

Report No.: EH/2014/10067 **Issue Date: Mar. 04, 2014**

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ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Product Name: PDA Phone

Brand Name: Sonv

Type No.: PM-0730-BV

Model Difference: N/A

FCC ID: PY7PM-0730

Report No.: EH/2014/10067

Issue Date: Mar. 04, 2014

FCC Rule Part: §15.247, Cat: DSS

Sony Mobile Communications AB Prepared for:

Nya Vattentornet 22188 Lund/Sweden

SGS Taiwan Ltd.

Electronics & Communication Laboratory Prepared by:

No.134, Wu Kung Road, New Taipei Industrial Park,

Wuku District, New Taipei City, Taiwan 24803



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VERIFICATION OF COMPLIANCE

Applicant: Sony Mobile Communications AB

Nya Vattentornet 22188 Lund/Sweden

Product Name: PDA Phone

Brand Name: Sony

Type No.: PM-0730-BV

Model Difference: N/A

FCC ID: PY7PM-0730

File Number: EH/2014/10067

Date of test: Jan. 27, 2014 ~ Mar. 04, 2014

Date of EUT Received: Jan. 27, 2014

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2009 & ANSI C63.10:2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247. The test results of this report relate only to the tested sample identified in this report.

Test By:	Marcus Tseng	Date:	Mar. 04, 2014	
Prepared By:	Marcus Tseng/Engineer Julia Chang	Date:	Mar. 04, 2014	
Approved By:	Julia Chang / Clerk Jim Chang / Supervisor	Date:	Mar. 04, 2014	

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Revision History

Report Number	Revision	Description	Issue Date
EH/2014/10067	Rev.00	Initial creation of document	Mar. 04, 2014

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GENERAL INFORMATION

1.1. Product description

General:

General:	,			
Product Name:	PDA Phone			
Brand Name:	Sony			
Type No.:	PM-0730-	BV		
Model Difference:	N/A			
Data Cable (USB):	Type No.:	o.: EC450, Supplier: K-one AI-0700, Length: 100 cm o.: EC801, Supplier: Sony		
		AI-0401, Length: 100 cm		
Simple Hands-Free (SHF-White):	Model No. Type No.:	: MH410c, Supplier: Foster Electric AG-1100		
Simple Hands-Free (SHF-Black):		Model No.: MH410c, Supplier: Foster Electric Type No.: CCA-0004017		
Car Charger:		Model No.: AN400, Supplier: Salcomp Type No.: CAA-0003013		
Hi-Fi Wireless Headset:	Model No.: MW600, Supplier: BALDA Type No.: DDA-0002029.B coupling with Simple Hands Free (Model No.: MH755, Supplier: BALDA Type No.: AG-0502)			
Hardware Version:	A			
Software Version:	18.1.A.0.9			
	3.8Vdc			
	Battery:	Model No.: LIS1546ERPC, Supplier: Sony Type No.: N/A		
Power Supply:	Adapter:	1.Model No.: EP800, Supplier: Salcomp Type No.: CAA-0002016-US		
		2.Model No.: EP880, Supplier: Salcomp Type No.: AC-0400-US		

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Bluetooth_BR+EDR:

Bluetooth Version:	V3.0+HS
Channel number:	79 channels
Modulation type:	Frequency Hopping Spread Spectrum
Transmit Power:	10.04dBm
Frequency Range:	2.402GHz – 2.480GHz
Dwell Time:	<= 0.4s
Antenna Designation:	PIFA Antenna, Gain: -1.34dBi

Bluetooth Low Energy:

Frequency Range:	2402 – 2480MHz
Bluetooth Version:	V4.0 Dual mode
Channel number:	40 channels
Modulation type:	GFSK
Transmit Power:	1.85dBm (Peak)
Antenna Designation:	PIFA Antenna, Gain: -1.34dBi

NFC:

Operating Frequency	13.56MHz
Transmit Power	< 123dBuV/m at 3m.
Number of Channels	1
Antenna Type	Loop Antenna
Modulation Type	ASK, BPSK

Antenna Plus

Operation Frequency:	2402 – 2480MHz
Transmit Power	101.78dBuV/m at 3m.
Channel number:	79
Modulation Type:	GFSK
Antenna Designation:	PIFA Antenna, Gain: -1.34dBi

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WLAN 2.4GHz+5.7GHz:

Wi-Fi	Frequency Range	Channels	Rated Power	Modulation Technology	
11b/g	2412-2462	11	b: 20.35dBm g: 21.91dBm	DSSS, OFDM	
11n	HT20 2412-2462	11	HT20: 20.55dBm	OFDM	
11a	5725-5850	5	a: 21.15dBm		
11n (5GHz)	HT20 5725-5850	5	HT20: 20.22dBm	OFDM	
11n (5GHz)	HT40 5725-5850	2	HT40: 19.50dBm		
Antenna Designation:		PIFA Antenna, 2.4GHz Gain: -1.34dBi 5GHz Gain: 4.51dBi (5725MHz-5850MHz)			
Modulation type:		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM			
Transition Rate:		802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 b: 1/2/5.5/11 Mbps 802.11 g: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 65.0Mbps 802.11 n_40MHz: 13.5 – 135.0Mbps			

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WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg)	Modulation Technology	
11a	5150~5250	4	13.96dBm	OFDM	
	5250~5350	4	13.97dBm		
	5470~5725	8	13.99dBm		
11n	HT20 5150~5250	4	HT20: 11.49dBm	OFDM	
	HT20 5250~5350	4	HT20: 11.49dBm		
	HT20 5470~5725	8	HT20: 11.83dBm		
11n	HT40 5150~5250	2	HT40: 11.41dBm	OFDM	
	HT40 5250~5350 2 HT40: 10.45dBm				
	HT40 5470~5725 3 HT40: 10.48dBm				
Antenna Designation	PIFA Antenna, 5GHz Gain: -0.38dBi (5150MHz-5250MHz) 5GHz Gain: 0.10dBi (5250MHz-5350MHz) 5GHz Gain: 3.98dBi (5470MHz-5725MHz)				
Modulation type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM				
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 65.0Mbps 802.11 n_40MHz: 13.5 – 135.0Mbps				

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GSM / WCDMA/ LTE:

	Operating Frequency	Rated Power				
	GSM/GPRS 850, Class 33	824.2 MHz– 848.8 MHz	33dBm			
	EDGE 850, Class 33	824.2 MHz– 848.8 MHz	27dBm			
Cellular Phone	GSM/GPRS 1900, Class 33	1850.2MHz – 1909.8MHz	30dBm			
Standards Frequency	EDGE 1900, Class 33	1850.2MHz – 1909.8MHz	26dBm			
Range and Power.	5MHz BW LTE-Band 7	2502.5MHz – 2567.5MHz	23 dBm			
	10MHz BW LTE-Band 7	2505.0MHz – 2565.0MHz	23 dBm			
	15MHz BW LTE-Band 7	2507.5MHz – 2562.5MHz	23 dBm			
	20MHz BW LTE-Band 7 2510.0MHz – 2560MHz		23 dBm			
Type of Emission:	GSM 850: 250KGXW, GSM 1900: 252KGXW GPRS 850: 244KGXW, GPRS 1900: 248KGXW EDGE 850: 249KG7W, EDGE 1900: 248KG7W 5MHz BW LTE-Band 7: QPSK: 4M51G7D, 16QAM: 4M51D7W 10MHz BW LTE-Band 7: QPSK: 9M01G7D, 16QAM: 8M99D7W 15MHz BW LTE-Band 7: QPSK: 13M5G7D, 16QAM: 13M4D7W 20MHz BW LTE-Band 7: QPSK: 17M9G7D, 16QAM: 17M9D7W					
IMEI:	004402452026218					

The report applied for Bluetooth BR+EDR.

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1.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: PY7PM-0730 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules. The composite system (digital device) is compliance with FCC part 15; Subpart B is authorized under the certification procedure.

1.3. Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4:2009 and ANSI C63.10:2009. Radiated testing was performed at an antenna to EUT distance 3 meters. Tested in accordance with FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

1.4. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009. & ANSI C63.10:2009. FCC Registration Number is: 990257...

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

1.5. Special Accessories

There is no special accessory used while test was conducted.

1.6. Equipment Modifications

There was no modification incorporated into the EUT.

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SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3. Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the general criterion in Section 7.1 of ANSI C63.4:2009 & 6.2 ANSI 63.10:2009. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz, and the measurement procedure 7.3 in ANSI 63.4:2009 & 6.2.2, and 6.2.3 in ANSI 63.10:2009 is followed to carry out the test. The CISPR Quasi-Peak and Average detector mode is employed according to §15.107

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13 and of ANSI C63.4:2009, & Section 6.3, 6.4, 6.5, and 6.6 of ANSI 63.10:2009 and DA 00-705.

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2.4. Configuration of Tested System

Fig. 2-1 Radiated Emission

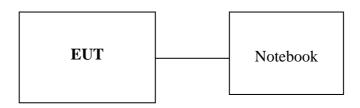


Fig. 2-2 Conducted (Antenna Port) Configuration

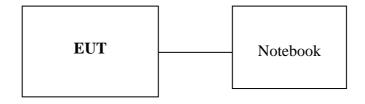


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	Bluetooth Test Software	QRCT	2.4.83.0	N/A	N/A	N/A
2.	Bluetooth Test Set	Anritsu	MT8852B	6k00006107	N/A	N/A
3.	Notebook	DELL	E5400	3704625136	N/A	N/A

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Fig. 2-3 AC Power Line Conducted Emission

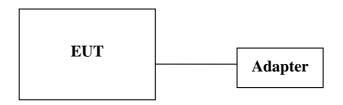


Table 2-2 Equipment Used in Tested System

Iten	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	Bluetooth Test Software	QRCT	2.4.83.0	N/A	N/A	N/A

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3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a)	AC Power Line Conducted Emission	Compliant
§15.247(b)(1)	Peak Output Power	Compliant
§15.247(a)(1)	20dB Bandwidth	Compliant
§15.247(d)	100 kHz Bandwidth Of Frequency Band Edges	Compliant
\$15.247(d) \$15.209(a) (f)	Spurious Emission	Compliant
§15.247(a)(1)	Frequency Separation	Compliant
§15.247(a)(1)(iii)	Number of hopping frequency	Compliant
§15.247(a)(1)(iii)	Time of Occupancy	Compliant
§15.203	Antenna Requirement	Compliant

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DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel Low, Mid and High with highest rated data rate were chosen as worst case for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for Bluetooth Transmitter for channel Low, Mid and High the worst case E2 position was reported.

Channel Low: channel 1 at 2402MHz Channel Mid: channel 39 at 2441MHz Channel High: channel 78 at 2480MHz

In comparison with BR and EDR mode, emission carried out by EDR is chosen as the most representative measurement to perform measurement of radiated spurious emission pursuant to Part 15C.Modulation, EDR, is selected to be performed for 100 kHz Bandwidth Band Edge, Conducted Spurious Emission, Frequency Separation, Number of hopping frequency due to its characteristics of wider bandwidth.

Data type being used to conduct the measurement: DH1/DH3/DH5 (GFSK) with 1Mbps 2DH1/2DH3/2DH5 (\prod /4 DQPSK) with 2Mbps 3DH1/3DH3/3DH5 (8DPSK) with 3Mbps

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5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty			
AC Power Line Conducted Emission	+/- 2.586 dB			
Peak Output Power	+/- 1.55 dB			
20dB Bandwidth	+/- 123.36 Hz			
100 KHz Bandwidth Of Frequency Band Edges	+/- 1.55 dB			
Frequency Separation	+/- 123.36 Hz			
Number of hopping frequency	+/- 123.36 Hz			
Time of Occupancy	+/- 123.36 Hz			
Temperature	+/- 0.8 °C			
Humidity	+/- 4.7 %			
DC / AC Power Source	DC= +/- 1%, AC= +/- 0.2%			

Radiated Spurious Emission:

Management	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
Measurement uncertainty (Polarization : Vertical)	0.417GHz-1GHz: +/- 3.19dB
(I startzation : Vertical)	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

	202 777 1 1 777 1 1 2 2 2 7		
	30MHz - 167MHz: +/- 4.22dB		
Measurement uncertainty	167MHz -500MHz: +/- 3.44dB		
(Polarization : Horizontal)	0.5GHz-1GHz: +/- 3.39dB		
	1GHz - 18GHz: +/- 4.08dB		
	18GHz - 40GHz: +/- 4.08dB		

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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CONDUCTED EMISSION TEST

6.1. Standard Applicable

According to §15.207, frequency within 150 kHz to 30MHz shall not exceed the limit table as below.

Frequency range	Limits dB(uV)		
MHz	Quasi-peak	Average	
0.15 to 0.50	66 to 56	56 to 46	
0.50 to 5	56	46	
5 to 30	60	50	

Note

6.2. Measurement Equipment Used:

Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	LAST	CAL DUE.					
TYPE		NUMBER	NUMBER	CAL.					
EMI Test Receiver	R&S	ESCI7	100760	05/27/2013	05/26/2014				
LISN	Rolf-Heine	NNB-2/16Z	99012	03/23/2013	03/22/2014				
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	03/23/2013	03/22/2014				
Coaxial Cables	N/A	WK CE Cable	N/A	11/26/2013	11/25/2014				

6.3. EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4:2009 & ANSI 63.10:2009.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
- 3. The LISN was connected with 120Vac/60Hz power source.

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^{1.} The lower limit shall apply at the transition frequencies

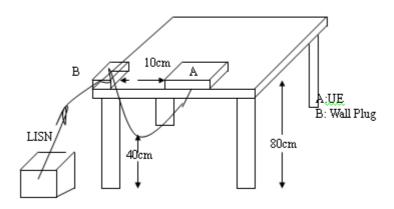
^{2.} The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.



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6.4. Test SET-UP (Block Diagram of Configuration)



6.5. Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

6.6. Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The * reveals the worst-case results that closet to the limit

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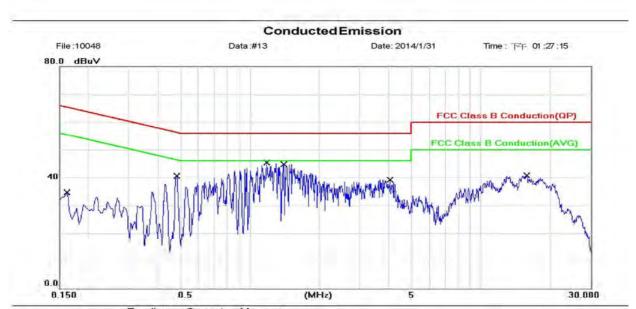
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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Operation mode			Test Date:	Jan. 31, 2014
Temperature:	26 °C	Humidity:	60 %	Test By:	Marcus
Model No.:	EP800				

Site ConductionRoom Phase: LI Temperature: AC 120V/60Hz Humidity: Limit: FCC Class B Conduction(QP) Power: Mode: Operation Mode

Note:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1620	30.50	0.16	30.66	65.36	-34.70	QP	
2		0.1620	17.80	0.16	17.96	55.36	-37.40	AVG	
3		0.4860	39.00	0.16	39.16	56.24	-17.08	QΡ	
4		0.4860	28.70	0.16	28.86	46.24	-17.38	AVG	
5	*	1.1900	39.60	0.17	39.77	56.00	-16.23	QP	
6		1.1900	28.10	0.17	28.27	46.00	-17.73	AVG	
7		1.4060	38.00	0.18	38.18	56.00	-17.82	QР	
8		1.4060	24.50	0.18	24.68	46.00	-21.32	AVG	
9		4.0500	32.60	0.24	32.84	56.00	-23.16	QP	
10		4.0500	21.00	0.24	21.24	46.00	-24.76	AVG	
11		15.8340	36.50	0.39	36.89	60.00	-23.11	QP	
12		15.8340	25.10	0.39	25.49	50.00	-24.51	AVG	

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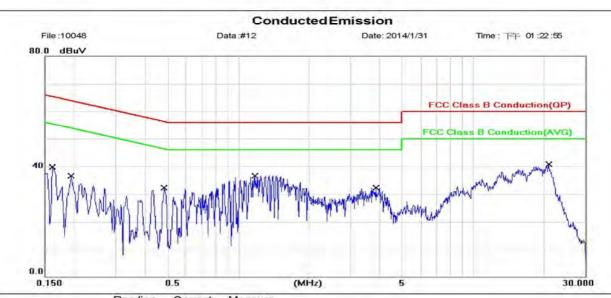
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Temperature: Site ConductionRoom Phase: N AC 120V/60Hz Humidity: Limit: FCC Class B Conduction(QP) Power:

Mode: Operation Mode

Note:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1620	36.30	0.18	36.48	65.36	-28.88	QP.	
2		0.1620	18.10	0.18	18.28	55.36	-37.08	AVG	
3		0.1940	31.60	0.19	31.79	63.86	-32.07	QP	
4		0.1940	16.00	0.19	16.19	53.86	-37.67	AVG	
5		0.4820	31.10	0.19	31.29	56.30	-25.01	QP	
6	*	0.4820	24.70	0.19	24.89	46.30	-21.41	AVG	
7		1.1780	30.70	0.21	30.91	56.00	-25.09	QР	
8		1.1780	18.40	0.21	18.61	46.00	-27.39	AVG	
9		3.8540	26.00	0.29	26.29	56.00	-29.71	QP	
10		3.8540	6.50	0.29	6.79	46.00	-39.21	AVG	
11		20.9340	33.50	0.53	34.03	60.00	-25.97	QР	
12		20.9340	15.80	0.53	16.33	50.00	-33.67	AVG	

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Temperature:

Humidity:

26 C

60%

Operation Mode:	Operation mode			Test Date:	Feb. 12, 2014
Temperature:	26 ℃	Humidity:	60 %	Test By:	Marcus
Model No.:	EP880				

Phase:

Power:

L1

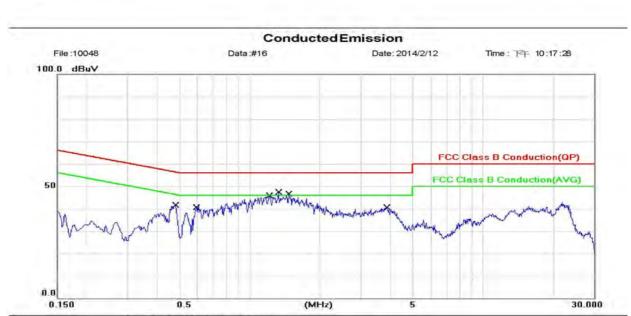
AC 120V/60Hz

Site ConductionRoom

Limit: FCC Class B Conduction(QP)

Mode: Operation Mode

Note:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	αB	Detector	Comment
1		0.4780	39.00	0.16	39.16	56.37	-17.21	QР	
2		0.4780	29.20	0.16	29.36	46.37	-17.01	AVG	
3		0.5913	36.10	0.16	36.26	56.00	-19.74	QР	
4		0.5913	25.90	0.16	26.06	46.00	-19.94	AVG	
5		1.2226	41.30	0.17	41.47	56.00	-14.53	QР	
6		1.2226	30.20	0.17	30.37	46.00	-15.63	AVG	
7	*	1.3373	41.30	0.18	41.48	56.00	-14.52	QР	
8		1.3373	30.70	0.18	30.88	46.00	-15.12	AVG	
9		1.4827	41.10	0.18	41.28	56.00	-14.72	QP	
10		1.4827	28.80	0.18	28.98	46.00	-17.02	AVG	
11		3.8820	34.10	0.24	34.34	56.00	-21.66	QР	
12		3.8820	22.90	0.24	23.14	46.00	-22.86	AVG	

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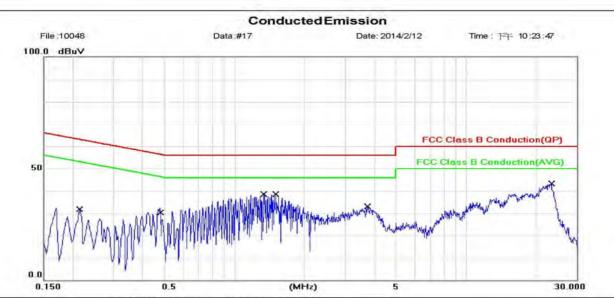
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Temperature: 26 T Site ConductionRoom Phase: Limit: FCC Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 60%

Mode: Operation Mode

Note:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2134	26.80	0.19	26.99	63.07	-36.08	QP	
2		0.2134	18.00	0.19	18.19	53.07	-34.88	AVG	
3		0.4833	31.70	0.19	31.89	56.28	-24.39	QP	
4		0.4833	21.40	0.19	21.59	46.28	-24.69	AVG	
5	*	1.3413	34.80	0.21	35.01	56.00	-20.99	QP	
6		1.3413	21.80	0.21	22.01	46.00	-23.99	AVG	
7		1.5015	34.60	0.23	34.83	56.00	-21.17	QP	
8		1.5015	22.20	0.23	22.43	46.00	-23.57	AVG	
9		3.7420	27.30	0.28	27.58	56.00	-28.42	QP	
10		3.7420	16.40	0.28	16.68	46.00	-29.32	AVG	
11		23.3660	34.70	0.55	35.25	60.00	-24.75	QP	
12		23.3660	19.00	0.55	19.55	50.00	-30.45	AVG	

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PEAK OUTPUT POWER MEASUREMENT

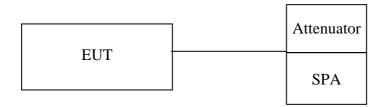
7.1. Standard Applicable

According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels, The Limit: 1Watt. For all other frequency hopping systems in the 2400 – 2483.5MHz band: The Limit: 0.125 Watts.

7.2. Measurement Equipment Used

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
Power Meter	Anritsu	ML2495A	1005007	01/13/2014	01/12/2015	
Power Sensor	Anritsu	MA2411B	917032	01/13/2014	01/12/2015	
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014	
Spectrum Analyzer	Agilent	E4440A	MY45304525	03/15/2013	03/14/2014	
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014	
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/03/2014	01/02/2015	
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014	
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014	

7.3. Test Set-up:



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7.4. Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter or spectrum. (Max Hold, Detector = Peak, RBW >= 20dB bandwidth)
- 3. Record the max. reading.
- 4. Repeat above procedures until all default test channel is completed.

NOTE: cable loss as 4dB that offsets in the spectrum

7.5. Measurement Result

1M BR mode:

Frequency (MHz)	Reading Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
2402.00	6.58	6.58	0.00455	1
2441.00	8.96	8.96	0.00787	1
2480.00	7.22	7.22	0.00527	1

2M EDR mode:

Frequency (MHz)	Reading Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
2402.00	7.47	7.47	0.00558	0.125
2441.00	9.83	9.83	0.00962	0.125
2480.00	8.05	8.05	0.00638	0.125

3M EDR mode:

Frequency (MHz)	Reading Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
2402.00	7.68	7.68	0.00586	0.125
2441.00	10.04	10.04	0.01009	0.125
2480.00	8.28	8.28	0.00673	0.125

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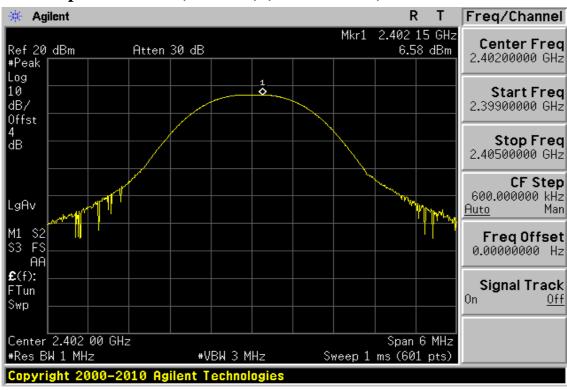
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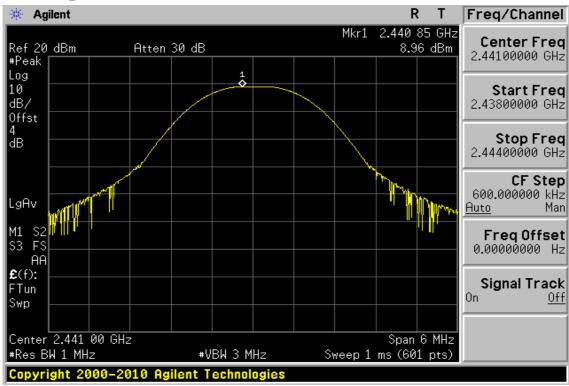
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Peak Power Output Data Plot (CH Low) (1M BR mode)



Peak Power Output Data Plot (CH Mid) (1M BR mode)



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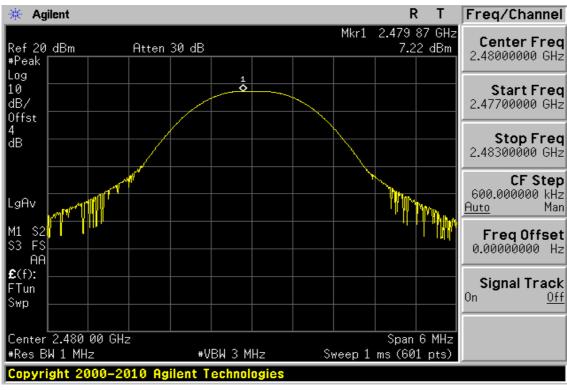
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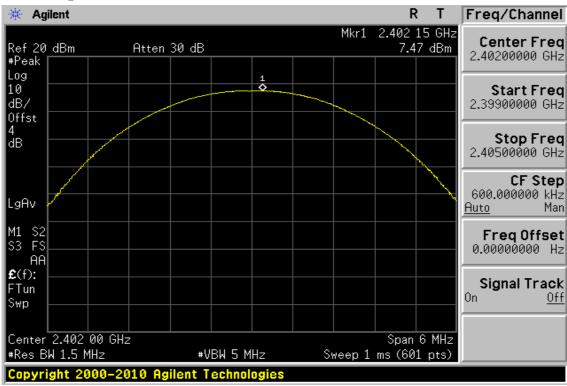
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Peak Power Output Data Plot (CH High) (1M BR mode)



Peak Power Output Data Plot (CH Low) (2M EDR mode)



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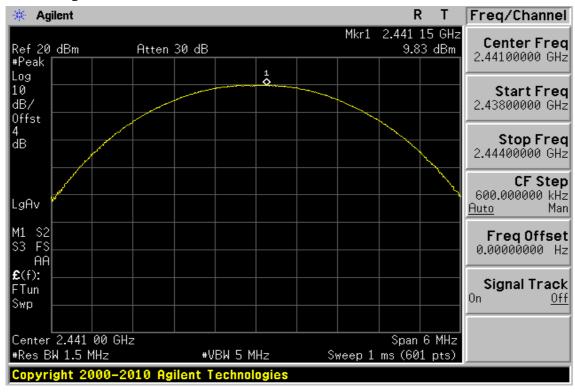
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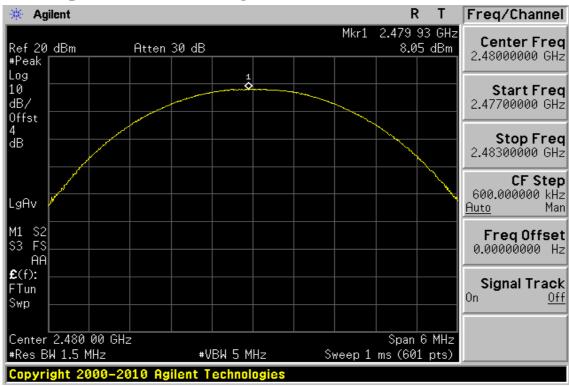
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Peak Power Output Data Plot (CH Mid) (2M EDR mode)



Peak Power Output Data Plot (CH High) (2M EDR mode)



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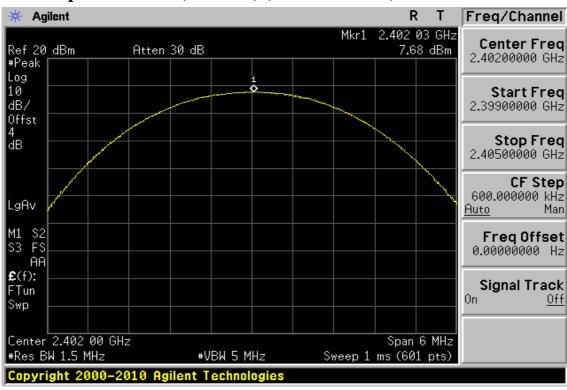
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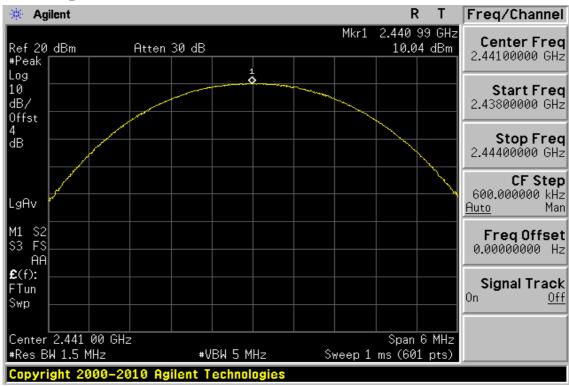
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Peak Power Output Data Plot (CH Low) (3M EDR mode)



Peak Power Output Data Plot (CH Mid) (3M EDR mode)



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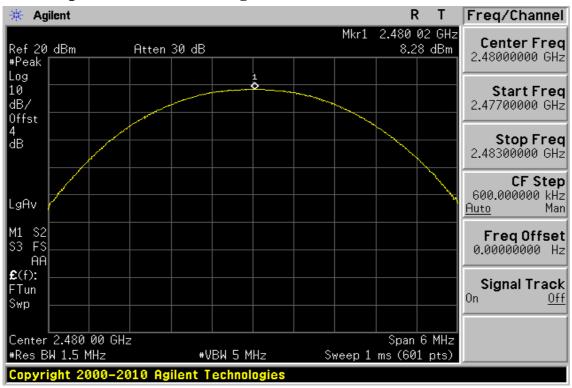
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Peak Power Output Data Plot (CH High) (3M EDR mode)



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8. 20dB BANDWIDTH

8.1. Standard Applicable

For 20dB Bandwidth

According to §15.247(a)(1) and RSS210 A8.1(b), for frequency hopping systems operating in the 2400MHz-2483.5 MHz no limit for 20dB bandwidth.

8.2. Measurement Equipment Used

Conducted Emission Test Site						
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.	
TYPE		NUMBER	NUMBER	CAL.		
Power Meter	Anritsu	ML2495A	1005007	01/13/2014	01/12/2015	
Power Sensor	Anritsu	MA2411B	917032	01/13/2014	01/12/2015	
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014	
Spectrum Analyzer	Agilent	E4440A	MY45304525	03/15/2013	03/14/2014	
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014	
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/03/2014	01/02/2015	
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014	
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014	

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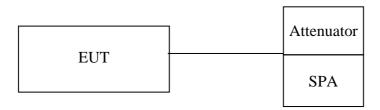
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8.3. Test Set-up



8.4. Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW=10 kHz (1 % of 20 dB Bandwidth.), VBW = 30 kHz, Span= 3MHz, Sweep=auto, Detector = Peak, and Max hold for 20dB Bandwidth test.
- 4. Mark the peak frequency and –20dB (upper and lower) frequency
- 5. Repeat above procedures until all test default channel is completed

NOTE: cable loss as 4dB that offsets in the spectrum

NOTE2: For the plot of bandwidth measurement, the marker of the 20dB BW is arrow-mark

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8.5. Measurement Result:

1M BR mode:

СН	Bandwidth
	(MHz)
Low	0.926
Mid	0.926
High	0.922

2M EDR mode:

СН	Bandwidth	2/3 Bandwidth
	(MHz)	(MHz)
Low	1.312	0.859
Mid	1.314	0.859
High	1.314	0.860

3M EDR mode:

СН	Bandwidth	2/3 Bandwidth
	(MHz)	(MHz)
Lower	1.278	0.847
Mid	1.342	0.847
High	1.317	0.848

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20dB Band Width Test Data CH-Low (1M BR mode)



20dB Band Width Test Data CH-Mid (1M BR mode)



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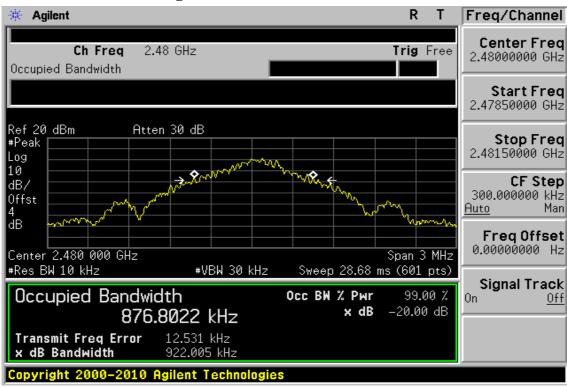
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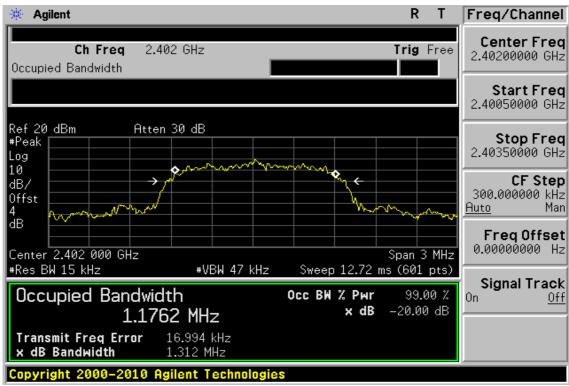
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20dB Width Test Data CH-High (1M BR mode)



20dB Band Width Test Data CH-Low (2M EDR mode)



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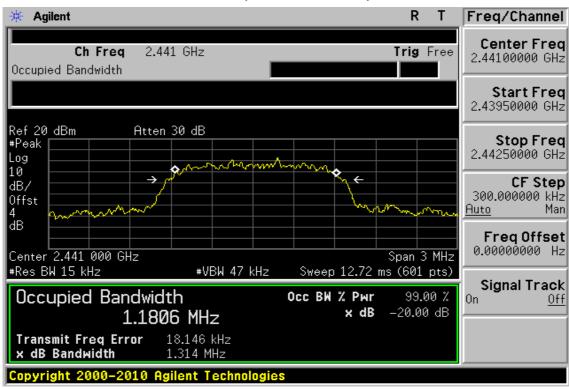
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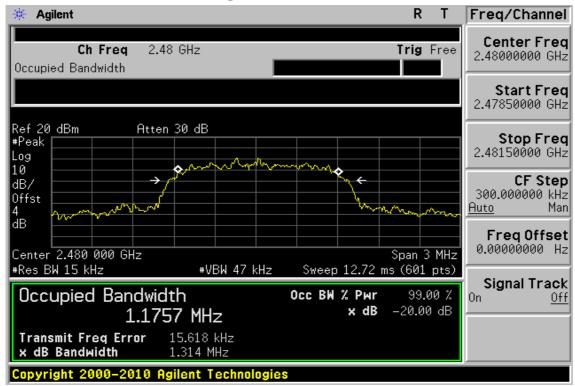
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20dB Band Width Test Data CH-Mid (2M EDR mode)



20dB Band Width Test Data CH-High (2M EDR mode)



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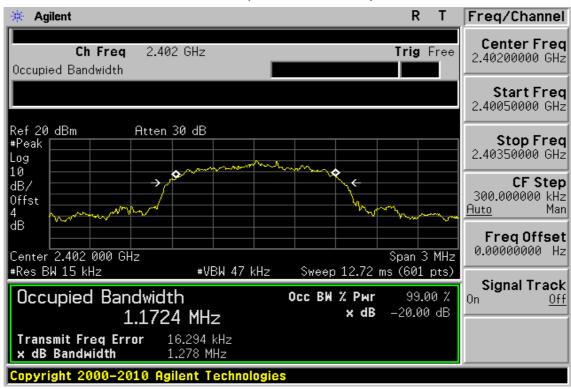
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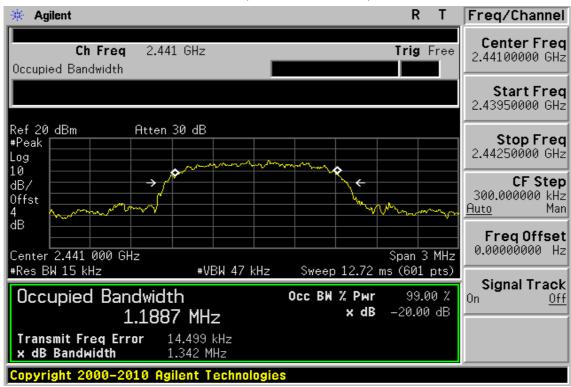
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20dB Band Width Test Data CH-Low (3M EDR mode)



20dB Band Width Test Data CH-Mid (3M EDR mode)



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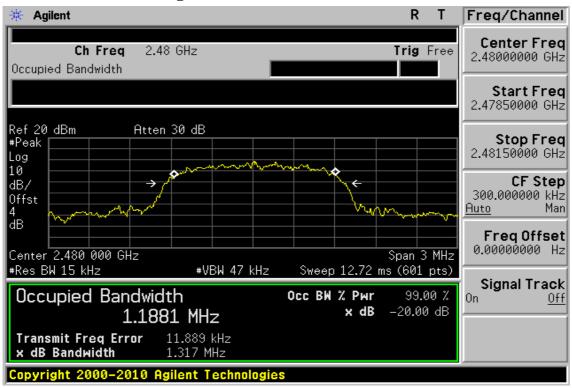
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20dB Width Test Data CH-High (3M EDR mode)



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9. BAND EDGES EMISSION MEASUREMENT

9.1. Standard Applicable

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in15.209(a).

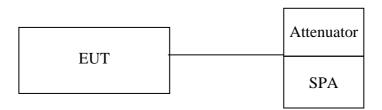
9.2. Measurement Equipment Used

9.2.1. Conducted Emission at antenna port:

Conducted Emission Test Site										
EQUIPMENT	EQUIPMENT MFR		MODEL SERIAL		CAL DUE.					
TYPE		NUMBER	NUMBER	CAL.						
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014					
Spectrum Analyzer	Agilent	E4440A	MY45304525	03/15/2013	03/14/2014					
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014					
Low Loss Cable HUBER+SUH		SUCOFLEX 104PEA	N/A	01/03/2014	01/02/2015					
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014					
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014					

9.3. Test SET-UP:

9.3.1. Conducted Emission at antenna port:



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9.4. Measurement Procedure

100 kHz BANDWIDTH OF BAND EDGES:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set center frequency of spectrum analyzer = operating frequency.
- 4. Set the spectrum analyzer as RBW, VBW=300 kHz, Sweep = auto
- 5. Mark Peak, 2.390GHz and 2.4835GHz and record the max. level.
- 6. Repeat above procedures until all frequency measured were complete.

Out-Of-Band EMISSION

- 1. To connect Antenna Port of EUT to Spectrum.
- 2. Set RBW = 100K & VBW = 300K on Spectrum.
- 3. Sweep the frequency to determine spurious emission as seen on spectrum from span of 30MHz to 3G, 3G to 8G, 8G to 13G, 13G to 18G and 18G to 26.5GHz
- 4. Via Software, combine 5 spans of frequency range into two plots containing the range of 30MHz to 3GHz, and 3GHz to 26.5GHz.

9.5. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

9.6. Measurement Result -1 Out-Of-Band EMISSION:

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

NOTE: cable loss as 4dB that offsets in the spectrum

NOTE: the occurrence of the spike on the conducted emission is the signal of the fundamental emission.

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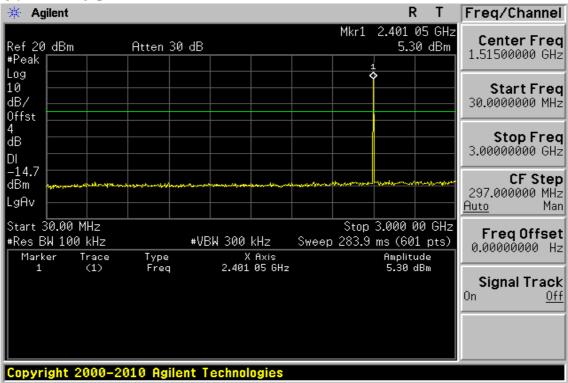


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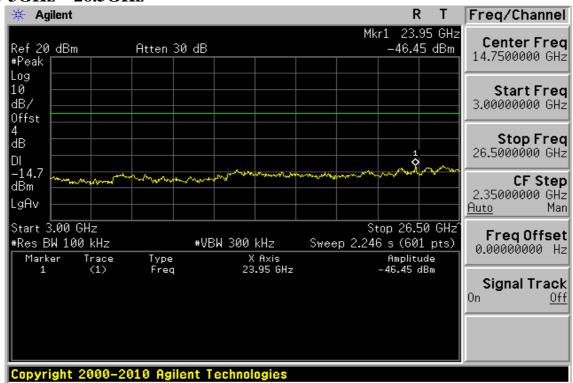
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9.7 Measurement Result -1 Conducted Spurious Emission Measurement Result (Worst: EDR mode)

Ch Low 30MHz - 3GHz



Ch Low 3GHz – 26.5GHz



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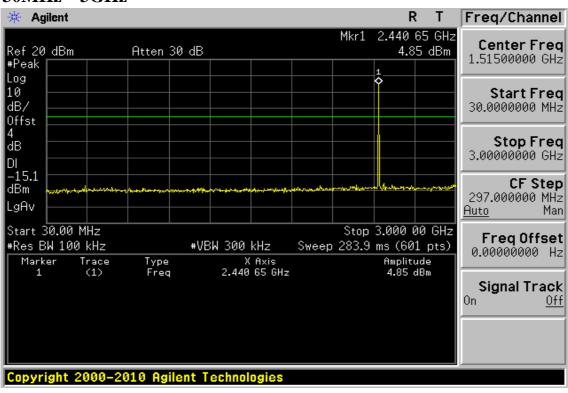
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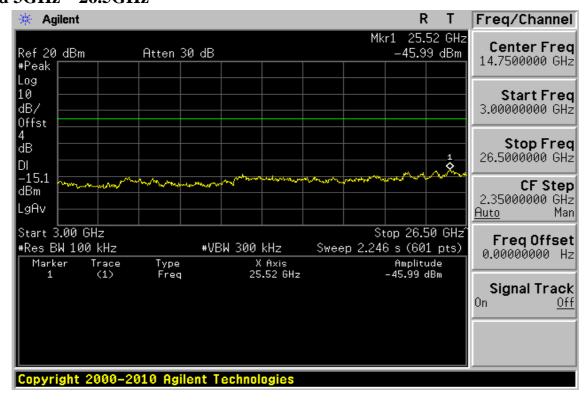
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Ch Mid 30MHz – 3GHz



Ch Mid 3GHz – 26.5GHz



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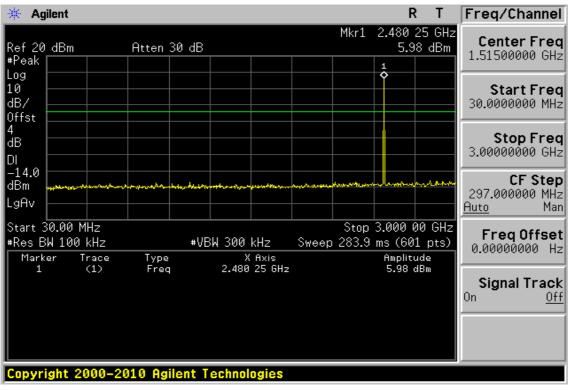
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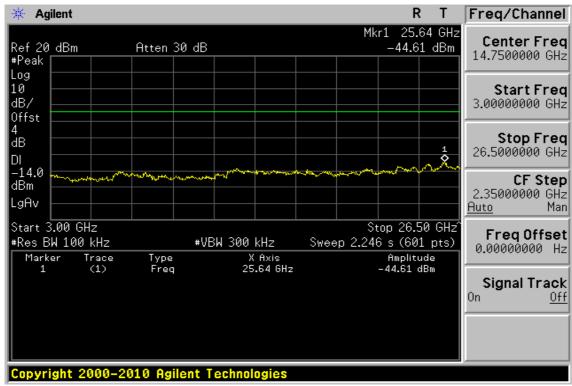
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Ch High 30MHz – 3GHz



Ch High 3GHz - 26.5GHz



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Tabular Results:

Out of Band emission at antenna terminals – Bluetooth (EDR- The Worst)

Fundamental Frequency :2412 MHz Engineer :Nick

Operation Mode :TX Low

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
2401.00	Ref	5.30		
< 30	S		-14.70	
30-1000	S		-14.70	
4824.00	Н		-14.70	
7236.00	Н		-14.70	
9648.00	Н		-14.70	
12060.00	Н		-14.70	
14472.00	Н		-14.70	
16884.00	Н		-14.70	
19296.00	Н		-14.70	
21708.00	Н		-14.70	
23950.00	S	-46.45	-14.70	31.75
24120.00	Н		-14.70	

"H": denotes Harmonic Frequency. "S": denotes Spurious Frequency. Note:

"---": denotes Noise Floor. Ref: Reference Signal

Note2: Limit = Ref (the highest emission of the fundamental) – 20dBm

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Fundamental Frequency Engineer :2441 MHz :Nick

Operation Mode :TX Mid

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
2440.65	Ref	4.85		
< 30	S		-15.10	
30-1000	S		-15.10	
4882.00	Н		-15.10	
7323.00	Н		-15.10	
9764.00	Н		-15.10	
12205.00	Н		-15.10	
14646.00	Н		-15.10	
17087.00	Н		-15.10	
19528.00	Н		-15.10	
21969.00	Н		-15.10	
24410.00	Н		-15.10	
25520.00	S	-45.99	-15.10	30.89

"H": denotes Harmonic Frequency. "S": denotes Spurious Frequency. Note:

"---": denotes Noise Floor.

Note2: Limit = Ref (the highest emission of the fundamental) – 20dBm

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Fundamental Frequency :2480 MHz Engineer :Nick

Operation Mode :TX High

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
2480.25	Ref	5.98		
< 30	S		-14.00	
30-1000	S		-14.00	
4960.00	Н		-14.00	
7440.00	Н		-14.00	
9920.00	Н		-14.00	
12400.00	Н		-14.00	
14880.00	Н		-14.00	
17360.00	Н		-14.00	
19840.00	Н		-14.00	
22320.00	Н		-14.00	
24800.00	Н		-14.00	
25640.00	S	-44.61	-14.00	30.61

"H": denotes Harmonic Frequency. "S": denotes Spurious Frequency. Note:

"---": denotes Noise Floor.

Note2: Limit = Ref (the highest emission of the fundamental) – 20dBm

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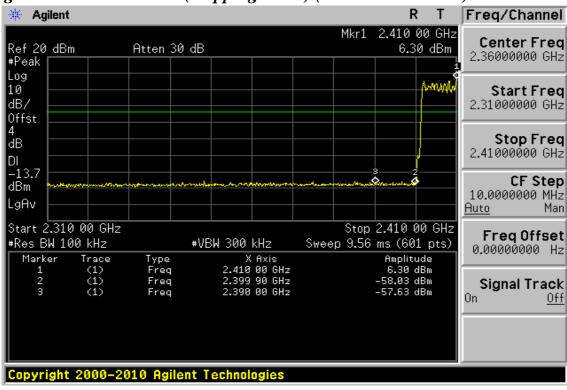
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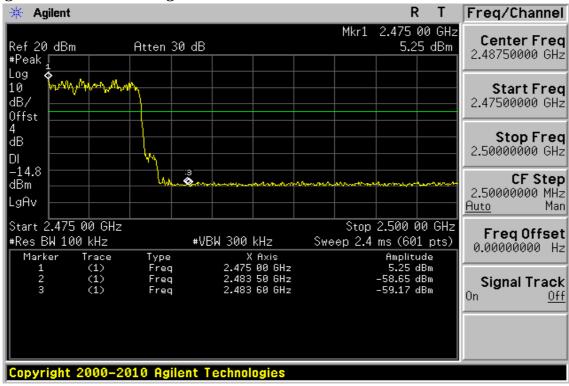
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9.7 Measurement Result -2 100 kHz BANDWIDTH OF BNAD EDGE: Band Edges Test Data CH-Low (Hopping mode) (Worst: EDR mode)



Band Edges Test Data CH-High



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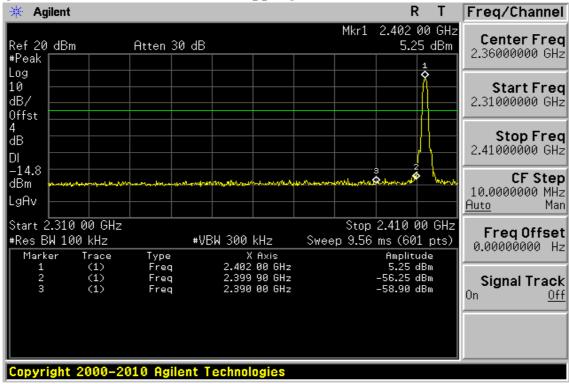
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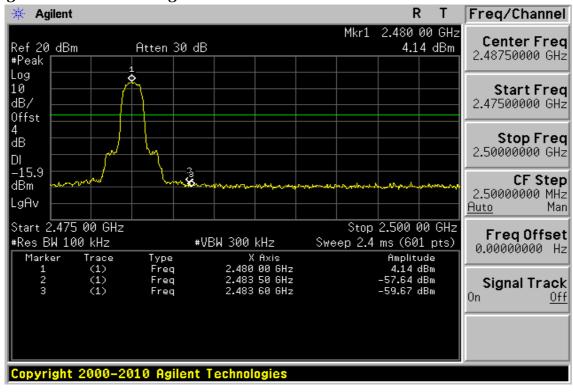
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Band Edges Test Data CH-Low (Non-Hopping mode) (Worst: EDR mode)



Band Edges Test Data CH-High



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Bluetooth EDR - The Worst

Frequency (GHz)	Results (dBm)	Ref (dBm)	Limit (dBm)	Verdict
2.3999	-56.25	5.25	-14.80	Pass
2.4835	-57.64	4.14	-15.90	Pass

Note: Limit = Ref (The highest level of emission) dBm – 20dBm

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10. SPURIOUS RADIATED EMISSION TEST

10.1. Standard Applicable

According to §15.247(d),

Emission at antenna port:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Radiated Spurious Emission

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

And according to §15.33(a) (1), for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

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10.2. Measurement Equipment Used:

10.2.1. Radiated emission:

966 Chamber										
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.					
EMI Test Receiver	R&S	ESCI7	100760	05/27/2013	05/26/2014					
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014					
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	01/20/2014	01/19/2015					
Spectrum Analyzer	R&S	FSV-30	101398	10/22/2013	10/21/2014					
Bilog Antenna	SCHWAZBECK	VULB9168	378	01/02/2014	01/02/2015					
Horn antenna	ETS.LINDGREN	3117	123995	05/31/2013	05/30/2014					
Horn Antenna	Horn Antenna Schwarzbeck		184	01/23/2014	01/22/2015					
Pre-Amplifier	Agilent	8447D	2944A07676	01/03/2014	01/02/2015					
Pre-Amplifier	Agilent	8449B	3008A00578	01/03/2014	01/02/2015					
Pre-Amplifier	EMC Instruments Corp.	EMC184045	980135	01/24/2014	01/23/2015					
Filter 2400-2483.5 MHz	EWT	EWT-14-0166	M2	02/28/2013	02/28/2014					
Attenuator	Mini-Circuit	BW-S10W2+	004	02/28/2013	02/27/2014					
Turn Table	HD	DT420	N/A	N.C.R	N.C.R					
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R					
Controller	HD	HD100	N/A	N.C.R	N.C.R					
Low Loss Cable	Huber Suhner	966_Rx	9	01/03/2014	01/02/2015					
3m Site NSA	SGS	966 chamber	N/A	07/15/2013	07/14/2014					

NOTE: N.C.R refers to Not Calibrated Required.

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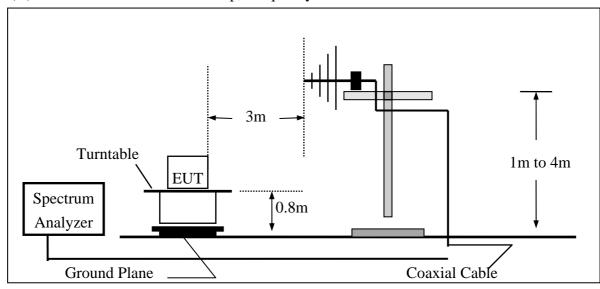
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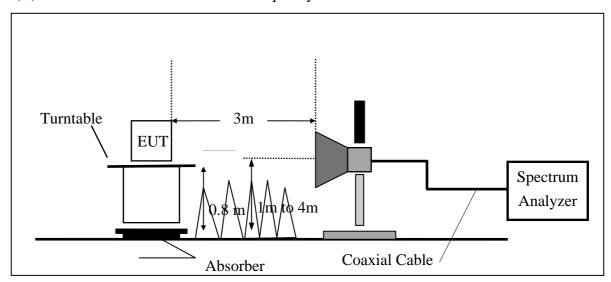
10.3. Test SET-UP:

10.3.1. Radiated emission:

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



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10.4. Measurement Procedure:

Radiated Emission:

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 4. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.
- 5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 7. Repeat above procedures until all frequency of the interest measured were complete.

Auxiliary Procedure (Setting on Spectrum to capture the reading of emission level):

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \ge 1$ GHz, 100 kHz for f < 1 GHz

 $VBW \ge RBW$

Sweep = auto

Detector function = peak

Trace = max hold

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10.5. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

Remark:

- 1. The limit of the emission level is expressed in dBuV/m, which converts 20*log(uV/m)
- 2. Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) Pre Amplifier Gain(dB)

10.6. Measurement Result:

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

Note: For measurement plot of radiation revealing the compliance of 15.209, please refer to Appendix I.

Note: For the tabular table as presents below, "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency. "E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor

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EUT Pol.

FCC ID: PY7PM-0730

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:HORIZONTAL

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10.6.1 Radiated Emission – Band Edge: (Hopping Mode) (Worst: EDR mode)

:E2 Plane

Operation Band :EDR+ Hopping Test Date :2014-02-13

Fundamental Frequency :2402 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :Band Edge LOW Engineer :Allen

EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	vel	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2390.00	E	Average	31.07	2.42	33.49	54.00	-20.51
2390.00	E	Peak	42.92	2.42	45.34	74.00	-28.66
Operation Bar Fundamental Operation Mo	Frequency	:EDR+Hopp :2402 MHz :Band Edge		Test Date Temp./Humi. Engineer		:2014-02-13 :23.3deg_C /	52 RH

Measurement Antenna Pol.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
 MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2390.00	E	Average	30.75	2.42	33.17	54.00	-20.83
2390.00	E	Peak	43.74	2.42	46.16	74.00	-27.84

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Operation Band :EDR+Hopping **Test Date** :2014-02-14

Fundamental Frequency :2480 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :Band Edge HIGH Engineer :Allen

EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol.

Freq.	Note	Detector Mode	Spectrum Reading Lev	Factor rel	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2483.50	E	Average	30.21	2.74	32.95	54.00	-21.05
2483.50	E	Peak	43.22	2.74	45.96	74.00	-28.04
Operation Band :EDR+Hpppin Fundamental Frequency :2480 MHz Operation Mode :Band Edge H EUT Pol. :E2 Plane			Test Date Temp./Humi. Engineer Measurement A	ntenna Pol.	:2014-02-14 :23.3deg_C / :Allen :HORIZON		
Freq.	Note	Detector Mode	Spectrum Reading Lev	Factor vel	Actual FS	Limit @3m	Margin

		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2483.50	Е	Average	30.18	2.74	32.92	54.00	-21.08
2483.50	E	Peak	42.80	2.74	45.54	74.00	-28.46

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10.6.2 Radiated Emission – Band Edge (Non-Hopping Mode) (Worst: EDR mode):

Operation Band :EDR Test Date :2014-02-13

Fundamental Frequency :2402 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :Band Edge LOW Engineer :Allen

EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Lev	/el	FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2390.00	E	Average	31.11	2.42	33.53	54.00	-20.47
2390.00	E	Peak	45.65	2.42	48.07	74.00	-25.93
1 2		:EDR :2402 MHz :Band Edge		Test Date Temp./Humi. Engineer		:2014-02-13 :23.3deg_C /	/52 RH

EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:HORIZONTAL
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Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2390.00	E	Average	30.77	2.42	33.19	54.00	-20.81
2390.00	E	Peak	43.66	2.42	46.08	74.00	-27.92

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Operation Band :EDR Test Date :2014-02-13

Fundamental Frequency :2480 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :Band Edge HIGH Engineer :Allen

EUT Pol. :E2 Plane :VERTICAL Measurement Antenna Pol.

Freq.	Note	Detector Mode	Spectrum Reading Lev		Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2483.50	E	Average	31.01	2.74	33.75	54.00	-20.25
2483.50	E	Peak	47.95	2.74	50.69	74.00	-23.31
Fundamental Frequency :2480 MHz Temp Operation Mode :Band Edge HIGH Engin		Test Date Temp./Humi. Engineer Measurement A	antenna Pol.	:2014-02-13 :23.3deg_C / :Allen :HORIZON			
Freq.	Note	Detector Mode	Spectrum Reading Lev		Actual FS	Limit @3m	Margin

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
2483.50	E	Average	31.03	2.74	33.77	54.00	-20.23
2483.50	E	Peak	47.06	2.74	49.80	74.00	-24.20

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10.6.2 Radiated Spurious Emission Measurement Result (worst case EDR mode)

Operation Band	:EDR	Test Date	:2014-02-14
Fundamental Frequency	:2402 MHz	Temp./Humi.	:23.3deg_C /52 RH
Operation Mode	:TX LOW	Engineer	:Allen
EUT Pol.	:E2 Plane	Measurement Antenna Pol.	:VERTICAL
T		T	71.

EUT Pol.		:E2 Plane	Me	asurement A	Antenna Pol.	:VERTICAL	
Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
31.94	S	Peak	52.62	-13.96	38.66	40.00	-1.34
99.84	S	Peak	39.93	-17.86	22.07	43.50	-21.43
288.99	S	Peak	41.86	-11.44	30.42	46.00	-15.58
480.08	S	Peak	33.10	-7.75	25.35	46.00	-20.65
672.14	S	Peak	29.45	-3.95	25.50	46.00	-20.50
797.27	S	Peak	33.29	-2.35	30.94	46.00	-15.06
1602.00	S	Average	28.32	-1.97	26.35	54.00	-27.65
1602.00	S	Peak	51.93	-1.97	49.96	74.00	-24.04
4804.00	Н	Average	25.10	6.79	31.89	54.00	-22.11
4804.00	Н	Peak	38.16	6.79	44.95	74.00	-29.05
7206.00	Н						
9608.00	Н						
12010.00	Н						
14412.00	Н						
16814.00	Н						
19216.00	Н						
21618.00	Н						
24020.00	Н						

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:EDR

Operation Band

FCC ID: PY7PM-0730

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:2014-02-14

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Fundamental Frequency :2402 MHz Temp./Humi. :23.3deg_C /52 RH Operation Mode Engineer :TX LOW :Allen EUT Pol. :E2 Plane :HORIZONTAL Measurement Antenna Pol.

Test Date

		Wedstrement / Mediate 1 of.					
Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
42.61	S	Peak	36.72	-13.25	23.47	40.00	-16.53
148.34	S	Peak	42.51	-12.86	29.65	43.50	-13.85
202.66	S	Peak	38.48	-15.18	23.30	43.50	-20.20
290.93	S	Peak	38.44	-11.41	27.03	46.00	-18.97
499.48	S	Peak	34.58	-7.54	27.04	46.00	-18.96
799.21	S	Peak	33.86	-2.31	31.55	46.00	-14.45
1595.00	S	Average	29.36	-2.03	27.33	54.00	-26.67
1595.00	S	Peak	50.21	-2.03	48.18	74.00	-25.82
4804.00	Н	Average	25.09	6.79	31.88	54.00	-22.12
4804.00	Н	Peak	36.99	6.79	43.78	74.00	-30.22
7206.00	Н						
9608.00	Н						
12010.00	Н						
14412.00	Н						
16814.00	Н						
19216.00	Н						
21618.00	Н						
24020.00	Н						

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Operation Ba Fundamental Operation Mo EUT Pol.	Frequency	:EDR :2441 MHz :TX MID :E2 Plane	Test Date Temp./Humi. Engineer Measurement Antenna Pol.			:2014-02-14 :23.3deg_C /52 RH :Allen :VERTICAL	
Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
31.94	S	Peak	52.67	-13.96	38.71	40.00	-1.29
99.84	S	Peak	39.65	-17.86	21.79	43.50	-21.71
285.11	S	Peak	40.66	-11.48	29.18	46.00	-16.82
480.08	S	Peak	32.64	-7.75	24.89	46.00	-21.11
530.52	S	Peak	33.11	-7.54	25.57	46.00	-20.43
799.21	S	Peak	34.92	-2.31	32.61	46.00	-13.39
1595.00	S	Average	30.93	-2.03	28.90	54.00	-25.10
1595.00	S	Peak	50.53	-2.03	48.50	74.00	-25.50
4882.00	Н	Average	25.08	6.96	32.04	54.00	-21.96
4882.00	Н	Peak	37.72	6.96	44.68	74.00	-29.32
7323.00	Н						
9764.00	Н						
12205.00	Н						
14646.00	Н						
17087.00	Н						
19528.00	Н						
21969.00	Н						
24410.00	Н						

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:EDR

:2441 MHz

Average

Peak

Average

Peak

Operation Band

1595.00

1595.00

4882.00

4882.00

7323.00

9764.00

12205.00

14646.00

17087.00

19528.00

21969.00

24410.00

S

S

Η

Η

Η

Η

Η

Η

Η

Η

Η

Η

Fundamental Frequency

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:2014-02-14

54.00

74.00

54.00

74.00

-26.47

-27.81

-21.99

-29.34

:23.3deg_C /52 RH

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27.53

46.19

32.01

44.66

Operation M	ode	:TX MID	Eng	gineer		:Allen	
EUT Pol.		:E2 Plane	Mea	asurement A	Antenna Pol.	:HORIZONTAL	
Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
43.58	S	Peak	37.22	-13.17	24.05	40.00	-15.95
142.52	S	Peak	40.66	-13.07	27.59	43.50	-15.91
201.69	S	Peak	38.83	-15.19	23.64	43.50	-19.86
278.32	S	Peak	41.21	-11.60	29.61	46.00	-16.39
499.48	S	Peak	34.44	-7.54	26.90	46.00	-19.10
796.30	S	Peak	30.94	-2.38	28.56	46.00	-17.44

29.56

48.22

25.05

37.70

Test Date

Temp./Humi.

-2.03

-2.03

6.96

6.96

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19840.00

22320.00

24800.00

Η

Η

Η

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Operation Ba Fundamental Operation Mo EUT Pol.	Frequency	:EDR :2480 MHz :TX HIGH :E2 Plane	Test Date Temp./Humi. Engineer Measurement Antenna Pol.			:2014-02-14 :23.3deg_C /52 RH :Allen :VERTICAL	
Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
31.94	S	Peak	52.32	-13.96	38.36	40.00	-1.64
99.84	S	Peak	39.15	-17.86	21.29	43.50	-22.21
320.03	S	Peak	39.78	-10.97	28.81	46.00	-17.19
480.08	S	Peak	34.13	-7.75	26.38	46.00	-19.62
665.35	S	Peak	31.69	-4.16	27.53	46.00	-18.47
800.18	S	Peak	37.99	-2.29	35.70	46.00	-10.30
1595.00	S	Average	30.90	-2.03	28.87	54.00	-25.13
1595.00	S	Peak	50.02	-2.03	47.99	74.00	-26.01
4960.00	Н	Average	23.90	7.09	30.99	54.00	-23.01
4960.00	Н	Peak	37.81	7.09	44.90	74.00	-29.10
7440.00	Н						
9920.00	Н						
12400.00	Н						
14880.00	Н						
17360.00	Н						

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17360.00

19840.00

22320.00

24800.00

Η

Η

Η

Η

FCC ID: PY7PM-0730

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Operation Band :EDR Test Date :2014-02-14 Fundamental Frequency :2480 MHz Temp./Humi. :23.3deg_C /52 RH Operation Mode :TX HIGH Engineer :Allen EUT Pol. :E2 Plane :HORIZONTAL Measurement Antenna Pol. Note Spectrum Actual Freq. Detector Factor Limit Margin Reading Level FS @3m Mode dBμV dBµV/m dBμV/m MHz F/H/E/S PK/QP/AV dB dB S 43.58 Peak 36.02 -13.1722.85 40.00 -17.15 145.43 S 41.08 -12.95 28.13 43.50 Peak -15.37 281.23 S 39.59 28.07 46.00 -17.93 Peak -11.52 499.48 S Peak 34.04 -7.54 26.50 46.00 -19.50 S 645.95 Peak 31.06 -4.7826.28 46.00 -19.72 799.21 S Peak 33.67 -2.3131.36 46.00 -14.64 S 1595.00 Average 29.35 -2.0327.32 54.00 -26.68 1595.00 S Peak 47.54 -2.0345.51 74.00 -28.49 4960.00 Η Average 23.87 7.09 30.96 54.00 -23.04 4960.00 Η Peak 36.47 7.09 43.56 74.00 -30.44 7440.00 Η 9920.00 Η 12400.00 Η 14880.00 Η

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11. FREQUENCY SEPARATION

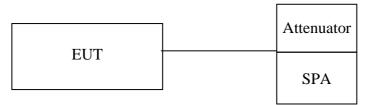
11.1. Standard Applicable

According to §15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by minimum of 25 kHz or the 2/3*20dB bandwidth of the hopping channel, whichever is greater.

11.2. Measurement Equipment Used:

Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014				
Spectrum Analyzer	Agilent	E4440A	MY45304525	03/15/2013	03/14/2014				
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/03/2014	01/02/2015				
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014				
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014				

11.3. Test Set-up:



11.4. Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set center frequency of spectrum analyzer = middle of hopping channel.
- 4. Set the spectrum analyzer as RBW, VBW=100 kHz, Adjust Span to 5MHz, Sweep = auto.
- 5. Max hold. Mark 3 Peaks of hopping channel and record the 3 peaks frequency.

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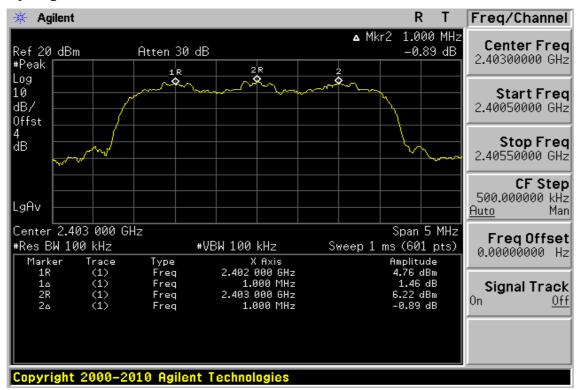
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11.5. Measurement Result:

Channel separation (MHz)	Limit	Result
1	>=25 kHz or 2/3 times 20dB bandwidth	PASS

Frequency Separation Test Data



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12. NUMBER OF HOPPING FREQUENCY

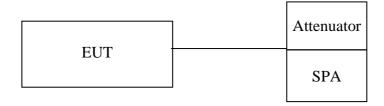
12.1. Standard Applicable

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

12.2. Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014		
Spectrum Analyzer	Agilent	E4440A	MY45304525	03/15/2013	03/14/2014		
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014		
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/03/2014	01/02/2015		
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014		
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014		

12.3. Test Set-up:



12.4. Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set spectrum analyzer Start=2400MHz, Stop = 2483.5MHz, Sweep = auto.
- 4. Set the spectrum analyzer as RBW=430 kHz, VBW=1.5MHz., Detector = Peak
- 5. Max hold, view and count how many channel in the band.

12.5. Measurement Result:

Note: Refer to next page for plots.

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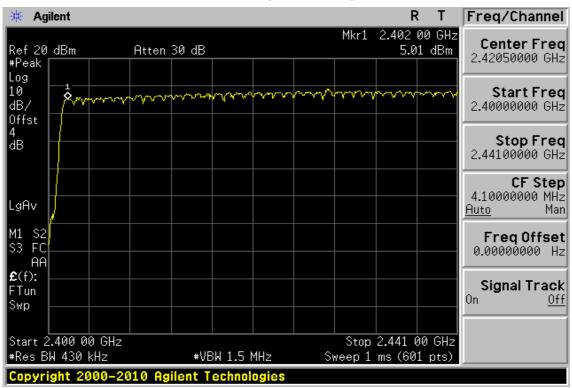


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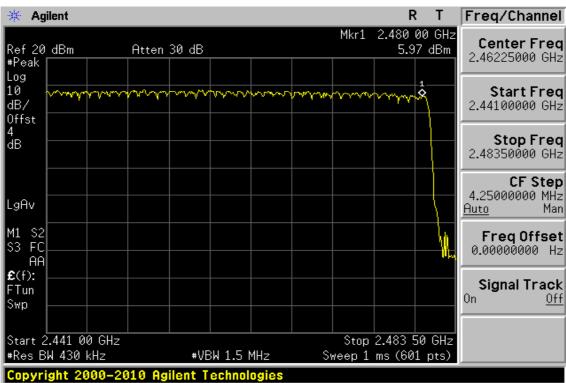
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Channel Number

2.4 GHz - 2.441GHz



2.441 GHz - 2.4835GHz



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Tabular Data of Total Channel Number:

	Channel Number	Limit
2.4 GHz – 2.441GHz	40	
2.441 GHz – 2.4835GHz	39	15
2.4GHz ~2.4835GHz	(40+39) = 79	

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13. TIME OF OCCUPANCY (DWELL TIME)

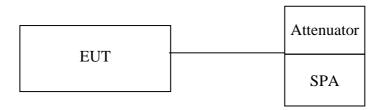
13.1. Standard Applicable

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz. The average time of occupancy on any frequency shall not greater than 0.4 s within period of 0.4 seconds multiplied by the number of hopping channel employed.

13.2. Measurement Equipment Used:

Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014		
Spectrum Analyzer	Agilent	E4440A	MY45304525	03/15/2013	03/14/2014		
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014		
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/03/2014	01/02/2015		
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014		
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014		

13.3. Test Set-up:



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13.4. Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set center frequency of spectrum analyzer = operating frequency.
- 4. Set the spectrum analyzer as RBW, VBW=1MHz, 3MHz, Span = 0Hz, Detector = Peak, Adjust Sweep = 2~7ms.
- 5. Repeat above procedures until all frequency of the interest measured were complete.

Formula Deduced: time occupancy of one time slot X Hopping rate / total slot in one channel / total channel that hops X period of working channels.

Where, standard hopping rate is 1600 hops/s, slot in one channel for DH1, DH3, and DH5 is 2, 4, and 6, respectively.

DH1 consists of single time slot of the uplink, and one slot of the downlink Total Slot: 2

DH3 consists of three time slot of the uplink, and one slot of the downlink. Total Slot: 4

DH5 consists of five time slot of the uplink, and one slot of the downlink. Total Slot: 6

Note: the result of the complete test default channel at 1Mbps is recorded on the test report, 2Mbps, and 3Mbps only records the measurement result at middle channel that reveals no much deviation.

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13.5. Tabular Result of the Measurement:

1Mbps (GFSK):

Test Channel:	Mode:	Measurement Result (ms):	Limit (ms):
Low:	DH1	121.60	400ms
	DH3	261.28	400ms
	DH5	307.52	400ms
Middle:	DH1	121.60	400ms
	DH3	261.28	400ms
	DH5	307.52	400ms
High:	DH1	121.60	400ms
	DH3	261.28	400ms
	DH5	307.52	400ms

2Mbps ($\Pi/4$ DOPSK):

1 (==)	- Train ()				
Test Channel:	Mode:	Measurement Result (ms):	Limit (ms):		
Middle:	2DH1	121.60	400ms		
Wilduie.	20111	121.00	4001118		
	2DH3	261.28	400ms		
	2DH5	307.52	400ms		

3Mbps (8DPSK):

Test Channel:	Mode:	Measurement Result	Limit (ms):
		(ms):	
Middle:	3DH1	121.60	400
	3DH3	261.28	400
	3DH5	307.52	400

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A period time = 0.4 (s) * 79 = 31.6 (s)

1Mbps:

CH Low DH1 time slot =
$$0.380 \text{ (ms)} * (1600/2/79) * 31.6 = 121.60 \text{ (ms)}$$

DH3 time slot =
$$1.633 \text{ (ms)} * (1600/4/79) * 31.6 = 261.28 \text{ (ms)}$$

DH5 time slot =
$$2.883 \text{ (ms)} * (1600/6/79) * 31.6 = 307.52 \text{ (ms)}$$

CH Mid DH1 time slot =
$$0.380 \text{ (ms)} * (1600/2/79) * 31.6 = 121.60 \text{ (ms)}$$

DH3 time slot =
$$1.633$$
 (ms) * $(1600/4/79)$ * $31.6 = 261.28$ (ms)

DH5 time slot =
$$2.883 \text{ (ms)} * (1600/6/79) * 31.6 = 307.52 \text{ (ms)}$$

CH High DH1 time slot =
$$0.380 \text{ (ms)} * (1600/2/79) * 31.6 = 121.60 \text{ (ms)}$$

DH3 time slot =
$$1.633 \text{ (ms)} * (1600/4/79) * 31.6 = 261.28 \text{ (ms)}$$

DH5 time slot =
$$2.883 \text{ (ms)} * (1600/6/79) * 31.6 = 307.52 \text{ (ms)}$$

2Mbps:

CH Mid 2DH1 time slot =
$$0.380 \text{ (ms)} * (1600/2/79) * 31.6 = 121.60 \text{ (ms)}$$

2DH3 time slot =
$$1.633 \text{ (ms)} * (1600/4/79) * 31.6 = 261.28 \text{ (ms)}$$

2DH5 time slot =
$$2.883 \text{ (ms)} * (1600/6/79) * 31.6 = 307.52 \text{ (ms)}$$

3Mbps:

CH Mid 3DH1 time slot =
$$0.380 \text{ (ms)} * (1600/2/79) * 31.6 = 121.60 \text{ (ms)}$$

3DH3 time slot =
$$1.633$$
 (ms) * $(1600/4/79)$ * $31.6 = 261.28$ (ms)

3DH5 time slot =
$$2.883 \text{ (ms)} * (1600/6/79) * 31.6 = 307.52 \text{ (ms)}$$

13.6. Measurement Result:

Note: Refer to next page for plots.

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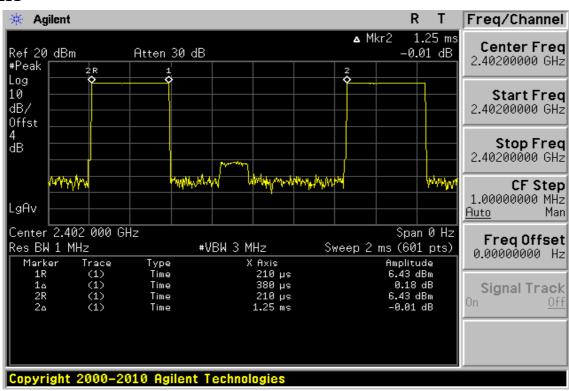
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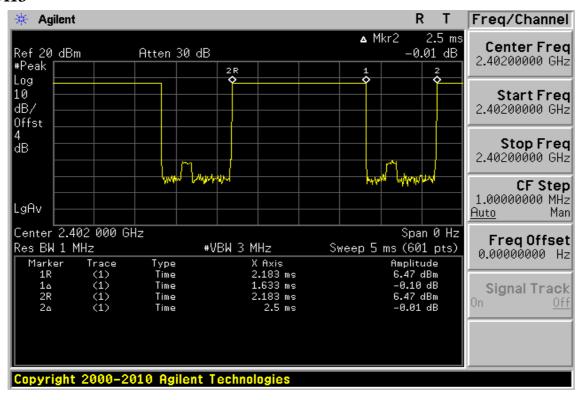
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CH-Low DH1



DH3



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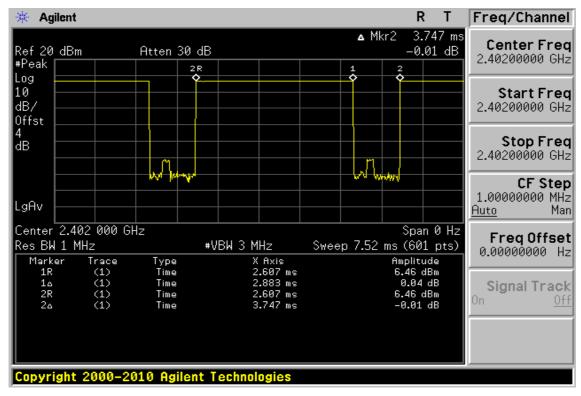
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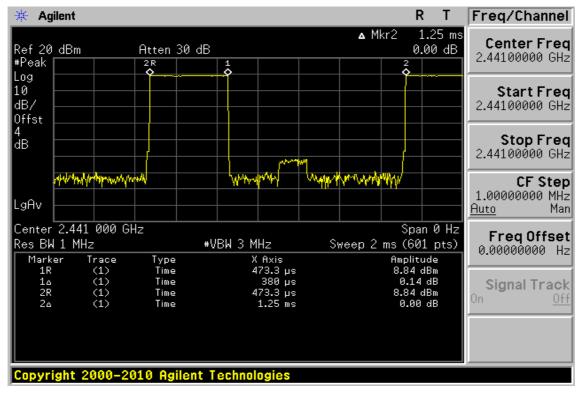
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DH5



CH-Mid

DH1



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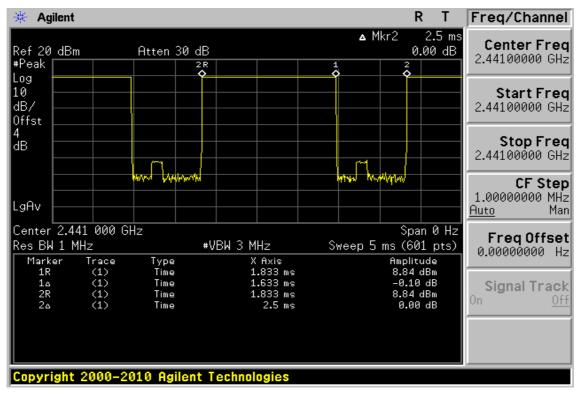
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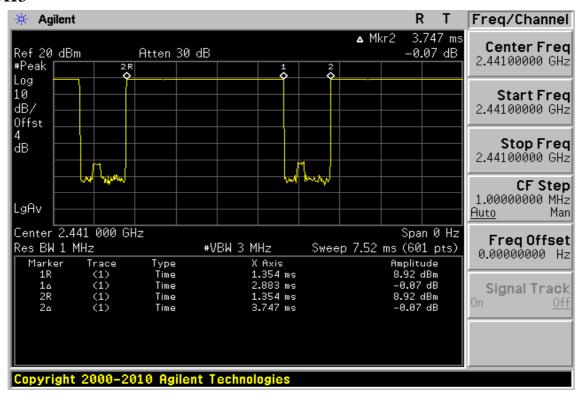
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DH3



DH5



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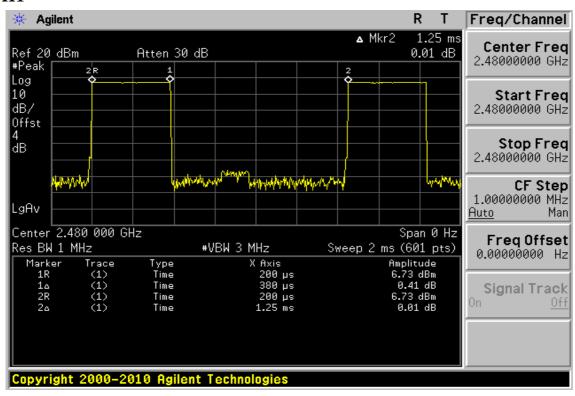
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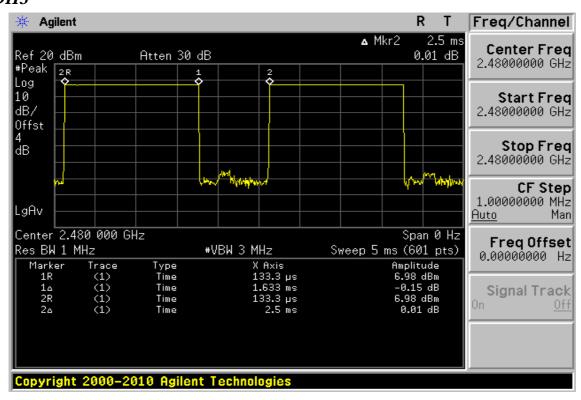
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CH-High DH1



DH3



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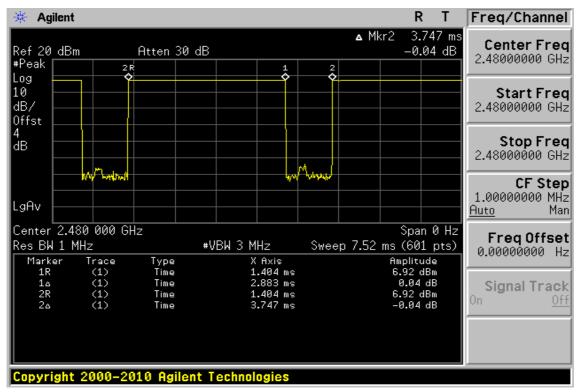
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DH5



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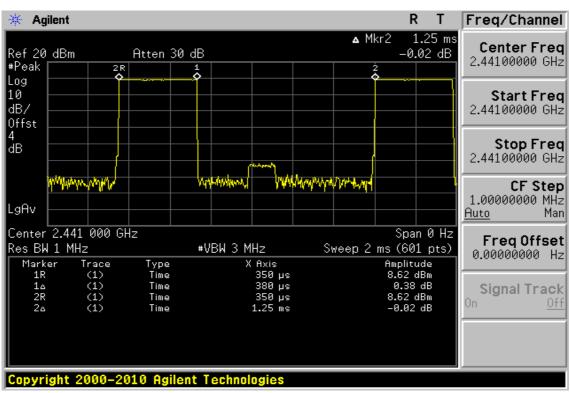
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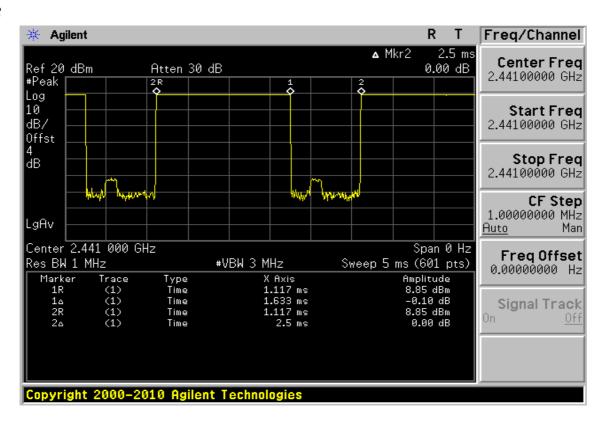
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CH-Mid 2DH1



2DH3



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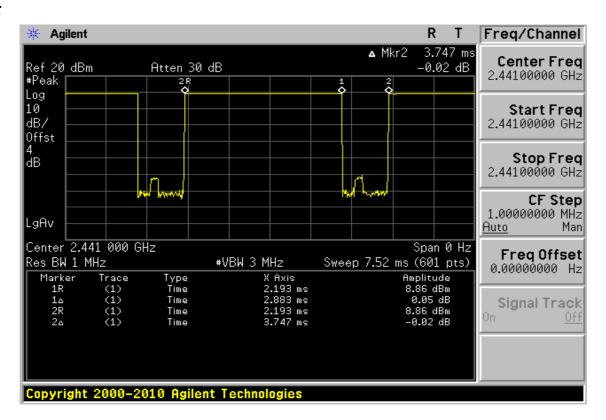
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2DH5



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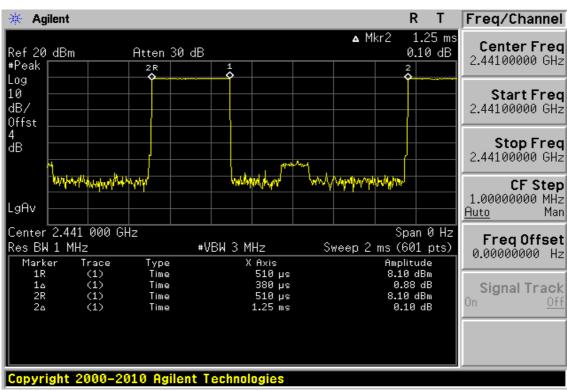
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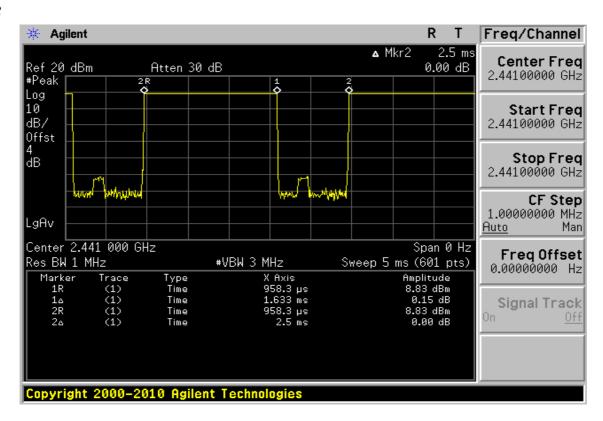
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CH-Mid 3DH1



3DH3



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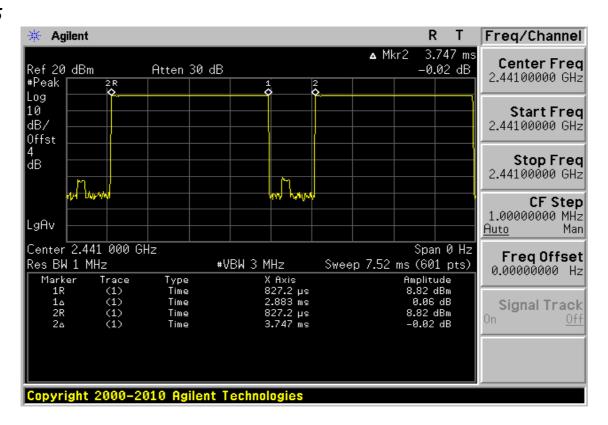
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3DH5



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14. ANTENNA REQUIREMENT

14.1. Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

14.2. Antenna Connected Construction

The directional gains of antenna used for transmitting is -1.34dBi, and the antenna connector is designed with unique type RF connector and no consideration of replacement. Please see EUT photo and antenna spec. for details.

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APPENDIX 1 MEASUREMENT PLOT OF RADIATED SPURIOUS **EMISSION**

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Band Edges Radiated Emission: (Hopping Mode)

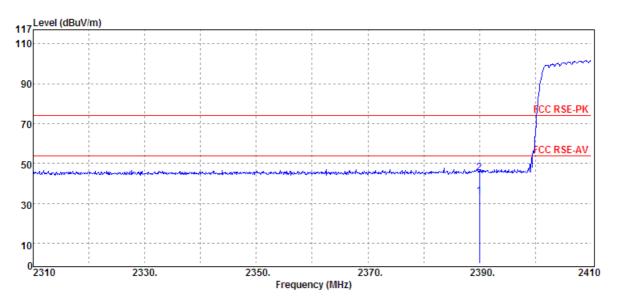
Note: The emission that surpasses the limit of peak represents the fundamental emission of the operation that does not account to be conformed to the limit of the interest.

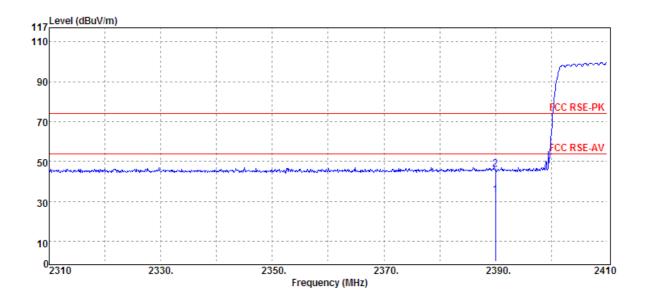
Note: The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Operation Band :EDR+ Hopping :2014-02-13 Test Date

Fundamental Frequency :2402 MHz :23.3deg_C /52 RH Temp./Humi.

Operation Mode :Band Edge LOW Engineer :Allen EUT Pol. :E2 Plan Measurement Antenna Pol. :Ver. / Hor.





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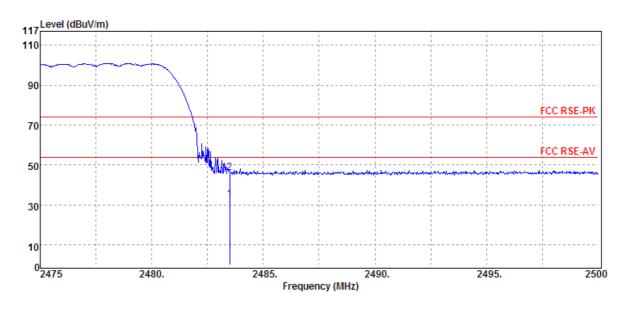
Operation Band Fundamental Frequency Operation Mode EUT Pol.

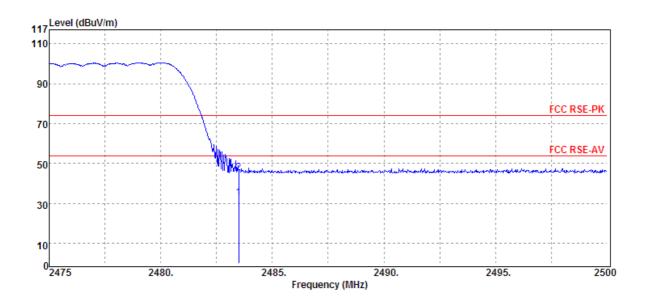
:EDR+Hopping :2480 MHz :Band Edge HIGH

:E2 Plan

Test Date Temp./Humi. :2014-02-14 :23.3deg_C /52 RH

Engineer :Allen Measurement Antenna Pol. :Ver. / Hor.







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Band Edges Radiated Emission: (Non-Hopping Mode)

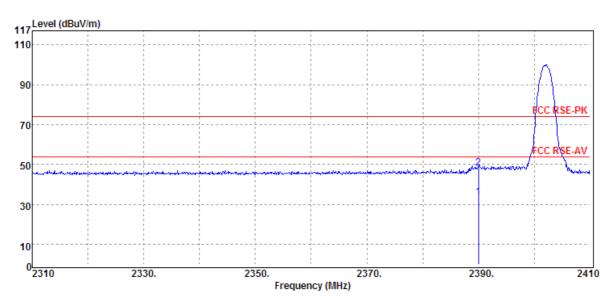
Note: The emission that surpasses the limit of peak represents the fundamental emission of the operation that does not account to be conformed to the limit of the interest.

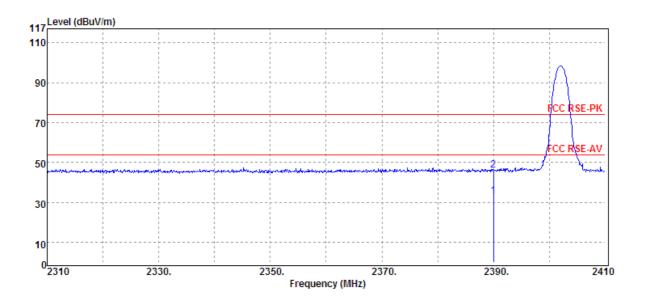
Note: The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Operation Band :2014-02-13 :EDR Test Date

Fundamental Frequency :2402 MHz :23.3deg_C /52 RH Temp./Humi.

Operation Mode :Band Edge LOW Engineer :Allen EUT Pol. :E2 Plan Measurement Antenna Pol. :Ver. / Hor.





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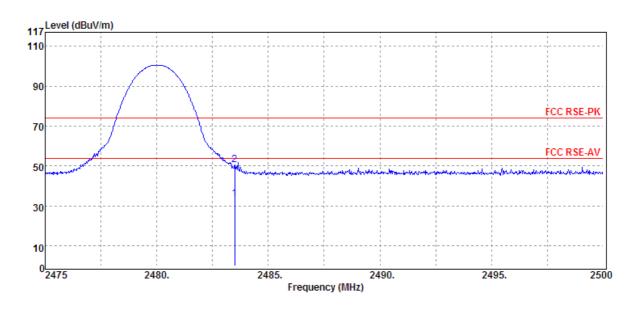
Report No.: EH/2014/10067 Issue Date: Mar. 04, 2014

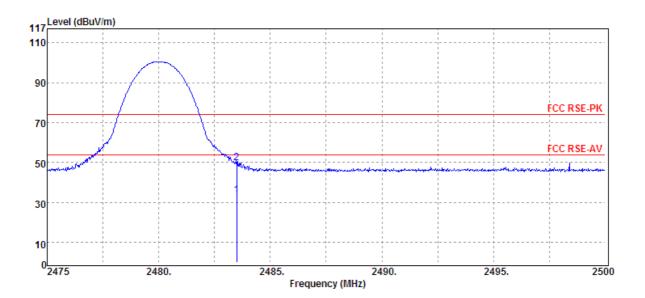
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Operation Band :EDR **Test Date** :2014-02-13

Fundamental Frequency :2480 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :Band Edge HIGH Engineer :Allen EUT Pol. :E2 Plan Measurement Antenna Pol. :Ver. / Hor.







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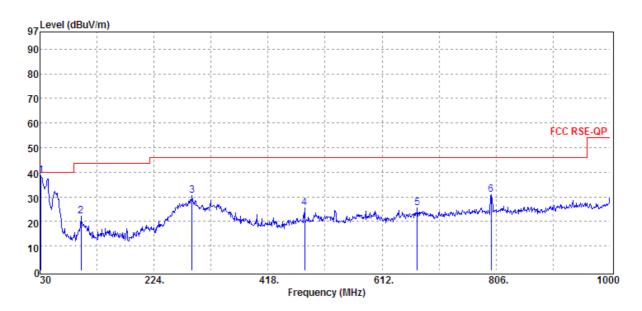
Radiated Spurious Emission Measurement photos Result (below 1GHz)

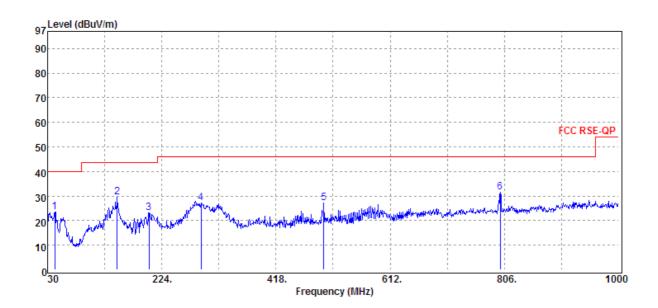
Note: The trace on RE (radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

Operation Band Test Date :2014-02-14 :EDR

Fundamental Frequency :2402 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX LOW Engineer :Allen EUT Pol. : E2 Plan Measurement Antenna Pol. : Ver. / Hor.





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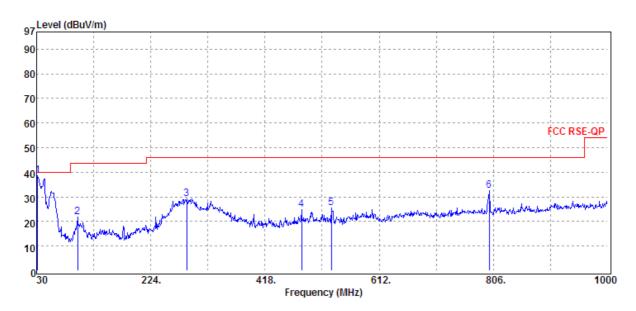
Report No.: EH/2014/10067 Issue Date: Mar. 04, 2014

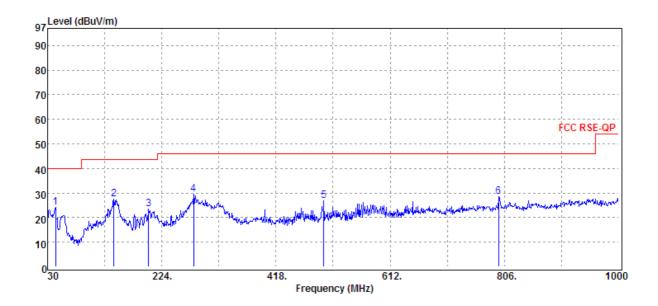
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Operation Band :EDR **Test Date** :2014-02-14

Fundamental Frequency: 2441 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX MID Engineer :Allen EUT Pol. : E2 Plan Measurement Antenna Pol. : Ver. / Hor.







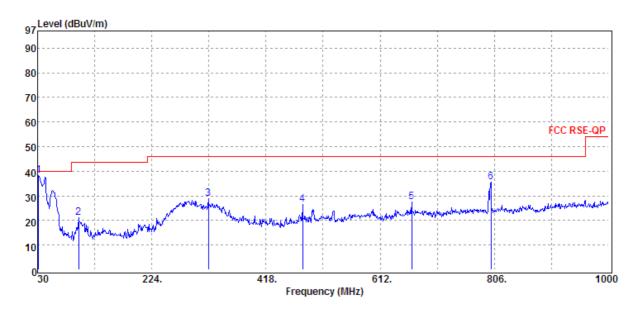
Report No.: EH/2014/10067 Issue Date: Mar. 04, 2014

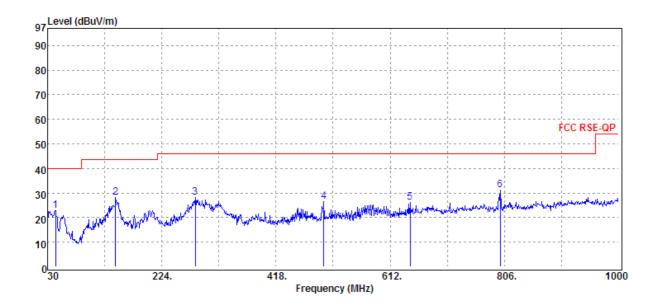
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Operation Band :EDR **Test Date** :2014-02-14

Fundamental Frequency: 2480 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX HIGH Engineer :Allen EUT Pol. : E2 Plan Measurement Antenna Pol. : Ver. / Hor.





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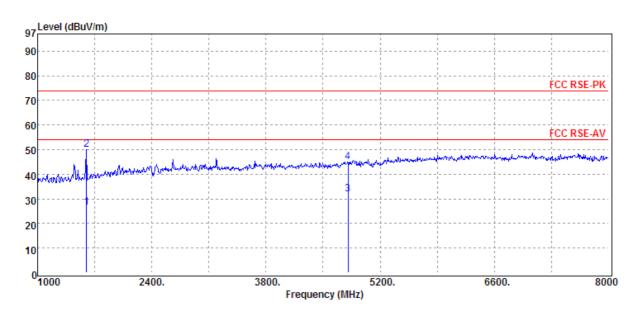
Radiated Spurious Emission Measurement photos Result (above 1GHz)

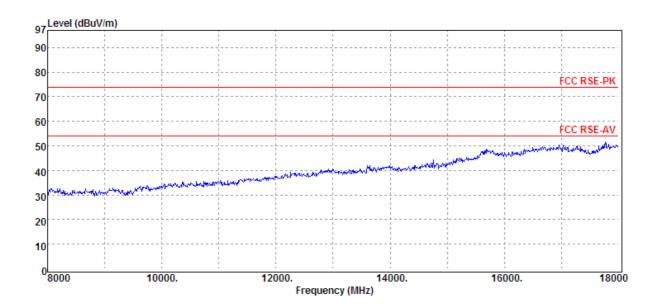
Operation Band :EDR **Test Date** :2014-02-14

Fundamental Frequency :2402 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX LOW Engineer

EUT Pol. : E2 Plan Measurement Antenna Pol. : VERTICAL





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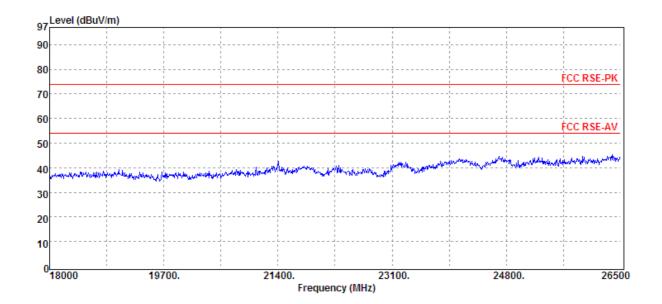
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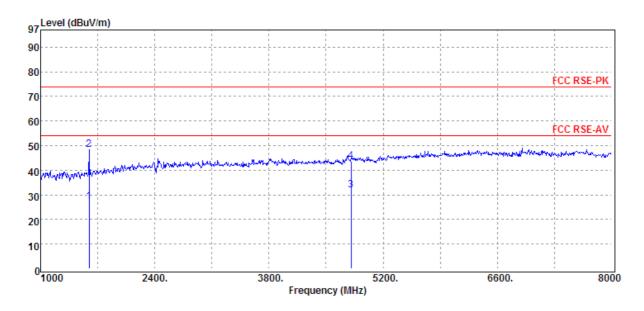
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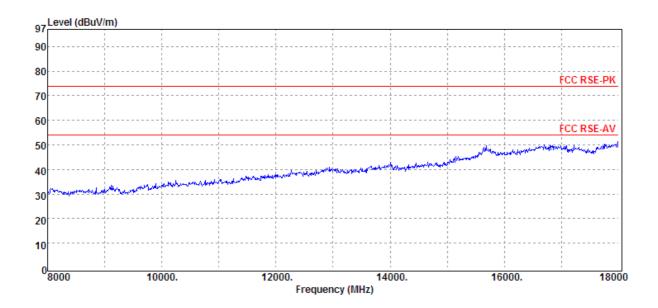
Operation Band Test Date :2014-02-14 :EDR

Fundamental Frequency: 2402 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :E2 Plan Measurement Antenna Pol. :HORIZONTAL

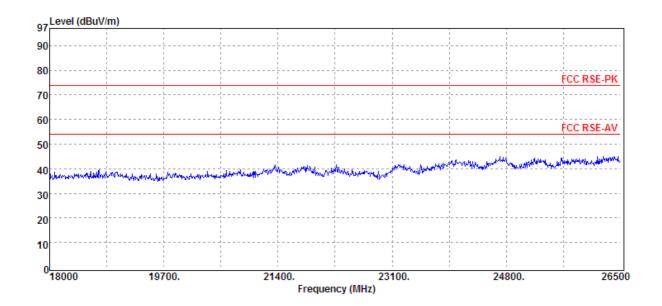






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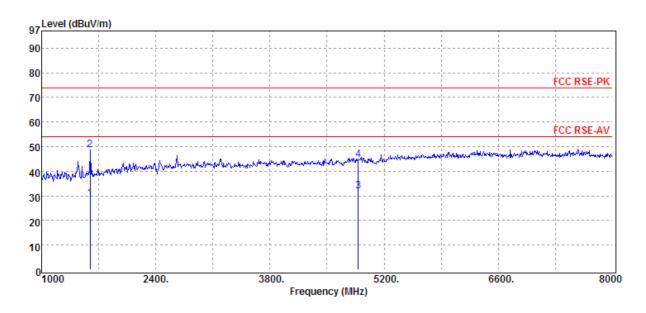
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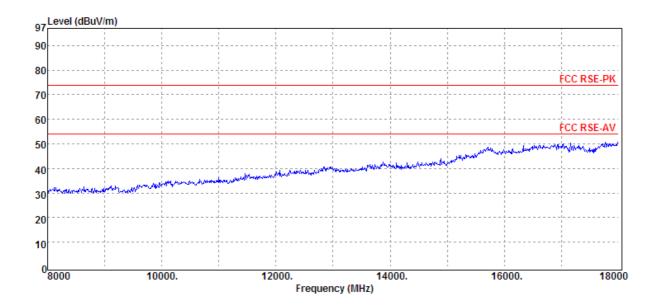
Operation Band Test Date :2014-02-14 :EDR

Fundamental Frequency: 2441 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :E2 Plan Measurement Antenna Pol. : VERTICAL





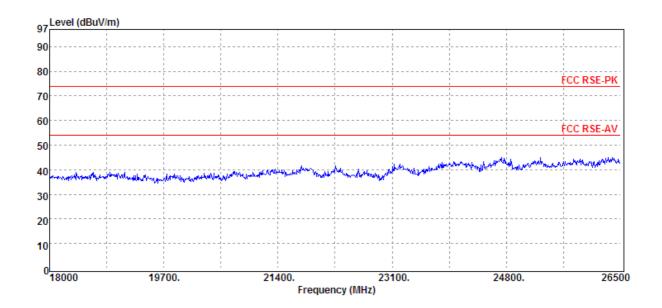
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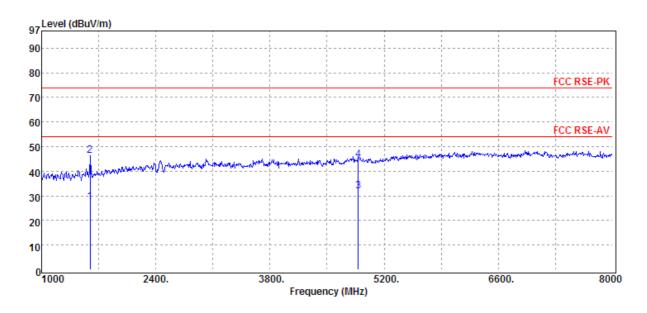
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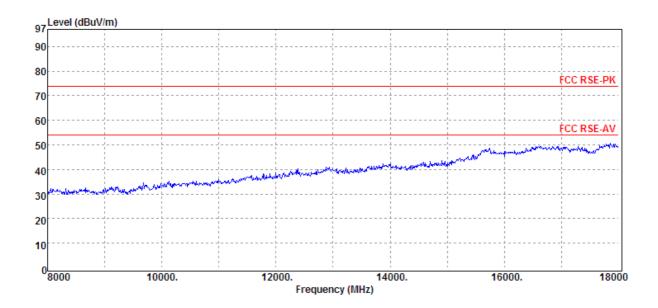
Operation Band Test Date :2014-02-14 :EDR

Fundamental Frequency: 2441 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :E2 Plan Measurement Antenna Pol. :HORIZONTAL





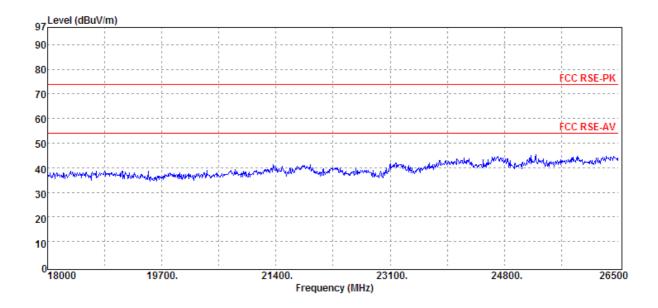
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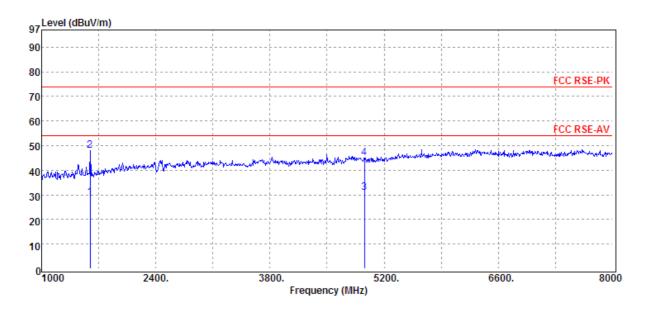
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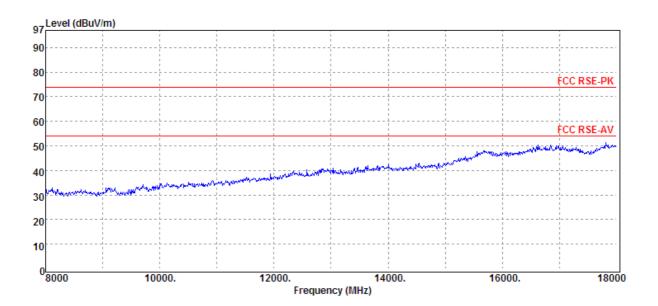
Operation Band :EDR Test Date :2014-02-14

Fundamental Frequency: 2480 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX HIGH Engineer

EUT Pol. :E2 Plan Measurement Antenna Pol. : VERTICAL





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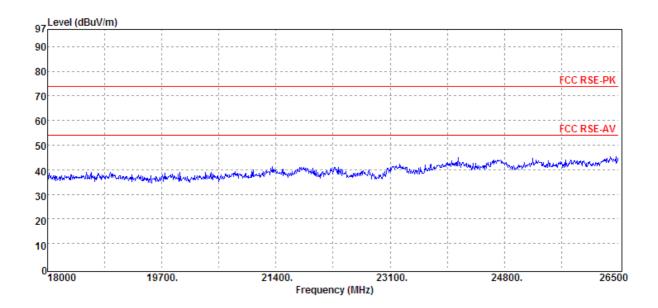
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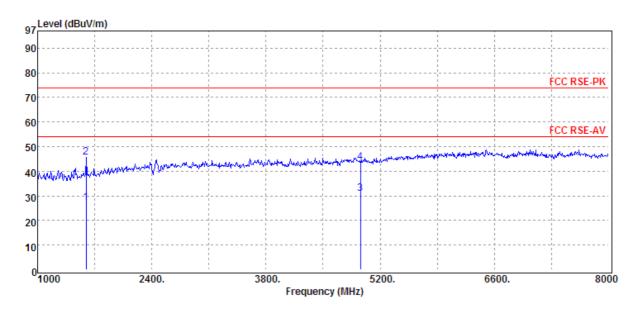
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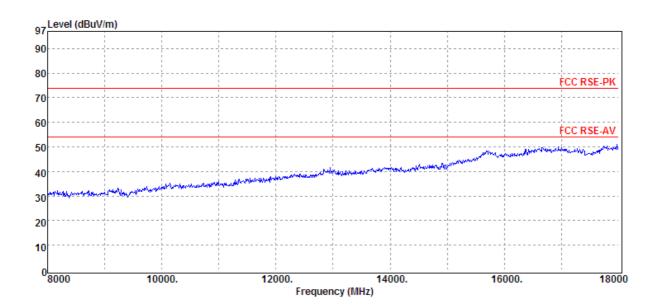
Operation Band Test Date :2014-02-14 :EDR

Fundamental Frequency: 2480 MHz Temp./Humi. :23.3deg_C /52 RH

Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :E2 Plan Measurement Antenna Pol. :HORIZONTAL

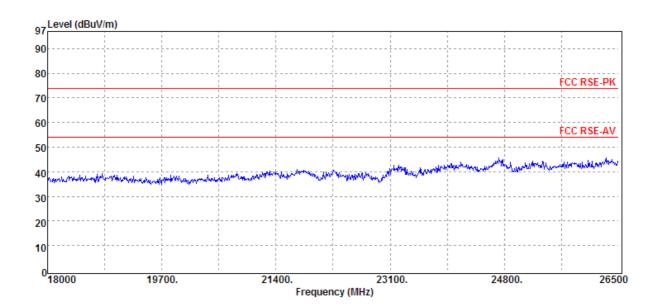






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