



RADIO TEST REPORT

FCC ID : TLZ-XM455
Equipment : IEEE 802.11 2X2 WiFi 6 MIMO Wireless LAN + Bluetooth
5.3 Combo LGA Module
Brand Name : AzureWave
Model Name : AW-XM455
Applicant : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City ,
Taiwan 231
Manufacturer : AzureWave Technologies, Inc.
8F., No.94, Baozhong Rd. , Xindian Dist., New Taipei City ,
Taiwan 231
Standard : 47 CFR FCC Part 15.247

The product was received on Oct. 24, 2022, and testing was started from Nov. 05, 2022 and completed on Feb. 09, 2023. We, Sporton International Inc. Hsinchu 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 test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A10_6 Ver1.3



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	-

Declaration of Conformity:

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen**Report Producer: Vicky Huang**



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Bluetooth 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	1
2.4-2.4835GHz	BT-LE(500Kb/s)	1	1
2.4-2.4835GHz	BT-LE(125Kb/s)	1	1
2.4-2.4835GHz	BT-LE(2Mbps)	2	1

Note:

- ♦ Bluetooth LE uses a GFSK modulation.
- ♦ BWch is the nominal channel bandwidth.

**1.1.2 Antenna Information**

Ant.	Port			Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz	WLAN 5GHz	Bluetooth					
1	1/2	1/2	1	MAG. LAYERS	MSA-4008-25GC1-A2	PIFA	I-PEX	Note 1
2	1/2	1/2	1	SONY	IW611-IW620-D(100)	Dipole	I-PEX	
3	1/2	1/2	1	SONY	IW611-IW620-D(110)	Dipole	I-PEX	
4	1/2	1/2	1	SONY	IW611-IW620-D(120)	Dipole	I-PEX	
5	1/2	1/2	1	SONY	IW611-IW620-D(130)	Dipole	I-PEX	
6	1/2	1/2	1	SONY	IW611-IW620-D(140)	Dipole	I-PEX	
7	1/2	1/2	1	SONY	IW611-IW620-D(150)	Dipole	I-PEX	
8	1/2	1/2	1	SONY	IW611-IW620-D(160)	Dipole	I-PEX	
9	1/2	1/2	1	SONY	IW611-IW620-D(170)	Dipole	I-PEX	
10	1/2	1/2	1	SONY	IW611-IW620-D(180)	Dipole	I-PEX	
11	1/2	1/2	1	SONY	IW611-IW620-D(190)	Dipole	I-PEX	
12	1/2	1/2	1	SONY	IW611-IW620-D(200)	Dipole	I-PEX	
13	1/2	1/2	1	SONY	IW611-IW620-D(210)	Dipole	I-PEX	
14	1/2	1/2	1	SONY	IW611-IW620-D(220)	Dipole	I-PEX	
15	1/2	1/2	1	SONY	IW611-IW620-D(230)	Dipole	I-PEX	
16	1/2	1/2	1	SONY	IW611-IW620-D(240)	Dipole	I-PEX	
17	1/2	1/2	1	SONY	IW611-IW620-D(250)	Dipole	I-PEX	
18	1/2	1/2	1	SONY	IW611-IW620-D(260)	Dipole	I-PEX	
19	1/2	1/2	1	SONY	IW611-IW620-D(270)	Dipole	I-PEX	
20	1/2	1/2	1	SONY	IW611-IW620-D(280)	Dipole	I-PEX	
21	1/2	1/2	1	SONY	IW611-IW620-D(290)	Dipole	I-PEX	
22	1/2	1/2	1	SONY	IW611-IW620-D(300)	Dipole	I-PEX	
23	1/2	1/2	1	SONY	IW611-IW620-D(310)	Dipole	I-PEX	
24	1/2	1/2	1	SONY	IW611-IW620-D(320)	Dipole	I-PEX	
25	1/2	1/2	1	SONY	IW611-IW620-D(330)	Dipole	I-PEX	
26	1/2	1/2	1	SONY	IW611-IW620-D(340)	Dipole	I-PEX	
27	1/2	1/2	1	SONY	IW611-IW620-D(350)	Dipole	I-PEX	
28	1/2	1/2	1	SONY	IW611-IW620-D(360)	Dipole	I-PEX	
29	1/2	1/2	1	SONY	IW611-IW620-D(370)	Dipole	I-PEX	
30	1/2	1/2	1	SONY	IW611-IW620-D(380)	Dipole	I-PEX	
31	1/2	1/2	1	SONY	IW611-IW620-D(390)	Dipole	I-PEX	
32	1/2	1/2	1	SONY	IW611-IW620-D(400)	Dipole	I-PEX	
33	1/2	1/2	1	SONY	IW611-IW620-D(410)	Dipole	I-PEX	
34	1/2	1/2	1	SONY	IW611-IW620-D(420)	Dipole	I-PEX	
35	1/2	1/2	1	SONY	IW611-IW620-D(430)	Dipole	I-PEX	
36	1/2	1/2	1	SONY	IW611-IW620-D(440)	Dipole	I-PEX	
37	1/2	1/2	1	SONY	IW611-IW620-D(450)	Dipole	I-PEX	
38	1/2	1/2	1	SONY	IW611-IW620-D(460)	Dipole	I-PEX	

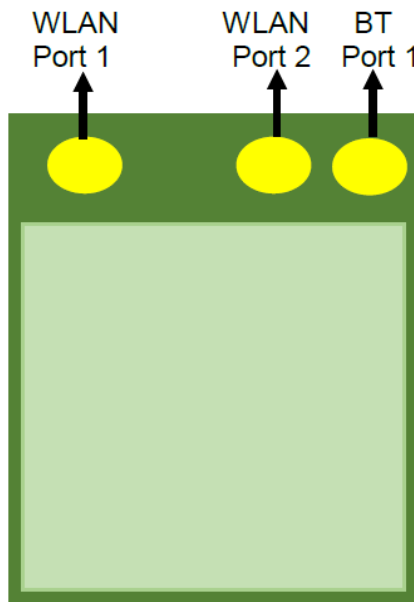


39	1/2	1/2	1	SONY	IW611-IW620-D(470)	Dipole	I-PEX	Note 1
40	1/2	1/2	1	SONY	IW611-IW620-D(480)	Dipole	I-PEX	
41	1/2	1/2	1	SONY	IW611-IW620-D(490)	Dipole	I-PEX	
42	1/2	1/2	1	SONY	IW611-IW620-D(500)	Dipole	I-PEX	
43	1/2	1/2	1	SONY	IW611-IW620-D(510)	Dipole	I-PEX	
44	1/2	1/2	1	SONY	IW611-IW620-D(520)	Dipole	I-PEX	
45	1/2	1/2	1	SONY	IW611-IW620-D(530)	Dipole	I-PEX	
46	1/2	1/2	1	SONY	IW611-IW620-D(540)	Dipole	I-PEX	
47	1/2	1/2	1	SONY	IW611-IW620-D(550)	Dipole	I-PEX	
48	1/2	1/2	1	SONY	IW611-IW620-D(560)	Dipole	I-PEX	
49	1/2	1/2	1	SONY	IW611-IW620-D(570)	Dipole	I-PEX	
50	1/2	1/2	1	SONY	IW611-IW620-D(580)	Dipole	I-PEX	
51	1/2	1/2	1	SONY	IW611-IW620-D(590)	Dipole	I-PEX	
52	1/2	1/2	1	SONY	IW611-IW620-D(600)	Dipole	I-PEX	
53	1/2	1/2	1	SONY	IW611-IW620-D(610)	Dipole	I-PEX	
54	1/2	1/2	1	SONY	IW611-IW620-D(620)	Dipole	I-PEX	
55	1/2	1/2	1	SONY	IW611-IW620-D(630)	Dipole	I-PEX	
56	1/2	1/2	1	SONY	IW611-IW620-D(640)	Dipole	I-PEX	
57	1/2	1/2	1	SONY	IW611-IW620-D(650)	Dipole	I-PEX	
58	1/2	1/2	1	SONY	IW611-IW620-D(660)	Dipole	I-PEX	
59	1/2	1/2	1	SONY	IW611-IW620-D(670)	Dipole	I-PEX	
60	1/2	1/2	1	SONY	IW611-IW620-D(680)	Dipole	I-PEX	
61	1/2	1/2	1	SONY	IW611-IW620-D(690)	Dipole	I-PEX	
62	1/2	1/2	1	SONY	IW611-IW620-D(700)	Dipole	I-PEX	
63	1/2	1/2	1	SONY	IW611-IW620-D(710)	Dipole	I-PEX	
64	1/2	1/2	1	SONY	IW611-IW620-D(720)	Dipole	I-PEX	
65	1/2	1/2	1	SONY	IW611-IW620-D(730)	Dipole	I-PEX	
66	1/2	1/2	1	SONY	IW611-IW620-D(740)	Dipole	I-PEX	
67	1/2	1/2	1	SONY	IW611-IW620-D(750)	Dipole	I-PEX	
68	1/2	1/2	1	SONY	IW611-IW620-D(760)	Dipole	I-PEX	
69	1/2	1/2	1	SONY	IW611-IW620-D(770)	Dipole	I-PEX	
70	1/2	1/2	1	SONY	IW611-IW620-D(780)	Dipole	I-PEX	
71	1/2	1/2	1	SONY	IW611-IW620-D(790)	Dipole	I-PEX	
72	1/2	1/2	1	SONY	IW611-IW620-D(800)	Dipole	I-PEX	
73	1/2	1/2	1	SONY	IW611-IW620-G(100)	Dipole	I-PEX	
74	1/2	1/2	1	SONY	IW611-IW620-G(110)	Dipole	I-PEX	
75	1/2	1/2	1	SONY	IW611-IW620-G(120)	Dipole	I-PEX	
76	1/2	1/2	1	SONY	IW611-IW620-G(130)	Dipole	I-PEX	
77	1/2	1/2	1	SONY	IW611-IW620-G(140)	Dipole	I-PEX	
78	1/2	1/2	1	SONY	IW611-IW620-G(150)	Dipole	I-PEX	
79	1/2	1/2	1	SONY	IW611-IW620-G(160)	Dipole	I-PEX	
80	1/2	1/2	1	SONY	IW611-IW620-G(170)	Dipole	I-PEX	



81	1/2	1/2	1	SONY	IW611-IW620-G(180)	Dipole	I-PEX	Note 1
82	1/2	1/2	1	SONY	IW611-IW620-G(190)	Dipole	I-PEX	
83	1/2	1/2	1	SONY	IW611-IW620-G(200)	Dipole	I-PEX	
84	1/2	1/2	1	SONY	IW611-IW620-G(210)	Dipole	I-PEX	
85	1/2	1/2	1	SONY	IW611-IW620-G(220)	Dipole	I-PEX	
86	1/2	1/2	1	SONY	IW611-IW620-G(230)	Dipole	I-PEX	
87	1/2	1/2	1	SONY	IW611-IW620-G(240)	Dipole	I-PEX	
88	1/2	1/2	1	SONY	IW611-IW620-G(250)	Dipole	I-PEX	
89	1/2	1/2	1	SONY	IW611-IW620-G(260)	Dipole	I-PEX	
90	1/2	1/2	1	SONY	IW611-IW620-G(270)	Dipole	I-PEX	
91	1/2	1/2	1	SONY	IW611-IW620-G(280)	Dipole	I-PEX	
92	1/2	1/2	1	SONY	IW611-IW620-G(290)	Dipole	I-PEX	
93	1/2	1/2	1	SONY	IW611-IW620-G(300)	Dipole	I-PEX	
94	1/2	1/2	1	SONY	IW611-IW620-G(310)	Dipole	I-PEX	
95	1/2	1/2	1	SONY	IW611-IW620-G(320)	Dipole	I-PEX	
96	1/2	1/2	1	SONY	IW611-IW620-G(330)	Dipole	I-PEX	
97	1/2	1/2	1	SONY	IW611-IW620-G(340)	Dipole	I-PEX	
98	1/2	1/2	1	SONY	IW611-IW620-G(350)	Dipole	I-PEX	
99	1/2	1/2	1	SONY	IW611-IW620-G(360)	Dipole	I-PEX	
100	1/2	1/2	1	SONY	IW611-IW620-G(370)	Dipole	I-PEX	
101	1/2	1/2	1	SONY	IW611-IW620-G(380)	Dipole	I-PEX	
102	1/2	1/2	1	SONY	IW611-IW620-G(390)	Dipole	I-PEX	
103	1/2	1/2	1	SONY	IW611-IW620-G(400)	Dipole	I-PEX	
104	1/2	1/2	1	SONY	IW611-IW620-G(410)	Dipole	I-PEX	
105	1/2	1/2	1	SONY	IW611-IW620-G(420)	Dipole	I-PEX	
106	1/2	1/2	1	SONY	IW611-IW620-G(430)	Dipole	I-PEX	
107	1/2	1/2	1	SONY	IW611-IW620-G(440)	Dipole	I-PEX	
108	1/2	1/2	1	SONY	IW611-IW620-G(450)	Dipole	I-PEX	
109	1/2	1/2	1	SONY	IW611-IW620-G(460)	Dipole	I-PEX	
110	1/2	1/2	1	SONY	IW611-IW620-G(470)	Dipole	I-PEX	
111	1/2	1/2	1	SONY	IW611-IW620-G(480)	Dipole	I-PEX	
112	1/2	1/2	1	SONY	IW611-IW620-G(490)	Dipole	I-PEX	
113	1/2	1/2	1	SONY	IW611-IW620-G(500)	Dipole	I-PEX	
114	1/2	1/2	1	SONY	IW611-IW620-G(510)	Dipole	I-PEX	
115	1/2	1/2	1	SONY	IW611-IW620-G(520)	Dipole	I-PEX	
116	1/2	1/2	1	SONY	IW611-IW620-G(530)	Dipole	I-PEX	
117	1/2	1/2	1	SONY	IW611-IW620-G(540)	Dipole	I-PEX	
118	1/2	1/2	1	SONY	IW611-IW620-G(550)	Dipole	I-PEX	
119	1/2	1/2	1	SONY	IW611-IW620-G(560)	Dipole	I-PEX	
120	1/2	1/2	1	SONY	IW611-IW620-G(570)	Dipole	I-PEX	
121	1/2	1/2	1	SONY	IW611-IW620-G(580)	Dipole	I-PEX	
122	1/2	1/2	1	SONY	IW611-IW620-G(590)	Dipole	I-PEX	

123	1/2	1/2	1	SONY	IW611-IW620-G(600)	Dipole	I-PEX	Note 1
124	1/2	1/2	1	SONY	IW611-IW620-G(610)	Dipole	I-PEX	
125	1/2	1/2	1	SONY	IW611-IW620-G(620)	Dipole	I-PEX	
126	1/2	1/2	1	SONY	IW611-IW620-G(630)	Dipole	I-PEX	
127	1/2	1/2	1	SONY	IW611-IW620-G(640)	Dipole	I-PEX	
128	1/2	1/2	1	SONY	IW611-IW620-G(650)	Dipole	I-PEX	
129	1/2	1/2	1	SONY	IW611-IW620-G(660)	Dipole	I-PEX	
130	1/2	1/2	1	SONY	IW611-IW620-G(670)	Dipole	I-PEX	
131	1/2	1/2	1	SONY	IW611-IW620-G(680)	Dipole	I-PEX	
132	1/2	1/2	1	SONY	IW611-IW620-G(690)	Dipole	I-PEX	
133	1/2	1/2	1	SONY	IW611-IW620-G(700)	Dipole	I-PEX	
134	1/2	1/2	1	SONY	IW611-IW620-G(710)	Dipole	I-PEX	
135	1/2	1/2	1	SONY	IW611-IW620-G(720)	Dipole	I-PEX	
136	1/2	1/2	1	SONY	IW611-IW620-G(730)	Dipole	I-PEX	
137	1/2	1/2	1	SONY	IW611-IW620-G(740)	Dipole	I-PEX	
138	1/2	1/2	1	SONY	IW611-IW620-G(750)	Dipole	I-PEX	
139	1/2	1/2	1	SONY	IW611-IW620-G(760)	Dipole	I-PEX	
140	1/2	1/2	1	SONY	IW611-IW620-G(770)	Dipole	I-PEX	
141	1/2	1/2	1	SONY	IW611-IW620-G(780)	Dipole	I-PEX	
142	1/2	1/2	1	SONY	IW611-IW620-G(790)	Dipole	I-PEX	
143	1/2	1/2	1	SONY	IW611-IW620-G(800)	Dipole	I-PEX	

WLAN Port1 / WLAN Port2 / BT Port 1 Location




Note 1:

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth	WLAN 5GHz
1	2.98	5.16
2	0.38	1.68
3	0.35	1.63
4	0.32	1.59
5	0.28	1.54
6	0.25	1.49
7	0.22	1.45
8	0.19	1.4
9	0.16	1.36
10	0.13	1.31
11	0.09	1.26
12	0.06	1.22
13	0.03	1.17
14	0.00	1.12
15	-0.03	1.08
16	-0.06	1.03
17	-0.10	0.99
18	-0.13	0.94
19	-0.16	0.89
20	-0.19	0.85
21	-0.22	0.8
22	-0.25	0.75
23	-0.29	0.71
24	-0.32	0.66
25	-0.35	0.62
26	-0.38	0.57
27	-0.41	0.52
28	-0.44	0.48
29	-0.48	0.43
30	-0.51	0.38
31	-0.54	0.34
32	-0.57	0.29
33	-0.60	0.24
34	-0.63	0.2
35	-0.67	0.15
36	-0.70	0.11
37	-0.73	0.06
38	-0.76	0.01



39	-0.79	-0.03
40	-0.82	-0.08
41	-0.86	-0.13
42	-0.89	-0.17
43	-0.92	-0.22
44	-0.95	-0.26
45	-0.98	-0.31
46	-1.01	-0.36
47	-1.05	-0.4
48	-1.08	-0.45
49	-1.11	-0.5
50	-1.14	-0.54
51	-1.17	-0.59
52	-1.21	-0.64
53	-1.24	-0.68
54	-1.27	-0.73
55	-1.30	-0.77
56	-1.33	-0.82
57	-1.36	-0.87
58	-1.40	-0.91
59	-1.43	-0.96
60	-1.46	-1.01
61	-1.49	-1.05
62	-1.52	-1.1
63	-1.55	-1.14
64	-1.59	-1.19
65	-1.62	-1.24
66	-1.65	-1.28
67	-1.68	-1.33
68	-1.71	-1.38
69	-1.74	-1.42
70	-1.78	-1.47
71	-1.81	-1.51
72	-1.84	-1.56
73	0.29	1.36
74	0.26	1.31
75	0.23	1.27
76	0.19	1.22
77	0.16	1.17
78	0.13	1.13
79	0.10	1.08



80	0.07	1.04
81	0.04	0.99
82	0.00	0.94
83	-0.03	0.9
84	-0.06	0.85
85	-0.09	0.8
86	-0.12	0.76
87	-0.15	0.71
88	-0.19	0.67
89	-0.22	0.62
90	-0.25	0.57
91	-0.28	0.53
92	-0.31	0.48
93	-0.34	0.43
94	-0.38	0.39
95	-0.41	0.34
96	-0.44	0.3
97	-0.47	0.25
98	-0.50	0.2
99	-0.53	0.16
100	-0.57	0.11
101	-0.60	0.06
102	-0.63	0.02
103	-0.66	-0.03
104	-0.69	-0.08
105	-0.72	-0.12
106	-0.76	-0.17
107	-0.79	-0.21
108	-0.82	-0.26
109	-0.85	-0.31
110	-0.88	-0.35
111	-0.91	-0.4
112	-0.95	-0.45
113	-0.98	-0.49
114	-1.01	-0.54
115	-1.04	-0.58
116	-1.07	-0.63
117	-1.10	-0.68
118	-1.14	-0.72
119	-1.17	-0.77
120	-1.20	-0.82



121	-1.23	-0.86
122	-1.26	-0.91
123	-1.30	-0.96
124	-1.33	-1
125	-1.36	-1.05
126	-1.39	-1.09
127	-1.42	-1.14
128	-1.45	-1.19
129	-1.49	-1.23
130	-1.52	-1.28
131	-1.55	-1.33
132	-1.58	-1.37
133	-1.61	-1.42
134	-1.64	-1.46
135	-1.68	-1.51
136	-1.71	-1.56
137	-1.74	-1.6
138	-1.77	-1.65
139	-1.80	-1.7
140	-1.83	-1.74
141	-1.87	-1.79
142	-1.90	-1.83
143	-1.93	-1.88

Note2: The above information was declared by manufacturer.

For the radiated test: The EUT has two types of antenna. Only the highest gain antenna was selected from each different type of antenna to test and record in this report. Thus, Antenna 1 and 2 were selected to perform the test.

For the conducted test: The EUT has two types of antenna. Only the highest gain antenna was selected to test and record in this report. Thus, Antenna 1 was selected to perform the test.

<For WLAN 2.4GHz function>

For IEEE 802.11b/g/n/VHT/ax (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

<For WLAN 5GHz function>

For IEEE 802.11a/n/ac/ax (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

<For Bluetooth function> (1TX/1RX):

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

Each antenna port, please refer to the photographs of EUT.

Note 3: Directional gain information

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ss}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ss}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ss}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ss}} \left[\sum_{k=1}^{N_{ant}} g_{j,k} \right]^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20}$$

$$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2))^2$$

$$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2))^2 / N_{ANT}]$$

$$\Rightarrow 10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$$

Where ;

Antenna Gain

2.4G G1 = 2.98 dBi; G2 = 2.98 dBi

5G Band1 G1 = 5.16dBi; G2 = 5.16 dBi

5G Band2 G1 = 5.16dBi; G2 = 5.16 dBi

5G Band3 G1 = 5.16dBi; G2 = 5.16 dBi

5G Band4 G1 = 5.16dBi; G2 = 5.16 dBi

2.4G

DG = 5.99 dBi

5G

Band1 DG = 8.17 dBi

Band2 DG = 8.17 dBi

Band3 DG = 8.17 dBi

Band4 DG = 8.17 dBi



1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
BT-LE(1Mbps)	0.624	2.05	390.00u	3k
BT-LE(2Mbps)	0.33	4.81	206.25u	10k

Note:

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

1.1.4 EUT Operational Condition

EUT Power Type	From host system			
Function	☒	Point-to-multipoint	☐	Point-to-point
Test Software Version	DutApiMimoApApp (V 1.0.0.114) 、DOS[ver 6.1.7601]			
Support Mode	☒	LE 1M PHY: 1 Mb/s		
	☒	LE Coded PHY (S=2): 500 Kb/s		
	☒	LE Coded PHY (S=8): 125 Kb/s		
	☒	LE 2M PHY: 2 Mb/s		

Note: The above information was declared by manufacturer.

1.1.5 Table for Hardware Information

Hardware Version	Description
V04	The difference between V04 and V05 is the layout of DC-DC power and xtal. All RF layouts are the same.
V05	

Note: The above information was declared by manufacturer.

1.1.6 Table for EUT Combination

EUT	Hardware Version	Antenna Trace Type	Equip Antenna
1	V04	Design to PIFA use	Ant. 1
2	V05	Design to PIFA use	Ant. 1
3	V04	Design to Dipole use	Ant. 2~143
4	V05	Design to Dipole use	Ant. 2~143

Note:

After evaluating, the EUT 1~4 were selected to test AC power-line conducted emissions and Emissions in Restricted Frequency Bands below 1GHz. The EUT 2 and EUT 4 were selected to test Restricted Frequency Bands above 1GHz. The EUT 2 was selected to test other test items.



1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15.247
- ♦ ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF.

- ♦ FCC KDB 558074 D01 v05r02
- ♦ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065 FAX: 886-3-656-9085 Test site Designation No. TW3787 with FCC. Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	TH03-CB	Eason Chen	24.1-25.1 / 62-68	Nov. 11, 2022 ~ Jan. 18, 2023
Radiated (Below 1GHz)	03CH06-CB	Stim Sung	24.4-25.5 / 55-58	Jan. 30, 2023 ~ Jan. 31, 2023
Radiated (Above 1GHz)	03CH01-CB	Ken Yeh	21.6~22.1 / 59~62	Nov. 05, 2022 ~ Jan. 16, 2023
	03CH02-CB	Ken Yeh	21.9~22.3 / 60~65	Nov. 05, 2022 ~ Jan. 16, 2023
AC Conduction	CO01-CB	Elvin Yeh	22~23 / 50~51	Feb. 09, 2023

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)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.7 dB	Confidence levels of 95%
Conducted Emission	3.2 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.2 dB	Confidence levels of 95%
Bandwidth Measurement	2.0 %	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
BT-LE(1Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4
BT-LE(2Mbps)	-
2402MHz	4
2440MHz	4
2480MHz	4



2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
Operating Mode	Normal Link
1	Normal Link:EUT1-WLAN 2.4GHz+Bluetooth+Ant. 1
2	Normal Link:EUT1-WLAN 5GHz+Bluetooth+Ant. 1
3	Normal Link:EUT2-WLAN 2.4GHz+Bluetooth+Ant. 1
4	Normal Link:EUT2-WLAN 5GHz+Bluetooth+Ant. 1
5	Normal Link:EUT3-WLAN 2.4GHz+Bluetooth+Ant. 2
6	Normal Link:EUT3-WLAN 5GHz+Bluetooth+Ant. 2
7	Normal Link:EUT4-WLAN 2.4GHz+Bluetooth+Ant. 2
8	Normal Link:EUT4-WLAN 5GHz+Bluetooth+Ant. 2
For operating mode 1 is the worst case and it was record in this test report.	

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
Operating Mode	CTX
1	EUT2+Ant. 1

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emissions in Restricted Frequency Bands
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	EUT1 in X axis-WLAN 2.4GHz+Bluetooth+Ant. 1
2	EUT1 in Y axis-WLAN 2.4GHz+Bluetooth+Ant. 1
3	EUT1 in Z axis-WLAN 2.4GHz+Bluetooth+Ant. 1
Mode 3 has been evaluated to be the worst case among Mode 1~3, thus measurement for Mode 4 will follow this same test mode.	
4	EUT1 in Z axis-WLAN 5GHz+Bluetooth+Ant. 1



Mode 3 has been evaluated to be the worst case among Mode 1~4, thus measurement for Mode 5 will follow this same test mode.

5	EUT2 in Z axis-WLAN 2.4GHz+Bluetooth+Ant. 1
6	EUT3 in X axis-WLAN 2.4GHz+Bluetooth+Ant. 2
7	EUT3 in Y axis-WLAN 2.4GHz+Bluetooth+Ant. 2
8	EUT3 in Z axis-WLAN 2.4GHz+Bluetooth+Ant. 2

Mode 6 has been evaluated to be the worst case among Mode 6~8, thus measurement for Mode 9 will follow this same test mode.

9	EUT3 in X axis-WLAN 5GHz+Bluetooth+Ant. 2
---	---

Mode 6 has been evaluated to be the worst case among Mode 6~9, thus measurement for Mode 10 will follow this same test mode.

10	EUT4 in X axis-WLAN 2.4GHz+Bluetooth+Ant. 2
----	---

For operating mode 3 is the worst case and it was record in this test report.

Operating Mode > 1GHz	CTX
---------------------------------	-----

The EUT was performed at X axis, Y axis and Z axis position, and the worst case as below:

1	EUT 2 in Y axis+Ant. 1
2	EUT 4 in Z axis+Ant. 2

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

N/A



2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Fixture	Azurewave	2455-I4	N/A
B	NB	acer	ZQW	N/A
C	Earphone	e-Power	S90W	N/A
D	Mouse	acer	MOBVUO	N/A
E	Smart phone	Samsung	Galaxy J2	A3LSMJ200F
F	AP Router	TP-LINK	Archer AX10	TE7AX10V1

For Radiated (below 1GHz):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	Fixture	Azurewave	2455-I4	N/A
C	WLAN AP	NETGEAR	WNDR3300v2	PY309300116
D	iPhone 4	Apple	A1332	BCG-E2380A
E	Mouse	Logitech	M-U0026	N/A
F	Earphone	e-Power	S90W	N/A

For Radiated (above 1GHz):

Mode 1:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	NB	DELL	E4300	N/A
C	Fixture	Azurewave	2455-I4	N/A

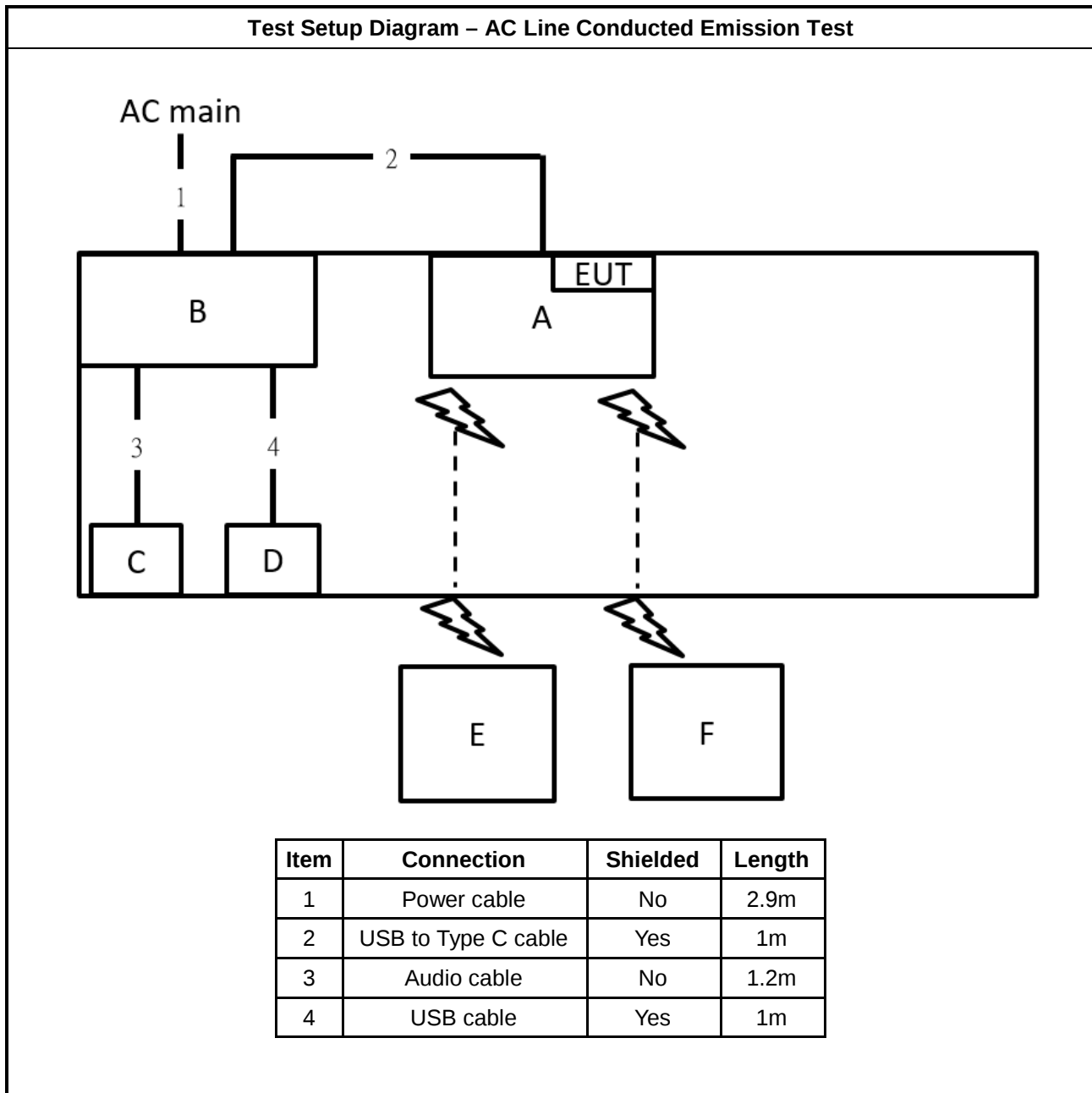
Mode 2:

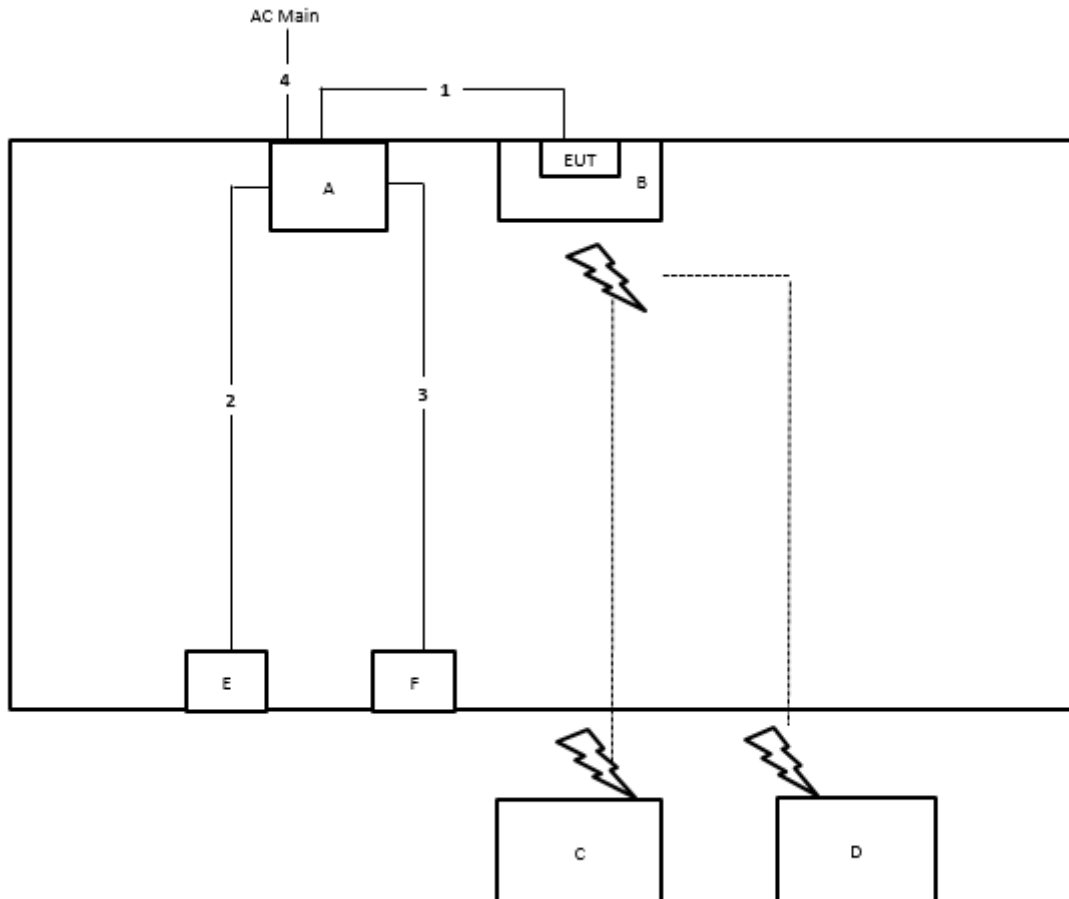
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	NB	DELL	E4300	N/A
C	Fixture	Azurewave	2455-I5	N/A

**For RF Conducted:**

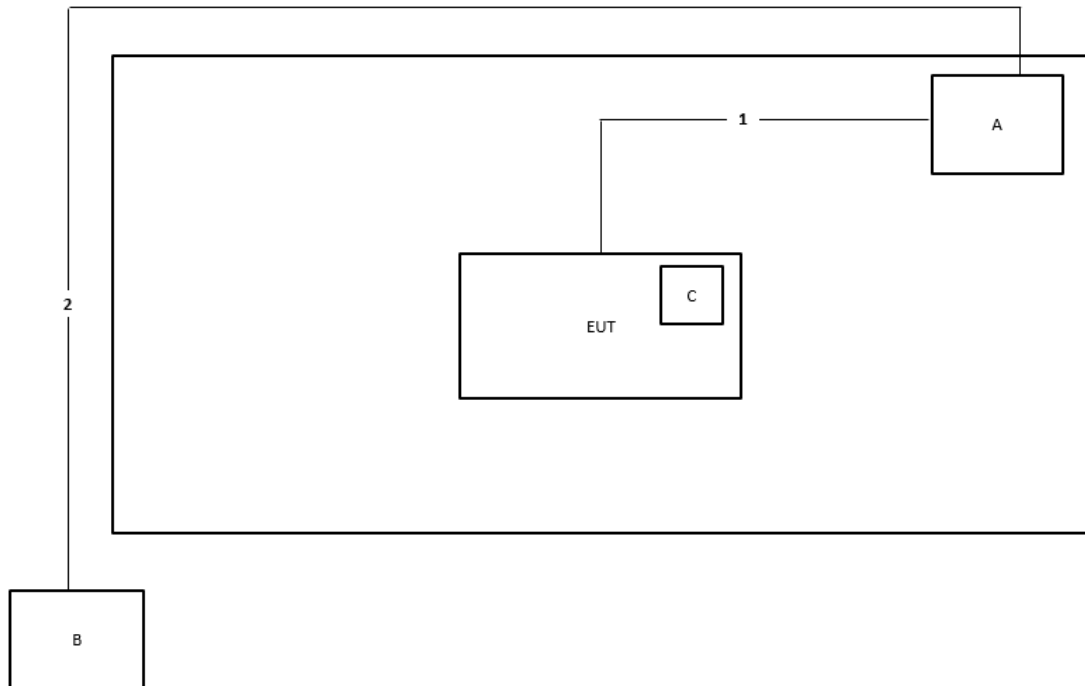
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	NB	DELL	E4300	N/A
C	Fixture	Azurewave	2455-I4	N/A

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test < 1GHz


Item	Connection	Shielded	Length
1	USB to Type C cable	Yes	0.3m
2	USB cable	Yes	1m
3	Audio cable	No	1.2m
4	Power cable	No	1.5m

Test Setup Diagram - Radiated Test > 1GHz


Item	Connection	Shielded	Length
1	USB to Type C cable	Yes	1.5m
2	RJ-45 cable	No	10m



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

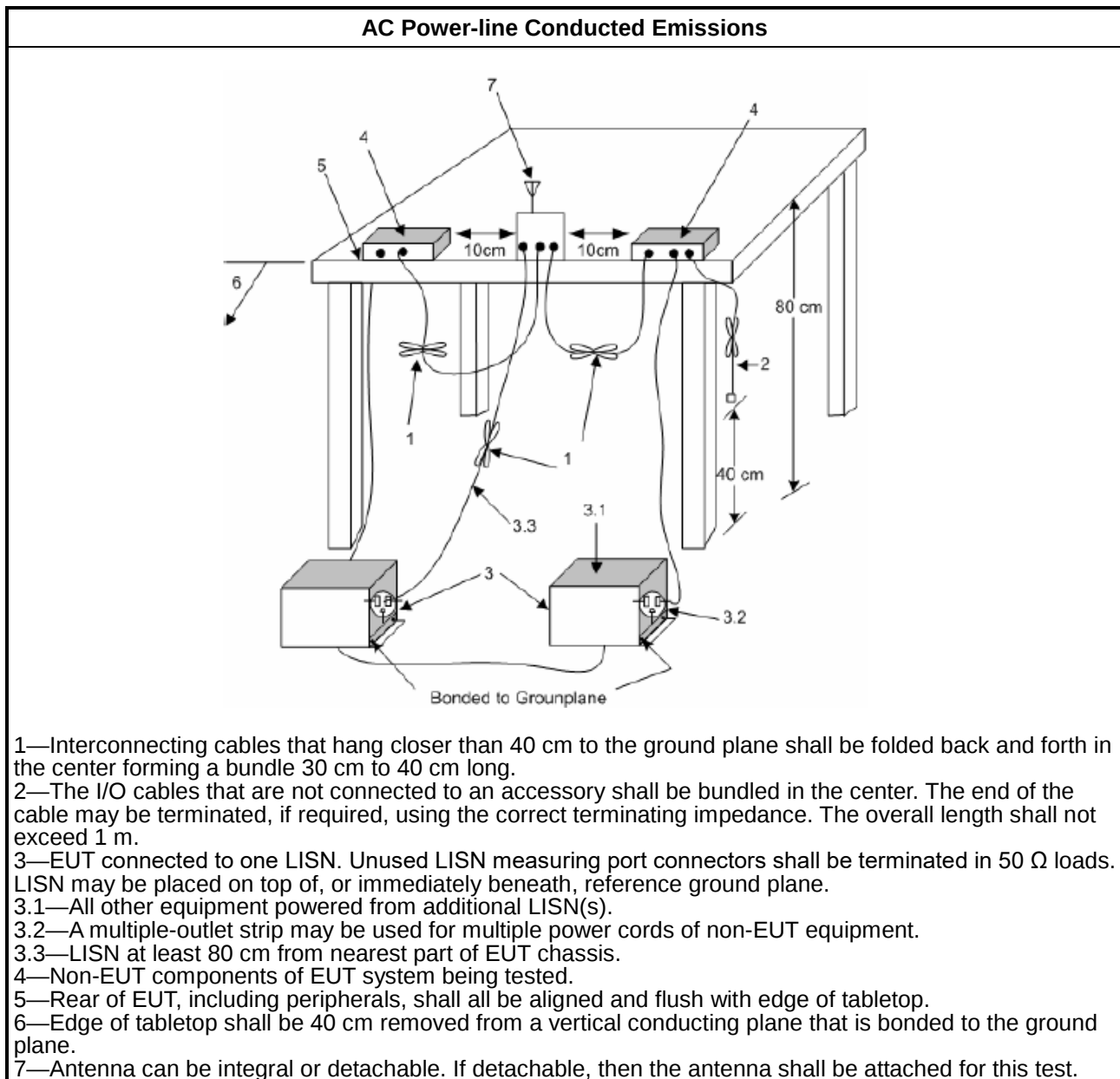
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup



1.1.1. Measurement Results Calculation

The measured Level is calculated using:

- Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- Margin = -Limit + Level

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.

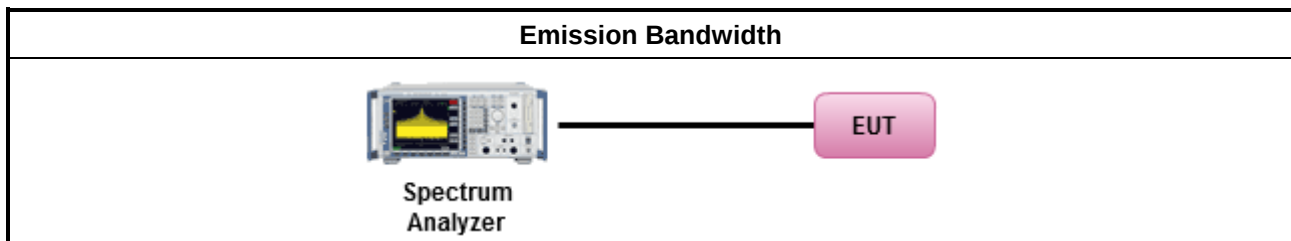
3.2.2 Measuring Instruments

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 FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.
☐ Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.
☐ Refer as ANSI C63.10, clause 6.9.1 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
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

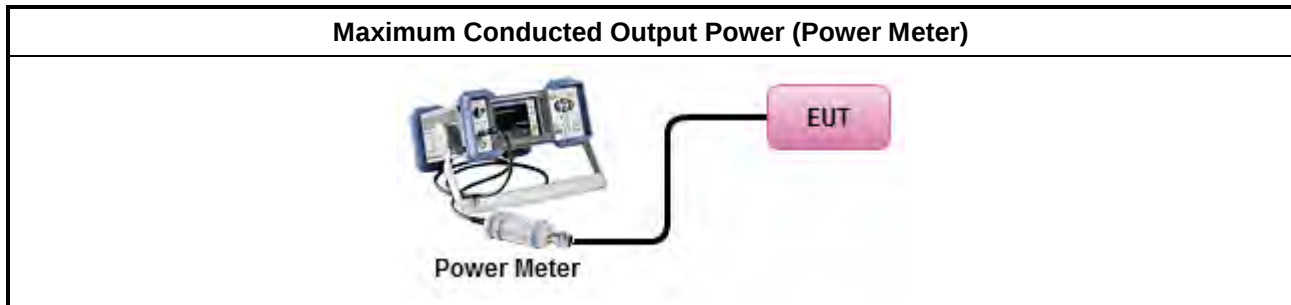
Refer a test equipment and calibration data table in this test report.



3.3.3 Test Procedures

Test Method	
▪ Maximum Peak Conducted Output Power	
☐	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
☐	Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
▪ Maximum Conducted Output Power	
[duty cycle ≥ 98% or external video / power trigger]	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A. (alternative)
duty cycle < 98% and average over on/off periods with duty factor	
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
☐	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
Measurement using a power meter (PM)	
☐	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using an RF average power meter).
☒	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (using an gate RF average power meter).
▪ For conducted measurement.	
▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC 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

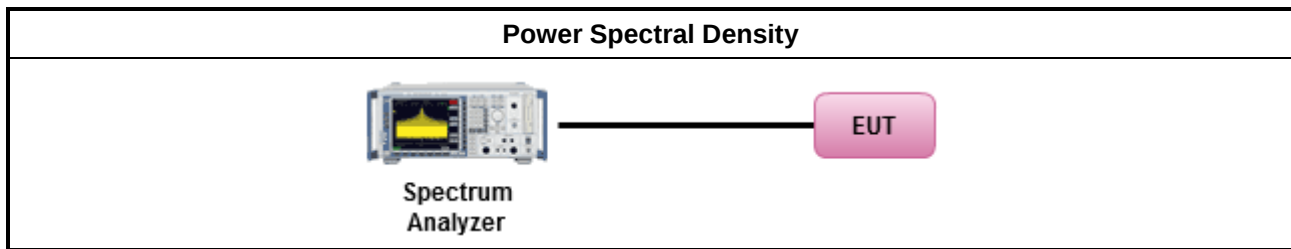
3.4.2 Measuring Instruments

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 FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD. [duty cycle $\geq 98\%$ or external video / power trigger]
▪ For conducted measurement.	
▪ If The EUT supports multiple transmit chains using options given below:	
☒	Option 1: Measure and sum the spectra across the outputs. Refer as FCC 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.
☐	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
☐	Option 3: Measure and add $10 \log(N)$ dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with $10 \log(N)$. Or each transmit chains shall be add $10 \log(N)$ to compared with the limit.

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

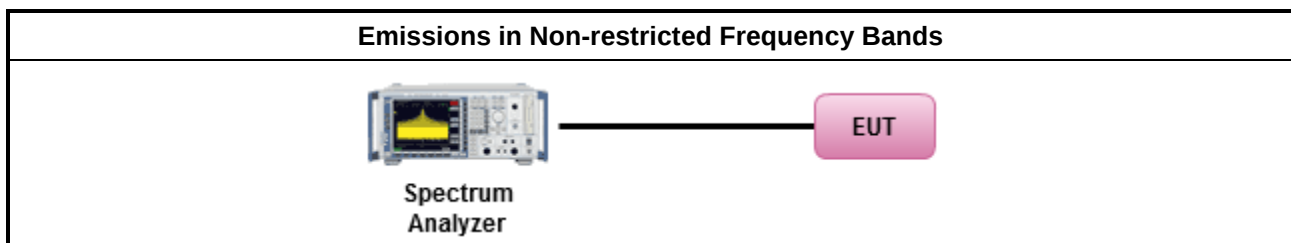
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method
Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix 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

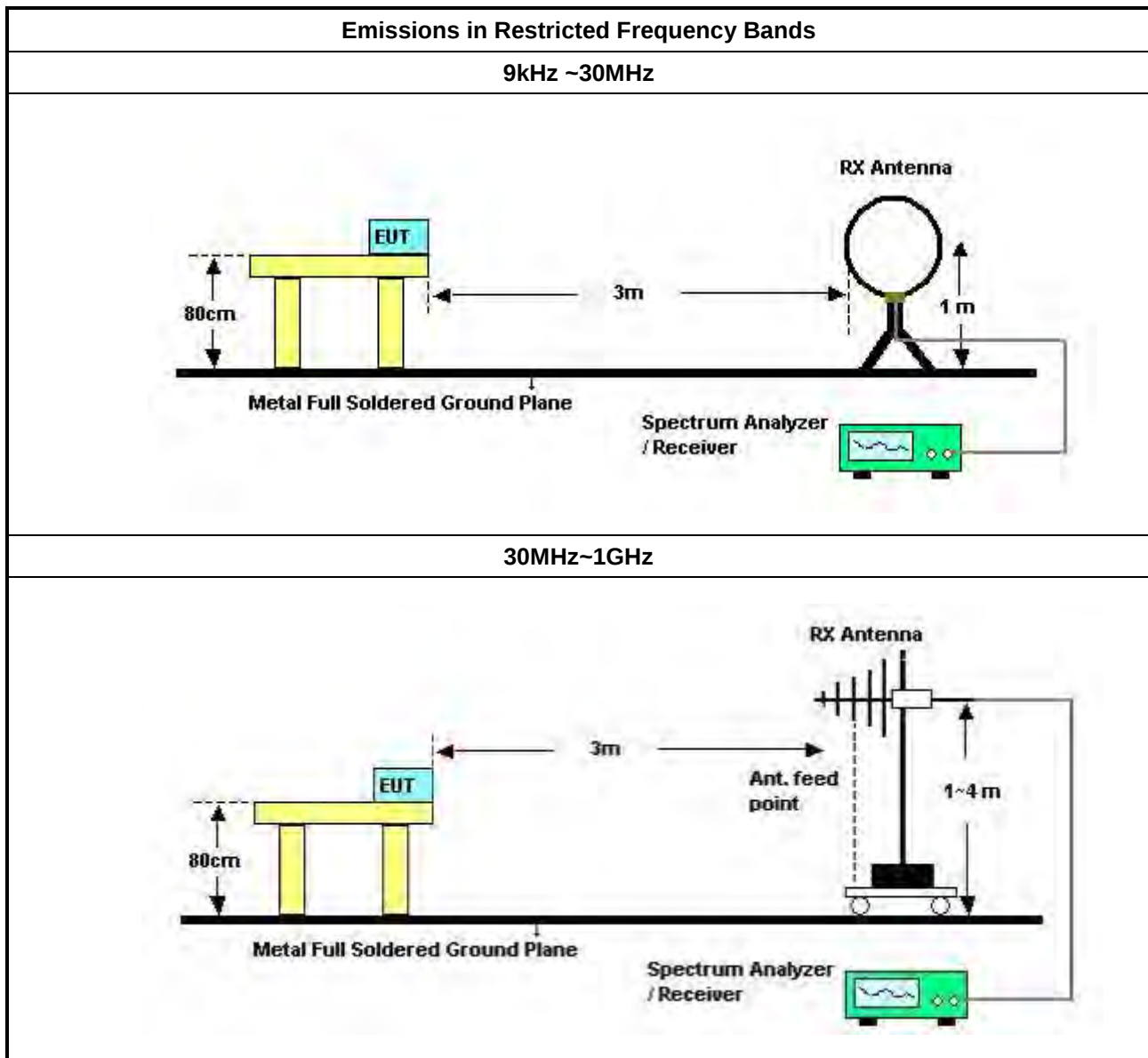
Refer a test equipment and calibration data table in this test report.

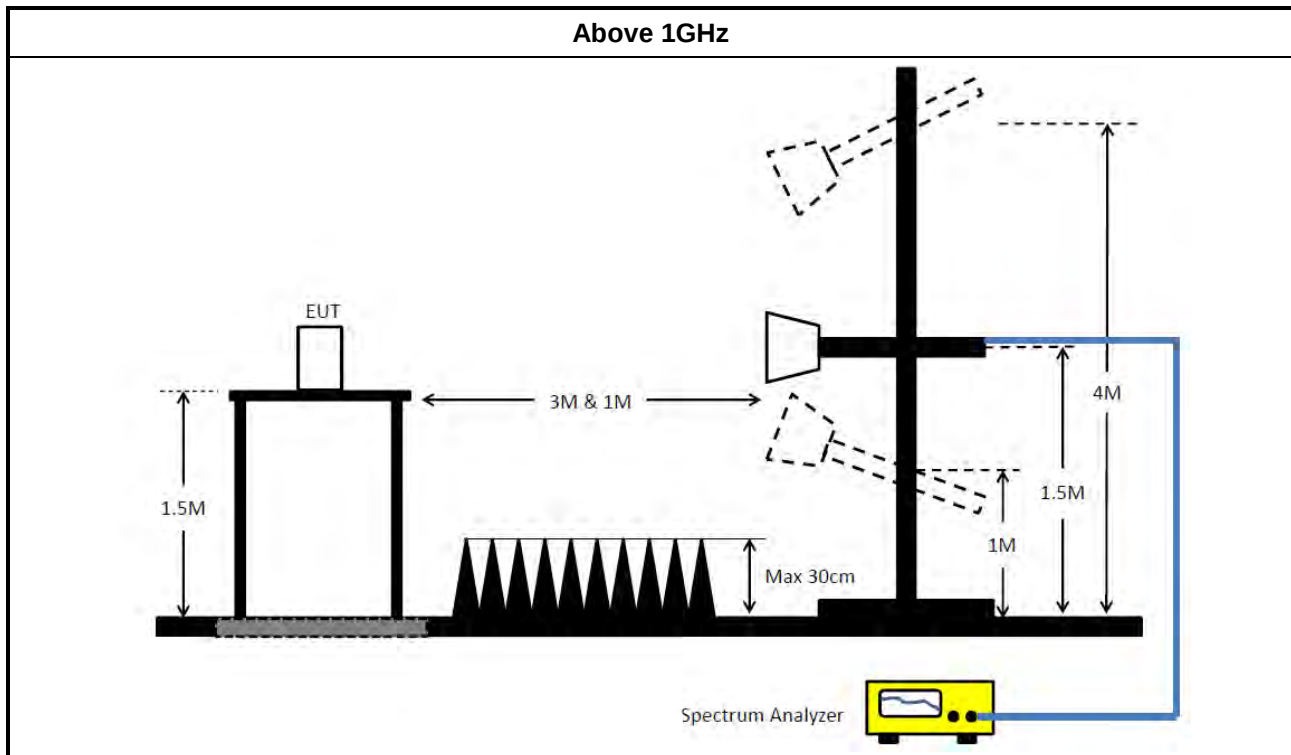


3.6.3 Test Procedures

Test Method	
▪ The average emission levels shall be measured in [duty cycle ≥ 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 FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for duty cycle $\geq 98\%$).
	☐ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).
	☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW $\geq 1/T$).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.
	▪ For the transmitter band-edge emissions shall be measured using following options below:
	▪ Refer as FCC KDB 558074 clause 8.7 & c63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	▪ Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
	▪ Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.6.4 Test Setup





3.6.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.6.6 Emissions in Restricted Frequency Bands (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Feb. 22, 2022	Feb. 21, 2023	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Dec. 20, 2022	Dec. 19, 2023	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 12, 2022	Apr. 11, 2023	Conduction (CO01-CB)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 09, 2023	Feb. 08, 2024	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH06-CB	30 MHz ~ 1 GHz	Aug. 04, 2022	Aug. 03, 2023	Radiation (03CH06-CB)
Bilog Antenna with 6 dB attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37878 & AT-N0606	20MHz ~ 2GHz	Jul. 31, 2022	Jul. 30, 2023	Radiation (03CH06-CB)
Pre-Amplifier	Agilent	310N	187290	0.1MHz ~ 1GHz	Nov. 04, 2022	Nov. 03, 2023	Radiation (03CH06-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	Apr. 26, 2022	Apr. 25, 2023	Radiation (03CH06-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 17, 2022	Jun. 16, 2023	Radiation (03CH06-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	May 14, 2022	May 13, 2023	Radiation (03CH06-CB)
RF Cable-low	Woken	RG402	Low Cable-24+68	30MHz~1GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH06-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH06-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 04, 2022	Nov. 03, 2023	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 19, 2022	May 18, 2023	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	May 06, 2022	May 05, 2023	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz	Mar. 26, 2022	Mar. 25, 2023	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	Apr. 19, 2022	Apr. 18, 2023	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 22, 2022	Aug. 21, 2023	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 01, 2022	Jun. 30, 2023	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSP	100593	9kHz~40GHz	Apr. 08, 2022	Apr. 07, 2023	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 08, 2021	Dec. 07, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#7	1GHz ~ 40 GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (03CH02-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Jan. 07, 2022	Jan. 06, 2023	Conducted (TH03-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Dec. 30, 2022	Dec. 29, 2023	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1531344	300MHz~40GHz	Jul. 31, 2022	Jul. 30, 2023	Conducted (TH03-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Power Meter	Anritsu	ML2495A	1728002	300MHz~40GHz	Jul. 31, 2022	Jul. 30, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-11	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-12	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-13	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz ~18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH03-CB)
Switch	SPTCB	SP-SWI	SWI-03	1 GHz ~26.5 GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (TH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH03-CB)

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

NCR means Non-Calibration required.



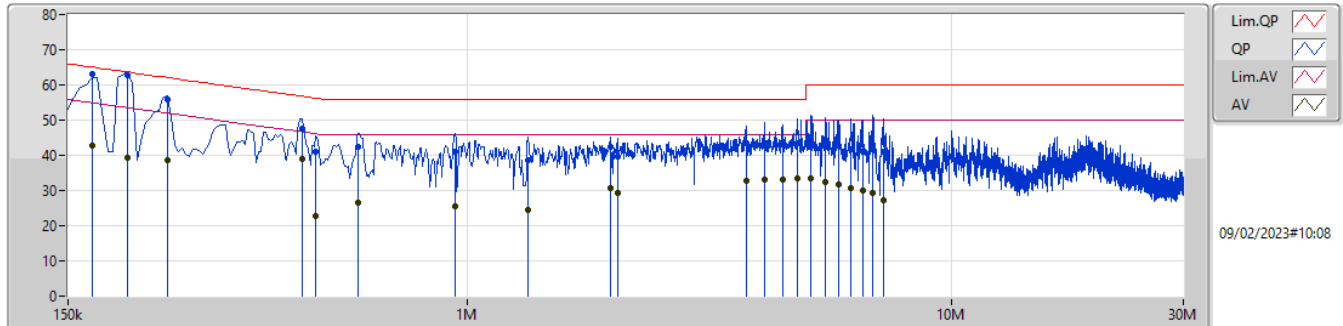
Conducted Emissions at Powerline

Appendix A

Summary

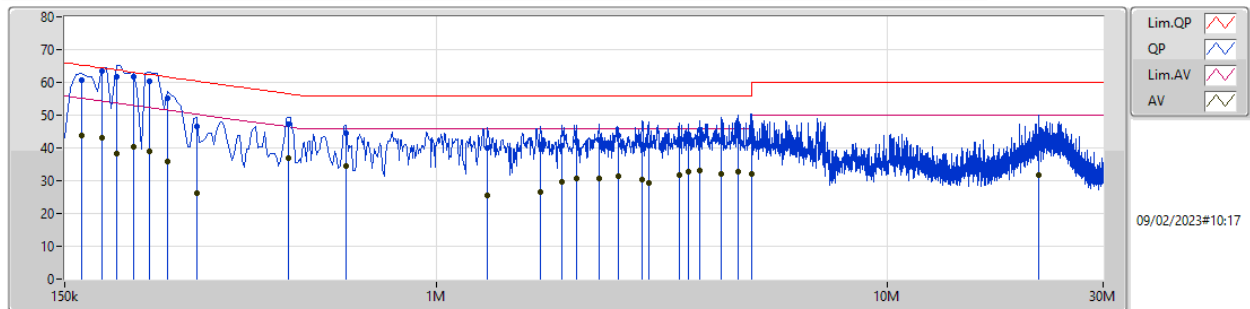
Mode	Result	Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	QP	181.5k	63.40	64.41	-1.01	Neutral

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	168k	63.11	65.06	-1.95	9.99	Line	-	53.12	0.06	0.04	9.89						
AV	168k	42.81	55.06	-12.25	9.99	Line	-	32.82	0.06	0.04	9.89						
QP	199.5k	62.61	63.63	-1.02	9.99	Line	"Worst"	52.62	0.06	0.04	9.89						
AV	199.5k	39.46	53.63	-14.17	9.99	Line	-	29.47	0.06	0.04	9.89						
QP	240k	55.92	62.10	-6.18	10.00	Line	-	45.92	0.06	0.05	9.89						
AV	240k	38.79	52.10	-13.31	10.00	Line	-	28.79	0.06	0.05	9.89						
QP	456k	47.55	56.76	-9.21	10.01	Line	-	37.54	0.06	0.06	9.89						
AV	456k	38.95	46.76	-7.81	10.01	Line	-	28.94	0.06	0.06	9.89						
QP	487.5k	41.14	56.21	-15.07	10.01	Line	-	31.13	0.06	0.06	9.89						
AV	487.5k	22.64	46.21	-23.57	10.01	Line	-	12.63	0.06	0.06	9.89						
QP	595.5k	42.41	56.00	-13.59	10.00	Line	-	32.41	0.06	0.05	9.89						
AV	595.5k	26.65	46.00	-19.35	10.00	Line	-	16.65	0.06	0.05	9.89						
QP	942k	41.04	56.00	-14.96	10.00	Line	-	31.04	0.07	0.04	9.89						
AV	942k	25.42	46.00	-20.58	10.00	Line	-	15.42	0.07	0.04	9.89						
QP	1.334M	38.64	56.00	-17.36	10.03	Line	-	28.61	0.08	0.06	9.89						
AV	1.334M	24.44	46.00	-21.56	10.03	Line	-	14.41	0.08	0.06	9.89						
QP	1.973M	42.50	56.00	-13.50	10.07	Line	-	32.43	0.09	0.09	9.89						
AV	1.973M	30.73	46.00	-15.27	10.07	Line	-	20.66	0.09	0.09	9.89						
QP	2.04M	39.80	56.00	-16.20	10.07	Line	-	29.73	0.09	0.09	9.89						
AV	2.04M	29.44	46.00	-16.56	10.07	Line	-	19.37	0.09	0.09	9.89						
QP	3.755M	43.40	56.00	-12.60	10.11	Line	-	33.29	0.12	0.10	9.89						
AV	3.755M	32.91	46.00	-13.09	10.11	Line	-	22.80	0.12	0.10	9.89						
QP	4.101M	43.26	56.00	-12.74	10.11	Line	-	33.15	0.12	0.10	9.89						
AV	4.101M	33.07	46.00	-12.93	10.11	Line	-	22.96	0.12	0.10	9.89						
QP	4.47M	43.87	56.00	-12.13	10.13	Line	-	33.74	0.13	0.11	9.89						
AV	4.47M	33.27	46.00	-12.73	10.13	Line	-	23.14	0.13	0.11	9.89						
QP	4.803M	43.31	56.00	-12.69	10.14	Line	-	33.17	0.14	0.11	9.89						
AV	4.803M	33.58	46.00	-12.42	10.14	Line	-	23.44	0.14	0.11	9.89						
QP	5.114M	44.36	60.00	-15.64	10.17	Line	-	34.19	0.15	0.12	9.90						
AV	5.114M	33.40	50.00	-16.60	10.17	Line	-	23.23	0.15	0.12	9.90						
QP	5.483M	42.64	60.00	-17.36	10.17	Line	-	32.47	0.15	0.12	9.90						
AV	5.483M	32.38	50.00	-17.62	10.17	Line	-	22.21	0.15	0.12	9.90						
QP	5.838M	42.62	60.00	-17.38	10.18	Line	-	32.44	0.16	0.12	9.90						
AV	5.838M	31.74	50.00	-18.26	10.18	Line	-	21.56	0.16	0.12	9.90						
QP	6.189M	41.68	60.00	-18.32	10.20	Line	-	31.48	0.17	0.13	9.90						
AV	6.189M	30.77	50.00	-19.23	10.20	Line	-	20.57	0.17	0.13	9.90						
QP	6.531M	40.97	60.00	-19.03	10.20	Line	-	30.77	0.17	0.13	9.90						
AV	6.531M	30.06	50.00	-19.94	10.20	Line	-	19.86	0.17	0.13	9.90						
QP	6.851M	41.56	60.00	-18.44	10.22	Line	-	31.34	0.18	0.14	9.90						
AV	6.851M	29.31	50.00	-20.69	10.22	Line	-	19.09	0.18	0.14	9.90						
QP	7.211M	41.17	60.00	-18.83	10.22	Line	-	30.95	0.18	0.14	9.90						
AV	7.211M	27.35	50.00	-22.65	10.22	Line	-	17.13	0.18	0.14	9.90						

Mode 1



Type	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Factor (dB)	Condition	Comment	Raw (dBuV)	LISN (dB)	CL (dB)	AT (dB)						
QP	163.5k	60.75	65.27	-4.52	10.00	Neutral	-	50.75	0.07	0.04	9.89						
AV	163.5k	43.63	55.27	-11.64	10.00	Neutral	-	33.63	0.07	0.04	9.89						
QP	181.5k	63.40	64.41	-1.01	10.00	Neutral	"Worst"	53.40	0.07	0.04	9.89						
AV	181.5k	43.08	54.41	-11.33	10.00	Neutral	-	33.08	0.07	0.04	9.89						
QP	195k	61.58	63.82	-2.24	10.00	Neutral	-	51.58	0.07	0.04	9.89						
AV	195k	38.32	53.82	-15.50	10.00	Neutral	-	28.32	0.07	0.04	9.89						
QP	213k	61.74	63.09	-1.35	10.00	Neutral	-	51.74	0.07	0.04	9.89						
AV	213k	40.47	53.09	-12.62	10.00	Neutral	-	30.47	0.07	0.04	9.89						
QP	231k	60.33	62.41	-2.08	10.00	Neutral	-	50.33	0.07	0.04	9.89						
AV	231k	38.99	52.41	-13.42	10.00	Neutral	-	28.99	0.07	0.04	9.89						
QP	253.5k	55.16	61.64	-6.48	10.01	Neutral	-	45.15	0.07	0.05	9.89						
AV	253.5k	35.80	51.64	-15.84	10.01	Neutral	-	25.79	0.07	0.05	9.89						
QP	294k	46.44	60.42	-13.98	10.01	Neutral	-	36.43	0.07	0.05	9.89						
AV	294k	26.27	50.42	-24.15	10.01	Neutral	-	16.26	0.07	0.05	9.89						
QP	469.5k	47.41	56.52	-9.11	10.02	Neutral	-	37.39	0.07	0.06	9.89						
AV	469.5k	36.82	46.52	-9.70	10.02	Neutral	-	26.80	0.07	0.06	9.89						
QP	631.5k	44.36	56.00	-11.64	10.01	Neutral	-	34.35	0.07	0.05	9.89						
AV	631.5k	34.48	46.00	-11.52	10.01	Neutral	-	24.47	0.07	0.05	9.89						
QP	1.298M	40.07	56.00	-15.93	10.04	Neutral	-	30.03	0.09	0.06	9.89						
AV	1.298M	25.36	46.00	-20.64	10.04	Neutral	-	15.32	0.09	0.06	9.89						
QP	1.698M	41.19	56.00	-14.81	10.07	Neutral	-	31.12	0.10	0.08	9.89						
AV	1.698M	26.48	46.00	-19.52	10.07	Neutral	-	16.41	0.10	0.08	9.89						
QP	1.896M	40.78	56.00	-15.22	10.08	Neutral	-	30.70	0.10	0.09	9.89						
AV	1.896M	29.54	46.00	-16.46	10.08	Neutral	-	19.46	0.10	0.09	9.89						
QP	2.045M	42.19	56.00	-13.81	10.08	Neutral	-	32.11	0.10	0.09	9.89						
AV	2.045M	30.73	46.00	-15.27	10.08	Neutral	-	20.65	0.10	0.09	9.89						
QP	2.292M	42.27	56.00	-13.73	10.09	Neutral	-	32.18	0.11	0.09	9.89						
AV	2.292M	30.80	46.00	-15.20	10.09	Neutral	-	20.71	0.11	0.09	9.89						
QP	2.522M	43.95	56.00	-12.05	10.09	Neutral	-	33.86	0.11	0.09	9.89						
AV	2.522M	31.42	46.00	-14.58	10.09	Neutral	-	21.33	0.11	0.09	9.89						
QP	2.859M	41.20	56.00	-14.80	10.11	Neutral	-	31.09	0.12	0.10	9.89						
AV	2.859M	30.28	46.00	-15.72	10.11	Neutral	-	20.17	0.12	0.10	9.89						
QP	2.954M	40.71	56.00	-15.29	10.11	Neutral	-	30.60	0.12	0.10	9.89						
AV	2.954M	29.37	46.00	-16.63	10.11	Neutral	-	19.26	0.12	0.10	9.89						
QP	3.449M	42.63	56.00	-13.37	10.11	Neutral	-	32.52	0.12	0.10	9.89						
AV	3.449M	31.89	46.00	-14.11	10.11	Neutral	-	21.78	0.12	0.10	9.89						
QP	3.611M	44.00	56.00	-12.00	10.12	Neutral	-	33.88	0.13	0.10	9.89						
AV	3.611M	32.90	46.00	-13.10	10.12	Neutral	-	22.78	0.13	0.10	9.89						
QP	3.836M	45.36	56.00	-10.64	10.12	Neutral	-	35.24	0.13	0.10	9.89						
AV	3.836M	33.21	46.00	-12.79	10.12	Neutral	-	23.09	0.13	0.10	9.89						
QP	4.286M	42.13	56.00	-13.87	10.13	Neutral	-	32.00	0.14	0.10	9.89						
AV	4.286M	32.15	46.00	-13.85	10.13	Neutral	-	22.02	0.14	0.10	9.89						
QP	4.65M	44.99	56.00	-11.01	10.15	Neutral	-	34.84	0.15	0.11	9.89						
AV	4.65M	32.93	46.00	-13.07	10.15	Neutral	-	22.78	0.15	0.11	9.89						
QP	4.983M	42.12	56.00	-13.88	10.16	Neutral	-	31.96	0.16	0.11	9.89						
AV	4.983M	32.09	46.00	-13.91	10.16	Neutral	-	21.93	0.16	0.11	9.89						
QP	21.642M	41.59	60.00	-18.41	10.50	Neutral	-	31.09	0.30	0.24	9.96						
AV	21.642M	31.85	50.00	-18.15	10.50	Neutral	-	21.35	0.30	0.24	9.96						

**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)	695k	1.031M	1M03F1D	687.5k	1.027M
BT-LE(2Mbps)	1.153M	2.046M	2M05F1D	1.15M	2.044M

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

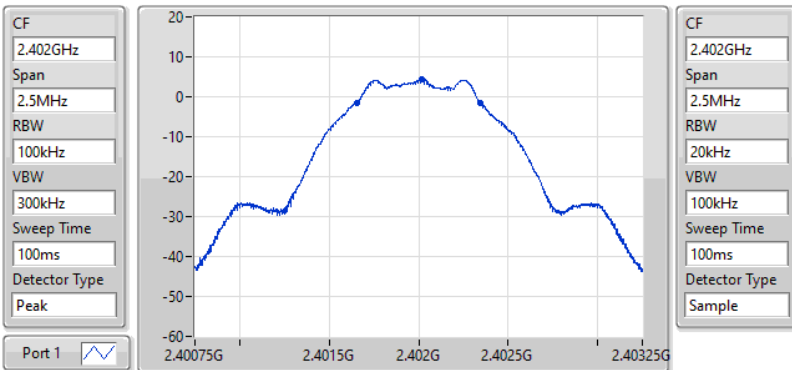
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	695k	1.027M
2440MHz	Pass	500k	687.5k	1.031M
2480MHz	Pass	500k	692.5k	1.031M
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	500k	1.15M	2.046M
2440MHz	Pass	500k	1.153M	2.044M
2480MHz	Pass	500k	1.153M	2.044M

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

BT-LE(1Mbps)

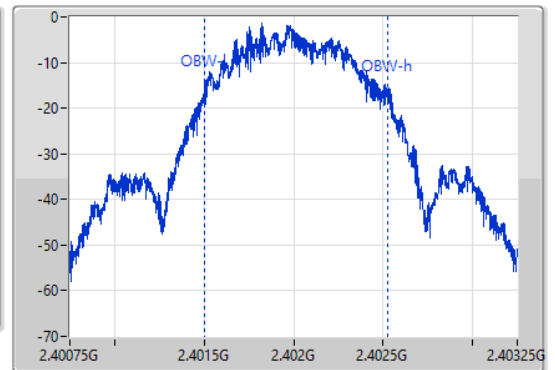
2402MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
695k	2.401653G	2.402348G	1.027M	2.401501G	2.402528G	500k	1

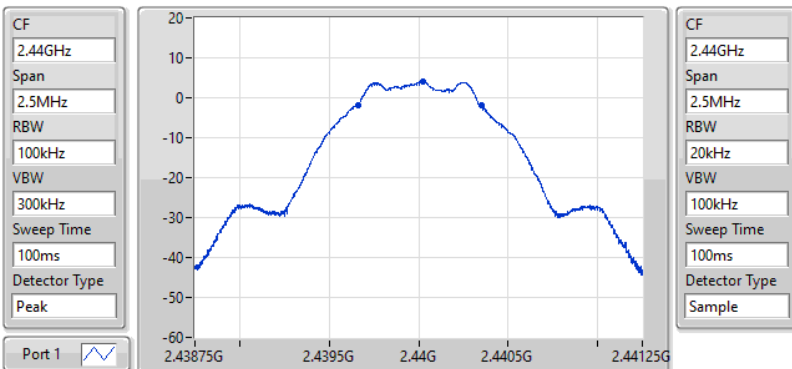
EBW-DTS

15/11/2022



BT-LE(1Mbps)

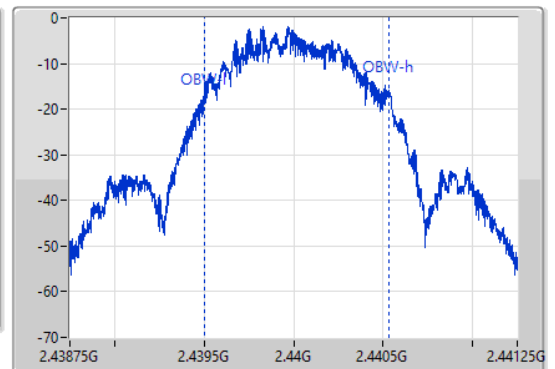
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
687.5k	2.439663G	2.44035G	1.031M	2.4395G	2.440531G	500k	1

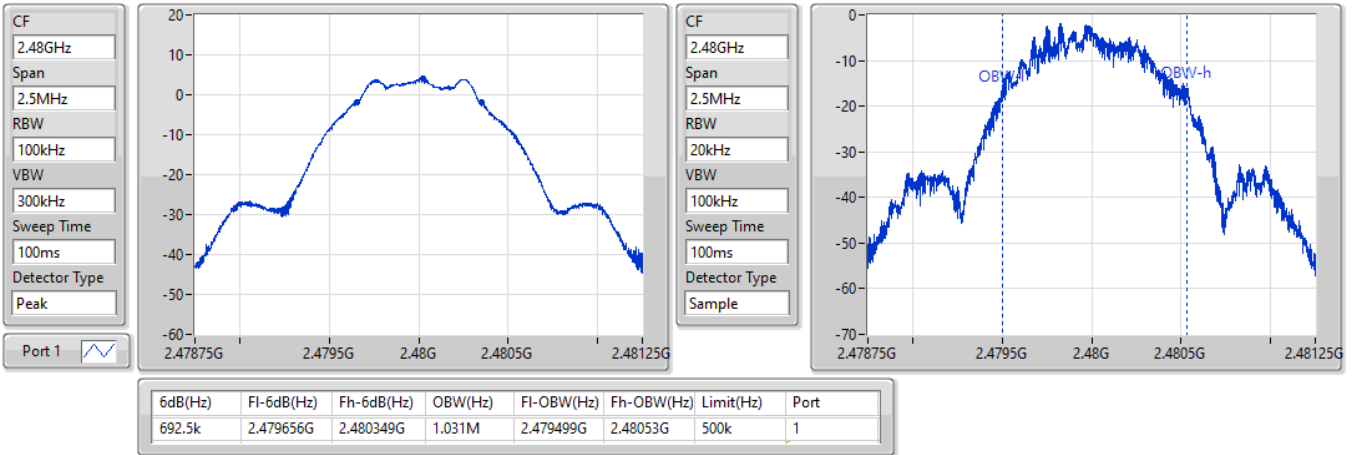
EBW-DTS

15/11/2022

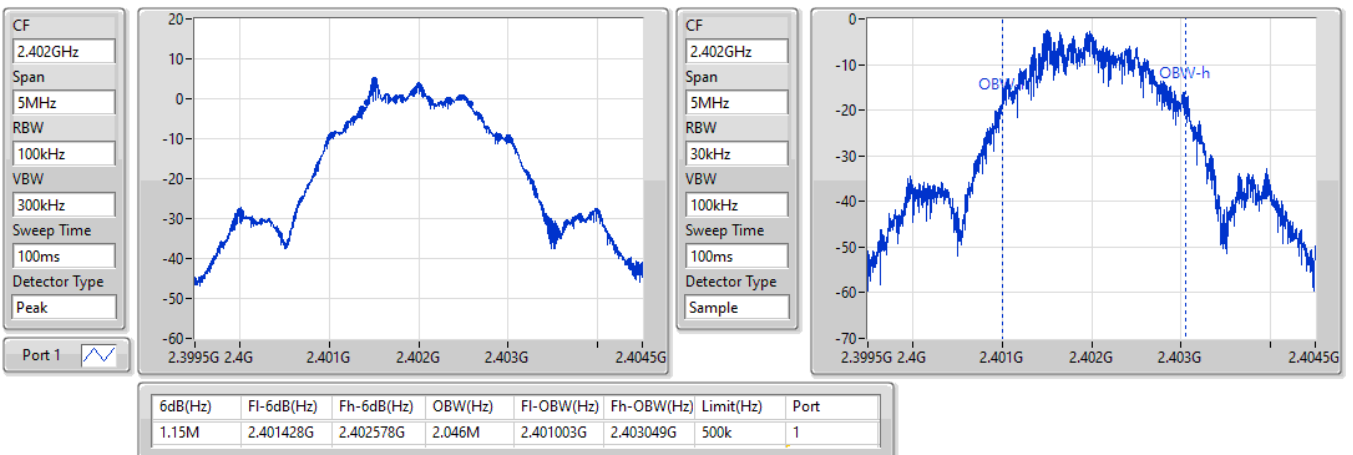


BT-LE(1Mbps)
EBW-DTS
2480MHz

15/11/2022

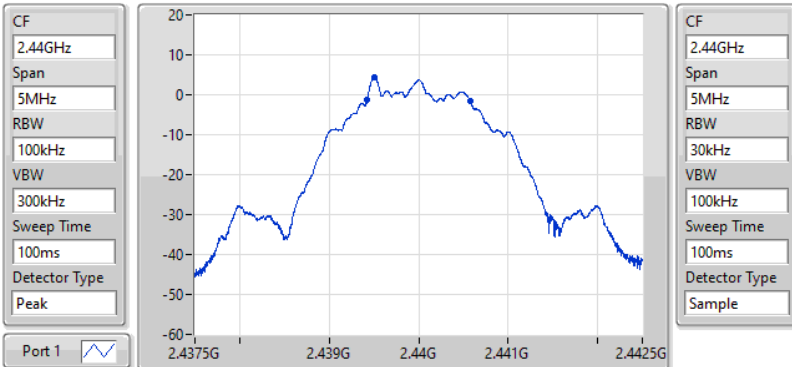

BT-LE(2Mbps)
EBW-DTS
2402MHz

15/11/2022



BT-LE(2Mbps)

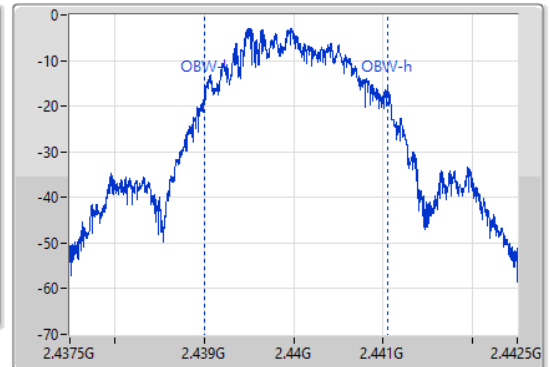
2440MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.153M	2.439425G	2.440578G	2.044M	2.439005G	2.441049G	500k	1

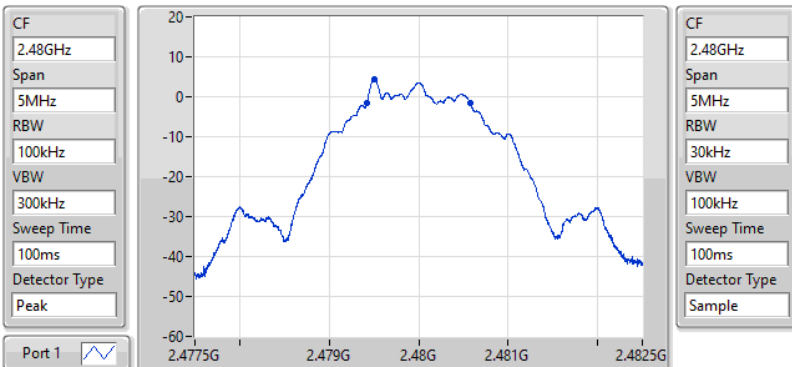
EBW-DTS

15/11/2022



BT-LE(2Mbps)

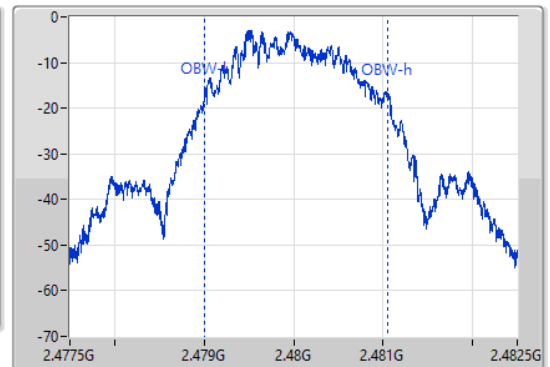
2480MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
1.153M	2.479425G	2.480578G	2.044M	2.479005G	2.481049G	500k	1

EBW-DTS

15/11/2022





Summary

Mode	Power (dBm)	Power (W)
2.4-2.4835GHz	-	-
BT-LF(1Mbps)	4.39	0.00275
BT-LF(2Mbps)	4.08	0.00256



Result

Mode	Result	Gain (dBi)	Power (dBm)	Power Limit (dBm)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	4.39	30.00
2440MHz	Pass	2.98	4.13	30.00
2480MHz	Pass	2.98	4.03	30.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.98	4.08	30.00
2440MHz	Pass	2.98	3.96	30.00
2480MHz	Pass	2.98	3.83	30.00

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



Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-10.67
BT-LE(2Mbps)	-13.90

RBW = 3kHz;

Result

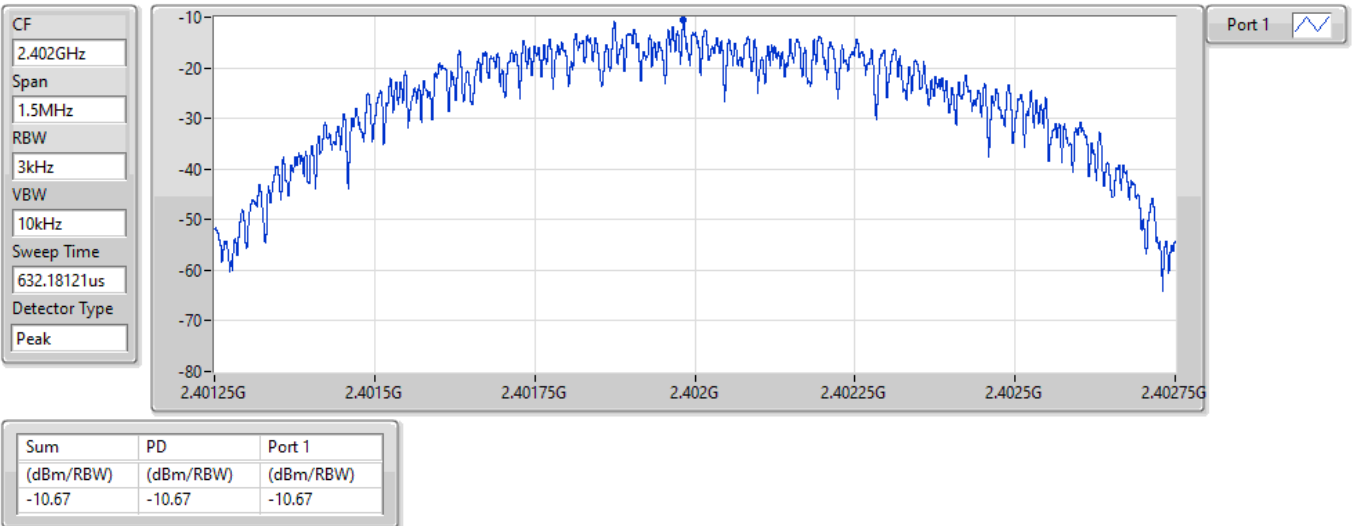
Mode	Result	Gain (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	2.98	-10.67	8.00
2440MHz	Pass	2.98	-11.00	8.00
2480MHz	Pass	2.98	-11.33	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	2.98	-16.07	8.00
2440MHz	Pass	2.98	-13.96	8.00
2480MHz	Pass	2.98	-13.90	8.00

DG = Directional Gain; RBW = 3kHz;
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)

2402MHz

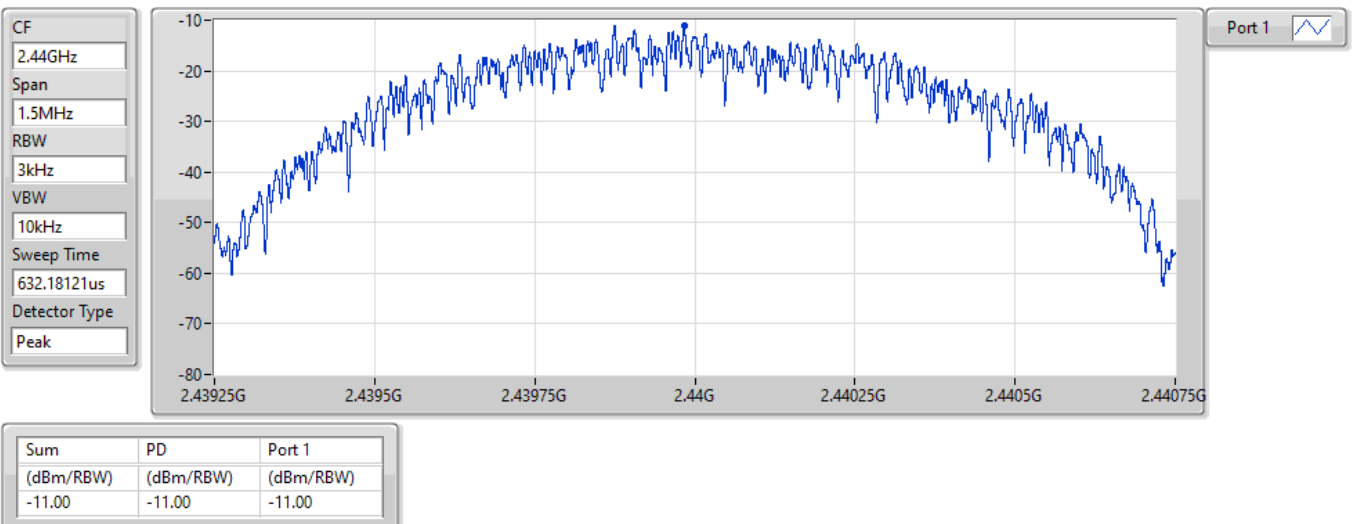
15/11/2022



BT-LE(1Mbps)

2440MHz

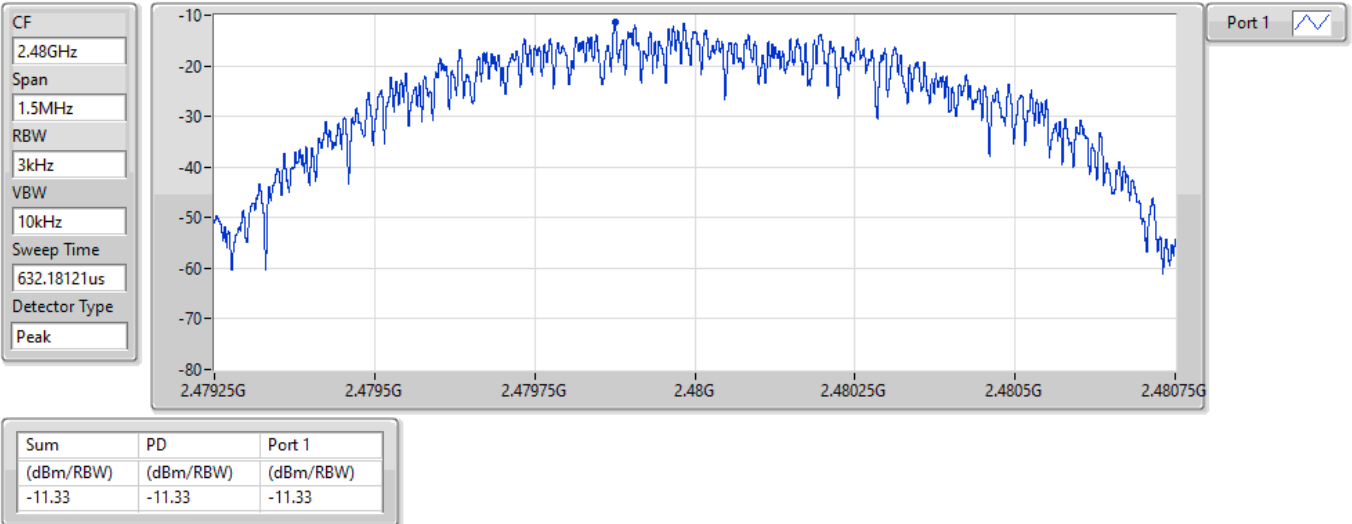
15/11/2022



BT-LE(1Mbps)

2480MHz

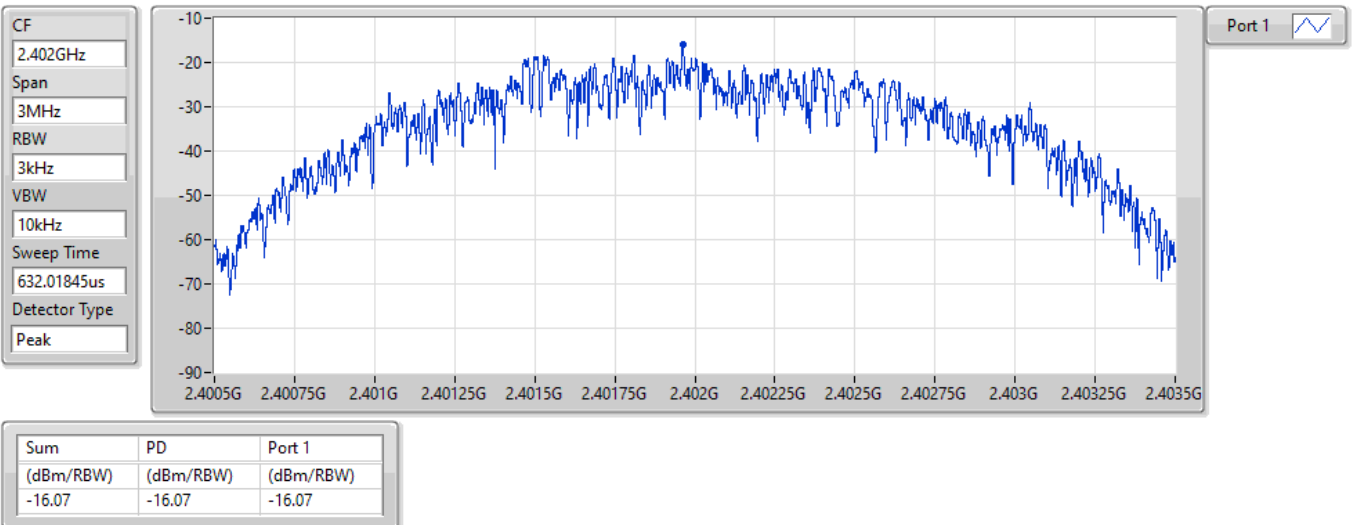
15/11/2022



BT-LE(2Mbps)

2402MHz

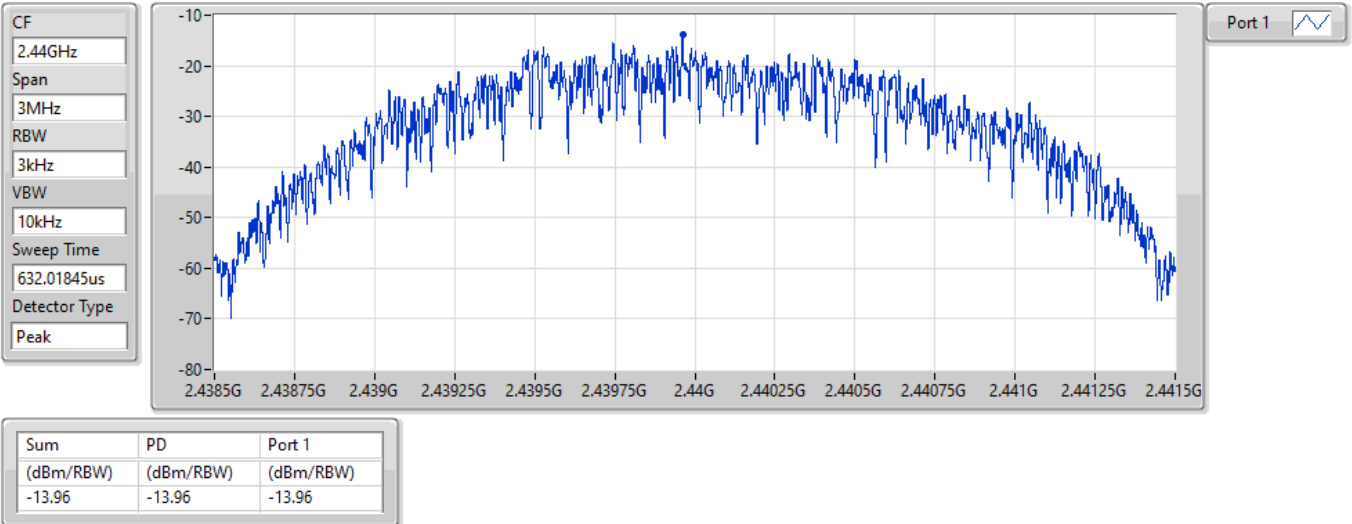
15/11/2022



BT-LE(2Mbps)

2440MHz

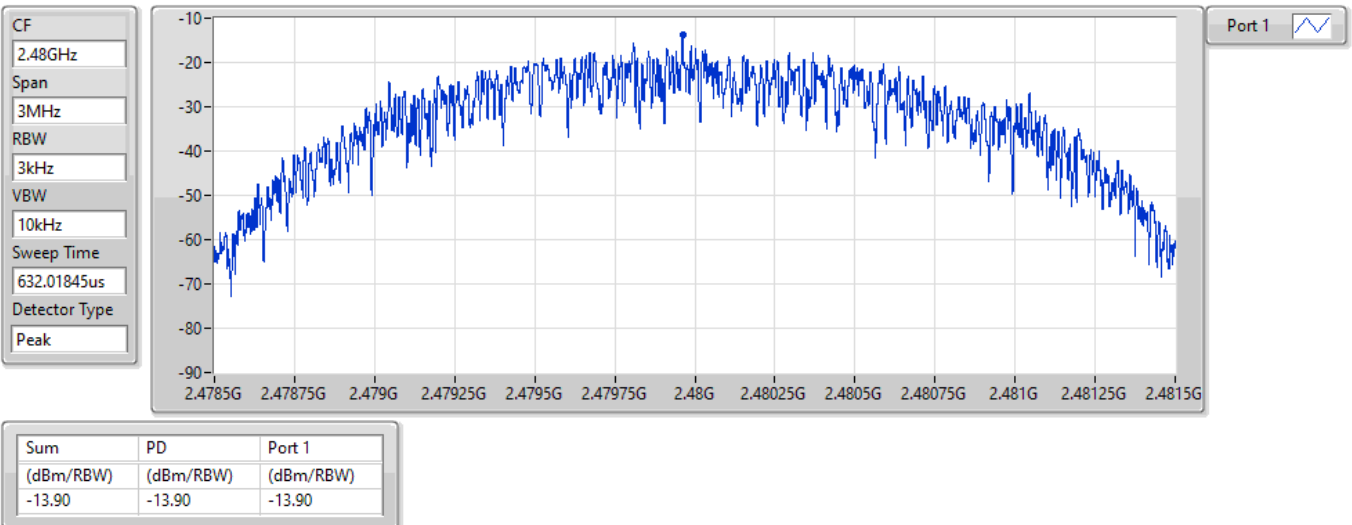
15/11/2022



BT-LE(2Mbps)

2480MHz

15/11/2022



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)	Freq (Hz)	Level (dBm)	Port
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	2.402G	4.46	-25.54	2.1403G	-51.37	2.39288G	-52.05	2.4G	-54.25	2.50278G	-46.85	6.99436G	-45.89	1
BT-LE(2Mbps)	Pass	2.4015G	4.54	-25.46	933.58M	-51.41	2.4G	-27.64	2.4G	-27.51	2.50222G	-51.23	16.26011G	-47.11	1

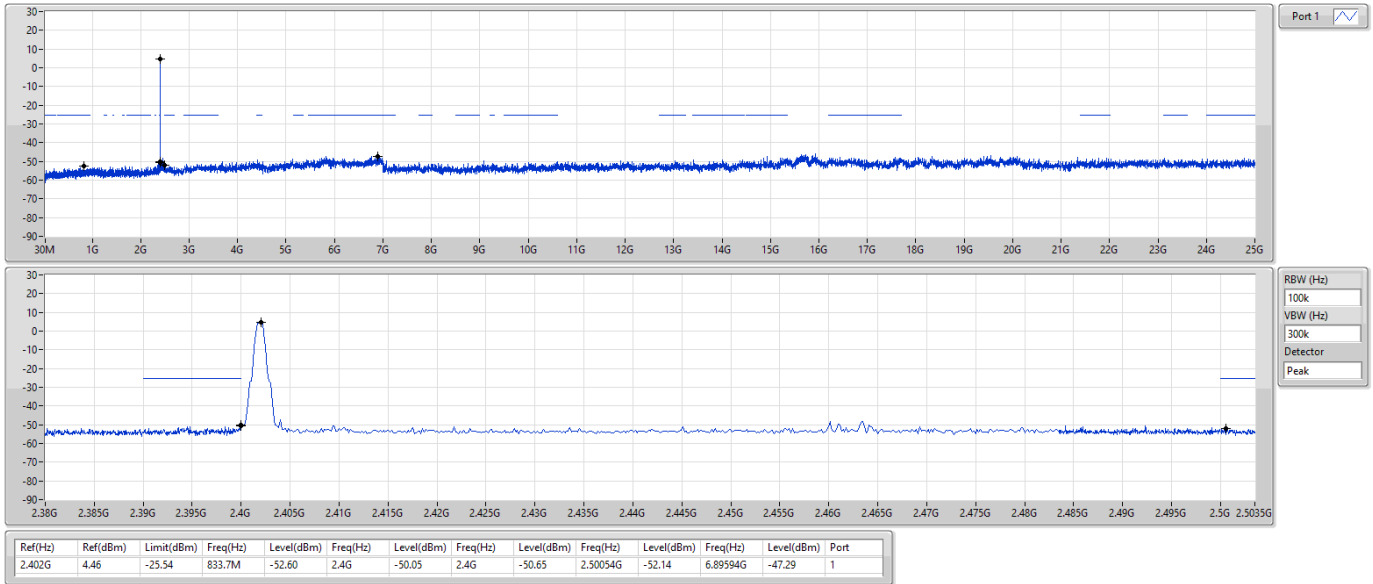
Result

Mode	Result	Ref (Hz)	Ref (dBm)	Limit (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Freq (Hz)	Level (dBm)	Port
BT-LE(1Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.402G	4.46	-25.54	833.7M	-52.60	2.4G	-50.05	2.4G	-50.65	2.50054G	-52.14	6.89594G	-47.29	1
2440MHz	Pass	2.402G	4.46	-25.54	2.1403G	-51.37	2.39288G	-52.05	2.4G	-54.25	2.50278G	-46.85	6.99436G	-45.89	1
2480MHz	Pass	2.402G	4.46	-25.54	1.78075G	-52.38	2.39496G	-51.77	2.4G	-53.75	2.50234G	-51.52	15.26464G	-47.26	1
BT-LE(2Mbps)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2402MHz	Pass	2.4015G	4.54	-25.46	933.58M	-51.41	2.4G	-27.64	2.4G	-27.51	2.50222G	-51.23	16.26011G	-47.11	1
2440MHz	Pass	2.4015G	4.54	-25.46	2.30128G	-53.22	2.39896G	-51.36	2.4G	-51.94	2.50258G	-51.42	16.63693G	-47.15	1
2480MHz	Pass	2.4015G	4.54	-25.46	1.86418G	-52.99	2.392G	-49.29	2.4G	-53.64	2.50146G	-51.57	17.68301G	-46.78	1

BT-LE(1Mbps)

CSEndB-DTS

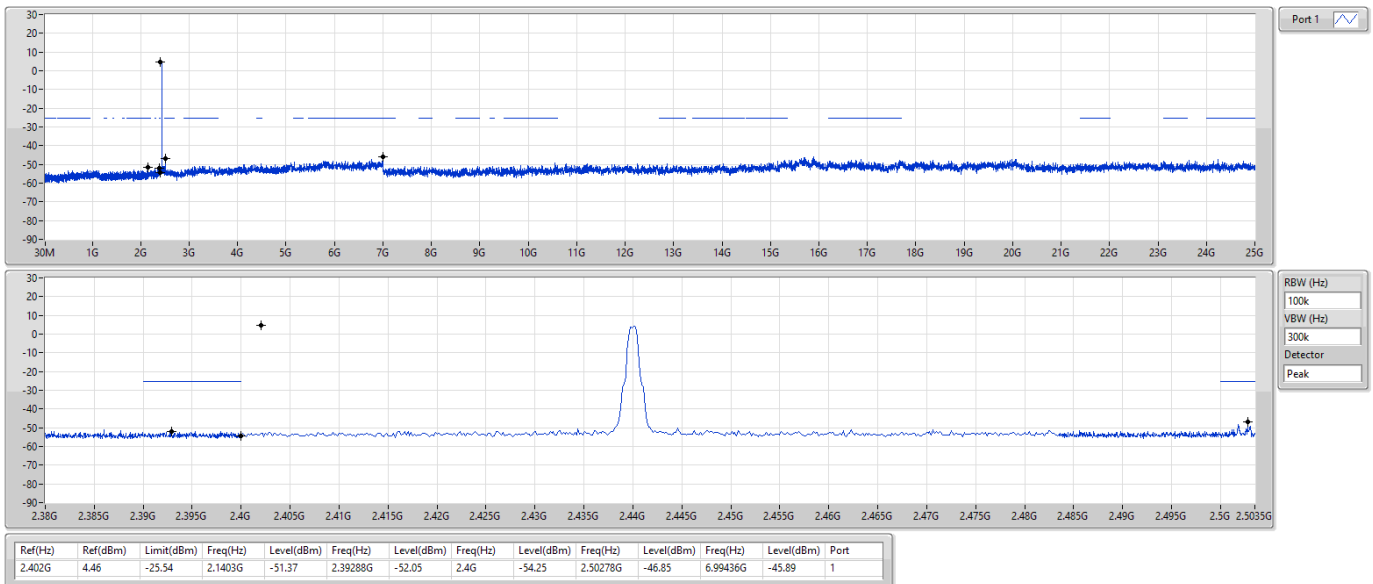
2402MHz



BT-LE(1Mbps)

CSEndB-DTS

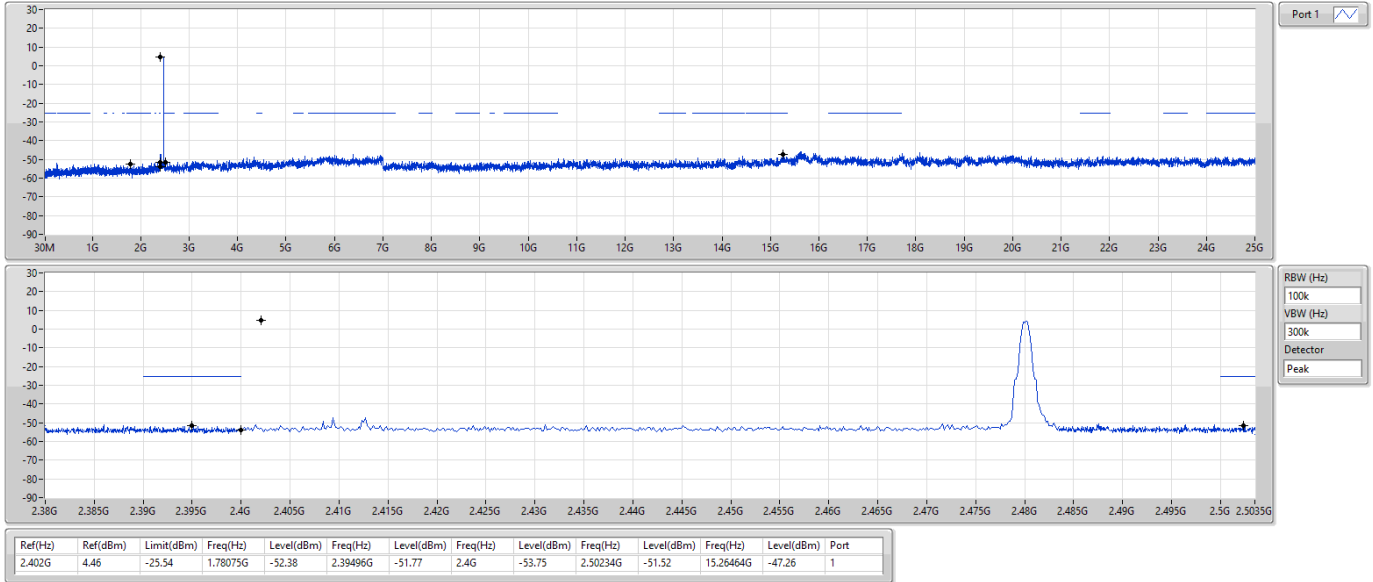
2440MHz



BT-LE(1Mbps)

CSEndB-DTS

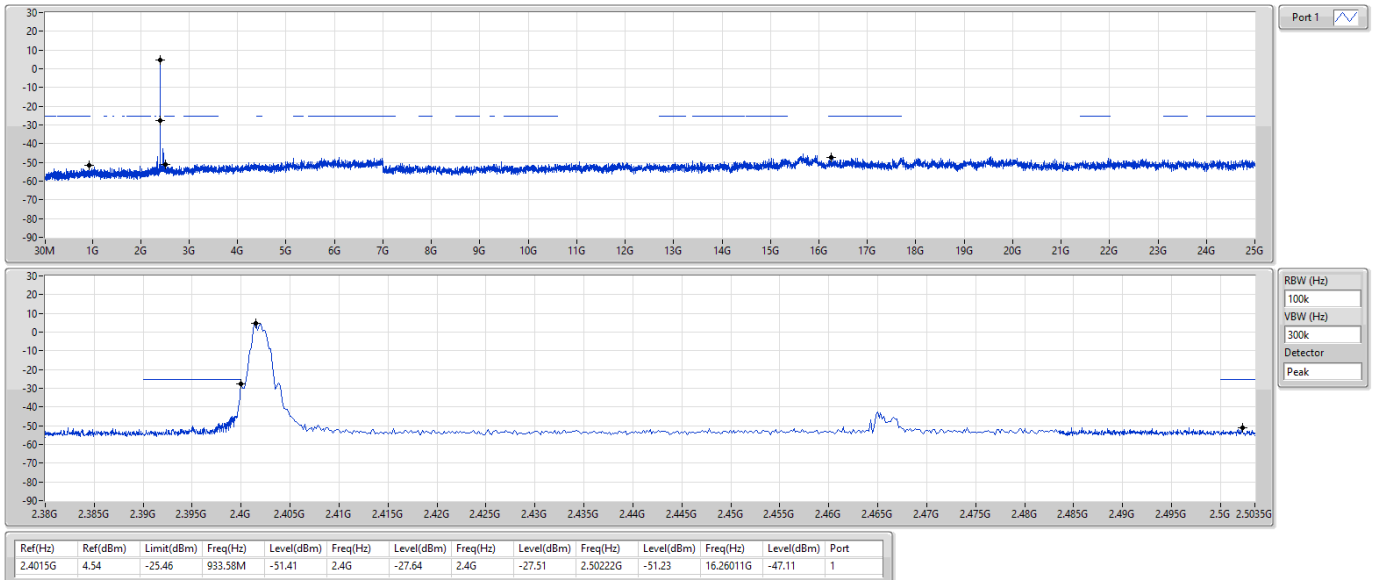
2480MHz



BT-LE(2Mbps)

CSEndB-DTS

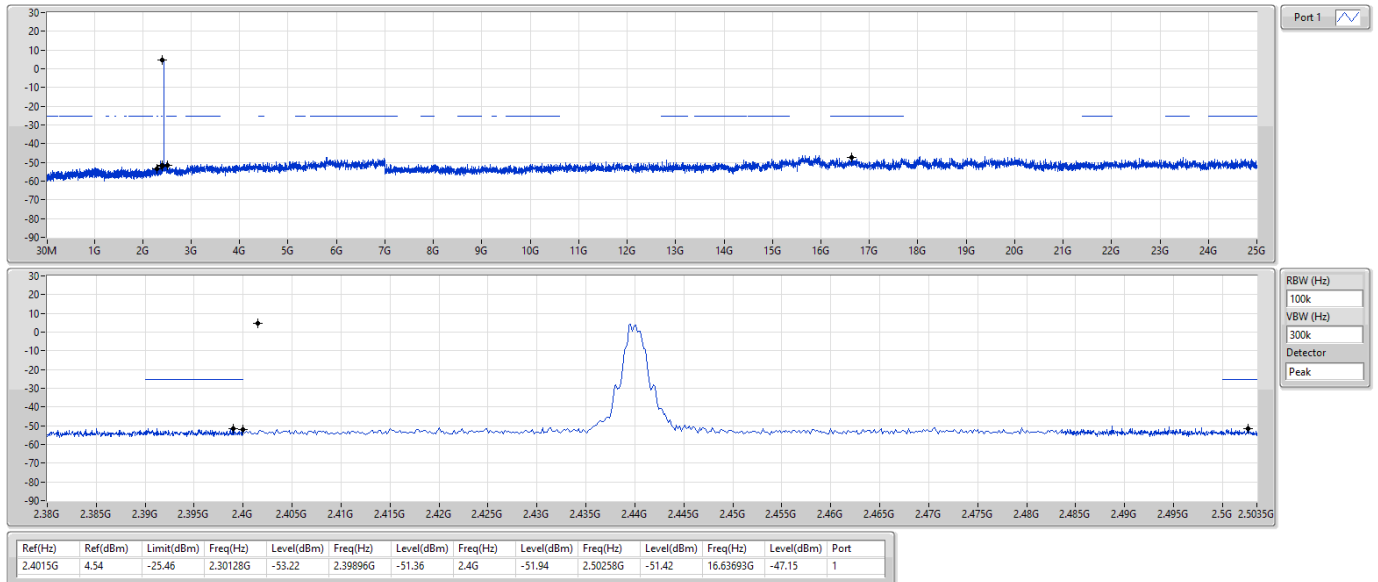
2402MHz



BT-LE(2Mbps)

CSEndB-DTS

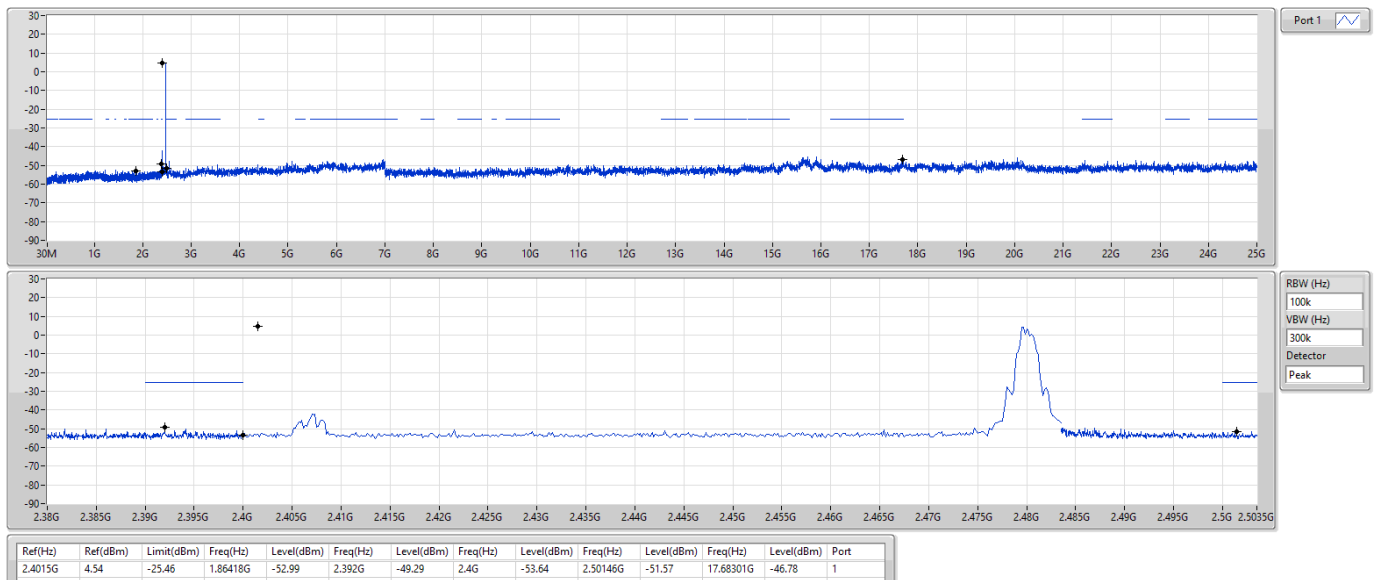
2440MHz



BT-LE(2Mbps)

CSEndB-DTS

2480MHz





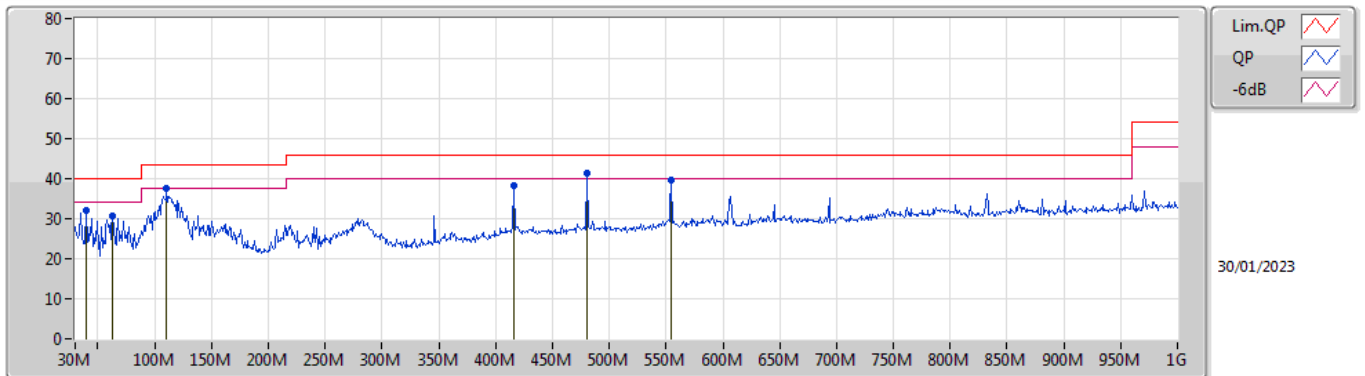
Radiated Emissions below 1GHz

Appendix F.1

Summary

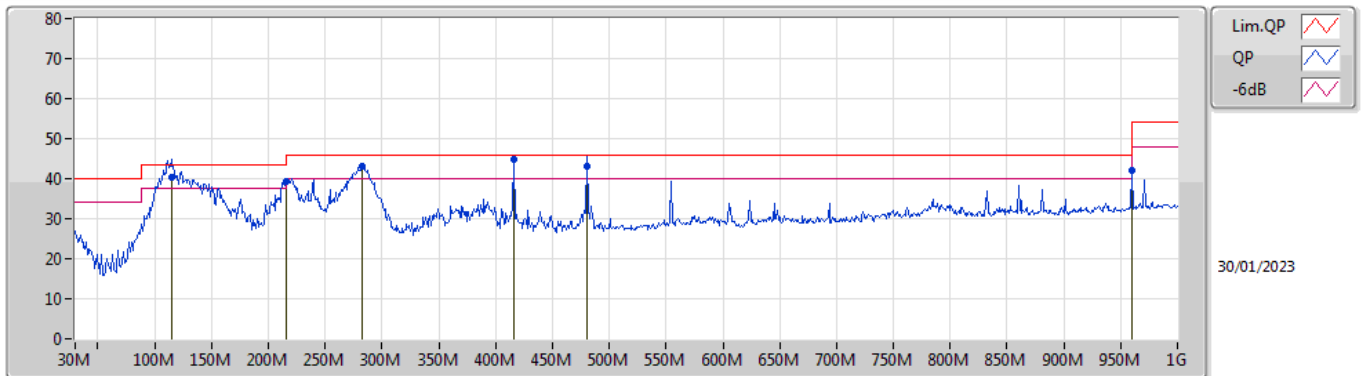
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 3	Pass	QP	416.06M	44.99	46.00	-1.01	Horizontal

Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
PK	39.7M	32.18	40.00	-7.82	-11.90	3	Vertical	123	1.00	-	44.08	19.32	0.90	32.12
PK	62.98M	30.85	40.00	-9.15	-18.65	3	Vertical	124	2.00	-	49.50	12.41	1.09	32.15
PK	110.51M	37.58	43.50	-5.92	-12.95	3	Vertical	213	1.50	-	50.53	17.64	1.43	32.02
PK	416.06M	38.39	46.00	-7.61	-6.49	3	Vertical	239	2.00	-	44.88	22.23	2.77	31.49
PK	480.08M	41.39	46.00	-4.61	-5.33	3	Vertical	211	2.00	"Worst"	46.72	23.21	2.99	31.53
PK	554.77M	39.67	46.00	-6.33	-3.72	3	Vertical	5	1.50	-	43.39	24.75	3.20	31.67

Mode 3



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV/m)	AF (dB/m)	CL (dB)	PA (dB)
QP	114.39M	40.36	43.50	-3.14	-12.64	3	Horizontal	359	2.00	-	53.00	17.87	1.46	31.97
PK	215.27M	39.21	43.50	-4.29	-15.16	3	Horizontal	145	2.00	-	54.37	14.89	1.91	31.96
PK	282.2M	43.14	46.00	-2.86	-10.83	3	Horizontal	338	1.50	-	53.97	18.74	2.23	31.80
QP	416.06M	44.99	46.00	-1.01	-6.49	3	Horizontal	294	1.00	"Worst"	51.48	22.23	2.77	31.49
QP	480.08M	42.94	46.00	-3.06	-5.33	3	Horizontal	194	1.00	-	48.27	23.21	2.99	31.53
PK	959.9M	42.21	46.00	-3.79	0.65	3	Horizontal	360	1.25	-	41.56	26.80	4.30	30.45

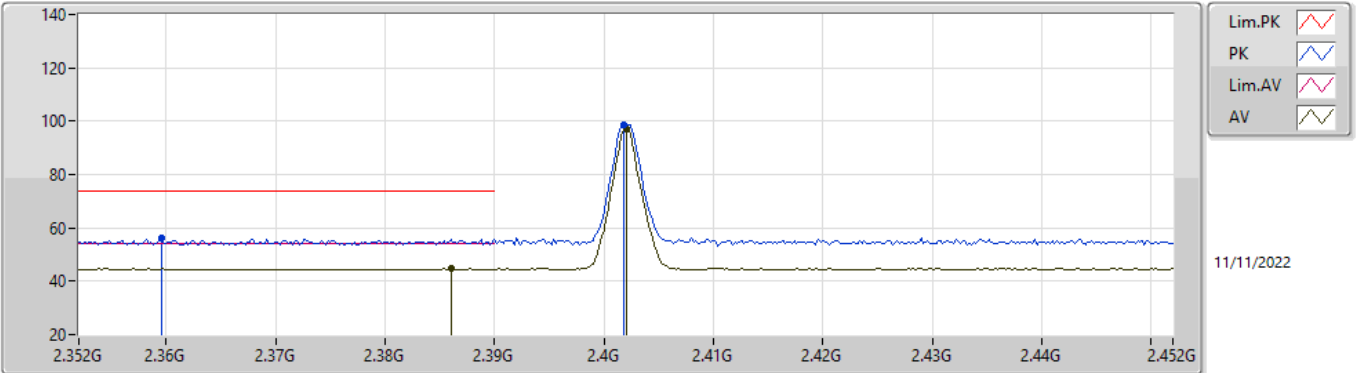


Summary

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(2Mbps)	Pass	AV	2.4835G	50.53	54.00	-3.47	3	Vertical	225	1.72	-

BT-LE(1Mbps)

2402MHz_TX

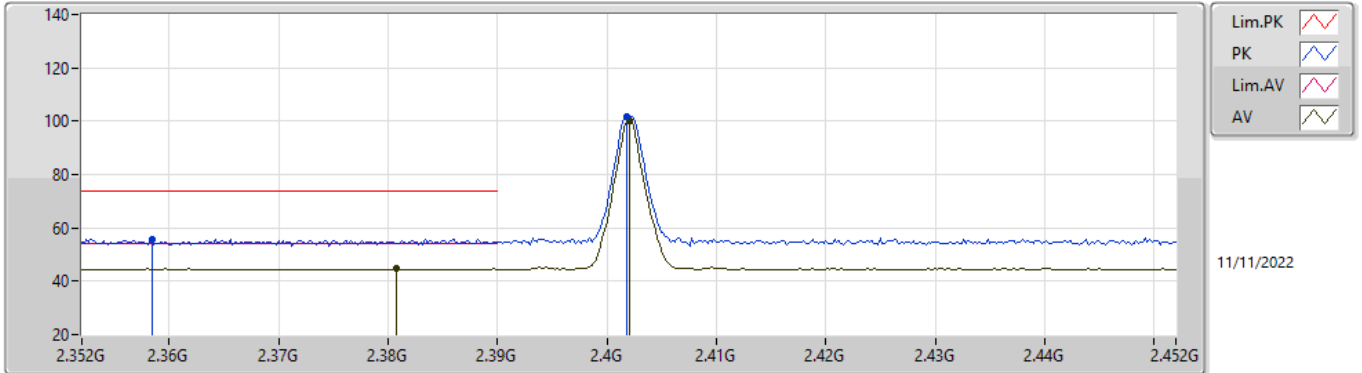


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3596G	56.37	74.00	-17.63	24.87	3	Vertical	190	1.11	-	28.32	3.18	-	
AV	2.386G	44.88	54.00	-9.12	13.32	3	Vertical	190	1.11	-	28.37	3.19	-	
PK	2.4018G	98.49	Inf	-Inf	66.89	3	Vertical	190	1.11	-	28.40	3.20	-	
AV	2.402G	97.15	Inf	-Inf	65.55	3	Vertical	190	1.11	-	28.40	3.20	-	

BT-LE(1Mbps)

2402MHz_TX

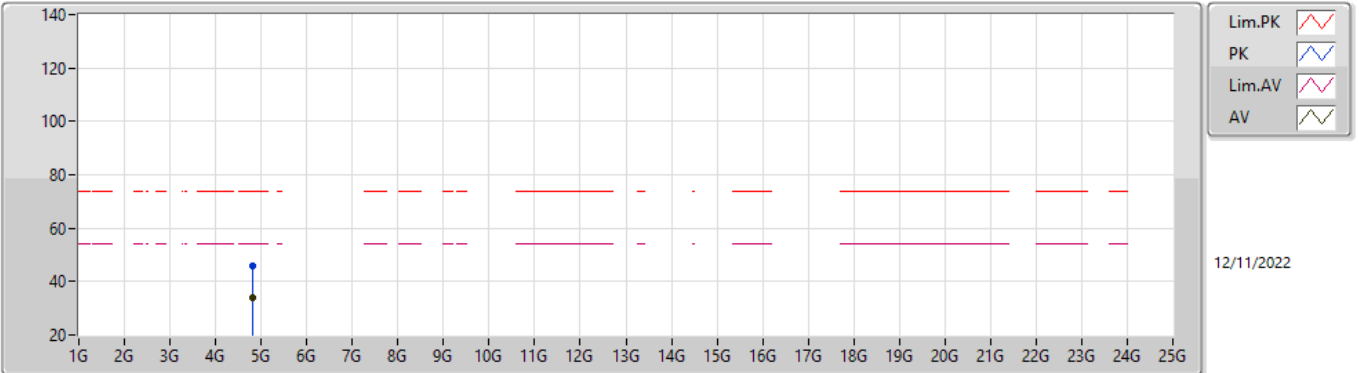


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3584G	55.84	74.00	-18.16	24.34	3	Horizontal	214	2.22	-	28.32	3.18	-	
AV	2.3808G	44.87	54.00	-9.13	13.32	3	Horizontal	214	2.22	-	28.36	3.19	-	
PK	2.4018G	101.53	Inf	-Inf	69.93	3	Horizontal	214	2.22	-	28.40	3.20	-	
AV	2.402G	100.11	Inf	-Inf	68.51	3	Horizontal	214	2.22	-	28.40	3.20	-	

BT-LE(1Mbps)

2402MHz_TX

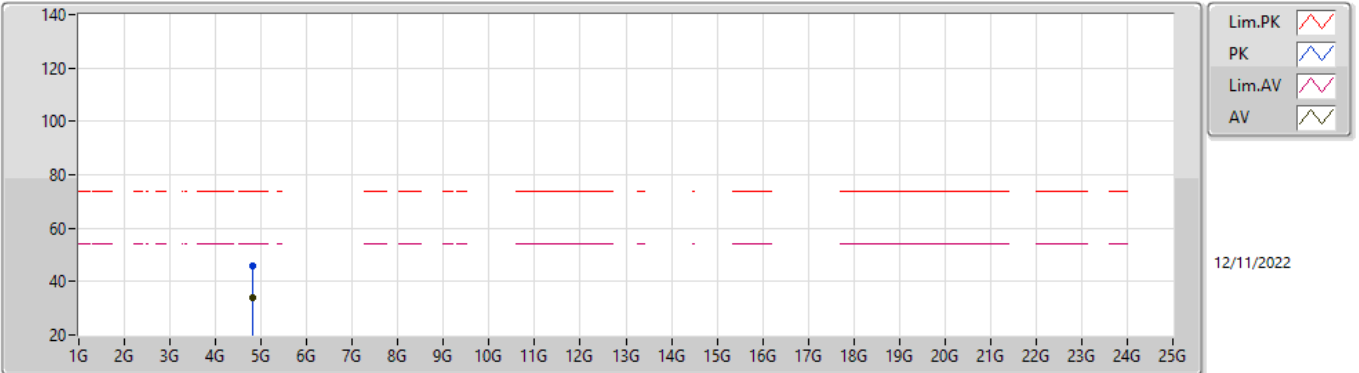


EUT Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.79978G	46.11	74.00	-27.89	38.52	3	Vertical	335	1.72	-	32.80	5.60	30.81
AV	4.80486G	33.83	54.00	-20.17	26.21	3	Vertical	335	1.72	-	32.83	5.60	30.81

BT-LE(1Mbps)

2402MHz_TX

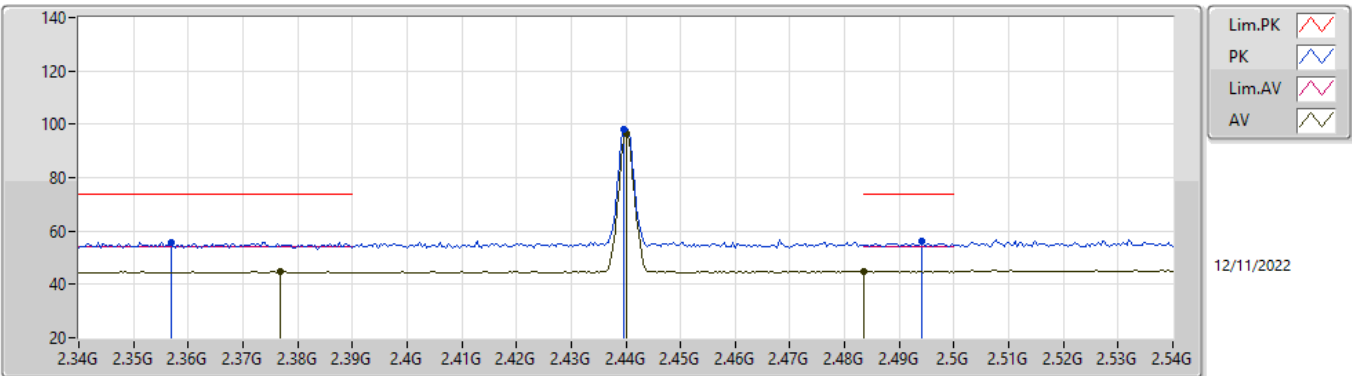


EUT Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80288G	46.05	74.00	-27.95	38.44	3	Horizontal	228	2.90	-	32.82	5.60	30.81
AV	4.80188G	33.85	54.00	-20.15	26.25	3	Horizontal	228	2.90	-	32.81	5.60	30.81

BT-LE(1Mbps)

2440MHz_TX

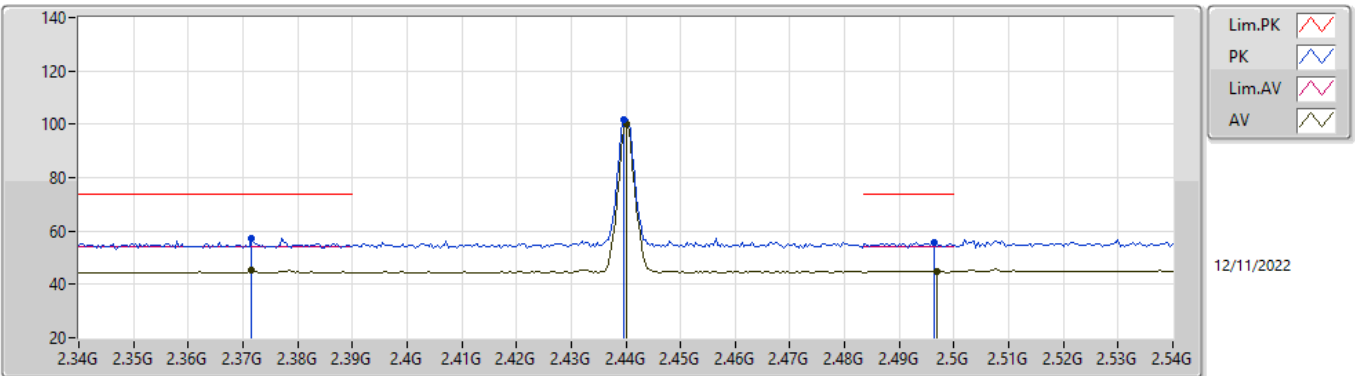


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3568G	55.91	74.00	-18.09	24.42	3	Vertical	202	1.83	-	28.31	3.18	-
AV	2.3768G	44.89	54.00	-9.11	13.35	3	Vertical	202	1.83	-	28.35	3.19	-
PK	2.4396G	98.05	Inf	-Inf	66.43	3	Vertical	202	1.83	-	28.40	3.22	-
AV	2.44G	96.72	Inf	-Inf	65.10	3	Vertical	202	1.83	-	28.40	3.22	-
PK	2.494G	56.02	74.00	-17.98	24.19	3	Vertical	202	1.83	-	28.58	3.25	-
AV	2.4835G	45.03	54.00	-8.97	13.26	3	Vertical	202	1.83	-	28.53	3.24	-

BT-LE(1Mbps)

2440MHz_TX

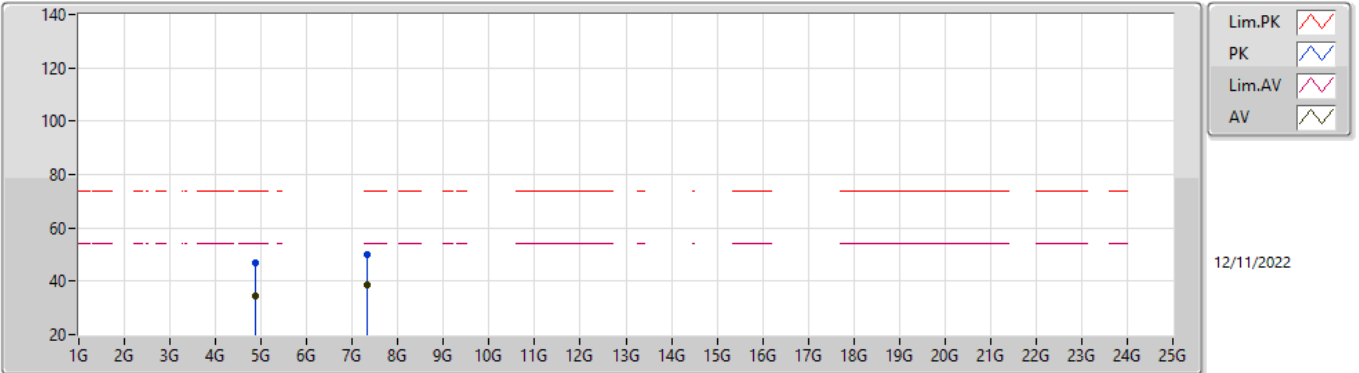


EUT_V_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3716G	57.00	74.00	-17.00	25.47	3	Horizontal	212	2.15	-	28.34	3.19	-
AV	2.3716G	45.58	54.00	-8.42	14.05	3	Horizontal	212	2.15	-	28.34	3.19	-
PK	2.4396G	101.60	Inf	-Inf	69.98	3	Horizontal	212	2.15	-	28.40	3.22	-
AV	2.44G	100.23	Inf	-Inf	68.61	3	Horizontal	212	2.15	-	28.40	3.22	-
PK	2.4964G	55.65	74.00	-18.35	23.81	3	Horizontal	212	2.15	-	28.59	3.25	-
AV	2.4968G	44.99	54.00	-9.01	13.15	3	Horizontal	212	2.15	-	28.59	3.25	-

BT-LE(1Mbps)

2440MHz_TX

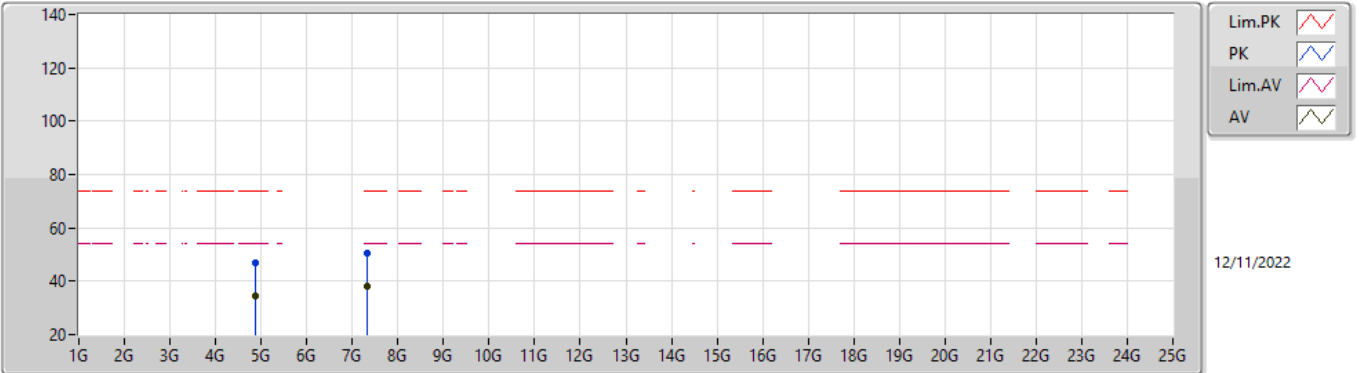


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.8752G	46.98	74.00	-27.02	38.97	3	Vertical	134	1.39	-	33.15	5.64	30.78	
AV	4.88142G	34.44	54.00	-19.56	26.42	3	Vertical	134	1.39	-	33.16	5.64	30.78	
PK	7.32262G	50.21	74.00	-23.79	38.85	3	Vertical	123	2.93	-	36.45	6.84	31.93	
AV	7.31776G	38.37	54.00	-15.63	27.01	3	Vertical	123	2.93	-	36.44	6.84	31.92	

BT-LE(1Mbps)

2440MHz_TX

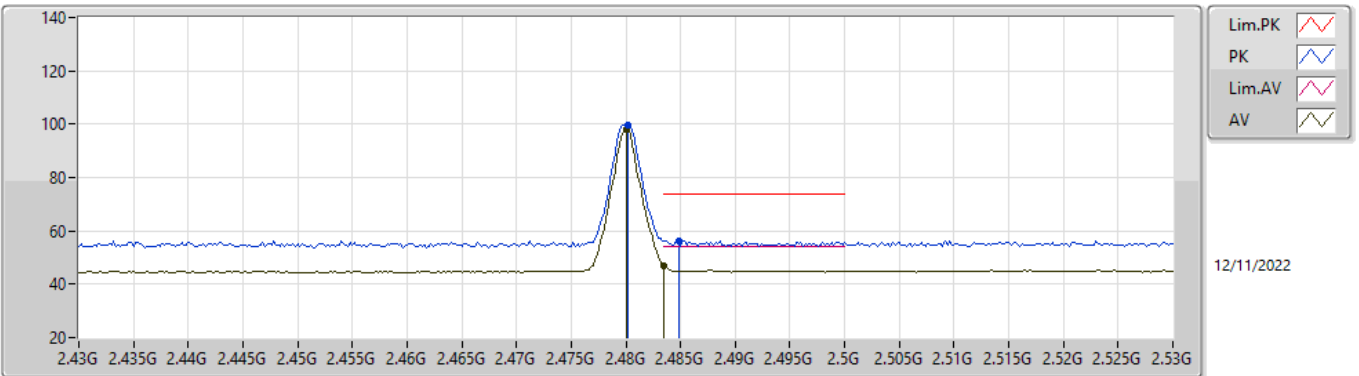


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.87922G	46.75	74.00	-27.25	38.73	3	Horizontal	330	2.84	-	33.16	5.64	30.78	
AV	4.87818G	34.35	54.00	-19.65	26.33	3	Horizontal	330	2.84	-	33.16	5.64	30.78	
PK	7.32308G	50.43	74.00	-23.57	39.07	3	Horizontal	125	1.58	-	36.45	6.84	31.93	
AV	7.3195G	38.27	54.00	-15.73	26.92	3	Horizontal	125	1.58	-	36.44	6.84	31.93	

BT-LE(1Mbps)

2480MHz_TX

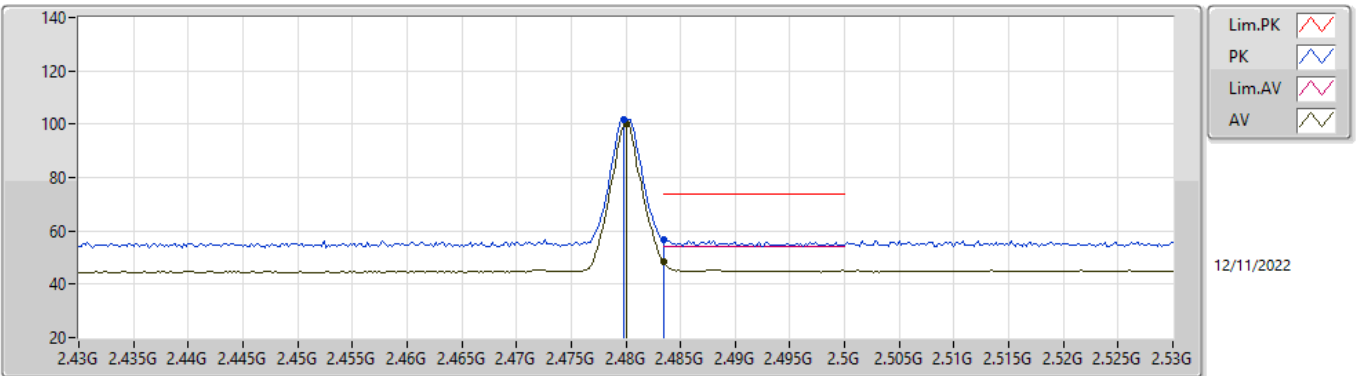


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4802G	99.54	Inf	-Inf	67.78	3	Vertical	191	1.41	-	28.52	3.24	-	
AV	2.48G	98.20	Inf	-Inf	66.44	3	Vertical	191	1.41	-	28.52	3.24	-	
PK	2.4848G	56.39	74.00	-17.61	24.61	3	Vertical	191	1.41	-	28.54	3.24	-	
AV	2.4835G	47.03	54.00	-6.97	15.26	3	Vertical	191	1.41	-	28.53	3.24	-	

BT-LE(1Mbps)

2480MHz_TX

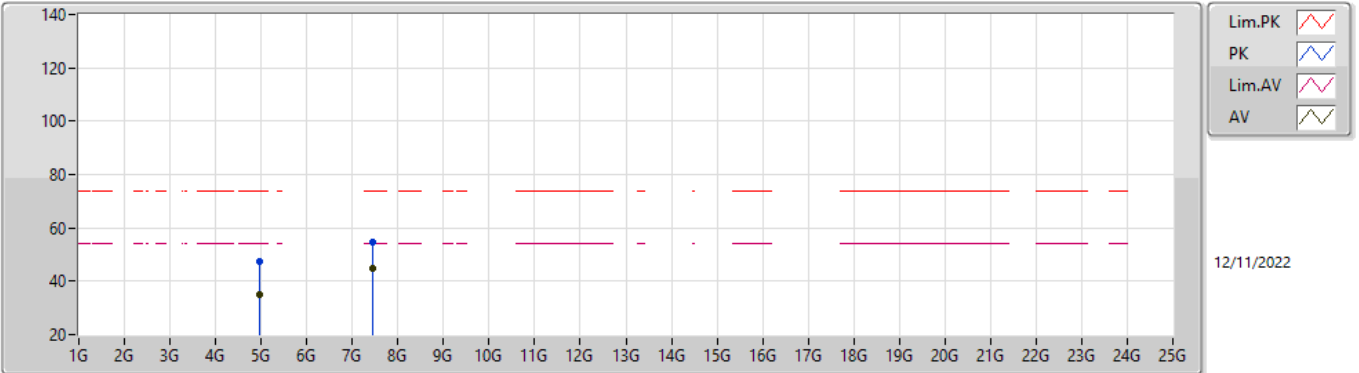


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4798G	101.76	Inf	-Inf	70.00	3	Horizontal	208	2.30	-	28.52	3.24	-	
AV	2.48G	100.34	Inf	-Inf	68.58	3	Horizontal	208	2.30	-	28.52	3.24	-	
PK	2.4835G	56.81	74.00	-17.19	25.04	3	Horizontal	208	2.30	-	28.53	3.24	-	
AV	2.4835G	48.33	54.00	-5.67	16.56	3	Horizontal	208	2.30	-	28.53	3.24	-	

BT-LE(1Mbps)

2480MHz_TX

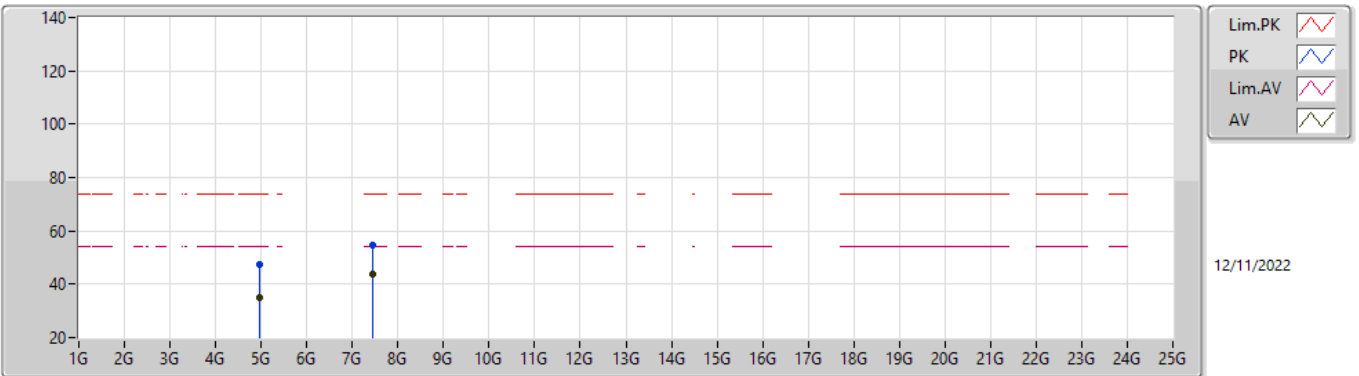


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.95536G	47.63	74.00	-26.37	39.39	3	Vertical	78	2.83	-	33.31	5.68	30.75	
AV	4.9563G	34.80	54.00	-19.20	26.56	3	Vertical	78	2.83	-	33.31	5.68	30.75	
PK	7.4393G	54.70	74.00	-19.30	43.35	3	Vertical	200	1.71	-	36.50	6.84	31.99	
AV	7.43934G	44.98	54.00	-9.02	33.63	3	Vertical	200	1.71	-	36.50	6.84	31.99	

BT-LE(1Mbps)

2480MHz_TX

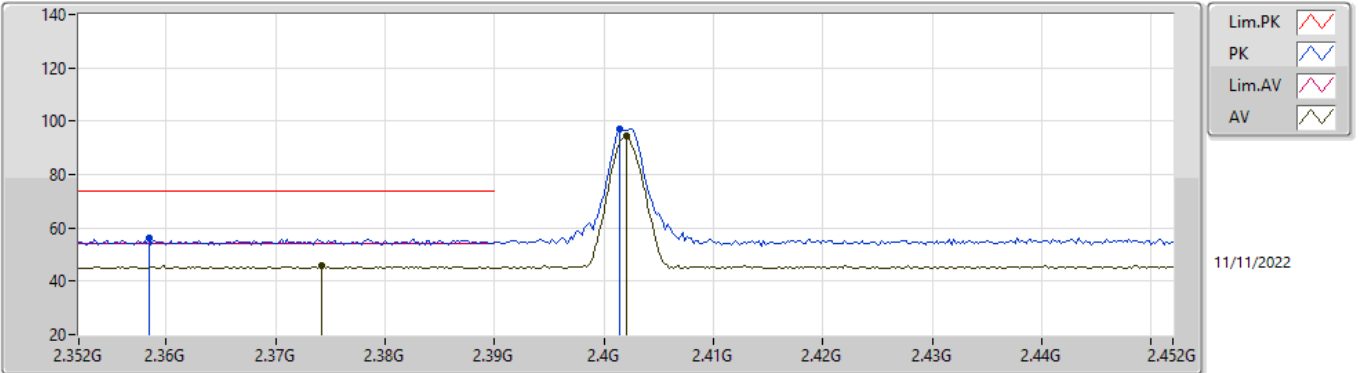


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.96294G	47.20	74.00	-26.80	38.94	3	Horizontal	327	2.65	-	33.33	5.68	30.75	
AV	4.95554G	34.78	54.00	-19.22	26.54	3	Horizontal	327	2.65	-	33.31	5.68	30.75	
PK	7.44078G	54.84	74.00	-19.16	43.50	3	Horizontal	158	2.02	-	36.50	6.84	32.00	
AV	7.4393G	43.59	54.00	-10.41	32.24	3	Horizontal	158	2.02	-	36.50	6.84	31.99	

BT-LE(2Mbps)

2402MHz_TX

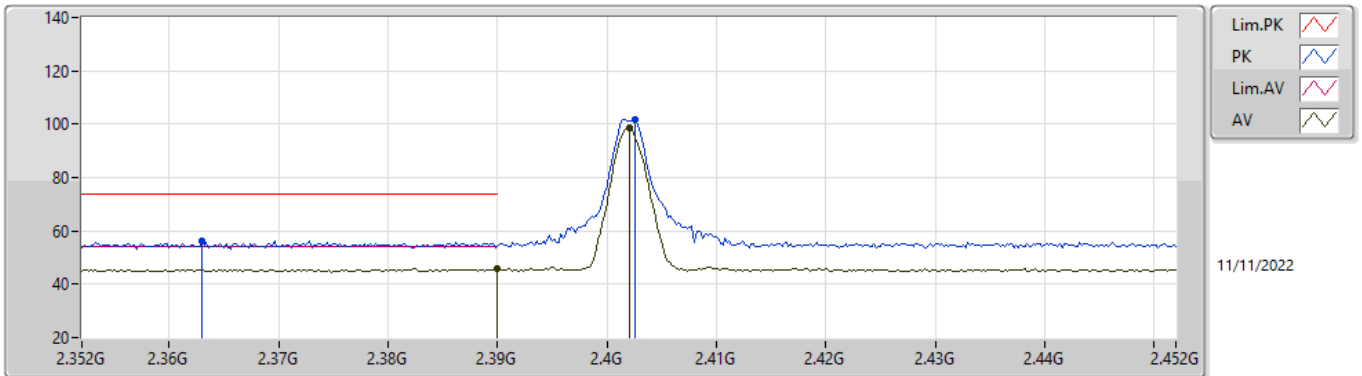


EUT Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3584G	56.04	74.00	-17.96	24.54	3	Vertical	172	1.74	-	28.32	3.18	-	
AV	2.3742G	45.99	54.00	-8.01	14.45	3	Vertical	172	1.74	-	28.35	3.19	-	
PK	2.4014G	97.15	Inf	-Inf	65.55	3	Vertical	172	1.74	-	28.40	3.20	-	
AV	2.402G	94.27	Inf	-Inf	62.67	3	Vertical	172	1.74	-	28.40	3.20	-	

BT-LE(2Mbps)

2402MHz_TX

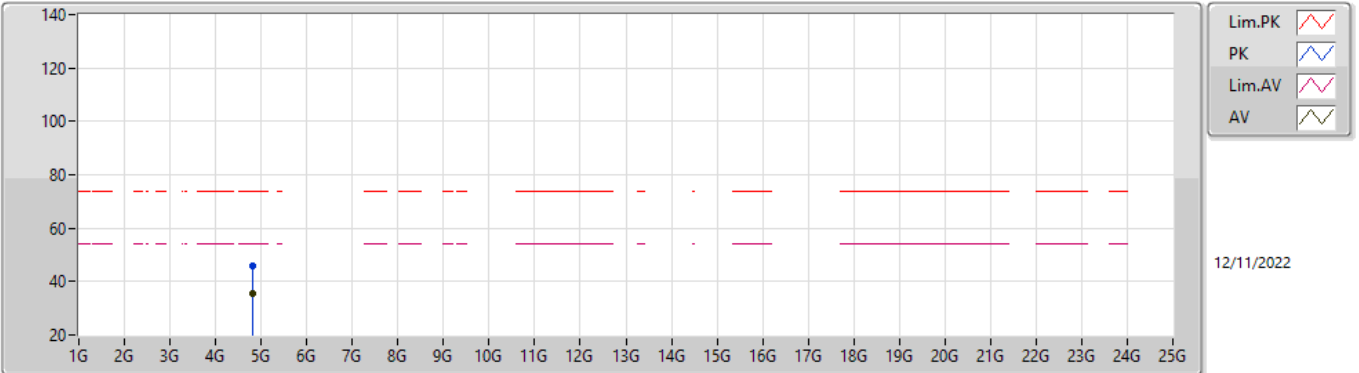


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.363G	56.25	74.00	-17.75	24.74	3	Horizontal	211	2.23	-	28.33	3.18	-	
AV	2.39G	45.69	54.00	-8.31	14.11	3	Horizontal	211	2.23	-	28.38	3.20	-	
PK	2.4026G	101.67	Inf	-Inf	70.07	3	Horizontal	211	2.23	-	28.40	3.20	-	
AV	2.402G	98.86	Inf	-Inf	67.26	3	Horizontal	211	2.23	-	28.40	3.20	-	

BT-LE(2Mbps)

2402MHz_TX

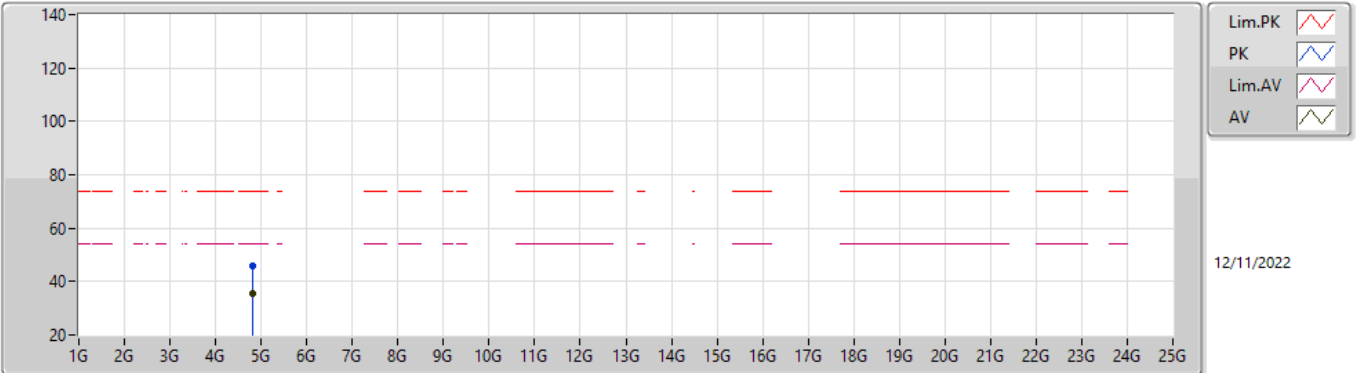


EUT Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.80092G	46.11	74.00	-27.89	38.51	3	Vertical	92	2.50	-	32.81	5.60	30.81	
AV	4.80718G	35.27	54.00	-18.73	27.64	3	Vertical	92	2.50	-	32.84	5.60	30.81	

BT-LE(2Mbps)

2402MHz_TX

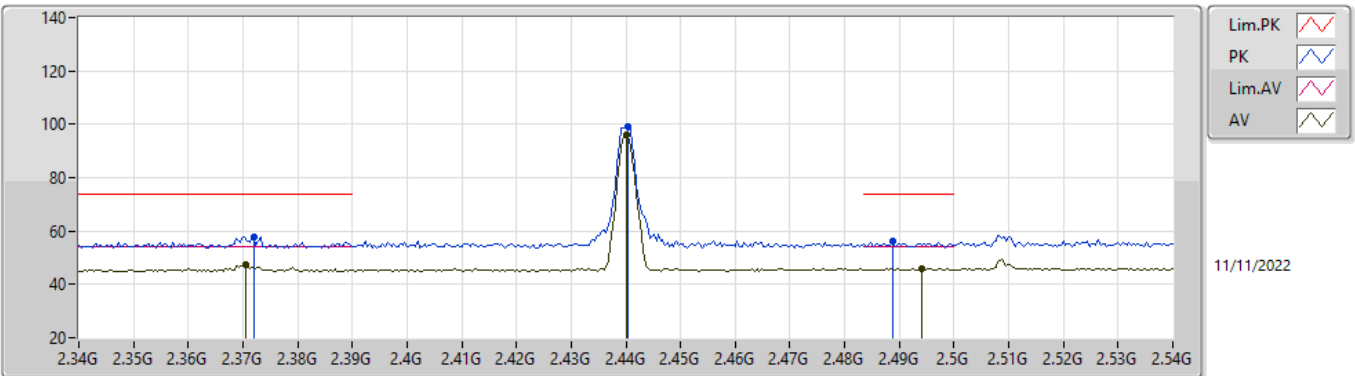


EUT Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.80708G	46.09	74.00	-27.91	38.46	3	Horizontal	49	1.62	-	32.84	5.60	30.81
AV	4.80402G	35.51	54.00	-18.49	27.90	3	Horizontal	49	1.62	-	32.82	5.60	30.81

BT-LE(2Mbps)

2440MHz_TX

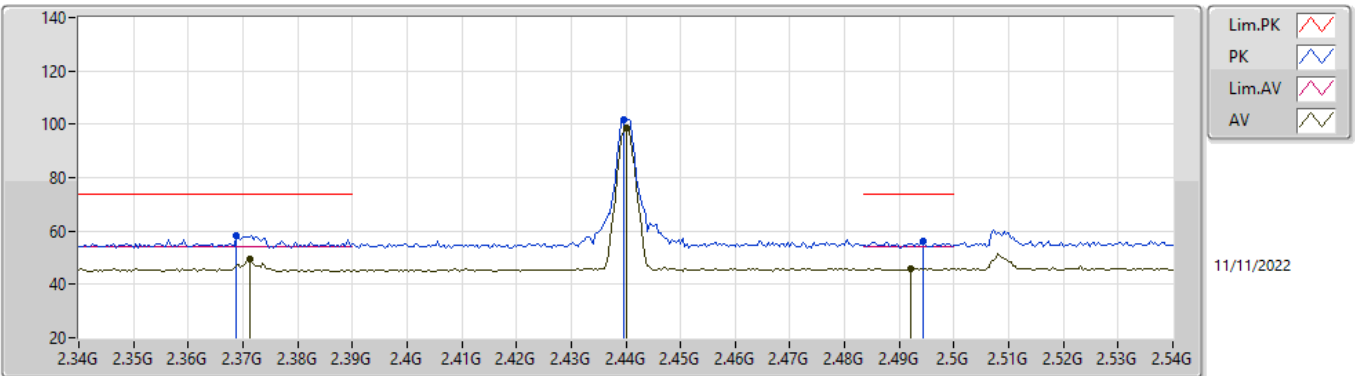


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.372G	57.77	74.00	-16.23	26.24	3	Vertical	190	1.07	-	28.34	3.19	-
AV	2.3704G	47.67	54.00	-6.33	16.14	3	Vertical	190	1.07	-	28.34	3.19	-
PK	2.4404G	98.89	Inf	-Inf	67.27	3	Vertical	190	1.07	-	28.40	3.22	-
AV	2.44G	96.12	Inf	-Inf	64.50	3	Vertical	190	1.07	-	28.40	3.22	-
PK	2.4888G	56.44	74.00	-17.56	24.64	3	Vertical	190	1.07	-	28.56	3.24	-
AV	2.494G	46.04	54.00	-7.96	14.21	3	Vertical	190	1.07	-	28.58	3.25	-

BT-LE(2Mbps)

2440MHz_TX

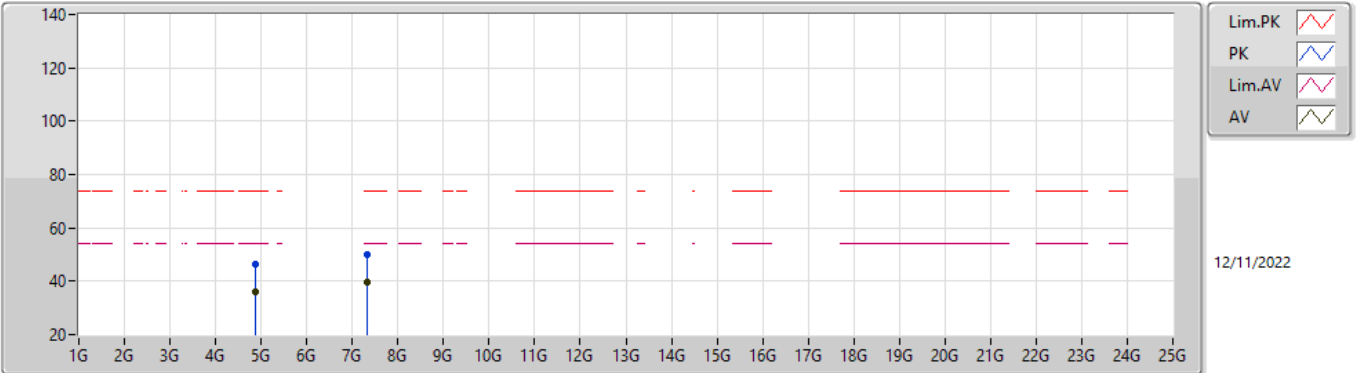


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3688G	58.18	74.00	-15.82	26.66	3	Horizontal	211	2.10	-	28.34	3.18	-
AV	2.3712G	49.61	54.00	-4.39	18.08	3	Horizontal	211	2.10	-	28.34	3.19	-
PK	2.4396G	101.62	Inf	-Inf	70.00	3	Horizontal	211	2.10	-	28.40	3.22	-
AV	2.44G	98.75	Inf	-Inf	67.13	3	Horizontal	211	2.10	-	28.40	3.22	-
PK	2.4944G	56.15	74.00	-17.85	24.32	3	Horizontal	211	2.10	-	28.58	3.25	-
AV	2.492G	46.08	54.00	-7.92	14.26	3	Horizontal	211	2.10	-	28.57	3.25	-

BT-LE(2Mbps)

2440MHz_TX

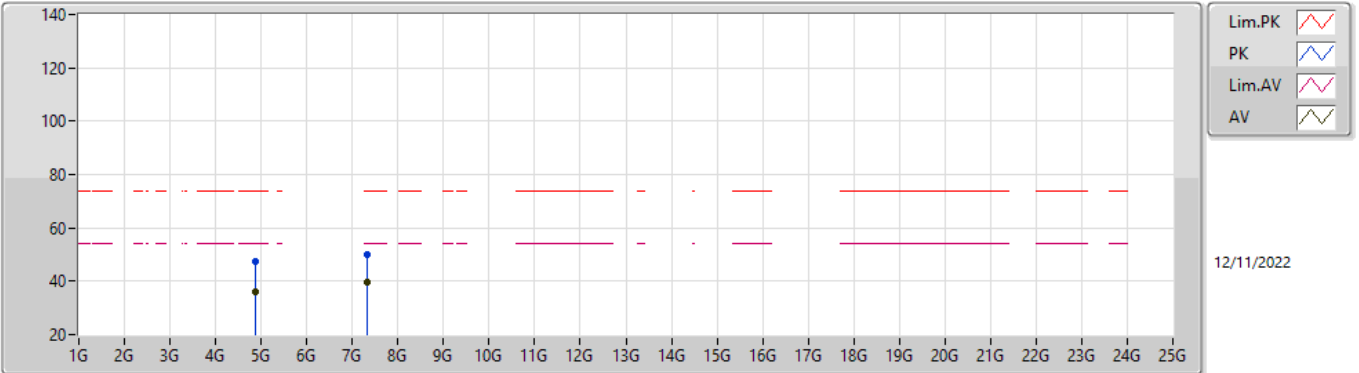


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.87724G	46.42	74.00	-27.58	38.41	3	Vertical	158	1.10	-	33.15	5.64	30.78	
AV	4.88318G	35.94	54.00	-18.06	27.91	3	Vertical	158	1.10	-	33.17	5.64	30.78	
PK	7.32382G	49.77	74.00	-24.23	38.41	3	Vertical	276	2.17	-	36.45	6.84	31.93	
AV	7.31576G	39.68	54.00	-14.32	28.33	3	Vertical	276	2.17	-	36.43	6.84	31.92	

BT-LE(2Mbps)

2440MHz_TX

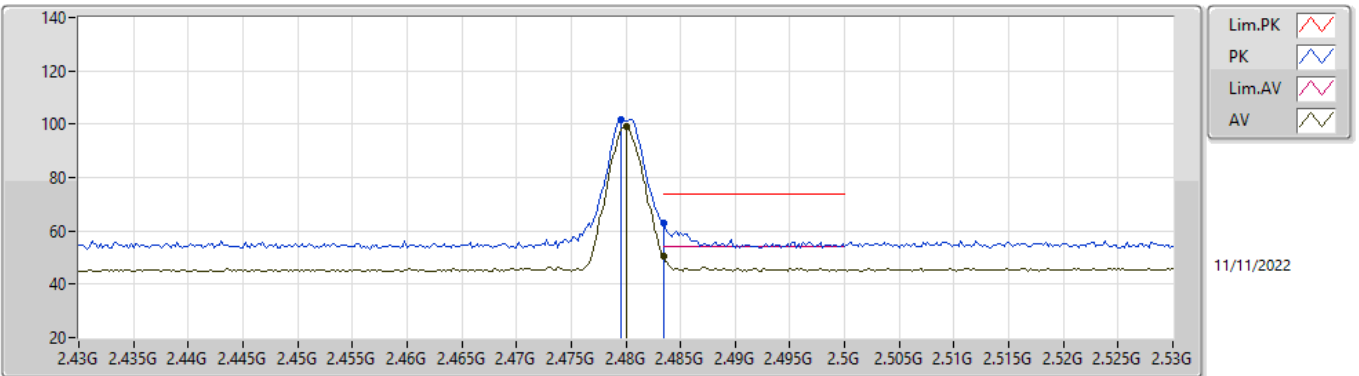


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.88336G	47.63	74.00	-26.37	39.60	3	Horizontal	198	2.12	-	33.17	5.64	30.78
AV	4.88398G	35.85	54.00	-18.15	27.82	3	Horizontal	198	2.12	-	33.17	5.64	30.78
PK	7.3159G	49.92	74.00	-24.08	38.57	3	Horizontal	73	2.25	-	36.43	6.84	31.92
AV	7.32052G	39.63	54.00	-14.37	28.28	3	Horizontal	73	2.25	-	36.44	6.84	31.93

BT-LE(2Mbps)

2480MHz_TX

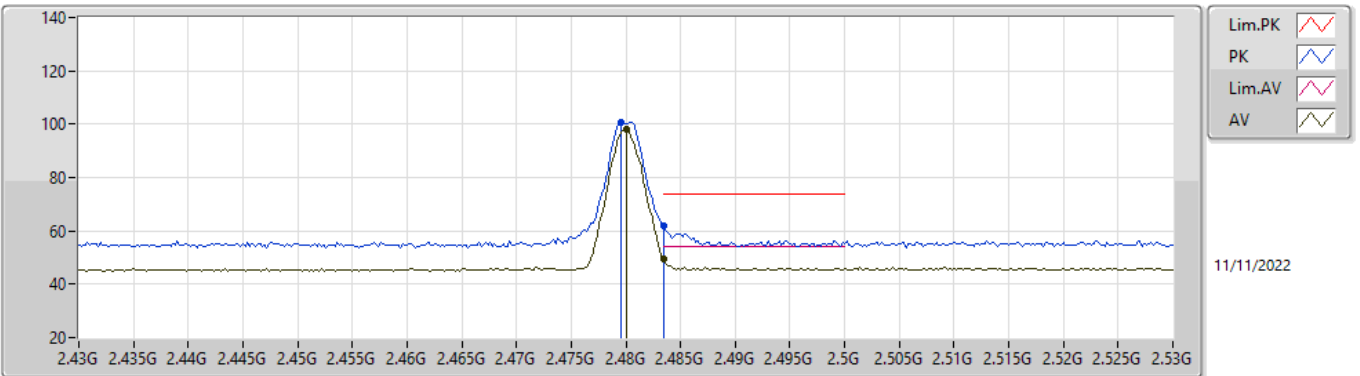


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4796G	101.74	Inf	-Inf	69.98	3	Vertical	225	1.72	-	28.52	3.24	-	
AV	2.48G	98.88	Inf	-Inf	67.12	3	Vertical	225	1.72	-	28.52	3.24	-	
PK	2.4835G	62.83	74.00	-11.17	31.06	3	Vertical	225	1.72	-	28.53	3.24	-	
AV	2.4835G	50.53	54.00	-3.47	18.76	3	Vertical	225	1.72	-	28.53	3.24	-	

BT-LE(2Mbps)

2480MHz_TX

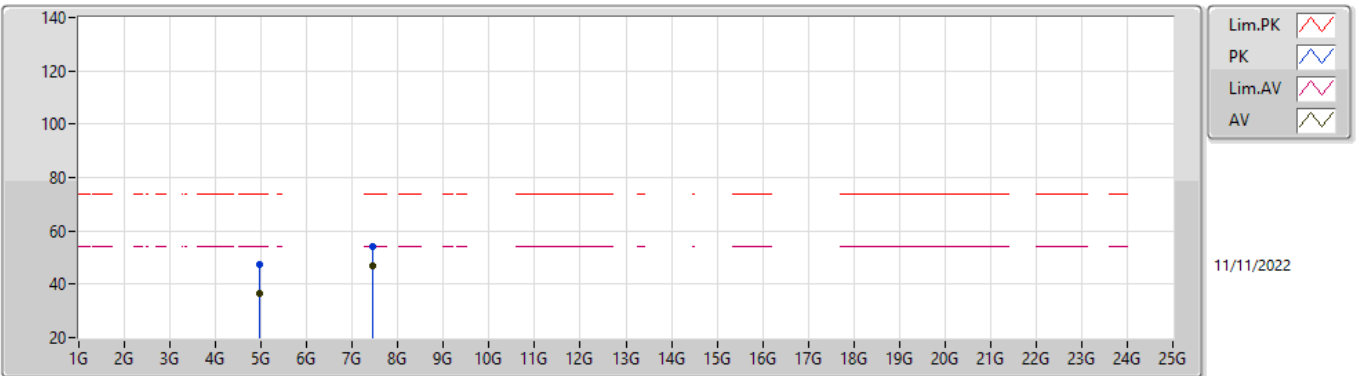


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.4796G	100.72	Inf	-Inf	68.96	3	Horizontal	213	2.02	-	28.52	3.24	-	
AV	2.48G	97.89	Inf	-Inf	66.13	3	Horizontal	213	2.02	-	28.52	3.24	-	
PK	2.4835G	61.67	74.00	-12.33	29.90	3	Horizontal	213	2.02	-	28.53	3.24	-	
AV	2.4835G	49.45	54.00	-4.55	17.68	3	Horizontal	213	2.02	-	28.53	3.24	-	

BT-LE(2Mbps)

2480MHz_TX

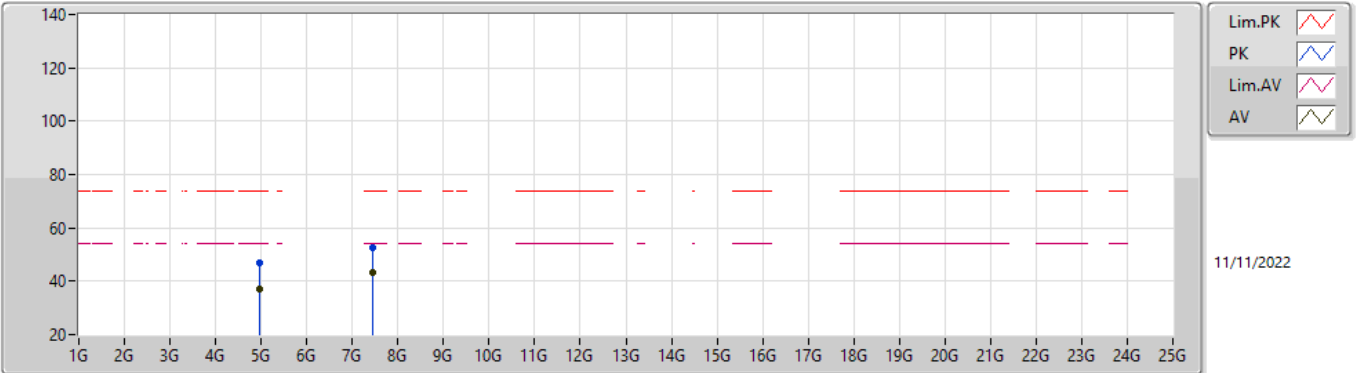


EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.95676G	47.16	74.00	-26.84	38.92	3	Vertical	42	1.81	-	33.31	5.68	30.75	
AV	4.96108G	36.71	54.00	-17.29	28.46	3	Vertical	42	1.81	-	33.32	5.68	30.75	
PK	7.43842G	53.88	74.00	-20.12	42.53	3	Vertical	135	1.80	-	36.50	6.84	31.99	
AV	7.4386G	46.72	54.00	-7.28	35.37	3	Vertical	135	1.80	-	36.50	6.84	31.99	

BT-LE(2Mbps)

2480MHz_TX



EUT_Y_1TX
Setting 4
02-F-K-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.96098G	46.75	74.00	-27.25	38.50	3	Horizontal	139	2.04	-	33.32	5.68	30.75
AV	4.95898G	37.18	54.00	-16.82	28.93	3	Horizontal	139	2.04	-	33.32	5.68	30.75
PK	7.44138G	52.36	74.00	-21.64	41.02	3	Horizontal	212	2.93	-	36.50	6.84	32.00
AV	7.43854G	43.26	54.00	-10.74	31.91	3	Horizontal	212	2.93	-	36.50	6.84	31.99

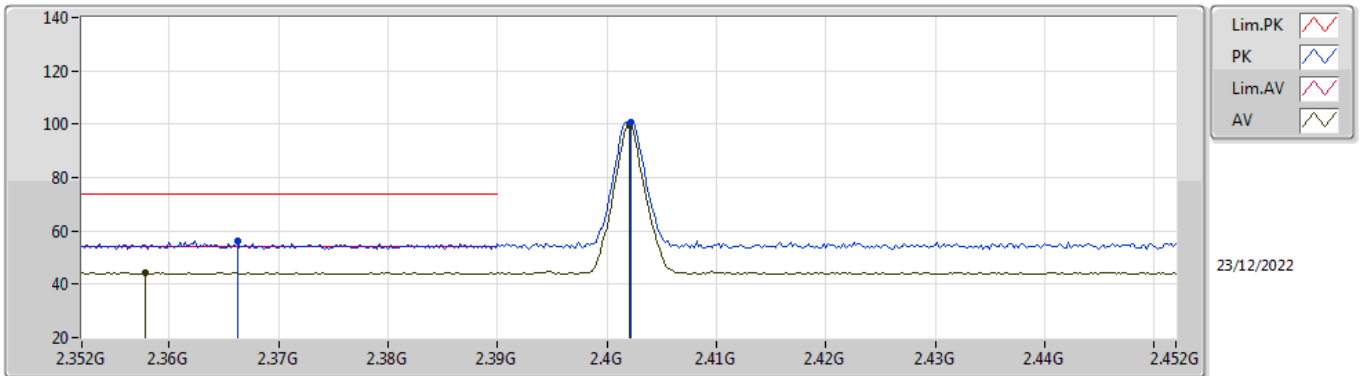


Summary

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	2.4835G	48.16	54.00	-5.84	3	Horizontal	6	2.64	-
BT-LE(2Mbps)	Pass	AV	2.4835G	51.35	54.00	-2.65	3	Horizontal	360	2.66	-

BT-LE(1Mbps)

2402MHz_TX

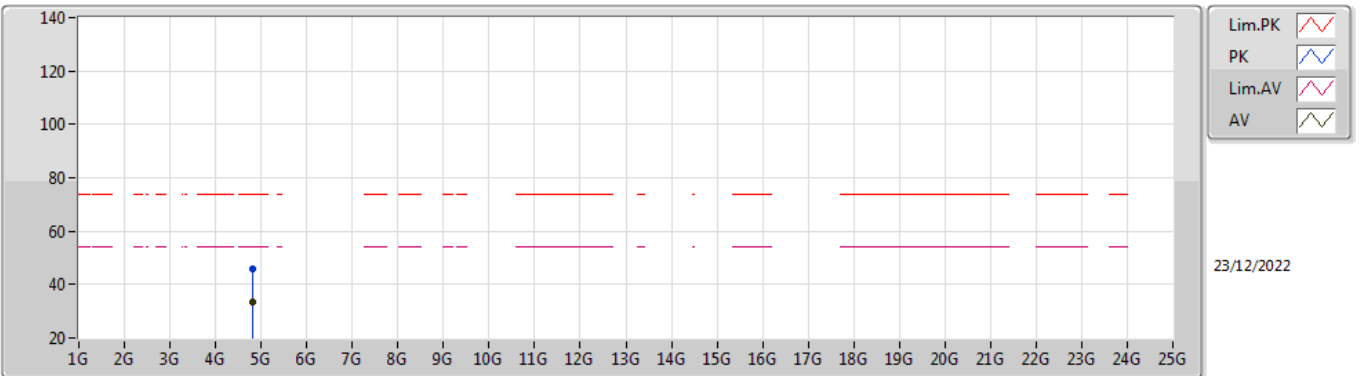


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.3662G	56.34	74.00	-17.66	25.04	3	Horizontal	344	2.35	-	27.73	3.57	-	
AV	2.3578G	44.40	54.00	-9.60	13.12	3	Horizontal	344	2.35	-	27.72	3.56	-	
PK	2.4022G	100.80	Inf	-Inf	69.40	3	Horizontal	344	2.35	-	27.80	3.60	-	
AV	2.402G	99.43	Inf	-Inf	68.03	3	Horizontal	344	2.35	-	27.80	3.60	-	

BT-LE(1Mbps)

2402MHz_TX

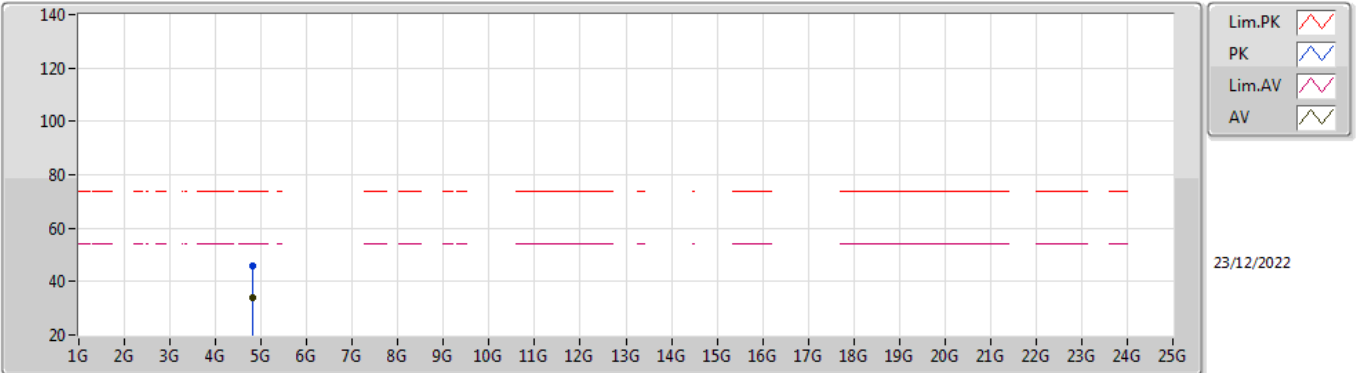


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.80496G	45.67	74.00	-28.33	40.13	3	Vertical	38	1.93	-	32.73	5.70	32.89	
AV	4.81296G	33.67	54.00	-20.33	28.07	3	Vertical	38	1.93	-	32.78	5.71	32.89	

BT-LE(1Mbps)

2402MHz_TX

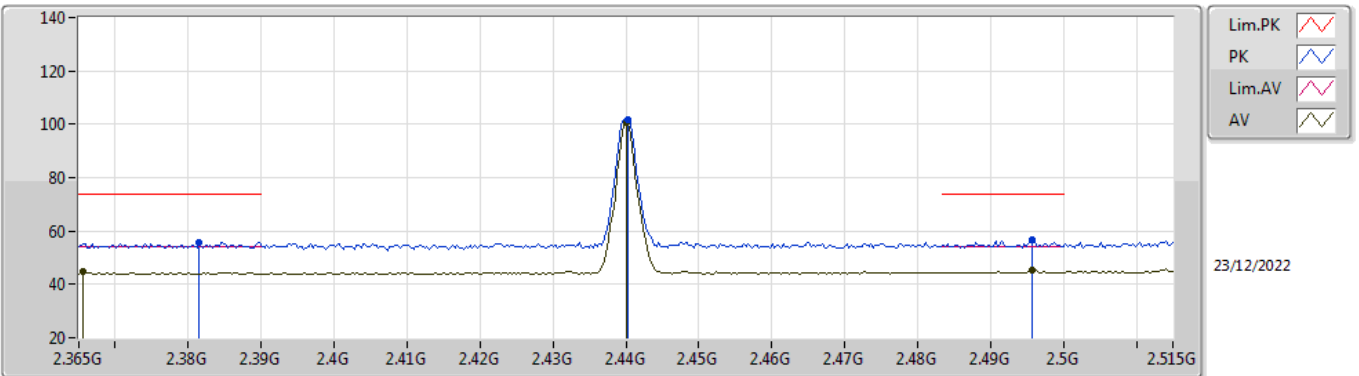


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.81288G	45.82	74.00	-28.18	40.22	3	Horizontal	11	1.28	-	32.78	5.71	32.89
AV	4.81368G	33.76	54.00	-20.24	28.16	3	Horizontal	11	1.28	-	32.78	5.71	32.89

BT-LE(1Mbps)

2440MHz_TX

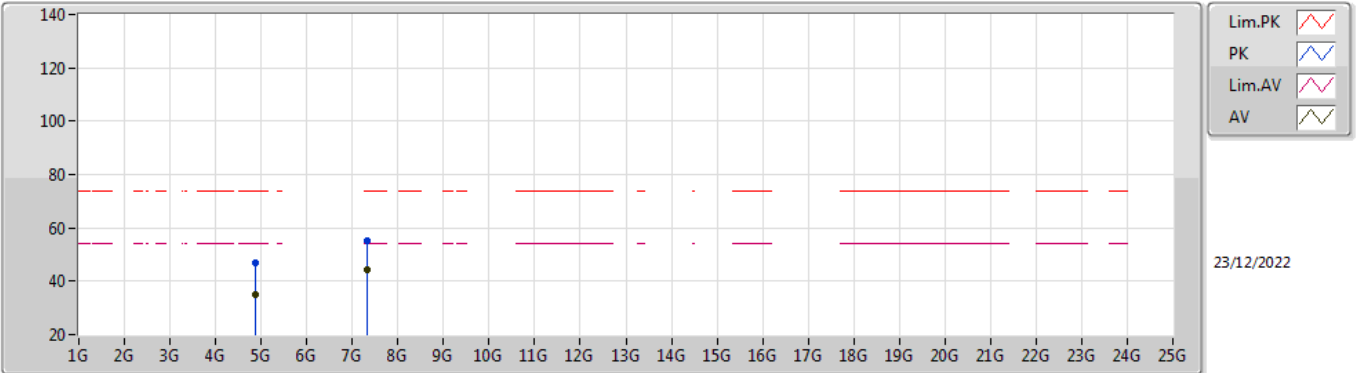


EUT_Z1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3815G	55.83	74.00	-18.17	24.49	3	Horizontal	360	2.44	-	27.76	3.58	-
AV	2.3656G	45.01	54.00	-8.99	13.71	3	Horizontal	360	2.44	-	27.73	3.57	-
PK	2.4403G	101.86	Inf	-Inf	70.36	3	Horizontal	360	2.44	-	27.88	3.62	-
AV	2.44G	100.46	Inf	-Inf	68.96	3	Horizontal	360	2.44	-	27.88	3.62	-
PK	2.4958G	56.53	74.00	-17.47	24.71	3	Horizontal	360	2.44	-	28.17	3.65	-
AV	2.4958G	45.48	54.00	-8.52	13.66	3	Horizontal	360	2.44	-	28.17	3.65	-

BT-LE(1Mbps)

2440MHz_TX

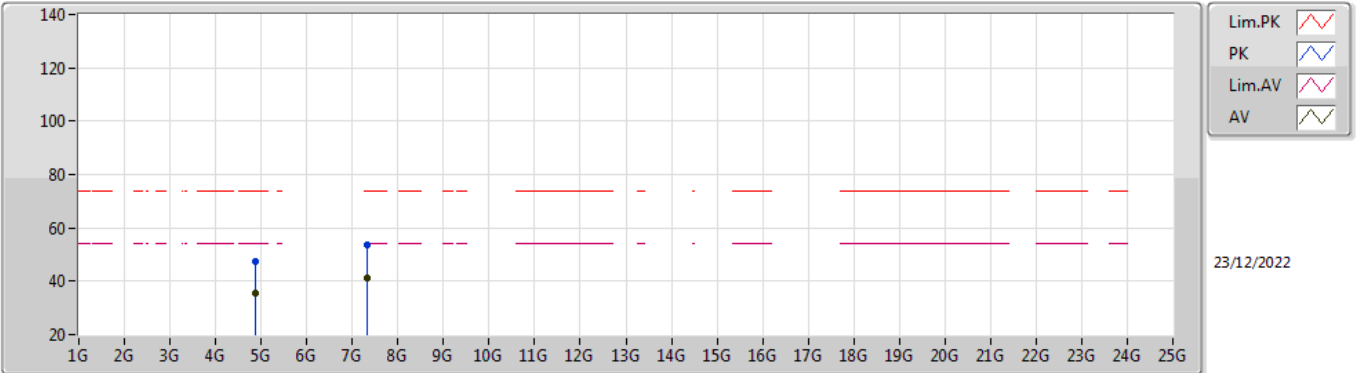


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.8802G	47.07	74.00	-26.93	41.16	3	Vertical	106	1.80	-	33.00	5.78	32.87
AV	4.88024G	34.98	54.00	-19.02	29.07	3	Vertical	106	1.80	-	33.00	5.78	32.87
PK	7.31936G	55.21	74.00	-18.79	43.64	3	Vertical	82	2.61	-	37.60	7.16	33.19
AV	7.31928G	44.54	54.00	-9.46	32.97	3	Vertical	82	2.61	-	37.60	7.16	33.19

BT-LE(1Mbps)

2440MHz_TX

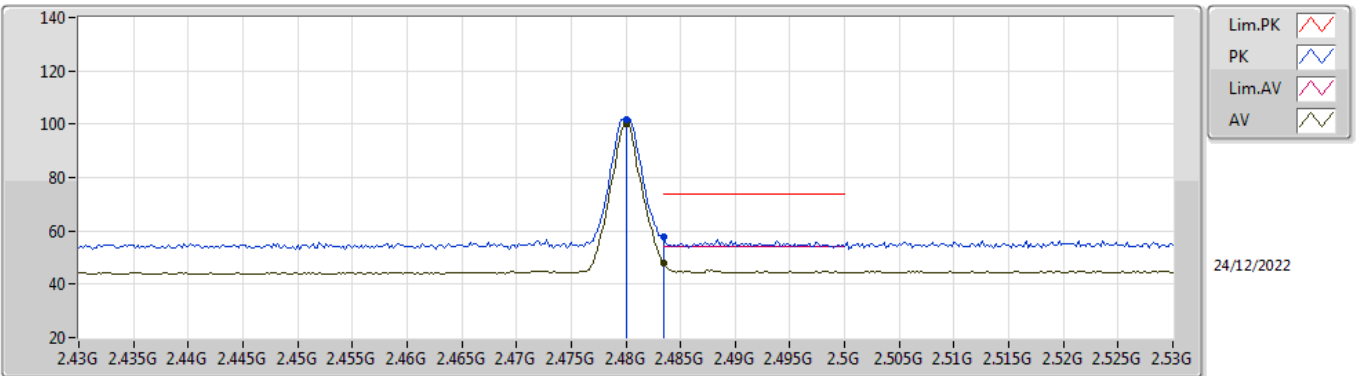


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.88332G	47.56	74.00	-26.44	41.65	3	Horizontal	148	1.80	-	33.00	5.78	32.87
AV	4.88G	35.38	54.00	-18.62	29.47	3	Horizontal	148	1.80	-	33.00	5.78	32.87
PK	7.3192G	53.76	74.00	-20.24	42.19	3	Horizontal	318	1.79	-	37.60	7.16	33.19
AV	7.32024G	41.03	54.00	-12.97	29.46	3	Horizontal	318	1.79	-	37.60	7.16	33.19

BT-LE(1Mbps)

2480MHz_TX

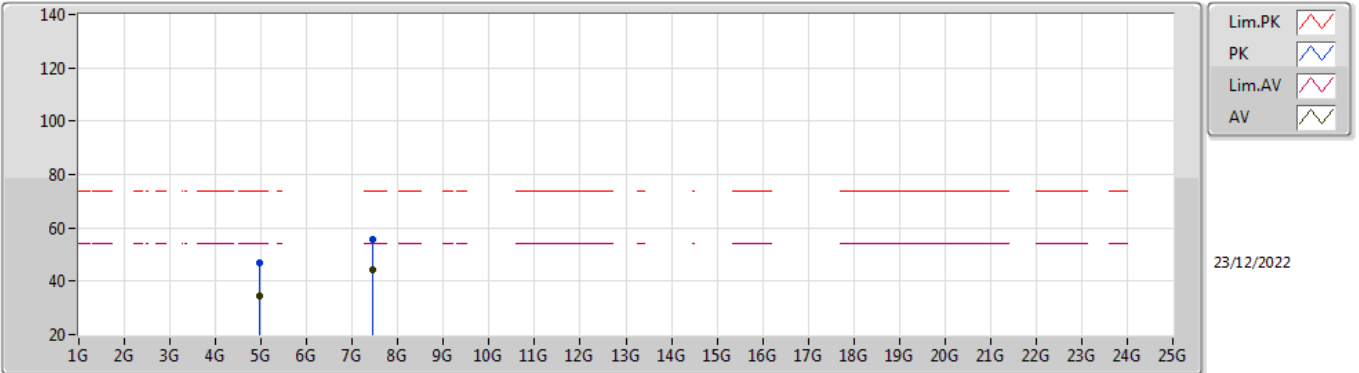


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.48G	101.78	Inf	-Inf	70.06	3	Horizontal	6	2.64	-	28.08	3.64	-	
AV	2.48G	100.41	Inf	-Inf	68.69	3	Horizontal	6	2.64	-	28.08	3.64	-	
PK	2.4835G	57.54	74.00	-16.46	25.80	3	Horizontal	6	2.64	-	28.10	3.64	-	
AV	2.4835G	48.16	54.00	-5.84	16.42	3	Horizontal	6	2.64	-	28.10	3.64	-	

BT-LE(1Mbps)

2480MHz_TX

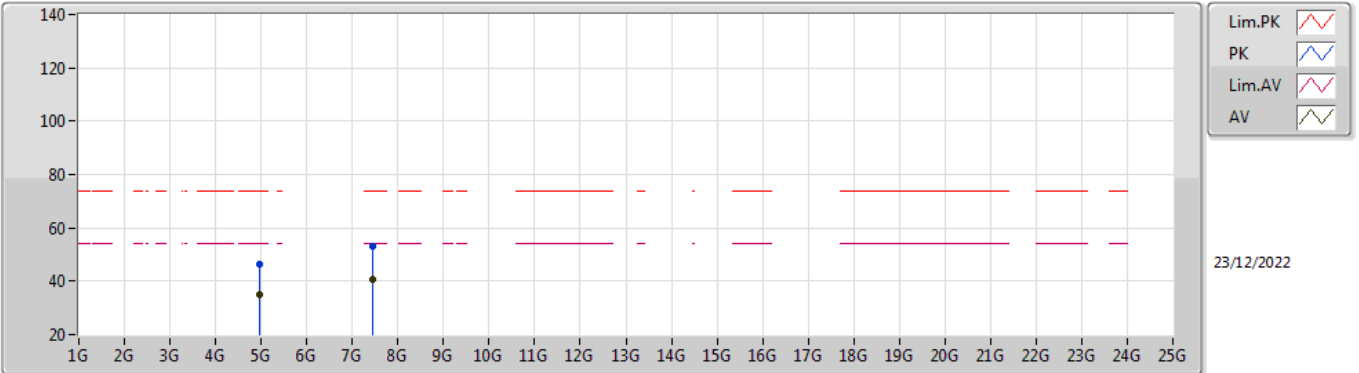


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.95304G	47.02	74.00	-26.98	41.02	3	Vertical	196	1.96	-	33.01	5.85	32.86	
AV	4.9502G	34.60	54.00	-19.40	28.61	3	Vertical	196	1.96	-	33.00	5.85	32.86	
PK	7.43932G	55.55	74.00	-18.45	44.08	3	Vertical	87	3.00	-	37.50	7.22	33.25	
AV	7.43928G	44.33	54.00	-9.67	32.86	3	Vertical	87	3.00	-	37.50	7.22	33.25	

BT-LE(1Mbps)

2480MHz_TX

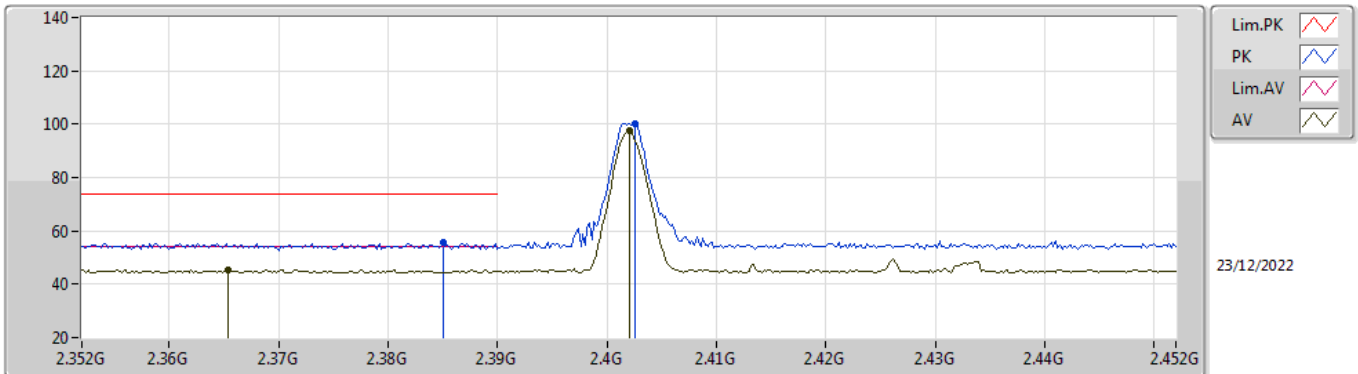


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.96008G	46.62	74.00	-27.38	40.60	3	Horizontal	292	2.35	-	33.02	5.86	32.86	
AV	4.9528G	34.82	54.00	-19.18	28.82	3	Horizontal	292	2.35	-	33.01	5.85	32.86	
PK	7.43348G	52.90	74.00	-21.10	41.43	3	Horizontal	18	2.66	-	37.50	7.22	33.25	
AV	7.44048G	40.94	54.00	-13.06	29.47	3	Horizontal	18	2.66	-	37.50	7.22	33.25	

BT-LE(2Mbps)

2402MHz_TX

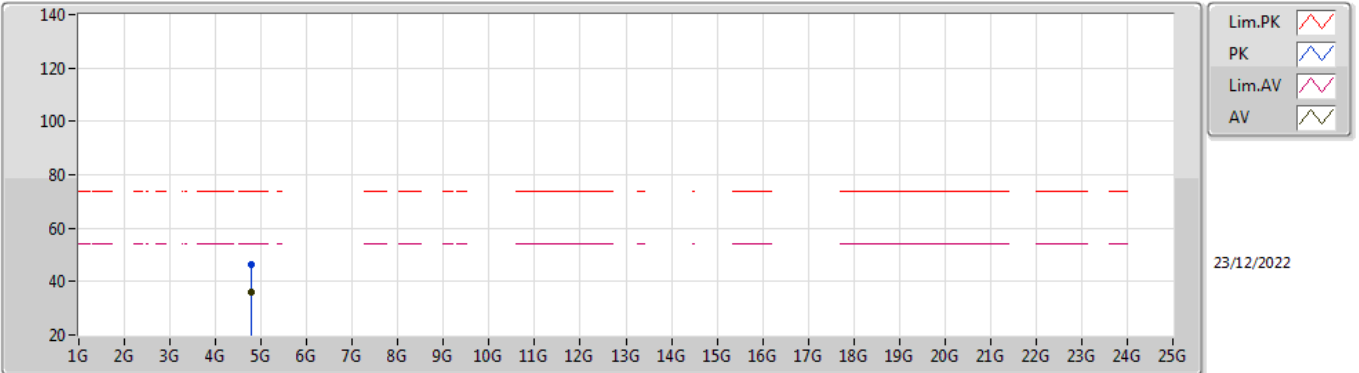


EUT_Z_1TX
Setting 4
01-C-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	2.385G	55.73	74.00	-18.27	24.37	3	Horizontal	334	2.34	-	27.77	3.59	-	
AV	2.3654G	45.52	54.00	-8.48	14.22	3	Horizontal	334	2.34	-	27.73	3.57	-	
PK	2.4026G	100.36	Inf	-Inf	68.95	3	Horizontal	334	2.34	-	27.81	3.60	-	
AV	2.402G	97.46	Inf	-Inf	66.06	3	Horizontal	334	2.34	-	27.80	3.60	-	

BT-LE(2Mbps)

2402MHz_TX

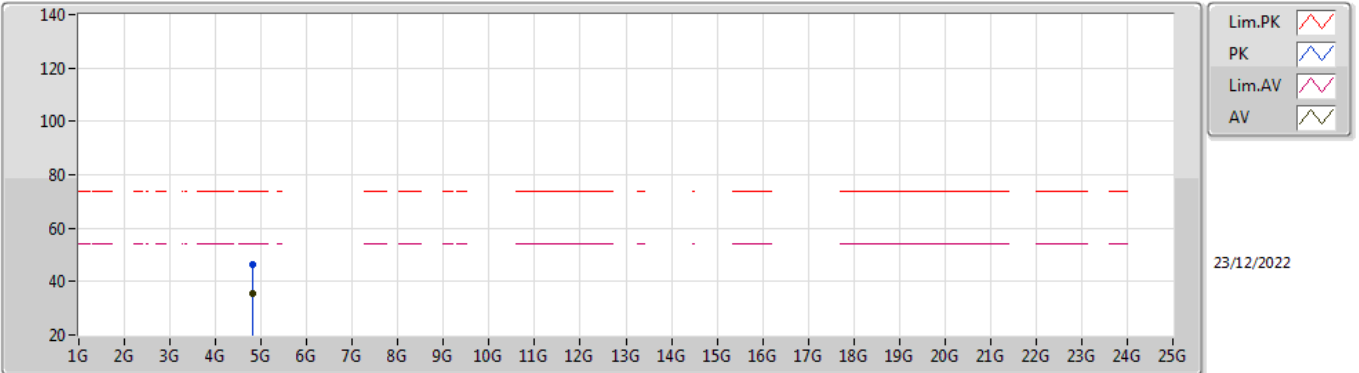


EUT_Z_1TX
Setting 4
01-C-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.79628G	46.27	74.00	-27.73	40.76	3	Vertical	60	1.69	-	32.70	5.70	32.89
AV	4.7966G	35.97	54.00	-18.03	30.46	3	Vertical	60	1.69	-	32.70	5.70	32.89

BT-LE(2Mbps)

2402MHz_TX

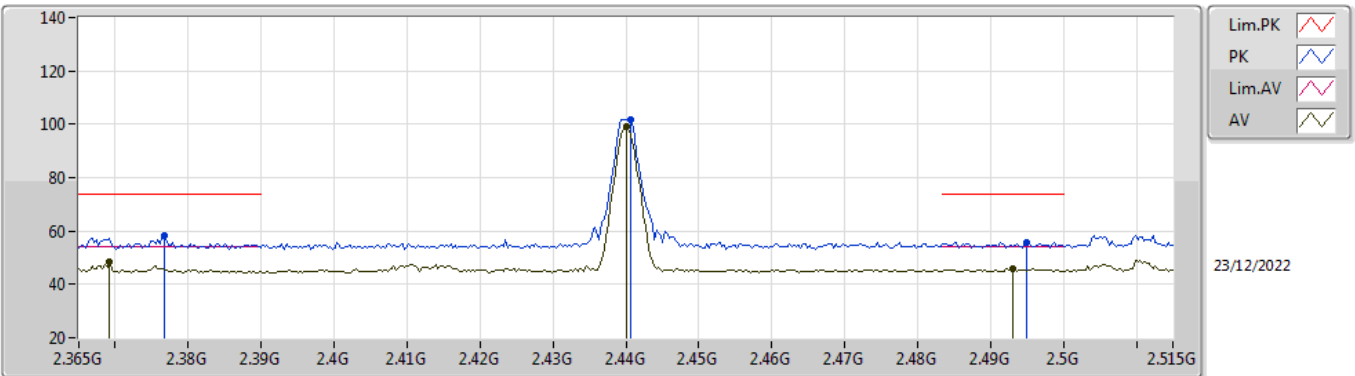


EUT_Z_1TX
Setting 4
01-C-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.81148G	46.35	74.00	-27.65	40.76	3	Horizontal	349	2.17	-	32.77	5.71	32.89	
AV	4.80548G	35.33	54.00	-18.67	29.78	3	Horizontal	349	2.17	-	32.73	5.71	32.89	

BT-LE(2Mbps)

2440MHz_TX

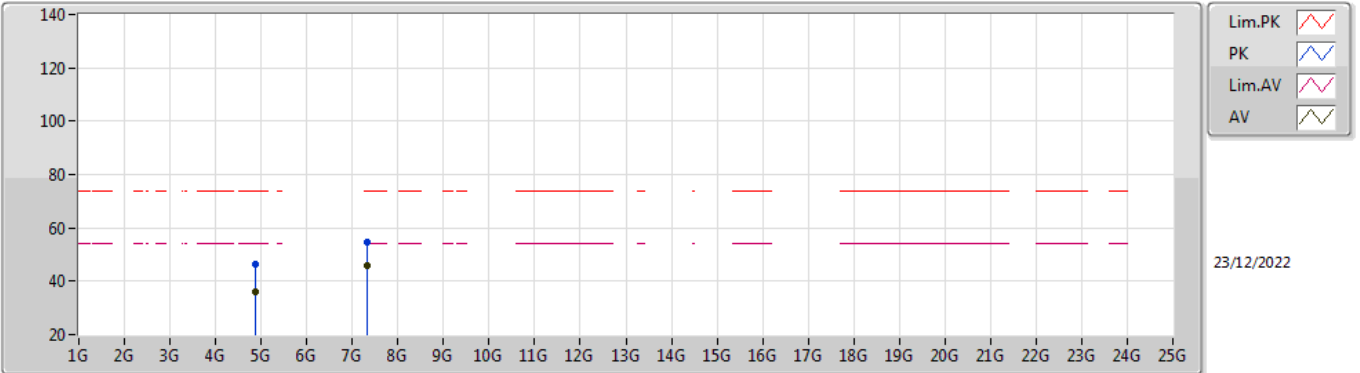


EUT_Z1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	2.3767G	58.18	74.00	-15.82	26.85	3	Horizontal	8	2.27	-	27.75	3.58	-
AV	2.3692G	48.50	54.00	-5.50	17.19	3	Horizontal	8	2.27	-	27.74	3.57	-
PK	2.4406G	101.85	Inf	-Inf	70.35	3	Horizontal	8	2.27	-	27.88	3.62	-
AV	2.44G	99.06	Inf	-Inf	67.56	3	Horizontal	8	2.27	-	27.88	3.62	-
PK	2.4949G	55.94	74.00	-18.06	24.12	3	Horizontal	8	2.27	-	28.17	3.65	-
AV	2.4931G	45.77	54.00	-8.23	13.96	3	Horizontal	8	2.27	-	28.16	3.65	-

BT-LE(2Mbps)

2440MHz_TX

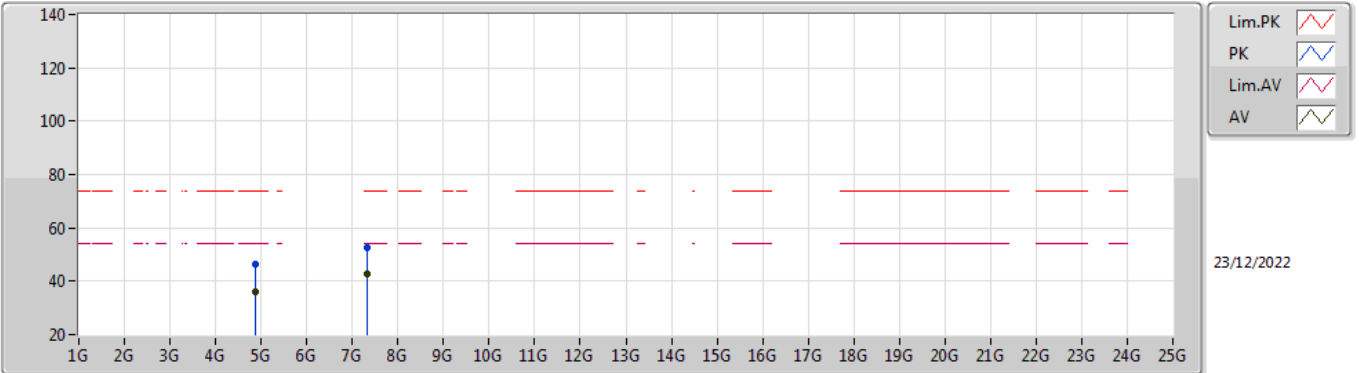


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.87888G	46.56	74.00	-27.44	40.65	3	Vertical	160	1.81	-	33.00	5.78	32.87	
AV	4.8798G	35.97	54.00	-18.03	30.06	3	Vertical	160	1.81	-	33.00	5.78	32.87	
PK	7.31864G	54.57	74.00	-19.43	43.00	3	Vertical	81	3.00	-	37.60	7.16	33.19	
AV	7.31868G	45.63	54.00	-8.37	34.06	3	Vertical	81	3.00	-	37.60	7.16	33.19	

BT-LE(2Mbps)

2440MHz_TX

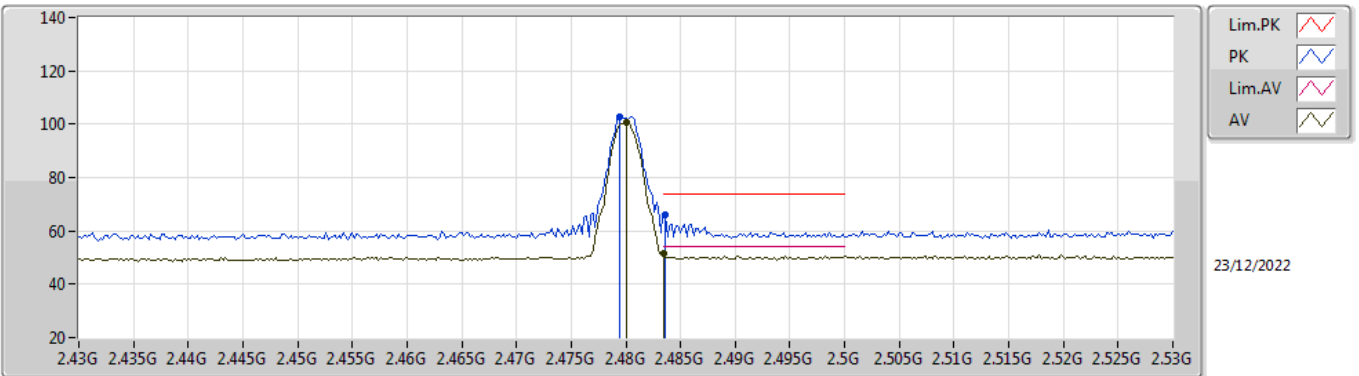


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.8836G	46.54	74.00	-27.46	40.63	3	Horizontal	263	2.27	-	33.00	5.78	32.87
AV	4.88032G	36.12	54.00	-17.88	30.21	3	Horizontal	263	2.27	-	33.00	5.78	32.87
PK	7.32052G	52.73	74.00	-21.27	41.16	3	Horizontal	297	1.80	-	37.60	7.16	33.19
AV	7.31852G	42.59	54.00	-11.41	31.02	3	Horizontal	297	1.80	-	37.60	7.16	33.19

BT-LE(2Mbps)

2480MHz_TX

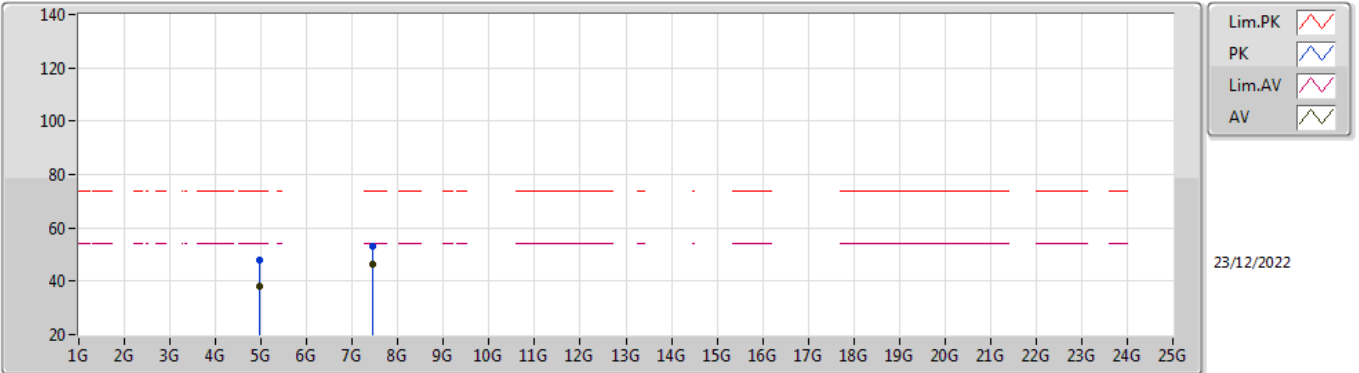


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA	
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)	
PK	2.4794G	102.59	Inf	-Inf	70.87	3	Horizontal	360	2.66	-	28.08	3.64	-	
AV	2.48G	100.52	Inf	-Inf	68.80	3	Horizontal	360	2.66	-	28.08	3.64	-	
PK	2.4836G	65.96	74.00	-8.04	34.22	3	Horizontal	360	2.66	-	28.10	3.64	-	
AV	2.4835G	51.35	54.00	-2.65	19.61	3	Horizontal	360	2.66	-	28.10	3.64	-	

BT-LE(2Mbps)

2480MHz_TX

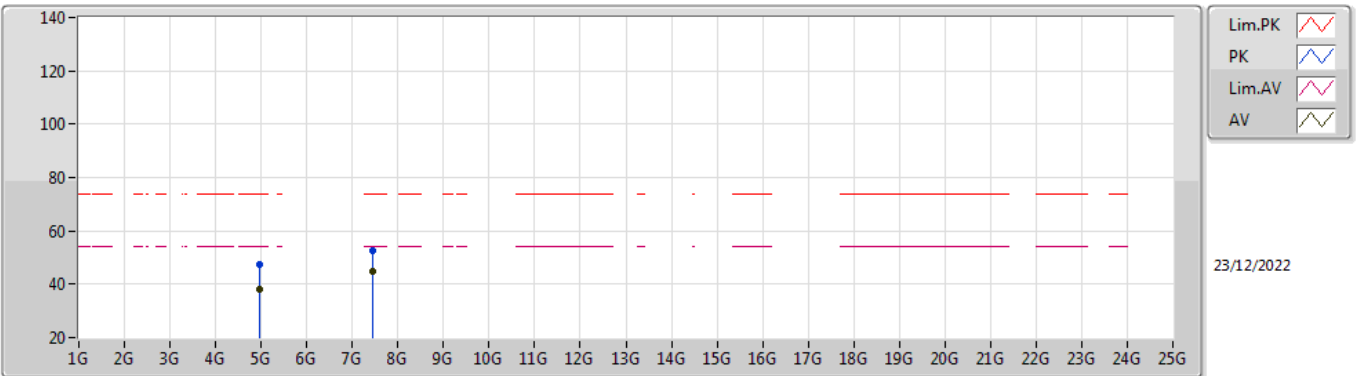


EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)	
PK	4.95168G	47.82	74.00	-26.18	41.83	3	Vertical	0	2.16	-	33.00	5.85	32.86	
AV	4.9686G	37.88	54.00	-16.12	31.83	3	Vertical	0	2.16	-	33.04	5.87	32.86	
PK	7.43844G	53.25	74.00	-20.75	41.78	3	Vertical	79	3.00	-	37.50	7.22	33.25	
AV	7.4384G	46.44	54.00	-7.56	34.97	3	Vertical	79	3.00	-	37.50	7.22	33.25	

BT-LE(2Mbps)

2480MHz_TX



EUT_Z_1TX
Setting 4
01-K-R-6

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	4.96288G	47.53	74.00	-26.47	41.50	3	Horizontal	187	1.80	-	33.03	5.86	32.86
AV	4.96928G	37.95	54.00	-16.05	31.90	3	Horizontal	187	1.80	-	33.04	5.87	32.86
PK	7.44148G	52.43	74.00	-21.57	40.96	3	Horizontal	0	2.73	-	37.50	7.22	33.25
AV	7.43836G	44.73	54.00	-9.27	33.26	3	Horizontal	0	2.73	-	37.50	7.22	33.25