



FCC Test Report

Equipment : Wireless STB
Brand Name : AT&T
Model No. : C71KW-400, C71KWBP-400
FCC ID : NKR-ATTC71KW
Standard : 47 CFR FCC Part 15.247
Operating Band : 2400 MHz – 2483.5 MHz
Applicant : Wistron NeWeb Corporation
20 Park Avenue II Hsinchu Science Park Hsinchu,
308 Taiwan
Manufacturer : Wistron NeWeb Corporation
20 Park Avenue II Hsinchu Science Park Hsinchu,
308 Taiwan

The product sample received on Aug. 18, 2017 and completely tested on Oct. 16, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given inanes and shown compliance with the applicable technical standards.

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


Cliff Chang
SPORTON INTERNATIONAL INC.





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PHOTOGRAPHS OF EUT V01



Summary of Test Result

Conformance Test Specifications				
Report Clause	Ref. Std. Clause	Description	Limit	Result
1.1.2	15.203	Antenna Requirement	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	FCC 15.207	Complied
3.2	15.247(a)	20dB Bandwidth	15.247(a)	Complied
3.2	15.247(a)	Carrier Frequency Separation	15.247(a)	Complied
3.3	15.247(b)	Maximum Conducted Output Power	15.247(b)	Complied
3.4	15.247(a)	Number of Hopping Frequencies and Hopping Band edge	15.247(a)	Complied
3.5	15.247(a)	Time of Occupancy (Dwell Time)	15.247(a)	Complied
3.6	15.247(d)	Emissions in Non-restricted Frequency Bands	15.247(d)	Complied
3.7	15.247(d)	Emissions in Restricted Frequency Bands	Restricted Bands: FCC 15.209	Complied



1 General Description

1.1 Information

1.1.1 RF General Information

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

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

Note:

- ♦ Bluetooth BR uses a GFSK (1Mbps).
- ♦ Bluetooth EDR uses a combination of $\pi/4$ -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)		
						2.4GHz	5GHz	BT
A	1	Airgain	N2425DWA7	PCB Antenna	I-PEX	Note	Note	-
B	2	Airgain	N2410DWB7	PCB Antenna	I-PEX			
C	3	Airgain	N2425DWC7	PCB Antenna	I-PEX			
D	4	Airgain	N2410DWD7	PCB Antenna	I-PEX			
E	1	N/A	N/A	Printed Antenna	N/A	-	-	1.11

Note:

2.4 GHz Antenna gain (dBi)				
Port \ Frequency	1	2	3	4
2412MHz	4.30	2.20	3.90	2.80
2422MHz	4.30	2.40	4.00	2.90
2437MHz	4.50	3.10	4.20	3.20
2452MHz	4.50	3.30	4.20	3.30
2462MHz	4.70	3.50	4.20	3.20

Frequency	2.4 GHz Directional gain (dBi)
2412MHz	5.70
2422MHz	5.90
2437MHz	6.30
2452MHz	6.40
2462MHz	6.40

5 GHz Antenna gain (dBi)				
Port \ Band	1	2	3	4
Band 1	5.50	2.30	4.30	4.30
Band 2	5.30	1.90	4.00	4.20
Band 3	5.80	1.80	3.90	2.50
Band 4	5.70	2.00	3.70	2.00



Band	5 GHz Directional gain (dBi)
Band 1	7.60
Band 2	7.50
Band 3	7.00
Band 4	7.10

Note: The EUT has four antennas.

For WLAN function (4TX, 4RX):

Port 1, Port 2, Port 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Port 3 and Port 4 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-BR(1Mbps)	0.769	1.141	2.888m	1k
BT-EDR(2Mbps)	0.783	1.062	2.891m	1k
BT-EDR(3Mbps)	0.78	1.079	2.893m	1k

1.1.4 EUT Operational Condition

EUT Power Type	From power adapter
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1.1.5 Table for Multiple Listing

The EUT has two model names which are identical to each other in all aspects except for the following table:

Model Name	Description
C71KW-400	There is nothing different of two models, just for different marketing use.
C71KWBP-400	

From the above models, model: C71KW-400 was selected as representative model for the test and its data was recorded in this report.



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 Public Notice DA 00-705
- ◆ FCC KDB 412172 D01 v01r01

1.3 Testing Location Information

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
<input checked="" type="checkbox"/>	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	Lucke Hsieh · Stim Sung · Gino Huang	20°C / 55%	Aug. 28, 2017~Oct. 16, 2017
Radiated	03CH01-CB	Justin Lin	22°C / 54%	Aug. 18, 2017 ~ Aug. 31, 2017
AC Conduction	CO01-CB	Deven Huang	23°C / 60%	Sep. 11, 2017

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)	3.2 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 x10 ⁻⁸	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-BR(1Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	10
BT-EDR(2Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	10
BT-EDR(3Mbps)	-
2402MHz	10
2440MHz	10
2480MHz	10

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 with Ethernet + Bluetooth function
2	EUT with 2.4GHz WLAN + Bluetooth function
3	EUT with 5GHz WLAN + Bluetooth function
For operating mode 3 is the worst case and it was record in this test report.	

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

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 with Ethernet + Bluetooth function
2	EUT in Y axis with Ethernet + Bluetooth function
Mode 1 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3~4 will follow this same test mode.	
3	EUT in Z axis with 2.4GHz WLAN + Bluetooth function
4	EUT in Z axis with 5GHz WLAN + Bluetooth function
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
The EUT was performed at Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Y axis. So the measurement will follow this same test configuration.	
1	EUT in Y axis



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.: FA791514 for Co-location RF Exposure Evaluation.	

Note: 1. The defines from manufacturer, "USB port" without any function, and it was performed test at the load.
2. The adapter is for measurement only, would not be marketed

Support Unit	Brand	Model	FCC ID
Adapter	DIRECTV	EPS10R4-16	DoC

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 Test Site No: CO01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	AP Router	Planex	GW-AP54SGX	KA220030603014-1
2	NB	DELL	E6430	DoC
3	Earphone	SHYARO CHI	MIC-04	DoC
4	Adapter	DIRECTV	EPS10R4-16	DoC
5	4K TV	LG	27UD68	DoC
6	Converter	UPMOST	DCT3	N/A
7	Flash disk3.0	Transcend	JetFlash-700	DoC
8	Remote controller	AT&T	VRC81	N/A

For Test Site No: 03CH01-CB (below 1GHz)

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	WLAN AP	NETGEAR	WNDR3300v2	PY309300116
2	NB	DELL	E4300	DoC
3	Earphone	SHYARO CHI	MIC-04	N/A
4	Adapter	DIRECTV	EPS10R4-16	DoC
5	4K TV	SONY	KLV-32U300A	DoC
6	Flash disk3.0	Silicon Power	B06	DoC
7	Remote controller	AT&T	VRC81	N/A
8	Converter	UPMOST	DCT3	N/A

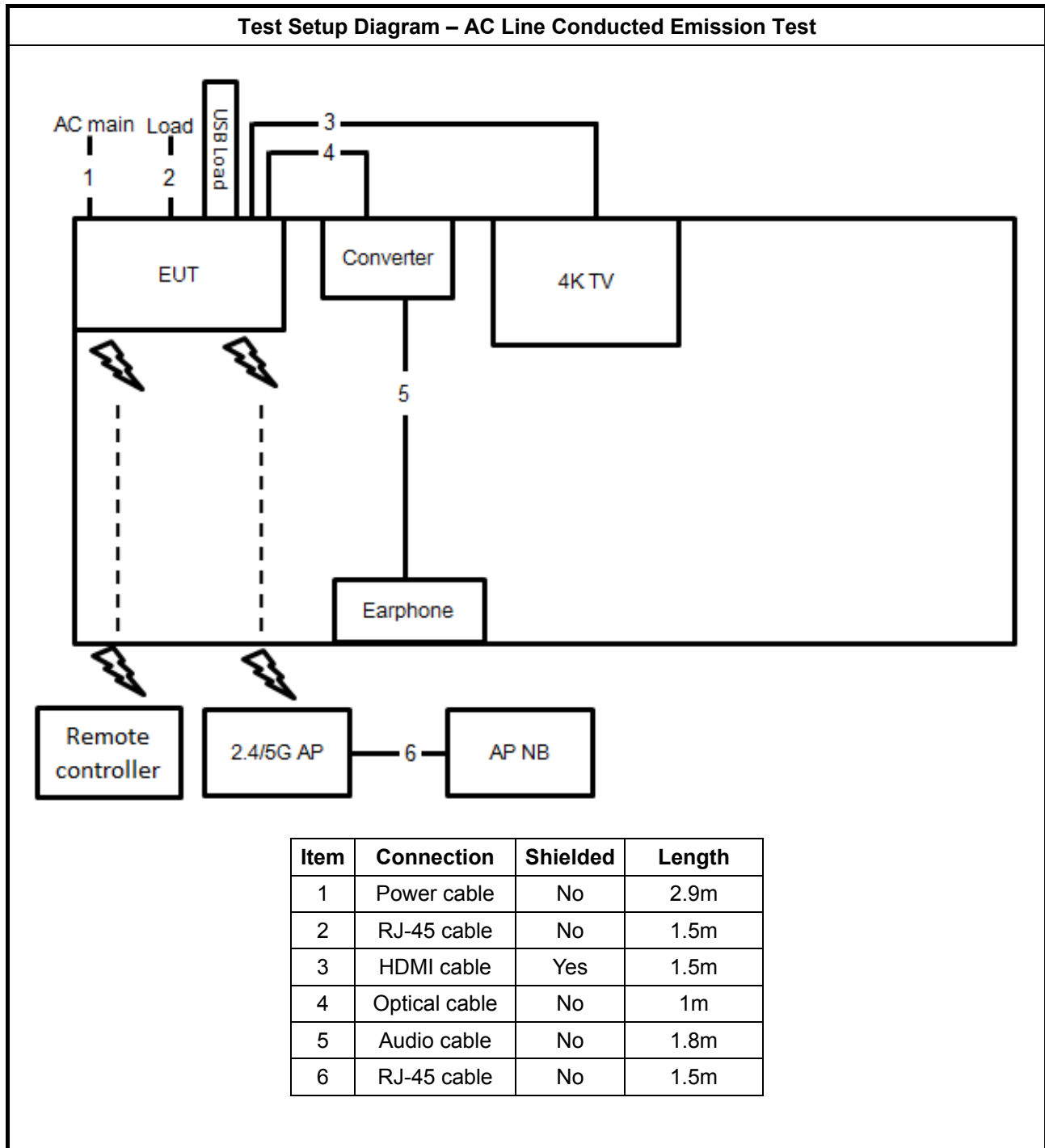
For Test Site No: 03CH01-CB (above 1GHz)

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC
2	Adapter	DIRECTV	EPS10R4-16	DoC

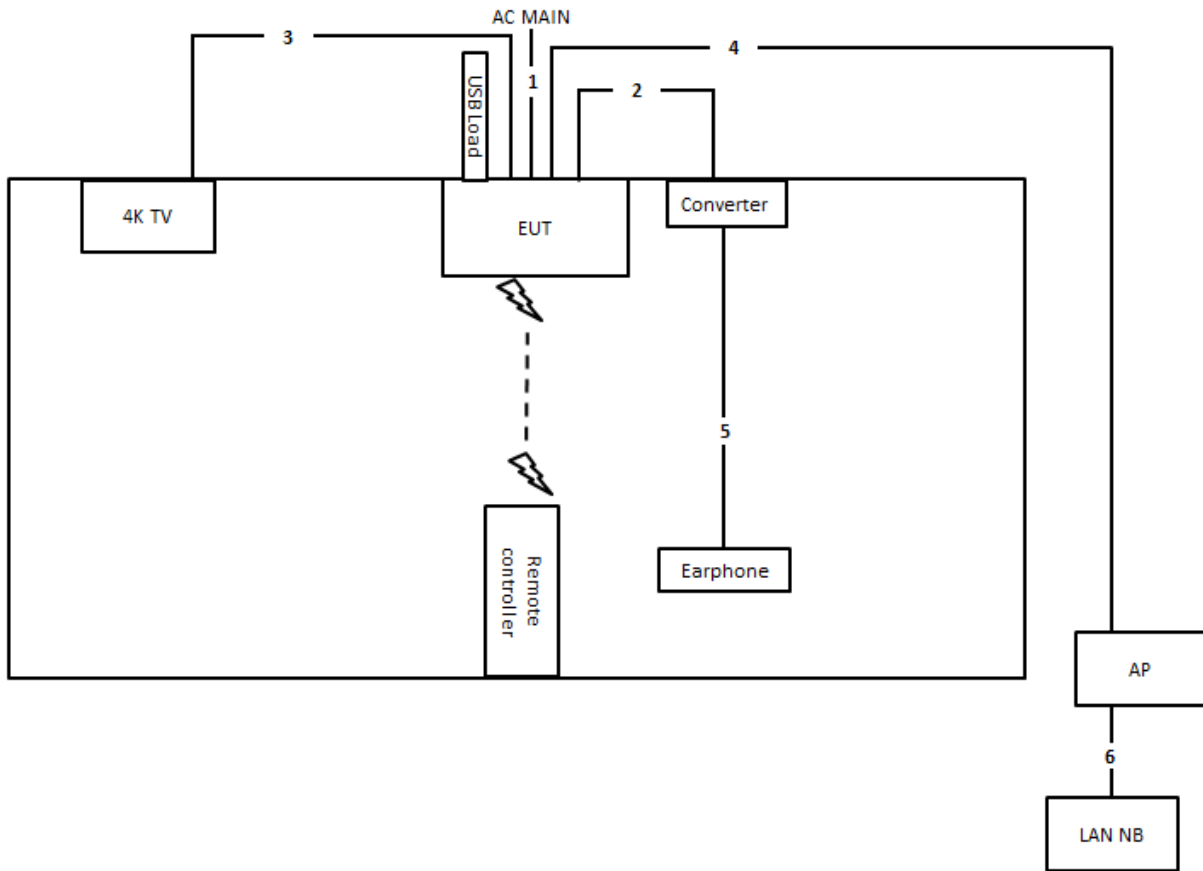
For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC
2	Adapter	DIRECTV	EPS10R4-16	DoC

2.6 Test Setup Diagram

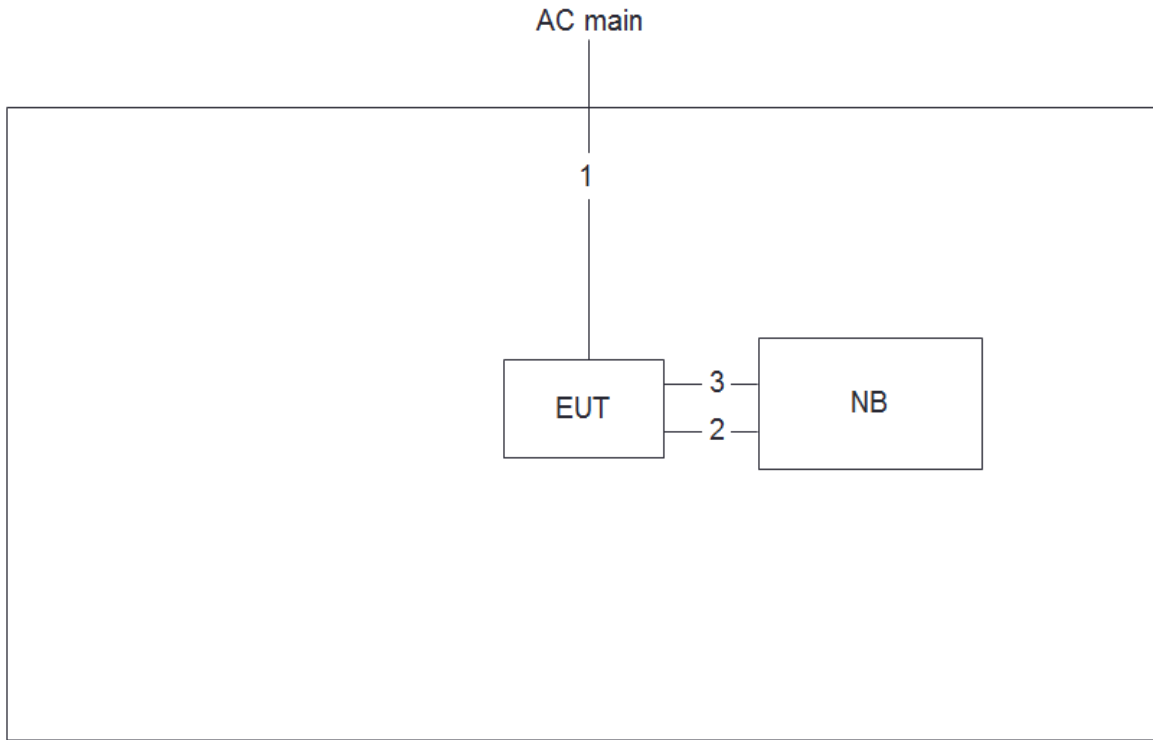


Test Setup Diagram - Radiated Test < 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.9m
2	Optical cable	No	1m
3	HDMI cable	Yes	1.5m
4	RJ-45 cable	No	10m
5	Audio cable	No	1.1m
6	RJ-45 cable	No	1m

Test Setup Diagram - Radiated Test > 1GHz



Item	Connection	Shielded	Length
1	Power cable	No	2.9m
2	RS-232 cable	Yes	1.5m
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.

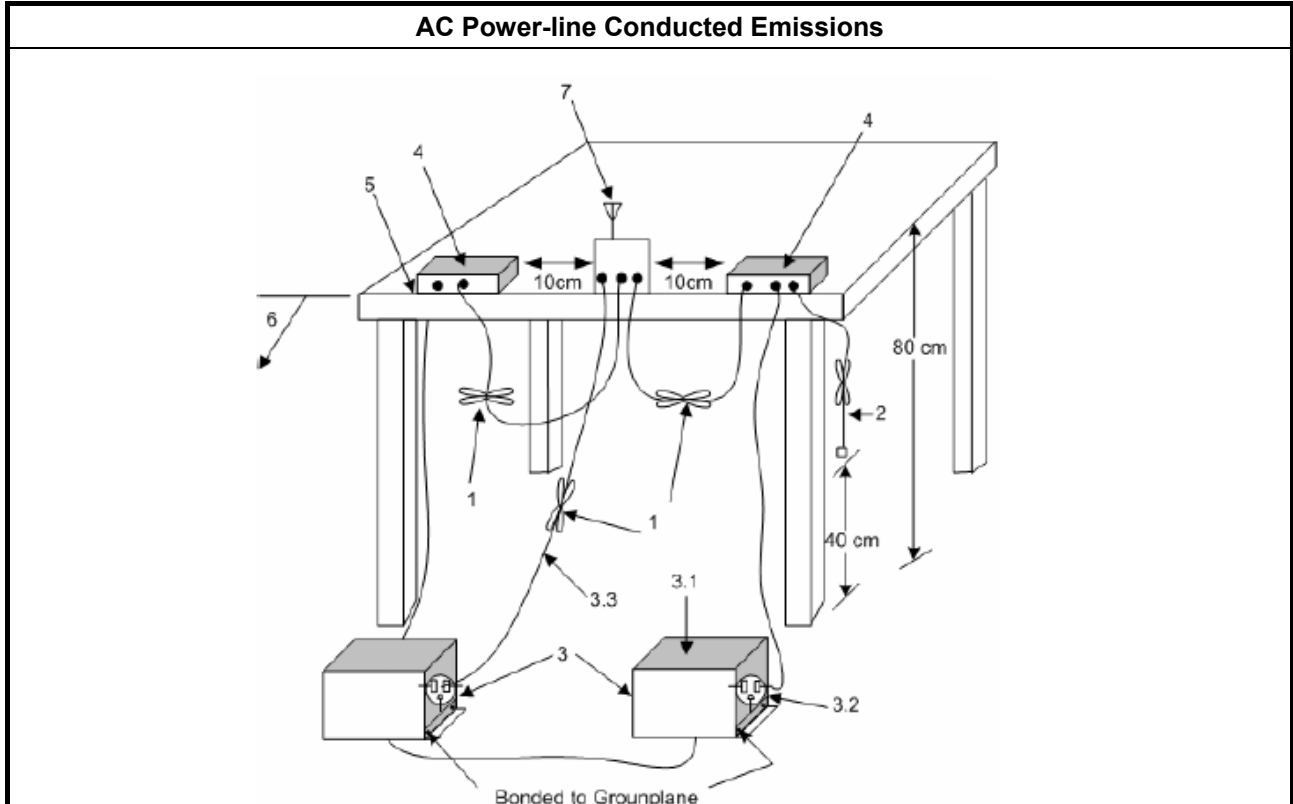
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> 902-928 MHz Band: <ul style="list-style-type: none"> $N \geq 50$ 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. 	
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: <ul style="list-style-type: none"> $N \geq 75$ 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). 	
<ul style="list-style-type: none"> 5725-5850 MHz Band: <ul style="list-style-type: none"> $N \geq 75$ 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	

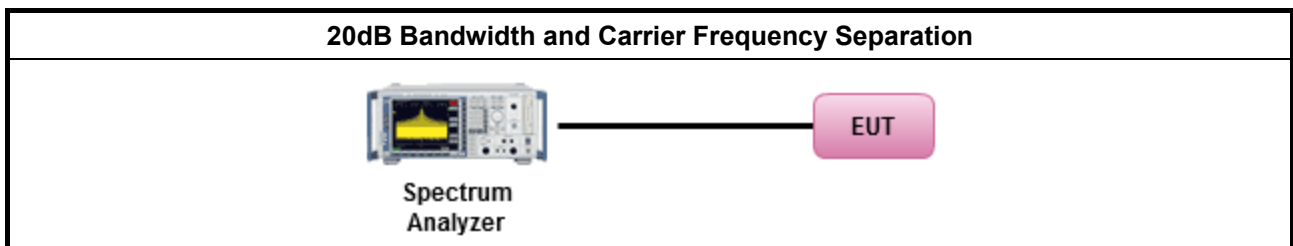
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 6.9.1 for 20 dB bandwidth measurement.
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> ▪ 902-928 MHz Band: 	
	<ul style="list-style-type: none"> ▪ $N \geq 50$; Power 30dBm; EIRP 36dBm
	<ul style="list-style-type: none"> ▪ $50 > N \geq 25$; Power 24dBm; EIRP 30dBm
<ul style="list-style-type: none"> ▪ 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> ▪ $N \geq 75$; Power 30dBm; EIRP 36dBm
	<ul style="list-style-type: none"> ▪ $75 > N \geq 15$; Power 21dBm; EIRP 27dBm
<ul style="list-style-type: none"> ▪ 5725-5850 MHz Band: 	
	<ul style="list-style-type: none"> ▪ $N \geq 75$; Power 30dBm; EIRP 36dBm
N: Number of Hopping Frequencies	

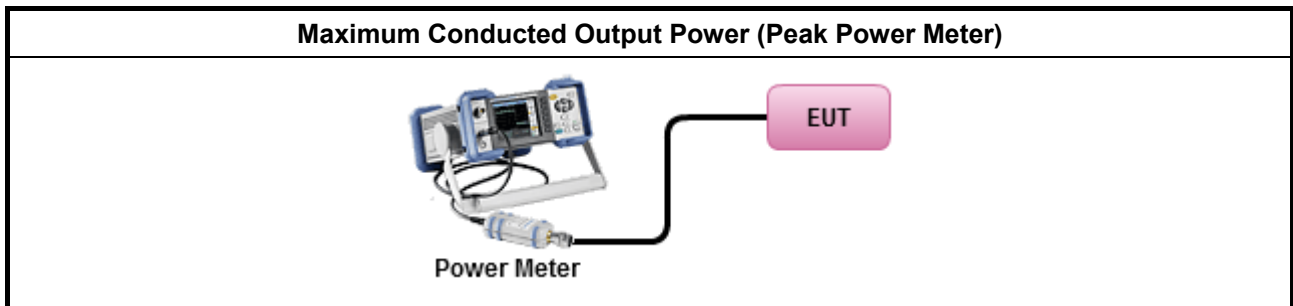
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method
<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10-2013, clause 7.8.5 for output power measurement.

3.3.4 Test Setup



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

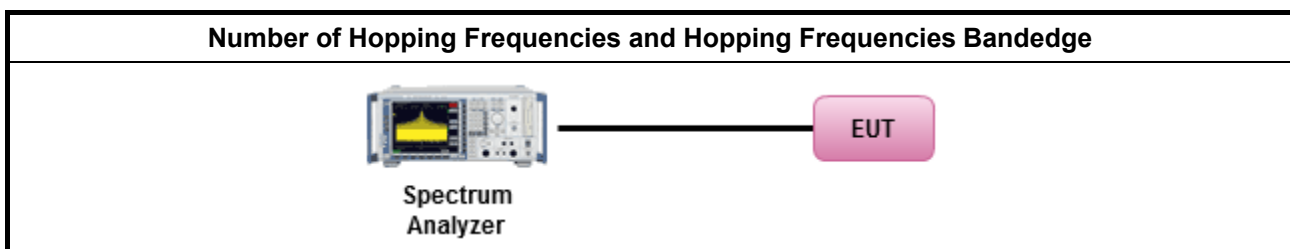
3.4.3 Measuring Instruments

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	
<ul style="list-style-type: none"> 902-928 MHz Band: 	
	<ul style="list-style-type: none"> N ≥ 50; 0.4s in 20s period
	<ul style="list-style-type: none"> 50 > N ≥ 25; 0.4s in 10s period
<ul style="list-style-type: none"> 2400-2483.5 MHz Band: 	
	<ul style="list-style-type: none"> N ≥ 75; 0.4s in N x 0.4 period
	<ul style="list-style-type: none"> 75 > N ≥ 15; 0.4s in N x 0.4 period
<ul style="list-style-type: none"> 5725-5850 MHz Band: 	
	<ul style="list-style-type: none"> N ≥ 75; 0.4s in 30s period
N: Number of Hopping Frequencies	

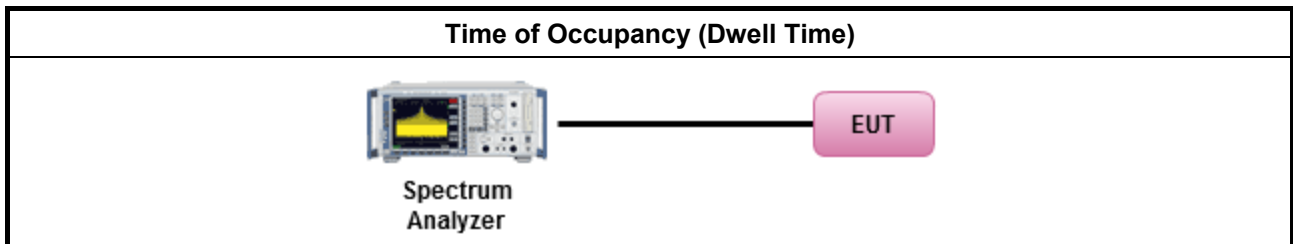
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Refer as ANSI C63.10-2013, clause 7.8.4 for dwell time measurement. 	
<ul style="list-style-type: none"> 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. 	
	<ul style="list-style-type: none"> 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 (dB)
Peak output power procedure	20
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.	

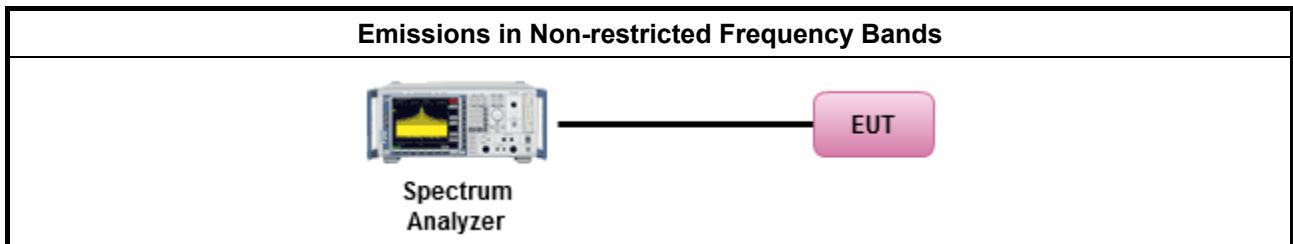
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method
<ul style="list-style-type: none"> 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.

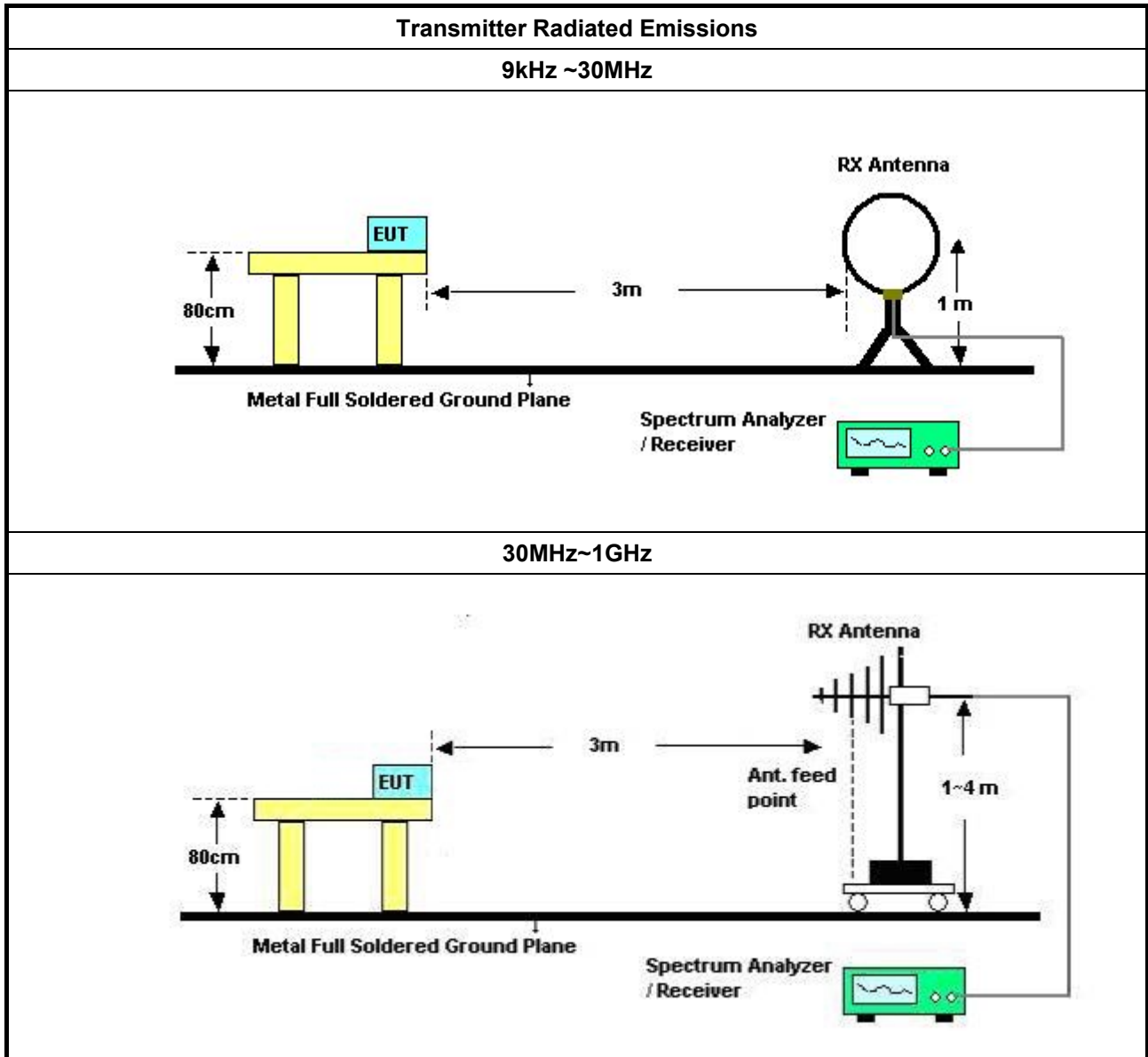
3.7.2 Measuring Instruments

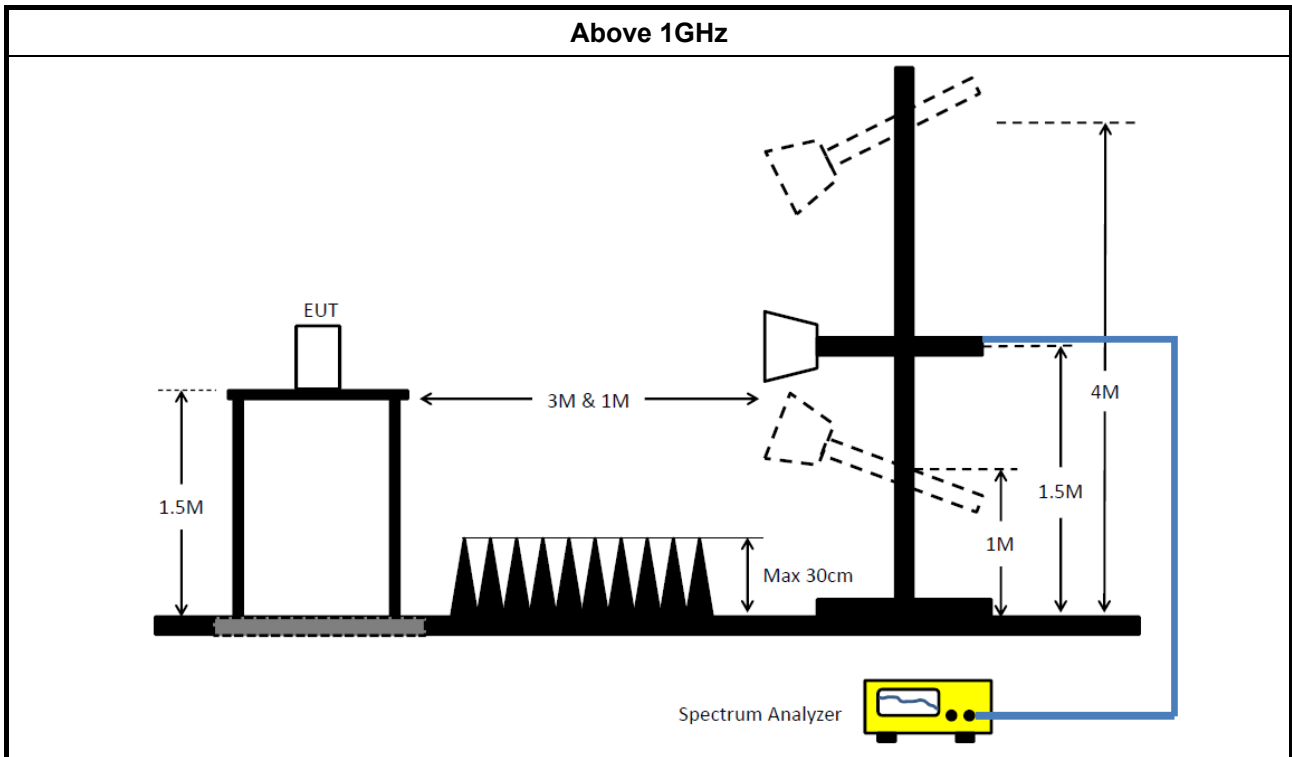
Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

Test Method	
	<ul style="list-style-type: none"> ▪ The average emission levels shall be measured in [hopping duty factor].
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10; clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
	<ul style="list-style-type: none"> ▪ For the transmitter unwanted emissions shall be measured using following options below:
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 4.1.4.2.1 QP value.
	<ul style="list-style-type: none"> ▪ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak.
	<ul style="list-style-type: none"> ▪ 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 Transmitter Radiated Unwanted Emissions (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.

3.7.6 Transmitter Radiated Unwanted Emissions

Refer as Appendix G



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. 23, 2017	Jan. 22, 2018	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Dec. 13, 2017	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Dec. 20, 2017	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	May 22, 2018	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Bilog Antenna with 6dB Attenuator	Chase & EMCI	CBL6111A &N-6-06	1543 &AT-N0604	30MHz ~ 1GHz	Jan. 11, 2017	Jan. 10, 2018	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Mar. 15, 2018*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Nov. 09, 2017	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA91702 52	15GHz ~ 40GHz	Jul. 05, 2017	Jul. 04, 2018	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	May 01, 2018	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Jan. 15, 2018	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 10, 2017	Jul. 09, 2018	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Nov. 21, 2017	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	May 05, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Dec. 25, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz ~ 26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY5341000 1	50MHz~18GHz	Nov. 22, 2016	Nov. 21, 2017	Conducted (TH01-CB)

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

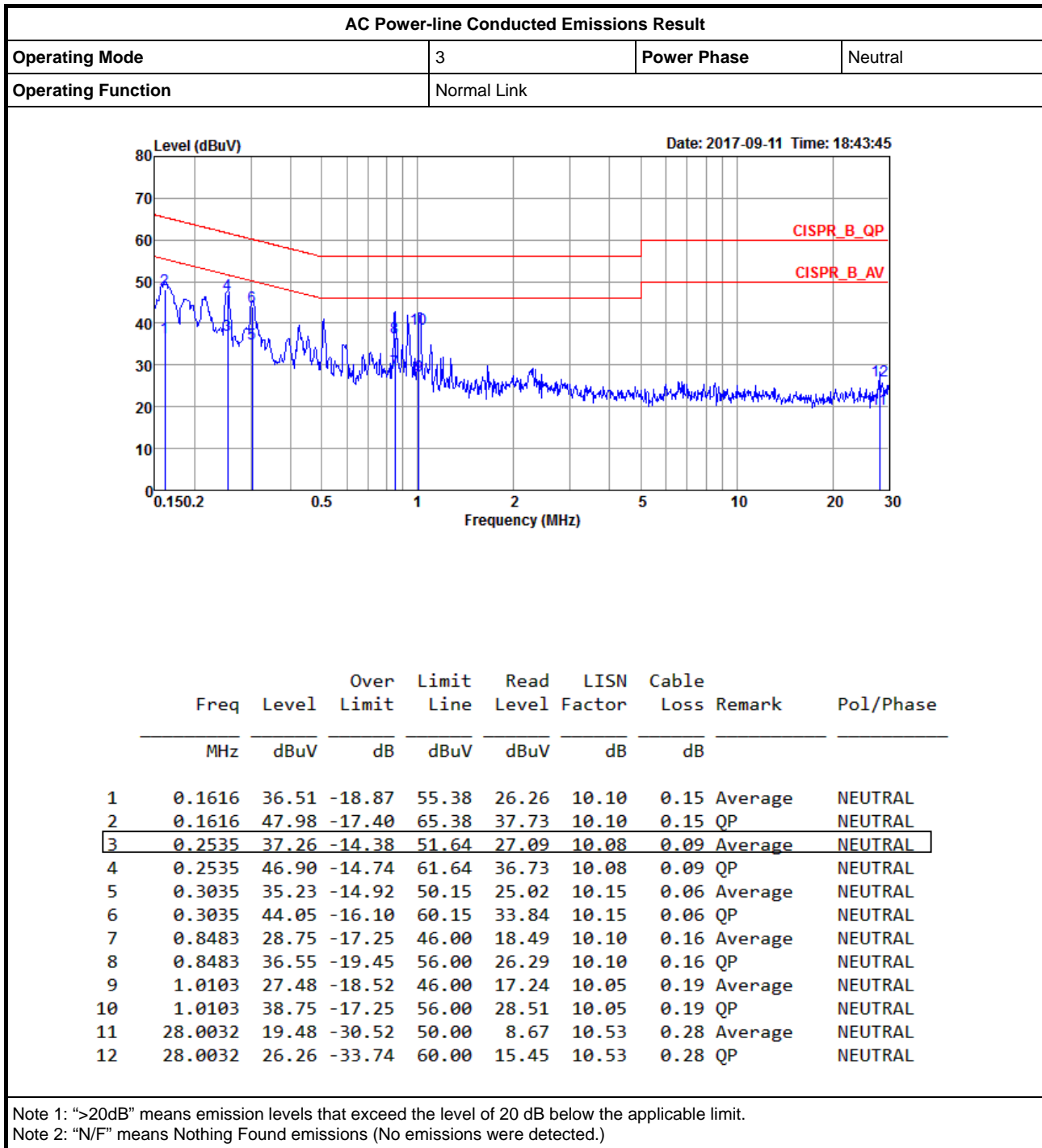
“*” Calibration Interval of instruments listed above is two years.

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



AC Power-line Conducted Emissions Result

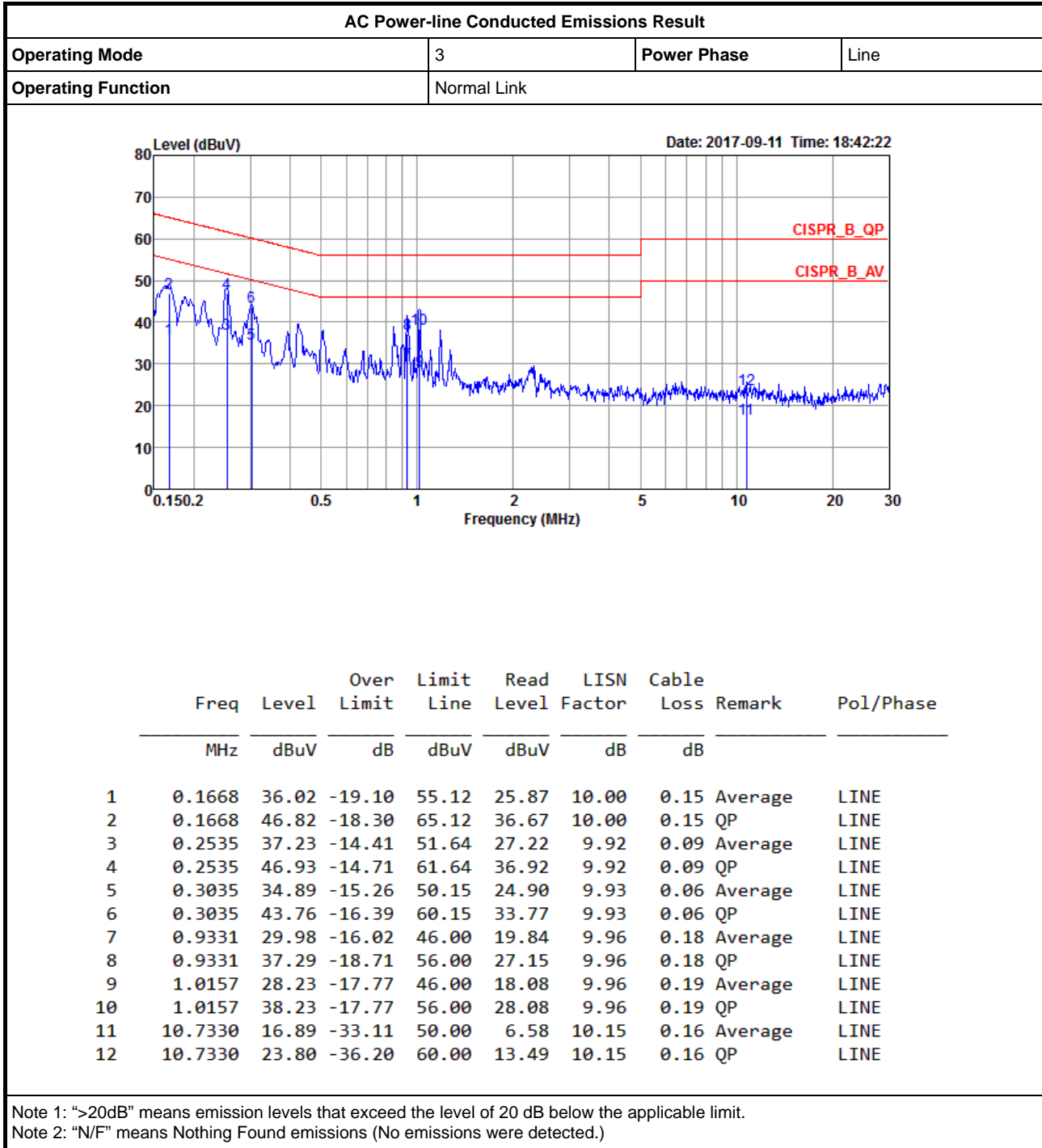
Appendix A





AC Power-line Conducted Emissions Result

Appendix A





Summary

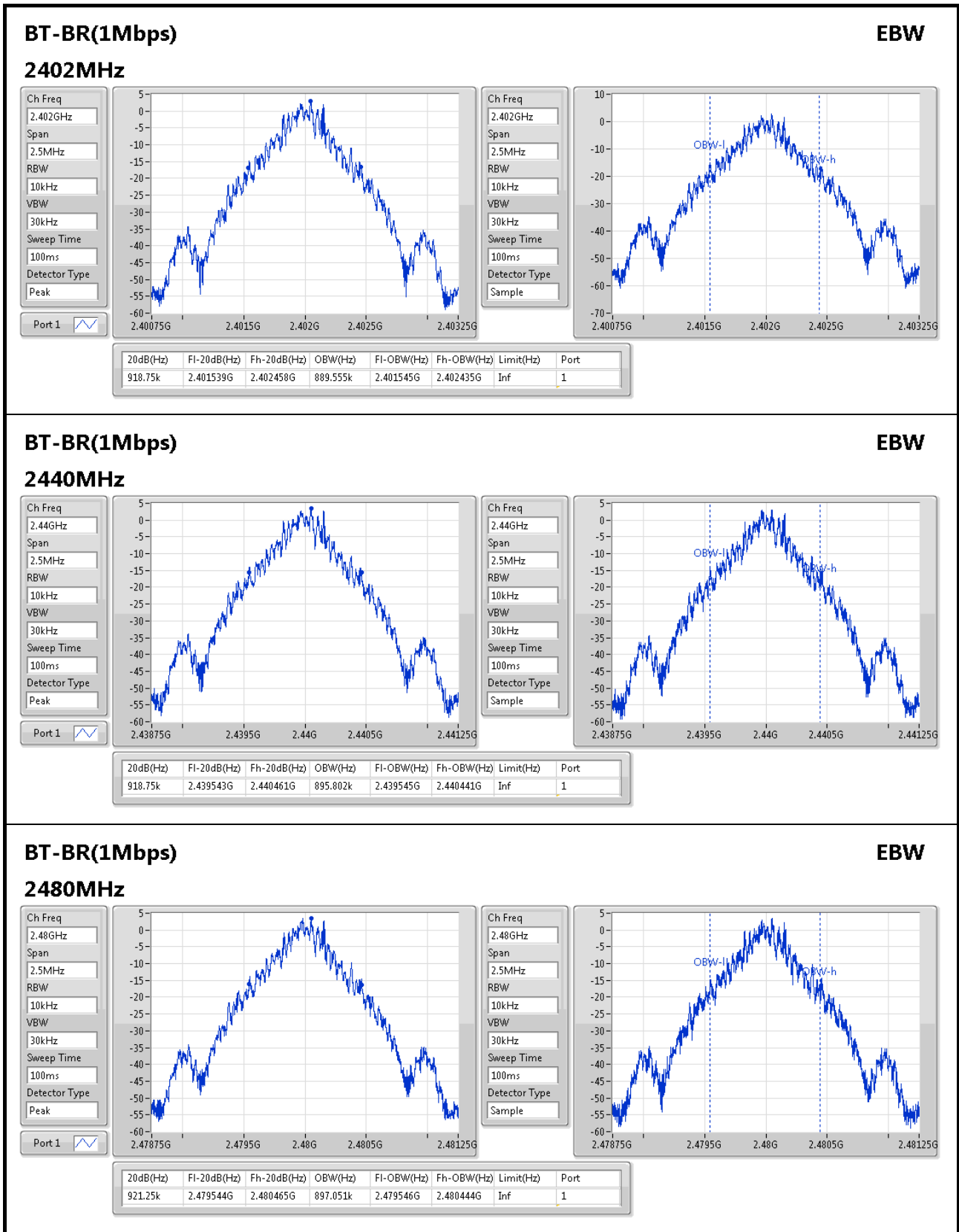
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2.4-2.4835GHz	921.25k	897.051k	897KF1D	918.75k	889.555k
BT-EDR(2Mbps)	-	-	-	-	-
2.4-2.4835GHz	1.338M	1.228M	1M23G1D	1.335M	1.222M
BT-EDR(3Mbps)	-	-	-	-	-
2.4-2.4835GHz	1.313M	1.222M	1M22G1D	1.309M	1.219M

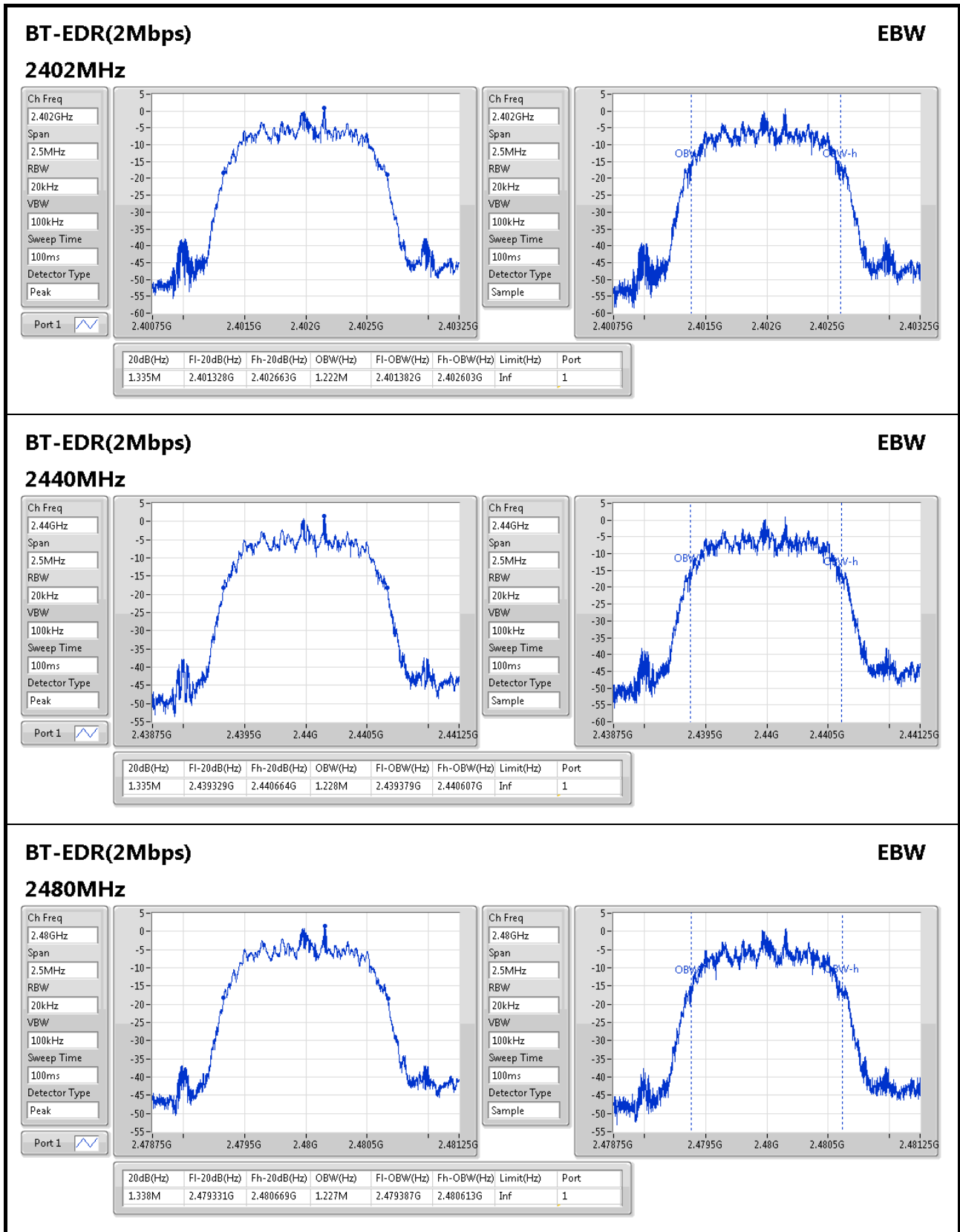
Max-N dB = Maximum 20dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 20dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

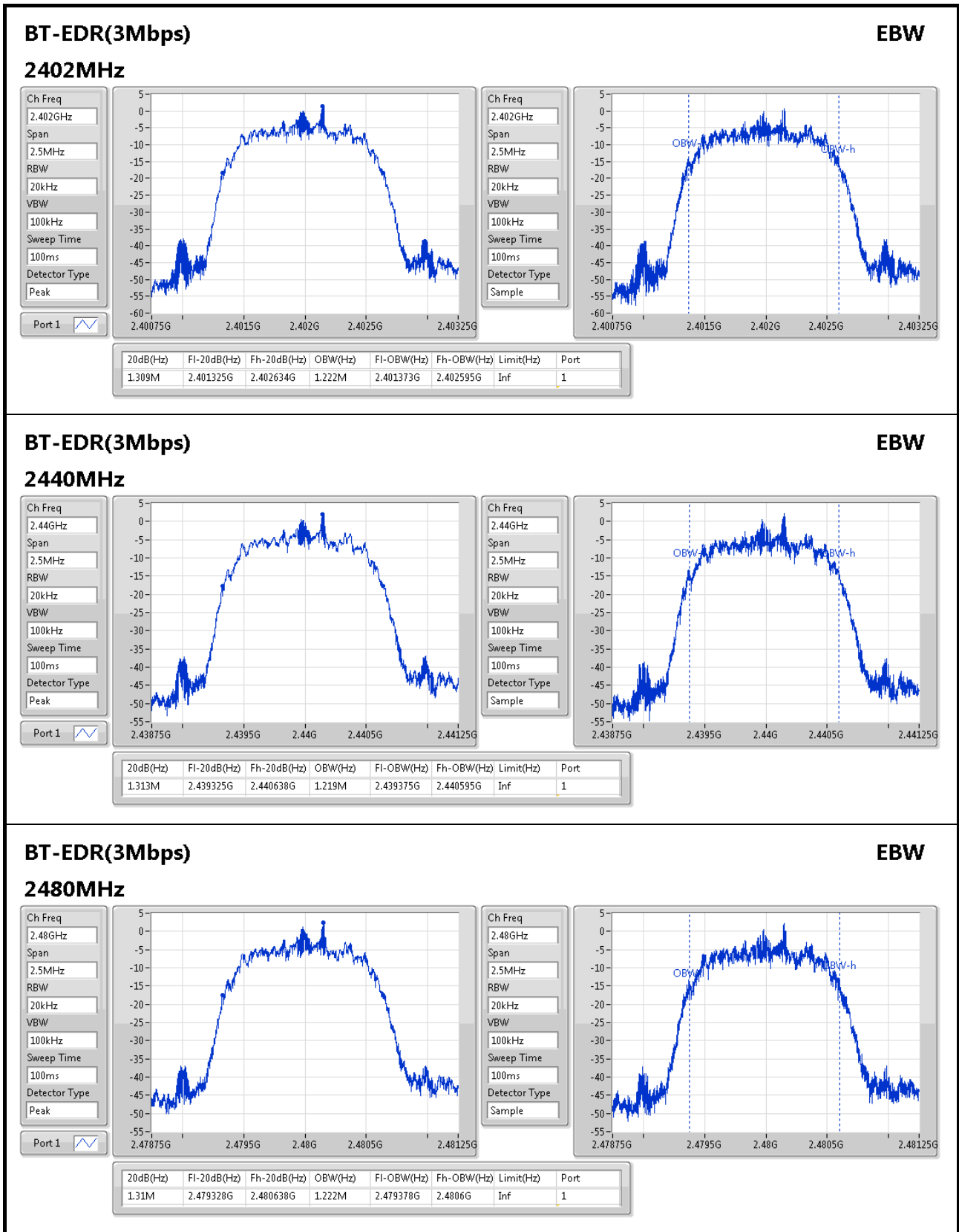
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	Inf	918.75k	889.555k
2440MHz	Pass	Inf	918.75k	895.802k
2480MHz	Pass	Inf	921.25k	897.051k
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.335M	1.222M
2440MHz	Pass	Inf	1.335M	1.228M
2480MHz	Pass	Inf	1.338M	1.227M
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	Inf	1.309M	1.222M
2440MHz	Pass	Inf	1.313M	1.219M
2480MHz	Pass	Inf	1.31M	1.222M

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









Summary

Mode	Max-Space (Hz)	Min-Space (Hz)
BT-BR(1Mbps)	-	-
2.4-2.4835GHz	1.002M	997.5k
BT-EDR(2Mbps)	-	-
2.4-2.4835GHz	1.1655M	1.0005M
BT-EDR(3Mbps)	-	-
2.4-2.4835GHz	1.002M	1.0005M

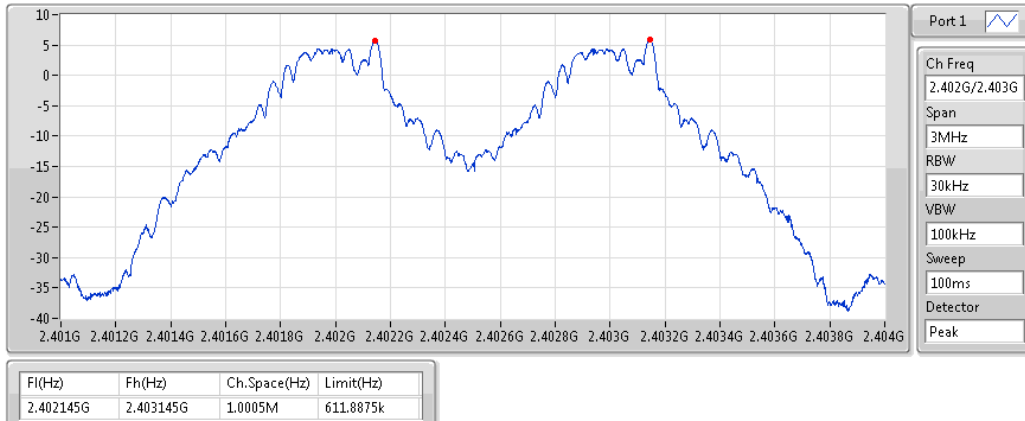
Result

Mode	Result	Fl (Hz)	Fh (Hz)	Ch.Space (Hz)	Limit (Hz)
BT-BR(1Mbps)	-	-	-	-	-
2402MHz	Pass	2.402145G	2.403145G	1.0005M	611.8875k
2440MHz	Pass	2.440146G	2.441148G	1.002M	611.8875k
2480MHz	Pass	2.479151G	2.480148G	997.5k	613.5525k
BT-EDR(2Mbps)	-	-	-	-	-
2402MHz	Pass	2.402151G	2.403151G	1.0005M	889.11k
2440MHz	Pass	2.439989G	2.441154G	1.1655M	889.11k
2480MHz	Pass	2.478995G	2.479995G	1.0005M	891.108k
BT-EDR(3Mbps)	-	-	-	-	-
2402MHz	Pass	2.402143G	2.403145G	1.002M	871.794k
2440MHz	Pass	2.440146G	2.441148G	1.002M	874.458k
2480MHz	Pass	2.479148G	2.480148G	1.0005M	872.46k

BT-BR(1Mbps)

Channel Separation

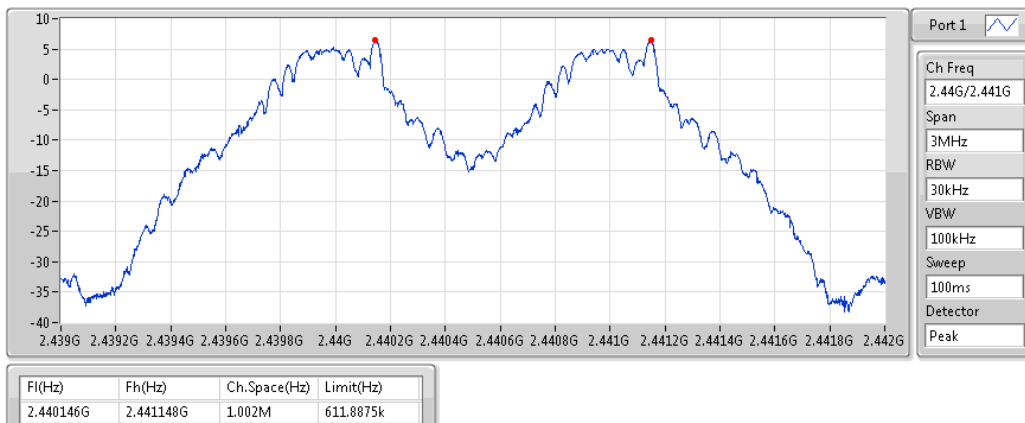
2.402G/2.403GHz



BT-BR(1Mbps)

Channel Separation

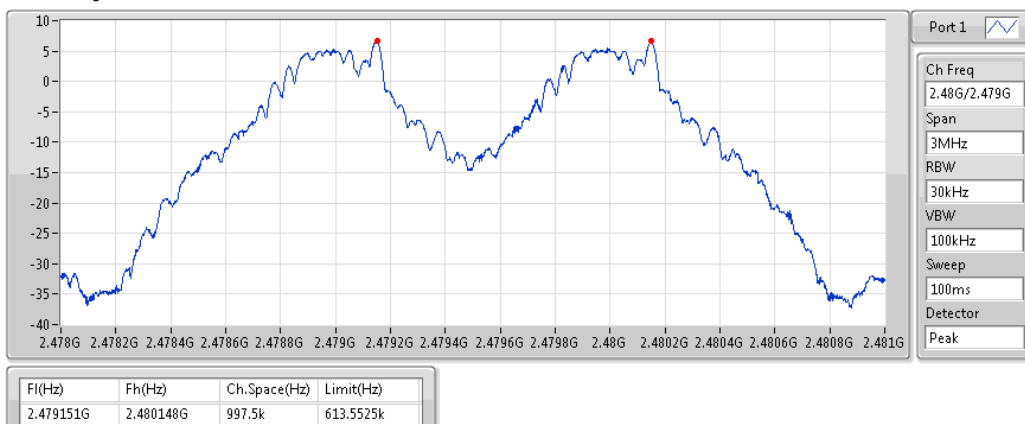
2.44G/2.441GHz



BT-BR(1Mbps)

Channel Separation

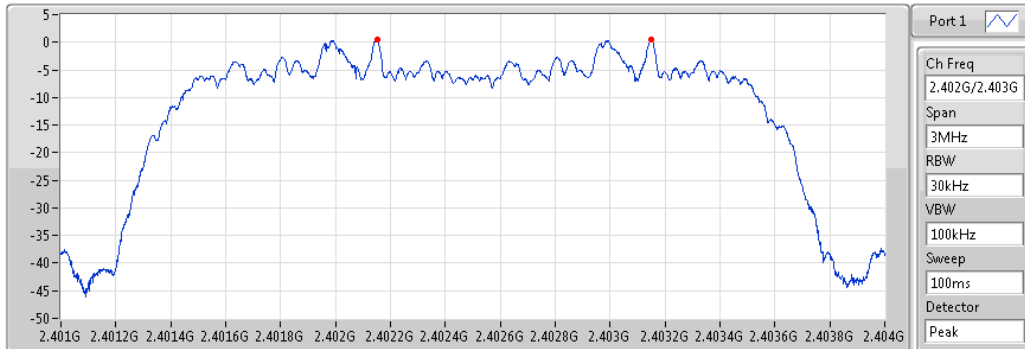
2.48G/2.479GHz



BT-EDR(2Mbps)

Channel Separation

2.402G/2.403GHz

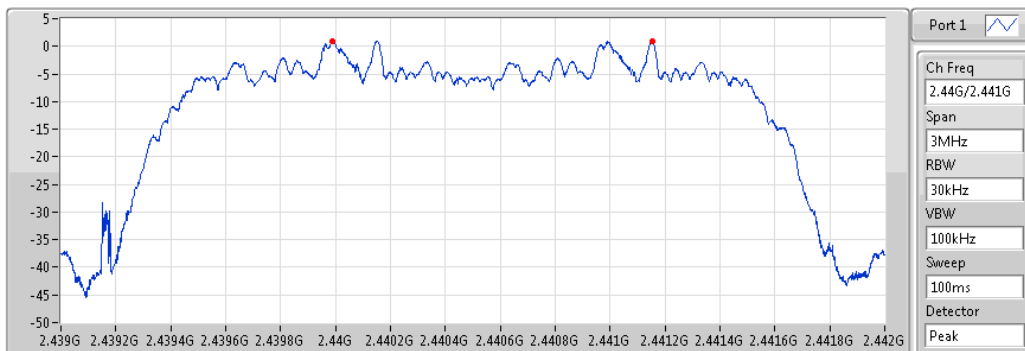


Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402151G	2.403151G	1.0005M	889.11k

BT-EDR(2Mbps)

Channel Separation

2.44G/2.441GHz

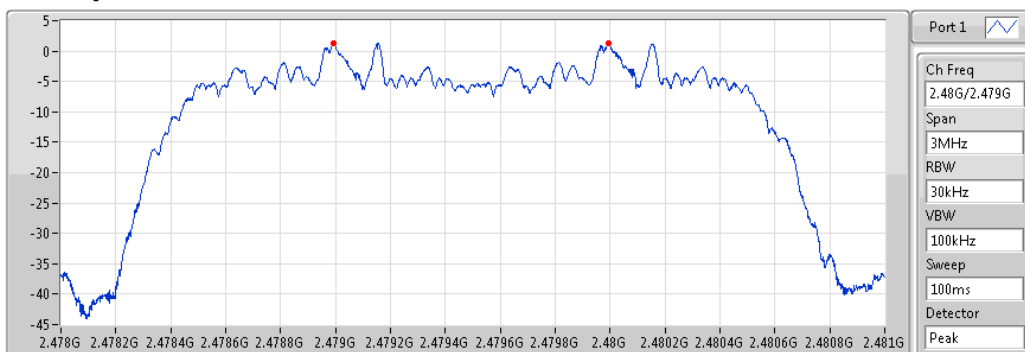


Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.439989G	2.441154G	1.1655M	889.11k

BT-EDR(2Mbps)

Channel Separation

2.48G/2.479GHz

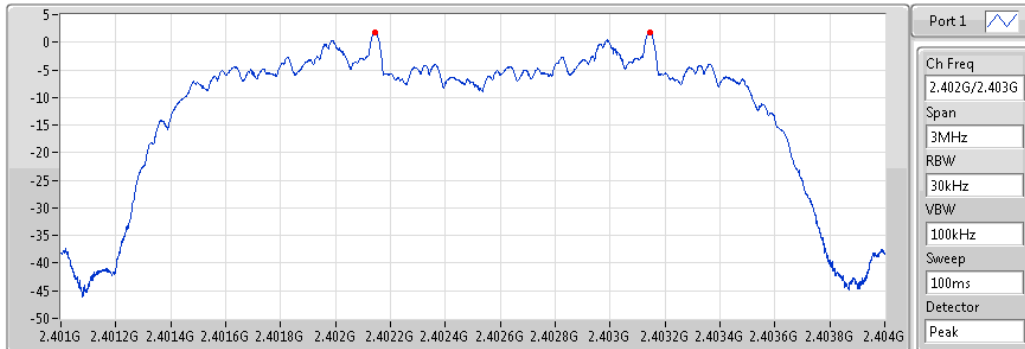


Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.478995G	2.479995G	1.0005M	891.108k

BT-EDR(3Mbps)

Channel Separation

2.402G/2.403GHz

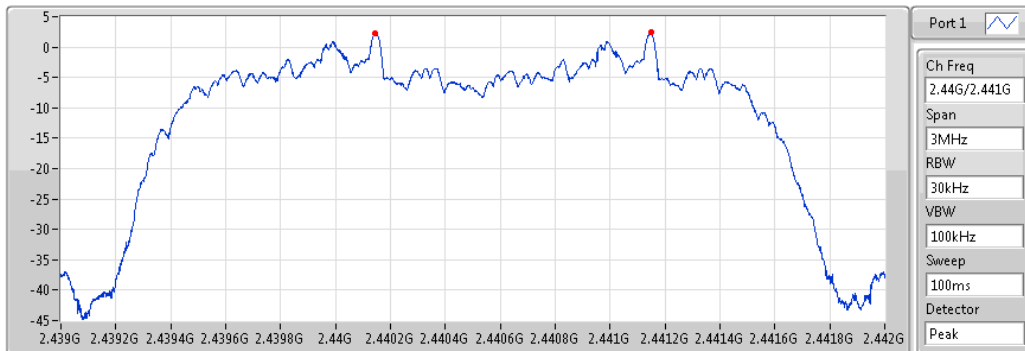


Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.402143G	2.403145G	1.002M	871.794k

BT-EDR(3Mbps)

Channel Separation

2.44G/2.441GHz

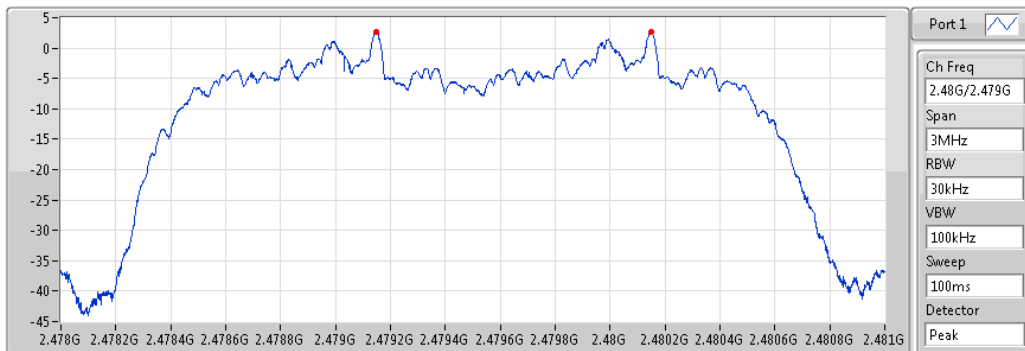


Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.440146G	2.441148G	1.002M	874.458k

BT-EDR(3Mbps)

Channel Separation

2.48G/2.479GHz



Ff(Hz)	Fh(Hz)	Ch.Space(Hz)	Limit(Hz)
2.479148G	2.480148G	1.0005M	872.46k



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	10.98	0.01253
BT-EDR(2Mbps)	6.39	0.00436
BT-EDR(3Mbps)	6.40	0.00437

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.11	10.02	30.00
2440MHz	Pass	1.11	10.66	30.00
2480MHz	Pass	1.11	10.98	30.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.11	6.00	30.00
2440MHz	Pass	1.11	6.39	30.00
2480MHz	Pass	1.11	6.34	30.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.11	5.71	30.00
2440MHz	Pass	1.11	6.40	30.00
2480MHz	Pass	1.11	6.40	30.00

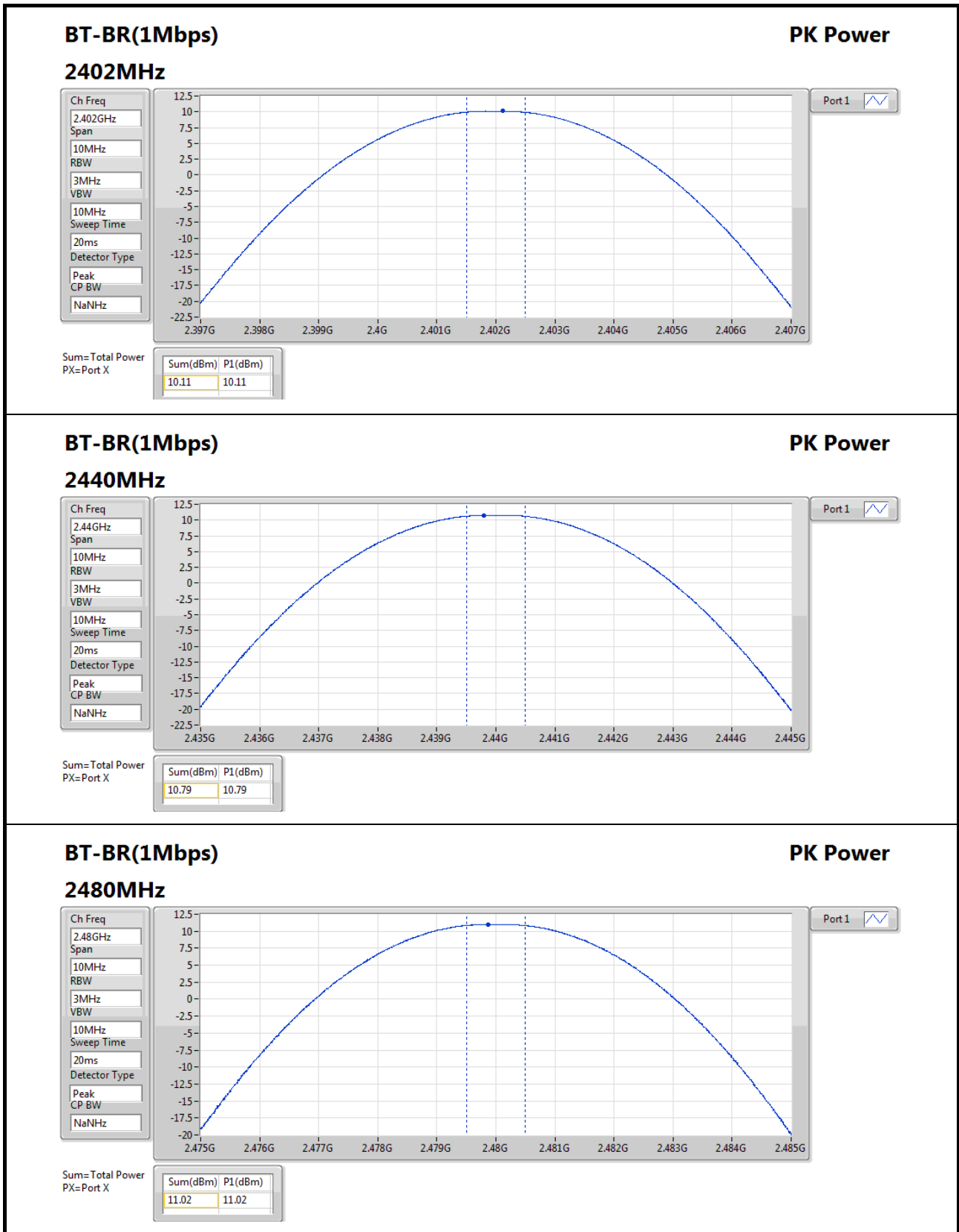


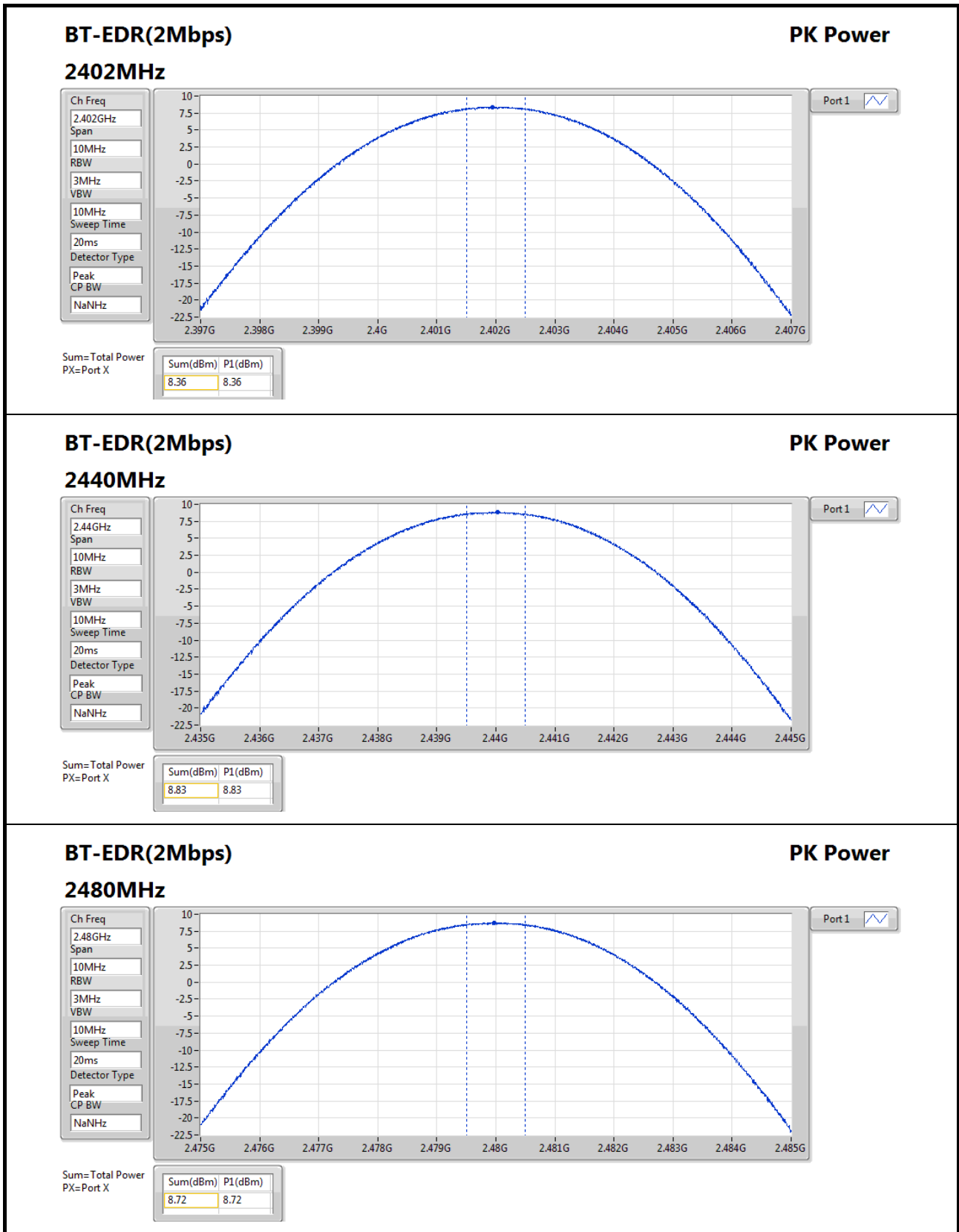
Summary

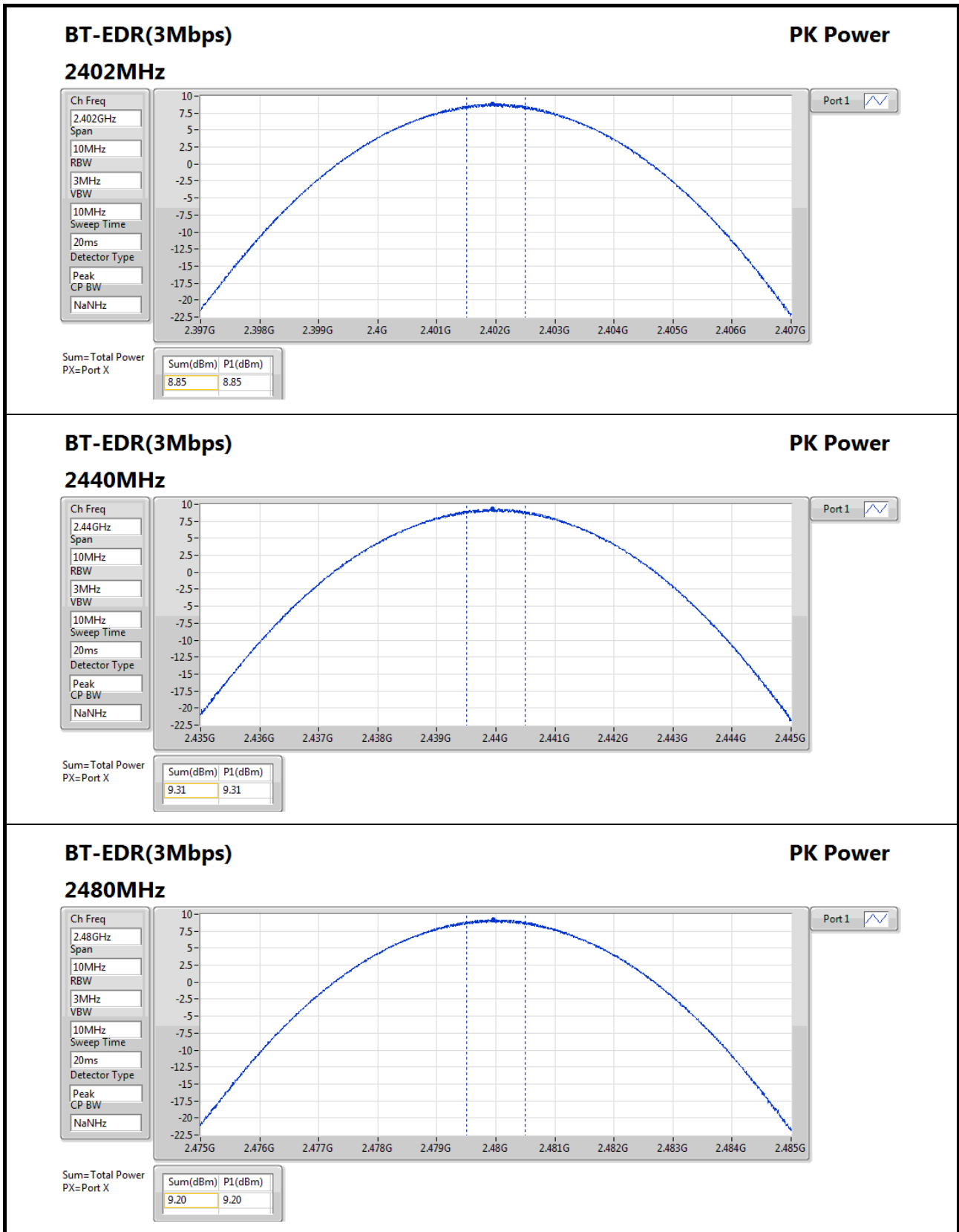
Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-BR(1Mbps)	11.02	0.01265
BT-EDR(2Mbps)	8.83	0.00764
BT-EDR(3Mbps)	9.31	0.00853

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-BR(1Mbps)	-	-	-	-
2402MHz	Pass	1.11	10.11	21.00
2440MHz	Pass	1.11	10.79	21.00
2480MHz	Pass	1.11	11.02	21.00
BT-EDR(2Mbps)	-	-	-	-
2402MHz	Pass	1.11	8.36	21.00
2440MHz	Pass	1.11	8.83	21.00
2480MHz	Pass	1.11	8.72	21.00
BT-EDR(3Mbps)	-	-	-	-
2402MHz	Pass	1.11	8.85	21.00
2440MHz	Pass	1.11	9.31	21.00
2480MHz	Pass	1.11	9.20	21.00







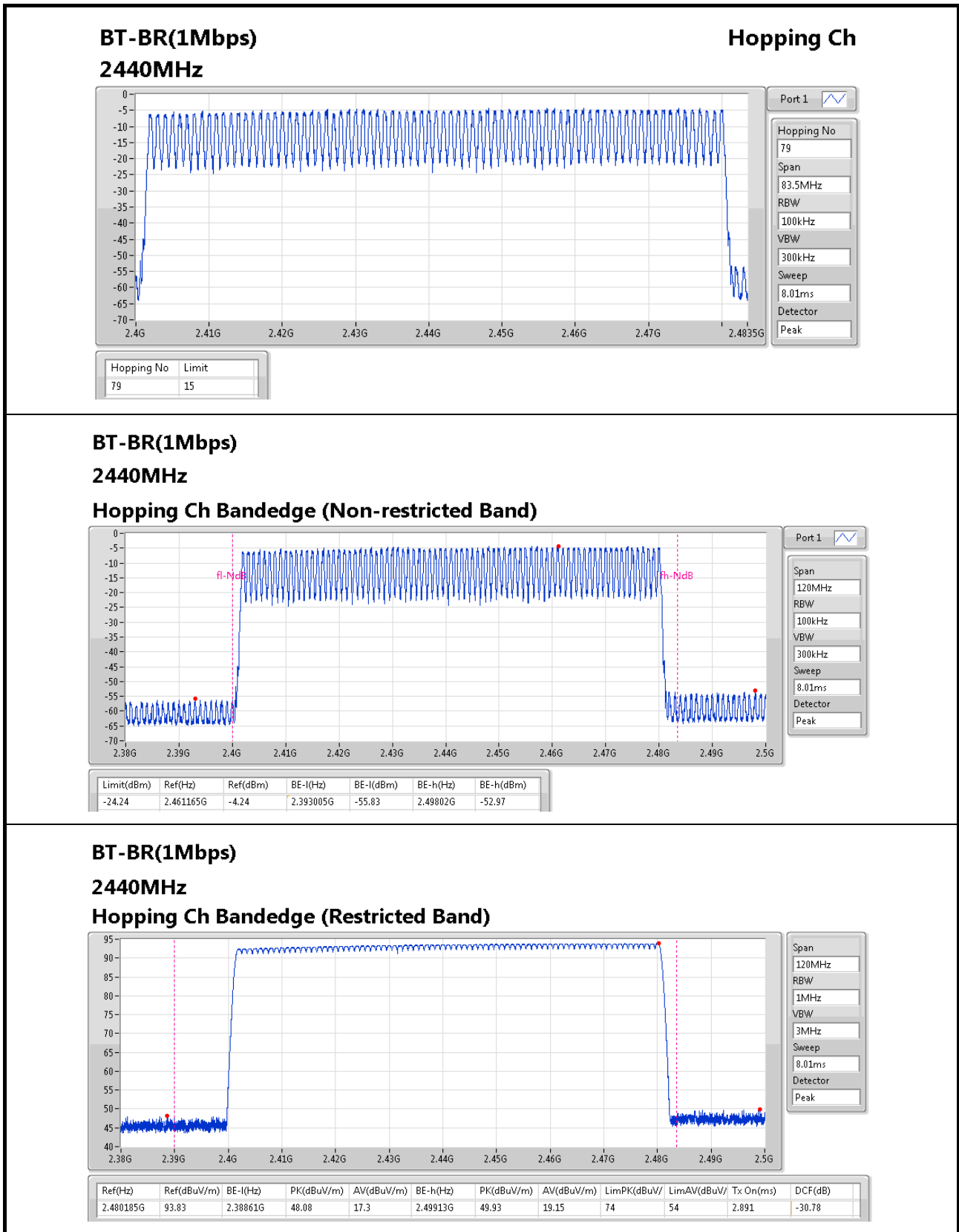


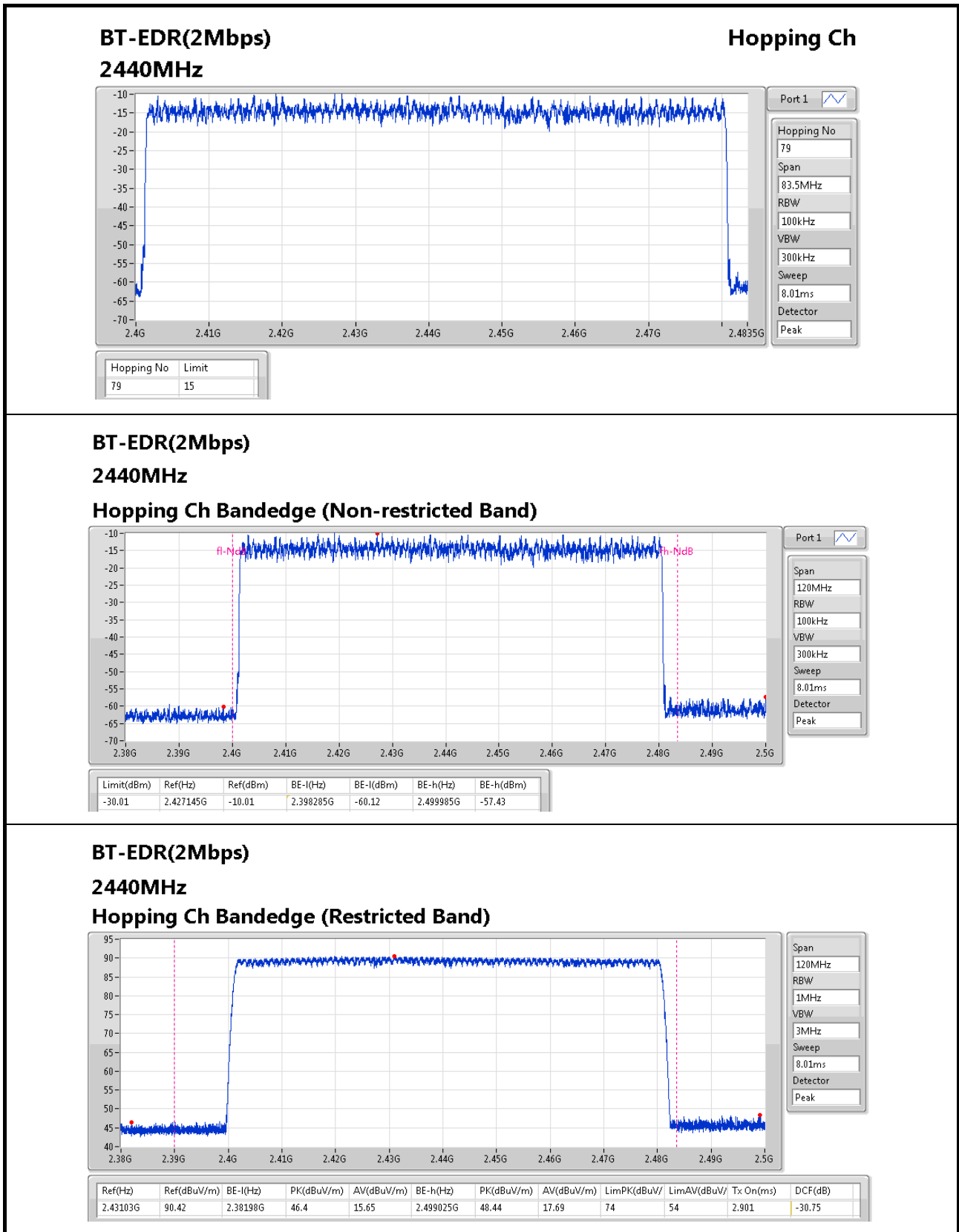
Summary

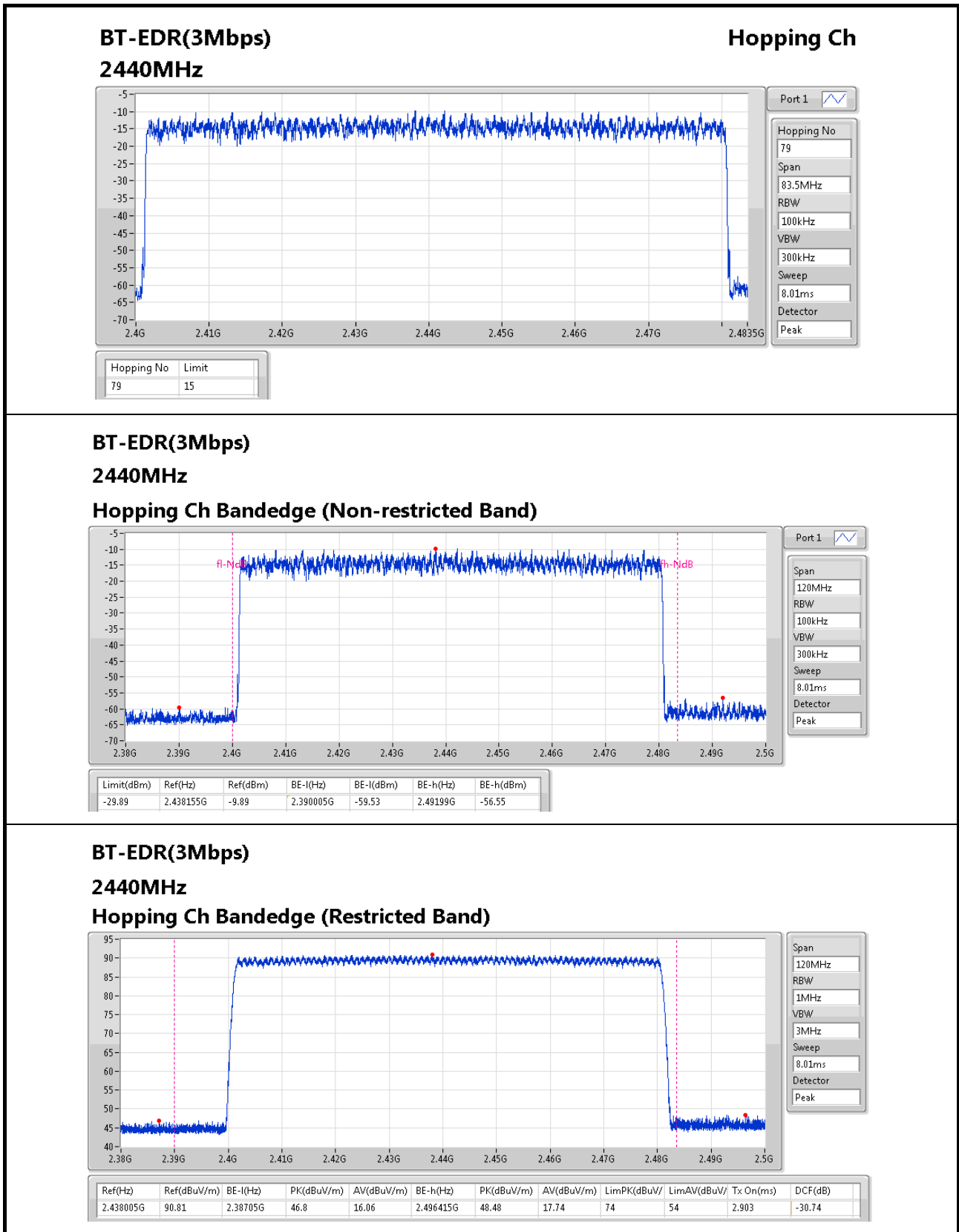
Mode	Max-Hop No
BT-BR(1Mbps)	-
2.4-2.4835GHz	79
BT-EDR(2Mbps)	-
2.4-2.4835GHz	79
BT-EDR(3Mbps)	-
2.4-2.4835GHz	79

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







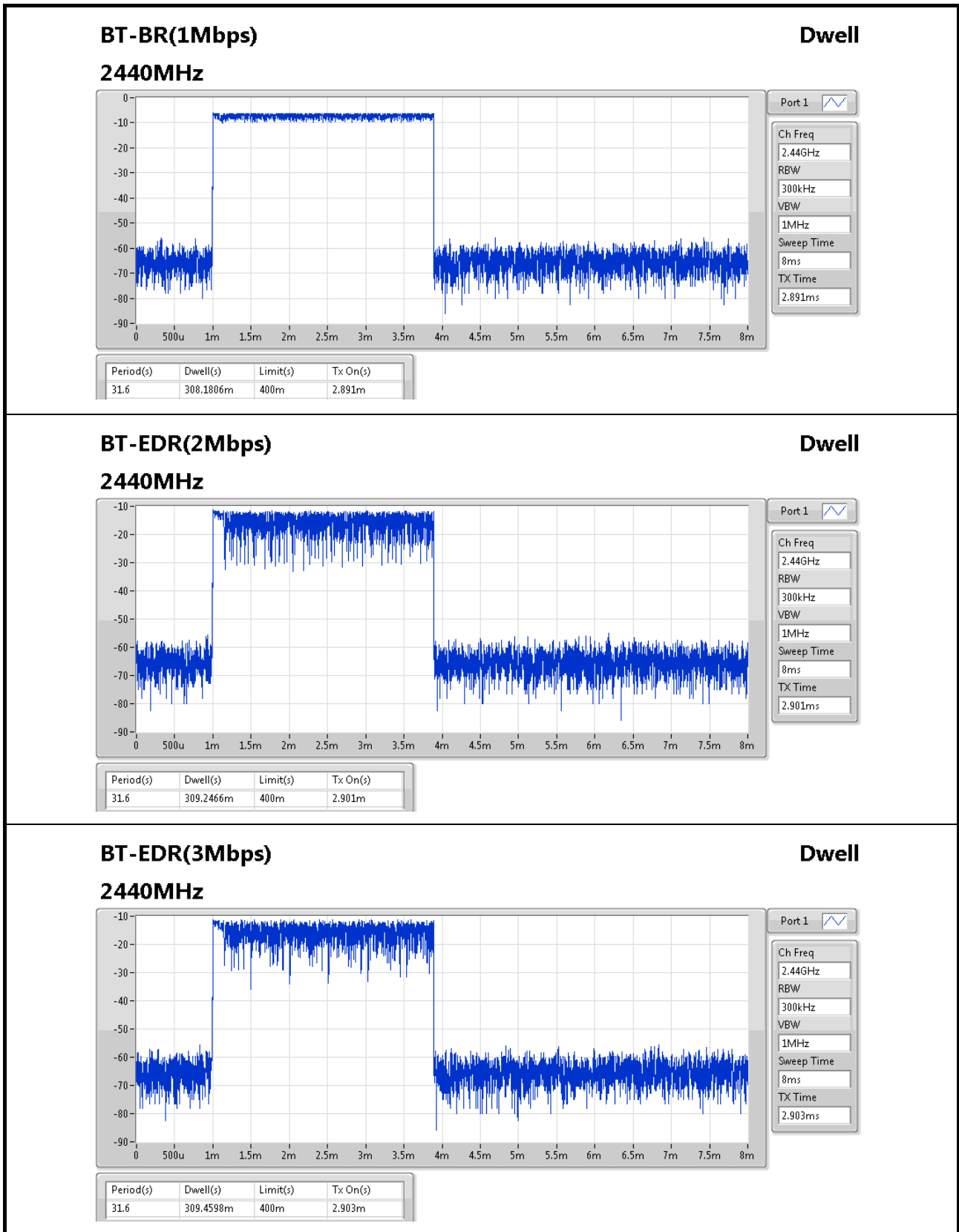


Summary

Mode	Max-Dwell (s)
BT-BR(1Mbps)	-
2.4-2.4835GHz	308.1806m
BT-EDR(2Mbps)	-
2.4-2.4835GHz	309.2466m
BT-EDR(3Mbps)	-
2.4-2.4835GHz	309.4598m

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	309.2466m	400m	2.901m
BT-EDR(3Mbps)	-	-	-	-	-
2440MHz	Pass	31.6	309.4598m	400m	2.903m



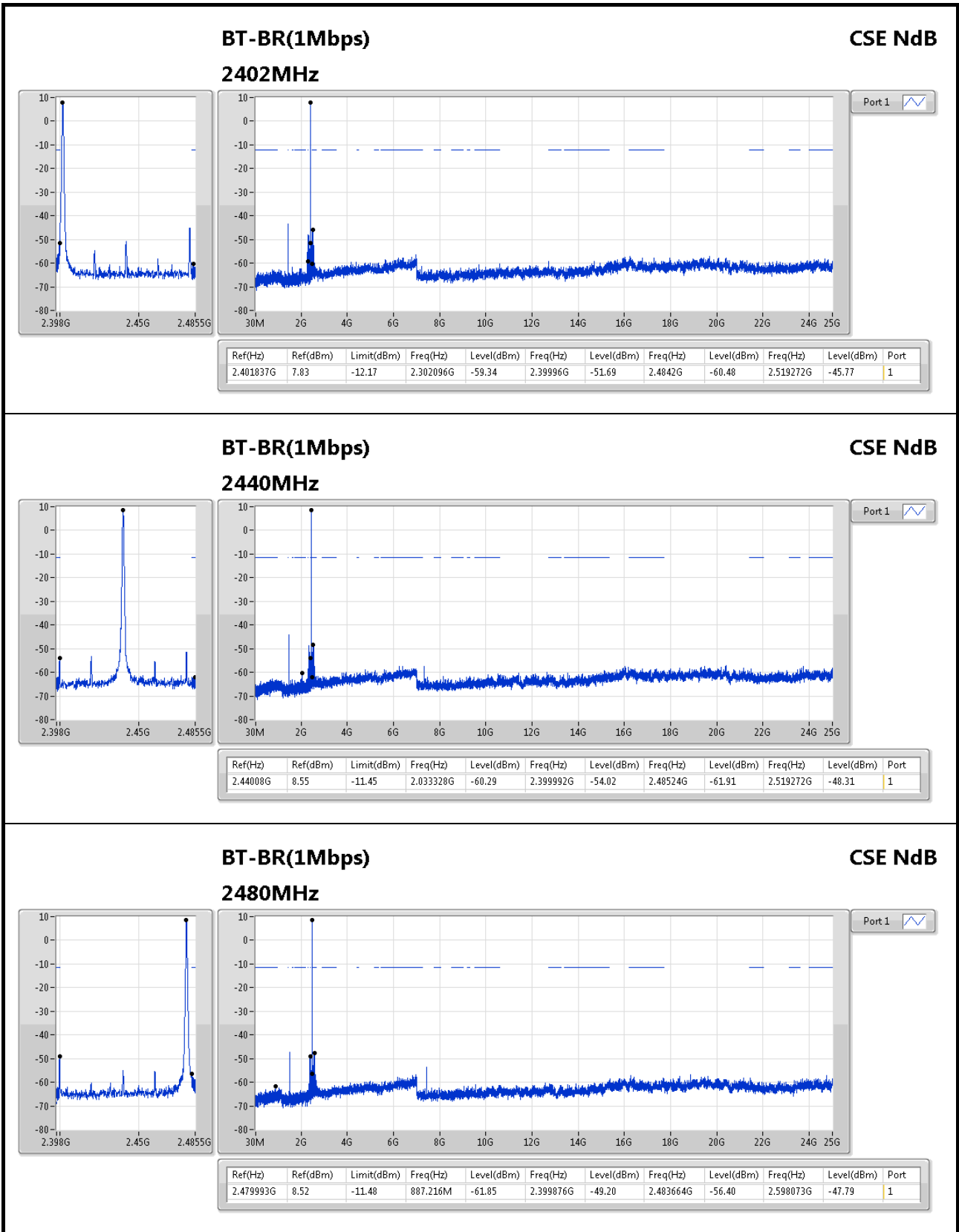


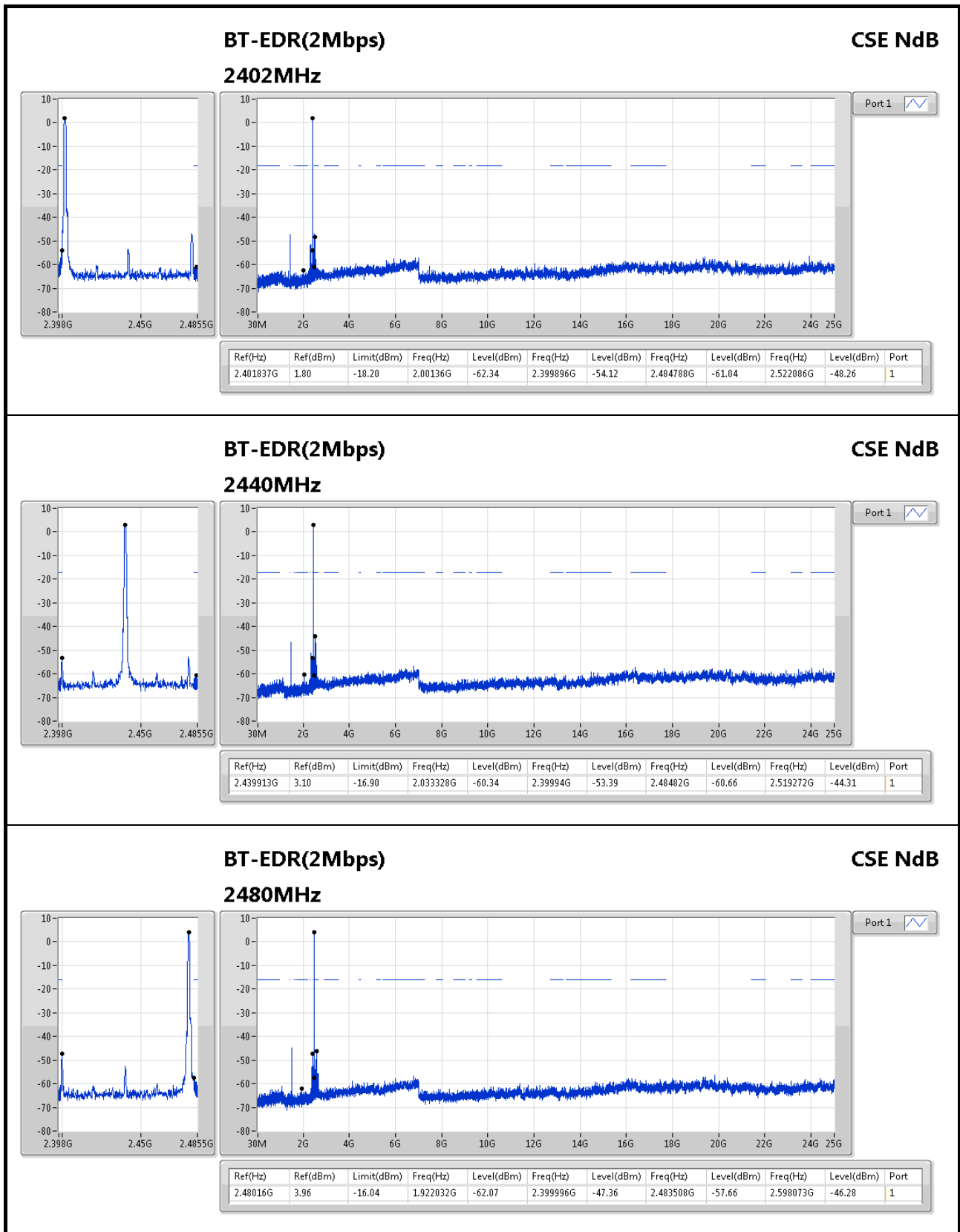
Summary

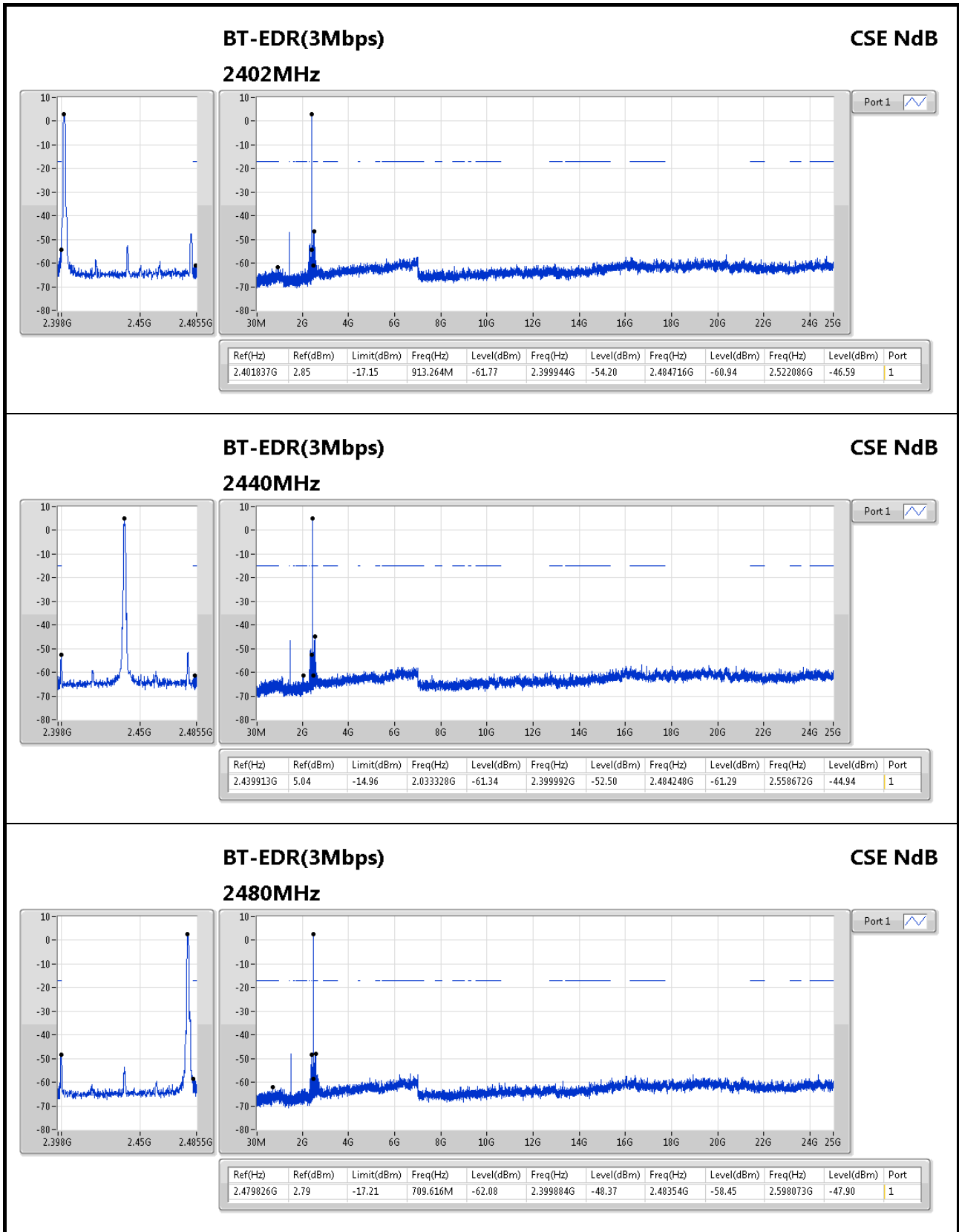
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	2.439913G	3.10	-16.90	2.033328G	-60.34	2.39994G	-53.39	2.48482G	-60.66	2.519272G	-44.31	1

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	2.401837G	7.83	-12.17	2.302096G	-59.34	2.39996G	-51.69	2.4842G	-60.48	2.519272G	-45.77	1
2440MHz	Pass	2.44008G	8.55	-11.45	2.033328G	-60.29	2.399992G	-54.02	2.48524G	-61.91	2.519272G	-48.31	1
2480MHz	Pass	2.479993G	8.52	-11.48	887.216M	-61.85	2.399876G	-49.20	2.483664G	-56.40	2.598073G	-47.79	1
BT-EDR(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.401837G	1.80	-18.20	2.00136G	-62.34	2.399896G	-54.12	2.484788G	-61.04	2.522086G	-48.26	1
2440MHz	Pass	2.439913G	3.10	-16.90	2.033328G	-60.34	2.39994G	-53.39	2.48482G	-60.66	2.519272G	-44.31	1
2480MHz	Pass	2.48016G	3.96	-16.04	1.922032G	-62.07	2.399996G	-47.36	2.483508G	-57.66	2.598073G	-46.28	1
BT-EDR(3Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.401837G	2.85	-17.15	913.264M	-61.77	2.399944G	-54.20	2.484716G	-60.94	2.522086G	-46.59	1
2440MHz	Pass	2.439913G	5.04	-14.96	2.033328G	-61.34	2.399992G	-52.50	2.484248G	-61.29	2.558672G	-44.94	1
2480MHz	Pass	2.479826G	2.79	-17.21	709.616M	-62.08	2.399884G	-48.37	2.48354G	-58.45	2.598073G	-47.90	1

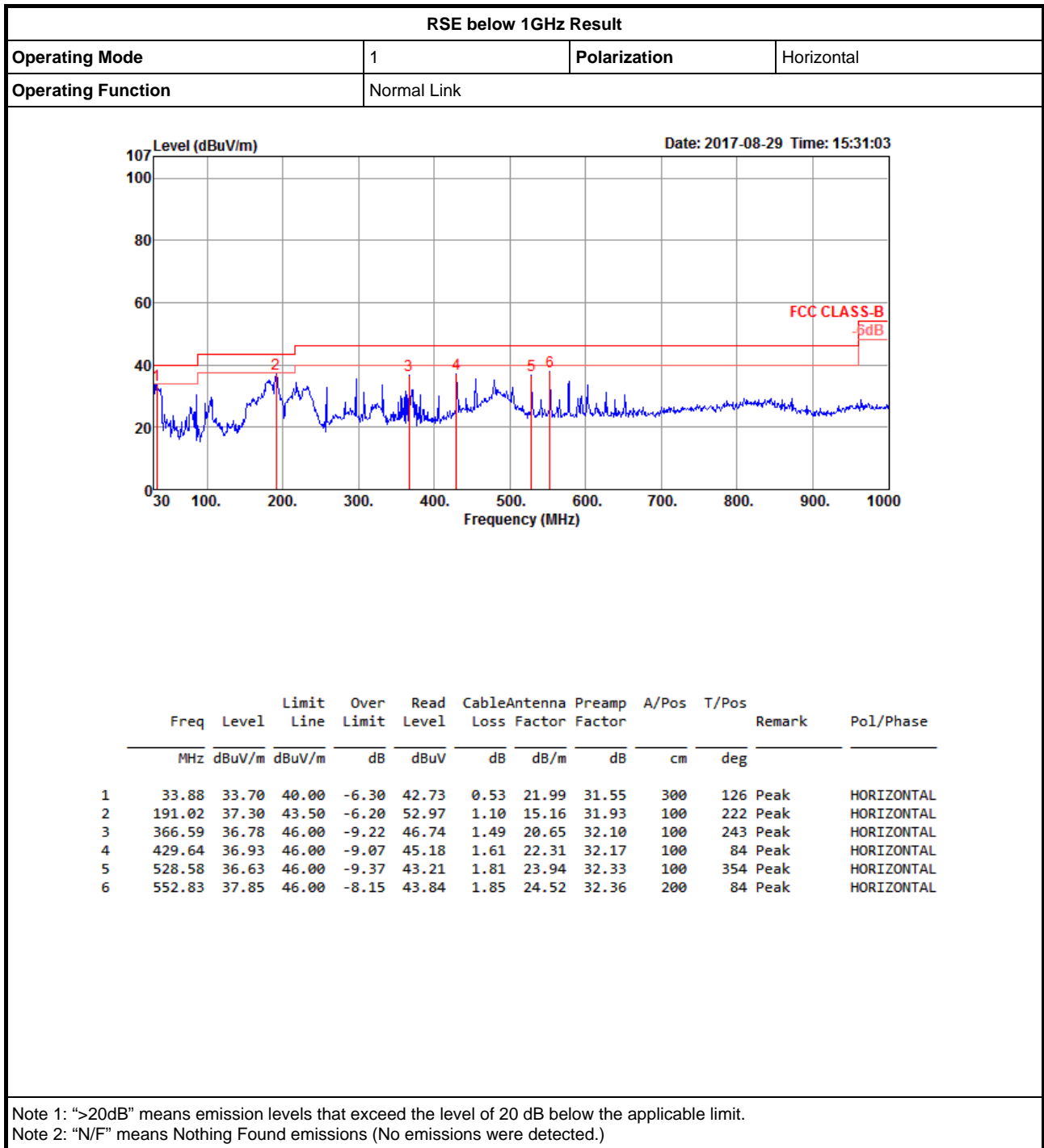






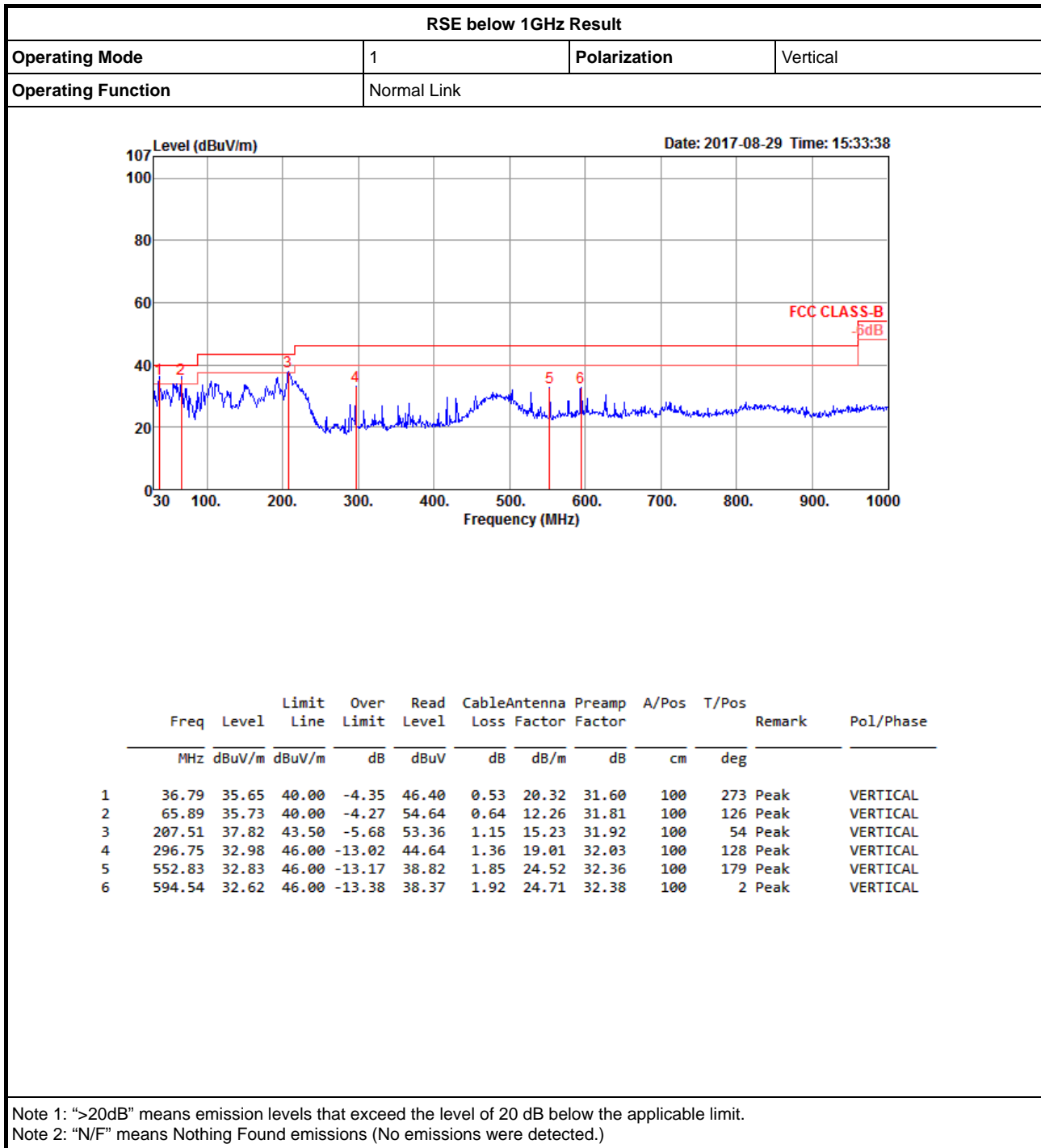


RSE below 1GHz Result





RSE below 1GHz Result



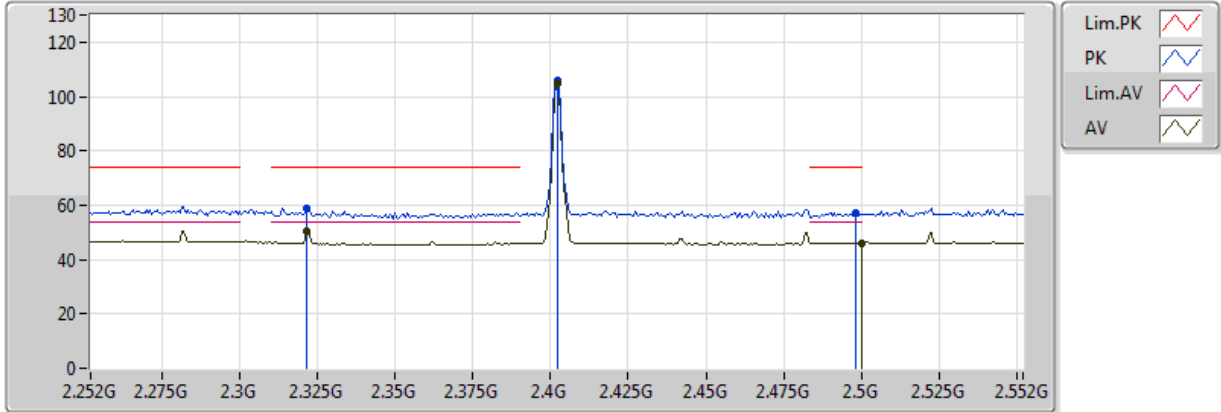


Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
BT-BR(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	AV	2.4836G	52.10	54.00	-1.90	33.19	3	H	204	1.05	-

BT-BR(1Mbps)

2402MHz_TX

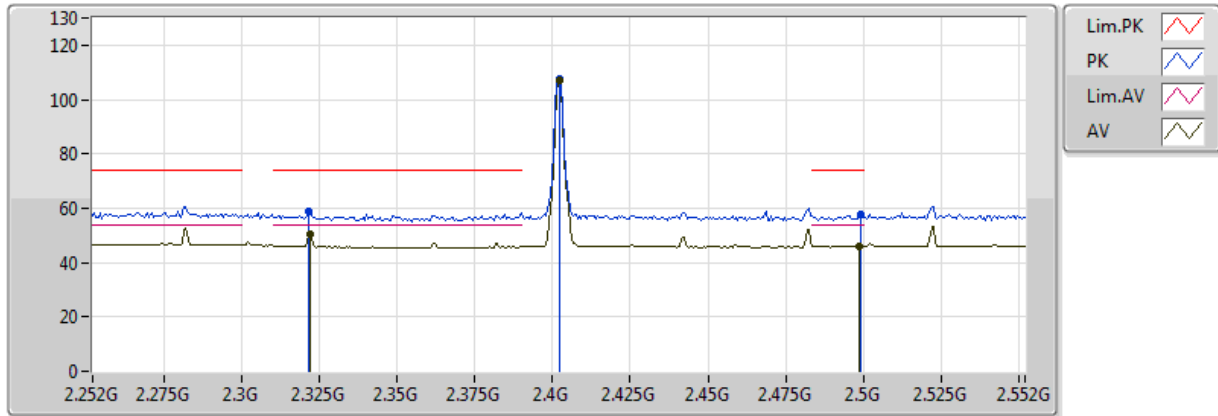


20170825
 EUT Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3216G	50.52	54.00	-3.48	33.18	3	V	266	1.50	-
AV	2.402G	104.76	Inf	-Inf	33.14	3	V	266	1.50	-
AV	2.499998G	46.09	54.00	-7.91	33.20	3	V	266	1.50	-
PK	2.3216G	58.67	74.00	-15.33	33.18	3	V	266	1.50	-
PK	2.402G	105.65	Inf	-Inf	33.14	3	V	266	1.50	-
PK	2.498G	57.20	74.00	-16.80	33.20	3	V	266	1.50	-

BT-BR(1Mbps)

2402MHz_TX

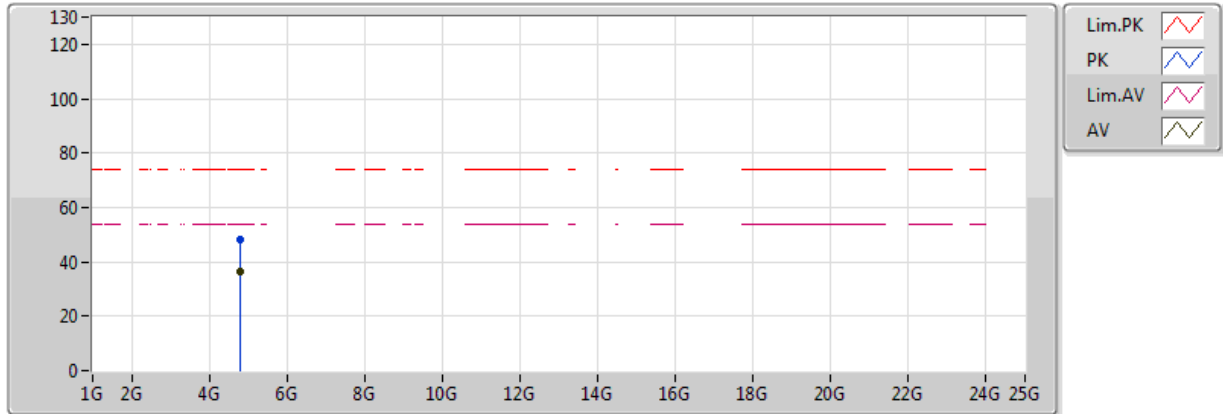


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3222G	50.28	54.00	-3.72	33.18	3	H	203	1.23	-
AV	2.402G	106.85	Inf	-Inf	33.14	3	H	203	1.23	-
AV	2.4986G	46.09	54.00	-7.91	33.20	3	H	203	1.23	-
PK	2.3216G	58.97	74.00	-15.03	33.18	3	H	203	1.23	-
PK	2.402G	107.72	Inf	-Inf	33.14	3	H	203	1.23	-
PK	2.4992G	57.77	74.00	-16.23	33.20	3	H	203	1.23	-

BT-BR(1Mbps)

2402MHz_TX

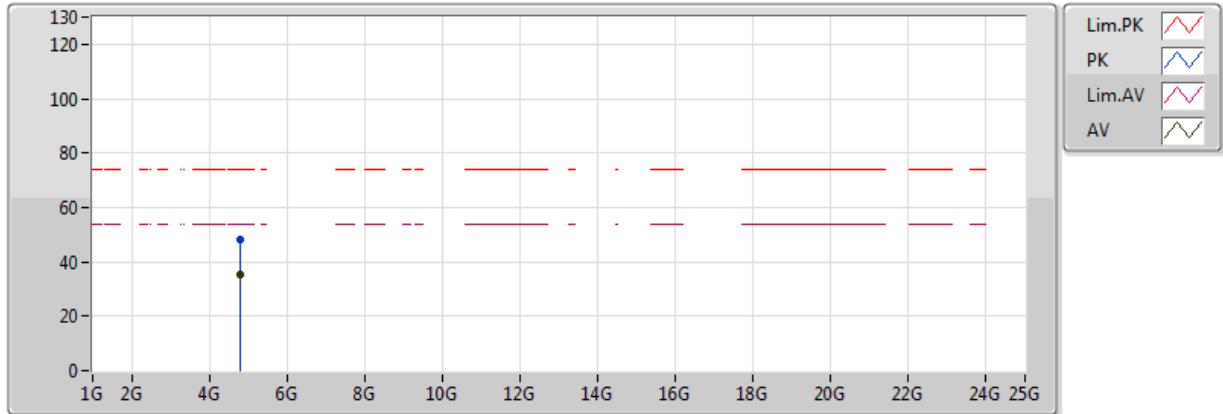


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.804G	36.34	54.00	-17.66	4.12	3	V	191	1.54	-
PK	4.80436G	48.32	74.00	-25.68	4.12	3	V	191	1.54	-

BT-BR(1Mbps)

2402MHz_TX

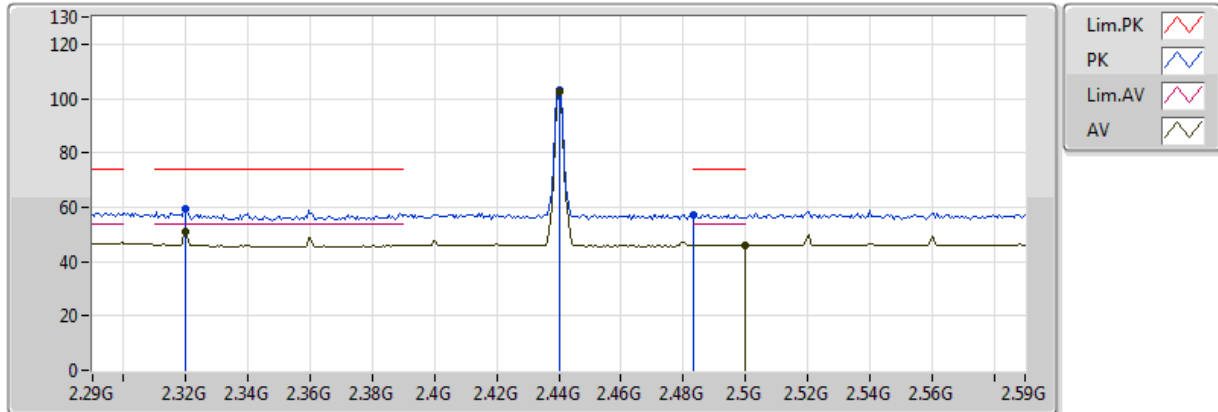


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.8042G	35.25	54.00	-18.75	4.12	3	H	204	2.44	-
PK	4.80364G	48.05	74.00	-25.95	4.12	3	H	204	2.44	-

BT-BR(1Mbps)

2440MHz_TX

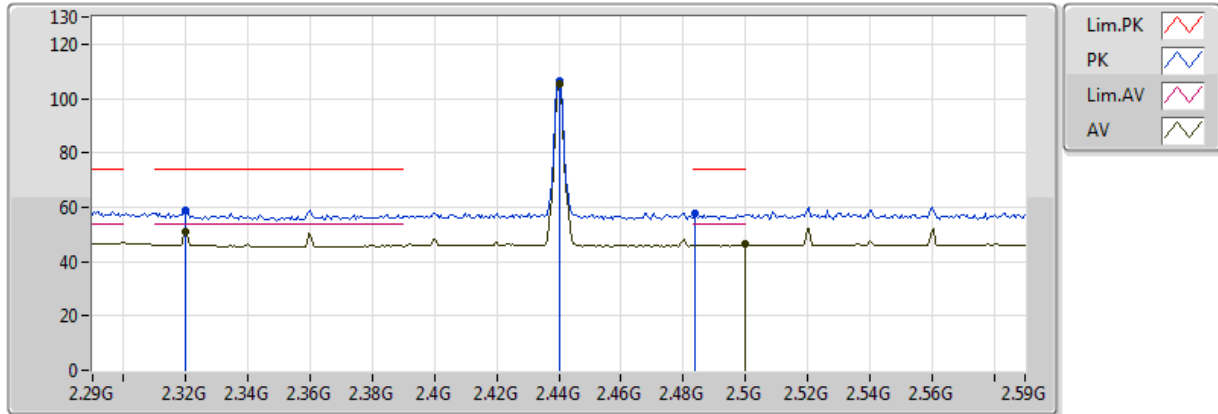


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.32G	51.21	54.00	-2.79	33.18	3	V	260	1.50	-
AV	2.44G	102.33	Inf	-Inf	33.16	3	V	260	1.50	-
AV	2.5G	46.00	54.00	-8.00	33.20	3	V	260	1.50	-
PK	2.32G	59.44	74.00	-14.56	33.18	3	V	260	1.50	-
PK	2.44G	103.21	Inf	-Inf	33.16	3	V	260	1.50	-
PK	2.483502G	57.43	74.00	-16.57	33.19	3	V	260	1.50	-

BT-BR(1Mbps)

2440MHz_TX

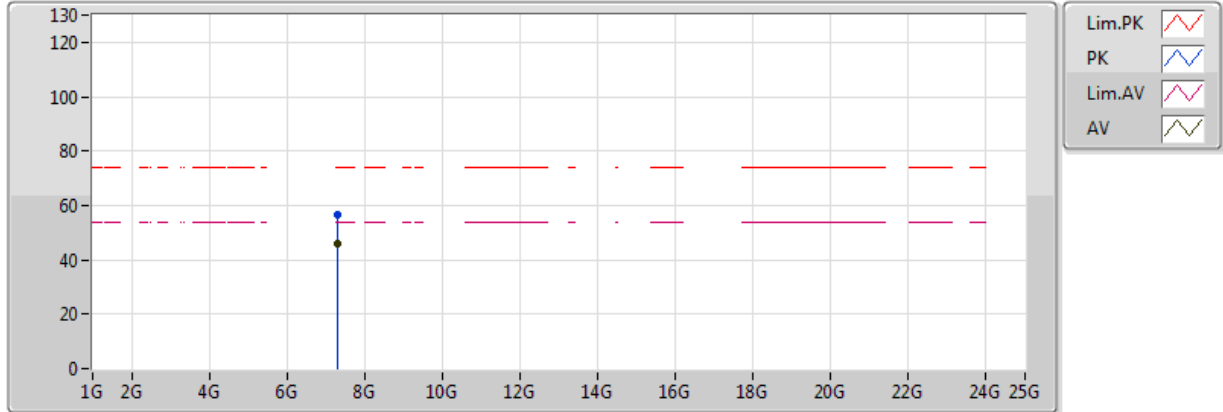


20170825
EUT_Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.32G	51.01	54.00	-2.99	33.18	3	H	216	1.50	-
AV	2.44G	105.59	Inf	-Inf	33.16	3	H	216	1.50	-
AV	2.5G	46.32	54.00	-7.68	33.20	3	H	216	1.50	-
PK	2.32G	59.04	74.00	-14.96	33.18	3	H	216	1.50	-
PK	2.44G	106.47	Inf	-Inf	33.16	3	H	216	1.50	-
PK	2.4838G	57.55	74.00	-16.45	33.19	3	H	216	1.50	-

BT-BR(1Mbps)

2440MHz_TX

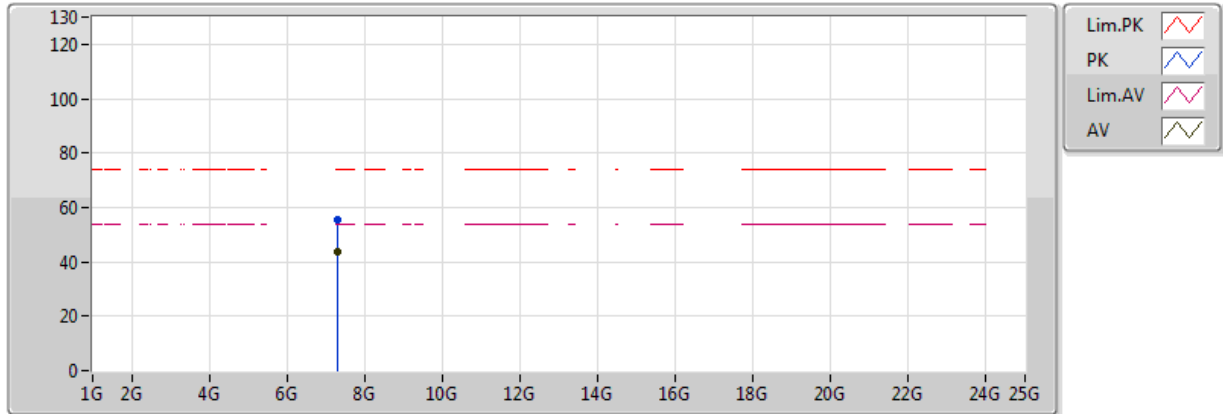


20170825
EUT_Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.32002G	46.02	54.00	-7.98	11.34	3	V	91	1.93	-
PK	7.31938G	56.33	74.00	-17.67	11.34	3	V	91	1.93	-

BT-BR(1Mbps)

2440MHz_TX

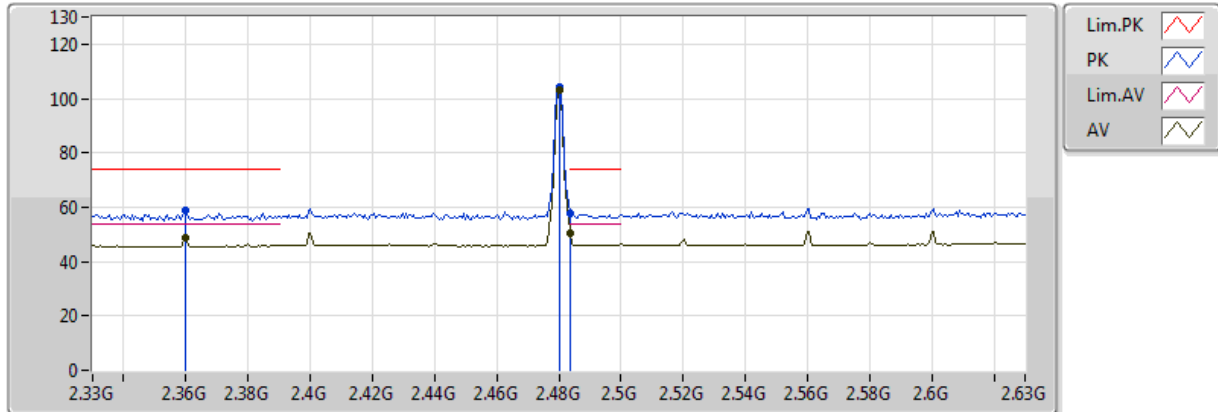


20170825
EUT_Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.32G	43.54	54.00	-10.46	11.34	3	H	210	1.40	-
PK	7.31968G	55.48	74.00	-18.52	11.34	3	H	210	1.40	-

BT-BR(1Mbps)

2480MHz_TX

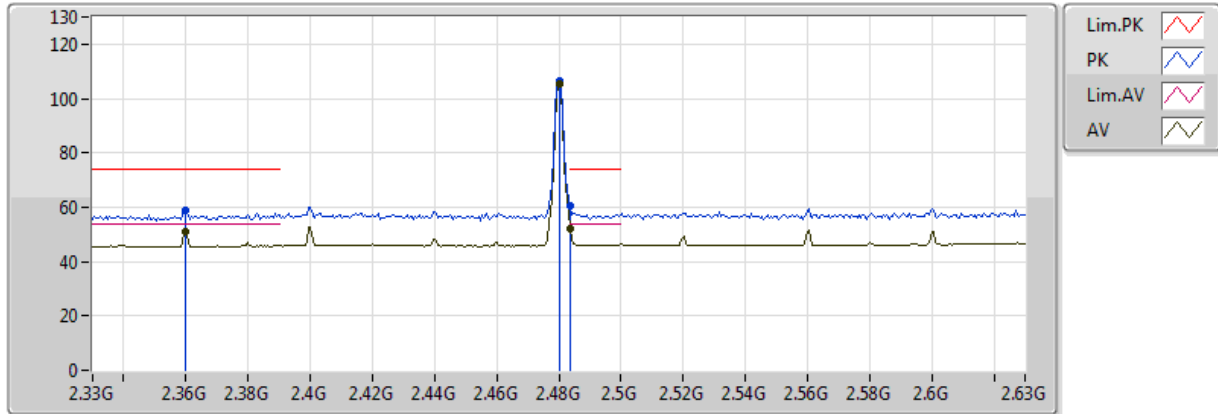


20170825
 EUT Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.36G	48.48	54.00	-5.52	33.16	3	V	282	2.79	-
AV	2.48G	103.17	Inf	-Inf	33.19	3	V	282	2.79	-
AV	2.4836G	50.26	54.00	-3.74	33.19	3	V	282	2.79	-
PK	2.36G	58.63	74.00	-15.37	33.16	3	V	282	2.79	-
PK	2.48G	104.06	Inf	-Inf	33.19	3	V	282	2.79	-
PK	2.4836G	57.57	74.00	-16.43	33.19	3	V	282	2.79	-

BT-BR(1Mbps)

2480MHz_TX

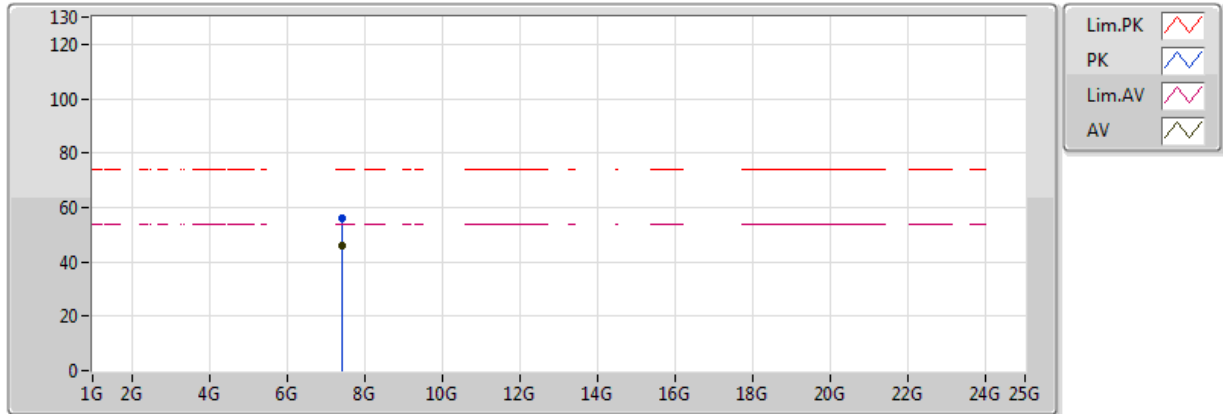


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.36G	51.26	54.00	-2.74	33.16	3	H	204	1.05	-
AV	2.48G	105.42	Inf	-Inf	33.19	3	H	204	1.05	-
AV	2.4836G	52.10	54.00	-1.90	33.19	3	H	204	1.05	-
PK	2.36G	58.82	74.00	-15.18	33.16	3	H	204	1.05	-
PK	2.48G	106.31	Inf	-Inf	33.19	3	H	204	1.05	-
PK	2.4836G	60.25	74.00	-13.75	33.19	3	H	204	1.05	-

BT-BR(1Mbps)

2480MHz_TX

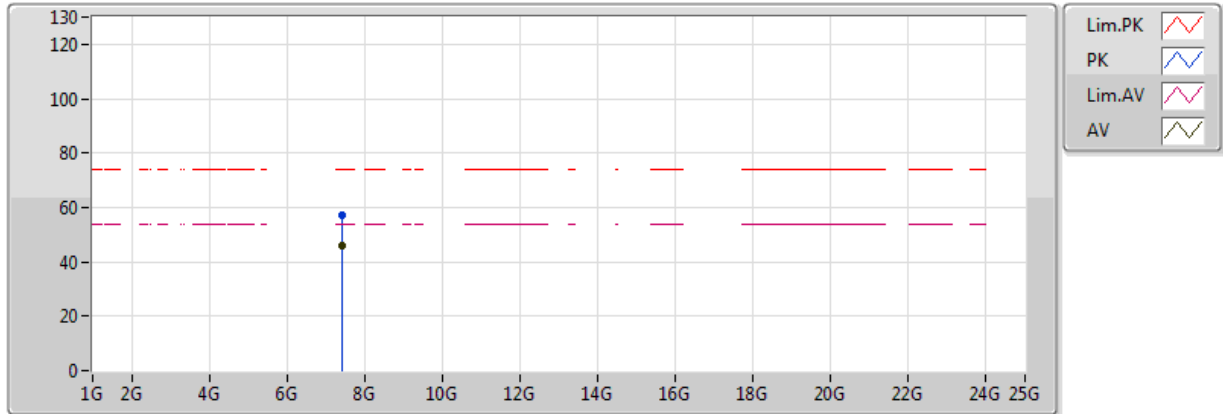


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.43984G	45.75	54.00	-8.25	11.57	3	V	94	1.97	-
PK	7.4394G	56.31	74.00	-17.69	11.57	3	V	94	1.97	-

BT-BR(1Mbps)

2480MHz_TX

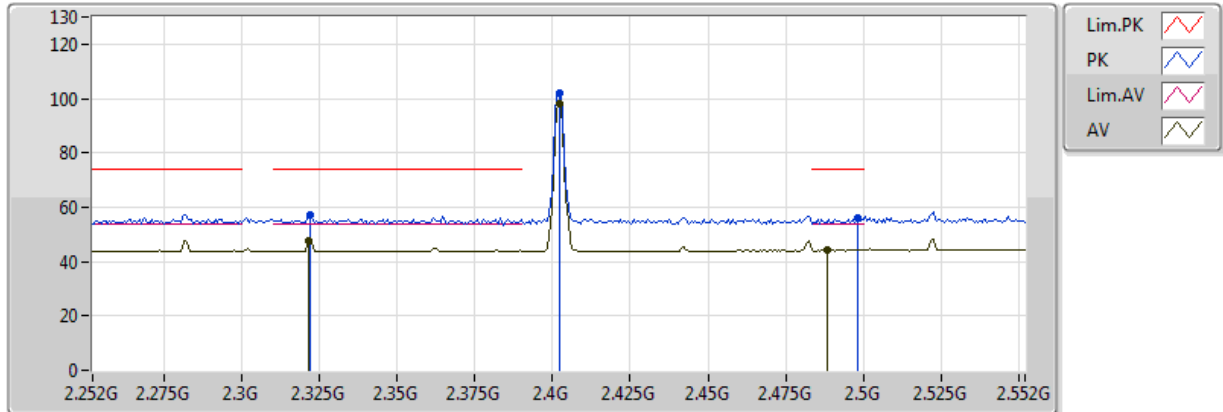


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.44008G	46.17	54.00	-7.83	11.57	3	H	124	2.20	-
PK	7.4395G	56.93	74.00	-17.07	11.57	3	H	124	2.20	-

BT-EDR(2Mbps)

2402MHz_TX

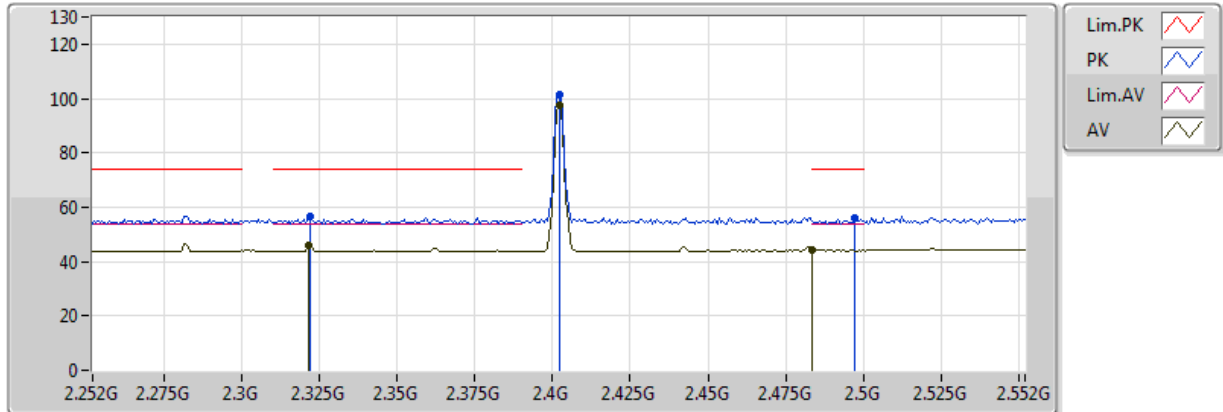


20170830
EUT_Y_1TX
Setting 10
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3216G	47.85	54.00	-6.15	31.74	3	V	269	1.45	-
AV	2.402G	97.89	Inf	-Inf	31.94	3	V	269	1.45	-
AV	2.4884G	44.25	54.00	-9.75	32.15	3	V	269	1.45	-
PK	2.3222G	57.25	74.00	-16.75	31.74	3	V	269	1.45	-
PK	2.402G	101.98	Inf	-Inf	31.94	3	V	269	1.45	-
PK	2.498G	55.79	74.00	-18.21	32.18	3	V	269	1.45	-

BT-EDR(2Mbps)

2402MHz_TX

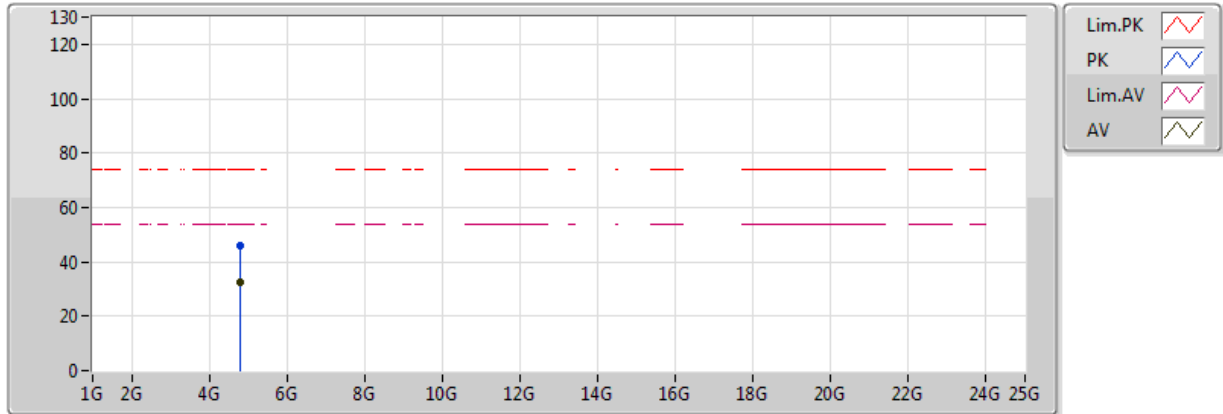


20170830
EUT_Y_1TX
Setting 10
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3216G	46.06	54.00	-7.94	31.74	3	H	39	1.99	-
AV	2.402G	97.53	Inf	-Inf	31.94	3	H	39	1.99	-
AV	2.4836G	44.16	54.00	-9.84	32.14	3	H	39	1.99	-
PK	2.3222G	56.40	74.00	-17.60	31.74	3	H	39	1.99	-
PK	2.402G	101.64	Inf	-Inf	31.94	3	H	39	1.99	-
PK	2.4974G	55.81	74.00	-18.19	32.17	3	H	39	1.99	-

BT-EDR(2Mbps)

2402MHz_TX

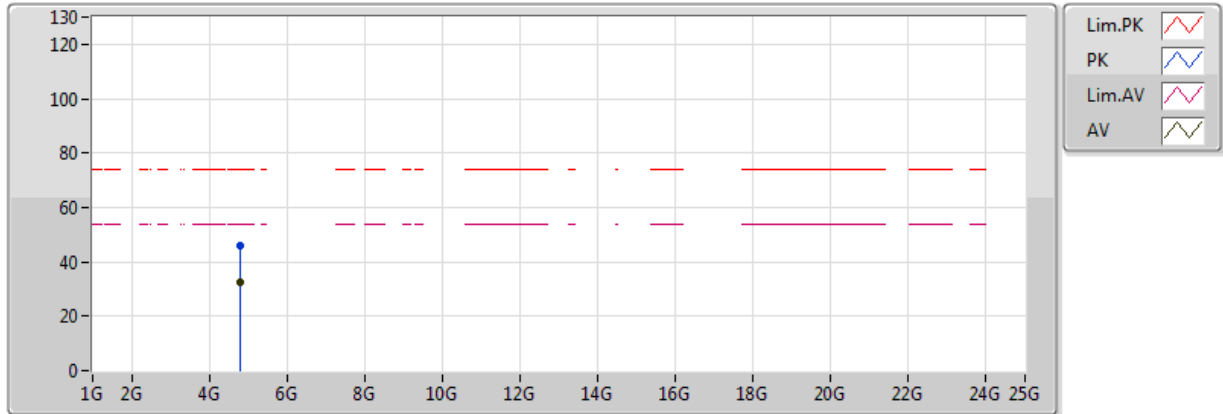


20170830
EUT_Y_1TX
Setting 10
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.80447G	32.61	54.00	-21.39	4.68	3	V	52	1.64	-
PK	4.80194G	46.03	74.00	-27.97	4.67	3	V	52	1.64	-

BT-EDR(2Mbps)

2402MHz_TX

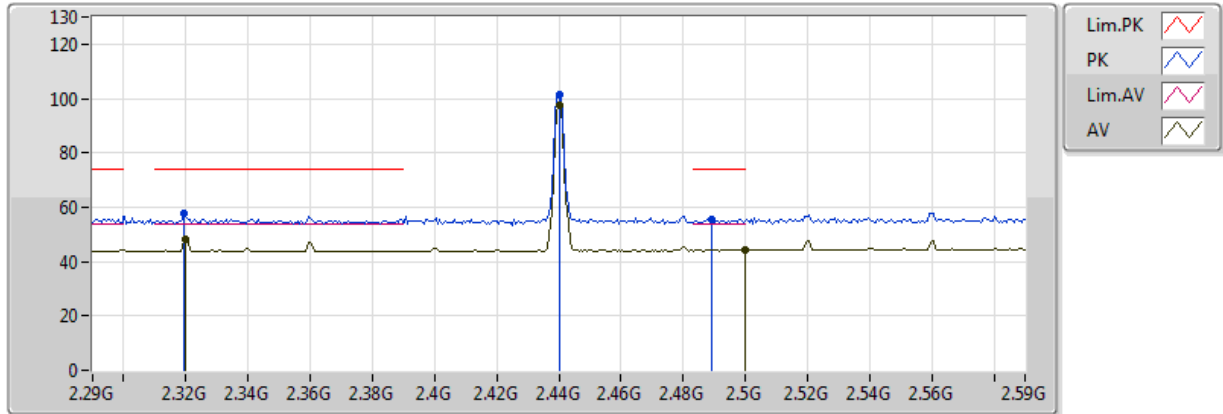


20170830
 EUT_Y_1TX
 Setting 10
 04-R-2
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.80339G	32.43	54.00	-21.57	4.68	3	H	262	1.11	-
PK	4.80423G	45.80	74.00	-28.20	4.68	3	H	262	1.11	-

BT-EDR(2Mbps)

2440MHz_TX

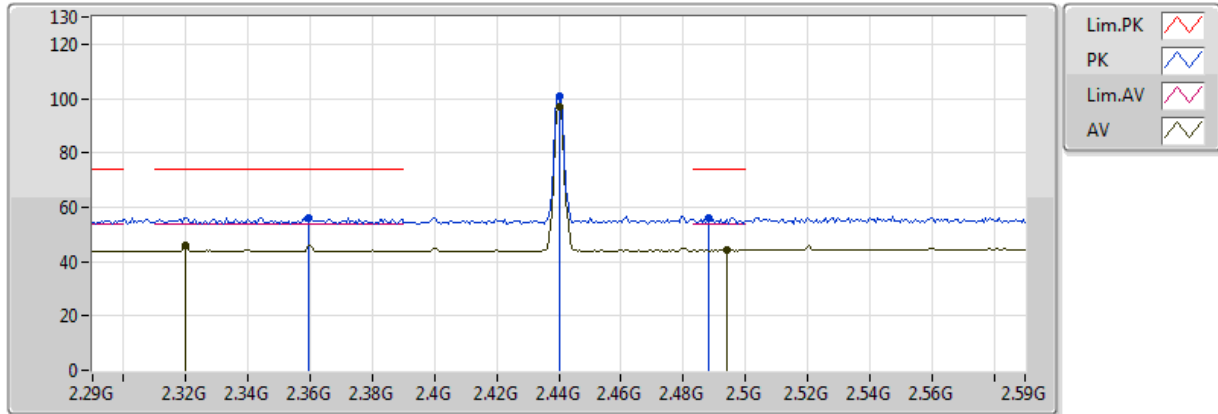


20170830
EUT_Y_1TX
Setting 10
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.32G	48.30	54.00	-5.70	31.73	3	V	261	1.31	-
AV	2.44G	97.55	Inf	-Inf	32.04	3	V	261	1.31	-
AV	2.5G	44.24	54.00	-9.76	32.18	3	V	261	1.31	-
PK	2.3194G	57.80	74.00	-16.20	31.73	3	V	261	1.31	-
PK	2.44G	101.51	Inf	-Inf	32.04	3	V	261	1.31	-
PK	2.4892G	55.68	74.00	-18.32	32.15	3	V	261	1.31	-

BT-EDR(2Mbps)

2440MHz_TX

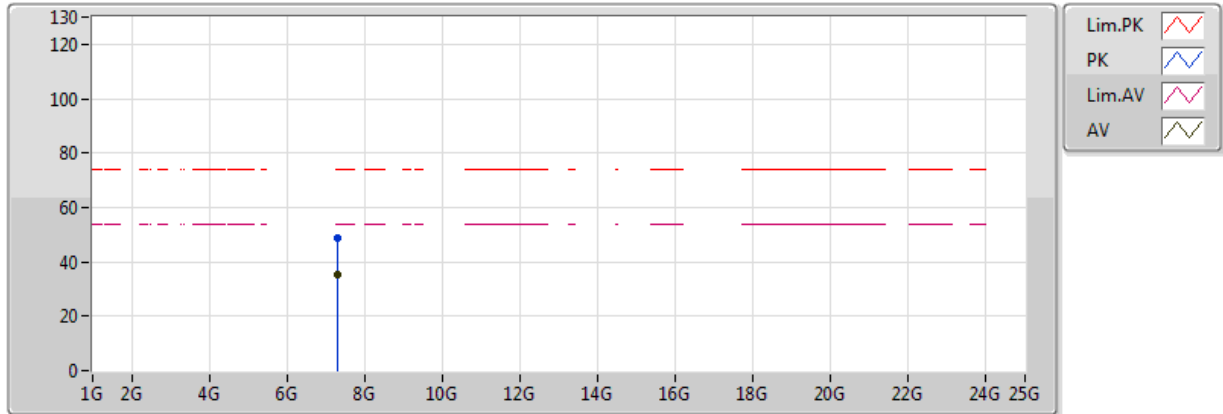


20170830
 EUT_Y_1TX
 Setting 10
 04-R-2
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.32G	46.08	54.00	-7.92	31.73	3	H	22	1.58	-
AV	2.44G	96.99	Inf	-Inf	32.04	3	H	22	1.58	-
AV	2.494G	44.19	54.00	-9.81	32.17	3	H	22	1.58	-
PK	2.3596G	56.27	74.00	-17.73	31.83	3	H	22	1.58	-
PK	2.44G	101.07	Inf	-Inf	32.04	3	H	22	1.58	-
PK	2.488G	56.18	74.00	-17.82	32.15	3	H	22	1.58	-

BT-EDR(2Mbps)

2440MHz_TX

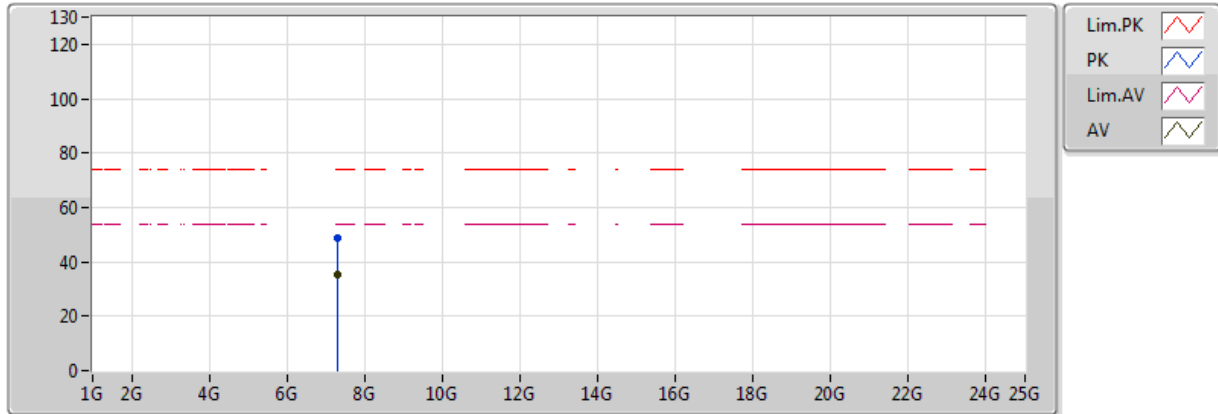


20170830
EUT_Y_1TX
Setting 10
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.3198G	35.12	54.00	-18.88	8.81	3	V	224	1.23	-
PK	7.32119G	48.65	74.00	-25.35	8.81	3	V	224	1.23	-

BT-EDR(2Mbps)

2440MHz_TX

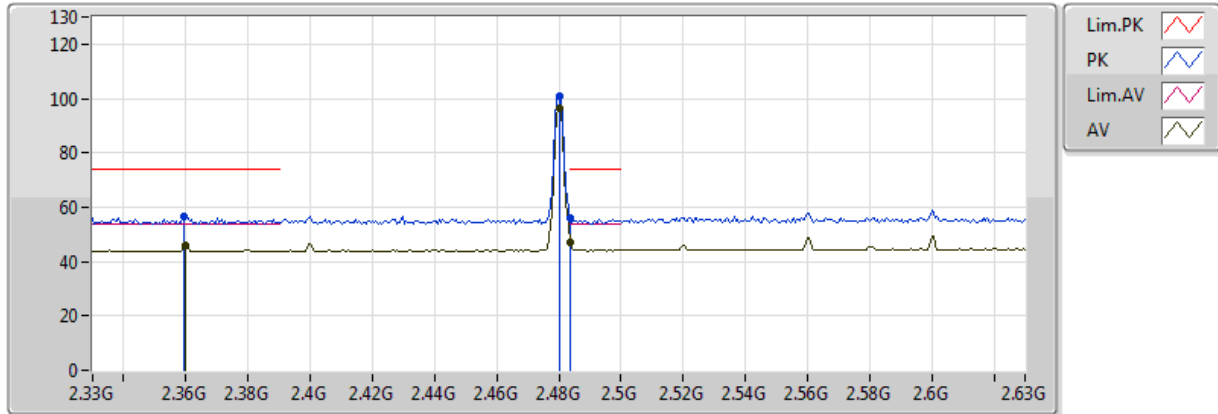


20170830
 EUT_Y_1TX
 Setting 10
 04-R-2
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.31854G	35.10	54.00	-18.90	8.81	3	H	30	2.22	-
PK	7.32059G	48.75	74.00	-25.25	8.81	3	H	30	2.22	-

BT-EDR(2Mbps)

2480MHz_TX

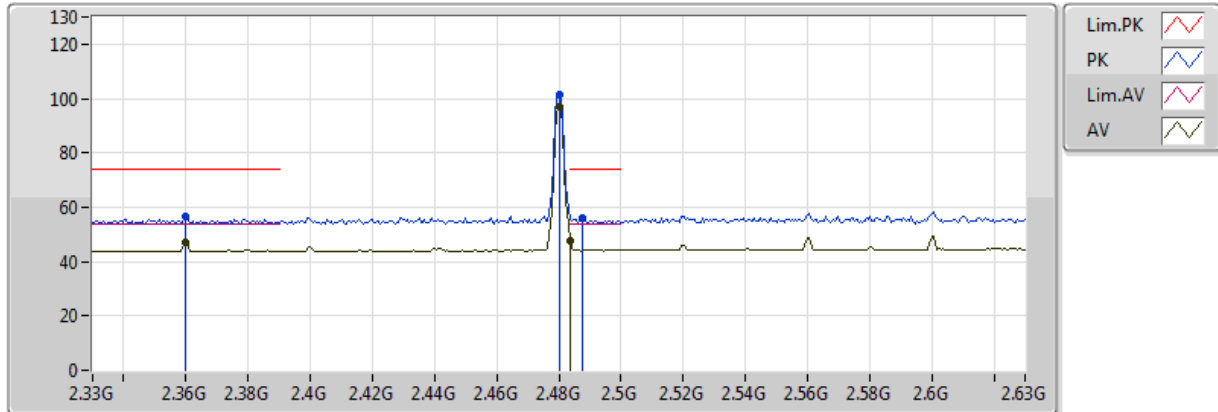


20170830
EUT_Y_1TX
Setting 10
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.36G	46.10	54.00	-7.90	31.84	3	V	290	2.97	-
AV	2.48G	96.42	Inf	-Inf	32.13	3	V	290	2.97	-
AV	2.4836G	47.23	54.00	-6.77	32.14	3	V	290	2.97	-
PK	2.3594G	56.48	74.00	-17.52	31.83	3	V	290	2.97	-
PK	2.48G	100.64	Inf	-Inf	32.13	3	V	290	2.97	-
PK	2.4836G	55.85	74.00	-18.15	32.14	3	V	290	2.97	-

BT-EDR(2Mbps)

2480MHz_TX

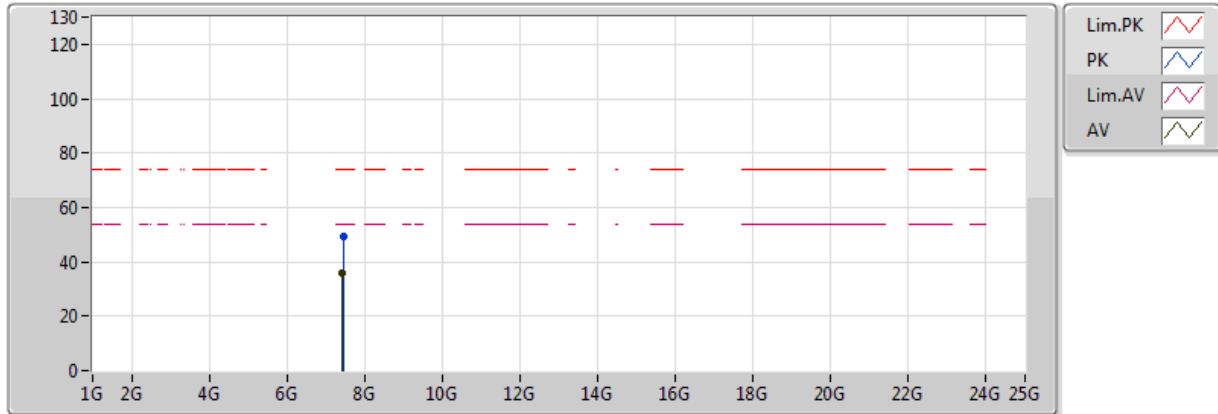


20170830
EUT_Y_1TX
Setting 10
04-R-2
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.36G	46.91	54.00	-7.09	31.84	3	H	329	1.14	-
AV	2.48G	97.09	Inf	-Inf	32.13	3	H	329	1.14	-
AV	2.4836G	47.57	54.00	-6.43	32.14	3	H	329	1.14	-
PK	2.36G	56.76	74.00	-17.24	31.84	3	H	329	1.14	-
PK	2.48G	101.20	Inf	-Inf	32.13	3	H	329	1.14	-
PK	2.4878G	56.04	74.00	-17.96	32.15	3	H	329	1.14	-

BT-EDR(2Mbps)

2480MHz_TX

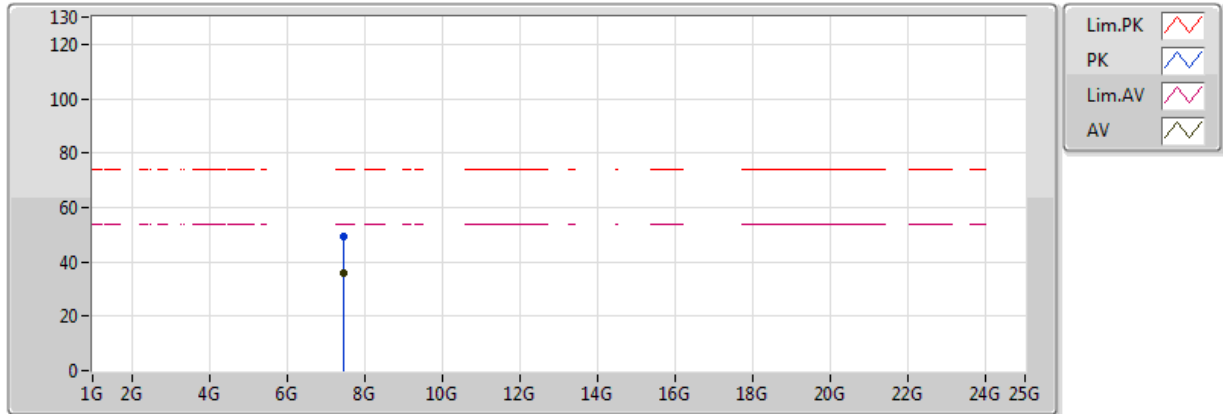


20170830
 EUT_Y_1TX
 Setting 10
 04-R-2
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.43989G	35.75	54.00	-18.25	8.97	3	V	37	1.84	-
PK	7.44059G	49.57	74.00	-24.43	8.97	3	V	37	1.84	-

BT-EDR(2Mbps)

2480MHz_TX

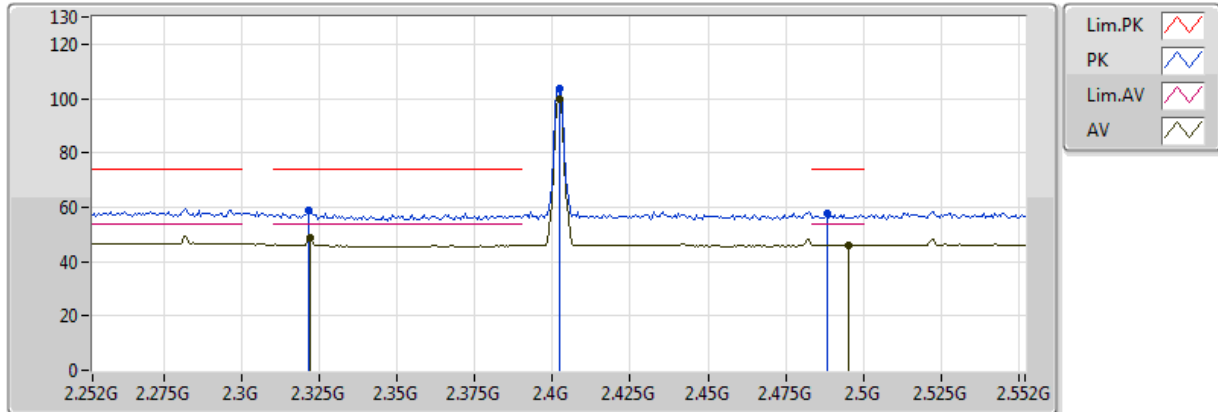


20170830
 EUT_Y_1TX
 Setting 10
 04-R-2
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.44113G	35.70	54.00	-18.30	8.97	3	H	257	1.62	-
PK	7.44062G	49.08	74.00	-24.92	8.97	3	H	257	1.62	-

BT-EDR(3Mbps)

2402MHz_TX

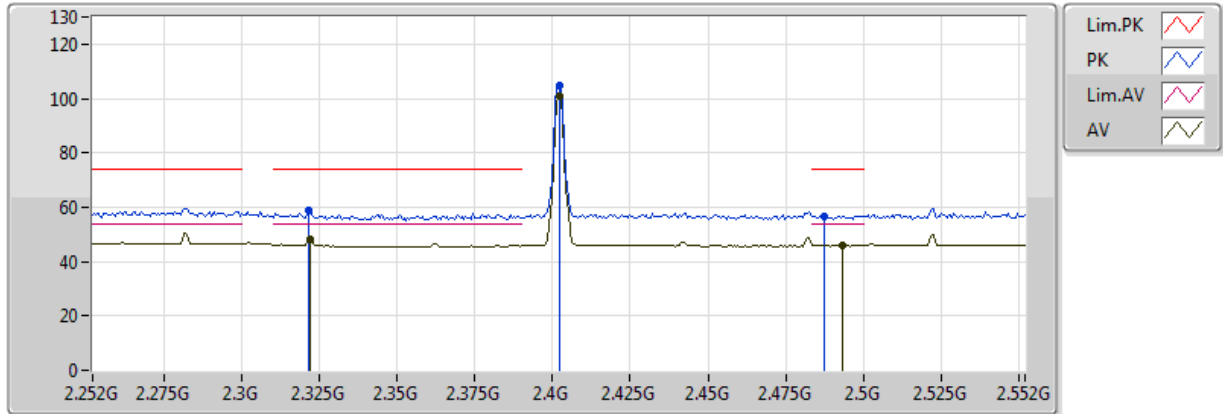


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3222G	48.52	54.00	-5.48	33.18	3	V	267	1.48	-
AV	2.402G	99.52	Inf	-Inf	33.14	3	V	267	1.48	-
AV	2.495G	46.03	54.00	-7.97	33.20	3	V	267	1.48	-
PK	2.3216G	58.96	74.00	-15.04	33.18	3	V	267	1.48	-
PK	2.402G	103.76	Inf	-Inf	33.14	3	V	267	1.48	-
PK	2.4884G	57.54	74.00	-16.46	33.19	3	V	267	1.48	-

BT-EDR(3Mbps)

2402MHz_TX

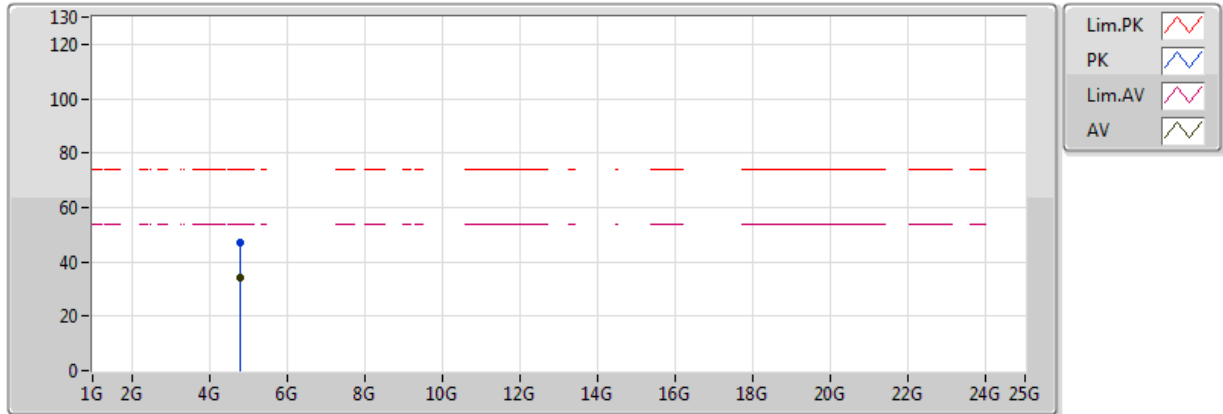


20170825
EUT_Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3222G	48.45	54.00	-5.55	33.18	3	H	220	1.87	-
AV	2.402G	100.91	Inf	-Inf	33.14	3	H	220	1.87	-
AV	2.4932G	45.94	54.00	-8.06	33.20	3	H	220	1.87	-
PK	2.3216G	58.84	74.00	-15.16	33.18	3	H	220	1.87	-
PK	2.402G	105.05	Inf	-Inf	33.14	3	H	220	1.87	-
PK	2.4872G	56.80	74.00	-17.20	33.19	3	H	220	1.87	-

BT-EDR(3Mbps)

2402MHz_TX

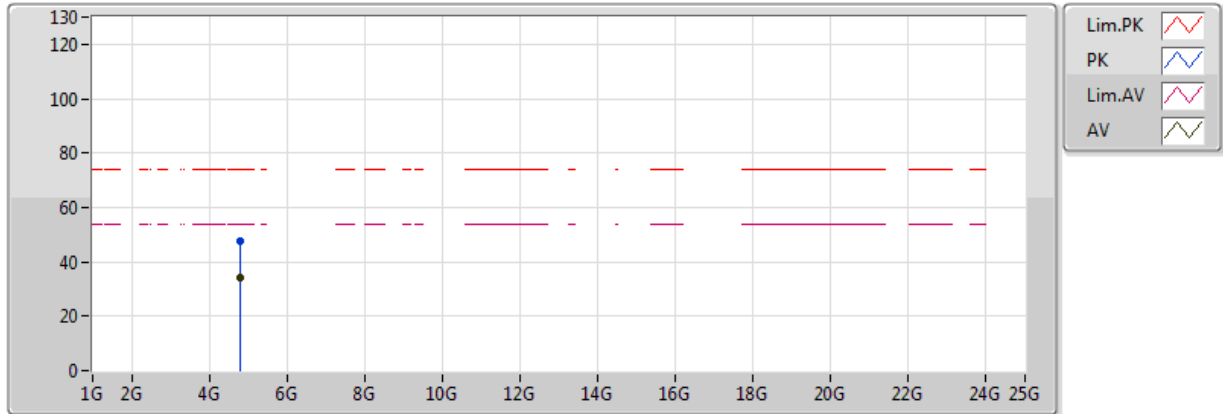


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.80446G	34.43	54.00	-19.57	4.12	3	V	199	1.48	-
PK	4.79974G	47.32	74.00	-26.68	4.11	3	V	199	1.48	-

BT-EDR(3Mbps)

2402MHz_TX

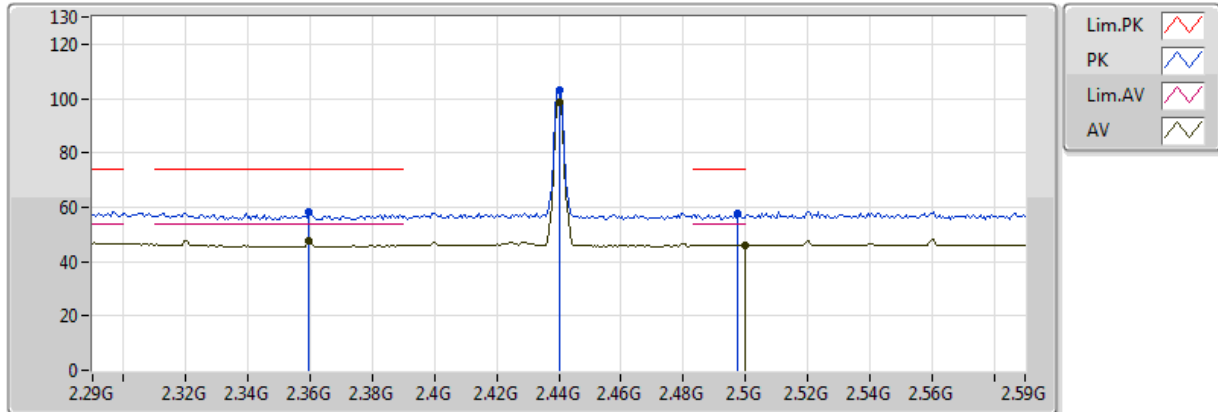


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.80302G	34.04	54.00	-19.96	4.12	3	H	171	1.62	-
PK	4.80686G	47.37	74.00	-26.63	4.13	3	H	171	1.62	-

BT-EDR(3Mbps)

2440MHz_TX

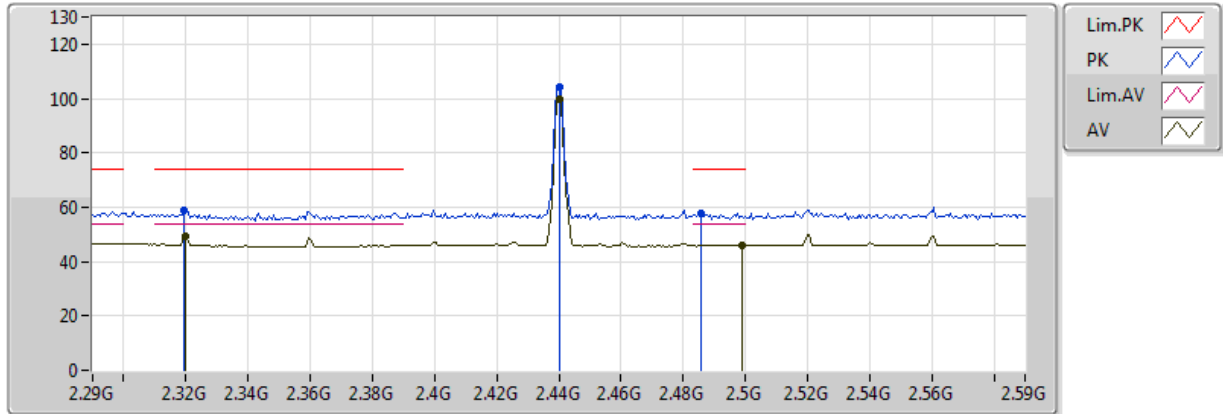


20170825
EUT Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.3596G	47.87	54.00	-6.13	33.16	3	V	106	1.30	-
AV	2.44G	98.83	Inf	-Inf	33.16	3	V	106	1.30	-
AV	2.5G	45.99	54.00	-8.01	33.20	3	V	106	1.30	-
PK	2.3596G	58.26	74.00	-15.74	33.16	3	V	106	1.30	-
PK	2.44G	103.10	Inf	-Inf	33.16	3	V	106	1.30	-
PK	2.4976G	57.97	74.00	-16.03	33.20	3	V	106	1.30	-

BT-EDR(3Mbps)

2440MHz_TX

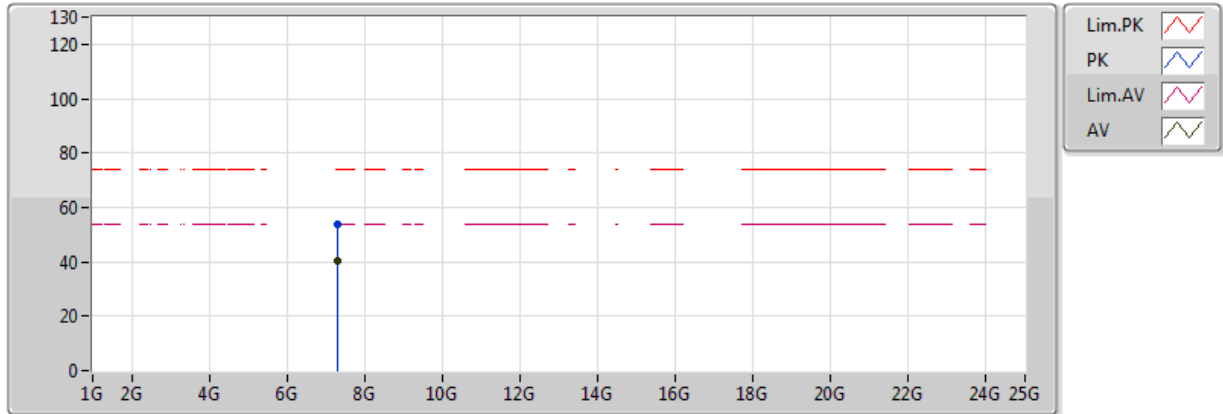


20170825
 EUT Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.32G	49.13	54.00	-4.87	33.18	3	H	218	1.50	-
AV	2.44G	100.01	Inf	-Inf	33.16	3	H	218	1.50	-
AV	2.4988G	45.93	54.00	-8.07	33.20	3	H	218	1.50	-
PK	2.3194G	58.98	74.00	-15.02	33.18	3	H	218	1.50	-
PK	2.44G	104.22	Inf	-Inf	33.16	3	H	218	1.50	-
PK	2.4856G	57.47	74.00	-16.53	33.19	3	H	218	1.50	-

BT-EDR(3Mbps)

2440MHz_TX

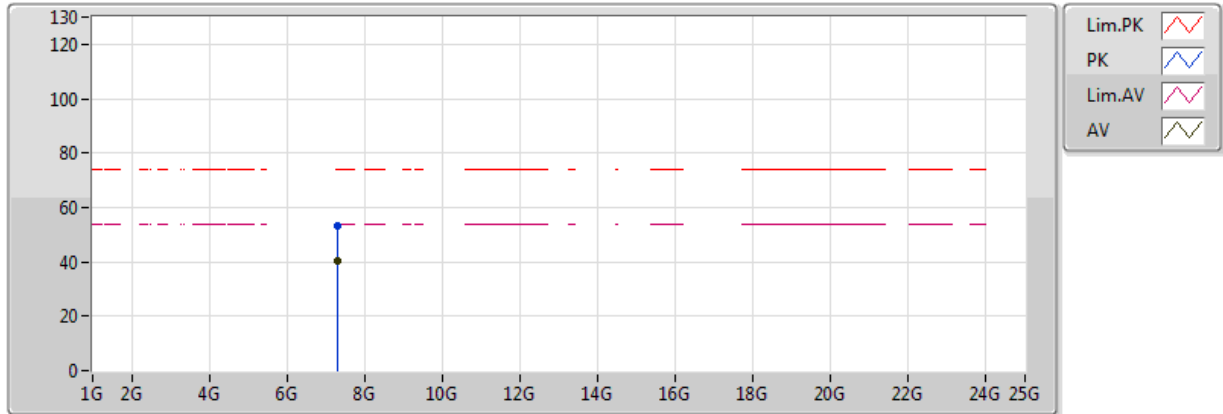


20170825
EUT Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.32002G	40.57	54.00	-13.43	11.34	3	V	92	2.01	-
PK	7.31992G	53.76	74.00	-20.24	11.34	3	V	92	2.01	-

BT-EDR(3Mbps)

2440MHz_TX

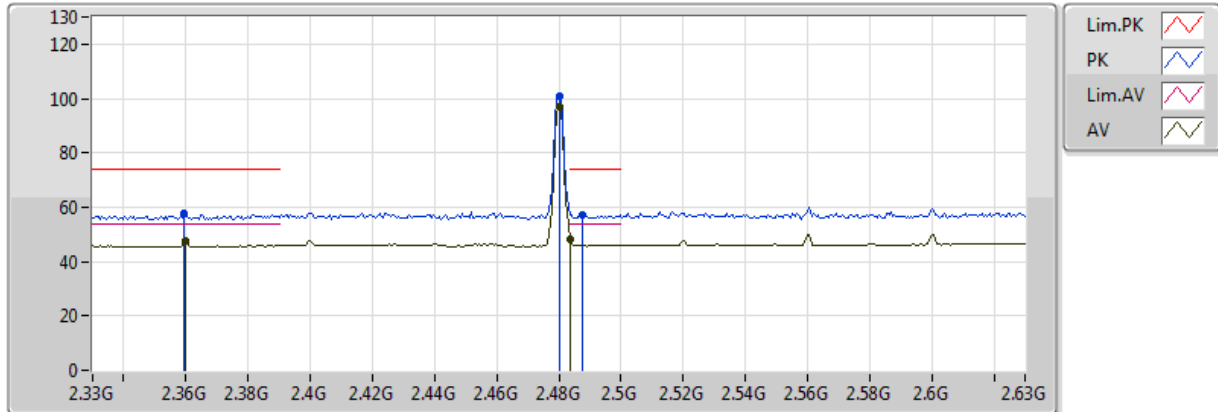


20170825
EUT_Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.31582G	40.23	54.00	-13.77	11.34	3	H	338	1.37	-
PK	7.31716G	53.13	74.00	-20.87	11.34	3	H	338	1.37	-

BT-EDR(3Mbps)

2480MHz_TX

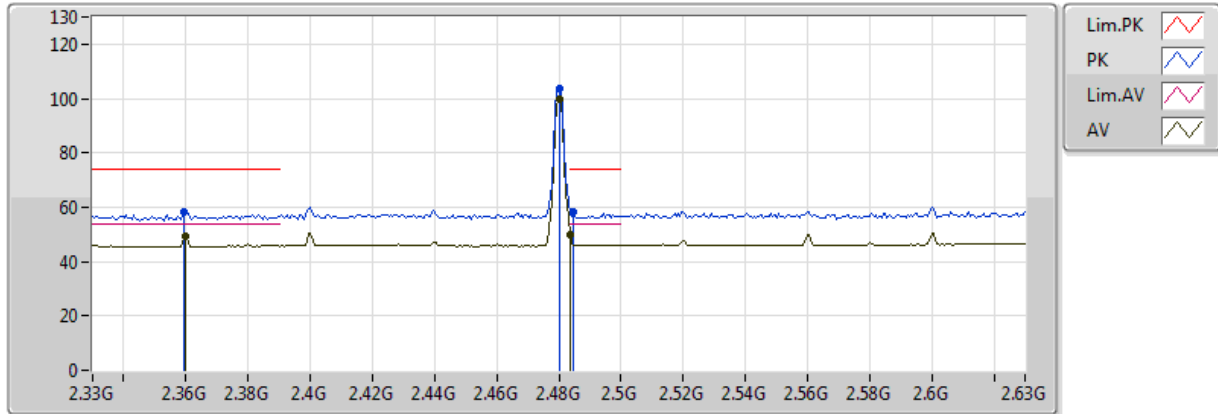


20170825
EUT_Y_1TX
Setting 10
04-J-5
FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.36G	47.64	54.00	-6.36	33.16	3	V	281	2.90	-
AV	2.48G	96.67	Inf	-Inf	33.19	3	V	281	2.90	-
AV	2.4836G	48.27	54.00	-5.73	33.19	3	V	281	2.90	-
PK	2.3594G	57.60	74.00	-16.40	33.16	3	V	281	2.90	-
PK	2.48G	100.69	Inf	-Inf	33.19	3	V	281	2.90	-
PK	2.4878G	57.39	74.00	-16.61	33.19	3	V	281	2.90	-

BT-EDR(3Mbps)

2480MHz_TX

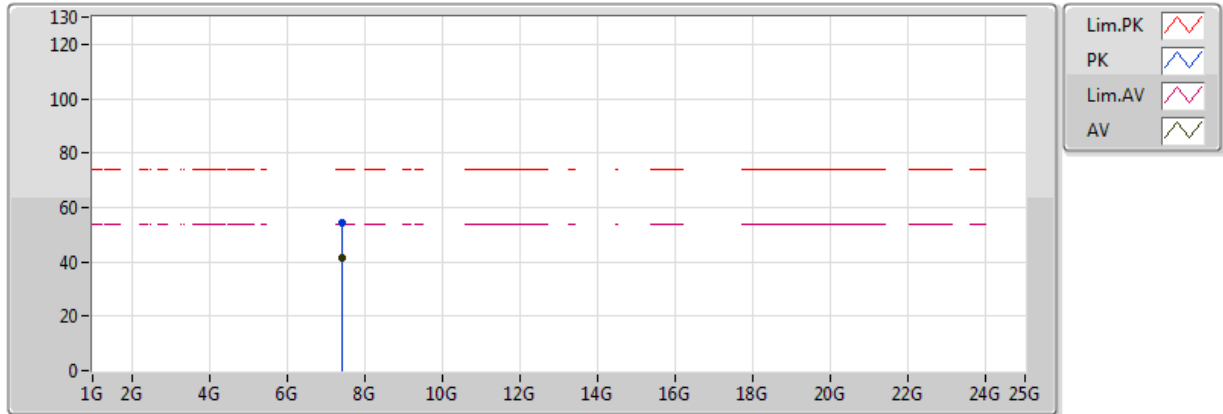


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.36G	49.05	54.00	-4.95	33.16	3	H	204	1.05	-
AV	2.48G	99.51	Inf	-Inf	33.19	3	H	204	1.05	-
AV	2.4836G	49.95	54.00	-4.05	33.19	3	H	204	1.05	-
PK	2.3594G	58.14	74.00	-15.86	33.16	3	H	204	1.05	-
PK	2.48G	103.67	Inf	-Inf	33.19	3	H	204	1.05	-
PK	2.4848G	58.42	74.00	-15.58	33.19	3	H	204	1.05	-

BT-EDR(3Mbps)

2480MHz_TX

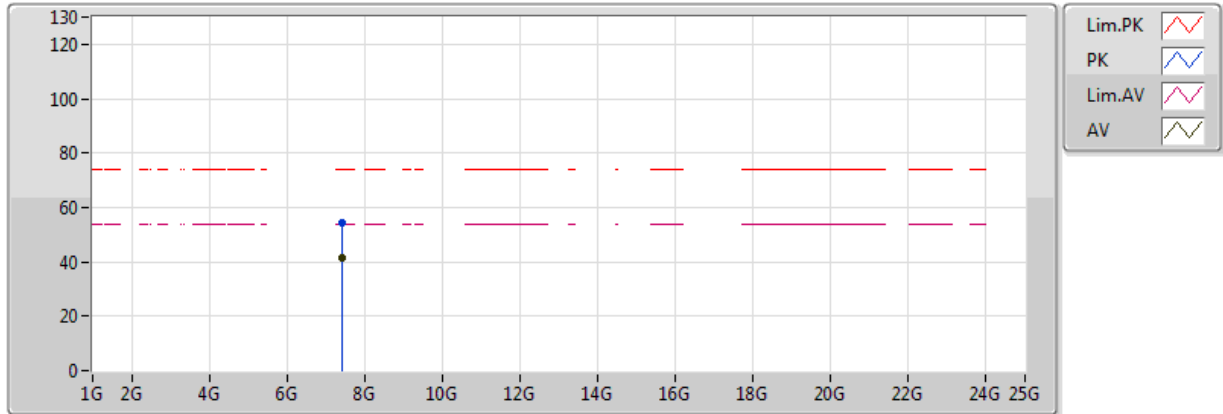


20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.44G	41.31	54.00	-12.69	11.57	3	V	352	1.26	-
PK	7.43932G	54.18	74.00	-19.82	11.57	3	V	352	1.26	-

BT-EDR(3Mbps)

2480MHz_TX



20170825
 EUT_Y_1TX
 Setting 10
 04-J-5
 FSP(100142)

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	7.44014G	41.25	54.00	-12.75	11.57	3	H	49	1.39	-
PK	7.43754G	54.48	74.00	-19.52	11.56	3	H	49	1.39	-