FCC RADIO TEST REPORT

FCC ID	:	TLZ-CB250NF
Equipment	:	IEEE 802.11 2x2 MU-MIMO a/b/g/n/ac Wireless LAN + Bluetooth 5.0 M.2 2230 Module
Brand Name	:	AzureWave
Model Name	:	AW-CB250NF
Applicant	:	AzureWave Technologies, Inc. 8F., No.94, Baozhong Rd., Xindian Dist., New Taipei City 23144, Taiwan
Manufacturer	:	AzureWave Technologies, Inc. 8F., No.94, Baozhong Rd., Xindian Dist., New Taipei City 23144, Taiwan
Standard	:	47 CFR FCC Part 15.247

The product was received on Dec. 26, 2018, and testing was started from Jul. 15, 2019 and completed on Oct. 12, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR8D2029AB	01	Initial issue of report	Nov. 22, 2019

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:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen
Report Producer: Wendy Pan

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 modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2, 3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Ant.	Port			Brand	Part No.	Antenna Type	Connector	Gain (dBi)		
	2.4GHz	5GHz	BT					2.4GHz	5GHz	BT
1	1, 2	1, 2	1	MAG.LAYERS	MSA-4008-25GC1-A2	PIFA Antenna	I-PEX	2.98	5.16	2.98
2	1, 2	1, 2	1	Cortec	AN2450-5511BRS	Dipole Antenna	I-PEX	2.14	3.61	2.14

Note: The above information was declared by manufacturer.

For 2.4GHz WLAN function:
For IEEE 802.11b/g/n mode (2TX/2RX):
Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.
For 5GHz WLAN function:
For IEEE 802.11a/n/ac mode (2TX/2RX):
Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.
For Bluetooth function: (1TX/1RX):
Only Port 1 can be used as transmitting/receiving antenna.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.626	2.03	391.875u	3k

Note:
- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	Dut labtool 1.0.0.164			
Support Mode	☒	LE 1M PHY: 1 Mb/s		
	☐	LE Coded PHY (S=2): 500 Kb/s		
	☐	LE Coded PHY (S=8): 125 Kb/s		
	☐	LE 2M PHY: 2 Mb/s		

Note: The above information was declared by manufacturer.

1.2 Applicable 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
- FCC KDB 558074 D01 v05r02
- FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location			
☐	HWA YA	ADD :	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)
		TEL :	886-3-327-3456 FAX : 886-3-327-0973
☒	JHUBEI	ADD :	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
		TEL :	886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Gino Huang	26.3~27.3°C / 59~63%	Oct. 11, 2019 ~ Oct. 12, 2019
Radiated<1GHz and Radiated Emission Co-location	03CH03-CB	Stim Sung	22~24°C / 50~60%	Jul. 15, 2019 ~ Jul. 16, 2019
Radiated>1GHz	03CH04-CB	Paul Chen	23.2~23.5°C / 48~54%	Oct. 08, 2019 ~ Oct. 10, 2019
AC Conduction	CO01-CB	Wei Li	24.5~24.9°C / 57~60%	Jul. 18, 2019

Test site Designation No. TW0006 with FCC.
Test site registered number IC 4086D with Industry Canada.

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)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	5.1 dB	Confidence levels of 95%
Conducted Emission	2.4 dB	Confidence levels of 95%
Output Power Measurement	1.5 dB	Confidence levels of 95%
Power Density Measurement	2.4 dB	Confidence levels of 95%
Bandwidth Measurement	2%	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

For Ant.1 and Ant.2:

Mode	PowerSetting
BT-LE(1Mbps)	-
2402MHz	Default Power
2440MHz	Default Power
2480MHz	Default Power

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
Operating Mode	Normal Link
1	EUT + Ant.1 (WLAN 2.4GHz+Bluetooth)
2	EUT + Ant.1 (WLAN 5GHz+Bluetooth)
3	EUT + Ant.2 (WLAN 2.4GHz+Bluetooth)
4	EUT + Ant.2 (WLAN 5GHz+Bluetooth)
For operating mode 3 was the worst case and it was record in this test report.	

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	
Test Mode	1	EUT + Ant.1
	2	EUT + Ant.2

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	Normal Link
1	EUT in Z axis + Ant.1 (WLAN 2.4GHz+Bluetooth)
2	EUT in Z axis + Ant.1 (WLAN 5GHz+Bluetooth)
3	EUT in Z axis + Ant.2 (WLAN 2.4GHz+Bluetooth)
4	EUT in Z axis + Ant.2 (WLAN 5GHz+Bluetooth)
For operating mode 4 was the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position test, and the worst case was found at X axis So the measurement will follow this same test configuration.	
1	EUT in X axis + Ant.1
2	EUT in X axis + Ant.2

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Radiated Emission Co-location
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	Bluetooth+WLAN 2.4GHz
2	Bluetooth+WLAN 5GHz
For operating mode 2 was the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	Bluetooth+WLAN 2.4GHz
2	Bluetooth+WLAN 5GHz
Refer to Sporton Test Report No.: FA8D2029 for Co-location RF Exposure Evaluation.	

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

N/A

2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	NB	DELL	E6430	N/A
B	Mouse	Logitech	M-U0026	N/A
C	AP Router	ASUS	RP-N53	MSQ-RPN53
D	Bluetooth Speaker	MARUS	MSK06C-RD	N/A
E	Earphone	SHYARO CHI	MIC-04	N/A
F	Fixture	AzureWave	AW-CB162NF	N/A

For Radiated (below 1GHz):

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Bluetooth speaker	MARUS	MSK06C-RD	N/A
C	WLAN AP	Netgear	R7500	PY314300288
D	Earphone	e-Power	S90W	N/A
E	Mouse	Logitech	M-U0026	N/A
F	Fixture	AzureWave	AW-CB162NF	N/A

For Radiated (above 1GHz):

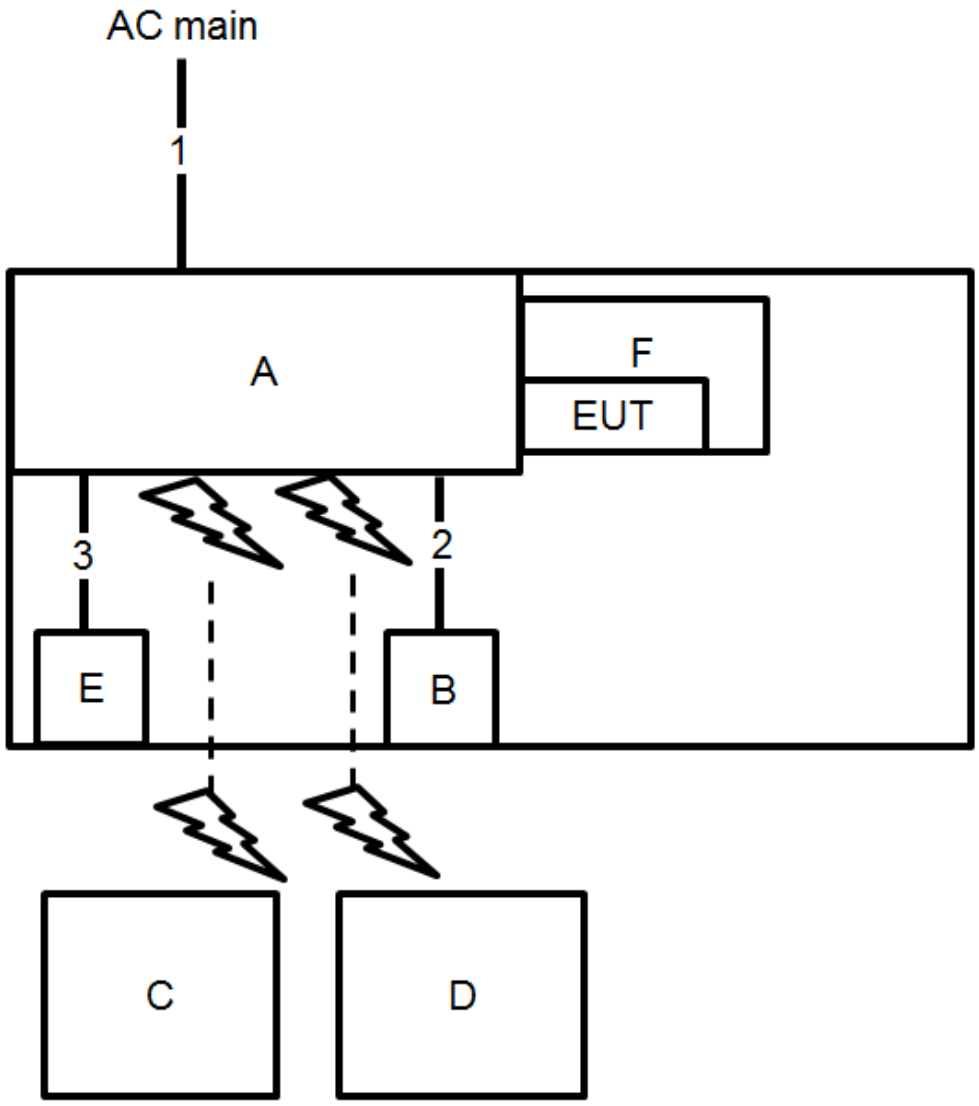
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	Notebook	DELL	E4300	N/A
C	Fixture	AzureWave	AW-CB162NF	N/A

For RF Conducted:

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
A	Notebook	DELL	E4300	N/A
B	fixture	AzureWave	AW-CB162NF	N/A

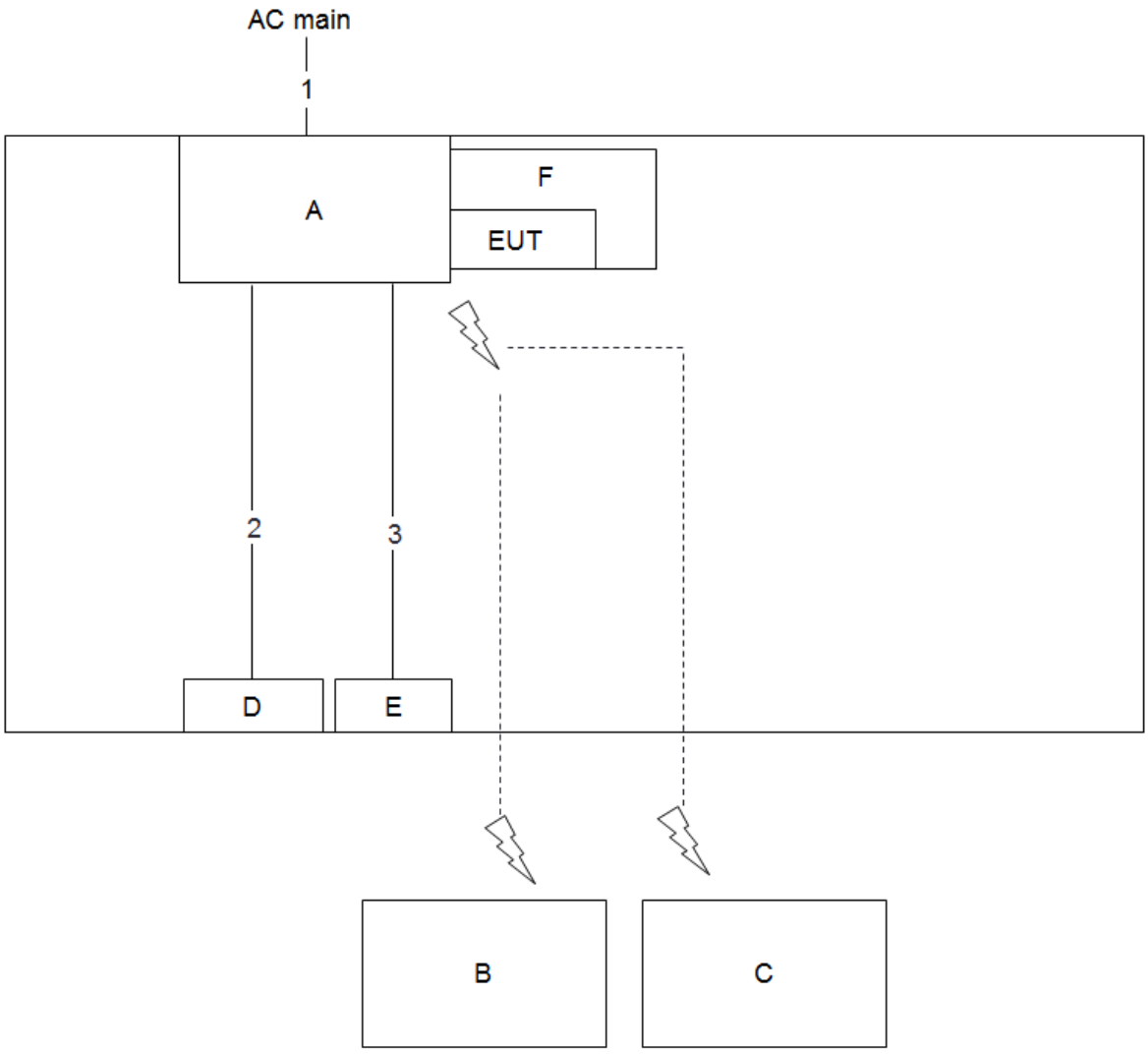
2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



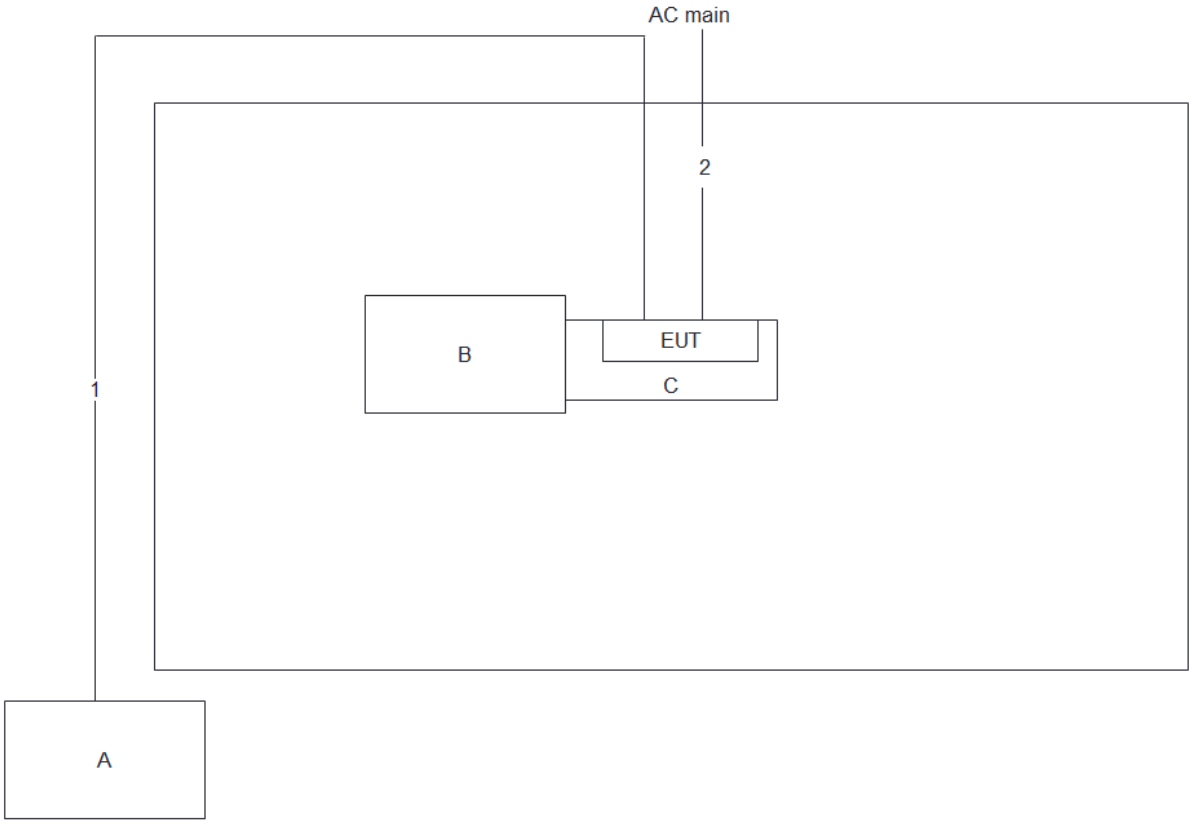
Item	Connection	Shielded	Length
1	Power cable	No	2.2m
2	USB cable	Yes	1.2m
3	Audio cable	No	1.2m

Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	Audio cable	No	1.4m
3	USB cable	Yes	1.8m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	1.5m

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

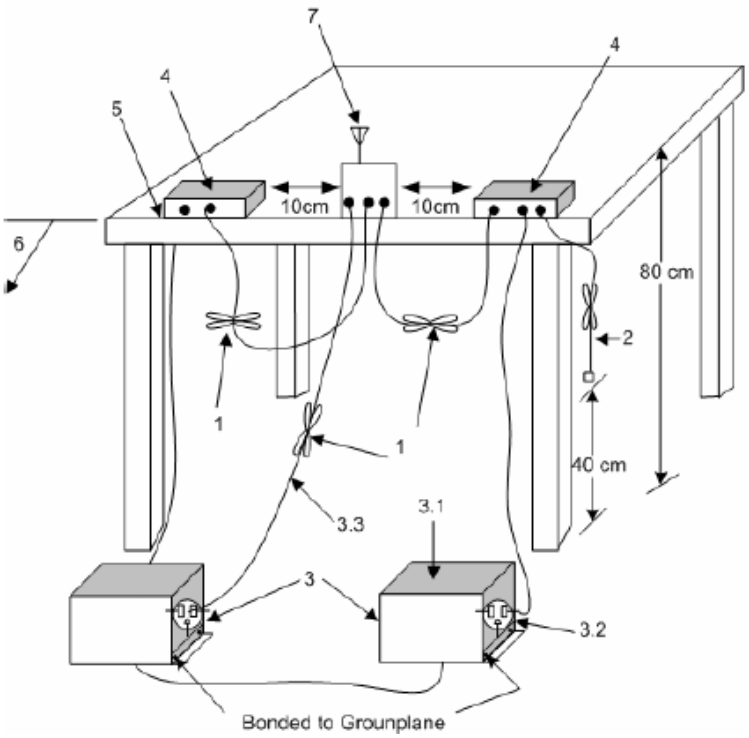
Refer a test equipment and calibration data table in this test report.

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 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 50 Ω 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.

3.1.5 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 ≥ 500 kHz.

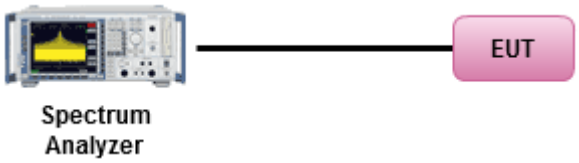
3.2.2 Measuring Instruments

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 FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
	☐ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
	☐ Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth


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
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 FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
	☐ Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
	☐ Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
	Measurement using a power meter (PM)
	☒ Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
	☐ Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC 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: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

Maximum Conducted Output Power (Power Meter)


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.

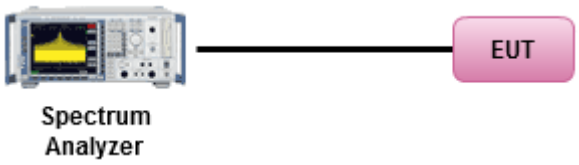
3.4.3 Test Procedures

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 FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.2 Method PKPSD.
	[duty cycle ≥ 98% or external video / power trigger]
	☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.
	☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.
	☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPSD-3.
	duty cycle < 98% and average over on/off periods with duty factor
	☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).
	☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)
	☐ Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPSD-3A. (alternative)
▪ For conducted measurement.	
	▪ If The EUT supports multiple transmit chains using options given below:
	☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC 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.
	☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,

		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

3.4.4 Test Setup

Power Spectral Density



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 (dBc)**
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 PSD 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 PSD level.	

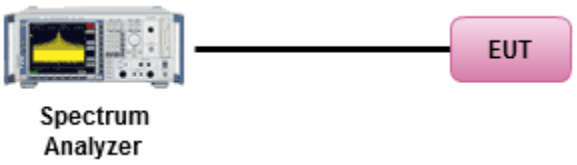
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
▪ Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup

Emissions in Non-restricted Frequency Bands


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 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.

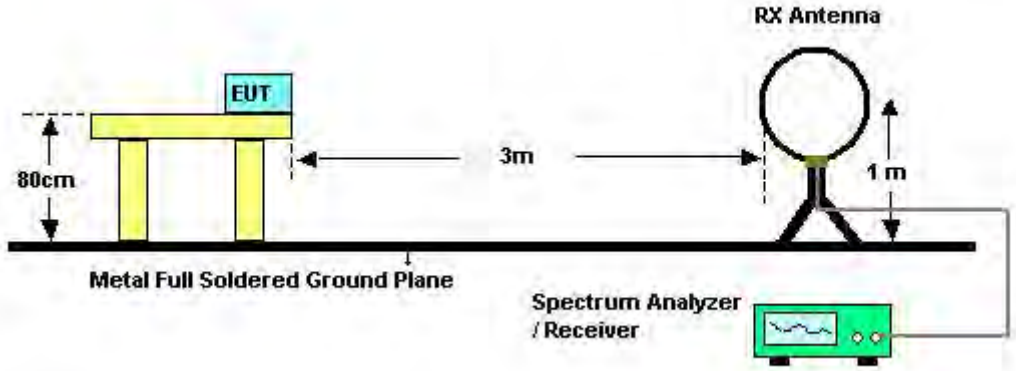
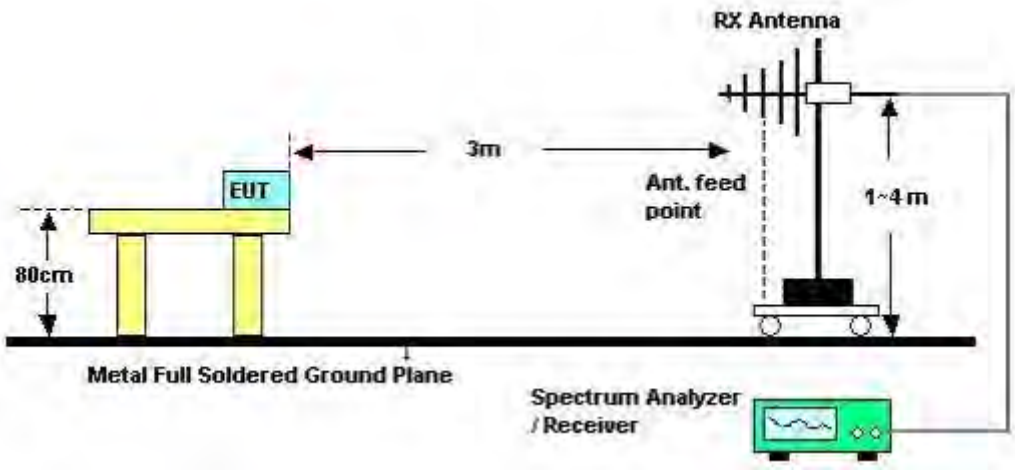
3.6.2 Measuring Instruments

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

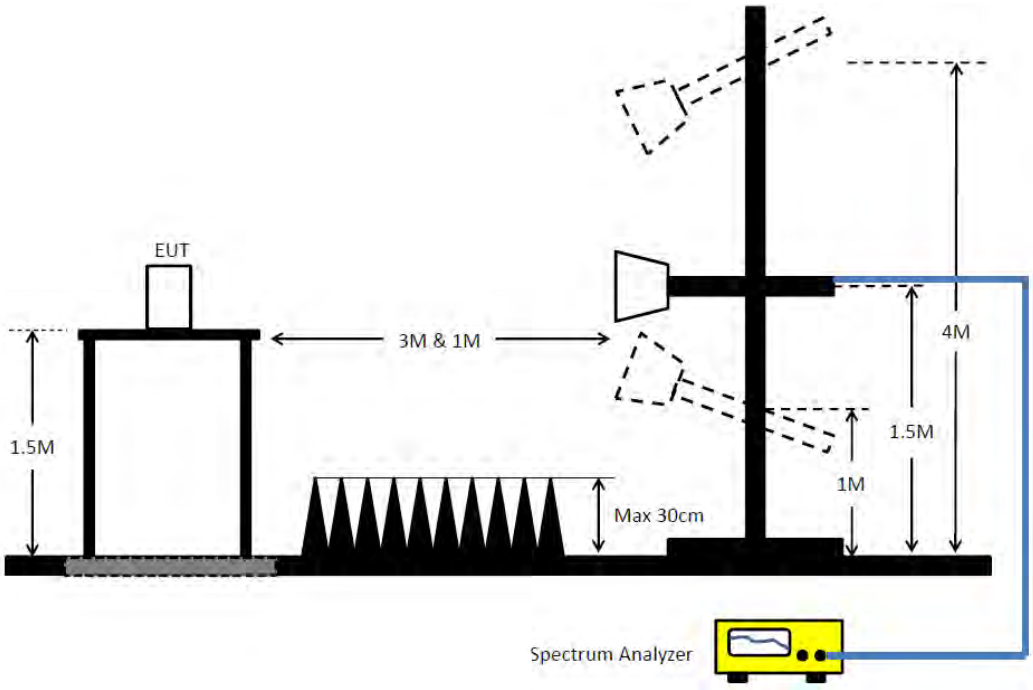
3.6.3 Test Procedures

Test Method			
▪ The average emission levels shall be measured in [duty cycle ≥ 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 FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.		
		☐	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle ≥98%).
		☐	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
		☒	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).
		☐	Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐	Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
		☒	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
▪ For the transmitter band-edge emissions shall be measured using following options below:			
	▪ Refer as FCC KDB 558074 clause 8.7 & c63.10 clause 11.13.1, 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 FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.		
	▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).		
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB		
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.		

3.6.4 Test Setup

Emissions in Restricted Frequency Bands
9kHz ~30MHz

30MHz~1GHz


Above 1GHz



3.6.5 Measurement Results Calculation

The measured Level is calculated using:
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.
The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Bilog Antenna with 6 dB attenuator	Schaffner	CBL6112B & N-6-06	2928 & AT-N0607	20MHz ~ 2GHz	Jan. 02, 2019	Jan. 01, 2020	Radiation (03CH03-CB)
Horn Antenna	ETS・Lindgren	3115	6821	750MHz~18GHz	Jan. 24, 2019	Jan. 23, 2020	Radiation (03CH03-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 27, 2019	Jun. 26, 2020	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8447D	2944A10259	9kHz ~ 1.3GHz	Jan. 16, 2019	Jan. 15, 2020	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Dec. 20, 2018	Dec. 19, 2019	Radiation (03CH03-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 19, 2019	Jun. 18, 2020	Radiation (03CH03-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 15, 2019	May 14, 2020	Radiation (03CH03-CB)
RF Cable-low	Woken	RG402	Low Cable-02+27	25MHz ~ 1GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+27	1GHz ~ 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-27	1GHz ~ 18GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH03-CB)
Horn Antenna	ETS・Lindgren	3115	00143147	750MHz~18GHz	Oct. 26, 2018	Oct. 25, 2019	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jun. 12, 2019	Jun. 11, 2020	Radiation (03CH04-CB)
Pre-Amplifier	Agilent	83017A	MY53270063	0.5GHz ~ 26.5GHz	Mar. 19, 2019	Mar. 18, 2020	Radiation (03CH04-CB)

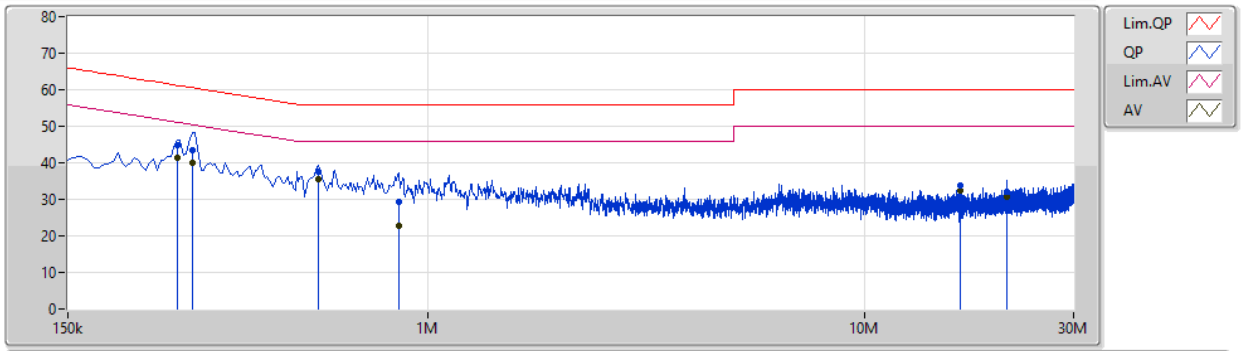
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 03, 2019	Jul. 02, 2020	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Dec. 26, 2018	Dec. 25, 2019	Radiation (03CH04-CB
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+22	1GHz - 18GHz	Oct. 07, 2019	Oct. 06, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 24, 2019	Jul. 23, 2020	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 07, 2019	Oct. 08, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 08, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 08, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 08, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 07, 2019	Oct. 08, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	GB41291199	50MHz~18GHz	Jan. 15, 2019	Jan. 14, 2020	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

N.C.R. means Non-Calibration required.

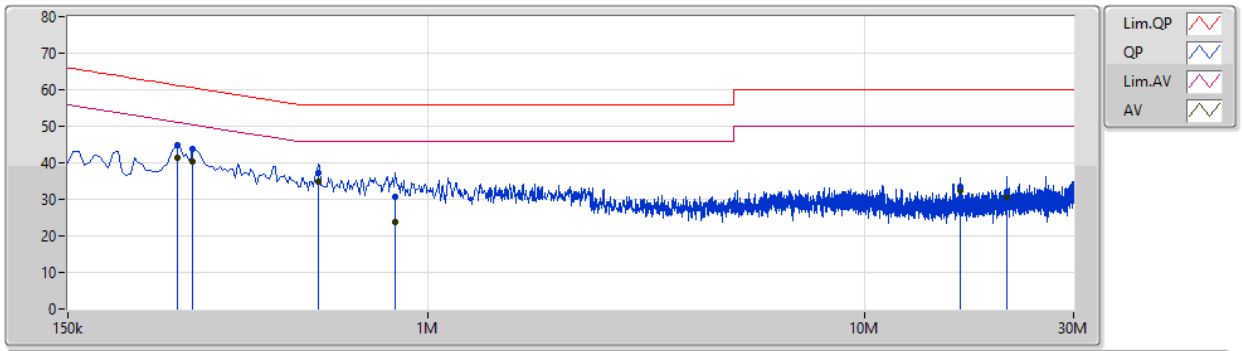
Test Mode	Mode 3	**Frequency Range**	0.15 MHz to 30 MHz

Line



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	AF	CL	AT			
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)			
QP	267k	44.69	61.20	-16.51	9.92	Line	-	34.77	0.06	0.06	9.80			
AV	267k	41.32	51.20	-9.88	9.92	Line	"Worst"	31.40	0.06	0.06	9.80			
QP	289.5k	43.49	60.53	-17.04	9.92	Line	-	33.57	0.06	0.06	9.80			
AV	289.5k	39.99	50.53	-10.54	9.92	Line	-	30.07	0.06	0.06	9.80			
QP	559.5k	37.72	56.00	-18.28	9.94	Line	-	27.78	0.06	0.07	9.81			
AV	559.5k	35.53	46.00	-10.47	9.94	Line	-	25.59	0.06	0.07	9.81			
QP	856.5k	29.26	56.00	-26.74	9.97	Line	-	19.29	0.07	0.08	9.82			
AV	856.5k	22.68	46.00	-23.32	9.97	Line	-	12.71	0.07	0.08	9.82			
QP	16.463M	33.67	60.00	-26.33	10.44	Line	-	23.23	0.27	0.23	9.94			
AV	16.463M	32.49	50.00	-17.51	10.44	Line	-	22.05	0.27	0.23	9.94			
QP	21.17M	32.16	60.00	-27.84	10.58	Line	-	21.58	0.30	0.28	10.00			
AV	21.17M	30.82	50.00	-19.18	10.58	Line	-	20.24	0.30	0.28	10.00			

Neutral



Type	Freq	Level	Limit	Margin	Factor	Condition	Comment	Raw	AF	CL	AT			
	(Hz)	(dBuV)	(dBuV)	(dB)	(dB)			(dBuV)	(dB)	(dB)	(dB)			
QP	267k	44.66	61.20	-16.54	9.90	Neutral	-	34.76	0.04	0.06	9.80			
AV	267k	41.55	51.20	-9.65	9.90	Neutral	"Worst"	31.65	0.04	0.06	9.80			
QP	289.5k	43.70	60.53	-16.83	9.90	Neutral	-	33.80	0.04	0.06	9.80			
AV	289.5k	40.20	50.53	-10.33	9.90	Neutral	-	30.30	0.04	0.06	9.80			
QP	559.5k	37.32	56.00	-18.68	9.93	Neutral	-	27.39	0.05	0.07	9.81			
AV	559.5k	34.73	46.00	-11.27	9.93	Neutral	-	24.80	0.05	0.07	9.81			
QP	843k	30.67	56.00	-25.33	9.96	Neutral	-	20.71	0.06	0.08	9.82			
AV	843k	23.74	46.00	-22.26	9.96	Neutral	-	13.78	0.06	0.08	9.82			
QP	16.463M	33.53	60.00	-26.47	10.40	Neutral	-	23.13	0.23	0.23	9.94			
AV	16.463M	32.39	50.00	-17.61	10.40	Neutral	-	21.99	0.23	0.23	9.94			
QP	21.17M	32.03	60.00	-27.97	10.55	Neutral	-	21.48	0.27	0.28	10.00			
AV	21.17M	30.71	50.00	-19.29	10.55	Neutral	-	20.16	0.27	0.28	10.00			

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)	672.5k	1.032M	1M03F1D	670k	1.031M

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;

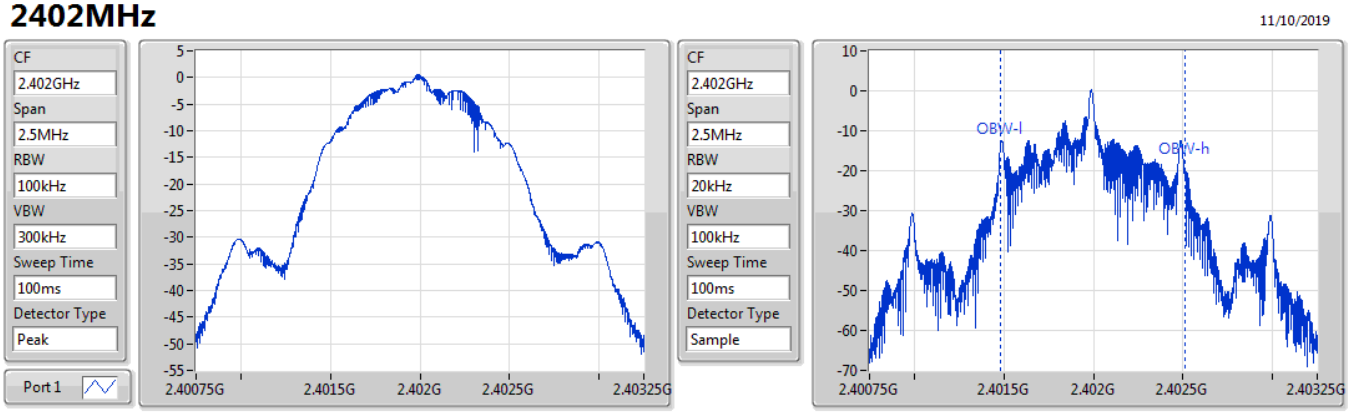
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	670k	1.031M
2440MHz	Pass	500k	672.5k	1.032M
2480MHz	Pass	500k	672.5k	1.031M

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

BT-LE(1Mbps) EBW

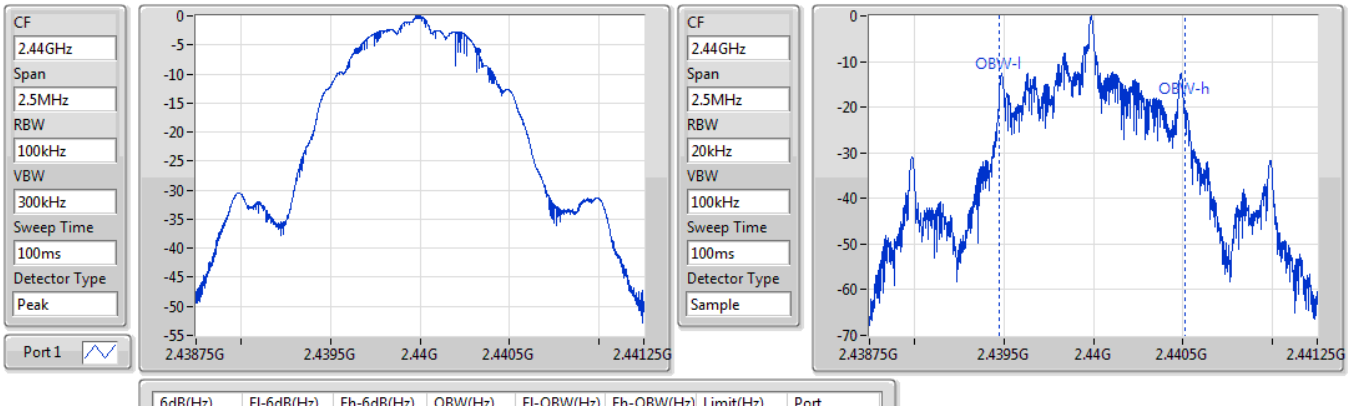
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
670k	2.40165G	2.40232G	1.031M	2.401478G	2.402508G	500k	1

BT-LE(1Mbps) EBW

2440MHz

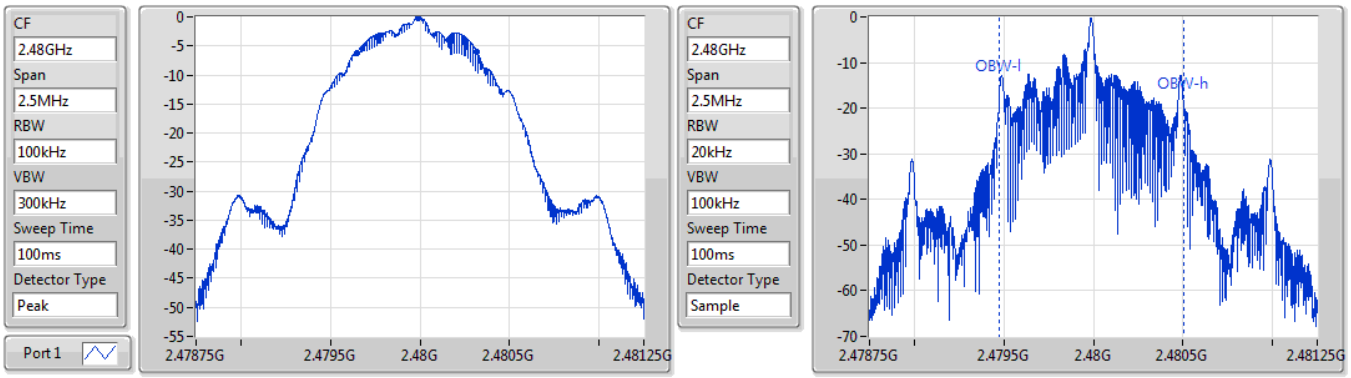


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
672.5k	2.439649G	2.440321G	1.032M	2.439477G	2.440508G	500k	1

BT-LE(1Mbps) **EBW**

2480MHz

11/10/2019



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
672.5k	2.479648G	2.48032G	1.031M	2.479477G	2.480507G	500k	1

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)	672.5k	1.032M	1M03F1D	670k	1.031M

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;

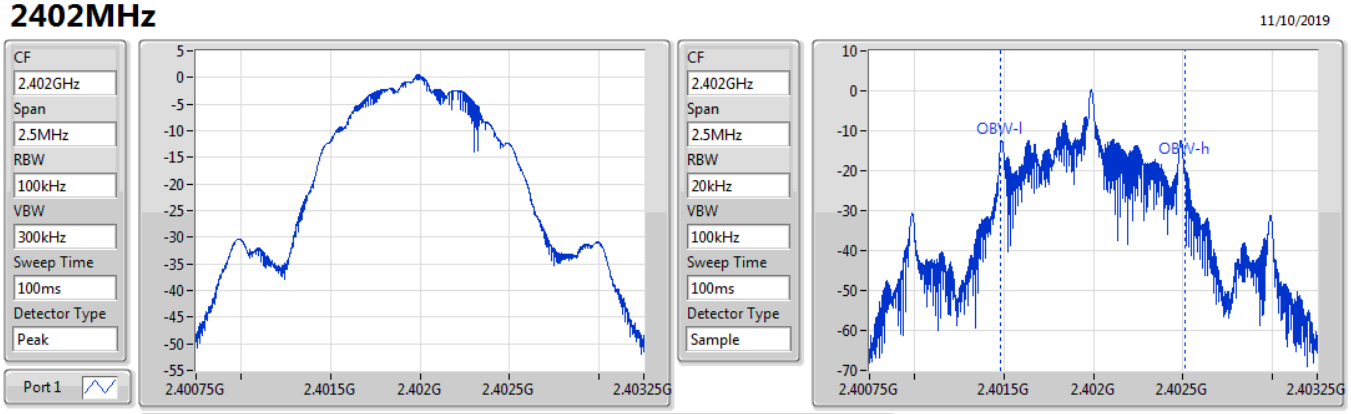
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	670k	1.031M
2440MHz	Pass	500k	672.5k	1.032M
2480MHz	Pass	500k	672.5k	1.031M

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

BT-LE(1Mbps) EBW

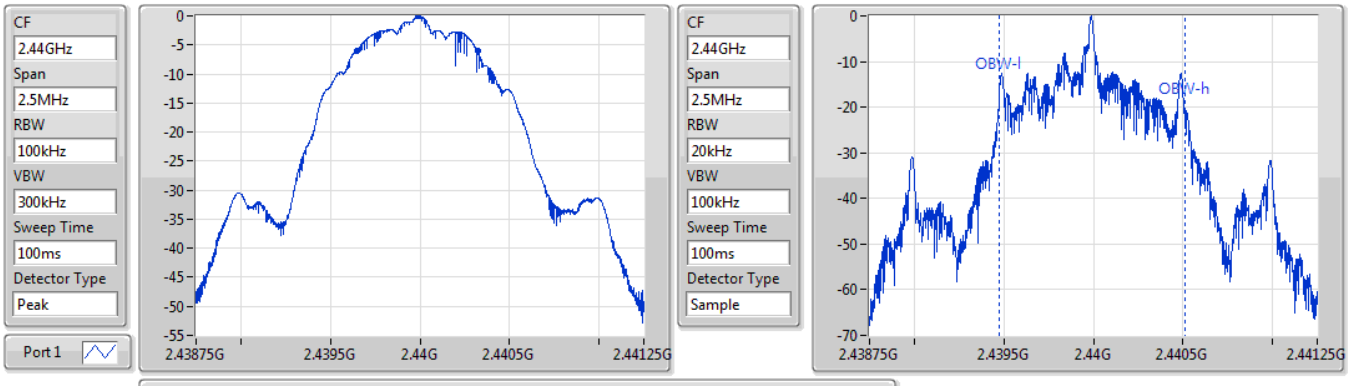
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
670k	2.40165G	2.40232G	1.031M	2.401478G	2.402508G	500k	1

BT-LE(1Mbps) EBW

2440MHz

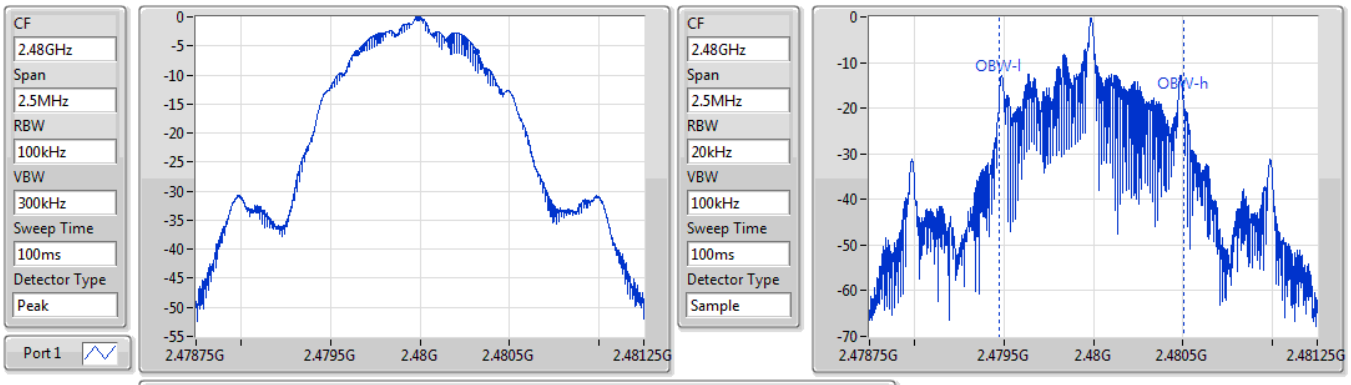


6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
672.5k	2.439649G	2.440321G	1.032M	2.439477G	2.440508G	500k	1

BT-LE(1Mbps) **EBW**

2480MHz

11/10/2019



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
672.5k	2.479648G	2.48032G	1.031M	2.479477G	2.480507G	500k	1

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	1.42	0.00139

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	1.38	30.00
2440MHz	Pass	2.98	1.42	30.00
2480MHz	Pass	2.98	0.89	30.00

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

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	1.42	0.00139

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.14	1.38	30.00
2440MHz	Pass	2.14	1.42	30.00
2480MHz	Pass	2.14	0.89	30.00

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

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-0.67

RBW=3 kHz.

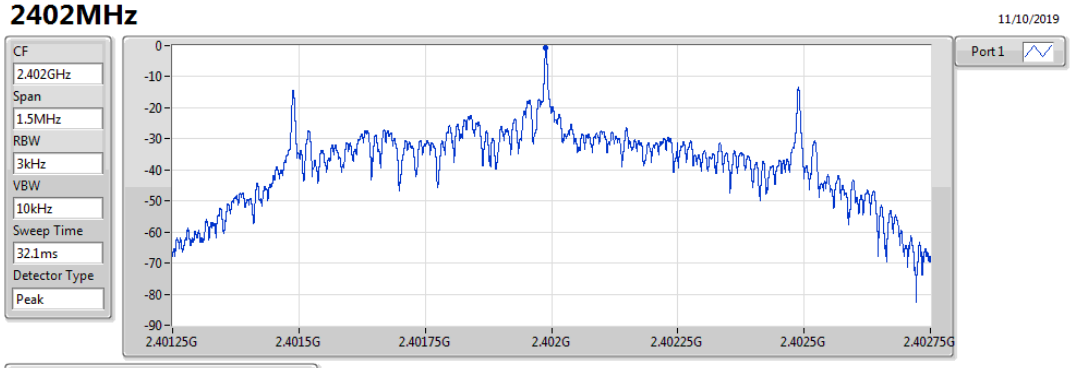
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	-0.67	8.00
2440MHz	Pass	2.98	-1.11	8.00
2480MHz	Pass	2.98	-1.31	8.00

DG = Directional Gain; RBW=3 kHz;
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) **PSD**

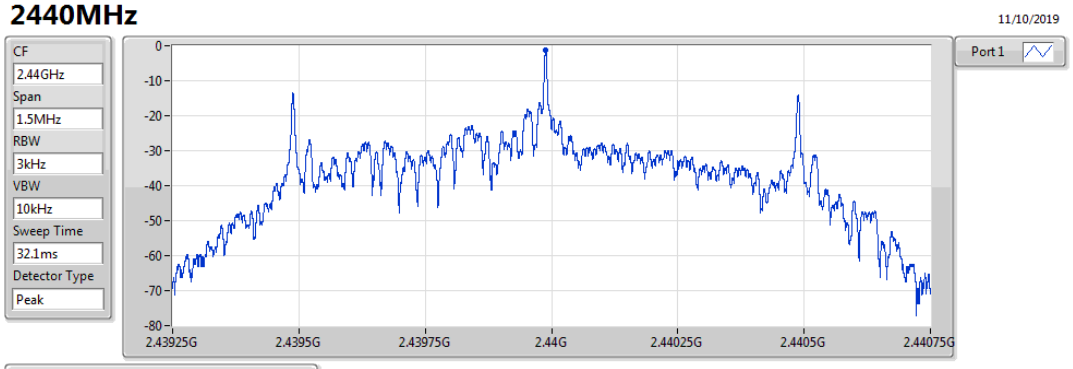
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.67	-0.67	-0.67

BT-LE(1Mbps) **PSD**

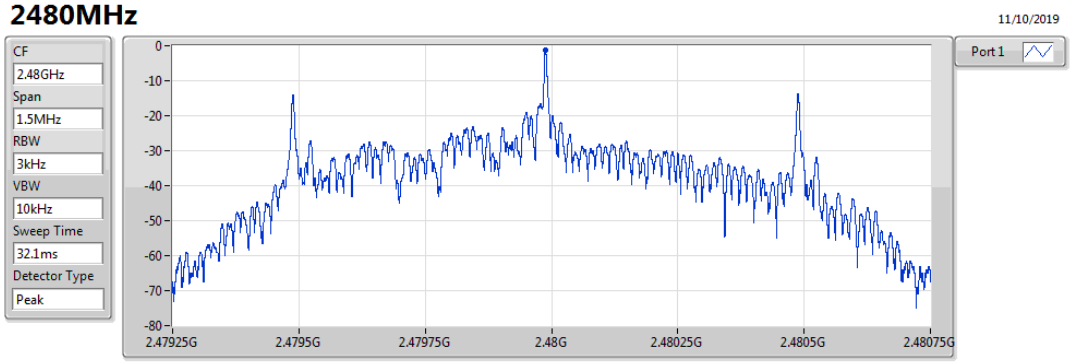
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.11	-1.11	-1.11

BT-LE(1Mbps) **PSD**

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.31	-1.31	-1.31

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-0.67

RBW=3 kHz.

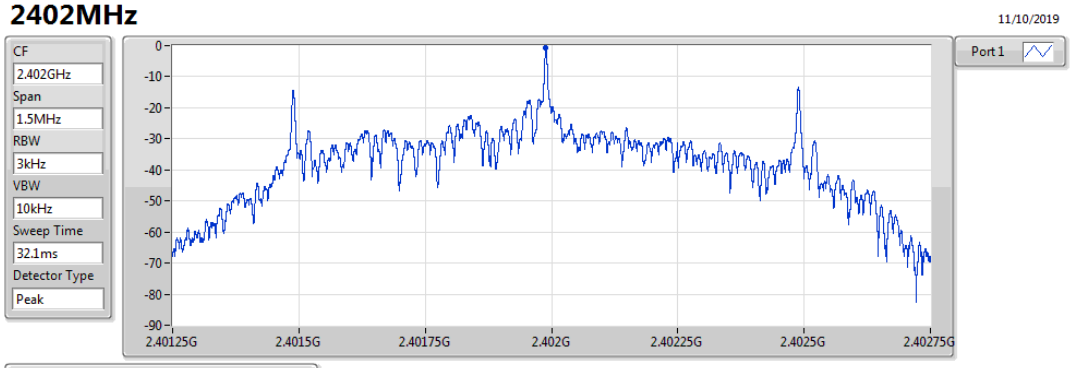
Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.14	-0.67	8.00
2440MHz	Pass	2.14	-1.11	8.00
2480MHz	Pass	2.14	-1.31	8.00

DG = Directional Gain; RBW=3 kHz;
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) **PSD**

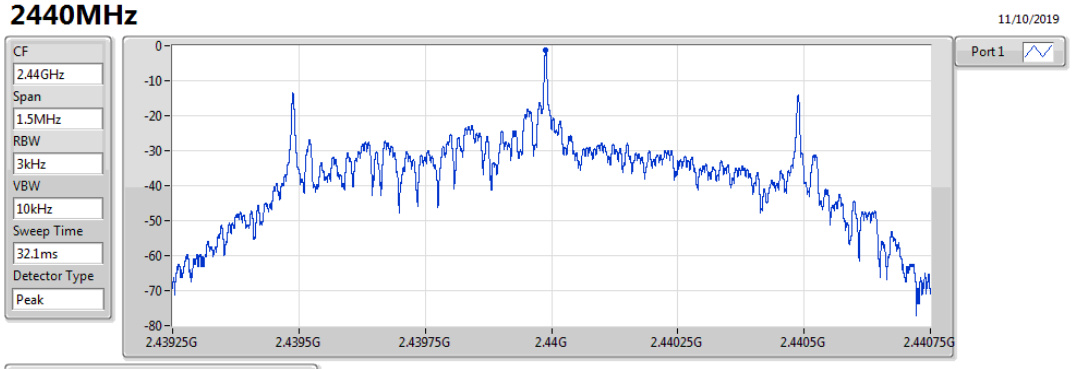
2402MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.67	-0.67	-0.67

BT-LE(1Mbps) **PSD**

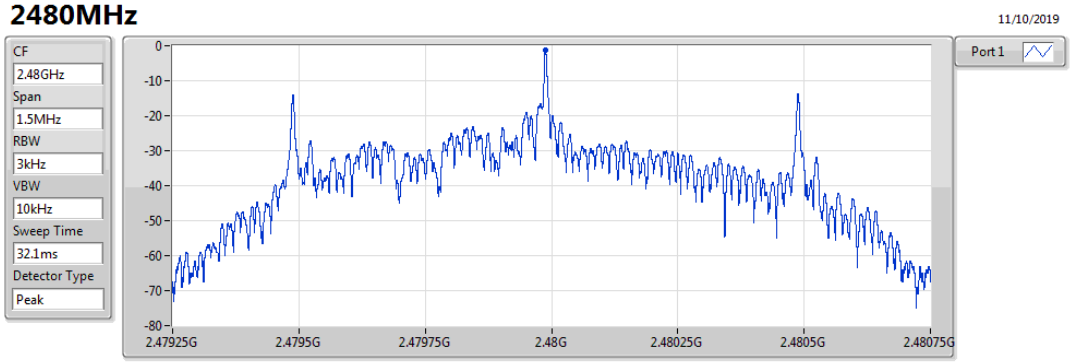
2440MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.11	-1.11	-1.11

BT-LE(1Mbps) **PSD**

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.31	-1.31	-1.31

Summary

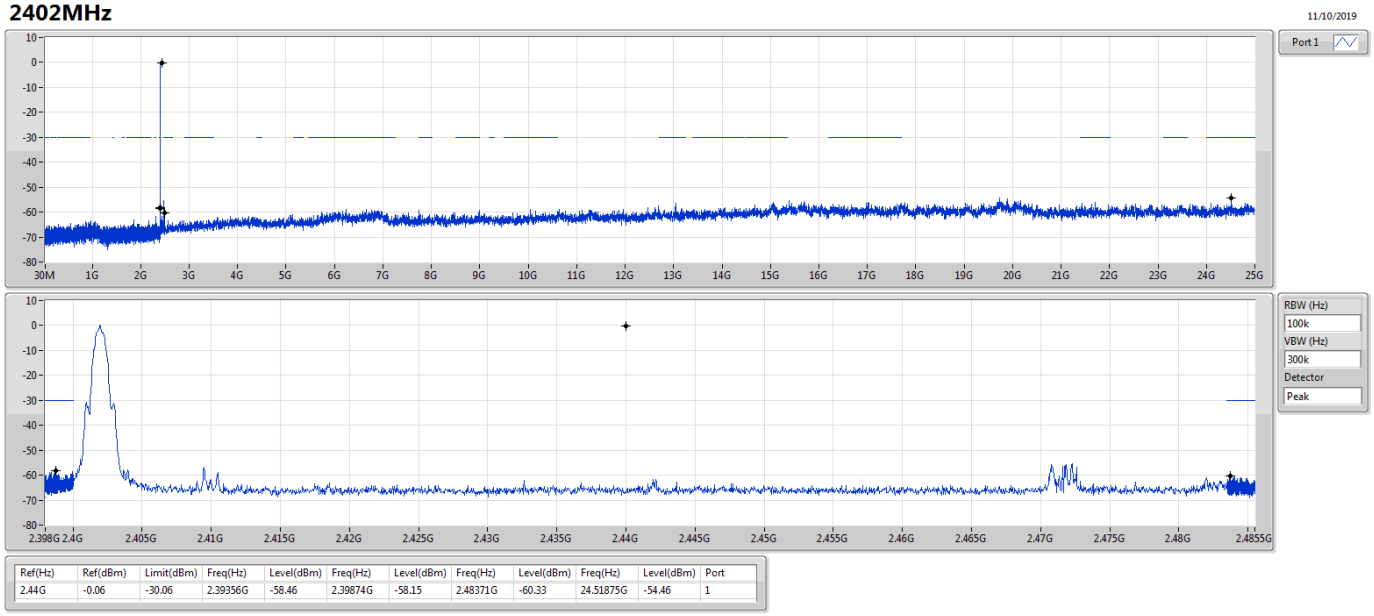
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44G	-0.06	-30.06	2.39356G	-58.46	2.39874G	-58.15	2.48371G	-60.33	24.51875G	-54.46	1

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)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44G	-0.06	-30.06	2.39356G	-58.46	2.39874G	-58.15	2.48371G	-60.33	24.51875G	-54.46	1
2440MHz	Pass	2.44G	-0.06	-30.06	857.91M	-63.80	2.39999G	-61.79	2.48365G	-63.16	24.20355G	-55.99	1
2480MHz	Pass	2.44G	-0.06	-30.06	1.96288G	-64.16	2.39998G	-60.56	2.48355G	-61.87	17.00454G	-55.70	1

BT-LE(1Mbps) **CSE NdB**

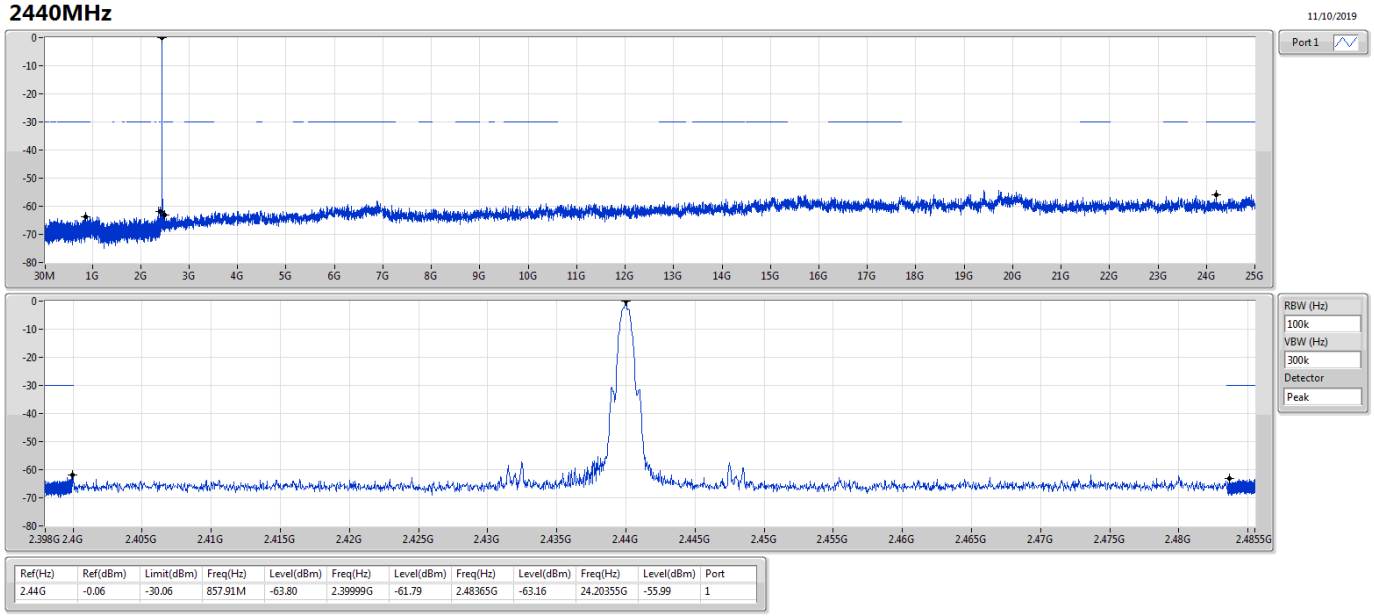
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	-0.06	-30.06	2.39356G	-58.46	2.39874G	-58.15	2.48371G	-60.33	24.51875G	-54.46	1

BT-LE(1Mbps) **CSE NdB**

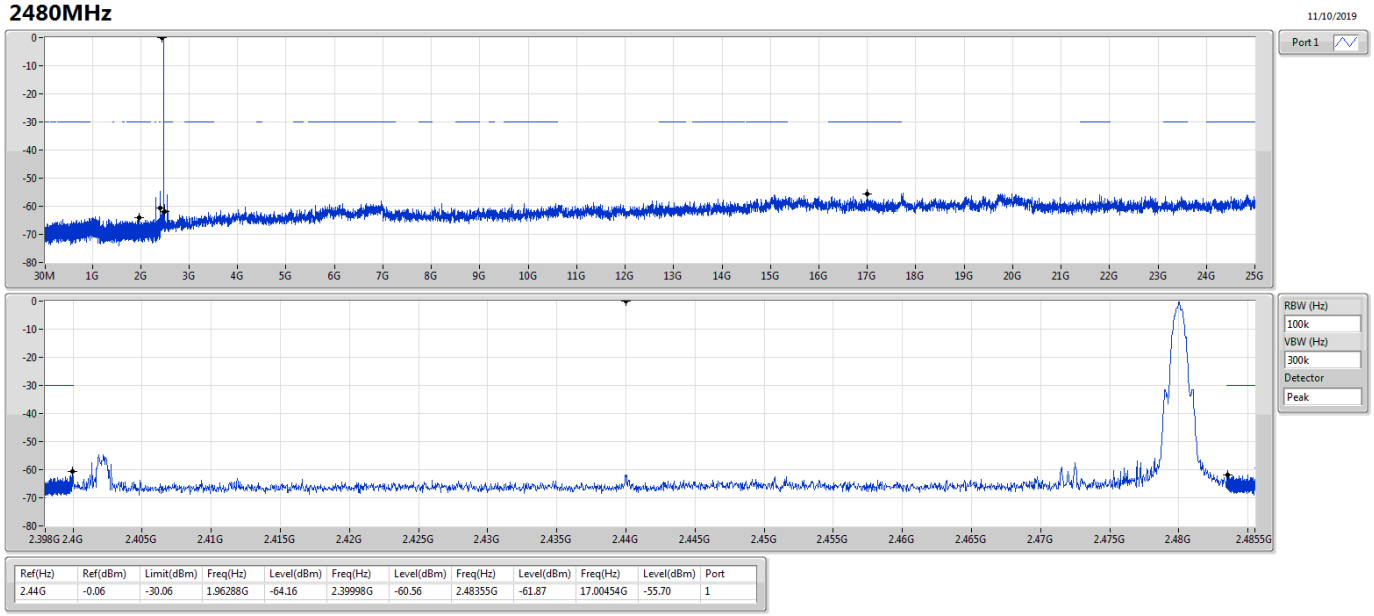
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	-0.06	-30.06	857.91M	-63.80	2.39999G	-61.79	2.48365G	-63.16	24.20355G	-55.99	1

BT-LE(1Mbps) **CSE NdB**

2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	-0.06	-30.06	1.96288G	-64.16	2.39998G	-60.56	2.48355G	-61.87	17.00454G	-55.70	1

Summary

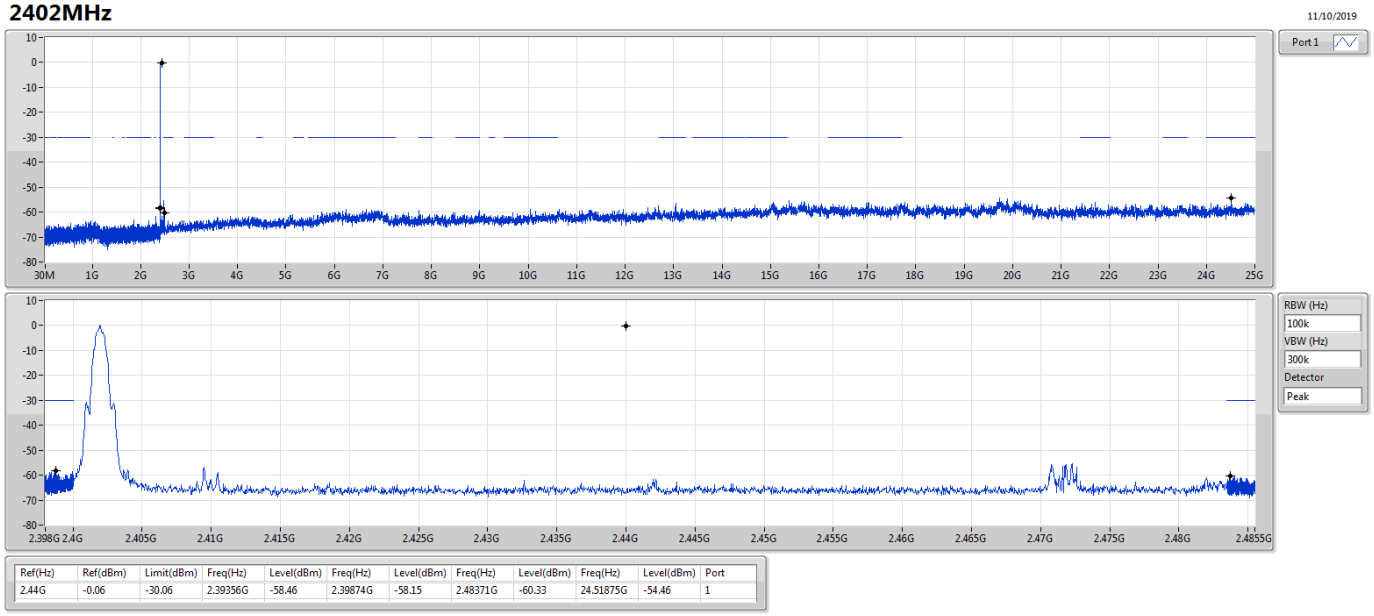
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44G	-0.06	-30.06	2.39356G	-58.46	2.39874G	-58.15	2.48371G	-60.33	24.51875G	-54.46	1

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)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44G	-0.06	-30.06	2.39356G	-58.46	2.39874G	-58.15	2.48371G	-60.33	24.51875G	-54.46	1
2440MHz	Pass	2.44G	-0.06	-30.06	857.91M	-63.80	2.39999G	-61.79	2.48365G	-63.16	24.20355G	-55.99	1
2480MHz	Pass	2.44G	-0.06	-30.06	1.96288G	-64.16	2.39998G	-60.56	2.48355G	-61.87	17.00454G	-55.70	1

BT-LE(1Mbps) **CSE NdB**

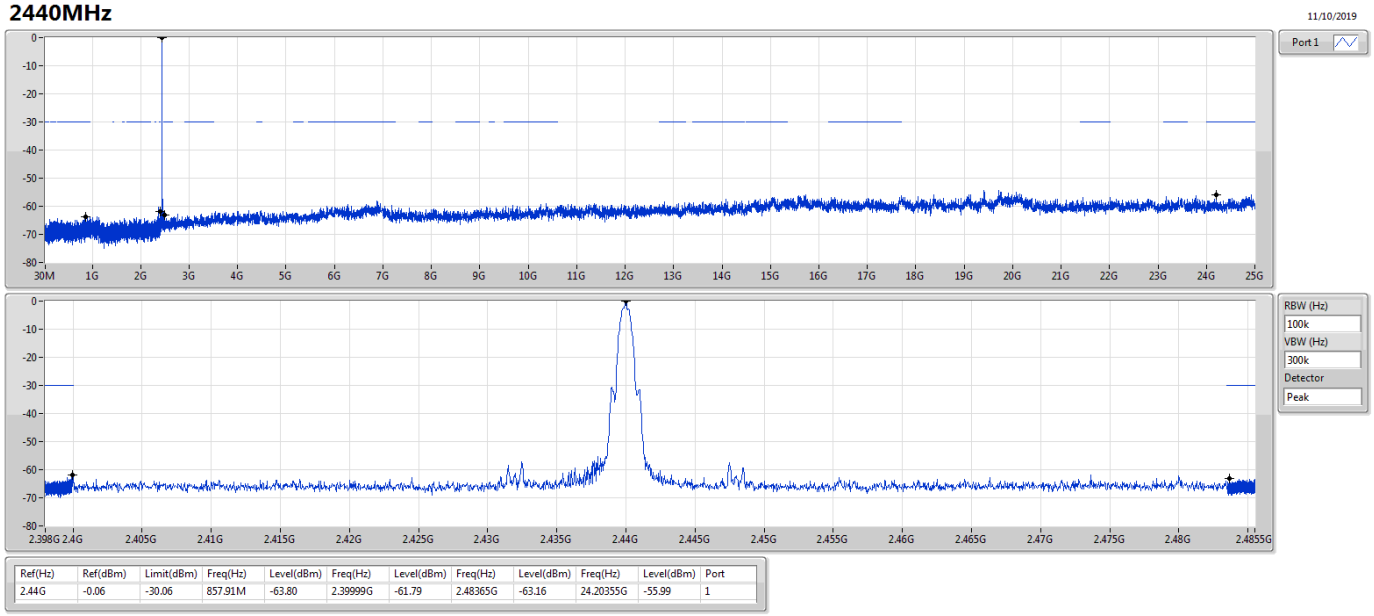
2402MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	-0.06	-30.06	2.39356G	-58.46	2.39874G	-58.15	2.48371G	-60.33	24.51875G	-54.46	1

BT-LE(1Mbps) **CSE NdB**

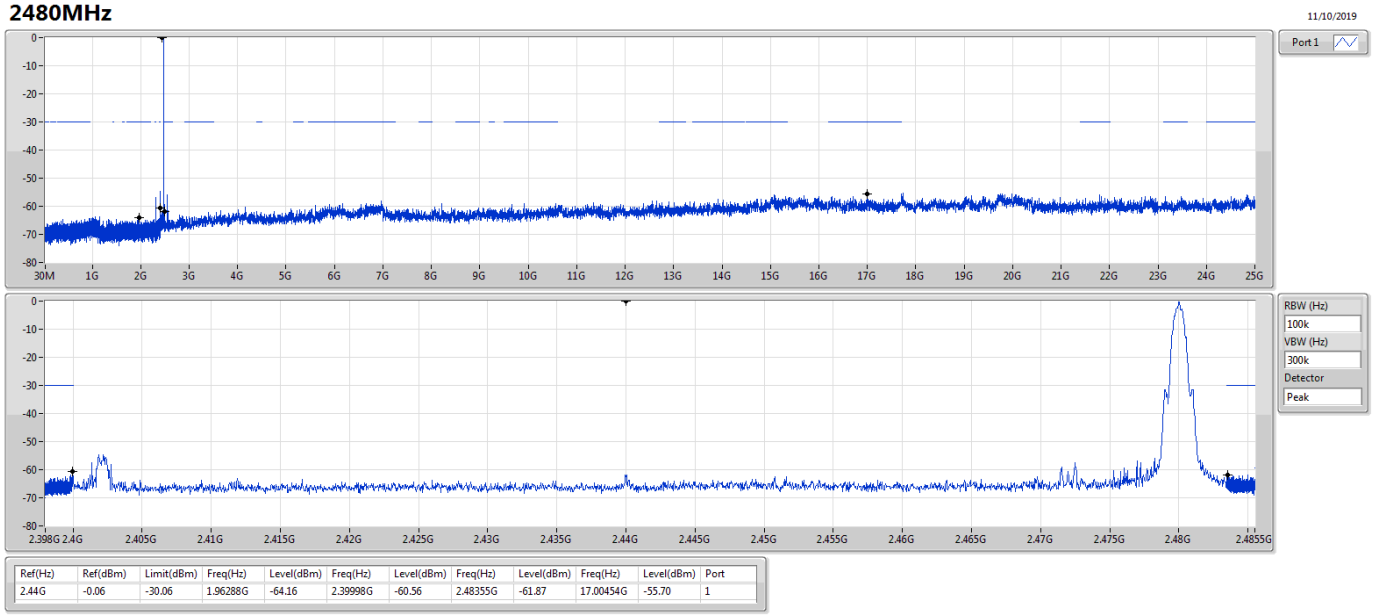
2440MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	-0.06	-30.06	857.91M	-63.80	2.39999G	-61.79	2.48365G	-63.16	24.20355G	-55.99	1

BT-LE(1Mbps) **CSE NdB**

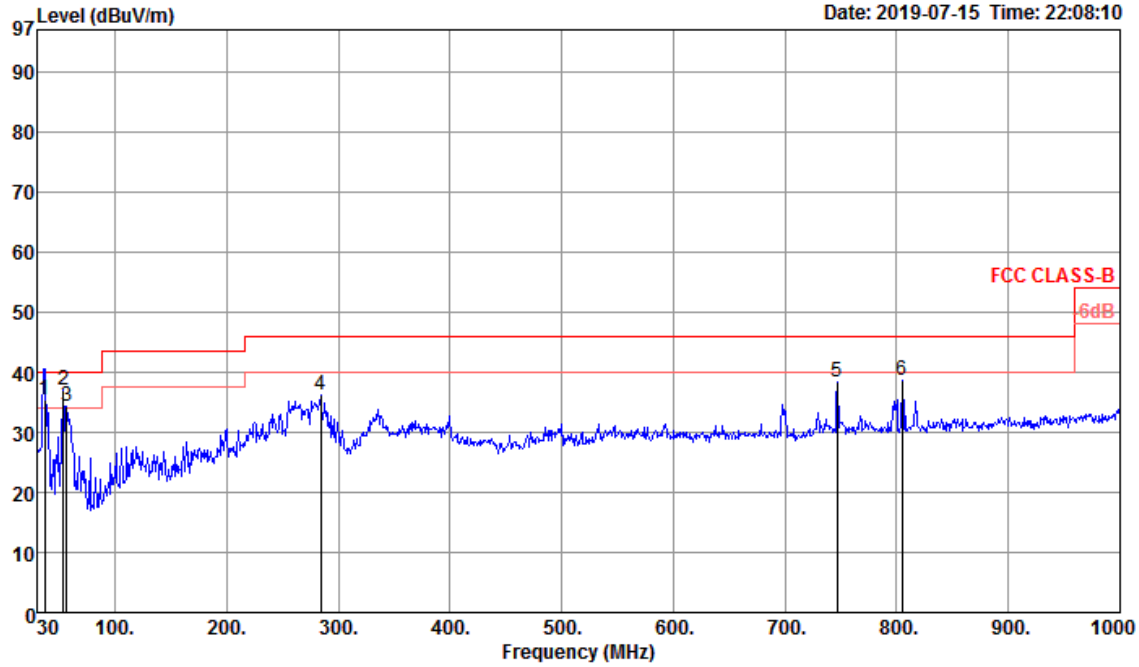
2480MHz



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	-0.06	-30.06	1.96288G	-64.16	2.39998G	-60.56	2.48355G	-61.87	17.00454G	-55.70	1

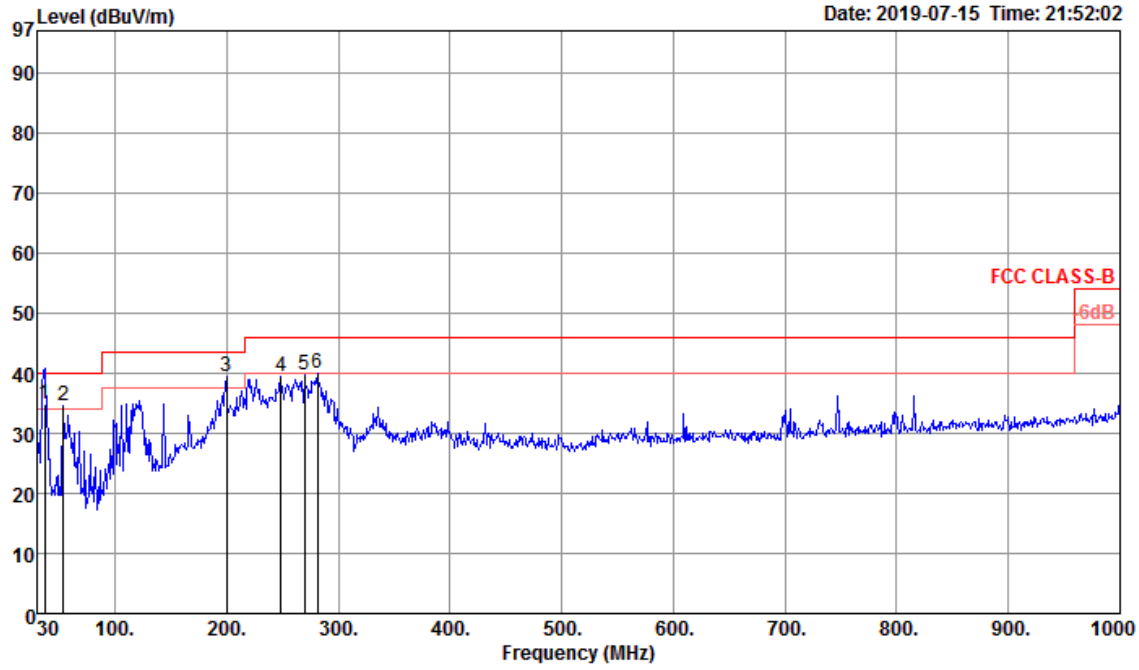
Test Mode	Mode 4	Frequency Range	30 MHz to 1,000 MHz

Vertical 30 MHz to 1,000 MHz



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	36.79	35.42	40.00	-4.58	42.50	0.71	20.78	28.57	100	116	QP	VERTICAL
2	53.28	36.95	40.00	-3.05	51.60	0.85	13.05	28.55	100	360	Peak	VERTICAL
3	56.19	34.39	40.00	-5.61	49.45	0.87	12.61	28.54	100	360	Peak	VERTICAL
4	284.14	36.24	46.00	-9.76	43.41	1.97	18.81	27.95	100	360	Peak	VERTICAL
5	746.83	38.46	46.00	-7.54	38.75	3.22	25.90	29.41	100	360	Peak	VERTICAL
6	805.03	38.69	46.00	-7.31	38.61	3.36	26.05	29.33	100	360	Peak	VERTICAL

Horizontal 30 MHz to 1,000 MHz



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	36.79	34.82	40.00	-5.18	41.90	0.71	20.78	28.57	100	124	QP	HORIZONTAL
2	53.28	34.65	40.00	-5.35	49.30	0.85	13.05	28.55	400	360	Peak	HORIZONTAL
3	199.75	39.32	43.50	-4.18	50.62	1.65	15.11	28.06	400	360	Peak	HORIZONTAL
4	248.25	39.51	46.00	-6.49	47.53	1.84	18.14	28.00	400	360	Peak	HORIZONTAL
5	269.59	39.73	46.00	-6.27	47.04	1.92	18.74	27.97	400	360	Peak	HORIZONTAL
6	281.23	39.91	46.00	-6.09	47.16	1.96	18.74	27.95	400	360	Peak	HORIZONTAL

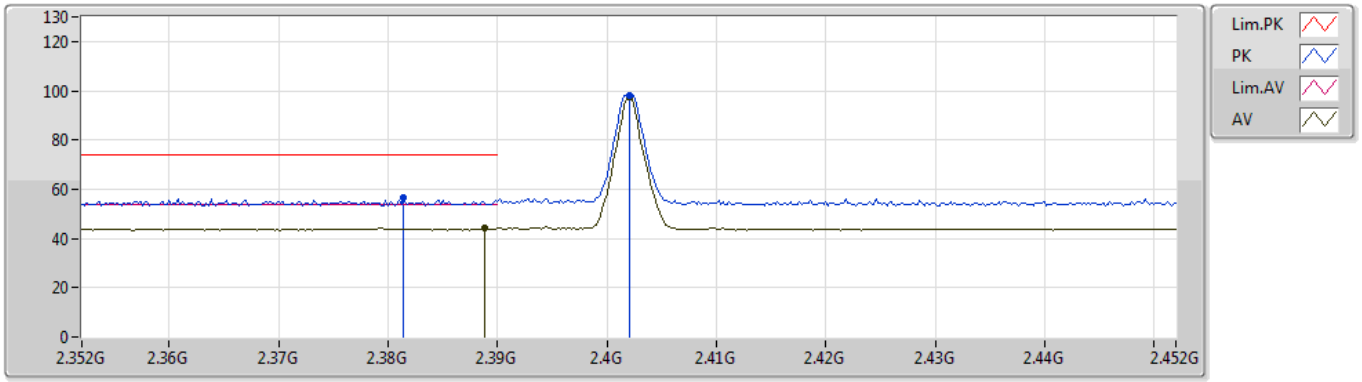
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4835G	47.05	54.00	-6.95	30.96	3	Vertical	52	1.04	-

BT-LE(1Mbps)

09/10/2019

2402MHz_TX



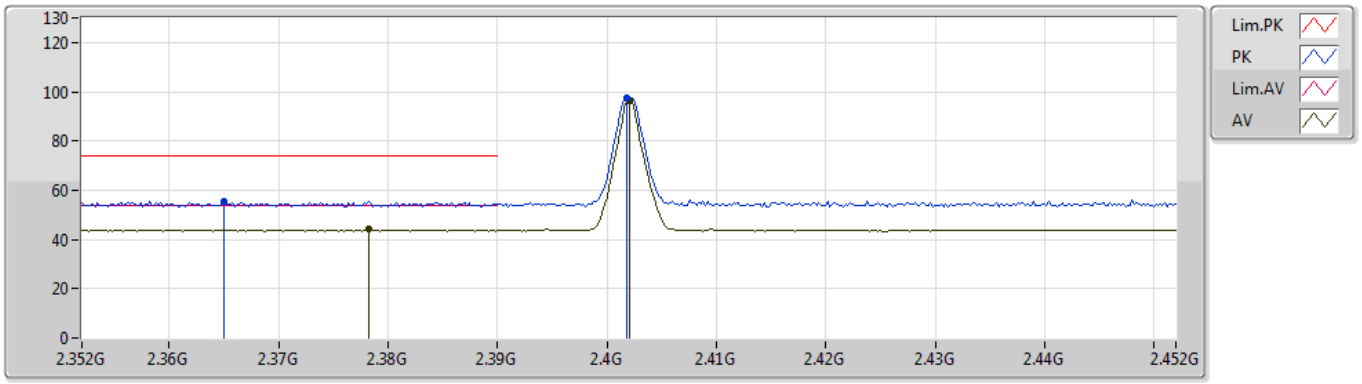
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.3814G	56.39	74.00	-17.61	30.77	3	Vertical	52	1.01	-	25.62
AV	2.3888G	44.08	54.00	-9.92	30.80	3	Vertical	52	1.01	-	13.28
PK	2.402G	98.13	Inf	-Inf	30.84	3	Vertical	52	1.01	-	67.29
AV	2.402G	97.32	Inf	-Inf	30.84	3	Vertical	52	1.01	-	66.48

BT-LE(1Mbps)

09/10/2019

2402MHz_TX



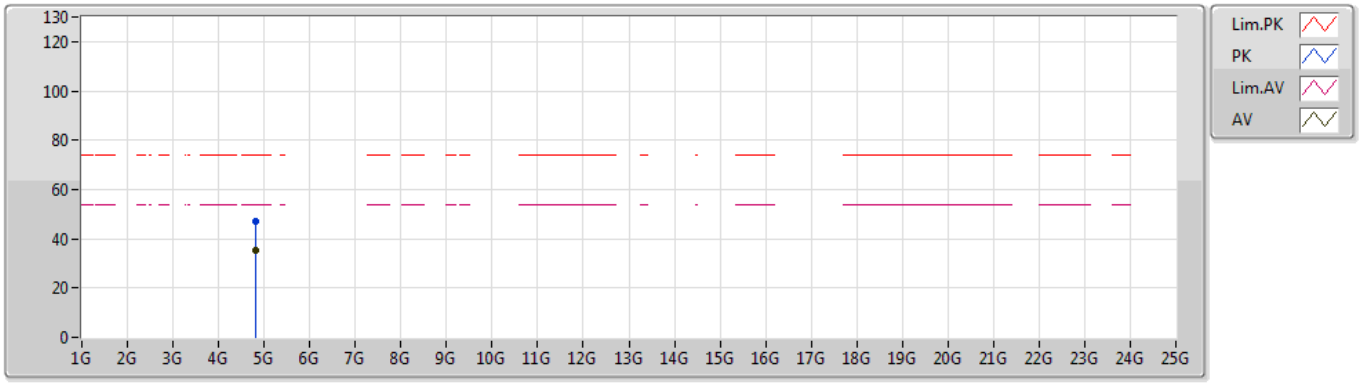
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.365G	55.59	74.00	-18.41	30.70	3	Horizontal	67	1.20	-	24.89
AV	2.3782G	44.01	54.00	-9.99	30.75	3	Horizontal	67	1.20	-	13.26
PK	2.4018G	97.31	Inf	-Inf	30.84	3	Horizontal	67	1.20	-	66.47
AV	2.402G	96.49	Inf	-Inf	30.84	3	Horizontal	67	1.20	-	65.65

BT-LE(1Mbps)

2402MHz_TX

09/10/2019



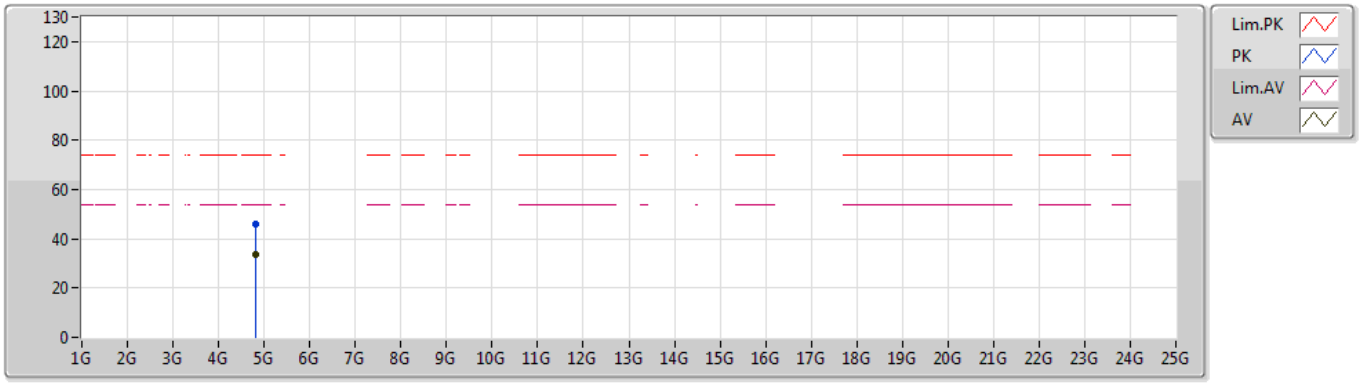
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.8036G	47.22	74.00	-26.78	3.49	3	Vertical	184	2.67	-	43.73
AV	4.80384G	35.50	54.00	-18.50	3.49	3	Vertical	184	2.67	-	32.01

BT-LE(1Mbps)

09/10/2019

2402MHz_TX



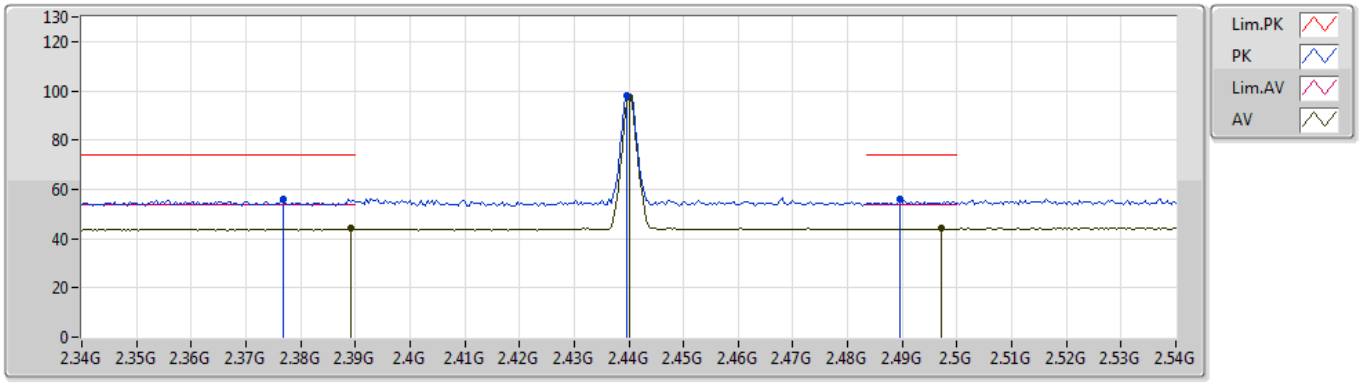
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.80474G	46.13	74.00	-27.87	3.50	3	Horizontal	190	1.77	-	42.63
AV	4.80412G	33.78	54.00	-20.22	3.49	3	Horizontal	190	1.77	-	30.29

BT-LE(1Mbps)

2440MHz_TX

09/10/2019



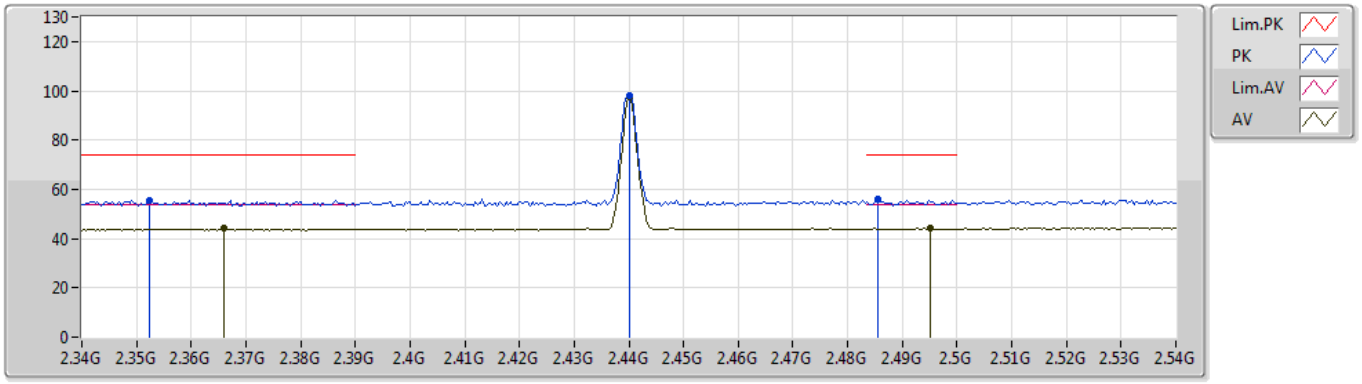
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.3768G	55.90	74.00	-18.10	30.75	3	Vertical	55	1.17	-	25.15
AV	2.3892G	44.10	54.00	-9.90	30.80	3	Vertical	55	1.17	-	13.30
PK	2.4396G	98.24	Inf	-Inf	30.90	3	Vertical	55	1.17	-	67.34
AV	2.44G	97.46	Inf	-Inf	30.90	3	Vertical	55	1.17	-	66.56
PK	2.4896G	55.89	74.00	-18.11	30.97	3	Vertical	55	1.17	-	24.92
AV	2.4972G	44.23	54.00	-9.77	30.99	3	Vertical	55	1.17	-	13.24

BT-LE(1Mbps)

09/10/2019

2440MHz_TX



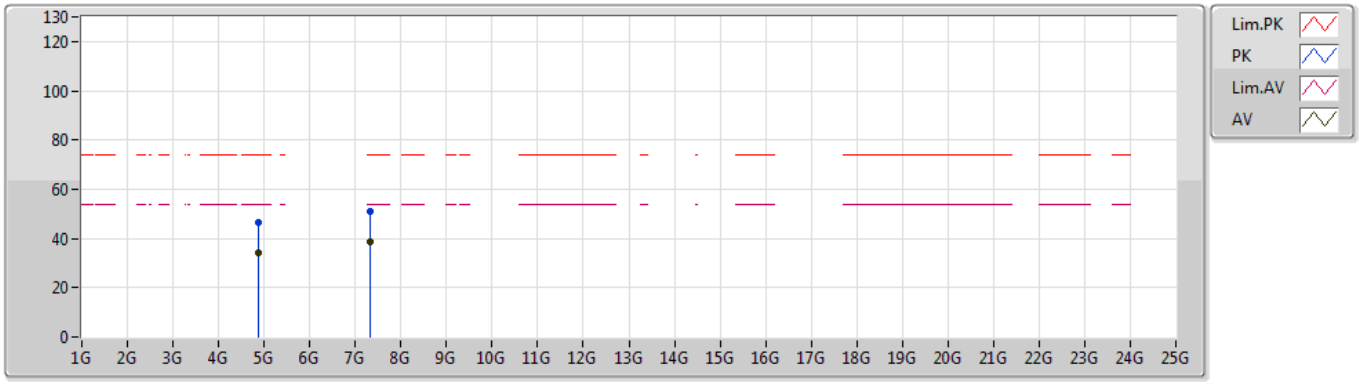
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.3524G	55.68	74.00	-18.32	30.66	3	Horizontal	68	1.06	-	25.02
AV	2.366G	43.99	54.00	-10.01	30.71	3	Horizontal	68	1.06	-	13.28
PK	2.44G	98.10	Inf	-Inf	30.90	3	Horizontal	68	1.06	-	67.20
AV	2.44G	97.30	Inf	-Inf	30.90	3	Horizontal	68	1.06	-	66.40
PK	2.4856G	56.27	74.00	-17.73	30.97	3	Horizontal	68	1.06	-	25.30
AV	2.4952G	44.05	54.00	-9.95	30.99	3	Horizontal	68	1.06	-	13.06

BT-LE(1Mbps)

09/10/2019

2440MHz_TX



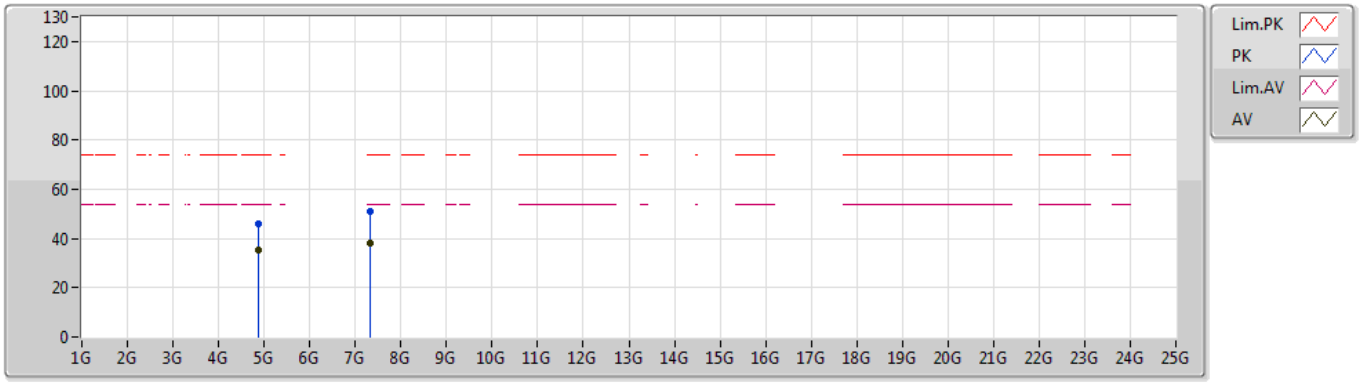
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.88424G	46.31	74.00	-27.69	3.86	3	Vertical	47	1.15	-	42.45
AV	4.87986G	34.17	54.00	-19.83	3.84	3	Vertical	47	1.15	-	30.33
PK	7.31662G	51.22	74.00	-22.78	9.26	3	Vertical	149	1.50	-	41.96
AV	7.31504G	38.40	54.00	-15.60	9.26	3	Vertical	149	1.50	-	29.14

BT-LE(1Mbps)

09/10/2019

2440MHz_TX



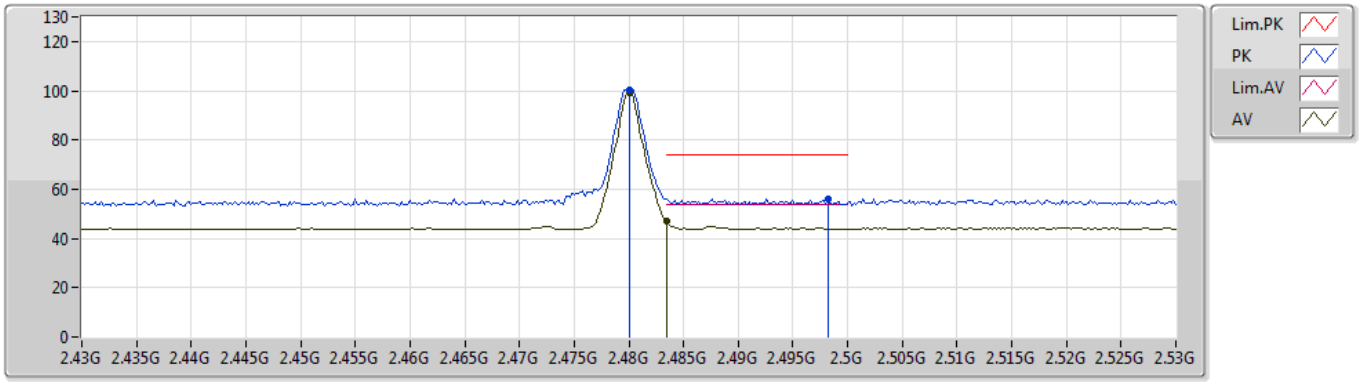
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.88214G	46.17	74.00	-27.83	3.85	3	Horizontal	183	2.27	-	42.32
AV	4.88G	35.26	54.00	-18.74	3.84	3	Horizontal	183	2.27	-	31.42
PK	7.31652G	50.77	74.00	-23.23	9.26	3	Horizontal	232	1.50	-	41.51
AV	7.32346G	38.22	54.00	-15.78	9.25	3	Horizontal	232	1.50	-	28.97

BT-LE(1Mbps)

09/10/2019

2480MHz_TX



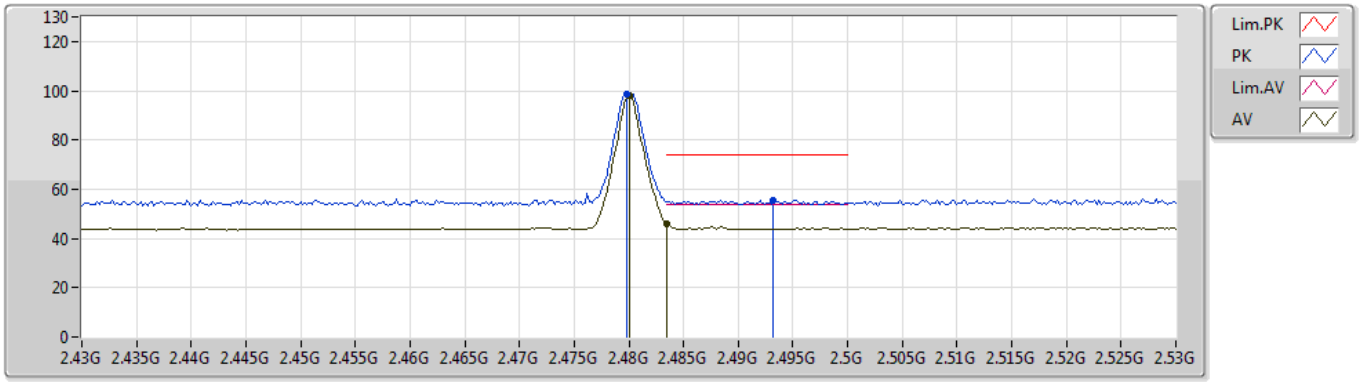
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.48G	100.23	Inf	-Inf	30.96	3	Vertical	52	1.04	-	69.27
AV	2.48G	99.42	Inf	-Inf	30.96	3	Vertical	52	1.04	-	68.46
PK	2.4982G	56.14	74.00	-17.86	30.99	3	Vertical	52	1.04	-	25.15
AV	2.4835G	47.05	54.00	-6.95	30.96	3	Vertical	52	1.04	-	16.09

BT-LE(1Mbps)

09/10/2019

2480MHz_TX



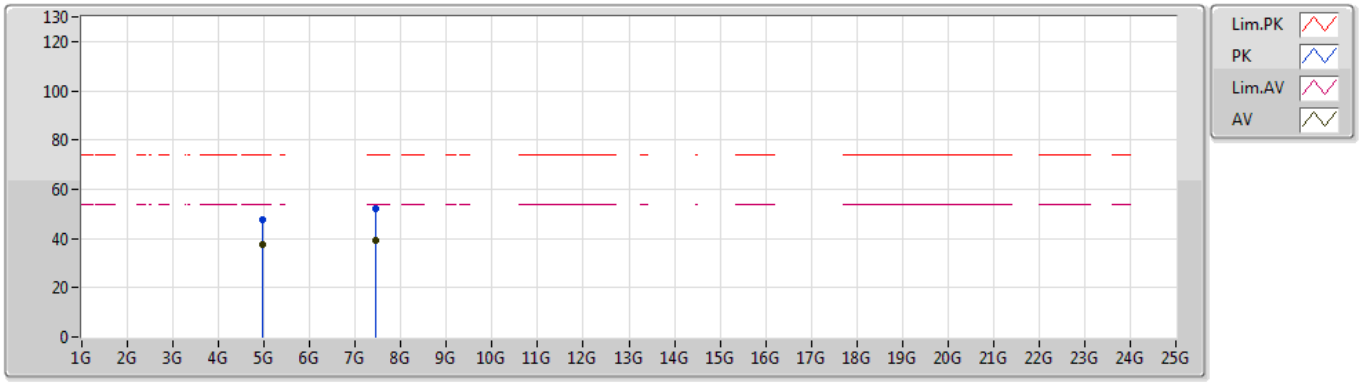
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.4798G	98.80	Inf	-Inf	30.96	3	Horizontal	69	2.66	-	67.84
AV	2.48G	97.98	Inf	-Inf	30.96	3	Horizontal	69	2.66	-	67.02
PK	2.4932G	55.48	74.00	-18.52	30.98	3	Horizontal	69	2.66	-	24.50
AV	2.4835G	46.16	54.00	-7.84	30.96	3	Horizontal	69	2.66	-	15.20

BT-LE(1Mbps)

09/10/2019

2480MHz_TX



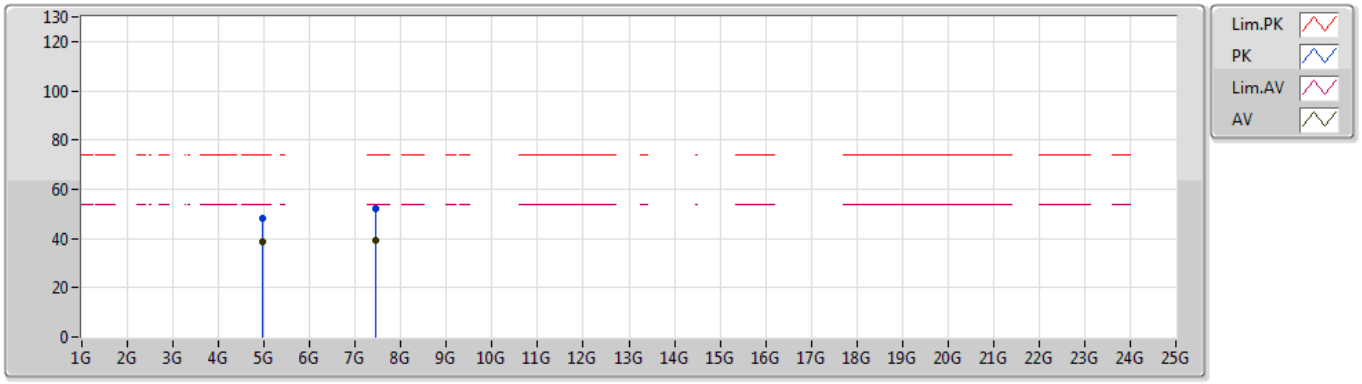
EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.9606G	47.62	74.00	-26.38	4.20	3	Vertical	15	2.11	-	43.42
AV	4.95992G	37.31	54.00	-16.69	4.20	3	Vertical	15	2.11	-	33.11
PK	7.43846G	52.35	74.00	-21.65	9.46	3	Vertical	339	1.50	-	42.89
AV	7.43504G	39.22	54.00	-14.78	9.44	3	Vertical	339	1.50	-	29.78

BT-LE(1Mbps)

09/10/2019

2480MHz_TX



EUT X_1TX_PIFA ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.95942G	48.28	74.00	-25.72	4.20	3	Horizontal	22	1.03	-	44.08
AV	4.95994G	38.58	54.00	-15.42	4.20	3	Horizontal	22	1.03	-	34.38
PK	7.4364G	52.04	74.00	-21.96	9.45	3	Horizontal	358	1.43	-	42.59
AV	7.43784G	39.43	54.00	-14.57	9.45	3	Horizontal	358	1.43	-	29.98

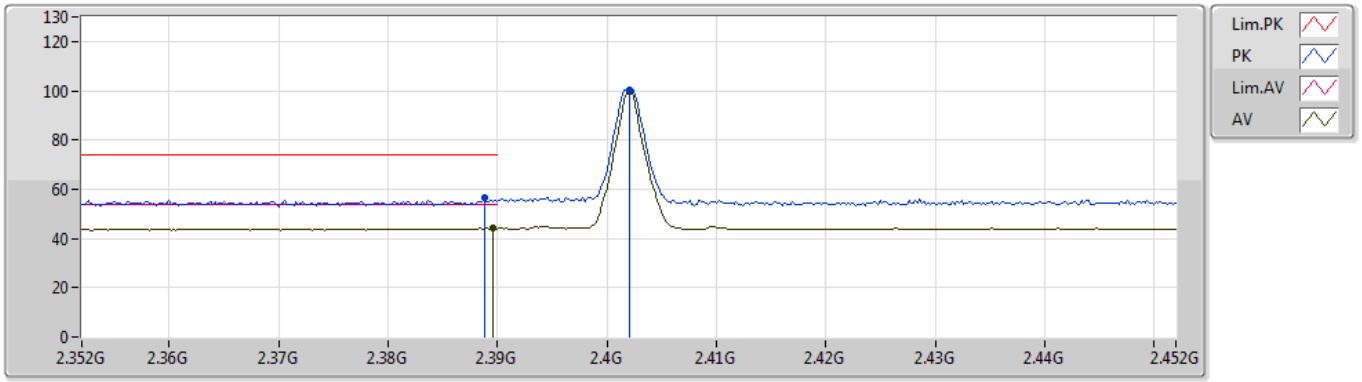
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4835G	47.63	54.00	-6.37	30.96	3	Vertical	192	2.43	-

BT-LE(1Mbps)

09/10/2019

2402MHz_TX



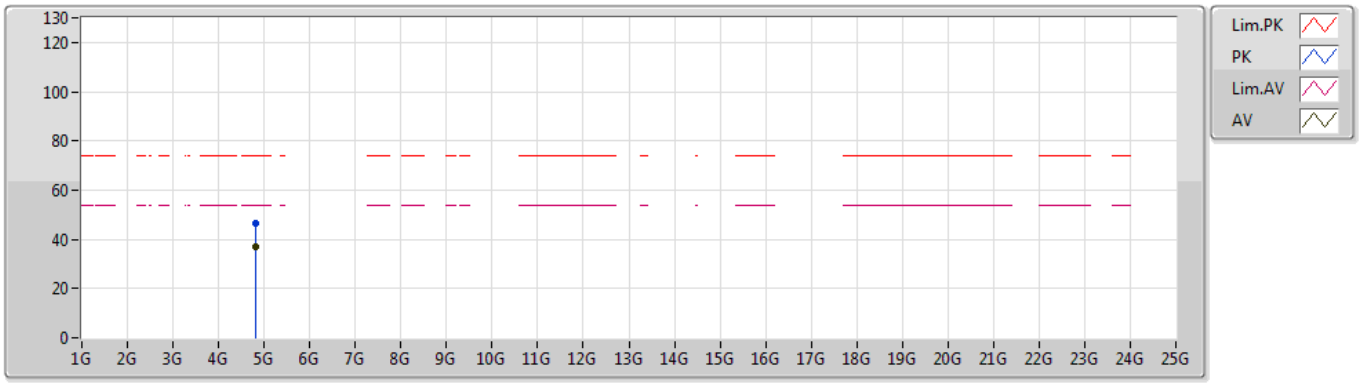
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.3888G	56.40	74.00	-17.60	30.80	3	Vertical	212	2.05	-	25.60
AV	2.3896G	44.26	54.00	-9.74	30.80	3	Vertical	212	2.05	-	13.46
PK	2.402G	100.44	Inf	-Inf	30.84	3	Vertical	212	2.05	-	69.60
AV	2.402G	99.62	Inf	-Inf	30.84	3	Vertical	212	2.05	-	68.78

BT-LE(1Mbps)

09/10/2019

2402MHz_TX



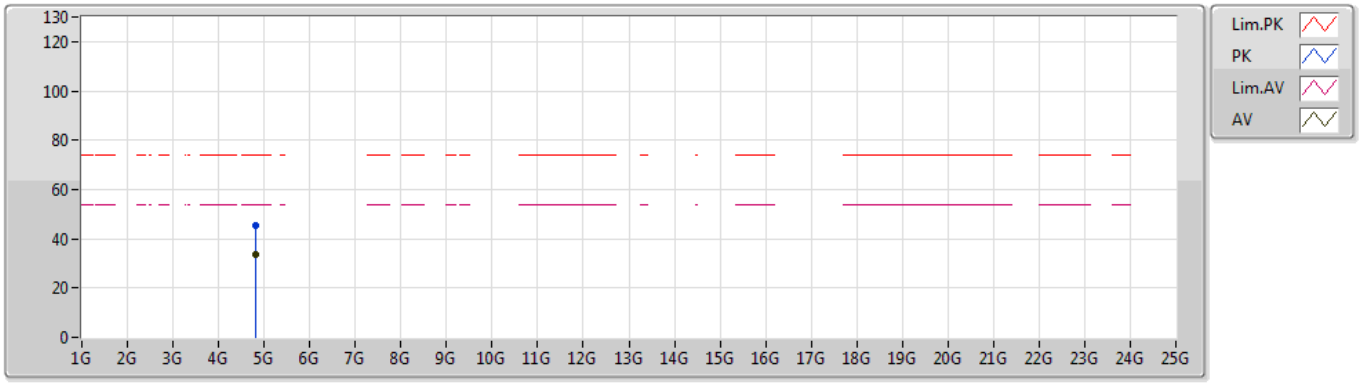
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.80368G	46.27	74.00	-27.73	3.49	3	Vertical	162	1.96	-	42.78
AV	4.80394G	36.73	54.00	-17.27	3.49	3	Vertical	162	1.96	-	33.24

BT-LE(1Mbps)

09/10/2019

2402MHz_TX



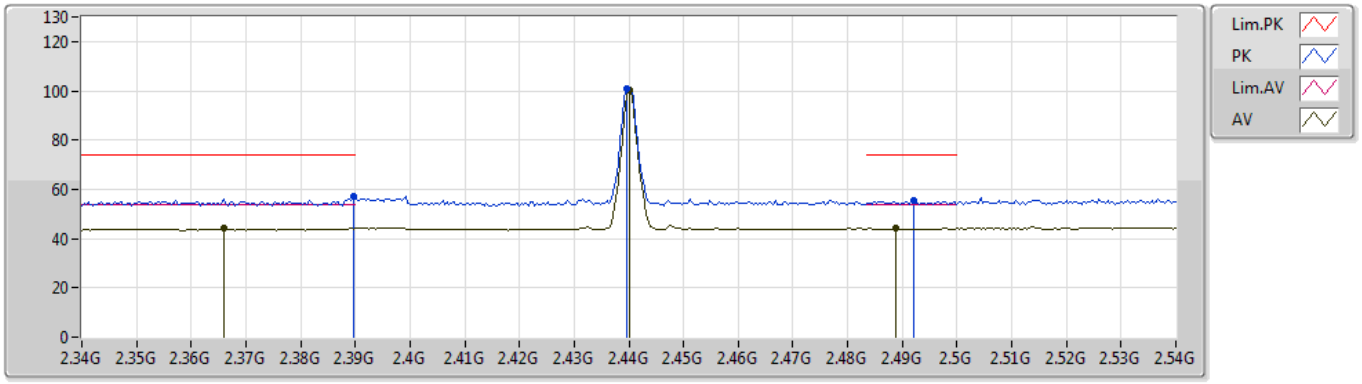
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.80328G	45.50	74.00	-28.50	3.49	3	Horizontal	211	2.51	-	42.01
AV	4.80436G	33.35	54.00	-20.65	3.50	3	Horizontal	211	2.51	-	29.85

BT-LE(1Mbps)

09/10/2019

2440MHz_TX



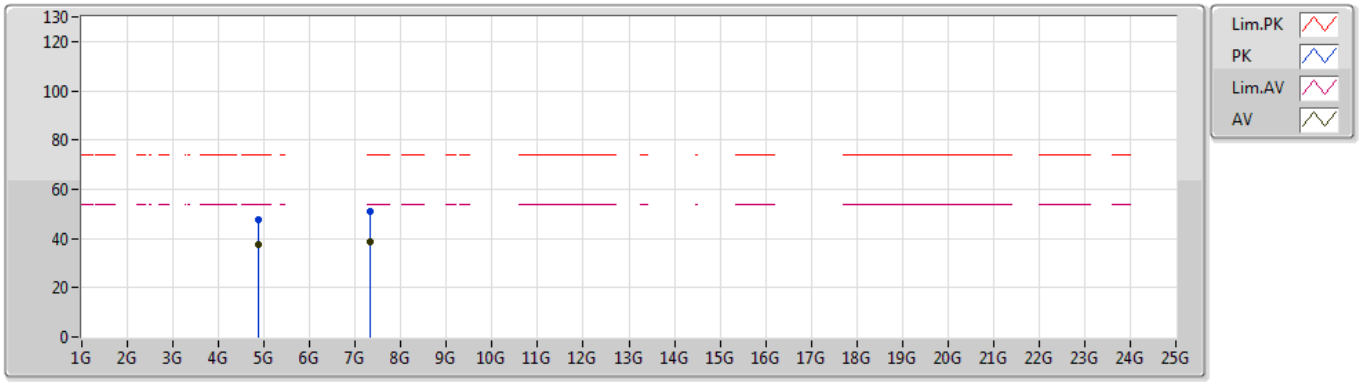
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.3896G	57.01	74.00	-16.99	30.80	3	Vertical	217	2.23	-	26.21
AV	2.366G	44.23	54.00	-9.77	30.71	3	Vertical	217	2.23	-	13.52
PK	2.4396G	101.08	Inf	-Inf	30.90	3	Vertical	217	2.23	-	70.18
AV	2.44G	100.30	Inf	-Inf	30.90	3	Vertical	217	2.23	-	69.40
PK	2.492G	55.43	74.00	-18.57	30.98	3	Vertical	217	2.23	-	24.45
AV	2.4888G	44.26	54.00	-9.74	30.97	3	Vertical	217	2.23	-	13.29

BT-LE(1Mbps)

09/10/2019

2440MHz_TX



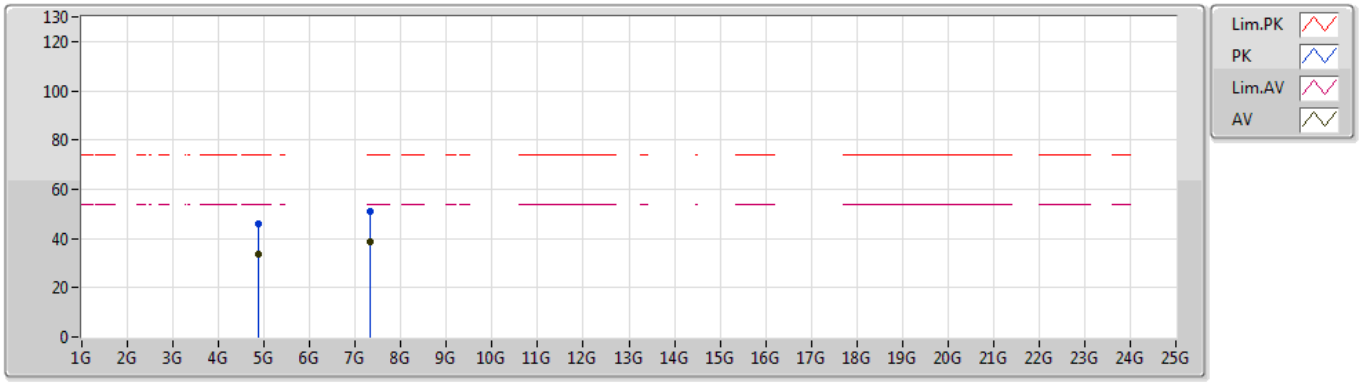
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.8795G	47.77	74.00	-26.23	3.84	3	Vertical	327	1.66	-	43.93
AV	4.87998G	37.79	54.00	-16.21	3.84	3	Vertical	327	1.66	-	33.95
PK	7.31982G	50.88	74.00	-23.12	9.25	3	Vertical	52	1.82	-	41.63
AV	7.315G	38.64	54.00	-15.36	9.25	3	Vertical	52	1.82	-	29.39

BT-LE(1Mbps)

09/10/2019

2440MHz_TX



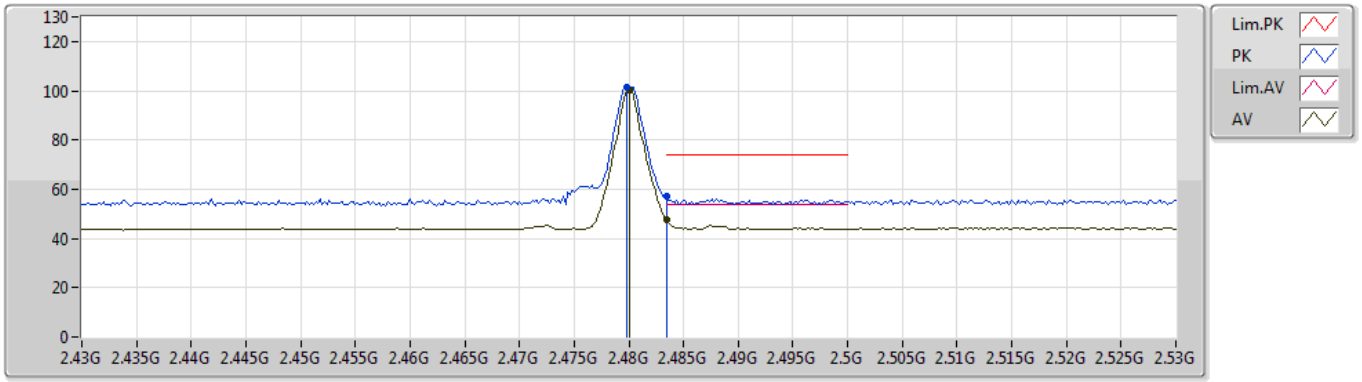
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.87776G	45.71	74.00	-28.29	3.82	3	Horizontal	16	1.50	-	41.89
AV	4.87868G	33.42	54.00	-20.58	3.83	3	Horizontal	16	1.50	-	29.59
PK	7.3167G	50.92	74.00	-23.08	9.25	3	Horizontal	109	1.50	-	41.67
AV	7.315G	38.46	54.00	-15.54	9.25	3	Horizontal	109	1.50	-	29.21

BT-LE(1Mbps)

2480MHz_TX

09/10/2019



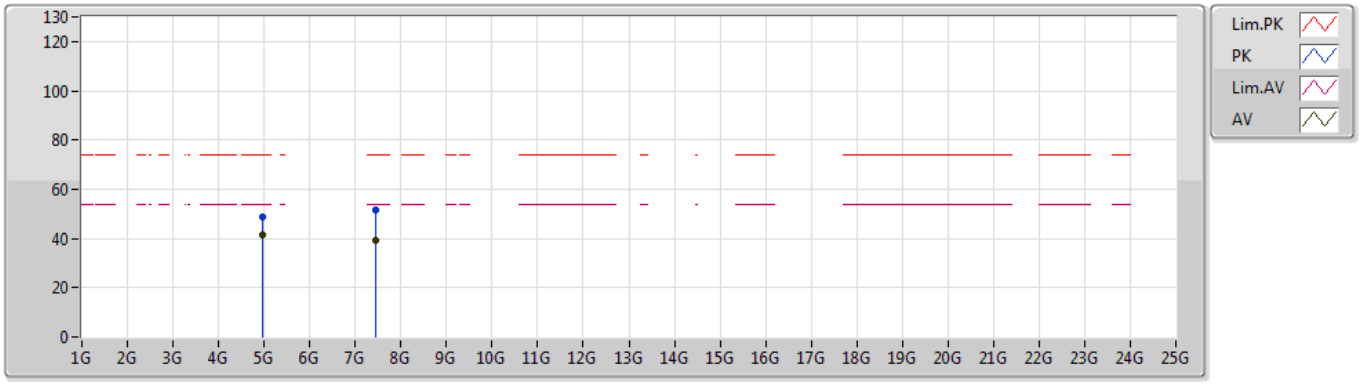
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	2.4798G	101.42	Inf	-Inf	30.96	3	Vertical	192	2.43	-	70.46
AV	2.48G	100.52	Inf	-Inf	30.96	3	Vertical	192	2.43	-	69.56
PK	2.4835G	57.24	74.00	-16.76	30.96	3	Vertical	192	2.43	-	26.28
AV	2.4835G	47.63	54.00	-6.37	30.96	3	Vertical	192	2.43	-	16.67

BT-LE(1Mbps)

09/10/2019

2480MHz_TX



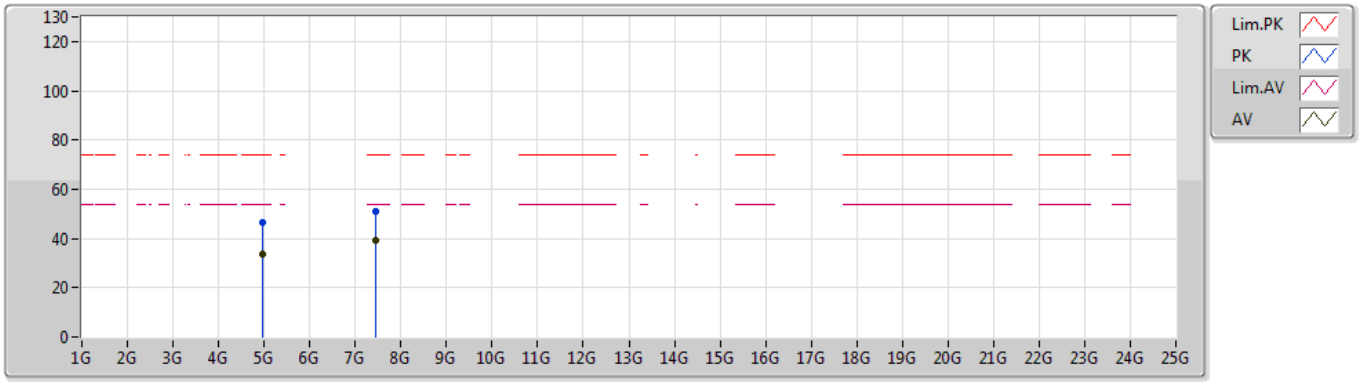
EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.96036G	48.98	74.00	-25.02	4.20	3	Vertical	64	1.74	-	44.78
AV	4.95996G	41.25	54.00	-12.75	4.20	3	Vertical	64	1.74	-	37.05
PK	7.43542G	51.42	74.00	-22.58	9.44	3	Vertical	48	2.13	-	41.98
AV	7.43874G	39.17	54.00	-14.83	9.46	3	Vertical	48	2.13	-	29.71

BT-LE(1Mbps)

09/10/2019

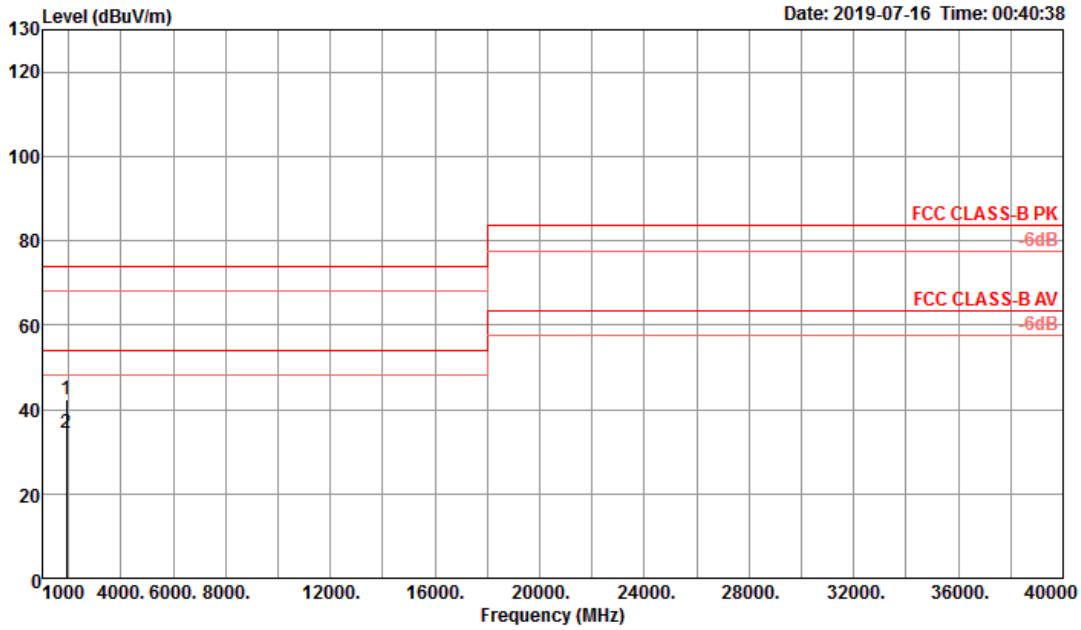
2480MHz_TX



EUT X_1TX_Dipole ANT
Setting Default
01-P-2
FSP(100019)

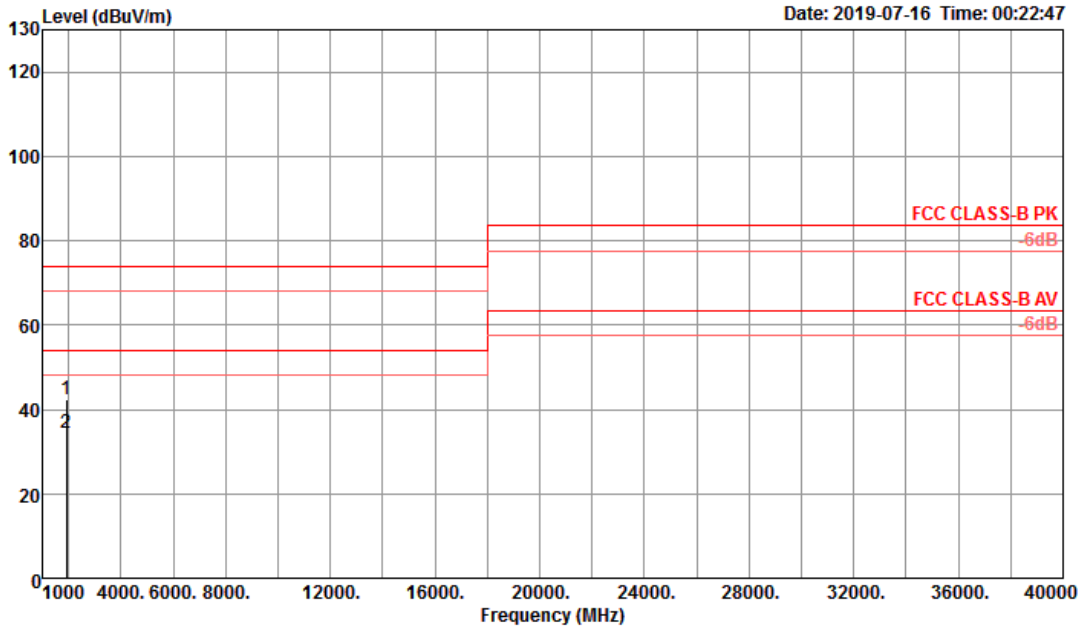
Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)
PK	4.95852G	46.46	74.00	-27.54	4.20	3	Horizontal	333	1.50	-	42.26
AV	4.95712G	33.67	54.00	-20.33	4.19	3	Horizontal	333	1.50	-	29.48
PK	7.43616G	51.25	74.00	-22.75	9.44	3	Horizontal	326	1.64	-	41.81
AV	7.44104G	39.16	54.00	-14.84	9.47	3	Horizontal	326	1.64	-	29.69

RSE Co-location Result			
Operating Mode	2	**Polarization**	Horizontal
Operating Function	Normal Link		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1918.86	42.51	74.00	-31.49	45.95	3.87	27.33	34.64	118	69	Peak	HORIZONTAL
2	1919.59	34.56	54.00	-19.44	37.99	3.87	27.34	34.64	118	69	Average	HORIZONTAL

RSE Co-location Result			
Operating Mode	2	**Polarization**	Vertical
Operating Function	Normal Link		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	1919.12	42.46	74.00	-31.54	45.89	3.87	27.34	34.64	177	128	Peak	VERTICAL
2	1919.82	34.23	54.00	-19.77	37.66	3.87	27.34	34.64	177	128	Average	VERTICAL