

FCC Test Report

FCC ID : XHM-AP6255D42
Equipment : Module 802.11 a/b/g/n/ac+Bluetooth 4.2
Brand Name : Flytech
Model Name : AP6255
Applicant : FLYTECH TECHNOLOGY CO., LTD
No. 168, Sing-ai Rd., Neihu District, Taipei City, Taiwan
Manufacturer : FLYTECH TECHNOLOGY CO., LTD
No. 168, Sing-ai Rd., Neihu District, Taipei City, Taiwan
Standard : 47 CFR FCC Part 15.247

The product was received on Aug. 06, 2019, and testing was started from Aug. 19, 2019 and completed on Aug. 26, 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 Ver3.5
FCC ID: XHM-AP6255D42

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	FCC 15.207
3.2	15.247(a)	DTS Bandwidth	PASS	≥500kHz
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Power [dBm]:30
3.4	15.247(e)	Power Spectral Density	PASS	PSD [dBm/3kHz]:8
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: >30 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

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: Jenny Yang

1 General Description

1.1 Information

1.1.1 RF General Information

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

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

Note:

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

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector
1	SINBON	A9703688-D	PCB Antenna	I-PEX

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	1.39	3.34	1.39

Note 1: The EUT has one antenna.

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (1TX/1RX)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

For 5GHz function:

For IEEE 802.11 a/n/ac mode (1TX/1RX)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

Operational Condition			
EUT Power Type	From AC Adapter		
EUT Function	<input checked="" type="checkbox"/> Point-to-multipoint	<input type="checkbox"/> Point-to-point	
Type of EUT			
<input checked="" type="checkbox"/>	Stand-alone		
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)		
	Combined Equipment - Brand Name / Model No.: ...		
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)		
	Host System - Brand Name / Model No.: ...		
<input type="checkbox"/>	Other:		

1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
BT-BR(1Mbps)	0.818	0.87	2.888m	1k
BT-EDR(2Mbps)	0.812	0.9	2.891m	1k
BT-EDR(3Mbps)	0.812	0.9	2.894m	1k
BT-LE(1Mbps)	0.625	2.04	391.25u	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

1.3 Testing Location Information

Testing Location			
<input checked="" type="checkbox"/>	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.			
<input type="checkbox"/>	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	Edward	22.8~24.5°C / 55.1~68.7%	21/Aug/2019
RF Conducted	TH06-HY	Tim	23~25°C / 55~58%	21/Aug/2019~ 26/Aug/2019
Radiated	03CH09-HY	Lego	23.1~23.5°C / 52.3~55.7%	19/Aug/2019~ 20/Aug/2019
Radiated (Co-location)	03CH09-HY	Lego	21.1~22.9°C / 53.2~55.8%	23/Aug/2019~ 24/Aug/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	120V

2.2 Test Channel Mode


Test Software	DoS
---------------	-----

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	CTX
1	Adapter mode

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	Adapter mode
Operating Mode > 1GHz	CTX
Orthogonal Planes of EUT	Z Plane
	
Worst Planes of EUT	V

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	Bluetooth+WLAN 2.4GHz
2	Bluetooth+WLAN 5GHz
Refer to Sporton Test Report No.: FA980606 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	

2.4 Support Equipment

Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Adapter	Asian	WA-36A12R	-
2	Test Fixture	-	-	-

Note: Support equipment No.1 & 2 were provided by customer.

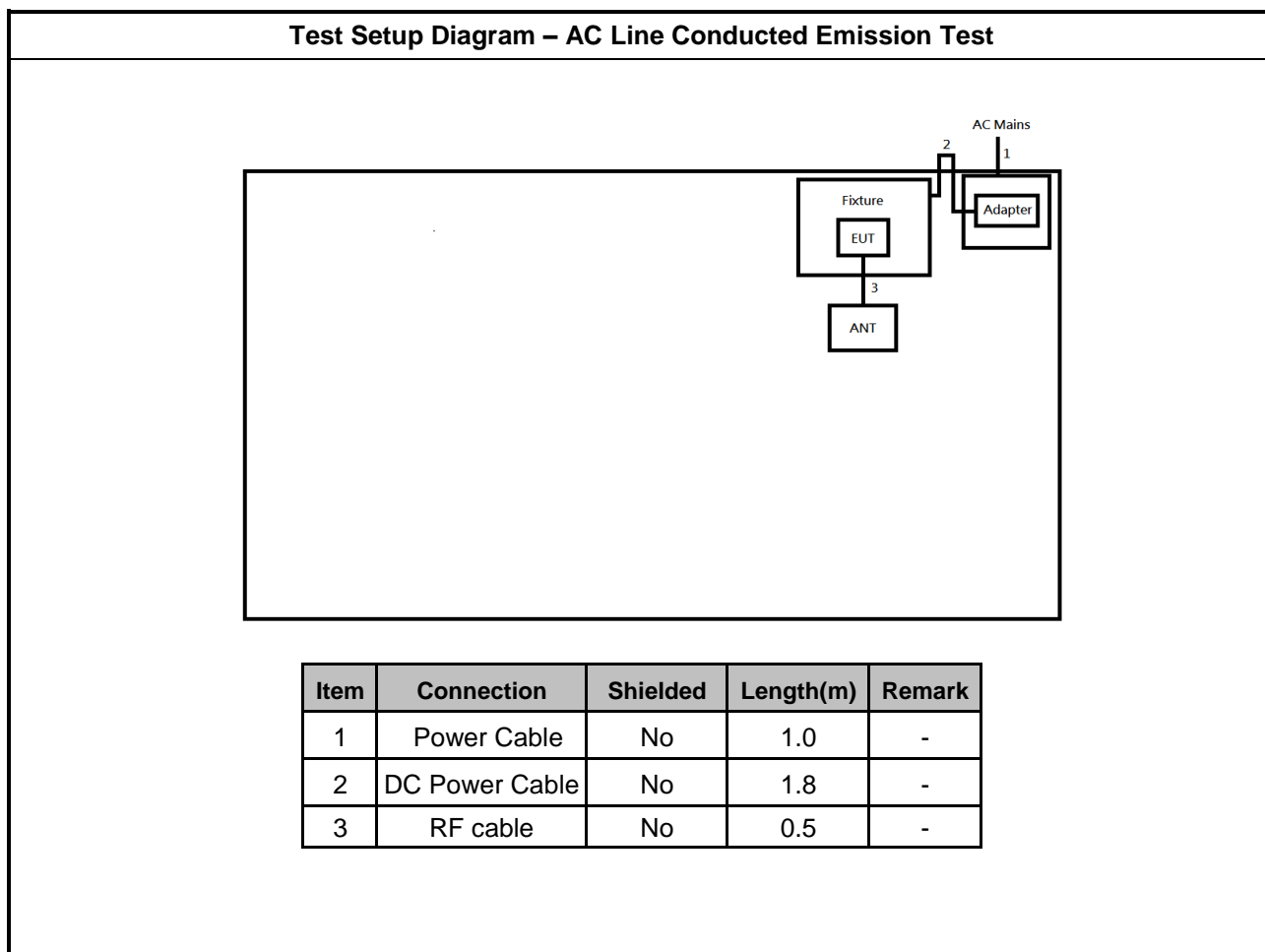
Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Test Fixture	-	-	-
2	Fixture	Abocom	AM7221T-X10	N/A

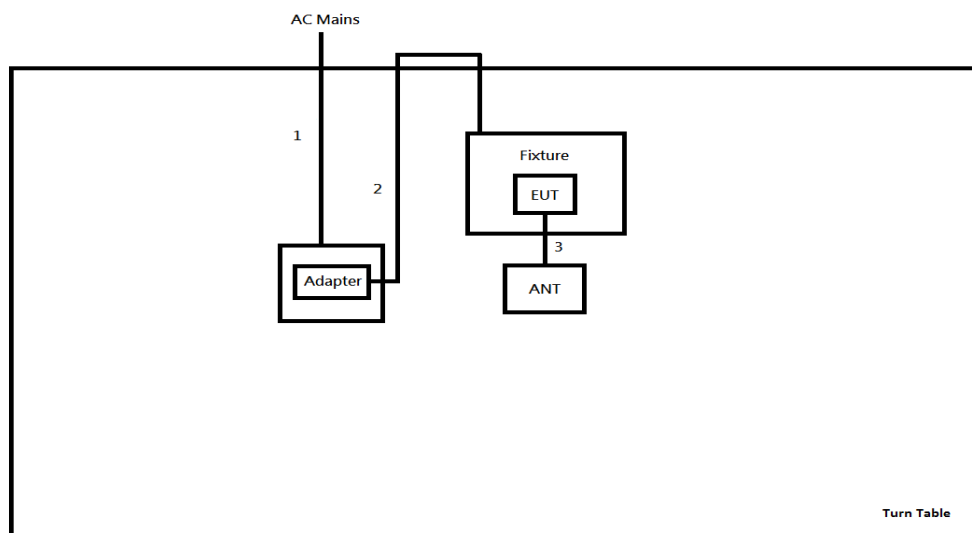
Note: Support equipment No.1 was provided by customer.

Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Adapter	Asian	WA-36A12R	-
2	Test Fixture	-	-	-

Note: Support equipment No.1 & 2 were provided by customer.

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length(m)	Remark
1	AC Power line	No	2.0	-
2	DC Power line	No	1.8	-
3	RF cable	No	0.5	-

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.

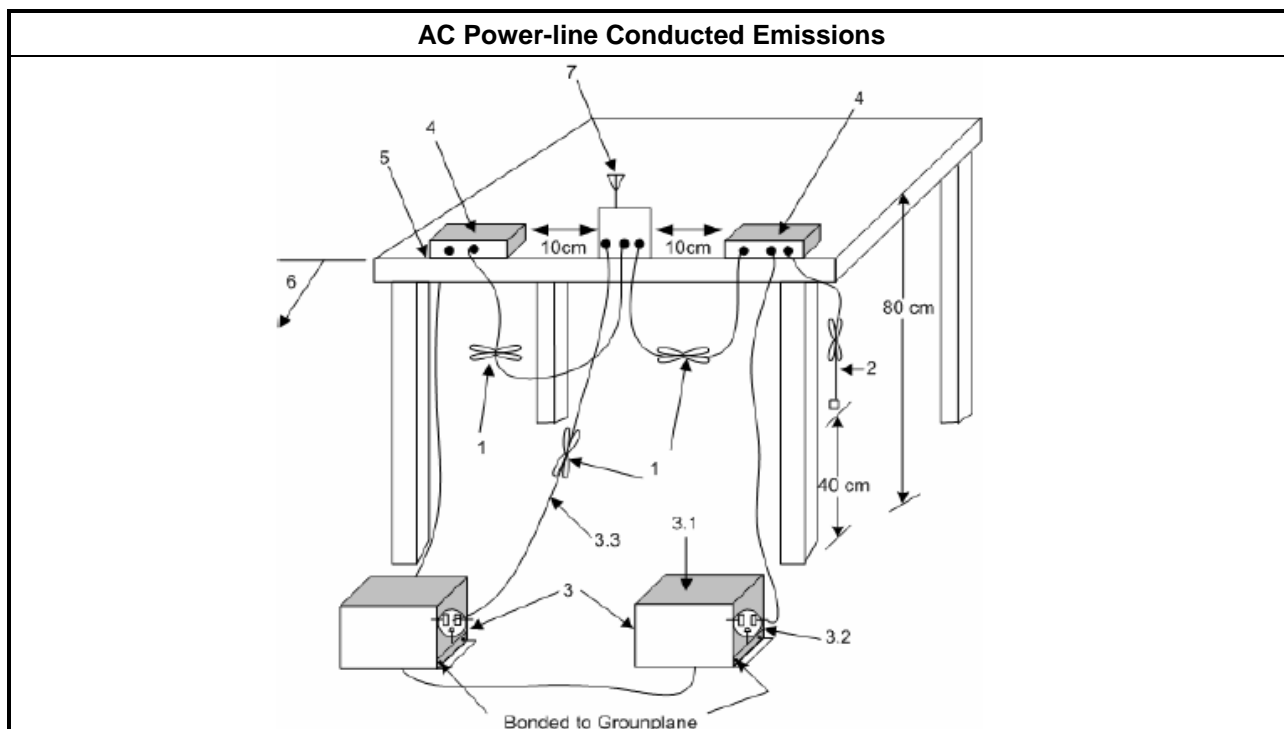
3.1.2 Measuring Instruments

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 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:
<ul style="list-style-type: none"> 6 dB bandwidth \geq 500 kHz.

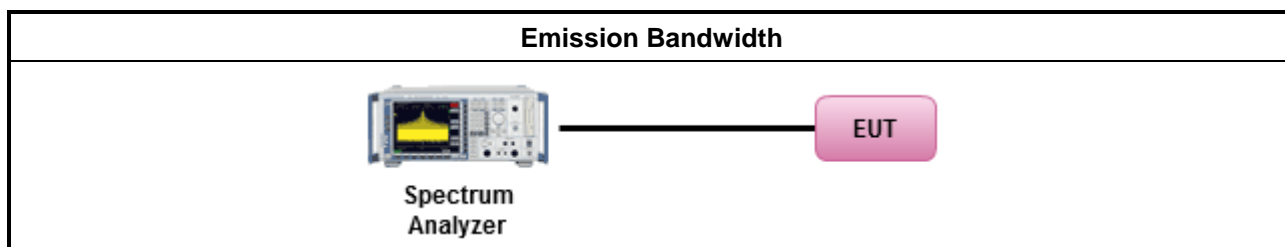
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method
<ul style="list-style-type: none"> For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/> Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
<input type="checkbox"/> Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
<input type="checkbox"/> 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	
	<ul style="list-style-type: none"> If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	<ul style="list-style-type: none"> Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	<ul style="list-style-type: none"> Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> Smart antenna system (SAS):
	<ul style="list-style-type: none"> - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	<ul style="list-style-type: none"> - 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:	
	<ul style="list-style-type: none"> 2400-2483.5 MHz Band
	<ul style="list-style-type: none"> Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	<ul style="list-style-type: none"> Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	<ul style="list-style-type: none"> Smart antenna system (SAS)
	<ul style="list-style-type: none"> - Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	<ul style="list-style-type: none"> - 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.	

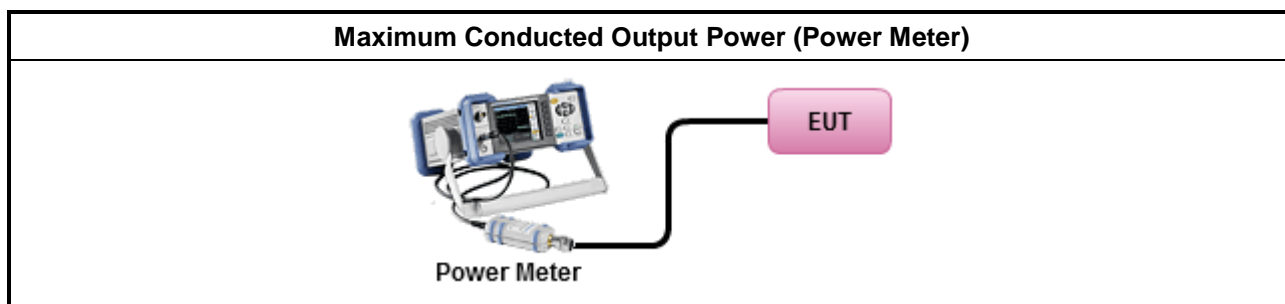
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> Maximum Peak Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
<ul style="list-style-type: none"> Maximum Average Conducted Output Power 	
<input type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
<input checked="" type="checkbox"/>	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
<ul style="list-style-type: none"> For conducted measurement. 	
<ul style="list-style-type: none"> 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. 	
<ul style="list-style-type: none"> 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

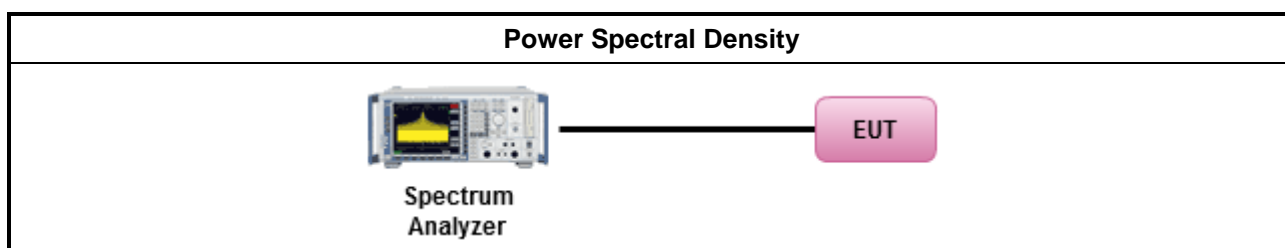
3.4.2 Measuring Instruments

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).
<input checked="" type="checkbox"/>	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
<p>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.</p> <p>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.</p>	

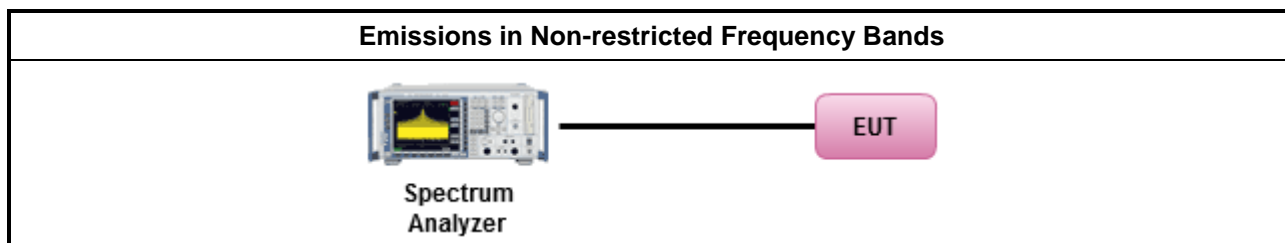
3.5.2 Measuring Instruments

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 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.

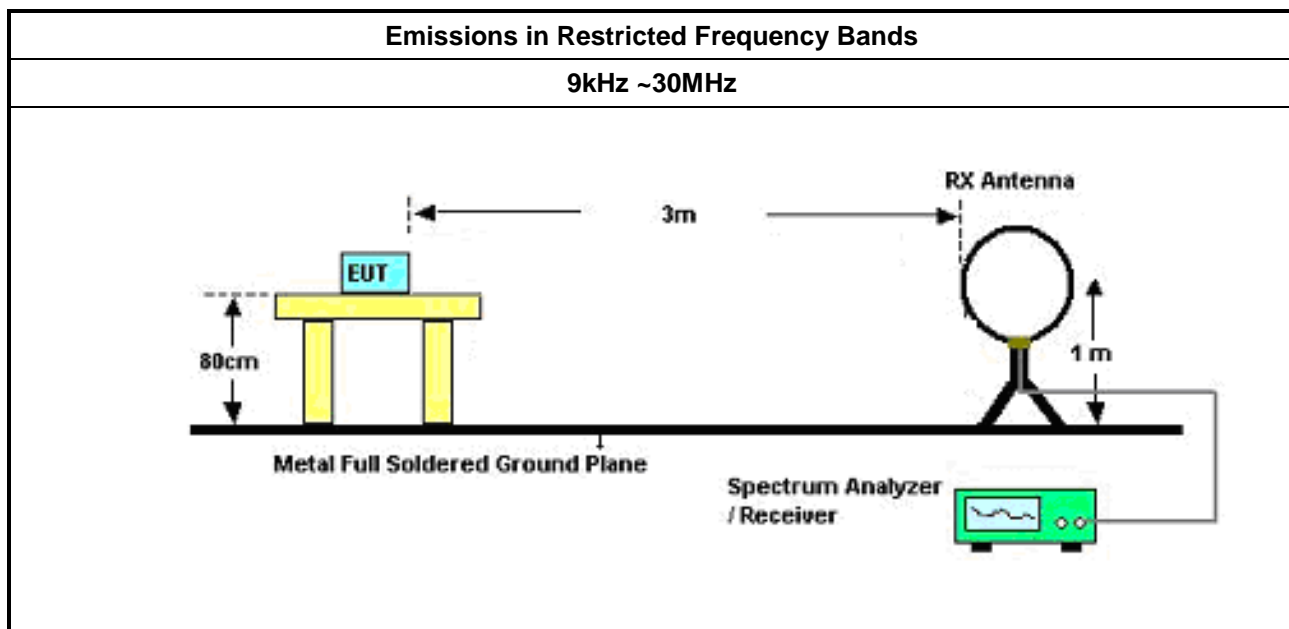
3.6.2 Measuring Instruments

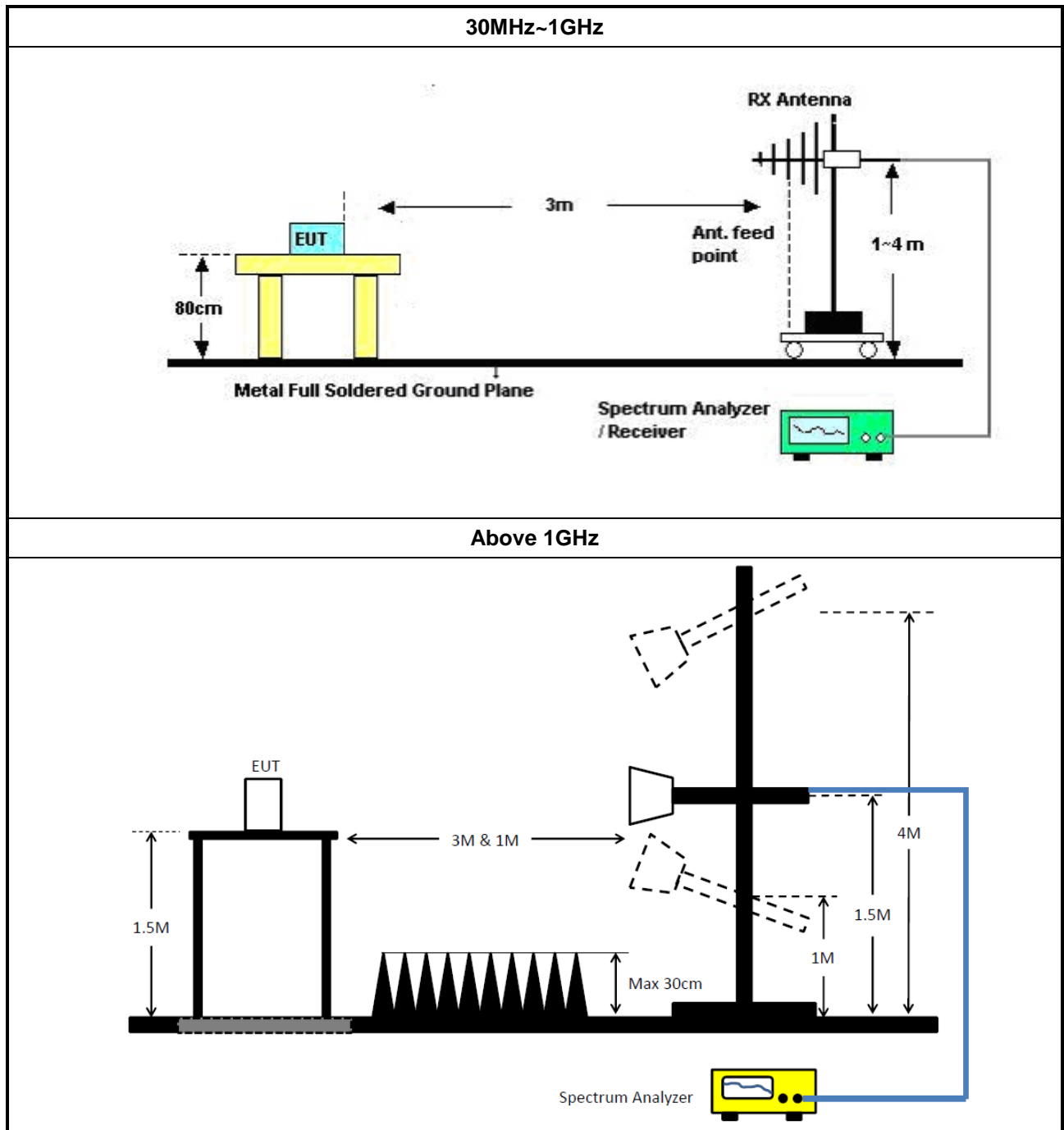
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
<ul style="list-style-type: none"> The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor]. 	
<ul style="list-style-type: none"> 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. 	
<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 KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
<ul style="list-style-type: none"> For the transmitter band-edge emissions shall be measured using following options below: 	
	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	<ul style="list-style-type: none"> Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels.
<ul style="list-style-type: none"> Use the following spectrum analyzer settings: 	
	<ul style="list-style-type: none"> Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	<ul style="list-style-type: none"> Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.

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	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
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	13/Mar/2019	12/Mar/2020
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	17/Nov/2018	16/Nov/2019
Cable 0.2m	HUBER	MY10710/4	RF Cable - 01	30MHz ~18G	21/Mar/2019	20/Mar/2020
Cable 0.2m	HUBER	MY10711/4	RF Cable - 02	30MHz ~18G	21/Mar/2019	20/Mar/2020
Cable 0.5m	HUBER	MY39470/4	RF Cable - 29	30MHz ~18G	21/Mar/2019	20/Mar/2020
SMB100A Signal Generator	R&S	SMB100A03	181147	100kHz~40GHz	12/Nov/2018	10/Nov/2020

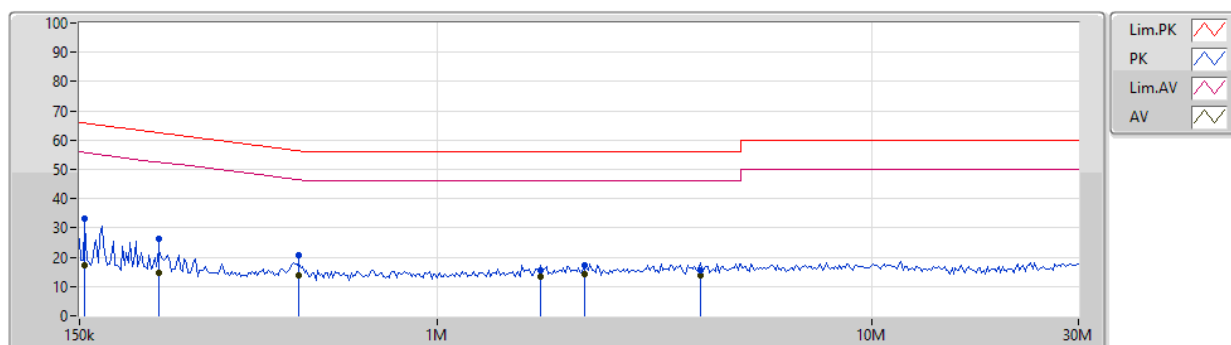
Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz	22/Apr/2019	21/Apr/2020
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	13/Jun/2019	12/Jun/2020
Microwave System Premplifier	KEYSIGHT	87422A	MY53270197	1GHz ~ 18GHz	30/Nov/2018	29/Nov/2019
Amplifier	EMC	EMC9135	980232	9KHz~1GHz	22/Apr/2019	21/Apr/2020
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
Spectrum Analyzer	R&S	FSP30	100793	9 kHz ~ 30GHz	05/Jun/2019	04/Jun/2020
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	22/May/2019	21/May/2020
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170614	18GHz~40GHz	22/May/2019	21/May/2020
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2018	23/Aug/2019
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	15/Mar/2019	14/Mar/2020
LF-CABLE-2019 0218	Jye Bao	RG142	CB028	9kHz ~ 1GHz	18/Feb/2019	17/Feb/2020
RF Cable-high	HUBER+SUHNER	SUCOFLEX104	SN 556626/4 + 556627	1GHz ~ 40GHz	13/Mar/2019	12/Mar/2020

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	Adapter Mode		

21/08/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	154.545k	33.22	65.75	-32.53	19.48	Neutral	-	13.74	9.60	0.01	9.87			
AV	154.545k	17.42	55.75	-38.33	19.48	Neutral	-	-2.06	9.60	0.01	9.87			
QP	227.818k	26.20	62.52	-36.32	19.47	Neutral	-	6.73	9.59	0.01	9.87			
AV	227.818k	14.76	52.52	-37.76	19.47	Neutral	-	-4.71	9.59	0.01	9.87			
QP	480.498k	20.83	56.33	-35.50	19.48	Neutral	-	1.35	9.59	0.01	9.88			
AV	480.498k	13.81	46.33	-32.52	19.48	Neutral	-	-5.67	9.59	0.01	9.88			
QP	1.734M	15.55	56.00	-40.45	19.53	Neutral	-	-3.98	9.61	0.03	9.89			
AV	1.734M	13.37	46.00	-32.63	19.53	Neutral	-	-6.16	9.61	0.03	9.89			
QP	2.18M	17.29	56.00	-38.71	19.53	Neutral	-	-2.24	9.61	0.03	9.89			
AV	2.18M	14.11	46.00	-31.89	19.53	Neutral	"Worst"	-5.42	9.61	0.03	9.89			
QP	4.041M	15.55	56.00	-40.45	19.55	Neutral	-	-4.00	9.61	0.05	9.89			
AV	4.041M	13.91	46.00	-32.09	19.55	Neutral	-	-5.64	9.61	0.05	9.89			

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Line
Operating Function	Adapter Mode		

21/08/2019



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)			
QP	160.82k	33.32	65.43	-32.11	19.48	Line	-	13.84	9.60	0.01	9.87			
AV	160.82k	16.96	55.43	-38.47	19.48	Line	-	-2.52	9.60	0.01	9.87			
QP	261.871k	23.49	61.37	-37.88	19.48	Line	-	4.01	9.60	0.01	9.87			
AV	261.871k	14.84	51.37	-36.53	19.48	Line	-	-4.64	9.60	0.01	9.87			
QP	466.367k	27.23	56.57	-29.34	19.48	Line	"Worst"	7.75	9.59	0.01	9.88			
AV	466.367k	16.70	46.57	-29.87	19.48	Line	-	-2.78	9.59	0.01	9.88			
QP	1.618M	14.05	56.00	-41.95	19.53	Line	-	-5.48	9.61	0.03	9.89			
AV	1.618M	12.60	46.00	-33.40	19.53	Line	-	-6.93	9.61	0.03	9.89			
QP	2.557M	14.94	56.00	-41.06	19.55	Line	-	-4.61	9.62	0.04	9.89			
AV	2.557M	13.25	46.00	-32.75	19.55	Line	-	-6.30	9.62	0.04	9.89			
QP	3.412M	18.10	56.00	-37.90	19.56	Line	-	-1.46	9.63	0.04	9.89			
AV	3.412M	14.04	46.00	-31.96	19.56	Line	-	-5.52	9.63	0.04	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)	716.25k	1.056M	1M06F1D	713.75k	1.054M

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;

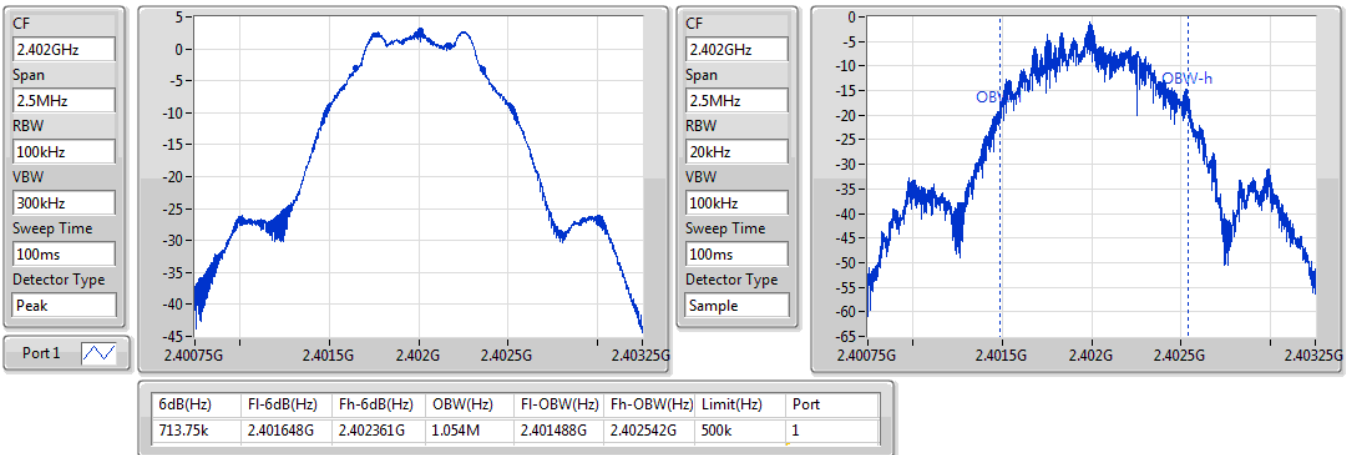
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	500k	713.75k	1.054M
2440MHz_TnomVnom	Pass	500k	716.25k	1.056M
2480MHz_TnomVnom	Pass	500k	713.75k	1.054M

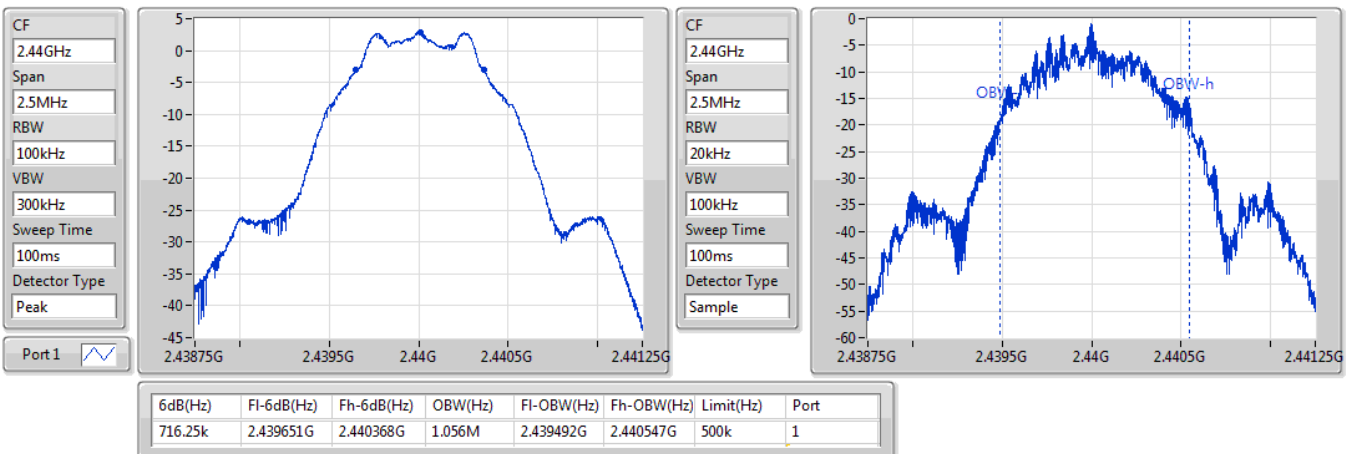
Port X-N dB = Port X 6dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

BT-LE(1Mbps)
2402MHz
EBW

22/08/2019


BT-LE(1Mbps)
2440MHz
EBW

22/08/2019

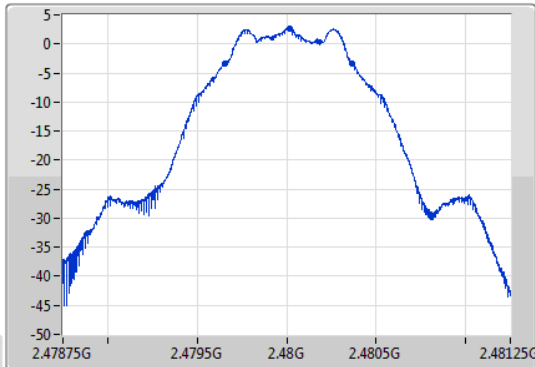


BT-LE(1Mbps)

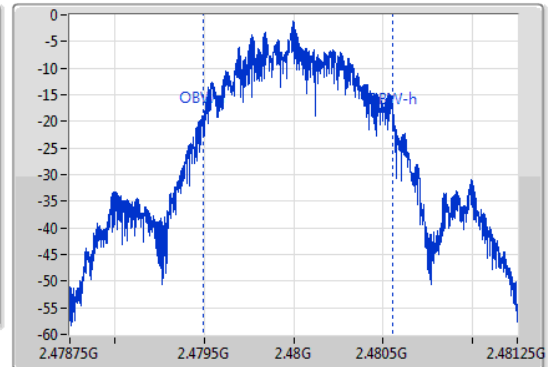
2480MHz

22/08/2019

CF
2.48GHz
Span
2.5MHz
RBW
100kHz
VBW
300kHz
Sweep Time
100ms
Detector Type
Peak
Port 1



CF
2.48GHz
Span
2.5MHz
RBW
20kHz
VBW
100kHz
Sweep Time
100ms
Detector Type
Sample



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
713.75k	2.479655G	2.480369G	1.054M	2.479498G	2.480552G	500k	1



Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	3.51	0.00224



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.39	3.50	30.00
2440MHz_TnomVnom	Pass	1.39	3.51	30.00
2480MHz_TnomVnom	Pass	1.39	3.34	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-11.23

RBW=3 kHz.



Result

Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz_TnomVnom	Pass	1.39	-12.99	8.00
2440MHz_TnomVnom	Pass	1.39	-11.23	8.00
2480MHz_TnomVnom	Pass	1.39	-12.92	8.00

DG = Directional Gain; RBW=3 kHz;

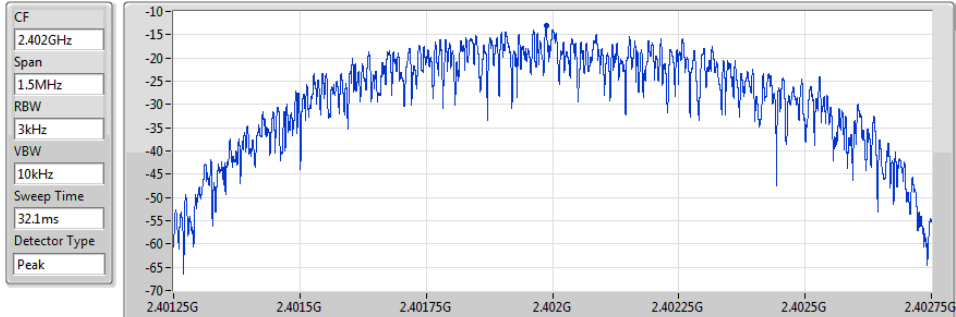
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

BT-LE(1Mbps)

PSD

2402MHz

22/08/2019

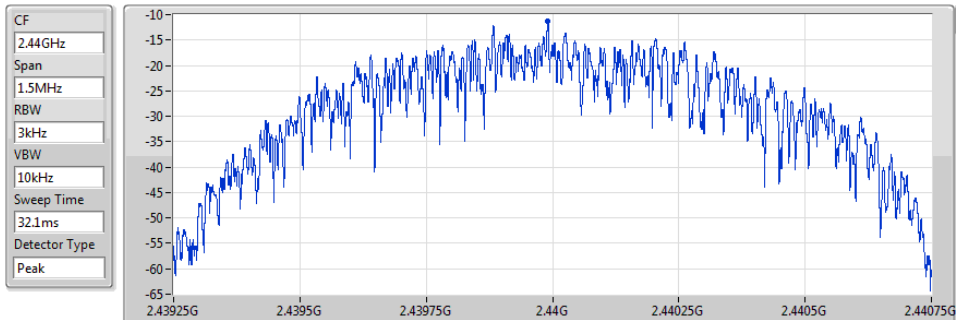


BT-LE(1Mbps)

PSD

2440MHz

22/08/2019

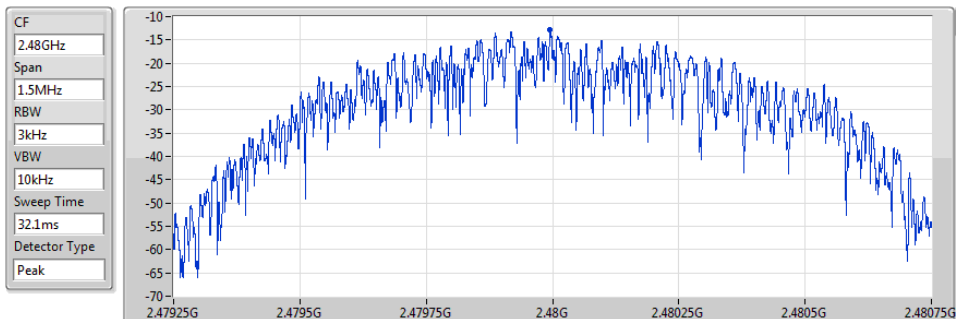


BT-LE(1Mbps)

PSD

2480MHz

22/08/2019





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	2.85	-27.15	915.04M	-54.23	2.39958G	-53.62	2.48549G	-54.24	16.55988G	-42.08	1

Result

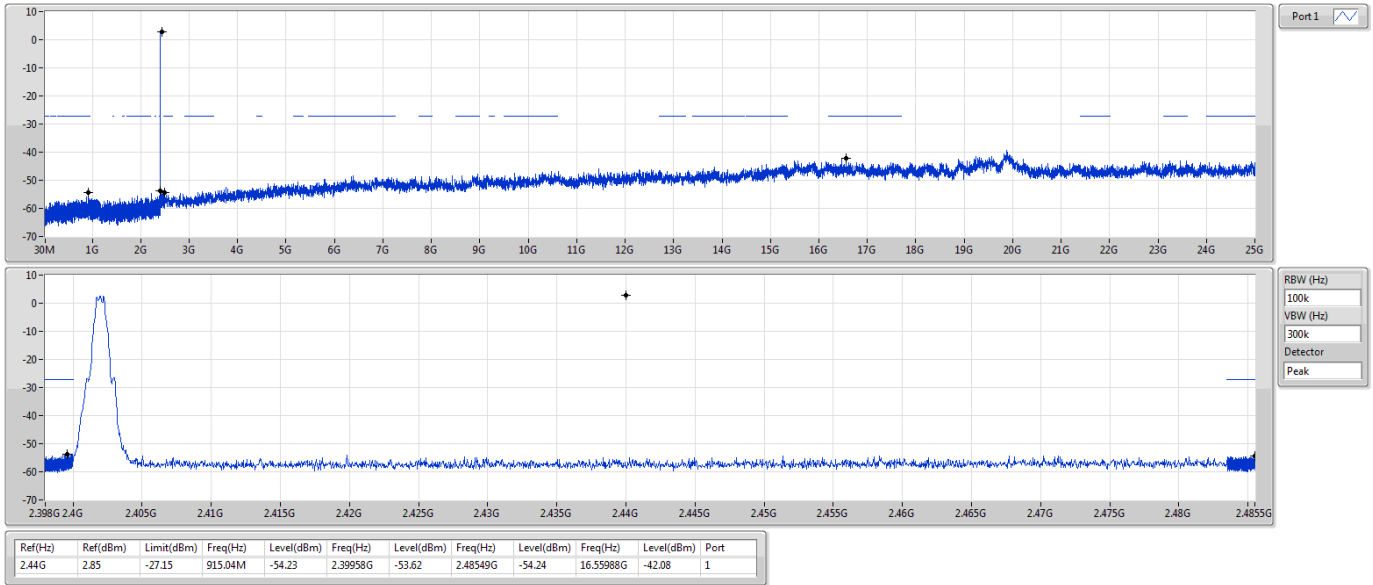
Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz_TnomVnom	Pass	2.44G	2.85	-27.15	915.04M	-54.23	2.39958G	-53.62	2.48549G	-54.24	16.55988G	-42.08	1
2440MHz_TnomVnom	Pass	2.44G	2.85	-27.15	920.37M	-55.90	2.39942G	-54.21	2.4853G	-52.33	23.51686G	-42.30	1
2480MHz_TnomVnom	Pass	2.44G	2.85	-27.15	693.34M	-55.69	2.39941G	-54.23	2.4839G	-53.45	24.27391G	-42.48	1

BT-LE(1Mbps)

CSE NdB

2402MHz

22/08/2019

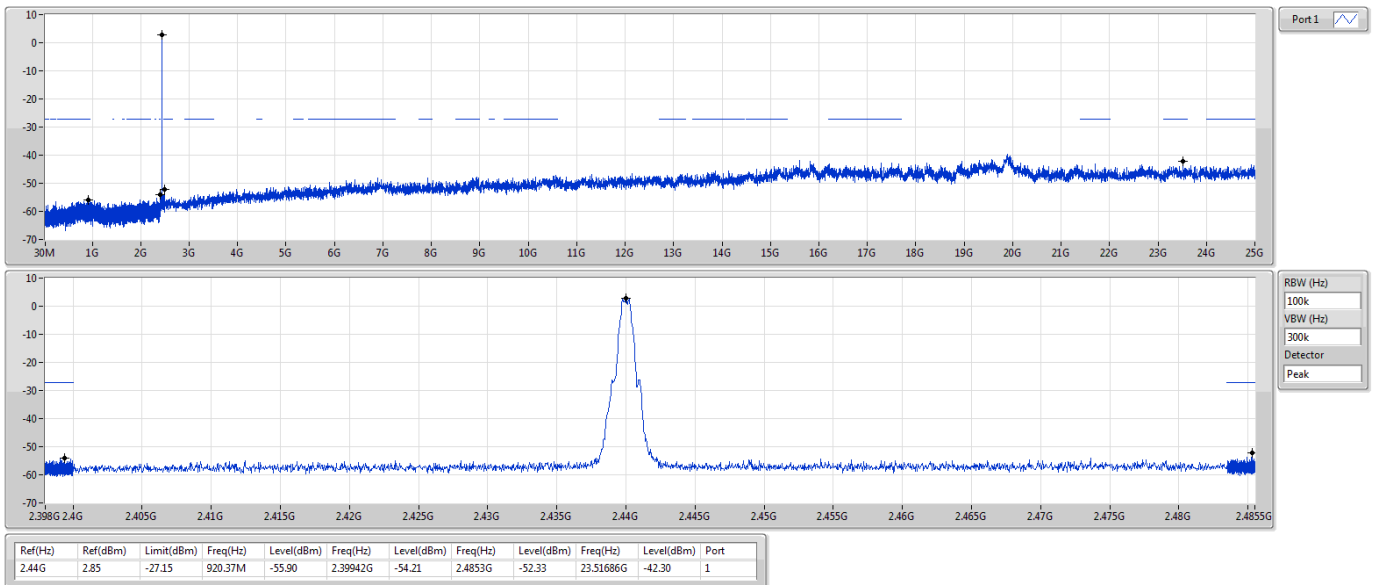


BT-LE(1Mbps)

CSE NdB

2440MHz

22/08/2019



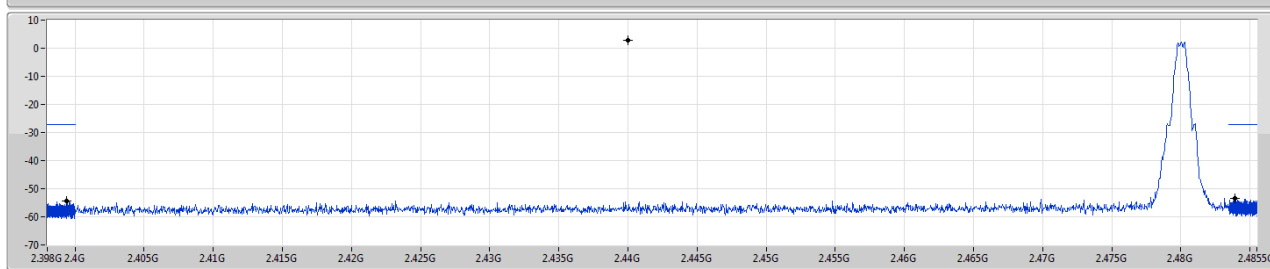
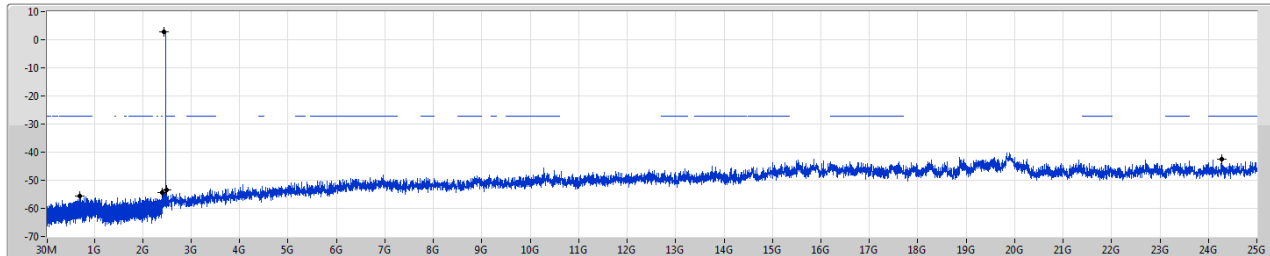
BT-LE(1Mbps)

2480MHz

CSE NdB

22/08/2019

Port1



RBW (Hz)
100k
VBW (Hz)
300k
Detector
Peak

Ref(Hz)	Ref(dBm)	Limit(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Freq(Hz)	Level(dBm)	Port
2.44G	2.85	-27.15	693.34M	-55.69	2.39941G	-54.23	2.4839G	-53.45	24.27391G	-42.48	1

**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	86.26M	33.05	40.00	-6.95	3	Vertical	360	2.00	-

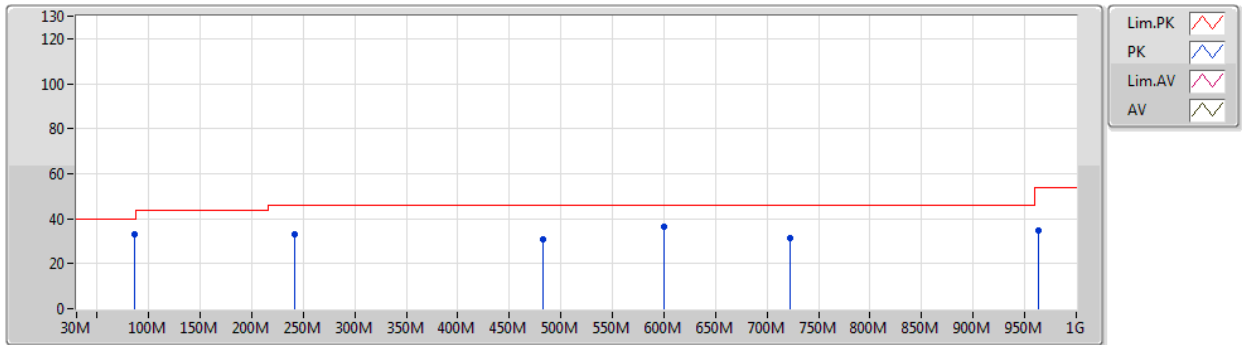
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	86.26M	33.05	40.00	-6.95	3	Vertical	360	2.00	-
2440MHz	Pass	PK	241.46M	33.28	46.00	-12.72	3	Vertical	360	2.00	-
2440MHz	Pass	PK	482.02M	30.74	46.00	-15.26	3	Vertical	360	2.00	-
2440MHz	Pass	PK	600.36M	36.17	46.00	-9.83	3	Vertical	360	2.00	-
2440MHz	Pass	PK	722.58M	31.14	46.00	-14.86	3	Vertical	360	2.00	-
2440MHz	Pass	PK	963.14M	34.62	54.00	-19.38	3	Vertical	360	2.00	-
2440MHz	Pass	PK	241.46M	38.80	46.00	-7.20	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	344.28M	35.55	46.00	-10.45	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	482.02M	38.46	46.00	-7.54	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	600.36M	33.85	46.00	-12.15	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	722.58M	33.95	46.00	-12.05	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	963.14M	35.18	54.00	-18.82	3	Horizontal	0	1.00	-

BT-LE(1Mbps)

2440MHz_Adapter

20/08/2019

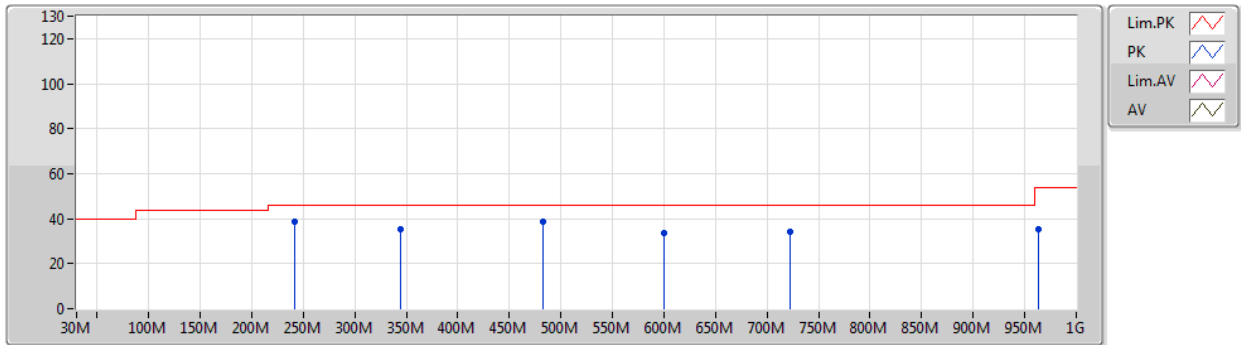


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	86.26M	33.05	40.00	-6.95	-22.89	3	Vertical	360	2.00	-	55.94	13.24	0.76	36.89
PK	241.46M	33.28	46.00	-12.72	-18.38	3	Vertical	360	2.00	-	51.66	16.76	1.27	36.41
PK	482.02M	30.74	46.00	-15.26	-12.08	3	Vertical	360	2.00	-	42.82	22.93	1.86	36.87
PK	600.36M	36.17	46.00	-9.83	-10.43	3	Vertical	360	2.00	-	46.60	24.70	2.09	37.22
PK	722.58M	31.14	46.00	-14.86	-8.73	3	Vertical	360	2.00	-	39.87	26.35	2.31	37.39
PK	963.14M	34.62	54.00	-19.38	-4.37	3	Vertical	360	2.00	-	38.99	30.26	2.61	37.24

BT-LE(1Mbps)

2440MHz_Adapter

20/08/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
PK	241.46M	38.80	46.00	-7.20	-18.38	3	Horizontal	0	1.00	-	57.18	16.76	1.27	36.41
PK	344.28M	35.55	46.00	-10.45	-15.55	3	Horizontal	0	1.00	-	51.10	19.44	1.56	36.55
PK	482.02M	38.46	46.00	-7.54	-12.08	3	Horizontal	0	1.00	-	50.54	22.93	1.86	36.87
PK	600.36M	33.85	46.00	-12.15	-10.43	3	Horizontal	0	1.00	-	44.28	24.70	2.09	37.22
PK	722.58M	33.95	46.00	-12.05	-8.73	3	Horizontal	0	1.00	-	42.68	26.35	2.31	37.39
PK	963.14M	35.18	54.00	-18.82	-4.37	3	Horizontal	0	1.00	-	39.55	30.26	2.61	37.24

**Summary**

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4884G	47.74	54.00	-6.26	3	Horizontal	47	1.20	-

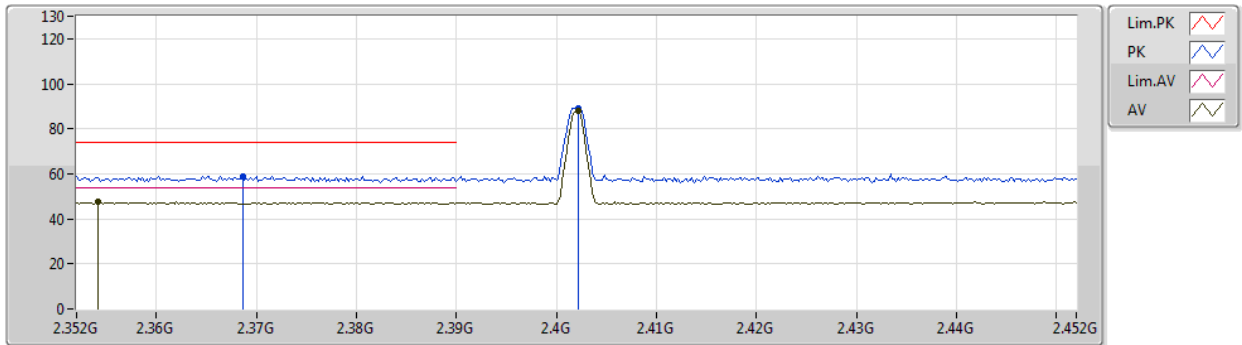
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	AV	2.3542G	47.37	54.00	-6.63	3	Vertical	128	2.88	-
2402MHz	Pass	AV	2.4022G	87.97	Inf	-Inf	3	Vertical	128	2.88	-
2402MHz	Pass	PK	2.3686G	58.98	74.00	-15.02	3	Vertical	128	2.88	-
2402MHz	Pass	PK	2.4022G	88.99	Inf	-Inf	3	Vertical	128	2.88	-
2402MHz	Pass	AV	2.3662G	47.57	54.00	-6.43	3	Horizontal	49	1.17	-
2402MHz	Pass	AV	2.402G	95.80	Inf	-Inf	3	Horizontal	49	1.17	-
2402MHz	Pass	PK	2.3868G	59.92	74.00	-14.08	3	Horizontal	49	1.17	-
2402MHz	Pass	PK	2.4018G	96.86	Inf	-Inf	3	Horizontal	49	1.17	-
2402MHz	Pass	AV	4.8043G	34.82	54.00	-19.18	3	Vertical	23	2.13	-
2402MHz	Pass	PK	4.80408G	47.29	74.00	-26.71	3	Vertical	23	2.13	-
2402MHz	Pass	AV	4.80474G	34.76	54.00	-19.24	3	Horizontal	325	1.45	-
2402MHz	Pass	PK	4.80466G	47.30	74.00	-26.70	3	Horizontal	325	1.45	-
2440MHz	Pass	AV	2.3876G	47.43	54.00	-6.57	3	Vertical	282	3.00	-
2440MHz	Pass	AV	2.44G	90.64	Inf	-Inf	3	Vertical	282	3.00	-
2440MHz	Pass	AV	2.4928G	47.50	54.00	-6.50	3	Vertical	282	3.00	-
2440MHz	Pass	PK	2.36G	59.37	74.00	-14.63	3	Vertical	282	3.00	-
2440MHz	Pass	PK	2.4396G	91.66	Inf	-Inf	3	Vertical	282	3.00	-
2440MHz	Pass	PK	2.4984G	59.15	74.00	-14.85	3	Vertical	282	3.00	-
2440MHz	Pass	AV	2.346G	47.61	54.00	-6.39	3	Horizontal	51	1.23	-
2440MHz	Pass	AV	2.44G	93.53	Inf	-Inf	3	Horizontal	51	1.23	-
2440MHz	Pass	AV	2.4868G	47.42	54.00	-6.58	3	Horizontal	51	1.23	-
2440MHz	Pass	PK	2.366G	59.67	74.00	-14.33	3	Horizontal	51	1.23	-
2440MHz	Pass	PK	2.4396G	94.46	Inf	-Inf	3	Horizontal	51	1.23	-
2440MHz	Pass	PK	2.5G	59.04	74.00	-14.96	3	Horizontal	51	1.23	-
2440MHz	Pass	AV	4.8829G	34.51	54.00	-19.49	3	Vertical	83	1.84	-
2440MHz	Pass	PK	4.8834G	46.32	74.00	-27.68	3	Vertical	83	1.84	-
2440MHz	Pass	AV	4.87922G	34.59	54.00	-19.41	3	Horizontal	151	1.88	-
2440MHz	Pass	PK	4.88534G	46.83	74.00	-27.17	3	Horizontal	151	1.88	-
2480MHz	Pass	AV	2.48G	88.61	Inf	-Inf	3	Vertical	282	2.74	-
2480MHz	Pass	AV	2.4936G	47.58	54.00	-6.42	3	Vertical	282	2.74	-
2480MHz	Pass	PK	2.4798G	89.68	Inf	-Inf	3	Vertical	282	2.74	-
2480MHz	Pass	PK	2.4962G	59.10	74.00	-14.90	3	Vertical	282	2.74	-
2480MHz	Pass	AV	2.48G	91.19	Inf	-Inf	3	Horizontal	47	1.20	-
2480MHz	Pass	AV	2.4884G	47.74	54.00	-6.26	3	Horizontal	47	1.20	-
2480MHz	Pass	PK	2.4802G	92.20	Inf	-Inf	3	Horizontal	47	1.20	-
2480MHz	Pass	PK	2.4866G	58.91	74.00	-15.09	3	Horizontal	47	1.20	-
2480MHz	Pass	AV	4.9664G	34.85	54.00	-19.15	3	Vertical	105	1.82	-
2480MHz	Pass	PK	4.96004G	47.19	74.00	-26.81	3	Vertical	105	1.82	-
2480MHz	Pass	AV	4.96148G	35.12	54.00	-18.88	3	Horizontal	42	1.00	-
2480MHz	Pass	PK	4.96016G	46.83	74.00	-27.17	3	Horizontal	42	1.00	-

BT-LE(1Mbps)

2402MHz_TX

19/08/2019

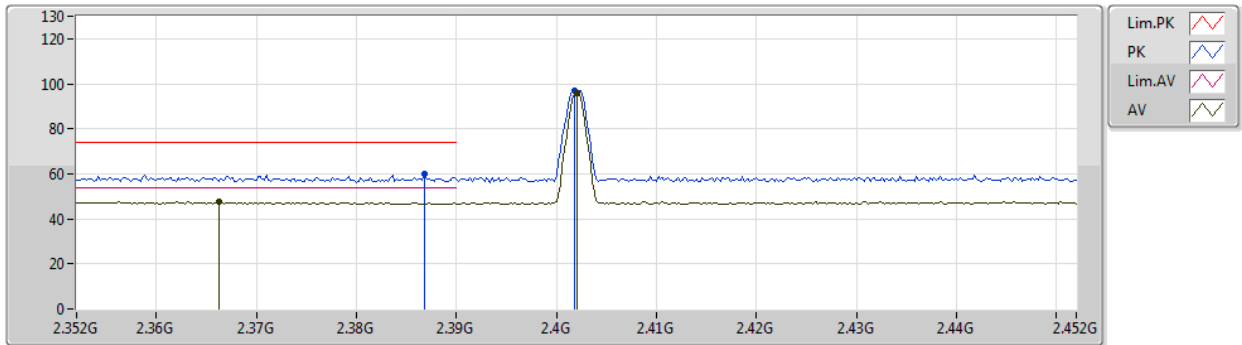


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3542G	47.37	54.00	-6.63	33.90	3	Vertical	128	2.88	-	13.47	27.78	6.12	-
AV	2.4022G	87.97	Inf	-Inf	33.71	3	Vertical	128	2.88	-	54.26	27.60	6.11	-
PK	2.3686G	58.98	74.00	-15.02	33.85	3	Vertical	128	2.88	-	25.13	27.73	6.12	-
PK	2.4022G	88.99	Inf	-Inf	33.71	3	Vertical	128	2.88	-	55.28	27.60	6.11	-

BT-LE(1Mbps)

2402MHz_TX

19/08/2019

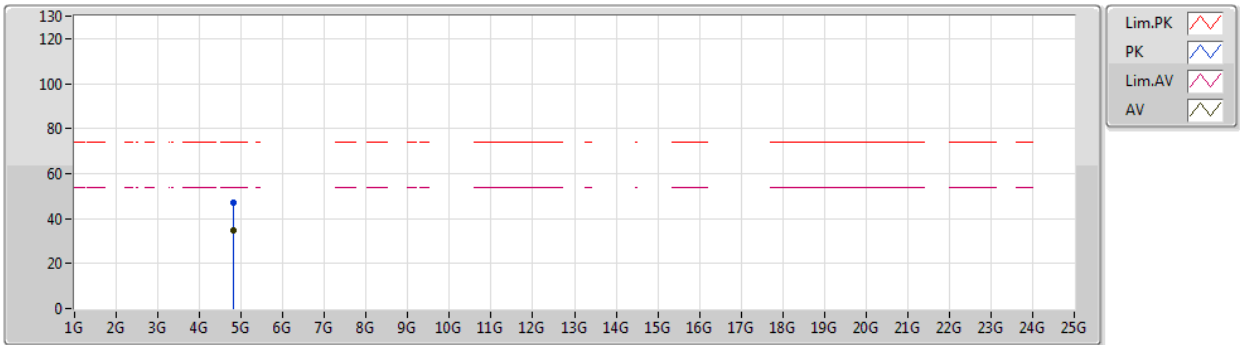


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3662G	47.57	54.00	-6.43	33.86	3	Horizontal	49	1.17	-	13.71	27.74	6.12	-
AV	2.402G	95.80	Inf	-Inf	33.71	3	Horizontal	49	1.17	-	62.09	27.60	6.11	-
PK	2.3868G	59.92	74.00	-14.08	33.76	3	Horizontal	49	1.17	-	26.16	27.65	6.11	-
PK	2.4018G	96.86	Inf	-Inf	33.71	3	Horizontal	49	1.17	-	63.15	27.60	6.11	-

BT-LE(1Mbps)

2402MHz_TX

19/08/2019

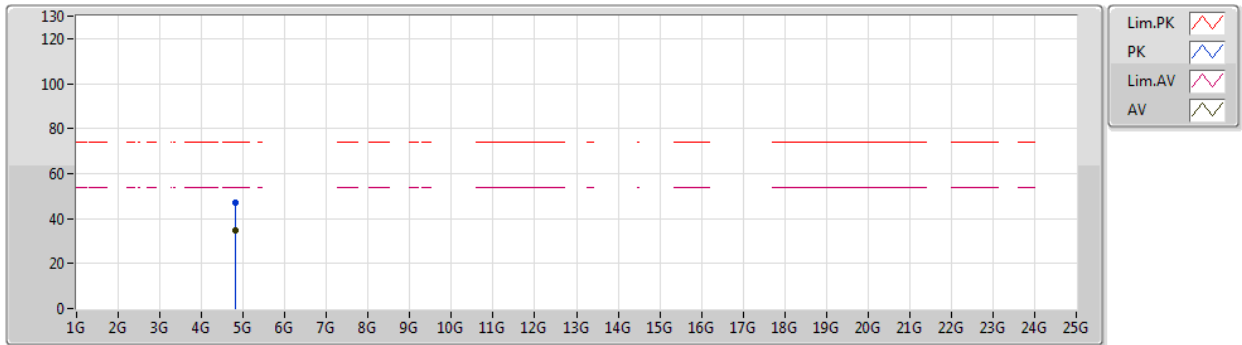


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.8043G	34.82	54.00	-19.18	5.70	3	Vertical	23	2.13	-	29.12	31.10	8.90	34.30
PK	4.80408G	47.29	74.00	-26.71	5.70	3	Vertical	23	2.13	-	41.59	31.10	8.90	34.30

BT-LE(1Mbps)

2402MHz_TX

19/08/2019

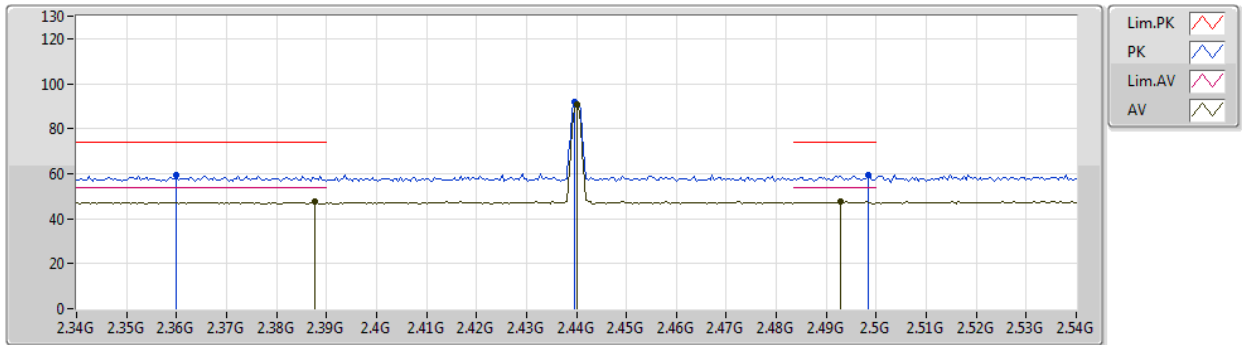


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.80474G	34.76	54.00	-19.24	5.70	3	Horizontal	325	1.45	-	29.06	31.10	8.90	34.30
PK	4.80466G	47.30	74.00	-26.70	5.70	3	Horizontal	325	1.45	-	41.60	31.10	8.90	34.30

BT-LE(1Mbps)

2440MHz_TX

19/08/2019

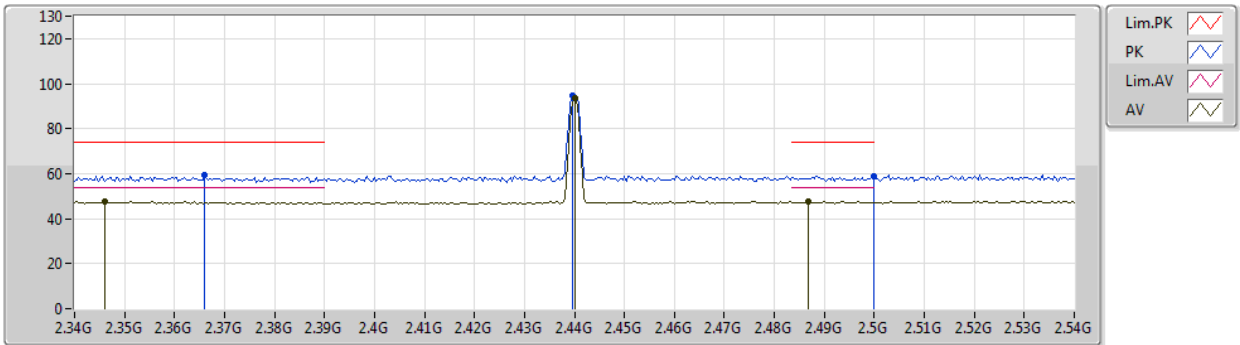


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.3876G	47.43	54.00	-6.57	33.76	3	Vertical	282	3.00	-	13.67	27.65	6.11	-
AV	2.44G	90.64	Inf	-Inf	33.69	3	Vertical	282	3.00	-	56.95	27.56	6.13	-
AV	2.4928G	47.50	54.00	-6.50	33.66	3	Vertical	282	3.00	-	13.84	27.51	6.15	-
PK	2.36G	59.37	74.00	-14.63	33.88	3	Vertical	282	3.00	-	25.49	27.76	6.12	-
PK	2.4396G	91.66	Inf	-Inf	33.69	3	Vertical	282	3.00	-	57.97	27.56	6.13	-
PK	2.4984G	59.15	74.00	-14.85	33.65	3	Vertical	282	3.00	-	25.50	27.50	6.15	-

BT-LE(1Mbps)

2440MHz_TX

19/08/2019

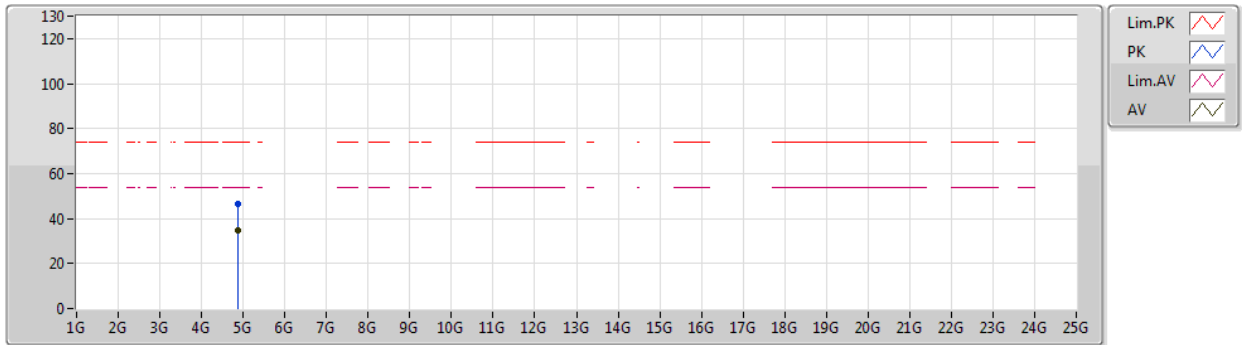


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.346G	47.61	54.00	-6.39	33.94	3	Horizontal	51	1.23	-	13.67	27.82	6.12	-
AV	2.44G	93.53	Inf	-Inf	33.69	3	Horizontal	51	1.23	-	59.84	27.56	6.13	-
AV	2.4868G	47.42	54.00	-6.58	33.66	3	Horizontal	51	1.23	-	13.76	27.51	6.15	-
PK	2.366G	59.67	74.00	-14.33	33.86	3	Horizontal	51	1.23	-	25.81	27.74	6.12	-
PK	2.4396G	94.46	Inf	-Inf	33.69	3	Horizontal	51	1.23	-	60.77	27.56	6.13	-
PK	2.5G	59.04	74.00	-14.96	33.65	3	Horizontal	51	1.23	-	25.39	27.50	6.15	-

BT-LE(1Mbps)

2440MHz_TX

19/08/2019

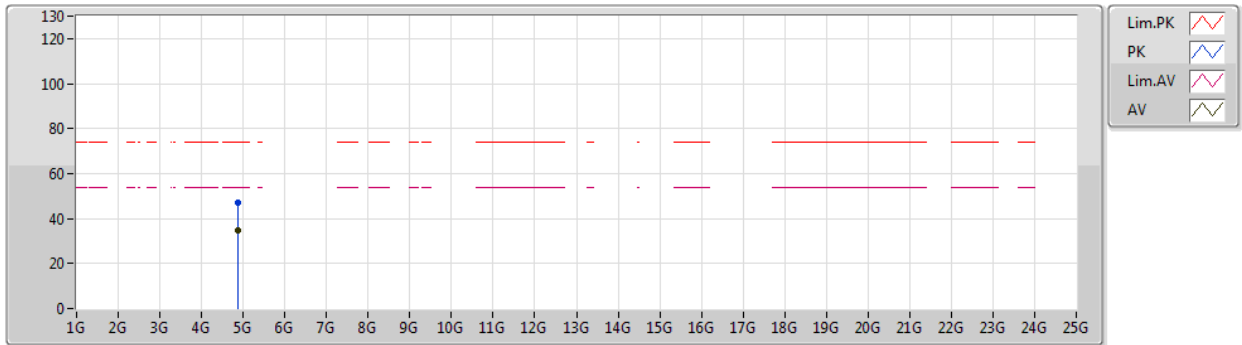


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.8829G	34.51	54.00	-19.49	5.80	3	Vertical	83	1.84	-	28.71	31.10	8.97	34.27
PK	4.8834G	46.32	74.00	-27.68	5.78	3	Vertical	83	1.84	-	40.54	31.10	8.96	34.28

BT-LE(1Mbps)

2440MHz_TX

19/08/2019

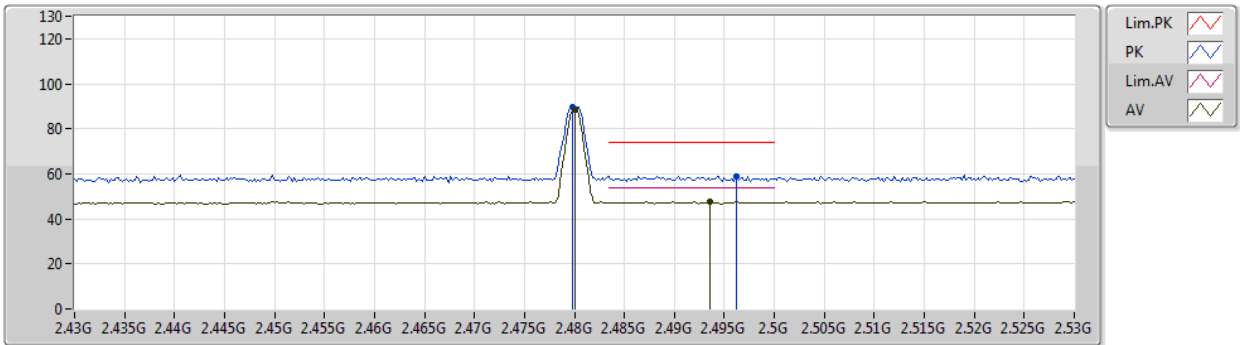


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.87922G	34.59	54.00	-19.41	5.78	3	Horizontal	151	1.88	-	28.81	31.10	8.96	34.28
PK	4.88534G	46.83	74.00	-27.17	5.80	3	Horizontal	151	1.88	-	41.03	31.10	8.97	34.27

BT-LE(1Mbps)

2480MHz_TX

19/08/2019

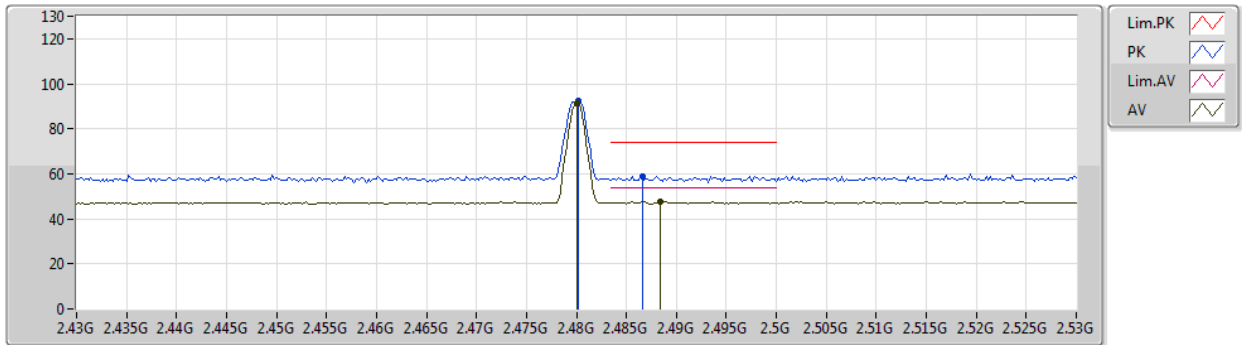


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	88.61	Inf	-Inf	33.67	3	Vertical	282	2.74	-	54.94	27.52	6.15	-
AV	2.4936G	47.58	54.00	-6.42	33.66	3	Vertical	282	2.74	-	13.92	27.51	6.15	-
PK	2.4798G	89.68	Inf	-Inf	33.66	3	Vertical	282	2.74	-	56.02	27.52	6.14	-
PK	2.4962G	59.10	74.00	-14.90	33.65	3	Vertical	282	2.74	-	25.45	27.50	6.15	-

BT-LE(1Mbps)

2480MHz_TX

19/08/2019

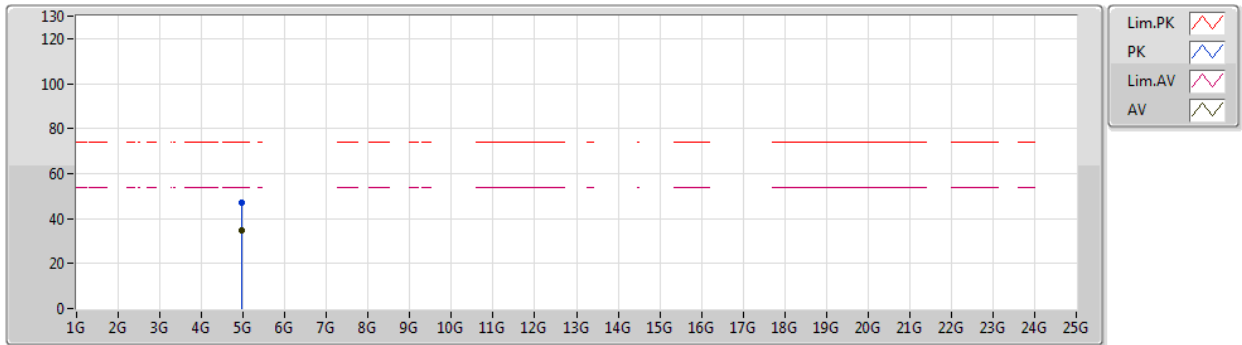


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.48G	91.19	Inf	-Inf	33.67	3	Horizontal	47	1.20	-	57.52	27.52	6.15	-
AV	2.4884G	47.74	54.00	-6.26	33.66	3	Horizontal	47	1.20	-	14.08	27.51	6.15	-
PK	2.4802G	92.20	Inf	-Inf	33.67	3	Horizontal	47	1.20	-	58.53	27.52	6.15	-
PK	2.4866G	58.91	74.00	-15.09	33.66	3	Horizontal	47	1.20	-	25.25	27.51	6.15	-

BT-LE(1Mbps)

2480MHz_TX

19/08/2019

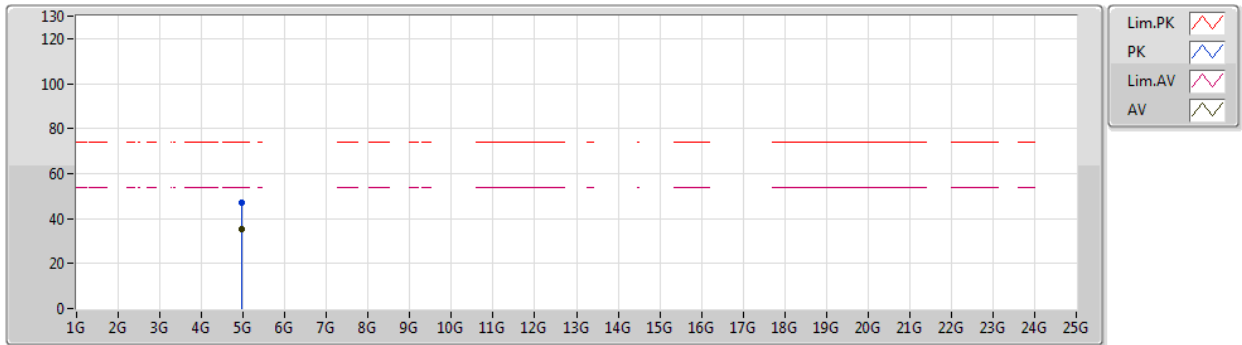


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.9664G	34.85	54.00	-19.15	6.26	3	Vertical	105	1.82	-	28.59	31.37	9.03	34.14
PK	4.96004G	47.19	74.00	-26.81	6.21	3	Vertical	105	1.82	-	40.98	31.34	9.03	34.16

BT-LE(1Mbps)

2480MHz_TX

19/08/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	4.96148G	35.12	54.00	-18.88	6.23	3	Horizontal	42	1.00	-	28.89	31.35	9.03	34.15
PK	4.96016G	46.83	74.00	-27.17	6.21	3	Horizontal	42	1.00	-	40.62	31.34	9.03	34.16

**Summary**

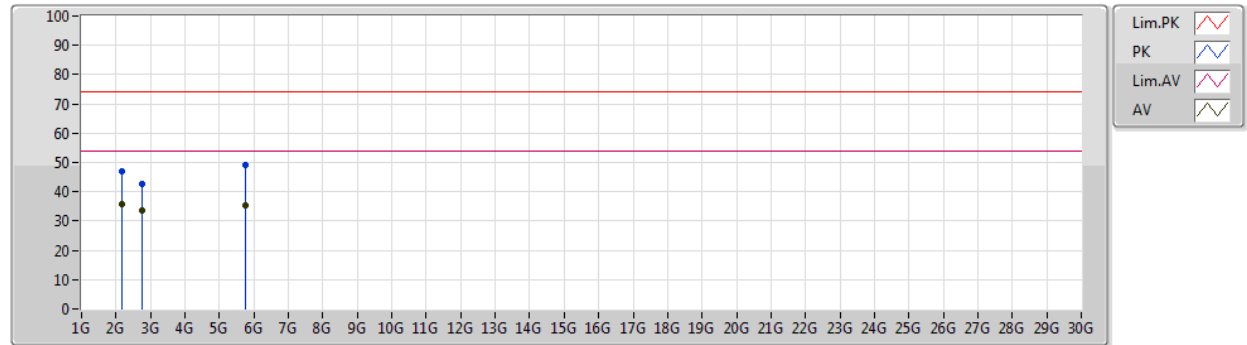
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Mode 1	Pass	AV	1.4G	42.13	54.00	-11.87	-5.56	3	Horizontal	197	2.45	-
Mode 2	Pass	AV	1.4G	42.18	54.00	-11.82	-5.56	3	Horizontal	191	2.43	-

Mode Configure

Mode	
Mode 1	WIFI 2.4G+BT
Mode 2	WIFI 5G+BT

Mode 1

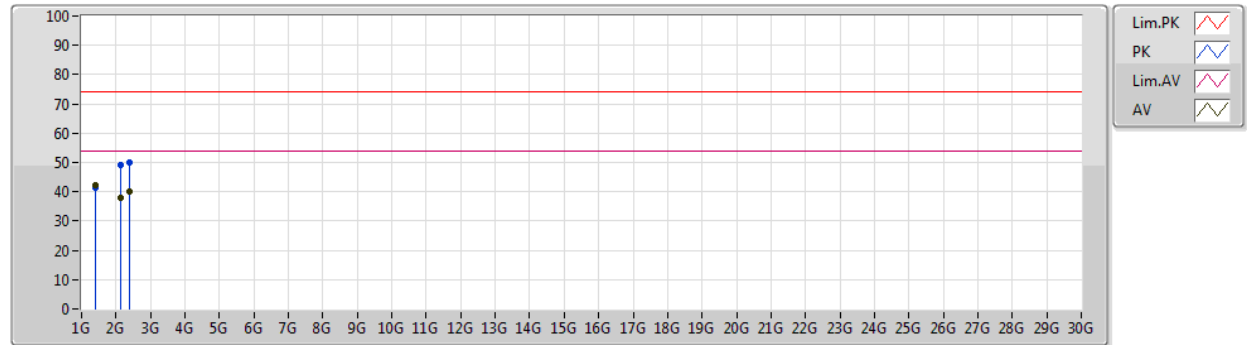
23/08/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	2.152G	35.66	54.00	-18.34	-3.30	3	Vertical	216	2.34	-	38.96	26.66	4.44	34.40
AV	2.744G	33.57	54.00	-20.43	-1.40	3	Vertical	306	1.33	-	34.97	28.09	5.14	34.63
AV	5.756G	35.17	54.00	-18.83	5.43	3	Vertical	238	1.61	-	29.74	32.26	7.64	34.47
PK	2.152G	47.07	74.00	-26.93	-3.30	3	Vertical	216	2.34	-	50.37	26.66	4.44	34.40
PK	2.744G	42.50	74.00	-31.50	-1.40	3	Vertical	306	1.33	-	43.90	28.09	5.14	34.63
PK	5.756G	48.99	74.00	-25.01	5.43	3	Vertical	238	1.61	-	43.56	32.26	7.64	34.47

Mode 1

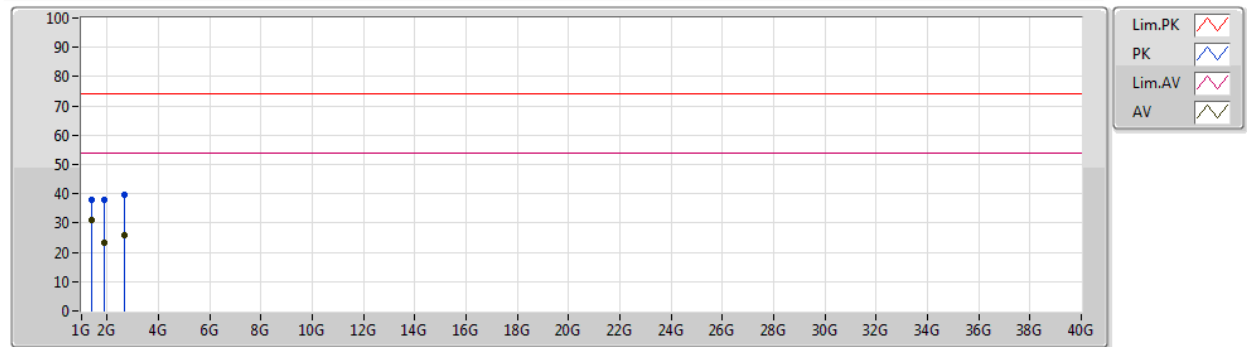
23/08/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	1.4G	42.13	54.00	-11.87	-5.56	3	Horizontal	197	2.45	-	47.69	25.44	3.66	34.66
AV	2.132G	38.04	54.00	-15.96	-3.37	3	Horizontal	302	1.71	-	41.41	26.60	4.42	34.39
AV	2.376G	40.09	54.00	-13.91	-2.46	3	Horizontal	39	1.84	-	42.55	27.33	4.70	34.49
PK	1.4G	41.49	74.00	-32.51	-5.56	3	Horizontal	197	2.45	-	47.05	25.44	3.66	34.66
PK	2.132G	49.33	74.00	-24.67	-3.37	3	Horizontal	236	1.74	-	52.70	26.60	4.42	34.39
PK	2.376G	50.09	74.00	-23.91	-2.46	3	Horizontal	39	1.84	-	52.55	27.33	4.70	34.49

Mode 2

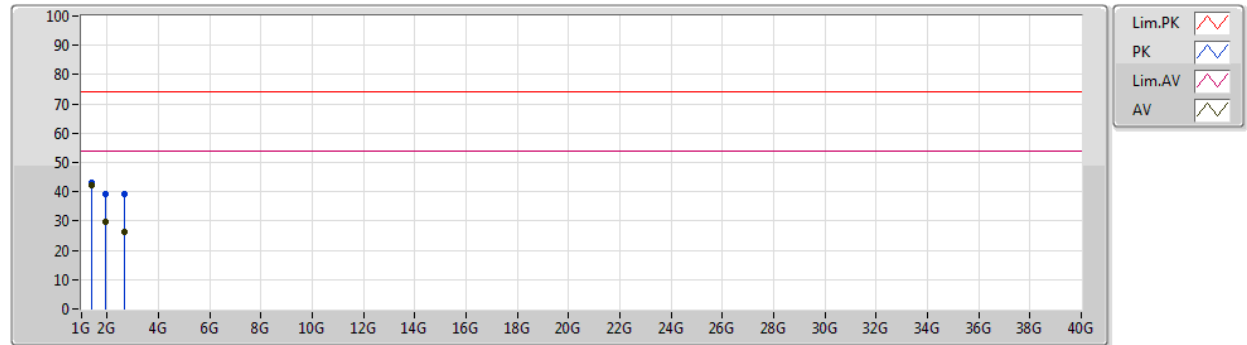
24/08/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	1.4G	30.90	54.00	-23.10	-5.56	3	Vertical	174	2.14	-	36.46	25.44	3.66	34.66
AV	1.868G	23.49	54.00	-30.51	-4.17	3	Vertical	347	1.99	-	27.66	26.07	4.14	34.38
AV	2.68G	25.93	54.00	-28.07	-1.56	3	Vertical	138	2.09	-	27.49	27.99	5.06	34.61
PK	1.4G	37.82	74.00	-36.18	-5.49	3	Vertical	174	2.14	-	43.31	25.47	3.68	34.64
PK	1.868G	37.94	74.00	-36.06	-4.17	3	Vertical	347	1.99	-	42.11	26.07	4.14	34.38
PK	2.68G	39.79	74.00	-34.21	-1.56	3	Vertical	138	2.09	-	41.35	27.99	5.06	34.61

Mode 2

24/08/2019



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB)	CL (dB)	PA (dB)
AV	1.4G	42.18	54.00	-11.82	-5.56	3	Horizontal	191	2.43	-	47.74	25.44	3.66	34.66
AV	1.926G	29.64	54.00	-24.36	-4.04	3	Horizontal	276	1.44	-	33.68	26.13	4.19	34.36
AV	2.69G	26.37	54.00	-27.63	-1.54	3	Horizontal	231	1.73	-	27.91	28.00	5.08	34.62
PK	1.4G	43.13	74.00	-30.87	-5.56	3	Horizontal	191	2.43	-	48.69	25.44	3.66	34.66
PK	1.926G	39.14	74.00	-34.86	-4.04	3	Horizontal	276	1.44	-	43.18	26.13	4.19	34.36
PK	2.69G	39.09	74.00	-34.91	-1.54	3	Horizontal	231	1.73	-	40.63	28.00	5.08	34.62