

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC150438

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FCC Radio Test Report FCC ID: 2AJ9Z-4GX9

Original Grant

Report No. TB-FCC150438

EMATIC LIMITED Applicant

Equipment Under Test (EUT)

EUT Name ROCK X9+

Model No. ROCK X9+

Series No. N/A

Brand Name EXTREM

Receipt Date 2016-11-04

2016-11-05 to 2016-12-09 **Test Date**

Issue Date 2016-12-10

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	1	ROCK X9+				
Models No.	1	ROCK X9+	ROCK X9+			
Model Difference	1	: N/A				
The Course		Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz			
		Number of Channel:	802.11b/g/n(HT20):11 channels see note(3) 802.11n(HT40):9 channels see note(3)			
		RF Output Power:	802.11b: 18.49 dBm 802.11g: 17.91 dBm			
Product		0000	802.11n (HT20): 16.26 dBm 802.11n (HT40): 16.34 dBm			
Description		Antenna Gain:	-3.16 dBi PIFA Antenna			
	TOBY	Modulation Type:	802.11b: CCK, QPSK, BPSK 802.11g: OFDM 802.11n: OFDM			
		Bit Rate of	802.11b:11/5.5/2/1 Mbps			
			Transmitter:	802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps		
Power Supply	Ė	DC power supplied by AC/DC Adapter. DC Voltage supplied from Li-ion battery.				
Power Rating	:	Input: AC 100~240V 50/60Hz, 0.3A.				
(10)33	5	Output: 5V/2000mA. DC 3.7V from 4200mA Li-ion battery.				
Connecting I/O Port(S)		Please refer to the User's Manual				

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 v03r05.



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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		

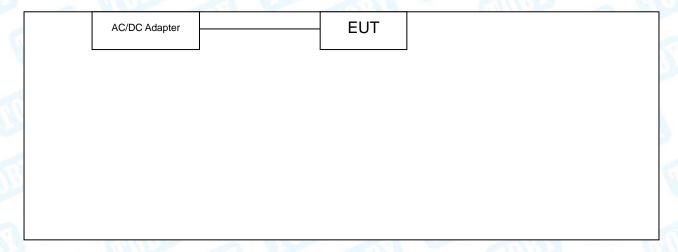
Note:CH 01~CH 11 for 802.11b/g/n(HT20) CH 03~CH 09 for 802.11n(HT40)

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

TX Mode



Charging with TX Mode





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1.4 Description of Support Units

The EUT had been tested as an independent unit.

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 mobile 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		*#*#3646633#*#*	
Channel	CH 01	CH 06	CH 11
IEEE 802.11b DSSS	13.5	13.5	13.5
IEEE 802.11g OFDM	13.5	13.5	13.5
IEEE 802.11n (HT20)	13.5	13.5	13.5
Channel	CH 03	CH 06	CH 09
IEEE 802.11n (HT40)	13	13	13

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})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.42 dB ±3.42 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.40 dB
Radiated Emission	Level Accuracy: 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 15 Subpart C(15.247)/ RSS 247 Issue 1						
Standa	rd Section	Tool Hom	Judgment			
FCC	IC	IC Test Item		Remark		
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 5.2 (1)	6dB Bandwidth	PASS	N/A		
15.247(b)	RSS 247 5.4 (4)	Peak Output Power	PASS	N/A		
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	PASS	N/A		
15.247(d)& 15.209	RSS 247 5.5	Transmitter Radiated Spurious 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

Conducted	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. 20, 2016	Mar. 19, 201
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 20, 2016	Mar. 19, 201
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 19, 2016	Mar. 18, 2017
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar. 19, 2016	Mar. 18, 2017
Pre-amplifier	Sonoma	310N	185903	Mar. 20, 2016	Mar. 19, 2017
Pre-amplifier	HP	8449B	3008A00849	Mar. 26, 2016	Mar. 25, 201
Loop Antenna	Laplace instrument	RF300	0701	Mar. 19, 2016	Mar. 18, 201
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 26, 2016	Mar. 25, 201
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna C	onducted 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	100321	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

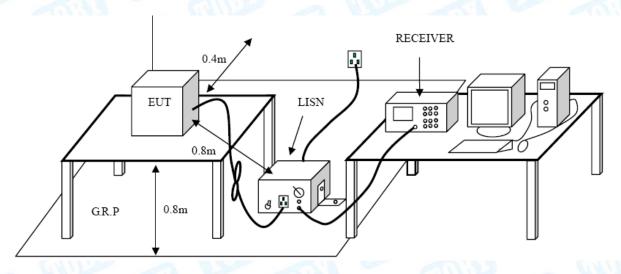
Conducted Emission Test Limit

Fragueney	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



4.3 Test Procedure

The EUT was placed 0.8 meters 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.



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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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30.000

UT: ROCK X9+ Model Name :		ROCK X9+	
25 ℃	Relative Humidity:	55%	
AC 120V/60Hz			
Line			
TX B Mode	(III)	FILL	
Only worse case is reported			
	QF AV		
	25 °C AC 120V/60Hz Line TX B Mode	25 °C AC 120V/60Hz Line TX B Mode Only worse case is reported	

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBu∀	dBu∀	dB	Detector
1		0.2419	11.96	10.11	22.07	62.03	-39.96	QP
2		0.2419	-0.51	10.11	9.60	52.03	-42.43	AVG
3		0.6660	14.05	10.02	24.07	56.00	-31.93	QP
4		0.6660	4.76	10.02	14.78	46.00	-31.22	AVG
5		1.7259	20.53	10.09	30.62	56.00	-25.38	QP
6		1.7259	7.07	10.09	17.16	46.00	-28.84	AVG
7		3.8500	14.24	10.06	24.30	56.00	-31.70	QP
8		3.8500	5.01	10.06	15.07	46.00	-30.93	AVG
9		8.8899	10.35	10.12	20.47	60.00	-39.53	QP
10		8.8899	-3.54	10.12	6.58	50.00	-43.42	AVG
11	*	17.8858	27.79	10.06	37.85	60.00	-22.15	QP
12		17.8858	10.25	10.06	20.31	50.00	-29.69	AVG

(MHz)

0.5

0.150



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	ROCK	X9+	2 13	Mode	I Name :	ROCK X9
Temperature:	25 ℃		13	Relati	ve Humidity:	55%
Test Voltage:	AC 120	V/60Hz		1	(illim)	3
Terminal:	Neutral		A KOT		1	
Test Mode:	TXBM	ode				Riting
Remark:	Only wo	orse case is	reported	Cale of the Cale o	COLUMN TO THE PARTY OF THE PART	
90.0 dBuV						
-10	The same		**************************************		QI AN	/G:peak
0.150	0.5		(MHz)	5		30.000
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit Ov	er
	MHz	dBu∀	dB	dBuV	dBuV d€	B Detector
1 0.	MHz .2460	dBuV 29.43	dB 10.02	dBu∨ 39.45	dBuV dl	
						44 QP
2 0.	.2460	29.43	10.02	39.45	61.89 -22.4	44 QP 45 AVG
2 0. 3 0.	.2460 .2460	29.43 9.42	10.02	39.45 19.44	61.89 -22.4 51.89 -32.4	44 QP 45 AVG 72 QP
2 0. 3 0. 4 0.	.2460 .2460 .6700	29.43 9.42 15.18	10.02 10.02 10.10	39.45 19.44 25.28	61.89 -22.4 51.89 -32.4 56.00 -30.7	44 QP 45 AVG 72 QP 18 AVG
2 0. 3 0. 4 0. 5 1.	.2460 .2460 .6700	29.43 9.42 15.18 5.72	10.02 10.02 10.10 10.10	39.45 19.44 25.28 15.82	61.89 -22.4 51.89 -32.4 56.00 -30.3 46.00 -30.3	44 QP 45 AVG 72 QP 18 AVG 16 QP
2 0. 3 0. 4 0. 5 1. 6 1.	.2460 .2460 .6700 .6700	29.43 9.42 15.18 5.72 12.78	10.02 10.02 10.10 10.10 10.06	39.45 19.44 25.28 15.82 22.84	61.89 -22.4 51.89 -32.4 56.00 -30.4 46.00 -30.5 56.00 -33.6	44 QP 45 AVG 72 QP 18 AVG 16 QP 66 AVG
2 0. 3 0. 4 0. 5 1. 6 1. 7 * 1.	.2460 .2460 .6700 .6700 .2100	29.43 9.42 15.18 5.72 12.78 1.28	10.02 10.02 10.10 10.10 10.06 10.06	39.45 19.44 25.28 15.82 22.84 11.34	61.89 -22.4 51.89 -32.4 56.00 -30. 46.00 -30. 56.00 -33. 46.00 -34.6	44 QP 45 AVG 72 QP 18 AVG 16 QP 66 AVG 73 QP
2 0. 3 0. 4 0. 5 1. 6 1. 7 * 1. 8 1.	.2460 .2460 .6700 .6700 .2100 .2100	29.43 9.42 15.18 5.72 12.78 1.28 24.21	10.02 10.02 10.10 10.10 10.06 10.06	39.45 19.44 25.28 15.82 22.84 11.34 34.27	61.89 -22.4 51.89 -32.4 56.00 -30.4 46.00 -33.4 46.00 -34.6 56.00 -21.7	44 QP 45 AVG 72 QP 18 AVG 16 QP 66 AVG 73 QP 80 AVG
2 0. 3 0. 4 0. 5 1. 6 1. 7 * 1. 8 1. 9 2.	.2460 .2460 .6700 .6700 .2100 .2100 .6780	29.43 9.42 15.18 5.72 12.78 1.28 24.21 9.14	10.02 10.02 10.10 10.10 10.06 10.06 10.06	39.45 19.44 25.28 15.82 22.84 11.34 34.27 19.20	61.89 -22.4 51.89 -32.4 56.00 -30. 46.00 -33. 46.00 -34.6 56.00 -21. 46.00 -26.8	44 QP 45 AVG 72 QP 18 AVG 16 QP 66 AVG 73 QP 80 AVG
2 0. 3 0. 4 0. 5 1. 6 1. 7 * 1. 8 1. 9 2.	.2460 .2460 .6700 .6700 .2100 .2100 .6780 .6780	29.43 9.42 15.18 5.72 12.78 1.28 24.21 9.14 12.55	10.02 10.02 10.10 10.10 10.06 10.06 10.06 10.06	39.45 19.44 25.28 15.82 22.84 11.34 34.27 19.20 22.58	61.89 -22.4 51.89 -32.4 56.00 -30.5 46.00 -33.4 46.00 -34.6 56.00 -21.5 46.00 -26.6 56.00 -33.4	44 QP 45 AVG 72 QP 18 AVG 16 QP 66 AVG 73 QP 80 AVG 42 QP 58 AVG



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EUT:	ROCK	X9+	2 18	Mode	I Name :	ROCK X9-
Temperature:	25 ℃		10	Relati	ve Humidity:	: 55%
Test Voltage:	AC 24	0V/60Hz		13	mn b	3
Terminal:	Line		ARILE		100	
Test Mode:	TXBN	/lode				A.H.I.
Remark:	Only w	orse case is	reported	C. Service		
90.0 dBuV						
						QP: — AVG: —
× m. m		X	X May X		Josh Walley Dod Warner Land	LAND NO.
40	$w^{\lambda}w^{\lambda}w^{\lambda}w^{\lambda}$	4 , /4/w/l/w/	JAMAAAAA	when the state of the state of	druft and and	···
m Mm	NAM		LAND THE MANAGEMENT	White was	Water Contraction of the Contrac	homen My
1 4	~ 70-	A . A Alban	N. A. MAA	Alfred Mar Blydden or		pea
						AVI
-10 0.150	0.5		(MHz)	5		30.000
No Mic	Frag	Reading	Correct	Measure-	Limit C)ver
No. Mk.	Freq.	Level dBuV	Factor	ment		
4 0			dB	dBuV		dB Detector
	.2100	12.19	10.02	22.21	63.20 -40	
	.2100	-1.95	10.02	8.07		5.13 AV
3 0	.6460	12.38	10.09	22.47	56.00 -33	3.53 QP
4 0	.6460	2.24	10.09	12.33	46.00 -33	3.67 AVG
5 1	.9380	22.11	10.06	32.17	56.00 -23	3.83 QP
6 1	.9380	5.92	10.06	15.98	46.00 -30	0.02 AVG
7 * 2	5940	24.22	10.04	34.26	56.00 -21	.74 QP
	.5940	9.83	10.04	19.87	46.00 -26	
	.0338	11.33	10.16	21.49	60.00 -38	
	0.0338	-3.11	10.16	7.05		2.95 AVG
	.6018	22.03	10.21	32.24	60.00 -27	
12 17	.6018	4.98	10.21	15.19	50.00 -34	1.81 AVG



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UT:	ROCK	X9+	2 13	Mode	I Name :		ROCK X9-
emperature:	25 ℃			Relat	ive Humidi	ity:	55%
est Voltage:	AC 24	0V/60Hz		1	Time:	133	
erminal:	Neutra	l ,	A. S.C.E.		10		
est Mode:	TXBN	/lode		(MID)		1 1	MUL
Remark:	Only w	orse case is	reported	C.	CITI'S	3	
90.0 dBuV							
						QP: AVG:	
www		X X	M ×		×.		
40	/WW/WW	1 / W W WA	Var./Yojj ^{kM} rhratimfihr/hr/	May be from the free from the free from the free from the free free free free free free free fr	well to the world broken to the world	photography and any	X
ma.	Λ	V AM	. '			•	Mary Augus
	MM		MWWWWWWWWWWW	engaged and high group man	- Markey Sand	,	pea
,	Ψ'	, m ////	An Aftersonal Miss.	A CANAL CANAL CONTRACTOR	A AN WOOL	Jan Jan Salar Mary	AVE
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	.2260	32.70	10.11	42.81	62.59 -1	19.78	QP
2 0	.2260	13.34	10.11	23.45	52.59 -2	29.14	AVG
3 0	.6540	10.79	10.02	20.81	56.00 -3	35.19	QP
							AVG
4 0	.6540	0.18	10.02	10.20	46.00 -3	35.80	
	.6540 .2260	0.18 15.38	10.02 10.14	10.20 25.52	46.00 -3 56.00 -3		QP
5 1						30.48	
5 1 6 1	.2260	15.38	10.14	25.52	56.00 -3	30.48 30.52	
5 1 6 1 7 1	.2260	15.38 5.34 22.19	10.14 10.14 10.09	25.52 15.48 32.28	56.00 -3 46.00 -3 56.00 -2	30.48 30.52 23.72	AVG QP
5 1 6 1 7 1 8 1	.2260 .2260 .7460 .7460	15.38 5.34 22.19 4.46	10.14 10.14 10.09 10.09	25.52 15.48 32.28 14.55	56.00 -3 46.00 -3 56.00 -2 46.00 -3	30.48 30.52 23.72 31.45	AVG QP AVG
5 1 6 1 7 1 8 1 9 6	.2260 .2260 .7460 .7460 .6779	15.38 5.34 22.19 4.46 13.23	10.14 10.14 10.09 10.09 10.06	25.52 15.48 32.28 14.55 23.29	56.00 -3 46.00 -3 56.00 -2 46.00 -3 60.00 -3	30.48 30.52 23.72 31.45 36.71	AVG QP AVG QP
5 1 6 1 7 1 8 1 9 6 10 6	.2260 .2260 .7460 .7460 .6779	15.38 5.34 22.19 4.46 13.23 4.19	10.14 10.14 10.09 10.09 10.06	25.52 15.48 32.28 14.55 23.29 14.25	56.00 -3 46.00 -3 56.00 -3 46.00 -3 50.00 -3	30.48 30.52 23.72 31.45 36.71 35.75	AVG QP AVG QP AVG
5 1 6 1 7 1 8 1 9 6 10 6 11 20	.2260 .2260 .7460 .7460 .6779	15.38 5.34 22.19 4.46 13.23	10.14 10.14 10.09 10.09 10.06	25.52 15.48 32.28 14.55 23.29	56.00 -3 46.00 -3 56.00 -2 46.00 -3 60.00 -3	30.48 30.52 23.72 31.45 36.71 35.75 21.00	AVG QP AVG



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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	Class A (dBuV	/m)(at 3 M)	Class B (dBuV/m)(at 3 M)		
(MHz)	Peak	Average	Peak	Average	
Above 1000	80	60	74	54	

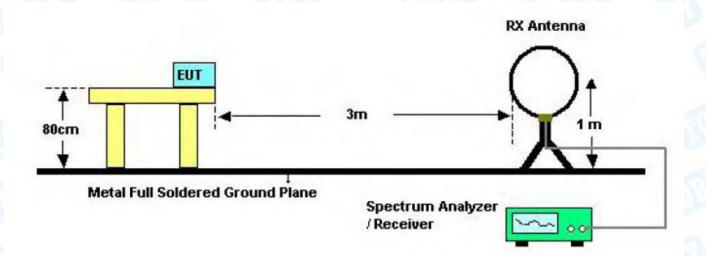
Note:

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

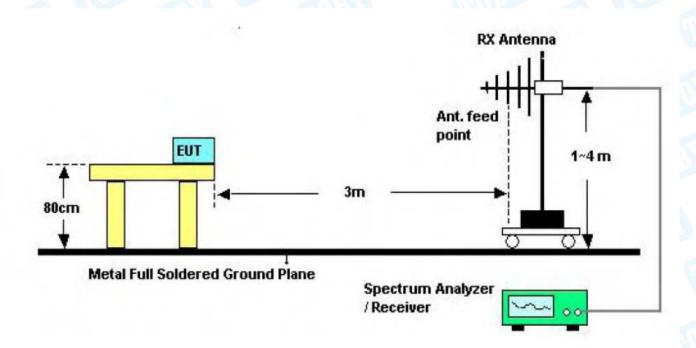


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5.2 Test Setup



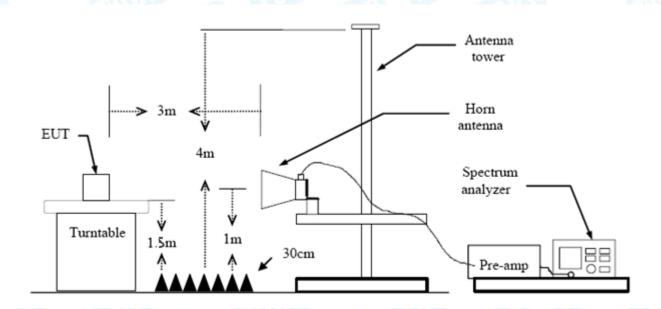
Below 30MHz Test Setup



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 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.
- (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.

5.4 EUT Operating Condition

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



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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

	I COOK	X9+		Mode	1:	R	OCK X9
Temperature	: 25 °C	William .		Relati	ive Humidity	y: 55	5%
Test Voltage:	: AC 12	0V/60Hz	WILD?		OBJECT		1
Ant. Pol.	Horizo	ntal	The same	TRU		TIN T	13.3
Test Mode:	TXBI	Mode 2412N	/lHz	1100	Time.	Wallson .	
Remark:	Only v	vorse case is	s reported	- 0	Illine		1 10
30 dBuV/m	, , , , , , , , , , , , , , , , , , ,	λ	n May May	2 34 X XX	(RF)FCC 15C 3M	4 Radiation Margin -6 5 6 × X	
auth management	V V	MV MAN	/ V '				
"N 1 1 1	50 60 70	80	(MHz)	300	400 500 (600 700	1000.000
.20				300 Measure- ment		600 700 Over	1000.000
20 30.000 40	50 60 70	80 Reading	(MHz)	Measure-			1000.000
20 30.000 40 No. Mk.	50 60 70 Freq.	Reading Level	(MHz) Correct Factor	Measure- ment	Limit (Over	
20 30.000 40 No. Mk.	50 60 70 Freq. MHz	Reading Level	(MHz) Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detecto
No. Mk.	Freq. MHz 47.9938	Reading Level dBuV 53.87	Correct Factor dB/m -23.65	Measure- ment dBuV/m 30.22	Limit 0 dBuV/m 40.00 46.00	Over dB -9.78	Detecto peak
No. Mk. 1 2 2 3 2 3 2	Freq. MHz 47.9938	Reading Level dBuV 53.87 55.11	Correct Factor dB/m -23.65 -18.18	Measure- ment dBuV/m 30.22 36.93	Limit 0 dBuV/m 40.00 46.00 46.00	Over dB -9.78 -9.07	Detecto peak peak
No. Mk. 1 2 3 4 3 2 4 3	Freq. MHz 47.9938 239.9874 292.0581	Reading Level dBuV 53.87 55.11 54.84	(MHz) Correct Factor dB/m -23.65 -18.18 -16.81	Measure- ment dBuV/m 30.22 36.93 38.03	Limit 0 dBuV/m 40.00 46.00 46.00	Over dB -9.78 -9.07 -7.97	Detector peak peak peak



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Test Voltage: Ant. Pol. Test Mode:	25 °C AC 120V/60Hz Vertical		Relative	Humidity:	55%		
Ant. Pol. Test Mode:	Vertical	mag:			33		
Test Mode:		A KILL					
	TV D Mada 04400			1			
Remark:							
	Only worse case	is reported	C. De	ATTI E	3		
80.0 dBuV/m							
-20	2 X X	3 ************************************	yle hay	(RF)FCC 15C 3	Margin -6 c		
30.000 40 50	60 70 80	(MHz)	300	400 500	600 700	1000.00	
No. Mk. Fre	Reading q. Level	Correct N Factor	/leasure- ment	Limit	Over		
MHz	z dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto	
1 * 48.16	25 58.13	-23.72	34.41	40.00	-5.59	peak	
2 106.01	126 57.25	-21.85	35.40	43.50	-8.10	peak	
3 143.82	293 58.78	-21.51	37.27	43.50	-6.23	peak	
4 ! 480.52		-11.13	40.32		-5.68	peak	
5 601.42		-8.67	38.06		-7.94	peak	
6 661.15	503 46.06	-7.32	38.74	46.00	-7.26	peal	



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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	in the	13
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2437MHz		MILL
Remark:	Only worse case is reported		



1	No. N	Лk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1			191.7450	54.41	-20.45	33.96	43.50	-9.54	peak
2			239.9874	55.11	-18.18	36.93	46.00	-9.07	peak
3			292.0581	54.34	-16.81	37.53	46.00	-8.47	peak
4			480.5276	48.28	-11.13	37.15	46.00	-8.85	peak
5	*		721.7259	43.70	-6.00	37.70	46.00	-8.30	peak
6			962.1621	40.46	-3.23	37.23	54.00	-16.77	peak

^{*:}Maximum data x:Over limit !:over margin



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Temperature:	ROCK X9+		Model:		ROCK	(X9+
	25 ℃	33	Relative	Humidity:	55%	N. S.
Test Voltage:	AC 120V/60Hz			(Min)	33	
Ant. Pol.	Vertical	AKIL		1 63		
Test Mode:	TX B Mode 2437N	ИHz	CHID)		167	A STATE OF THE PARTY OF THE PAR
Remark:	Only worse case i	s reported	No.	anit!	9	_
30 dBuV/m 1 30 30.000 40 50	60 70 80	2 3 4 X X X X X X (MHz)	300	(RF)FCC 15C 3	Margin -6 Margin -6	
No. Mk. F	Reading Freq. Level	Correct N Factor	Measure- ment	Limit	Over	
			dBuV/m	ID 1//	dD	Detecto
	MHz dBuV	dB/m	ubuv/III	dBuV/m	dB	Detecti
	MHz dBuV 1625 56.13	-23.72	32.41	40.00	-7.59	
1 * 48.						peal peal
1 * 48. 2 143	1625 56.13	-23.72	32.41	40.00	-7.59	peal
1 * 48. 2 143 3 163	.1625 56.13 .8291 57.28	-23.72 -21.51	32.41 35.77	40.00 43.50	-7.59 -7.73	peal peal
1 * 48. 2 143 3 163 4 191	.1625 56.13 .8291 57.28 .7547 56.22	-23.72 -21.51 -20.52	32.41 35.77 35.70	40.00 43.50 43.50	-7.59 -7.73 -7.80	peal peal peal



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rature: pltage: pl. pde: k:	Horizo	20V/60Hz		Relat	ive Humidity:	55%			
ol. ode: k:	Horizo	ontal Mode 2462N			3 6000				
ode: k:	ТХВ	Mode 2462N		CITE S	3				
k:									
	Only	worse case i							
uV/m			s reported	Carrie	an's				
					(RF)FCC 15C 3M I	Padiation			
						Margin -6 dB			
						6			
			1 2 X X	⁻ 3 , √√√√,	, k				
A		\ \ \	" Wymynyll	Whiteman, J	MATATAMAN	JAN WALLAND			
	/ ^{MM} \	Jery Marriage Mayor	N	1		by, halled &			
MANAGARA INT	n ArmAn	V,							
40 50	D 60 70	0 80	(MHz)	300	400 500 60	00 700 1000.000			
		Reading	Correct	Measure-	Lineit O				
			Factor			ver			
	MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB Detecto			
143	3.8291	54.70	-21.51	33.19	43.50 -1	0.31 peak			
191	.7450	52.91	-20.45	32.46	43.50 -1	1.04 peak			
239	9.9874	52.61	-18.18	34.43	46.00 -1	1.57 peak			
305	.6800	52.41	-16.43	35.98	46.00 -1	0.02 peak			
						0.85 peak			
						9.30 peak			
121	.1200	72.10	-0.00	30.70	- 0.00 -3	7.00 peak			
	Mk. F 143 191 239 305 480	Mk. Freq. MHz 143.8291 191.7450 239.9874 305.6800 480.5276	Mk. Freq. Reading Level MHz dBuV 143.8291 54.70 191.7450 52.91 239.9874 52.61 305.6800 52.41 480.5276 46.28	Reading Correct Level Factor MHz dBuV dB/m 143.8291 54.70 -21.51 191.7450 52.91 -20.45 239.9874 52.61 -18.18 305.6800 52.41 -16.43 480.5276 46.28 -11.13	Mk. Freq. Reading Level Correct Factor Measure-Factor Measure-Factor Measure-Tactor Measure-Tacto	Reading Correct Measure- Mk. Freq. Level Factor ment Limit O MHz dBuV dB/m dBuV/m dBuV/m dBuV/m 143.8291 54.70 -21.51 33.19 43.50 -1 191.7450 52.91 -20.45 32.46 43.50 -1 239.9874 52.61 -18.18 34.43 46.00 -1 305.6800 52.41 -16.43 35.98 46.00 -1 480.5276 46.28 -11.13 35.15 46.00 -1			



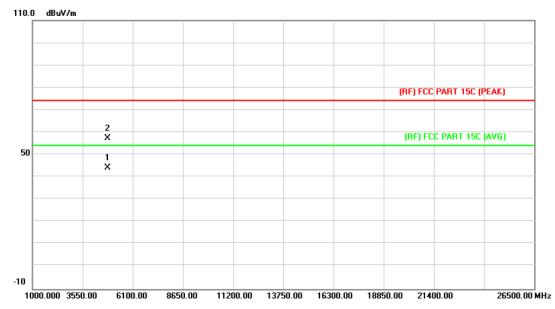
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UT:	ROCK	(X9+	2 13	Mode	el:	ROCK X9-
Temperature:	25 ℃	Call!		Rela	ive Humidity	: 55%
Test Voltage:	AC 12	0V/60Hz				3
Ant. Pol. Vertical						
Test Mode: TX B Mode 2462MHz					FILL	
Remark:	Only v	vorse case i	s reported	C. C.		
80.0 dBuV/m						
					(RF)FCC 15C 3M	
						Margin -6 dB
1		2	3 *		Ť,	5 6 X X
30			landadal	Profession and the second	Aut I	
may and a	M .	. M/ Wm.	VVV AAL MAIN	\ _\ _#^\\" '		ANAL AND ALL AND ALL AND ALCOHOLD
AN What / holy	" Y\.	hull Munday of	/ w .	γr	M/L/V	
	' F M	, ,				
20						
30.000 40 !	50 60 70	80	(MHz)	300	400 500	600 700 1000.00
		Reading	Correct	Measure-		
No. Mk.	Freq.	Level	Factor	ment	Limit O	ver
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB Detector
1 * 48	8.1625	58.13	-23.72	34.41	40.00 -	5.59 peak
2 10	6.0126	57.25	-21.85	35.40	43.50 -8	8.10 peak
3 14	3.8293	58.78	-21.51	37.27	43.50 -6	6.23 peak
4 ! 48	0.5276	51.45	-11.13	40.32	46.00 -	5.68 peak
	4 4005	46.73	-8.67	38.06	46.00 -	7.94 peak
	1.4265					
5 60	31.4265 31.1503	46.06	-7.32	38.74	46.00 -	7.26 peak



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ROCK X9+	Model:	ROCK X9+
25 ℃	Relative Humidity:	55%
AC 120V/60Hz		133
Horizontal		Cistor.
TX B Mode 2412MHz		A HILL
No report for the emission which	ch more than 10 dB bel	ow the prescribed
limit.		
	25 ℃ AC 120V/60Hz Horizontal TX B Mode 2412MHz No report for the emission which	25 °C Relative Humidity: AC 120V/60Hz Horizontal TX B Mode 2412MHz No report for the emission which more than 10 dB bel

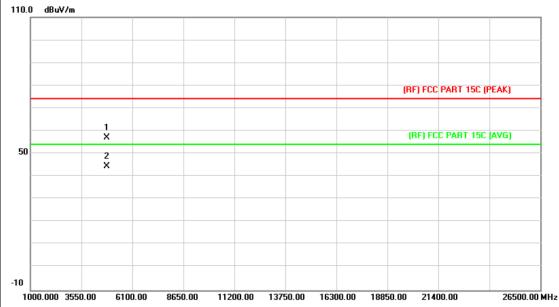


N	lo. I	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	r	4823.946	30.67	13.56	44.23	54.00	-9.77	AVG
2			4825.455	43.87	13.57	57.44	74.00	-16.56	peak



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EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz	The second	133				
Ant. Pol.	Vertical		Cirror.				
Test Mode:	TX B Mode 2412MHz		A FIRE				
Remark:	No report for the emission w prescribed limit.	No report for the emission which more than 10 dB below the prescribed limit.					
	presented inflit.		4714				

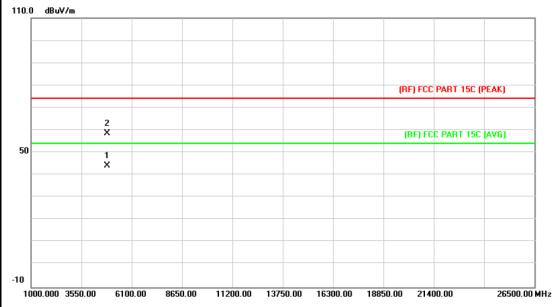


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.769	43.57	13.56	57.13	74.00	-16.87	peak
2	*	4824.162	30.90	13.56	44.46	54.00	-9.54	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz	and a	33			
Ant. Pol.	Horizontal		TO THE			
Test Mode:	TX B Mode 2437MHz		All Control			
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

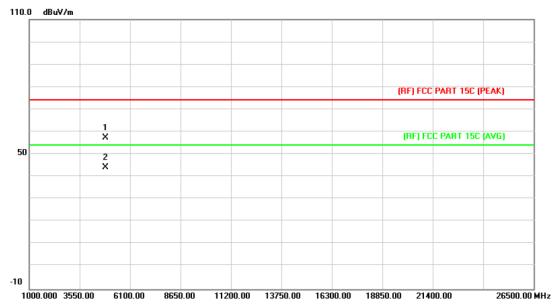


N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	,	k	4872.851		13.85		54.00	-9.97	AVG
2			4873.388	44.63	13.86	58.49	74.00	-15.51	peak



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EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz		10			
Ant. Pol.	Vertical		C. F. Contract			
Test Mode:	TX B Mode 2437MHz		All Indian			
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		4874.747	43.38	13.86	57.24	74.00	-16.76	peak
2	*	4875.221	30.26	13.87	44.13	54.00	-9.87	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz		10			
Ant. Pol.	Horizontal		CERT			
Test Mode:	TX B Mode 2462MHz		A LIVE			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					
	No report for the emission which	h more than 10 dB bel	ow the			

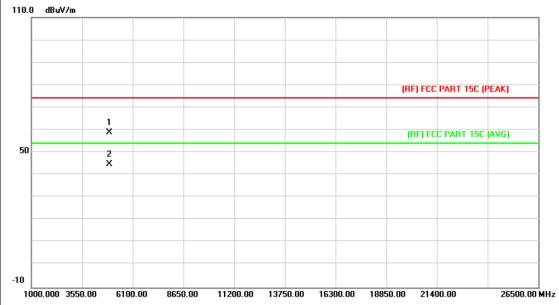


N	lo.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4923.538	30.64	14.15	44.79	54.00	-9.21	AVG
2			4923.958	44.69	14.15	58.84	74.00	-15.16	peak



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EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz		33			
Ant. Pol.	Vertical					
Test Mode:	TX B Mode 2462MHz		All Control			
Remark:	No report for the emission which	No report for the emission which more than 10 dB below the				
	prescribed limit.	7				
			Į.			

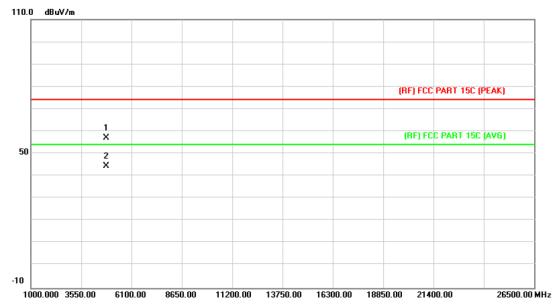


N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4924.144	44.64	14.15	58.79	74.00	-15.21	peak
2		*	4924.651	30.65	14.15	44.80	54.00	-9.20	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 °C Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz		333				
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX G Mode 2412MHz	TX G Mode 2412MHz					
Remark:	No report for the emission which more than 10 dB below the						
	prescribed limit.						
i							

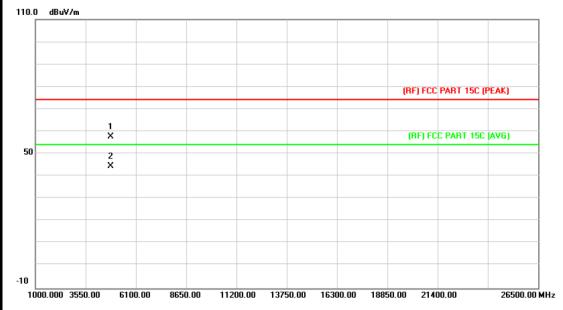


N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4823.769	43.57	13.56	57.13	74.00	-16.87	peak
2		*	4824.162	30.90	13.56	44.46	54.00	-9.54	AVG



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EUT:	ROCK X9+	ROCK X9+ Model:					
Temperature:	25 ℃	25 °C Relative Humidity:					
Test Voltage:	AC 120V/60Hz		33				
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX G Mode 2412MHz	TX G Mode 2412MHz					
Remark:	emark: No report for the emission which more than 10 dB below the						
	prescribed limit.						
l							

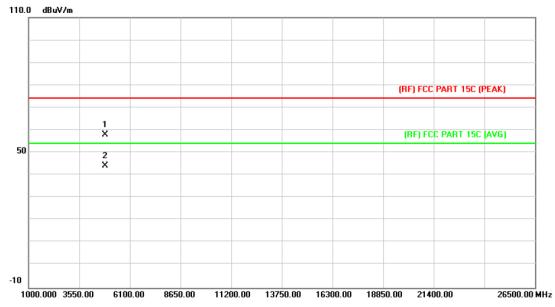


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4824.042	44.03	13.56	57.59	74.00	-16.41	peak
2	*	4824.066	30.76	13.56	44.32	54.00	-9.68	AVG



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EUT:	ROCK X9+ Model:		ROCK X9+				
Temperature:	25 ℃	25 °C Relative Humidity:					
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
Ant. Pol.	. Pol. Horizontal						
Test Mode:	TX G Mode 2437MHz	TX G Mode 2437MHz					
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		4873.445	44.08	13.86	57.94	74.00	-16.06	peak
2	*	4874.816	30.28	13.86	44.14	54.00	-9.86	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	25 °C Relative Humidity:				
Test Voltage:	AC 120V/60Hz	The last	333			
Ant. Pol.	Ant. Pol. Vertical					
Test Mode:	TX G Mode 2437MHz					
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		4873.796	43.49	13.86	57.35	74.00	-16.65	peak
2	*	4875.452	30.36	13.87	44.23	54.00	-9.77	AVG



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	Relative Humidity:	55%			
)Hz		3			
A AROLE					
2462MHz		ALIAN S			
No report for the emission which more than 10 dB below the prescribed limit.					
,		0Hz e 2462MHz or the emission which more than 10 dB below			

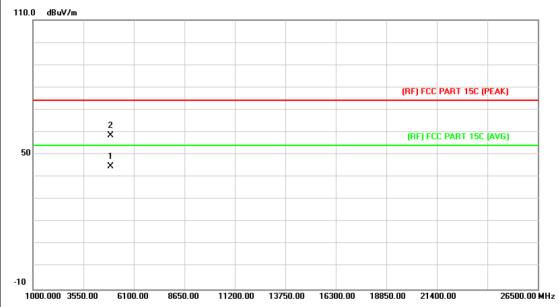


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4924.144	44.64	14.15	58.79	74.00	-15.21	peak
2	*	4925.254	30.51	14.16	44.67	54.00	-9.33	AVG



Page: 38 of 95

ROCK X9+	Model:	ROCK X9+
25 ℃	Relative Humidity:	55%
AC 120V/60Hz		13
Vertical		
TX G Mode 2462MHz	WILLIAM STATE	All Indian
No report for the emission which prescribed limit.	h more than 10 dB belo	ow the
	AC 120V/60Hz Vertical TX G Mode 2462MHz No report for the emission which	AC 120V/60Hz Vertical TX G Mode 2462MHz No report for the emission which more than 10 dB below



No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4922.836	30.75	14.14	44.89	54.00	-9.11	AVG
2		4924.018	44.43	14.15	58.58	74.00	-15.42	peak



Page: 39 of 95

EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz		33				
Ant. Pol.	Horizontal		TO THE				
Test Mode:	TX N(HT20) Mode 2412MHz		ARTIC				
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			4822.992	44.32	13.55	57.87	74.00	-16.13	peak
2	-	*	4825.011	30.14	13.57	43.71	54.00	-10.29	AVG



Page: 40 of 95

ROCK X9+	Model:	ROCK X9+				
25 ℃	Relative Humidity:	55%				
AC 120V/60Hz		33				
Vertical						
TX N(HT20) Mode 2412MHz		ALIVE -				
No report for the emission which more than 10 dB below the						
prescribed limit.						
	25 °C AC 120V/60Hz Vertical TX N(HT20) Mode 2412MHz No report for the emission which	25 °C Relative Humidity: AC 120V/60Hz Vertical TX N(HT20) Mode 2412MHz No report for the emission which more than 10 dB bel				

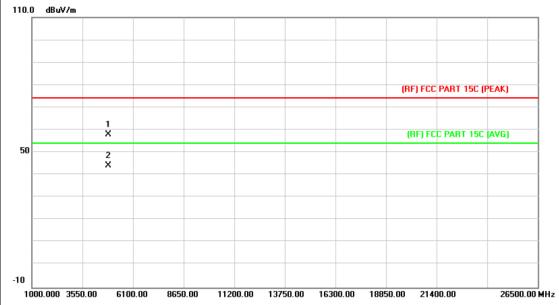


No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4824.624	30.33	13.56	43.89	54.00	-10.11	AVG
2		4825.293	43.29	13.57	56.86	74.00	-17.14	peak



Page: 41 of 95

EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	and it	3
Ant. Pol.	Horizontal		Circumstance of the Control of the C
Test Mode:	TX N(HT20) Mode 2437MHz	THE PARTY OF	ALIAN .
Remark:	No report for the emission which prescribed limit.	more than 10 dB belo	w the

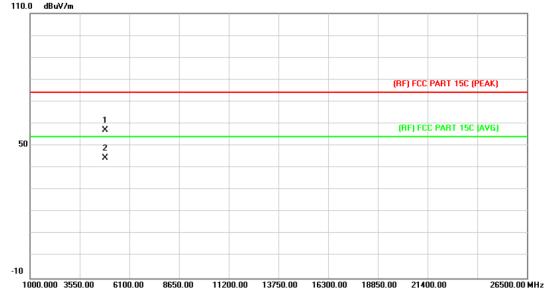


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.718	44.04	13.86	57.90	74.00	-16.10	peak
2	*	4875.305	30.34	13.87	44.21	54.00	-9.79	AVG



Page: 42 of 95

EUT:	ROCK X9+	Model:	ROCK X9+	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	AC 120V/60Hz		33	
Ant. Pol.	Vertical			
Test Mode:	TX N(HT20) Mode 2437MHz		Alle	
Remark:	No report for the emission which prescribed limit.	th more than 10 dB bel	ow the	
110.0 dBuV/m				

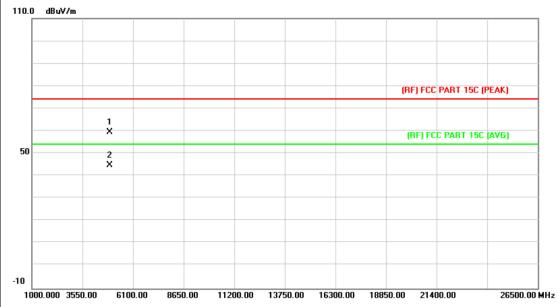


N	o. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4872.608	43.28	13.85	57.13	74.00	-16.87	peak
2	*	4874.405	30.53	13.86	44.39	54.00	-9.61	AVG



Page: 43 of 95

EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX N(HT20) Mode 2462MHz		A LIVE			
Remark:	mark: No report for the emission which more than 10 dB below the prescribed limit.					

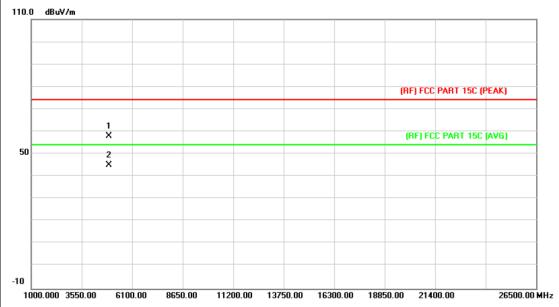


N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4922.749	45.36	14.14	59.50	74.00	-14.50	peak
2		*	4925.119	30.46	14.16	44.62	54.00	-9.38	AVG



Page: 44 of 95

EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX N(HT20) Mode 2462MHz		A LIVE				
Remark:	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		4922.944	43.67	14.14	57.81	74.00	-16.19	peak
2	*	4924.960	30.77	14.15	44.92	54.00	-9.08	AVG



Page: 45 of 95

EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 °C Relative Humidity: 55%					
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Horizontal	Horizontal				
Test Mode:	TX N(HT40) Mode 2422MHz		A PURE			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					

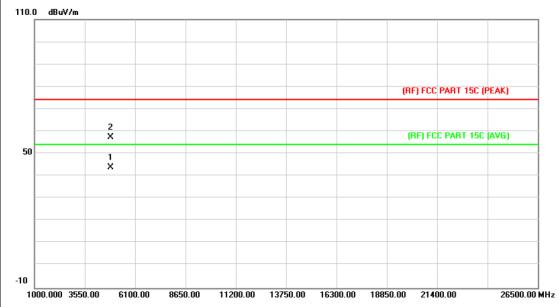


	No.	Mk.	Freq.	_		Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4843.841		13.68	43.86	54.00	-10.14	AVG
2			4844.642	43.38	13.68	57.06	74.00	-16.94	peak



Page: 46 of 95

EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 ℃ Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX N(HT40) Mode 2422MHz		Alle				
Remark:	No report for the emission which	ch more than 10 dB bel	ow the				
	prescribed limit.						



No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4843.142	30.27	13.68	43.95	54.00	-10.05	AVG
2		4843.235	43.63	13.68	57.31	74.00	-16.69	peak



Page: 47 of 95

EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 °C Relative Humidity: 55%					
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Horizontal		TO THE			
Test Mode:	TX N(HT40) Mode 2437MHz		ARTIC			
Remark:	No report for the emission which	ch more than 10 dB bel	ow the			
	prescribed limit.					



No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.553	43.37	13.86	57.23	74.00	-16.77	peak
2	*	4874.486	30.29	13.86	44.15	54.00	-9.85	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 °C Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX N(HT40) Mode 2437MHz		A FIRE				
Remark:	No report for the emission wh	nich more than 10 dB b	elow the				
	prescribed limit.						
Í							



No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4873.250	30.29	13.86	44.15	54.00	-9.85	AVG
2		4874.213	43.24	13.86	57.10	74.00	-16.90	peak



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EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX N(HT40) Mode 2452MHz		All Control				
Remark:	No report for the emission which more than 10 dB below the						
	prescribed limit.						



N	No.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4903.508	43.72	14.03	57.75	74.00	-16.25	peak
2		*	4905.146	30.60	14.04	44.64	54.00	-9.36	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX N(HT40) Mode 2452MHz		ALIVE TO SERVICE				
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		4904.231	43.47	14.03	57.50	74.00	-16.50	peak
2	*	4904.870	30.25	14.03	44.28	54.00	-9.72	AVG



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6. Restricted Bands Requirement

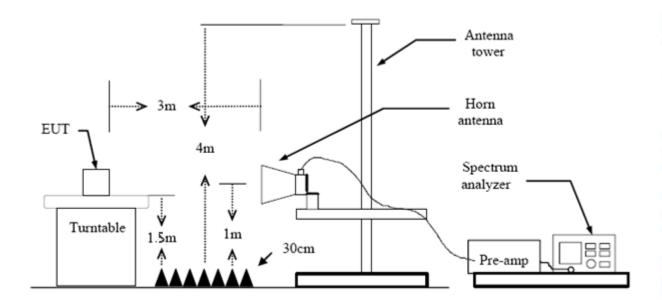
6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

6.1.2 Test Limit

Restricted Frequency	Class B (dB	suV/m)(at 3 M)
Band (MHz)	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

6.2 Test Setup



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.



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(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

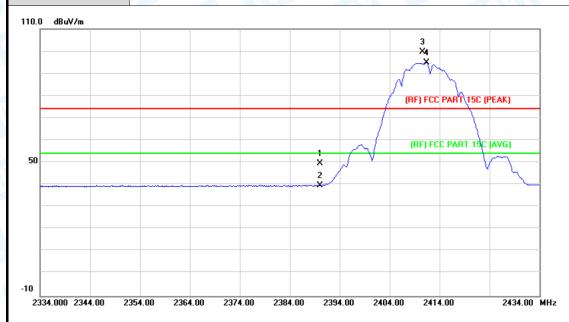
Please see the next page.



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(1) Radiation Test

EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Horizontal		J. M. C.			
Test Mode:	TX B Mode 2412MHz					
Remark:	N/A	A RIVE				

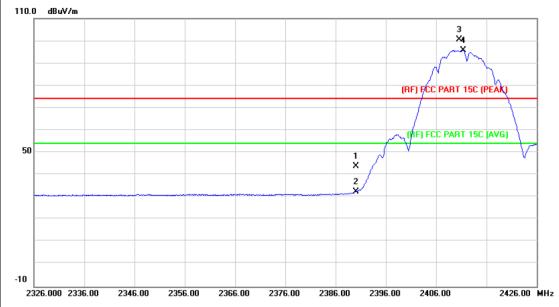


No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	48.71	0.77	49.48	74.00	-24.52	peak
2		2390.000	38.86	0.77	39.63	54.00	-14.37	AVG
3	Χ	2410.600	98.78	0.86	99.64	Fundamental F	Frequency	peak
4	*	2411.400	93.98	0.86	94.84	Fundamental I	Frequency	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHz		
Remark:	N/A	000	

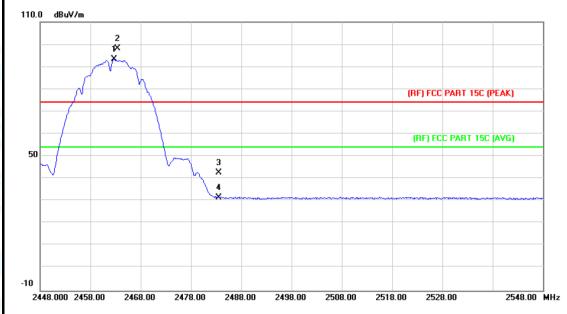


N	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	43.22	0.77	43.99	74.00	-30.01	peak
2		2390.000	31.73	0.77	32.50	54.00	-21.50	AVG
3	X	2410.600	99.73	0.86	100.59	Fundamental F	requency	peak
4	*	2411.400	95.03	0.86	95.89	Fundamental I	requency	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX B Mode 2462MHz		A HILL				
Remark:	N/A		3 _ (ii)				

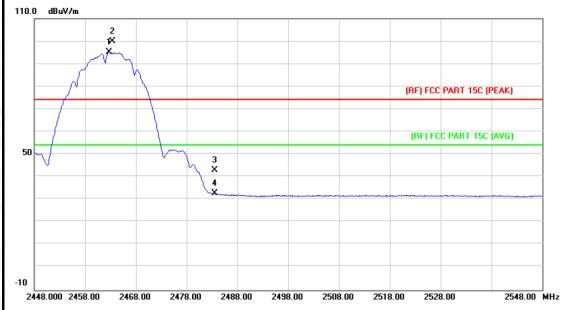


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2462.700	92.28	1.08	93.36	Fundamental	Frequency	AVG
2	Χ	2463.400	96.96	1.08	98.04	Fundamental	Frequency	peak
3		2483.500	41.36	1.17	42.53	74.00	-31.47	peak
4		2483.500	30.51	1.17	31.68	54.00	-22.32	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Vertical		TO THE			
Test Mode:	TX B Mode 2462MHz					
Remark:	N/A		3 _ (1)			

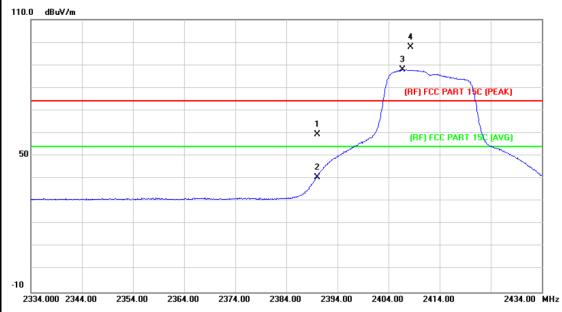


No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2462.700	94.09	1.08	95.17	Fundamental Frequency		AVG
2	X	2463.400	98.87	1.08	99.95	Fundamental	Frequency	peak
3		2483.500	41.64	1.17	42.81	74.00	-31.19	peak
4		2483.500	31.49	1.17	32.66	54.00	-21.34	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz	Olim I	333					
Ant. Pol.	Horizontal							
Test Mode:	TX G Mode 2412MHz							
Remark:	N/A		3					
440.0 10.111								

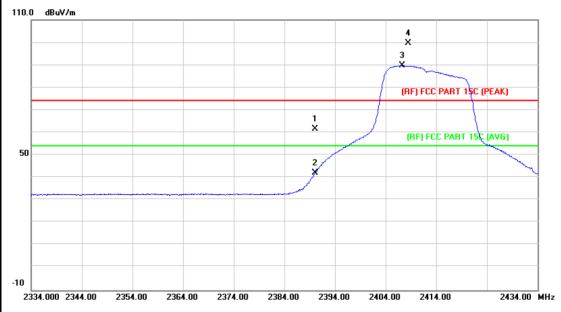


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	58.58	0.77	59.35	74.00	-14.65	peak
2		2390.000	39.81	0.77	40.58	54.00	-13.42	AVG
3	*	2406.700	87.08	0.84	87.92	Fundamental Frequency		AVG
4	X	2408.300	96.89	0.85	97.74	Fundamental	Frequency	peak



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EUT:	ROCK X9+	Model:	ROCK X9+						
Temperature:	Temperature: 25 ℃ Relative Humidity: 55%								
Test Voltage: AC 120V/60Hz									
Ant. Pol.	Vertical								
Test Mode:	TX G Mode 2412MHz		THE PARTY OF						
Remark: N/A									
110.0 dBuV/m									

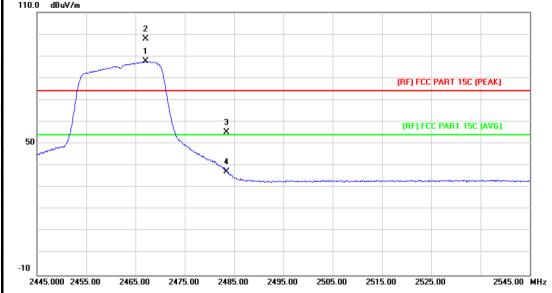


No	. Mk	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	60.81	0.77	61.58	74.00	-12.42	peak
2		2390.000	41.28	0.77	42.05	54.00	-11.95	AVG
3	*	2407.300	88.91	0.85	89.76	Fundamental Frequency		AVG
4	Χ	2408.500	98.81	0.85	99.66	Fundamental	Frequency	peak



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EUT:	ROCK X9+	Model:	ROCK X9+					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz		33					
Ant. Pol. Horizontal								
Test Mode:	TX G Mode 2462MHz		FILL					
Remark:	N/A							
110.0 dBuV/m								
	2							
	×							
	×							

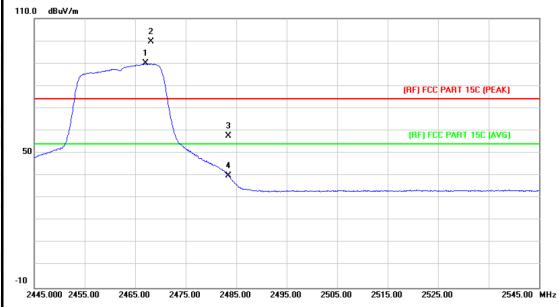


N	o. Mk	c. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2467.000	86.63	1.10	87.73	Fundamental Frequency		AVG
2	X	2467.100	96.77	1.10	97.87	Fundamental Frequency		peak
3		2483.500	53.96	1.17	55.13	74.00	-18.87	peak
4		2483.500	36.09	1.17	37.26	54.00	-16.74	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz							
Ant. Pol.	Vertical							
Test Mode:	TX G Mode 2462MHz							
Remark:	N/A		72					



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2467.000	88.80	1.10	89.90	Fundamental Frequency		AVG
2	X	2468.200	98.63	1.11	99.74	Fundamental	Frequency	peak
3		2483.500	56.38	1.17	57.55	74.00	-16.45	peak
4		2483.500	38.73	1.17	39.90	54.00	-14.10	AVG



3

Χ

2406.500

2406.600

Report No.: TB-FCC150438

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EUT:		ROCK	X9+		Model:		ROCK X9+	
Tempera	ture:	25 ℃			Relative H	lumidity:	55%	
Test Volt	age:	AC 120	OV/60Hz			Time:	133	
Ant. Pol.		Horizo	ntal	A. S. C.		1 CD		Ciri?
Test Mod	de:	TX N(F	HT20) Mod	e 2412MHz	CHILD		A W	
Remark:		N/A	130		Cale In	CIII'S	3	_ 6
110.0 dBu/	//m							
						3 X		
						4 ×		
						(RF) FCC PA	ART 15C (PEAK	g
					1 X			
50						(RF) FCC F	PART 150 IAVO	
30					2 X			
-10								
2334.000	2344.00 2	354.00 2	2364.00 2374	1.00 2384.00	2394.00 240	14.00 2414.0	0 2	434.00 MHz
			Reading	Correct	Measure-			
No. N	∕lk. Fre		Level	Factor	ment	Limit	Over	
	MH	łz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	2390.	000	59.74	0.77	60.51	74.00	-13.49	peak
2	2390.		43.44	0.77	44.21	54.00	-9.79	AVG

Emission Level= Read Level+ Correct Factor

100.10

89.96

0.84

0.84

100.94

90.80

peak

AVG

Fundamental Frequency

Fundamental Frequency



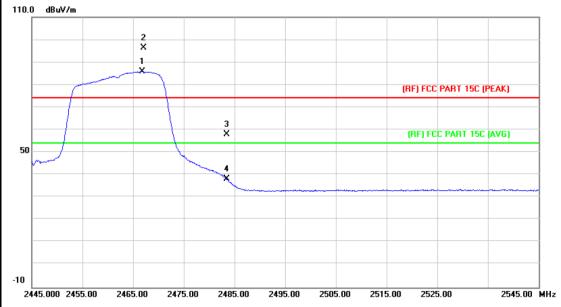
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:		ROC	CK X9+		a 1	MA	Mod	del:	: ROO		CK X9+
peratur	re:	25 °	C		10		Rela	ative	Humidity	55 %	ó
Voltag	e:	AC 1	120V/60)Hz							
Pol.		Verti	ical		11/1				10		
Mode:		1XT	V(HT20) Mod	le 2412N	ИHz	CILI	103	2	2 1	ALL STREET
nark:		N/A	A.D.		100					3	_ (
dBuV/m											
									4 X 3 X (RF) FCC P	ART 15C (PE	AK)
						1 X		-	(RF) FCC	PART 15¢ (A	VG)
						2	Armor Market				
		+				×					
34.000 234	4.00 23	354.00	2364.00	237	1.00 2384	1.00	2394.00	2404	1.00 2414.0	00	2434.00 MHz
lo. Mk.	Fre	∍q.							Limit	Over	
	MH	Z	dBu	IV	dB/m		dBuV/	/m	dBuV/m	dB	Detector
	2390.	000	60.6	60	0.77		61.3	7	74.00	-12.63	3 peak
	2390.	000	40.8	35	0.77		41.6	2	54.00	-12.3	B AVG
*	2406.	000	85.6	39	0.84		86.5	3	Fundamenta	l Frequenc	AVG
	2100.										
	perature: Voltage Pol. Mode: hark: dBuV/m	perature: : Voltage: : Pol. : Mode: hark: dBuV/m 34.000 2344.00 23 lo. Mk. Free MH 2390. 2390.	perature: 25 ° Voltage: AC ° Pol. Vertice Mode: TX Nonark: N/A dBuV/m 2354.00 2354.00 2354.00 2390.000 2390.000	Pol. Vertical TX N(HT20 N/A MBuV/m Reaction Reaction	perature: 25 °C Voltage: AC 120V/60Hz Pol. Vertical TX N(HT20) Mod nark: N/A dBuV/m 34.000 2344.00 2354.00 2364.00 2374 Reading Level MHz dBuV 2390.000 60.60 2390.000 40.85	Pol. Vertical TX N(HT20) Mode 2412N Mode: TX N(HT20) Mode 2412N Mode Mod	Pol. Vertical TX N(HT20) Mode 2412MHz N/A MBuV/m	Relative 25 °C Relative R	Relative 25 °C 25 °C	Pol. Vertical	Pol. Vertical



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EUT:	ROCK X9+	Model:	ROCK X9+						
Temperature:	25 ℃	Relative Humidity:	55%						
Test Voltage:	AC 120V/60Hz		33						
Ant. Pol.	Horizontal	Horizontal							
Test Mode:	TX N(HT20) Mode 2462MHz								
Remark:	N/A								

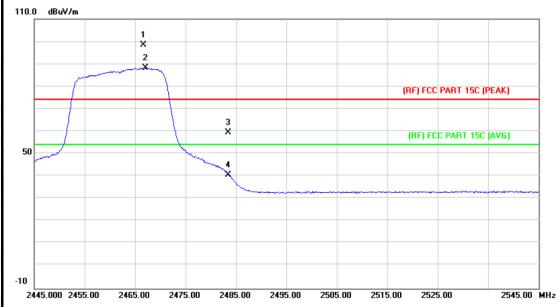


No.	. Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2466.800	84.73	1.10	85.83	Fundament	al Frequency	AVG
2	X	2467.000	95.31	1.10	96.41	Fundamental	I Frequency	peak
3		2483.500	56.85	1.17	58.02	74.00	-15.98	peak
4		2483.500	37.01	1.17	38.18	54.00	-15.82	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		33
Ant. Pol.	Vertical		CERT
Test Mode:	TX N(HT20) Mode 2462MHz		A TOP
Remark:	N/A	COLUMN TO SERVICE STATE OF THE PARTY OF THE	
1			Į.

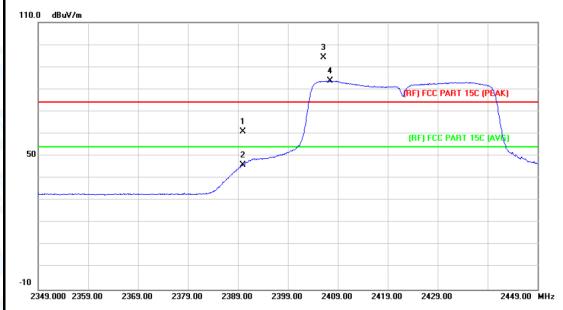


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2466.700	97.26	1.10	98.36	Fundamental	Frequency	peak
2	*	2467.000	87.21	1.10	88.31	Fundamental	Frequency	AVG
3		2483.500	58.14	1.17	59.31	74.00	-14.69	peak
4		2483.500	39.36	1.17	40.53	54.00	-13.47	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2422MHz		A. M. Commercial
Remark:	N/A	W. F.	

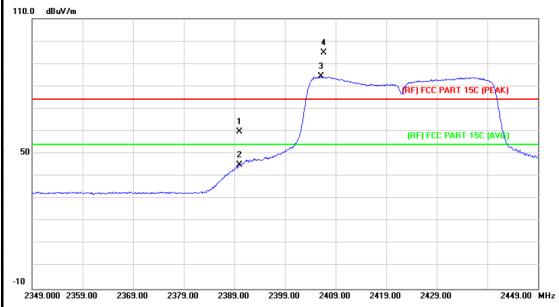


No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	60.19	0.77	60.96	74.00	-13.04	peak
2		2390.000	45.17	0.77	45.94	54.00	-8.06	AVG
3	X	2406.200	93.49	0.84	94.33	Fundamental	Frequency	peak
4	*	2407.500	82.86	0.85	83.71	Fundamental	Frequency	AVG



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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2422MHz		
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	59.04	0.77	59.81	74.00	-14.19	peak
2		2390.000	44.39	0.77	45.16	54.00	-8.84	AVG
3	*	2406.100	83.45	0.84	84.29	Fundamenta	l Frequency	AVG
4	Χ	2406.700	94.02	0.84	94.86	Fundamenta	l Frequency	peak



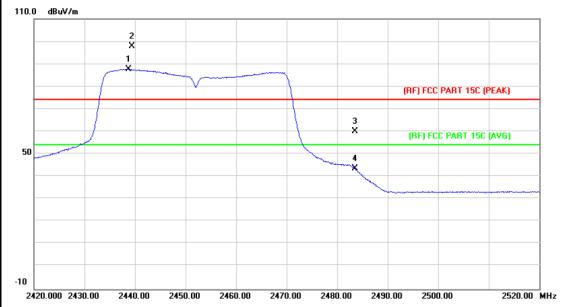
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EUT:		ROCI	< X9+		Model:		ROCK	(X9+	
Гет	peratu	re:	25 ℃	Call!	10	Relative	Humidity:	55%	The second
Гest	Voltag	je:	AC 12	20V/60Hz		1	(III)	33	
۹nt.	Pol.		Horiz	ontal	A. S. C.		1 60		
Гest	Mode:		TX N	(HT40) Mod	e 2452MHz	CHILD)		11:77	
Rem	ark:		N/A	A STATE OF	100	A Property of)	_ {
110.0) dBuV/m								
50			2 X 1 X			3 X	(RF) FCC PAR		
-10 24	20.000 24	30.00	2440.00	2450.00 246	0.00 2470.00	2480.00 24	90.00 2500.00	2	520.00 MH:
N	lo. Mk	. Fr	eq.	Reading Level	Correct I	Measure- ment	Limit	Over	
		M	Hz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto
1	*	2439	.100	83.20	0.98	84.18	Fundamental F	requency	AVG
				94.09	0.99	95.08	Fundamental F	requency	peak
2	X	2441	.600	04.00					
	X	2441 2483		57.23	1.17	58.40	74.00	-15.60	peak

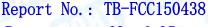


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Ş	EUT:	ROCK X9+	Model:	ROCK X9+
	Temperature:	25 ℃	Relative Humidity:	55%
	Test Voltage:	AC 120V/60Hz		
	Ant. Pol.	Vertical		
	Test Mode:	TX N(HT40) Mode 2452MHz		All Inches
	Remark:	N/A	anis)	



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2438.700	86.78	0.98	87.76	Fundamental	Frequency	AVG
2	Χ	2439.400	97.00	0.98	97.98	Fundamental	Frequency	peak
3		2483.500	58.76	1.17	59.93	74.00	-14.07	peak
4		2483.500	42.43	1.17	43.60	54.00	-10.40	AVG

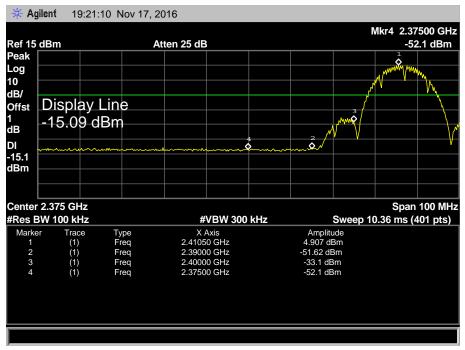


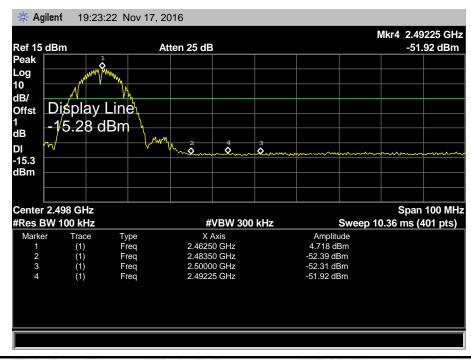


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(2) Conducted Test

EUT:	ROCK X9+	Model:	ROCK X9+			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Test Mode:	TX B Mode 2412MHz / TX B Mo	TX B Mode 2412MHz / TX B Mode 2462MHz				
Remark:	The EUT is programed in continuously transmitting mode					



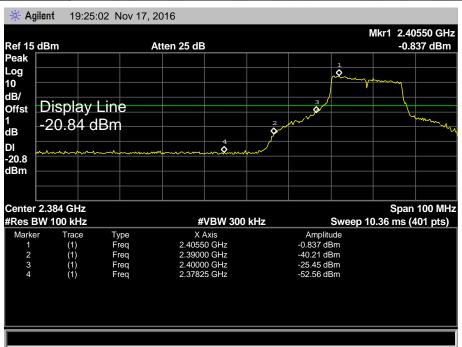


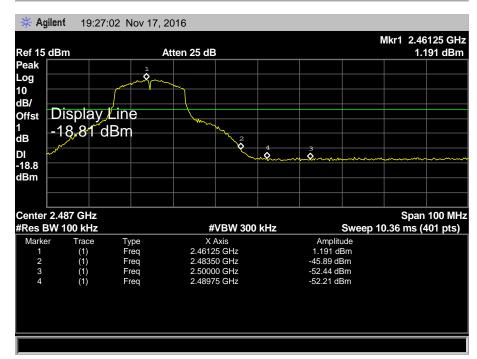




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EUT:	ROCK X9+	Model:	ROCK X9+		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V		33		
Test Mode:	TX G Mode 2412MHz / TX G N	Node 2462MHz			
Remark:	The EUT is programed in continuously transmitting mode				



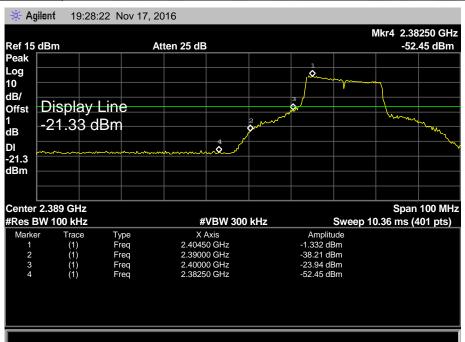


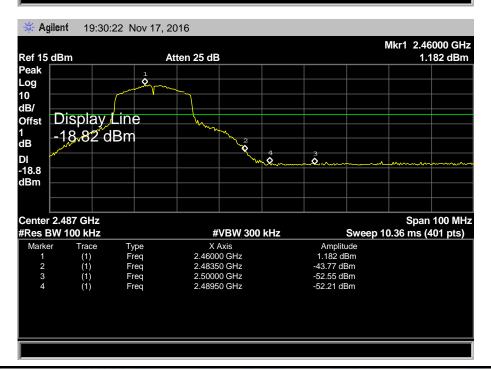


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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX N(HT20) Mode 2412MHz / TX N(HT20) Mode 2462MHz		
Remark:	The EUT is programed in continuously transmitting mode		



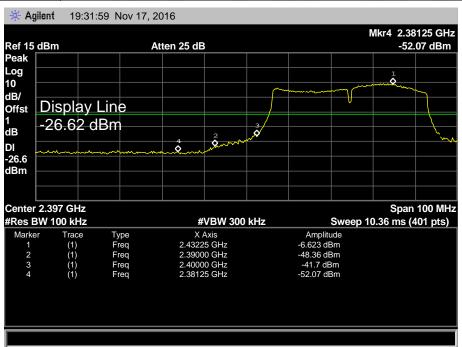


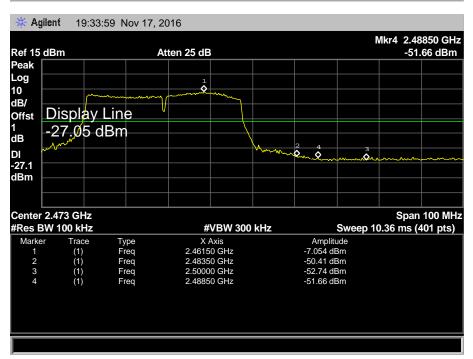




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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX N(HT40) Mode 2422MHz / TX N(HT40) Mode 2452MHz		
Remark:	The EUT is programed in continuously transmitting mode		







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7. Bandwidth Test

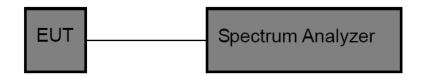
7.1 Test Standard and Limit

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

7.1.2 Test Limit

FCC 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.

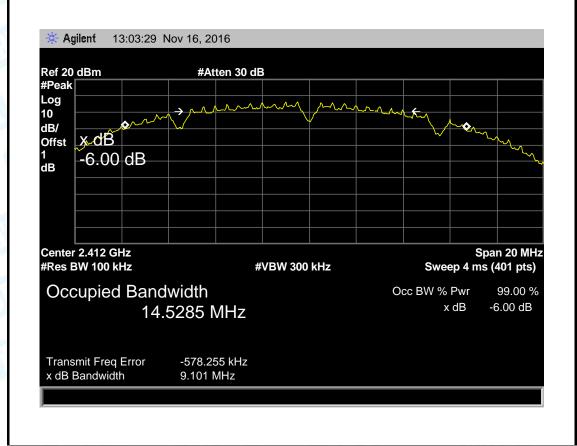


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7.5 Test Data

ROCK X9+	Model:	ROCK X9+
25 ℃	Relative Humidity:	55%
DC 3.7V		CALL PARTY
TX 802.11B Mode		
cy 6dB Bandwidth	99% Bandwidth	Limit
(MHz)	(MHz)	(MHz)
9.101	14.5285	
8.586	13.9003	>=0.5
8.603	13.4579	
	25 °C DC 3.7V TX 802.11B Mode cy 6dB Bandwidth (MHz) 9.101 8.586	25 °C Relative Humidity: DC 3.7V TX 802.11B Mode cy 6dB Bandwidth (MHz) (MHz) 9.101 14.5285 8.586 13.9003

802.11B Mode



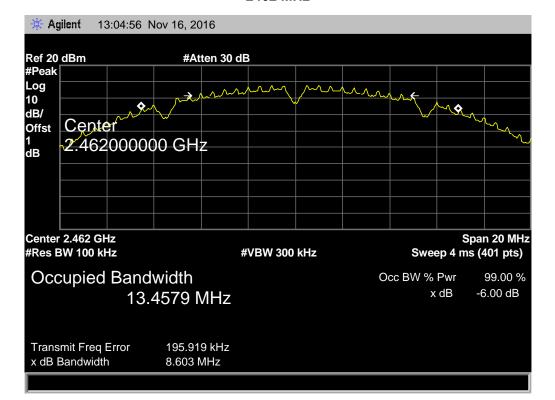


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802.11B Mode 2437 MHz # Agilent 13:04:10 Nov 16, 2016 Ref 20 dBm #Atten 30 dB #Peak Log 10 \$ ~~ dB/ Center Offst 2.437000000 GHz dΒ Center 2.437 GHz Span 20 MHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 4 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 13.9003 MHz Transmit Freq Error x dB Bandwidth -596.457 kHz

802.11B Mode

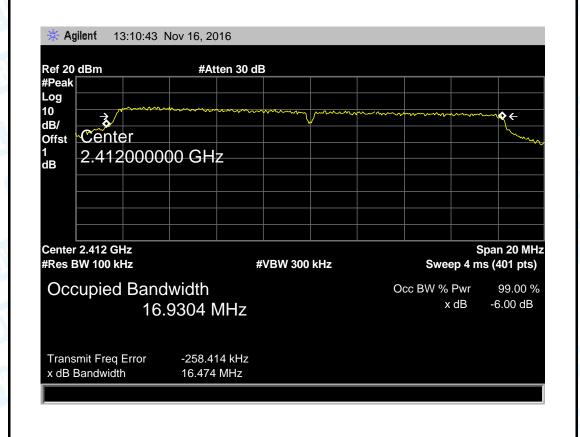
8.586 MHz





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EUT:	ROCK X9+	Model:	ROCK X9+	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 3.7V		33	
Test Mode: TX 802.11G Mode			TO THE	
Channel frequence	cy 6dB Bandwidth	99% Bandwidth	Limit	
(MHz)	(MHz)	(MHz)	(MHz)	
2412	16.474	16.9304		
2437	13.685	16.3915	>=0.5	
2462	15.711	16.2499		
802 11G Mode				





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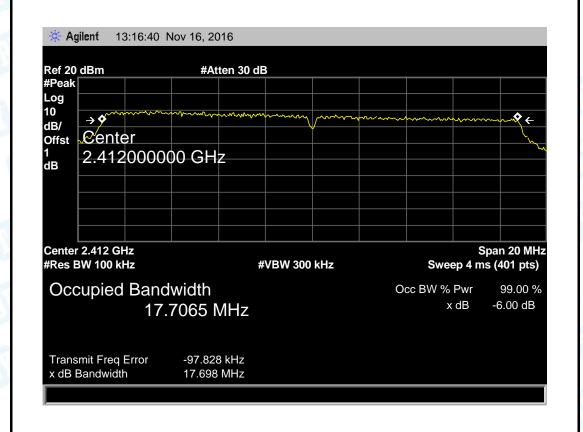
2462 MHz 🔆 Agilent 13:14:42 Nov 16, 2016 Ref 20 dBm #Atten 30 dB #Peak Log 10 dB/ Center Offst 1 dB 2.462000000 GHz Center 2.462 GHz Span 20 MHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 4 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 16.2499 MHz Transmit Freq Error 3.209 kHz x dB Bandwidth 15.711 MHz



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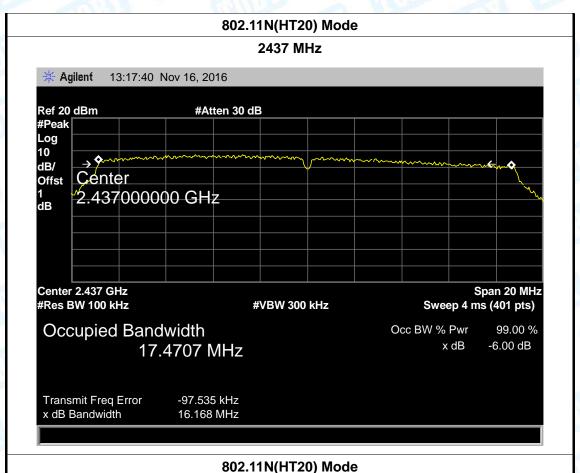
EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	Mode: TX 802.11N(HT20) Mode		
Channel frequence	cy 6dB Bandwidth	99% Bandwidth	Limit
(MHz)	(MHz)	(MHz)	(MHz)
2412	17.698	17.7065	
2437	16.108	17.4707	>=0.5
2462	16.704	17.4273	
802.11N(HT20) Mode			

2.11N(HT20) Mod





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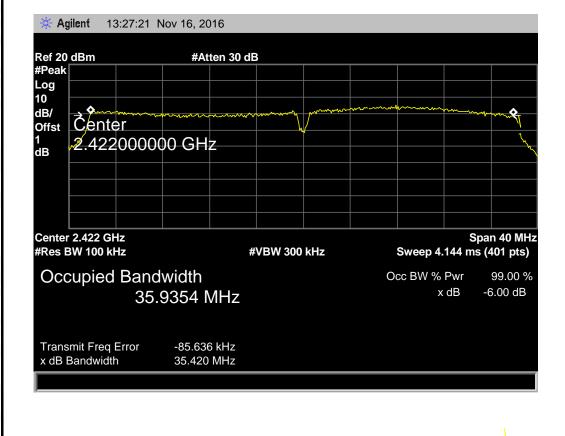


2462 MHz * Agilent 13:18:39 Nov 16, 2016 Ref 20 dBm #Atten 30 dB #Peak Log 10 dB/ Center Offst 1 dB 2.462000000 GHz Center 2.462 GHz Span 20 MHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 4 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 17.4273 MHz Transmit Freq Error 1.701 kHz x dB Bandwidth 16.704 MHz



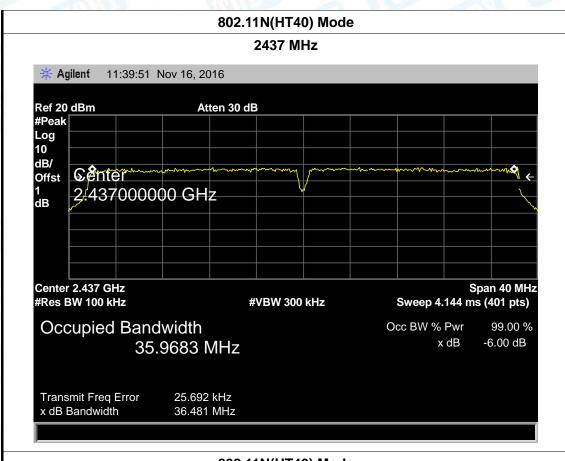
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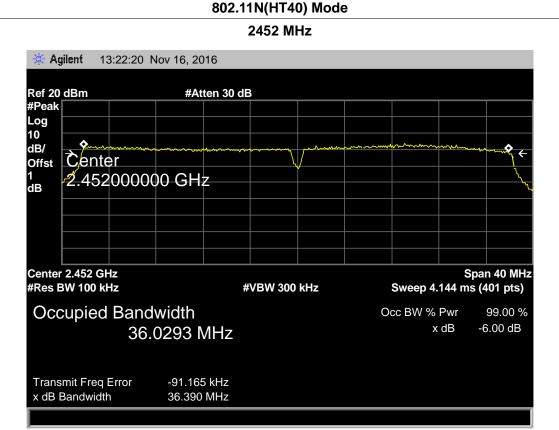
EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		133
Test Mode:	Test Mode: TX 802.11N(HT40) Mode		
Channel frequence	cy 6dB Bandwidth 99% Bandwidth Limit		
(MHz)	(MHz)	(MHz)	(MHz)
2422	35.420	35.9354	
2437	36.481	35.9683	>=0.5
2452	36.390	36.0293	
802.11N(HT40) Mode			





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8. Peak Output Power Test

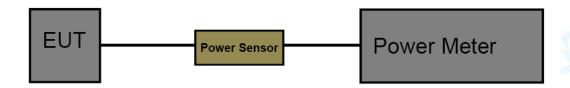
8.1 Test Standard and Limit

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(N			
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 v03r05.

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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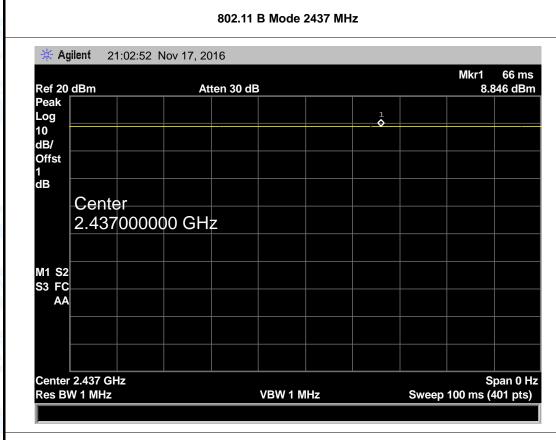
8.5 Test Data

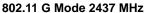
EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Relative Humic	dity: 55%
Test Voltage:	DC 3.7V		
Mode	Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
	2412	18.49	(4.2)
802.11b	2437	18.24	
	2462	18.41	
	2412	17.34	
802.11g	2437	17.91	
	2462	17.54	30
802.11n	2412	16.26	30
(HT20)	2437	16.10	
(11120)	2462	16.04	
802.11n	2422	16.08	
(HT40)	2437	15.78	
(2452	16.34	
	Resu	ult: PASS	

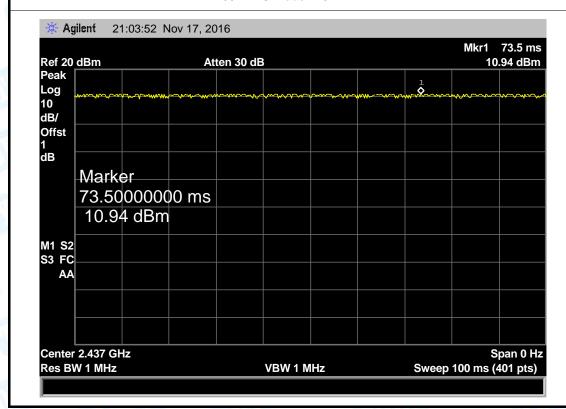
Duty Cycle			
Mode	Channel frequency (MHz)	Test Result	
	2412		
802.11b	2437		
	2462		
802.11g	2412		
	2437		
	2462	. 000/	
000 44	2412	>98%	
802.11n	2437		
(HT20)	2462		
000 44	2422		
802.11n (HT40)	2437		
(П140)	2452		
Please see belov	w plots		



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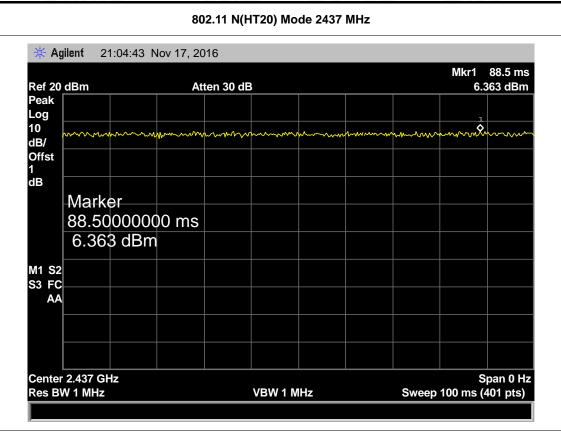


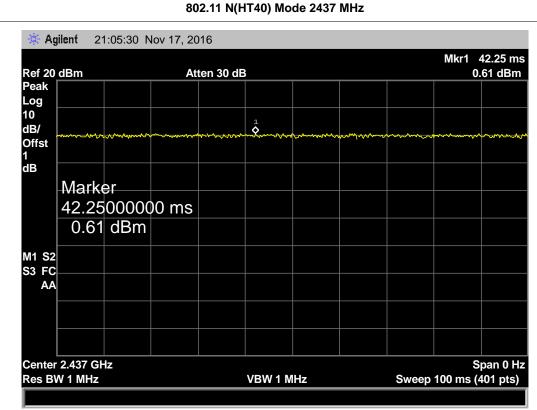






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9. Power Spectral Density Test

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 v03r05.

- (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.

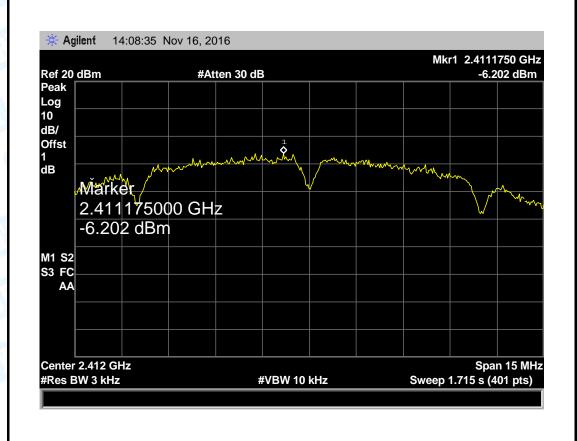


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9.5 Test Data

EUT:	ROCK XS)+	Model:	ROCK X9+
Temperature:	25 ℃		Relative Humidity:	55%
Test Voltage:	DC 3.7V			Calling
Test Mode:	TX 802.11B Mode		I War	
Channel Frequency	uency	Power Dens	sity	Limit
(MHz)		(3 kHz/dBr	n)	(dBm)
2412		-6.202		
2437		-5.764		8
2462		-5.516		
902 44D Mode				

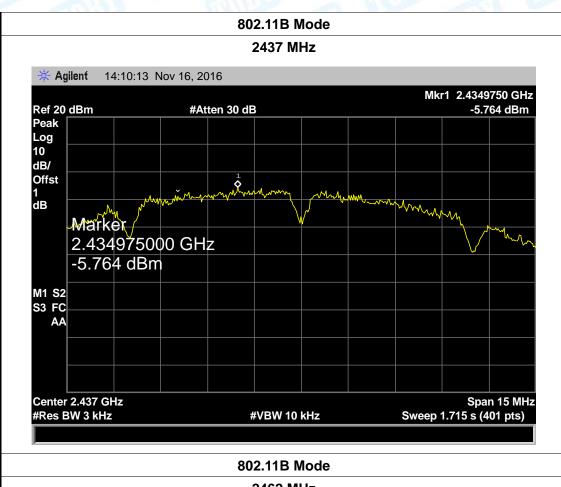
802.11B Mode







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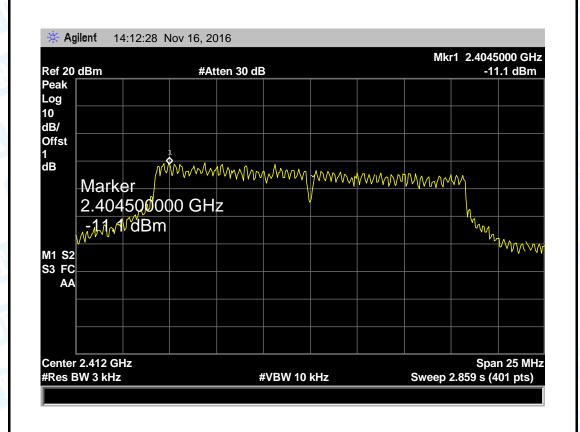


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Ì	EUT:	ROCK X9+	Model:	ROCK X9+
	Temperature:	25 ℃	Temperature:	25 ℃
	Test Voltage:	DC 3.7V	Time and	133
	Test Mode:	TX 802.11G Mode		

Channel Frequency	Power Density	Limit
(MHz)	(3 kHz/dBm)	(dBm)
2412	-11.10	
2437	-9.087	8
2462	-10.80	

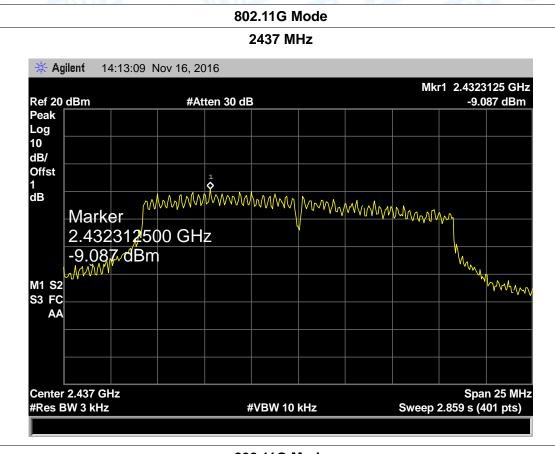
802.11G Mode







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802.11G Mode 2462 MHz * Agilent 14:13:46 Nov 16, 2016 Mkr1 2.4626250 GHz -10.8 dBm Ref 20 dBm #Atten 30 dB Peak Log 10 dB/ Offst 1 dB Marker MMWMMWMMM 2.462625<mark>000 GHz</mark> -10.8 dBm M1 S2 mmy AA Center 2.462 GHz Span 25 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.859 s (401 pts)

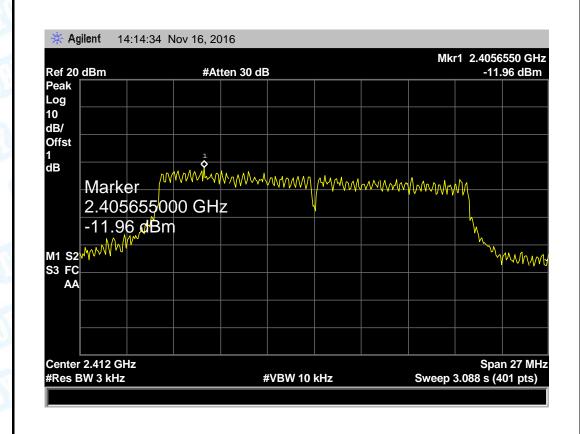


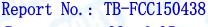
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EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Temperature:	25 ℃
Test Voltage:	DC 3.7V		W 25
Test Mode:	TX 802 11N(HT20) Mode		

		(=5)5	
Channel Frequency		Power Density	Limit
	(MHz)	(3 kHz/dBm)	(dBm)
	2412	-11.96	
	2437	-13.78	8
	2462	-13.6/	

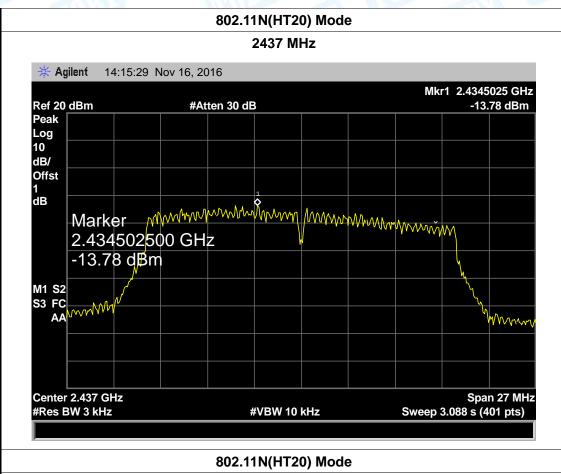
802.11N(HT20) Mode







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2462 MHz * Agilent 14:16:21 Nov 16, 2016 Mkr1 2.4638900 GHz -13.64 dBm Ref 20 dBm #Atten 30 dB Peak Log 10 dB/ Offst 1 dB www.my www. Marker 2.463890000 GHz -13.64 dBm M1 S2 S3 FC mmh AA Center 2.462 GHz Span 27 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 3.088 s (401 pts)



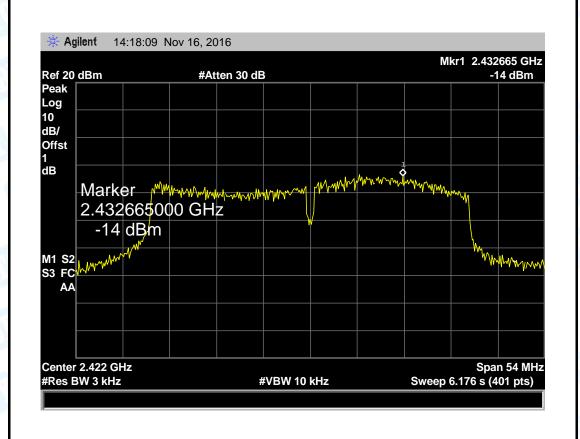
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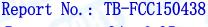
EUT:	ROCK X9+	Model:	ROCK X9+
Temperature:	25 ℃	Temperature:	25 ℃
Test Voltage:	DC 3.7V	man and	333

Test Mode: TX 802.11N(HT40) Mode

Channel Frequency	Power Density	Limit
(MHz)	(3 kHz/dBm)	(dBm)
2422	-14.00	
2437	-12.08	8
2452	-13.06	

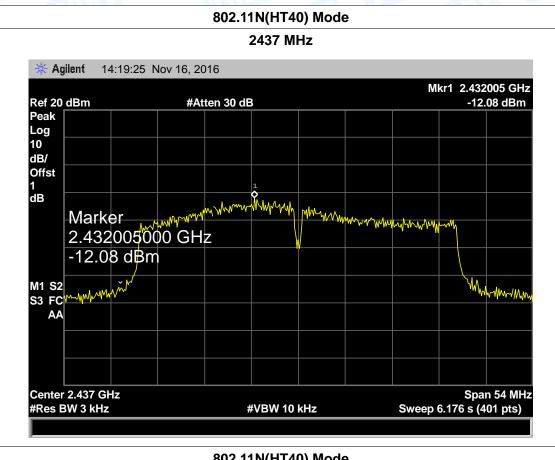
802.11N(HT40) Mode







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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 -3.16dBi, 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	
ans	✓ Unique connector antenna	
	☐ Professional installation antenna	