

TEST REPORT

Verified Code: 170998

Report No.:	E202012115394-2	Application No.:	E202012115394
Client:	SHENZHEN EASYLINKIN TECHNOLOGY CO.,LTD		
Address:	705, Floor 7, Zhongdian Difu Building, Zhenhua Road, Fuqiang Community, Huaqiang North Street, Futian District, Shenzhen, Guangdong Province, China		
Sample Description:	LoRaWAN Gateway		
Model:	G200-HA923		
Test Specification:	CFR 47, FCC Part 15 Subpart C RADIO FREQUENCY DEVICES: Subpart C—Intentional Radiators		
Receipt Date:	2021-01-11		
Test Date:	2021-01-12 to 2021-03-11		
Issue Date:	2021-04-15		
Test Result:	Pass		
Prepared By: Test Engineer Xie Jang	Reviewed By: Technical Manager Wu Haoming	Approved By: Manager Yong Dai	
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 verifications 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	Note ¹
	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

Note ¹:The EUT only have one wifi antenna. The antenna is external antenna.

The max gain of antenna is 2.15dBi.which accordance 15.203.is considered sufficient to comply with the provisions of this section.

2. GENERAL DESCRIPTION OF EUT

2.1. APPLICANT

Name: SHENZHEN EASYLINKIN TECHNOLOGY CO.,LTD
Address: 705, Floor 7, Zhongdian Difu Building, Zhenhua Road, Fuqiang Community, Huaqiang North Street, Futian District, Shenzhen, Guangdong Province, China

2.2. MANUFACTURER

Name: SHENZHEN EASYLINKIN TECHNOLOGY CO.,LTD
Address: 705, Floor 7, Zhongdian Difu Building, Zhenhua Road, Fuqiang Community, Huaqiang North Street, Futian District, Shenzhen, Guangdong Province, China

2.3. FACTORY

Name: SHENZHEN EASYLINKIN TECHNOLOGY CO.,LTD
Address: 705, Floor 7, Zhongdian Difu Building, Zhenhua Road, Fuqiang Community, Huaqiang North Street, Futian District, Shenzhen, Guangdong Province, China

2.4. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: LoRaWAN Gateway
Model No.: G200-HA923
Adding /
Model:
Trade Name: Easylinkin
FCC ID: 2AYYO-G200AS
Power Supply: DC12V power supplied by adapter
Adapter Specification: Model: PS120W1000U
Input: 100-240V~50/60Hz 0.5A Max
Output: 12.0V --- 1.0A 12.0W
Frequency Range: 2412MHz~2462MHz: 802.11b; 802.11g; 802.11n(HT20)
2422MHz~2452MHz: 802.11n(HT40);
Transmit Power: 18.16dBm for 802.11b mode
21.94dBm for 802.11g mode
21.87dBm for 802.11n HT20 mode
20.15dBm for 802.11n HT40 mode
Modulation type: DSSS for 802.11b mode;
OFDM for 802.11g mode;
OFDM for 802.11n mode.
Channel space: 5MHz

Antenna External antenna with 2.15dBi gain (Max.)

Specification:

Temperature Range: 0 °C ~ +60 °C

Hardware Version: PCB-GW200M-01D

Software Version: g200_v2.0.0.2001201313

Sample No: E202012115394-0003

Note: The EUT have two different color appearances.

2.5. TEST OPERATION MODE

Mode No.	Description of the modes
1	2.4GHz wifi fixed frequency

2.6. LOCAL SUPPORTIVE INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Note
Notebook	LENOVO	TianYi 310-14ISK	MP18DLC6	/
Adapter (Notebook)	LENOVO	ADLX65NCC3A	N/A	/
Cable				
AC cable	/	/	/	Unshielded, 1.00m
DC cable	/	/	/	Shielded, 1.80m

Test software:

Software version	Test level
ART2-GUI	Default

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)

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

Canada Industry Canada

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	2021-03-24
EZ-EMC	EZ	CCS-3A1-CE	/	/
Radiated Spurious Emission& Restricted bands of operation				
TEST RECEIVER	R&S	ESCI	100145	2021-10-07
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16
Bilog Antenna	TESEQ	CBL6143A	26039	2021-11-25
Horn Antenna	Schwarzbeck	BBHA 9120D(1201)	02143	2021-12-27
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2021-11-05
Amplifier	EMEC	EM330	/	2021-04-01
Amplifier	Tonscend	TAP9E6343	AP20E806065	2021-06-28
Amplifier	Tonscend	TAP01018048	AP20E8060075	2021-06-28
Amplifier	Tonscend	TAP184050	AP20E806071	2021-06-15
Test S/W	EZ	CCS-2ANT	/	/
Test S/W	Tonscend	JS32-RE/2.5.2.4		
6 dB Bandwidth				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16
Maximum Peak Output Power				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16
Conducted band edges and Spurious Emission				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16
Power Spectral Density				
Spectrum Analyzer	Agilent	N9010A	MY52221469	2021-05-16

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.

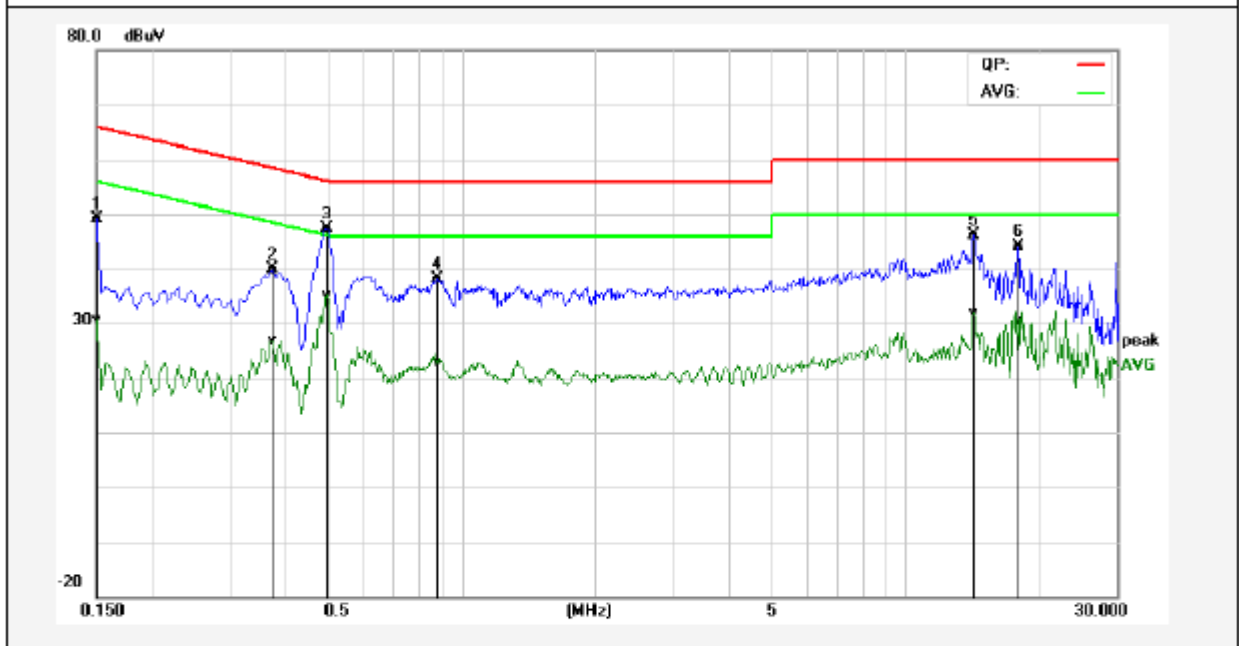
Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62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

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5.5. TEST RESULTS

EUT Name	LoRaWAN Gateway	Model	G200-HA923
Environmental Conditions	21.8°C/45%RH/101kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Jiang Tao
Test Date	2021-01-16	Sample No.	E202012115394-0003

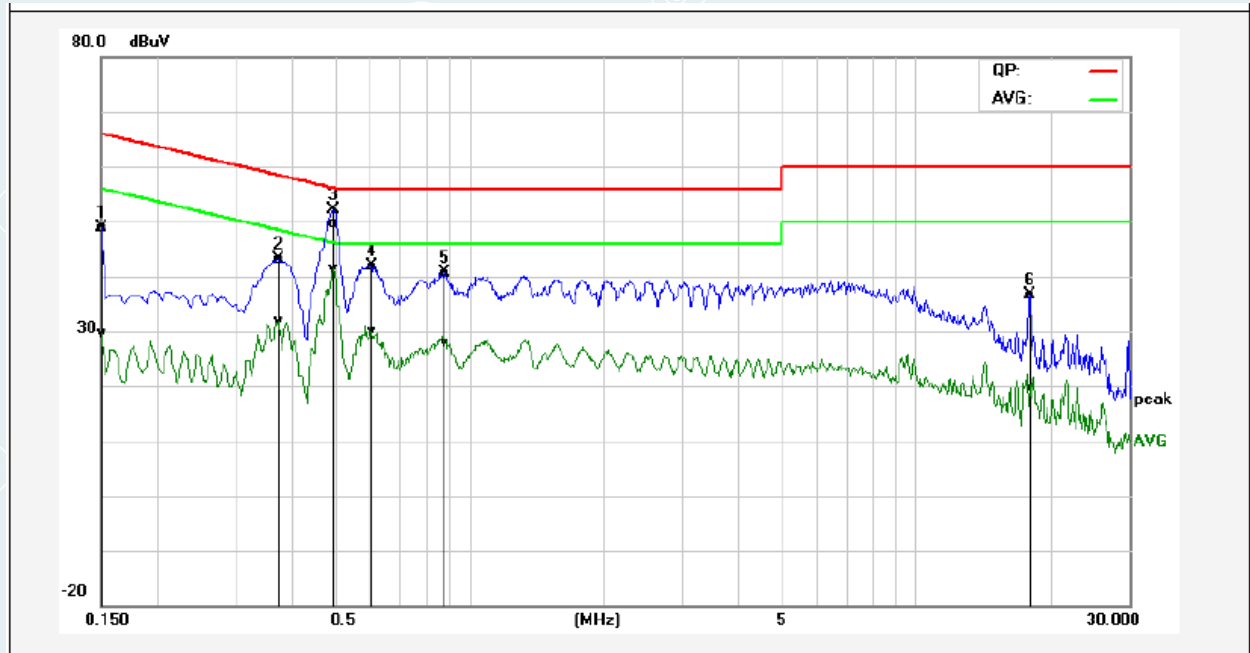
Line: L1



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	0.1500	39.45	20.96	9.61	49.06	30.57	65.99	56.00	-16.93	-25.43	Pass
2	0.3740	30.19	17.15	9.62	39.81	26.77	58.41	48.41	-18.60	-21.64	Pass
3*	0.4980	37.87	25.46	9.62	47.49	35.08	56.03	46.03	-8.54	-10.95	Pass
4	0.8820	28.39	13.36	9.62	38.01	22.98	56.00	46.00	-17.99	-23.02	Pass
5	14.2420	36.43	22.07	9.78	46.21	31.85	60.00	50.00	-13.79	-18.15	Pass
6	18.0380	34.30	20.48	9.83	44.13	30.31	60.00	50.00	-15.87	-19.69	Pass

EUT Name	LoRaWAN Gateway	Model	G200-HA923
Environmental Conditions	21.8°C/45%RH/101kPa	Test Mode	Mode 1
Power supply	AC120V/60Hz	Tested By	Jiang Tao
Test Date	2021-01-16	Sample No.	E202012115394-0003

Line: N



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	0.1500	39.19	20.05	9.61	48.80	29.66	65.99	56.00	-17.19	-26.34	Pass
2	0.3740	33.41	22.20	9.62	43.03	31.82	58.41	48.41	-15.38	-16.59	Pass
3*	0.4980	40.07	31.70	9.62	49.69	41.32	56.03	46.03	-6.34	-4.71	Pass
4	0.6060	32.26	20.33	9.61	41.87	29.94	56.00	46.00	-14.13	-16.06	Pass
5	0.8820	31.08	18.27	9.62	40.70	27.89	56.00	46.00	-15.30	-18.11	Pass
6	18.0020	26.85	10.12	9.83	36.68	19.95	60.00	50.00	-23.32	-30.05	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 QPK 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 3 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 2.5 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

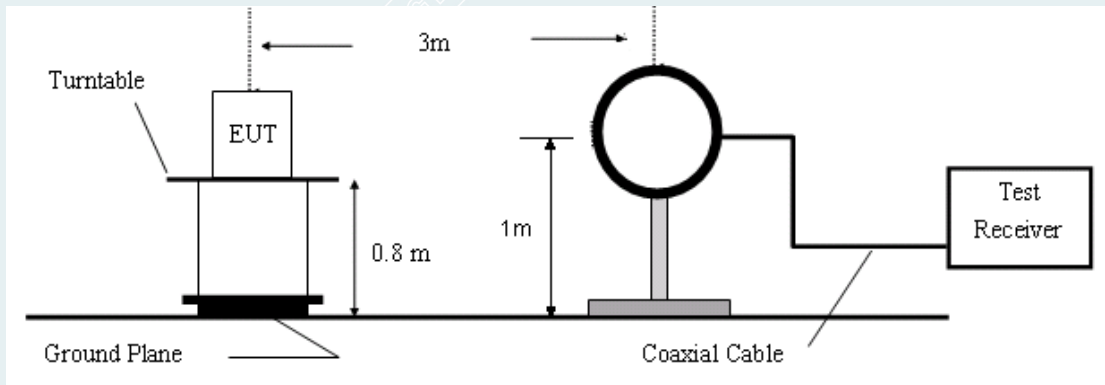


Figure 1. 9 KHz to 30MHz radiated emissions test configuration

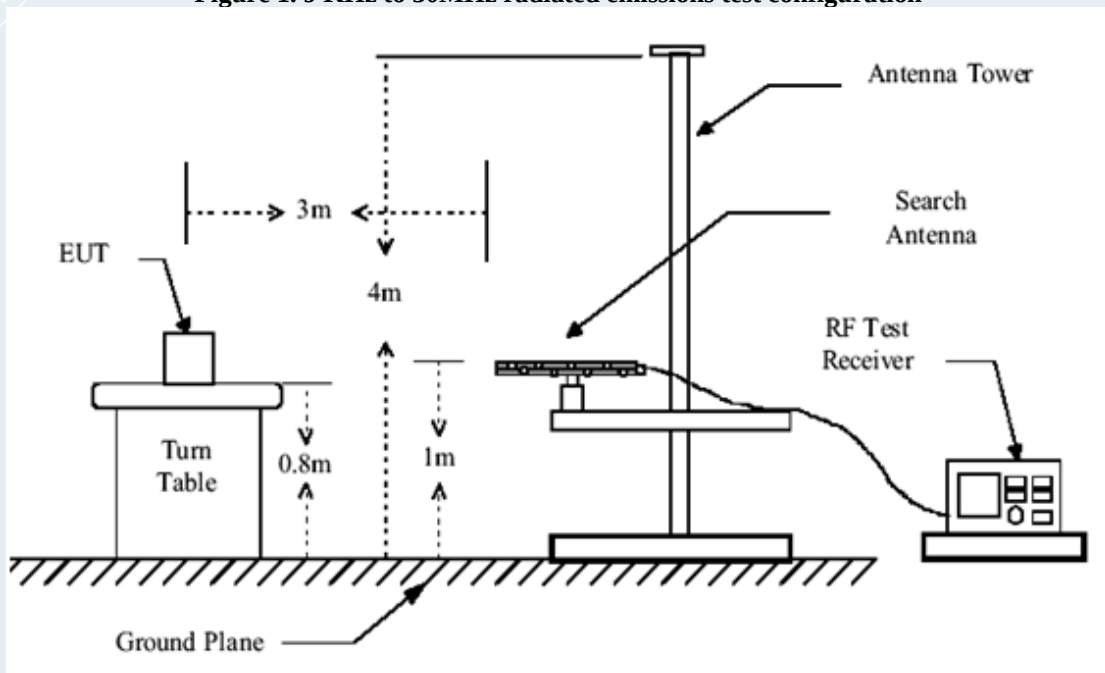


Figure 2. 30MHz to 1GHz radiated emissions test configuration

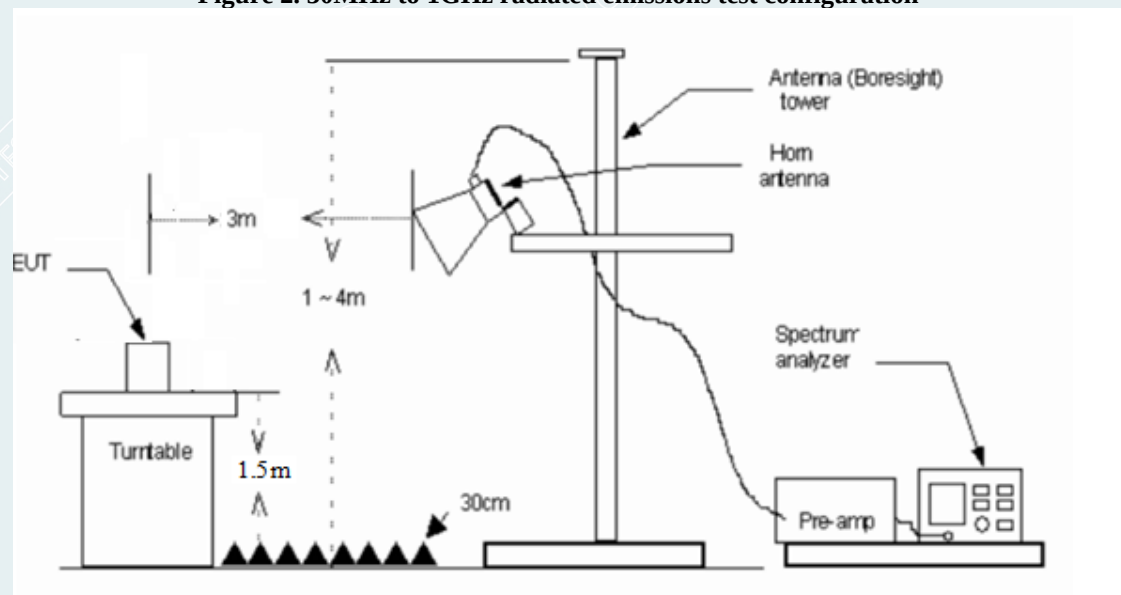


Figure 3. Above 1GHz radiated emissions test configuration

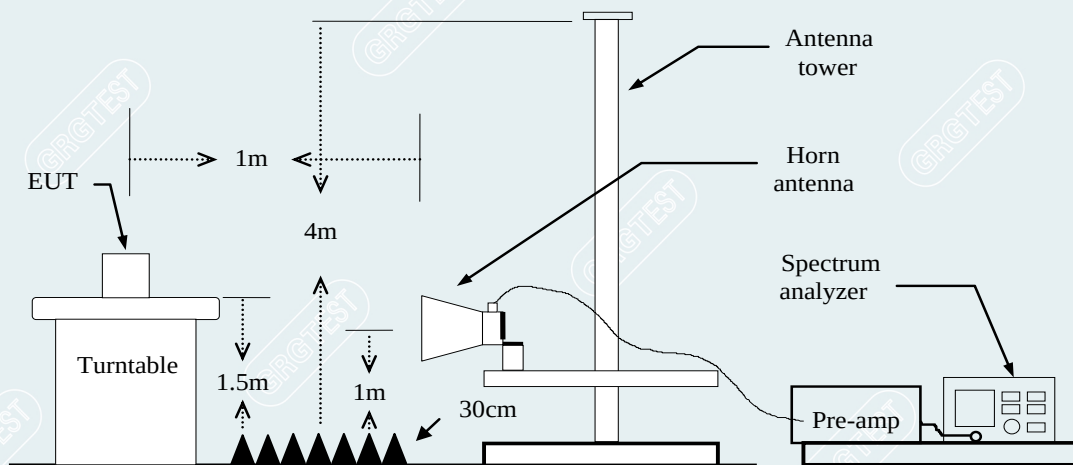


Figure 4. Above 18GHz radiated emissions test configuration

6.4. DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (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)	Correct Factor(dB/m)	Result (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)	Level (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	59.22	58.58	-0.64	83.54	24.96	peak	Vertical
xxx	xxx	53.01	52.37	-0.64	63.54	11.17	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)

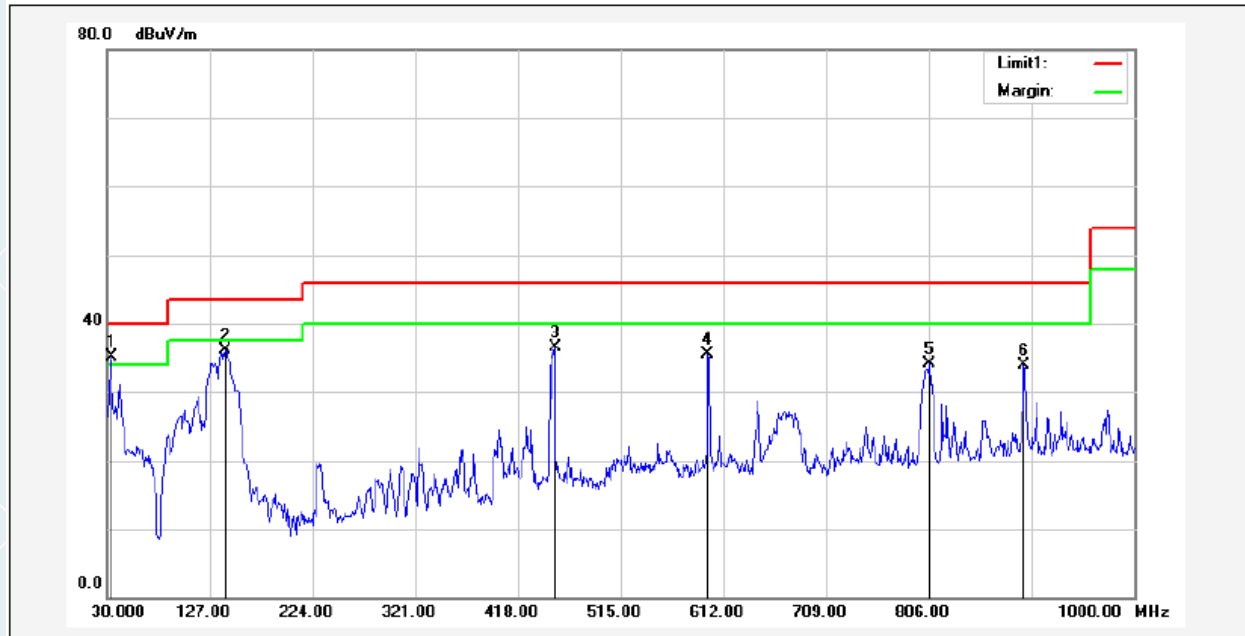
Mode: TX/ IEEE 802.11b

Lowest channel (2412MHz)

Polarity

Date: 2021-02-01

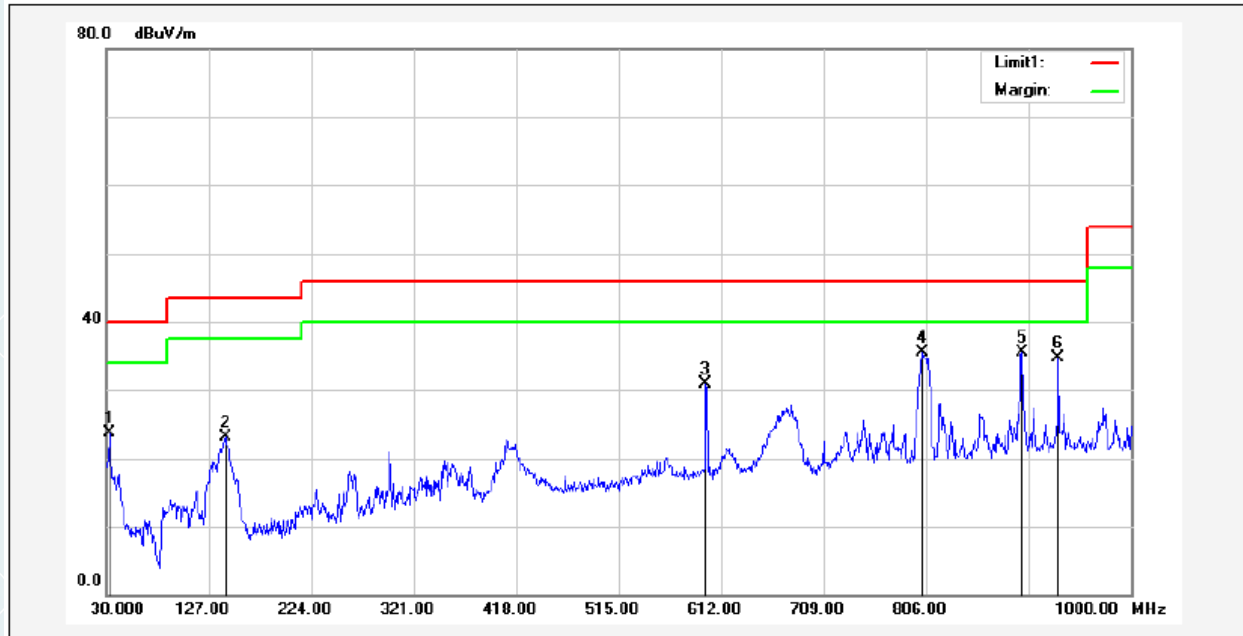
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1*	33.8800	53.98	-18.84	35.14	40.00	-4.86	150	100	QP
2	141.5500	62.59	-26.42	36.17	43.50	-7.33	264	100	QP
3	452.9200	56.93	-20.42	36.51	46.00	-9.49	312	100	QP
4	597.4500	53.10	-17.60	35.50	46.00	-10.50	205	199	QP
5	806.9700	49.57	-15.49	34.08	46.00	-11.92	159	199	QP
6	896.2100	48.93	-14.97	33.96	46.00	-12.04	63	100	QP

Mode: TX/ IEEE 802.11b
 Lowest channel (2412MHz)
 Polarity

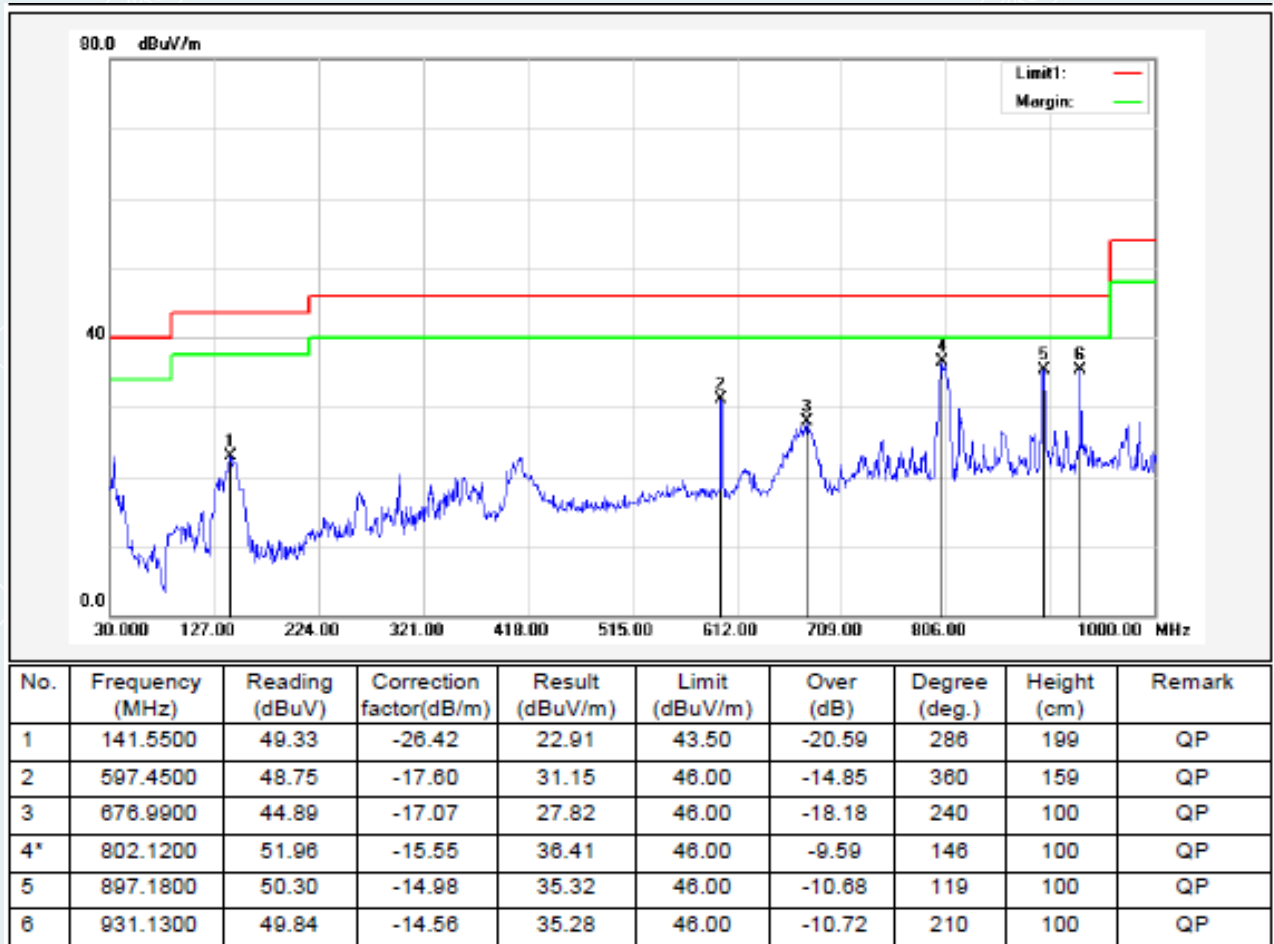
Date: 2021-02-01
 Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	32.9100	42.16	-18.38	23.78	40.00	-16.22	260	100	QP
2	142.5200	49.64	-26.48	23.16	43.50	-20.34	275	199	QP
3	597.4500	48.59	-17.60	30.99	46.00	-15.01	360	158	QP
4*	803.0900	51.03	-15.53	35.50	46.00	-10.50	135	100	QP
5	897.1800	50.46	-14.98	35.48	46.00	-10.52	146	100	QP
6	931.1300	49.19	-14.56	34.63	46.00	-11.37	209	100	QP

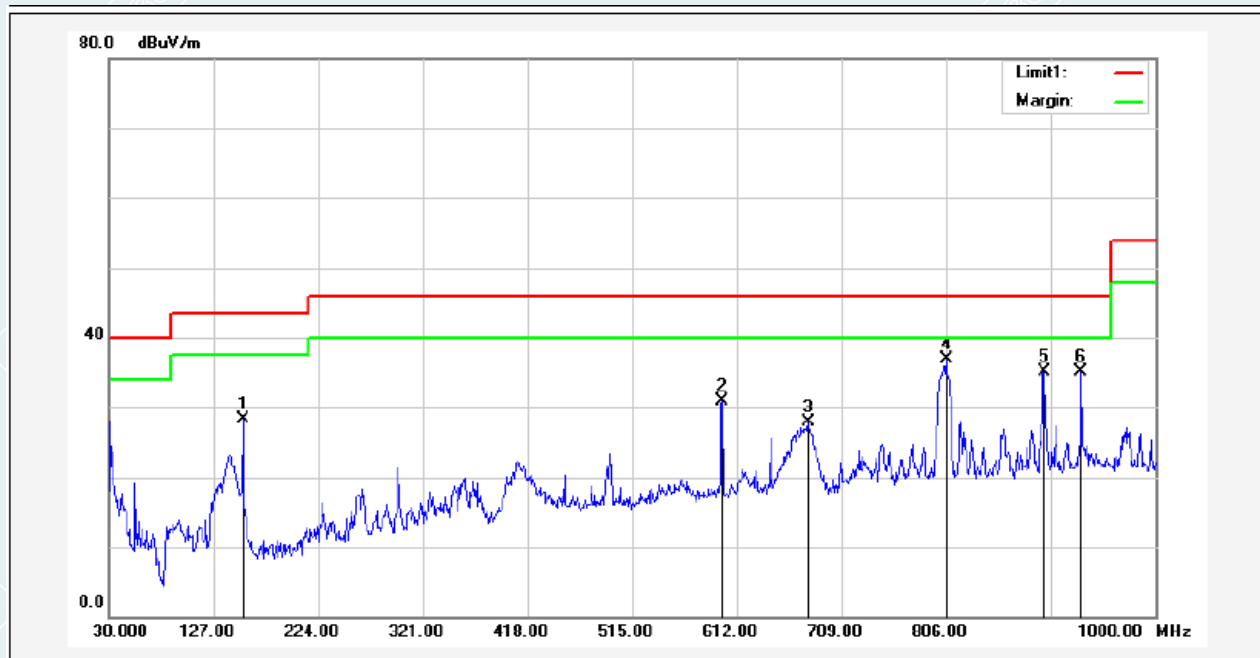
Mode: TX/ IEEE 802.11b
 Middle channel (2437MHz)
 Polarity

Date: 2021-02-01
 Vertical



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

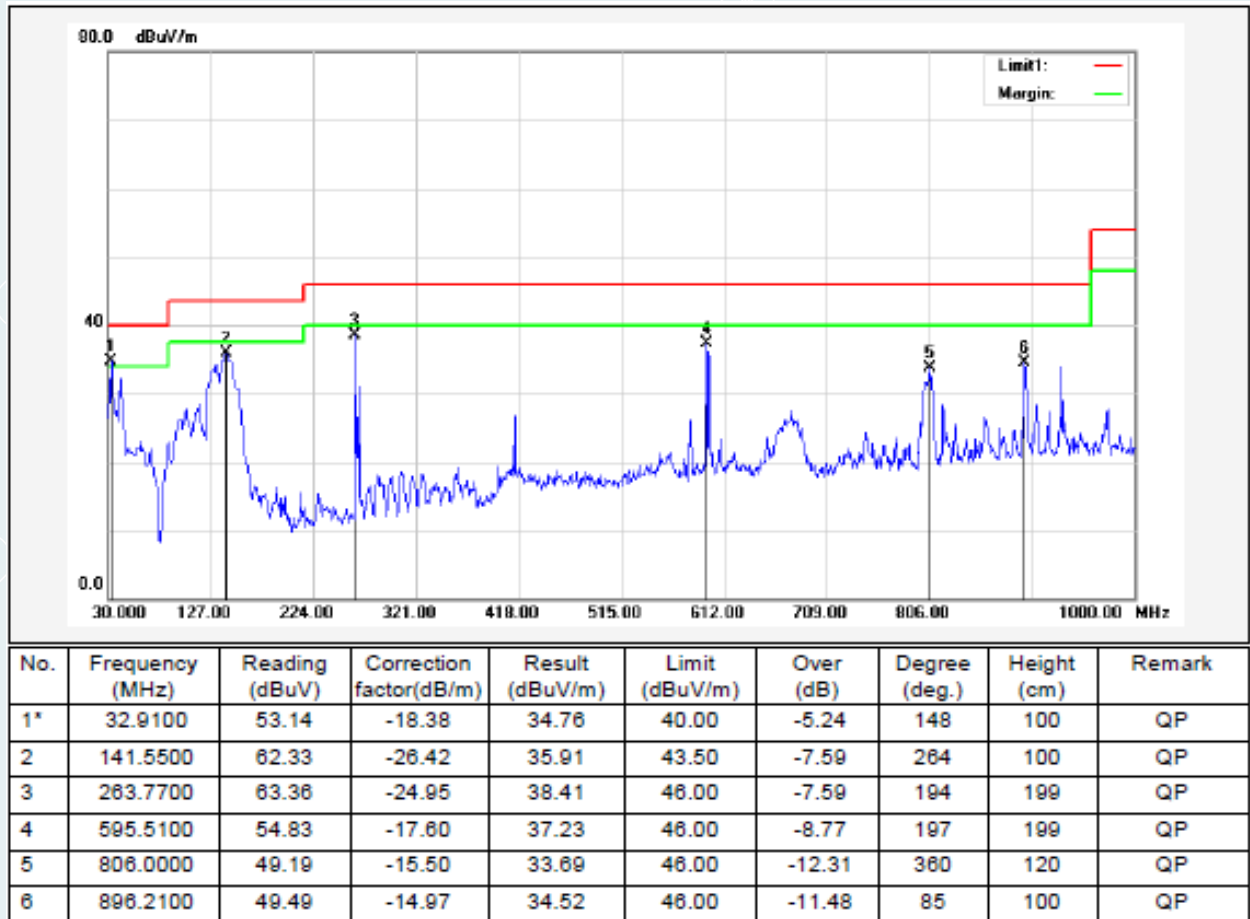
Date: 2021-02-01
 Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	154.1600	55.65	-27.27	28.38	43.50	-15.12	193	199	QP
2	598.4200	48.41	-17.60	30.81	46.00	-15.19	360	168	QP
3	677.9600	45.03	-17.06	27.97	46.00	-18.03	247	100	QP
4*	806.0000	52.36	-15.50	36.86	46.00	-9.14	137	100	QP
5	897.1800	50.17	-14.98	35.19	46.00	-10.81	153	100	QP
6	931.1300	49.61	-14.56	35.05	46.00	-10.95	213	100	QP

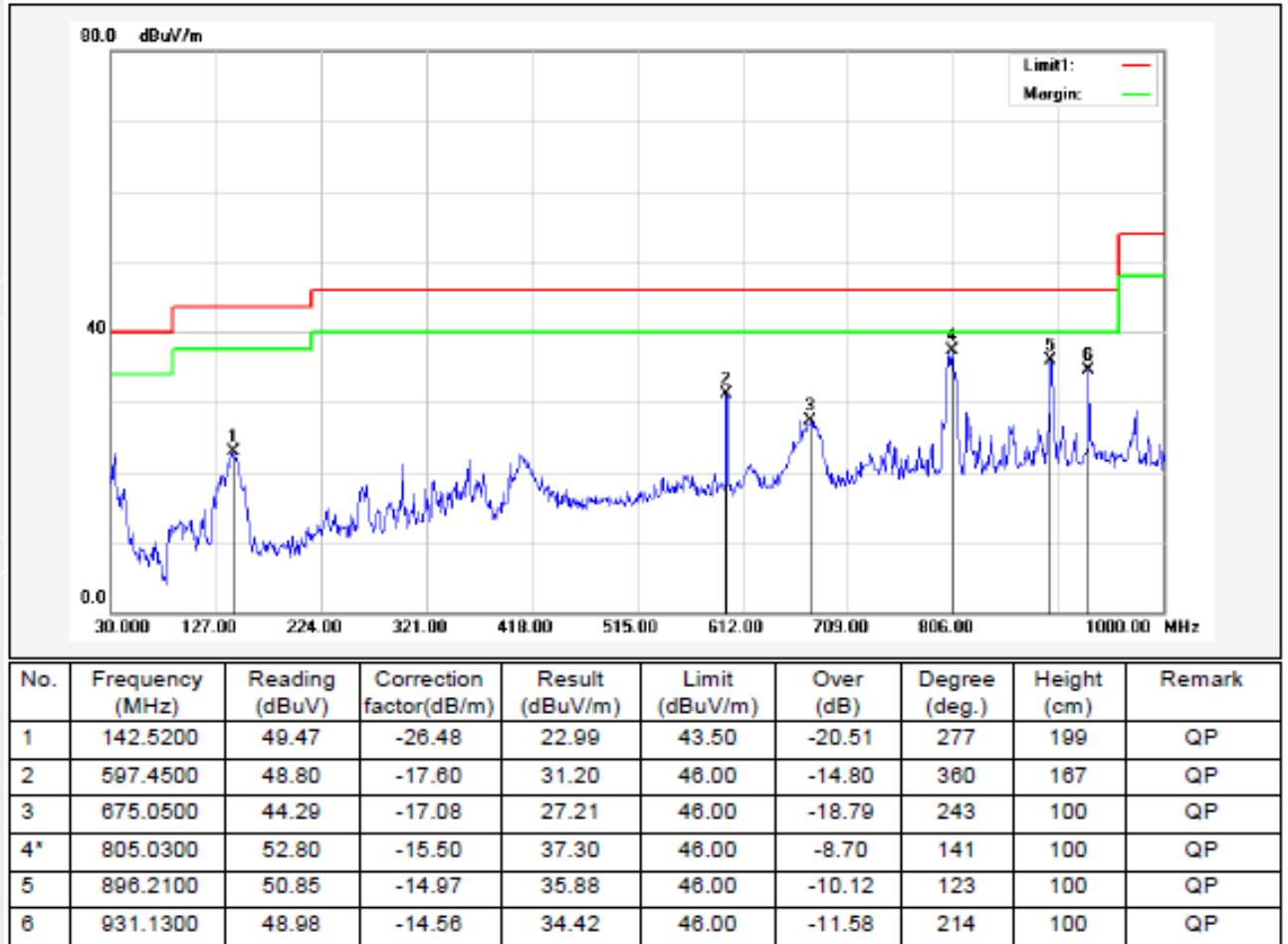
Mode: TX/ IEEE 802.11b
 Highest channel (2462MHz)
 Polarity

Date: 2021-02-01
 Vertical



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

Date: 2021-02-01
 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: TX / IEEE 802.11b

Lowest channel (2412MHz)

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1194.8195	65.21	40.60	-24.61	74.00	33.40	100	291	Horizontal
2	2089.7090	65.08	43.50	-21.58	74.00	30.50	200	270	Horizontal
3	2511.7512	68.42	48.23	-20.19	74.00	25.77	100	127	Horizontal
4	4824.1824	62.70	52.06	-10.64	74.00	21.94	200	29	Horizontal
5	14201.6202	43.29	51.36	8.07	74.00	22.64	100	120	Horizontal
6	17906.9907	42.40	52.20	9.80	74.00	21.80	200	135	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2507.7450	-20.19	100	140	Horizontal
2	4824.0136	-10.64	100	43	Horizontal
3	14199.9870	8.07	100	47	Horizontal
4	17862.5814	9.80	100	160	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	2507.7450	-20.19	48.85	28.66	54.00	25.34	100	140	Horizontal
2	4824.0136	-10.64	57.61	46.97	54.00	7.03	100	43	Horizontal
3	14199.9870	8.07	29.22	37.29	54.00	16.71	100	47	Horizontal
4	17862.5814	9.80	28.83	38.63	54.00	15.37	100	160	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	1194.6195	65.59	40.98	-24.61	74.00	33.02	100	277	Vertical
2	2687.7688	65.14	45.88	-19.26	74.00	28.12	200	239	Vertical
3	4824.1824	62.88	52.24	-10.64	74.00	21.76	100	157	Vertical
4	7653.4653	50.48	46.59	-3.89	74.00	27.41	200	255	Vertical
5	14120.6121	43.82	51.22	7.40	74.00	22.78	100	53	Vertical
6	17819.9820	42.09	52.15	10.06	74.00	21.85	100	203	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	4824.0136	-10.64	100	44	Vertical
2	14089.4761	7.41	100	2	Vertical
3	17861.2353	10.06	100	2	Vertical
4	4824.0377	-10.64	200	302	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	4824.0136	-10.64	59.05	48.41	54.00	5.59	100	44	Vertical
2	14089.4761	7.41	29.84	37.25	54.00	16.75	100	2	Vertical
3	17861.2353	10.06	29.70	39.76	54.00	14.24	100	2	Vertical
4	4824.0377	-10.64	57.16	46.52	54.00	7.48	200	302	Vertical

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

Date: 2021-01-10

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	1195.2195	65.53	40.92	-24.61	74.00	33.08	200	291	Horizontal
2	1749.0749	64.21	41.67	-22.54	74.00	32.33	200	105	Horizontal
3	2434.9435	74.65	54.24	-20.41	74.00	19.76	100	105	Horizontal
4	4873.6874	60.06	49.31	-10.75	74.00	24.69	200	29	Horizontal
5	14308.1308	42.88	50.77	7.89	74.00	23.23	100	0	Horizontal
6	17851.4851	42.49	52.60	10.11	74.00	21.40	100	211	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.7244	-20.41	100	150	Horizontal
2	4874.0286	-10.75	100	43	Horizontal
3	14301.1198	7.89	100	2	Horizontal
4	17853.5380	10.11	100	2	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2434.7244	-20.41	68.60	48.19	54.00	5.81	100	150	Horizontal
2	4874.0286	-10.75	56.16	45.41	54.00	8.59	100	43	Horizontal
3	14301.1198	7.89	28.85	36.74	54.00	17.26	100	2	Horizontal
4	17853.5380	10.11	28.75	38.86	54.00	15.14	100	2	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	1083.4083	67.04	42.06	-24.98	74.00	31.94	200	247	Vertical
2	1757.0757	65.95	43.47	-22.48	74.00	30.53	200	105	Vertical
3	2434.9435	74.61	54.20	-20.41	74.00	19.80	100	105	Vertical
4	4873.6874	60.54	49.79	-10.75	74.00	24.21	100	29	Vertical
5	14203.1203	43.07	51.11	8.04	74.00	22.89	100	36	Vertical
6	17866.4866	42.38	52.43	10.05	74.00	21.57	200	70	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.7244	-20.41	100	151	Vertical
2	4874.0286	-10.75	100	44	Vertical
3	14199.2144	8.03	100	2	Vertical
4	17861.0373	10.05	100	14	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2434.7244	-20.41	68.28	47.87	54.00	6.13	100	151	Vertical
2	4874.0286	-10.75	58.65	47.90	54.00	6.10	100	44	Vertical
3	14199.2144	8.03	29.42	37.45	54.00	16.55	100	2	Vertical
4	17861.0373	10.05	28.84	38.89	54.00	15.11	100	14	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1194.8195	65.32	40.71	-24.61	74.00	33.29	200	290	Horizontal
2	2090.3090	65.51	43.93	-21.58	74.00	30.07	200	276	Horizontal
3	2361.7362	67.06	46.13	-20.93	74.00	27.87	200	105	Horizontal
4	2508.7509	68.34	48.10	-20.24	74.00	25.90	200	135	Horizontal
5	4924.6925	57.85	46.86	-10.99	74.00	27.14	100	31	Horizontal
6	14083.1083	43.40	51.01	7.61	74.00	22.99	100	255	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2509.0018	-20.23	100	143	Horizontal
2	14083.1083	7.61	100	255	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	2509.0018	-20.23	54.67	34.44	54.00	19.56	100	143	Horizontal
2	14083.1083	7.61	29.39	37.00	54.00	17.00	100	255	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	1194.4194	65.29	40.68	-24.61	74.00	33.32	200	286	Vertical
2	2506.3506	70.42	50.14	-20.28	74.00	23.86	200	105	Vertical
3	4923.1923	57.64	46.65	-10.99	74.00	27.35	100	24	Vertical
4	7765.9766	50.26	47.03	-3.23	74.00	26.97	200	255	Vertical
5	14086.1086	43.51	51.20	7.69	74.00	22.80	100	16	Vertical
6	17863.4863	42.62	52.69	10.07	74.00	21.31	200	255	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2509.2078	-20.28	100	144	Vertical
2	14086.1086	7.69	100	16	Vertical
3	17863.4863	10.07	200	176	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2509.2078	-20.28	59.58	39.30	54.00	14.70	100	144	Vertical
2	14086.1086	7.69	29.66	37.35	54.00	16.65	100	16	Vertical
3	17863.4863	10.07	28.38	38.45	54.00	15.55	200	176	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1195.2195	66.23	41.62	-24.61	74.00	32.38	200	285	Horizontal
2	1494.0494	63.37	40.25	-23.12	74.00	33.75	100	295	Horizontal
3	2090.7091	63.42	41.84	-21.58	74.00	32.16	100	265	Horizontal
4	2389.5390	70.48	49.83	-20.65	74.00	24.17	200	345	Horizontal
5	4824.1824	61.88	51.24	-10.64	74.00	22.76	200	172	Horizontal
6	14095.1095	43.21	51.12	7.91	74.00	22.88	200	112	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2388.7146	-20.66	100	143	Horizontal
2	4822.1562	-10.64	100	51	Horizontal
3	14095.1095	7.91	200	112	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	2388.7146	-20.66	53.90	33.24	54.00	20.76	100	143	Horizontal
2	4822.1562	-10.64	44.25	33.61	54.00	20.39	100	51	Horizontal
3	14095.1095	7.91	29.63	37.54	54.00	16.46	200	112	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	1195.2195	65.80	41.19	-24.61	74.00	32.81	100	284	Vertical
2	1748.6749	63.92	41.38	-22.54	74.00	32.62	100	105	Vertical
3	2389.3389	72.71	52.05	-20.66	74.00	21.95	200	105	Vertical
4	4824.1824	60.93	50.29	-10.64	74.00	23.71	200	29	Vertical
5	14309.6310	43.37	51.24	7.87	74.00	22.76	200	255	Vertical
6	17840.9841	41.96	52.06	10.10	74.00	21.94	200	65	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2388.7296	-20.66	100	143	Vertical
2	4823.5553	-10.64	100	50	Vertical
3	14309.6310	7.87	200	282	Vertical
4	17840.9841	10.10	200	65	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2388.7296	-20.66	53.82	33.16	54.00	20.84	100	143	Vertical
2	4823.5553	-10.64	44.86	34.22	54.00	19.78	100	50	Vertical
3	14309.6310	7.87	29.34	37.21	54.00	16.79	200	282	Vertical
4	17840.9841	10.10	28.17	38.27	54.00	15.73	200	65	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1195.8196	65.42	40.81	-24.61	74.00	33.19	100	278	Horizontal
2	1747.2747	65.62	43.08	-22.54	74.00	30.92	200	211	Horizontal
3	2435.1435	78.42	58.01	-20.41	74.00	15.99	100	105	Horizontal
4	4872.1872	56.77	46.03	-10.74	74.00	27.97	100	37	Horizontal
5	13886.5887	44.34	51.42	7.08	74.00	22.58	200	255	Horizontal
6	17822.9823	41.98	52.05	10.07	74.00	21.95	100	159	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.8513	-20.41	100	150	Horizontal
2	13886.5887	7.08	200	265	Horizontal
3	17822.9823	10.07	100	159	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	2434.8513	-20.41	65.54	45.13	54.00	8.87	100	150	Horizontal
2	13886.5887	7.08	30.33	37.41	54.00	16.59	200	265	Horizontal
3	17822.9823	10.07	28.56	38.63	54.00	15.37	100	159	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	1195.6196	65.08	40.47	-24.61	74.00	33.53	100	284	Vertical
2	1764.0764	67.16	44.73	-22.43	74.00	29.27	200	180	Vertical
3	2434.7435	78.01	57.60	-20.41	74.00	16.40	100	105	Vertical
4	4873.6874	57.86	47.11	-10.75	74.00	26.89	200	33	Vertical
5	13906.0906	43.61	50.93	7.32	74.00	23.07	100	255	Vertical
6	17873.9874	43.17	53.19	10.02	74.00	20.81	100	225	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.8044	-20.41	100	151	Vertical
2	13906.0906	7.32	100	265	Vertical
3	17873.9874	10.02	100	225	Vertical

AV Final Data List

NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2434.8044	-20.41	65.22	44.81	54.00	9.19	100	151	Vertical
2	13906.0906	7.32	29.13	36.45	54.00	17.55	100	265	Vertical
3	17873.9874	10.02	28.32	38.34	54.00	15.66	100	225	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1195.2195	65.48	40.87	-24.61	74.00	33.13	200	286	Horizontal
2	2090.9091	64.40	42.82	-21.58	74.00	31.18	100	291	Horizontal
3	2363.9364	66.39	45.48	-20.91	74.00	28.52	200	105	Horizontal
4	2508.7509	69.85	49.61	-20.24	74.00	24.39	100	142	Horizontal
5	4921.6922	56.82	45.83	-10.99	74.00	28.17	200	29	Horizontal
6	14305.1305	43.22	51.14	7.92	74.00	22.86	100	1	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2508.8638	-20.23	100	148	Horizontal
2	14305.1305	7.92	100	89	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	2508.8638	-20.23	54.11	33.88	54.00	20.12	100	148	Horizontal
2	14305.1305	7.92	28.72	36.64	54.00	17.36	100	89	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	1194.2194	65.89	41.28	-24.61	74.00	32.72	100	276	Vertical
2	1763.2763	65.37	42.94	-22.43	74.00	31.06	100	105	Vertical
3	2512.7513	69.43	49.26	-20.17	74.00	24.74	100	322	Vertical
4	4926.1926	55.06	44.08	-10.98	74.00	29.92	100	22	Vertical
5	13903.0903	43.35	50.68	7.33	74.00	23.32	100	255	Vertical
6	17666.9667	42.42	52.52	10.10	74.00	21.48	100	30	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2509.6857	-20.17	100	147	Vertical
2	13903.0903	7.33	100	255	Vertical
3	17666.9667	10.10	100	298	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	2509.6857	-20.17	58.26	38.09	54.00	15.91	100	147	Vertical
2	13903.0903	7.33	28.98	36.31	54.00	17.69	100	255	Vertical
3	17666.9667	10.10	28.21	38.31	54.00	15.69	100	298	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1082.4082	66.23	41.25	-24.98	74.00	32.75	100	105	Horizontal
2	1762.4762	66.11	43.67	-22.44	74.00	30.33	100	203	Horizontal
3	2388.5389	73.61	52.95	-20.66	74.00	21.05	100	105	Horizontal
4	2514.1514	69.39	49.24	-20.15	74.00	24.76	200	142	Horizontal
5	4825.6826	61.07	50.43	-10.64	74.00	23.57	200	26	Horizontal
6	14179.1179	43.89	51.33	7.44	74.00	22.67	200	188	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2388.7539	-20.67	100	145	Horizontal
2	2507.8786	-20.14	100	148	Horizontal
3	4823.6558	-10.64	100	45	Horizontal
4	14179.1179	7.44	200	188	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	2388.7539	-20.67	54.81	34.14	54.00	19.86	100	145	Horizontal
2	2507.8786	-20.14	49.02	28.88	54.00	25.12	100	148	Horizontal
3	4823.6558	-10.64	45.82	35.18	54.00	18.82	100	45	Horizontal
4	14179.1179	7.44	29.98	37.42	54.00	16.58	200	188	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	1195.4195	65.81	41.20	-24.61	74.00	32.80	200	276	Vertical
2	1747.6748	66.73	44.19	-22.54	74.00	29.81	200	105	Vertical
3	2388.3388	74.11	53.44	-20.67	74.00	20.56	200	105	Vertical
4	2509.7510	68.44	48.22	-20.22	74.00	25.78	200	105	Vertical
5	4827.1827	60.45	49.82	-10.63	74.00	24.18	200	167	Vertical
6	14026.1026	44.12	50.77	6.65	74.00	23.23	100	92	Vertical

PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2388.7090	-20.67	100	146	Vertical
2	2505.5974	-20.22	100	148	Vertical
3	4822.5245	-10.63	100	43	Vertical
4	14026.1026	6.65	100	101	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	2388.7090	-20.67	54.51	33.84	54.00	20.16	100	146	Vertical
2	2505.5974	-20.22	49.26	29.04	54.00	24.96	100	148	Vertical
3	4822.5245	-10.63	46.67	36.04	54.00	17.96	100	43	Vertical
4	14026.1026	6.65	30.13	36.78	54.00	17.22	100	101	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1081.0081	64.02	39.04	-24.98	74.00	34.96	100	105	Horizontal
2	1194.8195	65.78	41.17	-24.61	74.00	32.83	200	283	Horizontal
3	1752.2752	64.02	41.50	-22.52	74.00	32.50	100	105	Horizontal
4	2434.7435	77.99	57.58	-20.41	74.00	16.42	200	105	Horizontal
5	4875.1875	56.48	45.71	-10.77	74.00	28.29	100	31	Horizontal
6	14197.1197	42.59	50.61	8.02	74.00	23.39	100	211	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.7678	-20.41	100	149	Horizontal
2	14197.1197	8.02	100	211	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	2434.7678	-20.41	65.35	44.94	54.00	9.06	100	149	Horizontal
2	14197.1197	8.02	29.10	37.12	54.00	16.88	100	211	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	1195.2195	65.44	40.83	-24.61	74.00	33.17	200	291	Vertical
2	1746.0746	64.45	41.91	-22.54	74.00	32.09	100	321	Vertical
3	2434.9435	78.01	57.60	-20.41	74.00	16.40	100	105	Vertical
4	4872.1872	56.26	45.52	-10.74	74.00	28.48	200	166	Vertical
5	14183.6184	43.60	51.19	7.59	74.00	22.81	200	62	Vertical
6	17599.4599	42.83	53.28	10.45	74.00	20.72	100	114	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.8461	-20.41	100	143	Vertical
2	14198.6530	7.59	100	2	Vertical
3	17599.4599	10.45	100	114	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2434.8461	-20.41	66.11	45.70	54.00	8.30	100	143	Vertical
2	14198.6530	7.59	29.43	37.02	54.00	16.98	100	2	Vertical
3	17599.4599	10.45	28.64	39.09	54.00	14.91	100	114	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1194.8195	66.01	41.40	-24.61	74.00	32.60	100	285	Horizontal
2	1758.6759	67.66	45.19	-22.47	74.00	28.81	200	105	Horizontal
3	2092.1092	65.35	43.77	-21.58	74.00	30.23	200	105	Horizontal
4	2509.9510	69.62	49.40	-20.22	74.00	24.60	100	134	Horizontal
5	4917.1917	55.11	44.12	-10.99	74.00	29.88	200	31	Horizontal
6	13391.5392	44.95	51.35	6.40	74.00	22.65	100	45	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2509.0098	-20.21	100	151	Horizontal
2	13391.5392	6.40	100	75	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	2509.0098	-20.21	52.38	32.17	54.00	21.83	100	151	Horizontal
2	13391.5392	6.40	29.67	36.07	54.00	17.93	100	75	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	1194.2194	65.50	40.89	-24.61	74.00	33.11	200	276	Vertical
2	1746.4746	64.70	42.16	-22.54	74.00	31.84	100	262	Vertical
3	2508.5509	68.88	48.64	-20.24	74.00	25.36	200	322	Vertical
4	3058.5059	60.36	42.31	-18.05	74.00	31.69	100	76	Vertical
5	4920.1920	56.30	45.31	-10.99	74.00	28.69	100	23	Vertical
6	14186.6187	43.46	51.14	7.68	74.00	22.86	100	255	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2509.5418	-20.24	100	145	Vertical
2	14186.6187	7.68	100	265	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2509.5418	-20.24	54.39	34.15	54.00	19.85	100	145	Vertical
2	14186.6187	7.68	29.83	37.51	54.00	16.49	100	265	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1195.8196	65.86	41.25	-24.61	74.00	32.75	200	288	Horizontal
2	1763.6764	64.30	41.87	-22.43	74.00	32.13	200	203	Horizontal
3	2090.7091	64.18	42.60	-21.58	74.00	31.40	200	311	Horizontal
4	2387.9388	82.28	61.61	-20.67	74.00	12.39	100	105	Horizontal
5	4822.6823	56.22	45.57	-10.65	74.00	28.43	100	34	Horizontal
6	14087.6088	43.10	50.82	7.72	74.00	23.18	100	255	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2388.0104	-20.67	100	144	Horizontal
2	14087.6088	7.72	100	255	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	2388.0104	-20.67	64.73	44.06	54.00	9.94	100	144	Horizontal
2	14087.6088	7.72	28.86	36.58	54.00	17.42	100	255	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	1083.6084	66.78	41.80	-24.98	74.00	32.20	100	119	Vertical
2	1195.2195	66.10	41.49	-24.61	74.00	32.51	100	284	Vertical
3	1764.2764	64.66	42.23	-22.43	74.00	31.77	100	105	Vertical
4	2387.5388	82.78	62.11	-20.67	74.00	11.89	100	105	Vertical
5	4848.1848	58.12	47.57	-10.55	74.00	26.43	100	171	Vertical
6	14188.1188	43.28	51.01	7.73	74.00	22.99	200	60	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2388.1237	-20.67	100	146	Vertical
2	14188.1188	7.73	200	60	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dB μ V/m]	AV Value [dB μ V/m]	AV Limit [dB μ V/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2388.1237	-20.67	64.10	43.43	54.00	10.57	100	146	Vertical
2	14188.1188	7.73	29.43	37.16	54.00	16.84	200	60	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1081.6082	67.61	42.63	-24.98	74.00	31.37	100	105	Horizontal
2	1195.2195	65.43	40.82	-24.61	74.00	33.18	100	279	Horizontal
3	1764.0764	67.56	45.13	-22.43	74.00	28.87	100	215	Horizontal
4	2089.7090	64.27	42.69	-21.58	74.00	31.31	100	279	Horizontal
5	2434.9435	74.22	53.81	-20.41	74.00	20.19	200	105	Horizontal
6	4872.1872	54.66	43.92	-10.74	74.00	30.08	200	172	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.9192	-20.41	100	144	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	2434.9192	-20.41	61.84	41.43	54.00	12.57	100	144	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	1081.8082	66.33	41.35	-24.98	74.00	32.65	200	250	Vertical
2	1195.0195	65.52	40.91	-24.61	74.00	33.09	100	293	Vertical
3	1749.6750	68.96	46.42	-22.54	74.00	27.58	200	250	Vertical
4	2434.5435	74.39	53.98	-20.41	74.00	20.02	200	105	Vertical
5	3058.5059	59.90	41.85	-18.05	74.00	32.15	100	105	Vertical
6	4866.1866	54.40	43.71	-10.69	74.00	30.29	200	21	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2434.7504	-20.41	100	143	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	2434.7504	-20.41	61.96	41.55	54.00	12.45	100	143	Vertical

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

Date: 2021-01-10

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1084.6085	66.96	41.99	-24.97	74.00	32.01	200	277	Horizontal
2	1195.8196	65.77	41.16	-24.61	74.00	32.84	100	291	Horizontal
3	1747.2747	63.02	40.48	-22.54	74.00	33.52	100	359	Horizontal
4	2090.7091	65.18	43.60	-21.58	74.00	30.40	100	277	Horizontal
5	2500.3500	74.71	54.34	-20.37	74.00	19.66	100	105	Horizontal
6	4897.6898	53.82	42.85	-10.97	74.00	31.15	200	136	Horizontal

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2499.7124	-20.37	100	143	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	2499.7124	-20.37	56.04	35.67	54.00	18.33	100	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	1080.0080	64.83	39.84	-24.99	74.00	34.16	200	105	Vertical
2	1194.0194	65.94	41.33	-24.61	74.00	32.67	100	284	Vertical
3	1762.8763	64.46	42.02	-22.44	74.00	31.98	200	283	Vertical
4	2090.7091	64.00	42.42	-21.58	74.00	31.58	100	291	Vertical
5	2500.1500	74.69	54.31	-20.38	74.00	19.69	200	105	Vertical
6	4899.1899	54.92	43.94	-10.98	74.00	30.06	100	38	Vertical

PK Final Data List					
NO.	Freq. [MHz]	Factor [dB]	Height [cm]	Angle [°]	Polarity
1	2499.5375	-20.38	100	146	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	2499.5375	-20.38	55.24	34.86	54.00	19.14	100	146	Vertical

Above 18GHz-26.5GHz:

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

Mode: TX / IEEE 802.11b

Lowest channel (2412MHz)

Date: 2020/11/02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18643.0250	58.70	47.32	-11.38	83.50	36.18	100	172	Horizontal
2	19786.2750	57.47	46.60	-10.87	83.50	36.90	100	200	Horizontal
3	21218.5250	56.95	46.69	-10.26	83.50	36.81	100	172	Horizontal
4	22511.3750	55.51	46.14	-9.37	83.50	37.36	100	172	Horizontal
5	23800.8250	56.05	47.59	-8.46	83.50	35.91	100	172	Horizontal
6	25240.3000	55.67	48.01	-7.66	83.50	35.49	100	172	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	18363.8000	58.49	46.95	-11.54	83.50	36.55	100	208	Vertical
2	19782.0250	56.93	46.06	-10.87	83.50	37.44	100	258	Vertical
3	21057.4500	57.50	47.20	-10.30	83.50	36.30	100	1	Vertical
4	22935.5250	55.83	46.85	-8.98	83.50	36.65	100	295	Vertical
5	24682.7000	55.31	47.21	-8.10	83.50	36.29	100	360	Vertical
6	25861.6500	55.98	47.78	-8.20	83.50	35.72	100	208	Vertical

Mode: TX / IEEE 802.11b

Lowest channel (2437MHz)

Date: 2020/11/02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18920.5500	58.30	47.13	-11.17	83.50	36.37	100	120	Horizontal
2	19260.9750	57.04	45.99	-11.05	83.50	37.51	100	283	Horizontal
3	20646.0500	56.36	45.96	-10.40	83.50	37.54	100	133	Horizontal
4	23241.9500	55.44	46.62	-8.82	83.50	36.88	100	308	Horizontal
5	23298.9000	56.04	47.24	-8.80	83.50	36.26	100	244	Horizontal
6	25265.8000	55.45	47.78	-7.67	83.50	35.72	100	170	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	18385.9000	58.61	47.08	-11.53	83.50	36.42	100	255	Vertical
2	19401.2250	57.88	46.91	-10.97	83.50	36.59	100	17	Vertical
3	21650.7500	56.78	46.85	-9.93	83.50	36.65	100	267	Vertical
4	23269.1500	55.93	47.12	-8.81	83.50	36.38	100	7	Vertical
5	23946.6000	55.41	47.10	-8.31	83.50	36.40	100	130	Vertical
6	25767.7250	56.95	48.86	-8.09	83.50	34.64	100	179	Vertical

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

Date: 2020/11/02

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18853.8250	58.28	47.04	-11.24	83.50	36.46	100	135	Horizontal
2	19670.6750	57.46	46.59	-10.87	83.50	36.91	100	73	Horizontal
3	20490.9250	56.76	46.26	-10.50	83.50	37.24	100	61	Horizontal
4	23224.1000	54.90	46.07	-8.83	83.50	37.43	100	110	Horizontal
5	24364.8000	55.81	47.64	-8.17	83.50	35.86	100	237	Horizontal
6	25114.5000	55.24	47.50	-7.74	83.50	36.00	100	48	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	18929.9000	58.05	46.89	-11.16	83.50	36.61	100	143	Vertical
2	19855.9750	57.19	46.33	-10.86	83.50	37.17	100	171	Vertical
3	21652.8750	56.23	46.30	-9.93	83.50	37.20	100	360	Vertical
4	22035.8000	56.56	46.63	-9.93	83.50	36.87	100	322	Vertical
5	23842.4750	55.49	47.07	-8.42	83.50	36.43	100	196	Vertical
6	26450.7000	55.19	47.69	-7.50	83.50	35.81	100	69	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

