

FCC Test Report

FCC ID : 2AVDR-KD2-M1
Equipment : Dive Computer
Brand Name : ATMOS
Model Name : KD2
Applicant : ATMOS CO., LTD.
1F., NO.17-1, LN. 60, TAISHUN ST. DA-AN DIST.,
TAIPEI CITY 10645, TAIWAN (R.O.C.)
Manufacturer : GLOBALSAT WORLDCOM CORPORATION
16F., No. 186, Jian 1st Rd., Zhonghe Dist., New Taipei
City 235, Taiwan (R.O.C.)
Standard : 47 CFR FCC Part 15.247

The product was received on Nov. 21, 2018, and testing was started from Jan. 26, 2019 and completed on Jan. 30, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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


Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-C10 Ver3.6
FCC ID: 2AVDR-KD2-M1

Summary of Test Result

Report Clause	Ref.Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

Note : From Sporton Project No.:TR8N2115AL

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and explanations:
None

Reviewed by: Jackson Tsai

Report Producer: Kate Lo

1 General Description

1.1.1 RF General Information

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

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

Note:

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

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	ACX	AT3216	Chip Antenna	N/A

Ant.	Port	Gain (dBi)
		BTLE
1	1	0.5

For BT function:

Ant. 1 (port 1) could transmit/receive simultaneously.

1.1.3 EUT Information

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

1.1.4 Table for Multiple Listing

The brand/model names in the following table are all refer to the identical product.

Brand Name	Model Name	Description
ATMOS	KD2	The product will be matched with different colors Enclosures, the same material <metal>.

1.1.5 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-LE(1Mbps)	0.642	1.925	405u	3k

Note. If $DC < 0.98$, the DCF was added while measuring Output power and PSD.

1.2 Testing Applied Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ KDB 558074 D01 v05r02
- ♦ KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
Test site Designation No. TW1190 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
AC Conduction	CO04-HY	Lego	22.5~23.6°C / 53~56%	26/Jan/2019~30/Jan/2019
RF Conducted	TH06-HY	Clara	21.8~23.3°C / 60~63%	28/Jan/2019~29/Jan/2019
Radiated	03CH09-HY	Kevin	20.2~21.8°C / 51~54%	25/Jan/2019~26/Jan/2019

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)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	3.8V

2.2 Test Channel Mode

Test Software Version	nRFgo studio-DTM UART interface ver. 1.21.2.10
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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	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	1. USB mode; CTX
	2. Charging mode; Normal

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	1. USB mode; CTX		
	2. Charging mode; Normal		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT	V		

2.4 Accessories and Support Equipment

Accessories				
Battery	Brand Name	SUNHE	Model Name	SH382525-250mAh
	Manufacturer	SUNHE	SN	SN701-KD2001-01
	Power Rating	3.8 Vdc, 250 mA	Type	Li-ion, Polymer rechargeable battery
USB Cable	Brand Name	Globalsat	Model Name	LT-100
	Manufacturer	Globalsat	SN	N3PL47TL100000
	Signal Line	1 meter,D-shielded cable,w/o ferrite core		

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

Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5540	-
2	AC Adapter for NB	DELL	LA65NS2-01	-
3	Mouse(USB)	Lenovo	MOGOUO	-
4	iPod	Apple	A1199	-
5	Test Fixture	-	-	-

Note.Support equipment No.5 was provided by customer.

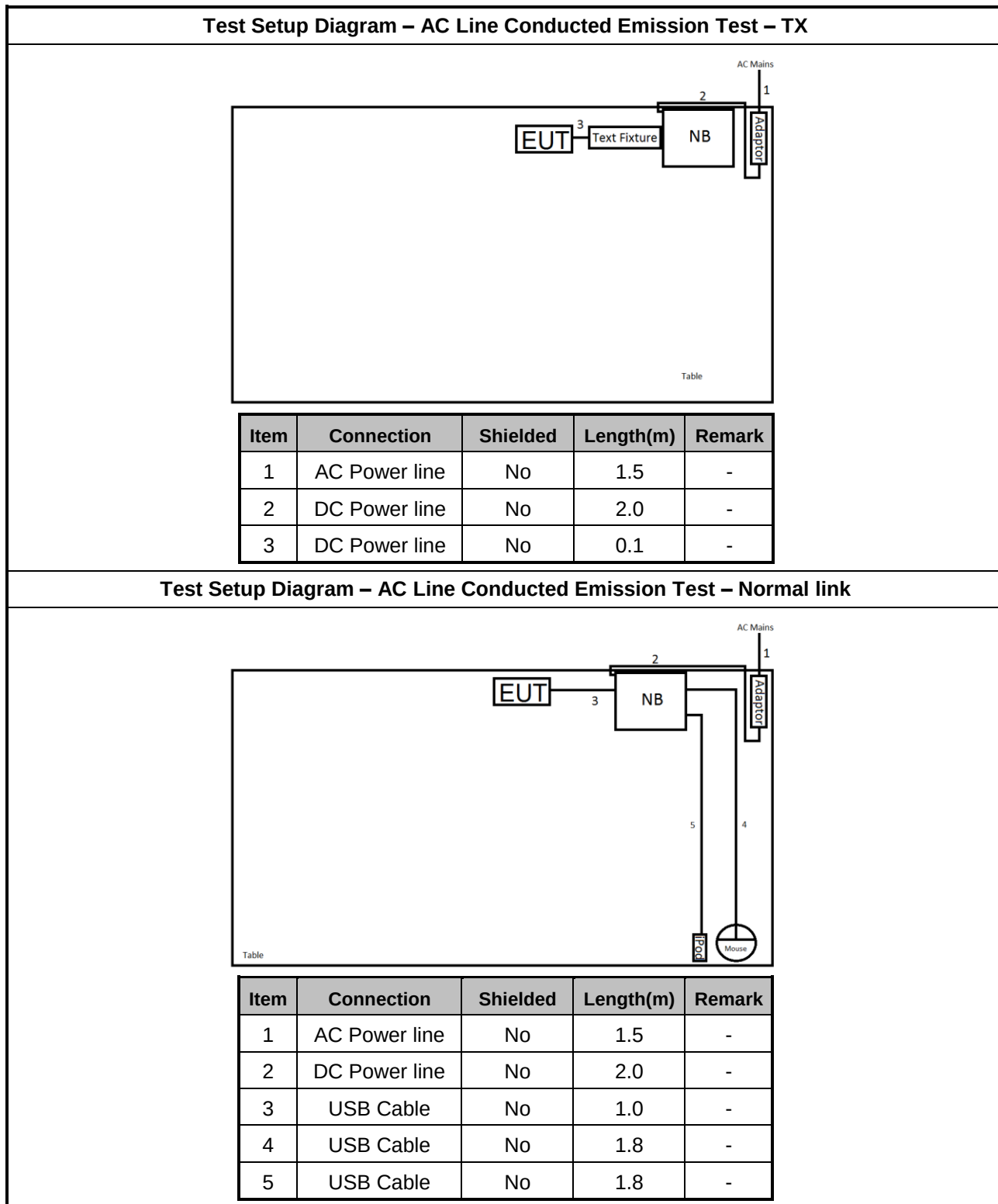
Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	Test Fixture	-	-	-

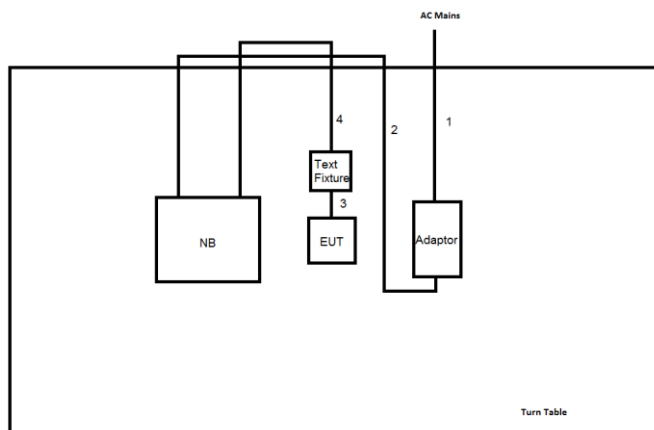
Note.Support equipment No.3 was provided by customer.

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5540	-
2	AC Adapter for NB	DELL	LA65NS2-01	-
3	Mouse(USB)	Lenovo	MOGOUO	-
4	iPod	Apple	A1199	-
5	Test Fixture	-	-	-

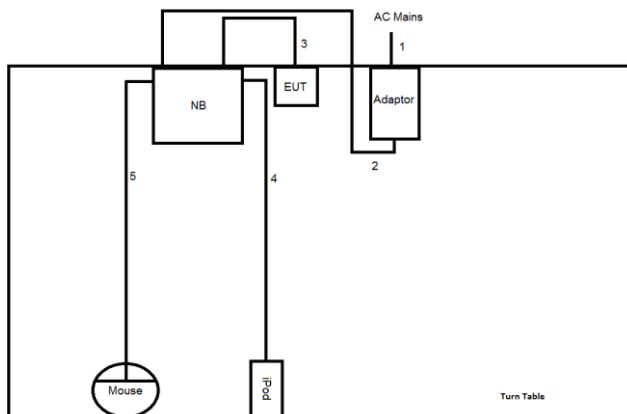
Note.Support equipment No.5 was provided by customer.

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test - TX


Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.5	-
2	DC Power line	No	2.0	-
3	DC Power line	No	0.1	-
4	USB Cable	No	1.5	-

Test Setup Diagram - Radiated Test - Normal link


Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	1.5	-
2	DC Power line	No	2.0	-
3	USB Cable	No	1.0	-
4	USB Cable	No	1.8	-
5	USB Cable	No	1.8	-

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.		

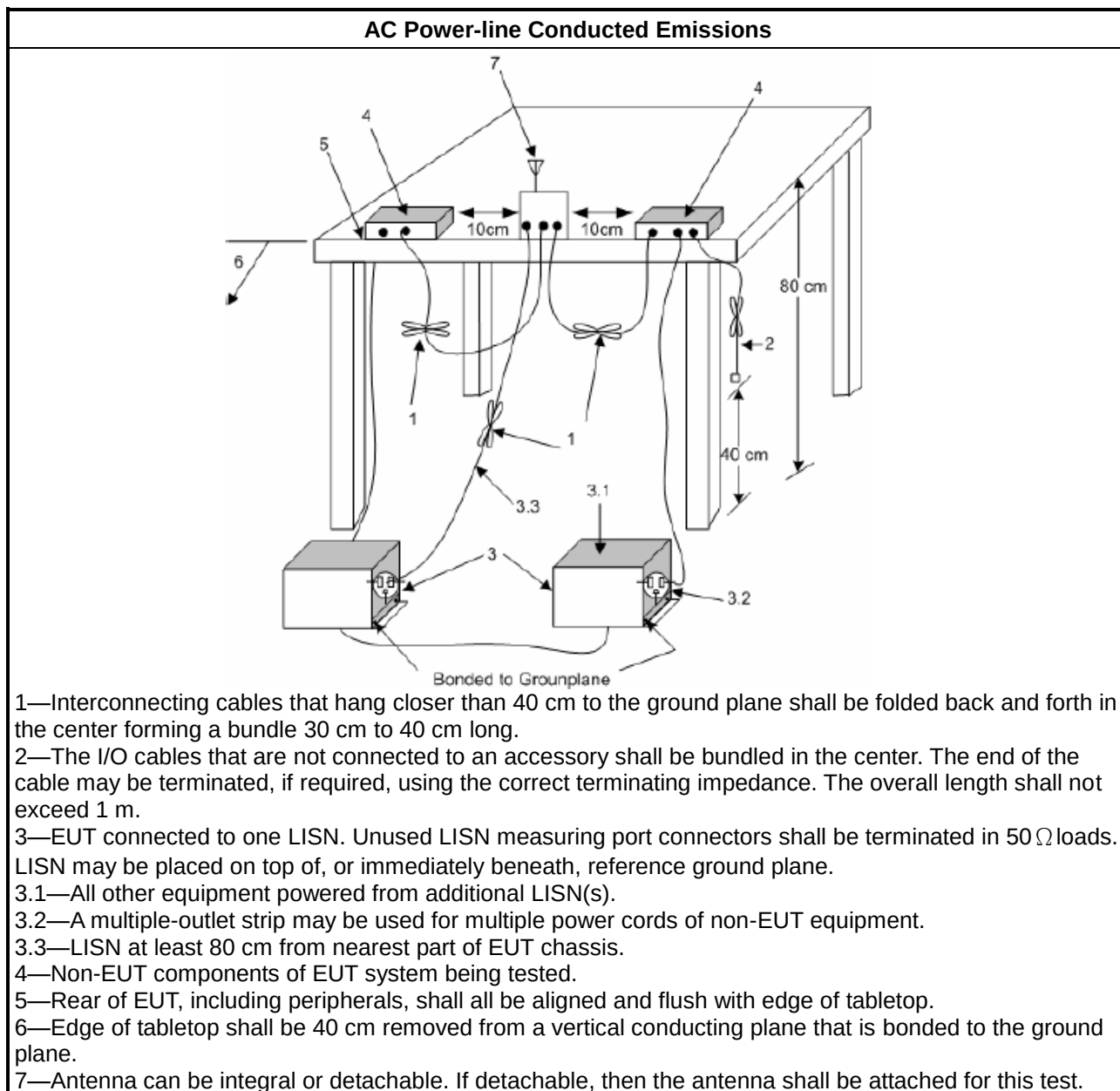
3.1.2 Measuring Instruments

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

Refer as Appendix A

3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

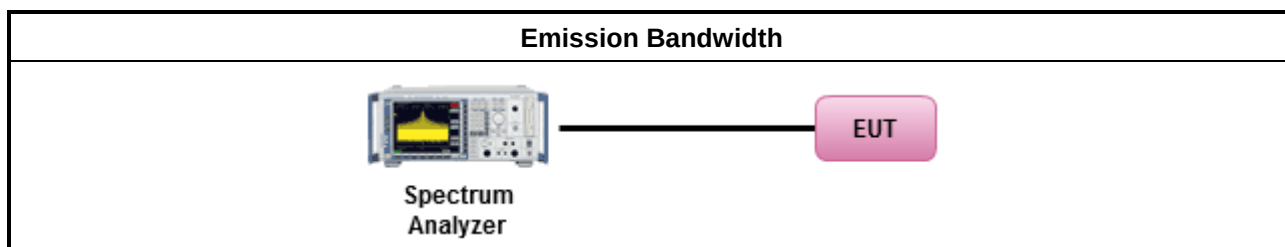
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

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

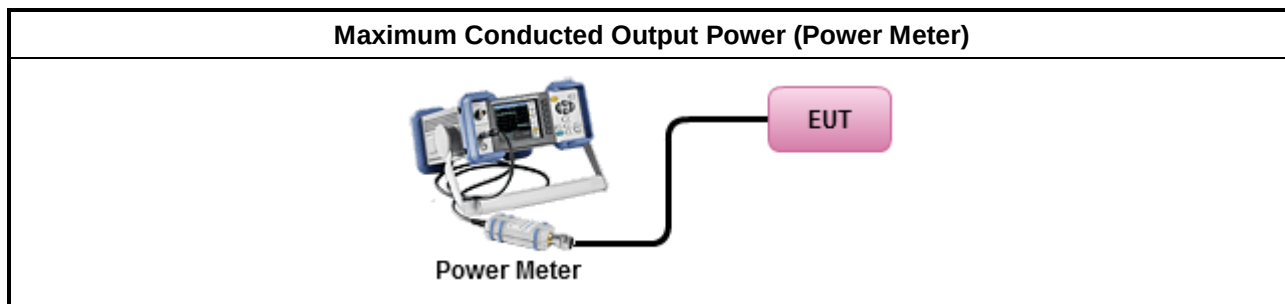
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

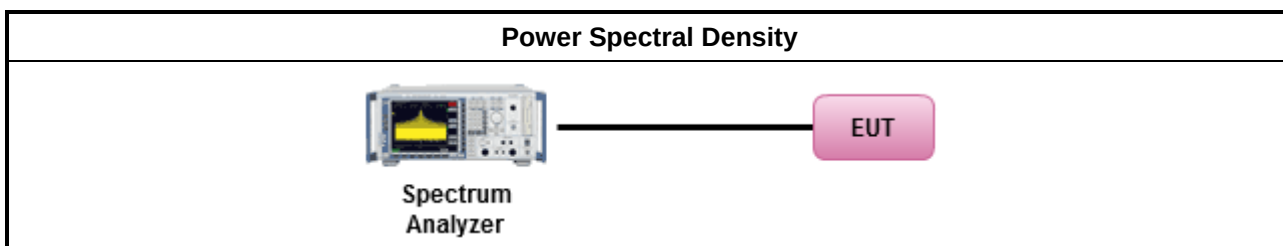
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

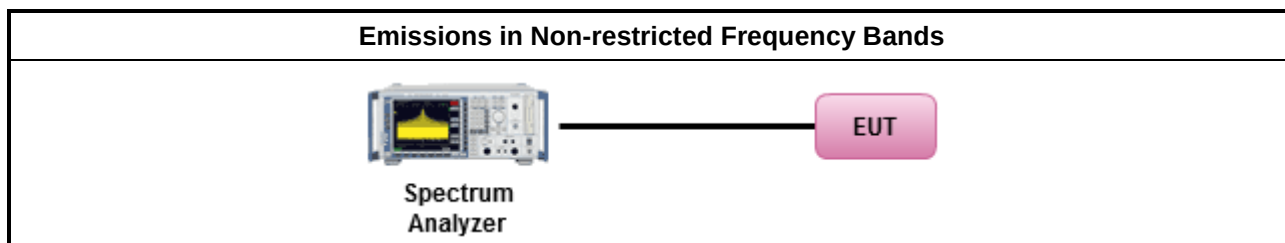
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

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

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

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

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

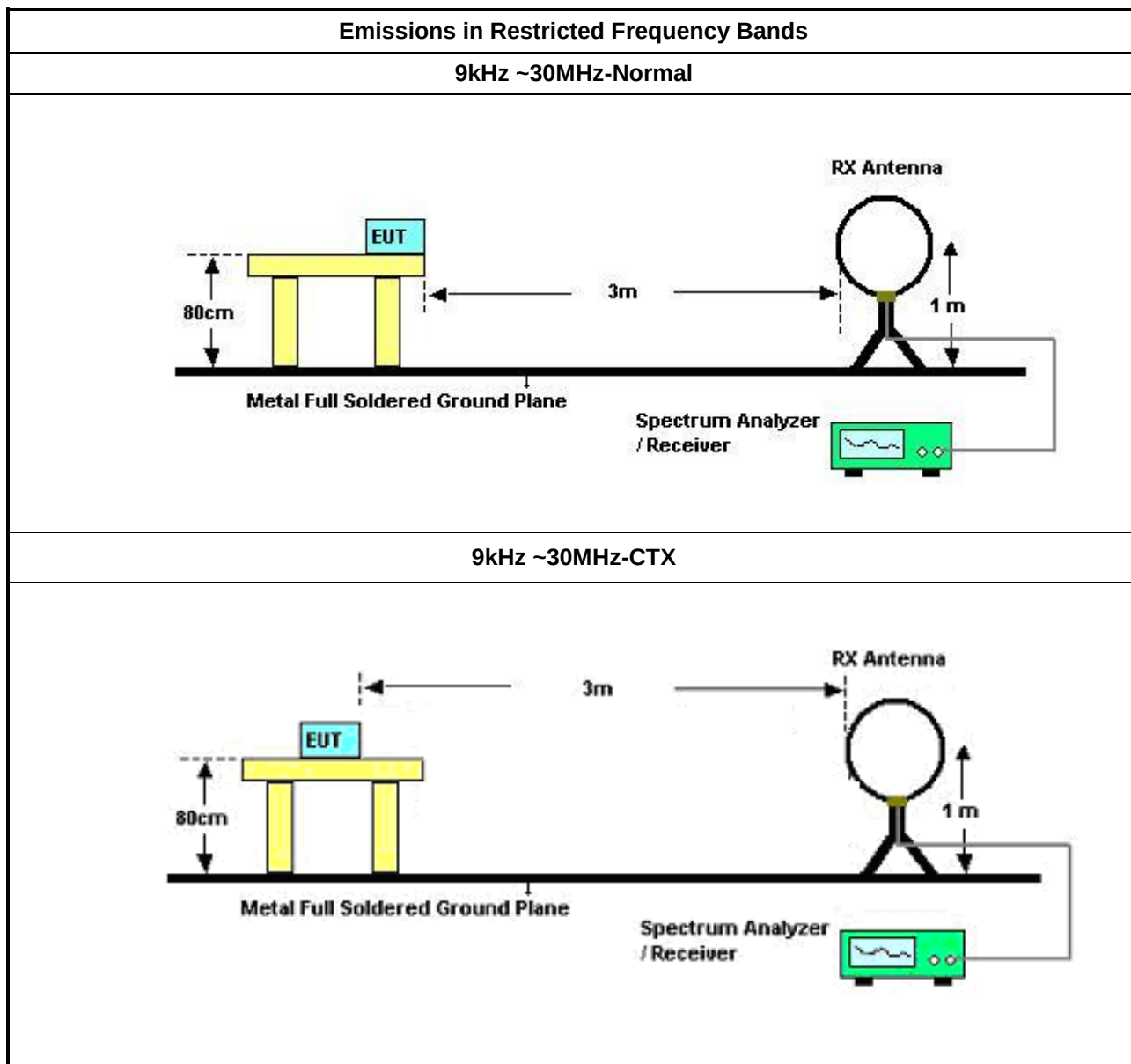
3.6.2 Measuring Instruments

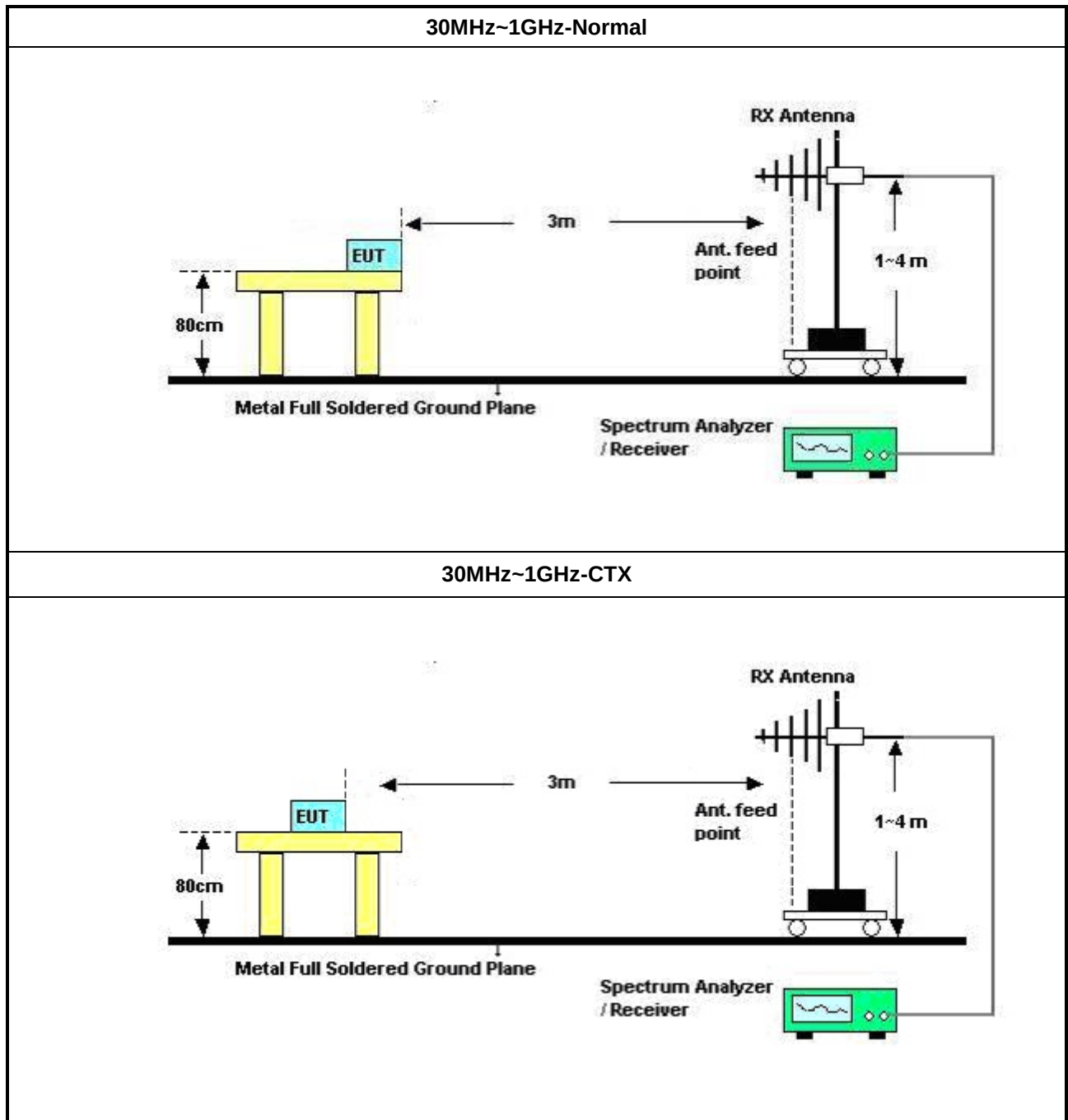
Refer a test equipment and calibration data table in this test report.

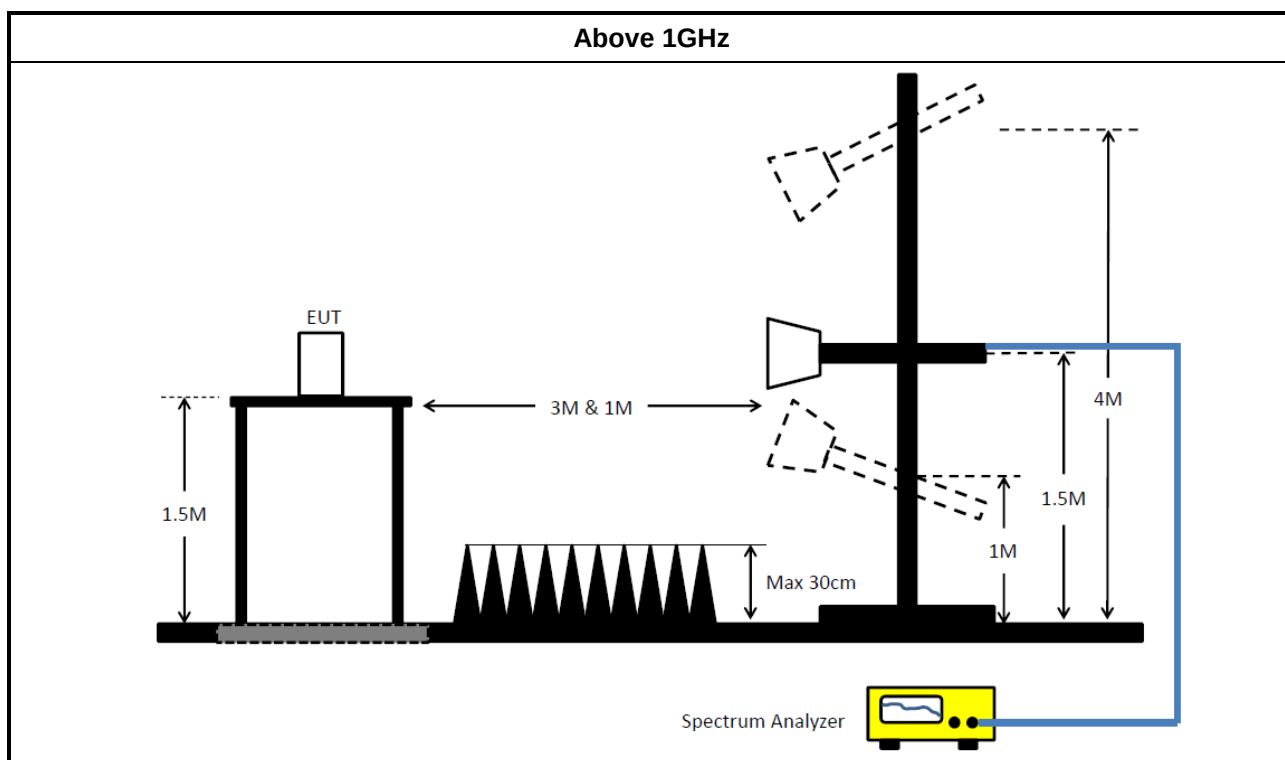
3.6.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.	
For the transmitter unwanted emissions shall be measured using following options below:	
	Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.
KDB 414788 Open-Field Test Sites and Chamber Correlation Justification.	
	Based on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in regulations; however, an attempt should be made to avoid making measurements in the near field.
	Open-field site and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

3.6.4 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.

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR	102051	9KHz ~ 3.6GHz	03/May/2018	02/May/2019
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	08/Nov/2018	07/Nov/2019
RF Cable-CON	MTJ	RG142	CB002-CO	9kHz ~ 200MHz	17/Sep/2018	16/Sep/2019
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2018	11/Oct/2019

NCR : Non-Calibration Require

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	05/Feb/2018	04/Feb/2019
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	05/Feb/2018	04/Feb/2019
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	05/Feb/2018	04/Feb/2019
Cable 0.5m	HUBER	MY10714/4	RF Cable – 05	1G~18G	10/Jan/2019	09/Jan/2020
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	-20 ~ 100°C	22/May/2018	21/May/2019

Instrument for Radiated Test

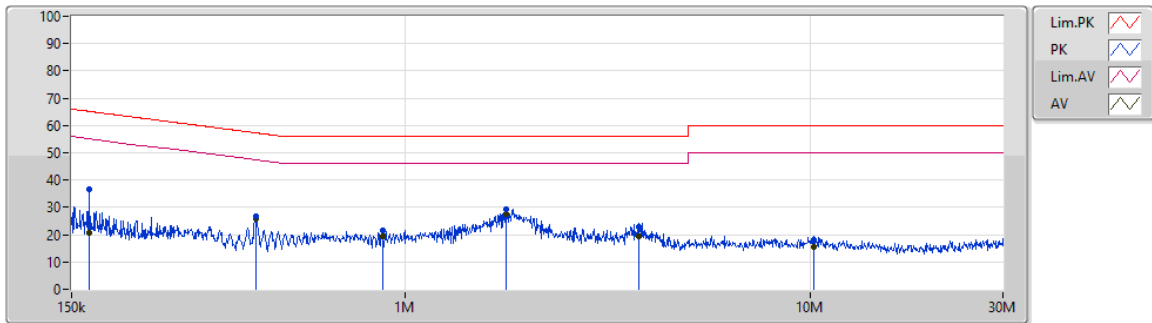
Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz	23/Apr/2018	22/Apr/2019
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	14/Jun/2018	13/Jun/2019
Microwave Preamplifier	Agilent	8449B	3008A02096	1GHz~26.5GHz	10/May/2018	09/May/2019
Amplifier	EMC	EMC9135	980232	9KHz~1GHz	27/Apr/2018	26/Apr/2019
EMI Test Receiver	R&S	ESR3	102052	9kHz~3.6GHz	10/Apr/2018	09/Apr/2019
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz~44GHz	31/Jul/2018	30/Jul/2019
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D & MTJ6102-05	35418 / 3	30MHz~1GHz	02/Oct/2018	03/Oct/2019
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA9120 D 1534	1GHz~18GHz	30/Apr/2018	29/Apr/2019
Loop Antenna	TESEQ	HLA 6120	31244	9k~30MHz	29/Mar/2018	28/Mar/2019
RF Cable-R03m	Jye Bao	RG142	CB031	9kHz~1GHz	1/Feb/2018	31/Jan/2019
RF Cable-high	HUBER+SUHNER	SUCOFLEX104	SN 556626/4 + 556627	1GHz ~ 40GHz	14/Mar/2018	13/Mar/2019

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	USB Mode_TX		

AC Conduction_Mode 1

26/01/2019



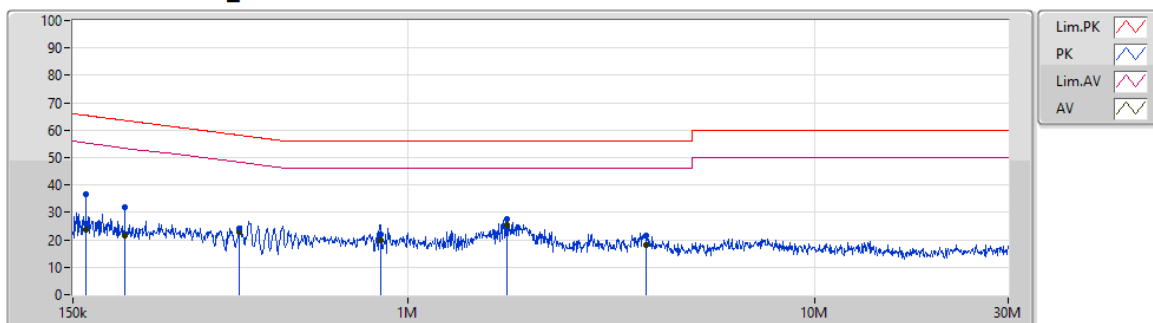
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	165.743k	36.61	65.18	-28.57	19.48	Neutral	-	17.13	9.60	0.01	9.87			
AV	165.743k	20.67	55.18	-34.51	19.48	Neutral	-	1.19	9.60	0.01	9.87			
QP	428.605k	26.92	57.28	-30.36	19.48	Neutral	-	7.44	9.59	0.01	9.88			
AV	428.605k	25.73	47.28	-21.55	19.48	Neutral	-	6.25	9.59	0.01	9.88			
QP	879.278k	21.44	56.00	-34.56	19.49	Neutral	-	1.95	9.59	0.02	9.88			
AV	879.278k	19.38	46.00	-26.62	19.49	Neutral	-	-0.11	9.59	0.02	9.88			
QP	1.775M	29.28	56.00	-26.72	19.53	Neutral	-	9.75	9.61	0.03	9.89			
AV	1.775M	27.46	46.00	-18.54	19.53	Neutral	"Worst"	7.93	9.61	0.03	9.89			
QP	3.79M	22.74	56.00	-33.26	19.54	Neutral	-	3.20	9.61	0.04	9.89			
AV	3.79M	19.41	46.00	-26.59	19.54	Neutral	-	-0.13	9.61	0.04	9.89			
QP	10.201M	17.90	60.00	-42.10	19.63	Neutral	-	-1.73	9.67	0.07	9.89			
AV	10.201M	15.57	50.00	-34.43	19.63	Neutral	-	-4.06	9.67	0.07	9.89			

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	USB Mode_TX		

AC Conduction_Mode 1

26/01/2019



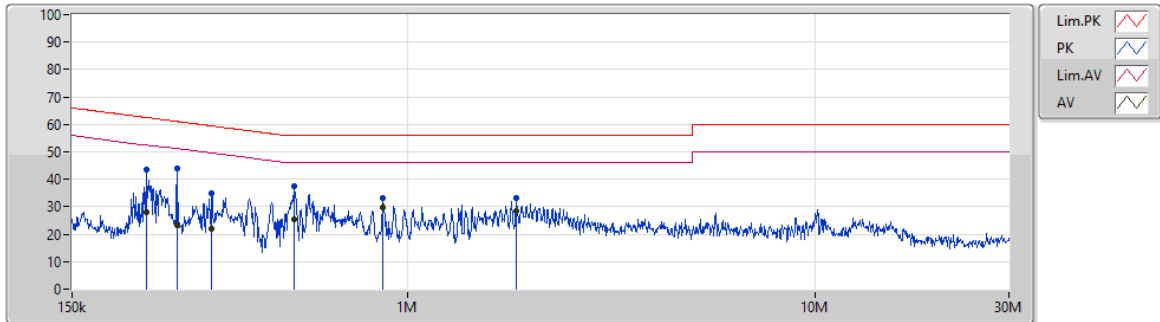
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	161.607k	36.50	65.39	-28.89	19.48	Line	-	17.02	9.60	0.01	9.87			
AV	161.607k	23.54	55.39	-31.85	19.48	Line	-	4.06	9.60	0.01	9.87			
QP	201.325k	31.80	63.55	-31.75	19.48	Line	-	12.32	9.60	0.01	9.87			
AV	201.325k	21.40	53.55	-32.15	19.48	Line	-	1.92	9.60	0.01	9.87			
QP	385.222k	24.16	58.16	-34.00	19.48	Line	-	4.68	9.59	0.01	9.88			
AV	385.222k	22.74	48.16	-25.42	19.48	Line	-	3.26	9.59	0.01	9.88			
QP	857.792k	21.89	56.00	-34.11	19.50	Line	-	2.39	9.60	0.02	9.88			
AV	857.792k	19.88	46.00	-26.12	19.50	Line	-	0.38	9.60	0.02	9.88			
QP	1.757M	27.45	56.00	-28.55	19.54	Line	-	7.91	9.62	0.03	9.89			
AV	1.757M	25.53	46.00	-20.47	19.54	Line	"Worst"	5.99	9.62	0.03	9.89			
QP	3.865M	21.65	56.00	-34.35	19.57	Line	-	2.08	9.63	0.05	9.89			
AV	3.865M	18.20	46.00	-27.80	19.57	Line	-	-1.37	9.63	0.05	9.89			

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Neutral
Operating Function	Charging mode _Normal		

AC Conduction

30/01/2019



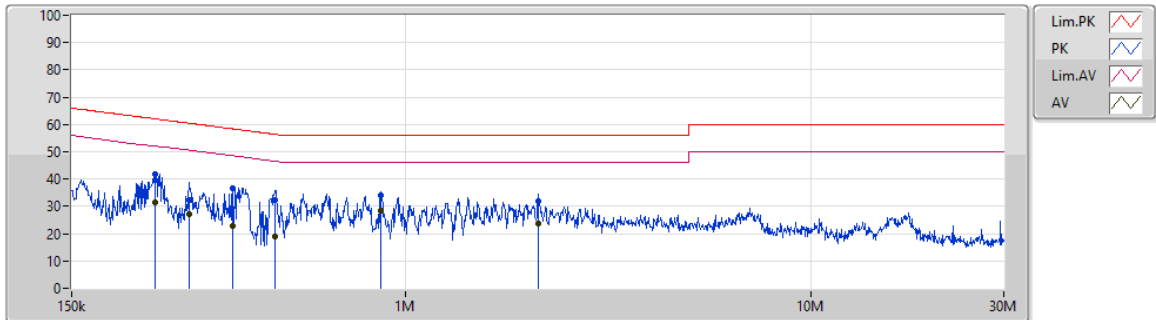
Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	228.103k	43.64	62.52	-18.88	19.47	Neutral	-	24.17	9.59	0.01	9.87			
AV	228.103k	27.97	52.52	-24.55	19.47	Neutral	-	8.50	9.59	0.01	9.87			
QP	271.903k	43.84	61.07	-17.23	19.47	Neutral	-	24.37	9.59	0.01	9.87			
AV	271.903k	23.23	51.07	-27.84	19.47	Neutral	-	3.76	9.59	0.01	9.87			
QP	329.331k	34.91	59.46	-24.55	19.48	Neutral	-	15.43	9.59	0.01	9.88			
AV	329.331k	22.17	49.46	-27.29	19.48	Neutral	-	2.69	9.59	0.01	9.88			
QP	525.384k	37.57	56.00	-18.43	19.48	Neutral	-	18.09	9.59	0.01	9.88			
AV	525.384k	25.26	46.00	-20.74	19.48	Neutral	-	5.78	9.59	0.01	9.88			
QP	872.285k	33.11	56.00	-22.89	19.49	Neutral	-	13.62	9.59	0.02	9.88			
AV	872.285k	29.92	46.00	-16.08	19.49	Neutral	"Worst"	10.43	9.59	0.02	9.88			
QP	1.855M	33.05	56.00	-22.95	19.53	Neutral	-	13.52	9.61	0.03	9.89			
AV	1.855M	28.37	46.00	-17.63	19.53	Neutral	-	8.84	9.61	0.03	9.89			

AC Power-line Conducted Emissions Result

Operating Mode	2	Power Phase	Line
Operating Function	Charging mode _Normal		

AC Conduction

30/01/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	241.214k	41.87	62.06	-20.19	19.48	Line	-	22.39	9.60	0.01	9.87			
AV	241.214k	31.62	52.06	-20.44	19.48	Line	-	12.14	9.60	0.01	9.87			
QP	292.16k	32.35	60.46	-28.11	19.48	Line	-	12.87	9.59	0.01	9.88			
AV	292.16k	27.24	50.46	-23.22	19.48	Line	-	7.76	9.59	0.01	9.88			
QP	375.703k	36.55	58.37	-21.82	19.48	Line	-	17.07	9.59	0.01	9.88			
AV	375.703k	23.03	48.37	-25.34	19.48	Line	-	3.55	9.59	0.01	9.88			
QP	477.384k	32.38	56.38	-24.00	19.48	Line	-	12.90	9.59	0.01	9.88			
AV	477.384k	18.92	46.38	-27.46	19.48	Line	-	-0.56	9.59	0.01	9.88			
QP	868.81k	34.13	56.00	-21.87	19.50	Line	-	14.63	9.60	0.02	9.88			
AV	868.81k	28.55	46.00	-17.45	19.50	Line	"Worst"	9.05	9.60	0.02	9.88			
QP	2.125M	31.72	56.00	-24.28	19.54	Line	-	12.18	9.62	0.03	9.89			
AV	2.125M	23.92	46.00	-22.08	19.54	Line	-	4.38	9.62	0.03	9.89			

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	692.5k	1.051M	1M05F1D	686.25k	1.04M

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;

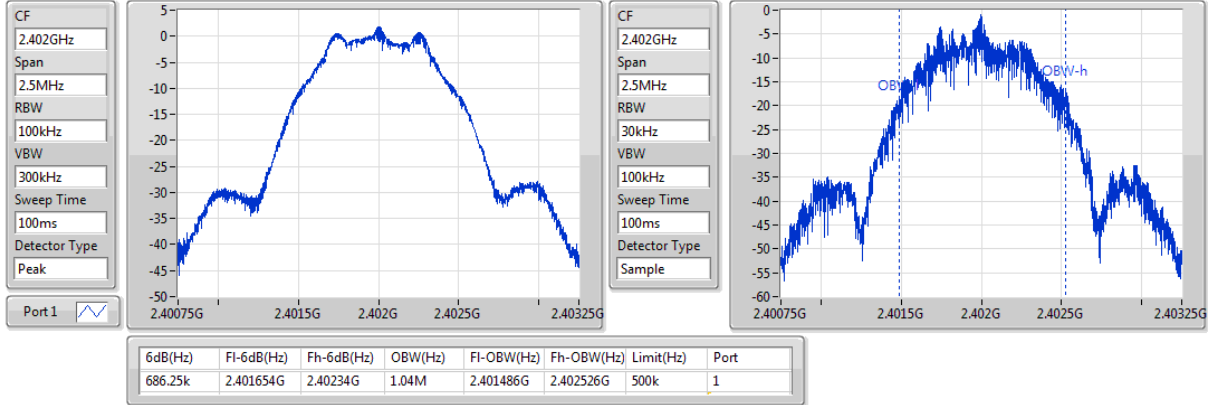
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	686.25k	1.04M
2440MHz	Pass	500k	692.5k	1.051M
2480MHz	Pass	500k	686.25k	1.046M

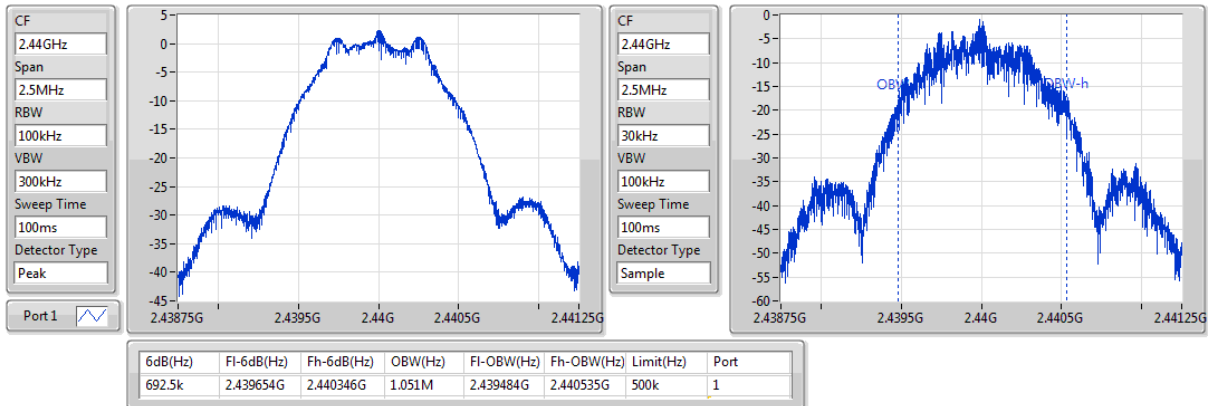
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-LE(1Mbps)
EBW
2402MHz

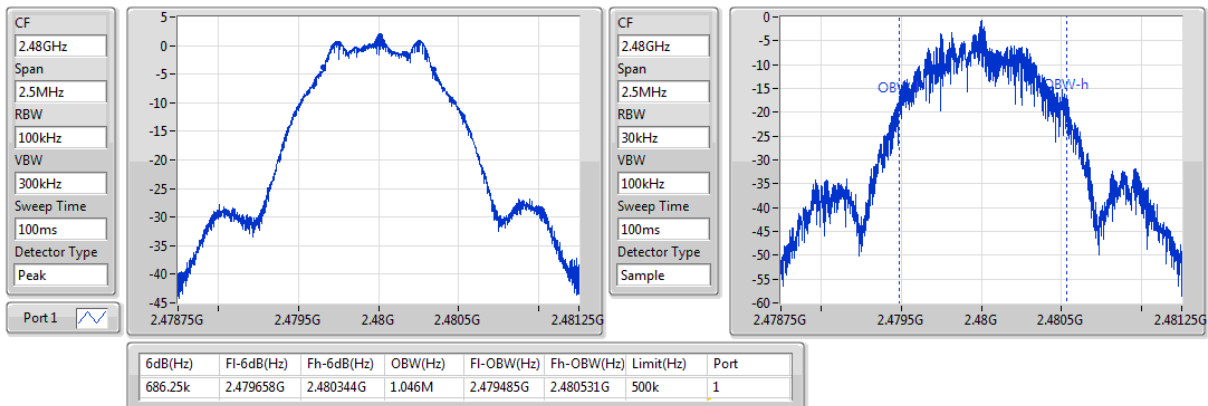
28/01/2019


BT-LE(1Mbps)
EBW
2440MHz

28/01/2019


BT-LE(1Mbps)
EBW
2480MHz

28/01/2019



**Summary**

Mode	Power	Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	1.20	0.00132

Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	0.50	0.79	30.00
2440MHz	Pass	0.50	1.20	30.00
2480MHz	Pass	0.50	1.10	30.00

**Summary**

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-13.99

RBW=3kHz.

Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	0.50	-14.44	8.00
2440MHz	Pass	0.50	-13.99	8.00
2480MHz	Pass	0.50	-14.19	8.00

RBW=3kHz.

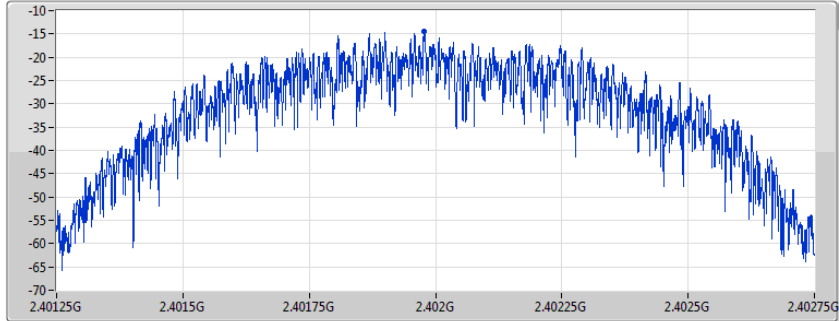
BT-LE(1Mbps)

PSD

2402MHz

28/01/2019

CF
2.402GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
170ms
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-14.44	-14.44	-14.44

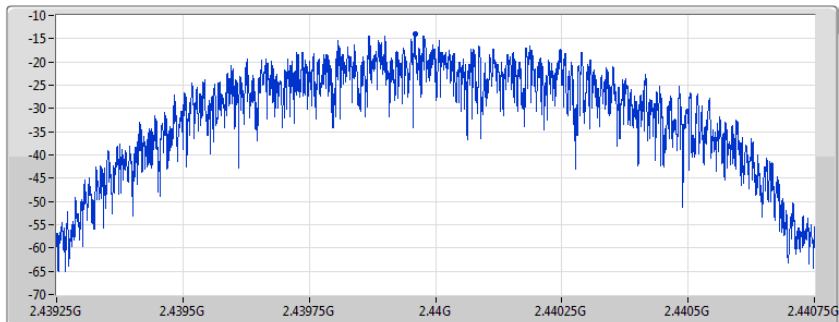
BT-LE(1Mbps)

PSD

2440MHz

28/01/2019

CF
2.44GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
170ms
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-13.99	-13.99	-13.99

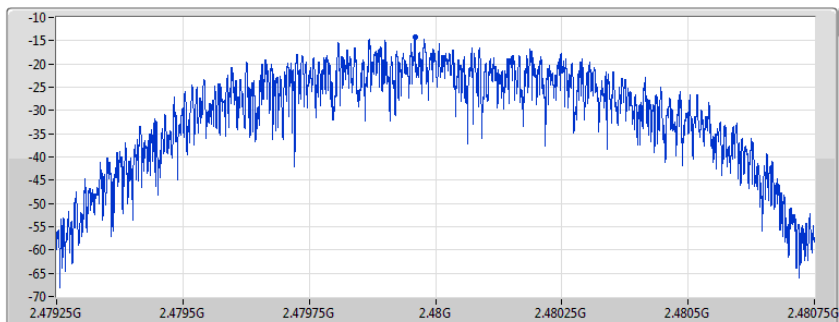
BT-LE(1Mbps)

PSD

2480MHz

28/01/2019

CF
2.48GHz
Span
1.5MHz
RBW
3kHz
VBW
10kHz
Sweep Time
170ms
Detector Type
Peak



Port 1

Sum	PD	Port 1
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-14.19	-14.19	-14.19

Summary

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.44G	2.43	-27.57	2.39534G	-59.63	2.39948G	-58.19	2.48488G	-55.95	15.11895G	-51.21	1

Result

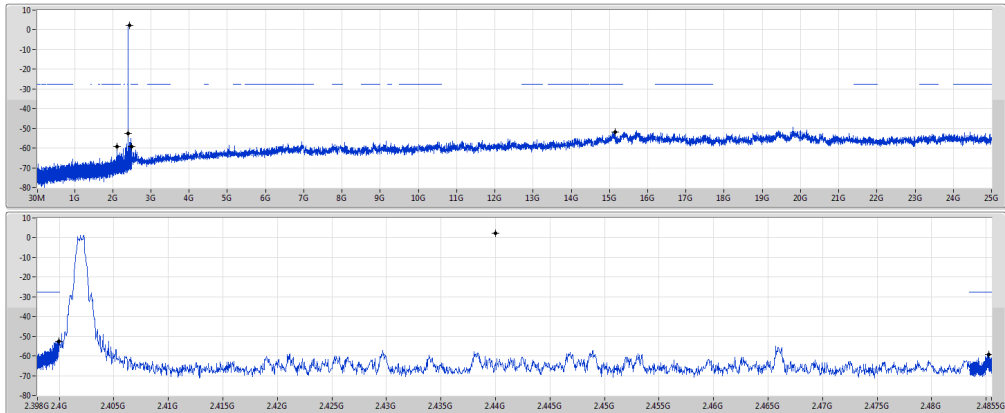
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.44G	2.43	-27.57	2.10999G	-59.09	2.39996G	-52.53	2.48523G	-59.11	15.14146G	-52.00	1
2440MHz	Pass	2.44G	2.43	-27.57	2.39534G	-59.63	2.39948G	-58.19	2.48488G	-55.95	15.11895G	-51.21	1
2480MHz	Pass	2.44G	2.43	-27.57	2.18784G	-62.64	2.39892G	-59.95	2.48359G	-57.94	16.74281G	-51.25	1

BT-LE(1Mbps)
2402MHz

CSE NdB

29/01/2019

Port 1



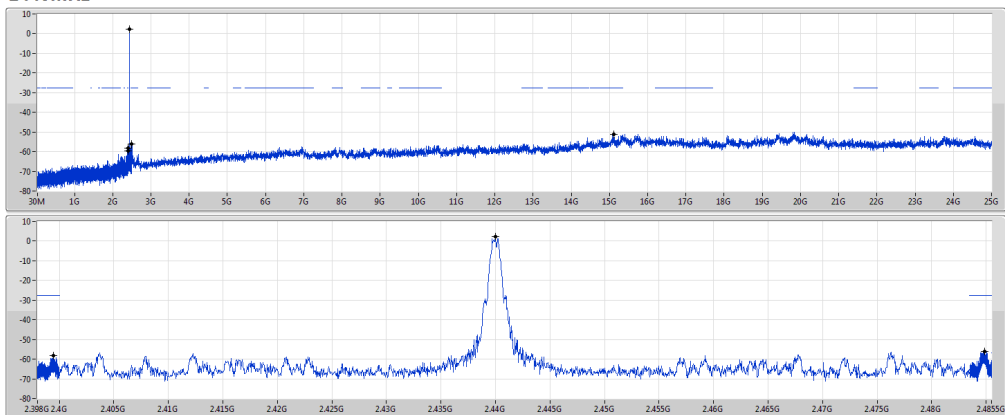
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
244G	243	-27.57	210999G	-59.09	239996G	-52.53	248523G	-59.11	1514146G	-52.00	1

BT-LE(1Mbps)
2440MHz

CSE NdB

29/01/2019

Port 1



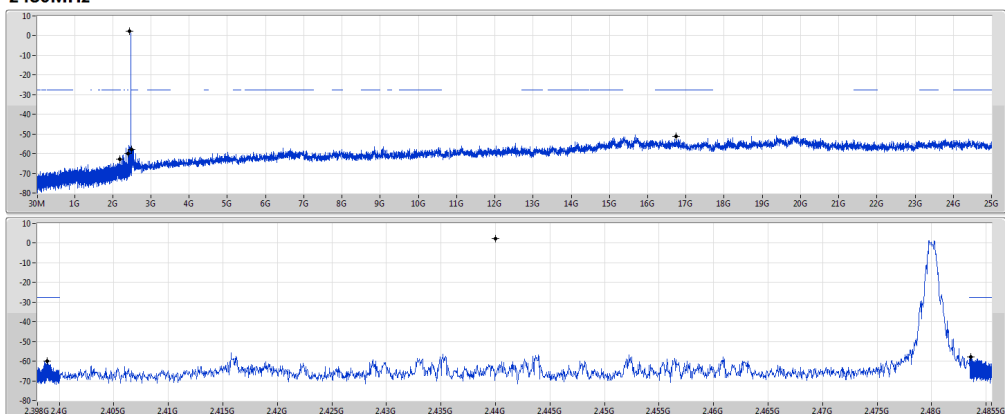
Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
244G	243	-27.57	239534G	-59.63	239948G	-58.19	248488G	-55.95	1511895G	-51.21	1

BT-LE(1Mbps)
2480MHz

CSE NdB

29/01/2019

Port 1



Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
244G	243	-27.57	238794G	-62.64	239821G	-59.95	248359G	-57.94	1674261G	-51.25	1



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	QP	167.74M	41.25	43.50	-2.25	-20.54	3	Horizontal	278	1.60	-

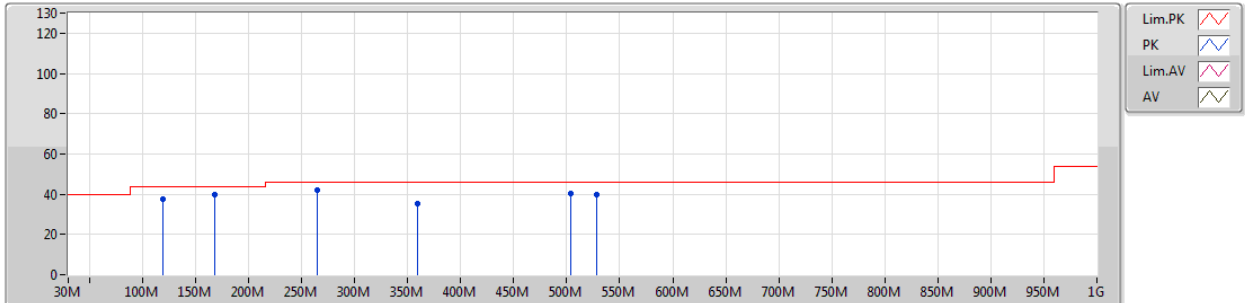
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	119.24M	37.39	43.50	-6.11	-19.33	3	Vertical	0	3.00	-
2440MHz	Pass	PK	167.74M	39.60	43.50	-3.90	-20.54	3	Vertical	0	3.00	-
2440MHz	Pass	PK	264.74M	42.24	46.00	-3.76	-15.98	3	Vertical	0	3.00	-
2440MHz	Pass	PK	359.8M	35.20	46.00	-10.80	-15.24	3	Vertical	0	3.00	-
2440MHz	Pass	PK	503.36M	40.50	46.00	-5.50	-12.10	3	Vertical	0	3.00	-
2440MHz	Pass	PK	528.58M	39.74	46.00	-6.26	-12.10	3	Vertical	0	3.00	-
2440MHz	Pass	QP	119.24M	34.28	43.50	-9.22	-19.33	3	Horizontal	247	1.55	-
2440MHz	Pass	QP	167.74M	41.25	43.50	-2.25	-20.54	3	Horizontal	278	1.60	-
2440MHz	Pass	QP	264.74M	42.64	46.00	-3.36	-15.98	3	Horizontal	261	1.05	-
2440MHz	Pass	QP	311.3M	39.06	46.00	-6.94	-16.50	3	Horizontal	293	1.00	-
2440MHz	Pass	PK	503.36M	39.75	46.00	-6.25	-12.10	3	Horizontal	0	3.00	-
2440MHz	Pass	PK	551.86M	42.77	46.00	-3.23	-11.00	3	Horizontal	0	3.00	-

BT-LE(1Mbps)

2440MHz_USB

26/01/2019

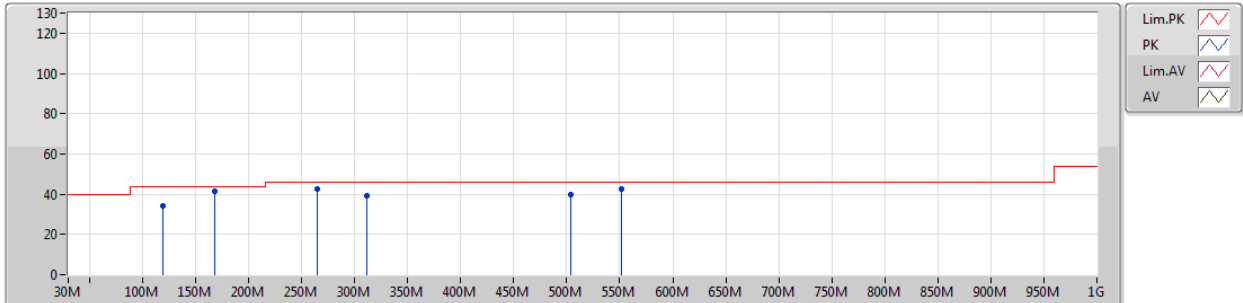


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
PK	119.24M	37.39	43.50	-6.11	-19.33	3	Vertical	0	3.00	-
PK	167.74M	39.60	43.50	-3.90	-20.54	3	Vertical	0	3.00	-
PK	264.74M	42.24	46.00	-3.76	-15.98	3	Vertical	0	3.00	-
PK	359.8M	35.20	46.00	-10.80	-15.24	3	Vertical	0	3.00	-
PK	503.36M	40.50	46.00	-5.50	-12.10	3	Vertical	0	3.00	-
PK	528.58M	39.74	46.00	-6.26	-12.10	3	Vertical	0	3.00	-

BT-LE(1Mbps)

2440MHz_USB

26/01/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
QP	119.24M	34.28	43.50	-9.22	-19.33	3	Horizontal	247	1.55	-
QP	167.74M	41.25	43.50	-2.25	-20.54	3	Horizontal	278	1.60	-
QP	264.74M	42.64	46.00	-3.36	-15.98	3	Horizontal	261	1.05	-
QP	311.3M	39.06	46.00	-6.94	-16.50	3	Horizontal	293	1.00	-
PK	503.36M	39.75	46.00	-6.25	-12.10	3	Horizontal	0	3.00	-
PK	551.86M	42.77	46.00	-3.23	-11.00	3	Horizontal	0	3.00	-



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4964G	43.25	54.00	-10.75	31.16	3	Horizontal	343	1.27	-

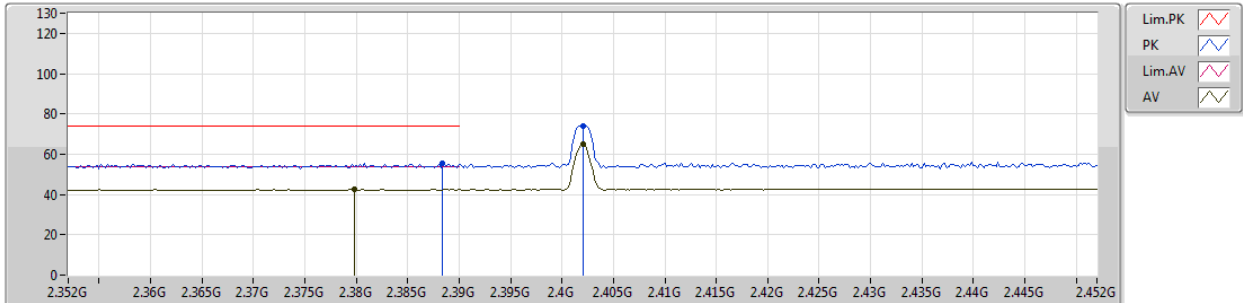
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3798G	42.42	54.00	-11.58	30.74	3	Vertical	173	1.33	-
2402MHz	Pass	AV	2.402G	64.97	Inf	-Inf	30.82	3	Vertical	173	1.33	-
2402MHz	Pass	PK	2.3884G	55.71	74.00	-18.29	30.77	3	Vertical	173	1.33	-
2402MHz	Pass	PK	2.402G	74.09	Inf	-Inf	30.82	3	Vertical	173	1.33	-
2402MHz	Pass	AV	2.3868G	42.44	54.00	-11.56	30.76	3	Horizontal	344	1.31	-
2402MHz	Pass	AV	2.402G	66.77	Inf	-Inf	30.82	3	Horizontal	344	1.31	-
2402MHz	Pass	PK	2.3884G	55.26	74.00	-18.74	30.77	3	Horizontal	344	1.31	-
2402MHz	Pass	PK	2.4022G	76.32	Inf	-Inf	30.82	3	Horizontal	344	1.31	-
2402MHz	Pass	AV	4.80382G	32.66	54.00	-21.34	2.08	3	Vertical	165	1.04	-
2402MHz	Pass	PK	4.80454G	44.52	74.00	-29.48	2.08	3	Vertical	165	1.04	-
2402MHz	Pass	AV	4.80376G	31.43	54.00	-22.57	2.08	3	Horizontal	157	1.01	-
2402MHz	Pass	PK	4.8043G	44.35	74.00	-29.65	2.08	3	Horizontal	157	1.01	-
2440MHz	Pass	AV	2.378G	42.47	54.00	-11.53	30.73	3	Vertical	176	2.04	-
2440MHz	Pass	AV	2.44G	64.87	Inf	-Inf	30.95	3	Vertical	176	2.04	-
2440MHz	Pass	AV	2.4964G	43.12	54.00	-10.88	31.16	3	Vertical	176	2.04	-
2440MHz	Pass	PK	2.3608G	55.27	74.00	-18.73	30.67	3	Vertical	176	2.04	-
2440MHz	Pass	PK	2.4404G	74.03	Inf	-Inf	30.95	3	Vertical	176	2.04	-
2440MHz	Pass	PK	2.4864G	56.11	74.00	-17.89	31.12	3	Vertical	176	2.04	-
2440MHz	Pass	AV	2.386G	42.44	54.00	-11.56	30.76	3	Horizontal	343	1.27	-
2440MHz	Pass	AV	2.44G	67.34	Inf	-Inf	30.95	3	Horizontal	343	1.27	-
2440MHz	Pass	AV	2.4964G	43.25	54.00	-10.75	31.16	3	Horizontal	343	1.27	-
2440MHz	Pass	PK	2.35G	55.13	74.00	-18.87	30.63	3	Horizontal	343	1.27	-
2440MHz	Pass	PK	2.4404G	76.95	Inf	-Inf	30.95	3	Horizontal	343	1.27	-
2440MHz	Pass	PK	2.4932G	56.07	74.00	-17.93	31.14	3	Horizontal	343	1.27	-
2440MHz	Pass	AV	4.89014G	32.49	54.00	-21.51	2.29	3	Vertical	184	1.10	-
2440MHz	Pass	PK	4.87706G	44.49	74.00	-29.51	2.26	3	Vertical	184	1.10	-
2440MHz	Pass	AV	4.88078G	31.56	54.00	-22.44	2.27	3	Horizontal	155	1.06	-
2440MHz	Pass	PK	4.88468G	44.63	74.00	-29.37	2.29	3	Horizontal	155	1.06	-
2480MHz	Pass	AV	2.48G	64.95	Inf	-Inf	31.09	3	Vertical	157	1.99	-
2480MHz	Pass	AV	2.4964G	43.12	54.00	-10.88	31.16	3	Vertical	157	1.99	-
2480MHz	Pass	PK	2.4798G	73.98	Inf	-Inf	31.09	3	Vertical	157	1.99	-
2480MHz	Pass	PK	2.4958G	56.06	74.00	-17.94	31.16	3	Vertical	157	1.99	-
2480MHz	Pass	AV	2.48G	67.33	Inf	-Inf	31.09	3	Horizontal	339	1.49	-
2480MHz	Pass	AV	2.4858G	43.06	54.00	-10.94	31.12	3	Horizontal	339	1.49	-
2480MHz	Pass	PK	2.4798G	76.87	Inf	-Inf	31.09	3	Horizontal	339	1.49	-
2480MHz	Pass	PK	2.4872G	56.50	74.00	-17.50	31.12	3	Horizontal	339	1.49	-
2480MHz	Pass	AV	4.96984G	32.26	54.00	-21.74	2.49	3	Vertical	245	1.50	-
2480MHz	Pass	PK	4.97332G	44.71	74.00	-29.29	2.50	3	Vertical	245	1.50	-
2480MHz	Pass	AV	4.97374G	31.27	54.00	-22.73	2.50	3	Horizontal	192	1.03	-
2480MHz	Pass	PK	4.95076G	44.80	74.00	-29.20	2.45	3	Horizontal	192	1.03	-

BT-LE(1Mbps)

2402MHz_TX

25/01/2019

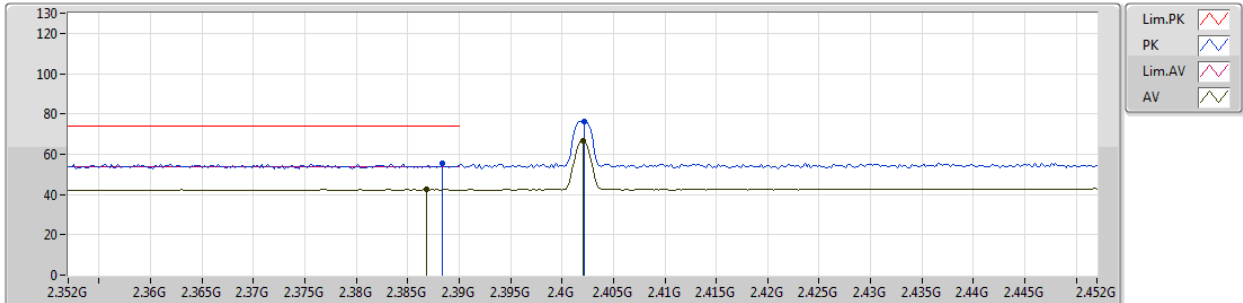


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3798G	42.42	54.00	-11.58	30.74	3	Vertical	173	1.33	-
AV	2.402G	64.97	Inf	-Inf	30.82	3	Vertical	173	1.33	-
PK	2.3884G	55.71	74.00	-18.29	30.77	3	Vertical	173	1.33	-
PK	2.402G	74.09	Inf	-Inf	30.82	3	Vertical	173	1.33	-

BT-LE(1Mbps)

2402MHz_TX

25/01/2019

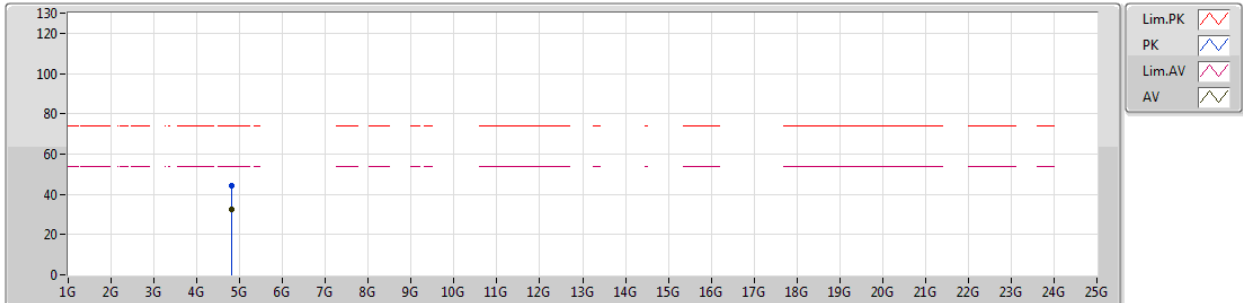


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.3868G	42.44	54.00	-11.56	30.76	3	Horizontal	344	1.31	-
AV	2.402G	66.77	Inf	-Inf	30.82	3	Horizontal	344	1.31	-
PK	2.3884G	55.26	74.00	-18.74	30.77	3	Horizontal	344	1.31	-
PK	2.4022G	76.32	Inf	-Inf	30.82	3	Horizontal	344	1.31	-

BT-LE(1Mbps)

2402MHz_TX

25/01/2019

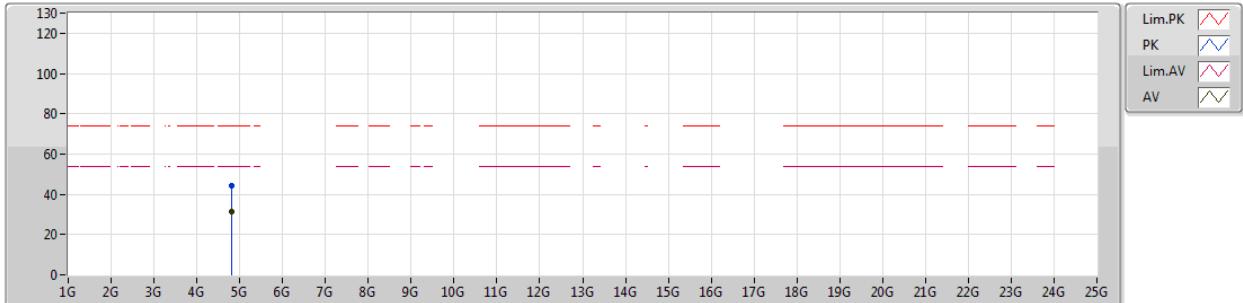


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.80382G	32.66	54.00	-21.34	2.08	3	Vertical	165	1.04	-
PK	4.80454G	44.52	74.00	-29.48	2.08	3	Vertical	165	1.04	-

BT-LE(1Mbps)

2402MHz_TX

25/01/2019

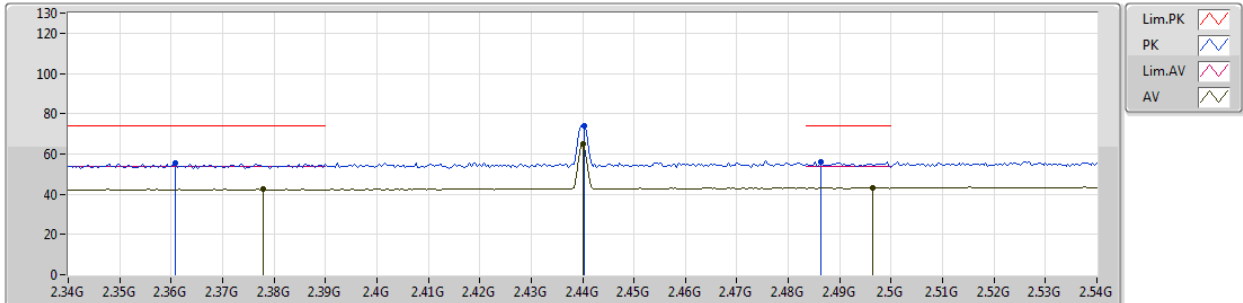


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments							
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)								
AV	4.80376G	31.43	54.00	-22.57	2.08	3	Horizontal	157	1.01	-							
PK	4.8043G	44.35	74.00	-29.65	2.08	3	Horizontal	157	1.01	-							

BT-LE(1Mbps)

2440MHz_TX

25/01/2019

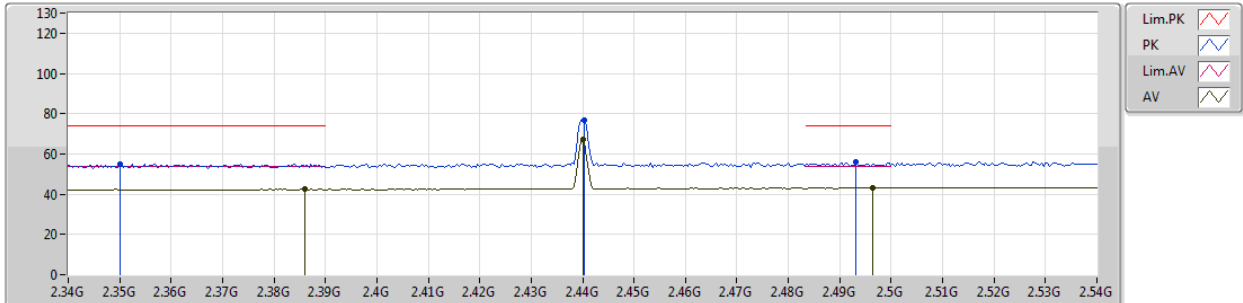


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.378G	42.47	54.00	-11.53	30.73	3	Vertical	176	2.04	-
AV	2.44G	64.87	Inf	-Inf	30.95	3	Vertical	176	2.04	-
AV	2.4964G	43.12	54.00	-10.88	31.16	3	Vertical	176	2.04	-
PK	2.3608G	55.27	74.00	-18.73	30.67	3	Vertical	176	2.04	-
PK	2.4404G	74.03	Inf	-Inf	30.95	3	Vertical	176	2.04	-
PK	2.4864G	56.11	74.00	-17.89	31.12	3	Vertical	176	2.04	-

BT-LE(1Mbps)

2440MHz_TX

25/01/2019

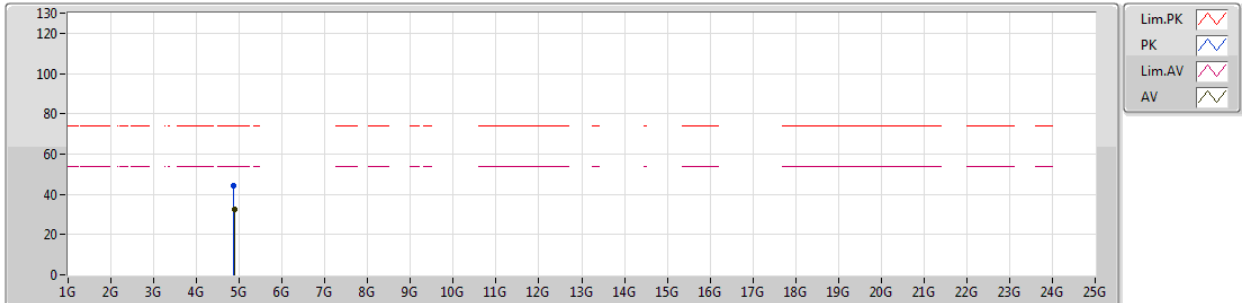


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.386G	42.44	54.00	-11.56	30.76	3	Horizontal	343	1.27	-
AV	2.44G	67.34	Inf	-Inf	30.95	3	Horizontal	343	1.27	-
AV	2.4964G	43.25	54.00	-10.75	31.16	3	Horizontal	343	1.27	-
PK	2.35G	55.13	74.00	-18.87	30.63	3	Horizontal	343	1.27	-
PK	2.4404G	76.95	Inf	-Inf	30.95	3	Horizontal	343	1.27	-
PK	2.4932G	56.07	74.00	-17.93	31.14	3	Horizontal	343	1.27	-

BT-LE(1Mbps)

25/01/2019

2440MHz_TX

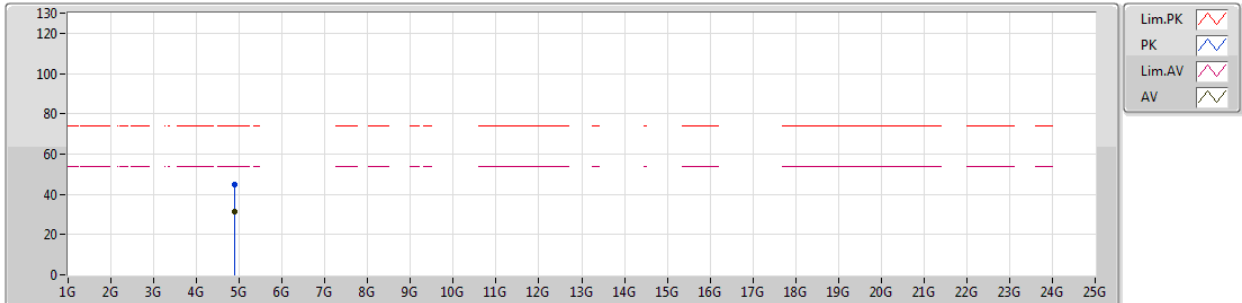


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.89014G	32.49	54.00	-21.51	2.29	3	Vertical	184	1.10	-
PK	4.87706G	44.49	74.00	-29.51	2.26	3	Vertical	184	1.10	-

BT-LE(1Mbps)

2440MHz_TX

25/01/2019

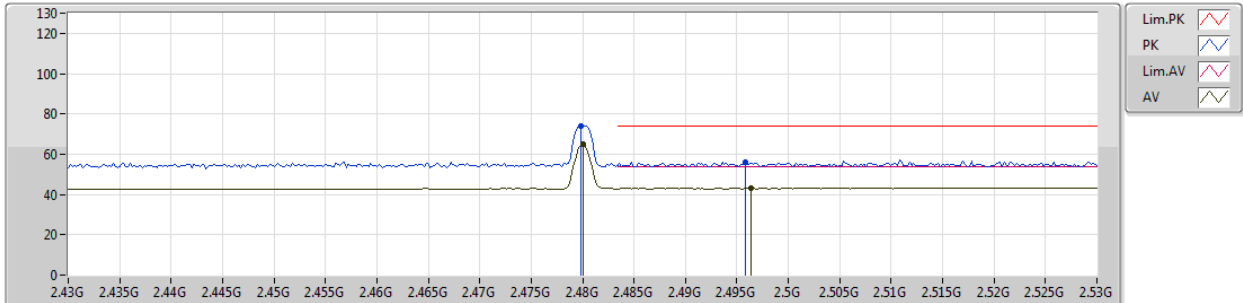


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments								
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)									
AV	4.88078G	31.56	54.00	-22.44	2.27	3	Horizontal	155	1.06	-								
PK	4.88468G	44.63	74.00	-29.37	2.29	3	Horizontal	155	1.06	-								

BT-LE(1Mbps)

2480MHz_TX

25/01/2019

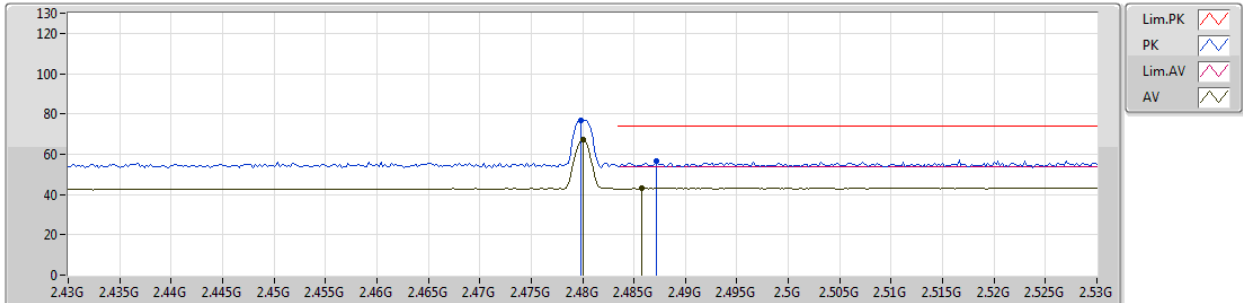


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	64.95	Inf	-Inf	31.09	3	Vertical	157	1.99	-
AV	2.4964G	43.12	54.00	-10.88	31.16	3	Vertical	157	1.99	-
PK	2.4798G	73.98	Inf	-Inf	31.09	3	Vertical	157	1.99	-
PK	2.4958G	56.06	74.00	-17.94	31.16	3	Vertical	157	1.99	-

BT-LE(1Mbps)

2480MHz_TX

25/01/2019

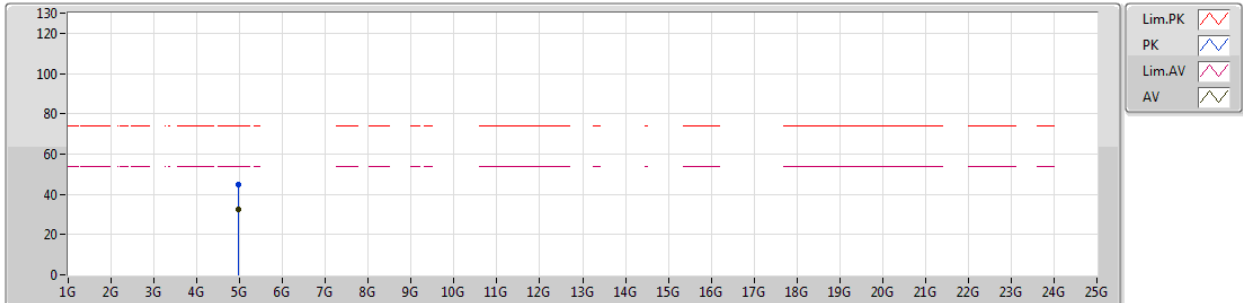


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	2.48G	67.33	Inf	-Inf	31.09	3	Horizontal	339	1.49	-
AV	2.4858G	43.06	54.00	-10.94	31.12	3	Horizontal	339	1.49	-
PK	2.4798G	76.87	Inf	-Inf	31.09	3	Horizontal	339	1.49	-
PK	2.4872G	56.50	74.00	-17.50	31.12	3	Horizontal	339	1.49	-

BT-LE(1Mbps)

2480MHz_TX

25/01/2019

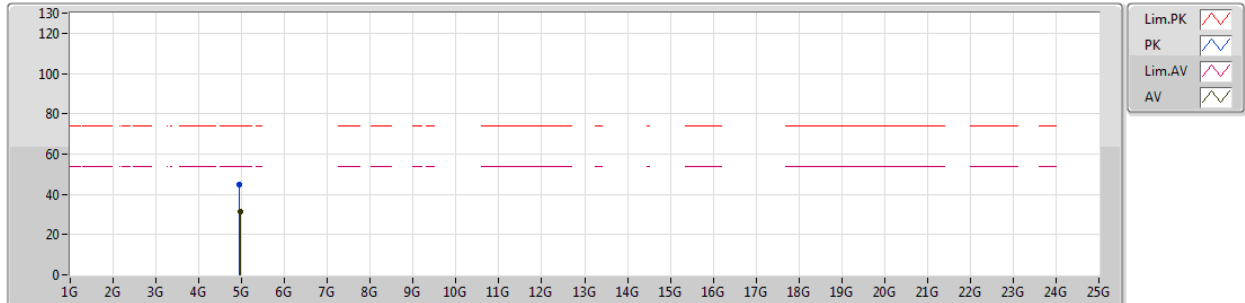


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
AV	4.96984G	32.26	54.00	-21.74	2.49	3	Vertical	245	1.50	-
PK	4.97332G	44.71	74.00	-29.29	2.50	3	Vertical	245	1.50	-

BT-LE(1Mbps)

2480MHz_TX

25/01/2019



Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments							
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)								
AV	4.97374G	31.27	54.00	-22.73	2.50	3	Horizontal	192	1.03	-							
PK	4.95076G	44.80	74.00	-29.20	2.45	3	Horizontal	192	1.03	-							