



FCC RADIO TEST REPORT

FCC ID : N89-UCM8033TVO
Equipment : UCM8033TVO
Brand Name : Technicolor
Model Name : UCM8033TVO
Applicant : CyberTAN Technology Inc.
No. 99, Park Avenue III Science-based Industrial
Park Hsinchu Taiwan 308
Manufacturer : CyberTAN Technology Inc.
No. 99, Park Avenue III Science-based Industrial
Park Hsinchu Taiwan 308
Standard : 47 CFR FCC Part 15.247

The product was received on Nov. 01, 2018, and testing was started from Dec. 10, 2018 and completed on Jan. 28, 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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Photographs of EUT v01



TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB Ver1.0



Summary of Test Result

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

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

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: Vicky Huang

1 General Description

1.1 Information

1.1.1 RF General Information

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

Band	Mode	BWch (MHz)	Nant
2400-2483.5	BT-BR(1Mbps)	1	1
2400-2483.5	BT-EDR(2Mbps)	1	1
2400-2483.5	BT-EDR(3Mbps)	1	1

Note:

- Bluetooth BR uses a GFSK (1Mbps).
- Bluetooth EDR uses a combination of $\pi/4$ -DQPSK (2Mbps) and 8DPSK (3Mbps).
- Bluetooth BR/EDR uses as a system using FHSS 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	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
1	1	-	-	Printed Antenna	N/A	4.39	RF4CE
2	1	-	-	Printed Antenna	N/A	3.40	Bluetooth

Note1: The above information was declared by manufacturer.

Note2: The EUT has two antennas.

For Bluetooth / RF4CE mode (1TX/1RX):

Only Port 1 can be use as transmitting/receiving antenna.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.785	1.051	2.89m	1k
BT-EDR(2Mbps)	0.781	1.073	2.893m	1k
BT-EDR(3Mbps)	0.772	1.124	2.838m	1k

Note:

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

**1.1.4 EUT Operational Condition**

EUT Power Type	From power adapter
Test Software Version	telnet 6.1.7600

1.1.5 Table for Multiple Listing

EUT No.	DDR	EMMC	Hard Disk
1	DDR1- Brand Name: Micron	EMMC1- Brand Name: Samsung	Hard Disk 1 Brand Name: SEAGATE Part Number: 1RE172-500
2	DDR 2- Brand Name: SK hynix	EMMC 2- Brand Name: Sandisk	Hard disk 2 Brand Name: TOSHIBA Model No.: MQ01ABD100V



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
- ♦ FCC KDB 558074 D01 v05

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	Owen Hsu	23°C / 55%	Dec. 10, 2018~Dec. 14, 2018
Radiated	03CH01-CB	Justin Lin	25°C / 56%	Dec. 11, 2018~Jan. 28, 2019
AC Conduction	CO02-CB	Wei Li	25°C / 63%	Jan. 14, 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)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	00
2440MHz	00
2480MHz	00
BT-EDR(2Mbps)	-
2402MHz	00
2440MHz	00
2480MHz	00
BT-EDR(3Mbps)	-
2402MHz	00
2440MHz	00
2480MHz	00

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	CTX
After pretest, EUT 2 have been evaluated to be the worst case, so the measurement will follow these same test configurations.	
1	EUT 2-Bluetooth

The Worst Case Mode for Following Conformance Tests	
Tests Item	20dB Bandwidth Carrier Frequency Separation Maximum Conducted Output Power Number of Hopping Frequencies Hopping Bandedge Time of Occupancy (Dwell Time)
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	CTX
After pretest, EUT 1 have been evaluated to be the worst case, so the measurement will follow these same test configurations.	
1	EUT 1-Bluetooth

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	Bluetooth+RF4CE
Refer to Sporton Test Report No.: FA8O0907 for Co-location RF Exposure Evaluation.	



2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

Accessories					
Equipment Name	Brand Name	Model Name	P/N	Rating	Remark
Adapter	HOIOTO	ADS-48PI-12-2 12036E-L	37814560	INPUT: 100-120V, 50/60Hz, 1.2A max OUTPUT: 12V, 30A	DC power cable, non-shielded, 0.4m
Other					
Power cable*1, non-shielded, 2m					

2.5 Support Equipment

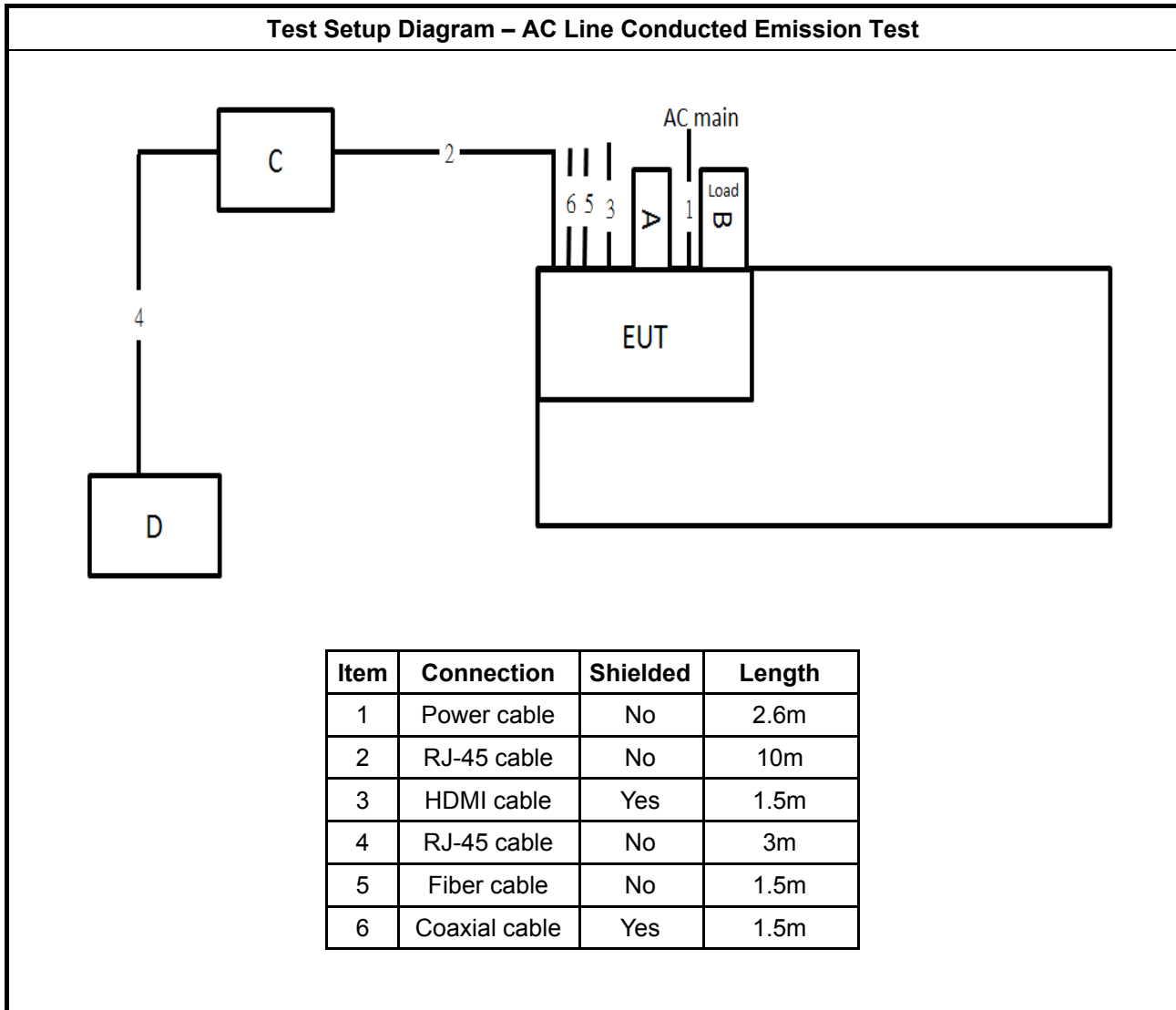
For Test Site No: CO02-CB

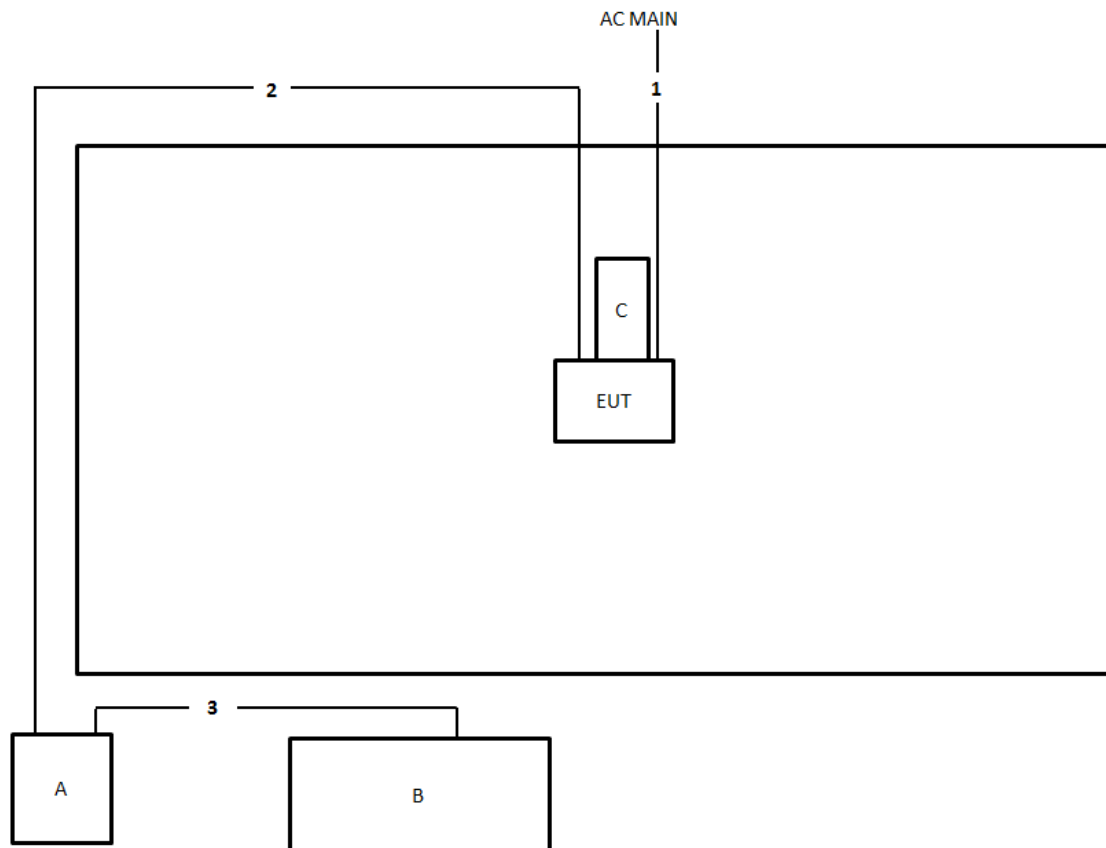
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Flash disk3.0	Transcend	JetFlash-700	N/A
B	Flash disk3.0	Transcend	JFV30	N/A
C	AP	NETGEAR	WNDR3400v3	N/A
D	NB	DELL	E6430	N/A

For Test Site No: 03CH01-CB and TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	AP	NETGEAR	WNDR3400v3	N/A
B	NB	DELL	E4300	N/A
C	Flash disk	Transcend	JFV30	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	RJ-45 cable	No	10m
3	RJ-45 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.

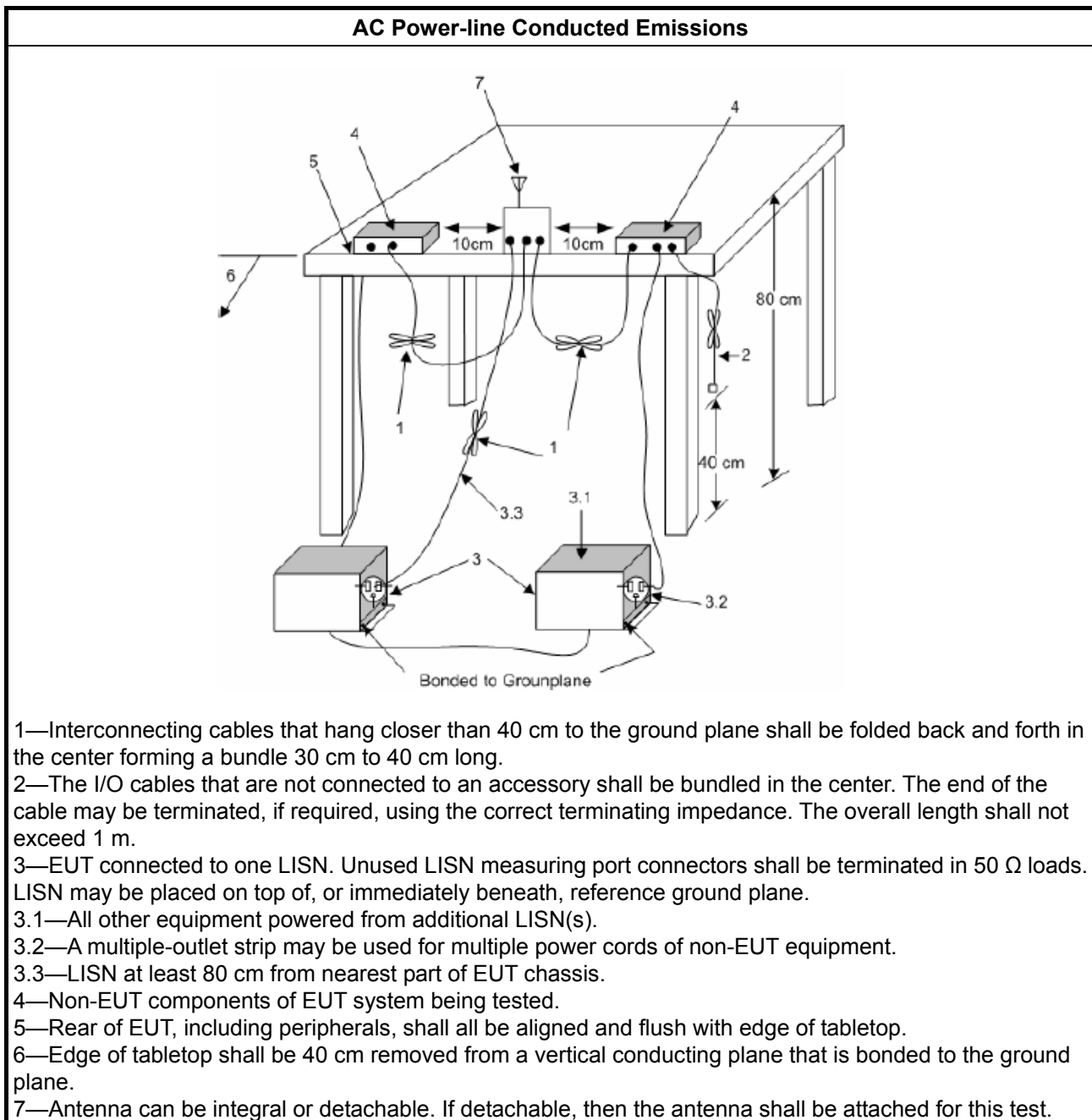
3.1.2 Measuring Instruments

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



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 20dB Bandwidth and Carrier Frequency Separation

3.2.1 20dB Bandwidth and Carrier Frequency Separation Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
▪ 902-928 MHz Band:	
	▪ $N \geq 50$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 250 kHz.
	▪ $50 > N \geq 25$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $>$ 250 kHz.
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz).
	▪ $75 > N \geq 15$ and $ChS \geq \text{MAX}$ (20 dB bandwidth 2/3, 25 kHz).
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq \text{MAX}$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 1 MHz.
N: Number of Hopping Frequencies; ChS: Hopping Channel Separation	

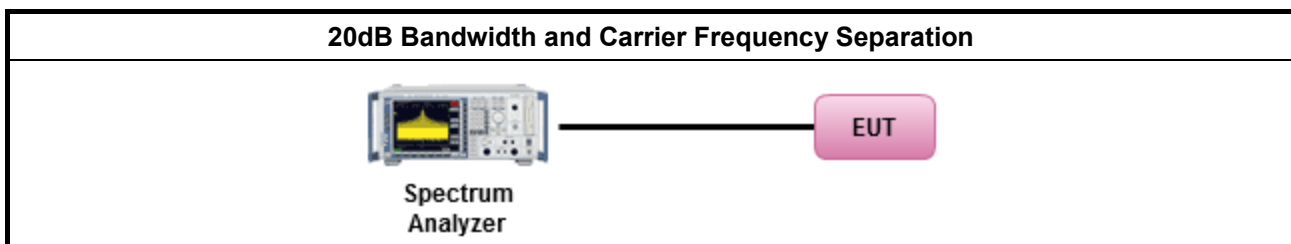
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
▪ Refer as ANSI C63.10-2013, clause 6.9.1 for 20 dB bandwidth measurement.
▪ Refer as ANSI C63.10-2013, clause 7.8.2 for carrier frequency separation measurement.

3.2.4 Test Setup



3.2.5 Test Result of 20dB Bandwidth

Refer as Appendix B

3.2.6 Test Result of Carrier Frequency Separation

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
▪ 902-928 MHz Band:	
▪ N ≥ 50; Power 30dBm; EIRP 36dBm	
▪ 50 > N ≥ 25; Power 24dBm; EIRP 30dBm	
▪ 2400-2483.5 MHz Band:	
▪ N ≥ 75; Power 30dBm; EIRP 36dBm	
▪ 75 > N ≥ 15; Power 21dBm; EIRP 27dBm	
▪ 5725-5850 MHz Band:	
▪ N ≥ 75; Power 30dBm; EIRP 36dBm	
N: Number of Hopping Frequencies	

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup

Maximum Conducted Output Power (Peak Power Meter)
 The diagram illustrates the test setup for measuring Maximum Conducted Output Power. It shows a Power Meter (a blue and white device with a screen and buttons) connected via a cable to an EUT (Equipment Under Test, represented by a pink box). The Power Meter is also connected to a computer or data logger (a blue device with a screen and buttons).

3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Number of Hopping Frequencies and Hopping Bandedge

3.4.1 Number of Hopping Frequencies Limit

Number of Hopping Frequencies Limit	
▪ 902-928 MHz Band:	
	▪ $N \geq 50$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 250 kHz.
	▪ $50 > N \geq 25$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $>$ 250 kHz.
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz).
	▪ $75 > N \geq 15$ and $ChS \geq MAX$ (20 dB bandwidth 2/3, 25 kHz).
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$ and $ChS \geq MAX$ (20 dB bandwidth, 25 kHz); 20 dB bandwidth $\leq$ 1 MHz.
N: Number of Hopping Frequencies; ChS : Hopping Channel Separation	

3.4.2 Hopping Bandedge Limit

Refer clause 3.6.1 and clause 3.7.1

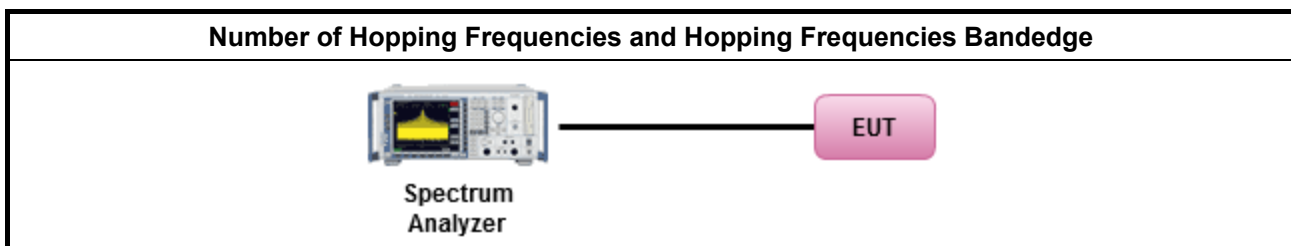
3.4.3 Measuring Instruments

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

3.4.4 Test Procedures

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

3.4.5 Test Setup



3.4.6 Test Result of Number of Hopping Frequencies

Refer as Appendix D

3.4.7 Test Result of Number of Hopping Frequencies Bandedge

Refer as Appendix D

3.5 Time of Occupancy (Dwell Time)

3.5.1 Time of Occupancy (Dwell Time) Limit

20dB Bandwidth and Carrier Frequency Separation Limit for Frequency Hopping Systems	
▪ 902-928 MHz Band:	
	▪ $N \geq 50$; 0.4s in 20s period
	▪ $50 > N \geq 25$; 0.4s in 10s period
▪ 2400-2483.5 MHz Band:	
	▪ $N \geq 75$; 0.4s in $N \times 0.4$ period
	▪ $75 > N \geq 15$; 0.4s in $N \times 0.4$ period
▪ 5725-5850 MHz Band:	
	▪ $N \geq 75$; 0.4s in 30s period
N: Number of Hopping Frequencies	

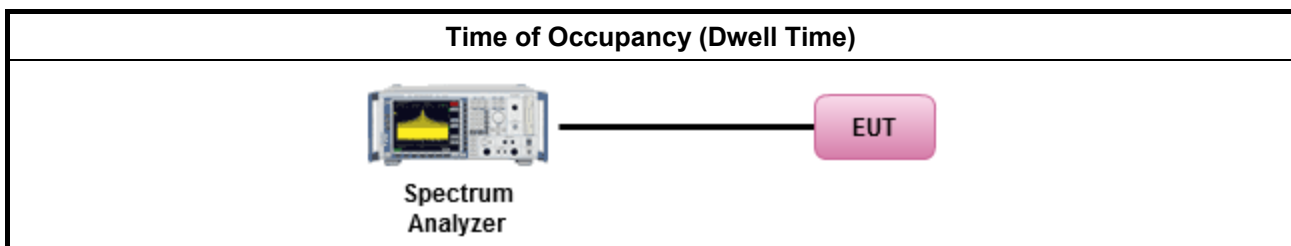
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Time of Occupancy (Dwell Time)

Refer as Appendix E

3.6 Emissions in Non-restricted Frequency Bands

3.6.1 Emissions in Non-restricted Frequency Bands Limit

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

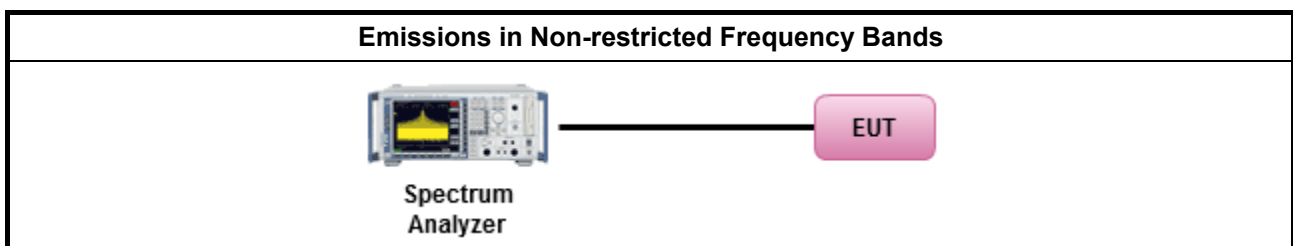
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup



3.6.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix F



3.7 Emissions in Restricted Frequency Bands

3.7.1 Emissions in Restricted Frequency Bands Limit

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

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

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements 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.

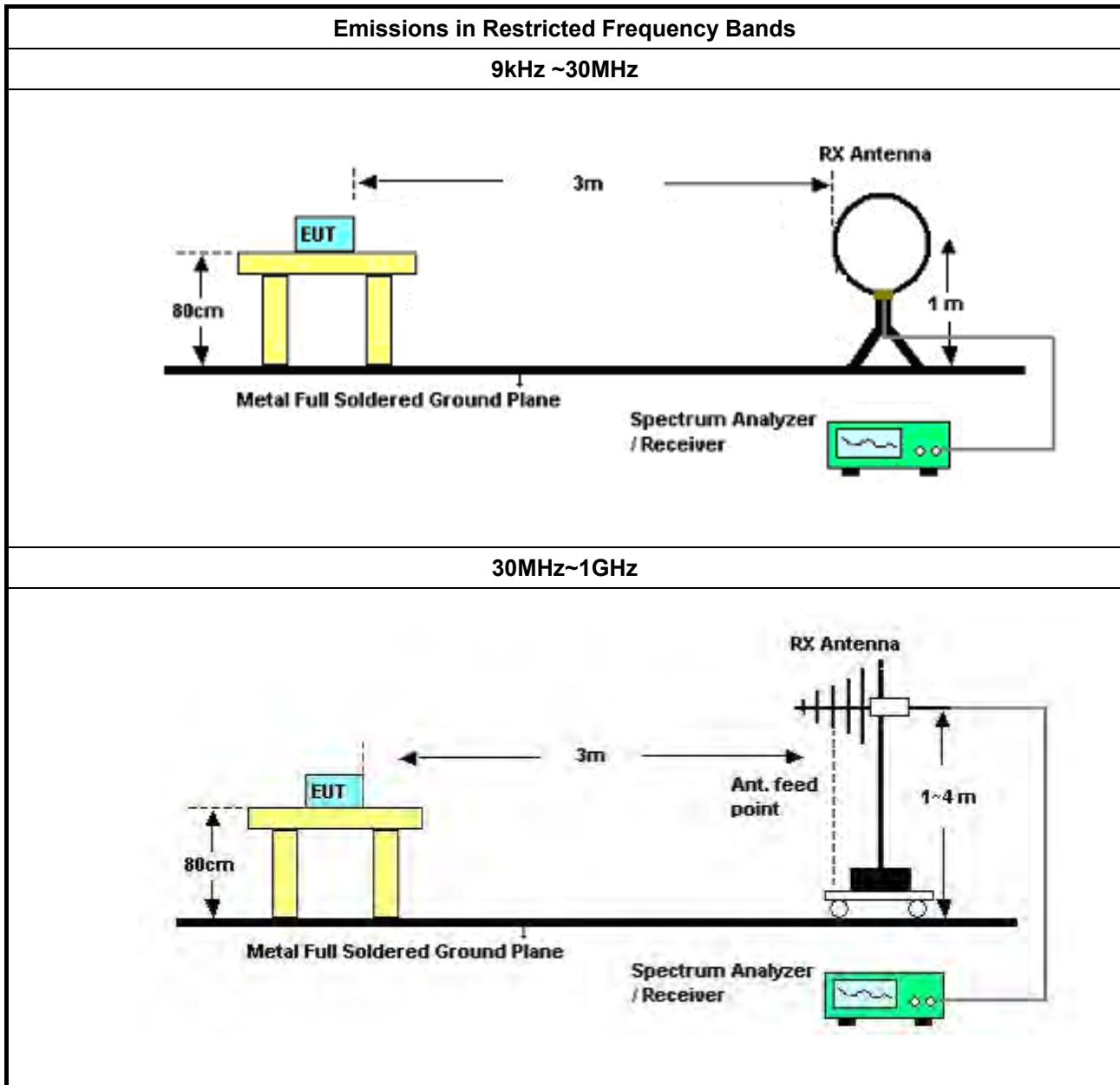
3.7.2 Measuring Instruments

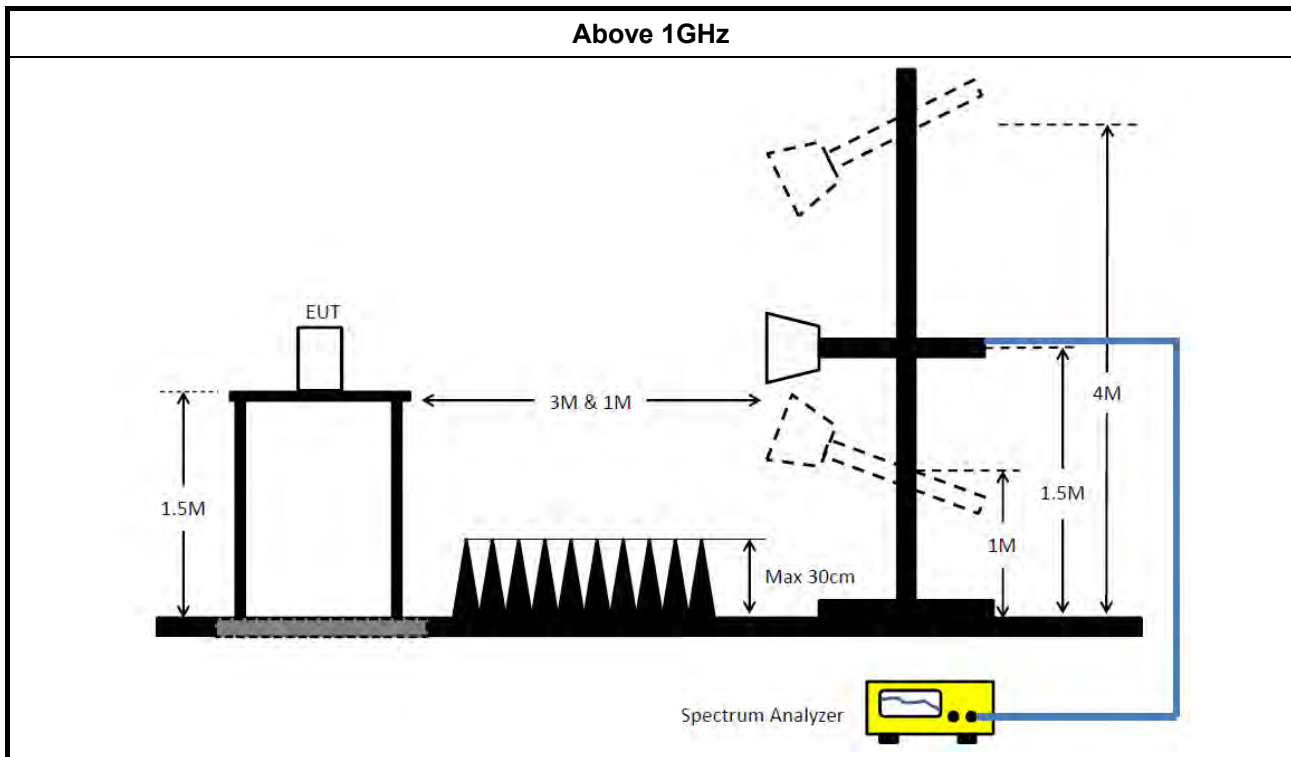
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [hopping duty factor].	
▪ Refer as ANSI C63.10; clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	▪ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of hopping pulsed emissions.

3.7.4 Test Setup





3.7.5 Emissions in Restricted Frequency Bands (Below 30MHz)

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.

3.7.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix G



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 21, 2018	Nov. 20, 2019	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 05, 2018	Nov. 04, 2019	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 17, 2018	Jan. 16, 2019	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Nov. 06, 2018	Nov. 05, 2019	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2018	Mar. 15, 2019	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2018	May 01, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 09, 2018	Jan. 08, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-H G	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100080	9kHz~40GHz	Oct. 03, 2018	Oct. 02, 2019	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 21, 2017	Dec. 20, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~ 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	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	U2021XA	MY53410001	50MHz~18GHz	Nov. 05, 2018	Nov. 04, 2019	Conducted (TH01-CB)

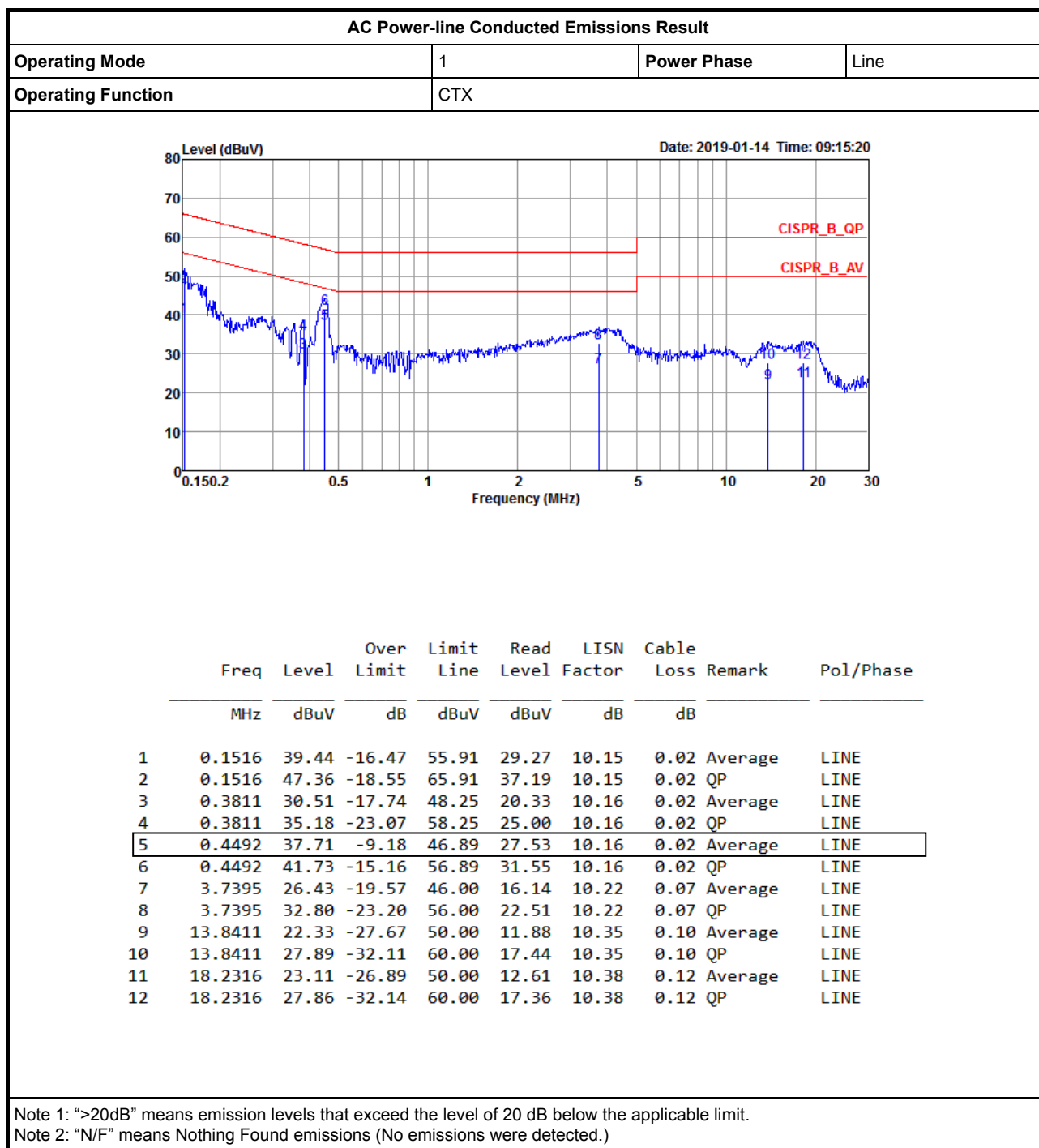
Note: Calibration Interval of instruments listed above is one year.

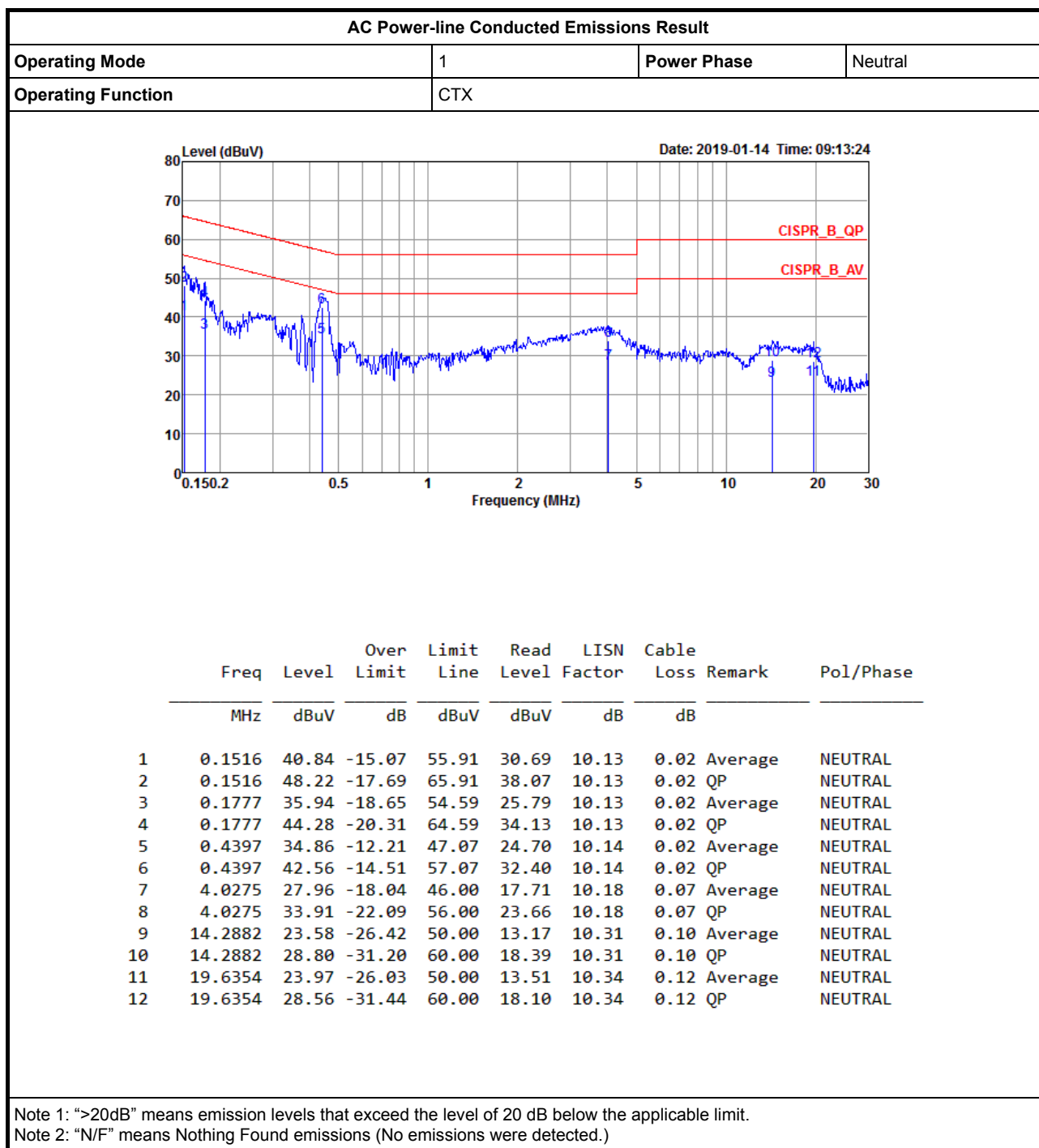
NCR means Non-Calibration required.



AC Power-line Conducted Emissions Result

Appendix A







EBW-FS Result

Appendix B.1

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-BR(1Mbps)	932.5k	893.303k	893KF1D	916.25k	885.807k
BT-EDR(2Mbps)	1.338M	1.236M	1M24G1D	1.333M	1.222M
BT-EDR(3Mbps)	1.334M	1.226M	1M23G1D	1.313M	1.223M

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

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	916.25k	892.054k
2440MHz	Pass	Inf	932.5k	885.807k
2480MHz	Pass	Inf	920k	893.303k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.338M	1.222M
2440MHz	Pass	Inf	1.333M	1.236M
2480MHz	Pass	Inf	1.335M	1.228M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.313M	1.226M
2440MHz	Pass	Inf	1.334M	1.224M
2480MHz	Pass	Inf	1.326M	1.223M

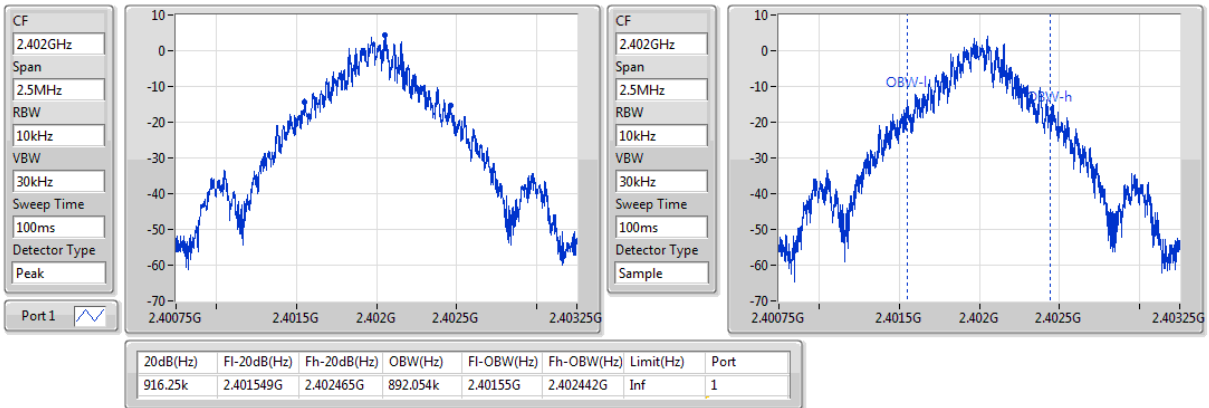
Port X-N dB = Port X 20dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-BR(1Mbps)

2402MHz

EBW

13/12/2018

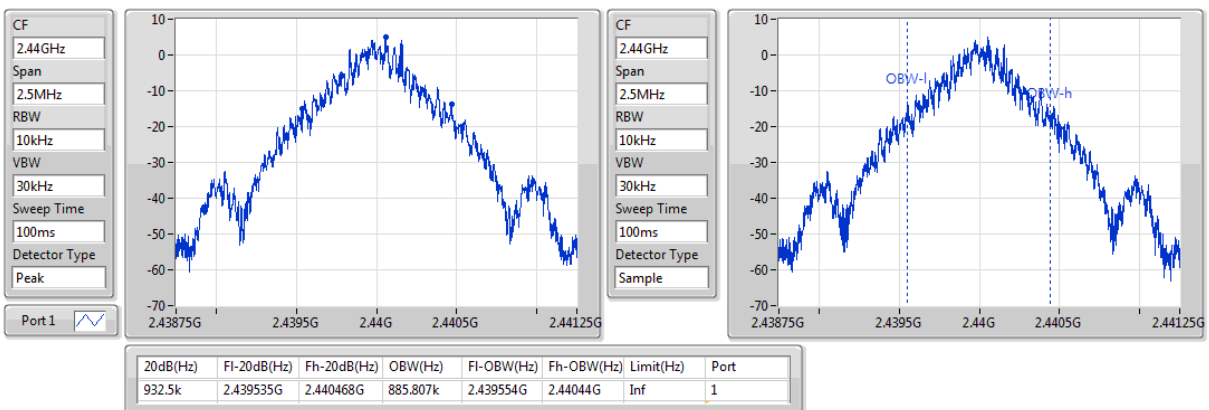


BT-BR(1Mbps)

2440MHz

EBW

13/12/2018

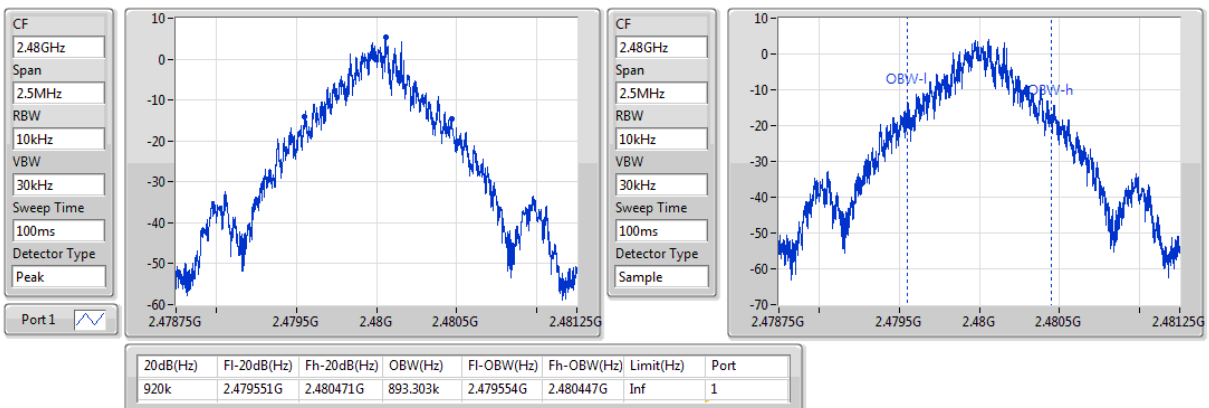


BT-BR(1Mbps)

2480MHz

EBW

13/12/2018

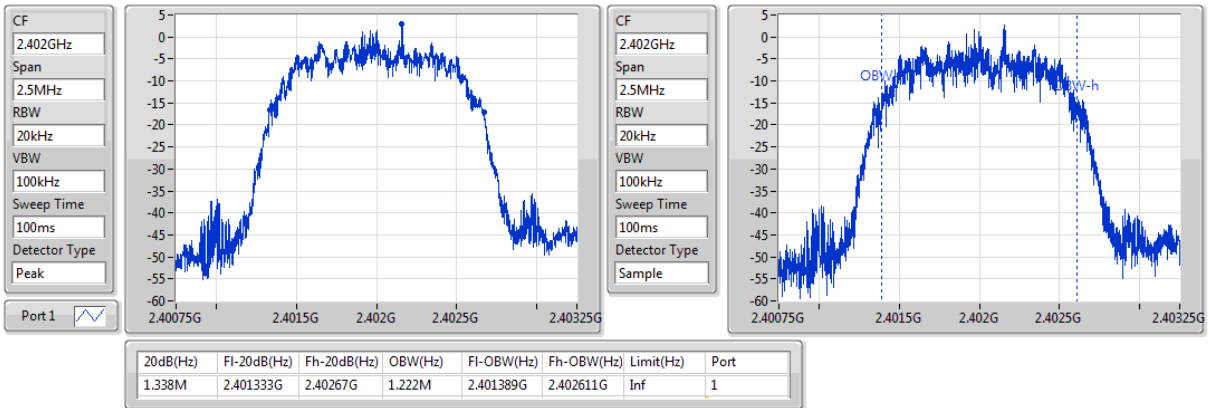


BT-EDR(2Mbps)

2402MHz

EBW

13/12/2018

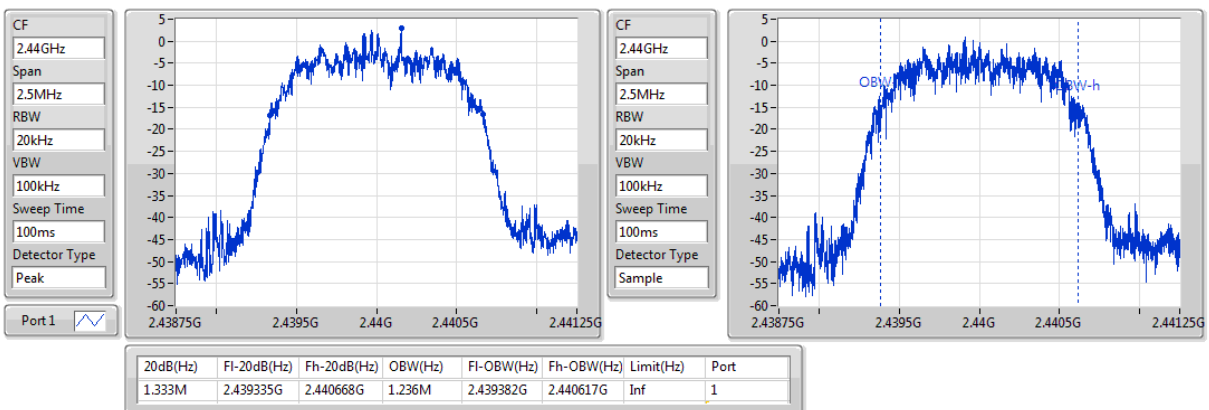


BT-EDR(2Mbps)

2440MHz

EBW

13/12/2018

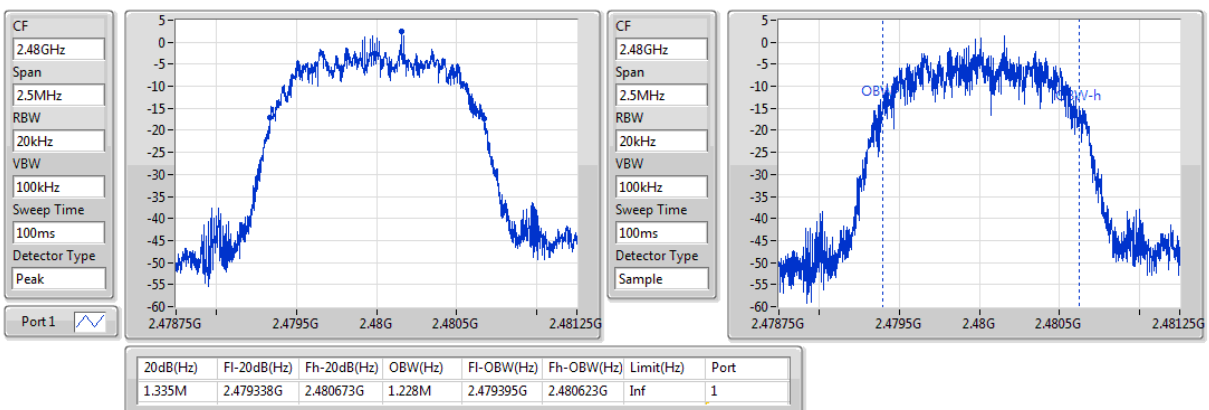


BT-EDR(2Mbps)

2480MHz

EBW

13/12/2018

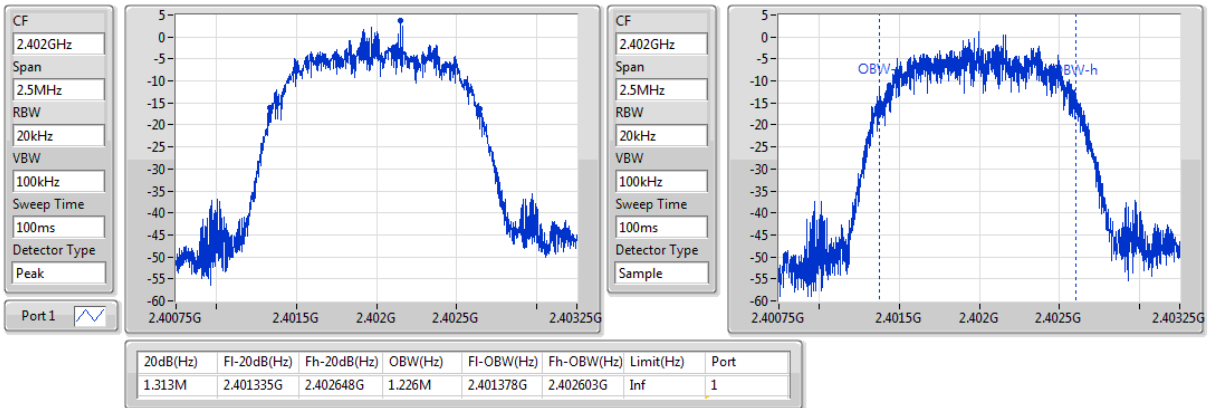


BT-EDR(3Mbps)

2402MHz

EBW

13/12/2018

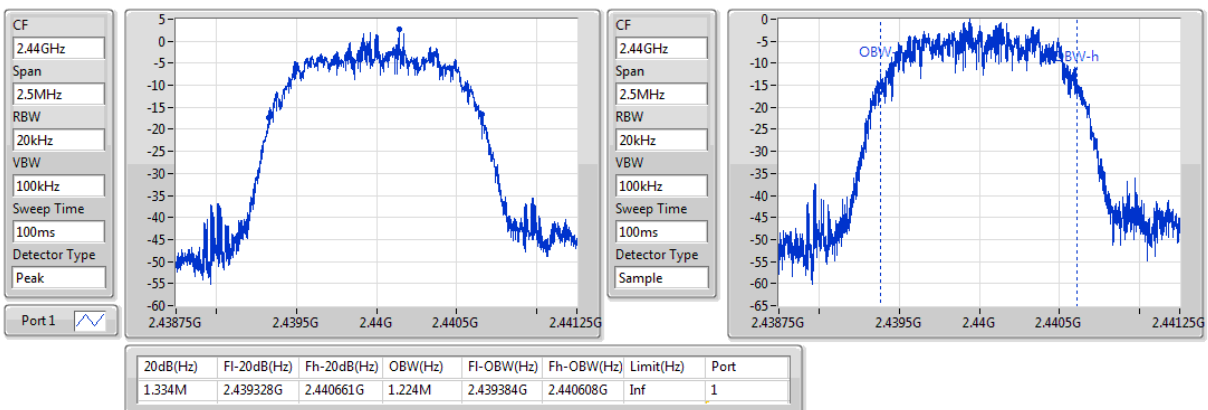


BT-EDR(3Mbps)

2440MHz

EBW

13/12/2018

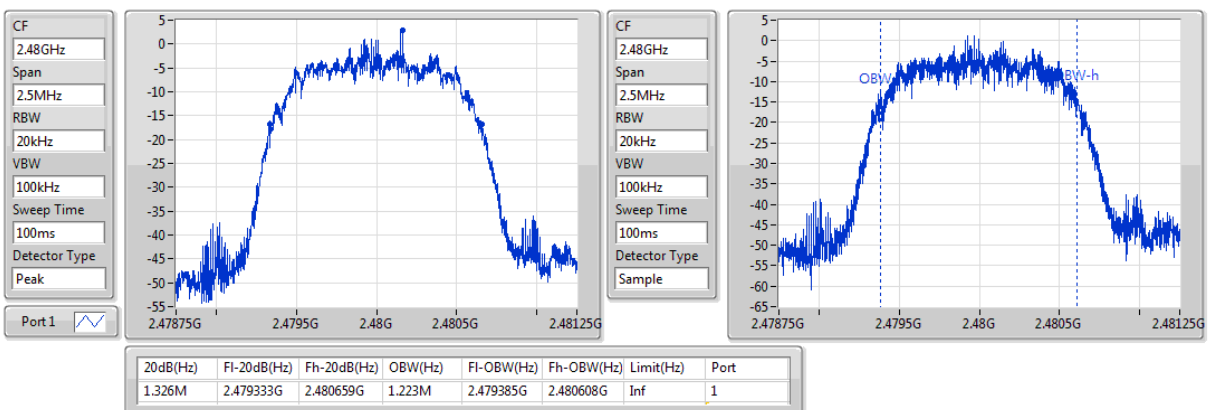


BT-EDR(3Mbps)

2480MHz

EBW

13/12/2018



Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	1.0005M	999k
BT-EDR(2Mbps)	1.002M	999k
BT-EDR(3Mbps)	1.002M	1.0005M

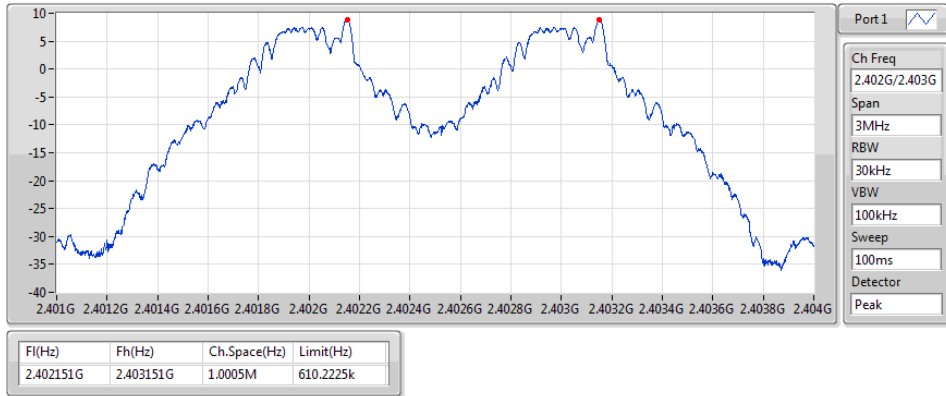
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402151G	2.403151G	1.0005M	610.2225k
2440MHz	Pass	2.440154G	2.441153G	999k	621.045k
2480MHz	Pass	2.479157G	2.480157G	1.0005M	612.72k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402155G	2.403156G	1.0005M	891.108k
2440MHz	Pass	2.440157G	2.441156G	999k	887.778k
2480MHz	Pass	2.47916G	2.480162G	1.002M	889.11k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402151G	2.403151G	1.0005M	874.458k
2440MHz	Pass	2.440152G	2.441154G	1.002M	888.444k
2480MHz	Pass	2.479155G	2.480156G	1.0005M	883.116k

BT-BR(1Mbps)

Channel Separation

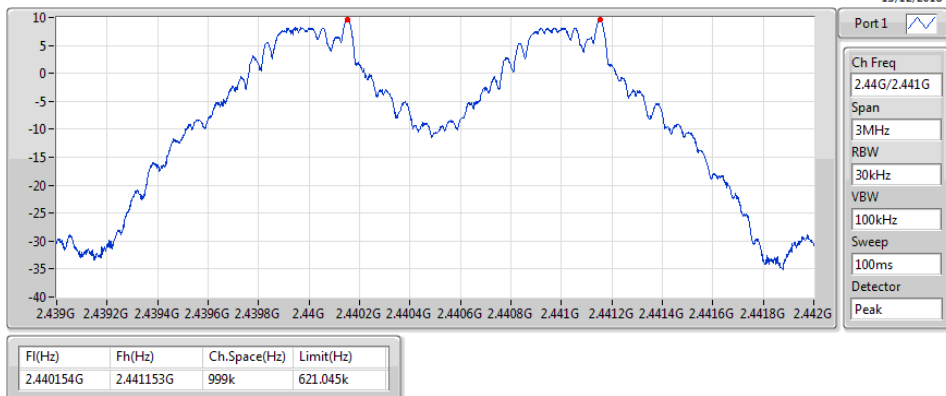
2.402G/2.403GHz



BT-BR(1Mbps)

Channel Separation

2.44G/2.441GHz



BT-BR(1Mbps)

Channel Separation

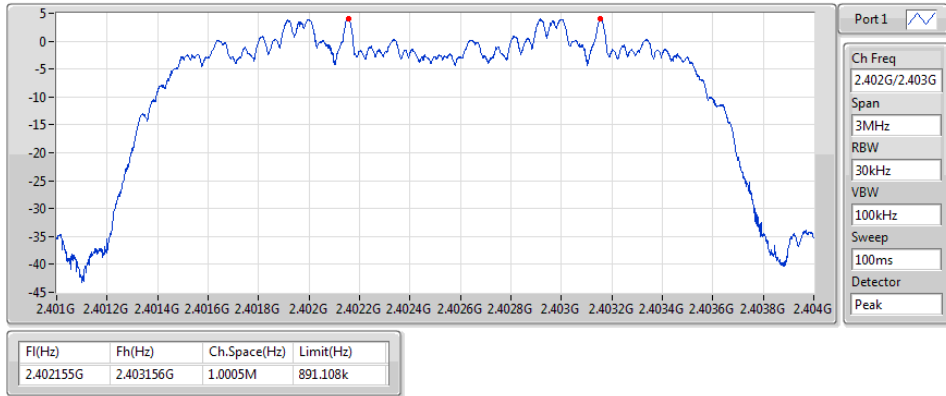
2.48G/2.479GHz



BT-EDR(2Mbps)

Channel Separation

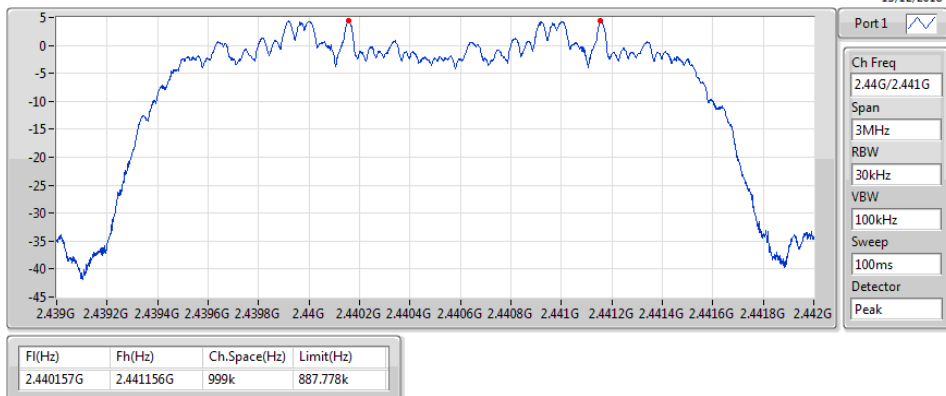
2.402G/2.403GHz



BT-EDR(2Mbps)

Channel Separation

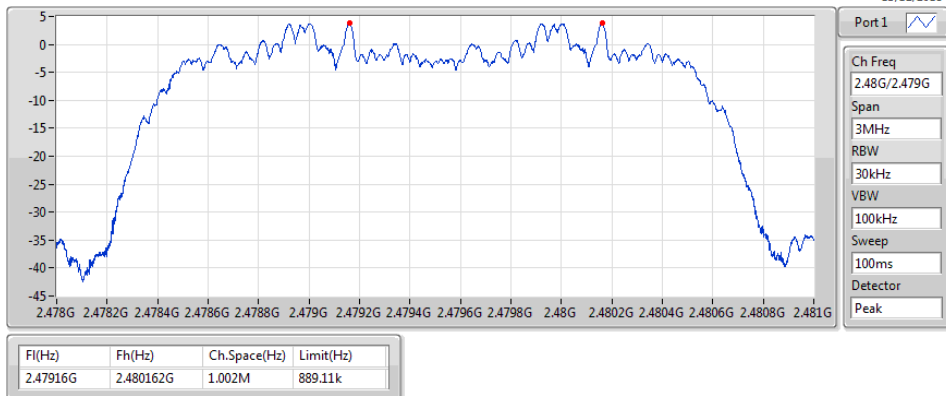
2.44G/2.441GHz



BT-EDR(2Mbps)

Channel Separation

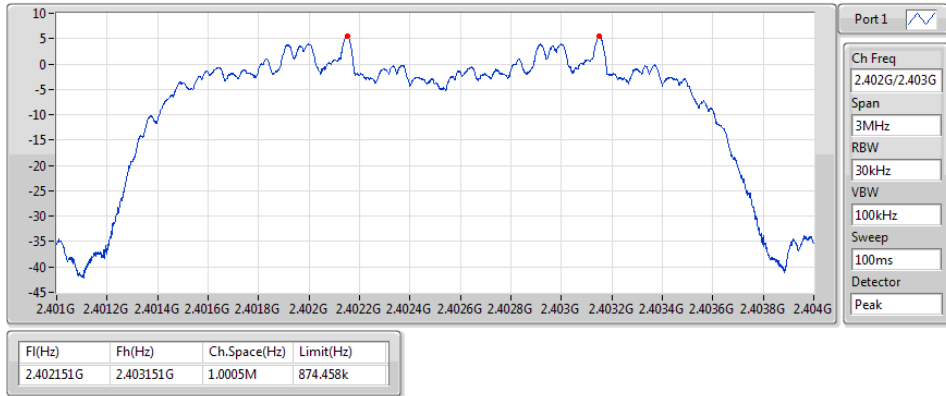
2.48G/2.479GHz



BT-EDR(3Mbps)

Channel Separation

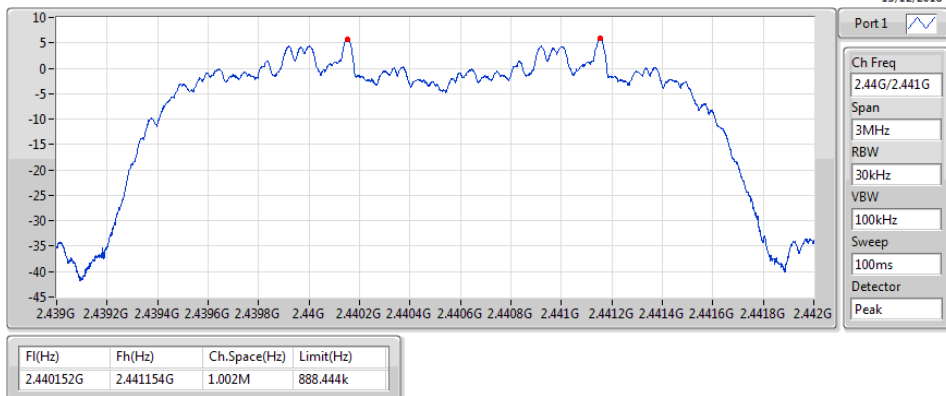
2.402G/2.403GHz



BT-EDR(3Mbps)

Channel Separation

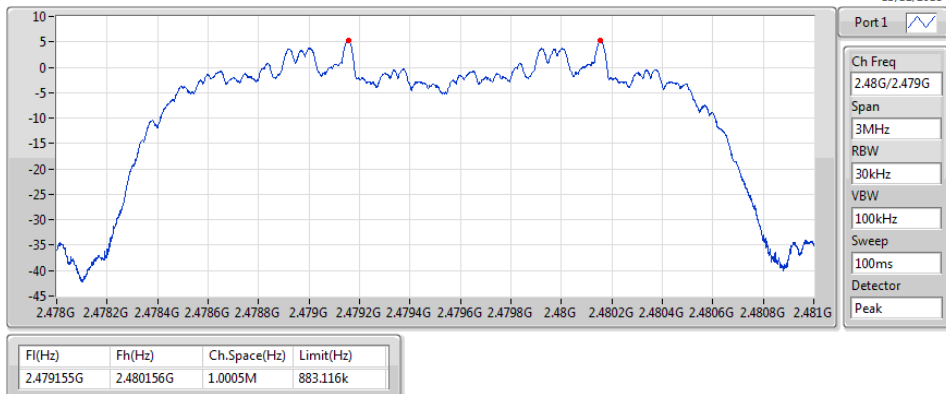
2.44G/2.441GHz



BT-EDR(3Mbps)

Channel Separation

2.48G/2.479GHz



Summary

Mode	Power	Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	10.59	0.01146
BT-EDR(2Mbps)	6.87	0.00486
BT-EDR(3Mbps)	6.85	0.00484

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.40	9.71	21.00
2440MHz	Pass	3.40	10.43	21.00
2480MHz	Pass	3.40	10.59	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.40	6.43	21.00
2440MHz	Pass	3.40	6.87	21.00
2480MHz	Pass	3.40	6.29	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.40	6.53	21.00
2440MHz	Pass	3.40	6.85	21.00
2480MHz	Pass	3.40	6.33	21.00



PK Power Result

Appendix C.2

Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	11.07	0.01279
BT-EDR(2Mbps)	9.76	0.00946
BT-EDR(3Mbps)	10.21	0.01050

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	3.40	10.28	21.00
2440MHz	Pass	3.40	11.07	21.00
2480MHz	Pass	3.40	11.04	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	3.40	9.33	21.00
2440MHz	Pass	3.40	9.76	21.00
2480MHz	Pass	3.40	9.03	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	3.40	9.81	21.00
2440MHz	Pass	3.40	10.21	21.00
2480MHz	Pass	3.40	9.54	21.00

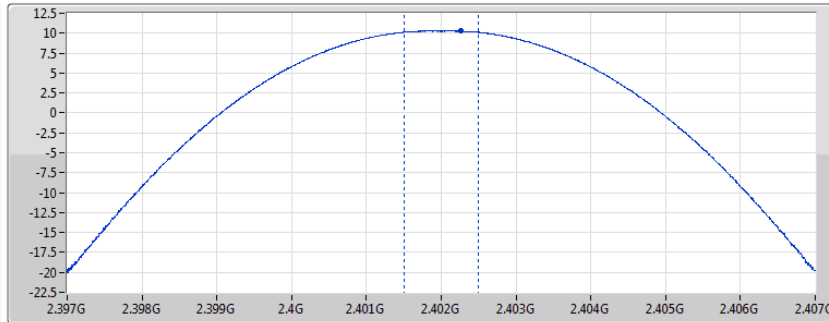
BT-BR(1Mbps)

PK Power

2402MHz

13/12/2018

CF
2.402GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
10.28	10.28

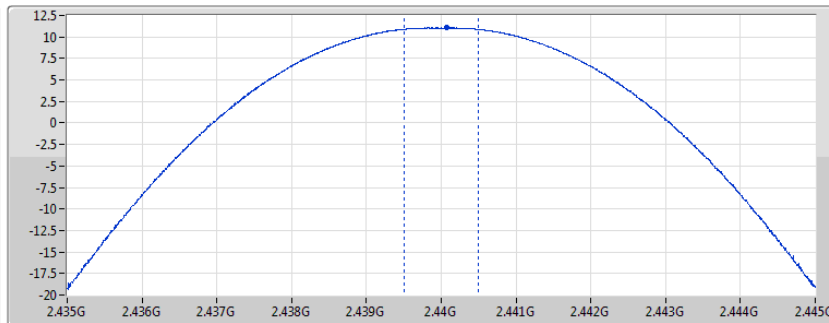
BT-BR(1Mbps)

PK Power

2440MHz

13/12/2018

CF
2.44GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
11.07	11.07

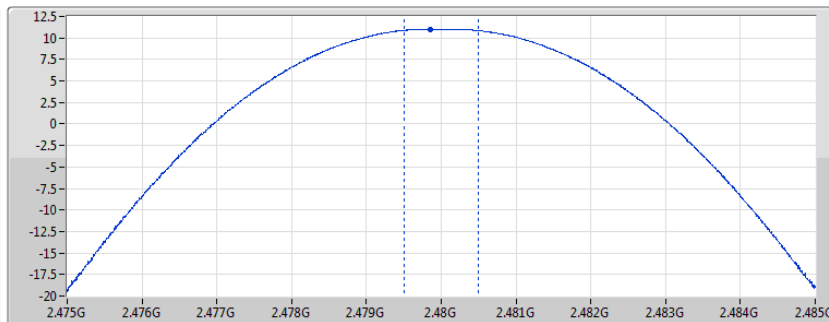
BT-BR(1Mbps)

PK Power

2480MHz

13/12/2018

CF
2.48GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
11.04	11.04

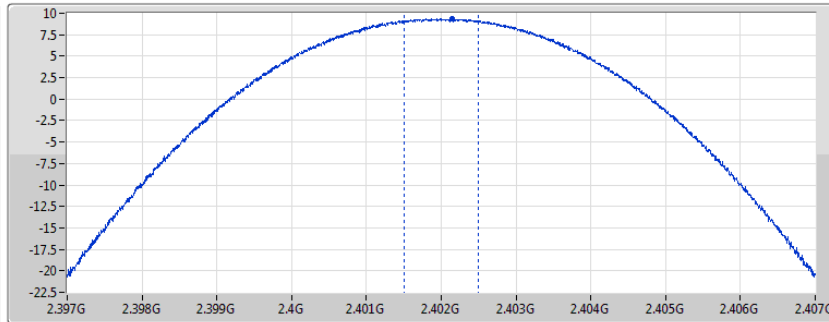
BT-EDR(2Mbps)

PK Power

2402MHz

13/12/2018

CF
2.402GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
9.33	9.33

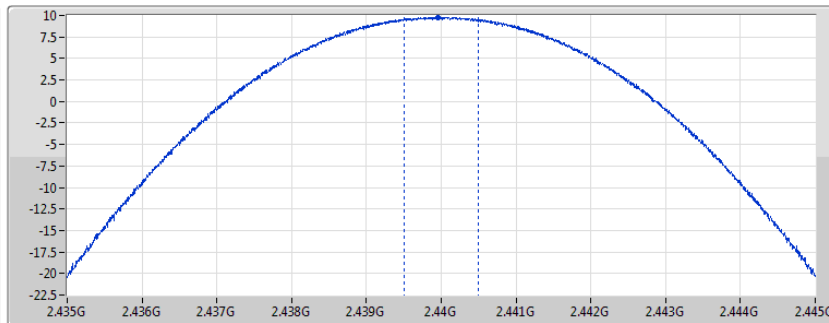
BT-EDR(2Mbps)

PK Power

2440MHz

13/12/2018

CF
2.44GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
9.76	9.76

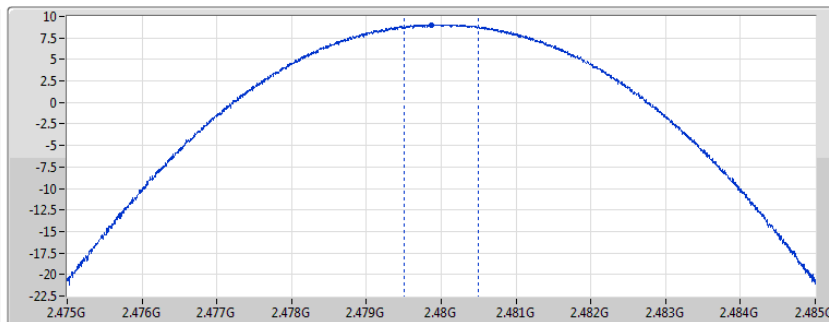
BT-EDR(2Mbps)

PK Power

2480MHz

13/12/2018

CF
2.48GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
9.03	9.03

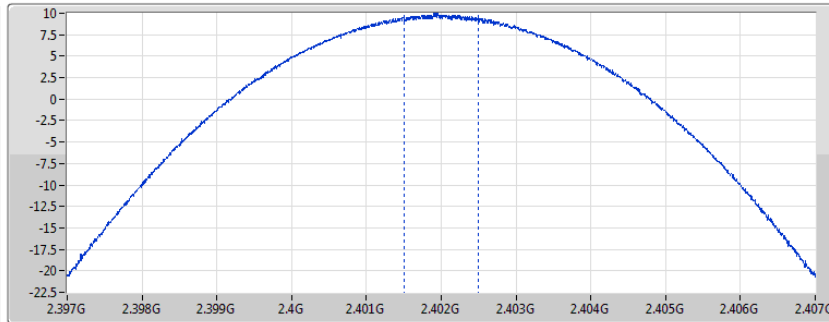
BT-EDR(3Mbps)

PK Power

2402MHz

13/12/2018

CF
2.402GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
9.81	9.81

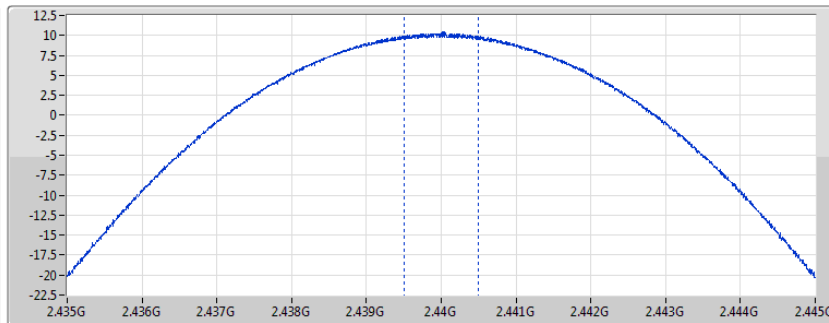
BT-EDR(3Mbps)

PK Power

2440MHz

13/12/2018

CF
2.44GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
10.21	10.21

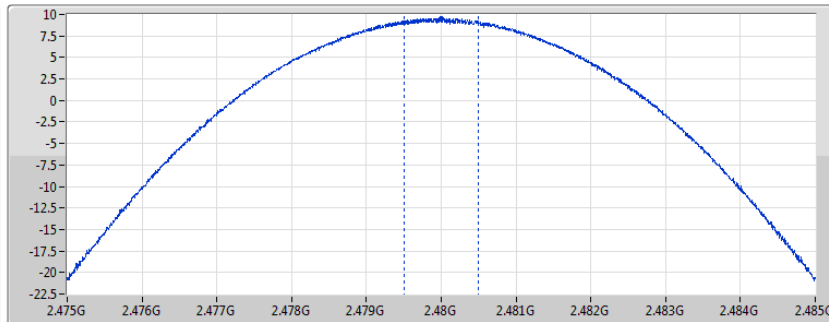
BT-EDR(3Mbps)

PK Power

2480MHz

13/12/2018

CF
2.48GHz
Span
10MHz
RBW
3MHz
VBW
10MHz
Sweep Time
20ms
Detector Type
Peak
CP BW
NaNHz



Port 1

Sum=Total Power
PX=Port X

Sum(dBm)	P1(dBm)
9.54	9.54

Summary

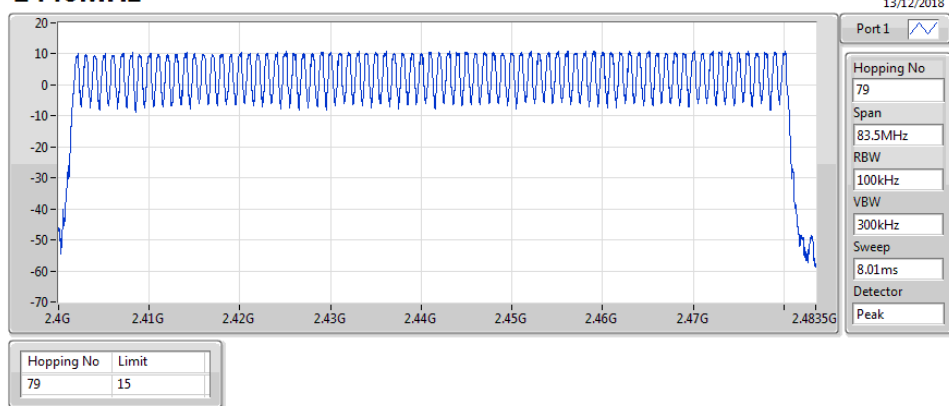
Mode	Max-Hop No
2.4-2.4835GHz	-
BT-BR(1Mbps)	79
BT-EDR(2Mbps)	79
BT-EDR(3Mbps)	79

Result

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

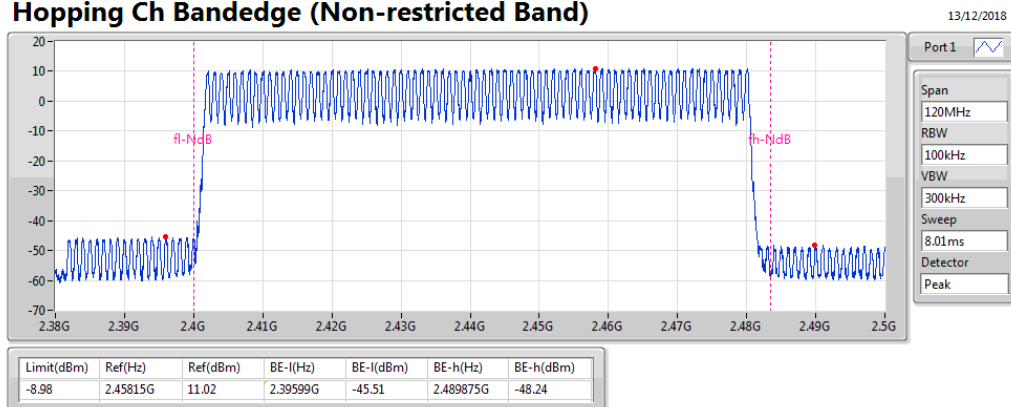
BT-BR(1Mbps) 2440MHz

Hopping Ch



BT-BR(1Mbps) 2440MHz

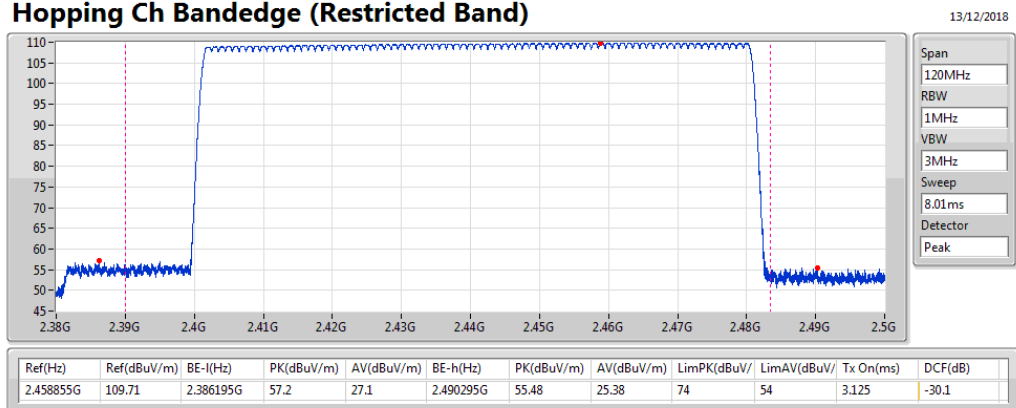
Hopping Ch Bandedge (Non-restricted Band)



BT-BR(1Mbps)

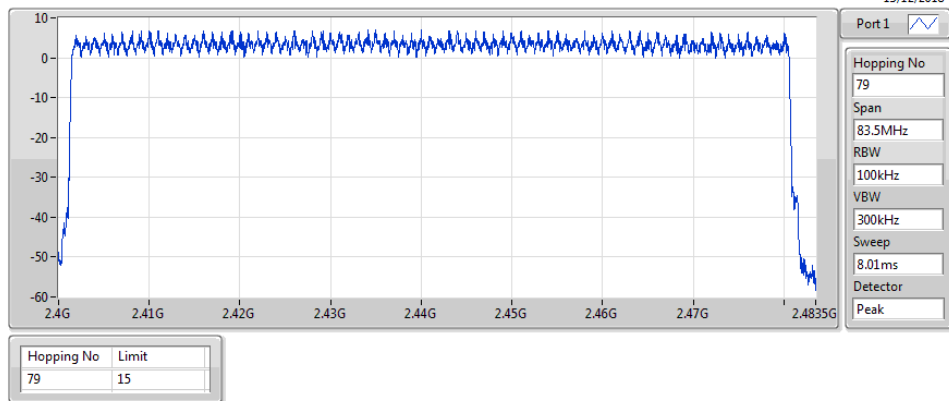
2440MHz

Hopping Ch Bandedge (Restricted Band)



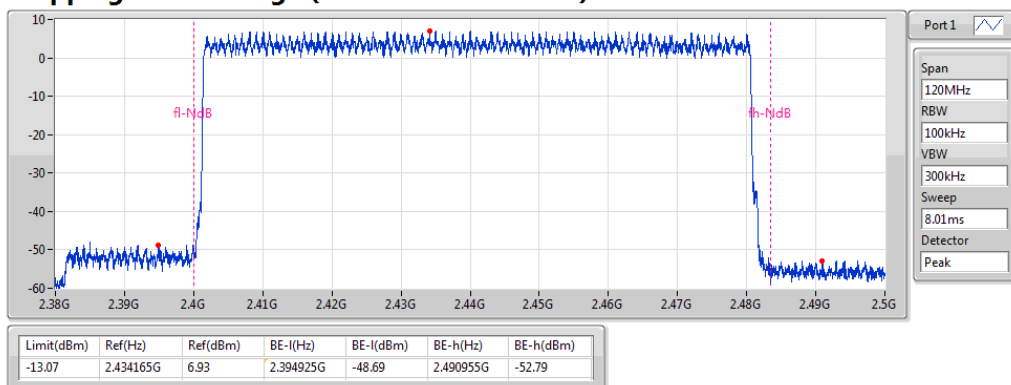
BT-EDR(2Mbps) 2440MHz

Hopping Ch



BT-EDR(2Mbps) 2440MHz

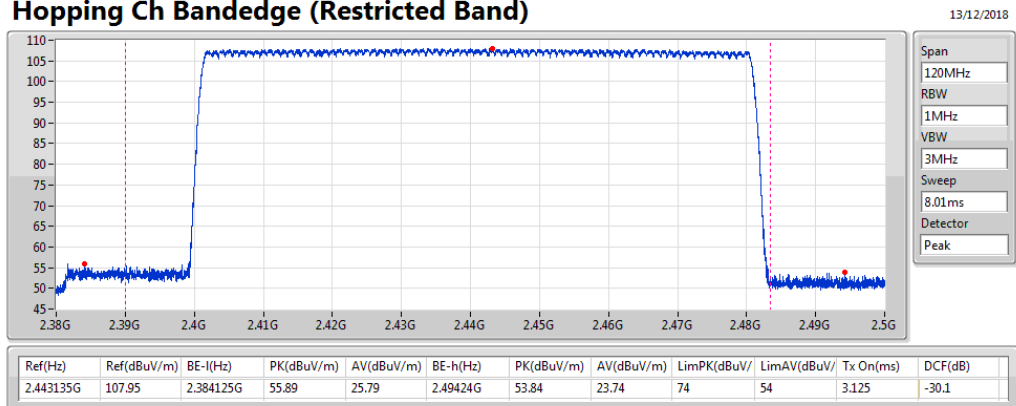
Hopping Ch Bandedge (Non-restricted Band)



BT-EDR(2Mbps)

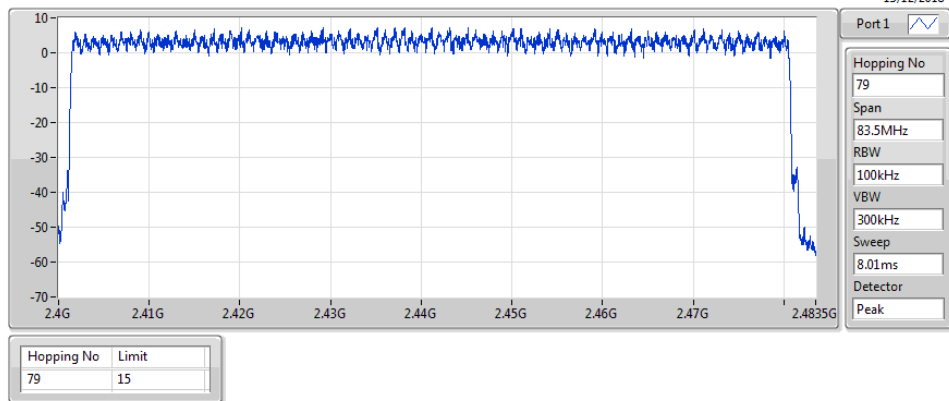
2440MHz

Hopping Ch Bandedge (Restricted Band)



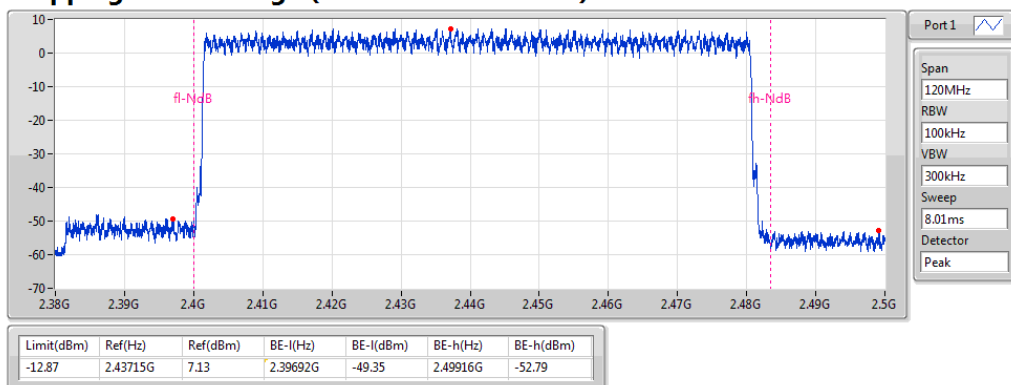
BT-EDR(3Mbps) 2440MHz

Hopping Ch



BT-EDR(3Mbps) 2440MHz

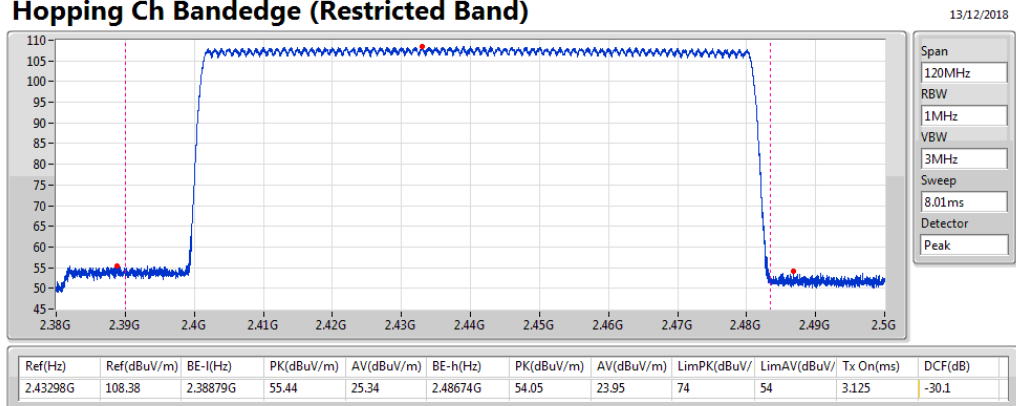
Hopping Ch Bandedge (Non-restricted Band)



BT-EDR(3Mbps)

2440MHz

Hopping Ch Bandedge (Restricted Band)





Dwell Time-FS Result

Appendix E

Summary

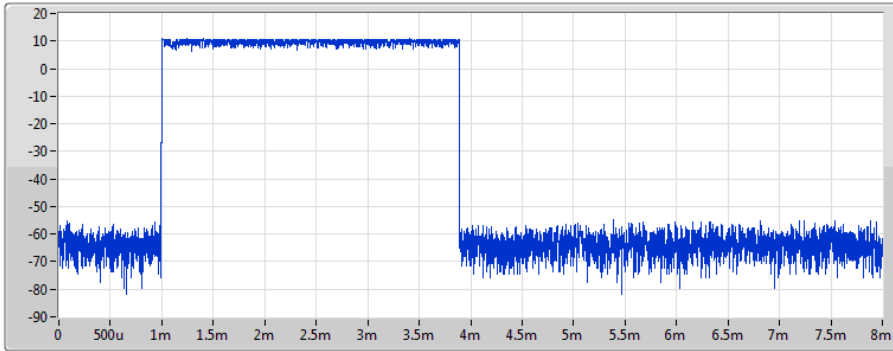
Mode	Max-Dwell (s)
2.4-2.4835GHz	-
BT-BR(1Mbps)	308.1806m
BT-EDR(2Mbps)	308.5004m
BT-EDR(3Mbps)	302.744m

Result

Mode	Result	Period (s)	Dwell (s)	Limit (s)	Tx On (s)
BT-BR(1Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.1806m	400m	2.891m
BT-EDR(2Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	308.5004m	400m	2.894m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	302.744m	400m	2.84m

BT-BR(1Mbps)

2440MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.1806m	400m	2.891m

Dwell

13/12/2018

Port 1 

Ch Freq
2.44GHz

RBW
300kHz

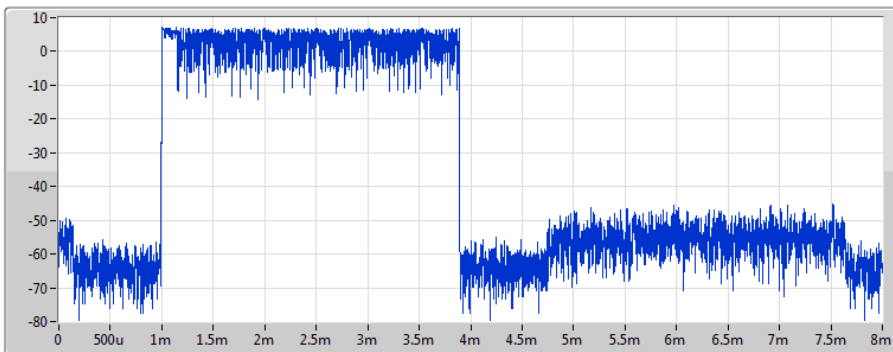
VBW
1MHz

Sweep Time
8ms

TX Time
2.891ms

BT-EDR(2Mbps)

2440MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	308.5004m	400m	2.894m

Dwell

13/12/2018

Port 1 

Ch Freq
2.44GHz

RBW
300kHz

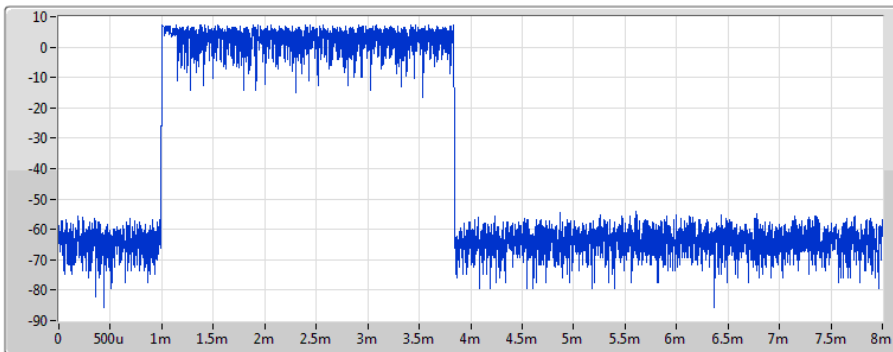
VBW
1MHz

Sweep Time
8ms

TX Time
2.894ms

BT-EDR(3Mbps)

2440MHz



Period(s)	Dwell(s)	Limit(s)	Tx On(s)
31.6	302.744m	400m	2.84m

Dwell

13/12/2018

Port 1 

Ch Freq
2.44GHz

RBW
300kHz

VBW
1MHz

Sweep Time
8ms

TX Time
2.84ms



CSE Non-restricted Band-FS Result

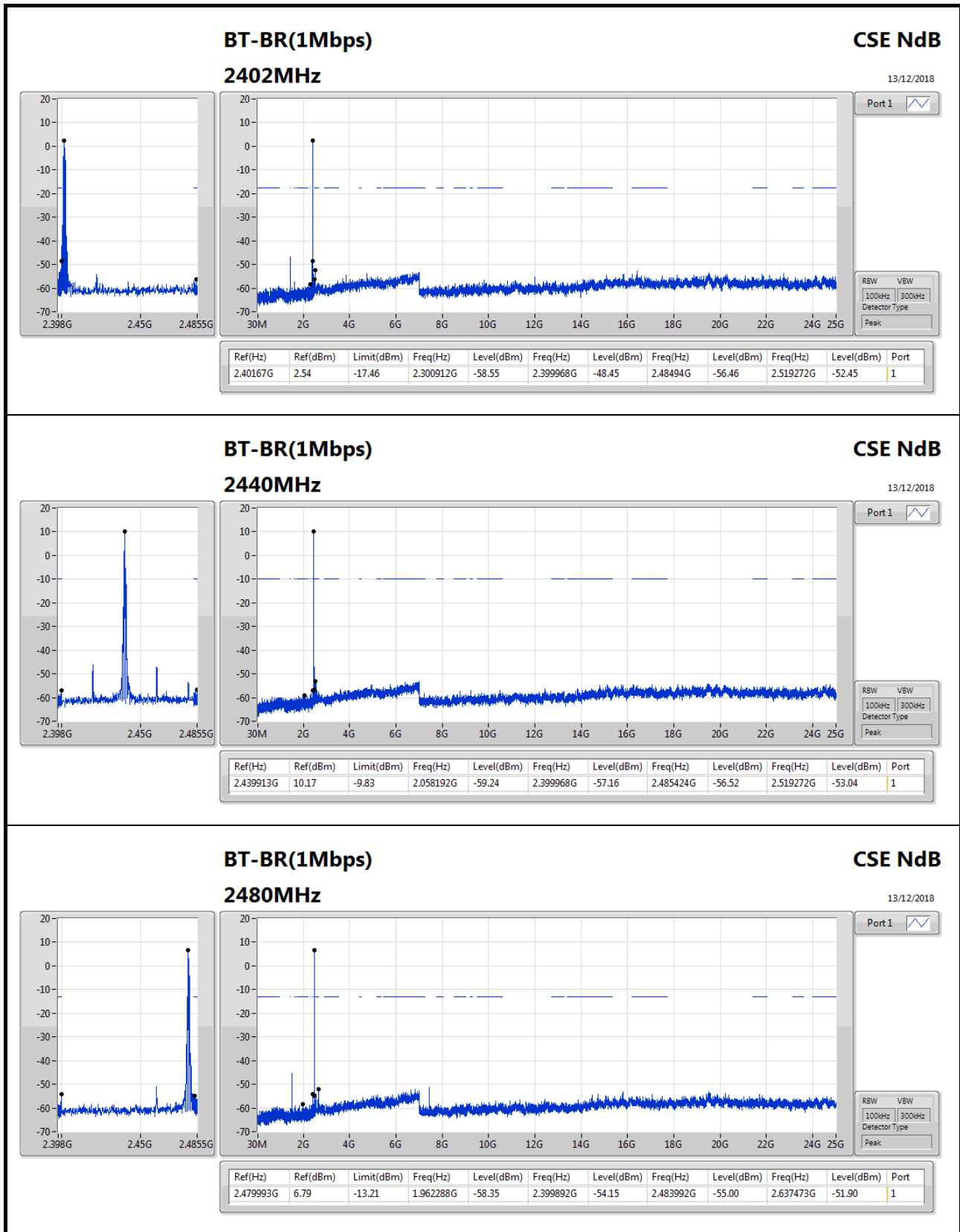
Appendix F

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-BR(1Mbps)	Pass	2.40167G	2.54	-17.46	2.300912G	-58.55	2.399968G	-48.45	2.48494G	-56.46	2.519272G	-52.45	1
BT-EDR(2Mbps)	Pass	2.402004G	6.64	-13.36	896.688M	-59.00	2.399964G	-50.48	2.483628G	-58.09	6.27075G	-52.43	1
BT-EDR(3Mbps)	Pass	2.401837G	4.18	-15.82	2.396816G	-58.74	2.399988G	-49.22	2.484668G	-57.36	6.9687G	-53.09	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-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.40167G	2.54	-17.46	2.300912G	-58.55	2.399968G	-48.45	2.48494G	-56.46	2.519272G	-52.45	1
2440MHz	Pass	2.439913G	10.17	-9.83	2.058192G	-59.24	2.399968G	-57.16	2.485424G	-56.52	2.519272G	-53.04	1
2480MHz	Pass	2.479993G	6.79	-13.21	1.962288G	-58.35	2.399892G	-54.15	2.483992G	-55.00	2.637473G	-51.90	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402004G	6.64	-13.36	896.688M	-59.00	2.399964G	-50.48	2.483628G	-58.09	6.27075G	-52.43	1
2440MHz	Pass	2.44008G	5.51	-14.49	2.122128G	-58.95	2.399896G	-57.82	2.485064G	-57.46	6.799841G	-52.53	1
2480MHz	Pass	2.479993G	4.31	-15.69	2.058192G	-59.33	2.399688G	-55.78	2.483992G	-55.39	6.9687G	-53.37	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.401837G	4.18	-15.82	2.396816G	-58.74	2.399988G	-49.22	2.484668G	-57.36	6.9687G	-53.09	1
2440MHz	Pass	2.439913G	5.51	-14.49	873.008M	-58.99	2.39966G	-57.42	2.484124G	-57.40	21.892999G	-53.19	1
2480MHz	Pass	2.48016G	6.52	-13.48	1.984784G	-58.42	2.399976G	-55.93	2.483856G	-56.22	6.830799G	-52.94	1

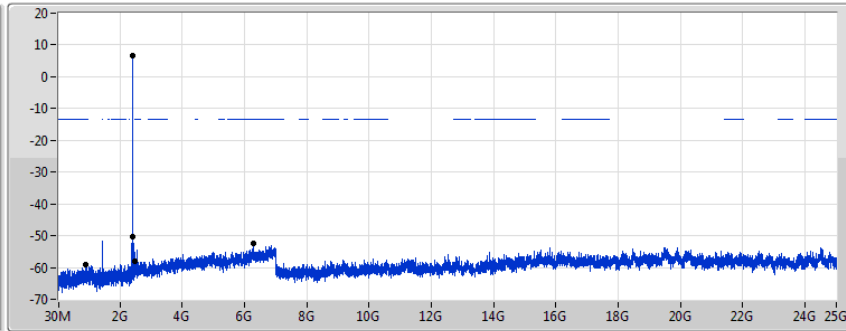
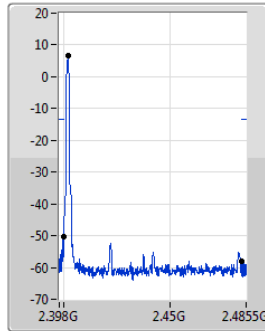


BT-EDR(2Mbps)

CSE NdB

2402MHz

13/12/2018



Port 1 

RBW 100kHz VBW 300kHz
Detector Type Peak

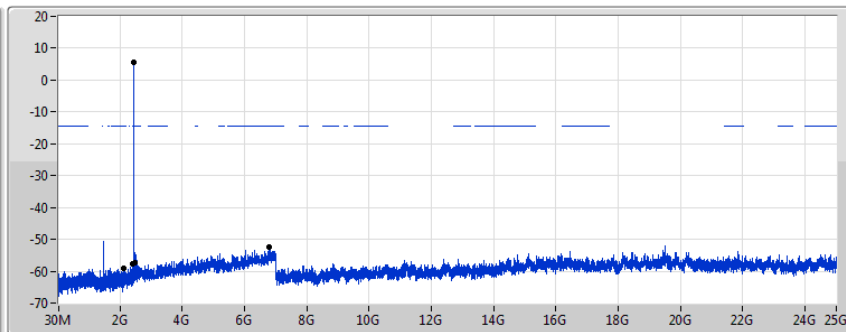
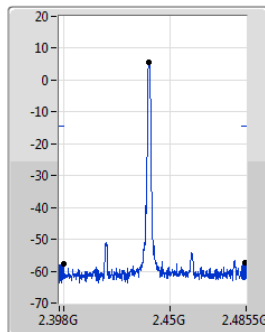
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.402004G	6.64	-13.36	896.688M	-59.00	2.399964G	-50.48	2.483628G	-58.09	6.27075G	-52.43	1

BT-EDR(2Mbps)

CSE NdB

2440MHz

13/12/2018



Port 1 

RBW 100kHz VBW 300kHz
Detector Type Peak

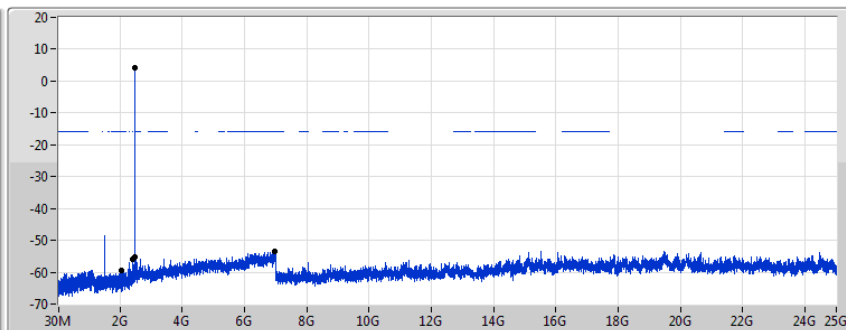
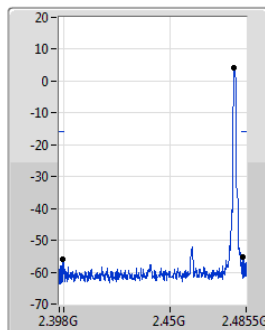
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44008G	5.51	-14.49	2.122128G	-58.95	2.399896G	-57.82	2.485064G	-57.46	6.799841G	-52.53	1

BT-EDR(2Mbps)

CSE NdB

2480MHz

13/12/2018



Port 1 

RBW 100kHz VBW 300kHz
Detector Type Peak

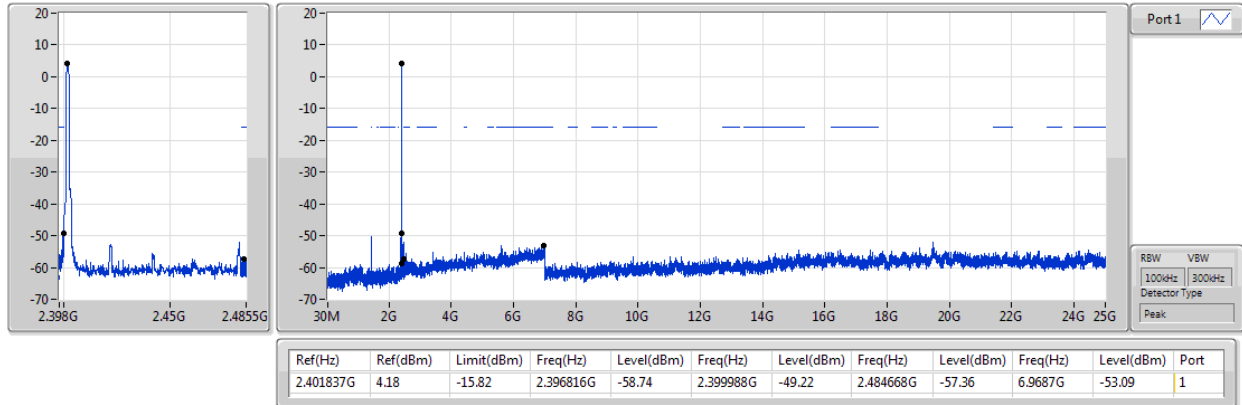
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.479993G	4.31	-15.69	2.058192G	-59.33	2.399688G	-55.78	2.483992G	-55.39	6.9687G	-53.37	1

BT-EDR(3Mbps)

CSE NdB

2402MHz

13/12/2018

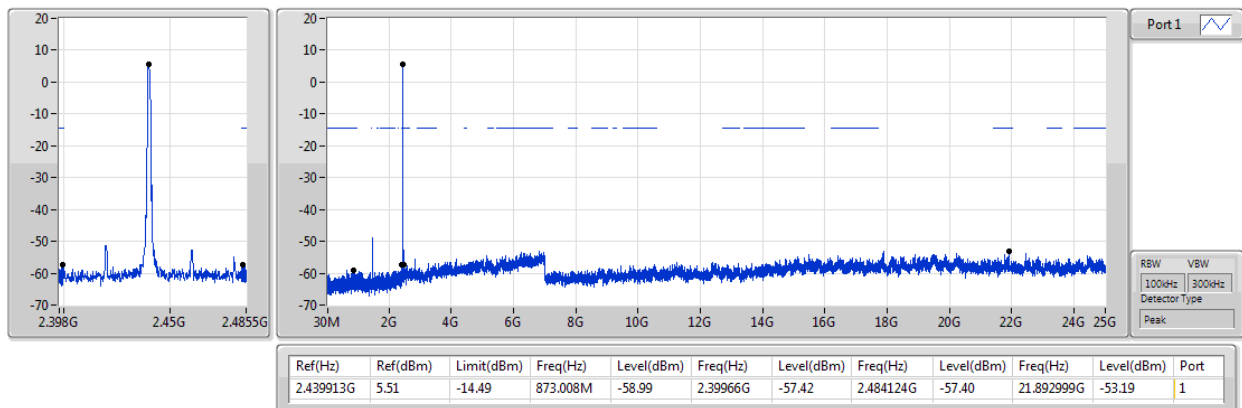


BT-EDR(3Mbps)

CSE NdB

2440MHz

13/12/2018

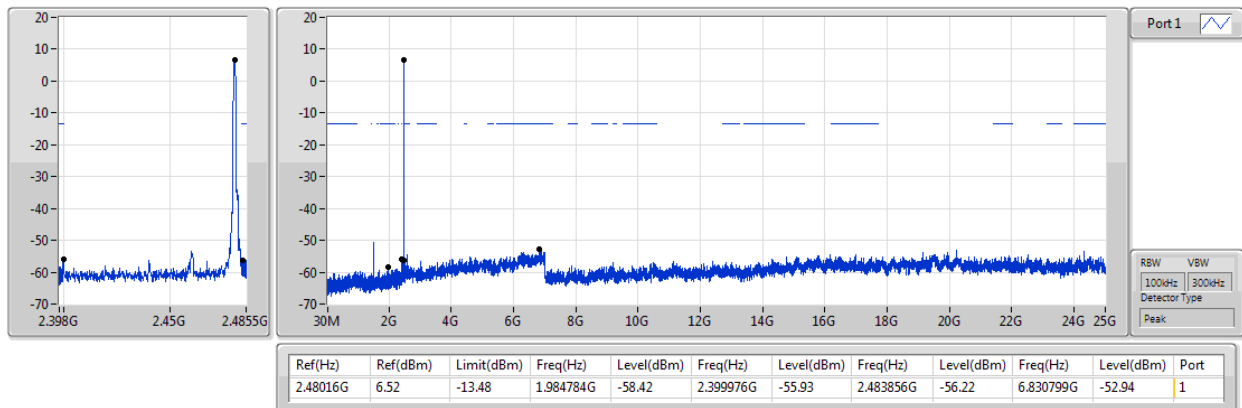


BT-EDR(3Mbps)

CSE NdB

2480MHz

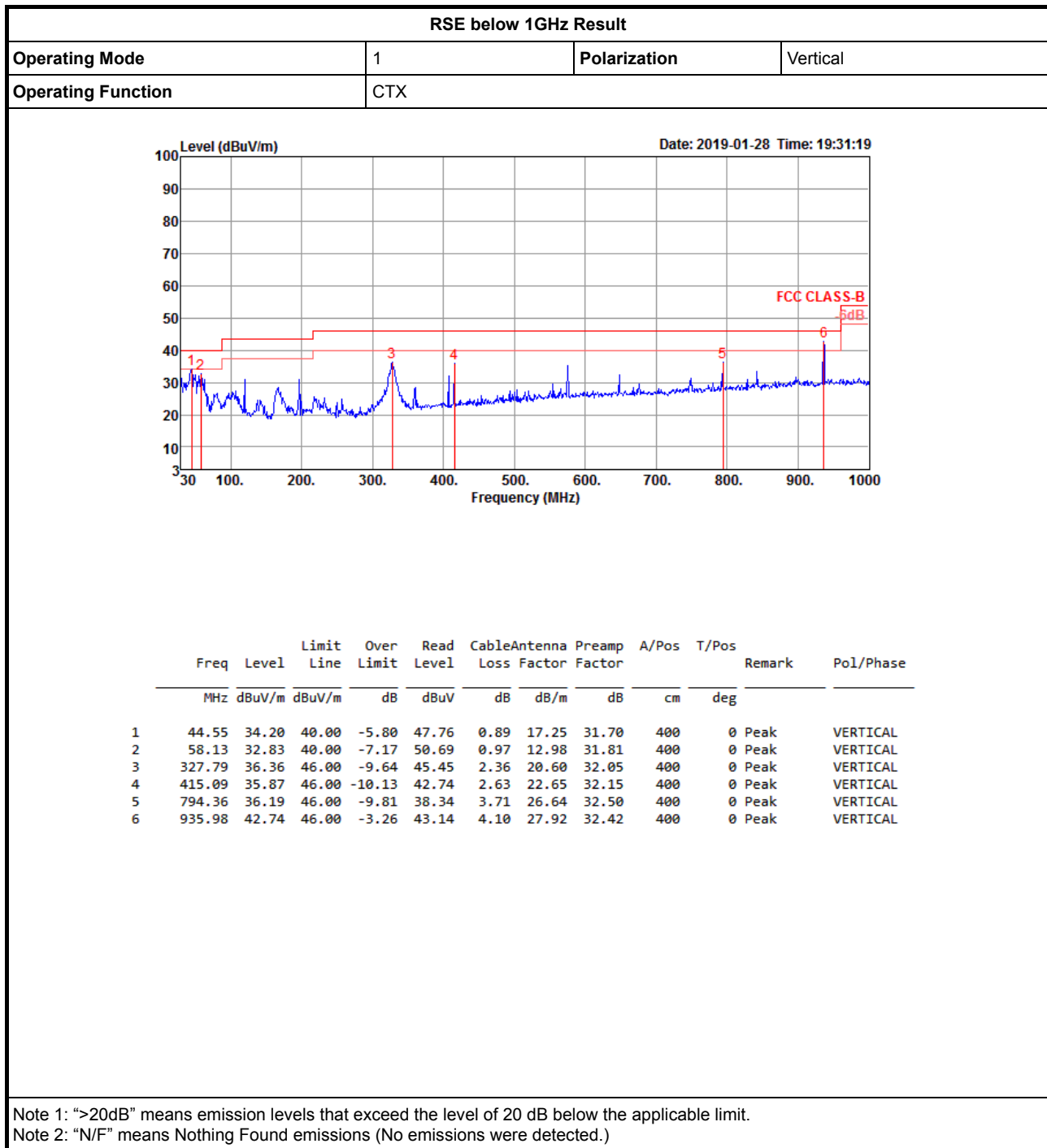
13/12/2018

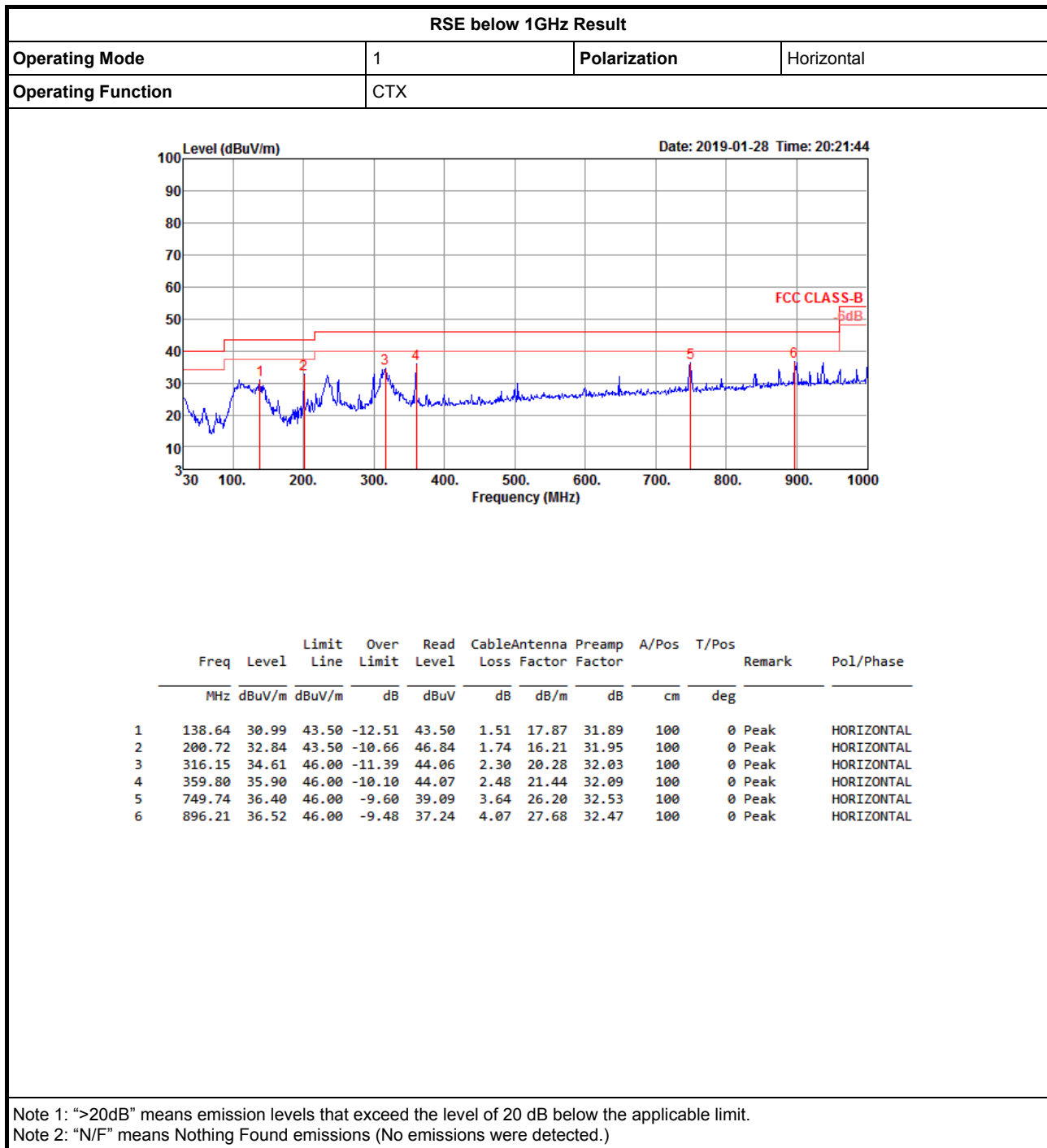




RSE below 1GHz Result

Appendix G.1







RSE TX above 1GHz Result

Appendix G.2

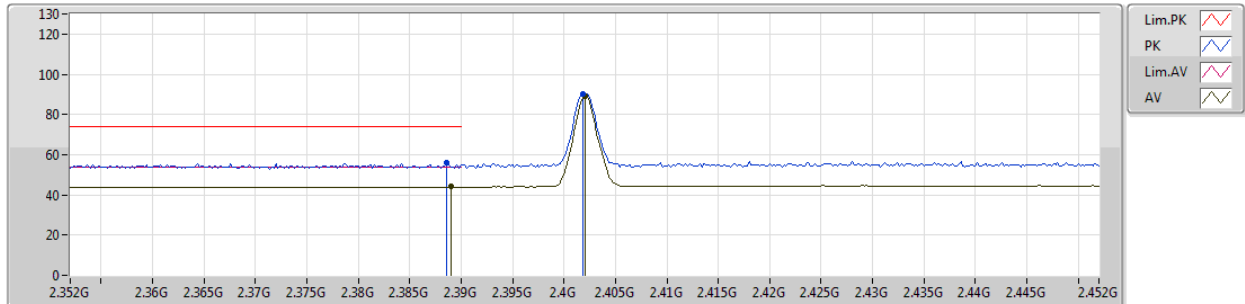
Summary

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-BR(1Mbps)	Pass	AV	2.4835G	52.56	54.00	-1.44	32.23	3	Horizontal	353	1.17	-

BT-BR(1Mbps)

2402MHz_TX

14/12/2018



EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.3886G	55.89	74.00	-18.11	31.95	3	Vertical	353	1.50	-
AV	2.389G	44.00	54.00	-10.00	31.95	3	Vertical	353	1.50	-
PK	2.4018G	90.22	Inf	-Inf	31.98	3	Vertical	353	1.50	-
AV	2.402G	89.26	Inf	-Inf	31.98	3	Vertical	353	1.50	-



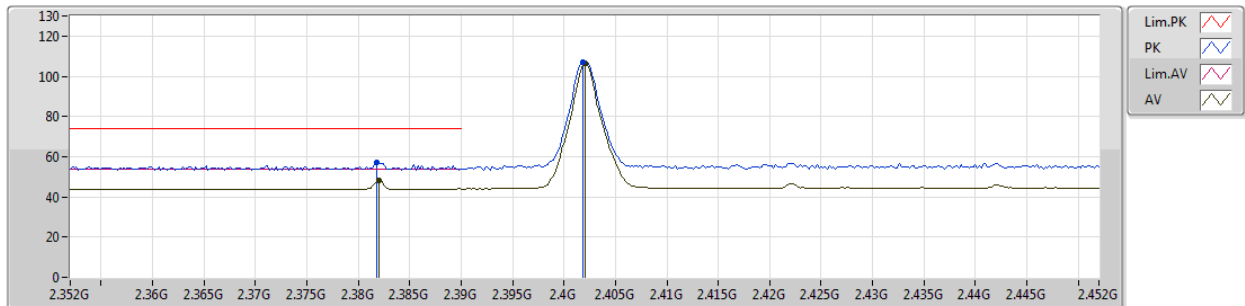
RSE TX above 1GHz Result

Appendix G.2

BT-BR(1Mbps)

2402MHz_TX

14/12/2018



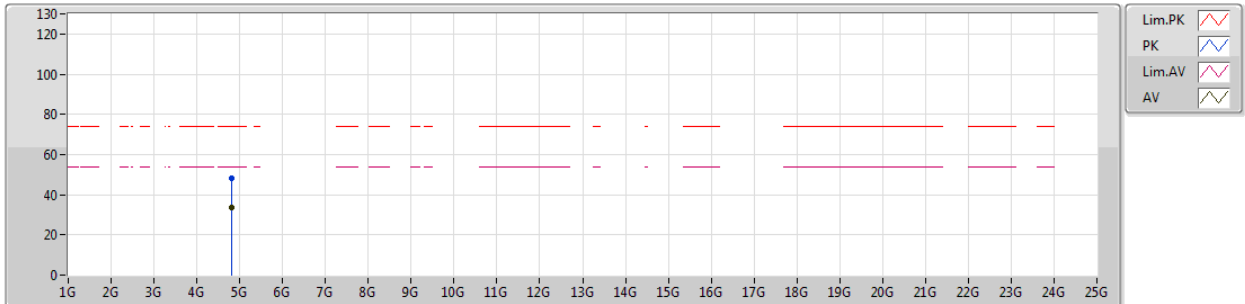
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.3818G	57.07	74.00	-16.93	31.92	3	Horizontal	356	1.20	-
AV	2.382G	48.13	54.00	-5.87	31.92	3	Horizontal	356	1.20	-
PK	2.4018G	107.03	Inf	-Inf	31.98	3	Horizontal	356	1.20	-
AV	2.402G	106.19	Inf	-Inf	31.98	3	Horizontal	356	1.20	-

BT-BR(1Mbps)

2402MHz_TX

14/12/2018



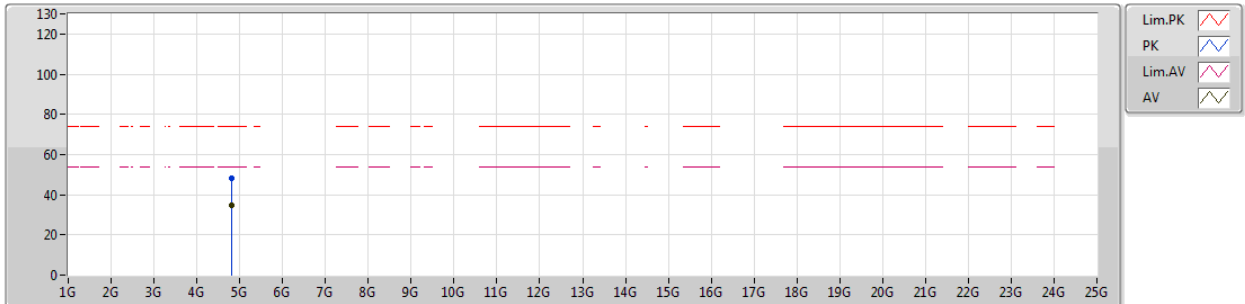
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.80264G	48.01	74.00	-25.99	4.92	3	Vertical	185	1.44	-						
AV	4.80378G	33.77	54.00	-20.23	4.92	3	Vertical	185	1.44	-						

BT-BR(1Mbps)

2402MHz_TX

14/12/2018



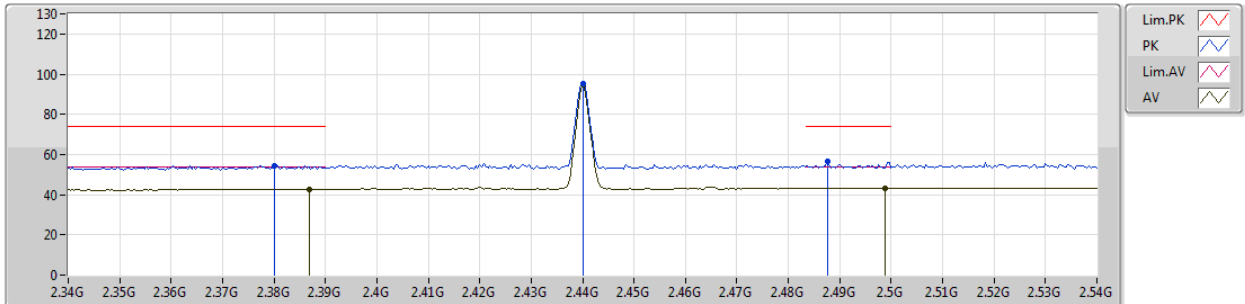
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.80338G	48.19	74.00	-25.81	4.92	3	Horizontal	35	1.01	-						
AV	4.80408G	34.83	54.00	-19.17	4.92	3	Horizontal	35	1.01	-						

BT-BR(1Mbps)

2440MHz_TX

14/12/2018



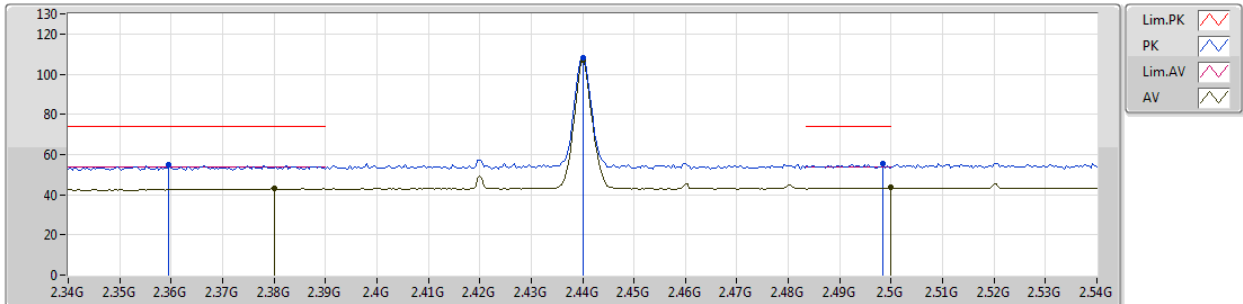
EUT_Z_1TX
Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.38G	54.51	74.00	-19.49	31.36	3	Vertical	114	1.53	-
AV	2.3868G	42.85	54.00	-11.15	31.37	3	Vertical	114	1.53	-
PK	2.44G	95.38	Inf	-Inf	31.50	3	Vertical	114	1.53	-
AV	2.44G	94.45	Inf	-Inf	31.50	3	Vertical	114	1.53	-
PK	2.4876G	56.47	74.00	-17.53	31.61	3	Vertical	114	1.53	-
AV	2.4988G	43.37	54.00	-10.63	31.63	3	Vertical	114	1.53	-

BT-BR(1Mbps)

2440MHz_TX

14/12/2018



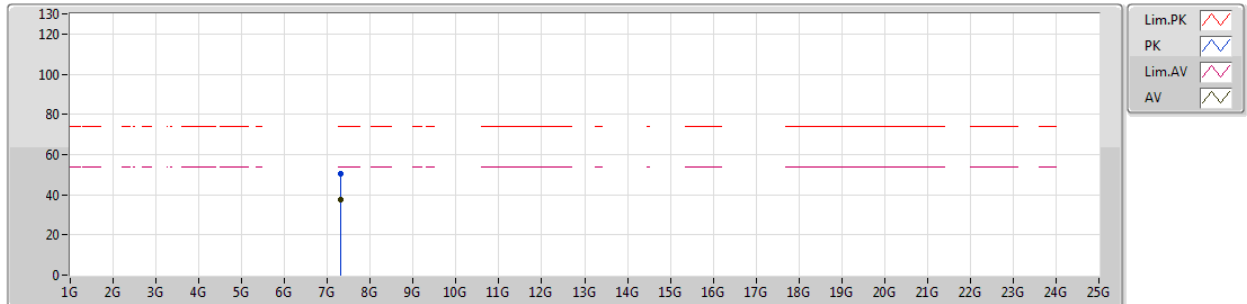
EUT_Z_1TX
Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.3596G	54.96	74.00	-19.04	31.30	3	Horizontal	347	1.32	-
AV	2.38G	43.00	54.00	-11.00	31.36	3	Horizontal	347	1.32	-
PK	2.44G	108.09	Inf	-Inf	31.50	3	Horizontal	347	1.32	-
AV	2.44G	107.16	Inf	-Inf	31.50	3	Horizontal	347	1.32	-
PK	2.4984G	55.38	74.00	-18.62	31.63	3	Horizontal	347	1.32	-
AV	2.5G	43.43	54.00	-10.57	31.63	3	Horizontal	347	1.32	-

BT-BR(1Mbps)

2440MHz_TX

14/12/2018



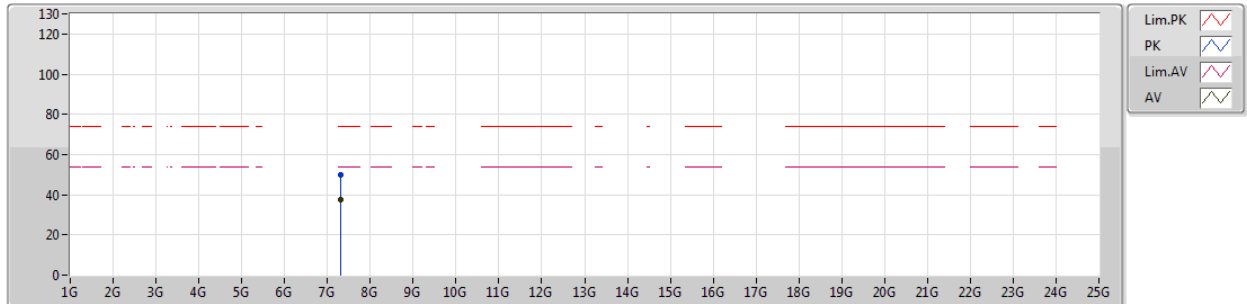
EUT_Z_1TX
Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	7.31963G	50.39	74.00	-23.61	10.57	3	Vertical	171	1.60	-						
AV	7.31986G	37.55	54.00	-16.45	10.57	3	Vertical	171	1.60	-						

BT-BR(1Mbps)

2440MHz_TX

14/12/2018



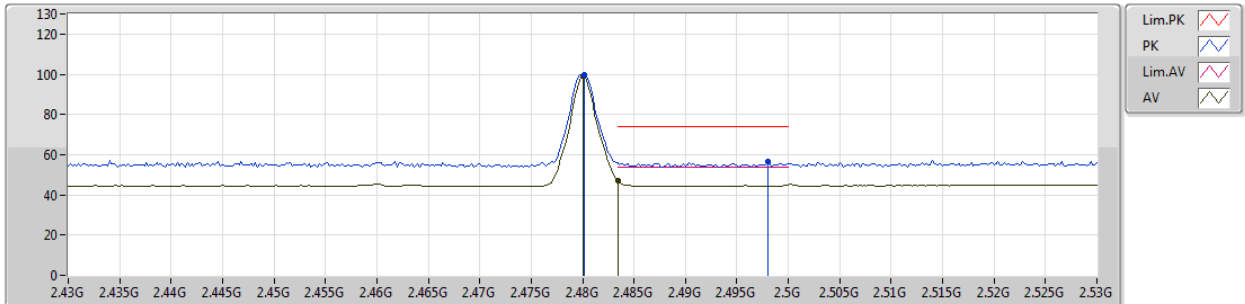
EUT_Z_1TX
Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	7.31922G	49.87	74.00	-24.13	10.57	3	Horizontal	259	1.58	-						
AV	7.32042G	37.32	54.00	-16.68	10.57	3	Horizontal	259	1.58	-						

BT-BR(1Mbps)

2480MHz_TX

14/12/2018



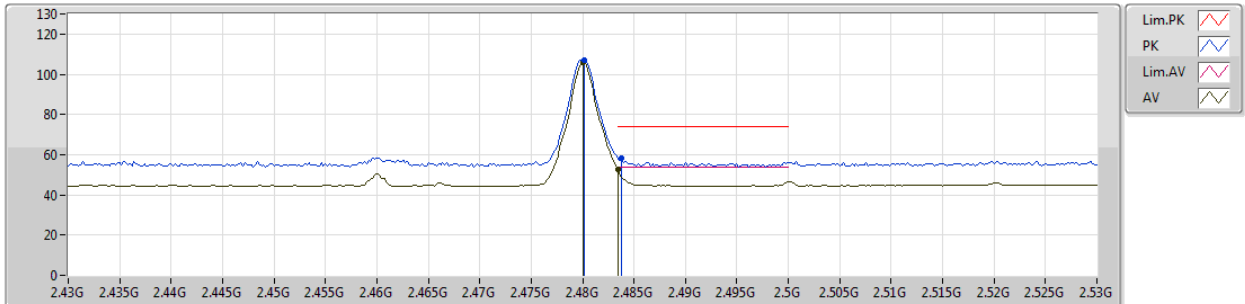
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.4802G	99.85	Inf	-Inf	32.21	3	Vertical	250	2.84	-
AV	2.48G	98.99	Inf	-Inf	32.21	3	Vertical	250	2.84	-
PK	2.498G	56.70	74.00	-17.30	32.27	3	Vertical	250	2.84	-
AV	2.4835G	47.09	54.00	-6.91	32.23	3	Vertical	250	2.84	-

BT-BR(1Mbps)

2480MHz_TX

14/12/2018



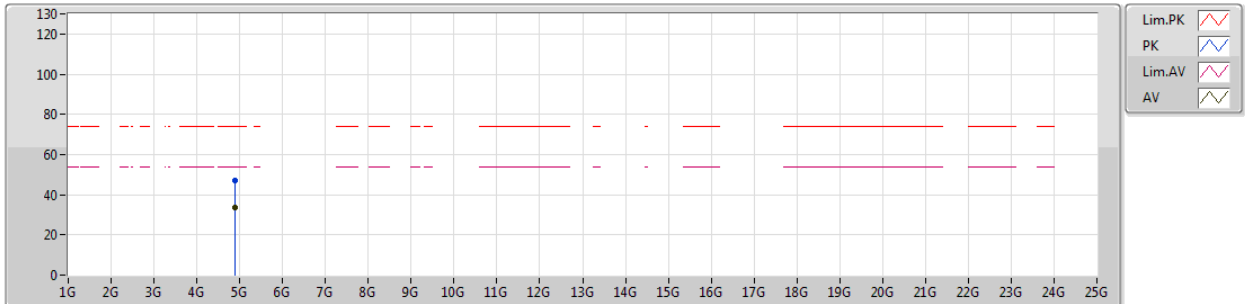
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.4802G	107.08	Inf	-Inf	32.21	3	Horizontal	353	1.17	-
AV	2.48G	106.18	Inf	-Inf	32.21	3	Horizontal	353	1.17	-
PK	2.4838G	58.49	74.00	-15.51	32.23	3	Horizontal	353	1.17	-
AV	2.4835G	52.56	54.00	-1.44	32.23	3	Horizontal	353	1.17	-

BT-BR(1Mbps)

2480MHz_TX

14/12/2018



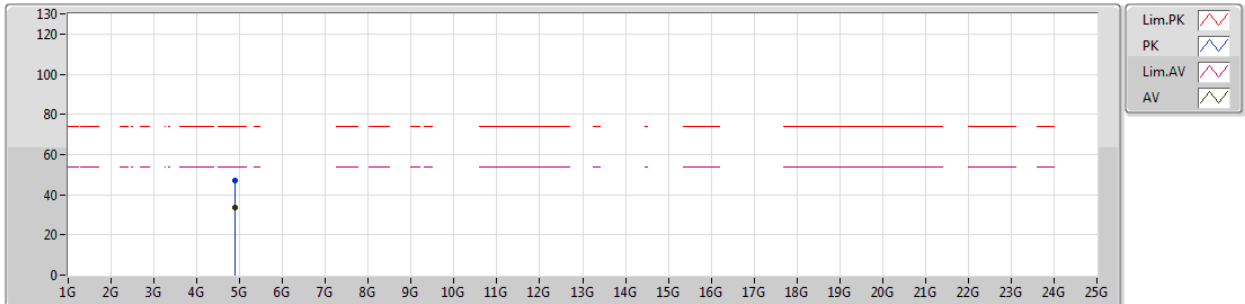
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.88282G	46.87	74.00	-27.13	5.12	3	Vertical	154	1.26	-						
AV	4.88488G	33.59	54.00	-20.41	5.13	3	Vertical	154	1.26	-						

BT-BR(1Mbps)

2480MHz_TX

14/12/2018



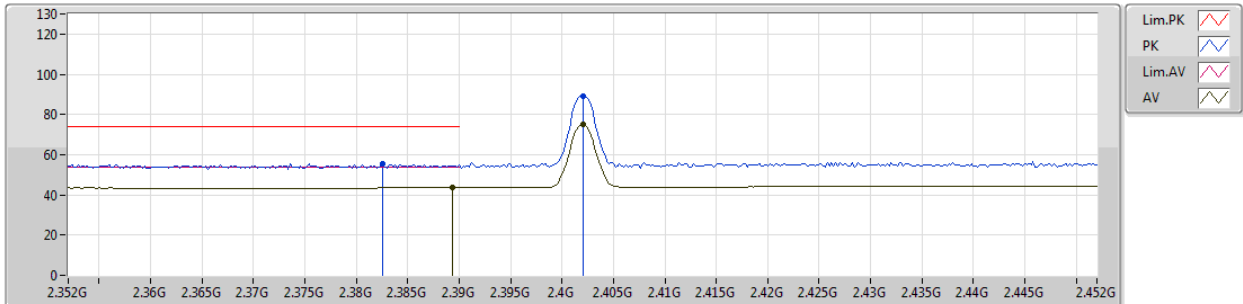
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.88622G	47.09	74.00	-26.91	5.13	3	Horizontal	125	1.84	-						
AV	4.8848G	33.73	54.00	-20.27	5.13	3	Horizontal	125	1.84	-						

BT-EDR(3Mbps)

2402MHz_TX

14/12/2018



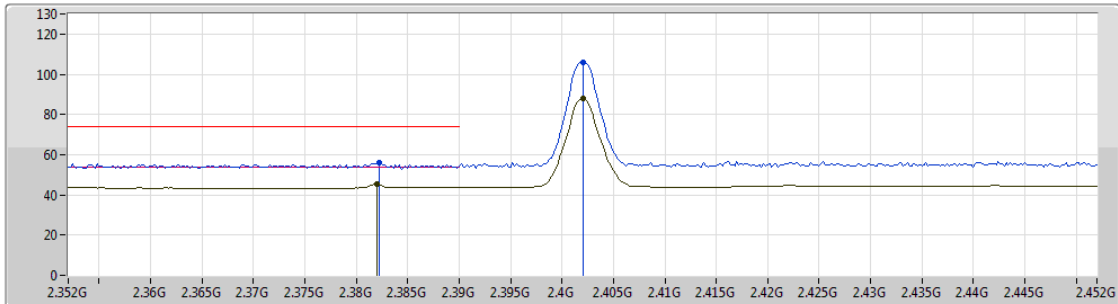
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	2.3826G	55.66	74.00	-18.34	31.93	3	Vertical	354	1.50	-						
AV	2.3894G	43.57	54.00	-10.43	31.95	3	Vertical	354	1.50	-						
PK	2.402G	89.01	Inf	-Inf	31.98	3	Vertical	354	1.50	-						
AV	2.402G	75.09	Inf	-Inf	31.98	3	Vertical	354	1.50	-						

BT-EDR(3Mbps)

2402MHz_TX

14/12/2018



Lim.PK
PK
Lim_AV
AV

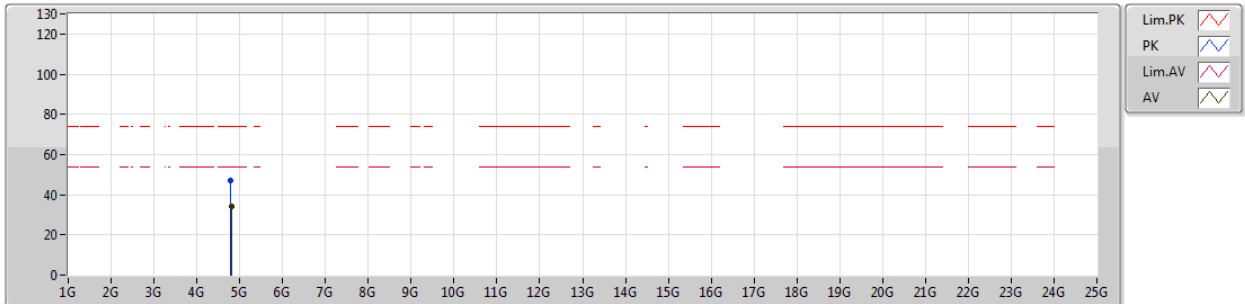
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments								
PK	2.3822G	56.09	74.00	-17.91	31.92	3	Horizontal	356	1.20	-								
AV	2.382G	45.15	54.00	-8.85	31.92	3	Horizontal	356	1.20	-								
PK	2.402G	105.74	Inf	-Inf	31.98	3	Horizontal	356	1.20	-								
AV	2.402G	87.90	Inf	-Inf	31.98	3	Horizontal	356	1.20	-								

BT-EDR(3Mbps)

2402MHz_TX

14/12/2018



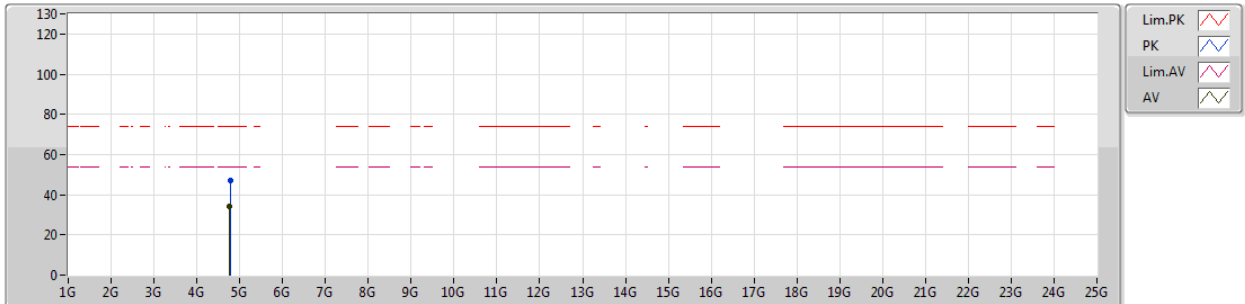
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.7832G	46.93	74.00	-27.07	4.85	3	Vertical	235	1.48	-						
AV	4.8034G	34.34	54.00	-19.66	4.92	3	Vertical	235	1.48	-						

BT-EDR(3Mbps)

2402MHz_TX

14/12/2018



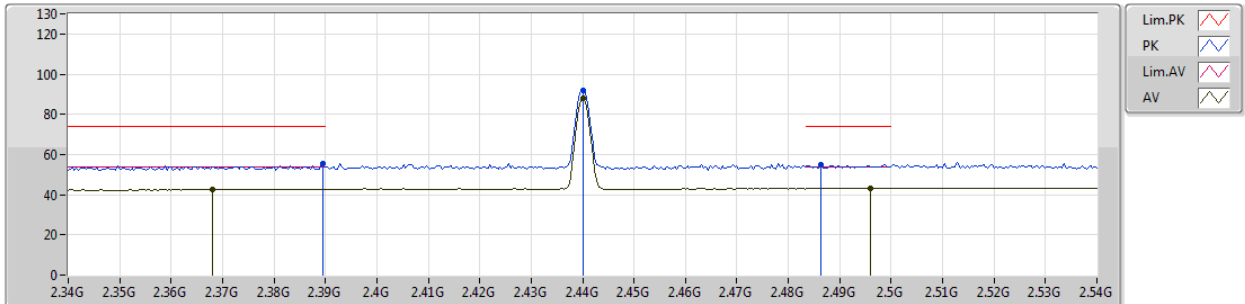
EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.7782G	47.06	74.00	-26.94	4.83	3	Horizontal	275	1.16	-						
AV	4.7616G	34.25	54.00	-19.75	4.77	3	Horizontal	275	1.16	-						

BT-EDR(3Mbps)

2440MHz_TX

14/12/2018



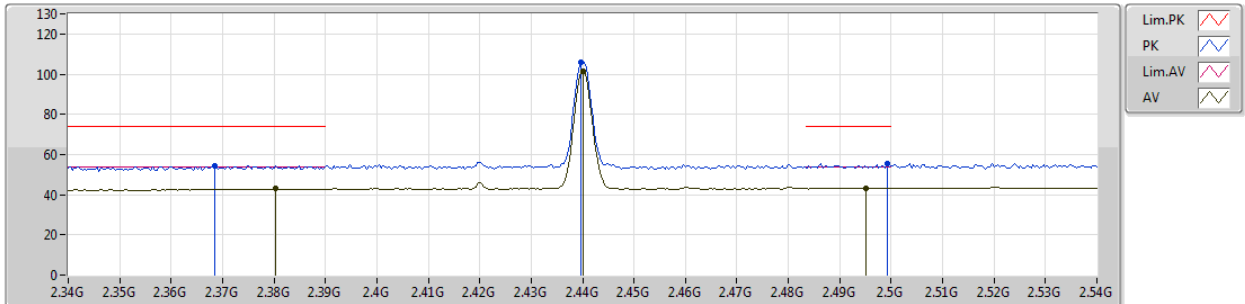
EUT_Z_1TX
Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments								
PK	2.3896G	55.30	74.00	-18.70	31.38	3	Vertical	142	2.96	-								
AV	2.368G	42.67	54.00	-11.33	31.33	3	Vertical	142	2.96	-								
PK	2.44G	92.00	Inf	-Inf	31.50	3	Vertical	142	2.96	-								
AV	2.44G	87.71	Inf	-Inf	31.50	3	Vertical	142	2.96	-								
PK	2.4864G	55.16	74.00	-18.84	31.60	3	Vertical	142	2.96	-								
AV	2.496G	43.24	54.00	-10.76	31.62	3	Vertical	142	2.96	-								

BT-EDR(3Mbps)

2440MHz_TX

14/12/2018



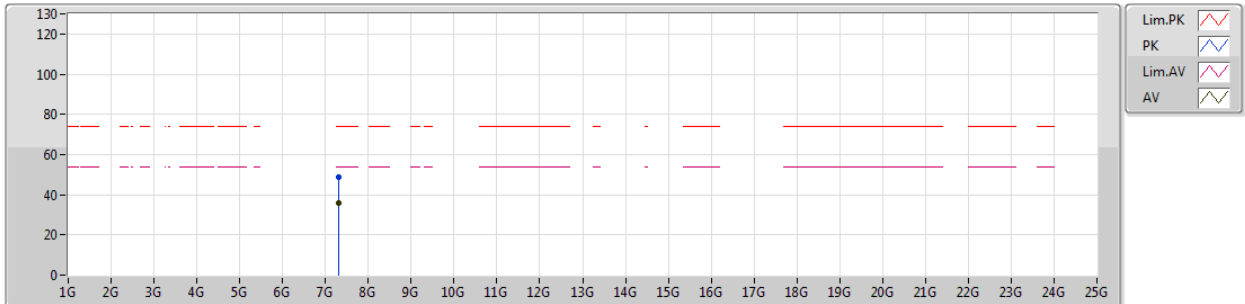
EUT_Z_1TX
Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	2.3684G	54.61	74.00	-19.39	31.33	3	Horizontal	348	1.51	-
AV	2.3804G	42.96	54.00	-11.04	31.36	3	Horizontal	348	1.51	-
PK	2.4396G	105.87	Inf	-Inf	31.50	3	Horizontal	348	1.51	-
AV	2.44G	101.61	Inf	-Inf	31.50	3	Horizontal	348	1.51	-
PK	2.4992G	55.37	74.00	-18.63	31.63	3	Horizontal	348	1.51	-
AV	2.4952G	43.23	54.00	-10.77	31.62	3	Horizontal	348	1.51	-

BT-EDR(3Mbps)

2440MHz_TX

14/12/2018



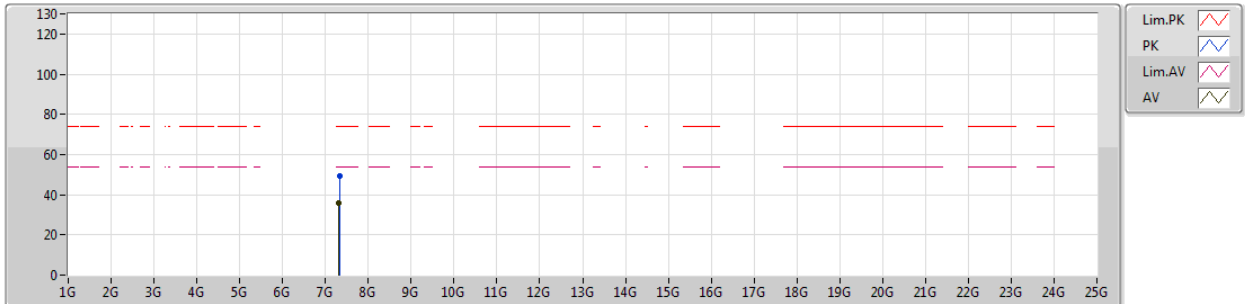
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Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	7.31994G	48.79	74.00	-25.21	10.57	3	Vertical	305	1.60	-						
AV	7.31934G	36.03	54.00	-17.97	10.57	3	Vertical	305	1.60	-						

BT-EDR(3Mbps)

2440MHz_TX

14/12/2018



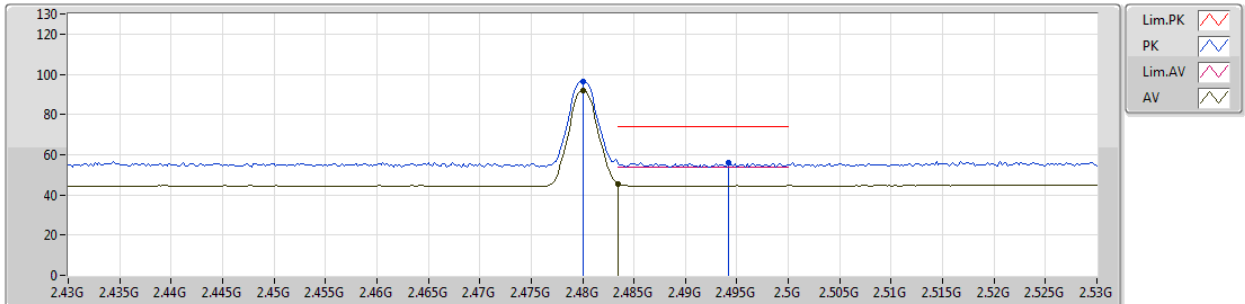
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Setting 00
02-C-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	7.3234G	49.15	74.00	-24.85	10.59	3	Horizontal	320	1.15	-						
AV	7.31898G	36.02	54.00	-17.98	10.57	3	Horizontal	320	1.15	-						

BT-EDR(3Mbps)

2480MHz_TX

14/12/2018



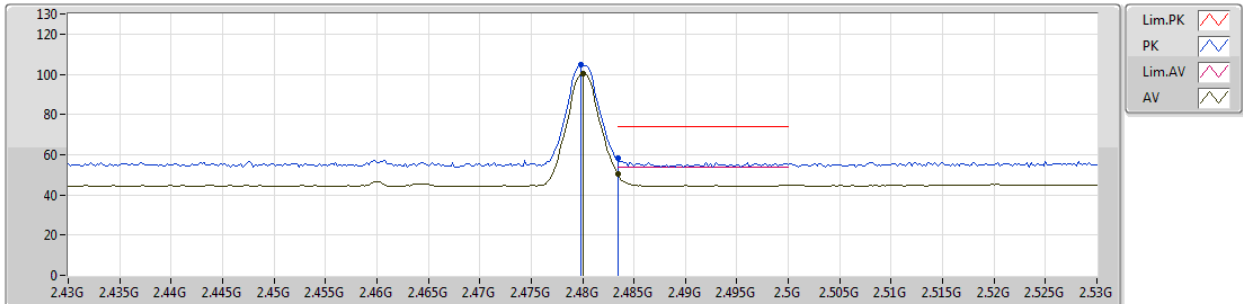
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Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments							
PK	2.48G	96.18	Inf	-Inf	32.21	3	Vertical	252	1.13	-							
AV	2.48G	91.98	Inf	-Inf	32.21	3	Vertical	252	1.13	-							
PK	2.4942G	56.04	74.00	-17.96	32.26	3	Vertical	252	1.13	-							
AV	2.4835G	45.53	54.00	-8.47	32.23	3	Vertical	252	1.13	-							

BT-EDR(3Mbps)

2480MHz_TX

14/12/2018



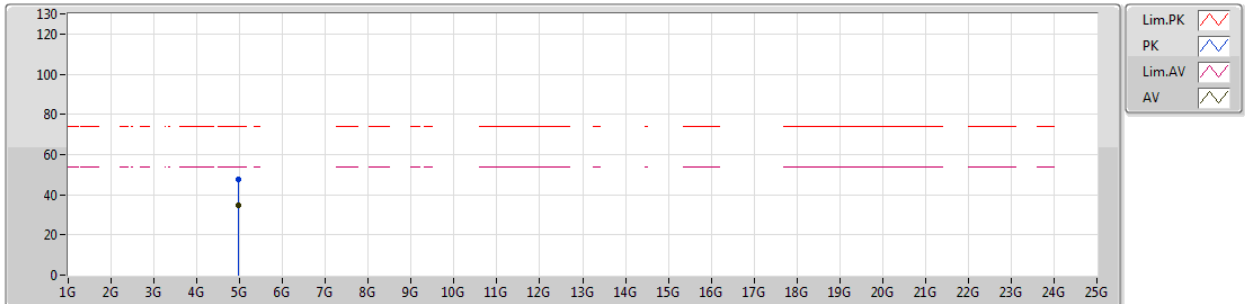
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03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments								
PK	2.4798G	104.55	Inf	-Inf	32.21	3	Horizontal	352	1.50	-								
AV	2.48G	100.34	Inf	-Inf	32.21	3	Horizontal	352	1.50	-								
PK	2.4835G	58.34	74.00	-15.66	32.23	3	Horizontal	352	1.50	-								
AV	2.4835G	50.32	54.00	-3.68	32.23	3	Horizontal	352	1.50	-								

BT-EDR(3Mbps)

2480MHz_TX

14/12/2018



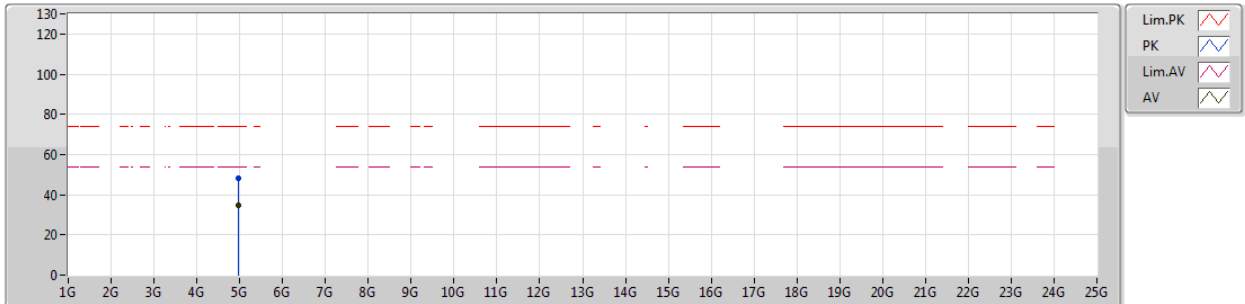
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Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.96068G	47.64	74.00	-26.36	5.34	3	Vertical	200	1.29	-						
AV	4.96016G	34.63	54.00	-19.37	5.34	3	Vertical	200	1.29	-						

BT-EDR(3Mbps)

2480MHz_TX

14/12/2018



EUT_Z_1TX
Setting 00
03-R-5
FSP

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments						
PK	4.96024G	48.23	74.00	-25.77	5.34	3	Horizontal	360	1.50	-						
AV	4.96108G	34.60	54.00	-19.40	5.34	3	Horizontal	360	1.50	-						