

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC156189

1 of 91 Page:

FCC Radio Test Report FCC ID: 2AJ9Z-X11

Original Grant

Report No. TB-FCC156189

EMATIC LIMITED Applicant

Equipment Under Test (EUT)

EUT Name ROCK X11

Model No. ROCK X11

Series Model No. N/A

Brand Name EXTREM

Receipt Date 2017-06-23

2017-06-24 to 2017-07-09 **Test Date**

Issue Date 2017-07-10

Standards FCC Part 15, Subpart C (15.247:2016)

Test Method ANSI C63.10: 2013

PASS Conclusions

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC and IC requirements

Test/Witness Engineer

Approved&

Authorized

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0

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1. General Information about EUT

1.1 Client Information

Applicant: EMATIC LIMITED

Address Unit 17, 9/F Tower A, New Mandarin Plaza NO, 14 Science Museum

Rd, TST, Hong Kong, China

Manufacturer : EMATIC LIMITED

Address : Unit 17, 9/F Tower A, New Mandarin Plaza NO, 14 Science Museum

Rd, TST, Hong Kong, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	ROCK X11	WILLIAM TO THE PARTY OF THE PAR		
Models No.	:	ROCK X11			
Model Difference		N/A			
		Operation Frequency: Number of Channel: RF Output Power:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz 802.11b/g/n(HT20):11 channels see note(3) 802.11n(HT40):9 channels see note(3) 802.11b: 16.91 dBm 802.11g: 13.38 dBm		
Product Description	:	Antenna Gain:	802.11n (HT20): 12.85 dBm 802.11n (HT40): 12.22 dBm		
	2	Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n:OFDM(BPSK,QPSK,16QAM, 64QAM)		
	0	Bit Rate of Transmitter:	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps		
Power Supply	:	DC power supplied by DC Voltage supplied			
Power Rating		AC/DC Adapter(A138A-120150U-US2): Input: AC 100~240V 50/60Hz, 0.5A. Output: 5V/2.5A&9V/2A&12V/1.5A. DC 3.8V from 10000mA Li-ion battery.			
Connecting I/O Port(S)	:	Please refer to the Us			

Note:

(1) This Test Report is FCC Part 15.247 for 802.11b/g/n, the test procedure follows the FCC KDB 558074 D01 DTS Meas Guidance v04.



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(2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(3) 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		

Note:CH 01~CH 11 for 802.11b/g/n(HT20) CH 03~CH 09 for 802.11n(HT40)

- (4) The Antenna information about the equipment is provided by the applicant.
- 1.3 Block Diagram Showing the Configuration of System Tested

Charging+TX Mode

Adapter		EUT		
	_	'		

1.4 Description of Support Units

The EUT has been test as an independent unit.



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1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For (Conducted Test
Final Test Mode	Description
Mode 1	Charging with TX B Mode

	For Radiated Test
Final Test Mode	Description
Mode 2	TX Mode B Mode Channel 01/06/11
Mode 3	TX Mode G Mode Channel 01/06/11
Mode 4	TX Mode N(HT20) Mode Channel 01/06/11
Mode 5	TX Mode N(HT40) Mode Channel 03/06/09

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, Middle, lowest available channels, and the worst case data rate as follows:

802.11b Mode: CCK (1 Mbps) 802.11g Mode: OFDM (6 Mbps)

802.11n (HT20) Mode: MCS 0 (6.5 Mbps) 802.11n (HT40) Mode: MCS 0 (13 Mbps)

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a fixed unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.



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1.6 Description of Test Software Setting

During testing channel&Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN.

Test Software Version	1000	*#*#3646633#*#*	
Channel	CH 01	CH 06	CH 11
IEEE 802.11b DSSS	DEF	DEF	DEF
IEEE 802.11g OFDM	DEF	DEF	DEF
IEEE 802.11n (HT20)	DEF	DEF	DEF
Channel	CH 03	CH 06	CH 09
IEEE 802.11n (HT40)	DEF	DEF	DEF

1.7 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U _{Lab})
	Level Accuracy:	
Conducted Emission	9kHz~150kHz	±3.42 dB
	150kHz to 30MHz	±3.42 dB
Dedicted Emission	Level Accuracy:	.4.00 dD
Radiated Emission	9kHz to 30 MHz	±4.60 dB
Dedicted Emission	Level Accuracy:	. 4. 40 dD
Radiated Emission	30MHz to 1000 MHz	±4.40 dB
Dadiated Emission	Level Accuracy:	. 4 20 dD
Radiated Emission	Above 1000MHz	±4.20 dB



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1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



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2. Test Summary

	FCC Part	t 15 Subpart C(15.247)/ RSS 247	' Issue 1	
Standa	rd Section	Test Item	Judgment	Remark
FCC	IC	Test item	oudgillent	Kemark
15.203	1	Antenna Requirement	PASS	N/A
15.207	RSS-GEN 7.2.4	Conducted Emission	PASS	N/A
15.205	RSS-GEN 7.2.2	Restricted Bands	PASS	N/A
15.247(a)(2)	RSS 247	6dB Bandwidth	PASS	N/A
10.247 (4)(2)	5.2 (1)	Cab Bariawian	17.00	
15.247(b)	RSS 247	Peak Output Power	PASS	N/A
10.2 17 (5)	5.4 (4)	Tour output Towor		
15.247(e)	RSS 247	Power Spectral Density	PASS	N/A
13.247 (6)	5.2 (2)	Tower Spectral Density	1 700	
15 047(d)	RSS 247	Pand Edga	DACC	N/A
15.247(d)	5.5	Band Edge	PASS	
15.247(d)&	RSS 247	Transmitter Radiated Spurious	DACC	N1/A
15.209	5.5	Emission	PASS	N/A

Note: "/" for no requirement for this test item.

N/A is an abbreviation for Not Applicable.



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3. Test Equipment

Conducte	d Emission Te	st			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 22, 2016	Jul. 21, 2017
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 22, 2016	Jul. 21, 2017
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 22, 2016	Jul. 21, 2017
LISN	Rohde & Schwarz	ENV216	101131	Jul. 22, 2016	Jul. 21, 2017
Radiation	Emission Tes	t			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 22, 2016	Jul. 21, 2017
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 22, 2016	Jul. 21, 2017
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.25, 2017	Mar. 24, 201
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar.25, 2017	Mar. 24, 2018
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.24, 2017	Mar. 23, 2018
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar.24, 2017	Mar. 23, 2018
Loop Antenna	Laplace instrument	RF300	0701	Mar.24, 2017	Mar. 23, 201
Pre-amplifier	Sonoma	310N	185903	Mar.24, 2017	Mar. 23, 201
Pre-amplifier	HP	8449B	3008A00849	Mar.25, 2017	Mar. 24, 201
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.24, 2017	Mar. 23, 201
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna C	Conducted Em	ission			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 22, 2016	Jul. 21, 2017
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 22, 2016	Jul. 21, 2017
Power Meter	Anritsu	ML2495A	25406005	Jul. 22, 2016	Jul. 21, 2017
Power Sensor	Anritsu	ML2411B	25406005	Jul. 22, 2016	Jul. 21, 2017



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4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1Test Standard FCC Part 15.207

4.1.2 Test Limit

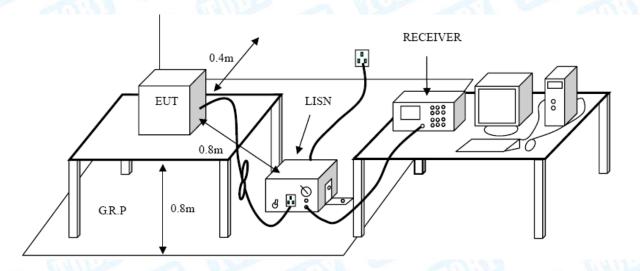
Conducted Emission Test Limit

Eroguenov	Maximum RF Line Voltage (dBμV)		
Frequency	Quasi-peak Level	Average Level	
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2 Test Setup





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4.3 Test Procedure

The EUT was placed 0.8m from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

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

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Please see the next page.



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EUT:	ROCK	X11	Mod	lel Name :		ROCK X1	1
Temperature	: 25 °C	em'	Rela	ative Humidi	ity:	55%	A British
Test Voltage:	: AC 12	0V/60Hz	150	18	(61)	MI S	
Terminal:	Line		Alto.		1 6		
Test Mode:	Charg	ng with TX	B Mode	111111111111111111111111111111111111111		- N	N. Land
Remark:	Only w	orse case is	s reported		SIN	333	
80.0 dBuV							
						QP: AVG:	
						,	
M. X	When the same	and Make a will should			walanay alama	Jakyphalashayya, na	
30	, , , , , , , , , , , , , , , , , , ,	1 - 41 1 - 141 1	W/Why by brond	A SHAMPAN AND LONG TO THE SHAPE OF THE SHAPE	4 11 141	W.	peak
m	Mary and mary	amawanaharibariba	the de way work his word the first	many to the same of the same o	or which the same	me	hear
1			. Johns				AVG
-20 0.150	0.5		(MHz)	5			30.000
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	0.2740	27.05	9.59	36.64	60.99	-24.35	QP
2	0.2740	12.46	9.59	22.05	50.99	-28.94	AVG
3 *	0.3740	26.27	9.60	35.87	58.41	-22.54	QP
4	0.3740	12.11	9.60	21.71	48.41	-26.70	AVG
5	1.0260	23.17	9.60	32.77	56.00	-23.23	QP
6	1.0260	11.10	9.60	20.70	46.00	-25.30	AVG
7	2.3780	22.30	9.62	31.92		-24.08	QP
8	2.3780	13.50	9.62	23.12		-22.88	AVG
9	8.2299	20.27	9.94	30.21		-29.79	QP
10	8.2299	12.61	9.94	22.55		-27.45	AVG
	10.6860	18.22	10.11	28.33		-31.67	QP
	10.6860	11.12	10.11	21.23		-28.77	AVG
	10.0000	11.12	10.11	21.23	50.00	-20.11	
Emission Le	vel= Read	Level+ Cor	rect Factor				



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EUT:	ROCK X11	M	odel Name :		ROCK X	(11
Temperature:	25 ℃	R	elative Humi	dity:	55%	ARTO
Test Voltage:	AC 120V/60Hz		10	61	4.33	
Terminal:	Neutral			16		
Test Mode:	Charging with	TX B Mode	MILE		a N	N. Carrie
Remark:	Only worse cas	se is reported		CIII	13	
80.0 dBuV						
30	Mary be made of the state of th	May	Why what was a series of the s	A CONTRACTOR OF THE STATE OF TH	QP: AVG:	peal
-20 0.150	0.5 Readin	(MHz)	Measure-			30.000
No. Mk.	Freq. Level	•	ment	Limit	Over	
1	MHz dBu∨	dB	dBuV	dBuV	dB	Detector
1 0.3	3020 28.45	9.57	38.02	60.19	-22.17	QP
2 0.3	3020 16.36	9.57	25.93	50.19	-24.26	AVG
3 0.4	4220 26.10	9.58	35.68	57.41	-21.73	QP
4 0.4	4220 14.67	9.58	24.25	47.41	-23.16	AVG
5 1.	1180 24.32	9.59	33.91	56.00	-22.09	QP
6 * 1.	1180 15.68	9.59	25.27	46.00	-20.73	AVG
7 1.	8980 22.42	9.61	32.03	56.00	-23.97	QP
8 1.	8980 15.22	9.61	24.83	46.00	-21.17	AVG
	5780 28.41		38.62		-21.38	QP
	5780 18.24		28.45		-21.55	AVG
	1420 27.74		38.06	60.00		QP
	1420 18.34		28.66		-21.34	AVG
	= Read Level+ C	Correct Factor				



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EUT:	ROCK X11	- W	Model Name		ROCK	X11
Temperature:	25 ℃	30	Relative Hum	idity:	55%	A STATE OF THE PARTY OF THE PAR
Test Voltage:	AC 240V/60Hz			Gall	11110	
Terminal:	Line	A LINE		63		133
Test Mode:	Charging with TX	B Mode	CONTRACT OF STREET		a V	N. L.
Remark:	Only worse case	is reported				
80.0 dBuV						
					QP: AVG:	
×	v v		han hand had been been been been been been been bee	Why way it	White Manner and	n. bts
Many Jr	Ty My My more than	Myddlyn franklig yn yr yn	Land Alle Alle Alle Alle Alle Alle Alle All			
30	V V V V	7179	- white and the state of the st	office of the second of the second	manufacture (the	peak
WWWW IN	rd . M. M. _{Mark} arakkalkalkalkalkalkalkalkalkalkalkalkalka	hippy from the succession	- white when the work of the state of the st			AVG
, W	A de dear man					
-20						
0.150	0.5	(MHz)	5			30.000
	Reading	Correct	Measure-		0	
	req. Level	Factor	mont	_imit	Over	
	MHz dBuV	dB		dBuV	dB	Detector
	2940 29.82	9.59			-21.00	QP
	2940 15.27	9.59			-25.55	AVG
	4300 27.40	9.60			-20.25	QP
	4300 10.51	9.60			-27.14	AVG
	9980 23.67	9.61			-22.72	QP
	9980 11.49	9.61			-24.90	AVG
	1180 25.72	9.75			-24.53	QP
8 5.	1180 16.32	9.75	26.07 5	0.00	-23.93	AVG
9 7.0	0260 27.35	9.86	37.21 6	0.00	-22.79	QP
10 7.0	0260 16.74	9.86	26.60 5	0.00	-23.40	AVG
11 10.9	9140 26.90	10.13	37.03	0.00	-22.97	QP
12 10.9	9140 17.55	10.13	27.68 5	0.00	-22.32	AVG
Emission Level	= Read Level+ Co	rrect Factor				



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Marie Marie S		
	11	4 V
		JI
	100	The same

UT:	ROCK	X11		Model Name	:	ROCK X	(11
emperature:	25 ℃	Carl's	F	Relative Hun	nidity:	55%	ARTE
est Voltage:	AC 24	0V/60Hz		11	(61)	11/19	
erminal:	Neutra	al	AHIT.		16	100	
est Mode:	Chargi	ing with TX E	3 Mode	THE PERSON		0 N	N. D.
Remark:	Only w	vorse case is	reported	6	em)	13	
30.0 dBuV							
						QP: AVG:	
* *	×			Anna Anna	VALLAN AND AND AND AND AND AND AND AND AND A	manular and	ton H.
Mary Mary	\ _ ^\^,	MAKAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAMAM	halling of the state of the sta	to the property of the second		adminda	be
30	A.M.		190	Marin Comment		maran market	~
My M	\	plate the morning	White of the property of the second	and my design and the second second			AV AV
	ΛΛ.,						
0							
0.150	0.5		(MHz)	5			30.000
		Reading	Correct	Measure-			
No. Mk.	Freq.	Level	Factor	ment	Limit	Over	
	MHz	dBu∀	dB	dBu∨	dBuV	dB	Detector
1	0.1860	28.28	9.65	37.93	64.21	-26.28	QP
2	0.1860	15.88	9.65	25.53	54.21	-28.68	AVG
3	0.3020	30.87	9.57	40.44	60.19	-19.75	QP
4	0.3020	20.21	9.57	29.78	50.19	-20.41	AVG
5	0.4260	29.20	9.58	38.78	57.33	-18.55	QP
	0.4260	19.05	9.58	28.63		-18.70	AVG
		23.80	9.60	33.40		-22.60	QP
	1 2020		9.00	JJ. T U	55.00	22.00	QΓ
7	1.2980		0.60	24.05	46.00	24.05	A\/C
7	1.2980	14.45	9.60	24.05		-21.95	AVG
7 8 9 *	1.2980 6.5940	14.45 31.85	10.21	42.06	60.00	-17.94	QP
7 8 9 *	1.2980	14.45 31.85 20.38			60.00		QP
7 8 9 * 10	1.2980 6.5940	14.45 31.85	10.21	42.06	60.00 50.00	-17.94	



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5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209

5.1.2 Test Limit

Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz	Field Strength (microvolt/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
Above 960	500	3

Radiated Emission Limit (Above 1000MHz)

Frequency	Distance of 3	m (dBuV/m)
(MHz)	Peak	Average
Above 1000	74	54

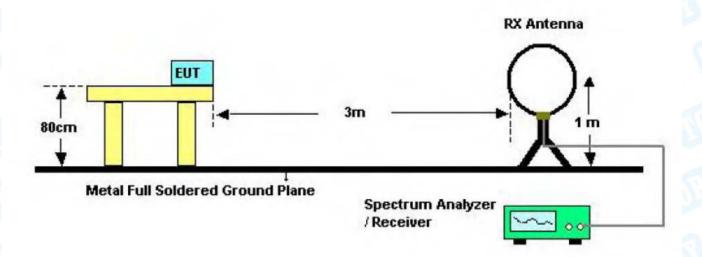
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

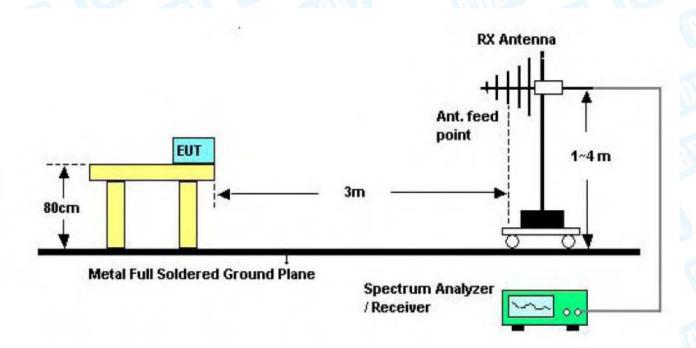


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5.2 Test Setup



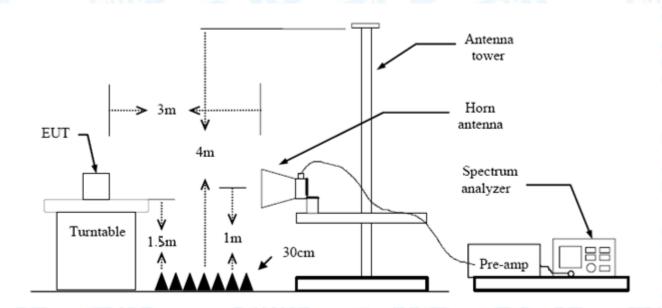
Below 30MHz Test Setup



Below 1000MHz Test Setup



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Above 1GHz Test Setup

5.3 Test Procedure

- (1) Measurements at frequency above 1GHz. The EUT was placed on a rotating 0.8m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (7) For the actual test configuration, please see the test setup photo.



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5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

Test data please refer the following pages.



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9KHz~30MHz

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB

below the permissible value has no need to be reported.

30MHz~1GHz

EUT:	ROCK	X11		Model:		ROCK X	11	
Temperature:	25 ℃	CHI)		Relative Hu	ımidity:	55%		
Test Voltage:	AC 120	OV/60Hz	COUNTY OF		BALE			
Ant. Pol.	Horizoi	Horizontal						
Test Mode:	TXBM	1ode 2412N	1Hz	1 The		E. Salar		
Remark:	Only w	Only worse case is reported						
80.0 dBuV/m								
					(RF)FCC 1	5C 3M Radiation		
						Margin -6	dB	
			34					
30 1			2 X	5 6 X				
X					مرر والهلام لامرية	المنافية المراجع والمنافية والمنافقة	البريغونساسولها	
May my		ملال بالأمنام م	J. A. P. C.	di , iui	Albert March	- Adding to the second		
Jun 1	Mary Mary Mary	The Art Library Control	\ \					
	'							
-20								
30.000 40 5	60 70	80	(MHz)	300	400 5	00 600 700	1000.00	
		Reading	Correct	Measure-				
No. Mk.	Freq.	Level	Factor	ment	Limit	Over		
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto	
1 31	.3992	41.50	-14.64	26.86	40.00	-13.14	peak	
2 163	3.1818	50.90	-20.23	30.67	43.50	-12.83	peak	
			-20.17	35.73	43.50	-7.77	peak	
3 185	5.1379	55.90	-20.17	55.75				
	5.1379 1.0738	55.90 56.12	-20.17	35.86	43.50	-7.64	peak	
4 * 19						-7.64 -16.00		
4 * 19 ⁻ 5 24 ⁻	1.0738	56.12	-20.26	35.86	43.50		peak peak peak	



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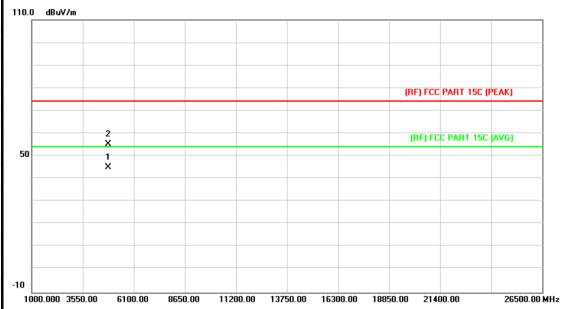
Γ:	ROCK X11 Model:			RO	CK X11			
nperature:	25 °C		R	Relative Humidity:			, o	BAR
t Voltage:	AC 1	20V/60Hz	To the same	8.0	6	m'		
. Pol.	Vertic	Vertical						M.
t Mode:	TX B	Mode 2412	2MHz	THINDS		A		Market
mark:	Only	worse case	is reported		610			
) dBuV/m								
1 2 X	3	A Managhi	5.8 ************************************				Margin -6	dB (on on high
0.000 40 50	60 70	80	(MHz)	300	400	500	600 700	1000.00
No. Mk. F	req.	Reading Level	Correct Factor	Measure- ment	Limit		Over	
N	1Hz	dBuV	dB/m	dBuV/m	dBuV/	m	dB	Detecto
! 31.8	8427	49.48	-14.91	34.57	40.0	0	-5.43	peal
45.9	8553	54.57	-22.34	32.23	40.0	0	-7.77	peal
₹5.0	5555							
	5836	50.92	-23.26	27.66	40.0	0	-12.34	peal
70.		50.92 50.23	-23.26 -22.18	27.66	40.0		-12.34 -15.45	peal peal
70.5 91.	5836					0		
	nperature: t Voltage: . Pol. t Mode: mark: . dBuV/m	t Voltage: AC 1 Pol. Vertication of the Mode: TX B nark: Only dBuV/m 1 2 3 No. Mk. Freq. MHz 1 31.8427	Tyolage: AC 120V/60Hz Nol. Vertical TX B Mode 2412 TX B Mode 2412	t Voltage: AC 120V/60Hz Pol. Vertical TX B Mode 2412MHz North Only worse case is reported dBuV/m Reading Correct Factor MHz dBuV dB/m 1 31.8427 49.48 -14.91	Relative Huming to Voltage: AC 120V/60Hz Pol. Vertical TX B Mode 2412MHz Nark: Only worse case is reported Only worse case is reported Reading Correct Measure- Level Factor ment MHz dBuV dB/m dBuV/m ! 31.8427 49.48 -14.91 34.57	Relative Humidity: Relativ	Relative Humidity: 55% t Voltage: AC 120V/60Hz Pol. Vertical TX B Mode 2412MHz Only worse case is reported Odbuv/m Reading Correct Measure- Level Factor ment Limit MHz dBuV dB/m dBuV/m dBuV/m ! 31.8427 49.48 -14.91 34.57 40.00	Relative Humidity:



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Above 1GHz

OCK X11	Model:	ROCK X11				
		NOCK XII				
5 ℃	Relative Humidity:	55%				
AC 120V/60Hz						
Horizontal						
TX B Mode 2412MHz						
o report for the emission nit.	which more than 10 dE	below the prescribed				
	C 120V/60Hz orizontal X B Mode 2412MHz o report for the emission	C 120V/60Hz orizontal X B Mode 2412MHz o report for the emission which more than 10 dB				

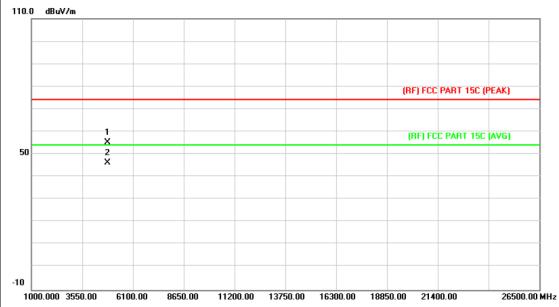


N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4823.225	31.61	13.56	45.17	54.00	-8.83	AVG
2			4824.627	41.76	13.56	55.32	74.00	-18.68	peak



Page: 24 of 91

OCK X11	Model:	ROCK X11				
25 °C Relative Humidity: 55%						
AC 120V/60Hz						
Vertical						
TX B Mode 2412MHz						
o report for the emission wheescribed limit.	hich more than 10 dB l	below the				
	tical B Mode 2412MHz report for the emission w	rtical B Mode 2412MHz report for the emission which more than 10 dB I				



No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4824.186	41.60	13.56	55.16	74.00	-18.84	peak
2	*	4825.224	32.73	13.57	46.30	54.00	-7.70	AVG



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	est Voltage: AC 120V/60Hz						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX B Mode 2437MHz	WIID S					
Remark: No report for the emission which more than 10 dB below the prescribed limit.							
440.0 ID VI	-						

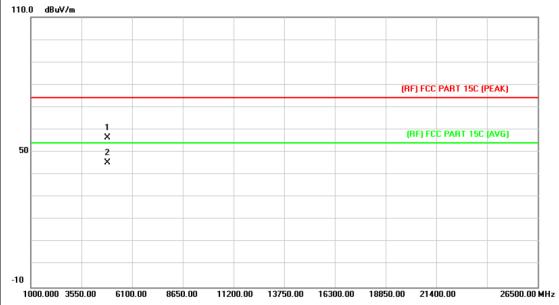


ı	No.	Mk.	Freq.			Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4874.218	30.92	13.86	44.78	54.00	-9.22	AVG
2			4875.337	42.37	13.87	56.24	74.00	-17.76	peak



Page: 26 of 91

EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX B Mode 2437MHz	WIID S	THE PERSON NAMED IN				
Remark: No report for the emission which more than 10 dB below the prescribed limit.							

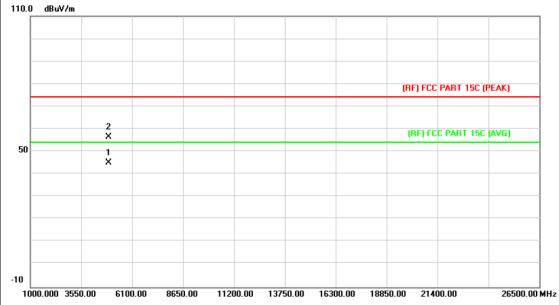


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4874.125	42.56	13.86	56.42	74.00	-17.58	peak
2	*	4875.288	31.57	13.87	45.44	54.00	-8.56	AVG



Page: 27 of 91

EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX B Mode 2462MHz	MILLOS					
Remark: No report for the emission which more than 10 dB below the prescribed limit.							

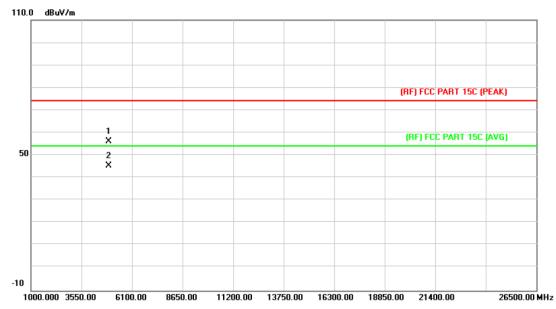


	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4924.328	30.95	14.15	45.10	54.00	-8.90	AVG
2			4925.688	42.29	14.16	56.45	74.00	-17.55	peak



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX B Mode 2462MHz	MILLOS	THE PARTY OF				
Remark: No report for the emission which more than 10 dB below the prescribed limit.							

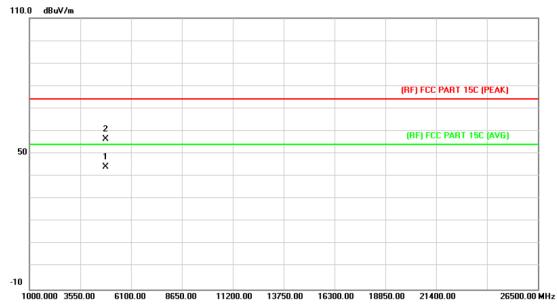


N	o. N	Лk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4923.237	42.00	14.15	56.15	74.00	-17.85	peak
2	*		4925.467	31.06	14.16	45.22	54.00	-8.78	AVG



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX G Mode 2412MHz	MILES					
Remark: No report for the emission which more than 10 dB below the prescribed limit.							
440.0 10.111							

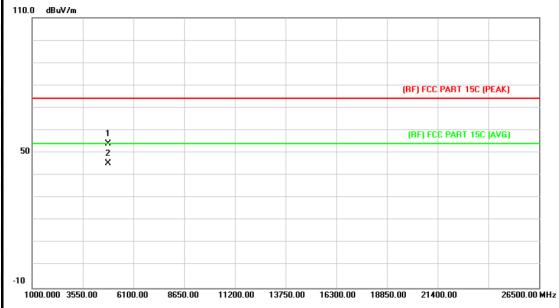


N	0.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	,	*	4824.327	30.56	13.56	44.12	54.00	-9.88	AVG
2			4825.475	42.76	13.57	56.33	74.00	-17.67	peak



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage: AC 120V/60Hz							
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX G Mode 2412MH	z	- Aller				
Remark: No report for the emission which more than 10 dB below the prescribed limit.							

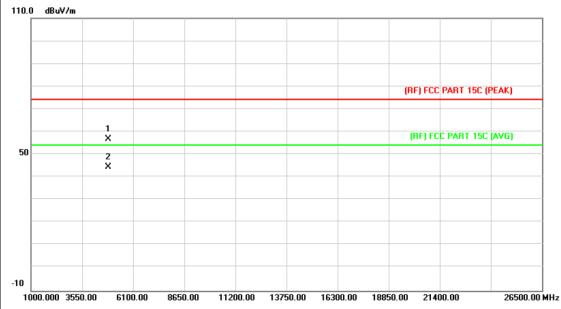


No.	Mk.	Freq.			Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4824.379	40.51	13.56	54.07	74.00	-19.93	peak
2	*	4825.163	31.71	13.57	45.28	54.00	-8.72	AVG



Page: 31 of 91

EUT:	ROCK X11	Model:	ROCK X11					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz						
Ant. Pol.	Horizontal							
Test Mode:	TX G Mode 2437MHz	MILES	THE PERSON NAMED IN					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.							
	procenied innit							

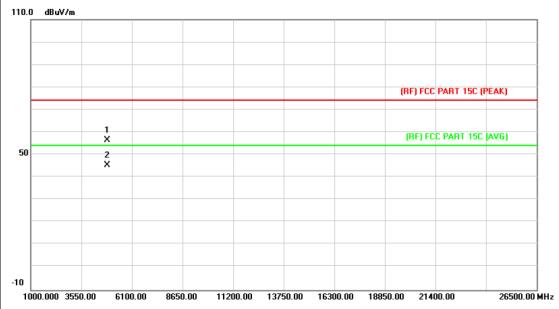


No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.704	42.81	13.86	56.67	74.00	-17.33	peak
2	*	4875.527	30.51	13.87	44.38	54.00	-9.62	AVG



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EUT:	ROCK X11	Model:	ROCK X11			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz		Tible			
Ant. Pol.	Vertical					
Test Mode:	TX G Mode 2437MHz	WIID S				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					



No.	Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4875.151	42.52	13.87	56.39	74.00	-17.61	peak
2	*	4875.864	31.39	13.87	45.26	54.00	-8.74	AVG



Page: 33 of 91

EUT:	ROCK X11	Model:	ROCK X11					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz						
Ant. Pol.	Horizontal							
Test Mode:	TX G Mode 2462MHz		The same of the sa					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.							



No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.774	31.21	14.15	45.36	54.00	-8.64	AVG
2		4924.232	42.05	14.15	56.20	74.00	-17.80	peak



Page: 34 of 91

EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX G Mode 2462MHz		A THURSDAY				
Remark:	No report for the emission prescribed limit.	which more than 10 dE	3 below the				



No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4924.865	31.01	14.15	45.16	54.00	-8.84	AVG
2		4925.342	42.07	14.16	56.23	74.00	-17.77	peak



Page: 35 of 91

EUT:	ROCK X11	Model:	ROCK X11					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz						
Ant. Pol.	Horizontal							
Test Mode:	TX N(HT20) Mode 2412N	1Hz	A THURSDAY					
Remark:	No report for the emission which more than 10 dB below the							
	prescribed limit.							

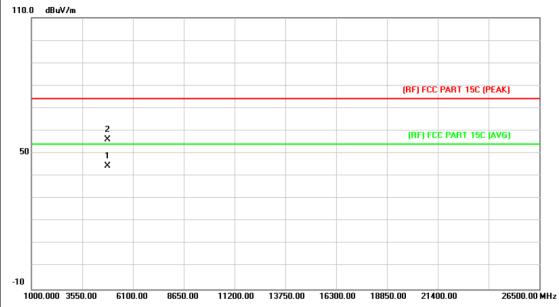


No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.115	42.65	13.56	56.21	74.00	-17.79	peak
2	*	4824.369	31.12	13.56	44.68	54.00	-9.32	AVG



Page: 36 of 91

ROCK X11	Model:	ROCK X11			
25 ℃	Relative Humidity:	55%			
AC 120V/60Hz	31 - 6	TIPS A			
Vertical					
TX N(HT20) Mode 2412Ml	Hz				
No report for the emission which more than 10 dB below the prescribed limit.					
	25 °C AC 120V/60Hz Vertical TX N(HT20) Mode 2412M	25 °C Relative Humidity: AC 120V/60Hz Vertical TX N(HT20) Mode 2412MHz No report for the emission which more than 10 dB			



N	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.271	30.78	13.56	44.34	74.00	-29.66	peak
2	*	4825.246	42.63	13.57	56.20	74.00	-17.80	peak



Page: 37 of 91

EUT:	ROCK X11	Model:	ROCK X11			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX N(HT20) Mode 2437M	Hz	THE PARTY OF THE P			
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

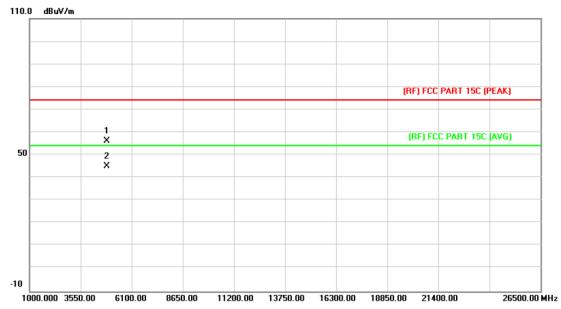


No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4875.244	42.35	13.87	56.22	74.00	-17.78	peak
2	*	4876.302	32.29	13.87	46.16	54.00	-7.84	AVG



Page: 38 of 91

EUT:	ROCK X11	Model:	ROCK X11			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Vertical					
Test Mode:	TX N(HT20) Mode 2437M	Hz				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					
Remark:		which more than 10 dB	3 below the			



No	. Mk	Freq.	_		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.114	42.37	13.86	56.23	74.00	-17.77	peak
2	*	4874.357	31.32	13.86	45.18	54.00	-8.82	AVG



Page: 39 of 91

EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX N(HT20) Mode 2462MH	lz	3 110				
Remark:	No report for the emission v	No report for the emission which more than 10 dB below the					
	prescribed limit.						
í							



	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4923.443	31.13	14.15	45.28	54.00	-8.72	AVG
2			4925.239	42.50	14.16	56.66	74.00	-17.34	peak



Page: 40 of 91

EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX N(HT20) Mode 2462MH	z	a Mul				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						
· · · · · · · · · · · · · · · · · · ·							

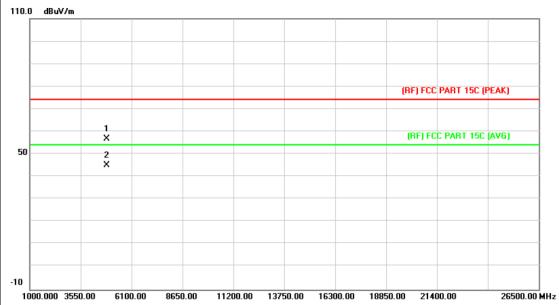


No.	Mk.	Freq.			Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4924.674	42.61	14.15	56.76	74.00	-17.24	peak
2	*	4925.322	31.52	14.16	45.68	54.00	-8.32	AVG



Page: 41 of 91

EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX N(HT40) Mode 2422N	ЛНz					
Remark:	No report for the emission	No report for the emission which more than 10 dB below the					
prescribed limit.							

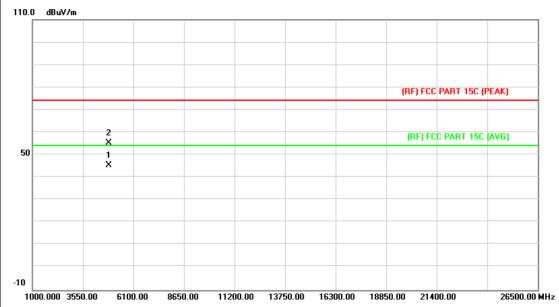


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4844.336	43.06	13.68	56.74	74.00	-17.26	peak
2	*	4845.647	31.29	13.69	44.98	54.00	-9.02	AVG



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX N(HT40) Mode 2422MH	lz	A VIII				
Remark:	No report for the emission v	No report for the emission which more than 10 dB below the					
	prescribed limit.						



N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4844.262	31.78	13.68	45.46	54.00	-8.54	AVG
2			4845.446	41.63	13.69	55.32	74.00	-18.68	peak



Page: 43 of 91

EUT:	ROCK X11	Model:	ROCK X11							
Temperature:	25 ℃	C Relative Humidity: 55% 120V/60Hz zontal	55%							
Test Voltage:	AC 120V/60Hz		Till							
Ant. Pol.	Horizontal	Horizontal								
Test Mode:	TX N(HT40) Mode 2437M	lHz								
Remark:	No report for the emission which more than 10 dB below the									
	prescribed limit.									
4400 10 111	<u> </u>	·	·							

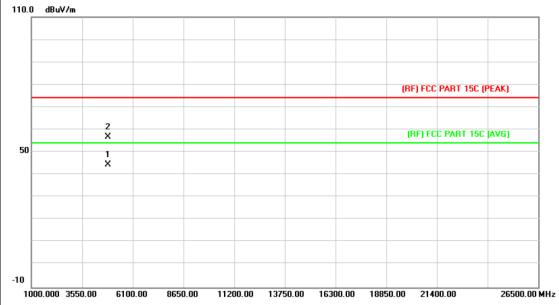


No	. Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.168	42.90	13.86	56.76	74.00	-17.24	peak
2	*	4874.427	30.72	13.86	44.58	54.00	-9.42	AVG



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ROCK X11	Model:	ROCK X11
25 ℃	Relative Humidity: 55% OHz	
AC 120V/60Hz		
Vertical		
TX N(HT40) Mode 2437M	Hz	THE PARTY OF THE P
No report for the emission prescribed limit.	which more than 10 dB	3 below the
	25 °C AC 120V/60Hz Vertical TX N(HT40) Mode 2437M No report for the emission	25 °C Relative Humidity: AC 120V/60Hz Vertical TX N(HT40) Mode 2437MHz No report for the emission which more than 10 dB

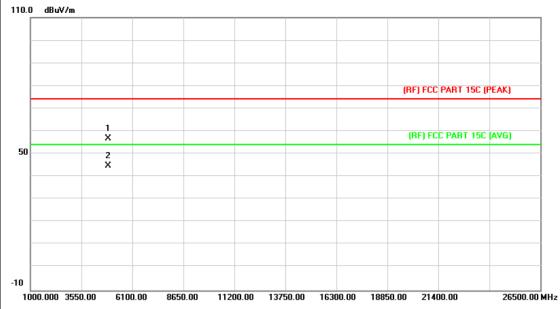


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4874.682	30.69	13.86	44.55	54.00	-9.45	AVG
2		4875.283	42.79	13.87	56.66	74.00	-17.34	peak



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity: 55% V/60Hz tal	
Test Voltage:	AC 120V/60Hz		Time
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2452N	1Hz	THE PARTY OF THE P
Remark:	No report for the emission prescribed limit.	which more than 10 de	3 below the
110.0 10.41	prescribed inflit.		



N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4903.312	42.77	14.03	56.80	74.00	-17.20	peak
2	,	*	4904.335	30.69	14.03	44.72	54.00	-9.28	AVG



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity: 55% OHz	
Test Voltage:	AC 120V/60Hz		Till
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2452N	1Hz	THE PARTY OF THE P
Remark:	No report for the emission prescribed limit.	which more than 10 dl	3 below the
110.0 40.47			



N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4904.426	30.60	14.03	44.63	54.00	-9.37	AVG
2			4905.230	42.67	14.04	56.71	74.00	-17.29	peak



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6. Restricted Bands Requirement

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC Part 15.247(d)

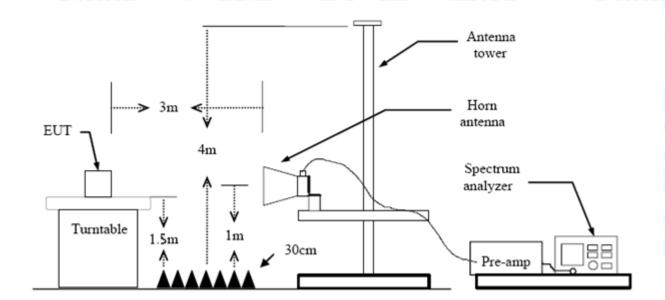
FCC Part 15.209

FCC Part 15.205

6.1.2 Test Limit

Restricted Frequency	Distance of 3m (dBuV/m)					
Band (MHz)	Peak	Average				
2310 ~2390	74	54				
2483.5 ~2500	74	54				

6.2 Test Setup





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6.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.

- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.5 Test Data

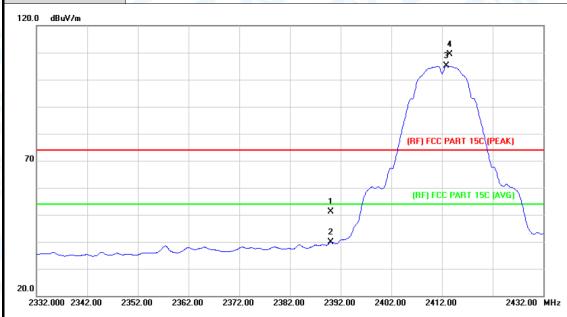
Please see the next page.



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(1) Radiation Test

EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	TO U	
Ant. Pol.	Horizontal	WILL SE	MILL
Test Mode:	TX B Mode 2412MHz		13 - 6
Remark:	N/A		



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	50.35	0.77	51.12	74.00	-22.88	peak
2		2390.000	39.16	0.77	39.93	54.00	-14.07	AVG
3	*	2412.900	104.22	0.86	105.08	Fundamental	Frequency	AVG
4	X	2413.500	108.60	0.86	109.46	Fundamental	Frequency	peak



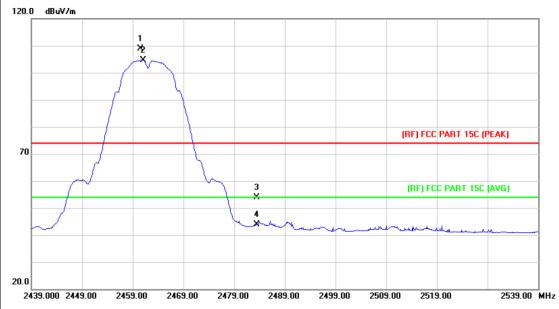
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EUT:			ROC	ROCK X11				Model:				ROCK X11			
em	peratu	re:	25 ℃				ı	Relati	ive H	łumid	ity:	55%	%	AR	
Test	Voltag	ge:	AC 1	AC 120V/60Hz					1						A
۱nt.	Pol.		Verti	cal		M				1	6		100	60	
Гest	Mode	•	TX B	8 Mode	2412	MHz		5				A	A		
Rem	ark:		N/A	167				\		6		M			- (
120.0	dBuV/m														_
													4 3 ^K X		1
-												\nearrow			-
											(DE) ERC	DADT	15C (PE)	(r)	-
70											myrec	TANT	130 (12)	36)	-
									1		(P/F) FC	C PAR	r 15C (AV	/G)	
- 1									×	_	/			M	
ŀ									2 —X	_/_					-
-															-
20.0															
23	27.000 23	37.00 7	2347.00	2357.00	2367	.00 23	77.00	2387	.00	2397.00	2407	7.00		2427.00	MHZ
							- 4	N 4		_					
N	o. Mk	Fr	eq.	Read Lev		Corre			asure ent		imit	(Over		
	O. 1VIII		Hz	dBu					uV/m		BuV/n		dB	Dete	octo
_						dB/n									
1		2390		48.0	J6	0.77		48	3.83		74.00	-	25.17		eak
2		2390	.000	38.6	35	0.77	7	39	9.42	ļ	54.00) -	14.58	3 A\	۷G
3	*	2412	.900	93.2	22	0.86	3	94	4.08	Fu	ndamen	ital Fre	equency	Α\	VG
	Χ	2/12	.400	97.4	47	0.86	3	98	3.33	Eu	ndamen	tal Er	auonov	DE	eak



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		Will a
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2462MHz		A THURSDAY
Remark:	N/A		133

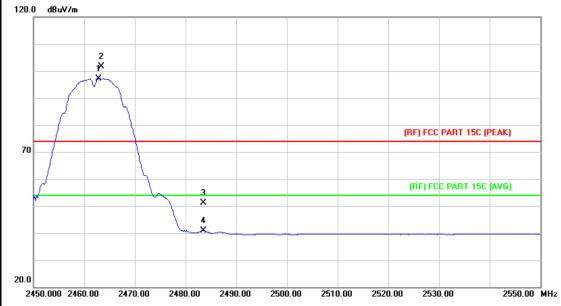


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2460.500	107.86	1.06	108.92	Fundamental	Frequency	peak
2	*	2461.100	103.58	1.06	104.64	Fundamental	Frequency	AVG
3		2483.500	52.65	1.17	53.82	74.00	-20.18	peak
4		2483.500	42.80	1.17	43.97	54.00	-10.03	AVG



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2462MHz	MILDE	
Remark:	N/A		13.3



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2462.800	96.10	1.08	97.18	Fundamental Frequency		AVG
2	Χ	2463.400	100.47	1.08	101.55	Fundamental	Frequency	peak
3		2483.500	49.89	1.17	51.06	74.00	-22.94	peak
4		2483.500	39.69	1.17	40.86	54.00	-13.14	AVG



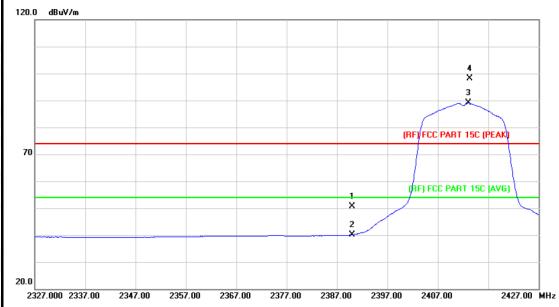
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EU	Т:		ROC	K X11			Mode	el:		ROCK X1	1
Ten	nperatu	re:	25 °	С	(in	3	Relat	ive Hur	nidity:	55%	The same
Tes	t Voltag	je:	AC 1	20V/60	Hz		Dist		GU	1133	
Ant	. Pol.		Horiz	zontal		ARI			1 6		
Tes	t Mode:		TX	Mode	2412M	Hz	. 6	MILE			1 lister
Rer	nark:		N/A	AR						33	
120.0) dBuV/m										
70							1 X X			PART 15C (PEAL	
20.0	337.000 234	7 00 2	357.00	2367.00	2377.00) 2387.0	n 239	7.00 24	D7.00 2417	' nn :	2437.00 MH
	No. Mk	. Fre	eq.	Read Leve		Correct Factor		asure- ient	Limit	Over	
		MH	Ηz	dBu	V	dB/m	dE	BuV/m	dBuV/m	dB	Detecto
1		2390.	.000	61.9	90	0.77	6	2.67	74.00	-11.33	peak
2		2390.	.000	46.5	59	0.77	4	7.36	54.00	-6.64	AVG
_		2442	100	108.	10	0.86	10	8.96	Fundament	al Frequency	peak
3	X	2413.	100	100.	10	0.00				a oquoo,	



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	110	133
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2412MHz		2
Remark:	N/A		

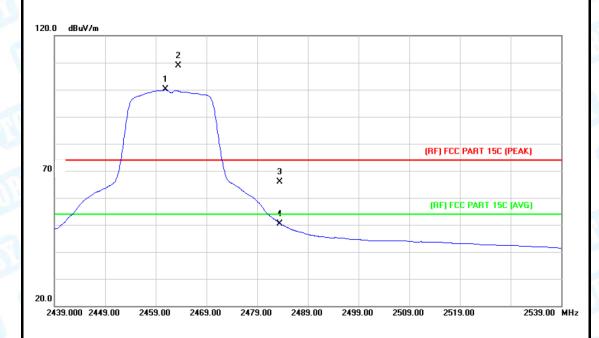


			Daration	0	N 4			
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	49.80	0.77	50.57	74.00	-23.43	peak
2		2390.000	39.38	0.77	40.15	54.00	-13.85	AVG
3	*	2413.100	88.17	0.86	89.03	Fundamental	Frequency	AVG
4	Χ	2413.300	97.32	0.86	98.18	Fundamental	Frequency	peak



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2462MHz	MILES	THE PARTY OF THE P
Remark:	N/A		133

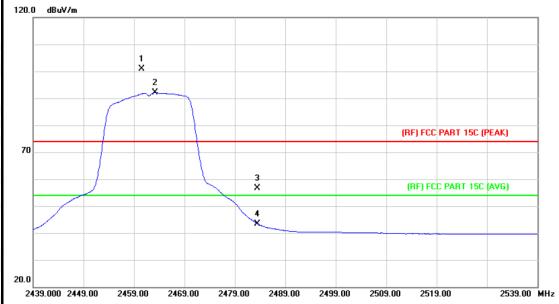


No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2460.900	98.99	1.06	100.05	Fundamental Frequency		AVG
2	X	2463.500	107.86	1.08	108.94	Fundamental F	requency	peak
3		2483.500	64.61	1.17	65.78	74.00	-8.22	peak
4		2483.500	49.30	1.17	50.47	54.00	-3.53	AVG



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2462MHz		2
Remark:	N/A		

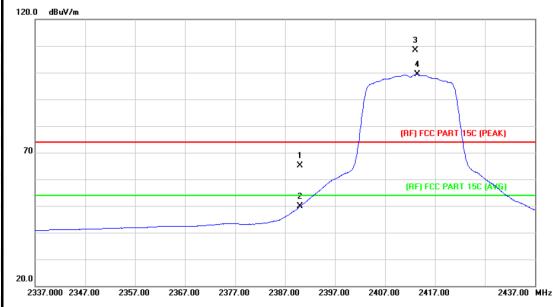


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2460.600	99.82	1.06	100.88	Fundamental	Frequency	peak
2	*	2463.200	91.07	1.08	92.15	Fundamental	Frequency	AVG
3		2483.500	55.43	1.17	56.60	74.00	-17.40	peak
4		2483.500	42.28	1.17	43.45	54.00	-10.55	AVG



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EUT:	ROCK X11	Model:	ROCK X11			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Horizontal	U				
Test Mode:	TX N(HT20) Mode 2412MHz					
Remark:	N/A		73 _ 0			

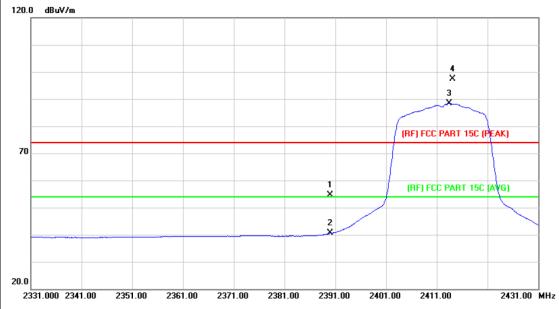


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	64.26	0.77	65.03	74.00	-8.97	peak
2		2390.000	49.13	0.77	49.90	54.00	-4.10	AVG
3	X	2413.100	107.49	0.86	108.35	Fundamental	Frequency	peak
4	*	2413.400	98.50	0.86	99.36	Fundamental	Frequency	AVG



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	EUT:	ROCK X11	Model:	ROCK X11				
	Temperature:	25 ℃	Relative Humidity:	55%				
	Test Voltage:	AC 120V/60Hz	31 - 0					
	Ant. Pol.	Vertical						
4	Test Mode:	TX N(HT20) Mode 2412MHz						
	Remark:	N/A						



No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	53.81	0.77	54.58	74.00	-19.42	peak
2		2390.000	39.74	0.77	40.51	54.00	-13.49	AVG
3	*	2413.400	87.56	0.86	88.42	Fundamental	Frequency	AVG
4	Χ	2414.100	96.60	0.87	97.47	Fundamental	Frequency	peak



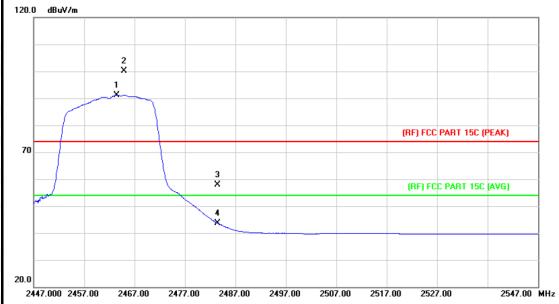
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EUT:			ROC	CK X1	1	0		Mode	el:			ROCK	X11	10
Гетре	eratu	e:	25 °C	C	e Till			Relat	ive H	lumid	ity:	55%	AR	b
Test V	oltag	e:	AC 1	20V/	60Hz		M				FILE	1133		h
Ant. P	ol.		Horiz	zonta		A RIV	٠				63		60	
Test N	lode:		TXN	1(HT2	20) Mo	de 2462	MHz	61	M			2 1		
Remai	k:		N/A				510	A.				10		
120.0 d	BuV/m													_
70			1 X 2 2 X			3 X						ART 15C (PE.		
20.0	00 244	7 በበ 2	457.00	2467.	00 24	77.00 248	B7.00	2497.0	00 2	507.00	2517.0	00	2537.00	MH
2437.0		2.00	437.00	2407.						307.00				
	Mk.		eq.	Rea Le	ading evel _{BuV}		or	Meas me		Lin	nit uV/m	Over	Dete	ecto
		Fr	eq.	Rea Le	evel	Corre Fact	or	dBu	ent	Lin	uV/m			
No.	Mk.	Fr Mi	eq. Hz	Rea Le	evel BuV	Corre Fact	or	dBu	ent V/m 8.18	Lin dBı Fundar	uV/m mental F	dB		ak
No.	Mk.	Fr Mi 2460	eq. -dz .600	Rea Le dl 10	BuV 7.12	Corre Fact dB/m	or	dBu	ent V/m 3.18 .20	Lin dBo Fundar	uV/m mental F	dB	pe A\	ak /G



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX N(HT20) Mode 2462M	TX N(HT20) Mode 2462MHz					
Remark:	N/A						

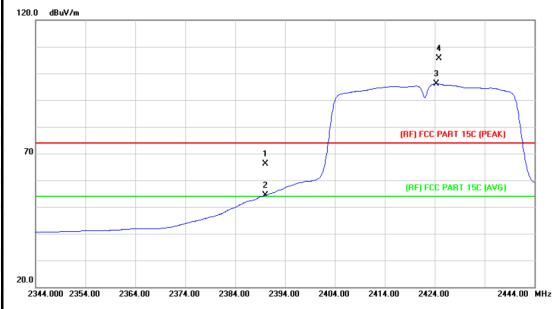


No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2463.400	90.10	1.08	91.18	Fundamental I	requency	AVG
2	X	2464.900	99.01	1.09	100.10	Fundamental I	requency	peak
3		2483.500	56.66	1.17	57.83	74.00	-16.17	peak
4		2483.500	42.43	1.17	43.60	54.00	-10.40	AVG



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal	0					
Test Mode:	TX N(HT40) Mode 2452MH	TX N(HT40) Mode 2452MHz					
Remark:	N/A						



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	65.32	0.77	66.09	74.00	-7.91	peak
2	X	2390.000	53.57	0.77	54.34	54.00	0.34	AVG
3	*	2424.300	95.15	0.93	96.08	Fundamental	Frequency	AVG
4	Χ	2424.900	104.64	0.93	105.57	Fundamental	Frequency	peak



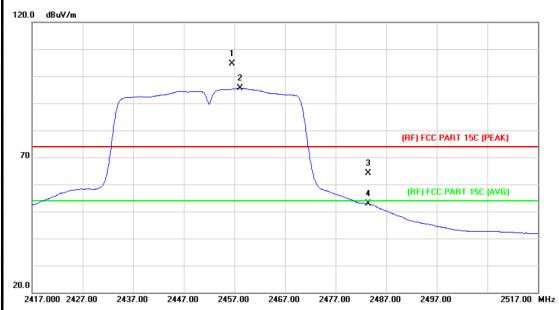
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EUT:		ROC	CK X	11		Mod	del:		ROCK X11			
Гетр	eratu	re:	25 °	C	CAN !	33	Rela	ative H	lumidity:	55%	The same	
Test '	Voltag	e:	AC 1	120V	//60Hz		Dist		(a)	11:33		
Ant. I	Pol.		Verti	ical		I WILL						
Test	Mode:		1XT	V(HT	40) Mo	de 2422M	Hz	4/1/5	9		1 less	
Rema	ark:		N/A							133		
120.0	dBuV/m											
70						1 X 2 X		400 2	(RF) FCC	PART 15C (PEAK		
20.0 2344	.000 235	4.00 23	364.00	237	4.00 23	84.00 2394.0	00 240	4.00 2	414.00 242		-111.00	
2344	.000 235			Re	eading		t Mea	asure-		Over		
2344			eq.	Re L	eading	Correc	t Mea	asure-		Over	Detecto	
2344		Fre	eq.	Re	eading evel	Correc Factor	t Mea m	asure- ient	Limit	Over dB		
Nc		Fr∈ M⊢ 2390.	eq.	Re L	eading evel dBuV 31.19	Correct Factor dB/m 0.77	t Mea	asure- ient ^{BuV/m} 1.96	Limit dBuV/m 74.00	Over dB -12.04	Detecto	
NC		Fre	eq. dz 000	Re L	eading evel dBuV	Correct Factor	t Mea m	asure- ient BuV/m	Limit dBuV/m 74.00 54.00	Over dB -12.04	Detecto	



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EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		Tibe
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2452M	Hz	
Remark:	N/A		13.5

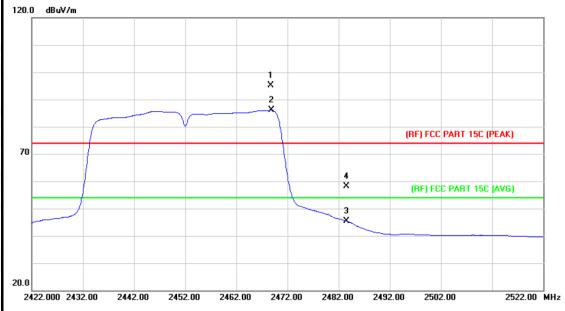


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2456.500	103.59	1.05	104.64	Fundamental	Frequency	peak
2	*	2458.200	94.57	1.06	95.63	Fundamental	Frequency	AVG
3		2483.500	62.99	1.17	64.16	74.00	-9.84	peak
4		2483.500	51.65	1.17	52.82	54.00	-1.18	AVG



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EUT:	ROCK X11	Model:	ROCK X11				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz		W. D.				
Ant. Pol.	Vertical	THE PERSON NAMED IN					
Test Mode:	TX N(HT40) Mode 24	TX N(HT40) Mode 2452MHz					
Remark:	N/A		133				
120.0 dBuV/m							

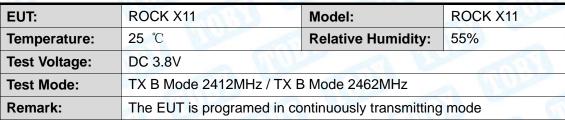


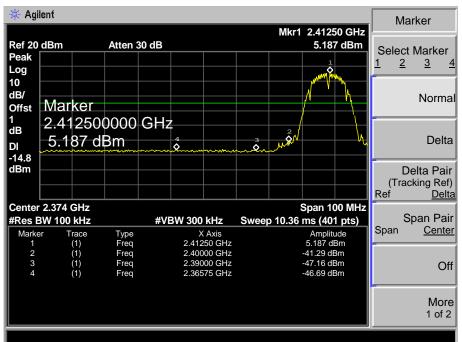
N	lo.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	,	*	2468.700	93.93	1.11	95.04	Fundamental	Frequency	peak
2	2	Χ	2468.800	84.91	1.11	86.02	Fundamental	Frequency	AVG
3			2483.500	44.30	1.17	45.47	54.00	-8.53	AVG
4			2483.500	56.89	1.17	58.06	74.00	-15.94	peak

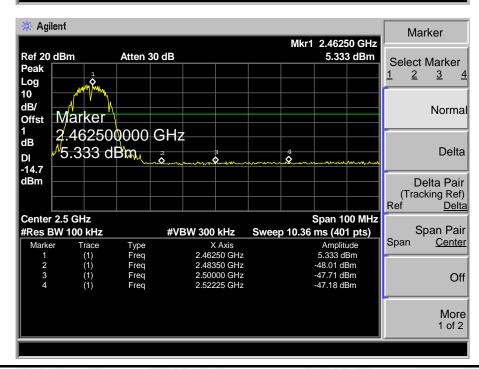


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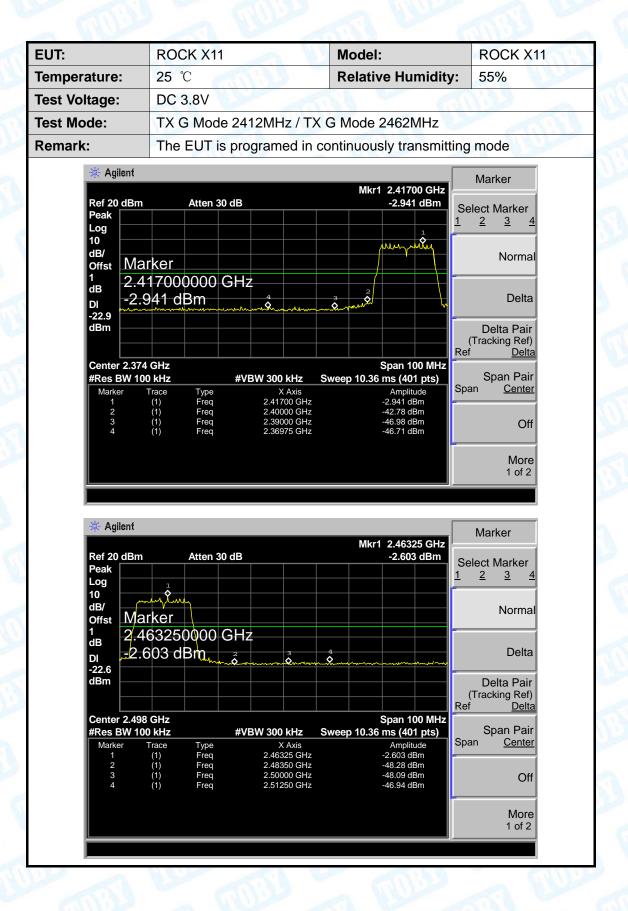






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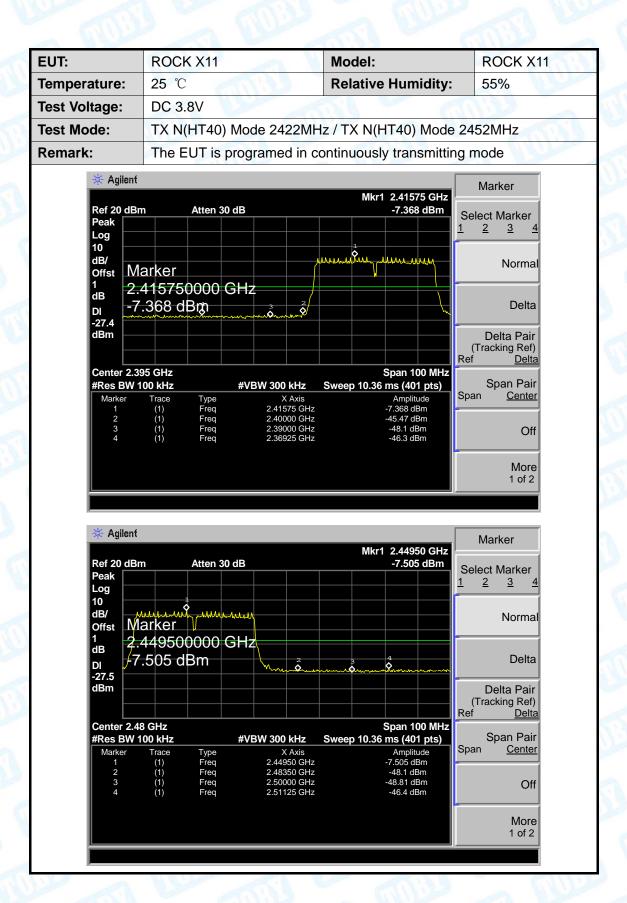


T:	ROCK X11		Model:	ROCK X11
mperature:	25 ℃		Relative Humidity:	55%
st Voltage:	DC 3.8V	A STATE OF THE PARTY OF THE PAR		MIN -
st Mode:	TX N(HT20)	Mode 2412MH	dz / TX N(HT20) Mode 2	2462MHz
mark:	The EUT is	programed in c	ontinuously transmitting	g mode
* Agilent			Г	Madan
			Mkr1 2.41075 GHz	Marker
Ref 20 dBr Peak Log	m Atten 30	0 dB	-3.737 dBm	Select Marker 2 3 4
10 dB/	larker		munique.	Normal
1 2	410750000 (GHz		
	3.737 dBm		nåmmå	Delta
dBm				Delta Pair (Tracking Ref) Ref Delta
Center 2.3 #Res BW 1	100 kHz	#VBW 300 kHz	Span 100 MHz Sweep 10.36 ms (401 pts)	Ref <u>Delta</u> Span Pair Span <u>Center</u>
Marker	Trace Type	X Axis	7 ti i i piitado	opan <u>oomer</u>
1 2 3 4	(1) Freq (1) Freq (1) Freq (1) Freq	2.41075 GHz 2.40000 GHz 2.39000 GHz 2.35650 GHz	-3.737 dBm -45.15 dBm -48.26 dBm -46.53 dBm	Off
2 3	(1) Freq (1) Freq (1) Freq (1) Freq	2.40000 GHz 2.39000 GHz	-45.15 dBm -48.26 dBm	Off More 1 of 2
2 3 4		2.40000 GHz 2.39000 GHz	-45.15 dBm -48.26 dBm	More 1 of 2
2 3 4		2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm	More
Agilent Ref 20 dBr Peak		2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm	More 1 of 2 Marker Select Marker
Agilent Ref 20 dBr Peak Log 10 dB/	m Atten 30	2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm -46.53 dBm	More 1 of 2 Marker Select Marker
Agilent Ref 20 dBr Peak Log 10 dB/ Offst	m Atten 30	2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm -46.53 dBm	More 1 of 2 Marker Select Marker 2 3 4
Agilent Ref 20 dBr Peak Log 10 dB/ Offst	m Atten 30	2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm -46.53 dBm	More 1 of 2 Marker Select Marker 2 3 4
Ref 20 dBr Peak Log 10 dB/ Offst 1 dB	m Atten 30	2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm -46.53 dBm	More 1 of 2 Marker Select Marker 2 3 4 Normal Delta Delta Pair (Tracking Ref)
Agilent Ref 20 dBr Peak Log 10 dB/ Offst 1 dB DI -23.5 dBm Center 2.4	m Atten 30 larker 483500000 8.39 dBm	2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm -46.53 dBm	More 1 of 2 Marker Select Marker 2 3 4 Normal Delta Delta Pair (Tracking Ref) Ref Delta
Agilent Ref 20 dBr Peak Log 10 dB/ Offst 1 dB DI -23.5 dBm Center 2.4 #Res BW 1 Marker 1	m Atten 30 larker 483500000 8.39 dBm	2.40000 GHz 2.39000 GHz 2.35650 GHz	-45.15 dBm -48.26 dBm -46.53 dBm -46.53 dBm Mkr2 2.48350 GHz -48.39 dBm 1 Span 100 MHz Sweep 10.36 ms (401 pts)	More 1 of 2 Marker Select Marker 2 3 4 Normal Delta Delta Pair (Tracking Ref)
Agilenf Ref 20 dBr Peak Log 10 dB/ Offst 1 dB DI -23.5 dBm Center 2.4 #Res BW Marker	m Atten 30 larker 483500000 8.39 dBm	2.40000 GHz 2.39000 GHz 2.35650 GHz 0 dB #VBW 300 kHz X Axis	-45.15 dBm -48.26 dBm -46.53 dBm -46.53 dBm -46.53 dBm Mkr2 2.48350 GHz -48.39 dBm 1 Span 100 MHz Sweep 10.36 ms (401 pts) Amplitude	More 1 of 2 Marker Select Marker 2 3 4 Normal Delta Delta Pair (Tracking Ref) Ref Delta Span Pair





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7. Bandwidth Test

7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.247 (a)(2)

7.1.2 Test Limit

FCC	FCC Part 15 Subpart C(15.247)/RSS-210				
Test Item	Limit	Frequency Range(MHz)			
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5			

7.2 Test Setup



7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
- (3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

7.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Digital photo framesdle and high channel for the test.

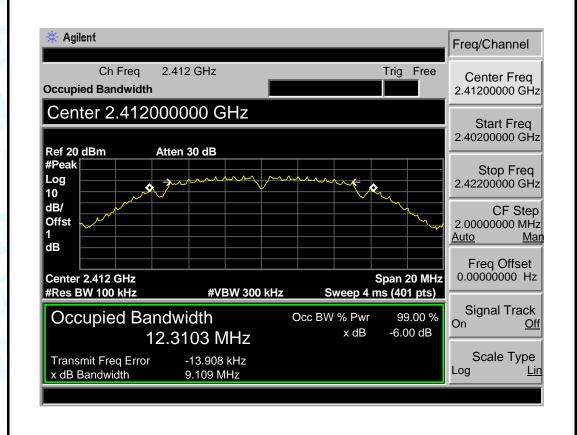


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7.5 Test Data

EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.8V		
Test Mode:	TX 802.11B Mode	2 PHILLIP	3
Channel frequence	y 6dB Bandwidth	99% Bandwidth	Limit
(MHz)	(MHz)	(MHz)	(MHz)
2412	9.109	12.3103	
2412 2437	9.109 9.127	12.3103 12.3504	>=0.5
			>=0.5

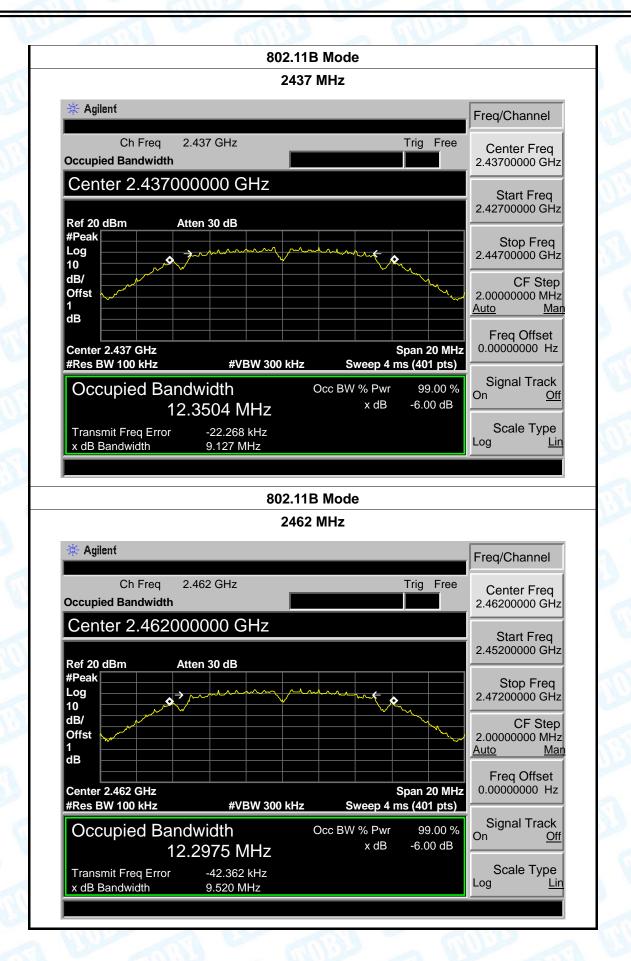
2412 MHz





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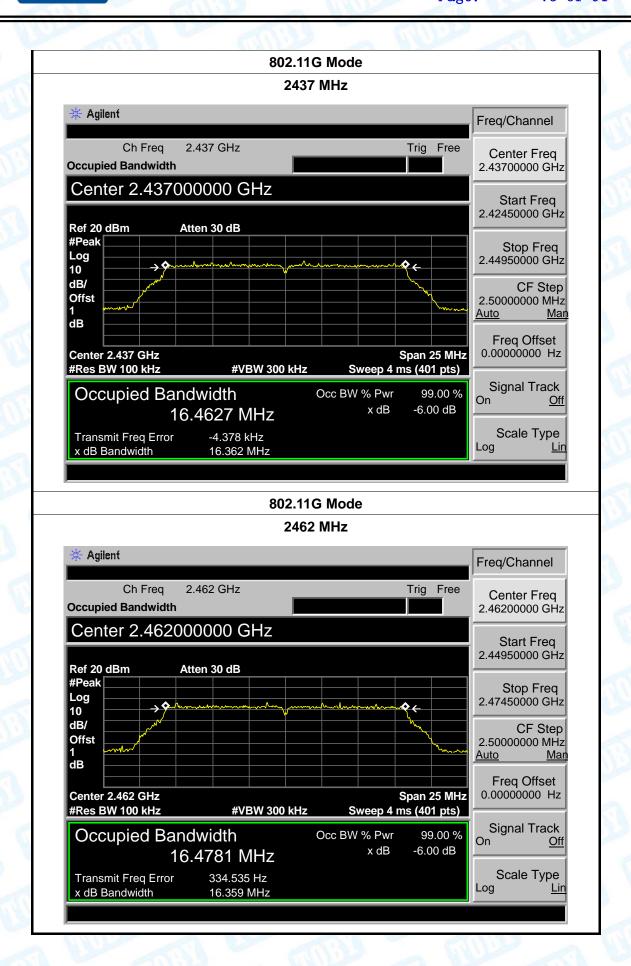


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UT:	ROCI	K X11	Model:	ROCK X11
emperature:	25 ℃		Relative Humidity:	55%
est Voltage:	DC 3	.8V	all a	1133
est Mode:	TX 80)2.11G Mode		
hannel frequen	су	6dB Bandwidth	99% Bandwidth	Limit
(MHz)		(MHz)	(MHz)	(MHz)
2412		16.405	16.4752	
2437		16.362	16.4627	>=0.5
2462		16.359	16.4781	
	•	802.11G	Mode	
* Agilent				Freq/Channel
Ch Fr	•	412 GHz	Trig Free	Center Freq 2.41200000 GHz
Center 2.4 Ref 20 dBm	width	412 GHz 0000 GHz en 30 dB	Trig Free	Center Freq 2.41200000 GHz Start Freq 2.39950000 GHz
Center 2.4	width	0000 GHz	Trig Free	2.41200000 GHz Start Freq
Center 2.4 Ref 20 dBm #Peak Log	vidth 1200	0000 GHz en 30 dB		2.41200000 GHz Start Freq 2.39950000 GHz Stop Freq
Center 2.4 Ref 20 dBm #Peak Log 10 dB/ Offst 1	Att	0000 GHz en 30 dB	•	2.41200000 GHz Start Freq 2.39950000 GHz Stop Freq 2.42450000 GHz CF Step 2.500000000 MHz
Center 2.4 Ref 20 dBm #Peak Log 10 dB/ Offst 1 dB Center 2.412 GH	Att	0000 GHz en 30 dB #VBW 300 kHz	Span 25 MHz	2.41200000 GHz Start Freq 2.39950000 GHz Stop Freq 2.42450000 GHz CF Step 2.50000000 MHz Auto Man Freq Offset



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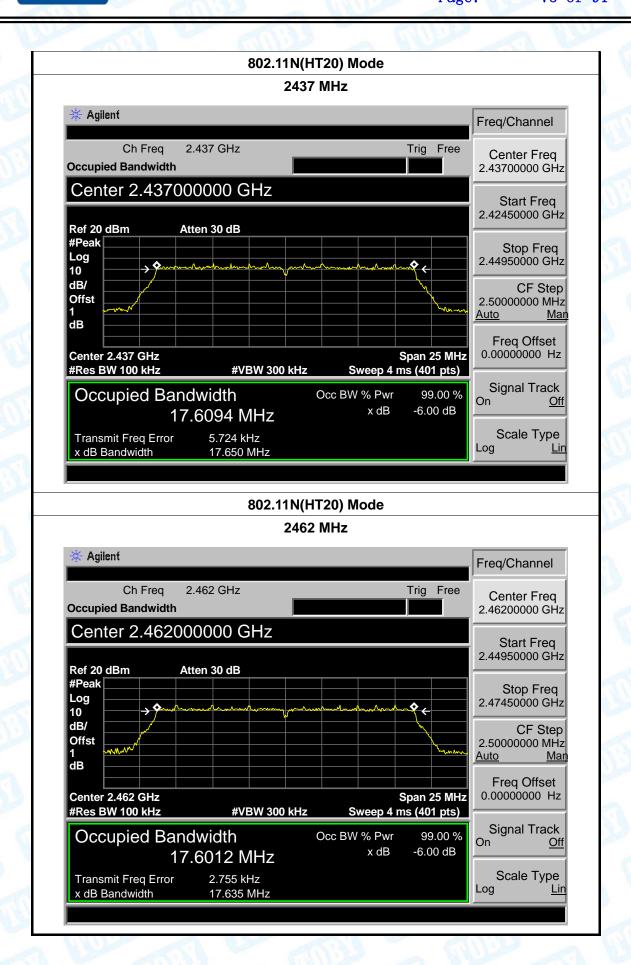


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mnorotura	ROCK X11	ROCK X11	
mperature:	25 ℃	Relative Humidity:	55%
st Voltage:	DC 3.8V	COLUMN TO THE PARTY OF THE PART	11:33
st Mode:	TX 802.11N(HT20) Mode		
nannel frequen	cy 6dB Bandwidth	99% Bandwidth	Limit
(MHz)	(MHz)	(MHz)	(MHz)
2412	17.615	17.5944	
2437	17.650	17.6094	>=0.5
2462	17.635	17.6012	
	802.11N(H	Γ20) Mode	
* Agilent			Freq/Channel
Occupied Bandy Center 2.4	vidth .12000000 GHz		Center Freq 2.41200000 GHz
			Start Freq 2.39950000 GHz
Ref 20 dBm #Peak Log 10 dB/ Offst 1 dB	Atten 30 dB	Span 25 MHz	
Ref 20 dBm #Peak Log 10 dB/ Offst 1	Atten 30 dB	Span 25 MHz Sweep 4 ms (401 pts)	2.39950000 GHz Stop Freq 2.42450000 GHz CF Step 2.500000000 MHz Auto Man Freq Offset 0.000000000 Hz
Ref 20 dBm #Peak Log 10 dB/ Offst 1 dB Center 2.412 GF #Res BW 100 kF	Atten 30 dB Atten 30 dB Z Z Z Z Z Z Z Z Z Z Z Z Z	Span 25 MHz	2.39950000 GHz Stop Freq 2.42450000 GHz CF Step 2.50000000 MHz Auto Man Freq Offset



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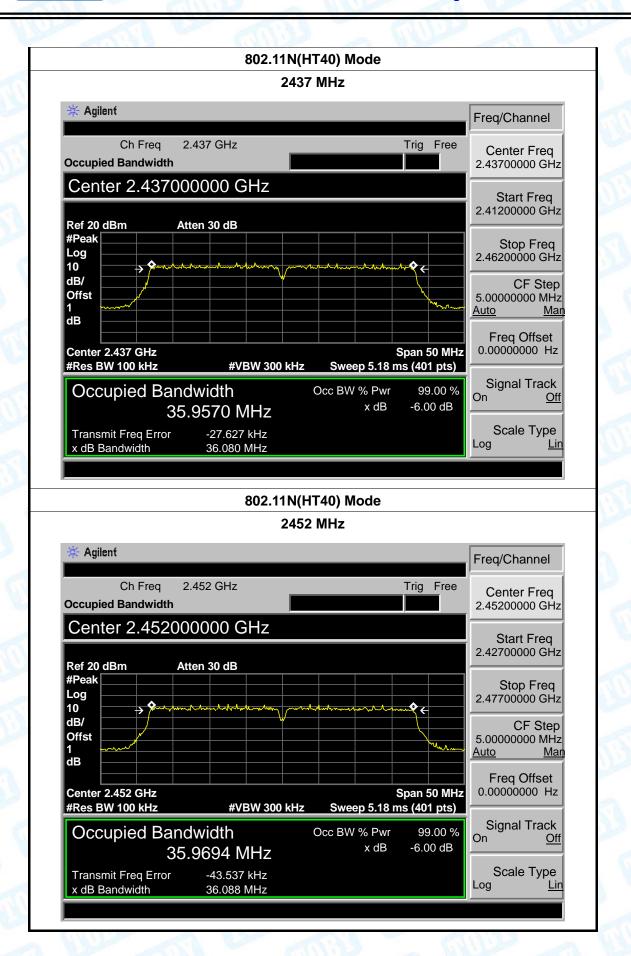


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Т:	ROCK X11	ROCK X11	
nperature:	25 ℃	Relative Humidity:	55%
t Voltage:	DC 3.8V	501	
t Mode:	TX 802.11N(HT40) Mod	е	1012
annel frequenc	cy 6dB Bandwidth	99% Bandwidth	Limit
(MHz)	(MHz)	(MHz)	(MHz)
2422	36.026	35.9793	
2437	36.080	35.9570	>=0.5
2452	36.088	35.9694	
	802.11N(F	HT40) Mode	
* Agilent			Freq/Channel
Ch Fre	ridth	Trig Free	Freq/Channel Center Freq 2.42200000 GHz
Ch Fre	•	Trig Free	Center Freq
Center 2.42 Ref 20 dBm #Peak Log 10	22000000 GHz	Trig Free	Center Freq 2.42200000 GHz Start Freq 2.39700000 GHz Stop Freq 2.44700000 GHz
Ch Free Occupied Bandw Center 2.42 Ref 20 dBm #Peak Log	22000000 GHz	Trig Free	Center Freq 2.42200000 GHz Start Freq 2.39700000 GHz
Ch Free Occupied Bandw Center 2.42 Ref 20 dBm #Peak Log 10 dB/ Offst 1 dB Center 2.422 GHz	Atten 30 dB	Span 50 MHz	Center Freq 2.42200000 GHz Start Freq 2.39700000 GHz Stop Freq 2.44700000 GHz CF Step 5.000000000 MHz Auto Mar
Ch Free Occupied Bandw Center 2.4. Ref 20 dBm #Peak Log 10 dB/ Offst 1 dB Center 2.422 GH: #Res BW 100 kH	Atten 30 dB	Span 50 MHz	Center Freq 2.42200000 GHz Start Freq 2.39700000 GHz Stop Freq 2.44700000 GHz CF Step 5.000000000 MHz Auto Mar



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8. Peak Output Power Test

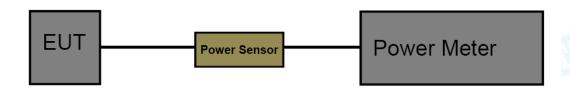
8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (b)

8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210				
Test Item Limit Frequency Range(MH				
Peak Output Power	1 Watt or 30 dBm	2400~2483.5		

8.2 Test Setup



8.3 Test Procedure

The measurement is according to section 9.1.2 of KDB 558074 D01 DTS Meas Guidance v04. The EUT was connected to RF power meter via a broadband power sensor as show the block above. The power sensor video bandwidth is greater than or equal to the DTS bandwidth of the equipment.

8.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.



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8.5 Test Data

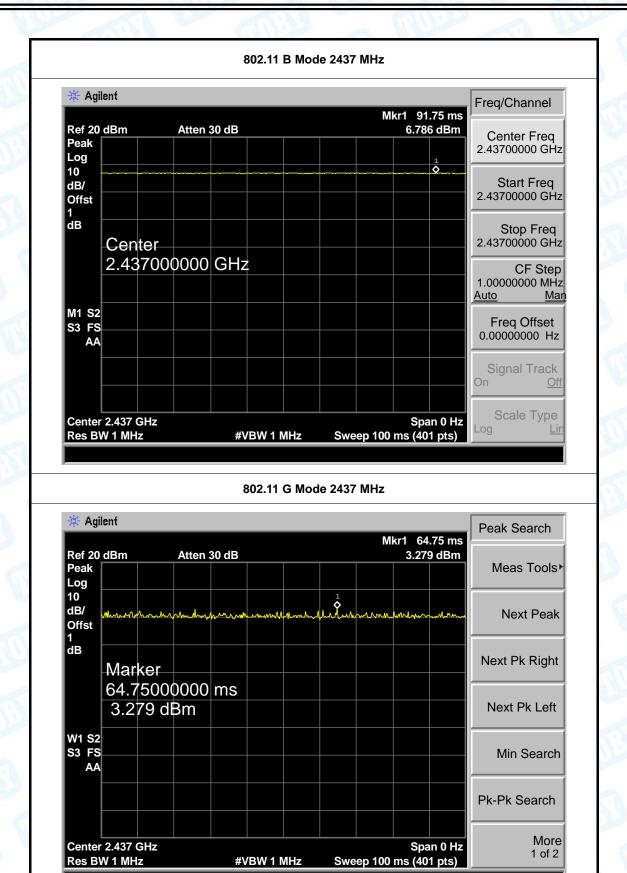
EUT:	ROCK X11	Model:	ROCK X11
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.8V		
Mode	Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
	2412	16.91	
802.11b	2437	16.78	
	2462	16.77	
	2412	13.34	
802.11g	2437	13.32	
	2462	13.38	30
200 44	2412	12.37	30
802.11n (HT20)	2437	12.85	
(11120)	2462	12.54	
802.11n	2422	12.10	
(HT40)	2437	12.22	
(11140)	2452	12.13	
	Resu	ult: PASS	

	Duty Cycle	
Mode	Channel frequency (MHz)	Test Result
	2412	
802.11b	2437	
	2462	
	2412	
802.11g	2437	
	2462	. 000/
000 44	2412	>98%
802.11n (HT20)	2437	
(П120)	2462	
000 44	2422	
802.11n (HT40)	2437	
(П140)	2452	
Please see belo	w plots	



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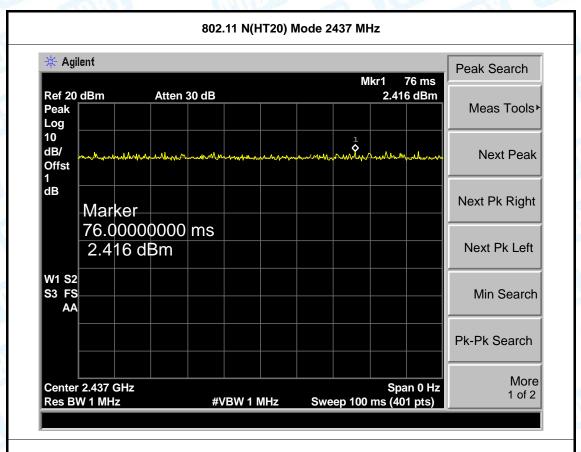


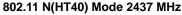


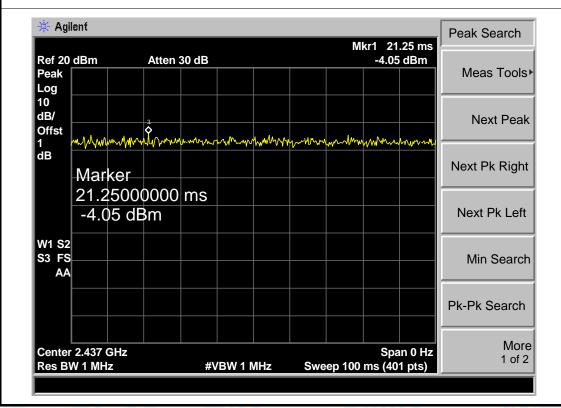


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9. Power Spectral Density Test

9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247 (e)

9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)				
Test Item Limit Frequency Range(MHz)				
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5		

9.2 Test Setup



9.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v04.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser center frequency to DTS channel center frequency.
- (3) Set the span to 1.5 times the DTS bandwidth.
- (4) Set the RBW to: 3 kHz(5) Set the VBW to: 10 kHz
- (6) Detector: peak(7) Sweep time: auto
- (8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

9.4 EUT Operating Condition

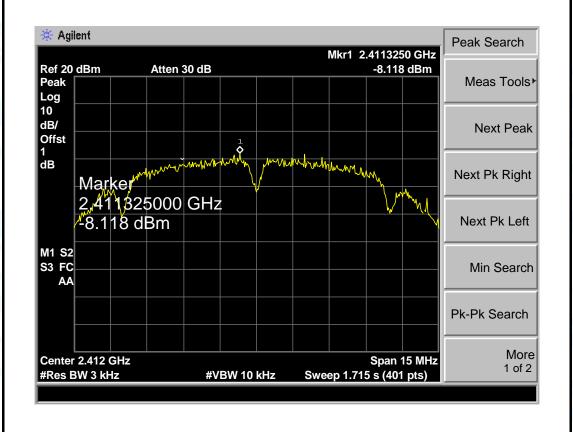
The EUT was set to continuously transmitting in each mode and low, Digital photo framesdle and high channel for the test.



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9.5 Test Data

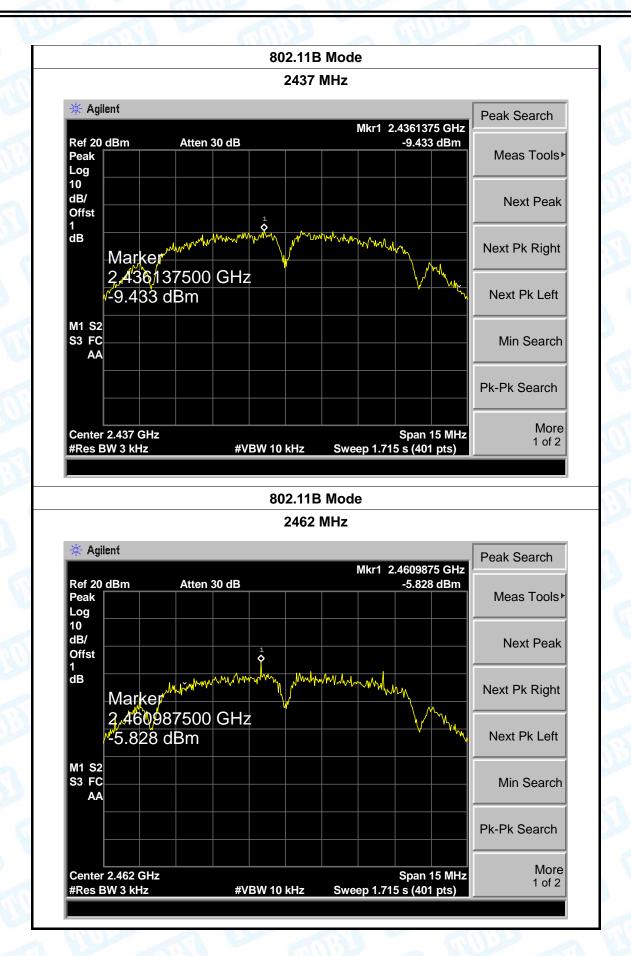
EUT:	ROCK X1	10(1)0	Model:	ROCK X11	
Temperature:	25 ℃		Relative Humidity:	55%	
Test Voltage:	DC 3.8V				
Test Mode:	TX 802.11	1B Mode	J. D. D. L.		
Channel Frequency		Power Density		Limit	
(MHz)		(dBm/3	kHz)	(dBm)	
2412		-8.11	8		
2437		-9.433		8	
2462		-5.82	28		
	802.11B Mode				





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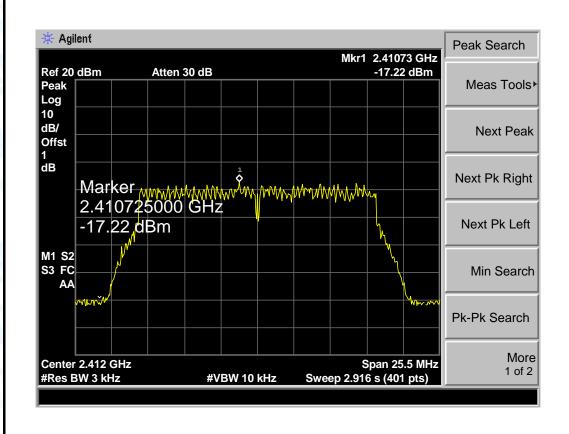




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į,	EUT:	ROCK X1	1	Model:	ROCK X11
	Temperature:	25 ℃		Temperature:	25 ℃
	Test Voltage:	DC 3.8V		10	COUNTY OF THE PARTY OF THE PART
	Test Mode:	TX 802.1	1G Mode		
	Channel Frequency	uency	Power Der	sity	Limit
	(MHz)		(dBm/3 kl	Hz)	(dBm)
	2412		-17.22		
	2437		-16.96		8
	2462		-16.95		

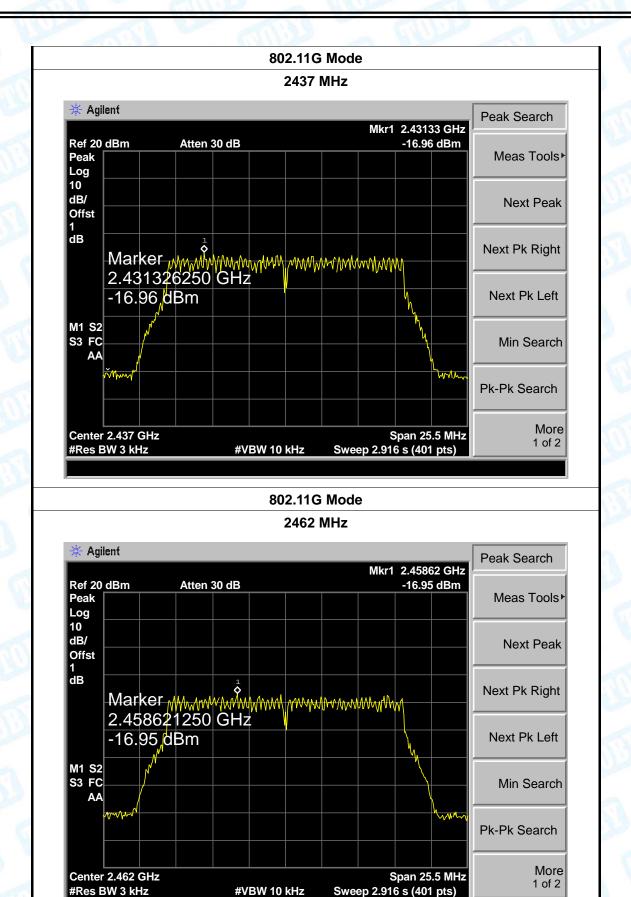
802.11G Mode







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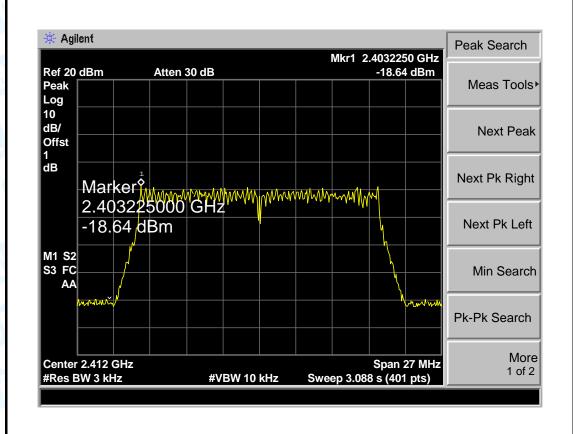


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EUT:	ROCK X1	1	Model:	ROCK X11	U
Temperature:	25 ℃		Temperature:	25 ℃	
Test Voltage:	DC 3.8V		11		
Test Mode:	TX 802.11	1N(HT20) Mode			
0			• •	1.114	

	Channel Frequency	Power Density	Limit
	(MHz)	(dBm/3 kHz)	(dBm)
	2412	-18.64	
	2437	-18.24	8
1	2462	-18.43	

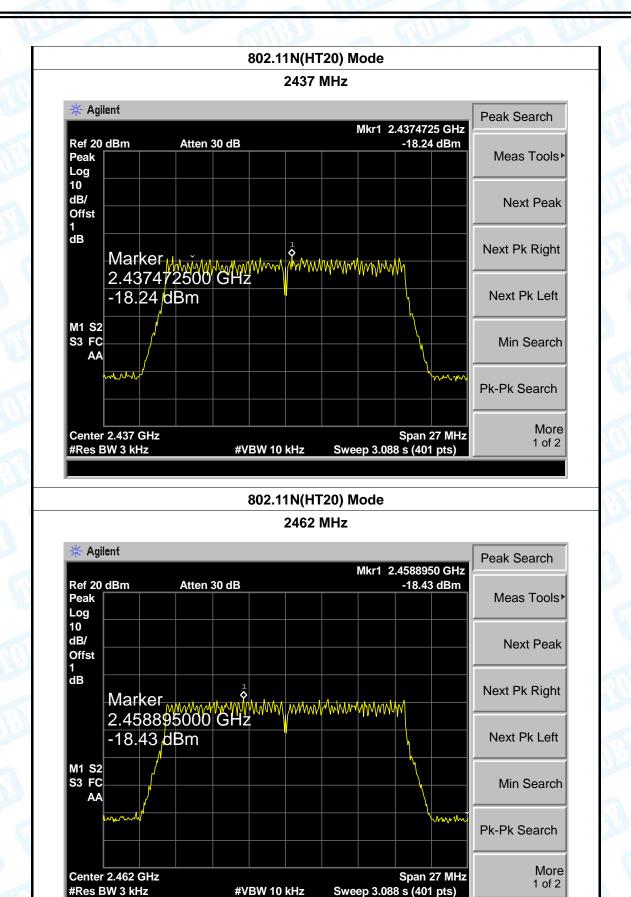
802.11N(HT20) Mode







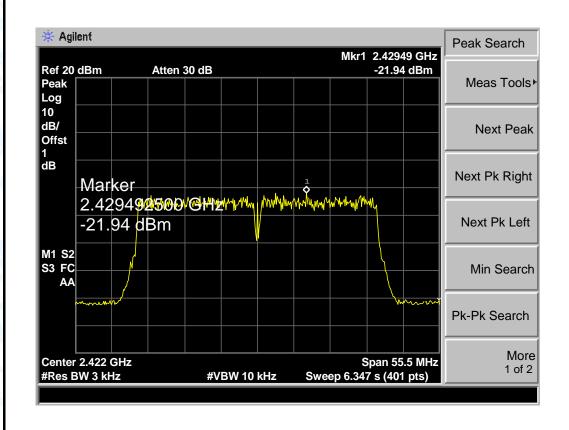
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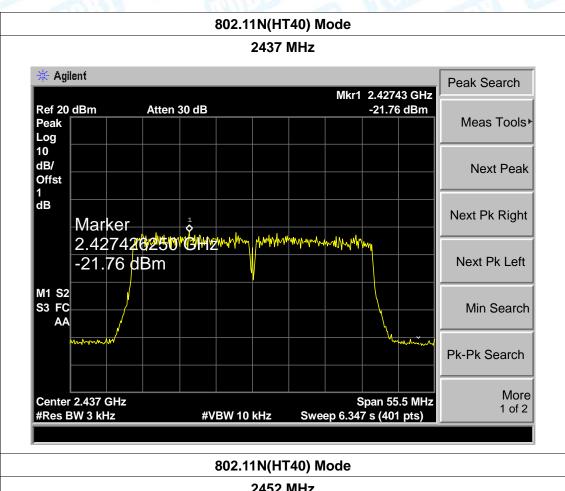
EUT:	ROCK X1	1	Model:	ROCK X11
Temperature:	25 ℃		Temperature:	25 ℃
Test Voltage:	DC 3.8V		1	
Test Mode:	TX 802.11N(HT40) Mode			
Channel Frequency		Power Density		Limit
(MHz)	(MHz)		(dBm/3 kHz)	
2422		-21.94		
2437	2437 -21.76 2452 -19.73			8
2452				
802.11N(HT40) Mode				

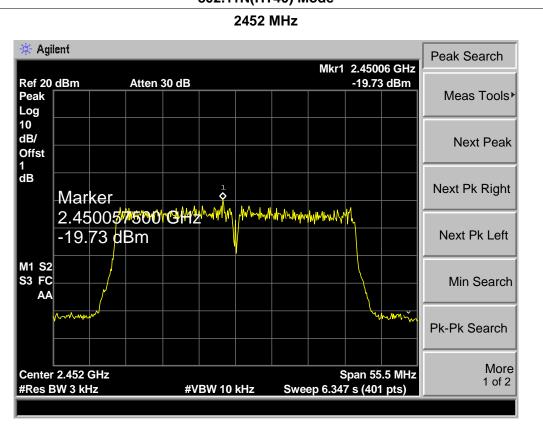






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10. Antenna Requirement

10.1 Standard Requirement

10.1.1 Standard FCC Part 15.203

10.1.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

10.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is 1.15dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

Result

The EUT antenna is a PIFA Antenna. It complies with the standard requirement.

	Antenna Type
	☐ Permanent attached antenna
Em.	☑ Unique connector antenna
	□ Professional installation antenna

----END OF REPORT----