

FCC Radio Test Report

FCC ID: 2AATB-SMC-1030

Report No. Equipment Model Name Brand Name Applicant Address	 BTL-FCCP-3-1803T076A Music Streamer SMC-1030 TTI Tatung Technology Inc. 10F, No.288, Sec 6, Civic Blvd, Xinyi Dist, Taipei City 11087, Taiwan
Radio Function	: WLAN 2.4 GHz
FCC Rule Part(s) Measurement Procedure(s)	: FCC Part15, Subpart C (15.247) : ANSI C63.4-2014
Date of Receipt Date of Test Issued Date	: 2018/4/25 : 2018/4/25 ~ 2019/9/20 : 2019/11/7

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.



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<u>3TL</u>



REPORT ISSUED HISTORY

REPORT ISSUED HISTORY				
Report Version	Description	Issued Date		
R00	Original Issue.	2019/11/7		

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

FCC Part 15, Subpart C (15.247)						
Standard(s) Section	Standard(s) Section Description Test Resu			Remark		
15.207	AC Power Line Conducted Emissions	APPENDIX A	Pass			
15.205 15.209 15.247(d)	Radiated Emissions	APPENDIX B APPENDIX C	Pass			
15.247(a)	Bandwidth	APPENDIX D	Pass			
15.247(b)	Output Power	APPENDIX E	Pass			
15.247(e)	Power Spectral Density	APPENDIX F	Pass			
15.247(d)	Antenna conducted Spurious Emission	APPENDIX G	Pass			
15.203	Antenna Requirement		Pass			

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report.



1.1 TEST FACILITY

The test facilities used to collect the test data in this report:

No. 6	8-1, Ln. ⁻	169, Sec. 2,	Datong Rd.	, Xizhi Dist.,	New Tai	pei City 221, T	Taiwan	
The t	est sites	and facilities	are covere	d under FC	C RN: 35	5421 and DN:	TW1099	
\boxtimes	C05		CB08		CB11	\boxtimes	CB15	CB16
\boxtimes	SR06							

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $\mathbf{y} \pm \mathbf{U}$, where expanded uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of $\mathbf{k} = 2$, providing a level of confidence of approximately **95**%. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C05	CISPR	150 kHz ~ 30MHz	3.44

B. Radiated emissions below 1 GHz test :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
CB15 (3m)	CISPR	30MHz ~ 200MHz	V	4.20
		30MHz ~ 200MHz	Н	3.64
		200MHz ~ 1,000MHz	V	4.56
		200MHz ~ 1,000MHz	Н	3.90

C. Radiated emissions above 1 GHz test :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
CB15 (3m)	CISPR	1GHz ~ 6GHz	V	4.46
		1GHz ~ 6GHz	Н	4.40
		6GHz ~ 18GHz	V	3.88
		6GHz ~ 18GHz	Η	4.00

Test Site	Method	Measurement Frequency Range	U,(dB)
CB15	CISPR	18 ~ 26.5 GHz	4.62
(1m)	CISER	26.5 ~ 40 GHz	5.12

D. Conducted test :

Test Item	U,(dB)
Bandwidth	1.13
Output power	1.06
Power Spectral Density	1.20
Conducted Spurious emissions	1.14
Conducted Band edges	1.13

NOTE:

Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Tested by
AC Power Line Conducted Emissions	25 °C, 45 %	Toby Tian
Radiated emissions below 1 GHz	22 °C, 60 %	Leo Liu
Radiated emissions above 1 GHz	22 °C, 60 %	Toby Tian
Bandwidth	23.9 °C, 49.7 %	Tim Lee
Output Power	23.9 °C, 49.7 %	Tim Lee
Power Spectral Density	23.9 °C, 49.7 %	Tim Lee
Antenna conducted Spurious Emission	23.9 °C, 49.7 %	Tim Lee

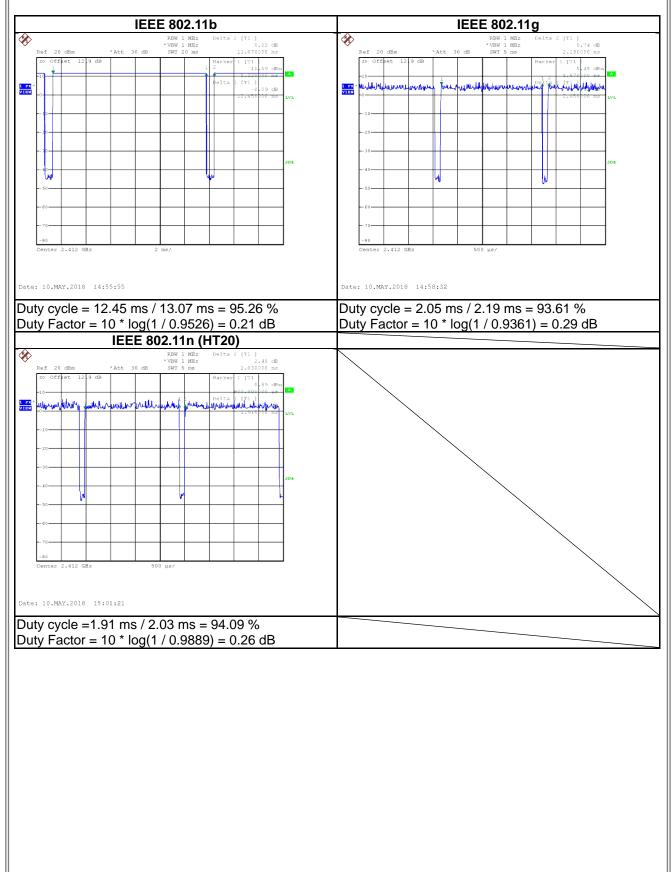
1.4 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

Test Software		Mt	ool	
Mode	2412 MHz	2437 MHz	2462 MHz	Data Rate
IEEE 802.11b	69	70	70	1 Mbps
IEEE 802.11g	52	68	68	6 Mbps
IEEE 802.11n (HT20)	48	64	64	MCS 0



1.5 DUTY CYCLE

If duty cycle is \geq 98 %, duty factor is not required. If duty cycle is < 98 %, duty factor shall be considered.



2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Music Streamer	
Model Name	SMC-1030	
Brand Name		
Model Difference	N/A	
Power Source	DC voltage supplied from External Power Supply.	
Power Rating	I/P: 100-240V~ 50-60 Hz 0.5A Max. O/P: 12.0V1.0A	
Products Covered	1 * Adapter: APD / WA-12M12FU 1 * remote control	
Frequency Range	2400 MHz ~ 2483.5 MHz	
Operation Frequency	2412 MHz ~ 2462 MHz	
Modulation Technology	IEEE 802.11b: DSSS IEEE 802.11g: OFDM IEEE 802.11n: OFDM	
Transfer Rate	IEEE 802.11b: 11/5.5/2/1 Mbps IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 300 Mbps	
Output Power Max.	IEEE 802.11b: 25.12 dBm (0.3247 W) IEEE 802.11g: 27.56 dBm (0.5703 W) IEEE 802.11n (HT20): 26.24 dBm (0.4204 W)	
Test Model	SMC-1030	
Sample Status	Engineering Sample	
EUT Modification(s)	N/A	

NOTE:

(1) For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

(2) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		



(3) Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Ethertronics	TTI_SMC-1030	PCB	I-PEX	4.8
2	Ethertronics	TTI_SMC-1030	PCB	I-PEX	4.0

NOTE:

(a) The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R). 2.4 GHz and 5GHz can't transmit simultaneously.

 (b) For Power Spectral Density (CDD mode) Directional Gain = 10log [(10^{G1/20} + 10^{G2/20} + ... + 10^{Gn/20})²/N_{ANT}] = 7.42 dBi dBi. > 6dBi. The reduced power spectral density limits (dBm/MHz) = 8 - (7.42-6) = 6.58
 (c) For Conducted Output Power (CDD mode)

For $N_{ANT} = 2 < 5$, Direction gain = $G_{ANT} + 0 = 4.8 + 0 = 4.8$ dBi .

The Direction gain is less than 6 dBi, so conducted power limits will not be reduced.

(4) Operating Mode and Antenna Configuration

Operating Mode	2 TX
IEEE 802.11b	Ant. 1 + Ant. 2
IEEE 802.11g	Ant. 1 + Ant. 2
IEEE 802.11n (HT20)	Ant. 1 + Ant. 2



2.2 TEST MODES

Test Items	Test mode	Channel	Note
AC power line conducted emissions	TX Mode_IEEE 802.11g	06	-
Transmitter Radiated Emissions (below 1GHz)	TX Mode_IEEE 802.11g	06	-
	TX Mode_IEEE 802.11b		
Transmitter Radiated Emissions (above 1GHz)	TX Mode_IEEE 802.11g	01/06/11	
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11b		
Bandwidth	TX Mode_IEEE 802.11g	01/06/11	-
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11b		
Output Power	TX Mode_IEEE 802.11g	01/06/11	-
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11b		
Power Spectral Density	TX Mode_IEEE 802.11g	01/06/11	-
	TX Mode_IEEE 802.11n (HT20)		
	TX Mode_IEEE 802.11b		
Antenna conducted Spurious Emission	TX Mode_IEEE 802.11g	01/06/11	-
	TX Mode_IEEE 802.11n (HT20)		

NOTE:

(1) The Radiated emissions test was verified based on the worst conducted power and Bandwidth test results reported in the original report.

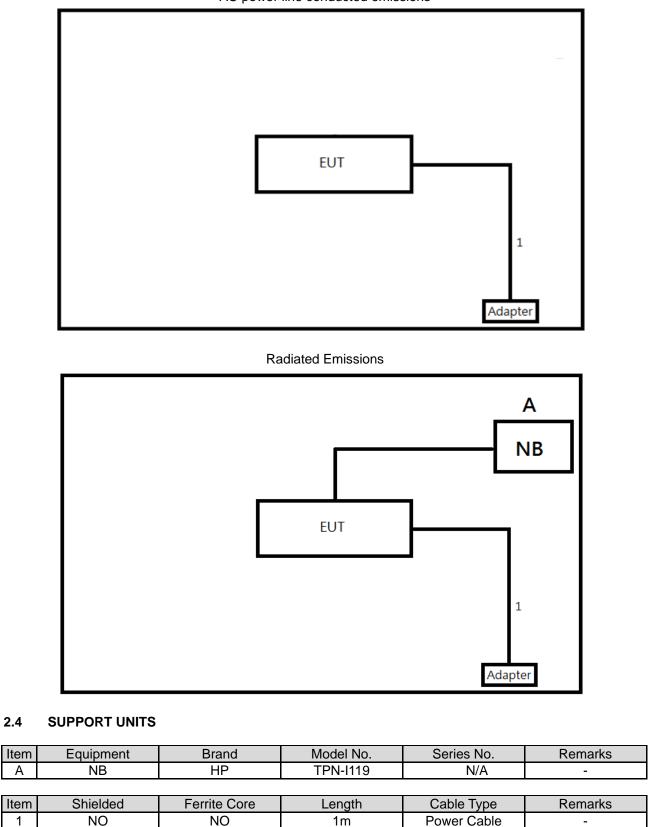
(2) All X, Y and Z axes are evaluated, but only the worst case (X axis) is recorded.

(3) There were no emissions found below 30 MHz within 20 dB of the limit.



2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4. AC power line conducted emissions





3 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency	Limit (dBµV)
(MHz)	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following: Measurement Value = Reading Level + Correct Factor Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use) Margin Level = Measurement Value – Limit Value Calculation example:

38.22 + 3.45	=	41.67

Measurement Value		Limit Value		Margin Level
41.67	-	60	Π	-18.33

The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.2 TEST PROCEDURE

a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
 All other support equipment were powered from an additional LISN(s).

The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.

- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle to keep the cable above 40 cm.
- c. Excess I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable will be terminated, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. The LISN is spaced at least 80 cm from the nearest part of the EUT chassis.
- e. For the actual test configuration, please refer to the related Item EUT TEST PHOTO.

NOTE:

- In the results, each reading is marked as Peak, QP or AVG per the detector used. BW=9 kHz (6 dB Bandwidth)
- (2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.

3.3 DEVIATION FROM TEST STANDARD

No deviation.



3.4 TEST SETUP

3.5 TEST RESULT

Please refer to the APPENDIX A.



4 RADIATED EMISSIONS TEST

4.1 LIMIT

In case the emission fall within the restricted band specified on 15.205, then the 15.209 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSIONS MEASUREMENT (9 kHz to 1000 MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSIONS MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	Radiated I (dBu	Emissions V/m)	Measurement Distance
(11172)	Peak	Average	(meters)
Above 1000	74	54	3

NOTE:

- (1) The limit for radiated test was performed according to FCC Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:
 - Measurement Value = Reading Level + Correct Factor
 - Correct Factor = Antenna Factor + Cable Loss Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level		Correct Factor		Measurement Value
19.11	+	2.11	Π	21.22

Measurement Value		Limit Value		Margin Level
21.22	-	54	=	-32.78

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	1MHz / 3MHz for Peak,
(Emission in restricted band)	1MHz / 1/T for Average

Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector



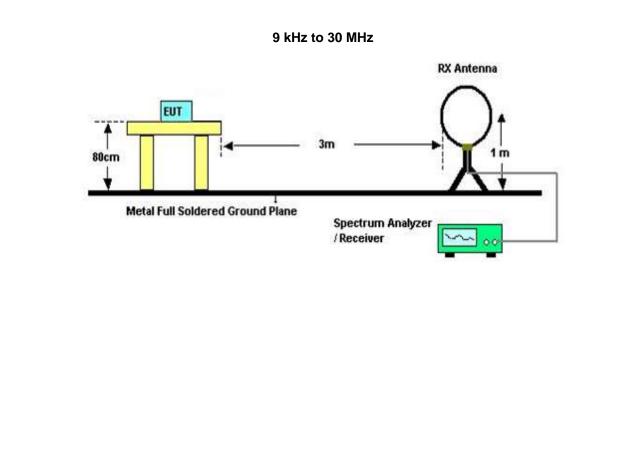
4.2 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1GHz)
- i. For the actual test configuration, please refer to the related Item EUT TEST PHOTO.

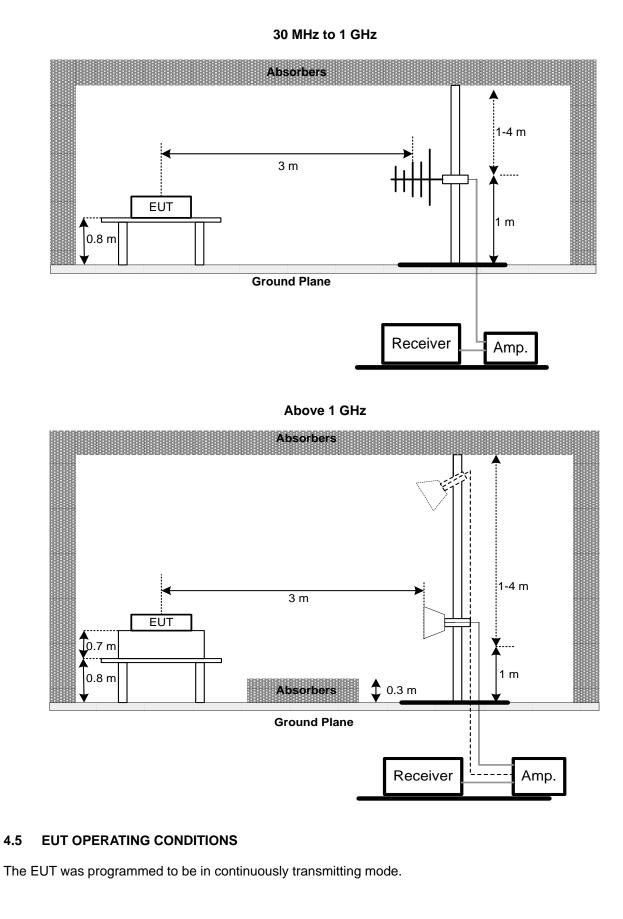
4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP









4.6 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX B.

4.7 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX C.

NOTE:

(1) No limit: This is fundamental signal, the judgment is not applicable. For fundamental signal judgment was referred to Peak output test.



5 BANDWIDTH TEST

5.1 LIMIT

FCC Part15, Subpart C (15.247)				
Section Test Item Limit				
15.247(a)	6 dB Bandwidth	500 kHz		

5.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

5.3 DEVIATION FROM TEST STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT

Please refer to the APPENDIX D.



6 OUTPUT POWER TEST

6.1 LIMIT

FCC Part15, Subpart C (15.247)				
Section Test Item Limit				
15.247(b)	Maximum Output Power	1 Watt or 30dBm		

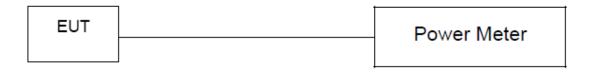
6.2 TEST PROCEDURE

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.
- b. The maximum peak conducted output power was performed in accordance with method 9.1.2 of FCC KDB 558074 D01 DTS Meas Guidance.

6.3 DEVIATION FROM TEST STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULT

Please refer to the APPENDIX E.



7 POWER SPECTRAL DENSITY

7.1 LIMIT

FCC Part15, Subpart C (15.247)					
Section	Test Item	Limit			
15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)			

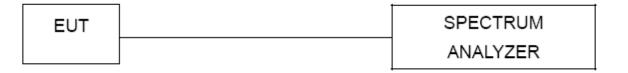
7.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW = 3 kHz, VBW = 10 kHz, Sweep time = Auto.

7.3 DEVIATION FROM TEST STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULT

Please refer to the APPENDIX F.



8 ANTENNA CONDUCTED SPURIOUS EMISSIONS TEST

8.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits.

8.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW = 100 kHz, VBW=300 kHz, Sweep time = Auto.
- c. Offset = antenna gain + cable loss.

8.3 DEVIATION FROM TEST STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULT

Please refer to the APPENDIX G.



9 LIST OF MEASURING EQUIPMENTS

	AC Power Line Conducted Emissions							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until		
1	TWO-LINE V-NETWORK	R&S	ENV216	101050	2019/3/18	2020/3/16		
2	Test Cable	EMCI	EMCCFD300-BM -BMR-6000	170715	2019/8/9	2020/8/7		
3	EMI Test Receiver	R&S	ESR7	101433	2018/12/5	2019/12/4		
4	Measurement Software	EZ	EZ_EMC (Version NB-03A)	N/A	N/A	N/A		

			Radiated Emission	ons		
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC02325	980217	2019/4/15	2020/4/13
2	Preamplifier	EMCI	EMC2654045	980030	2019/2/2	2020/2/1
3	Test Cable	EMCI	EMC104-SM-SM- 8000	8m	2019/4/15	2020/4/13
4	Test Cable	EMCI	EMC104-SM-SM- 800	150207	2019/4/15	2020/4/13
5	Test Cable	EMCI	EEMC104-SM-S M-3000	151205	2019/4/15	2020/4/13
6	MXE EMI Receiver	Agilent	N9038A	MY55420127	2019/3/26	2020/3/24
7	Signal Analyzer	Agilent	N9010A	MY52220990	2019/4/17	2020/4/15
8	Horm Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2019/5/3	2020/5/1
9	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-548	2019/3/22	2020/3/20
10	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0623	2019/3/22	2020/3/20

			Bandwidth			
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2019/5/23	2020/5/22

	Output Power							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until		
1	Spectrum Analyzer	R&S	FSP40	100129	2019/5/23	2020/5/22		
2	Power Meter	Anritsu	ML2495A	1128008	2018/12/6	2019/12/5		
3	Power Sensor	Anritsu	MA2411B	1126001	2018/12/6	2019/12/5		

	Power Spectral Density						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until	
1	Spectrum Analyzer	R&S	FSP40	100129	2019/5/23	2020/5/22	



		Antenna	conducted Spuric	ous Emission		
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Spectrum Analyzer	R&S	FSP40	100129	2019/5/23	2020/5/22

Remark: "N/A" denotes no model name, no serial no. or no calibration specified. All calibration period of equipment list is one year.



10 EUT TEST PHOTO

Please refer to document Appendix No.: TP-1803T076A-1 (APPENDIX-TEST PHOTOS).

11 EUT PHOTOS

Please refer to document Appendix No.: EP-1803T076A-1 (APPENDIX-EUT PHOTOS).



APPENDIX A AC POWER LINE CONDUCTED EMISSIONS



Mode	TX Mode	_IEEE 802.1	1g_2437MHz		Tested Date 2019/5							
st Voltage	AC 120V	/60Hz			Phase	Line						
80.0 dBuV	80.0 dBuV											
70												
60												
50												
40		1 3										
30		× × 2 4 × ×				11						
20			5 × 6 ×	7 X	9 X 10	11 12 X						
10				8 X	×							
0.0												
0.150		0.5	(MHz)	5		30.000						

No.	Mk.	Freq.	Level	Factor	measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4560	25.40	9.58	34.98	56.77	-21.79	QP	
2		0.4560	17.06	9.58	26.64	46.77	-20.13	AVG	
3		0.6202	24.91	9.59	34.50	56.00	-21.50	QP	
4	*	0.6202	18.37	9.59	27.96	46.00	-18.04	AVG	
5		2.4428	13.63	9.69	23.32	56.00	-32.68	QP	
6		2.4428	8.07	9.69	17.76	46.00	-28.24	AVG	
7		4.2855	8.76	9.74	18.50	56.00	-37.50	QP	
8		4.2855	0.98	9.74	10.72	46.00	-35.28	AVG	
9		7.8833	13.25	9.81	23.06	60.00	-36.94	QP	
10		7.8833	5.21	9.81	15.02	50.00	-34.98	AVG	
11		13.5600	13.92	9.87	23.79	60.00	-36.21	QP	
12		13.5600	8.57	9.87	18.44	50.00	-31.56	AVG	

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.



st Mode	TX Mode_	IEEE 802	2.11g_243	87MHz			Tested Date	2019/5/7	
est Voltage	AC 120V/6	60Hz					Phase	Neutral	
80.0 dBuV									
70									
60									
50									
40		1							
30		2 2 X							
20			3 ×	5 X		9 X 10	13 ×		
10			x	6 X		x			
0.0									
0.150		0.5		(MHz)		5		30.000	
	Reading eq. Level	Correct Factor	Measure ment	- Limit	Over				
	Hz dBuV	dB	dBuV	dBuV	dB	Detector	Comment		
1 0.61	157 24.90	9.64	34.54	56.00	-21.46	QP			
2 * 0.6	157 18.18	9.64	27.82	46.00	-18.18	AVG			

3

4

5

6 7

8

9 10

11

12

1.0882

1.0882

1.7093

1.7093

2.2673

2.2673

4.4543

4.4543

12.1920

12.1920

10.42

1.39

6.42

-0.48

12.30

8.53

9.62

1.26

10.48

9.18

9.66

9.66

9.70

9.70

9.72

9.72

9.79

9.79

9.93

9.93

20.08

11.05

16.12

9.22

22.02

18.25

19.41

11.05

20.41

19.11

56.00

46.00

56.00

46.00

56.00

46.00

56.00

46.00

60.00 50.00 -35.92

-34.95

-39.88

-36.78

-33.98

-27.75

-36.59

-34.95

-39.59

-30.89

QP

AVG

QP

AVG

AVG QP

AVG QP

AVG

QP

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.





APPENDIX B	RADIATED EMISSIONS - 30 MHZ TO 1 GHZ



Test Mod	de	TX Mode_	_IEEE 802	.11g_243	7MHz			Tested Date	2019/5/7
Test Volt	tage	AC 120V/	60Hz					Polarization	Vertical
80.0	dBu∀/m								
70									
60									
50									
40						_	6		
30	×					5X	Ř		
20	2 X	3 X	4 ×						
10									
0.0									
3	0.000 127.			418.00	515.00	612.00) 709.0	0 806.00	1000.00 MHz
No. M			Factor	Measure- ment	Limit	Over			
	MHz	dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 *	34.8500		-9.01	31.30	40.00	-8.70	peak		
2	61.0400		-8.94	20.38	40.00	-19.62	peak		
3	161.9200		-8.60	21.29	43.50	-22.21	peak		
4	304.5100		-7.40	22.13	46.00	-23.87	peak		
5	558.6500		-1.73	32.54	46.00	-13.46	peak		
6	701.2400	32.37	1.30	33.67	46.00	-12.33	peak		

- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.



est Mod	de		ТΧ	Mode	e_IEEE 8	302.11	g_243	87MHz			Teste	d Date	2019	/5/7
est Volt	age		AC	2120	//60Hz						Polari	zation	Horiz	ontal
80.0	dB	u¥∕m												1
70														
60														
50														
40														
30			2		5			6 X						
20	1 X	2 X	3 X	4 X	5 X									
10														
0.0 30	0.000	127	.00	224.	00 321	.00	418.00	515.0	0 612.0	0 709.	00 80	6.00	1000.00	MHz
No. M	۲.	Freq		Readir Level			easure ment							
		MHz		dBuV	dB	d	IBuV/m	dBuV/n	n dB	Detector	Comm	ient		
1 *		.1000		30.28			21.59	40.00	-18.41	peak				
2		.6300		33.41			21.63	43.50	-21.87	peak				
3		.5200		30.56			21.79	43.50	-21.71	peak				
4		.3600		31.37			20.70	43.50		· ·				
5		.6300		29.88			22.38	46.00		peak				
6	470	.3800	C	30.43	-3.4	4 2	26.99	46.00	-19.01	peak				

- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.



APPENDIX C RADIATED EMISSIONS - ABOVE 1 GHZ



est Mode	TX Mode_IEEE 802.11b_2412 MHz	Tested Date	2019/5/8
Fest Voltage	AC 120V/60Hz	Polarization	Vertical
120.0 dBuV	/m		
110			
100			
90			
80			
70			
60	1 V V	\sim	
50	× ×	- V~	
40			
30			
20			
10			
0.0	2372.00 2382.00 2392.00 2402.00 2412.00 2422.	00 2432.00 2442.00	2462.00 MHz
2002.000	Reading Correct Measure-		
No. Mk. Fr	eq. Level Factor ment Limit Over		
	Hz dBuV dB dBuV/m dBuV/m dB	Detector Comment	
1 2387.1	172 28.24 30.97 59.21 74.00 -14.79	peak	

2387.172

3 X 2412.000

4 * 2412.000

21.27

81.33

78.14

30.97

31.07

31.07

52.24

112.40

109.21

54.00

74.00

54.00

-1.76

38.40

55.21

AVG

peak

AVG

No Limit

No Limit

2

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.



est Mode	TX Mode_IEEE	802.11b_2412	MHz		Tested Date	2019/5/8
est Voltage	AC 120V/60Hz				Polarization	Horizontal
120.0 dBuV	/m				,	
110			*			
100						
90		4				
80						
70						
60	1 X 2	\sim		M		
50	2	\sim		<u> </u>	\sim	
40						
30						
20						
10						
0.0						
2362.000		392.00 2402.00	2412.00 242	2.00 2432	2.00 2442.00	2462.00 MHz
No. Mk. Fr	0	rrect Measure- ctor ment	Limit Ove	r		
		IB dBu∨/m	dBuV/m dB	Detector	Comment	
1 2387.:	200 27.83 30	.97 58.80	74.00 -15.3	20 peak		

2387.200

3 X 2412.000

4 * 2412.000

20.31

80.90

77.50

30.97

31.07

31.07

51.28

111.97

108.57

54.00

74.00

54.00

-2.72

37.97

54.57

AVG

peak

AVG

No Limit

No Limit

2

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.



est Mode	TX Mode	_IEEE 802.	11b_2437	MHz			Tested Date	2019/5/8
est Voltage	AC 120V	/60Hz					Polarization	Vertical
120.0 dBu\	//m							
	·							
110				*				
100								
90					6			
80								
70								
60			\sim			\sim		
50			י עי		- Y	~ ~	<u></u>	
40						Ĭ	~~~~~	
30								
20								
10								
0.0 2387.000	2397.00 240)7.00 2417.00) 2427.00	2437.00	2447.0)0 2457.	00 2467.00	2487.00 MHz
	Readi	ng Correct	Measure-					
	req. Leve		ment	Limit	Over			
	/Hz dBu∖		dBuV/m	dBuV/m	dB	Detector	Comment No Limit	
1 X 2437			108.97	74.00 54.00	34.97 51.68	peak AVG	No Limit	
2 2431			103.00	54.00	51.00	AVG		

Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value - Limit Value.



Mode	TX Mo	de_IEEE 8	802.11b_2437	' MHz		Te	ested Date	2019/5/8
Voltage	AC 12	0V/60Hz				P	olarization	Horizontal
120.0 dBu	ıV/m							
				1				
110				Å				
100								
90				r'	1			
80			<i>}</i>		\rightarrow			
70								
60					- 4v			
50								
40								
30								
20								
10								
0.0								
2387.000			17.00 2427.00	2437.00	2447.00	2457.00	2467.00	2487.00 MHz
. Mk f		ading Cor evel Fa	rect Measure ctor ment	– Limit	Over			
		Bu∀ d		dBuV/m	dB [Detector	Comment	
X 2437	7.000 8	1.95 31	18 113.13	74.00	39.13	peak	No Limit	
2 * 2437	7.000 78	8.78 31	18 109.96	54.00	55.96	AVG	No Limit	
MARKS:								
			ng Level + Co Value - Limit		or.			



est Mode	TX Mode_II	EEE 802.11	b_2462 Mł	Ηz		Tested D	Date	2019/5/8	
est Voltage	AC 120V/60)Hz				Polariza	tion	Vertical	
120.0 dBu¥	7m								
110				1					
100				× ·					
90									
80				+					
70			\sim						
60		N	V	1	\sim	3 X			
50		\mathcal{N}				×~			
40									
30									
20									
0.0									
2412.000	2422.00 2432.0	0 2442.00	2452.00	2462.00 247	2.00 2482	.00 2492	00	2512.00 MHz	
No. Mk. F	Reading req. Level	Correct M Factor	/leasure- ment l	_imit Ove	-				
N	1Hz dBu∨	dB	dBuV/m dE	BuV/m dB	Detector	Comme	nt		

AVG

peak AVG

51.99

-17.00

-3.67

No Limit

REMARKS:

2 * 2462.000

2483.500

2483.500

3

4

- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.

74.72

25.64

18.97

31.27

31.36

31.36

105.99

57.00

50.33

54.00

74.00



est Mode	TX Mode_I	EE 802.1	1b_2462	MHz		·	Tested Date	2019/5/8
est Voltage	AC 120V/60)Hz					Polarization	Horizontal
120.0 dBuV	/m							
110				1				
100				\bigwedge				
90								
			$ \int $					
80								
70			\frown				_	
60		$ \int$	r V		\neg		3 4	
50						Y	the second secon	
40								
30								
20								
10								
0.0								
2412.000			2452.00	2462.00	2472.0	0 2482.	00 2492.00	2512.00 MHz
No. Mk. Fi	Reading req. Level	Correct Factor	Measure- ment	Limit	Over			
M	IHz dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 X 2462.	000 80.63	31.27	111.90	74.00	37.90	peak	No Limit	
2 * 2462.	000 77.45	31.27	108.72	54.00	54.72	AVG	No Limit	

74.00 -15.18

-1.66

54.00

peak

AVG

REMARKS:

3

4

2483.500

2483.500

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.

27.46

20.98

31.36

31.36

58.82



st Mode	TX Mode	e_IEEE 802. ⁻	11 <u>g</u> _2412	MHz			Tested Date	2019/5/8
est Voltage	AC 120\	//60Hz					Polarization	Vertical
120.0 dBuV	//m							
110				ж				
100				, ×				
90				VV	V			
80								
70		1 X						
60			\sim		\			
50		2 X	V			\sim		
40								
30								
20								
10								
0.0								
2362.000	2372.00 23	82.00 2392.00	2402.00	2412.00	2422.0	0 2432.	00 2442.00	2462.00 MHz
No. Mk. Fi	Read req. Levi		Measure- ment	- Limit	Over			
M	1Hz dBu	V dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 2390.	000 36.8	33 30.98	67.81	74.00	-6.19	peak		

2390.000

3 X 2412.000

4 * 2412.000

21.24

79.65

70.36

30.98

31.07

31.07

52.22

110.72

101.43

54.00

74.00

54.00

-1.78

36.72

47.43

AVG

peak

AVG

No Limit

No Limit

2

- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.



est Mode	TX Mo	de_IEE	E 802.1	1g_2412	MHz			Tested Date	2019/5/8
est Voltage	AC 120)V/60H	Z					Polarization	Horizonta
120.0 dBu¥	'/m								
110					2				
100					X 4				
					\sim				
90				(Ĭ	\mathbf{x}			
80									
70			1 X						
60			×			$\neg \uparrow$			
50			2	~					
40									
30									
20									
10									
0.0									
2362.000	2372.00	2382.00	2392.00	2402.00	2412.00	2422.0	0 2432.	00 2442.00	2462.00 MHz
No. Mk. F			Correct Factor	Measure- ment	Limit	Over			
N	1Hz df	Bu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 2390.	000 32	2.38	30.98	63.36	74.00	-10.64	peak		
2 2390.	000 16	5.86	30.98	47.84	54.00	-6.16	AVG		

32.46

43.12

74.00

54.00

peak

AVG

No Limit

No Limit

REMARKS:

3 X 2412.000

4 * 2412.000

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.

31.07

31.07

75.39

66.05

106.46



	de	TX Mode	_IEEE 80	2.11g_2437	7 MHz			Tested Date	2019/5/8
est Volt	tage	AC 120V	/60Hz					Polarization	Vertical
120.0) dBu∀/m								
110					1 × 2				
100				1	\sim	\sim			
90						Ť			
80 70									
60				\sim					
50				✓			- Mark	~	
40									
30									
20									
10									
0.0 23	387.000 23	97.00 240	07.00 2417	7.00 2427.00	0 2437.00	2447.0	0 2457.	00 2467.00	2487.00 MHz
No. Mł	k. Fred	Readi 9. Leve			e- Limit	Over			
	MHz	: dBu∖		dBuV/m	dBuV/m	dB	Detector	Comment	
	2437.00				74.00	34.83	peak	No Limit	
2 *	2437.00	0 68.4	1 31.18	8 99.59	54.00	45.59	AVG	No Limit	



st Mode				1g_2437	MHz			Tested Date	2019/5/8
st Voltage	AC	120V/60H	Ηz					Polarization	Horizontal
110 100 90 80	uV/m				1 2 ×				
70 60						Ì			
50			\checkmark				\sim	~	
40									
30									
20									
0.0	0 2397.00	2407.00	2417.00	2427.00	2437.00	2447.0)0 2457	.00 2467.00	2487.00 MHz
		Reading Level	Correct Factor	Measure- ment		Over			
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 X 243	7.000	83.10	31.18	114.28	74.00	40.28	peak	No Limit	
2 * 243	7.000	73.32	31.18	104.50	54.00	50.50	AVG	No Limit	



est Mode	TX Mo	ode_IE	EE 802.1	1g_2462	MHz			Tested Date	2019/5/8
est Voltage	AC 12	20V/60H	Ηz					Polarization	Vertical
120.0 dBuV	'/m								
					1				
110					X2				
100									
90					V V	\vee			
80									
70								4 ×	
60			~	\sim				^	
			\sim	v				3	
50			~					·	
40									
30									
20									
10									
0.0									
2412.000	2422.00	2432.00	2442.00	2452.00	2462.00	2472.0	0 2482	.00 2492.00	2512.00 MHz
No. Mk. – Fi		eading .evel	Correct Factor	Measure- ment	Limit	Over			
N	1Hz (dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 X 2462.	000 7	8.89	31.27	110.16	74.00	36.16	peak	No Limit	
2 * 2462.	000 0	9.48	31.27	100.75	54.00	46.75	AVG	No Limit	

-1.06

-4.43

AVG

peak

54.00

74.00

REMARKS:

3

4

2483.500

2483.586

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.

21.58

38.21

31.36

31.36

52.94



est Mode	TX Mode_I	EEE 802.1	1g_2462	MHz			Tested Date	2019/5/8
est Voltage	AC 120V/6	0Hz					Polarization	Horizontal
120.0 dBuV	/m							
110				1 X 2				
100			\square	$\sqrt{-1}$				
90				V V	v			
80								
70					h		3 X	
60		$- \wedge$	V				4	
50							×	
40								
30								
20								
10								
0.0 2412.000	2422.00 2432.0	10 2442.00	2452.00	2462.00	2472.0	0 2482	.00 2492.00	2512.00 MHz
2412.000					2472.0	U 2482.	.00 2492.00	2312.00 MHz
No. Mk. – Fi	Reading req. Level	Correct Factor	Measure- ment	Limit	Over			
M	lHz dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 X 2462.	000 82.93	31.27	114.20	74.00	40.20	peak	No Limit	
2 * 2462.	000 73.63	31.27	104.90	54.00	50.90	AVG	No Limit	

3

4

2483.500

2483.500

37.83

21.64

31.36

31.36

69.19

53.00

74.00

54.00

-4.81

-1.00

peak

AVG



est Mode	TX Mod	de_IEEE 8	02.11n (HT2	0)_2412 N	ЛНz	Tes	sted Date	2019/5/8
est Voltage	AC 120	V/60Hz				Po	larization	Vertical
120.0 dBuV	/m							
110								
100				3 X 4				
90			<i>ب</i> م	$\sim\sim$	\sim			
80								
70		1						
60		1 X			\rightarrow			
50		2	~~~			~		
40							······································	
30								
20								
10								
0.0 2362.000	2372 00 2	2382.00 23	32.00 2402.00	2412.00	2422.00	2432.00	2442.00	2462.00 MHz
2302.000		iding Corr			2422.00	2432.00	2442.00	2402.00 1112
No. Mk. Fi	req. Le			Limit	Over			
	IHz dE	Bu∀ dE	l dBuV/m	dBuV/m	dB I	Detector (Comment	

2390.000

3 X 2412.000

4 * 2412.000

2

17.55

72.21

63.08

30.98

31.07

31.07

48.53

103.28

94.15

54.00

74.00

54.00

AVG

peak

AVG

No Limit

No Limit

-5.47

29.28

40.15

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.



est Mode	TX Mode_I	EEE 802.1	1n (HT20)_2412 🛚	ИНz		Tested [Date	2019/5/8
est Voltage	AC 120V/6	OHz					Polariza	ition	Horizontal
120.0 dBuV	//m								
110				3 X					
100					~				
90					\rightarrow				
80									
70		1 X							
60		2	~						
50		X				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	_		
40									
30									
20									
10									
0.0 2362.000	2372.00 2382.0	0 2392.00	2402.00	2412.00	2422.	00 2432	.00 244;	2.00	2462.00 MHz
2362.000					2422.	UU 2432		2.00	2462.00 MH2
No. Mk. F	Reading req. Level	Correct Factor	Measure- ment	Limit	Over				
N	1Hz dBu∨	dB	dBuV/m	dBuV/m	dB	Detector	Comme	nt	
1 2390.	000 41.00	30.98	71.98	74.00	-2.02	peak			

54.00

74.00

54.00

AVG

peak

AVG

No Limit

No Limit

-1.89

34.55

44.92

REMARKS:

2390.000

3 X 2412.000

4 * 2412.000

2

21.13

77.48

67.85

30.98

31.07

31.07

52.11

108.55

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



t Mode	TX Mode_	IEEE 802.1	l1n (HT20)_2437 I	MHz		Tested Date	2019/5/8
t Voltage	AC 120V/6	60Hz					Polarization	Vertical
120.0 dBuV 110 100 90 80	7m 			1 2 VVVV	M			
70 60 50 40		~~~~~	\sim			h	~~~~~~	
3U 20 10 0.0								
2387.000				2437.00	2447.0	0 2457	.00 2467.00	2487.00 MHz
o. Mk. – Fi	Readin req. Level	g Correct Factor	Measure- ment	Limit	Over			
M	1Hz dBu∀	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 X 2437.		31.18	105.46	74.00	31.46	peak	No Limit	
2 * 2437.	000 64.59	31.18	95.77	54.00	41.77	AVG	No Limit	



t Mode				1n (HT20))_2437 N	ИНZ		Tested Date	2019/5/8
t Voltage	AC	120V/60H	72					Polarization	Horizonta
120.0 dBu	ıV/m								
					1 X				
110					1 2 2				
100				$- \wedge$	$\sim \sim \sim$	m			
90						\rightarrow			
80									
70									
60			$\sim \sim \sim$	~~~		`	\sum		
50			4				· m	\sim	
40									
30									
20									
10 0.0									
) 2397.00	2407.00	2417.00	2427.00	2437.00	2447.0	0 2457	.00 2467.00	2487.00 MHz
		Reading	Correct	Measure-	1. 1 11	0			
	Freq.	Level	Factor	ment	Limit	Over			
1 X 2437	MHz	dBu∨ 80.76	dB 31.18	dBuV/m 111.94	dBuV/m 74.00	dB 37.94	Detector	Comment No Limit	
	7.000	70.75	31.18	101.94	54.00	47.93	peak AVG	No Limit	
2 2431	.000	10.15	51.10	101.95	J4.00	47.95	AVG	NO EIIIII	



est Mode	TX M	ode_IE	EE 802. ⁻	11n (HT	20)_246	2 MHz		Tes	sted Date	2019/5/8
est Voltage	AC 12	20V/60I	Ηz					Po	larization	Vertical
120.0 dBuV	/m									
110					1					
100					2					
90				[\sim	wy				
80										
70										
60				\sim			1	х		
50			\sim	-			5	*		
40									~~~~~	
30										
20										
10										
0.0										
2412.000	2422.00	2432.00	2442.00	2452.	00 2462	.00 2472	2.00 2	2482.00	2492.00	2512.00 MH
No. Mk. Fi		eading Level	Correct Factor	Measu ment		t Over				
	-	dBuV	dB	dBuV/r		m dB	Dete	ctor (Comment	
1 X 2462.	000	76.81	31.27	108.08	3 74.00	34.08	B pea	ak M	No Limit	

AVG

peak AVG

44.37

-8.55

-4.21

No Limit

REMARKS:

2 * 2462.000

2483.500

2483.500

3

4

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.

67.10

34.09

18.43

31.27

31.36

31.36

98.37

65.45

49.79

54.00

74.00



est Mode	ТΧ	Mode_IE	EE 802.1	1n (HT20)_2462 N	ЛНz		Tested Date	2019/5/8
est Voltage	AC	120V/60	Ηz					Polarization	Horizontal
120.0 dBuV	//m								
110					1 X				
100					\sim^{2}				
90				ſ	· · · ·	\sim			
80									
70			~	\sim		1	\	3 X	
60							m	4 X	
50									
40									
30									
20									
10 0.0									
2412.000	2422.00	0 2432.00	2442.00	2452.00	2462.00	2472.0	0 2482	.00 2492.00	2512.00 MHz
No. Mk. F	req.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	1Hz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment	
1 X 2462	000	81.62	31.27	112.89	74.00	38.89	peak	No Limit	
2 * 2462.	000	71.06	31.27	102.33	54.00	48.33	AVG	No Limit	

-7.84

-1.54

peak AVG

74.00

54.00

REMARKS:

3

4

2483.500

2483.500

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.

31.36

31.36

34.80

21.10

66.16



Mode	TX Mod	le_IE	EE 802.1	1b_2412	MHz			Tested	Date	2019/5/9
Voltage	AC 120	V/60I	Hz					Polariz	ation	Vertical
120.0 dBux 1100 900 800 700 500										
40 30	ž X									
20										
10										
0.0	3550.00 6	100.00	8650.00	11200.00	13750.0	0 16300	.00 1885	50.00 21	400.00	26500.00 MHz
		ding	Correct	Measure-	Limit	Ouer				
	req. Lev MHz dB	vel IuV	Factor dB	ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comm	nent	
4824		.80	-11.45	44.35	74.00	-29.65	peak			
2 * 4824	.000 50	.14	-11.45	38.69	54.00	-15.31	AVG			
MARKS:										
	nent Value vel = Mea					ctor.				



tit Voltage AC 120V/60Hz Polarization Horizontal 100 484V/m 4940V/m 4940V/m 4940V/m 4940V/m 100 4940V/m 4940V/m 4940V/m 4940V/m 4940V/m 4940V/m 100 4940V/m 4940V/m	st Mode	TX Mode_	IEEE 802.11k	<u>2412 N</u>	MHz		Tested Date	2019/5/9
110 1	st Voltage	AC 120V/6	0Hz				Polarization	Horizontal
20 0	110 100 90 80 70 60 50 40							
MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4824.000 55.98 -11.45 44.53 74.00 -29.47 peak 2 * 4824.000 50.44 -11.45 38.99 54.00 -15.01 AVG	20 10 0.0 1000.000	Reading				 00 1885	0.00 21400.00	26500.00 MHz
1 4824.000 55.98 -11.45 44.53 74.00 -29.47 peak 2 * 4824.000 50.44 -11.45 38.99 54.00 -15.01 AVG		req. Level	Factor	ment		Detector	0	
2 * 4824.000 50.44 -11.45 38.99 54.00 -15.01 AVG							Comment	
MARKS:								
Measurement Value = Reading Level + Correct Factor. Margin Level = Measurement Value - Limit Value.								



t Mode	TXI	Mode_II	EEE 802.1	1b_2437	MHz			Teste	d Date	2019/5/8
t Voltage	AC	120V/60)Hz					Polar	ization	Vertical
120.0 dB	uV/m									
110										
100										
90										
80										
70										
60										
50		1								
40		1 2 X								
30										
20										
10										
0.0										
	0 3550.00			11200.00	13750.00	16300.	.00 188	50.00 2	21400.00	26500.00 MHz
o. Mk.	Freq.	Level	Factor	ment	Limit	Over				
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	r Com	nment	
	4.000	55.98	-11.37	44.61	74.00	-29.39	peak			
2 * 4874	4 0 0 0				54.00	-14.71	AVG			
	Freq. MHz 4.000	dBu∨	dB	dBuV/m	dBuV/m	dB		r Com	nment	



st Mode	TX Mode	e_IEEE 80	2.11b_243	87 MHz			Tested	Date	2019/5/8
st Voltage	AC 120V	//60Hz					Polariz	ation	Horizontal
120.0 dBu	ıV/m								
110									
100									
90									
80									
70									
60									
50	Ĵ								
40	1 2 ×								
30									
20									
10									
0.0									
1000.000		00.00 8650		.00 13750.00	D 16300.	.00 1885	i0.00 21	400.00	26500.00 MHz
io Mk - F	Read Fred Leve				Over				
	MHz dBu		dBuV/m		dB	Detector	Comn	nent	
1 4874	1.000 56.7	71 -11.3	7 45.34	74.00	-28.66	peak			
2 * 4874	1.000 50.9	95 -11.3	7 39.58	54.00	-14.42	AVG			
1 4874	Freq. Leve MHz dBu 1.000 56.7	el Facto ∨ dB 71 -11.3	or ment dBuV/m 7 45.34	Limit dBuV/m 74.00	-28.66	peak	Comn	ient	



AC 120V/60Hz Polarization 120.0 d8uV/m 100 0 90 0 <t< th=""><th>Vertical</th></t<>	Vertical
110	26500.00 MHz
20 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 100 1000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 0. Mk. Freq. Reading Correct Level Measure- ment Limit Over 0 1000000 21400.00 MHz dBuV dB dBuV/m dB Detector Comment 1 1 4924.000 59.20 -11.30 47.90 74.00 -26.10 peak	26500.00 MHz
10	26500.00 MHz
1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 Reading Correct Measure- ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 59.20 -11.30 47.90 74.00 -26.10 peak	26500.00 MHz
No. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 59.20 -11.30 47.90 74.00 -26.10 peak	
MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 59.20 -11.30 47.90 74.00 -26.10 peak	
· · · · · · · · · · · · · · · · · · ·	
2 * 4924.000 54.60 -11.30 43.30 54.00 -10.70 AVG	
EMARKS:) Measurement Value = Reading Level + Correct Factor.) Margin Level = Measurement Value - Limit Value.	



120.0 d 120.0 d 110 90	e AC BuV/m	120V/60	Hz					Polar	ization	Horizonta
110	Bu¥/m									
80 70 60 50										
40 30		^								
20										
10										
0.0 1000.0	00 3550.00	6100.00	8650.00	11200.00	13750.00	16300.0	0 1885	0.00 2	21400.00	26500.00 MHz
o. Mk.	Freq.	Reading	Correct	Measure-	Limit	Over				
10. IVIK.	MHz	Level dBuV	Factor dB	ment dBuV/m	dBuV/m	dB	Detector	Com	nment	
1 49	24.000	59.64	-11.30	48.34	74.00	-25.66	peak			
2 * 49	24.000	54.87	-11.30	43.57	54.00	-10.43	AVG			
EMARKS) Measur	ement Va	alue = Re Veasurer	eading Le	evel + Cor Je - Limit V	rect Fact √alue.	or.				



Mode	TX Mod	e_IEEE 8	302.11g_2	412 MHz	2		Tested I	Date	2019/5	/9
Voltage	AC 120	V/60Hz					Polariza	ition	Vertica	l
120.0 dBu\	//m									
110										
100										
90										
80										
70										
60										
50										
40	1 X									
30	2 X									
20										
10										
0.0	3550.00 6	100.00 8	650.00 112	200.00 137	750.00 1630	0.00 188	50.00 214	DO. OO	26500.00 1	447
	Rea			sure-						
	req. Lev	vel Fa	ctor me	ent Lin						
4824	/Hz dB .000 51.		B dBu' .45 40.3			Detector 0 peak	Comme	ent		
* 4824			.45 27.:							
IARKS:										
/leasuren	nent Value vel = Mea	= Readii	ng Level +	- Correct	Factor.					



st Voltage AC 120V/60Hz Polarization Horizont 100 dbuV/m	t Mode	TX Mode_I	EEE 802.11g_	2412 MHz			Tested Date	2019/5/9
110	t Voltage	AC 120V/6	0Hz				Polarization	Horizontal
110								
110	120.0 dBu	V/m						
100								
90 80 90 <td< td=""><td>110</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	110							
80	100							
70 70 <td< td=""><td>90</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	90							
60	80							
50 1 -	70							
40 1	60							
30 2	50							
20 10 <td< td=""><td>40</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	40	X						
10 0.0 10 <t< td=""><td>30</td><td>2 X</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	30	2 X						
0.0 0.0 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MH 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MH 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MH 1000.000 MHz ABuVI Measure- ment Limit Over 0	20							
1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MH Reading Correct Measure- . <t< td=""><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	10							
Reading Correct Measure- b. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4824.000 50.13 -11.45 38.68 74.00 -35.32 peak		2550.00 0100 (0 0050 00 1	1200 00 12750	00 10000	00 100	-0.00 - 21.400.00	20500.00 MI
·		Freq. Level	Factor m	nent Limit		Detector	Comment	
2 * 4824.000 38.37 -11.45 26.92 54.00 -27.08 AVG	1 4824	.000 50.13	-11.45 38	.68 74.00	-35.32	peak		
	2 * 4824	.000 38.37	-11.45 26	.92 54.00	-27.08	AVG		
MARKS: Measurement Value = Reading Level + Correct Factor.								



$120.0 dBuV/m$ $110 \qquad $	Image: contract of the second seco
110	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
110	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
110	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
100	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
90	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
80	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
0 0	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
60	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
60	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
30 1 -	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
40 1	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
30 2 X Image: Constraint of the second	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
20 10 10 10 10 10 10 10 10 10 10 10 100 1000 1000 1000 1000 1000 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 1000.000 MHz dBuV dB dBuV/m dB Detector Comment 1 4874.000 50.15 -11.37 38.78 74.00 -35.22 peak	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
10 0.0 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 1000.000 MHz Beading Level Correct Factor Measure- ment Limit Over 0 MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4874.000 50.15 -11.37 38.78 74.00 -35.22 peak	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
0.0 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 Jo. Mk. Freq. Reading Level Correct Factor Measure- ment Limit Over Ver MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4874.000 50.15 -11.37 38.78 74.00 -35.22 peak	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 Reading Correct Measure-	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
Reading Correct Measure- o. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4874.000 50.15 -11.37 38.78 74.00 -35.22 peak	re- Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
o. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4874.000 50.15 -11.37 38.78 74.00 -35.22 peak	Limit Over n dBuV/m dB Detector Comment 74.00 -35.22 peak
MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4874.000 50.15 -11.37 38.78 74.00 -35.22 peak	n dBuV/m dB Detector Comment 74.00 -35.22 peak
1 4874.000 50.15 -11.37 38.78 74.00 -35.22 peak	74.00 -35.22 peak
· · · · · · · · · · · · · · · · · · ·	·



120.0 dBuV/m 110	t Mode	TX Mode_IE	EEE 802.1	1g_2437	MHz			Tested Date	2019/5/9
10 10 <td< th=""><th>t Voltage</th><th>AC 120V/60</th><th>)Hz</th><th></th><th></th><th></th><th></th><th>Polarization</th><th>Horizontal</th></td<>	t Voltage	AC 120V/60)Hz					Polarization	Horizontal
10 10 10 10 1000.000 3550.00 6100.00 3650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz 0. MK. Freq. Reading Level Correct Factor Measure- ment Limit Over Over Correct Comment Measure- Tation Over Correct Correct Measure- Tation Over Correct Correct Measure- Tation Over Correct	110 100 90 80 70 60 50 40								
0.0 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz b. Mk. Freq. Level Factor ment Limit Over Over Image: Correct MHz MHz dBuV dB dBuV/m dB Detector Comment Image: Correct MHz Correct MHz Correct MHz Correct MHz Over Correct MHz Correct MHZ		×							
Interna Reading Correct Measure- ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4874.000 49.50 -11.37 38.13 74.00 -26.03 AV G 2 * 4874.000 39.34 -11.37 27.97 54.00 -26.03 AV G	10								
Reading Level Correct Factor Measure- ment Limit Over MHz dBuV dB dBuV/m dB Detector Comment 1 4874.000 49.50 -11.37 38.13 74.00 -35.87 peak 2 * 4874.000 39.34 -11.37 27.97 54.00 -26.03 AVG									
2 * 4874.000 39.34 -11.37 27.97 54.00 -26.03 AVG			A	Mar crew					
MARKS:		Reading req. Level	Factor	ment	Limit		Detector	Comment	
	M 1 4874.	Reading req. Level 1Hz dBuV 000 49.50	Factor dB -11.37	ment dBuV/m 38.13	Limit dBuV/m 74.00	dB -35.87	peak	Comment	
	M 1 4874.	Reading req. Level 1Hz dBuV 000 49.50	Factor dB -11.37	ment dBuV/m 38.13	Limit dBuV/m 74.00	dB -35.87	peak	Comment	



at Voltage AC 120V/60Hz Polarization Vertical 100 deuV/m
110
30 2
30 x
10 .
0.0 0.0 0.0 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz 1000.000 MHz Beading Level Correct Factor Measure- ment Limit Over Ver Ve
1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz Reading No. Mk. Freq. Level Factor ment Correct Measure- ment Limit Over MHz dBuV dB dBuV/m dB Detector Comment 1 4924.000 53.48 -11.30 42.18 74.00 -31.82 peak
lo. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 53.48 -11.30 42.18 74.00 -31.82 peak
MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 53.48 -11.30 42.18 74.00 -31.82 peak
1 4924.000 53.48 -11.30 42.18 74.00 -31.82 peak



100 dBW/m 100 dBW/m 100 data	st Mode	TX Mode_I	EEE 802.11g	_2462 MHz		Tested Date	2019/5/9
10 10 <td< th=""><th>st Voltage</th><th>AC 120V/6</th><th>0Hz</th><th></th><th></th><th>Polarization</th><th>Horizontal</th></td<>	st Voltage	AC 120V/6	0Hz			Polarization	Horizontal
30 2 -	110 100 90 80 70 60 50						
20 10<							
10 10 10 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz 0. Mk. Freq. Level Factor Measure- ment Limit Over Over MHz dBuV dB dBuV/m dB Detector Comment 1 4924.000 51.90 -11.30 40.60 74.00 -33.40 peak 2 * 4924.000 39.93 -11.30 28.63 54.00 -25.37 AVG		×					
0.0 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz 0. Mk. Freq. Reading Level Correct Factor Measure- ment Limit Over - <						 	
Reading Level Correct Factor Measure- ment Limit Over MHz dBuV dB dBuV/m dB Detector Comment 1 4924.000 51.90 -11.30 40.60 74.00 -33.40 peak 2 * 4924.000 39.93 -11.30 28.63 54.00 -25.37 AVG							
2 * 4924.000 39.93 -11.30 28.63 54.00 -25.37 AVG	1	MHz dBuV	dB d	BuV/m dBuV/r	n dB	Comment	
Measurement Value = Reading Level + Correct Factor. Margin Level = Measurement Value - Limit Value.							



120.0 dBuV/m 110 110 90 90 90 90 90 90 90 9	Vertical	ion Vert				_24121	in (H120)	02.1 [°]	IEEE 80			st Mode
110			olarization	Pol					60Hz	120V/6	age AC	t Volta
110												
100											dBu∀/m	120.0
100												
90 80 90 80 90 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
80												
70 70 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>												
60 1												
su 1x 1												
1 1 <th1< th=""> <th1< th=""> <th1< th=""></th1<></th1<></th1<>												
x z x										1		
20												
IO IO <thio< th=""> IO IO IO<!--</td--><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>x</td><td></td><td></td></thio<>										x		
0.0 1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500 100.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500 10.00.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500 10.00.00 MHz Level Factor Measure- ment Limit Over 0 1 1 4824.000 53.57 -11.45 42.12 74.00 -31.88 peak												
1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500 Reading Correct Measure-												
o. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4824.000 53.57 -11.45 42.12 74.00 -31.88 peak	26500.00 MHz	D.00 26500) 21400.00	18850.00	16300.0	13750.00	11200.00	50.00).00 865	6100.0	0.000 3550.00	
MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4824.000 53.57 -11.45 42.12 74.00 -31.88 peak					Over	Limit					– – –	
1 4824.000 53.57 -11.45 42.12 74.00 -31.88 peak			Comment)etector (C								0. IVIK.
2 * 4824.000 40.18 -11.45 28.73 54.00 -25.27 AVG												1 4
				AVG	-25.27	54.00	28.73	.45	-11.4	40.18	4824.000	2 * 4



Mode	TX M	lode_IE	EE 802.2	l1n (HT20)_2412	MHz		Teste	d Date	2019/5/9
Voltage	AC 1	20V/60	Hz					Polar	ization	Horizontal
120.0 dBu\	√/m									
110										
100										
90										
80										
70										
60										
50		1 X								
40 30		2 X								
20	3	×								
10										
0.0										
1000.000	3550.00	6100.00	8650.00	11200.00	13750.0	0 16300	.00 1885	50.00	21400.00	26500.00 MHz
. Mk. – F		Reading Level	Correct Factor	Measure- ment	Limit	Over				
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Con	nment	
4824	.000	53.46	-11.45	42.01	74.00	-31.99	peak			
2 * 4824	.000	39.79	-11.45	28.34	54.00	-25.66	AVG			
MARKS: Measuren Margin Le	nent Va	lue = R leasure	eading Lo ment Val	evel + Cor ue - Limit '	rect Fao Value.	ctor.				



t Voltage		_IEEE 802.	11n (HT20))_2437 N	ЛНz		Tested	Date	2019/5/9
5	AC 120V/	/60Hz					Polariz	ation	Vertical
120.0 dBu	JV/m								
	1¥710								
110									
100									
90									
80									
70									
60									
50									
40	1 X								
30	2 X								
20									
10									
0.0									
1000.000		0.00 8650.00		13750.00	16300.	.00 1885	50.00 21	400.00	26500.00 MHz
o. Mk. – F	Readir Freq. Leve		Measure- ment	Limit	Over				
	MHz dBu∨		dBuV/m	dBuV/m	dB	Detector	Comn	nent	
1 4874	4.000 52.59	9 -11.37	41.22	74.00	-32.78	peak			
2 * 4874	4.000 39.55	5 -11.37	28.18	54.00	-25.82	AVG			



st Voltage AC 120V/60Hz Polarization Horizontal 100 dBuV/m		de	TΧ	Mode_I	EEE 802.	11n (HT20)_2437 I	MHz		Tes	ted Date	2019/5/9
110	st Voli	tage	AC	120V/6	OHz					Pola	arization	Horizontal
30 2 <th2< th=""> <th2< th=""> <th2< th=""></th2<></th2<></th2<>	110 100 90 80 70 60		'm 									
20	40											
10				2 X								
0.0 0.0 0.0 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz No. Mk. Freq. Reading Level Correct Factor Measure- ment Limit Over Over Image: Correct level Measure- ment Correct level Measure- ment Correct level Measure- ment Correct level Measure- ment Correct level Correct level Correct level Measure- ment Correct level Correct												
No. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4874.000 53.11 -11.37 41.74 74.00 -32.26 peak		000.000 3	550.00) 6100.0	0 8650.00	11200.00	13750.00) 16300.0	0 1885	50.00	21400.00	26500.00 MHz
MHz dBuV dB dBuV/m dB Detector Comment 1 4874.000 53.11 -11.37 41.74 74.00 -32.26 peak							Limit	Over				
1 4874.000 53.11 -11.37 41.74 74.00 -32.26 peak	0. IVIP								Data ata u		omment	
2 * 4874.000 39.78 -11.37 28.41 54.00 -25.59 AVG							000 */111	dВ	Detector			
	1	4874.0	000	53.11								
EMARKS:					-11.37	41.74	74.00	-32.26	peak			



t Mode	TX N	Mode_	IEEE 80)2.11n (⊢	IT20)_24	62 MHz		Tested Date	2019/5/9
t Voltage	AC [·]	120V/6	60Hz					Polarization	Vertical
120.0 dB 110 100 90 80 70 60 50	uV/m								
40		1 X 2							
30 20		x							
10									
0.0	0 3550.00	6100	.00 865	0.00 112	200.00 137	50.00 16300	.00 188	50.00 21400.00	26500.00 MH;
	MHz 4.000 4.000	dBu∨ 53.38 40.34		30 42.0	08 74.0	-31.92	Detector peak AVG	r Comment	
MARKS:		alue –	Reading	ז פעפן ג	Correct	Factor			



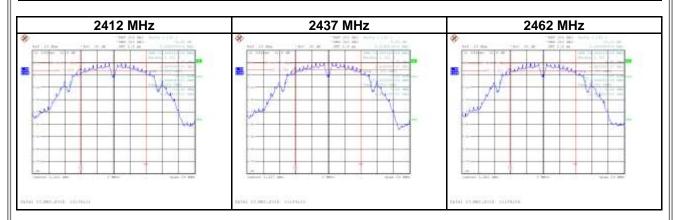
120.0 dBuV/m 110	120.0 dBuV/m 110	st Mode	TX Mod	le_IEEE 80)2.11n (HT	20)_2462	MHz		Tested	Date	2019/5/9
110	110	t Voltage	AC 120	V/60Hz					Polariza	ation	Horizontal
110	110										
100	100	120.0 dBuV	//m								
100	100	110									
90	90 80 90 80 90 80 90 80 90 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
80	80										
70 70 <td< td=""><td>70 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<></td></td<>	70 70 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
60	60										
40 1 <th1< th=""> <th1< th=""> <th1< th=""></th1<></th1<></th1<>	40 1 <th1< th=""> <th1< th=""></th1<></th1<>										
30 2 <th2< th=""> <th2< th=""> <th2< th=""></th2<></th2<></th2<>	30 2 <th2< th=""> <th2< th=""> <th2< th=""></th2<></th2<></th2<>	50									
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20 10 <td< td=""><td>20 10 <td< td=""><td>30</td><td>2 X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<></td></td<>	20 10 <td< td=""><td>30</td><td>2 X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	30	2 X								
0.0 0.0 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz 0. Mk. Freq. Reading Level Correct Factor Measure- ment Limit Over 0	0.0 0	20									
1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MHz D. Mk. Freq. Level Factor Ment Limit Over 0 <td>1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MH Reading Correct Measure- Imit Over Over Imit Over Imit Over Imit Over Imit Over Imit Over Imit Imit Over Imit I</td> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1000.000 3550.00 6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00 26500.00 MH Reading Correct Measure- Imit Over Over Imit Over Imit Over Imit Over Imit Over Imit Over Imit Imit Over Imit I	10									
Reading Correct Measure- D. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 53.35 -11.30 42.05 74.00 -31.95 peak	Reading Correct Measure- o. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 53.35 -11.30 42.05 74.00 -31.95 peak		2550.00 0	100.00 005	0.00 1120	00 13750 (0 1000	00 1005	0.00 21	400.00	26500.00 MU-
o. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 53.35 -11.30 42.05 74.00 -31.95 peak	o. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB dBuV/m dBuV/m dB Detector Comment 1 4924.000 53.35 -11.30 42.05 74.00 -31.95 peak	1000.000					10500	.00 1003	0.00 21	+00.00	20300.00 M112
1 4924.000 53.35 -11.30 42.05 74.00 -31.95 peak	1 4924.000 53.35 -11.30 42.05 74.00 -31.95 peak		req. Lev	/el Fact	or men	t Limit					
									Comm	ent	
2 +02+.000 50.00 +1.00 20.00 0+.00 20.00 +1.00	2 4024.000 00.00 11.00 20.00 04.00 20.00 7000										
		MARKO									
MARKS	MARKS		nent Value	= Reading	g Level + (Correct Fa	ctor.				
		Measurem		surement	Value - Lin	nit Value.					
Measurement Value = Reading Level + Correct Factor.	MARKS: Measurement Value = Reading Level + Correct Factor. Margin Level = Measurement Value - Limit Value.	Measuren Margin Le	vel = Mea	ouronnonn							
Measurement Value = Reading Level + Correct Factor.	Measurement Value = Reading Level + Correct Factor.	Measuren Margin Le	vel = Mea	ouromoni							
Measurement Value = Reading Level + Correct Factor.	Measurement Value = Reading Level + Correct Factor.	Measuren Margin Le	vel = Mea	ouromont							



APPENDIX D BANDWIDTH



Test Mode	IEEE 802.11b_AN	Г 1		
Test Voltage	AC 120V/60Hz			
Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	8.10	10.84	500	Complies
2437	8.12	10.56	500	Complies
2462	8.10	10.48	500	Complies



Test Mode	IEEE 802.11b_ANT 2	1
Test Voltage	AC 120V/60Hz	

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	8.60	11.60	500	Complies
2437	8.59	10.68	500	Complies
2462	8.58	10.64	500	Complies





Test Mode	IEEE 802.11g_ANT 1					
Test Voltage	AC 120V/60Hz					
Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result		
2412	16.42	16.56	500	Complies		
2437	16.38	16.56	500	Complies		
2462	16.48	16.56	500	Complies		



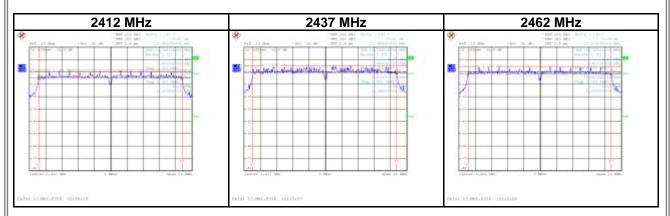
Test Mode	IEEE 802.11g_ANT 2	l
Test Voltage	AC 120V/60Hz	

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	16.45	16.52	500	Complies
2437	16.44	16.56	500	Complies
2462	16.42	16.56	500	Complies



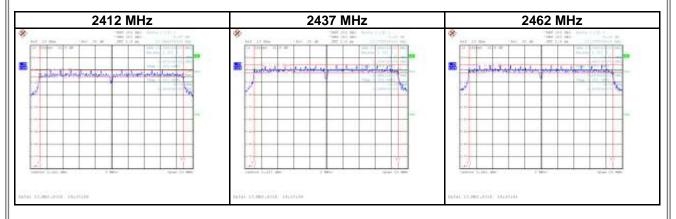


Test Mode	Test Mode IEEE 802.11n (HT20)_ANT 1						
Test Voltage AC 120V/60Hz							
	· · · · · ·						
Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result			
2412	17.66	17.76	500	Complies			
2437	17.70	17.72	500	Complies			
2462	17.62	17.72	500	Complies			



Test Mode	IEEE 802.11n (HT20)_ANT 2	
Test Voltage	AC 120V/60Hz	

Frequency (MHz)	6dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (kHz)	Result
2412	17.66	17.76	500	Complies
2437	17.70	17.68	500	Complies
2462	17.70	17.76	500	Complies



APPENDIX E OUTPUT POWER

BIL



Test Mode	IEEE 802.11b_ANT 1 Tested Date 2018/5/10					
Test Voltage	AC 120V/60Hz					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result	
2412	21.50	0.1413	30.00	1.0000	Complies	
2437	22.84	0.1923	30.00	1.0000	Complies	
2462	21.73	0.1489	30.00	1.0000	Complies	
Test Mode IEEE 802.11b ANT 2 Tested Date 2018/5/10						
Test Voltage	AC 120V/60Hz	L			010/0/10	
Test voltage	AC 1207/00112					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result	
2412	20.86	0.1219	30.00	1.0000	Complies	
2437	21.22	0.1324	30.00	1.0000	Complies	
2462	21.17	0.1309	30.00	1.0000	Complies	
Test Mode	Test Mode IEEE 802.11b Total Tested Date 2018/5/10					
Test Voltage	AC 120V/60Hz					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result	
2412	24.20	0.2632	30.00	1.0000	Complies	
2437	25.12	0.3247	30.00	1.0000	Complies	
2462	24.47	0.2799	30.00	1.0000	Complies	



1.0000

30.00

Test Mode	IEEE 802.11g_ANT 1 Tested Date 2018/5/10			2018/5/10		
Test Voltage	AC 120V/60Hz	AC 120V/60Hz				
_						
Frequency	Conducted Power	Conducted Power (W)	Limit	Limit	Result	
(MHz)	(dBm)		(dBm)	(W)		
2412	20.43	0.1104	30.00	1.0000	Complies	
2437	24.47	0.2799	30.00	1.0000	Complies	
2462	24.12	0.2582	30.00	1.0000	Complies	
Test Mode	Test Mode IEEE 802.11g ANT 2 Tested Date 2018/5/10					
Test Voltage AC 120V/60Hz						
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result	
2412	19.88	0.0973	30.00	1.0000	Complies	
2437	24.63	0.2904	30.00	1.0000	Complies	
2462	24.62	0.2897	30.00	1.0000	Complies	
Test Mode	IEEE 802.11g_Total Tested Date 2018/5/10					
Test Voltage	AC 120V/60Hz					
Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result	
2412	23.17	0.2077	30.00	1.0000	Complies	
2437	27.56	0.5703	30.00	1.0000	Complies	
	i i					

2462

27.39

0.5480

Complies



Test Mode	IEEE 802.11n (HT20) _ANT 1			ested Date	2018/5/10
Test Voltage	AC 120V/60Hz				
Frequency	Conducted Power	Conducted Power (W)	Limit	Limit	Result
(MHz)	(dBm)		(dBm)	(W)	Result
2412	19.67	0.0927	30.00	1.0000	Complies
2437	23.13	0.2056	30.00	1.0000	Complies
2462	22.61	0.1824	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20) _ANT 2	Tested Date	2018/5/10
Test Voltage	AC 120V/60Hz		

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	18.72	0.0745	30.00	1.0000	Complies
2437	23.32	0.2148	30.00	1.0000	Complies
2462	22.46	0.1762	30.00	1.0000	Complies

Test Mode	IEEE 802.11n (HT20)_Total	Tested Date	2018/5/10
Test Voltage	AC 120V/60Hz		

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	Limit (dBm)	Limit (W)	Result
2412	22.23	0.1672	30.00	1.0000	Complies
2437	26.24	0.4204	30.00	1.0000	Complies
2462	25.55	0.3586	30.00	1.0000	Complies

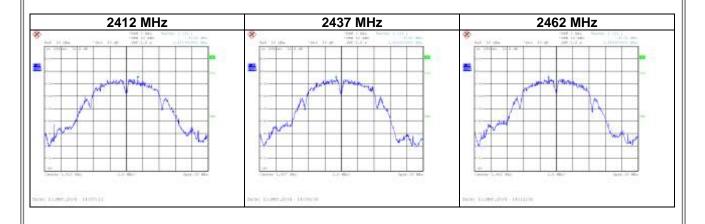


APPENDIX F POWER SPECTRAL DENSITY



Frequency (MHz) Power Density (dBm/3kHz) Limit (dBm) Result 2412 -4.63 6.58 Complies 2437 -4.17 6.58 Complies 2462 -5.08 6.58 Complies 2412 MHz 2437 MHz 2462 MHz 0 0 0 0 0 0 0	Test Mode	IEEE 802.11	IEEE 802.11b_ANT 1				
(MHz) (dBm/3kHz) (dBm) Result 2412 -4.63 6.58 Complies 2437 -4.17 6.58 Complies 2462 -5.08 6.58 Complies 2412 MHz 2437 MHz 2462 MHz 0 0 0 0 0 0 0 0	Test Voltage	AC 120V/60)Hz				
2437 -4.17 6.58 Complies 2462 -5.08 6.58 Complies 2412 MHz 2437 MHz 2462 MHz Image: Strength of the streng strength of the strength of the strength of the streng	•				Result		
2462 -5.08 6.58 Complies 2412 MHz 2437 MHz 2462 MHz Image: Complex of the second	2412	2	-4.63	6.58	Complies		
2412 MHz 2437 MHz 2462 MHz Image: Second and the second	2437	7	-4.17	6.58	Complies		
Image: state of the state	2462	2	-5.08	6.58	Complies		
Image: state of the state	24	12 MHz	2437	MHz	2462 MHz		
Frequency Power Density Limit		IEEE 802.11	be a first the set of	M	the let do not be an		
Result	Freque	ncy	Power Density	Limit			

(MHz)	(dBm/3kHz)	(dBm)	Result
2412	-5.56	6.58	Complies
2437	-5.88	6.58	Complies
2462	-5.74	6.58	Complies

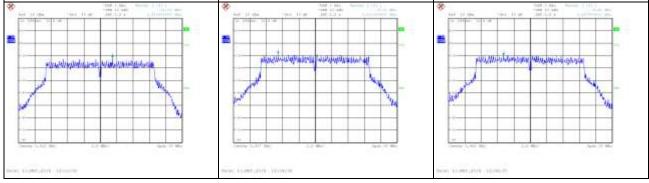


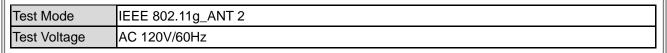


Test Mode	IEEE 802	IEEE 802.11b_Total			
Test Voltage	AC 120V	AC 120V/60Hz			
Frequen	су	Power Density	Limit	Decult	
(MHz)		(dBm/3kHz)	(dBm)	Result	
2412		-2.06	6.58	Complies	
2437		-1.93	6.58	Complies	
2462		-2.39	6.58	Complies	



Test Mode	IEEE 802.11g	IEEE 802.11g_ANT 1				
Test Voltage	AC 120V/60H	AC 120V/60Hz				
	-					
Frequer	псу	Power Density	Limit		Result	
(MHz)	(dBm/3kHz)	(dBm)			
2412		-11.59	6.58		Complies	
2437		-8.10	6.58		Complies	
2462		-9.46	6.58		Complies	
2412 MHz		2437	2437 MHz		2462 MHz	
We have been as a second secon					Karl 10 the Test of the T	





Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-12.13	6.58	Complies
2437	-9.67	6.58	Complies
2462	-10.13	6.58	Complies

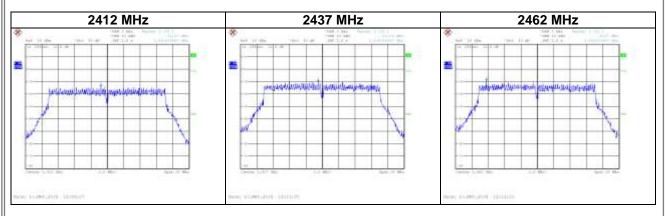




Test Mode	IEEE 802	IEEE 802.11g_Total			
Test Voltage	AC 120V	AC 120V/60Hz			
Frequen	су	Power Density	Limit	Decult	
(MHz)		(dBm/3kHz)	(dBm)	Result	
2412		-8.84	6.58	Complies	
2437		-5.80	6.58	Complies	
2462		-6.77	6.58	Complies	



Test Mode	IEEE 802.11n (HT20)_ANT 1				
Test Voltage	AC 120V/	AC 120V/60Hz			
Frequenc	су (Power Density	Limit	Decult	
(MHz)		(dBm/3kHz)	(dBm)	Result	
2412		-14.07	6.58	Complies	
2437		-10.09	6.58	Complies	
2462		-9.27	6.58	Complies	



Test Mode	IEEE 802.11n (HT20)_ANT 2
Test Voltage	AC 120V/60Hz

Frequency (MHz)	Power Density (dBm/3kHz)	Limit (dBm)	Result
2412	-14.51	6.58	Complies
2437	-10.13	6.58	Complies
2462	-11.32	6.58	Complies





Test Mode	IEEE 802.11n (HT20)_Total				
Test Voltage	AC 120V/60Hz				
Frequency Power Density Limit					
Frequency	ý	Power Density		Result	
(MHz)		(dBm/3kHz)	(dBm)	O a seating	
2412		-11.27	6.58	Complies	
2437		-7.10	6.58	Complies	
2462		-7.16	6.58	Complies	



APPENDIX G ANTENNA CONDUCTED SPURIOUS EMISSIONS



