

FCC Test Report

Equipment : 360 Car Camcorder
Brand Name : 360
Model No. : J511C
FCC ID : 2AGGXJ511C
Standard : 47 CFR FCC Part 15.247
Frequency : 2400 MHz – 2483.5 MHz
Function : ☒ Point-to-multipoint; ☐ Point-to-point
Applicant : Shenzhen Qihu Intelligent Technology Company Limited
Room201 Block A, No.1, Qianwan Rd.1, Qianhai
Shenzhen HongKong Modern Service Industry
Cooperation Zone Shenzhen China
Manufacturer : Chicony Electronics (Dong Guan) Co., Ltd.
San Zhong Guan Li Qu, Qingxi Town, Dongguan City
Guangdong 523651 China

The product sample received on May 16, 2017 and completely tested on Jun. 13, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

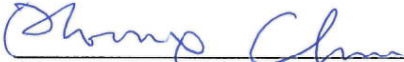

Phoenix Chen / Assistant Manager
SPORTON INTERNATIONAL INC.



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Testing Applied Standards	6
1.3	Testing Location Information	6
1.4	Measurement Uncertainty	6
2	TEST CONFIGURATION OF EUT.....	7
2.1	Test Condition	7
2.2	Test Channel Mode	7
2.3	The Worst Case Measurement Configuration.....	8
2.4	Accessories	9
2.5	Support Equipment.....	9
2.6	Test Setup Diagram	9
3	TRANSMITTER TEST RESULT	10
3.1	AC Power-line Conducted Emissions	10
3.2	DTS Bandwidth.....	11
3.3	Maximum Conducted Output Power	12
3.4	Power Spectral Density	14
3.5	Emissions in Non-restricted Frequency Bands	15
3.6	Emissions in Restricted Frequency Bands.....	16
4	TEST EQUIPMENT AND CALIBRATION DATA	20
APPENDIX A. TEST RESULTS OF DTS BANDWIDTH		
APPENDIX B. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER		
APPENDIX C. TEST RESULTS OF POWER SPECTRAL DENSITY		
APPENDIX D. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS		
APPENDIX E. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS		
APPENDIX F. TEST PHOTOS		
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)	DTS Bandwidth	≥500kHz	Complied
3.3	15.247(b)	Maximum Conducted Output Power	Power [dBm]:30	Complied
3.4	15.247(e)	Power Spectral Density	PSD [dBm/3kHz]:8	Complied
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	Non-Restricted Bands: >30 dBc	Complied
3.6	15.247(d)	Emissions in Restricted Frequency Bands	Restricted Bands: FCC 15.209	Complied

Revision History

[illegible]

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

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

Note:

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

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	PIFA	fixed on board	2.34

1.1.3 EUT Information

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

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.626	2.034	391.25u	3k

1.2 Testing Applied Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ KDB 558074 D01 v04

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
Test site Designation No. 553509 with FCC.			
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085
Test site Designation No. TW0006 with FCC.			

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH06-HY	Lisa	24.5°C / 64.5%	Jun/12/2017
Radiated	03CH02-HY	Morrison	22.8°C / 51.3%	Jun/13/2017

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)	3.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	2.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	2.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	2.9 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	12V

2.2 Test Channel Mode

Test Software	CMD
---------------	-----

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

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

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

2.4 Accessories

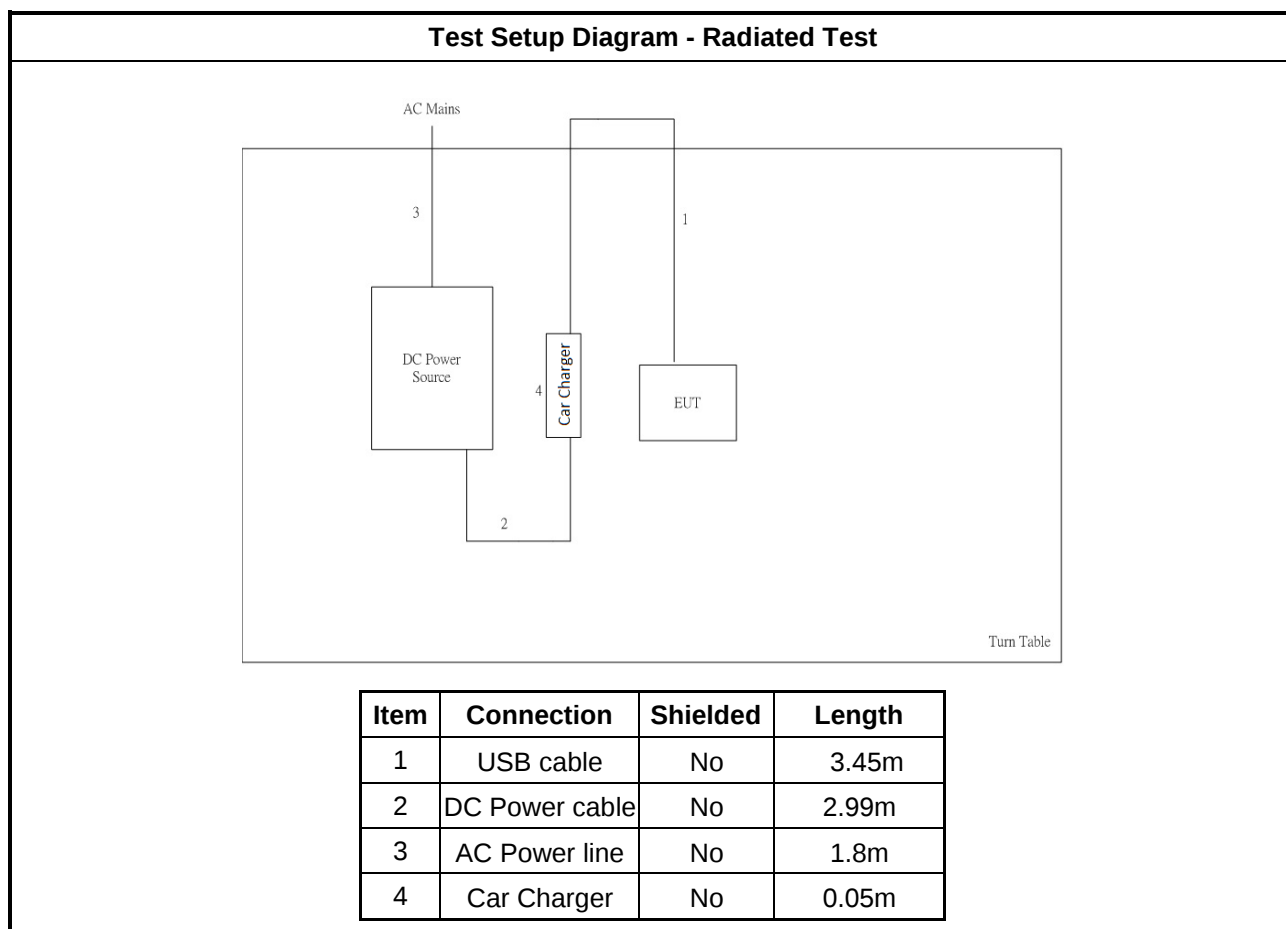
Accessories				
Car Charger	Brand Name	O9E	Model Name	DC-30V
	Power Rating	I/P: 12/14Vac O/P: 5Vdc, 1.5A		
USB cable	Power Cord	3.45 meter, non-shielded cable, w/o ferrite core		

2.5 Support Equipment

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

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	DC Power Supply	DELL	LA65NS2-01	-

2.6 Test Setup Diagram



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

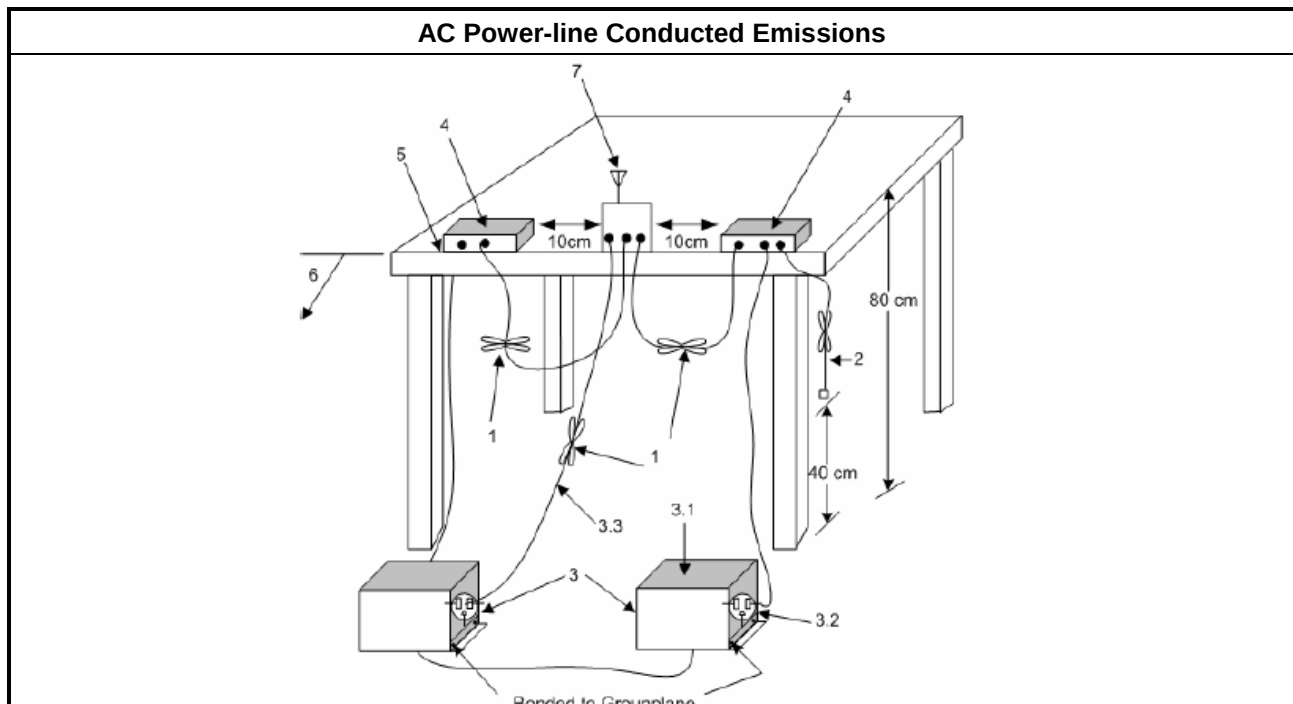
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Please refer to RSS-247 which states, "Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ DC power source for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines". Therefore, for this device, AC Power Line Conducted Emissions investigation is not required.

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

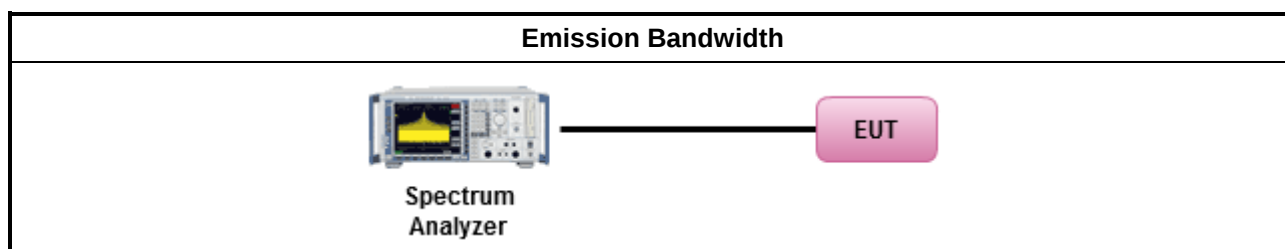
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
For the emission bandwidth shall be measured using one of the options below:
☒ Refer as KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
☐ Refer as KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
☐ Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.
☐ Refer as RSS-Gen, clause 6.6 for occupied bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix A

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

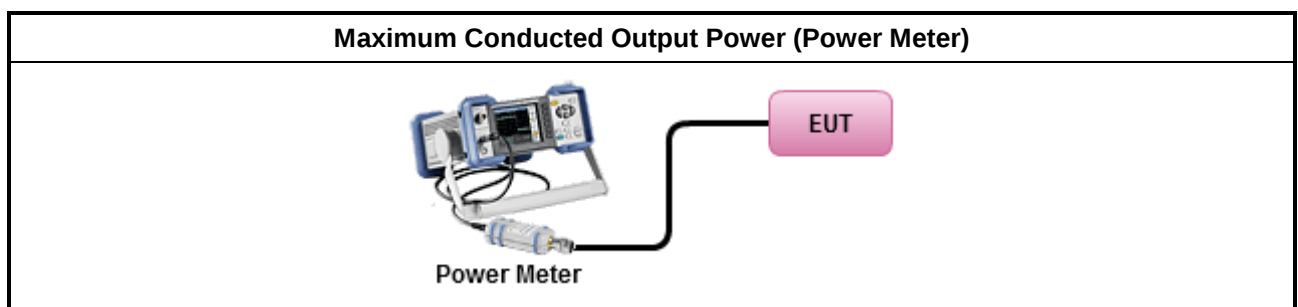
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
☐	Refer as KDB 558074, clause 9.1.2 Option 2 (integrated band power method)
☐	Refer as KDB 558074, clause 9.1.3 Option 3 (peak power meter for VBW ≥ DTS BW)
Maximum Average Conducted Output Power	
Duty cycle ≥ 98%	
☐	Refer as KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
Duty cycle < 98%	
☐	Refer as KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)
RF power meter and average over on/off periods with duty factor or gated trigger	
☒	Refer as KDB 558074, clause 9.2.3.1 Method AVGPM (using an RF average power meter).
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

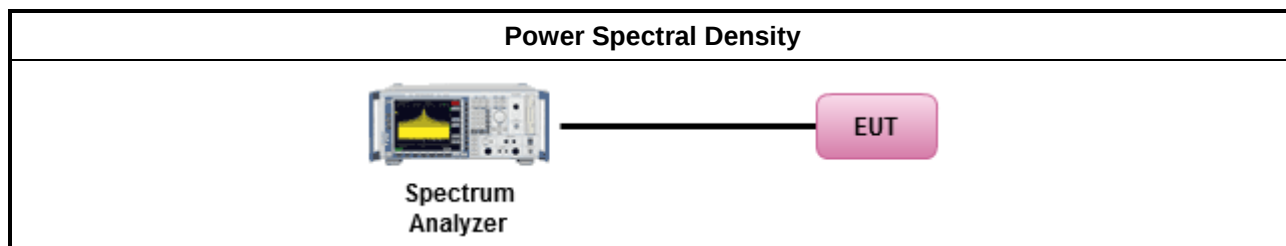
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method	
▪	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒	Refer as KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).
▪	For conducted measurement.
▪	If The EUT supports multiple transmit chains using options given below:
☐	Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix C

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30
Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level. Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.	

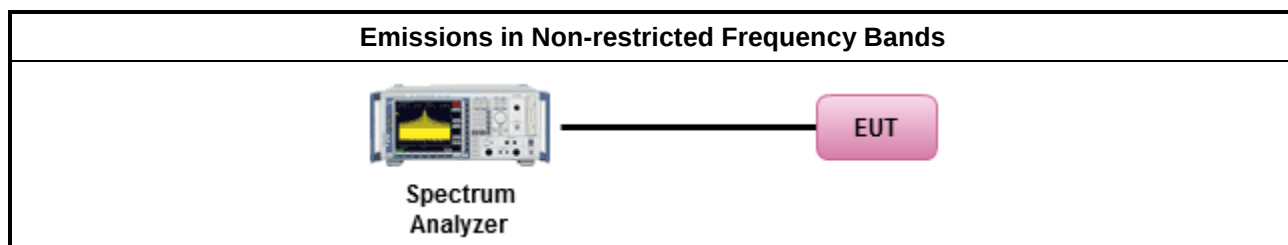
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix D

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

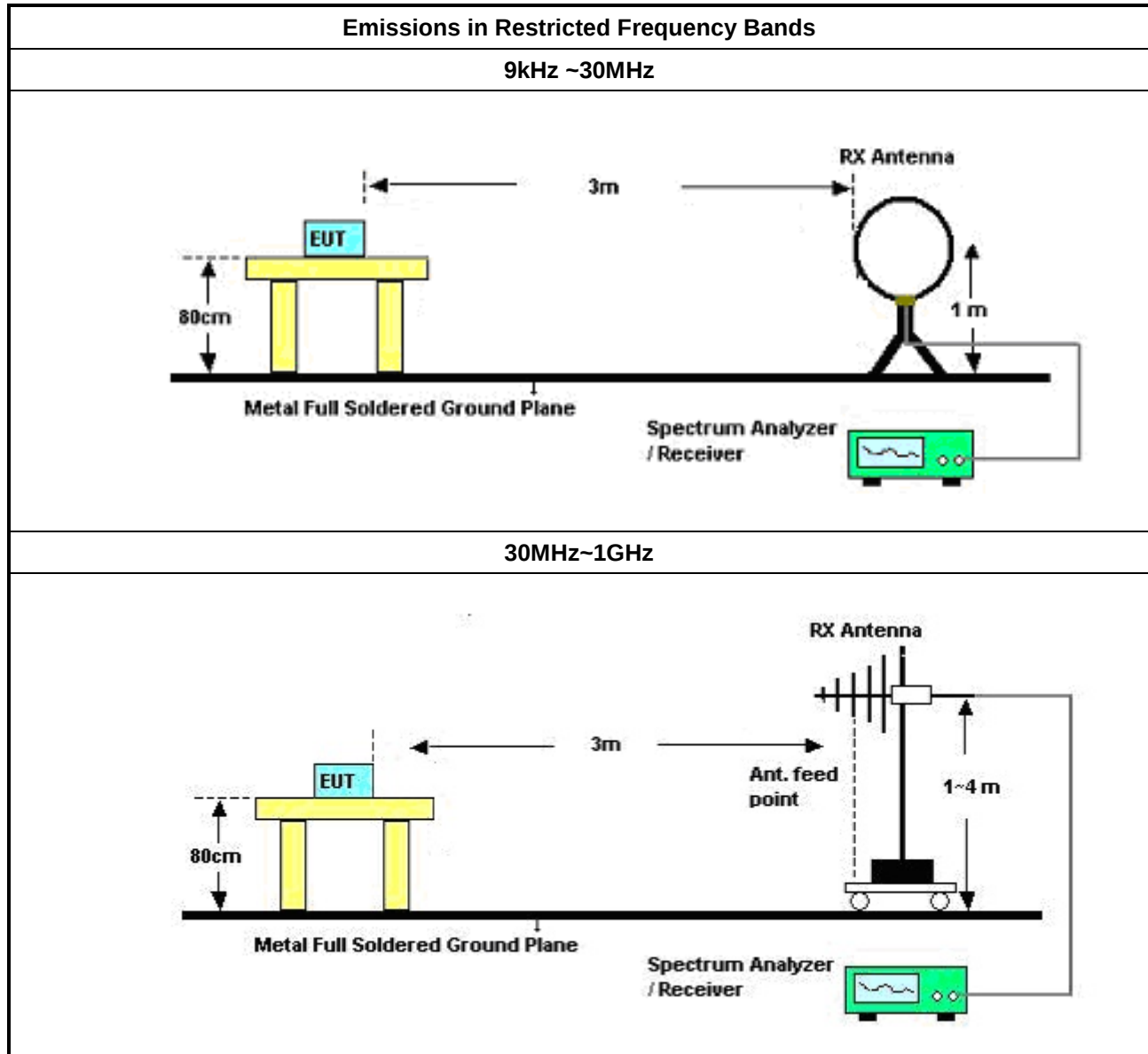
3.6.2 Measuring Instruments

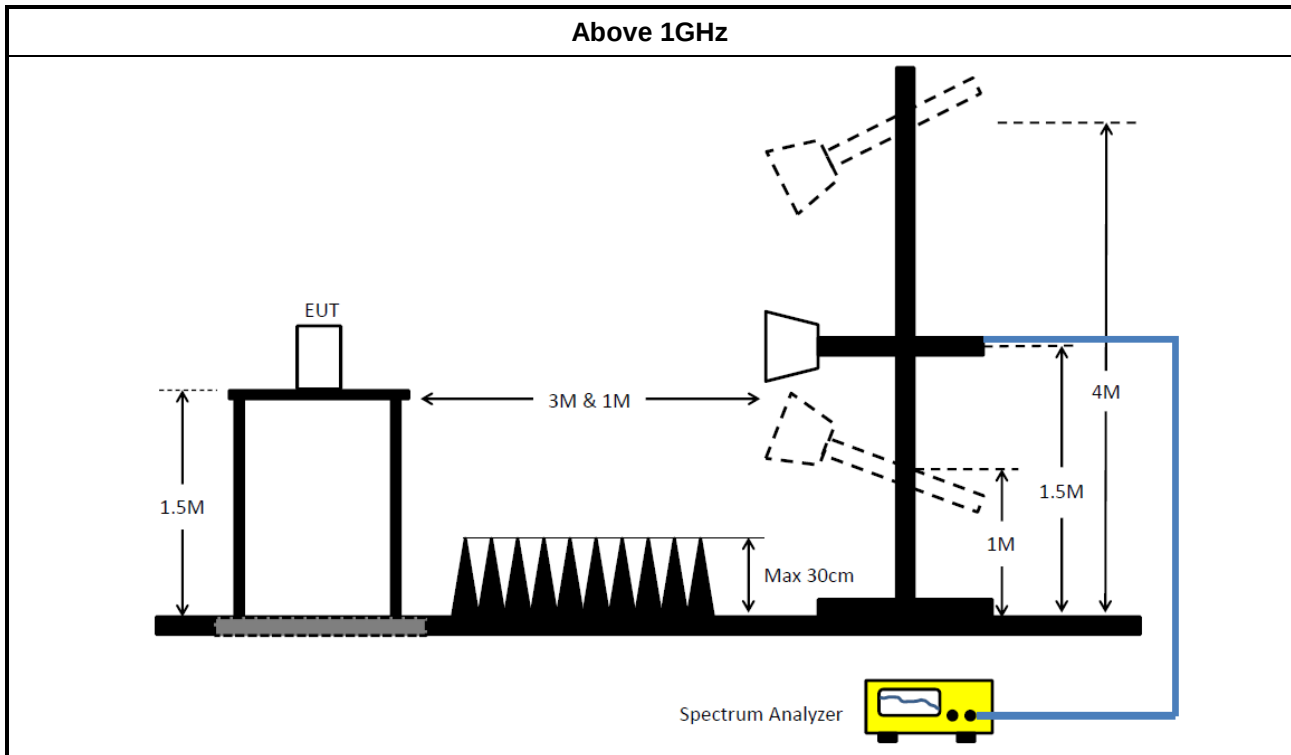
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 558074, clause 12 for unwanted emissions into restricted bands.
	☒ Refer as KDB 558074, clause 12.2.5.3 (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW $\geq 1/T$.
	☒ Refer as KDB 558074, clause 12.2.4 measurement procedure peak limit.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as KDB 558074 clause 13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	Refer as KDB 558074, clause 13.2 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
For conducted and cabinet radiation measurement, refer as KDB 558074, clause 12.2.2.	
	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	For KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.6.4 Test Setup





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

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

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix E

4 Test Equipment and Calibration Data

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSP40	100593	9KHz - 40GHz	26/Oct/2016	25/Oct/2017
3m Semi Anechoic	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz-1GHz	21/Oct/2016	20/Oct/2017
3m Semi Anechoic	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz	12/Dec/2016	11/Dec/2017
Amplifier	Agilent	8447D	2944A11149	100KHz-1.3GHz	01/Jul/2016	30/Jun/2017
Amplifier	Agilent	8449B	3008A02373	1GHz-26.5GHz	02/Sep/2016	01/Sep/2017
Horn Antenna	SCHWARZBECK	BBHA9120D	BBHA9120D 01531	1GHz-18GHz	25/Apr/2017	24/Apr/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15GHz-40GHz	06/Feb/2017	05/Feb/2018
Bilog Antenna	SCHAFFNER	CBL6112B	2723	30MHz-1GHz	01/Oct/2016	30/Sep/2017
MicrowavePreamplifier with 6dB Attenuator	EMC INSTRUMENTS	EMC184045B & PE7005-	1840917	18GHz-40GHz	24/Jun/2016	23/Aug/2017
RF Cable-high	SUHNER	SUCOFLEX104	MY34918/4	1GHz ~ 40GHz	26/Jan/2017	25/Jan/2018
RF Cable-R03m	Jye Bao	RG142	CB017	9kHz ~ 1GHz	26/Jan/2017	25/Jan/2018
Receiver	R&S	ESU-26	100422/026	20Hz ~ 26.5GHz	21/Sep/2016	20/Sep/2017

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	10Hz~40GHz	30/Dec/2016	29/Dec/2017
Power Sensor	Anritsu	MA2411B	1027452	300MHz ~ 40GHz	24/Feb/2017	23/Feb/2018
Power Meter	Anritsu	ML2495A	1124009	300MHz ~ 40GHz	24/Feb/2017	23/Feb/2018
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	21/Jul/2016	20/Jul/2017
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY677/3	30MHz~26.5GHz	02/Oct/2016	01/Oct/2017
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY678/3	30MHz~26.5GHz	02/Oct/2016	01/Oct/2017
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10717/4	30MHz~26.5GHz	02/Oct/2016	01/Oct/2017

**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-	-
2.4-2.4835GHz	653.75k	1.047M	1M05F1D	647.5k	1.042M

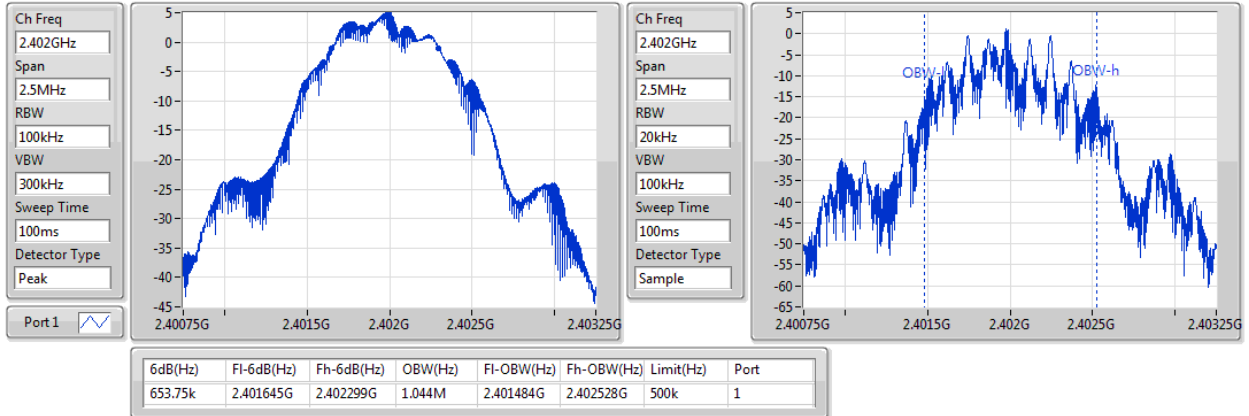
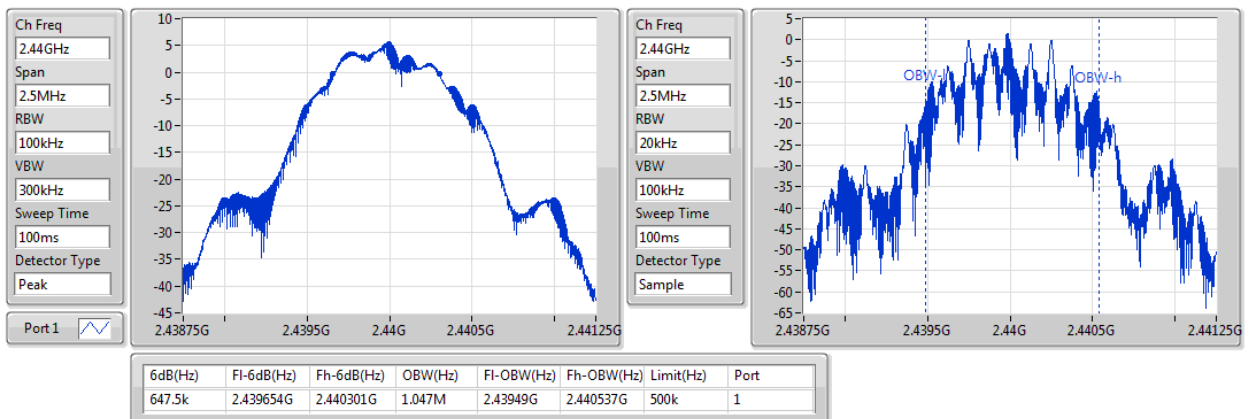
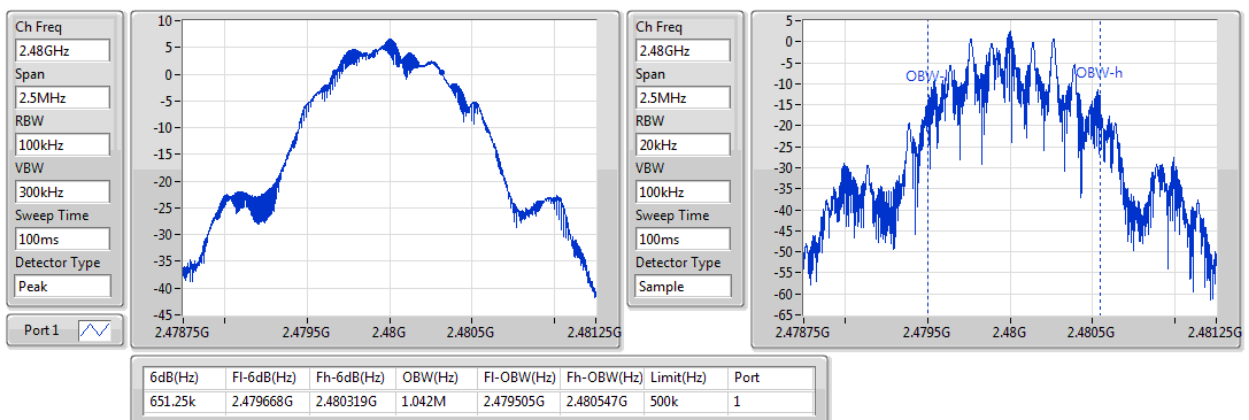
Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

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

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	653.75k	1.044M
2440MHz	Pass	500k	647.5k	1.047M
2480MHz	Pass	500k	651.25k	1.042M

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

BT-LE(1Mbps)
EBW
2402MHz

BT-LE(1Mbps)
EBW
2440MHz

BT-LE(1Mbps)
EBW
2480MHz


**Summary**

Mode	Power	Power
	(dBm)	(W)
BT-LE(1Mbps)	-	-
2.4-2.4835GHz	5.02	0.00318

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.34	4.04	30.00
2440MHz	Pass	2.34	4.38	30.00
2480MHz	Pass	2.34	5.02	30.00

**Summary**

Mode	PD (dBm/RBW)
BT-LE(1Mbps)	-
2.4-2.4835GHz	-0.90

RBW=3kHz.

Result

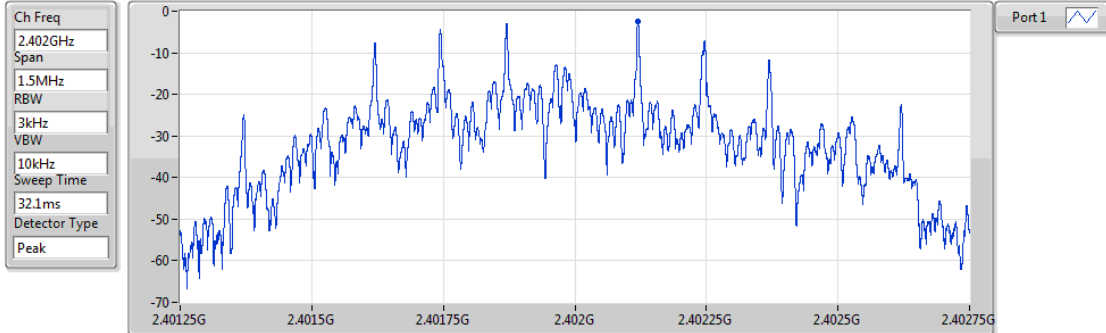
Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.34	-2.40	8.00
2440MHz	Pass	2.34	-1.24	8.00
2480MHz	Pass	2.34	-0.90	8.00

RBW=3kHz.

BT-LE(1Mbps)

PSD

2402MHz

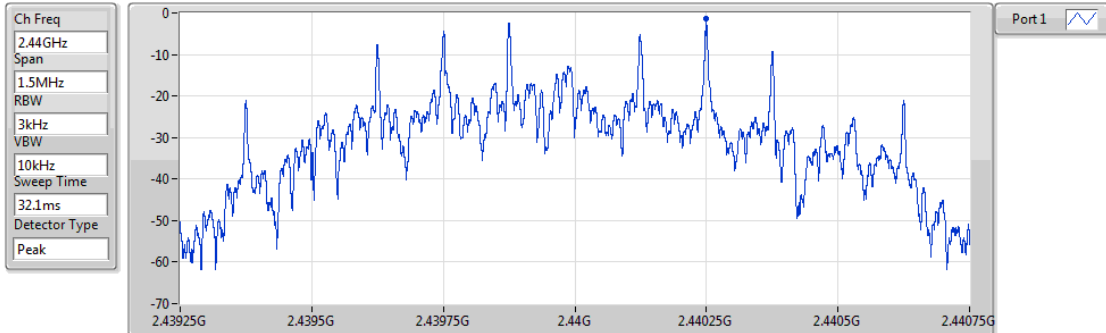


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-2.40	-2.40	-2.40

BT-LE(1Mbps)

PSD

2440MHz

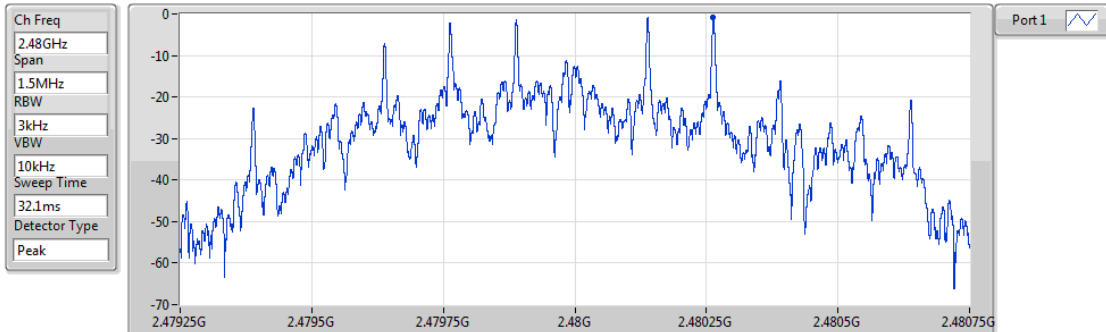


Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.24	-1.24	-1.24

BT-LE(1Mbps)

PSD

2480MHz



Sum	PD	Port 1
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.90	-0.90	-0.90

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-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	2.479993G	6.12	-23.88	2.3092G	-56.76	2.398864G	-56.08	2.4855G	-56.40	6.43398G	-52.09	1

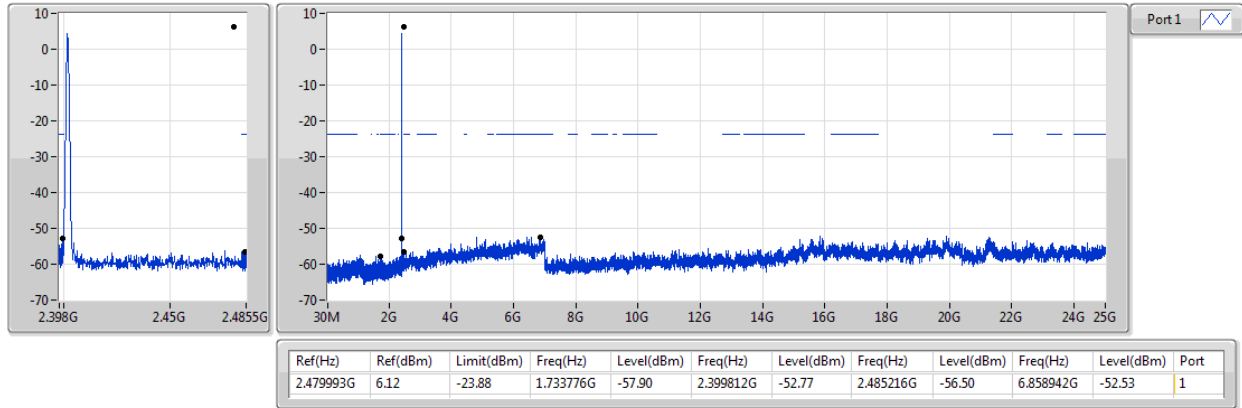
Result

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-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.479993G	6.12	-23.88	1.733776G	-57.90	2.399812G	-52.77	2.485216G	-56.50	6.858942G	-52.53	1
2440MHz	Pass	2.479993G	6.12	-23.88	2.3092G	-56.76	2.398864G	-56.08	2.4855G	-56.40	6.43398G	-52.09	1
2480MHz	Pass	2.479993G	6.12	-23.88	738.032M	-57.69	2.399648G	-55.70	2.483596G	-52.44	24.870542G	-52.27	1

BT-LE(1Mbps)

CSE NdB

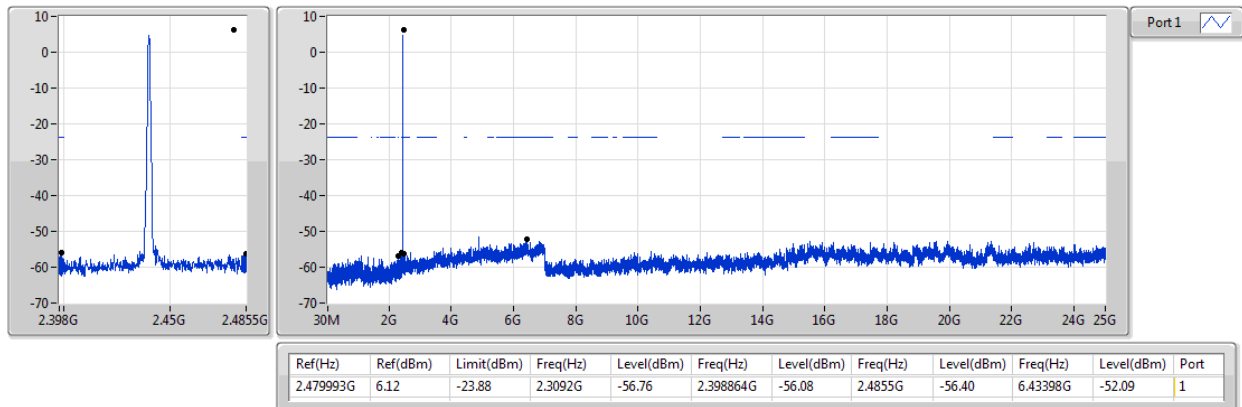
2402MHz



BT-LE(1Mbps)

CSE NdB

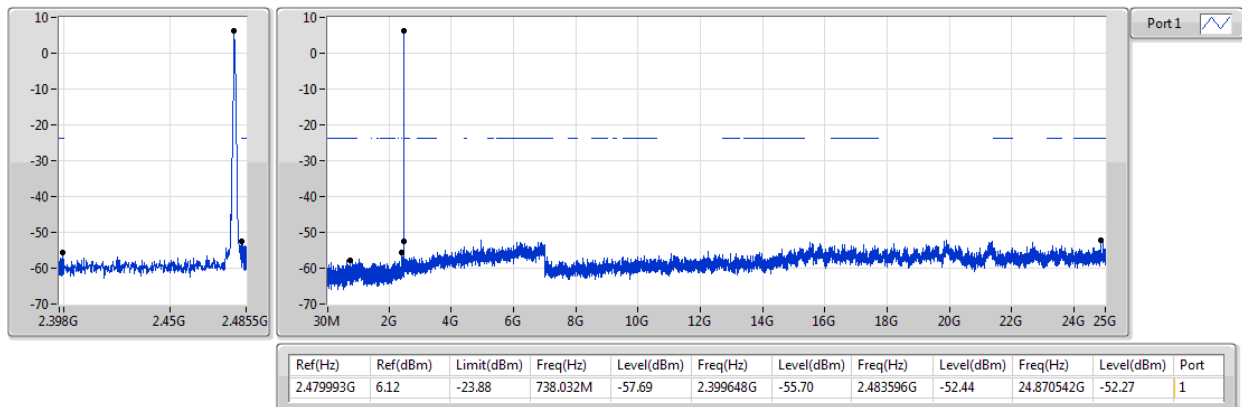
2440MHz



BT-LE(1Mbps)

CSE NdB

2480MHz





RSE TX below 1GHz Result

Appendix E.1

Summary

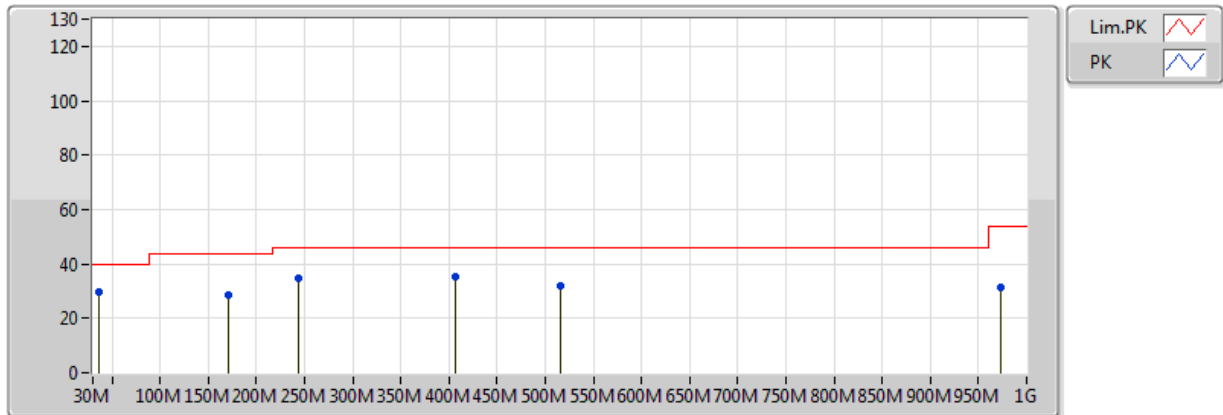
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	PK	35.82M	39.26	40.00	-0.74	-7.10	3	V	0	1.00	-

Result

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-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	35.82M	35.88	40.00	-4.12	-7.10	3	H	360	1.00	-
2440MHz	Pass	PK	169.68M	34.76	43.50	-8.74	-10.76	3	H	360	1.00	-
2440MHz	Pass	PK	243.4M	39.73	46.00	-6.27	-8.18	3	H	360	1.00	-
2440MHz	Pass	PK	352.04M	41.78	46.00	-4.22	-5.33	3	H	360	1.00	-
2440MHz	Pass	PK	513.06M	31.40	46.00	-14.60	-2.10	3	H	360	1.00	-
2440MHz	Pass	PK	935.98M	29.59	46.00	-16.41	3.20	3	H	360	1.00	-
2440MHz	Pass	PK	35.82M	39.26	40.00	-0.74	-7.10	3	V	0	1.00	-
2440MHz	Pass	PK	171.62M	28.65	43.50	-14.85	-10.83	3	V	0	1.00	-
2440MHz	Pass	PK	243.4M	34.52	46.00	-11.48	-8.18	3	V	0	1.00	-
2440MHz	Pass	PK	406.36M	35.08	46.00	-10.92	-3.86	3	V	0	1.00	-
2440MHz	Pass	PK	515M	31.67	46.00	-14.33	-2.04	3	V	0	1.00	-
2440MHz	Pass	PK	972.84M	31.56	54.00	-22.44	3.54	3	V	0	1.00	-
2440MHz	Pass	QP	35.82M	29.55	40.00	-10.45	-7.10	3	V	249	1.00	-

BT-LE(1Mbps)

2440MHz_Car charger

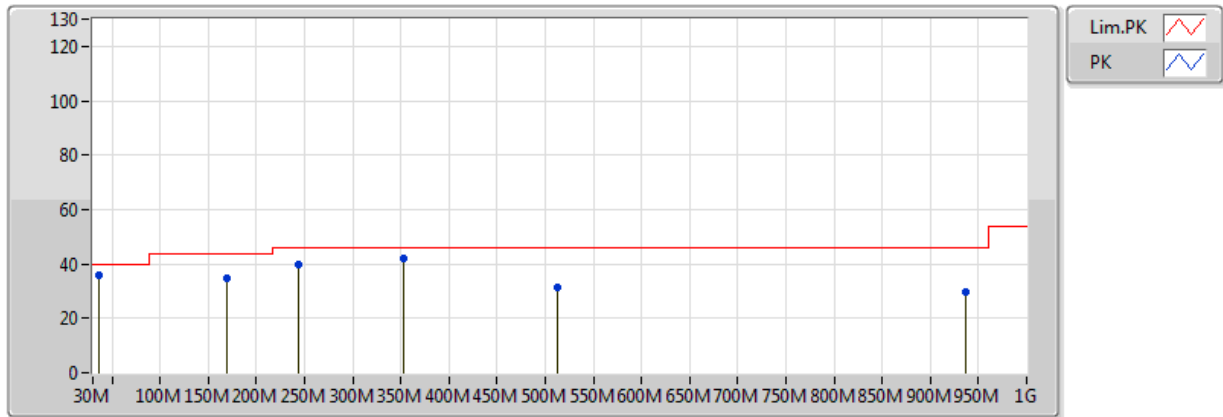


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
PK	171.62M	28.65	43.50	-14.85	-10.83	3	V	0	1.00	-
PK	243.4M	34.52	46.00	-11.48	-8.18	3	V	0	1.00	-
PK	406.36M	35.08	46.00	-10.92	-3.86	3	V	0	1.00	-
PK	515M	31.67	46.00	-14.33	-2.04	3	V	0	1.00	-
PK	972.84M	31.56	54.00	-22.44	3.54	3	V	0	1.00	-
QP	35.82M	29.55	40.00	-10.45	-7.10	3	V	249	1.00	-

BT-LE(1Mbps)

2440MHz_Car charger



EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
PK	35.82M	35.88	40.00	-4.12	-7.10	3	H	360	1.00	-
PK	169.68M	34.76	43.50	-8.74	-10.76	3	H	360	1.00	-
PK	243.4M	39.73	46.00	-6.27	-8.18	3	H	360	1.00	-
PK	352.04M	41.78	46.00	-4.22	-5.33	3	H	360	1.00	-
PK	513.06M	31.40	46.00	-14.60	-2.10	3	H	360	1.00	-
PK	935.98M	29.59	46.00	-16.41	3.20	3	H	360	1.00	-



RSE TX above 1GHz Result

Appendix E.2

Summary

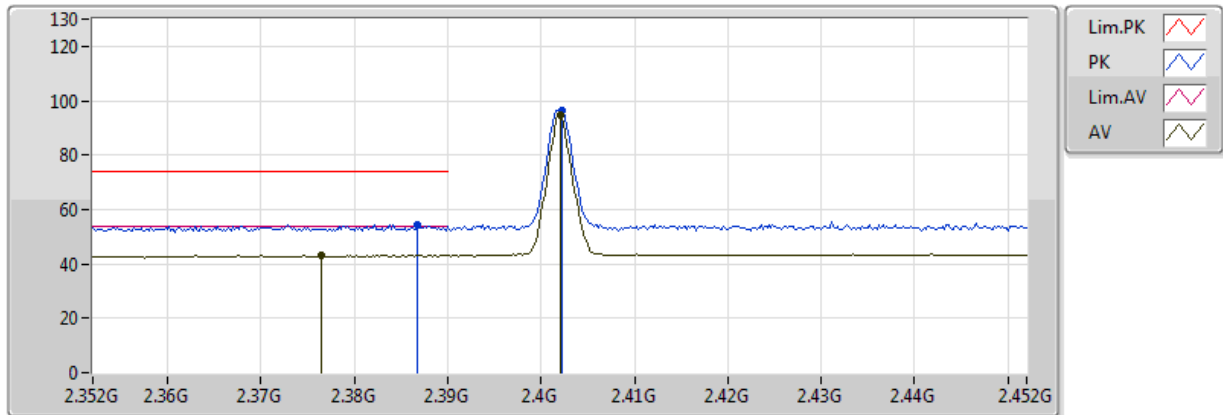
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2.4-2.4835GHz	Pass	AV	2.483502G	47.24	54.00	-6.76	31.27	3	H	132	2.35	-

Result

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-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3822G	43.25	54.00	-10.75	30.91	3	H	133	1.56	-
2402MHz	Pass	AV	2.402G	99.67	Inf	-Inf	30.98	3	H	133	1.56	-
2402MHz	Pass	PK	2.3696G	54.20	74.00	-19.80	30.86	3	H	133	1.56	-
2402MHz	Pass	PK	2.4022G	101.30	Inf	-Inf	30.98	3	H	133	1.56	-
2402MHz	Pass	AV	2.3764G	43.20	54.00	-10.80	30.89	3	V	92	1.22	-
2402MHz	Pass	AV	2.402G	94.84	Inf	-Inf	30.98	3	V	92	1.22	-
2402MHz	Pass	PK	2.3868G	54.52	74.00	-19.48	30.92	3	V	92	1.22	-
2402MHz	Pass	PK	2.4022G	96.50	Inf	-Inf	30.98	3	V	92	1.22	-
2402MHz	Pass	AV	4.804G	30.29	54.00	-23.71	2.10	3	H	360	1.50	-
2402MHz	Pass	PK	4.804G	43.32	74.00	-30.68	2.10	3	H	360	1.50	-
2402MHz	Pass	AV	4.804G	34.37	54.00	-19.63	2.10	3	V	121	1.01	-
2402MHz	Pass	PK	4.804G	46.70	74.00	-27.30	2.10	3	V	121	1.01	-
2440MHz	Pass	AV	2.3856G	43.11	54.00	-10.89	30.92	3	H	132	2.38	-
2440MHz	Pass	AV	2.44G	100.22	Inf	-Inf	31.11	3	H	132	2.38	-
2440MHz	Pass	AV	2.4996G	43.86	54.00	-10.14	31.33	3	H	132	2.38	-
2440MHz	Pass	PK	2.3844G	53.98	74.00	-20.02	30.92	3	H	132	2.38	-
2440MHz	Pass	PK	2.4396G	101.85	Inf	-Inf	31.11	3	H	132	2.38	-
2440MHz	Pass	PK	2.484G	55.32	74.00	-18.68	31.27	3	H	132	2.38	-
2440MHz	Pass	AV	2.376G	43.15	54.00	-10.85	30.89	3	V	102	1.17	-
2440MHz	Pass	AV	2.44G	95.31	Inf	-Inf	31.11	3	V	102	1.17	-
2440MHz	Pass	AV	2.4976G	43.79	54.00	-10.21	31.32	3	V	102	1.17	-
2440MHz	Pass	PK	2.3636G	53.78	74.00	-20.22	30.84	3	V	102	1.17	-
2440MHz	Pass	PK	2.4404G	97.00	Inf	-Inf	31.12	3	V	102	1.17	-
2440MHz	Pass	PK	2.4872G	54.38	74.00	-19.62	31.28	3	V	102	1.17	-
2480MHz	Pass	AV	2.48G	99.87	Inf	-Inf	31.26	3	H	132	2.35	-
2480MHz	Pass	AV	2.483502G	47.24	54.00	-6.76	31.27	3	H	132	2.35	-
2480MHz	Pass	PK	2.4798G	101.53	Inf	-Inf	31.26	3	H	132	2.35	-
2480MHz	Pass	PK	2.483502G	55.79	74.00	-18.21	31.27	3	H	132	2.35	-
2480MHz	Pass	AV	2.48G	96.00	Inf	-Inf	31.26	3	V	98	1.20	-
2480MHz	Pass	AV	2.483502G	45.08	54.00	-8.92	31.27	3	V	98	1.20	-
2480MHz	Pass	PK	2.48G	97.71	Inf	-Inf	31.26	3	V	98	1.20	-
2480MHz	Pass	PK	2.4838G	55.25	74.00	-18.75	31.27	3	V	98	1.20	-
2480MHz	Pass	AV	4.96G	30.73	54.00	-23.27	2.59	3	H	330	1.50	-
2480MHz	Pass	PK	4.96G	43.40	74.00	-30.60	2.59	3	H	360	1.50	-
2480MHz	Pass	AV	4.96G	36.72	54.00	-17.28	2.59	3	V	126	1.01	-
2480MHz	Pass	PK	4.96G	48.16	74.00	-25.84	2.59	3	V	126	1.01	-

BT-LE(1Mbps)

2402MHz_TX

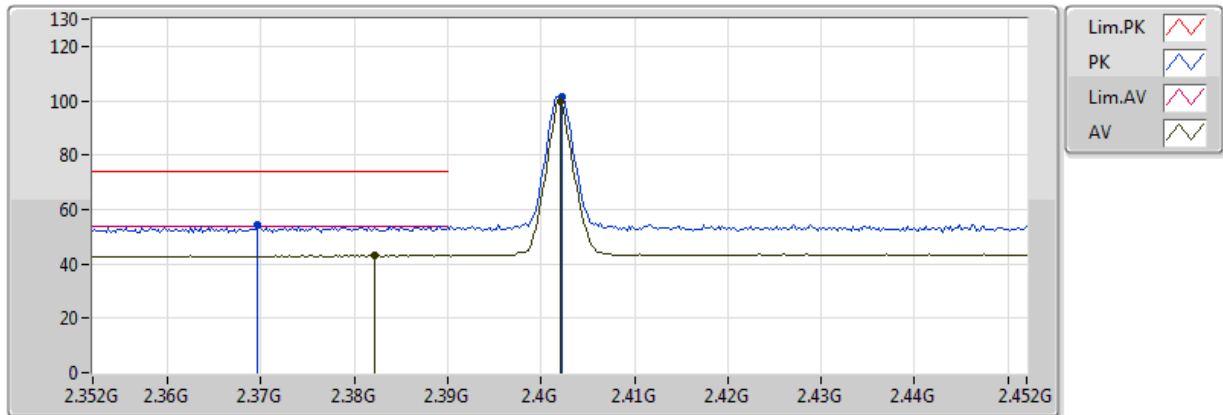


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.402G	94.84	Inf	-Inf	30.98	3	V	92	1.22	-
AV	2.3764G	43.20	54.00	-10.80	30.89	3	V	92	1.22	-
PK	2.4022G	96.50	Inf	-Inf	30.98	3	V	92	1.22	-
PK	2.3868G	54.52	74.00	-19.48	30.92	3	V	92	1.22	-

BT-LE(1Mbps)

2402MHz_TX

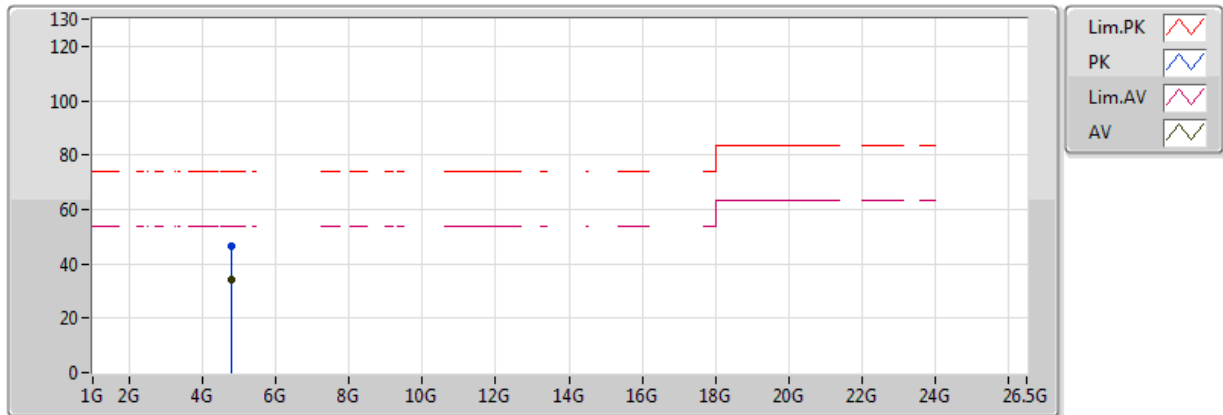


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.402G	99.67	Inf	-Inf	30.98	3	H	133	1.56	-
AV	2.3822G	43.25	54.00	-10.75	30.91	3	H	133	1.56	-
PK	2.4022G	101.30	Inf	-Inf	30.98	3	H	133	1.56	-
PK	2.3696G	54.20	74.00	-19.80	30.86	3	H	133	1.56	-

BT-LE(1Mbps)

2402MHz_TX

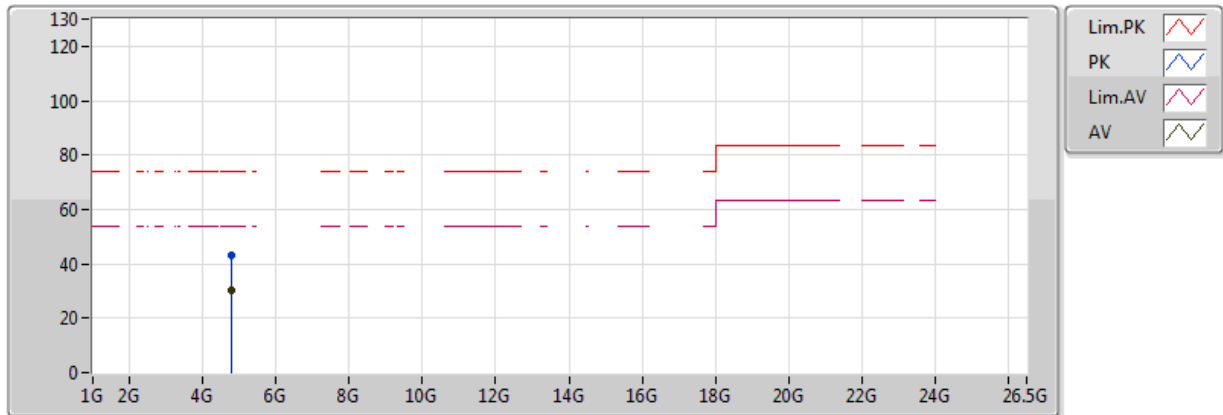


EUT=Y

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	34.37	54.00	-19.63	2.10	3	V	121	1.01	-
PK	4.804G	46.70	74.00	-27.30	2.10	3	V	121	1.01	-

BT-LE(1Mbps)

2402MHz_TX

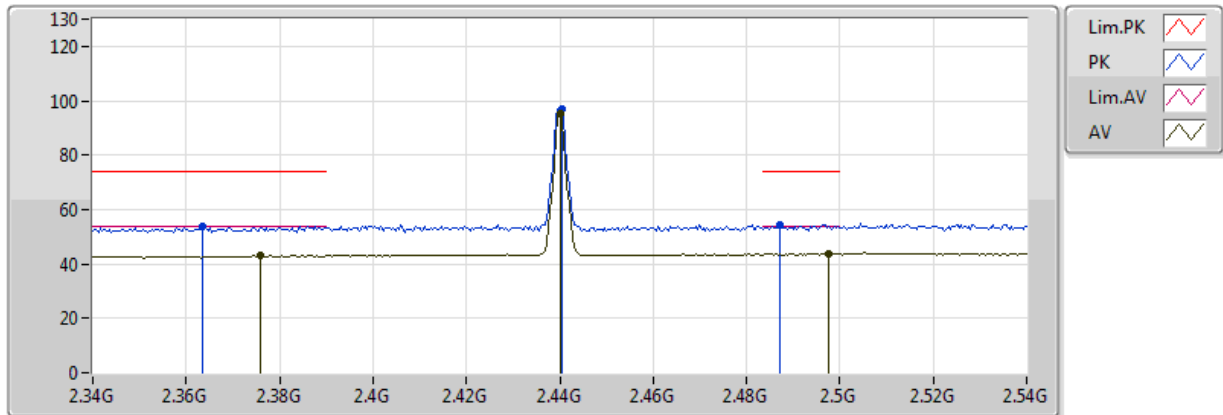


EUT=Y

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	30.29	54.00	-23.71	2.10	3	H	360	1.50	-
PK	4.804G	43.32	74.00	-30.68	2.10	3	H	360	1.50	-

BT-LE(1Mbps)

2440MHz_TX

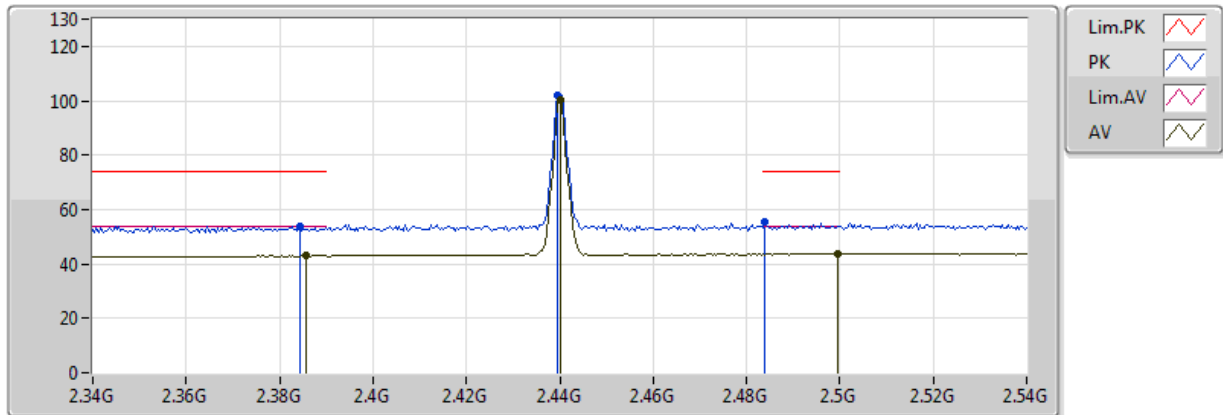


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.44G	95.31	Inf	-Inf	31.11	3	V	102	1.17	-
AV	2.376G	43.15	54.00	-10.85	30.89	3	V	102	1.17	-
AV	2.4976G	43.79	54.00	-10.21	31.32	3	V	102	1.17	-
PK	2.4404G	97.00	Inf	-Inf	31.12	3	V	102	1.17	-
PK	2.3636G	53.78	74.00	-20.22	30.84	3	V	102	1.17	-
PK	2.4872G	54.38	74.00	-19.62	31.28	3	V	102	1.17	-

BT-LE(1Mbps)

2440MHz_TX

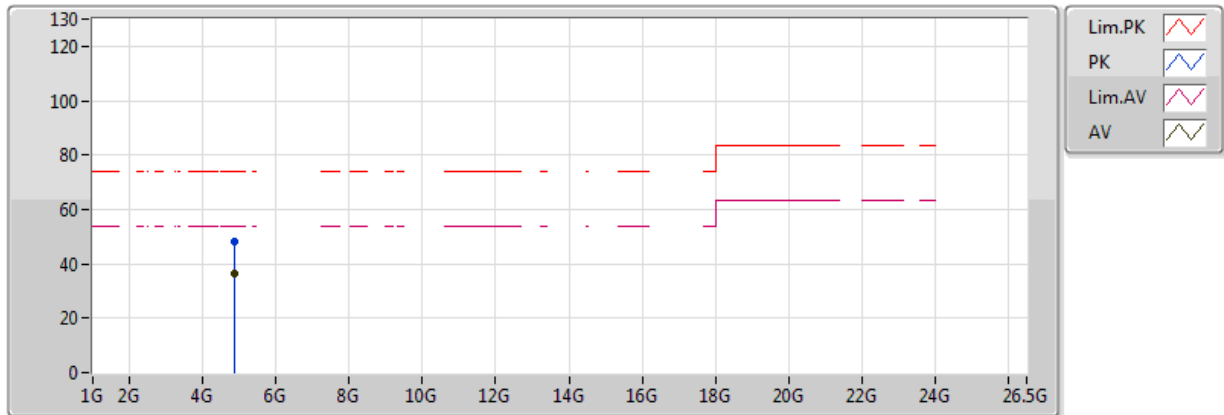


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.44G	100.22	Inf	-Inf	31.11	3	H	132	2.38	-
AV	2.3856G	43.11	54.00	-10.89	30.92	3	H	132	2.38	-
AV	2.4996G	43.86	54.00	-10.14	31.33	3	H	132	2.38	-
PK	2.3844G	53.98	74.00	-20.02	30.92	3	H	132	2.38	-
PK	2.484G	55.32	74.00	-18.68	31.27	3	H	132	2.38	-
PK	2.4396G	101.85	Inf	-Inf	31.11	3	H	132	2.38	-

BT-LE(1Mbps)

2440MHz_TX

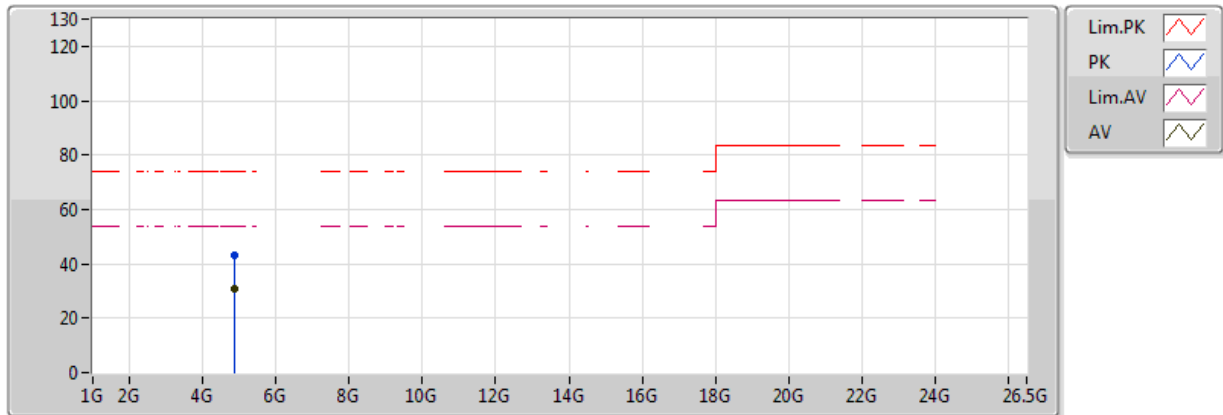


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.88G	36.64	54.00	-17.36	2.34	3	V	126	1.30	-
PK	4.88G	48.11	74.00	-25.89	2.34	3	V	126	1.30	-

BT-LE(1Mbps)

2440MHz_TX

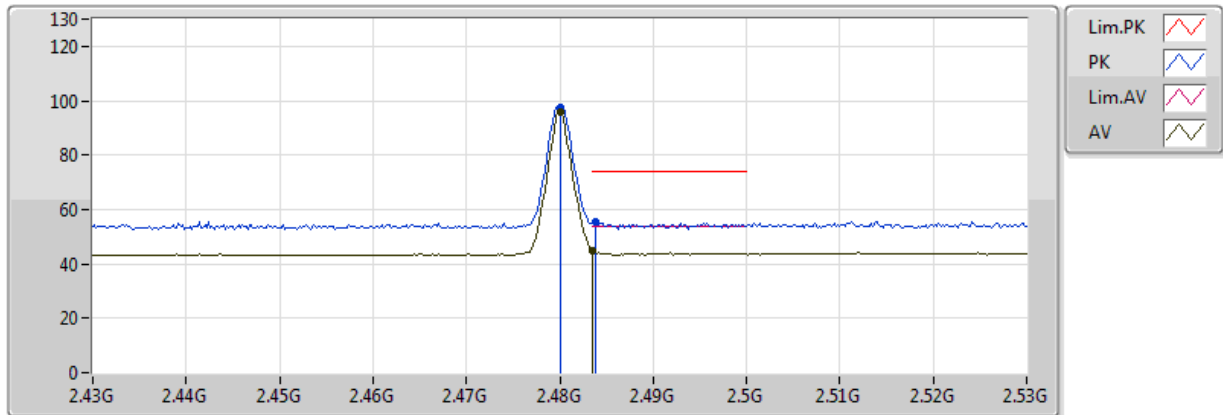


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.88G	30.79	54.00	-23.21	2.34	3	H	245	1.59	-
PK	4.88G	43.37	74.00	-30.63	2.34	3	H	245	1.59	-

BT-LE(1Mbps)

2480MHz_TX

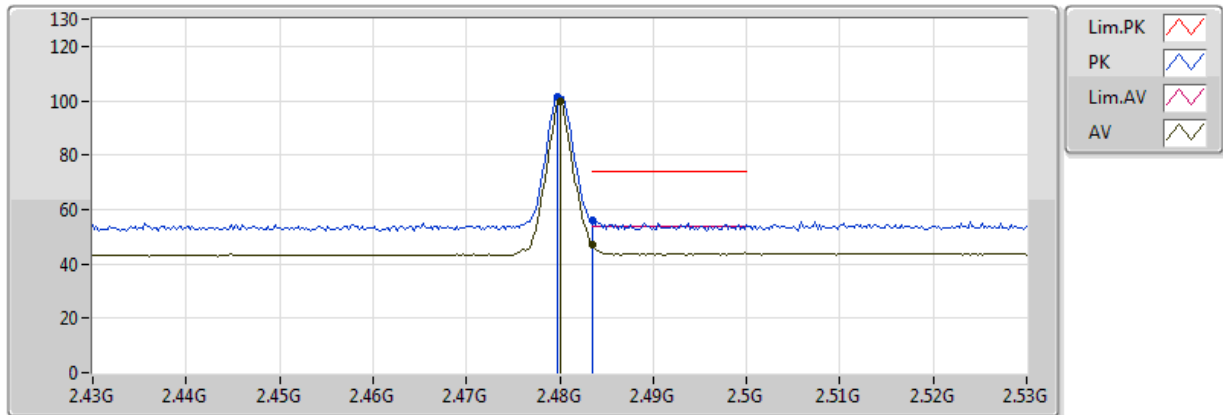


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.48G	96.00	Inf	-Inf	31.26	3	V	98	1.20	-
AV	2.483502G	45.08	54.00	-8.92	31.27	3	V	98	1.20	-
PK	2.48G	97.71	Inf	-Inf	31.26	3	V	98	1.20	-
PK	2.4838G	55.25	74.00	-18.75	31.27	3	V	98	1.20	-

BT-LE(1Mbps)

2480MHz_TX

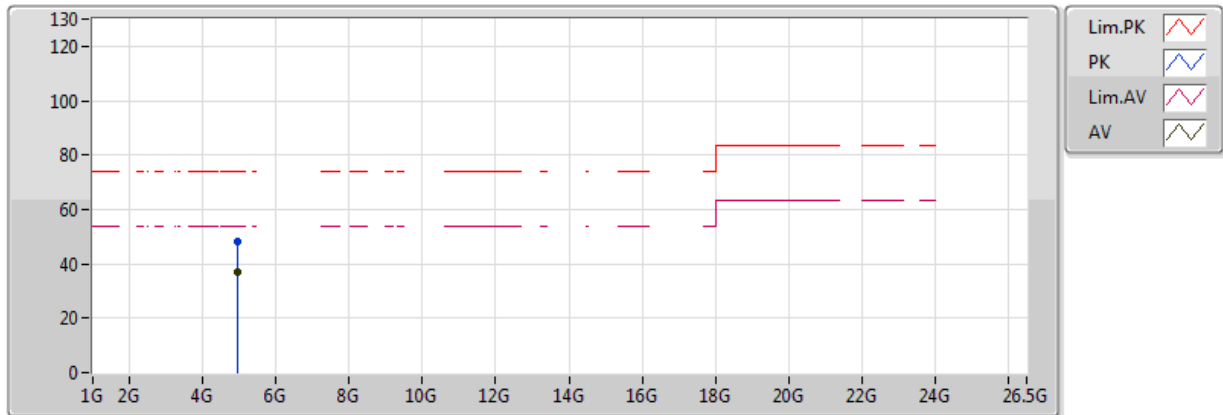


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.48G	99.87	Inf	-Inf	31.26	3	H	132	2.35	-
AV	2.483502G	47.24	54.00	-6.76	31.27	3	H	132	2.35	-
PK	2.4798G	101.53	Inf	-Inf	31.26	3	H	132	2.35	-
PK	2.483502G	55.79	74.00	-18.21	31.27	3	H	132	2.35	-

BT-LE(1Mbps)

2480MHz_TX

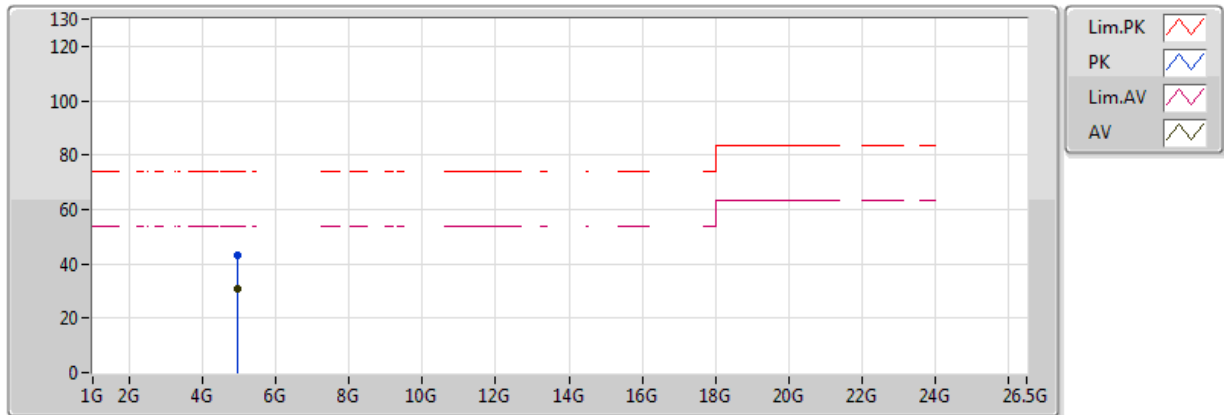


EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.96G	36.72	54.00	-17.28	2.59	3	V	126	1.01	-
PK	4.96G	48.16	74.00	-25.84	2.59	3	V	126	1.01	-

BT-LE(1Mbps)

2480MHz_TX



EUT=Y

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.96G	30.73	54.00	-23.27	2.59	3	H	330	1.50	-
PK	4.96G	43.40	74.00	-30.60	2.59	3	H	360	1.50	-