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GRGTEST®

TEST REPORT

Verified Code: 809437

Report No.:	E20210426746801-9	Application No.:	E20210426746801
Client:	Lumi United Technology Co., Ltd.		
Address:	8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave, Taoyuan Residential District, Nanshan District, Shenzhen.China		
Sample Description:	Camera Hub G3		
Model:	CH-H03		
Test Specification:	CFR 47, FCC Part 15 Subpart C RADIO FREQUENCY DEVICES:Subpart C—Intentional Radiators		
Receipt Date:	2021-06-09		
Test Date:	2021-07-02 to 2021-08-06		
Issue Date:	2021-09-04		
Test Result:	Pass		
Prepared By: Test Engineer <i>Yang Zhaojun</i>	Reviewed By: Technical Manager <i>Wu Haoting</i>	Approved By: Manager <i>John Lee</i>	
Other Aspects:			
Note: Note			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable;			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			



DIRECTIONS OF TEST

- 1. This station carries out test task according to the national regulation of verification which can be traced to National Primary Standards and BIPM.**
- 2. The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.**
- 3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.**

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1. TEST RESULT SUMMARY

Standard	Item	Limit / Severity	Result
CFR 47, FCC Part 15 Subpart C (§15.247)	Antenna Requirement	§15.203	PASS
	Conducted Emissions	§15.207 (a)	PASS
	Radiated Spurious Emission	§15.247(d)	PASS
	6 dB Bandwidth	§15.247 (a)(2)	PASS
	Maximum Peak Output Power	§15.247(b)(3)	PASS
	Power Spectral Density	§15.247(e)	PASS
	Conducted band edges and Spurious Emission	§15.247(d)	PASS
	Restricted bands of operation	§15.205	PASS

The EUT have one antenna. The antenna is internal antenna.

The max gain of antenna is 3dBi, which accordance 15.203, is considered sufficient to comply with the provisions of this section.

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Lumi United Technology Co., Ltd.
Address: 8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave,
Taoyuan Residential District, Nanshan District, Shenzhen.China

2.2 MANUFACTURER

Name: Lumi United Technology Co., Ltd.
Address: 8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave,
Taoyuan Residential District, Nanshan District, Shenzhen.China

2.3 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Camera Hub G3
Product Model: CH-H03
Adding Model: /
Trade Name: Aqara
FCC ID: 2AKIT-CHH03
Power Supply: DC5V power supplied by adapter
Adapter 1-US Plug
Model:A8A-050200U-US1
Specification: Input:100-240V~ 50/60Hz 0.35A
Output:5.0V  2.0A
Frequency Band: 2412MHz-2462MHz for 802.11b/g/n HT20,
2422MHz-2452MHz for 802.11n HT40
DSSS for 802.11b mode;
Modulation Type: OFDM for 802.11g mode;
OFDM for 802.11n mode.
Antenna
Specification: Internal antenna with 3dBi gain (Max.)
Temperature
Range: -10℃~40℃
Hardware
Version: A20-GHC01-MIAN-X4
Software
Version: 3.2.8_0003.0004
Sample
submitting way: ☒ Provided by customer ☐ Sampling
Sample No: E20210426746801-0005, E20210426746801-0008
Note: /

2.4 TEST OPERATION MODE

Mode No.	Description of the modes
1	2.4G Wi-Fi TX mode

2.5 LOCAL SUPPORTIVE INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Note
Notebook	LENOVO	TianYi 310-14ISK	MP18DLC6	/
/	/	/	/	/
Cable				
/	/	/	/	/

Test software:

Software version
QCOM_V1.0

Mode	Date Rate	Frequency (MHz)	Power Setting
802.11b	1M	2412	44
		2437	44
		2462	44
802.11g	6M	2412	48
		2437	48
		2462	48
802.11n HT20	MCS0	2412	48
		2437	48
		2462	48
802.11n HT40	MCS0	2422	48
		2437	48
		2452	48

3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add : Address: No.1301 Guanguang Road Xinlan Community, Guanlan Street,
Longhua District Shenzhen, 518110, People's Republic of China

P.C. : 518000

Tel : 0755-61180008

Fax : 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA A2LA(Certificate#:2861.01)
China CNAS(L0446)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada Industry Canada(Company Number: 24897)
USA FCC

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.grgtest.com>

3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26GHz	3.65dB
	Vertical	30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26GHz	3.65dB
Conduction Emission		9 kHz ~ 150 kHz	2.80dB
		150 kHz ~ 10 MHz	2.80dB
		10 MHz ~ 30 MHz	2.20dB

This uncertainty represents an expanded uncertainty factor of k=2.

4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EMI TEST RECEIVER	R&S	ESCI	100783	2021-10-08
LISN(EUT)	R&S	ENV216	101543	2022-03-21
EZ-EMC	EZ	CCS-3A1-CE	/	/
Radiated Spurious Emission&Restricted bands of operation				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2022-04-16
Horn Antenna	Schwarzbeck	BBHA9120D	286	2021-10-08
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2021-11-05
Amplifier	Tonscend	TAP01018048	AP20E8060075	2022-06-07
Amplifier	Tonscend	TAP184050	AP20E806071	2022-05-17
Test Receiver	R&S	ESCI	100088	2021-11-14
Preamplifier	EMEC	EM330	/	2022-03-21
Bi-log Antenna	TESEQ	CBL6143A	32399	2021-11-25
Test S/W	Tonscend	JS32-RE/2.5.1.5		
Test S/W	EZ	CCS-2ANT		
6 dB Bandwidth				
Spectrum Analyzer	R&S	FSV30	104381	2022-02-21
Output Power				
Pulse power sensor	Agilent	MA2411B	1126150	2022-03-21
Power meter	Anritsu	ML2495A	1204003	2022-03-21
Conducted band edges and Spurious Emission				
Spectrum Analyzer	R&S	FSV30	104381	2022-02-21
Power Spectral Density				
Spectrum Analyzer	R&S	FSV30	104381	2022-02-21

Note: The calibration interval of the above test instruments is 12 months.

5. CONDUCTED EMISSION MEASUREMENT

5.1.LIMITS

Frequency range	Limits (dBμV)	
	Quasi-peak	Average
150kHz ~ 0.5MHz	66~56	56~46
0.5 MHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

5.2.TEST PROCEDURES

Procedure of Preliminary Test

Test procedures follow ANSI C63.10:2013.

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or
- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

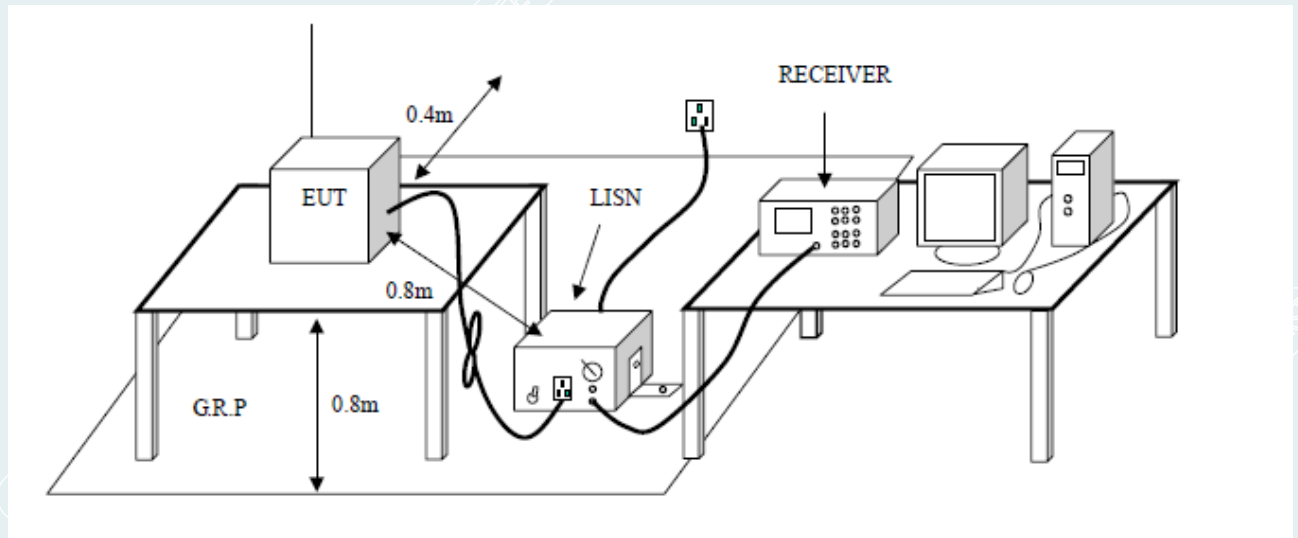
- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

5.3.TEST SETUP



5.4.DATA SAMPLE

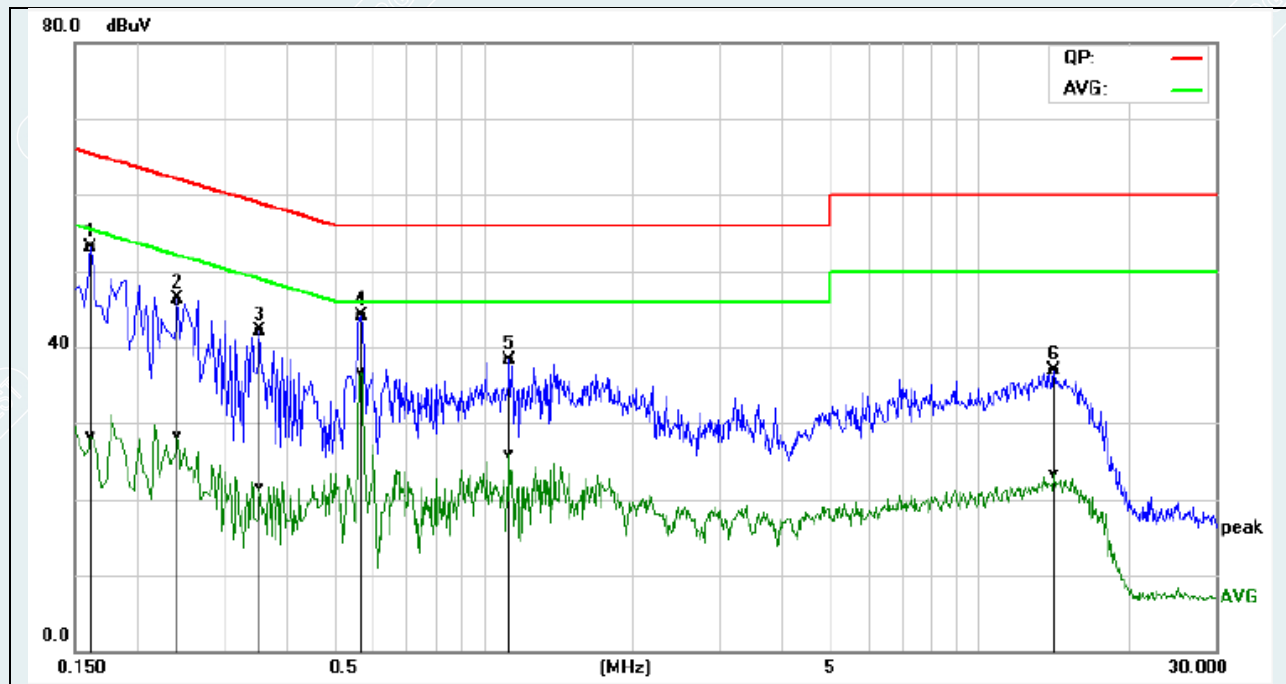
Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
 Result = Quasi-peak Reading/ Average Reading + Factor
 Limit = Limit stated in standard
 Margin = Result (dBuV) – Limit (dBuV)

5.5.TEST RESULTS

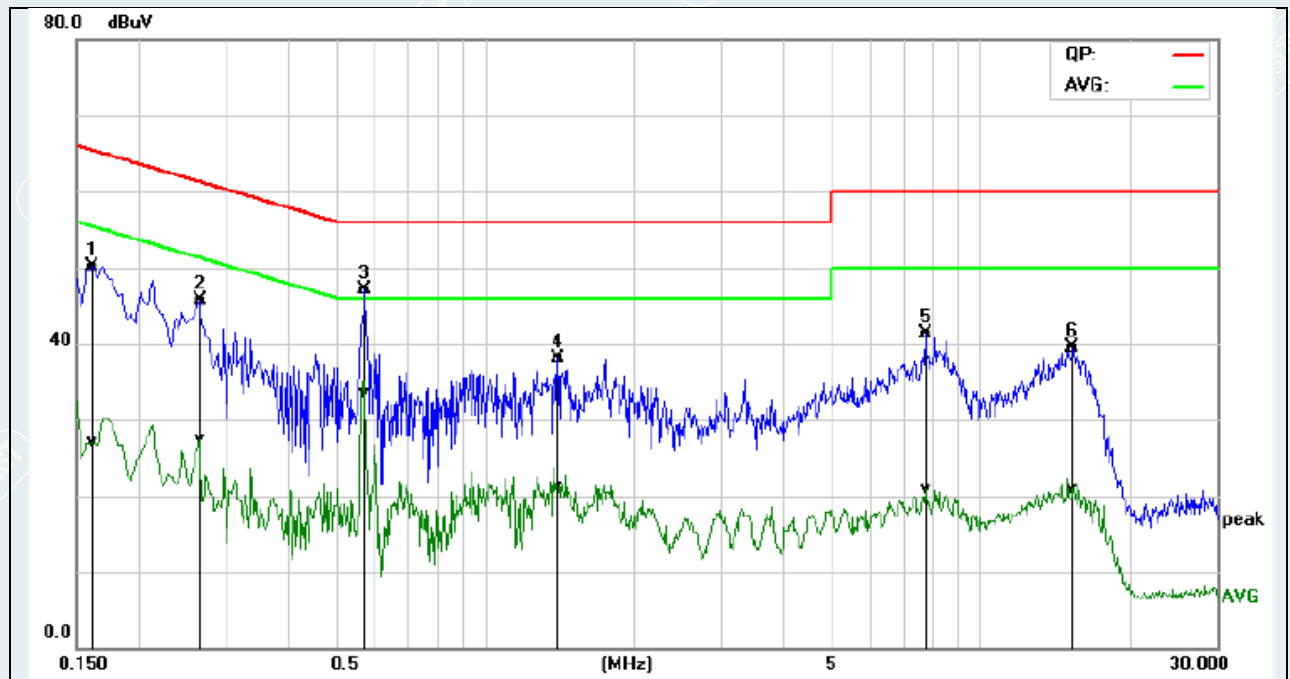
Recorded the worst case results in this report (IEEE 802.11b 2412MHz)

EUT Name	Camera Hub G3	Model	CH-H03
Environmental Conditions	21.1°C/40%RH	Test Mode	Mode 1
Tested By	Wang Xinyuan	Line	L
Tested Date	2021/07/02	Test Voltage	AC120V/60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1620	43.55	18.64	9.61	53.16	28.25	65.36	55.36	-12.20	-27.11	Pass
2	0.2420	36.57	18.64	9.63	46.20	28.27	62.02	52.03	-15.82	-23.76	Pass
3	0.3540	32.43	11.87	9.66	42.09	21.53	58.87	48.87	-16.78	-27.34	Pass
4*	0.5700	34.40	27.02	9.67	44.07	36.69	56.00	46.00	-11.93	-9.31	Pass
5	1.1340	28.58	16.23	9.67	38.25	25.90	56.00	46.00	-17.75	-20.10	Pass
6	14.1940	27.03	13.31	9.93	36.96	23.24	60.00	50.00	-23.04	-26.76	Pass

EUT Name	Camera Hub G3	Model	CH-H03
Environmental Conditions	21.1°C/40%RH	Test Mode	Mode 1
Tested By	Wang Xinyuan	Line	N
Tested Date	2021/07/02	Test Voltage	AC120V/60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1620	40.59	17.43	9.60	50.19	27.03	65.36	55.36	-15.17	-28.33	Pass
2	0.2660	36.03	17.96	9.63	45.66	27.59	61.24	51.24	-15.58	-23.65	Pass
3*	0.5740	37.35	23.84	9.66	47.01	33.50	56.00	46.00	-8.99	-12.50	Pass
4	1.4100	28.53	11.61	9.66	38.19	21.27	56.00	46.00	-17.81	-24.73	Pass
5	7.7660	31.42	11.09	9.83	41.25	20.92	60.00	50.00	-18.75	-29.08	Pass
6	15.3220	29.63	10.97	9.97	39.60	20.94	60.00	50.00	-20.40	-29.06	Pass

6. RADIATED SPURIOUS EMISSIONS

6.1.LIMITS

In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

Frequency (MHz)	Quasi-peak($\mu\text{V/m}$)	Measurement distance(m)	Quasi-peak($\text{dB}\mu\text{V/m}$)@distance 3m
0.009-0.490	2400/F(kHz)	300	53.8~88.5
0.490-1.705	24000/F(kHz)	30	43~53.8
1.705-30.0	30	30	49.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

NOTE: (1) The lower limit shall apply at the transition frequencies.

NOTE: (2) Above 18G Limit= $74+20\log(3/1)=83.54$ ($\text{dB}\mu\text{V/m}$).

6.2.TEST PROCEDURES(please refer to measurement standard)

1) Sequence of testing 9 kHz to 30 MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 0.8 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 °to 360 °) and by rotating the elevation axes (0 °to 360 °).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 °to 315 °using 45 °steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1 GHz to 18 GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 ° to 315 ° using 45 ° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ($\pm 45^\circ$) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18 GHz**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Pre measurement:

- The antenna is moved spherical over the EUT in different polarisations of the antenna.

Final measurement:

- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).

6.3.TEST SETUP

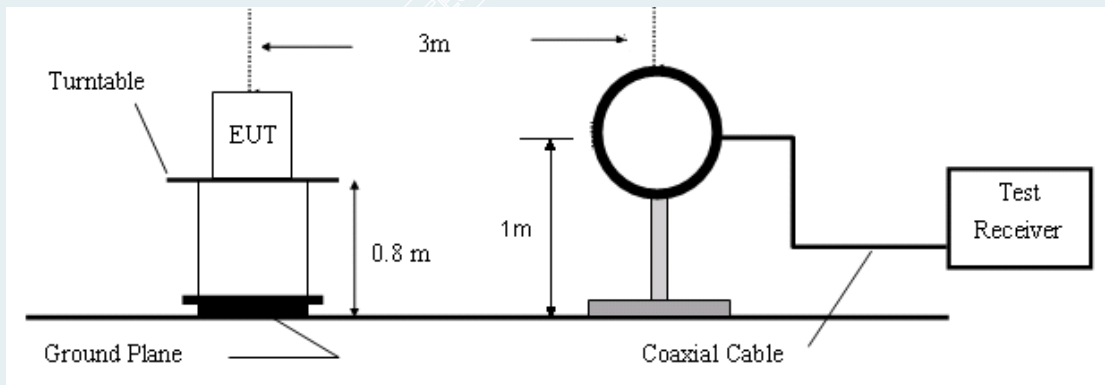


Figure 1. 9 kHz to 30MHz radiated emissions test configuration

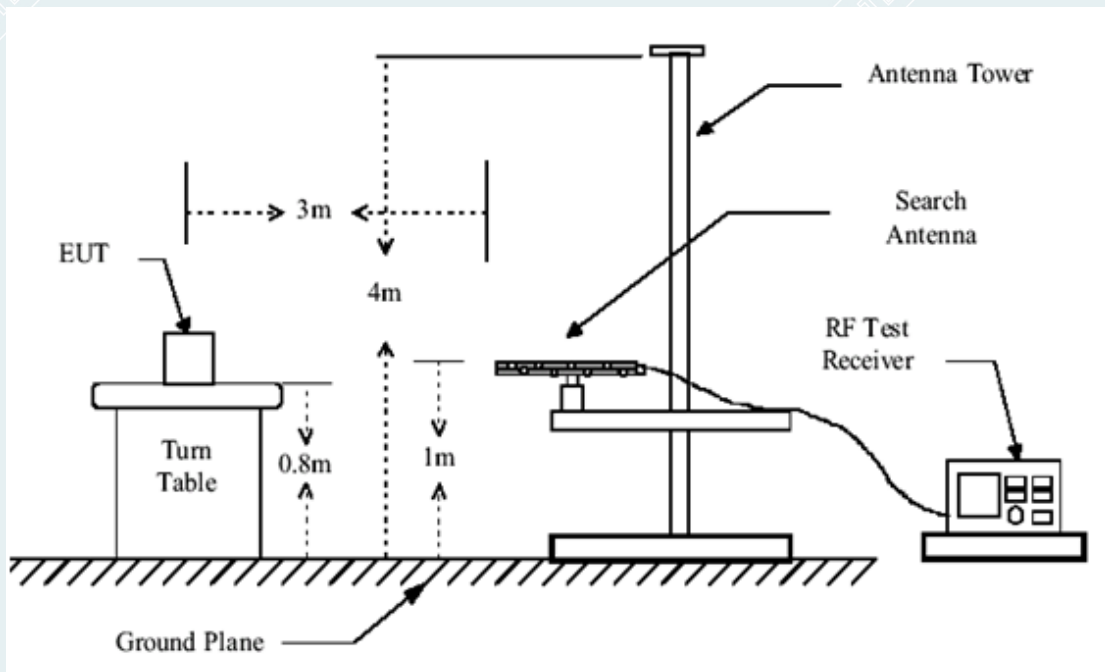


Figure 2. 30MHz to 1GHz radiated emissions test configuration

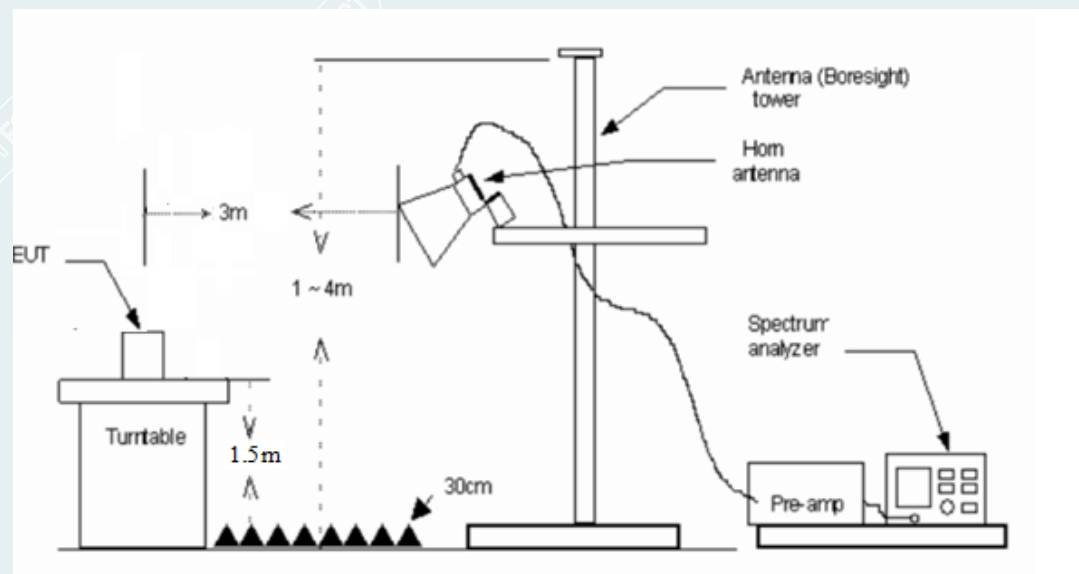


Figure 3. 1GHz to 18GHz radiated emissions test configuration

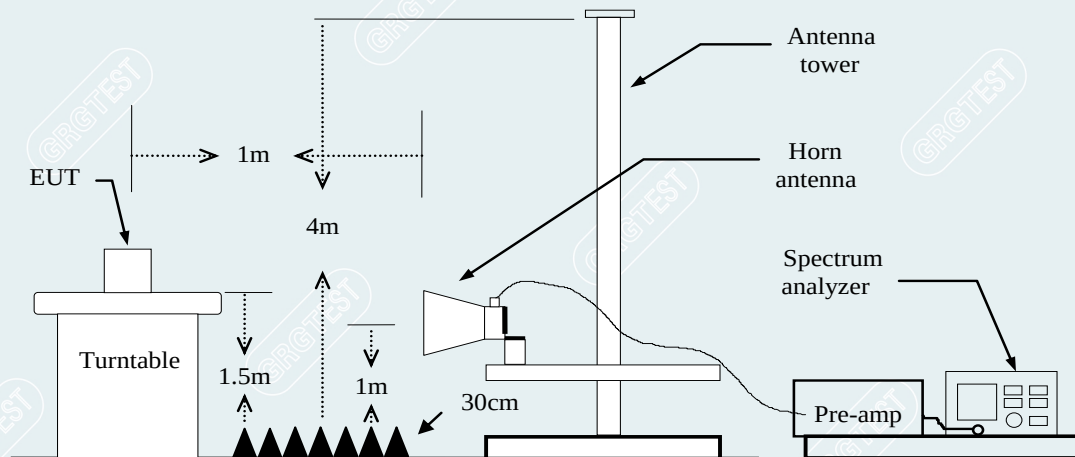


Figure 4.18GHz to 26.5GHz radiated emissions test configuration

6.4.DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

Above 1 GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18 GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz) = Emission frequency in MHz

Ant.Pol. (H/V) = Antenna polarization

Reading (dBuV) = Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain

Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Remark Result (dBuV/m) – Limit (dBuV/m)

Peak = Peak Reading

QP = Quasi-peak Reading

AVG = Average Reading

6.5.TEST RESULTS

30MHz to 1GHz

Recorded the worst case results in this report (IEEE 802.11b)

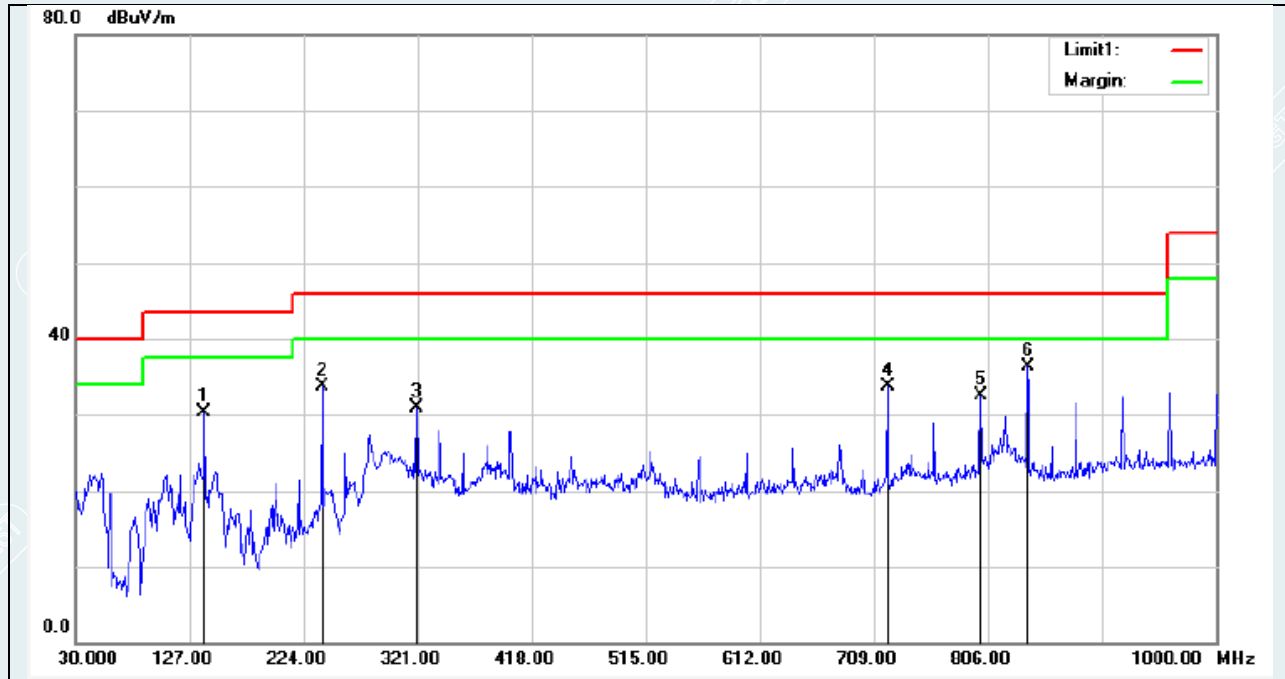
Mode: Mode 1/ IEEE 802.11b

Lowest channel (2412MHz)

Polarity

Date: 2021-07-23

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	139.6100	55.99	-25.65	30.34	43.50	-13.16	271	100	QP
2	239.5200	58.79	-25.12	33.67	46.00	-12.33	340	200	QP
3	320.0300	53.72	-22.81	30.91	46.00	-15.09	0	132	QP
4	720.6400	49.13	-15.35	33.78	46.00	-12.22	237	100	QP
5	800.1800	46.66	-14.23	32.43	46.00	-13.57	0	132	QP
6*	839.9500	50.44	-14.20	36.24	46.00	-9.76	0	123	QP

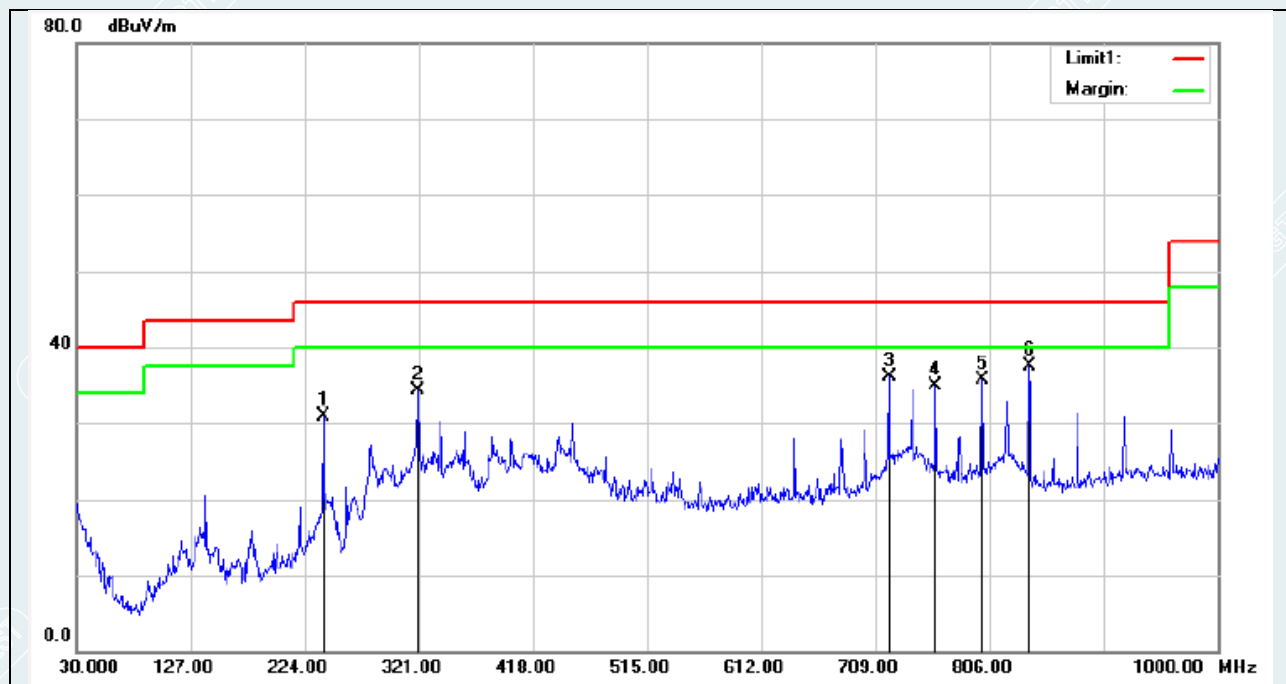
Mode: Mode 1/ IEEE 802.11b

Lowest channel (2412MHz)

Polarity

Date: 2021-07-23

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	239.5200	55.94	-25.12	30.82	46.00	-15.18	191	100	QP
2	320.0300	57.02	-22.81	34.21	46.00	-11.79	0	119	QP
3	720.6400	51.44	-15.35	36.09	46.00	-9.91	125	100	QP
4	760.4100	49.42	-14.60	34.82	46.00	-11.18	125	100	QP
5	800.1800	49.96	-14.23	35.73	46.00	-10.27	91	100	QP
6*	839.9500	51.76	-14.20	37.56	46.00	-8.44	93	100	QP

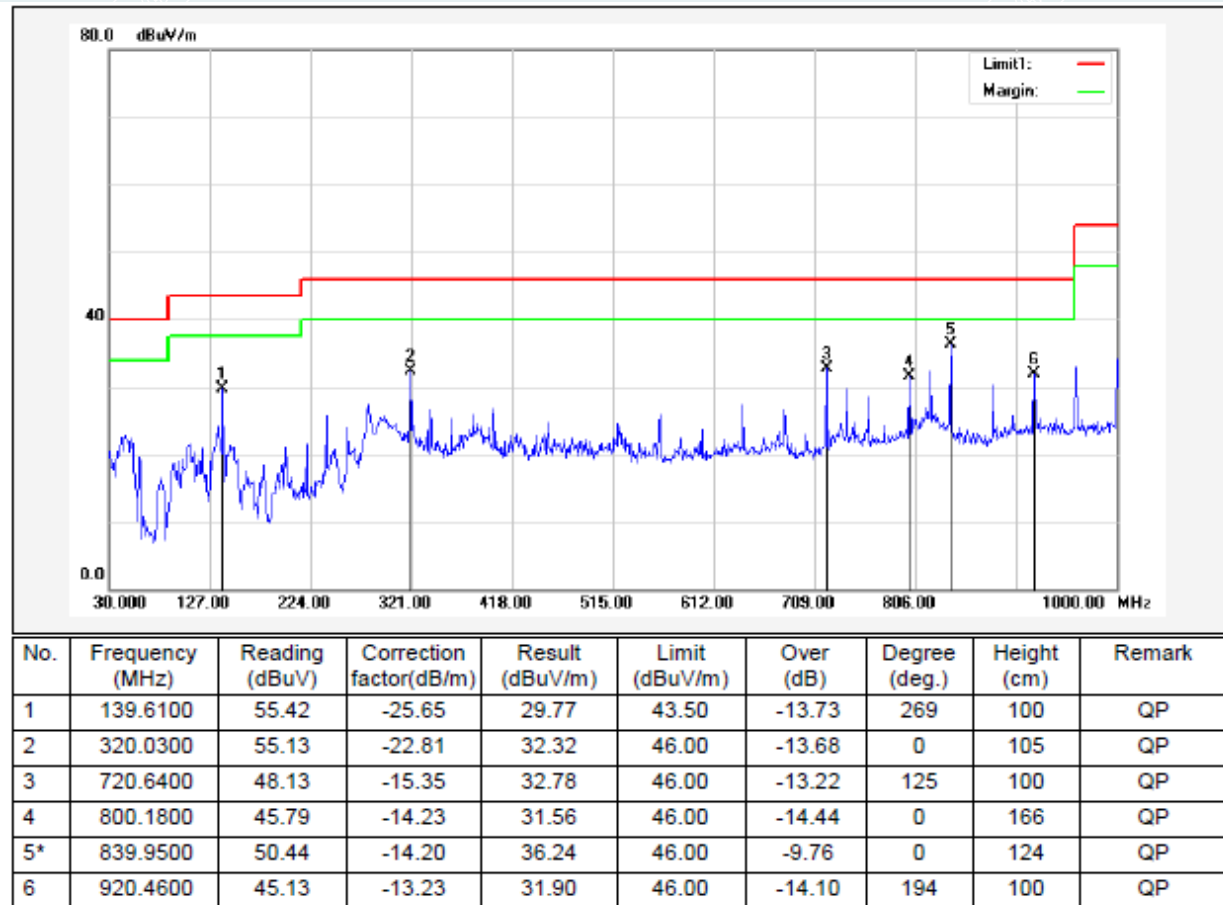
Mode: Mode 1/ IEEE 802.11b

Highest channel (2462MHz)

Polarity

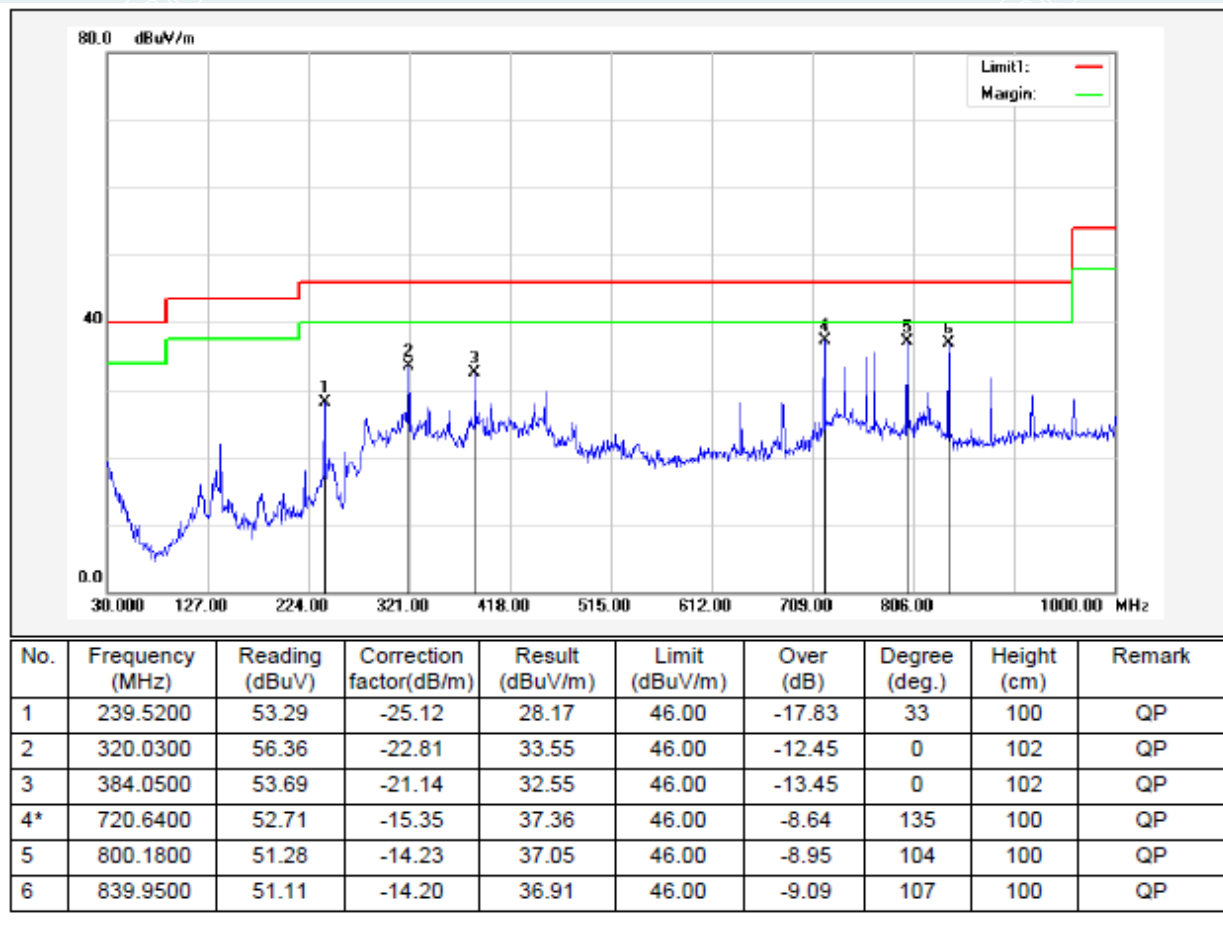
Date: 2021-07-23

Vertical



Mode: Mode 1/ IEEE 802.11b
 Highest channel (2462MHz)
 Polarity

Date: 2021-07-23
 Horizontal



Remark:

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 9 kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4 The IF bandwidth of Receiver between 30MHz to 1GHz was 120 kHz.

Above 1GHz-18GHz:

Mode: Mode 1 / IEEE 802.11b

Lowest channel (2412MHz)

Date: 2021-07-02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1055.7570	67.31	42.24	-25.07	74.00	31.76	150	217	Horizontal
2	1152.0190	64.60	39.95	-24.65	74.00	34.05	150	210	Horizontal
3	1344.0430	65.50	41.60	-23.90	74.00	32.40	150	312	Horizontal
4	1488.0610	65.21	42.06	-23.15	74.00	31.94	150	142	Horizontal
5	2416.4271	71.69	51.21	-20.48	74.00	22.79	150	34	Horizontal
6	4805.8507	61.51	50.79	-10.72	74.00	23.21	150	219	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2409.1053	-20.48	62.83	42.35	54.00	11.65	150	30	Horizontal
2	4806.6677	-10.72	60.44	49.72	54.00	4.28	150	224	Horizontal

Note:NO.1 is the fundamental frequency point.

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1055.7570	65.37	40.30	-25.07	74.00	33.70	150	346	Vertical
2	1344.0430	66.82	42.92	-23.90	74.00	31.08	150	197	Vertical
3	1487.8110	68.44	45.29	-23.15	74.00	28.71	150	332	Vertical
4	2413.6767	81.48	60.98	-20.50	74.00	13.02	150	22	Vertical
5	4805.8507	57.98	47.26	-10.72	74.00	26.74	150	216	Vertical
6	6431.6790	55.59	47.52	-8.07	74.00	26.48	150	1	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2414.5698	-20.50	76.38	55.88	54.00	-1.88	150	18	Vertical
2	4806.6677	-10.72	56.94	46.22	54.00	7.78	150	212	Vertical
3	6432.0006	-8.07	50.77	42.70	54.00	11.30	150	358	Vertical

Note:NO.1 is the fundamental frequency point.

Mode: Mode 1/ IEEE 802.11b
Middle channel (2437 MHz)

Date: 2021-07-02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1296.0370	63.63	39.54	-24.09	74.00	34.46	150	312	Horizontal
2	1344.0430	63.62	39.72	-23.90	74.00	34.28	150	312	Horizontal
3	1488.3110	64.29	41.14	-23.15	74.00	32.86	150	148	Horizontal
4	2435.6795	76.60	56.19	-20.41	74.00	17.81	150	12	Horizontal
5	4805.8507	61.90	51.18	-10.72	74.00	22.82	150	219	Horizontal
6	4875.2344	57.74	46.97	-10.77	74.00	27.03	150	34	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2436.0936	-20.40	71.07	50.67	54.00	3.33	150	1	Horizontal
2	4806.6677	-10.72	60.43	49.71	54.00	4.29	150	224	Horizontal
3	4874.1618	-10.77	54.46	43.69	54.00	10.31	150	34	Horizontal

Note:NO.1 is the fundamental frequency point.

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1008.0010	61.50	36.35	-25.15	74.00	37.65	150	196	Vertical
2	1055.7570	67.41	42.34	-25.07	74.00	31.66	150	0	Vertical
3	1391.7990	64.61	40.92	-23.69	74.00	33.08	150	292	Vertical
4	1488.0610	68.01	44.86	-23.15	74.00	29.14	150	332	Vertical
5	2436.9296	80.02	59.62	-20.40	74.00	14.38	150	12	Vertical
6	4807.7260	57.64	46.93	-10.71	74.00	27.07	150	218	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2436.2473	-20.40	75.66	55.26	54.00	-1.26	150	0	Vertical
2	4806.6683	-10.71	56.88	46.17	54.00	7.83	150	214	Vertical

Note:NO.1 is the fundamental frequency point.

Mode: Mode 1 / IEEE 802.11b
Highest channel (2462MHz)

Date:2021-07-02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1056.0070	65.65	40.58	-25.07	74.00	33.42	150	281	Horizontal
2	1343.7930	63.48	39.58	-23.90	74.00	34.42	150	349	Horizontal
3	1488.0610	64.51	41.36	-23.15	74.00	32.64	150	151	Horizontal
4	1746.3433	65.02	42.48	-22.54	74.00	31.52	150	185	Horizontal
5	2463.1829	69.61	49.25	-20.36	74.00	24.75	150	14	Horizontal
6	4805.8507	61.44	50.72	-10.72	74.00	23.28	150	210	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2461.2370	-20.36	64.68	44.32	54.00	9.68	150	7	Horizontal
2	4806.6677	-10.72	60.47	49.75	54.00	4.25	150	224	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1056.0070	66.35	41.28	-25.07	74.00	32.72	150	315	Vertical
2	1344.0430	64.50	40.60	-23.90	74.00	33.40	150	205	Vertical
3	1391.7990	64.93	41.24	-23.69	74.00	32.76	150	321	Vertical
4	1488.0610	68.11	44.96	-23.15	74.00	29.04	150	342	Vertical
5	2465.9332	73.53	53.17	-20.36	74.00	20.83	150	8	Vertical
6	2503.4379	67.81	47.49	-20.32	74.00	26.51	150	357	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2464.6509	-20.36	69.23	48.87	54.00	5.13	150	4	Vertical
2	2506.5672	-20.32	52.38	32.06	54.00	21.94	150	2	Vertical
3	4806.6677	-10.72	56.90	46.18	54.00	7.82	150	213	Vertical

Mode: Mode 1 / IEEE 802.11g
Lowest channel (2412MHz)

Date: 2021-08-05

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1422.0000	71.94	48.60	-23.34	74.00	25.40	100	198	Horizontal
2	1596.0000	72.71	49.80	-22.91	74.00	24.20	200	131	Horizontal
3	2203.5000	69.29	48.59	-20.70	74.00	25.41	100	177	Horizontal
4	2404.7500	72.32	52.44	-19.88	74.00	21.56	200	358	Horizontal
5	3000.0000	56.70	40.09	-16.61	74.00	33.91	100	94	Horizontal
6	6433.1250	54.20	47.84	-6.36	74.00	26.16	200	359	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1422.1587	-23.34	48.17	24.83	54.00	29.17	200	218	Horizontal
2	1596.5618	-22.92	49.11	26.19	54.00	27.81	100	230	Horizontal
3	2203.5236	-20.70	55.18	34.48	54.00	19.52	100	257	Horizontal

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1398.5000	70.37	46.87	-23.50	74.00	27.13	100	137	Vertical
2	1594.7500	78.22	55.31	-22.91	74.00	18.69	200	150	Vertical
3	2405.5000	80.98	61.10	-19.88	74.00	12.90	100	1	Vertical
4	2794.0000	65.63	47.16	-18.47	74.00	26.84	100	171	Vertical
5	3000.0000	63.67	47.06	-16.61	74.00	26.94	100	121	Vertical
6	5985.0000	55.53	47.91	-7.62	74.00	26.09	100	114	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1594.9971	-22.91	49.61	26.70	54.00	27.30	200	229	Vertical

Mode: Mode 1/ IEEE 802.11g
Middle channel (2437 MHz)

Date:2021-08-05

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1194.7500	67.03	42.49	-24.54	74.00	31.51	200	82	Horizontal
2	1596.7500	78.25	55.33	-22.92	74.00	18.67	100	102	Horizontal
3	2432.7500	74.73	55.00	-19.73	74.00	19.00	200	335	Horizontal
4	2662.5000	65.83	47.33	-18.50	74.00	26.67	100	150	Horizontal
5	2986.5000	63.91	46.19	-17.72	74.00	27.81	100	96	Horizontal
6	4807.5000	53.49	43.72	-9.77	74.00	30.28	200	6	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1596.7457	-22.92	48.16	25.24	54.00	28.76	100	90	Horizontal

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1199.5000	71.62	47.09	-24.53	74.00	26.91	200	116	Vertical
2	1594.5000	70.46	47.55	-22.91	74.00	26.45	100	123	Vertical
3	2432.7500	81.82	62.09	-19.73	74.00	11.91	100	8	Vertical
4	2999.7500	67.85	50.19	-17.66	74.00	23.81	100	130	Vertical
5	4779.3750	55.12	45.46	-9.66	74.00	28.54	100	120	Vertical
6	5985.0000	56.54	48.92	-7.62	74.00	25.08	100	326	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2999.7632	-17.66	45.67	28.01	54.00	25.99	100	120	Vertical
2	5985.1548	-7.60	48.71	41.09	54.00	12.91	100	174	Vertical

Mode: Mode 1/ IEEE 802.11g
Highest channel (2462MHz)

Date: 2021-08-05

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1195.5000	69.68	45.14	-24.54	74.00	28.86	100	62	Horizontal
2	1595.7500	74.19	51.28	-22.91	74.00	22.72	200	130	Horizontal
3	2458.0000	74.08	54.46	-19.62	74.00	19.54	200	14	Horizontal
4	2991.2500	65.01	47.31	-17.70	74.00	26.69	100	96	Horizontal
5	4807.5000	53.76	43.99	-9.77	74.00	30.01	200	11	Horizontal
6	6564.3750	53.16	47.22	-5.94	74.00	26.78	200	0	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1595.7471	-22.91	50.11	27.20	54.00	26.80	200	143	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1198.2500	67.97	43.44	-24.53	74.00	30.56	200	109	Vertical
2	1396.5000	69.03	45.52	-23.51	74.00	28.48	200	157	Vertical
3	1599.5000	74.06	51.14	-22.92	74.00	22.86	100	122	Vertical
4	2458.0000	81.80	62.18	-19.62	74.00	11.82	100	54	Vertical
5	3000.0000	66.99	50.38	-16.61	74.00	23.62	100	128	Vertical
6	5979.3750	56.94	49.27	-7.67	74.00	24.73	100	148	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.5054	-22.92	48.45	25.53	54.00	28.47	200	118	Vertical
2	3000.1547	-16.63	46.16	28.50	54.00	25.50	100	140	Vertical
3	5979.3697	-7.67	47.66	39.99	54.00	14.01	100	164	Vertical

Mode: Mode 1 / IEEE 802.11n HT20
Lowest channel (2412MHz)

Date: 2021-08-05

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1419.0000	68.53	45.17	-23.36	74.00	28.83	100	124	Horizontal
2	1595.2500	75.44	52.53	-22.91	74.00	21.47	100	111	Horizontal
3	2391.2500	72.61	52.60	-20.01	74.00	21.40	100	42	Horizontal
4	2994.0000	64.17	46.48	-17.69	74.00	27.52	100	97	Horizontal
5	4807.5000	54.41	44.64	-9.77	74.00	29.36	200	11	Horizontal
6	6433.1250	54.93	48.57	-6.36	74.00	25.43	200	352	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.9081	-22.92	49.94	27.02	54.00	26.98	100	119	Horizontal
2	2403.2063	-20.01	55.90	35.89	54.00	18.11	100	43	Horizontal
3	6432.1600	-6.36	50.96	44.60	54.00	9.40	200	2	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1596.0000	74.64	51.73	-22.91	74.00	22.27	100	151	Vertical
2	1747.2500	69.35	46.91	-22.44	74.00	27.09	100	360	Vertical
3	2405.5000	80.57	60.69	-19.88	74.00	13.31	100	4	Vertical
4	2988.5000	67.89	50.18	-17.71	74.00	23.82	100	136	Vertical
5	3195.0000	63.70	47.76	-15.94	74.00	26.24	100	182	Vertical
6	4991.2500	56.32	46.52	-9.80	74.00	27.48	100	135	Vertical
7	5988.7500	56.96	49.37	-7.59	74.00	24.63	100	182	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1596.0154	-22.91	49.62	26.71	54.00	27.29	100	114	Vertical
2	3000.0158	-16.63	45.70	29.07	54.00	24.93	200	28	Vertical
3	5988.7813	-7.57	47.46	39.89	54.00	14.11	100	185	Vertical

Mode: Mode 1/ IEEE 802.11n HT20
Middle channel (2437 MHz)

Date: 2021-08-06

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1195.7500	67.55	43.01	-24.54	74.00	30.99	100	102	Horizontal
2	1595.7500	73.22	50.31	-22.91	74.00	23.69	100	153	Horizontal
3	2433.5000	74.35	54.63	-19.72	74.00	19.37	100	27	Horizontal
4	2988.5000	64.91	47.20	-17.71	74.00	26.80	100	96	Horizontal
5	4807.5000	53.58	43.81	-9.77	74.00	30.19	200	12	Horizontal
6	6498.7500	53.44	46.92	-6.52	74.00	27.08	200	352	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1595.9104	-22.91	49.55	26.64	54.00	27.36	100	102	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1009.0000	71.18	46.04	-25.14	74.00	27.96	100	62	Vertical
2	1595.0000	75.12	52.21	-22.91	74.00	21.79	100	149	Vertical
3	2432.0000	81.91	62.18	-19.73	74.00	11.82	100	347	Vertical
4	2599.5000	66.43	47.13	-19.30	74.00	26.87	100	142	Vertical
5	2999.0000	67.38	49.72	-17.66	74.00	24.28	100	129	Vertical
6	5998.1250	57.02	49.51	-7.51	74.00	24.49	100	182	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1595.0254	-22.91	49.15	26.24	54.00	27.76	200	185	Vertical
2	3000.0215	-16.63	45.71	29.08	54.00	24.92	100	48	Vertical
3	5999.1741	-7.49	48.09	40.60	54.00	13.40	100	120	Vertical

Mode: Mode 1/ IEEE 802.11n HT20
Highest channel (2462MHz)

Date: 2021-08-06

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1437.7500	73.99	50.75	-23.24	74.00	23.25	100	145	Horizontal
2	1595.0000	71.87	48.96	-22.91	74.00	25.04	100	103	Horizontal
3	2456.7500	74.14	54.52	-19.62	74.00	19.48	200	15	Horizontal
4	2998.2500	64.32	46.65	-17.67	74.00	27.35	100	96	Horizontal
5	3982.5000	58.35	43.78	-14.57	74.00	30.22	100	299	Horizontal
6	4807.5000	54.20	44.43	-9.77	74.00	29.57	200	18	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1440.0360	-23.24	47.82	24.58	54.00	29.42	100	107	Horizontal
2	1599.8488	-22.92	49.81	26.89	54.00	27.11	100	51	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1117.2500	78.25	53.47	-24.78	74.00	20.53	200	63	Vertical
2	1426.7500	73.88	50.57	-23.31	74.00	23.43	200	55	Vertical
3	1594.5000	76.42	53.51	-22.91	74.00	20.49	200	145	Vertical
4	2456.2500	81.94	62.32	-19.62	74.00	11.68	100	354	Vertical
5	2995.2500	67.66	49.98	-17.68	74.00	24.02	100	137	Vertical
6	5998.1250	56.51	49.00	-7.51	74.00	25.00	100	147	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1117.2485	-24.78	48.17	23.39	54.00	30.61	200	104	Vertical
2	1426.7426	-23.31	47.64	24.33	54.00	29.67	200	21	Vertical
3	1594.5105	-22.91	49.14	26.23	54.00	27.77	100	337	Vertical
4	2995.2487	-17.68	46.17	28.49	54.00	25.51	100	154	Vertical
5	5998.1302	-7.49	48.30	40.81	54.00	13.19	100	196	Vertical

Mode: Mode 1/ IEEE 802.11n HT40
Lowest channel (2422MHz)

Date: 2021-08-05

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1596.7500	73.97	51.05	-22.92	74.00	22.95	100	3	Horizontal
2	2385.7500	77.15	57.07	-20.08	74.00	16.93	100	32	Horizontal
3	2997.5000	65.08	47.41	-17.67	74.00	26.59	100	94	Horizontal
4	3991.8750	59.50	44.82	-14.68	74.00	29.18	100	307	Horizontal
5	4807.5000	53.81	44.04	-9.77	74.00	29.96	200	360	Horizontal
6	6459.3750	54.59	48.13	-6.46	74.00	25.87	200	360	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.9754	-22.91	49.93	27.02	54.00	26.98	100	77	Horizontal
2	2378.0679	-20.08	56.50	36.42	54.00	17.58	100	42	Horizontal
3	6458.8583	-6.47	51.40	44.93	54.00	9.07	200	1	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1046.0000	68.59	43.51	-25.08	74.00	30.49	100	121	Vertical
2	1598.0000	76.22	53.30	-22.92	74.00	20.70	100	148	Vertical
3	2434.0000	78.66	58.94	-19.72	74.00	15.06	100	45	Vertical
4	2997.0000	68.17	50.50	-17.67	74.00	23.50	100	127	Vertical
5	3982.5000	58.91	44.34	-14.57	74.00	29.66	100	266	Vertical
6	5998.1250	57.58	50.07	-7.51	74.00	23.93	100	184	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.9975	-22.91	52.78	29.87	54.00	24.13	100	267	Vertical
2	2999.9670	-17.68	45.04	27.36	54.00	26.64	100	70	Vertical
3	5999.9844	-7.50	47.64	40.14	54.00	13.86	100	180	Vertical

Mode: Mode 1/ IEEE 802.11n HT40
Middle channel (2437 MHz)

Date: 2021-08-05

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1329.5000	67.56	43.73	-23.83	74.00	30.27	100	90	Horizontal
2	1596.0000	76.76	53.85	-22.91	74.00	20.15	100	106	Horizontal
3	2997.2500	64.90	47.23	-17.67	74.00	26.77	100	101	Horizontal
4	4807.5000	53.79	44.02	-9.77	74.00	29.98	200	9	Horizontal
5	7773.7500	50.88	48.98	-1.90	74.00	25.02	100	57	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.8304	-22.91	51.78	28.87	54.00	25.13	100	112	Horizontal
2	7773.5168	-1.90	36.62	34.72	54.00	19.28	100	2	Horizontal

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1595.7500	78.62	55.71	-22.91	74.00	18.29	200	144	Vertical
2	2434.0000	80.30	60.58	-19.72	74.00	13.42	100	351	Vertical
3	2795.5000	68.86	50.39	-18.47	74.00	23.61	100	128	Vertical
4	2999.5000	67.84	50.18	-17.66	74.00	23.82	100	139	Vertical
5	4788.7500	56.15	46.43	-9.72	74.00	27.57	100	122	Vertical
6	5998.1250	56.96	49.45	-7.51	74.00	24.55	100	182	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.9947	-22.92	50.77	27.85	54.00	26.15	200	218	Vertical
2	2784.3739	-18.47	44.73	26.26	54.00	27.74	100	76	Vertical
3	2999.9499	-17.66	46.94	29.28	54.00	24.72	100	101	Vertical
4	5999.9244	-7.50	41.46	33.96	54.00	20.04	100	185	Vertical

Mode: Mode 1/ IEEE 802.11n HT40
Highest channel (2452MHz)

Date: 2021-08-05

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1596.7500	75.38	52.46	-22.92	74.00	21.54	100	95	Horizontal
2	2436.0000	70.84	51.13	-19.71	74.00	22.87	100	30	Horizontal
3	2988.5000	65.47	47.76	-17.71	74.00	26.24	100	100	Horizontal
4	4807.5000	53.75	43.98	-9.77	74.00	30.02	200	15	Horizontal
5	9393.7500	48.71	50.40	1.69	74.00	23.60	200	59	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1599.8477	-22.91	51.34	28.43	54.00	25.57	100	112	Horizontal
2	9437.8067	1.68	35.18	36.86	54.00	17.14	200	1	Horizontal

Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1595.5000	76.59	53.68	-22.91	74.00	20.32	200	156	Vertical
2	2456.7500	78.61	58.99	-19.62	74.00	15.01	100	19	Vertical
3	2998.0000	68.73	51.06	-17.67	74.00	22.94	100	140	Vertical
4	5998.1250	56.68	49.17	-7.51	74.00	24.83	100	94	Vertical
5	9260.6250	49.58	50.21	0.63	74.00	23.79	100	170	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1600.0153	-22.92	50.88	27.96	54.00	26.04	200	228	Vertical
2	3000.0087	-17.67	45.48	27.81	54.00	26.19	100	72	Vertical
3	5998.4781	-7.49	44.18	36.67	54.00	17.33	100	165	Vertical
4	9242.3816	0.63	35.44	36.07	54.00	17.93	100	1	Vertical

Above 18GHz-26.5GHz:

Pre-scan all modes and recorded the worst case results in this report (antenna 1: IEEE 802.11b)

Mode: Mode 1 / IEEE 802.11b

Lowest channel (2412MHz)

Date: 2021-08-03

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18300.4750	58.43	46.87	-11.56	83.50	36.63	100	25	Horizontal
2	18841.9250	58.05	46.80	-11.25	83.50	36.70	100	111	Horizontal
3	19690.6500	57.03	46.16	-10.87	83.50	37.34	100	343	Horizontal
4	22231.3000	56.51	46.82	-9.69	83.50	36.68	100	183	Horizontal
5	24192.6750	55.05	46.84	-8.21	83.50	36.66	100	269	Horizontal
6	25650.8500	55.03	47.08	-7.95	83.50	36.42	100	330	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Level [dB μ V/m]	Factor [dB]	Limit [dB μ V/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18680.4250	57.77	46.41	-11.36	83.50	37.09	100	77	Vertical
2	20022.1500	56.83	45.99	-10.84	83.50	37.51	100	52	Vertical
3	23956.3750	54.98	46.68	-8.30	83.50	36.82	100	52	Vertical
4	24239.0000	55.24	47.04	-8.20	83.50	36.46	100	126	Vertical
5	25144.2500	54.35	46.65	-7.70	83.50	36.85	100	41	Vertical
6	26222.9000	54.91	47.04	-7.87	83.50	36.46	100	323	Vertical

Mode: Mode 1 / IEEE 802.11b
Moddle channel (2437MHz)

Date: 2021-08-03

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18311.9500	58.37	46.81	-11.56	83.50	36.69	100	8	Horizontal
2	18897.6000	57.65	46.46	-11.19	83.50	37.04	100	350	Horizontal
3	21207.9000	56.39	46.12	-10.27	83.50	37.38	100	251	Horizontal
4	21711.5250	55.39	45.46	-9.93	83.50	38.04	100	213	Horizontal
5	24001.0000	55.52	47.26	-8.26	83.50	36.24	100	46	Horizontal
6	26128.5500	55.75	47.67	-8.08	83.50	35.83	100	326	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18454.3250	57.65	46.15	-11.50	83.50	37.35	100	353	Vertical
2	20397.4250	56.31	45.76	-10.55	83.50	37.74	100	314	Vertical
3	21277.6000	56.34	46.13	-10.21	83.50	37.37	100	302	Vertical
4	23134.8500	55.53	46.66	-8.87	83.50	36.84	100	16	Vertical
5	24560.7250	55.00	46.87	-8.13	83.50	36.63	100	29	Vertical
6	26233.9500	55.61	47.77	-7.84	83.50	35.73	100	154	Vertical

Mode: Mode 1 / IEEE 802.11b
Highest channel (2462MHz)

Date: 2021-08-03

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18839.8000	57.64	46.39	-11.25	83.50	37.11	100	268	Horizontal
2	19393.5750	60.04	49.06	-10.98	83.50	34.44	100	23	Horizontal
3	21817.3500	58.08	48.13	-9.95	83.50	35.37	100	3	Horizontal
4	23973.3750	55.08	46.79	-8.29	83.50	36.71	100	318	Horizontal
5	25238.1750	54.48	46.83	-7.65	83.50	36.67	100	353	Horizontal
6	26212.2750	54.90	47.01	-7.89	83.50	36.49	100	182	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18444.9750	58.39	46.89	-11.50	83.50	36.61	100	7	Vertical
2	19745.0500	57.24	46.37	-10.87	83.50	37.13	100	273	Vertical
3	21017.0750	55.83	45.53	-10.30	83.50	37.97	100	152	Vertical
4	22924.4750	55.96	46.97	-8.99	83.50	36.53	100	337	Vertical
5	24460.8500	54.85	46.70	-8.15	83.50	36.80	100	225	Vertical
6	26211.4250	55.12	47.23	-7.89	83.50	36.27	100	30	Vertical

7. 6DB BANDWIDTH

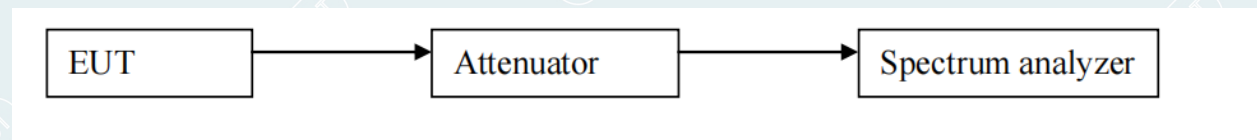
7.1.LIMITS

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2.TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Set resolution bandwidth (RBW) = 100kHz. Set the video bandwidth (VBW) $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize, record 6dB bandwidth value.
- 3) Repeat above procedures until all frequencies measured were complete.

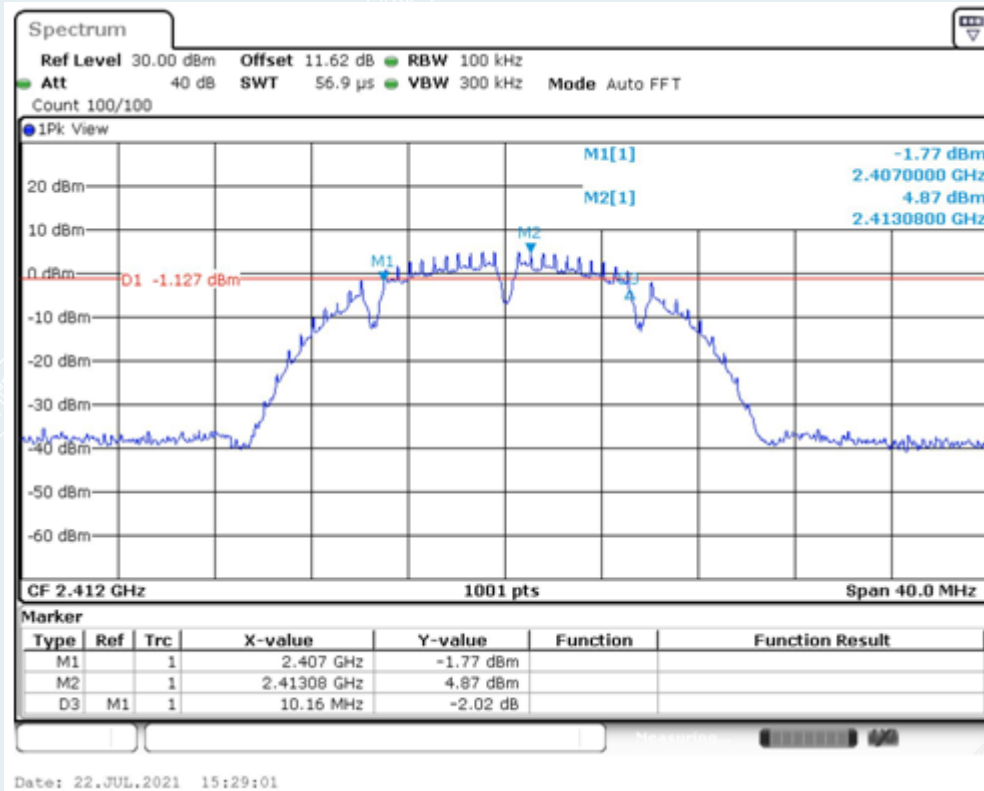
7.3.TEST SETUP



7.4.TEST RESULTS

TestMode	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
802.11b	2412	10.160	2407.000	2417.160	0.5	PASS
	2437	10.160	2432.000	2442.160	0.5	PASS
	2462	10.160	2457.000	2467.160	0.5	PASS
802.11g	2412	16.400	2403.840	2420.240	0.5	PASS
	2437	16.400	2428.840	2445.240	0.5	PASS
	2462	16.400	2453.840	2470.240	0.5	PASS
802.11n HT20	2412	17.000	2403.600	2420.600	0.5	PASS
	2437	17.000	2428.600	2445.600	0.5	PASS
	2462	16.840	2453.600	2470.440	0.5	PASS
802.11n HT40	2422	35.280	2404.400	2439.680	0.5	PASS
	2437	35.280	2419.400	2454.680	0.5	PASS
	2452	35.280	2434.400	2469.680	0.5	PASS

802.11b mode:
Channel 2412MHz



802.11b mode:
Channel 2437MHz

