AUDIX Technology Corp.
No. 53-11, Dingfu, Linkou, Dist.,
New Taipei City244, Taiwan
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FCC 15.247
2.4 GHz Report

for

Elitegroup Computer Systems Co., Ltd.

No. 239, Sec. 2, TiDing Blvd,
Taipei, Taiwan 11493

Brand : ECS

Product Name : 7" Multi Function Pad

Model Name : mPAD-7.....

(The "." in the model name can be 0 to 9, A to Z, a to z, "-", "_", "\", "/" or blank for marketing use only)

FCC ID : WL6TB71A-W-SI2

Prepared by: : AUDIX Technology Corporation, EMC Department

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AUDIX Technology Corp.
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TEST REPORT CERTIFICATION

Applicant	:	Elitegroup Computer Systems Co., Ltd.
Product Name	:	7" Multi Function Pad
Model No.	:	mPAD-7..... (The "." in the model name can be 0 to 9, A to Z, a to z, "-", "_", "\", "/" or blank for marketing use only)
Serial No.	:	N/A
Brand	:	ECS

Applicable Standards:

47 CFR FCC Part 15 Subpart C:2015
ANSI C63.10:2013
KDB 558074 D01 DTS Meas Guidance v03r05

AUDIX Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report. ***AUDIX Technology Corp.*** does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Test: 2016. 07. 28 ~ 08. 02 Date of Report: 2016. 08. 16

Producer: _____
(Annie Yu/Administrator)

Signatory: _____
(Jarwei Wang/Section Manager)

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1. REPORT HISTORY

Edition No.	Date of Rev.	Revision Summary	Report No.
0	2016. 08. 16	Original Report.	EM-F160523

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2. SUMMARY OF TEST RESULTS

Rule	Description	Results
15.207	Conducted Emission	**PASS**
15.247(d)/15.205	Radiated Band Edge and Radiated Spurious Emission	**PASS**
15.247(a)(2)	6dB Bandwidth	**PASS**
15.247(b)(3)	Maximum Peak Output	**PASS**
15.247(d)	Conducted Band Edges and Conducted Spurious Emission	**PASS**
15.247 (e)	Peak Power Spectral Density	**PASS**
15.203	Antenna Requirement	**PASS**

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3. GENERAL INFORMATION

3.1. Description of EUT

Product	7" Multi Function Pad
Model Number	mPAD-7..... (The "." in the model name can be 0 to 9, A to Z, a to z, "-", "_", "\", "/" or blank for marketing use only)
Test Model	mPAD-7-CHT3-I
Serial Number	N/A
Brand Name	ECS
Applicant	Elitegroup Computer Systems Co., Ltd. No. 239, Sec. 2., TiDing Blvd., Taipei, Taiwan 11493
RF Features	WLAN:802.11b/g/n Bluetooth: BT and BLE NFC
Transmit Type	2.4 GHz 802.11b 1T1R 802.11g 1T1R 802.11n-HT20 1T1R 802.11n-HT40 1T1R BLE 1T1R
Date of Receipt of Sample	2016. 07. 20

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3.2. Description of Key Component Lists

Item	Supplier	Model / Type	Character
Main Board	ECS	TB71A-W-SI2	---
CPU (Socket: BGA1380)	Intel	Z8350	1.44GHz, up to 1.84GHz
Memory (On Board)	KINGSTON	D2516EC4BXGGB	LPDDR3 1600MHz 4GB
7” LCD Panel	CPT	CLAT070WQ64	C1AA070WQ64XG" 800x1280
Touch Module	FocalTech	FT3417	Support 10-points multi-touch(Capacivtive)
Storage	SandDisk	SDINADF4-32G	32GB
Front Camera	KINGCOME	O6P2-TC12A-WFHQ.	Front Camera : 2.0M
Rear Camera	KINGCOME	O9P5-TB71ABHQ	Rear Camera: 8.0M
Wi-Fi +BT Module	Qualcomm (Azurewave)	RTL8723BS (AW-NB177NF)	Wi-Fi 802.11 b/g/n + BT 4.0
GPS	Boradcam	BCM4752	GPS & GLONASS
NFC	NXP	NPC100	---
BATTREY	Sunwoda	MICA-071	3.7V / 4100 mAh /15.17Wh
AC Adapter (Wall-mount, 2C)	EDAC	EA1024CR-050	I/P: AC 100-240V, 50-60Hz, 1.0A MAX O/P: DC 5V, 4A
	DC Power Cord: Unshielded, Undetachable, 1.8m With one ferrite core		
mPad Module (Option)	ECS	Barcode Scanner mPAD	Barcode Scanner
7" Pad Docking (Option)	ECS	DOCKING mPAD-7	Docking

Remark: For more detailed features description, please refer to the manufacturer’s specifications or the user manual.

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3.3. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (Mbps)
802.11b	2412-2462	11	DSSS (DBPSK/DQPSK/CCK)	Up to 11
802.11g		11	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11n-HT20				Up to 150
802.11n-HT40	2422-2452	7		
BLE	2402-2480	40	GFSK	1

Channel List			
802.11 b/g/n-HT20		802.11n-HT40	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	2412		
2	2417		
3	2422	3	2422
4	2427	4	2427
5	2432	5	2432
6	2437	6	2437
7	2442	7	2442
8	2447	8	2447
9	2452	9	2452
10	2457		
11	2462		

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Channel List			
BLE			
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
37	2402	18	2442
00	2404	19	2444
01	2406	20	2446
02	2408	21	2448
03	2410	22	2450
04	2412	23	2452
05	2414	24	2454
06	2416	25	2456
07	2418	26	2458
08	2420	27	2460
09	2422	28	2462
10	2424	29	2464
38	2426	30	2466
11	2428	31	2468
12	2430	32	2470
13	2432	33	2472
14	2434	34	2474
15	2436	35	2476
16	2438	36	2478
17	2440	39	2480

3.4. Antenna Information

GPS Antenna					
No.	**Antenna Part Number**	**Manufacture**	**Antenna Type**	**Frequency (MHz)**	**Max Gain (dBi)**
1	MICA-071	Innetech	Internal Antenna	1575 to 1610	**2.31**

2.4G Antenna					
No.	**Antenna Part Number**	**Manufacture**	**Antenna Type**	**Frequency (MHz)**	**Max Gain (dBi)**
1	MICA-071	Innetech	Internal Antenna	2400 to 2480	**1.01**

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3.5. Data Rate Relative to Output Power

802.11b			
Channel	Modulation	Date Rate (Mbps)	**Power (dBm)**
1	DBPSK	1	**16.45**
1	DQPSK	2	**16.42**
1	CCK	5.5	**16.44**
1	CCK	11	**16.43**

802.11g			
Channel	Modulation	Date Rate (Mbps)	**Power (dBm)**
1	BPSK	6	**14.36**
1	BPSK	9	**14.34**
1	QPSK	12	**14.35**
1	QPSK	18	**14.34**
1	16-QAM	24	**14.33**
1	16-QAM	36	**14.34**
1	64-QAM	48	**14.35**
1	64-QAM	54	**14.35**

802.11n-HT20				802.11n-HT40			
Channel	Modulation	Date Rate	**Power (dBm)**	Channel	Modulation	Date Rate	**Power (dBm)**
1	BPSK	MCS0	**13.22**	3	BPSK	MCS0	**13.27**
1	QPSK	MCS1	**13.21**	3	QPSK	MCS1	**13.25**
1	QPSK	MCS2	**13.21**	3	QPSK	MCS2	**13.25**
1	16-QAM	MCS3	**13.20**	3	16-QAM	MCS3	**13.24**
1	16-QAM	MCS4	**13.21**	3	16-QAM	MCS4	**13.26**
1	64-QAM	MCS5	**13.20**	3	64-QAM	MCS5	**13.25**
1	64-QAM	MCS6	**13.19**	3	64-QAM	MCS6	**13.24**
1	64-QAM	MCS7	**13.20**	3	64-QAM	MCS7	**13.24**

Note: Above results are assessed in average power.

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3.6. Test Configuration

Mode	Duty Cycle (x)	T (ms)	Duty Cycle Factor (dB)
802.11b	1	N/A	N/A
802.11g	1	N/A	N/A
802.11n-HT20	1	N/A	N/A
802.11n-HT40	1	N/A	N/A
BLE	1	N/A	N/A

Note: When duty cycle is less than 98% (0.98) that duty cycle factor 10log(1/x) is needed to add in conducted test items measured in average detector.

AC Conduction	
Test Case	Normal operation

Item		Mode	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge Note1	802.11b	1Mbps	1/11
		802.11g	6Mbps	1/11
		802.11n-HT20	MCS0	1/11
		802.11n-HT40	MCS0	3/9
		BLE	1Mbps	37/39
	Radiated Spurious Emission Note1 & 2	802.11b	1 Mbps	1
		802.11g	6Mbps	6
		802.11n-HT20	MCS0	6
		802.11n-HT40	MCS0	6
		BLE	1Mbps	37/17/39

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Item		Mode	Data Rate	Test Channel
Conducted Test Case Note3	6dB Bandwidth	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		802.11n-HT40	MCS0	3/6/9
		BLE	1Mbps	37/17/39
	Peak Power Spectral Density	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		802.11n-HT40	MCS0	3/6/9
		BLE	1Mbps	37/17/39
	Peak Output Power	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		802.11n-HT40	MCS0	3/6/9
		BLE	1Mbps	37/17/39
	Band Edge	802.11b	1Mbps	1/11
		802.11g	6Mbps	1/11
		802.11n-HT20	MCS0	1/11
		802.11n-HT40	MCS0	3/9
		BLE	1Mbps	37/17/39
	Spurious Emission	802.11b	1Mbps	1/6/11
		802.11g	6Mbps	1/6/11
		802.11n-HT20	MCS0	1/6/11
		802.11n-HT40	MCS0	3/6/9
		BLE	1Mbps	37/17/39

Note 1:

■Mobile Device: Device was pre-assessed with docking and portable (3 axis), the worst case is tested with portable (Lie).

☐Portable Device, and 3 axis were assessed.

- ☐ Lie
- ☐ Side
- ☐ Stand

Note 2: Low, mid, and high channels were measured, only the worst channel of each modulation was presented in this report.

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3.7. Setup Configuration

3.7.1. EUT Configuration for Power Line & Radiated Emission

3.7.2. EUT Configuration for Conducted Test Items

3.8. Operating Condition of EUT

Test programs "Realtek 11n 8723B PCIE WLAN MP Tool" for WLAN test and "Realtek Bluetooth MP Tool" for BLE test are used for enabling EUT WLAN function under continues transmitting and choosing data rate/ channel.

3.9. Description of Test Facility

Test Firm Name	:	**AUDIX Technology Corporation** **EMC Department** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Location & Facility	:	**No. 8 Shielded Room** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan **Semi-Anechoic Chamber** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan **Fully Anechoic Chamber** No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan IC Test Site Registration No.: 5183B-4 Renewal on August 31, 2015
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724
FCC OET Designation	:	TW1004 & TW1090

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3.10.Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conduction Test	150kHz~30MHz	±3.50dB
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 3.68dB
	Above 1GHz	± 5.82dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
6dB Bandwidth	± 0.05kHz
Maximum peak output power	± 0.33dB
Power spectral density	± 0.13dB
Conducted Emission Limitations	± 0.13dB

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4. MEASUREMENT EQUIPMENT LIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Test Receiver	R&S	ESR3	101774	2016. 02. 04	2017. 02. 03
2.	A.M.N.	R&S	ENV4200	825358/003	2016. 04. 21	2017. 04. 20
3.	L.I.S.N.	Kyoritsu	KNW-407	8-855-9	2015. 12. 23	2016. 12. 22
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2016. 01. 17	2017. 01. 16
5.	Test Software	Audix	e3	V.6.120424	N.C.R.	N.C.R.

4.2. Radiated Emission Measurement

4.2.1. Frequency Range 9kHz~1000MHz (Semi Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2015. 09. 14	2016. 09. 13
2.	Test Receiver	R & S	ESCS30	100338	2016. 06. 22	2017. 06. 21
3.	Amplifier	HP	8447D	2944A06305	2016. 02. 23	2017. 02. 22
4.	Bilog Antenna	CHASE	CBL6112D	33821	2016. 01. 30	2017. 01. 29
5.	Loop Antenna	R&S	HFH2-Z2	891847/27	2015. 12. 24	2016. 12. 23
6.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

4.2.2. Frequency Range Above 1GHz (Fully Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	2015. 08. 20	2016. 08. 19
2.	Amplifier	Sonoma	310N	187161	2016. 06. 14	2017. 06. 13
3.	2.4GHz Notch Filter	K&L	7NSL10-244 1.5E130.5-00	1	2016. 07. 27	2017. 07. 26
4.	Horn Antenna	ETS-Lindgren	3117	00135902	2016. 03. 05	2017. 03. 04
5.	Loop Antenna	R&S	HFH2-Z2	891847/27	2015. 12. 24	2016. 12. 23
6.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

4.3. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Spectrum Analyzer	Agilent	N9030A-526	MY53310269	2015. 11. 28	2016. 11. 27
2.	Power Meter	Anritsu	ML2495A	1145008	2015. 10. 23	2016. 10. 22
3.	Power Sensor	Anritsu	MA2411B	1126096	2015. 10. 23	2016. 10. 22

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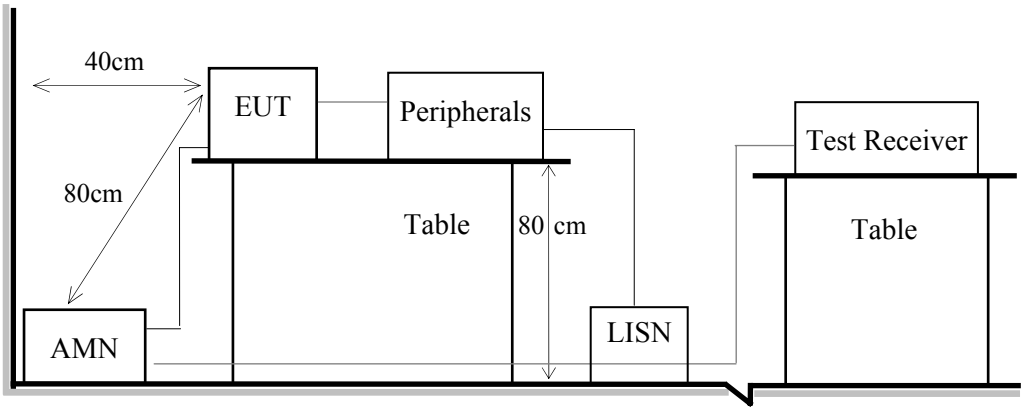
5. CONDUCTED EMISSION MEASUREMET

5.1. Block Diagram of Test Setup

Shielded Room Setup Diagram



Ground Plane

5.2. Power Line Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.
2.: The lower limit applies to the band edges.

5.3. Test Procedure

5.3.1. To set up the EUT as indicated in ANSI C 63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.

5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).

5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)

5.3.4. Checking frequency range from 150 kHz to 30 MHz and record the emission which does not have 20 dB below limit.

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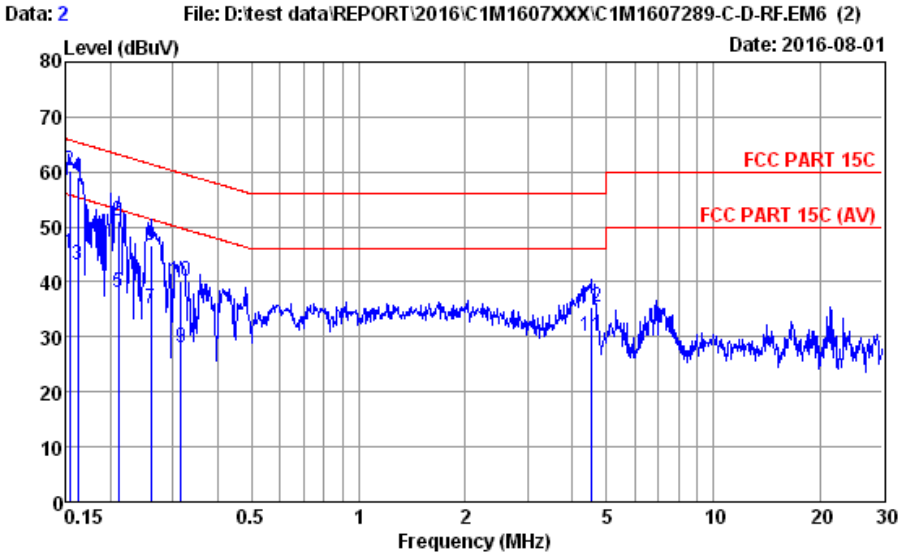
5.4. Conducted Emission Measurement Results

PASSED.

Test Date	2016/08/01	Temp./Hum.	28℃/48%
Test Voltage	AC 120V, 60Hz		



Site no. : No.8 Shielded Room
Data no. : 2
Condition : ENV4200 358 (H)
Phase : NEUTRAL
Limit : FCC PART 15C
Env. / Ins. : 28°C / 48% ESR3 (1774)
Engineer : Jemy
EUT : mPAD-7-CHT3-I
Power Rating : 120Vac/60Hz
Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.153	9.94	0.02	9.86	25.41	45.23	55.82	10.59	Average
2	0.153	9.94	0.02	9.86	40.43	60.25	65.82	5.57	QP
3	0.162	9.93	0.02	9.86	23.36	43.17	55.36	12.19	Average
4	0.162	9.93	0.02	9.86	39.13	58.94	65.36	6.42	QP
5	0.211	9.91	0.02	9.86	18.31	38.10	53.19	15.09	Average
6	0.211	9.91	0.02	9.86	31.37	51.16	63.19	12.03	QP
7	0.260	9.86	0.02	9.86	15.27	35.01	51.42	16.41	Average
8	0.260	9.86	0.02	9.86	27.03	46.77	61.42	14.65	QP
9	0.317	9.82	0.03	9.86	8.44	28.15	49.80	21.65	Average
10	0.317	9.82	0.03	9.86	20.36	40.07	59.80	19.73	QP
11	4.525	9.76	0.12	9.87	10.29	30.04	46.00	15.96	Average
12	4.525	9.76	0.12	9.87	15.78	35.53	56.00	20.47	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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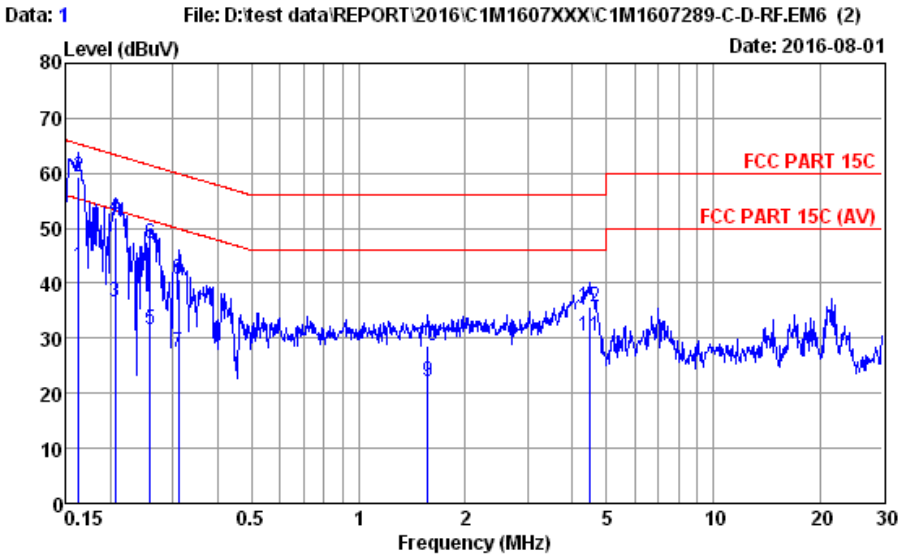
Test Date	2016/08/01	Temp./Hum.	28℃/48%
Test Voltage	AC 120V, 60Hz		



Site no. : No.8 Shielded Room
Condition : ENV4200 358 (H)
Limit : FCC PART 15C
Env. / Ins. : 28*C / 48% ESR3 (1774)
EUT : mPAD-7-CHT3-I
Power Rating : 120Vac/60Hz
Test Mode : Operating

Data no. : 1
Phase : LINE
Engineer : Jemy

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.162	10.07	0.02	9.86	23.02	42.97	55.34	12.37	Average
2	0.162	10.07	0.02	9.86	39.37	59.32	65.34	6.02	QP
3	0.206	10.08	0.02	9.86	16.77	36.73	53.36	16.63	Average
4	0.206	10.08	0.02	9.86	31.98	51.94	63.36	11.42	QP
5	0.259	10.04	0.02	9.86	11.72	31.64	51.47	19.83	Average
6	0.259	10.04	0.02	9.86	27.37	47.29	61.47	14.18	QP
7	0.312	10.02	0.03	9.86	7.53	27.44	49.93	22.49	Average
8	0.312	10.02	0.03	9.86	20.75	40.66	59.93	19.27	QP
9	1.568	9.97	0.07	9.86	2.14	22.04	46.00	23.96	Average
10	1.568	9.97	0.07	9.86	8.66	28.56	56.00	27.44	QP
11	4.501	10.04	0.12	9.87	10.51	30.54	46.00	15.46	Average
12	4.501	10.04	0.12	9.87	15.64	35.67	56.00	20.33	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.
2. If the average limit is met when useing a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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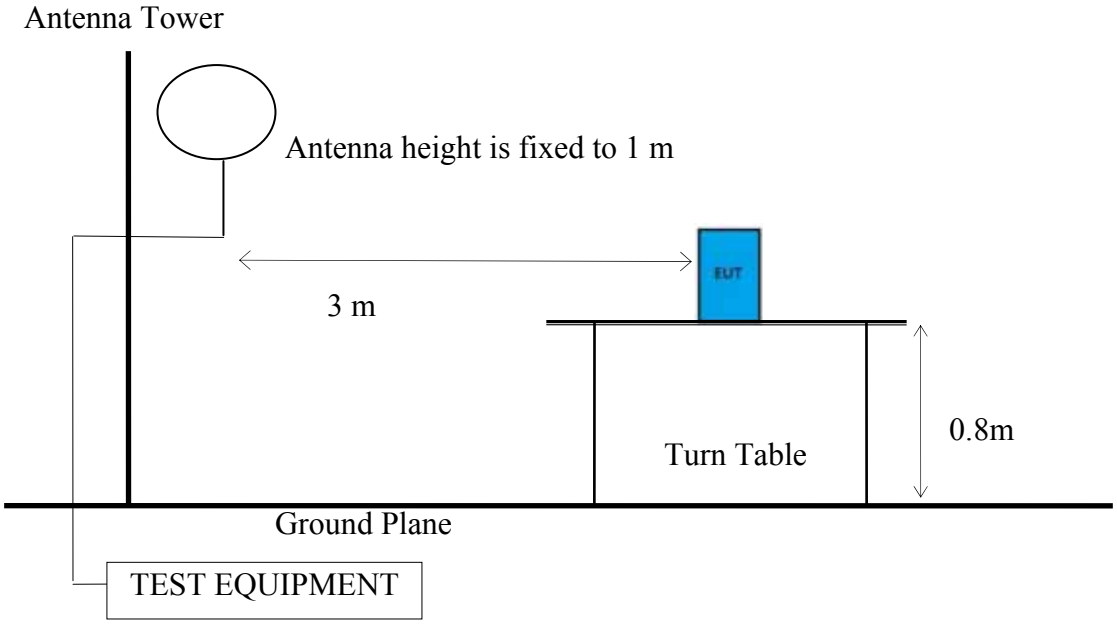
6. RADIATED EMISSION MEASUREMENT

6.1. Block Diagram of Test Setup

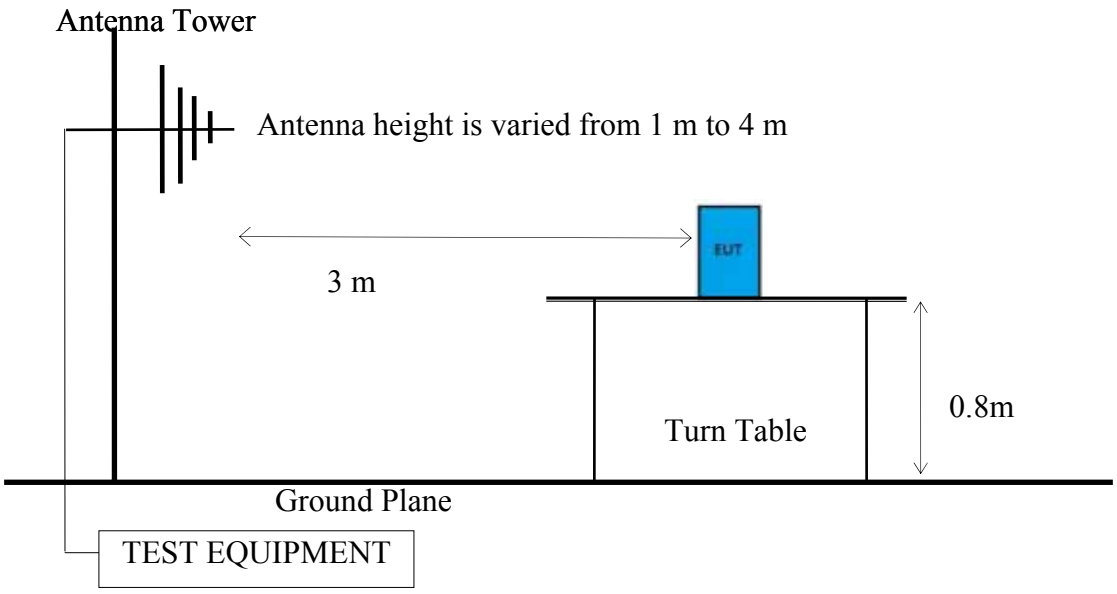
6.1.1. Block Diagram of connection between EUT and simulators

Indicated as section 3.7

6.1.2. Semi Anechoic Chamber (3m) Setup Diagram for 9kHz-30MHz



6.1.3. Semi Anechoic Chamber (3m) Setup Diagram for 30-1000 MHz



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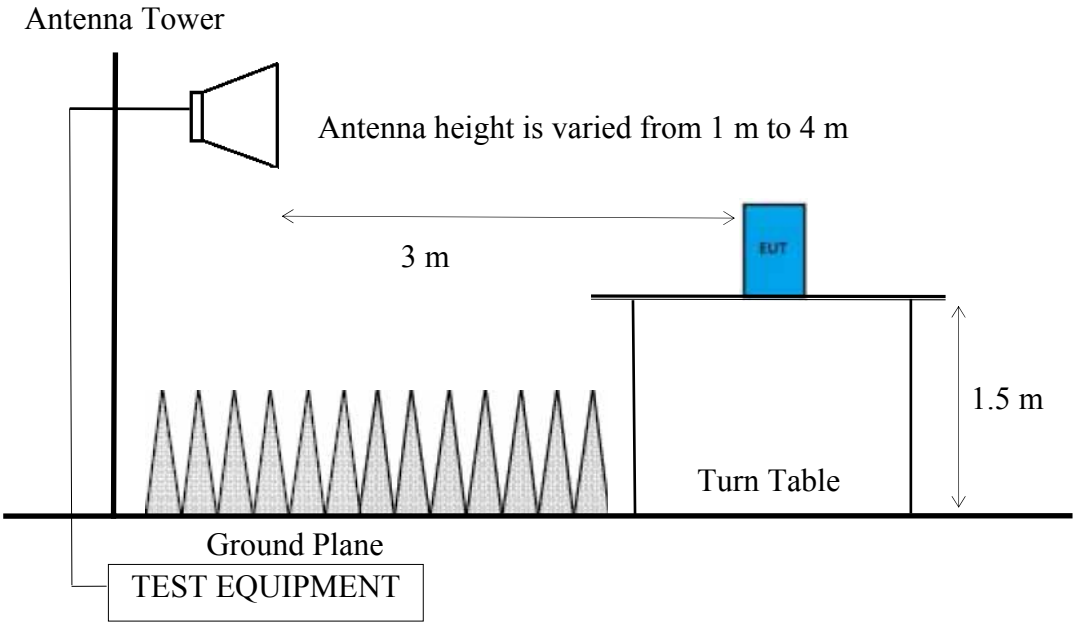
6.1.4. Fully Anechoic Chamber (3m) Setup Diagram for above 1GHz



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6.2. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) dBμV/m = 20 log (μV/m)
(2) The tighter limit applies to the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(4) Fundamental and emission fall within operation band are exempted from this section.
(5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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6.3. Test Procedure

Frequency Range 9kHz~30MHz:
The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

(1) RBW = 9kHz with peak and average detector.
(2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 40GHz:
The EUT setup on the turn find table which has 80 cm (for 30-1000 MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

Frequency below 1 GHz:
Spectrum Analyzer is used for pre-testing with following setting:

(1) RBW = 120KHz
(2) VBW ≥ 3 x RBW.
(3) Detector = Peak.
(4) Sweep time = auto.
(5) Trace mode = max hold.
(6) Allow sweeps to continue until the trace stabilizes.
(7) When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

Frequency above 1GHz to 10th harmonic:
Peak Detector:

(1) RBW = 1MHz
(2) VBW ≥ 3 x RBW.
(3) Detector = Peak.
(4) Sweep time = auto.
(5) Trace mode = max hold.
(6) Allow sweeps to continue until the trace stabilizes.
(7) When peak-detected value is lower than limit that the measurement using the average detector is not required. Otherwise using average for finally measurement.

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Average Detector:

■**Option 1:**

(1) RBW = 1MHz

(2) VBW ≥ 1/ T.

Modulation Type	T (ms)	1/ T (kHz)	VBW Setting (kHz)
802.11b	N/A	N/A	10 Hz
802.11g	N/A	N/A	10 Hz
802.11n-HT20	N/A	N/A	10 Hz
802.11n-HT40	N/A	N/A	10 Hz
BLE	N/A	N/A	10 Hz

N/A: 1/ T is not implemented when duty cycle presented in section 3.6 is ≥98 %.

(1) Detector = Peak.

(2) Sweep time = auto.

(3) Trace mode = max hold.

(4) Allow sweeps to continue until the trace stabilizes.

☐**Option 2:**

Average Emission Level= Peak Emission Level+ D.C.C.F.

6.4. Measurement Result Explanation

■Peak Emission Level=Antenna Factor + Cable Loss + Meter Reading

■Average Emission Level l=Antenna Factor + Cable Loss + Meter Reading

☐Average Emission Level= Peak Emission Level+ DCCF

Duty Cycle Correction Factor (DCCF)= 20log (TX_{on}/TX_{on+off}) presented in section 3.5

☐ERP= Peak Emission Level-95.2dB-2.14dB

6.5. Test Results

PASSED.

Test Date	2016/08/02	Temp./Hum.	22℃/58%
Test Voltage	DC 3.7V		

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6.5.1. Emissions within Restricted Frequency Bands

6.5.1.1. Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

6.5.1.2. Frequency 30MHz~1000MHz

Mode	802.11b	Frequency	TX 2412MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
30.97	20.57	1.22	0.74	22.53	40.00	17.47	Peak
400.54	15.95	5.56	6.78	28.29	46.00	17.71	Peak
500.45	17.15	6.43	8.40	31.98	46.00	14.02	Peak
800.18	19.60	7.60	12.48	39.68	46.00	6.32	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
30.97	20.57	1.22	1.63	23.42	40.00	16.58	Peak
101.78	12.04	2.29	5.88	20.21	43.50	23.29	Peak
600.36	18.41	6.75	7.17	32.33	46.00	13.67	Peak
800.18	19.60	7.60	7.08	34.28	46.00	11.72	Peak

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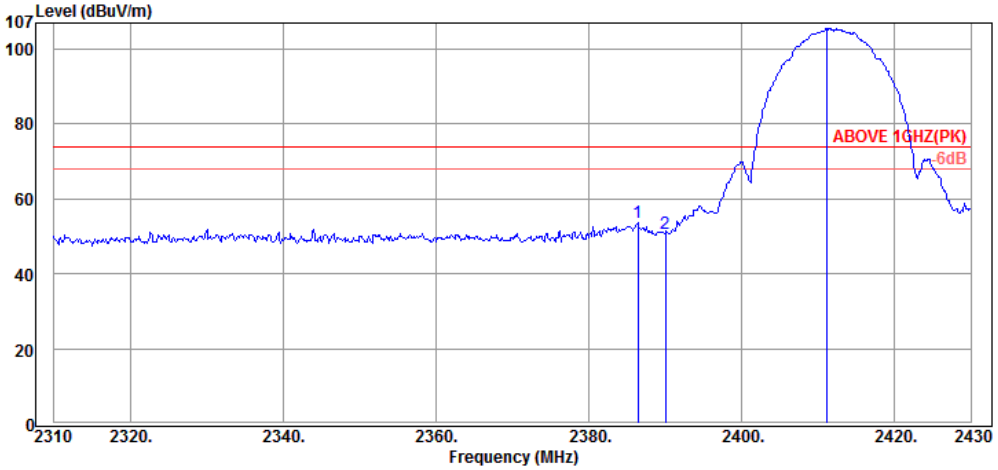
6.5.2. Frequency Above 1 GHz to 10th harmonics

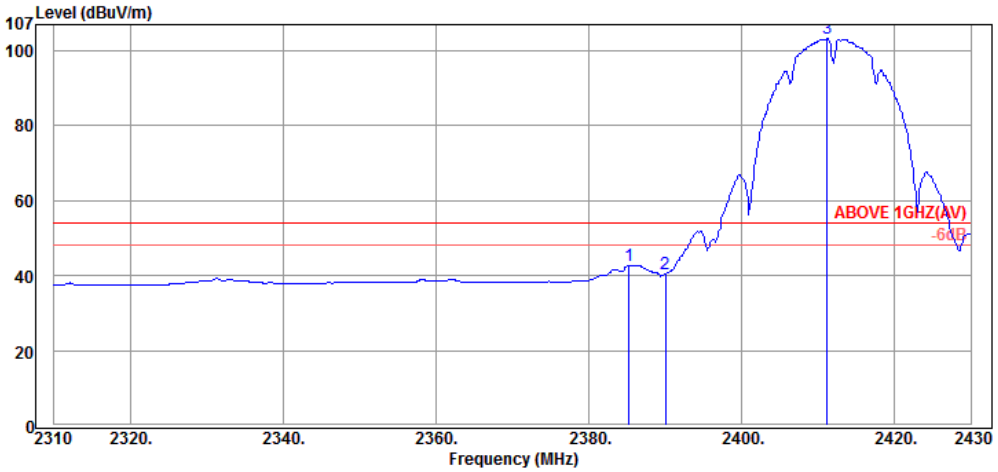
Band Edge:

Mode	802.11b	Frequency	TX 2412MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2386.44	32.16	6.07	15.49	53.72	74.00	20.28	Peak
2390.04	32.16	6.08	12.46	50.70	74.00	23.30	Peak
2411.16	32.18	6.11	67.15	105.44	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2385.24	32.13	6.07	4.48	42.68	54.00	11.32	Average
2390.04	32.16	6.08	2.18	40.42	54.00	13.58	Average
2411.16	32.18	6.11	65.03	103.32	---	---	Average

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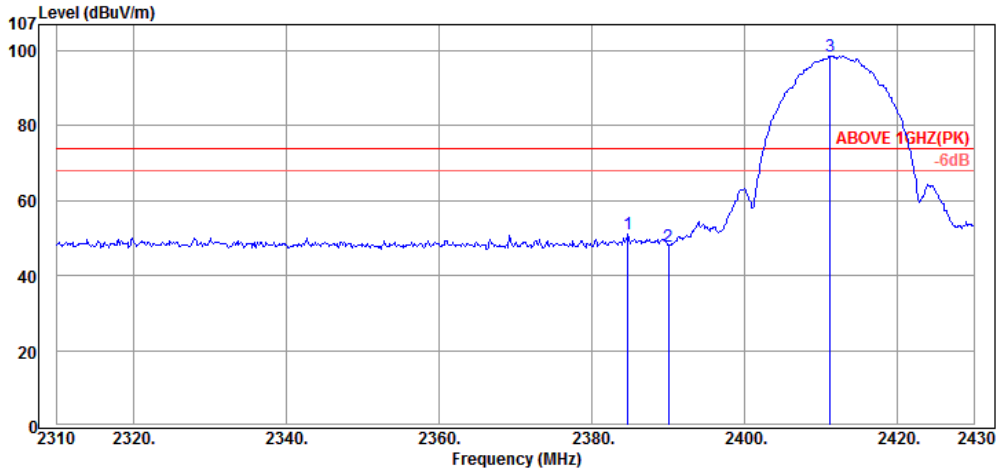
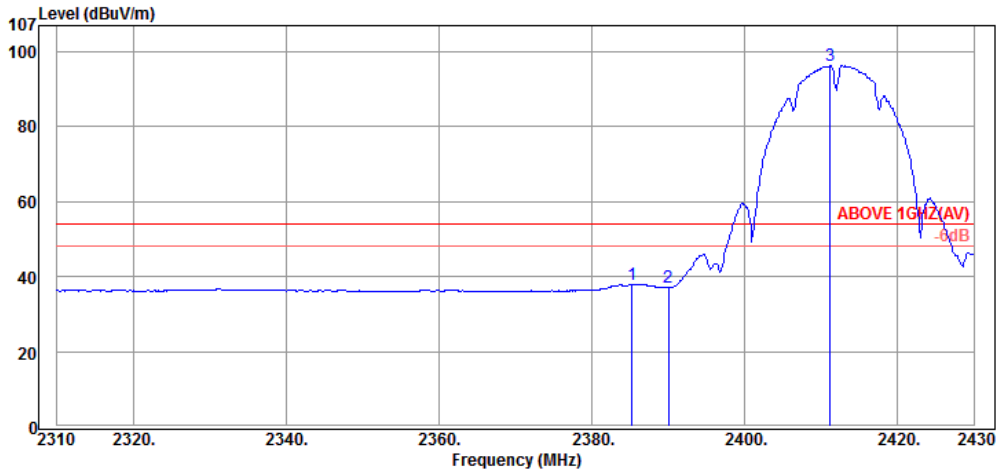
Mode	802.11b	Frequency	TX 2412MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2384.76	32.13	6.07	12.90	51.10	74.00	22.90	Peak
2390.04	32.16	6.08	9.74	47.98	74.00	26.02	Peak
2411.16	32.18	6.11	60.23	98.52	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2385.24	32.13	6.07	-0.18	38.02	54.00	15.98	Average
2390.04	32.16	6.08	-1.18	37.06	54.00	16.94	Average
2411.16	32.18	6.11	58.14	96.43	---	---	Average

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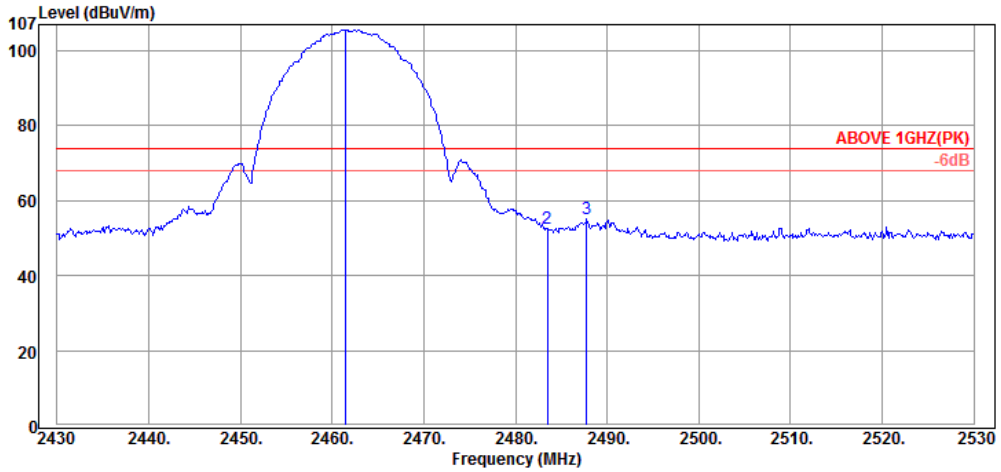
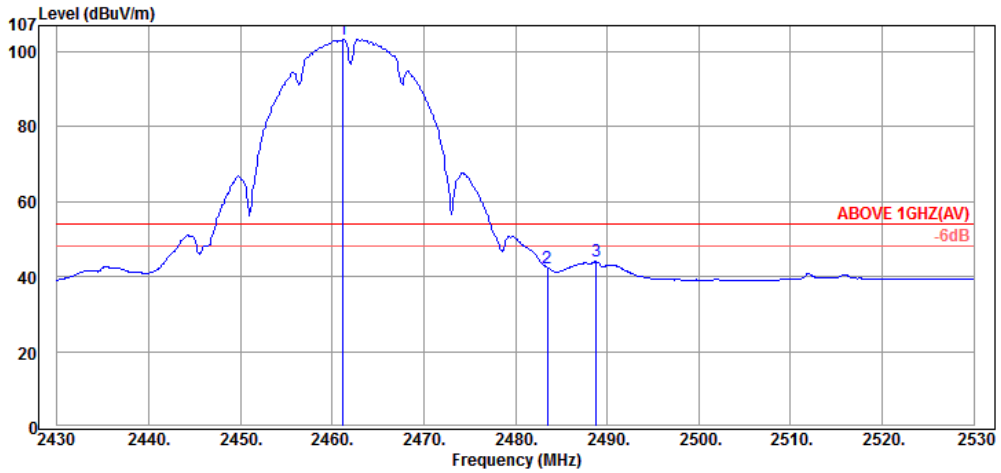


Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2461.50	32.25	6.16	67.15	105.56	---	---	Peak
2483.50	32.28	6.19	14.15	52.62	74.00	21.38	Peak
2487.80	32.30	6.19	16.67	55.16	74.00	18.84	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2461.20	32.25	6.16	65.07	103.48	---	---	Average
2483.50	32.28	6.19	3.94	42.41	54.00	11.59	Average
2488.80	32.30	6.19	5.49	43.98	54.00	10.02	Average

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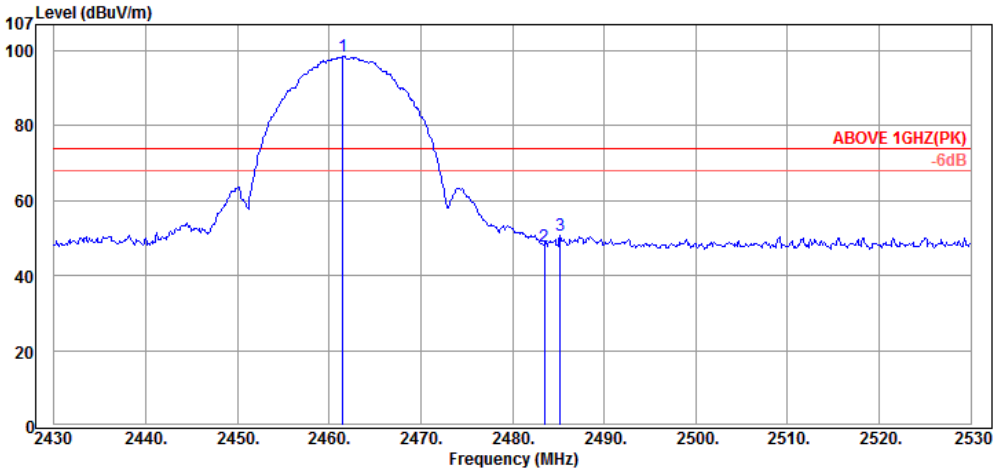
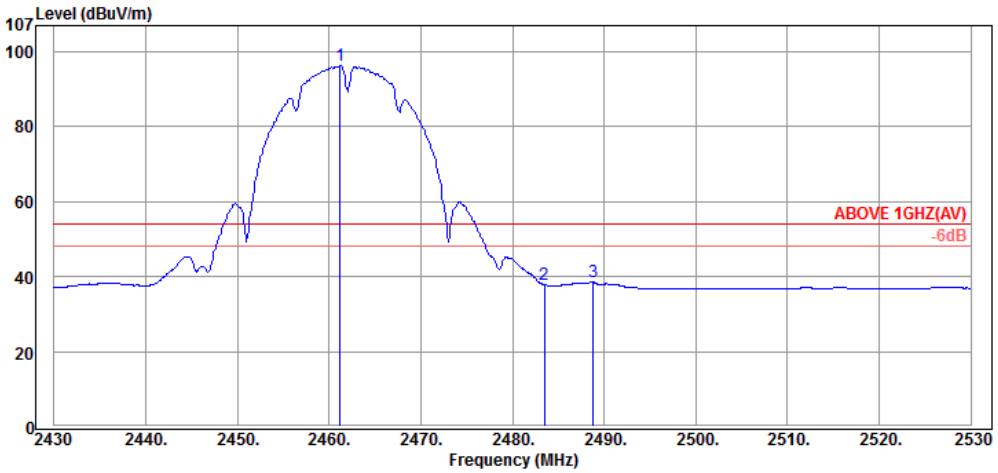
Mode	802.11b	Frequency	TX 2462MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2461.50	32.25	6.16	60.01	98.42	---	---	Peak
2483.50	32.28	6.19	9.44	47.91	74.00	26.09	Peak
2485.20	32.28	6.19	12.27	50.74	74.00	23.26	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2461.20	32.25	6.16	57.88	96.29	---	---	Average
2483.50	32.28	6.19	-0.59	37.88	54.00	16.12	Average
2488.80	32.30	6.19	-0.02	38.47	54.00	15.53	Average

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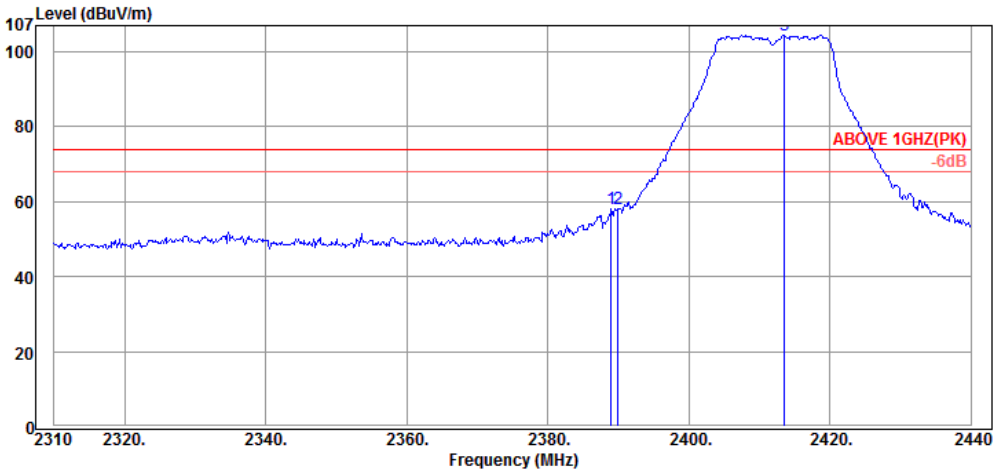
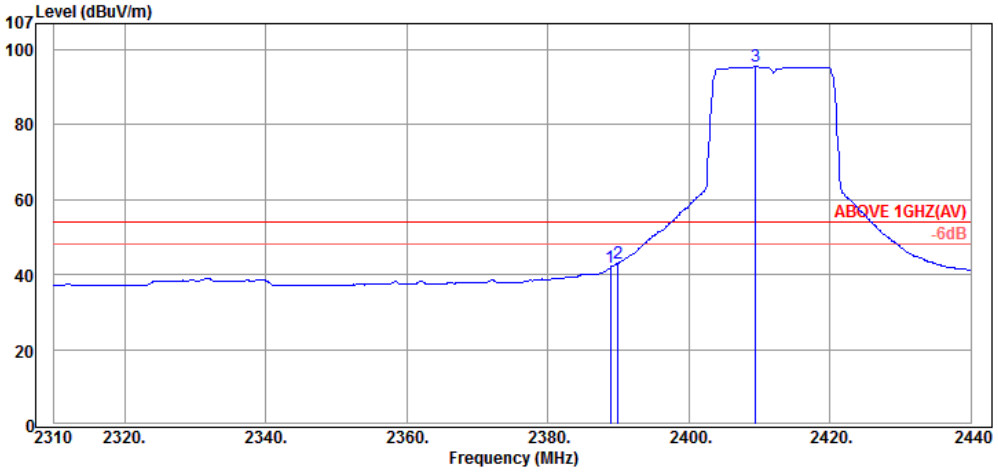
Mode	802.11g	Frequency	TX 2412MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.04	32.16	6.08	19.79	58.03	74.00	15.97	Peak
2389.95	32.16	6.08	19.91	58.15	74.00	15.85	Peak
2413.61	32.18	6.11	66.24	104.53	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.91	32.16	6.08	3.62	41.86	54.00	12.14	Average
2389.95	32.16	6.08	4.78	43.02	54.00	10.98	Average
2409.45	32.18	6.10	57.25	95.53	---	---	Average

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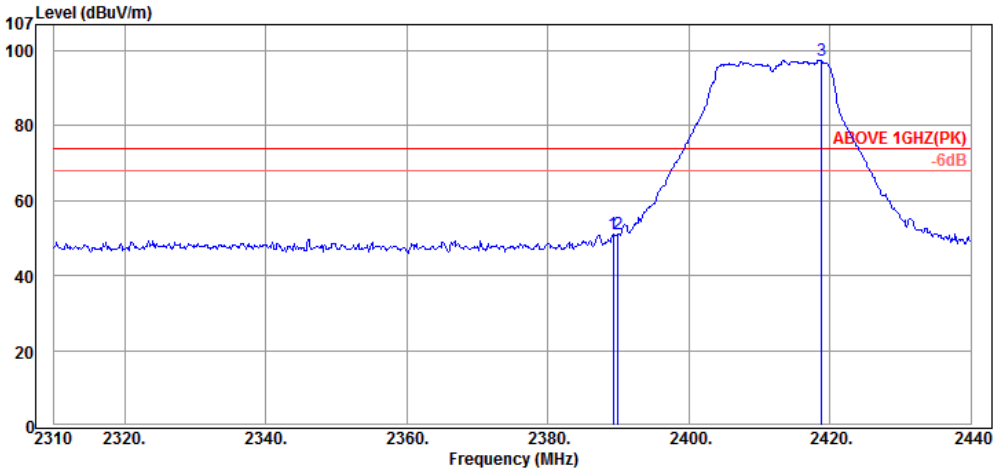
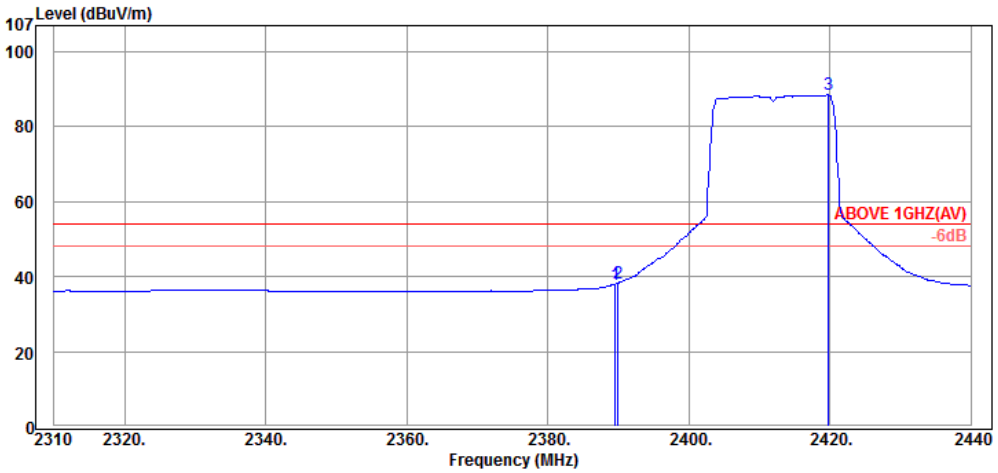
Mode	802.11g	Frequency	TX 2412MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.30	32.16	6.08	12.73	50.97	74.00	23.03	Peak
2389.95	32.16	6.08	12.81	51.05	74.00	22.95	Peak
2418.81	32.18	6.12	59.20	97.50	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.56	32.16	6.08	-0.23	38.01	54.00	15.99	Average
2389.95	32.16	6.08	0.05	38.29	54.00	15.71	Average
2419.85	32.20	6.12	50.12	88.44	---	---	Average

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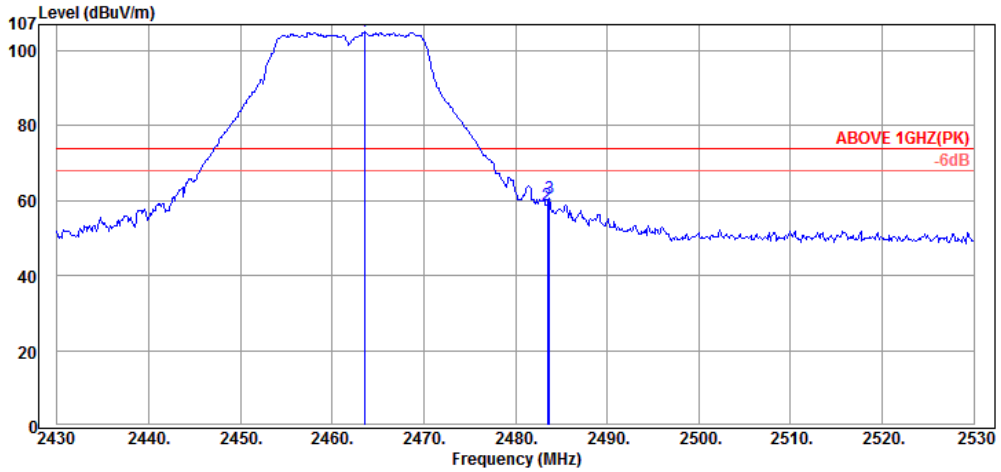
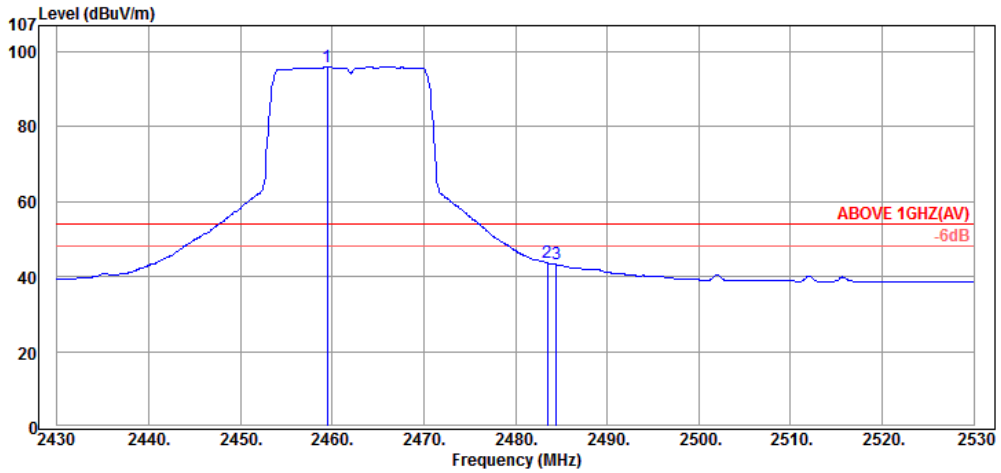
Mode	802.11g	Frequency	TX 2462MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2463.50	32.25	6.16	66.62	105.03	---	---	Peak
2483.50	32.28	6.19	20.20	58.67	74.00	15.33	Peak
2483.70	32.28	6.19	22.16	60.63	74.00	13.37	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2459.50	32.25	6.16	57.60	96.01	---	---	Average
2483.50	32.28	6.19	5.21	43.68	54.00	10.32	Average
2484.50	32.28	6.19	4.74	43.21	54.00	10.79	Average

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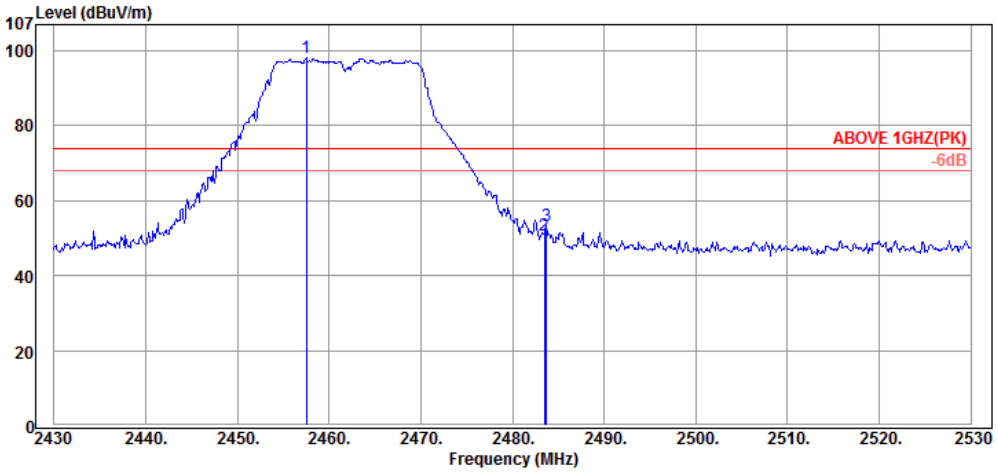
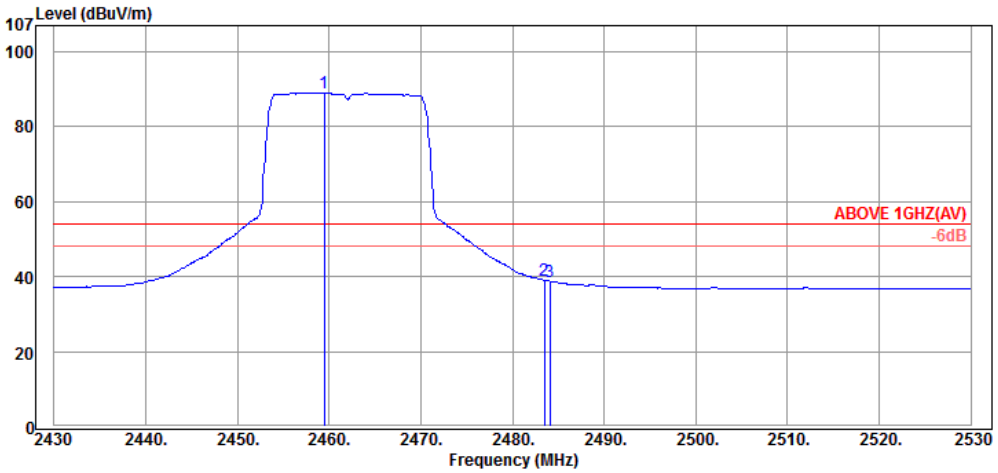
Mode	802.11g	Frequency	TX 2462MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2457.50	32.25	6.15	59.68	98.08	---	---	Peak
2483.50	32.28	6.19	12.14	50.61	74.00	23.39	Peak
2483.70	32.28	6.19	14.94	53.41	74.00	20.59	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2459.50	32.25	6.16	50.74	89.15	---	---	Average
2483.50	32.28	6.19	0.58	39.05	54.00	14.95	Average
2484.10	32.28	6.19	0.30	38.77	54.00	15.23	Average

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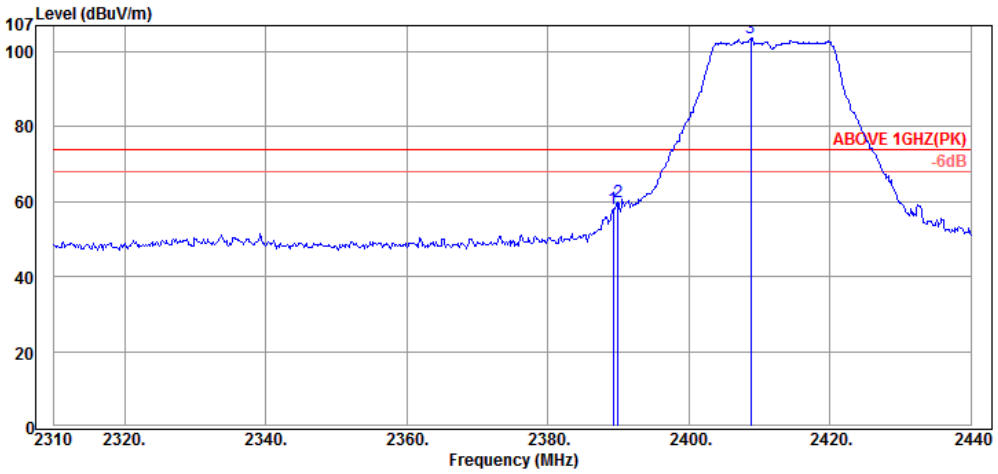
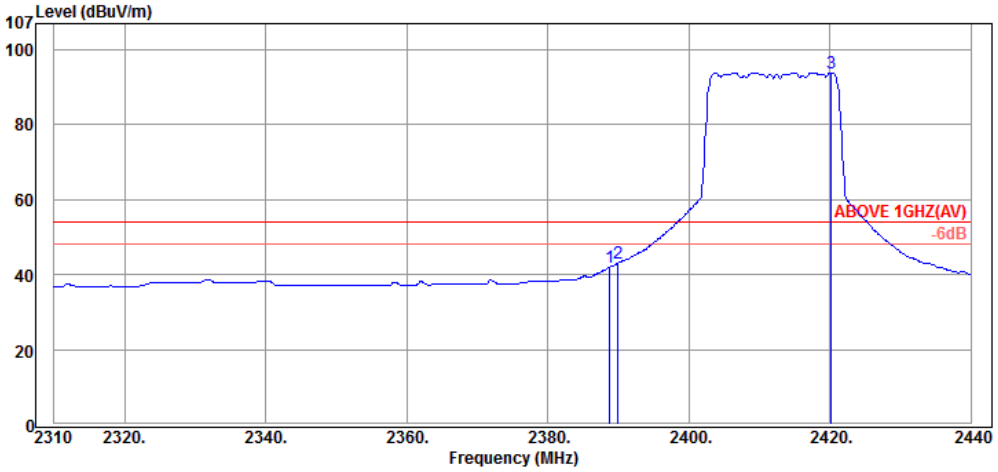
Mode	802.11n-HT20	Frequency	TX 2412MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.30	32.16	6.08	19.86	58.10	74.00	15.90	Peak
2389.95	32.16	6.08	21.72	59.96	74.00	14.04	Peak
2408.80	32.18	6.10	65.25	103.53	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.78	32.16	6.08	3.77	42.01	54.00	11.99	Average
2389.95	32.16	6.08	4.85	43.09	54.00	10.91	Average
2420.24	32.20	6.12	55.62	93.94	---	---	Average

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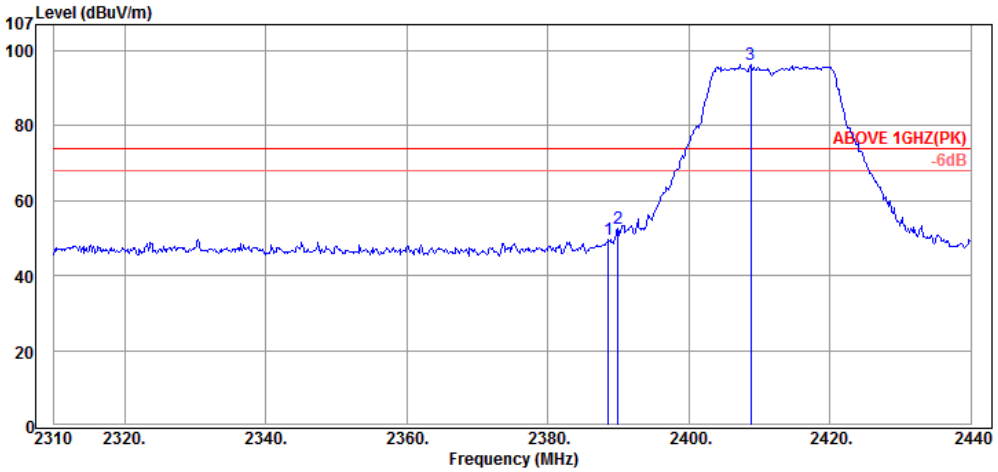
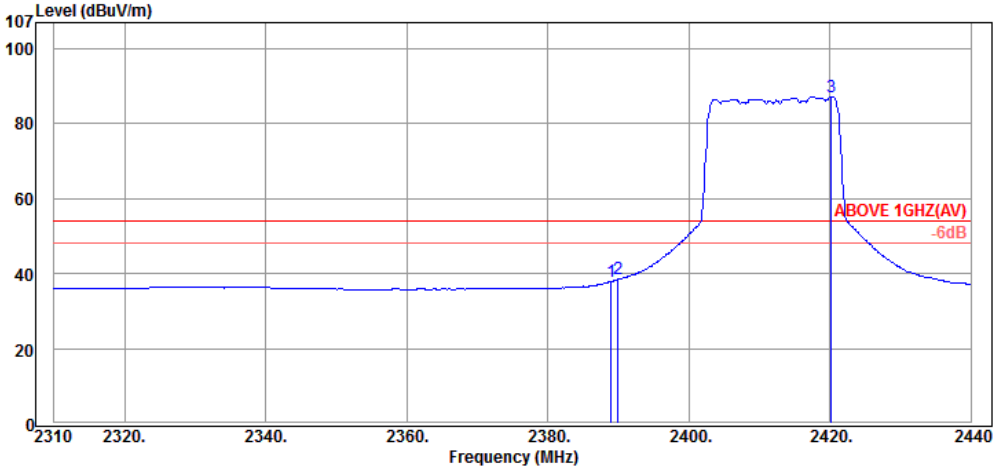
Mode	802.11n-HT20	Frequency	TX 2412MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.65	32.16	6.08	11.52	49.76	74.00	24.24	Peak
2389.95	32.16	6.08	14.18	52.42	74.00	21.58	Peak
2408.80	32.18	6.10	57.97	96.25	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2389.04	32.16	6.08	-0.28	37.96	54.00	16.04	Average
2389.95	32.16	6.08	0.21	38.45	54.00	15.55	Average
2420.24	32.20	6.12	48.84	87.16	---	---	Average

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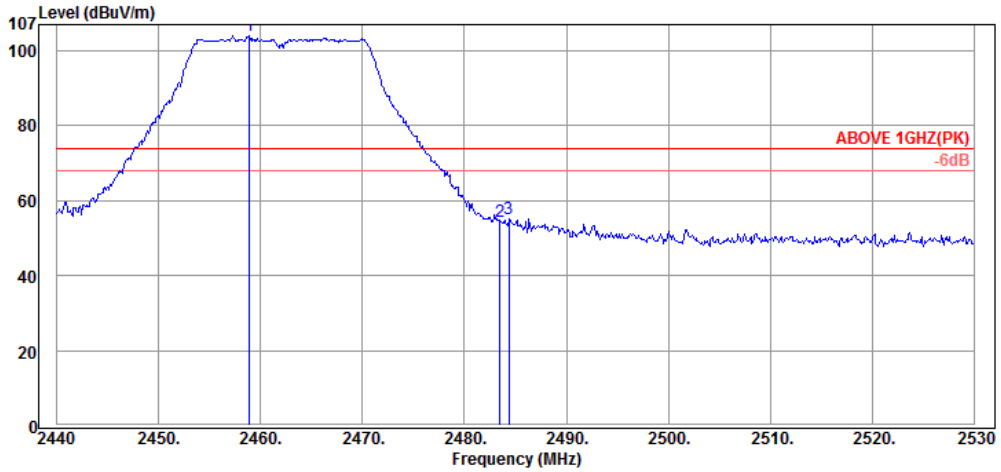
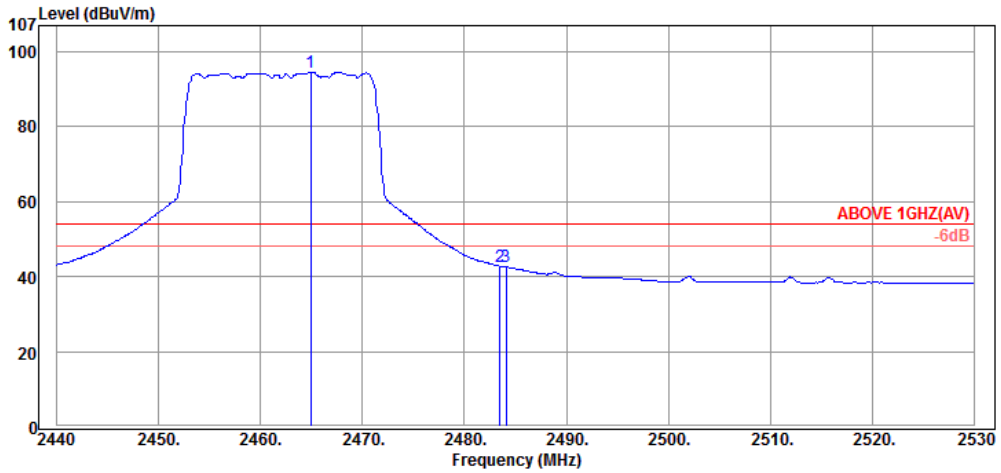
Mode	802.11n-HT20	Frequency	TX 2462MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2458.90	32.25	6.16	65.72	104.13	---	---	Peak
2483.47	32.28	6.19	16.12	54.59	74.00	19.41	Peak
2484.37	32.28	6.19	16.62	55.09	74.00	18.91	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2464.93	32.25	6.16	56.08	94.49	---	---	Average
2483.47	32.28	6.19	4.30	42.77	54.00	11.23	Average
2484.10	32.28	6.19	4.12	42.59	54.00	11.41	Average

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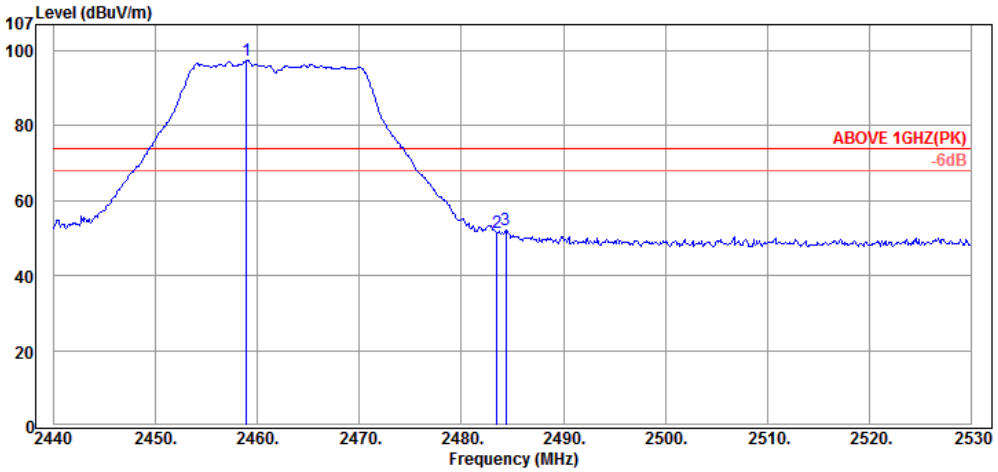
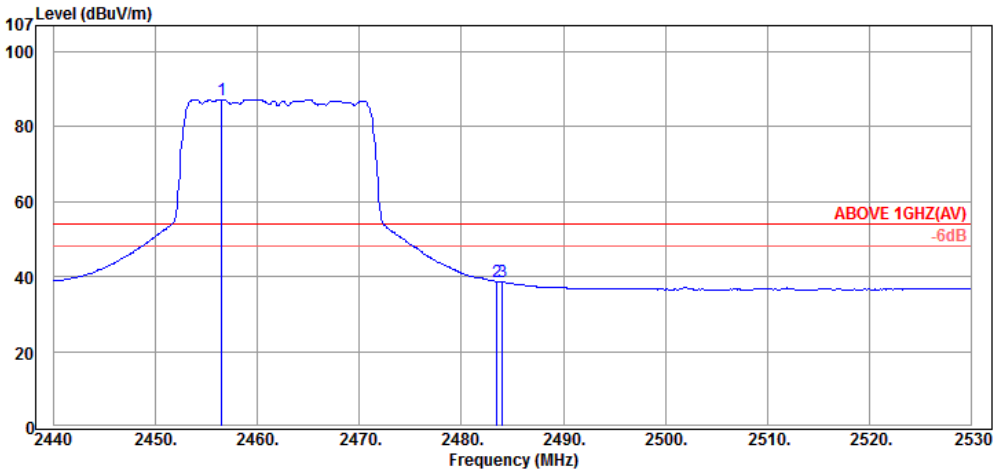
Mode	802.11n-HT20	Frequency	TX 2462MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2458.90	32.25	6.16	58.87	97.28	---	---	Peak
2483.47	32.28	6.19	13.16	51.63	74.00	22.37	Peak
2484.37	32.28	6.19	13.78	52.25	74.00	21.75	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2456.47	32.25	6.15	48.90	87.30	---	---	Average
2483.47	32.28	6.19	0.23	38.70	54.00	15.30	Average
2484.01	32.28	6.19	0.09	38.56	54.00	15.44	Average

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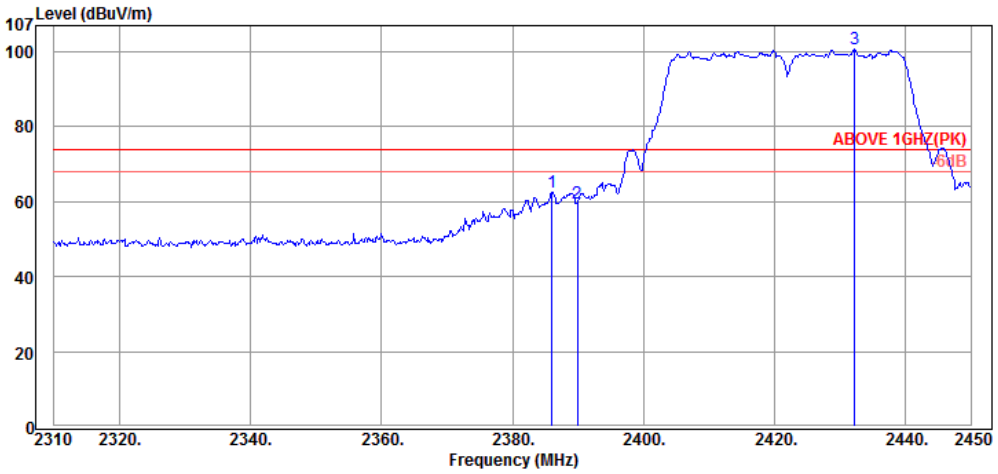
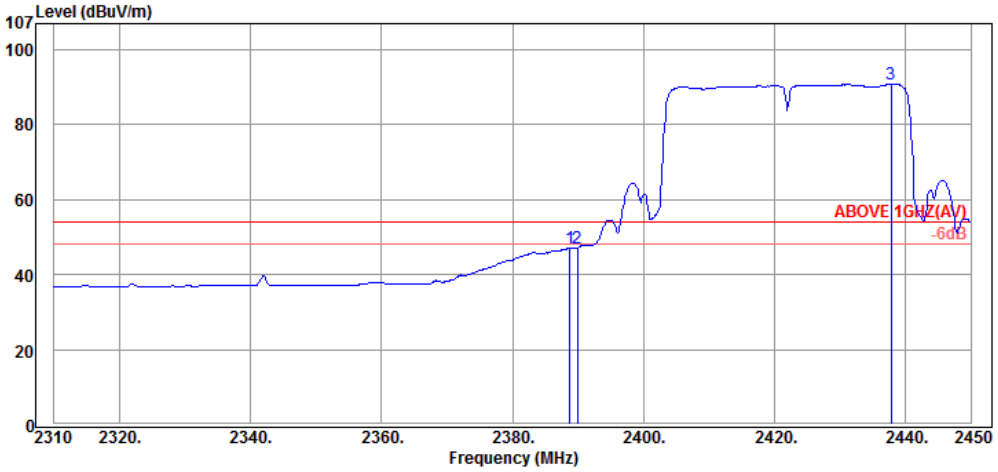
Mode	802.11n-HT40	Frequency	TX 2422MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2386.02	32.16	6.07	24.39	62.62	74.00	11.38	Peak
2389.94	32.16	6.08	21.22	59.46	74.00	14.54	Peak
2432.22	32.20	6.13	62.24	100.57	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2388.82	32.16	6.08	8.96	47.20	54.00	6.80	Average
2389.94	32.16	6.08	8.80	47.04	54.00	6.96	Average
2437.82	32.23	6.13	52.47	90.83	---	---	Average

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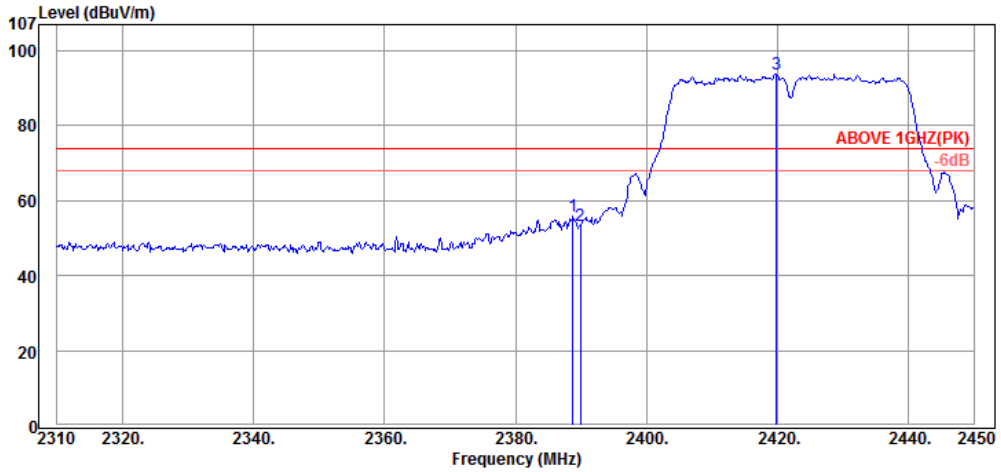
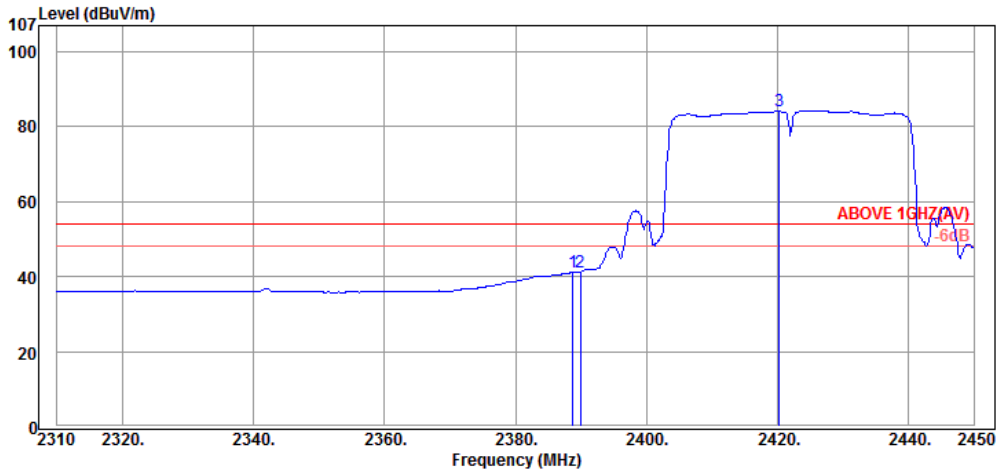
Mode	802.11n-HT40	Frequency	TX 2422MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2388.82	32.16	6.08	17.71	55.95	74.00	18.05	Peak
2389.94	32.16	6.08	15.03	53.27	74.00	20.73	Peak
2419.90	32.20	6.12	55.61	93.93	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2388.82	32.16	6.08	3.05	41.29	54.00	12.71	Average
2389.94	32.16	6.08	3.04	41.28	54.00	12.72	Average
2420.32	32.20	6.12	45.84	84.16	---	---	Average

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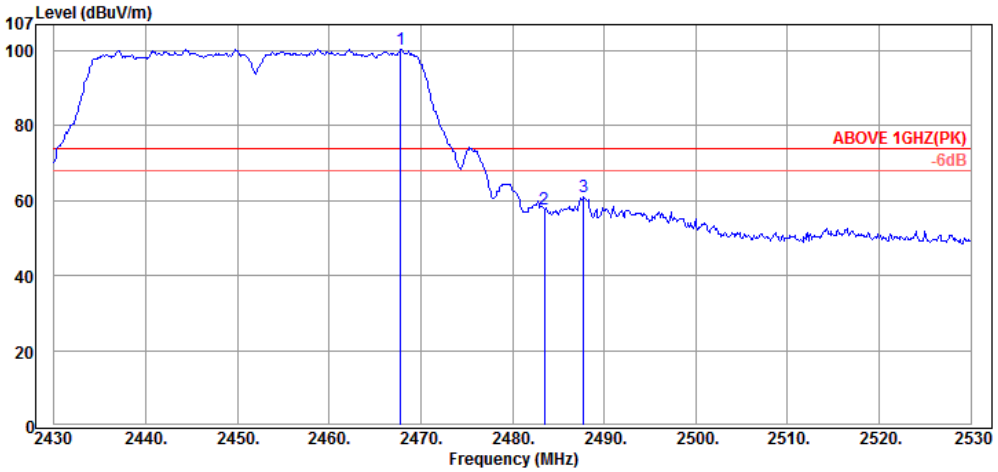
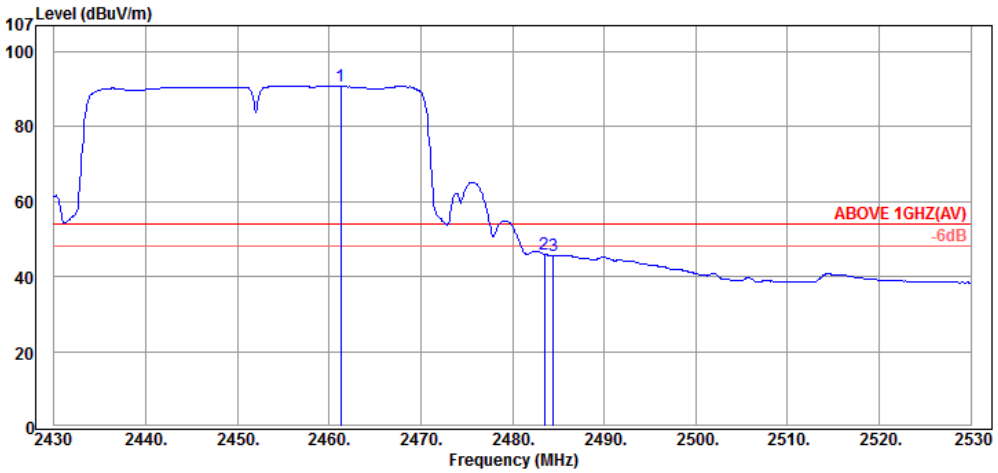
Mode	802.11n-HT40	Frequency	TX 2452MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2467.80	32.25	6.17	61.98	100.40	---	---	Peak
2483.50	32.28	6.19	19.39	57.86	74.00	16.14	Peak
2487.80	32.30	6.19	22.60	61.09	74.00	12.91	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2461.30	32.25	6.16	52.54	90.95	---	---	Average
2483.50	32.28	6.19	7.52	45.99	54.00	8.01	Average
2484.50	32.28	6.19	7.22	45.69	54.00	8.31	Average

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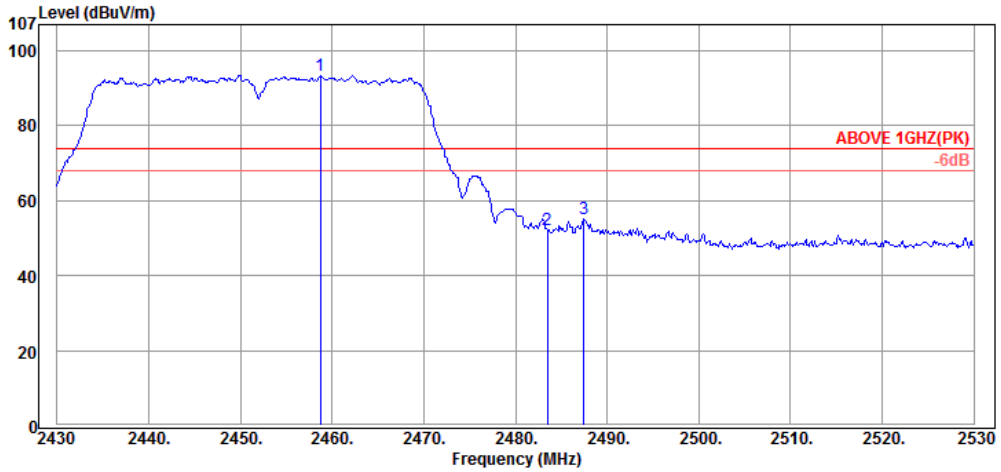
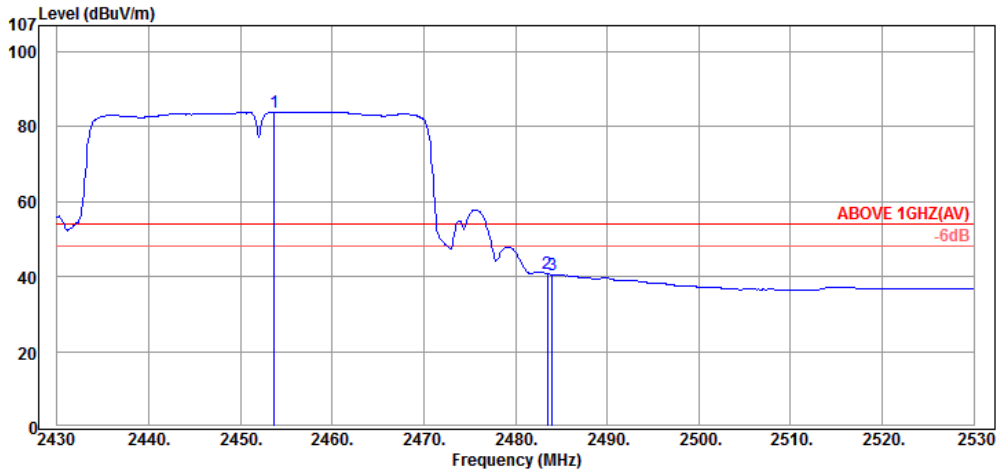
Mode	802.11n-HT40	Frequency	TX 2452MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2458.70	32.25	6.16	55.08	93.49	---	---	Peak
2483.50	32.28	6.19	13.79	52.26	74.00	21.74	Peak
2487.50	32.30	6.19	16.77	55.26	74.00	18.74	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2453.70	32.25	6.15	45.61	84.01	---	---	Average
2483.50	32.28	6.19	2.28	40.75	54.00	13.25	Average
2484.00	32.28	6.19	2.04	40.51	54.00	13.49	Average

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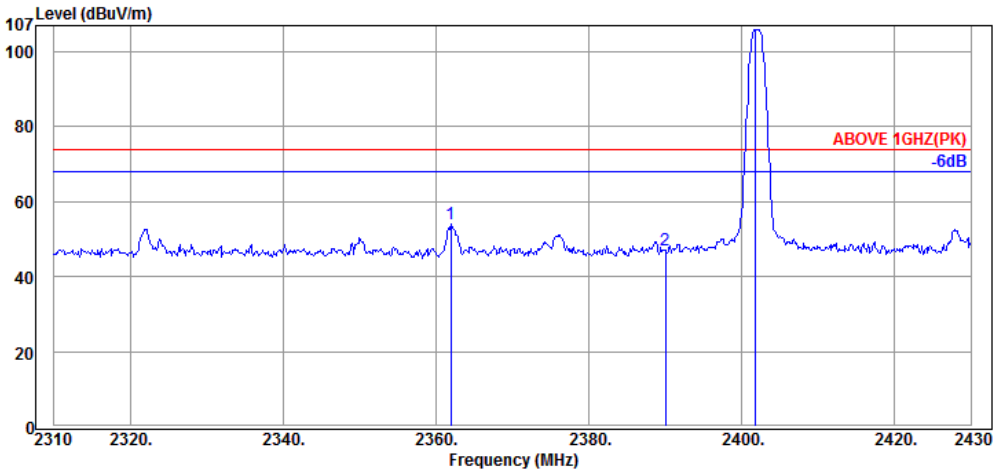
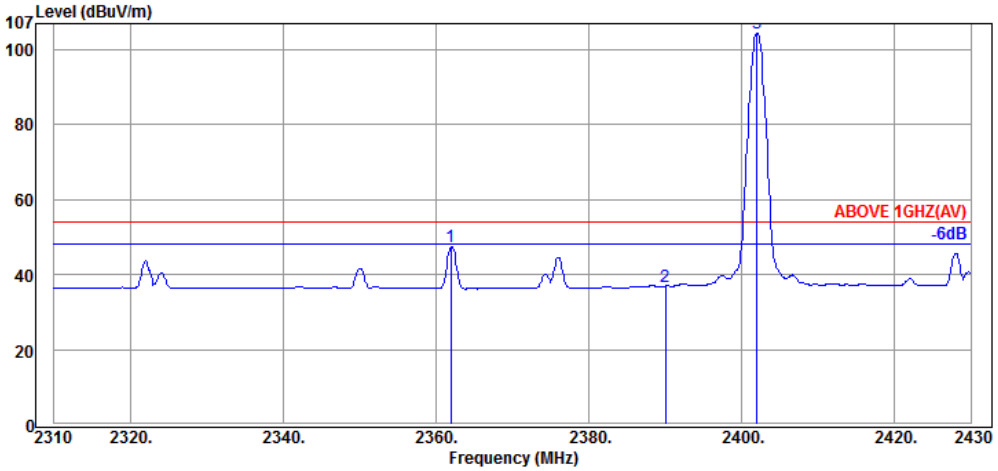
Mode	BLE	Frequency	TX 2402MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2361.96	32.11	6.04	15.80	53.95	74.00	20.05	Peak
2390.04	32.16	6.08	8.65	46.89	74.00	27.11	Peak
2401.80	32.16	6.09	67.65	105.90	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
2361.96	32.11	6.04	9.41	47.56	54.00	6.44	Average
2390.04	32.16	6.08	-1.33	36.91	54.00	17.09	Average
2402.04	32.16	6.09	66.30	104.55	---	---	Average

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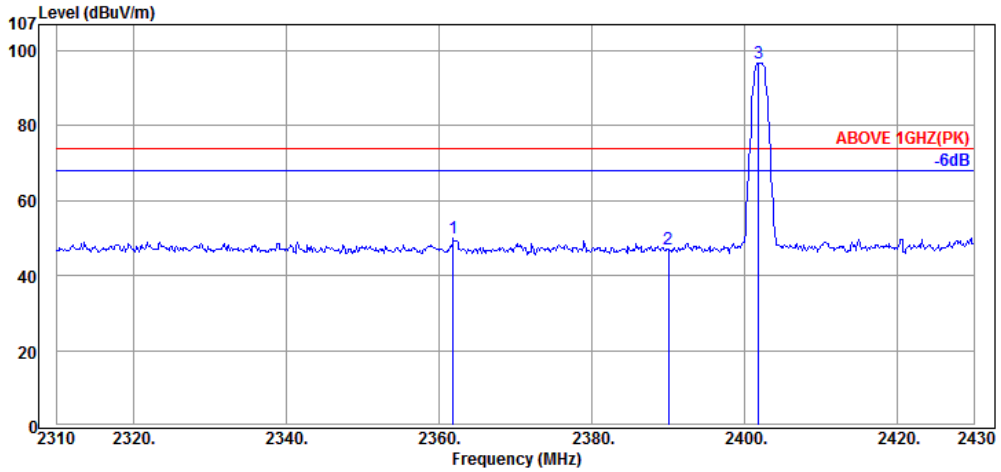
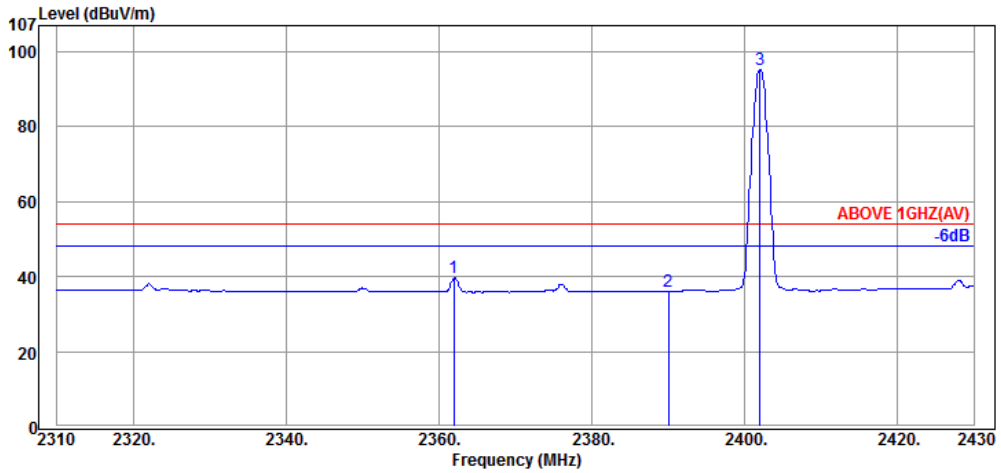
Mode	BLE	Frequency	TX 2402MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2361.84	32.11	6.04	11.75	49.90	74.00	24.10	Peak
2390.04	32.16	6.08	8.86	47.10	74.00	26.90	Peak
2401.80	32.16	6.09	58.63	96.88	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2361.96	32.11	6.04	1.46	39.61	54.00	14.39	Average
2390.04	32.16	6.08	-2.14	36.10	54.00	17.90	Average
2402.04	32.16	6.09	57.16	95.41	---	---	Average

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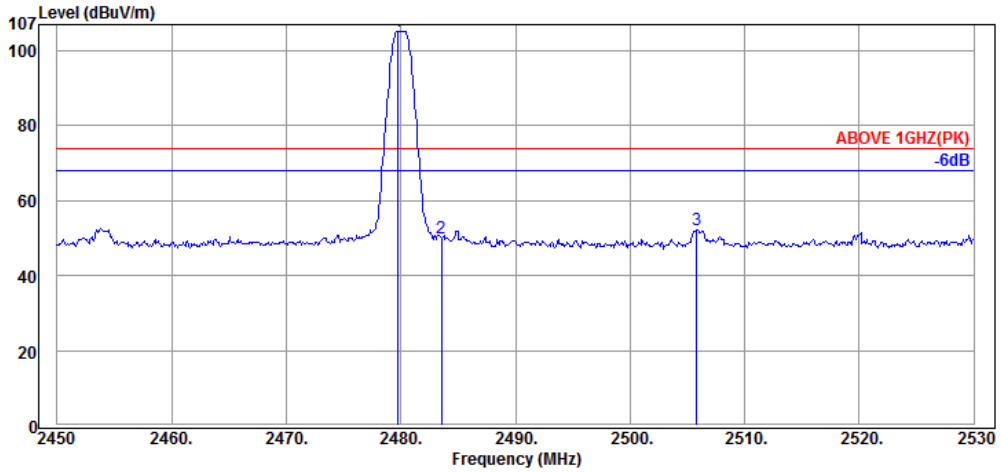
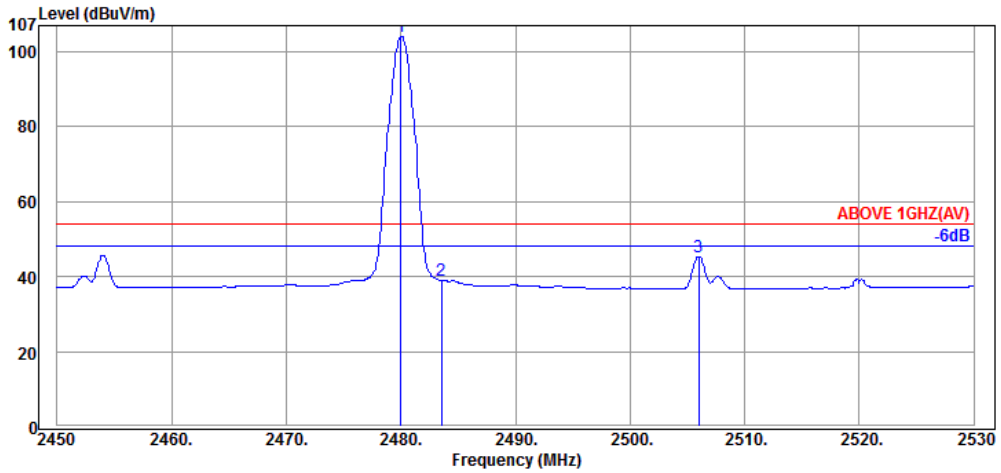
Mode	BLE	Frequency	TX 2480MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2479.76	32.28	6.18	66.87	105.33	---	---	Peak
2483.52	32.28	6.19	11.61	50.08	74.00	23.92	Peak
2505.84	32.32	6.21	13.76	52.29	74.00	21.71	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2480.00	32.28	6.18	65.47	103.93	---	---	Average
2483.52	32.28	6.19	0.50	38.97	54.00	15.03	Average
2506.00	32.32	6.21	6.83	45.36	54.00	8.64	Average

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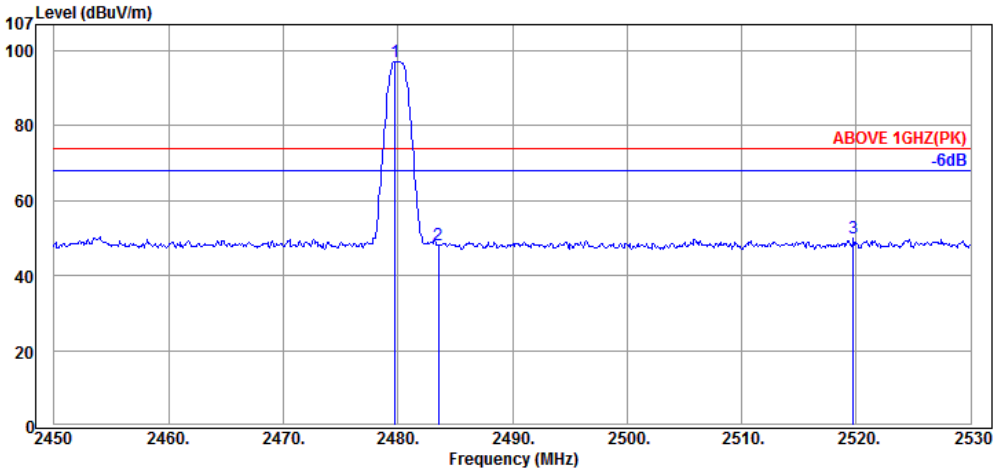
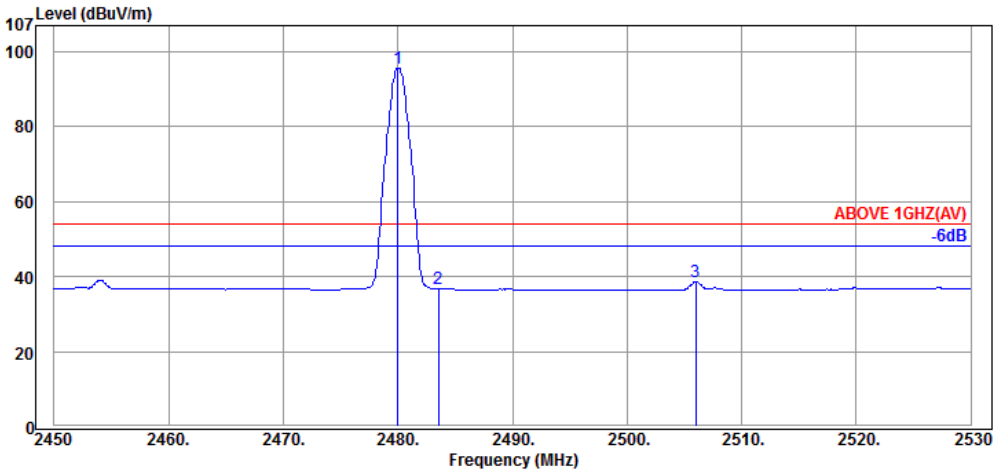
Mode	BLE	Frequency	TX 2480MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2479.76	32.28	6.18	58.61	97.07	---	---	Peak
2483.52	32.28	6.19	9.55	48.02	74.00	25.98	Peak
2519.76	32.32	6.23	11.56	50.11	74.00	23.89	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
2480.00	32.28	6.18	57.23	95.69	---	---	Average
2483.52	32.28	6.19	-1.79	36.68	54.00	17.32	Average
2506.00	32.32	6.21	0.10	38.63	54.00	15.37	Average

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6.5.3. Emissions outside the frequency band:

The emissions (up to 25GHz) not reported for there is no emission be found.

Mode	802.11b	Frequency	TX 2412MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4825.00	34.23	8.93	1.29	44.45	54.00	9.55	Peak
7235.00	35.80	11.35	-2.04	45.11	54.00	8.89	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4825.00	34.23	8.93	0.75	43.91	54.00	10.09	Peak
7215.00	35.80	11.27	-0.25	46.82	54.00	7.18	Peak

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Mode	802.11g	Frequency	TX 2437MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4810.00	34.22	8.87	1.27	44.36	54.00	9.64	Peak
7310.00	35.80	11.80	-1.31	46.29	54.00	7.71	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4850.00	34.24	9.03	0.99	44.26	54.00	9.74	Peak
7310.00	35.80	11.80	-1.11	46.49	54.00	7.51	Peak

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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4875.00	34.25	9.09	0.60	43.94	54.00	10.06	Peak
7310.00	35.80	11.80	-0.76	46.84	54.00	7.16	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4875.00	34.25	9.09	-0.02	43.32	54.00	10.68	Peak
7310.00	35.80	11.80	-1.52	46.08	54.00	7.92	Peak

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Mode	802.11n-HT40	Frequency	TX 2437MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4875.00	34.25	9.09	0.49	43.83	54.00	10.17	Peak
7310.00	35.80	11.80	-0.88	46.72	54.00	7.28	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4875.00	34.25	9.09	-0.13	43.21	54.00	10.79	Peak
7310.00	35.80	11.80	-1.30	46.30	54.00	7.70	Peak

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Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	34.22	8.87	-0.45	42.64	54.00	11.36	Peak
7205.00	35.80	11.27	-1.37	45.70	54.00	8.30	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4805.00	34.22	8.87	-0.85	42.24	54.00	11.76	Peak
7205.00	35.80	11.27	-2.22	44.85	54.00	9.15	Peak

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Mode	BLE	Frequency	TX 2440MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.14	-0.90	42.49	54.00	11.51	Peak
7320.00	35.80	11.80	-1.24	46.36	54.00	7.64	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4880.00	34.25	9.14	-0.41	42.98	54.00	11.02	Peak
7320.00	35.80	11.80	-2.24	45.36	54.00	8.64	Peak

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Mode	BLE	Frequency	TX 2480MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.40	-0.95	42.74	54.00	11.26	Peak
7440.00	35.80	12.56	-1.55	46.81	54.00	7.19	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
4960.00	34.29	9.40	-0.78	42.91	54.00	11.09	Peak
7440.00	35.80	12.56	-1.53	46.83	54.00	7.17	Peak

6.5.4. Emissions in Non-restricted Frequency Bands

Pursuant to KDB 558074 D01 v03r05 that emission levels below the 15.209 Section 8.9 table 4 general radiated emissions limits is not required.

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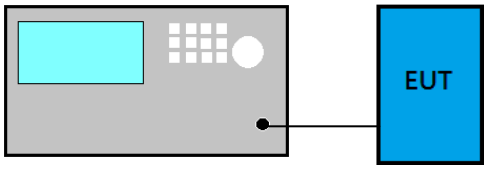
7. 6dB BANDWIDTH MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Specification Limits

The minimum 6dB bandwidth shall be at least 500kHz.

7.3. Test Procedure

Following measurement procedure is reference to KDB 558074 D01 DTS Meas Guidance v03r05:

■ Option 2

(1) Set RBW = 100 kHz.
(2) Set the video bandwidth (VBW) ≥ 3 × RBW.
(3) Detector = Peak.
(4) Trace mode = max hold.
(5) Sweep = auto couple.
(6) Allow the trace to stabilize.
(7) Setting channel bandwidth function x dB to -6 dB to record the final bandwidth.

7.4. Test Results

Please refer to Appendix A

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8. MAXIMUM PEAK OUTPUT POWER MEASUREMENT

8.1. Block Diagram of Test Setup

8.2. Specification Limits

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5MHz is : 1Watt. (30dBm), and E.I.R.P.: 4Watt (36dBm)

8.3. Test Procedure

Following measurement procedure is reference to KDB 558074 D01 DTS Meas Guidance v03r05:

■**PKPM1 Peak power meter method:**

EUT is connected to power sensor and record the maximum output power.

□**Method AVGPM (Measurement using an RF average power meter):**

EUT is connected to power sensor and record the maximum average output power and duty cycle factor is added when duty cycle presented in section 3.5 is < 98%.

□**Method AVGSA-2 (Spectrum channel power)**

(1) Set span to at least 1.5 times the OBW
(2) Set RBW = 1 -5% of OBW
(3) Set the video bandwidth (VBW) ≥ 3 × RBW.
(4) Detector = RMS.
(5) Trace mode = trace average at least 100 traces
(6) Sweep = auto couple.
(7) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges.
(8) Duty cycle factor is added when duty cycle presented in section 3.5 is < 98%.

8.4. Test Results

Please refer to Appendix A

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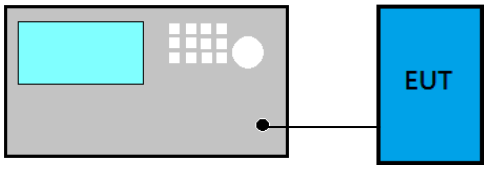
9. EMISSION LIMITATIONS MEASUREMENT

9.1. Block Diagram of Test Setup



9.2. Specification Limits

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, that the required attenuation shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a)/RSS-Gen Section 8.9 table 4
is not required. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205(a)/RSS-Gen Section 8.10 table 6, must also comply with the radiated emission limits specified in Section 15.209(a)/RSS-Gen Section 8.9 table 4 (See Section 15.205(c)).

9.3. Test Procedure

Following measurement procedure is reference to KDB 558074 D01 DTS Meas Guidance v03r05:

■Reference Level

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize to find the max PSD as reference level.

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■Emission Level Measurement

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize to find the max level.

9.4. Test Results

Please refer to Appendix A

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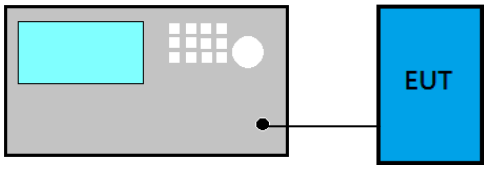
10. POWER SPECTRAL DENSITY

10.1. Block Diagram of Test Setup



10.2. Specification Limits

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band.

10.3. Test Procedure

Following measurement procedure is reference to KDB 558074 D01 DTS Meas Guidance v03r05:

■Method PKPSD (peak PSD)

(1) Set analyzer center frequency to DTS channel center frequency.
(2) Set the span to 1.5 times the DTS bandwidth.
(3) Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
(4) Set the VBW ≥ 3 × RBW.
(5) Detector = peak.
(6) Sweep time = auto couple.
(7) Trace mode = max hold.
(8) Allow trace to fully stabilize.
(9) Use the peak marker function to determine the maximum amplitude level.
(10) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

□Method AVGPSD-2

(1) Using peak PSD procedure step 1 to step 4.
(2) Detector= RMS detector
(3) Sweep time = auto couple
(4) Trace mode = trace averaging over a minimum of 100 traces
(5) Use the peak marker function to determine the maximum amplitude level.
(6) Duty cycle factor is added when duty cycle presented in section 3.5 < 98%.
(7) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

10.4. Test Results

Please refer to Appendix A

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11. DEVIATION TO TEST SPECIFICATIONS

【NONE】