	Vertical	79	3.00	-
2440MHz	Pass	PK	2.4928G	56.68	74.00	-17.32	3	Vertical	79	3.00	-
2440MHz	Pass	AV	2.3612G	44.19	54.00	-9.81	3	Horizontal	202	1.50	-
2440MHz	Pass	AV	2.44G	90.37	Inf	-Inf	3	Horizontal	202	1.50	-
2440MHz	Pass	AV	2.4835G	44.48	54.00	-9.52	3	Horizontal	202	1.50	-
2440MHz	Pass	PK	2.368G	56.80	74.00	-17.20	3	Horizontal	202	1.50	-
2440MHz	Pass	PK	2.44G	91.38	Inf	-Inf	3	Horizontal	202	1.50	-
2440MHz	Pass	PK	2.4872G	57.47	74.00	-16.53	3	Horizontal	202	1.50	-
2440MHz	Pass	AV	4.87998G	48.79	54.00	-5.21	3	Vertical	279	1.02	-
2440MHz	Pass	PK	4.87947G	54.22	74.00	-19.78	3	Vertical	279	1.02	-
2440MHz	Pass	AV	4.87996G	48.87	54.00	-5.13	3	Horizontal	201	2.61	-
2440MHz	Pass	PK	4.87956G	54.24	74.00	-19.76	3	Horizontal	201	2.61	-
2480MHz	Pass	AV	2.48G	91.46	Inf	-Inf	3	Vertical	134	1.53	-
2480MHz	Pass	AV	2.496G	44.63	54.00	-9.37	3	Vertical	134	1.53	-
2480MHz	Pass	PK	2.48G	92.60	Inf	-Inf	3	Vertical	134	1.53	-
2480MHz	Pass	PK	2.4978G	57.50	74.00	-16.50	3	Vertical	134	1.53	-
2480MHz	Pass	AV	2.48G	89.80	Inf	-Inf	3	Horizontal	201	1.50	-
2480MHz	Pass	AV	2.4952G	44.71	54.00	-9.29	3	Horizontal	201	1.50	-
2480MHz	Pass	PK	2.48G	90.88	Inf	-Inf	3	Horizontal	201	1.50	-
2480MHz	Pass	PK	2.4868G	57.86	74.00	-16.14	3	Horizontal	201	1.50	-
2480MHz	Pass	AV	4.95997G	50.00	54.00	-4.00	3	Vertical	285	1.02	-
2480MHz	Pass	PK	4.95948G	55.28	74.00	-18.72	3	Vertical	285	1.02	-
2480MHz	Pass	AV	4.95998G	49.72	54.00	-4.28	3	Horizontal	199	2.96	-
2480MHz	Pass	PK	4.95995G	55.25	74.00	-18.75	3	Horizontal	199	2.96	-

BT-LE(1Mbps)

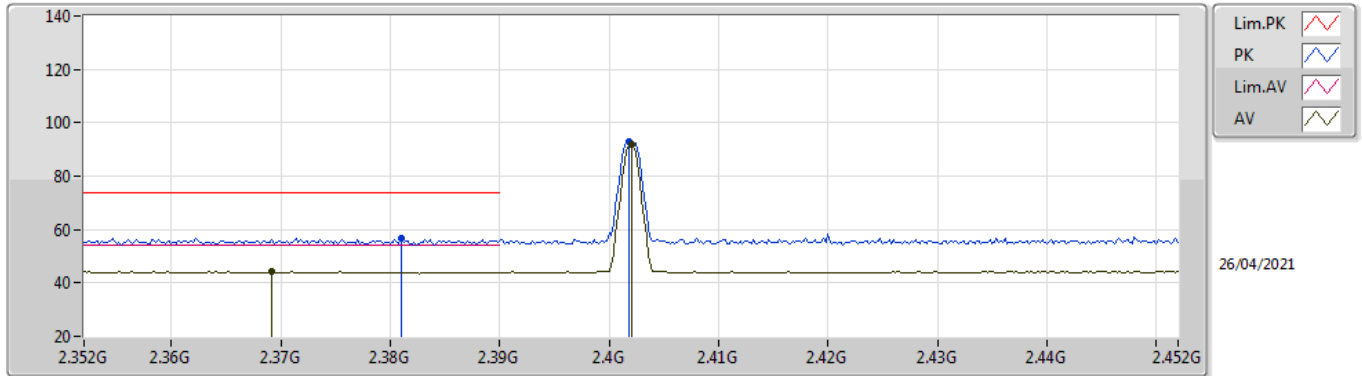
2402MHz_TX



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	2.3652G	44.20	54.00	-9.80	31.59	3	Vertical	67	2.69	-	12.61	27.74	3.85	-
AV	2.402G	94.28	Inf	-Inf	31.50	3	Vertical	67	2.69	-	62.78	27.60	3.90	-
PK	2.3534G	57.08	74.00	-16.92	31.62	3	Vertical	67	2.69	-	25.46	27.79	3.83	-
PK	2.402G	95.35	Inf	-Inf	31.50	3	Vertical	67	2.69	-	63.85	27.60	3.90	-

BT-LE(1Mbps)

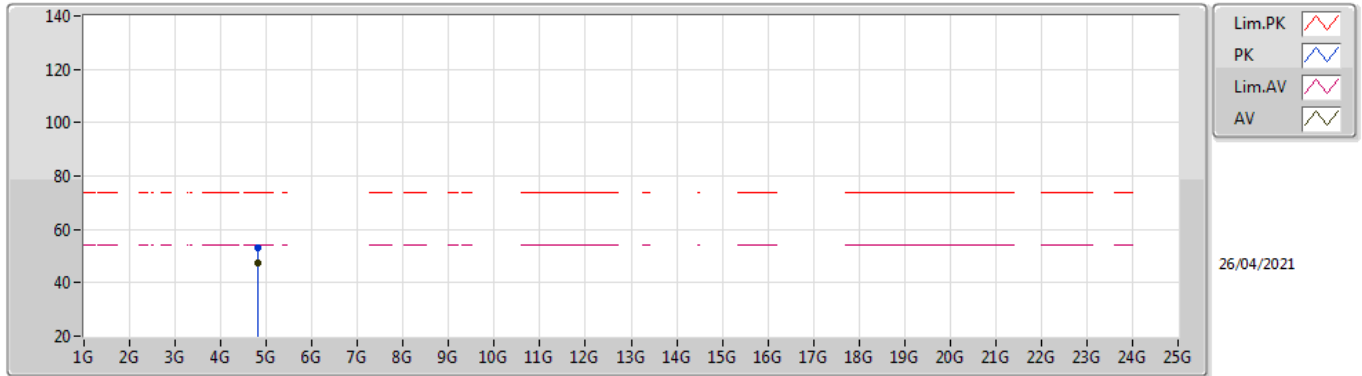
2402MHz_TX



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	2.3692G	44.23	54.00	-9.77	31.57	3	Horizontal	202	1.32	-	12.66	27.72	3.85	-
AV	2.402G	91.68	Inf	-Inf	31.50	3	Horizontal	202	1.32	-	60.18	27.60	3.90	-
PK	2.381G	56.97	74.00	-17.03	31.55	3	Horizontal	202	1.32	-	25.42	27.68	3.87	-
PK	2.4018G	92.74	Inf	-Inf	31.50	3	Horizontal	202	1.32	-	61.24	27.60	3.90	-

BT-LE(1Mbps)

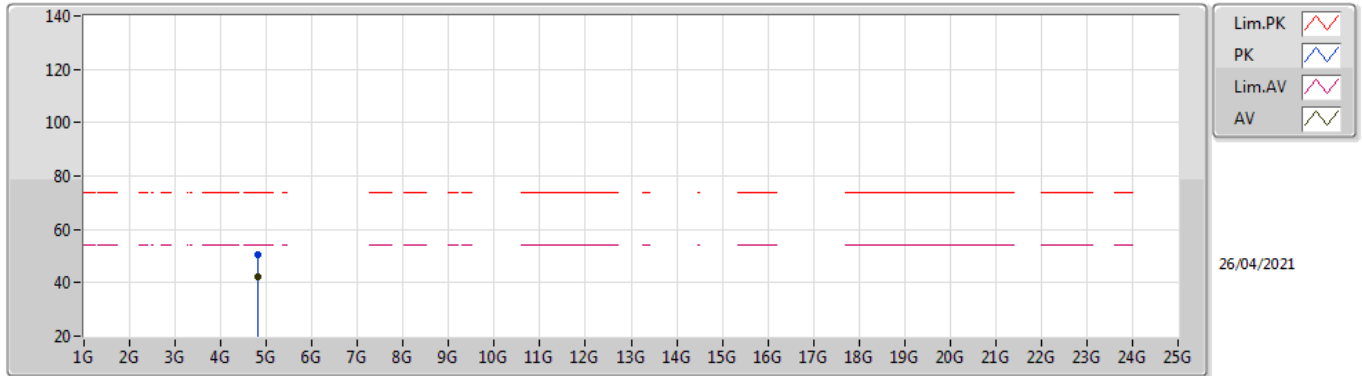
2402MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80394G	47.38	54.00	-6.62	1.49	3	Vertical	175	1.50	-	45.89	31.12	5.30	34.93
PK	4.80344G	53.30	74.00	-20.70	1.48	3	Vertical	175	1.50	-	51.82	31.11	5.30	34.93

BT-LE(1Mbps)

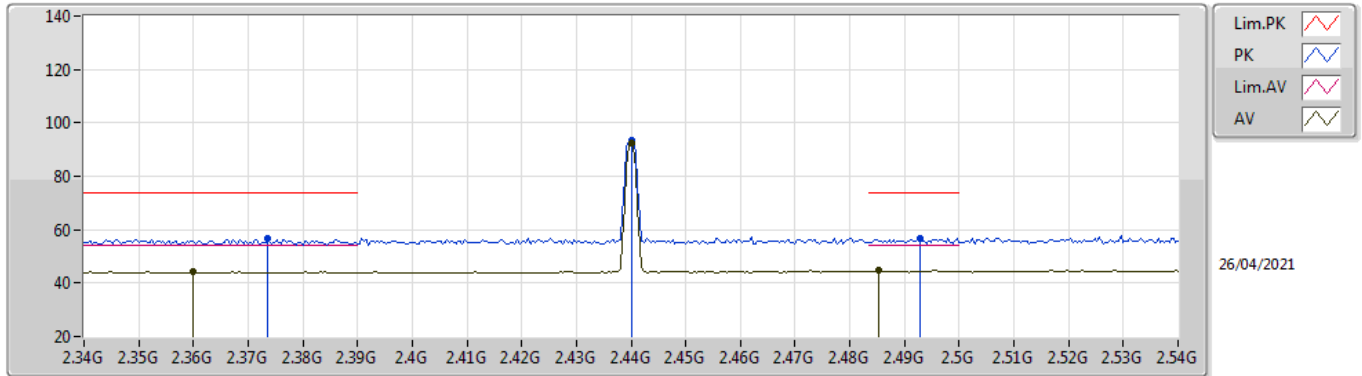
2402MHz_TX



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	4.80398G	42.28	54.00	-11.72	1.49	3	Horizontal	46	2.66	-	40.79	31.12	5.30	34.93
PK	4.80366G	50.31	74.00	-23.69	1.48	3	Horizontal	46	2.66	-	48.83	31.11	5.30	34.93

BT-LE(1Mbps)

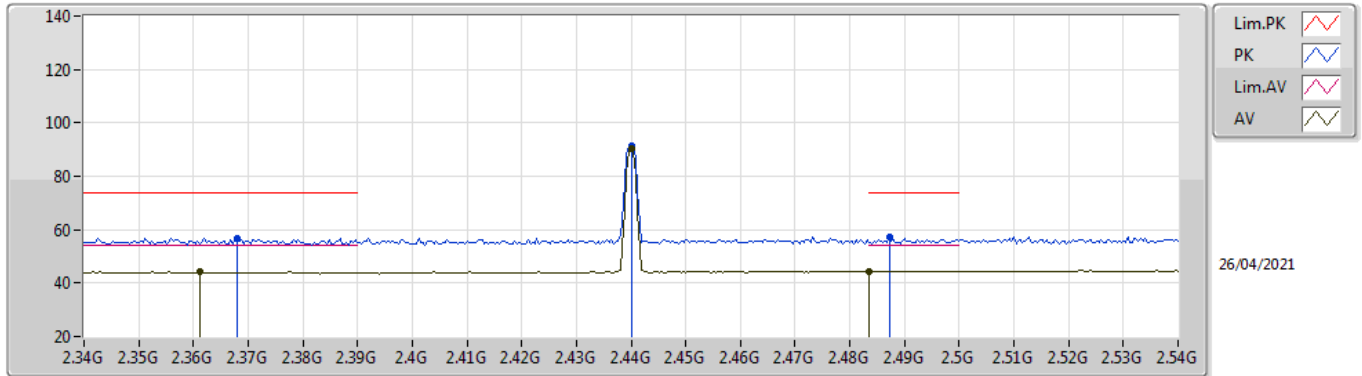
2440MHz_TX



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	2.36G	44.43	54.00	-9.57	31.60	3	Vertical	79	3.00	-	12.83	27.76	3.84	-
AV	2.44G	92.58	Inf	-Inf	31.56	3	Vertical	79	3.00	-	61.02	27.60	3.96	-
AV	2.4852G	44.76	54.00	-9.24	31.63	3	Vertical	79	3.00	-	13.13	27.60	4.03	-
PK	2.3736G	56.49	74.00	-17.51	31.57	3	Vertical	79	3.00	-	24.92	27.71	3.86	-
PK	2.44G	93.59	Inf	-Inf	31.56	3	Vertical	79	3.00	-	62.03	27.60	3.96	-
PK	2.4928G	56.68	74.00	-17.32	31.64	3	Vertical	79	3.00	-	25.04	27.60	4.04	-

BT-LE(1Mbps)

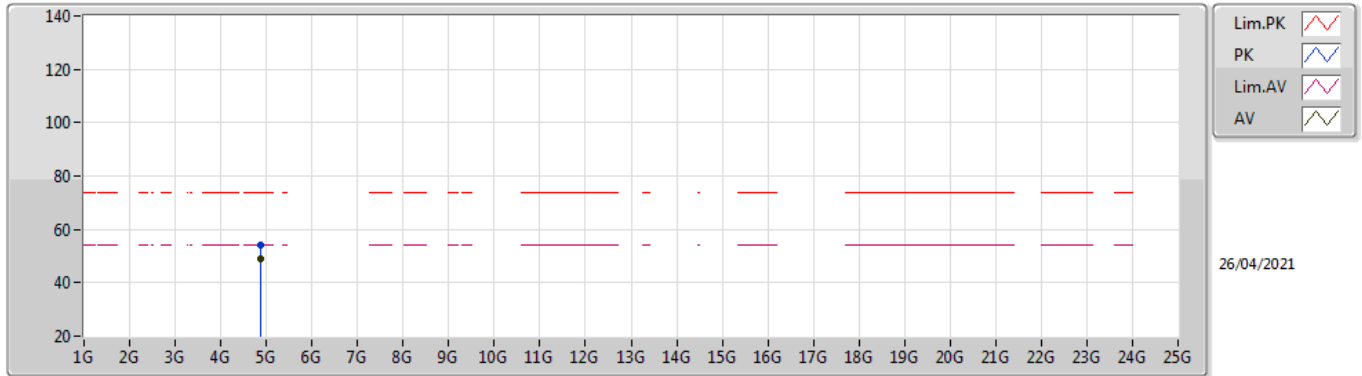
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3612G	44.19	54.00	-9.81	31.60	3	Horizontal	202	1.50	-	12.59	27.76	3.84	-
AV	2.44G	90.37	Inf	-Inf	31.56	3	Horizontal	202	1.50	-	58.81	27.60	3.96	-
AV	2.4835G	44.48	54.00	-9.52	31.63	3	Horizontal	202	1.50	-	12.85	27.60	4.03	-
PK	2.368G	56.80	74.00	-17.20	31.58	3	Horizontal	202	1.50	-	25.22	27.73	3.85	-
PK	2.44G	91.38	Inf	-Inf	31.56	3	Horizontal	202	1.50	-	59.82	27.60	3.96	-
PK	2.4872G	57.47	74.00	-16.53	31.63	3	Horizontal	202	1.50	-	25.84	27.60	4.03	-

BT-LE(1Mbps)

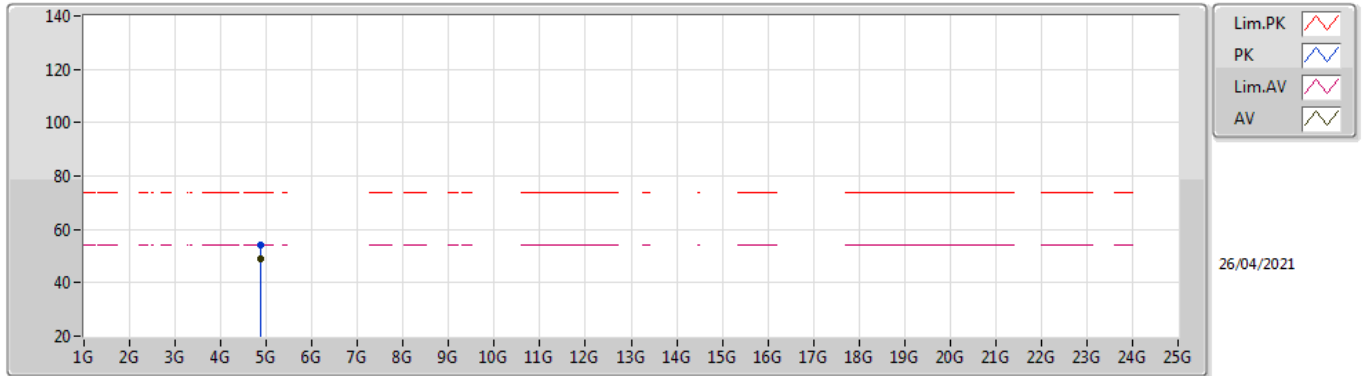
2440MHz_TX



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	4.87998G	48.79	54.00	-5.21	1.65	3	Vertical	279	1.02	-	47.14	31.24	5.34	34.93
PK	4.87947G	54.22	74.00	-19.78	1.65	3	Vertical	279	1.02	-	52.57	31.24	5.34	34.93

BT-LE(1Mbps)

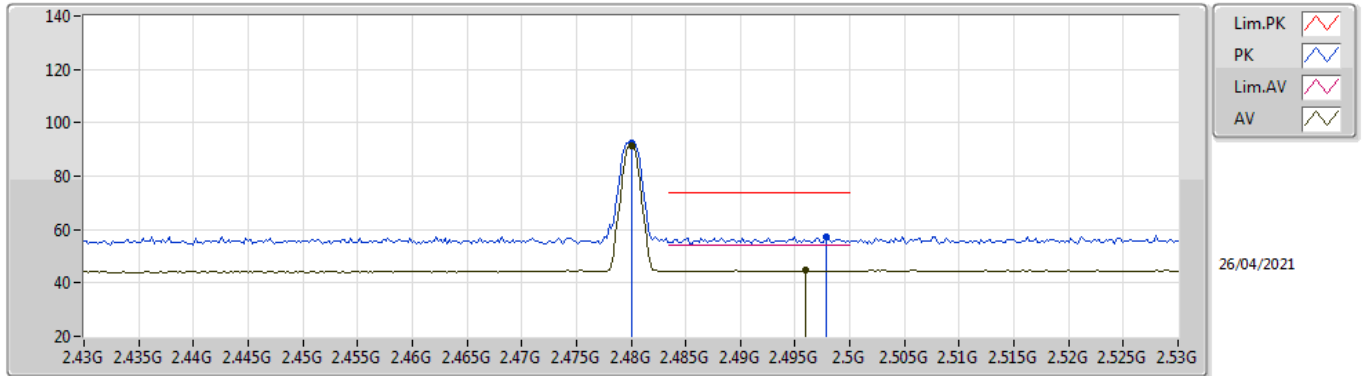
2440MHz_TX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87996G	48.87	54.00	-5.13	1.65	3	Horizontal	201	2.61	-	47.22	31.24	5.34	34.93
PK	4.87956G	54.24	74.00	-19.76	1.65	3	Horizontal	201	2.61	-	52.59	31.24	5.34	34.93

BT-LE(1Mbps)

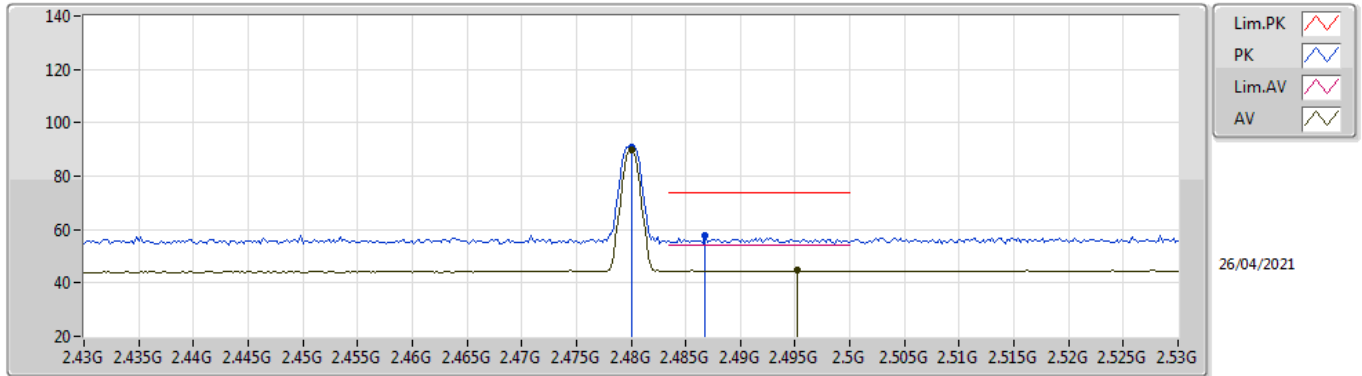
2480MHz_TX



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	91.46	Inf	-Inf	31.62	3	Vertical	134	1.53	-	59.84	27.60	4.02	-
AV	2.496G	44.63	54.00	-9.37	31.64	3	Vertical	134	1.53	-	12.99	27.60	4.04	-
PK	2.48G	92.60	Inf	-Inf	31.62	3	Vertical	134	1.53	-	60.98	27.60	4.02	-
PK	2.4978G	57.50	74.00	-16.50	31.65	3	Vertical	134	1.53	-	25.85	27.60	4.05	-

BT-LE(1Mbps)

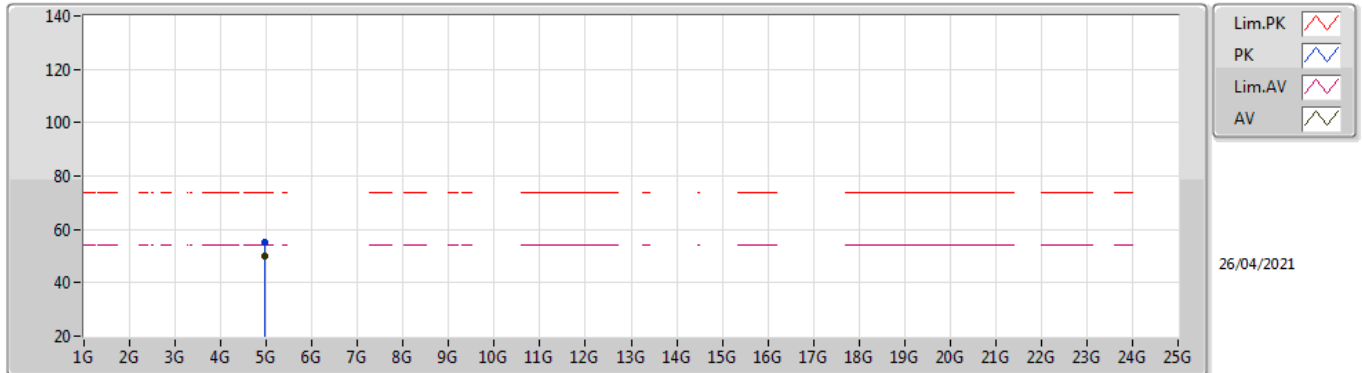
2480MHz_TX



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	89.80	Inf	-Inf	31.62	3	Horizontal	201	1.50	-	58.18	27.60	4.02	-
AV	2.4952G	44.71	54.00	-9.29	31.64	3	Horizontal	201	1.50	-	13.07	27.60	4.04	-
PK	2.48G	90.88	Inf	-Inf	31.62	3	Horizontal	201	1.50	-	59.26	27.60	4.02	-
PK	2.4868G	57.86	74.00	-16.14	31.63	3	Horizontal	201	1.50	-	26.23	27.60	4.03	-

BT-LE(1Mbps)

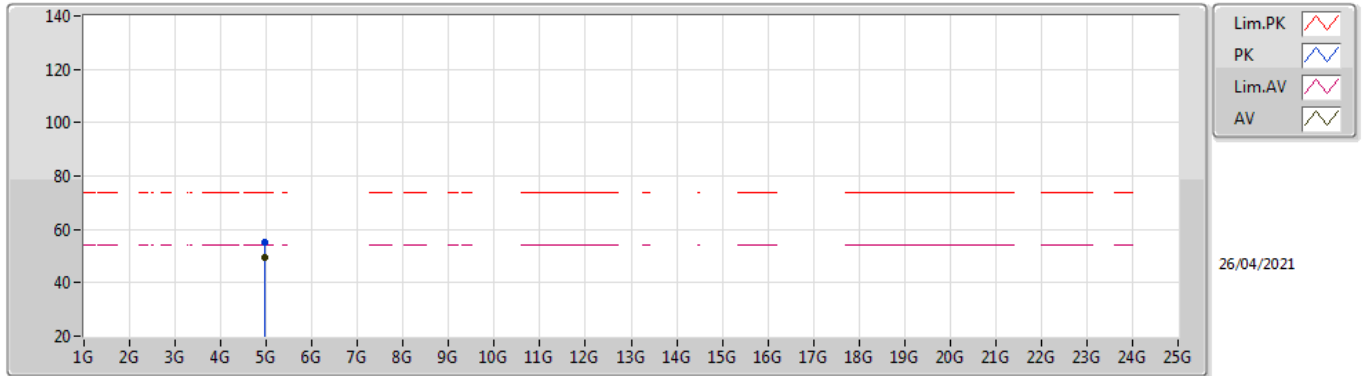
2480MHz_TX



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	4.95997G	50.00	54.00	-4.00	1.86	3	Vertical	285	1.02	-	48.14	31.42	5.38	34.94
PK	4.95948G	55.28	74.00	-18.72	1.86	3	Vertical	285	1.02	-	53.42	31.42	5.38	34.94

BT-LE(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	4.95998G	49.72	54.00	-4.28	1.86	3	Horizontal	199	2.96	-	47.86	31.42	5.38	34.94
PK	4.95995G	55.25	74.00	-18.75	1.86	3	Horizontal	199	2.96	-	53.39	31.42	5.38	34.94