

CENTRE OF TESTING SERVICE INTERNATIONAL

OPERATE ACCORDING TO ISO/IEC 17025

FCC ID/IC TEST REPORT

TEST REPORT NUMBER: CGZ3140728-00824-EFI



CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China





TEST REPORT For FCC ID/IC RSS-210 Issue 8 47 CFR PART 15 OCT, 2013 Report Reference No. CGZ3140728-00824-EFI Testing Laboratory Name CENTRE OF TESTING SERVICE CO., LTD. Address...... A101,No.65,Zhuji Highway,Tianhe District,Guangzhou, China Testing location/ procedure Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method \square Applicant's name Rigado LLC Test specification Standard RSS-210 Issue 8,RSS-Gen Issue 3 47 CFR PART 15 OCT, 2013 Test Report Form No. CTSEMC-1.0 TRF Originator CENTRE OF TESTING SERVICE CO., LTD. Master TRF...... Dated 2009-01 CENTRE OF TESTING SERVICE CO., LTD. All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the CENTRE OF TESTING SERVICE CO., LTD is acknowledged as copyright owner and source of the material. CENTRE OF TESTING SERVICE CO., LTD takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. Test item description.....: BMD-200 Trade Mark..... Rigado Manufacturer...... Rigado, LLC Model/Type reference...... BMD-200 Ratings...... DC 3.3V Operating Frequency...... 2402.0MHz ~2480.0MHz

Compiled by:

Result Positive

Supervised by:

Approved by:

Kate zhang / Fileadministrators

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Vincent yao / Manager

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FCC ID/IC -- TEST REPORT

Test Report No. : CGZ3140728-00824-EFI 30 July 2014 Date of issue

Type / Model	BMD-200
EUT.	DMD 000
EUT	BMD-200
Applicant	Rigado, LLC
Address	2601 25 th St SE, Suite 200, Salem, OR 97302 USA
Telephone	+001-971-208-9857
Fax	+001-971-208-9869
Contact	Cam Nichols
Manufacturer	Rigado, LLC
Address	2601 25 th St SE, Suite 200, Salem, OR 97302 USA
Telephone	+001-971-208-9857
Fax	+001-971-208-9869
Contact	Cam Nichols
Test report holder	Rigado, LLC
Address	2601 25 th St SE, Suite 200, Salem, OR 97302 USA
Telephone	+001-971-208-9857
Fax	+001-971-208-9869
Contact	Cam Nichols

Test Result according to the standards on page 1: PASSED

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1.TEST STANDARDS

The tests were performed according to following standards:

- RSS-210 Issue 8
- RSS-Gen Issue 3
- 47 CFR PART 15 OCT, 2013
- ANSI C63.4-2009

2.SUMMARY

2.1 GENERAL REMARKS

Date of receipt of test sample	28 July 2014
Testing commenced on	28~29 July 2014
Testing concluded on	30 July 2014

2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

- fulfilled.
- \Box - not fulfilled.

The equipment under test

- fulfils the FCC& IC requirements cited on page 1.
- does not fulfil the FCC & IC requirements cited on page 1.

3.EQUIPMENT UNDER TEST

3.1 Power supply system utilised

■ DC 3.3V by jig Power supply voltage :

3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

- □ Standby
- ☐ TX- Y position
- ☐ TX- Zposition
- TX- X position

Operation mode 1:TX-X Position Low (2402MHz), TX-X Position Middle (2440MHz),

TX-X Position High (2480MHz)

Note:Operation mode 1 TX -X position of EUT is the radiated test worst case; so only these test results be recorded in the test report.

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3.4 EUT configuration

3.4.1. Description of configuration (EUT)

Description	:	BMD-200
Model Number	:	BMD-200
Operation frequency	:	2402~ 2480 MHz ISM Band
Radio Technology	:	V4.0
Modulation Technology	:	GFSK modulation
Antenna	:	Chip antenna, met requirement of FCC 15.203

3.4.2. Tested Supporting System Details

N/A

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4.TEST ENVIRONMENT

4.1 Address of the test laboratory

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on May 22, 2014.

FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

4.4 Definitions of symbols used in this test report

- The black square indicates that the listed condition, standard or equipment is applicable for this report.
- The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

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4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
	30MHz~300MHz	±3.14dB	(1)
Radiation emission (3m)	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

^{(1).} This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5. Summary of standards and results

5.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	Standard	Results	
Conducted Emission Test	RSS-Gen:7.2.4 FCC Part 15 : 15.207 ANSI C63.4-2009	N/A	
Radiated Emission Test	RSS-Gen:7.2 RSS-210 A2.9 FCC Part 15 : 209 ANSI C63.4-2009	PASSED	
Receiver Spurious Emissions	RSS-Gen Issue 3:4.10 ANSI C63.4-2009	PASSED	
Band Edge Compliance Test	RSS-210 Annex 8 FCC Part 15 C: 15.249 ANSI C63.4-2009	PASSED	
99% Bandwidth	RSS-210 Annex 8 RSS-Gen 4.6.1	PASSED	
N/A is an abbreviation for Not Applicable.			

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6. Power Line Conducted Emission Test

6.1.Test Equipment

Conduc	ted Disturbance				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2013/11
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2013/11
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2013/11
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2013/11
5	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2013/11

6.2. Block Diagram of Test Setup

EUT

(EUT: BMD-200)

6.3. Power Line Conducted Emission Test Limits

Standard:RSS-Gen:7.2.4, FCC Part 15: 15.207, ANSI C63.4-2009

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

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

6.4.Test Procedure

The XBOX Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

6.5. Power Line Conducted Emission Test Results

N/A

The EUT power supply by battery, Not applicable.

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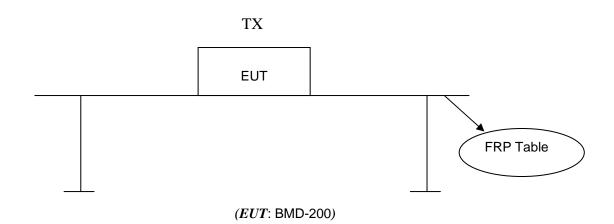
7. Radiated disturbance (electric field)

7.1.Test Equipment

Radia	Radiated disturbance (electric field)				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2013/11
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2014/03
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2014/03
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2014/03
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2013/11

7.2.Block Diagram of Test Setup

7.2.1 Block Diagram of connection between EUT and simulators



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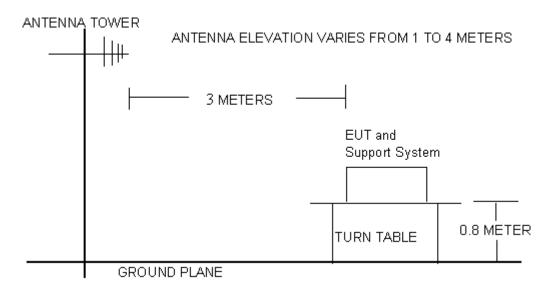
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7.2.2 Anechoic Chamber Setup Diagram



7.3. Radiated Emission Limit:

Standard: RSS-Gen: 7.2; RSS-210 A2.9; FCC 15.249, FCC 15.209.

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (µV/m)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

FRE	QUEN	CY	DISTANCE	FIELD STRENGTHS LIMIT	
I	MHz		Meters	μV/m	dB(μV)/m
0.009	~	0.490	300	2400/F(kHz)	
0.490	~	1.705	30	24000/F(kHz)	
1.705	~	30	30	30	
30	~	88	3	100	40.0
88	~	216	3	150	43.5
216	~	960	3	200	46.0
960	~	1000	3	500	54.0
٨٨	oove 10	200	3	Other:74.0 dB(µ	ιV)/m (Peak)
At	Jove II	JUU	3	54.0 dB(μV)/m	

Remark:

- (1) Emission level $dB\mu V = 20 log Emission level <math>\mu V/m$
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

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7.4.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009on radiated emission Test.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz and a Peak and Average detector with 2MHz RBW above 1GHz,

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz and a Peak detector with1MHz VBW above 1GHz, A average detector with 10Hz VBW above 1GHz

Pretest x, y, z position of EUT, final, select the worst case x position test and record the test results in the report.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on section 7.5

7.5. Radiated Emission Test Results

PASSED.

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

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Test Mode: TX −X Position Mode Result: ■ - passed □ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
Rem	Remark: The test result reading value is to low, margin all > 10dB of the limit.							

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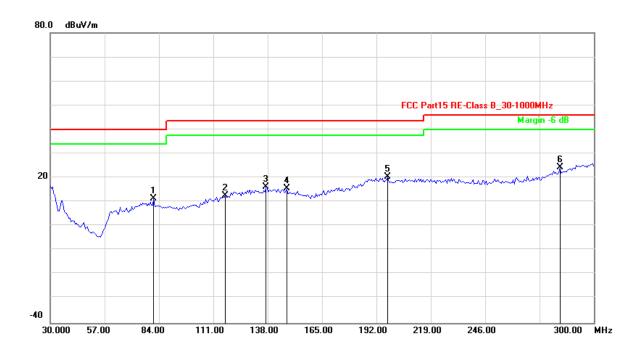
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Channel:	TX –X Position	Result:	■ - passed
Test point:	Horizontal		☐ - not passed
Frequency range:	30MHz-1GHz		

EUT	BMD-200
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	28~29 July 2014
Operator	Duke
MODEL NO	BMD-200



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	81.4028	-21.72	33.10	11.38	40.00	-28.62	QP			
2	117.1142	-18.83	31.63	12.80	43.50	-30.70	QP			
3	137.1343	-16.57	32.92	16.35	43.50	-27.15	QP			
4	147.4148	-17.09	32.84	15.75	43.50	-27.75	QP			
5	197.7355	-12.51	32.97	20.46	43.50	-23.04	QP			
6	283.2265	-8.61	32.85	24.24	46.00	-21.76	QP			
Remark:	Remark: Other frequency mini margin all >6 dB of Limit									

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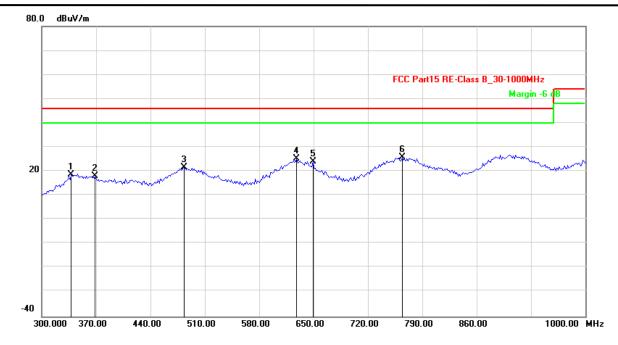
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	337.8758	-13.63	32.19	18.56	46.00	-27.44	QP
2	368.7375	-14.31	32.41	18.10	46.00	-27.90	QP
3	483.7675	-9.78	31.55	21.77	46.00	-24.23	QP
4	628.2565	-7.29	32.63	25.34	46.00	-20.66	QP
5	649.2986	-9.12	33.10	23.98	46.00	-22.02	QP
6	764.3287	-5.59	31.32	25.73	46.00	-20.27	QP
Remark	: Other frequen	cy mini ma	rgin all >6 dB	of Limit			





Channel:	TX –X Position Low CH	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2402.00	2.81	89.35	92.16	114.00	-21.84	Peak
2	2402.00	2.81	86.25	89.06	94.00	-4.94	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	1374.749	-2.47	42.91	40.44	74.00	-33.56	peak			
2	1374.749	-2.47	30.09	27.62	54.00	-26.38	AVG			
3	1947.896	-1.17	44.18	43.01	74.00	-30.99	peak			
4	1947.896	-1.17	29.18	28.01	54.00	-25.99	AVG			
5	9090.180	22.19	39.01	61.20	74.00	-12.80	peak			
6	9090.180	22.19	22.38	44.57	54.00	-9.43	AVG			
Remark:	Remark: Other frequency mini margin all >6 dB of Limit									

Channel:	TX –X Position Middle CH	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2440.00	3.18	90.83	94.01	114.00	-19.99	Peak
2	2440.00	3.18	87.19	90.37	94.00	-3.63	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2631.263	4.51	43.89	48.40	74.00	-25.60	peak
2	2631.263	4.51	35.72	40.23	54.00	-13.77	AVG
3	4130.261	10.12	39.75	49.87	74.00	-24.13	peak
4	4130.261	10.12	22.44	32.56	54.00	-21.44	AVG
5	8715.431	21.21	39.96	61.17	74.00	-12.83	peak
6	8715.431	21.21	22.18	43.39	54.00	-10.61	AVG
Remark	: Other frequen	cv mini ma	rgin all >6 dB	of Limit			

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Channel: TX –X Position High CH
Test point: Horizontal
Frequency range: 1GHz-26.5GHz

Result: ■ - passed
□ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2480.00	3.57	91.21	94.78	114.00	-19.22	Peak
2	2480.00	3.57	87.95	91.52	94.00	-2.48	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1947.896	-1.17	45.01	43.84	74.00	-30.16	peak		
2	1947.896	-1.17	30.06	28.89	54.00	-25.11	AVG		
3	5607.214	14.12	40.51	54.63	74.00	-19.37	peak		
4	5607.214	14.12	25.80	39.92	54.00	-14.08	AVG		
5	10831.663	25.31	39.40	64.71	74.00	-9.29	peak		
6	10831.663	25.31	16.80	42.11	54.00	-11.89	AVG		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

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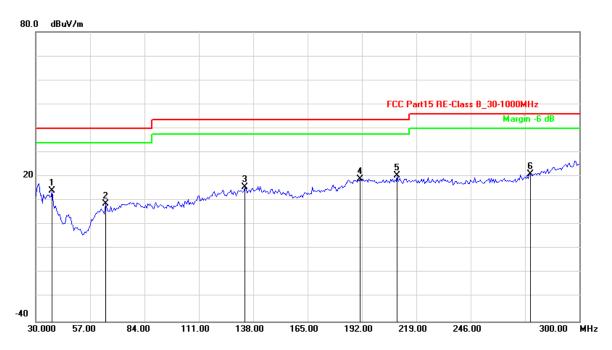
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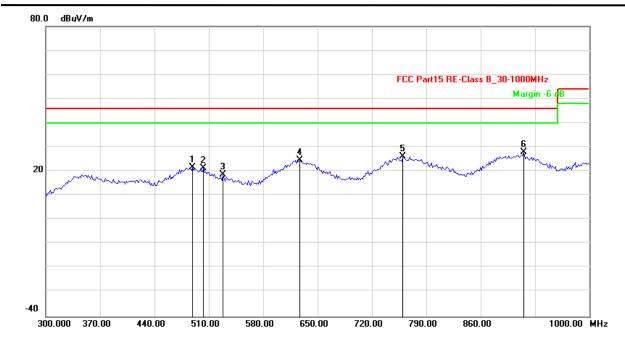




No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	38.1162	-24.88	38.98	14.10	40.00	-25.90	QP		
2	64.6293	-23.85	32.56	8.71	40.00	-31.29	QP		
3	133.8878	-16.80	32.49	15.69	43.50	-27.81	QP		
4	191.2425	-12.09	30.97	18.88	43.50	-24.62	QP		
5	209.6393	-12.08	32.42	20.34	43.50	-23.16	QP		
6	275.6513	-10.39	31.57	21.18	46.00	-24.82	QP		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	489.3788	-9.92	31.65	21.73	46.00	-24.27	QP		
2	503.4068	-10.68	32.12	21.44	46.00	-24.56	QP		
3	528.6573	-13.74	32.27	18.53	46.00	-27.47	QP		
4	626.8537	-7.26	31.85	24.59	46.00	-21.41	QP		
5	760.1202	-5.49	31.56	26.07	46.00	-19.93	QP		
6	915.8317	-4.39	32.39	28.00	46.00	-18.00	QP		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								





Channel:	TX –X Position Low CH	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2402.00	2.81	84.13	86.94	114.00	-27.06	Peak
2	2402.00	2.81	80.68	83.49	94.00	-10.51	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	2873.747	5.89	43.53	49.42	74.00	-24.58	peak		
2	2873.747	5.89	25.34	31.23	54.00	-22.77	AVG		
3	3689.379	8.81	41.27	50.08	74.00	-23.92	peak		
4	3689.379	8.81	22.76	31.57	54.00	-22.43	AVG		
5	8913.828	21.77	38.62	60.39	74.00	-13.61	peak		
6	8913.828	21.77	20.25	42.02	54.00	-11.98	AVG		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Channel:	TX –X Position Middle CH	Result:	■ - passed
Test point:	Vertical		☐ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2440.00	3.18	81.50	84.68	114.00	-29.32	Peak
2	2440.00	3.18	78.05	81.23	94.00	-12.77	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3028.056	6.69	43.19	49.88	74.00	-24.12	peak		
2	3028.056	6.69	27.15	33.84	54.00	-20.16	AVG		
3	6070.140	15.55	41.91	57.46	74.00	-16.54	peak		
4	6070.140	15.55	25.04	40.59	54.00	-13.41	AVG		
5	8715.431	21.21	39.71	60.92	74.00	-13.08	peak		
6	8715.431	21.21	21.06	42.27	54.00	-11.73	AVG		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

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Channel:	TX –X Position High CH	Result:	■ - passed
Test point:	Vertical		☐ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2480.00	3.57	80.12	83.69	114.00	-30.31	Peak
2	2480.00	3.57	75.43	79.00	94.00	-15.00	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	2829.659	5.64	44.02	49.66	74.00	-24.34	peak	
2	2829.659	5.64	26.58	32.22	54.00	-21.78	AVG	
3	4306.613	10.53	39.31	49.84	74.00	-24.16	peak	
4	4306.613	10.53	22.73	33.26	54.00	-20.74	AVG	
5	10456.914	24.73	39.65	64.38	74.00	-9.62	peak	
6	10456.914	24.73	18.85	43.58	54.00	-10.42	AVG	
Remark:	Remark: Other frequency mini margin all >6 dB of Limit							

Note:Level=Reading+Factor. Margin=Level-Limit.

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8 Receiver Spurious Emission

8.1 LIMIT

According to RSS-Gen Issue 3:4.10.Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FRI	EQUEN	CY	DISTANCE	FIELD STRENGTHS LIMIT	
	MHz		Meters	μV/m	dB(μV)/m
30	~	88	3	100	40.0
88	~	216	3	150	43.5
216	~	960	3	200	46.0
960	~	1000	3	500	54.0
А	bove 10	000	3	Other:74.0 dB(μ' 54.0 dB(μV)/m	

8.2 TEST EQUIPMENT

Radia	Radiated disturbance (electric field)									
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.					
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2013/11					
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2014/03					
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2014/03					
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2014/03					
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03					
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2013/11					
7	EMI Test Software	EZ-EMC	Farad	N/A	N/A					

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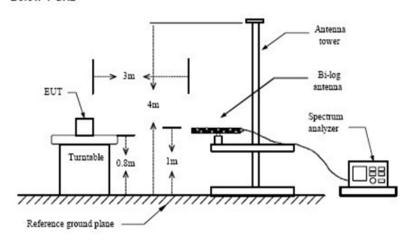
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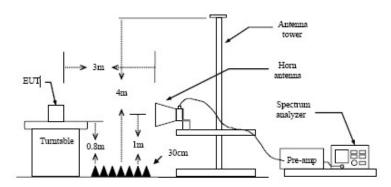


8.3 TEST CONFIGURATION

Below 1 GHz



Above 1 GHz



8.4 TEST PROCEDURE

- 1. The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.

8.5 TEST RESULTS

The frequency range from 30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

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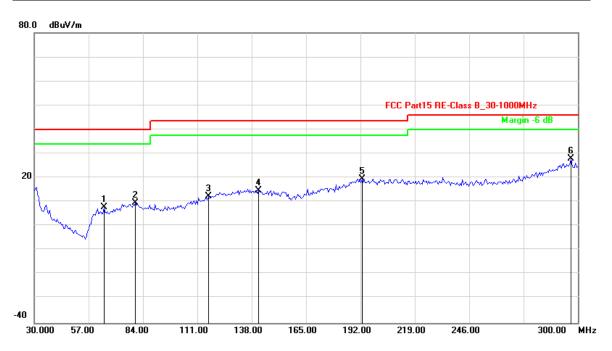
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EUT	BMD-200			
Test Condition	Ambient Temperature: 25°C Humidity: 56%			
Test distance	3 Meter			
Test Date:	28~29 July 2014			
Operator	Duke			
MODEL NO	BMD-200			

Channel:	RX	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	64.6293	-23.85	31.62	7.77	40.00	-32.23	QP		
2	80.3206	-21.48	31.03	9.55	40.00	-30.45	QP		
3	116.5731	-18.96	31.42	12.46	43.50	-31.04	QP		
4	141.4629	-16.52	31.32	14.80	43.50	-28.70	QP		
5	192.8657	-12.20	31.87	19.67	43.50	-23.83	QP		
6	296.7535	-6.05	33.87	27.82	46.00	-18.18	QP		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

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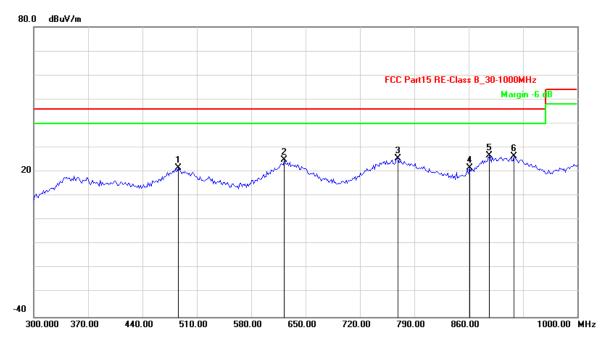
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	486.5731	-9.85	31.50	21.65	46.00	-24.35	peak
2	622.6453	-7.14	32.11	24.97	46.00	-21.03	peak
3	768.5371	-5.69	31.21	25.52	46.00	-20.48	peak
4	861.1222	-9.07	30.61	21.54	46.00	-24.46	peak
5	886.3727	-4.62	31.23	26.61	46.00	-19.39	peak
6	918.6373	-4.48	31.00	26.52	46.00	-19.48	peak
Remark	Other frequen	icy mini ma	rgin all >6 dB	of Limit			

Channel:	RX	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2895.792	6.01	42.93	48.94	74.00	-25.06	pools
ı		0.01		40.94	74.00	-25.06	peak
2	2895.792	6.01	24.98	30.99	54.00	-23.01	AVG
3	3380.762	7.82	41.91	49.73	74.00	-24.27	peak
4	3380.762	7.82	25.21	33.03	54.00	-20.97	AVG
5	4967.936	12.08	38.12	50.20	74.00	-23.80	peak
6	4967.936	12.08	20.24	32.32	54.00	-21.68	AVG
Remark:	Other frequen	cy mini ma	rgin all >6 dB	of Limit			•

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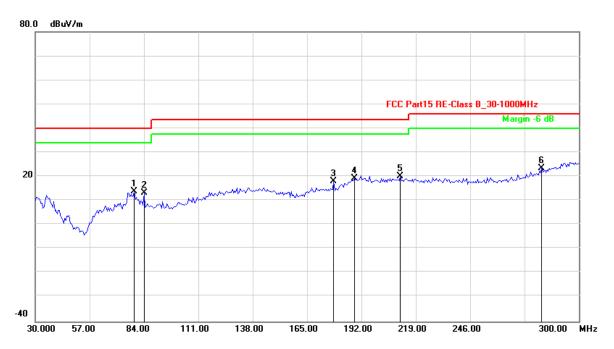
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	79.2385	-21.42	35.20	13.78	40.00	-26.22	QP
2	84.1082	-22.31	35.48	13.17	40.00	-26.83	QP
3	178.2565	-15.74	33.69	17.95	43.50	-25.55	QP
4	188.5371	-12.53	31.76	19.23	43.50	-24.27	QP
5	211.2625	-12.11	32.22	20.11	43.50	-23.39	QP
6	281.6032	-8.98	32.58	23.60	46.00	-22.40	QP
Remark:	Other frequen	cy mini ma	rgin all >6 dB	of Limit			

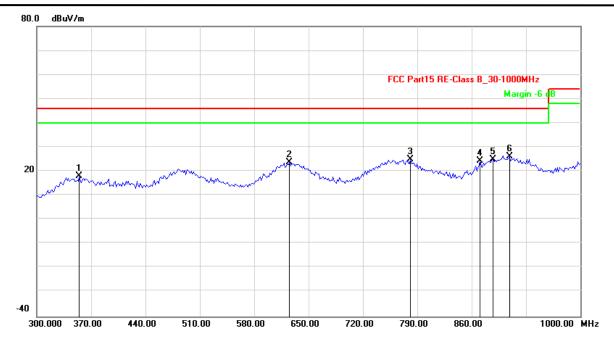
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	354.7094	-13.68	31.66	17.98	46.00	-28.02	QP		
2	625.4509	-7.22	30.89	23.67	46.00	-22.33	QP		
3	781.1623	-6.10	31.05	24.95	46.00	-21.05	QP		
4	870.9419	-6.92	31.41	24.49	46.00	-21.51	QP		
5	887.7756	-4.55	29.54	24.99	46.00	-21.01	QP		
6	908.8176	-4.18	30.31	26.13	46.00	-19.87	QP		
Remark:	Remark: Other frequency mini margin all >6 dB of Limit								

Channel:	RX	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3050.100	6.76	42.48	49.24	74.00	-24.76	peak
2	3050.100	6.76	23.95	30.71	54.00	-23.29	AVG
3	5364.729	13.33	39.57	52.90	74.00	-21.10	peak
4	5364.729	13.33	20.51	33.84	54.00	-20.16	AVG
5	6026.052	15.44	41.40	56.84	74.00	-17.16	peak
6	6026.052	15.44	22.95	38.39	54.00	-15.61	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

 $Note: Level = Reading + Factor. \qquad Margin = Level-Limit.$

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9. Band Edge Compliance test

9.1. Test Equipment

Band Edge Compliance test						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2013/11	
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2014/03	
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03	

9.2. Test Information

EUT	BMD-200
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	28~29 July 2014
Operator	Duke
MODEL NO	BMD-200

9.3. Test procedure

- 1. The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
- 2. Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.
- 3. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz; VBW=1/on time(1KHz) / Sweep=AUTO

9.4. Test Results

PASSED.

The EUT operates at hopping-off test mode. The lowest and highest channels are tested to verify the band edge emissions.

	Channel	Test	t Result Highest Emission (dBuv/m)			
Test Mode	Marked Frequency	Horizontal		Vertical		
		Peak	Average	Peak	Average	
Low Channel	2390MHz	46.94	20.88	42.29	19.21	
	2400MHz	69.95	61.70	68.01	56.92	
High Channel	2483.5MHz	55.78	51.66	46.65	39.36	
	2500MHz	32.64	19.18	27.91	18.23	

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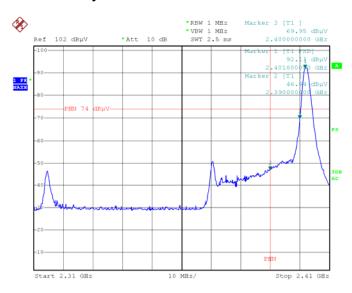
Report No.: CGZ3140728-00824-EFI Page 28 of 36





Band Edges(CH Low) Detector mode:Peak

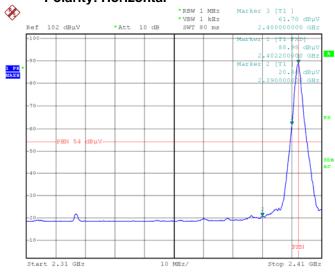
Polarity:Horizontal



Date: 29.JUL.2014 14:17:06

Band Edges(CH Low) Detector mode: Average

Polarity: Horizontal



Date: 29.JUL.2014 14:41:42

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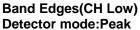
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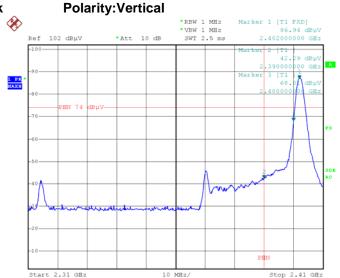
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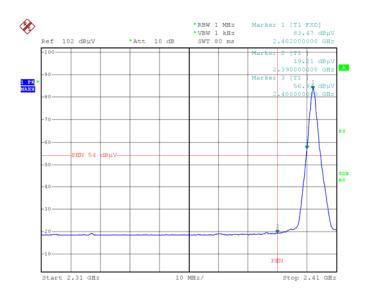




Date: 29.JUL.2014 14:21:32

Band Edges(CH Low) Detector mode:Average

Polarity:Vertical



Date: 29.JUL.2014 14:20:16

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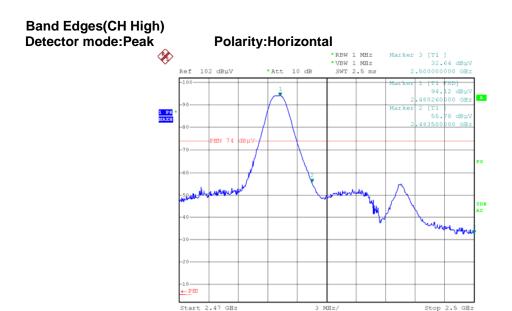
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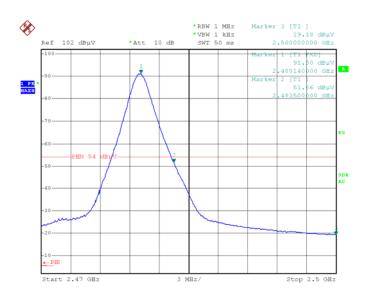




Date: 29.JUL.2014 14:24:32

Band Edges(CH High) Detector mode:Average

Polarity:Horizontal



Date: 29.JUL.2014 14:26:41

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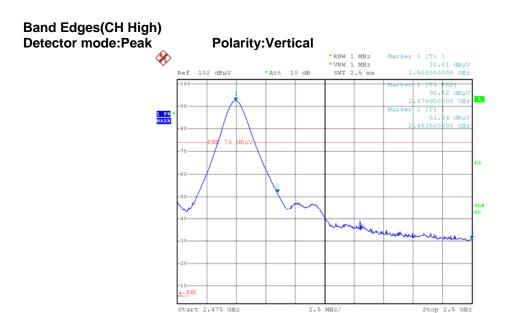
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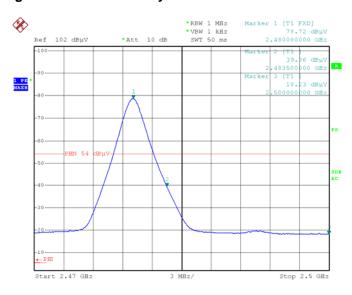




Date: 17.JUN.2014 14:32:21

Band Edges(CH High) Detector mode:Average

Polarity:Vertical



Date: 29.JUL.2014 14:28:23

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10. 99% bandwidth

10.1 Test procedure

According to RSS-210 Annex 8 and RSS-Gen 4.6.1 The Receiver output is connected to the spectrum analyzer. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual. The sweep time is coupled.

10.2. Test Equipment

Band Edge Compliance test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2014/03/30
2	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2014/03/25

10.3. Test Results

PASSED.

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	2402	1.45
Middle	2440	1.09
High	2480	1.03

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A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

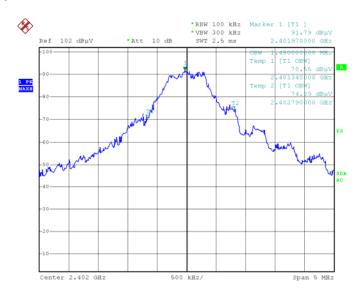
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn



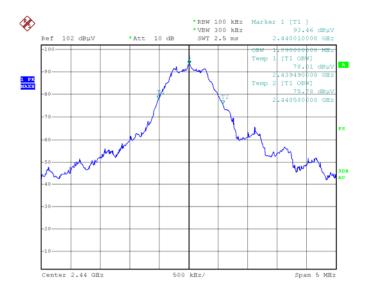


99% Bandwidth 2402MHz



Date: 29.JUL.2014 14:31:38

99% Bandwidth 2440 MHz



Date: 29.JUL.2014 14:32:43

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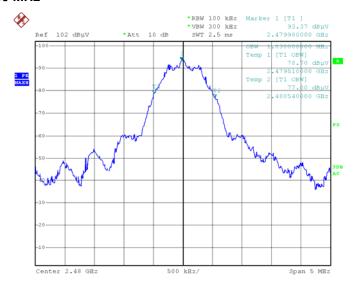
Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn





99% Bandwidth 2480 MHz



Date: 29.JUL.2014 14:30:04

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11. Deviation to test specifications

The following identical model(s):

N/A

Belong to the tested device:

Product description: **BMD-200**Model name: **BMD-200**

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