ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Product Name:	**CDMA TS001**
Brand Name:	**N/A**
Marketing Name:	**T001**
Model Difference:	**N/A**
FCC ID:	**WVS-CN8-J01**
Report No.:	**EH/2008/C0010**
Issue Date:	**Dec. 25, 2008**
Rule Part:	**FCC Part 15C:2007, §15.247**
Prepared for:	**Toshiba Corporation, Mobile Communications Co., Quality Management Division** **1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555,Japan**
Prepared by:	**SGS Taiwan Ltd.** **Electronics & Communication Laboratory** **No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei County, Taiwan.**

Testing Laboratory
0513

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CERTIFICATION OF COMPLIANCE

Applicant:	Toshiba Corporation, Mobile Communications Co., Quality Management Division 1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555, Japan
Manufacturer:	Toshiba Corporation, Mobile Communications Co., Quality Management Division 1-1, Asahigaoka 3-Chome, Hino-Shi, Tokyo, 191-8555, Japan
Product Name:	CDMA TS001
Brand Name:	N/A
FCC ID:	WVS-CN8-J01
Marketing Name:	T001
Model Difference:	N/A
File Number:	EH/2008/C0010
Date of test:	Dec. 12, 2008 ~ Dec. 16, 2008
Date of EUT Received:	Dec. 12, 2008

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. 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 (2003) 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:	Jazz Huang	***Date:***	Dec. 25, 2008
	Jazz Huang/Engineer		
Prepared By:	Elisa Chen	***Date:***	Dec. 25, 2008
	Elisa Chen/Asst. Supervisor		
Approved By:	Vincent Su	***Date:***	Dec. 25, 2008
	Vincent Su / Manager		

Version

Version No.	Date	Description
00	Dec. 25, 2008	Initial creation of document

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1. GENERAL INFORMATION

1.1. Product Description

Type Name:	CDMA TS001	
Brand Name:	N/A	
Marketing Name:	T001	
Model Difference:	N/A	
Data Cable (USB)	1 provided, Model: N/A	
Simple Hands-free (SHF)	1 provided, Model: N/A	
Power Supply:	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter	
	Battery Model:	61TSUAA, Brand: KDDI
	Adaptor Model:	N/A, Brand: KYUSHU MITSUMI

CDMA 2000:

DUT Standards and Power:	CDMA2000	Frequency Range		Maximum Output Power	
	BC0	TX:	824.70-848.31 MHz	24.09	dBm
		RX:	869.70-893.37 MHz		
Final Amplifier Voltage and Current Information			DC voltage (V)	DC current (mA)	
		CDMA 2000 Cellular	3.7Vdc	920	
Type of Emission	1M25F9W				
MEID	A1000006E707D5				
Software Version	N/A				
Hardware Version	CS sample				
Antenna Type	PIFA				

Bluetooth:

Bluetooth Version	☐ V1.1 (GFSK) ☐ V1.2 (GFSK) ☐ V2.0 (GFSK) ☒ V2.0 + EDR (GFSK + π/4DQPSK + 8DPSK) ☐ V2.1 + EDR (GFSK + π/4DQPSK + 8DPSK)
Frequency Range	2402 – 2480MHz
Channel number	79 channels max., 1MHz step
Rated Power	0.41 dBm (Peak)
Modulation type	Frequency Hopping Spread Spectrum
Antenna Designation	Metal Antenna / 2.1dBi.
Type of Emission	1M19F1D

The EUT is compliance with Bluetooth 2.0 with EDR.

This test report applies for BT.

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

This submittal(s) (test report) is intended for **FCC ID: WVS-CN8-J01** filing to comply with Section 15.247 of the FCC Part 15C, Subpart C Rules.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

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. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-1.

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. 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: TW1016.

1.5. Special Accessories

Not available for this EUT intended for grant.

1.6. Equipment Modifications

Not available for this EUT intended for grant.

2. 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

The Phone was tested with a test program to fix the Tx/RX frequency that was for the purpose of the measurements. For more information please see test data and APPENDIX 1 for set-up photographs.

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 requirements in Section 7, 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

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 Subclause 8.3.1.2 of ANSI C63.4-2003.

2.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System (Fixed channel)

Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.
1.	N/A			

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(d)	100 KHz Bandwidth Of Frequency Band Edges	Compliant
§15.247(c)	TX/RX Spurious Emission	Compliant
§15.247(a)(1)	Frequency Separation	Compliant
§15.247(a)(1)(iii)	Number of hopping frequency	Compliant
§15.247(a)(1)(ii)	Time of Occupancy	Compliant
§15.247	Peak Power Density	Compliant
§15.203, §15.247(c)	Antenna Requirement	Compliant
§15.247(a)(1)	20dB Bandwidth	No Limit

4. DESCRIPTION OF TEST MODES

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

Channel low (2402MHz)、mid (2441MHz) and high (2480MHz) modes are chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (E1 mode) and lie down position (E1, E2 mode) and three enclosures (Pink, White, and Black). The worst-case of H position with Pink enclosure were reported.

5. AC POWER LINE CONDUCTED EMISSION TEST

5.1. Standard Applicable

According to §15.207, frequency range within 150KHz 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 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.		

5.2. EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2003.
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 110Vac/60Hz power source.

5.3. 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.

5.4. Measurement Equipment Used:

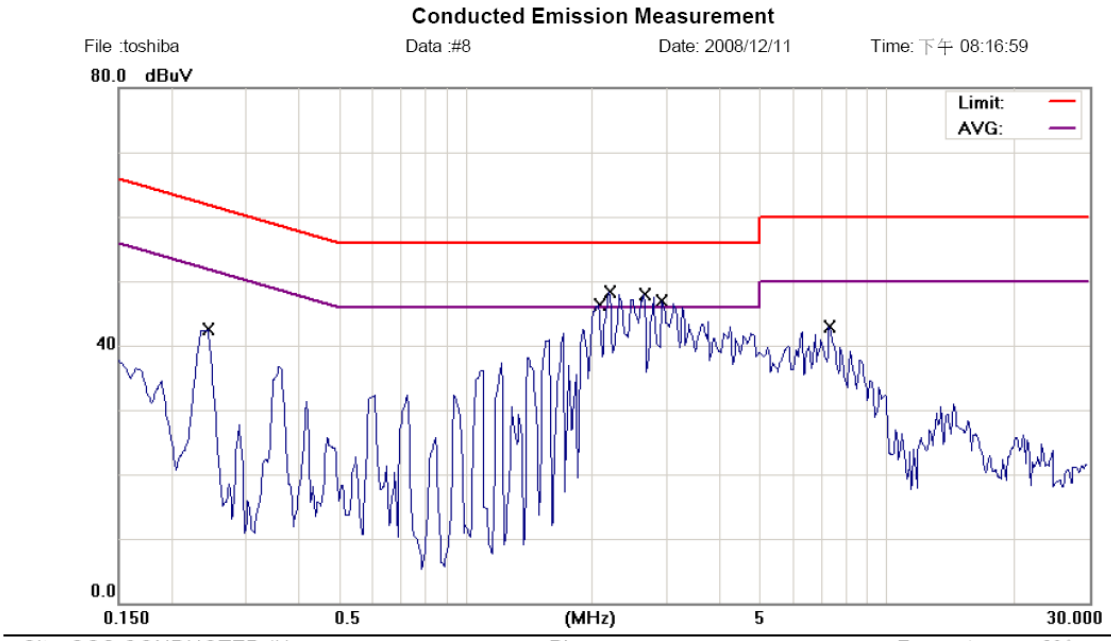
Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2008	09/15/2009
LISN	Rolf-Heine	NNB-2/16Z	99012	02/18/2008	02/17/2009
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/18/2008	02/17/2009
Coaxial Cables	N/A	WK CE Cable	N/A	10/30/2008	10/29/2009

5.5. Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	BT Link			Test Date:	Dec. 11, 2008
Temperature:	26 ℃	Humidity:	61%	Test By:	Jazz



Site SGS CONDUCTED #1
Limit: FCC Class B Conduction(QP)
EUT: CDMA TS001
M/N: T001
Note: BT link mode

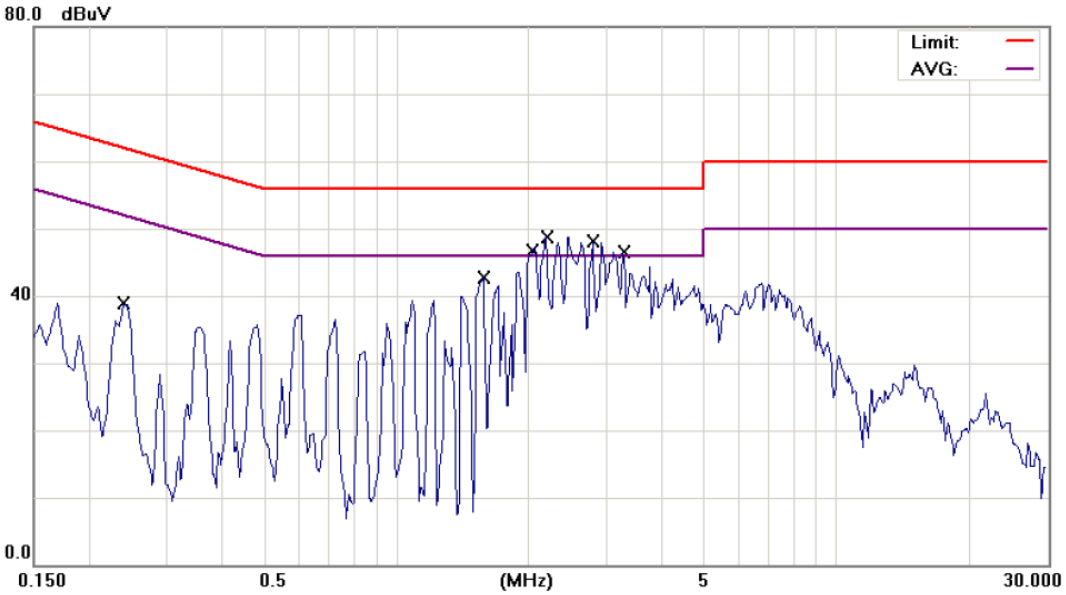
Phase: L1
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 61 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2450	40.90	0.14	41.04	61.92	-20.88	QP	
2		0.2450	27.90	0.14	28.04	51.92	-23.88	AVG	
3		2.0500	41.50	0.04	41.54	56.00	-14.46	QP	
4		2.0500	21.40	0.04	21.44	46.00	-24.56	AVG	
5	*	2.2000	46.80	0.04	46.84	56.00	-9.16	QP	
6		2.2000	25.30	0.04	25.34	46.00	-20.66	AVG	
7		2.6600	42.10	0.04	42.14	56.00	-13.86	QP	
8		2.6600	20.30	0.04	20.34	46.00	-25.66	AVG	
9		2.9300	44.00	0.04	44.04	56.00	-11.96	QP	
10		2.9300	24.00	0.04	24.04	46.00	-21.96	AVG	
11		7.3200	38.90	0.11	39.01	60.00	-20.99	QP	
12		7.3200	20.70	0.11	20.81	50.00	-29.19	AVG	

Conducted Emission Measurement

File :toshiba Data :#7 Date: 2008/12/11 Time: 下午 08:12:19



Site SGS CONDUCTED #1
Limit: FCC Class B Conduction(QP)
EUT: CDMA TS001
M/N: T001
Note: BT link mode

Phase: N
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 61 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2400	36.70	0.13	36.83	62.10	-25.27	QP	
2		0.2400	22.30	0.13	22.43	52.10	-29.67	AVG	
3		1.5800	41.10	0.03	41.13	56.00	-14.87	QP	
4		1.5800	20.60	0.03	20.63	46.00	-25.37	AVG	
5		2.0200	42.70	0.03	42.73	56.00	-13.27	QP	
6		2.0200	25.80	0.03	25.83	46.00	-20.17	AVG	
7	*	2.1900	47.10	0.03	47.13	56.00	-8.87	QP	
8		2.1900	24.10	0.03	24.13	46.00	-21.87	AVG	
9		2.8000	45.80	0.03	45.83	56.00	-10.17	QP	
10		2.8000	24.10	0.03	24.13	46.00	-21.87	AVG	
11		3.2900	44.00	0.04	44.04	56.00	-11.96	QP	
12		3.2900	27.00	0.04	27.04	46.00	-18.96	AVG	

6. PEAK OUTPUT POWER MEASUREMENT

6.1. 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, and all frequency hopping systems in the 5725-5850MHz band: 1Watt. For all other frequency hopping systems in the 2400 – 2483.5MHz band: 0.125 Watts.

6.2. 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. (Channel power function, RBW, VBW = 1MHz)
3. Record the max. reading.
4. Repeat above procedures until all frequency measured were complete.

6.3. Measurement Result:

BDR mode:

Frequency (MHz)	Reading Power (dBm)	Cable Loss	Output Power (dBm)	Output Power (W)	Limit (W)
2402.00	0.31	0.10	0.41	0.00110	1
2441.00	0.14	0.10	0.24	0.00106	1
2480.00	-0.63	0.10	-0.53	0.00088	1

EDR mode:

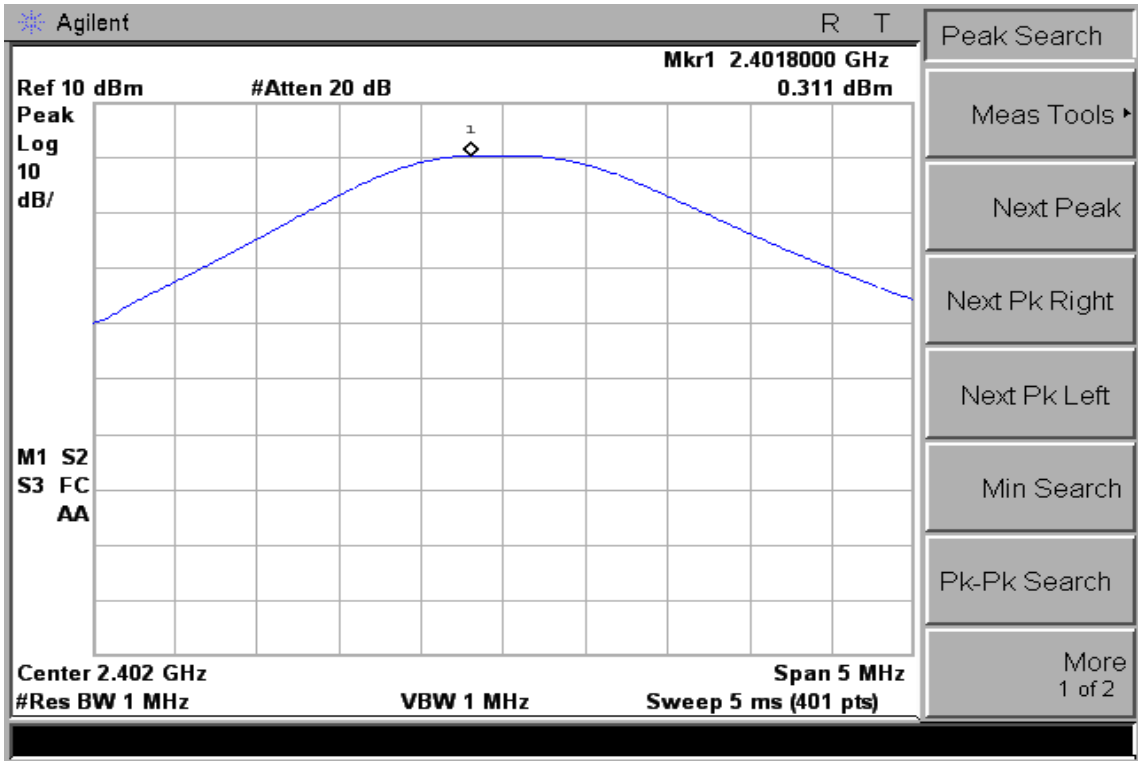
Frequency (MHz)	Reading Power (dBm)	Cable Loss	Output Power (dBm)	Output Power (W)	Limit (W)
2402.00	-0.05	0.10	0.05	0.00101	1
2441.00	-0.63	0.10	-0.53	0.00088	1
2480.00	-1.91	0.10	-1.81	0.00066	1

6.4. Measurement Equipment Used:

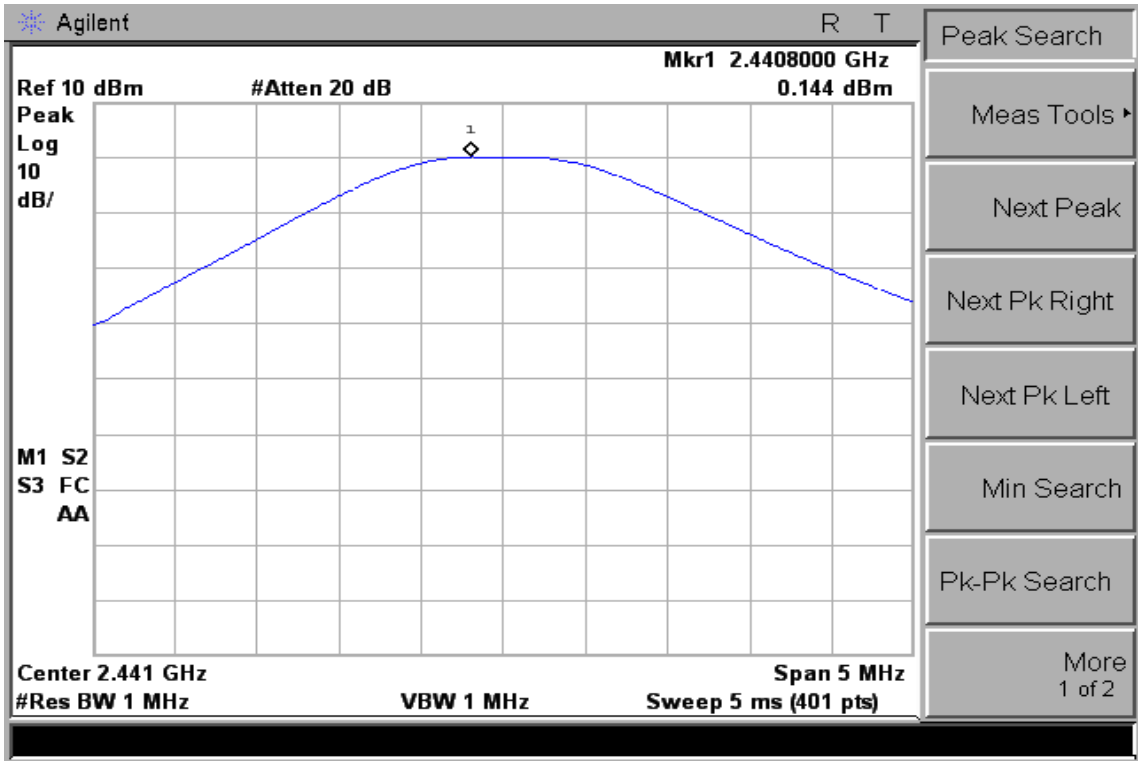
Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2008	01/22/2010
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009
Splitter	Agilent	11636B	N/A	07/05/2008	07/04/2009

BDR Mode

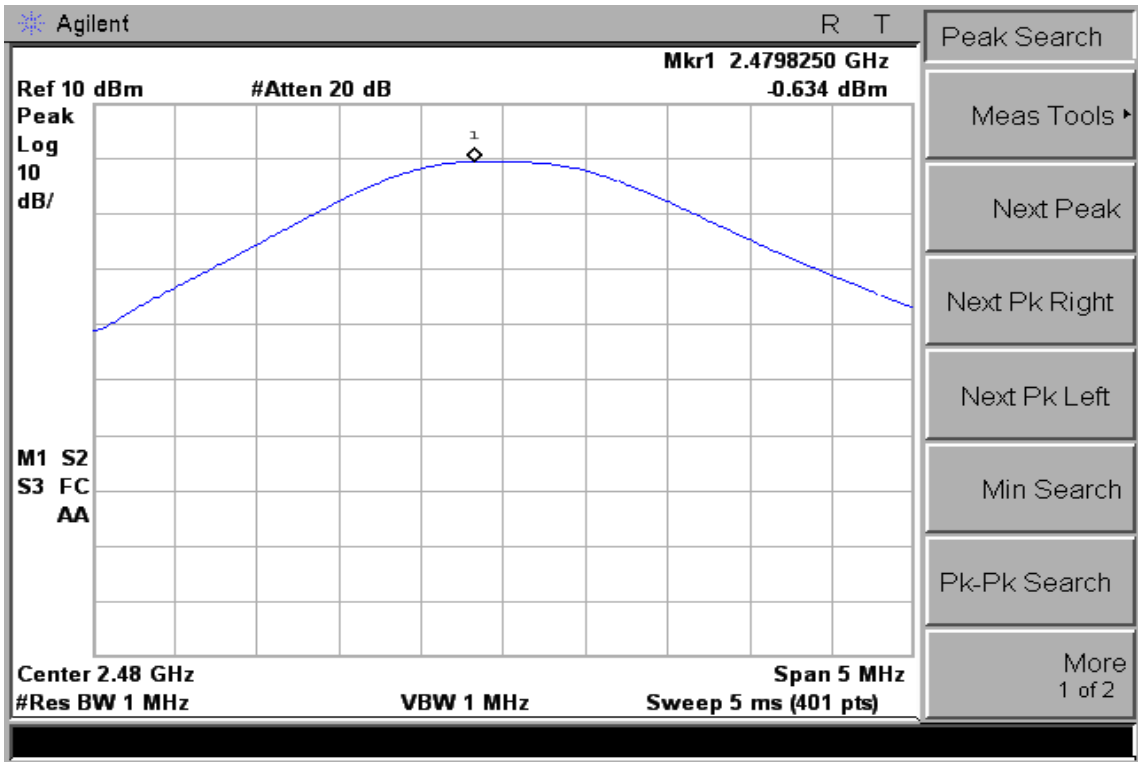
Peak Power Output Data Plot (CH Low)



Peak Power Output Data Plot (CH Mid)

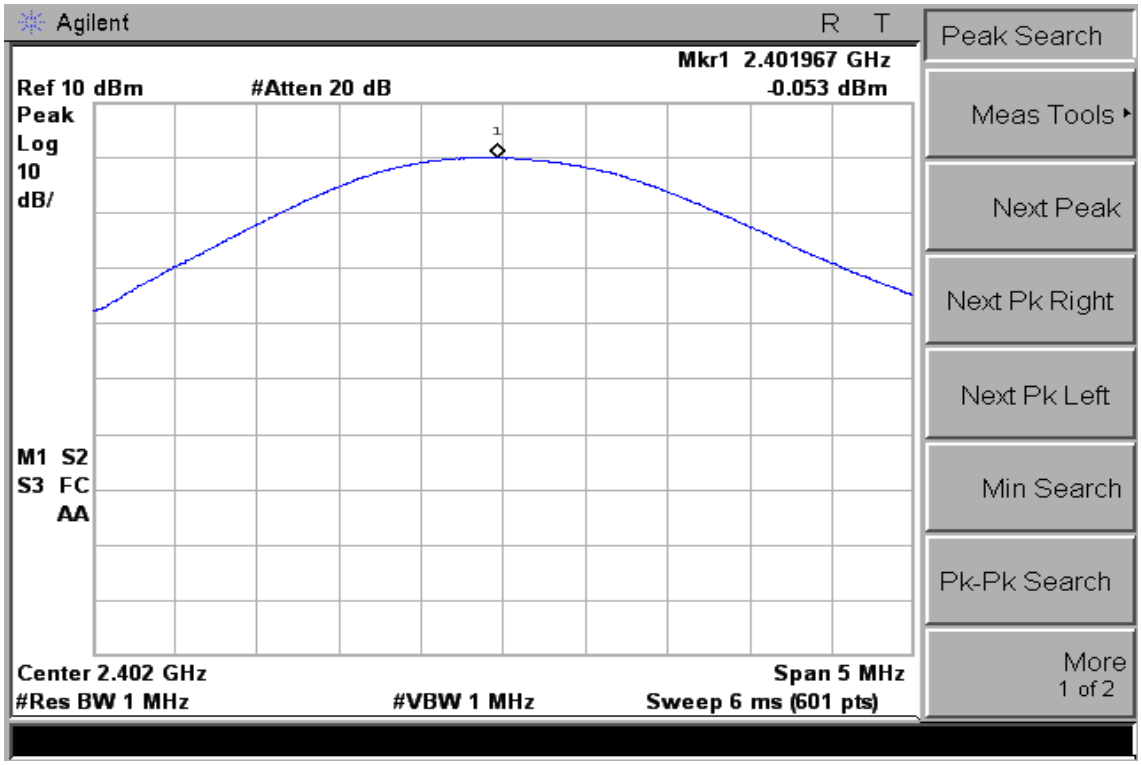


Peak Power Output Data Plot (CH High)

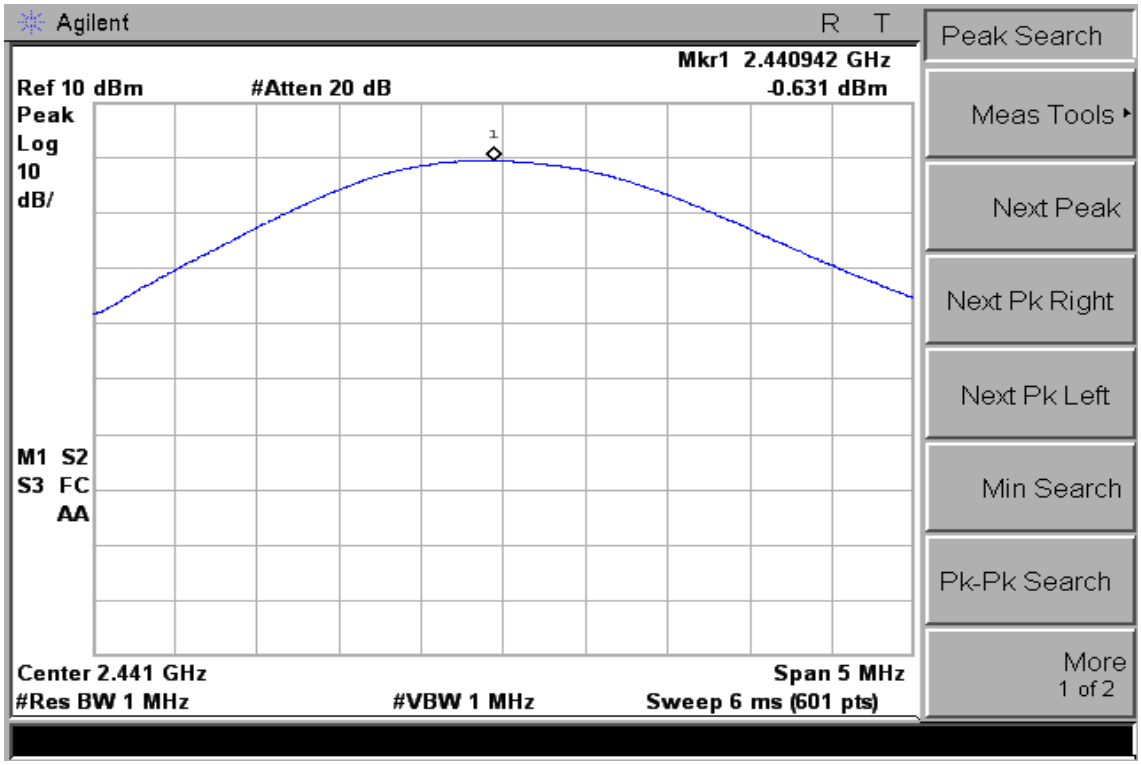


EDR Mode

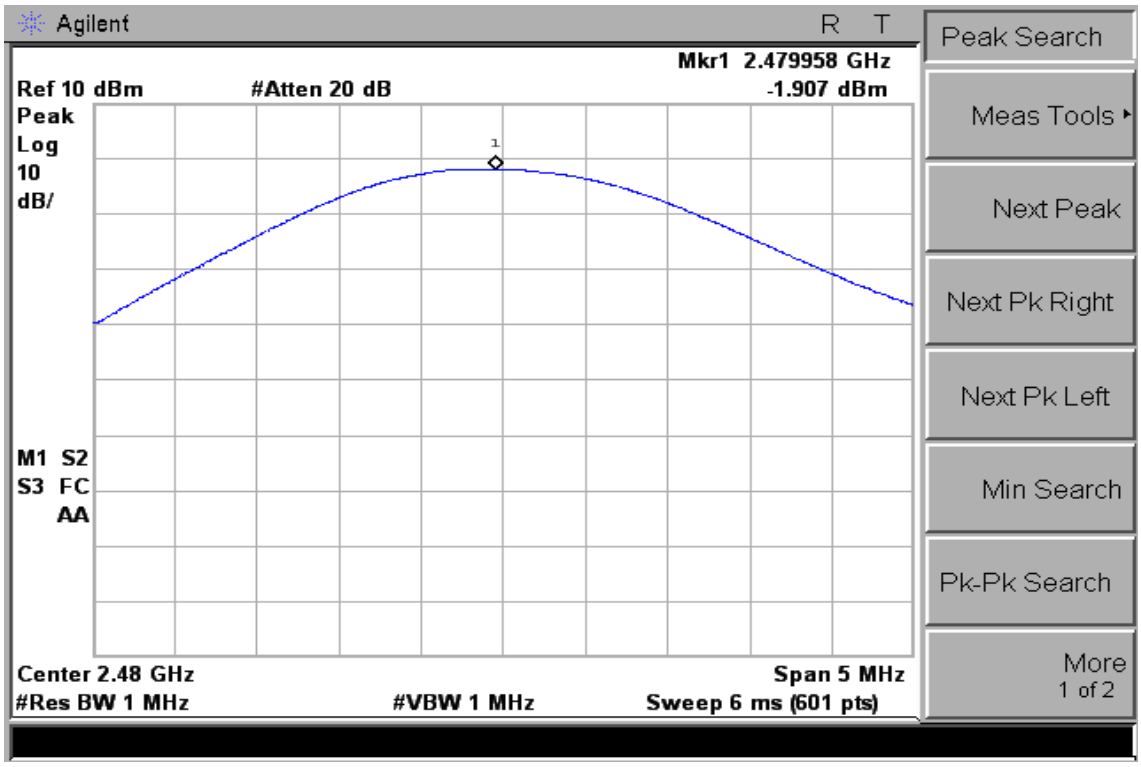
Peak Power Output Data Plot (CH Low)



Peak Power Output Data Plot (CH Mid)



Peak Power Output Data Plot (CH High)



7. 20dB Bandwidth

7.1. Standard Applicable

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

7.2. 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=10KHz (1 % of Bandwidth.), Span= 3MHz, Sweep=auto
4. Mark the peak frequency and –20dB (upper and lower) frequency.
5. Repeat above procedures until all frequency measured were complete.

7.3. Measurement Result

BDR mode:

CH	Bandwidth (kHz)
Lower	934.046
Mid	933.530
Higher	922.942

EDR mode:

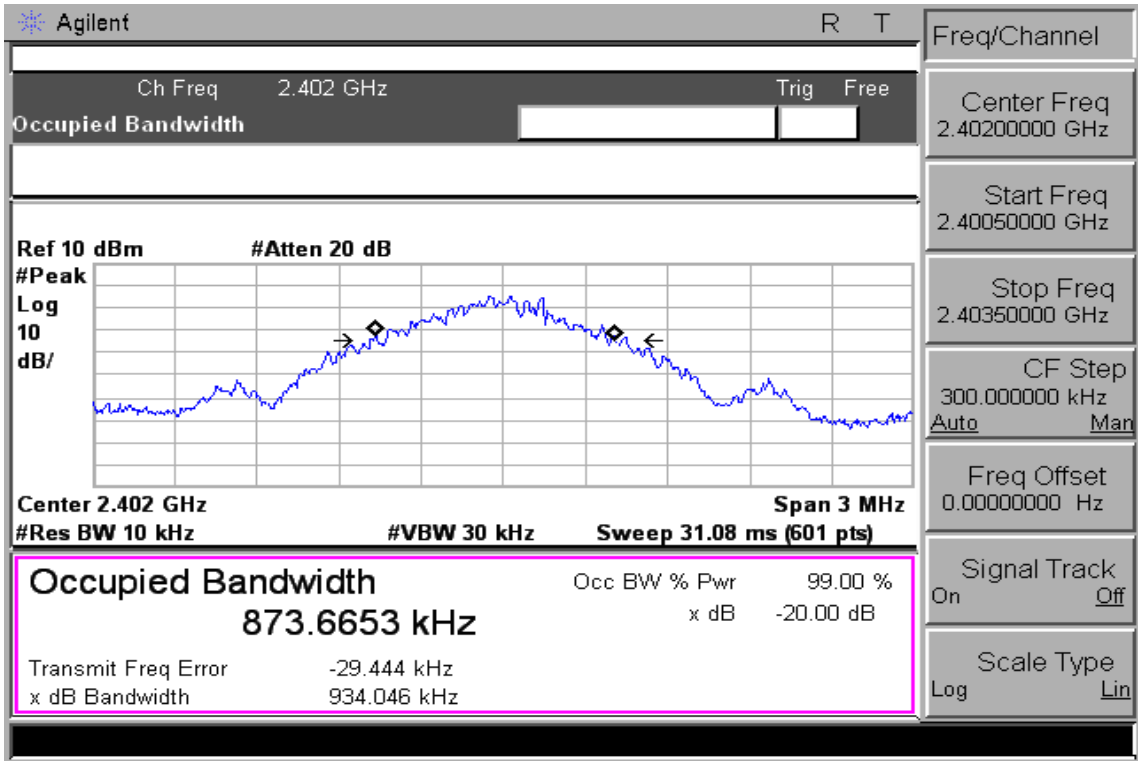
CH	Bandwidth (MHz)	2/3 Bandwidth (MHz)
Lower	1.268	0.845
Mid	1.296	0.864
Higher	1.263	0.842

7.4. Measurement Equipment Used:

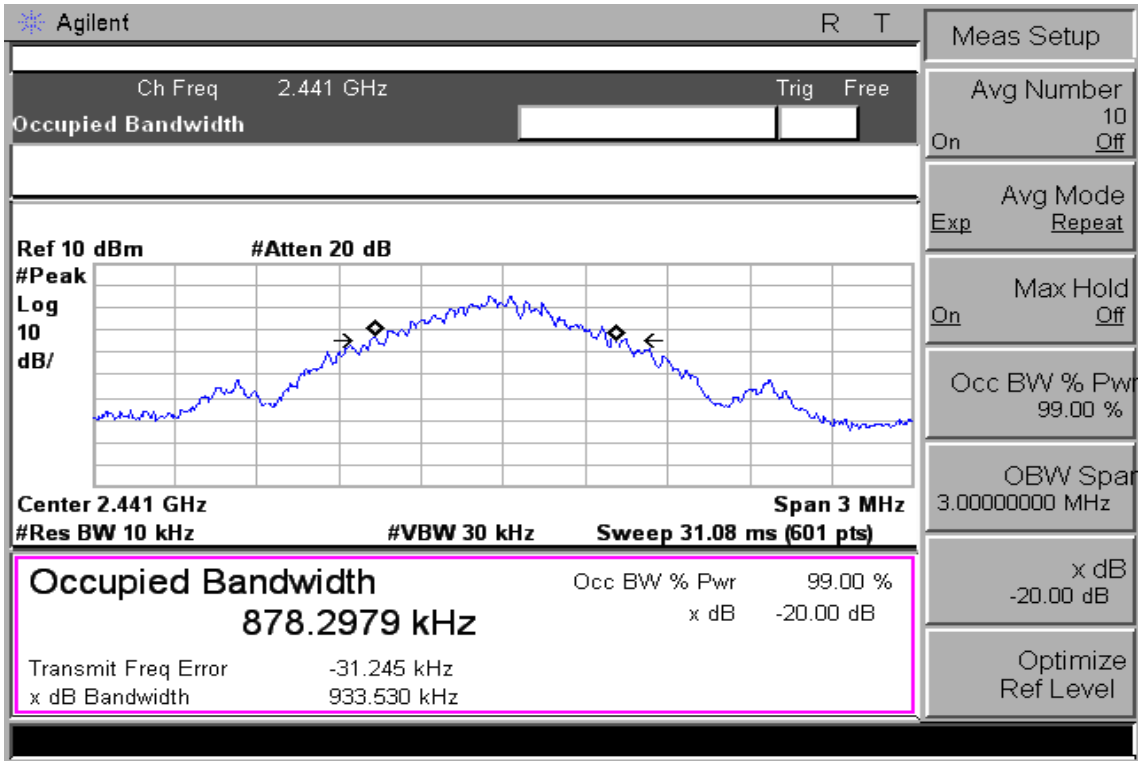
Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2008	01/22/2010
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009
Splitter	Agilent	11636B	N/A	07/05/2008	07/04/2009

BDR Mode

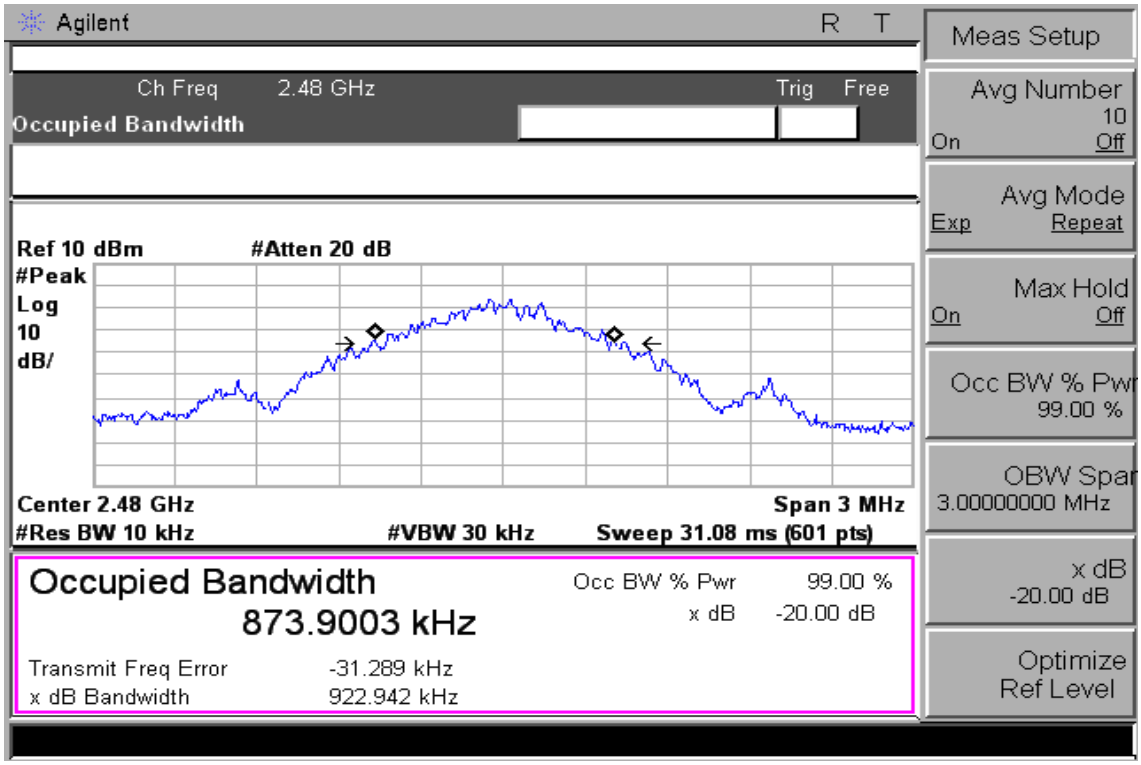
20dB Bandwidth Test Data CH-Low



20dB Bandwidth Test Data CH-Mid

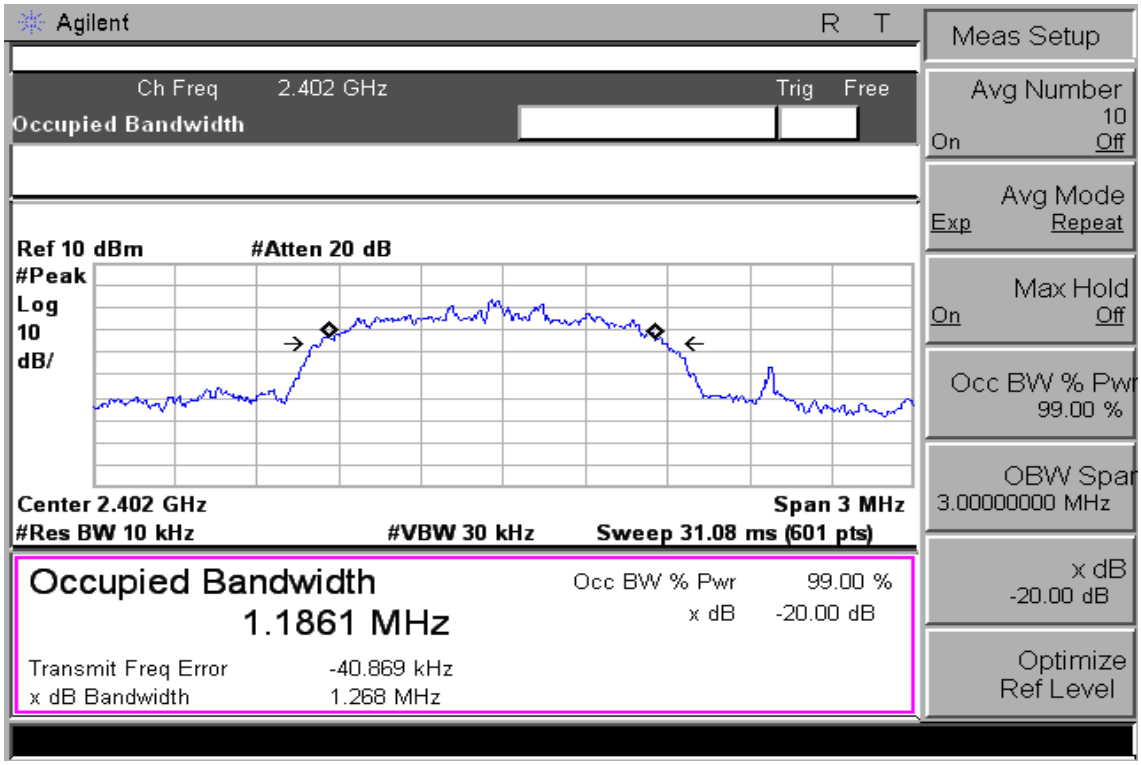


20dB Bandwidth Test Data CH-High

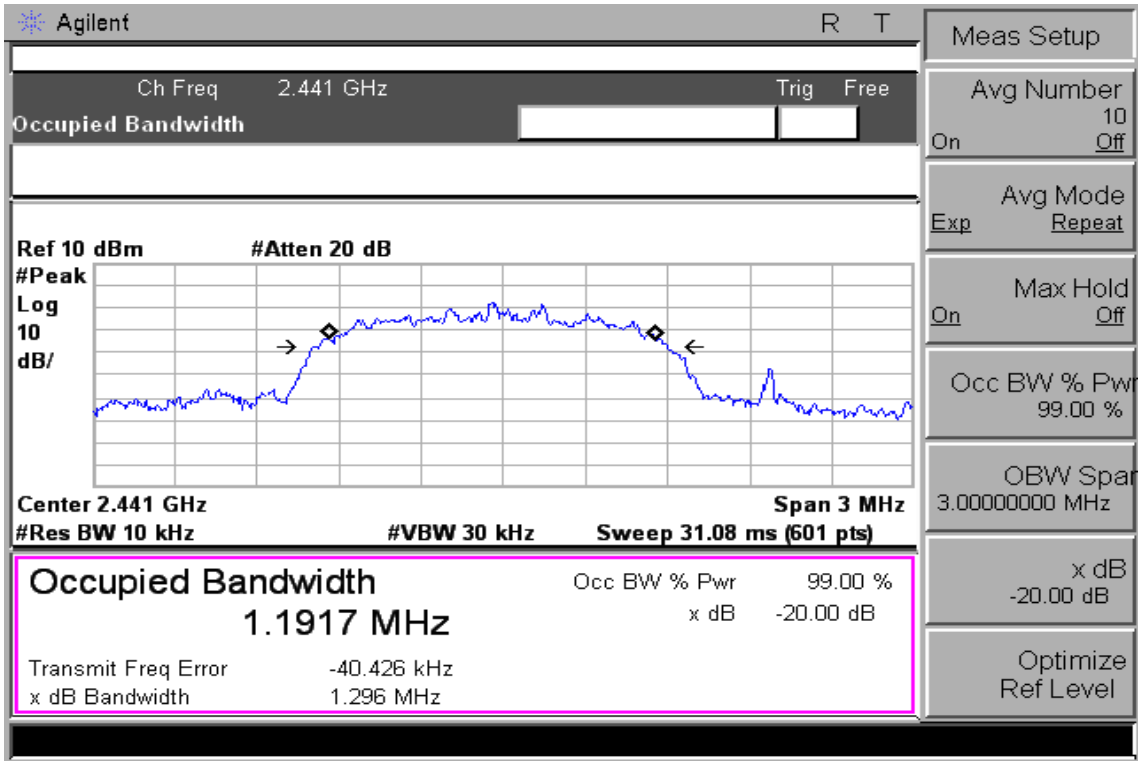


EDR Mode

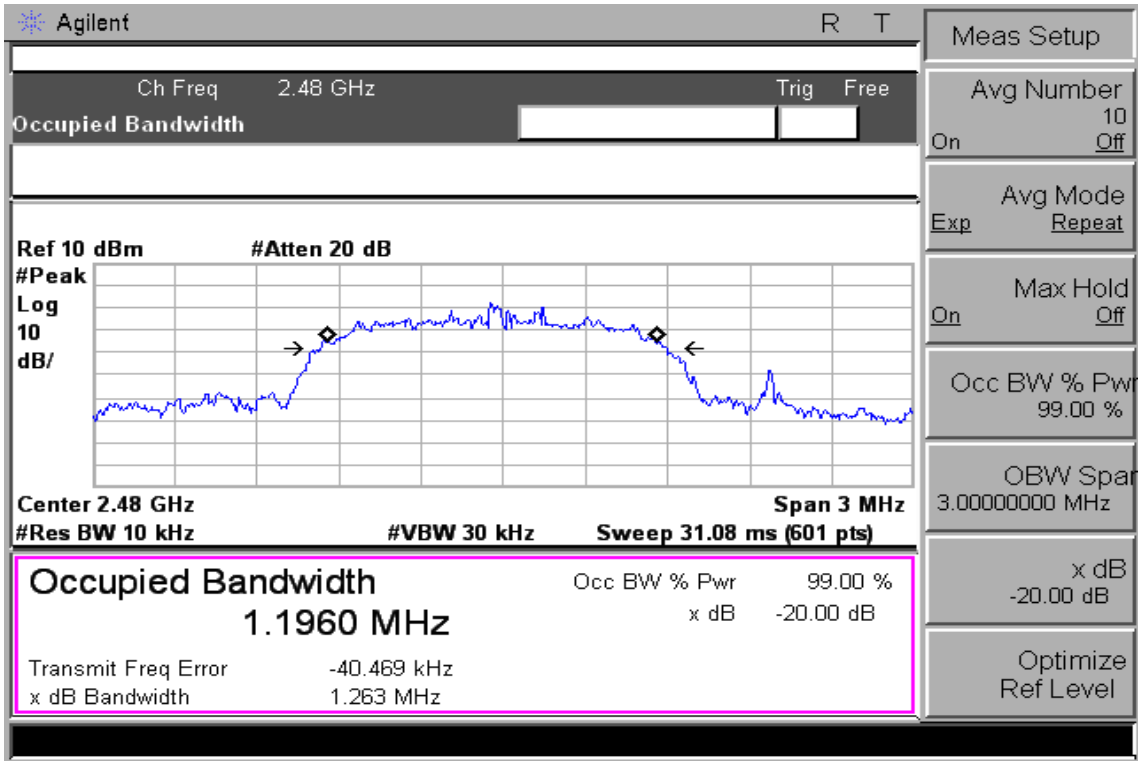
20dB Bandwidth Test Data CH-Low



20dB Bandwidth Test Data CH-Mid



20dB Bandwidth Test Data CH-High



8. 100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

8.1. 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 100KHz 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).

8.2. 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=100KHz, Span=25MHz, 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.

8.3. Measurement Result

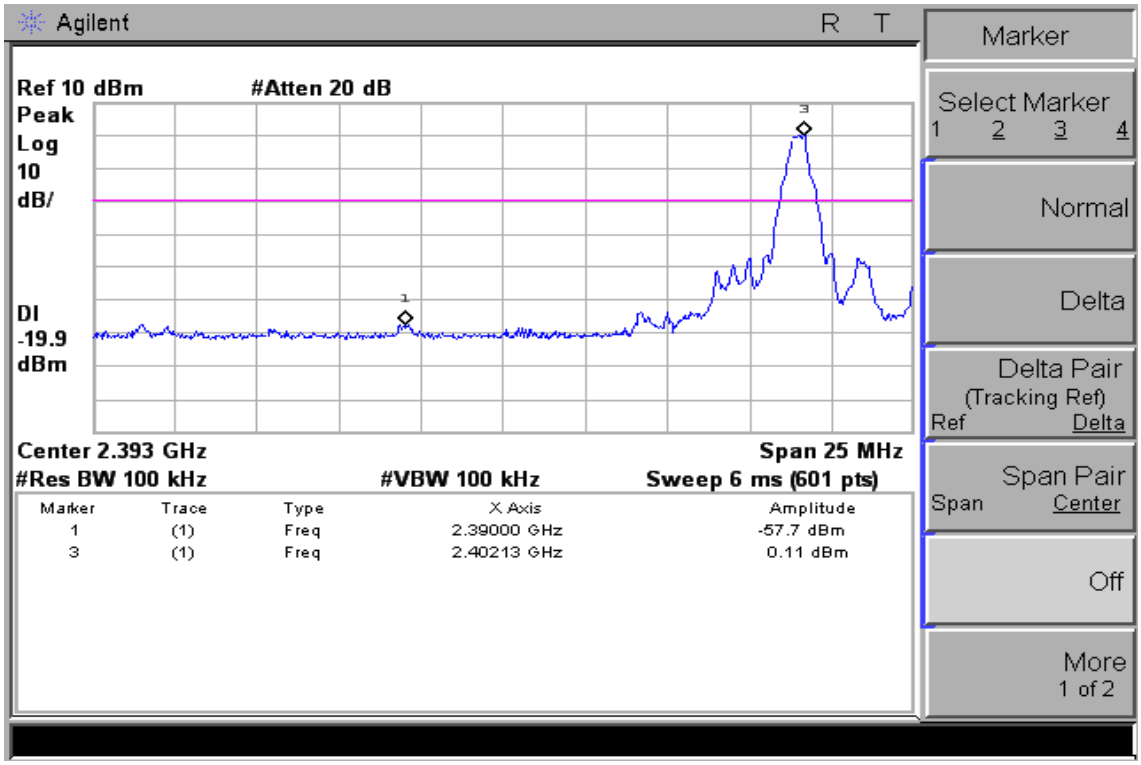
Refer to attach spectrum analyzer data chart.

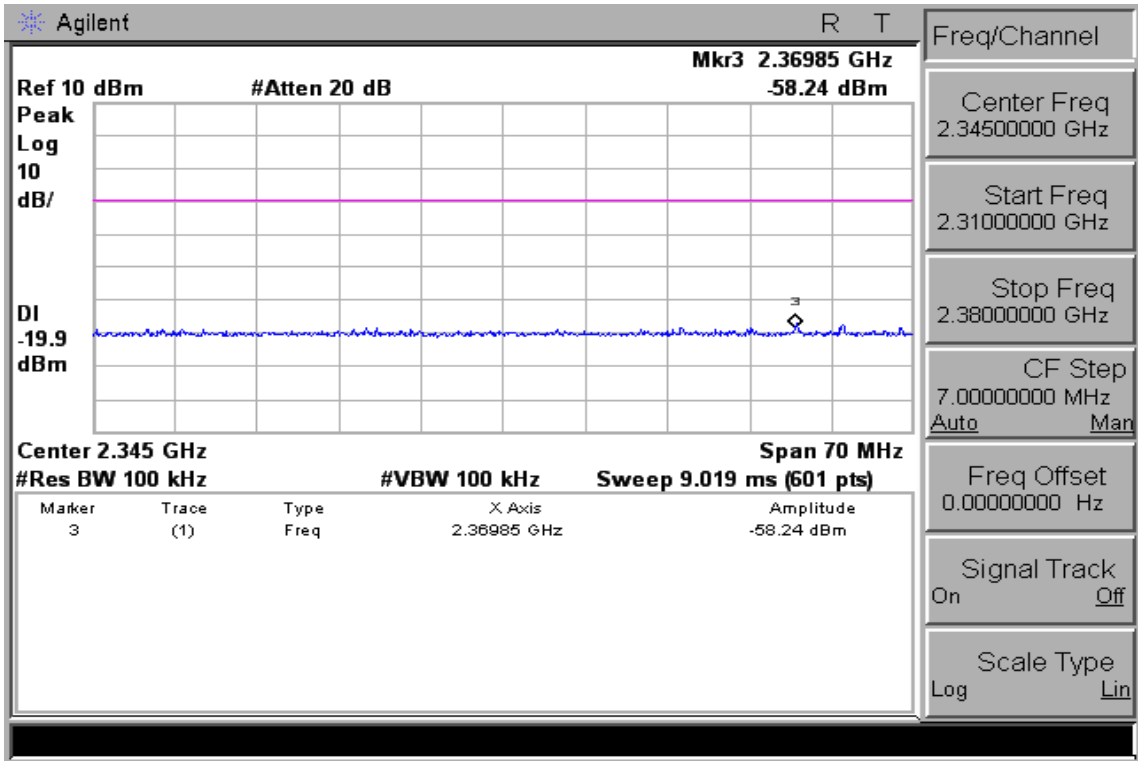
8.4. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2008	01/22/2010
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009
Splitter	Agilent	11636B	N/A	07/05/2008	07/04/2009

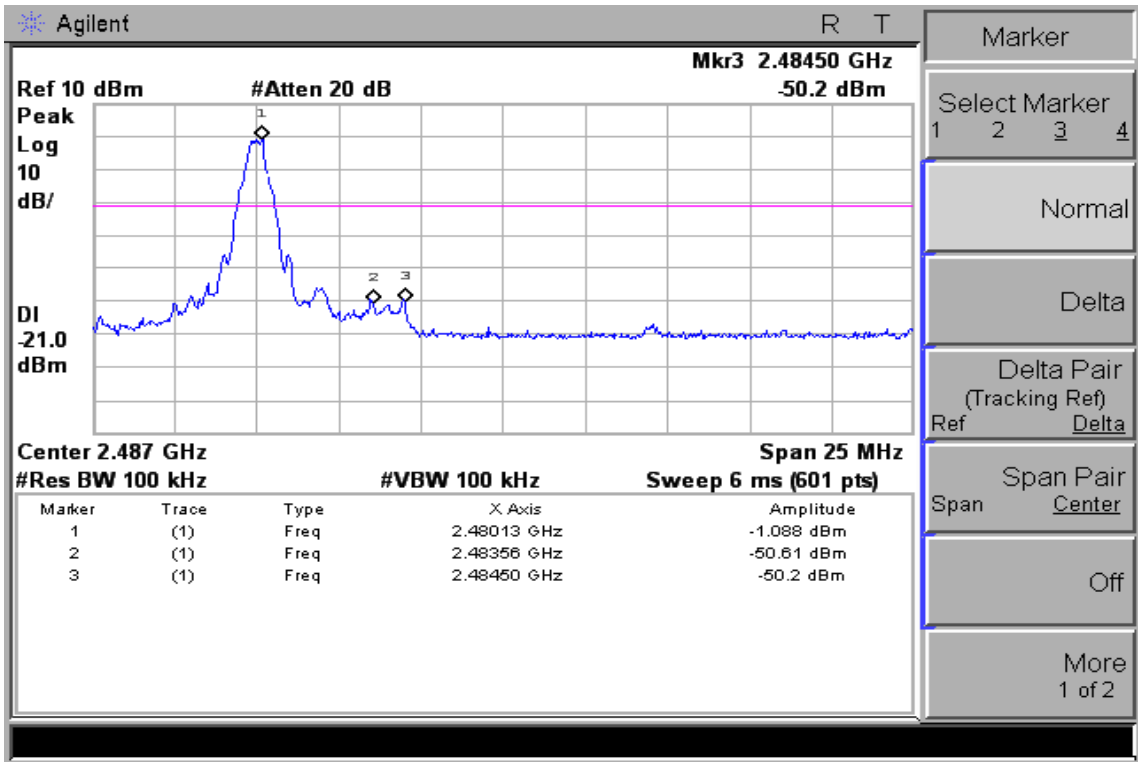
BDR Mode

Band Edges Test Data CH-Low





Band Edges Test Data CH-High



Radiated Emission:

Operation Mode	TX CH Low	Test Date	Dec. 13, 2008
Fundamental Frequency	2402 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2390.00	35.60	---	-1.39	34.21	---	74.00	54.00	-19.79	Peak

Operation Mode	TX CH Low	Test Date	Dec. 13, 2008
Fundamental Frequency	2402 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2390.00	34.72	---	-1.39	33.33	---	74.00	54.00	-20.67	Peak

Remark：

(1) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(3) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(4) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Emission:

Operation Mode	TX CH High	Test Date	Dec. 13, 2008
Fundamental Frequency	2480 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2483.56	39.74	---	-0.92	38.82	---	74.00	54.00	-15.18	Peak
2484.50	40.69	---	-0.92	39.77	---	74.00	54.00	-14.23	Peak

Operation Mode	TX CH High	Test Date	Dec. 13, 2008
Fundamental Frequency	2480 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2483.56	38.61	---	-0.92	37.69	---	74.00	54.00	-16.31	Peak
2484.50	39.47	---	-0.92	38.55	---	74.00	54.00	-15.45	Peak

Remark：

(1) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

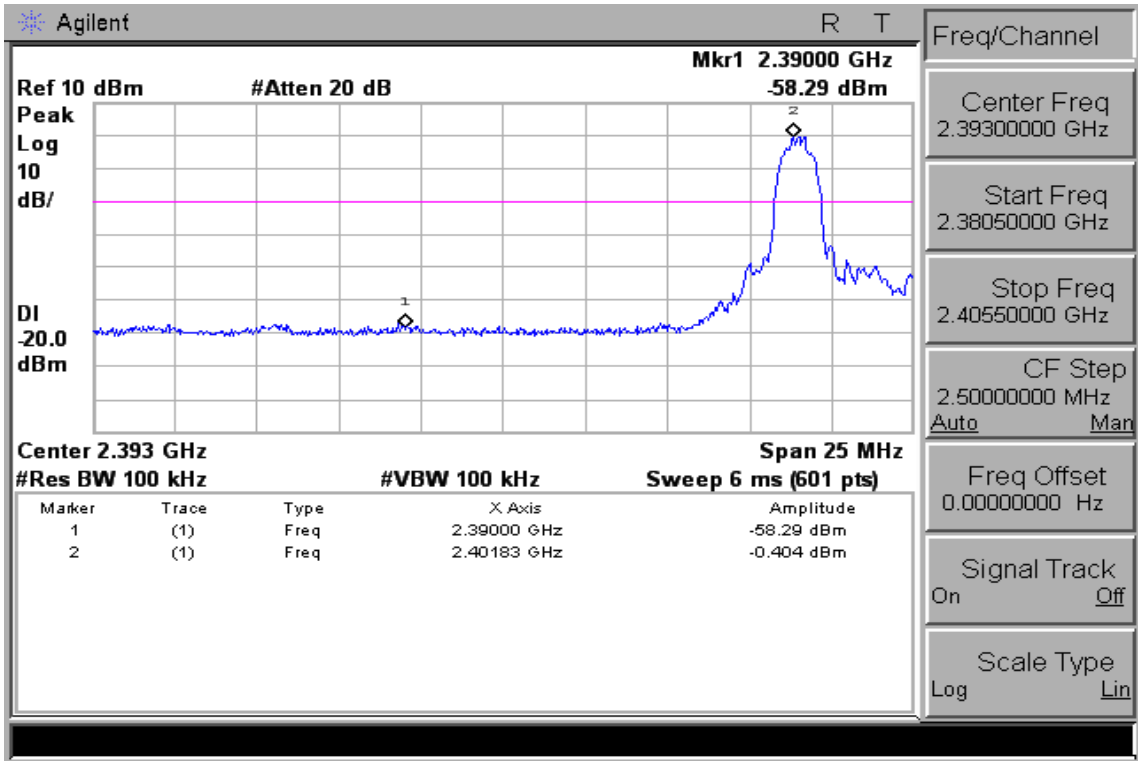
(2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

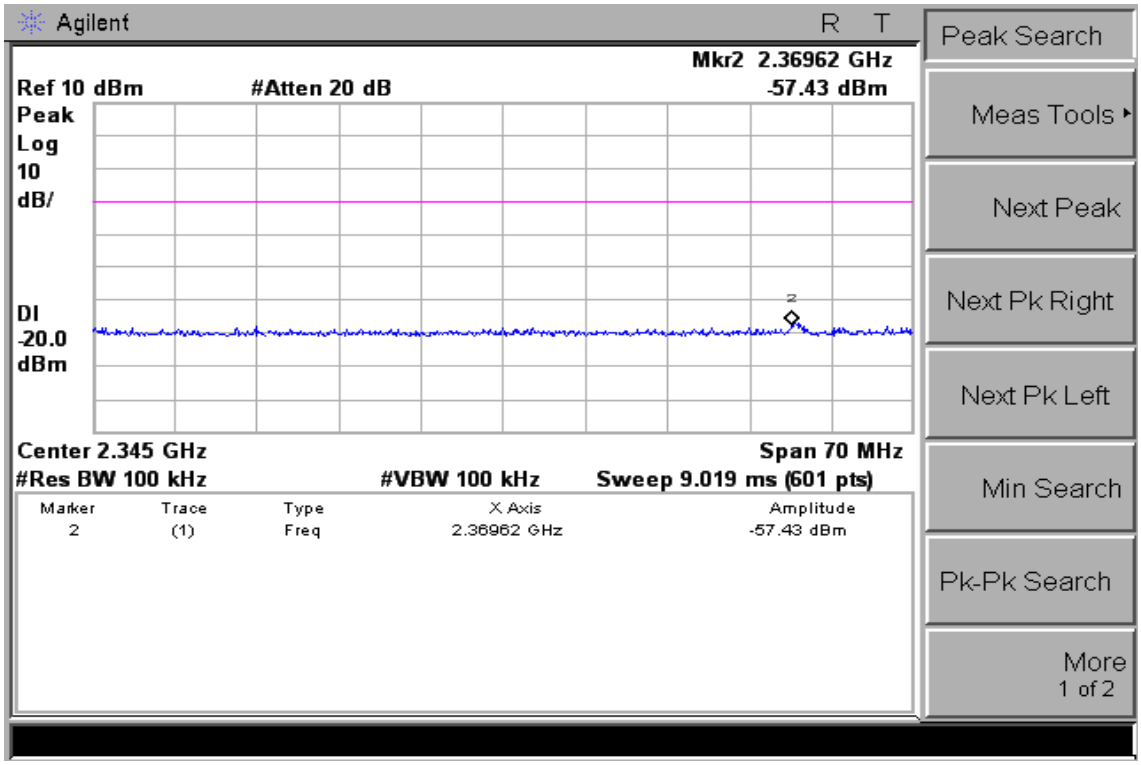
(3) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(4) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

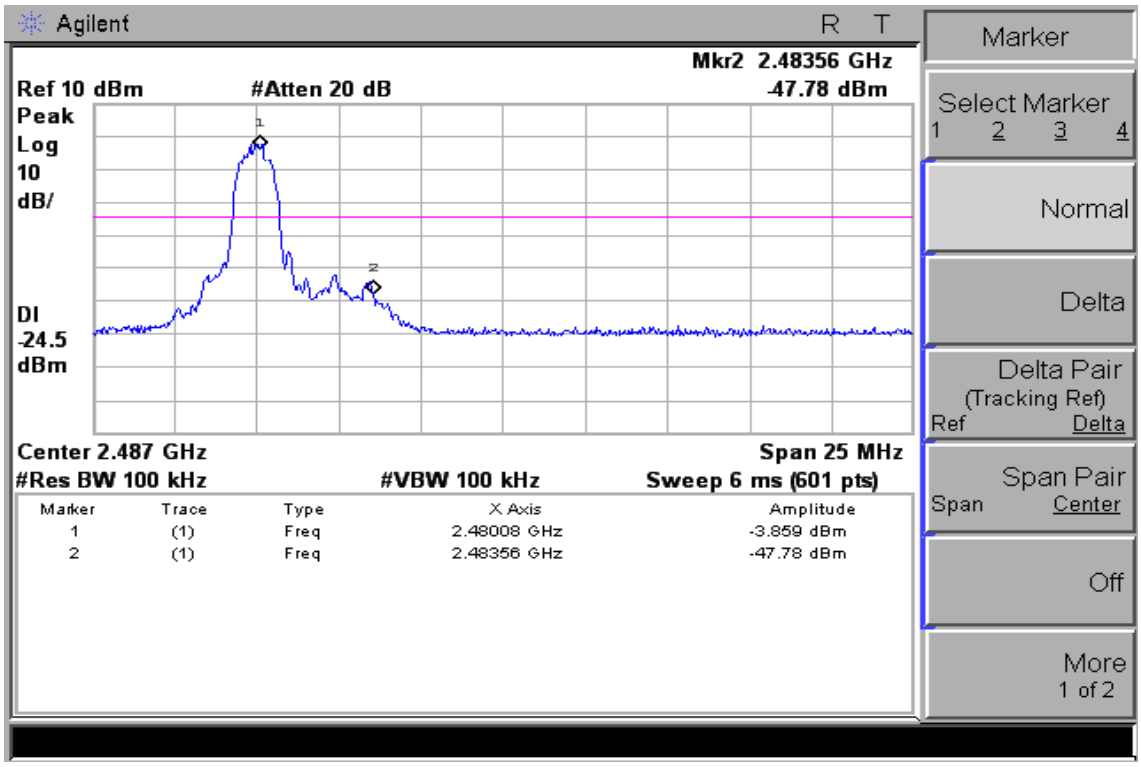
EDR Mode

Band Edges Test Data CH-Low





Band Edges Test Data CH-High



Radiated Emission:

Operation Mode	TX CH Low	Test Date	Dec. 13, 2008
Fundamental Frequency	2402 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2390.00	35.54	---	-1.39	34.15	---	74.00	54.00	-19.85	Peak

Operation Mode	TX CH Low	Test Date	Dec. 13, 2008
Fundamental Frequency	2402 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2390.00	34.58	---	-1.39	33.19	---	74.00	54.00	-20.81	Peak

Remark：

(1) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(3) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(4) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Emission:

Operation Mode	TX CH High	Test Date	Dec. 13, 2008
Fundamental Frequency	2480 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2483.56	40.47	---	-0.92	39.55	---	74.00	54.00	-14.45	Peak

Operation Mode	TX CH High	Test Date	Dec. 13, 2008
Fundamental Frequency	2480 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
2483.56	38.76	---	-0.92	37.84	---	74.00	54.00	-16.16	Peak

Remark：

(1) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(3) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(4) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

9. SPURIOUS RADIATED EMISSION TEST

9.1. Standard Applicable

According to §15.247(c), all other emissions outside these bands shall not exceed the general radiated emission limits specified in §15.209(a). 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.

9.2. EUT Setup

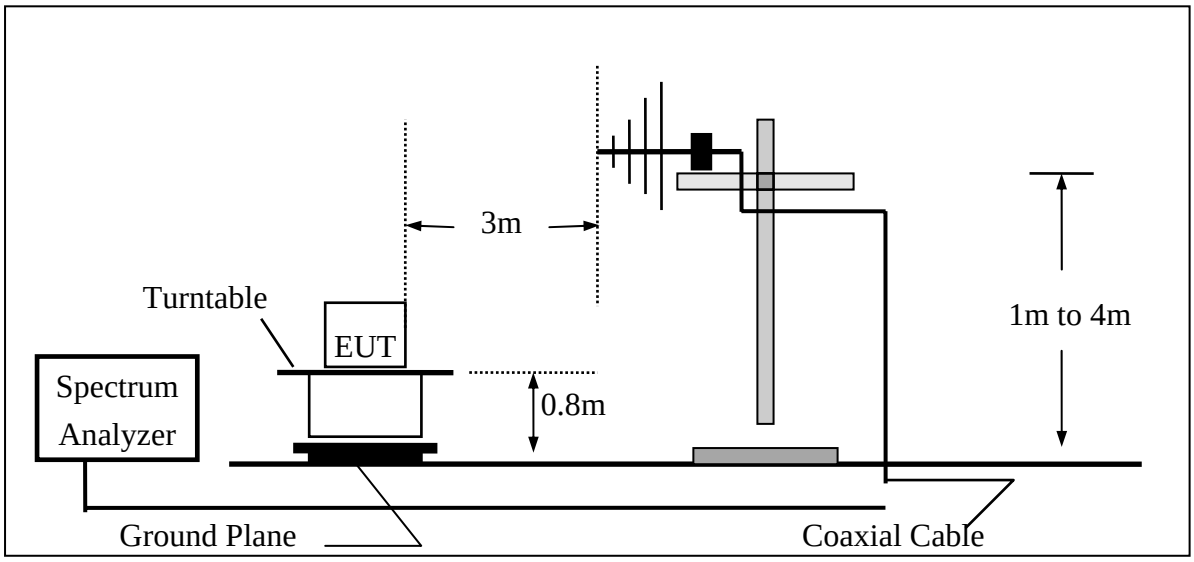
1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-2003.
2. The EUT was put on test table. The EUT was placed flushed with the rear of the table.

9.3. Measurement Procedure

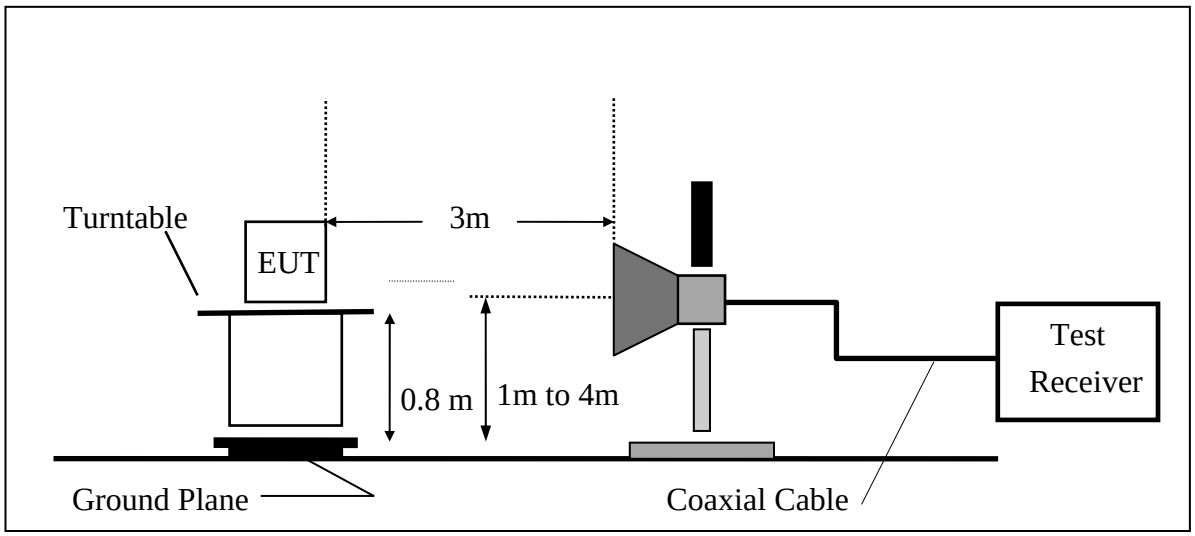
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. When measurement procedures 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 measured were complete.

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

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



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



9.5. Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2008	11/14/2009
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-320	03/14/2008	03/13/2009
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2008	11/29/2009
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2008	01/04/2009
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	SUCOFLEX 104PEA-10M	10m	01/05/2008	01/04/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2008	01/04/2009

9.6. 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

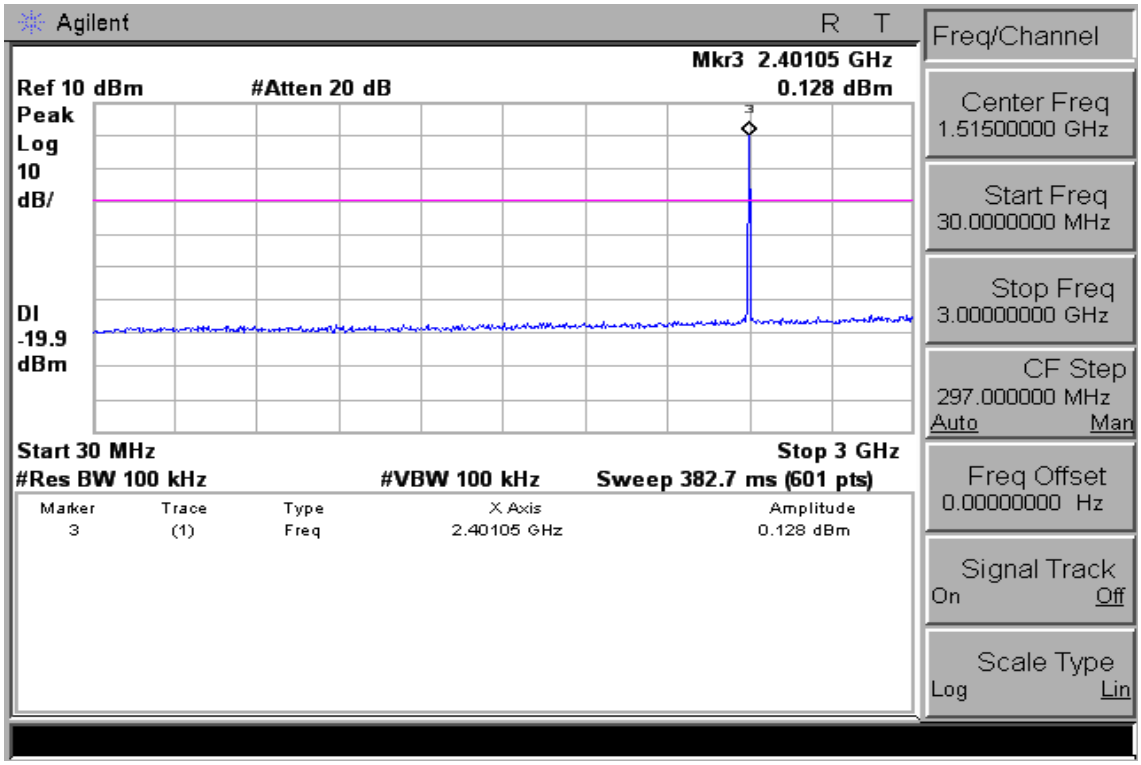
Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

9.7. Measurement Result

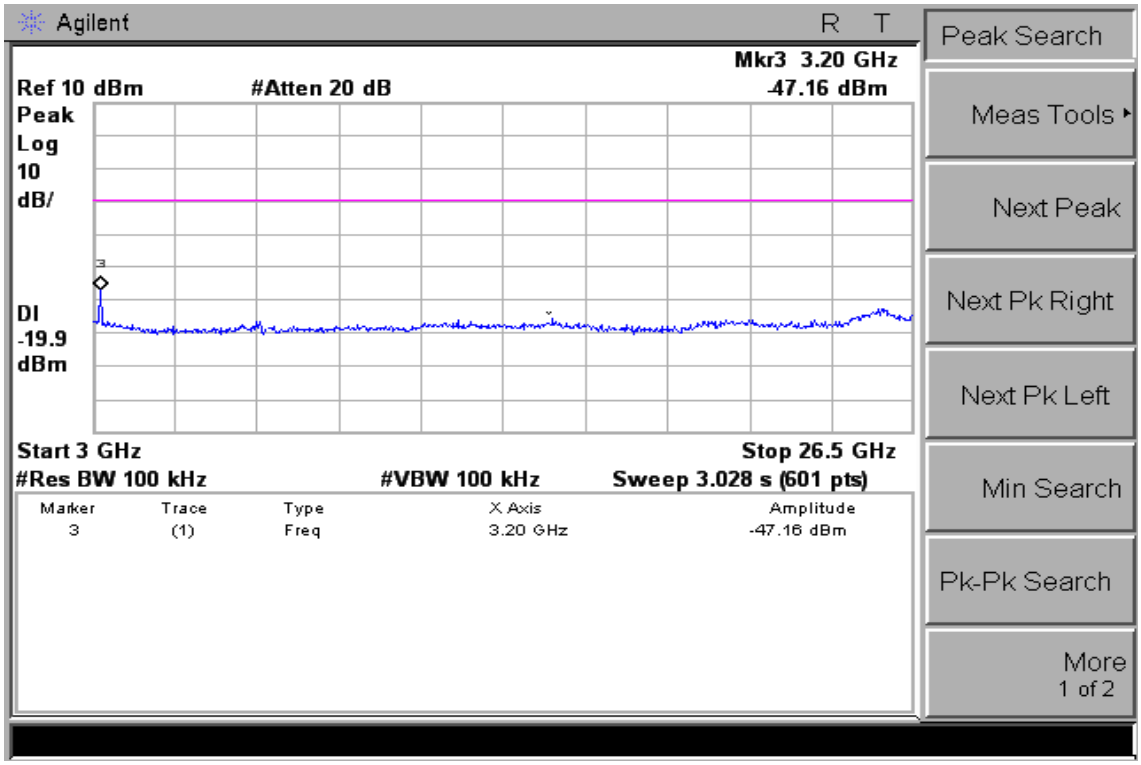
Refer to attach tabular data sheets.

BDR Mode Conducted Spurious Emission Measurement Result

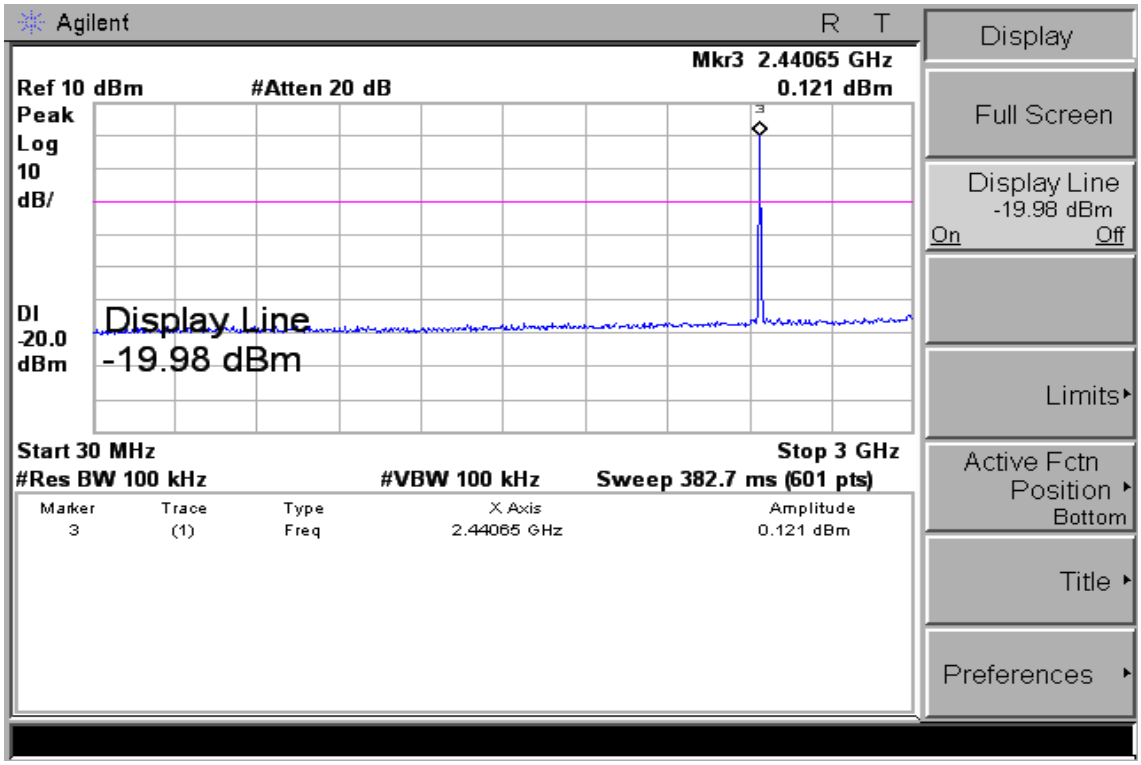
Ch Low 30MHz – 3GHz



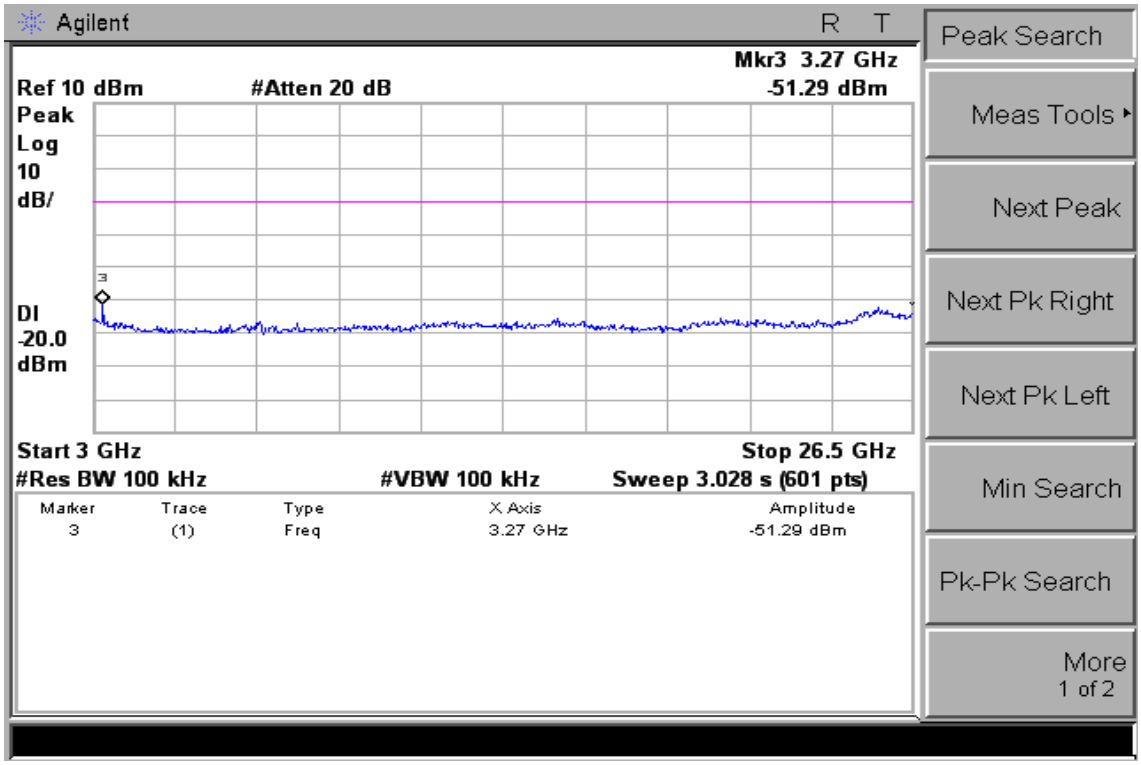
Ch Low 3GHz – 26.5GHz



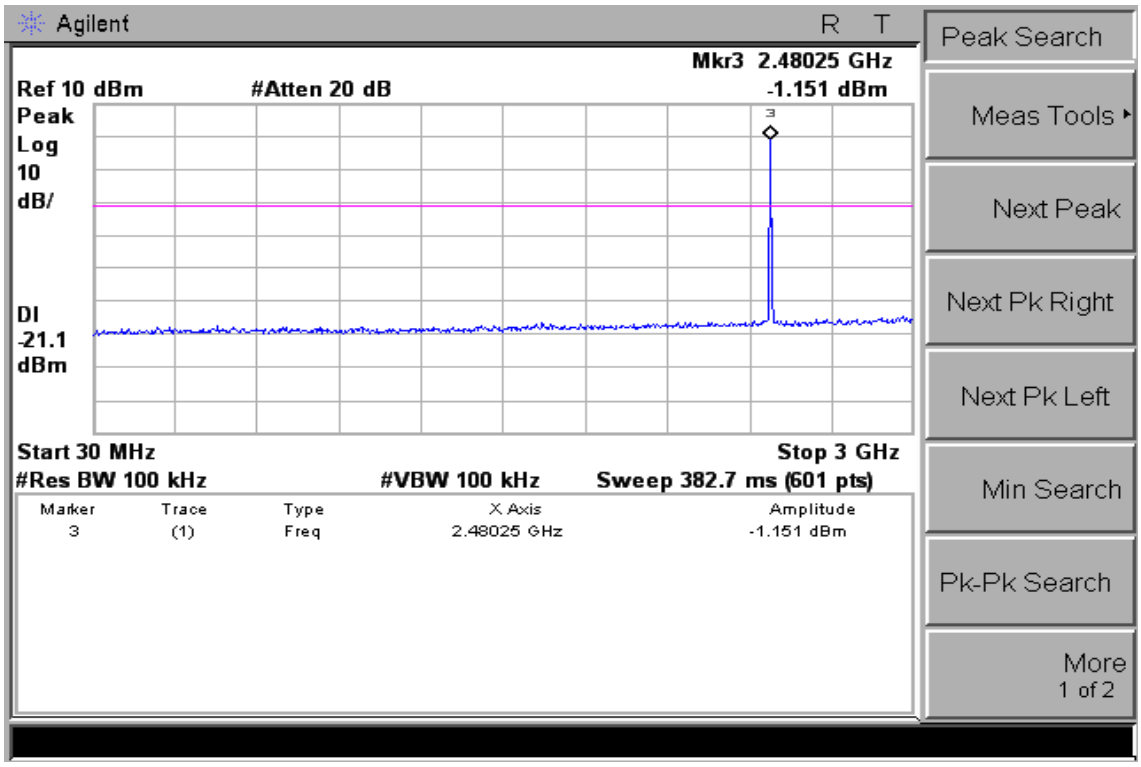
Ch Mid 30MHz – 3GHz



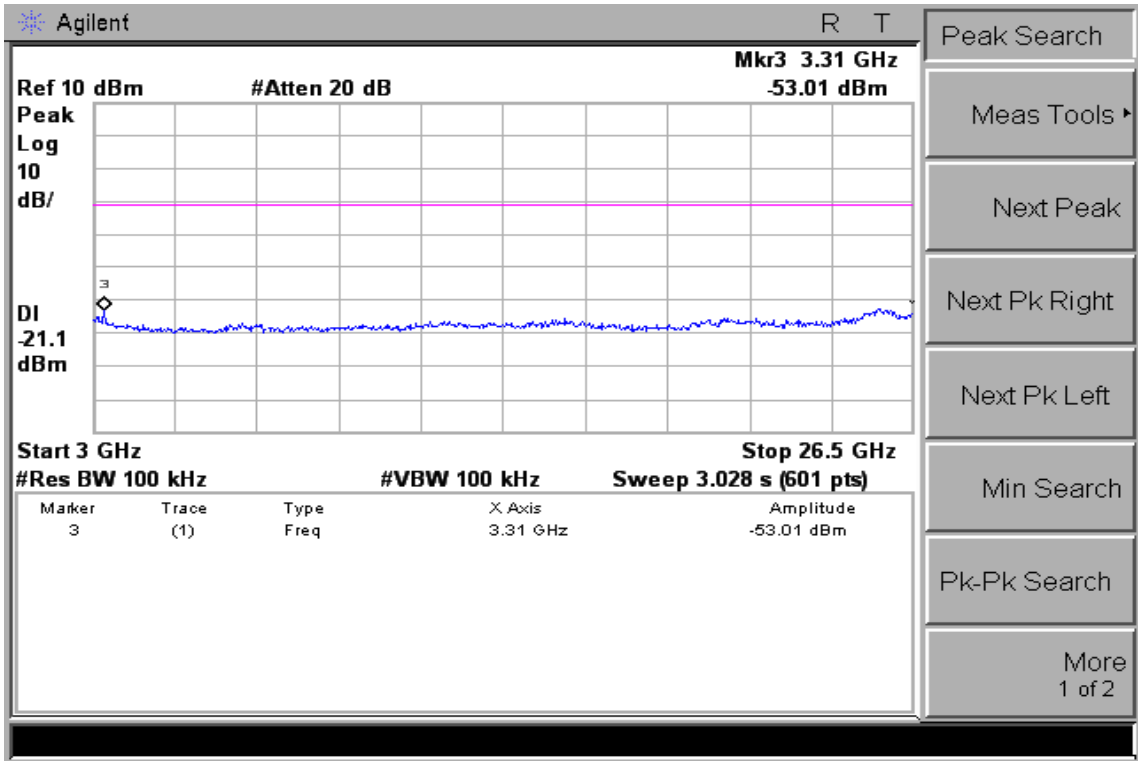
Ch Mid 3GHz – 26.5GHz



Ch High 30MHz – 3GHz

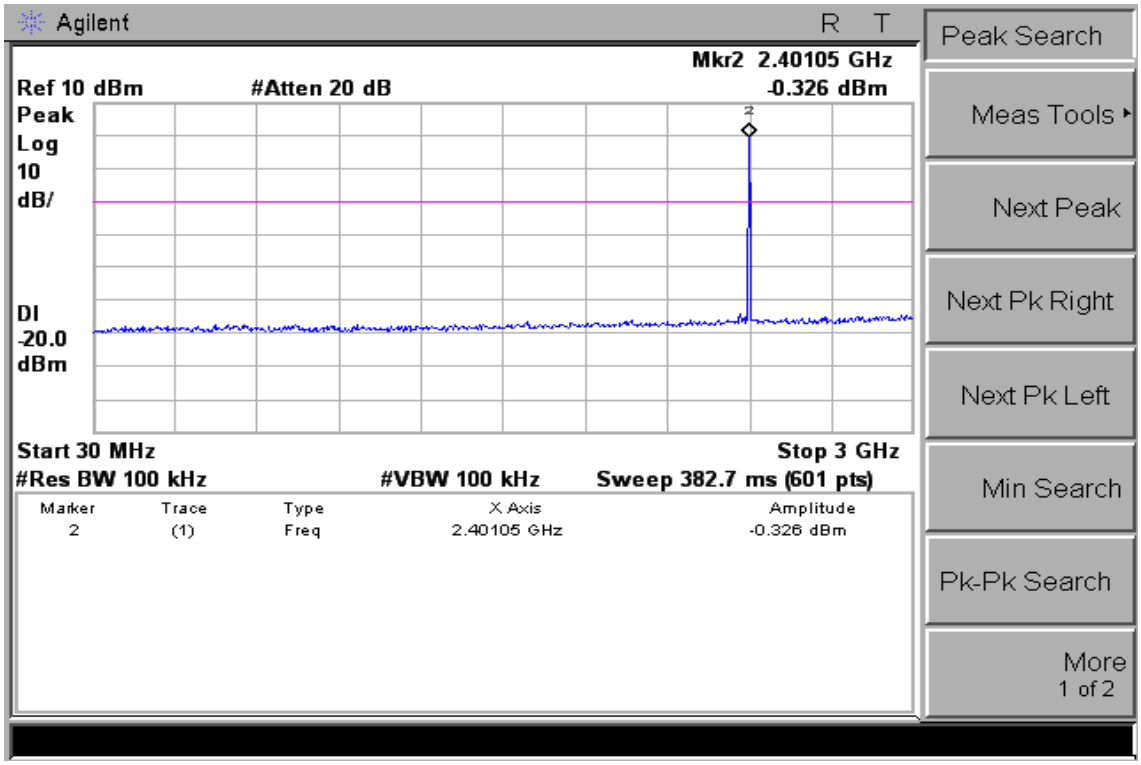


Ch High 3GHz – 26.5GHz

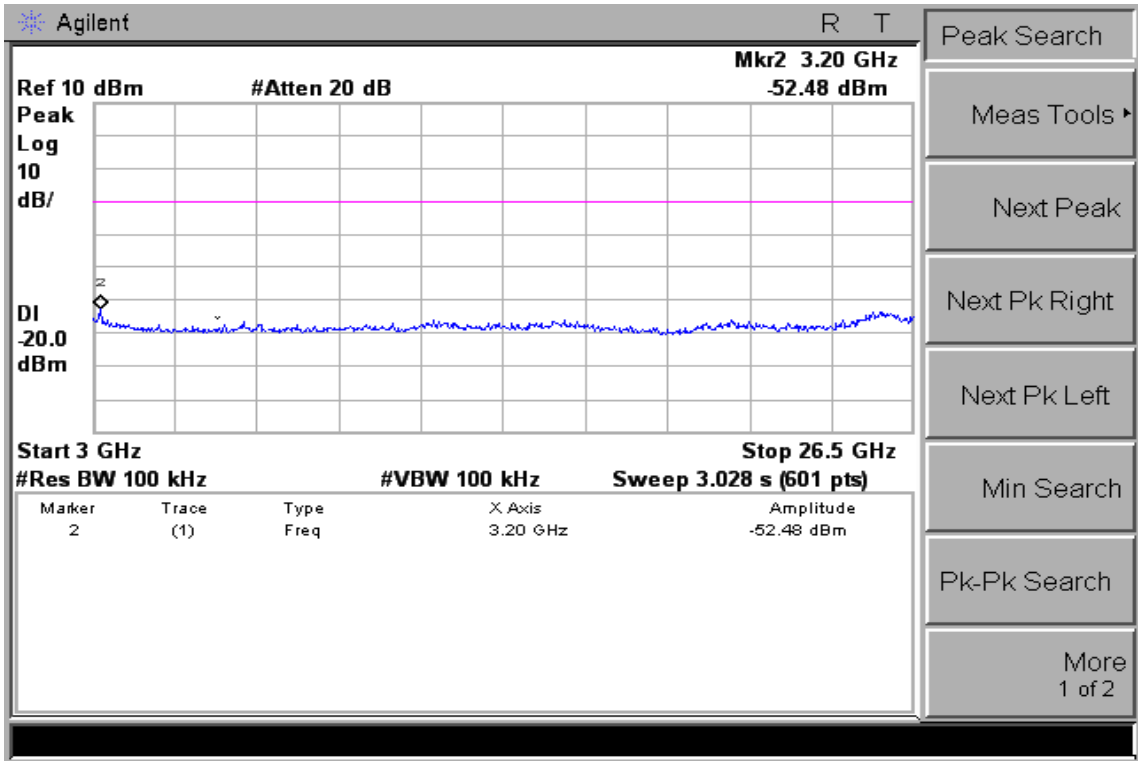


EDR Mode Conducted Spurious Emission Measurement Result

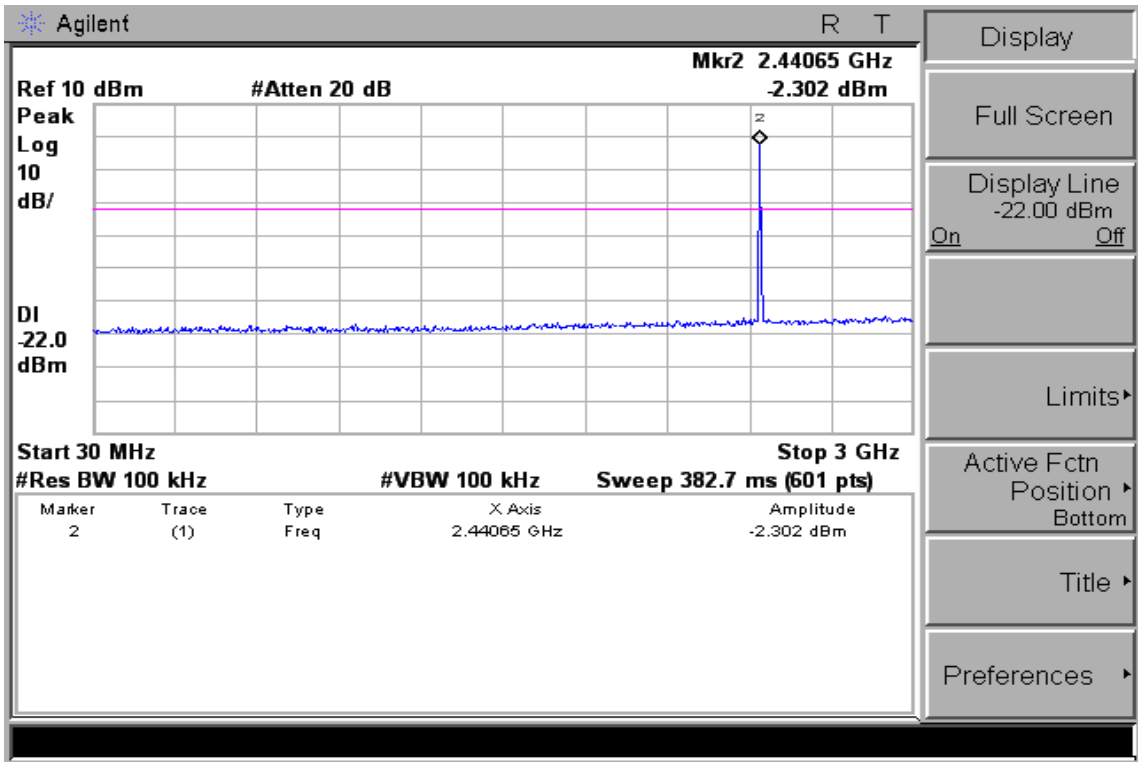
Ch Low 30MHz – 3GHz



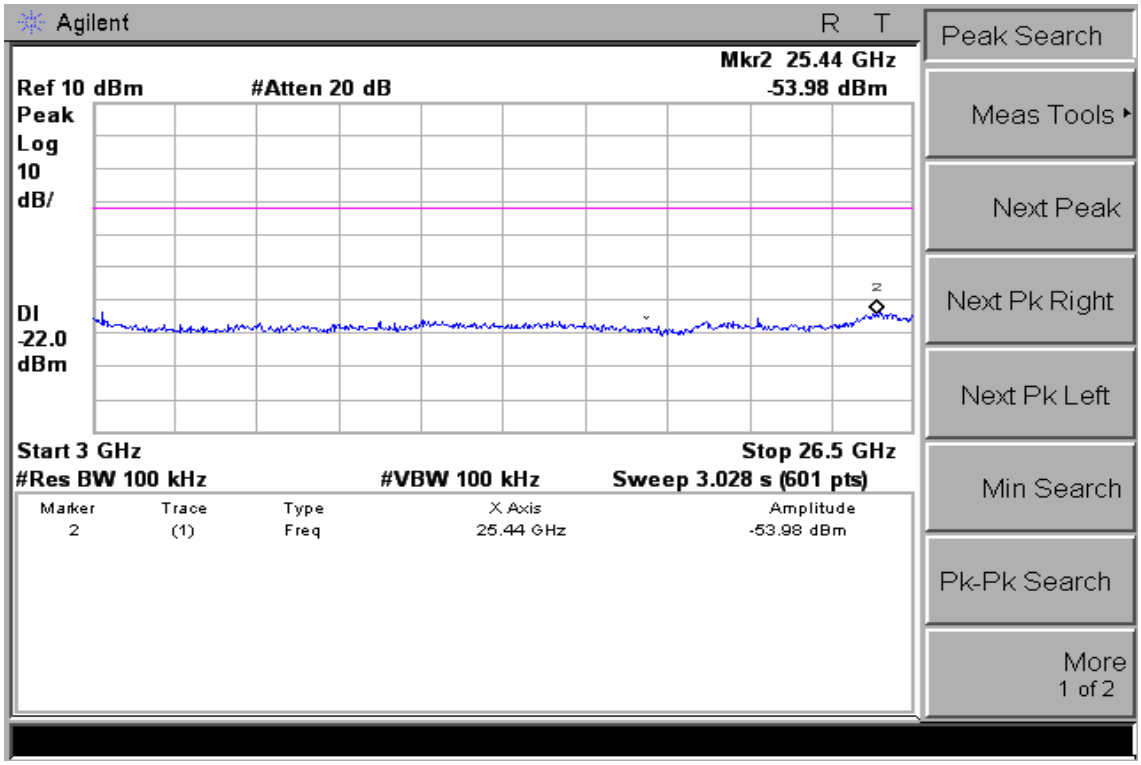
Ch Low 3GHz – 26.5GHz



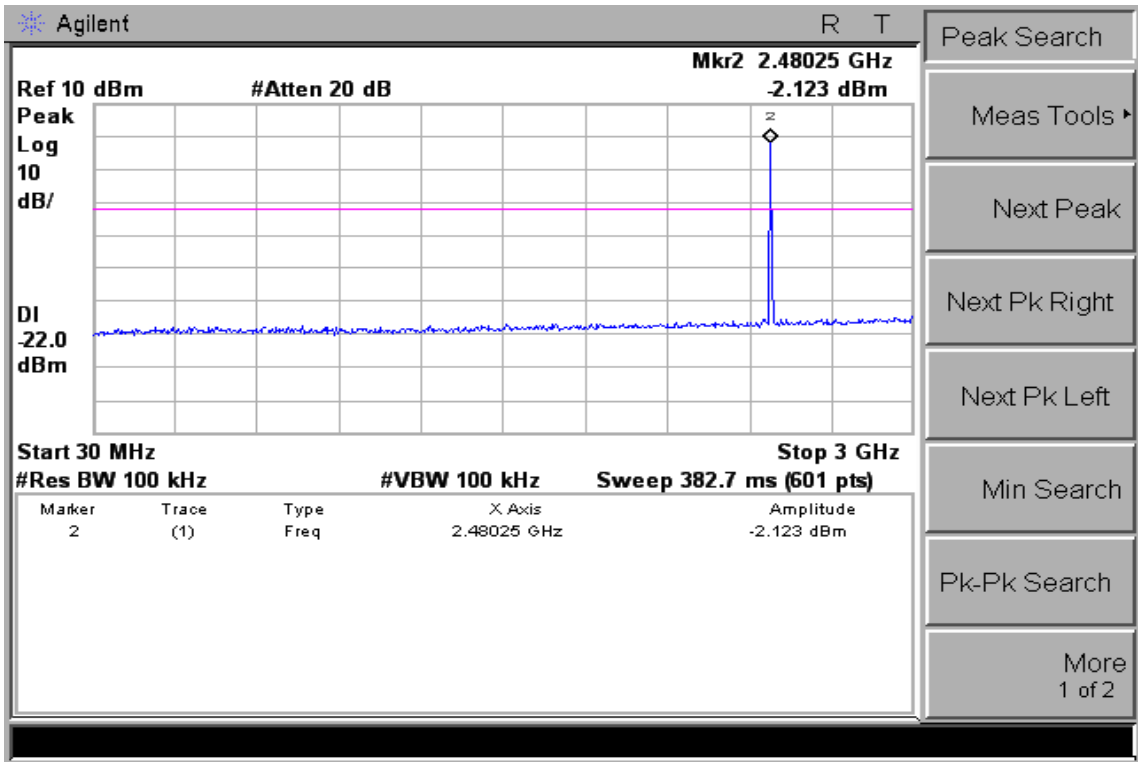
Ch Mid 30MHz – 3GHz



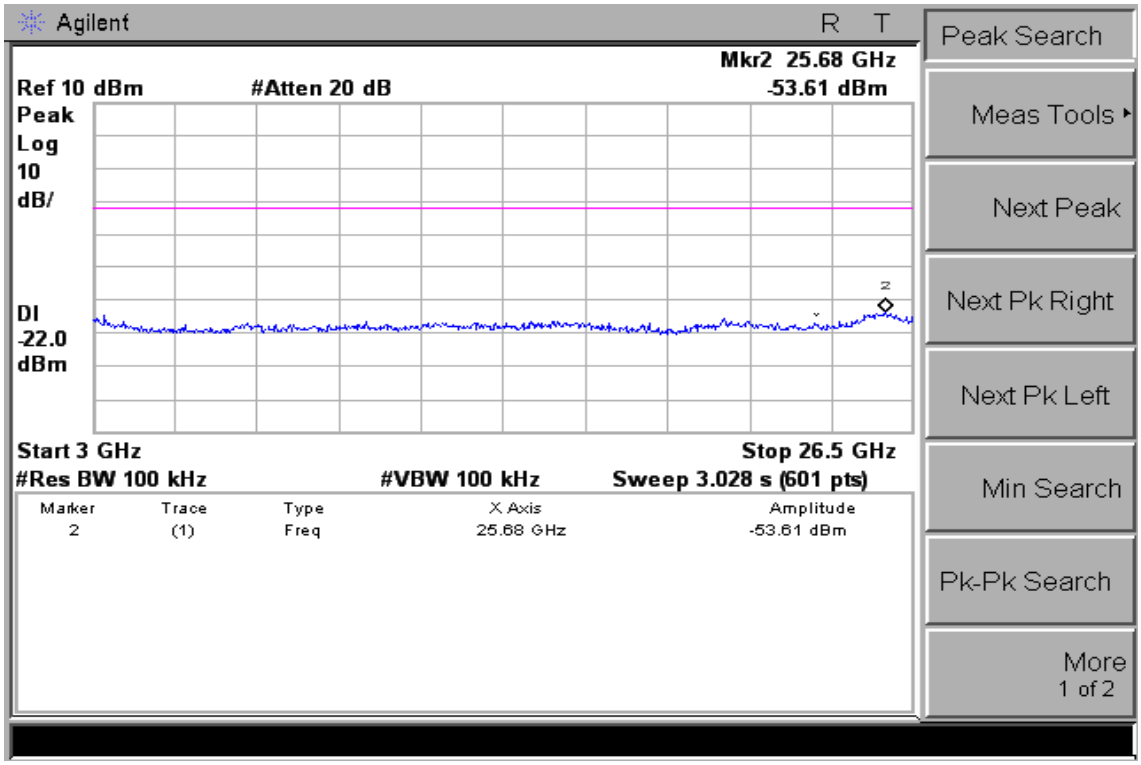
Ch Mid 3GHz – 26.5GHz



Ch High 30MHz – 3GHz



Ch High 3GHz – 26.5GHz



BDR Mode

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX CH Low	Test Date	Dec. 13, 2008
Fundamental Frequency	2402MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver./Hor.
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
70.74	V	Peak	48.36	-16.27	32.09	40.00	-7.91
104.69	V	Peak	50.04	-16.63	33.41	43.50	-10.09
282.20	V	Peak	31.01	-13.30	17.71	46.00	-28.29
450.98	V	Peak	30.97	-8.61	22.36	46.00	-23.64
678.93	V	Peak	31.30	-4.98	26.32	46.00	-19.68
909.79	V	Peak	31.32	-1.07	30.25	46.00	-15.75
71.71	H	Peak	47.75	-16.45	31.30	40.00	-8.70
104.69	H	Peak	43.25	-16.63	26.62	43.50	-16.88
155.13	H	Peak	30.74	-13.12	17.62	43.50	-25.88
450.98	H	Peak	31.28	-8.61	22.67	46.00	-23.33
649.83	H	Peak	31.60	-4.95	26.65	46.00	-19.35
866.14	H	Peak	31.91	-1.65	30.26	46.00	-15.74

Remark：

1 Measuring frequencies from 30 MHz to the 1GHz。

2 Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.

3 Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX CH Mid	Test Date	Dec. 13, 2008
Fundamental Frequency	2441MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver./Hor.
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
70.74	V	Peak	46.59	-16.27	30.32	40.00	-9.68
104.69	V	Peak	48.68	-16.63	32.05	43.50	-11.45
463.59	V	Peak	31.28	-8.55	22.73	46.00	-23.27
615.88	V	Peak	31.77	-5.70	26.07	46.00	-19.93
846.74	V	Peak	32.01	-2.04	29.97	46.00	-16.03
945.68	V	Peak	30.81	-1.01	29.80	46.00	-16.20
70.74	H	Peak	49.64	-16.27	33.37	40.00	-6.63
104.69	H	Peak	43.25	-16.63	26.62	43.50	-16.88
421.88	H	Peak	32.18	-9.34	22.84	46.00	-23.16
609.09	H	Peak	32.00	-5.83	26.17	46.00	-19.83
824.43	H	Peak	32.09	-2.52	29.57	46.00	-16.43
897.18	H	Peak	31.26	-1.11	30.15	46.00	-15.85

Remark：

1 Measuring frequencies from 30 MHz to the 1GHz。

2 Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.

3 Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX CH High	Test Date	Dec. 13, 2008
Fundamental Frequency	2480MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver./Hor.
Humidity	65 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
70.74	V	Peak	47.02	-16.27	30.75	40.00	-9.25
104.69	V	Peak	48.59	-16.63	31.96	43.50	-11.54
153.19	V	Peak	31.34	-13.00	18.34	43.50	-25.16
407.33	V	Peak	32.02	-9.82	22.20	46.00	-23.80
604.24	V	Peak	31.65	-5.92	25.73	46.00	-20.27
882.63	V	Peak	30.93	-1.42	29.51	46.00	-16.49
70.74	H	Peak	49.83	-16.27	33.56	40.00	-6.44
104.69	H	Peak	44.68	-16.63	28.05	43.50	-15.45
153.19	H	Peak	30.24	-13.00	17.24	43.50	-26.26
455.83	H	Peak	30.98	-8.61	22.37	46.00	-23.63
657.59	H	Peak	31.79	-4.98	26.81	46.00	-19.19
853.53	H	Peak	32.07	-1.93	30.14	46.00	-15.86

Remark：

1 Measuring frequencies from 30 MHz to the 1GHz。

2 Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.

3 Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX CH Low	Test Date	Dec. 13, 2008
Fundamental Frequency	2402 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
4804.0	33.33	---	6.04	39.37	---	74.00	54.00	-14.63	Peak
7206.0	----					74.00	54.00		
9608.0	----					74.00	54.00		
12010.0	----					74.00	54.00		
14412.0	----					74.00	54.00		
16814.0	----					74.00	54.00		
19216.0	----					74.00	54.00		
21618.0	----					74.00	54.00		
24020.0	----					74.00	54.00		

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX CH Low	Test Date	Dec. 13, 2008
Fundamental Frequency	2402 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
4804.0	33.21	---	6.04	39.25	---	74.00	54.00	-14.75	Peak
7206.0	----					74.00	54.00		
9608.0	----					74.00	54.00		
12010.0	----					74.00	54.00		
14412.0	----					74.00	54.00		
16814.0	----					74.00	54.00		
19216.0	----					74.00	54.00		
21618.0	----					74.00	54.00		
24020.0	----					74.00	54.00		

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX CH Mid	Test Date	Dec. 13, 2008
Fundamental Frequency	2441 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
4882.0	32.53	---	6.17	38.70	---	74.00	54.00	-15.30	Peak
7323.0	----					74.00	54.00		
9764.0	----					74.00	54.00		
12205.0	----					74.00	54.00		
14646.0	----					74.00	54.00		
17087.0	----					74.00	54.00		
19528.0	----					74.00	54.00		
21969.0	----					74.00	54.00		
24410.0	----					74.00	54.00		

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX CH Mid	Test Date	Dec. 13, 2008
Fundamental Frequency	2441 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
4882.0	33.41	---	6.17	39.58	---	74.00	54.00	-14.42	Peak
7323.0	----					74.00	54.00		
9764.0	----					74.00	54.00		
12205.0	----					74.00	54.00		
14646.0	----					74.00	54.00		
17087.0	----					74.00	54.00		
19528.0	----					74.00	54.00		
21969.0	----					74.00	54.00		
24410.0	----					74.00	54.00		

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX CH High	Test Date	Dec. 13, 2008
Fundamental Frequency	2480 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Ver.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
4960.0	33.08	---	6.36	39.44	---	74.00	54.00	-14.56	Peak
7440.0	----					74.00	54.00		
9920.0	----					74.00	54.00		
12400.0	----					74.00	54.00		
14880.0	----					74.00	54.00		
17360.0	----					74.00	54.00		
19840.0	----					74.00	54.00		
22320.0	----					74.00	54.00		
24800.0	----					74.00	54.00		

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	TX CH High	Test Date	Dec. 13, 2008
Fundamental Frequency	2480 MHz	Test By	Jazz
Temperature	25 ℃	Pol	Hor.
Humidity	65 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	
4960.0	33.38	---	6.36	39.74	---	74.00	54.00	-14.26	Peak
7440.0	----					74.00	54.00		
9920.0	----					74.00	54.00		
12400.0	----					74.00	54.00		
14880.0	----					74.00	54.00		
17360.0	----					74.00	54.00		
19840.0	----					74.00	54.00		
22320.0	----					74.00	54.00		
24800.0	----					74.00	54.00		

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

10. FREQUENCY SEPARATION

10.1. Standard Applicable

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

10.2. 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=3KHz, Adjust Span to 3.0 MHz, Sweep = auto.
5. Max hold. Mark 3 Peaks of hopping channel and record the 3 peaks frequency.

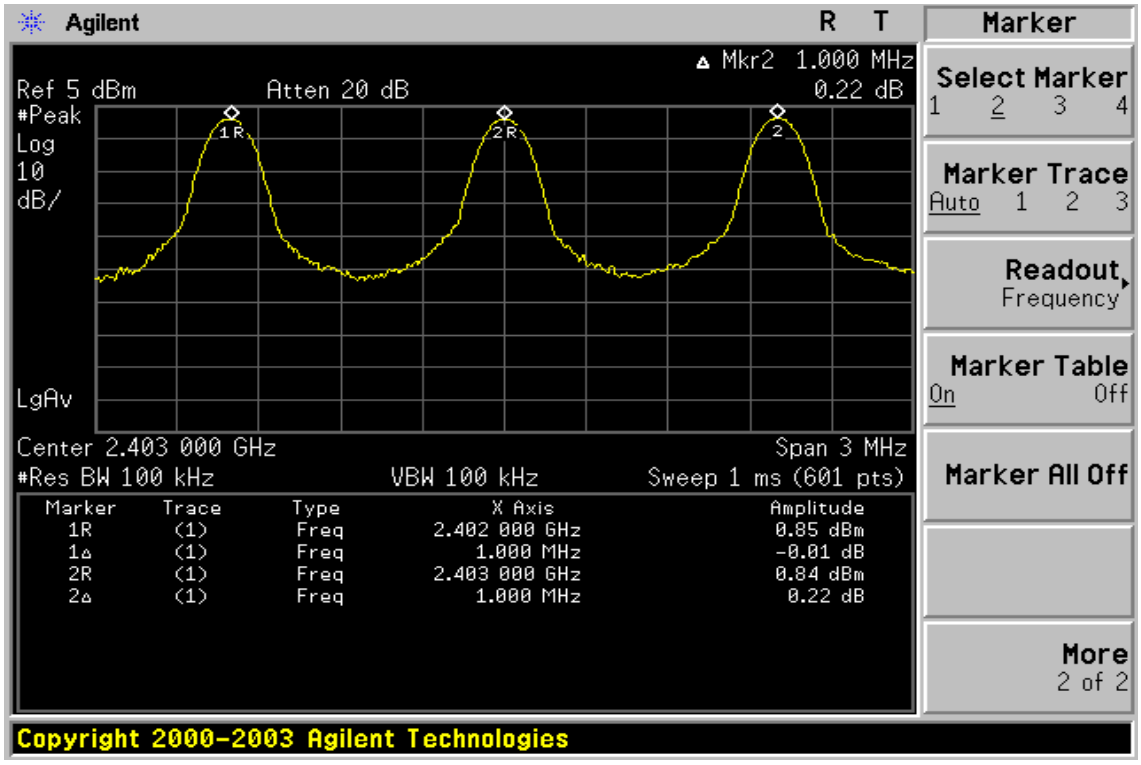
10.3. Measurement Result

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

10.4. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2008	01/22/2010
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009

Frequency Separation Test Data



11. NUMBER OF HOPPING FREQUENCY

11.1. 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.

11.2. 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, VBW=100KHz,
5. Max hold, view and count how many channel in the band.

11.3. Measurement Result

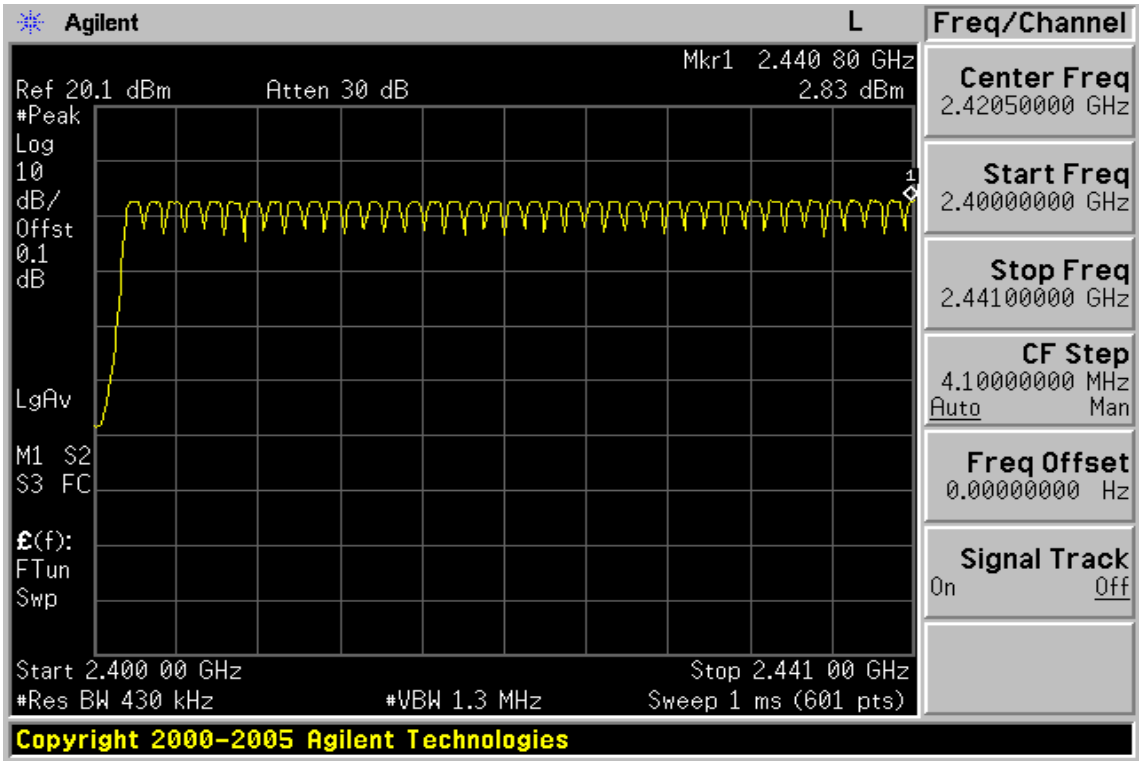
Refer to next page for the plots.

11.4. Measurement Equipment Used:

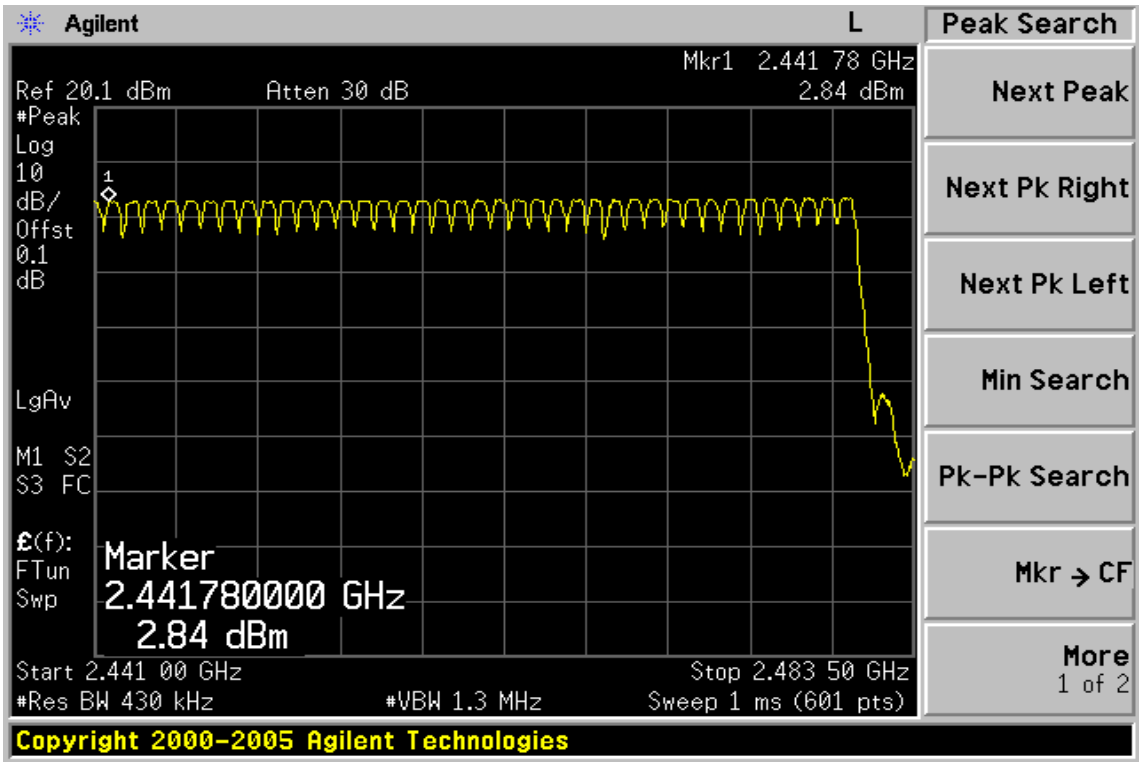
Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2008	01/22/2010
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009

Channel Number

2.4 GHz – 2.441GHz



2.441 GHz – 2.4835GHz



12. TIME OF OCCUPANCY (DWELL TIME)

12.1. 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.

12.2. 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=100KHz, Span = 0Hz , Adjust Sweep = 30s.
5. Repeat above procedures until all frequency measured were complete.

12.3. Measurement Result

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

CH Low: DH1 time slot = 0.417 (ms) * (1600/(2*79)) * 31.6 = 133.44 (ms)

DH3 time slot = 1.667 (ms) * (1600/(4*79)) * 31.6 = 266.72 (ms)

DH5 time slot = 2.925 (ms) * (1600/(6*79)) * 31.6 = 312.00 (ms)

CH Mid: DH1 time slot = 0.417 (ms) * (1600/(2*79)) * 31.6 = 133.44 (ms)

DH3 time slot = 1.667 (ms) * (1600/(4*79)) * 31.6 = 266.72 (ms)

DH5 time slot = 2.925 (ms) * (1600/(6*79)) * 31.6 = 312.00 (ms)

CH High: DH1 time slot = 0.417 (ms) * (1600/(2*79)) * 31.6 = 133.44 (ms)

DH3 time slot = 1.667 (ms) * (1600/(4*79)) * 31.6 = 266.72 (ms)

DH5 time slot = 2.925 (ms) * (1600/(6*79)) * 31.6 = 312.00 (ms)

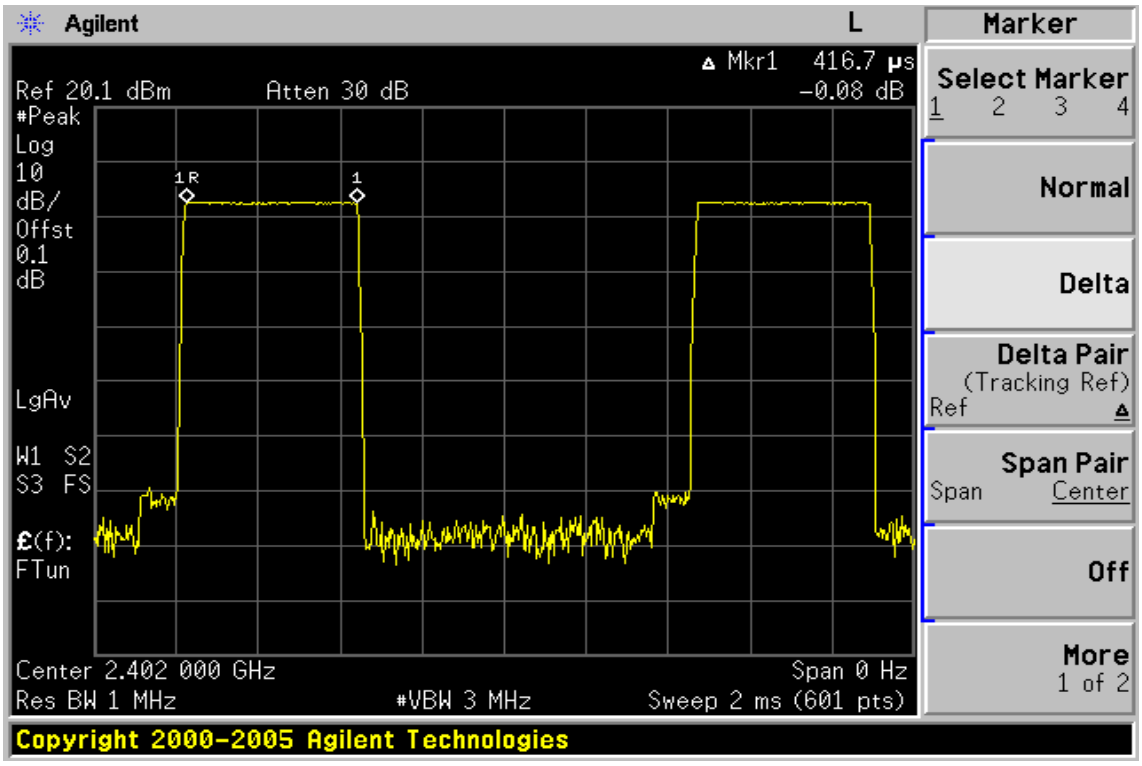
12.4. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2008	01/22/2010
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009

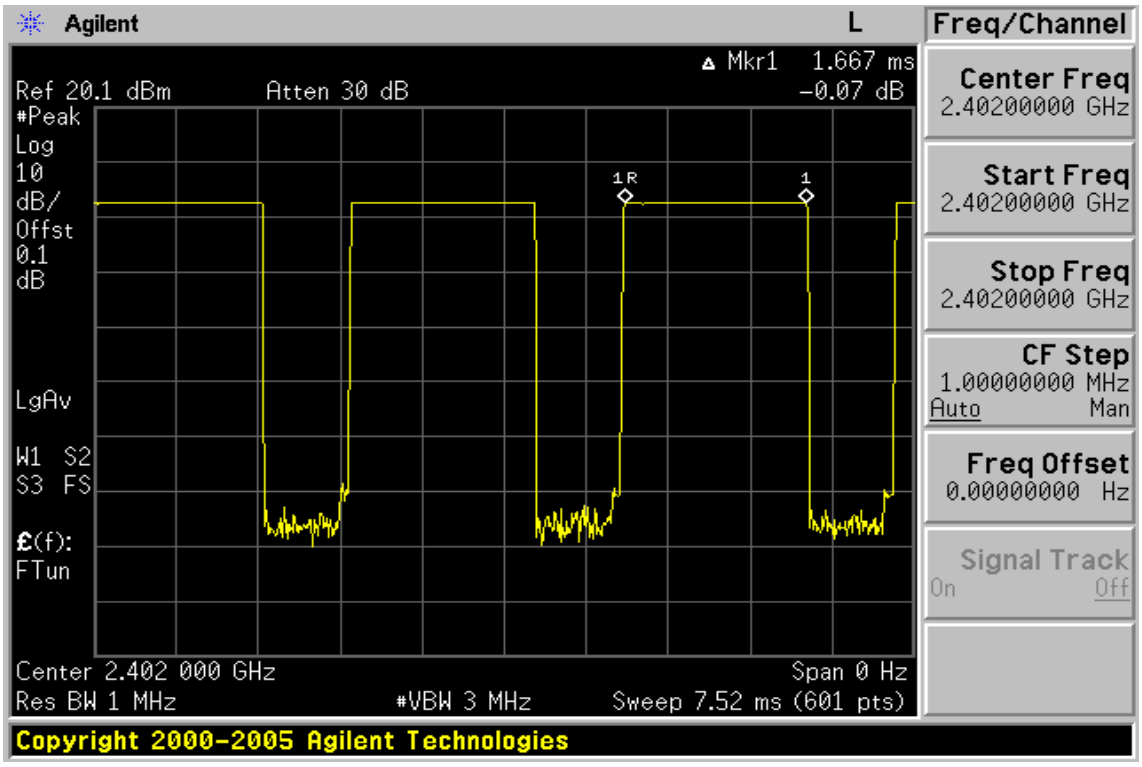
Dwell Time Test Data

CH-Low

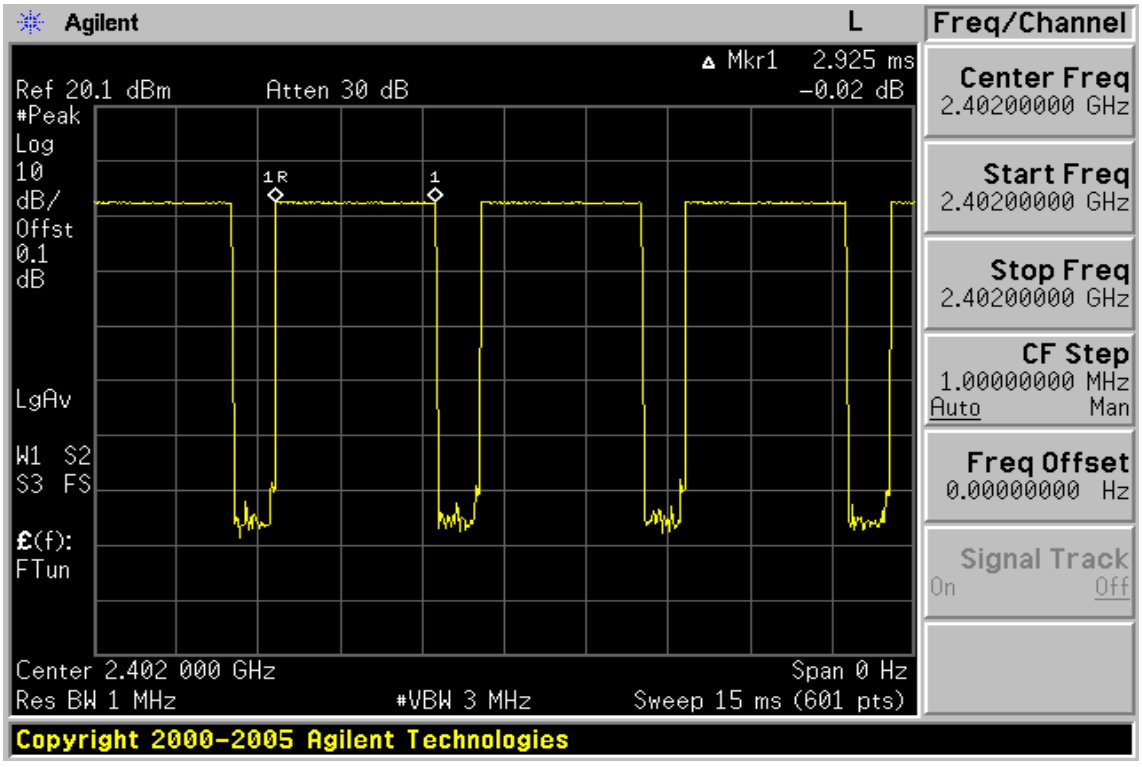
DH1



DH3

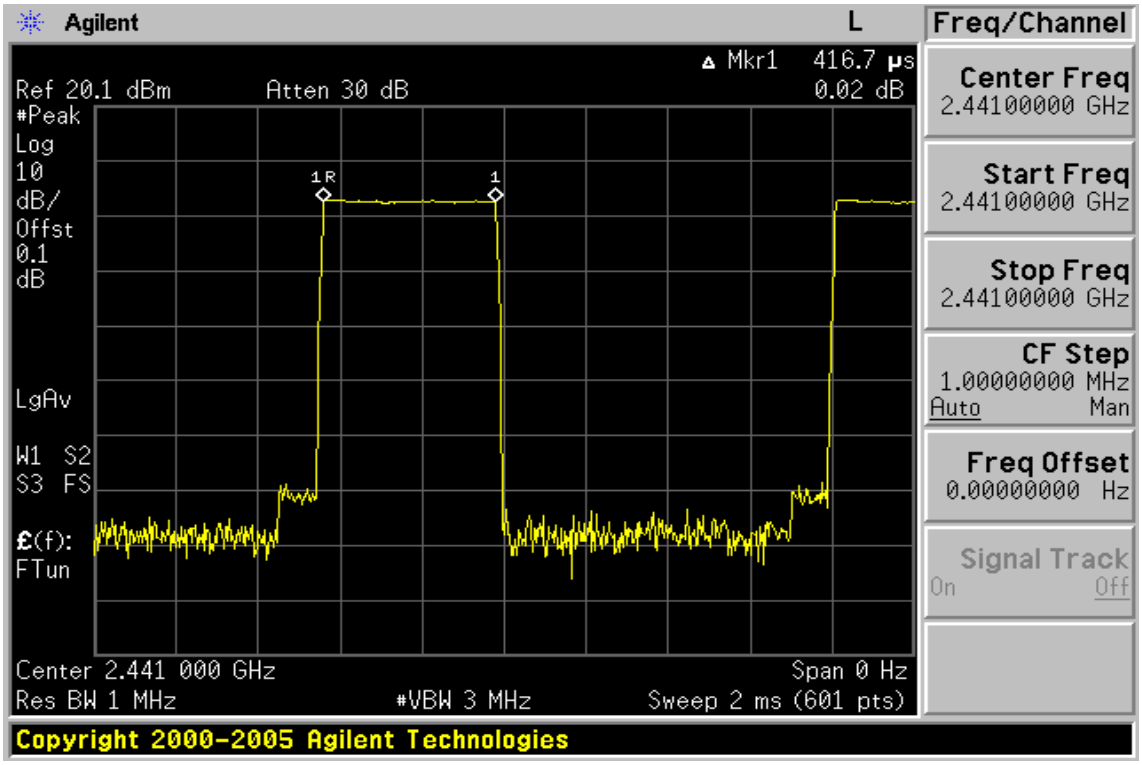


DH5

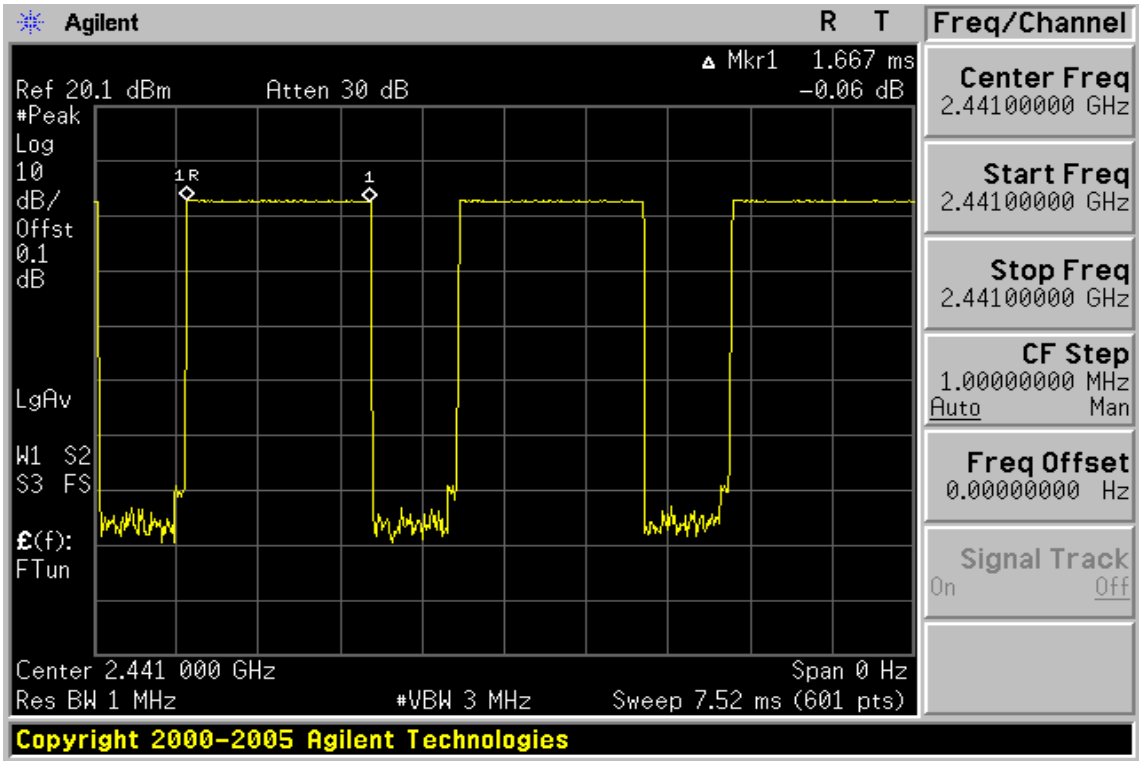


CH-Mid

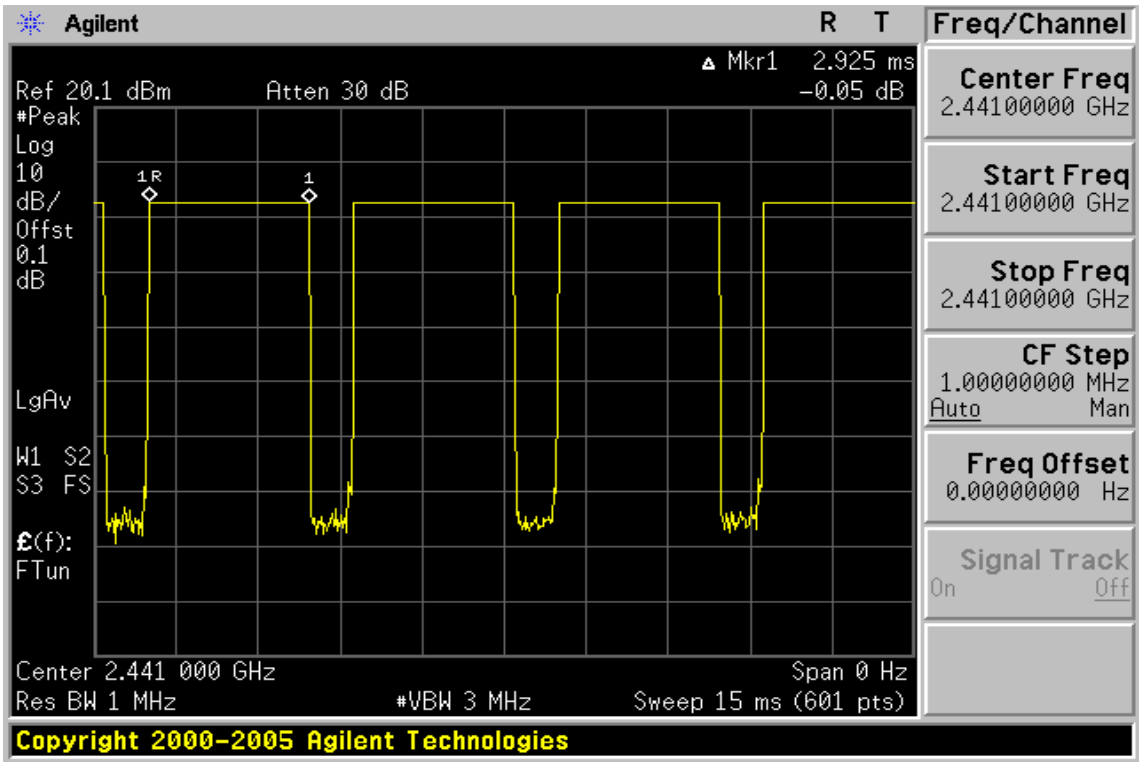
DH1



DH3

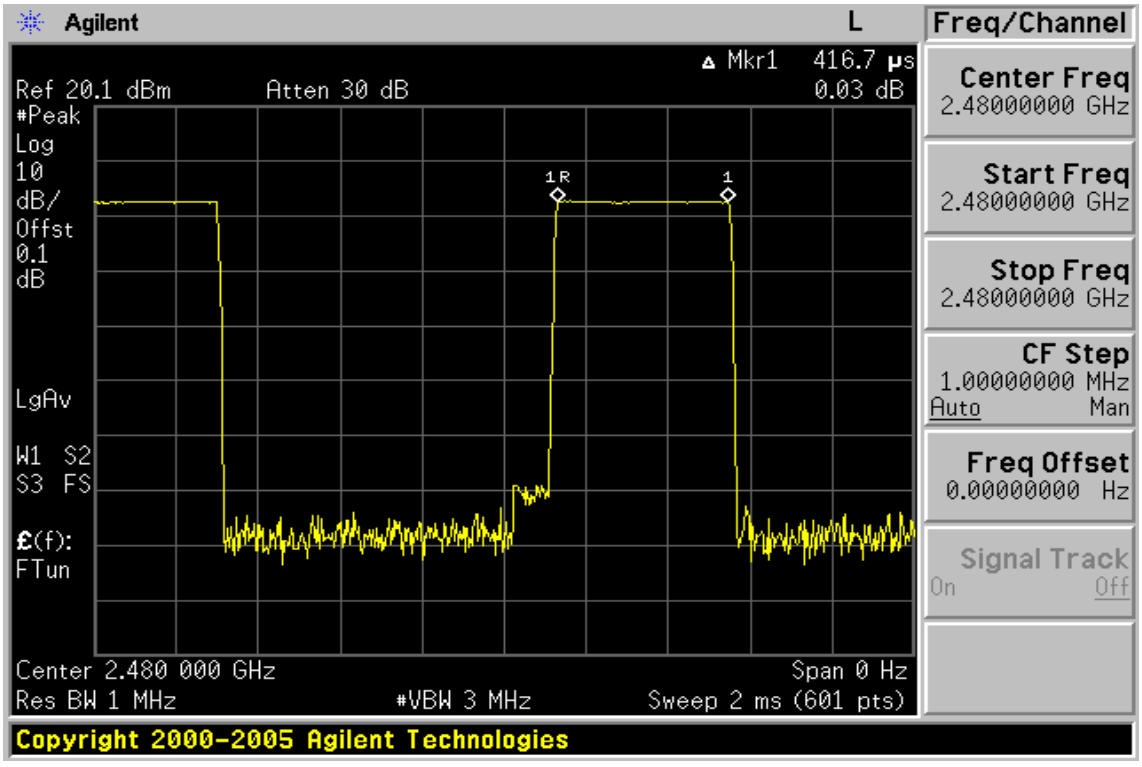


DH5

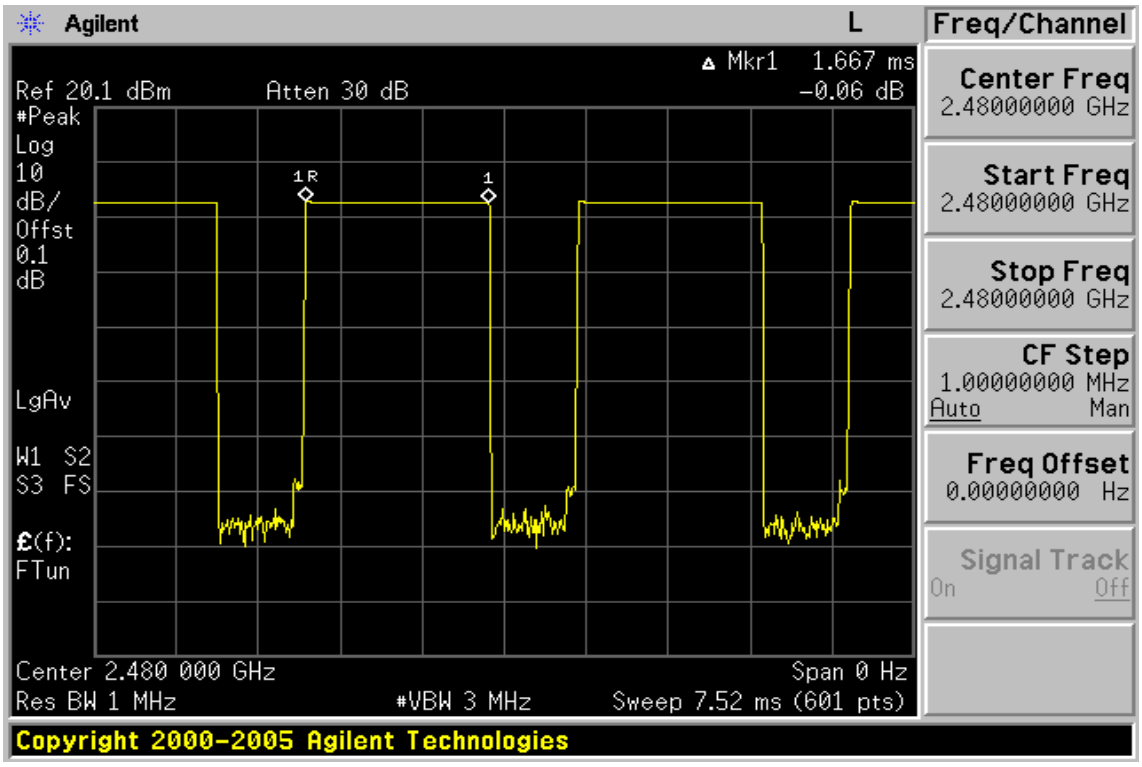


CH-High

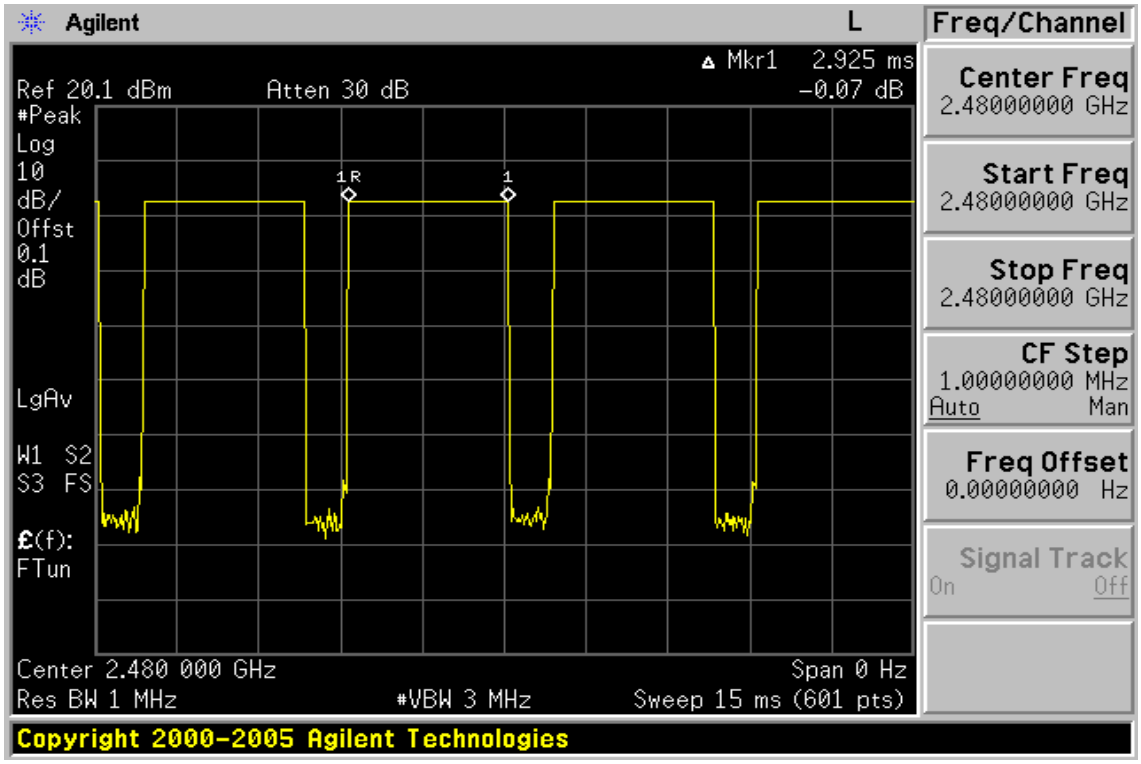
DH1



DH3



DH5



13. Peak Power Spectral Density

13.1. Standard Applicable

According to §15.247(d), for direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3kHz band during any time interval of continuous transmission.

13.2. 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 = 3KHz, VBW = 10KHz, Span = 1.5MHz, Sweep=100s
4. Record the max. reading.
5. Repeat above procedures until all frequency measured were complete.

13.3. Measurement Result

BDR Mode

CH	RF Power Density Reading (dBm)	Cable loss (dB)	RF Power Density Level (dBm)	Maximum Limit (dBm)
Low	-10.47	0.10	-10.37	8
Mid	-10.51	0.10	-10.41	8
High	-11.25	0.10	-11.15	8

EDR Mode

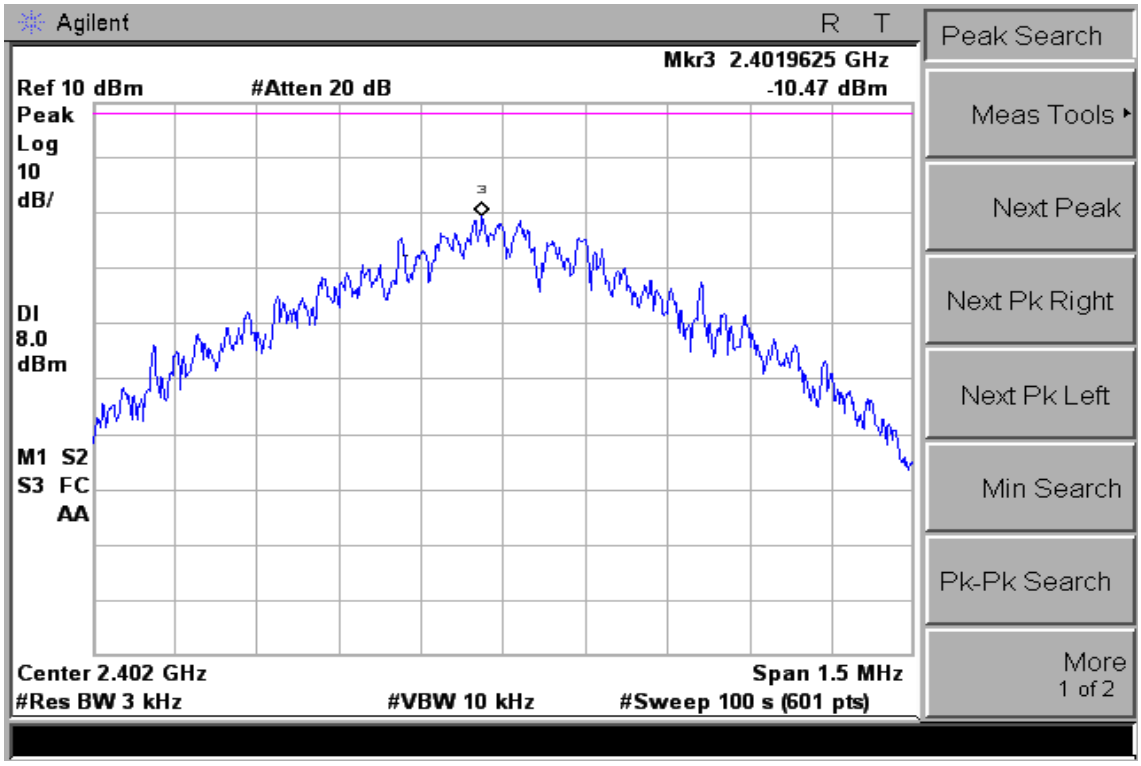
CH	RF Power Density Reading (dBm)	Cable loss (dB)	RF Power Density Level (dBm)	Maximum Limit (dBm)
Low	-13.91	0.10	-13.81	8
Mid	-14.34	0.10	-14.24	8
High	-16.03	0.10	-15.93	8

13.4. Measurement Equipment Used:

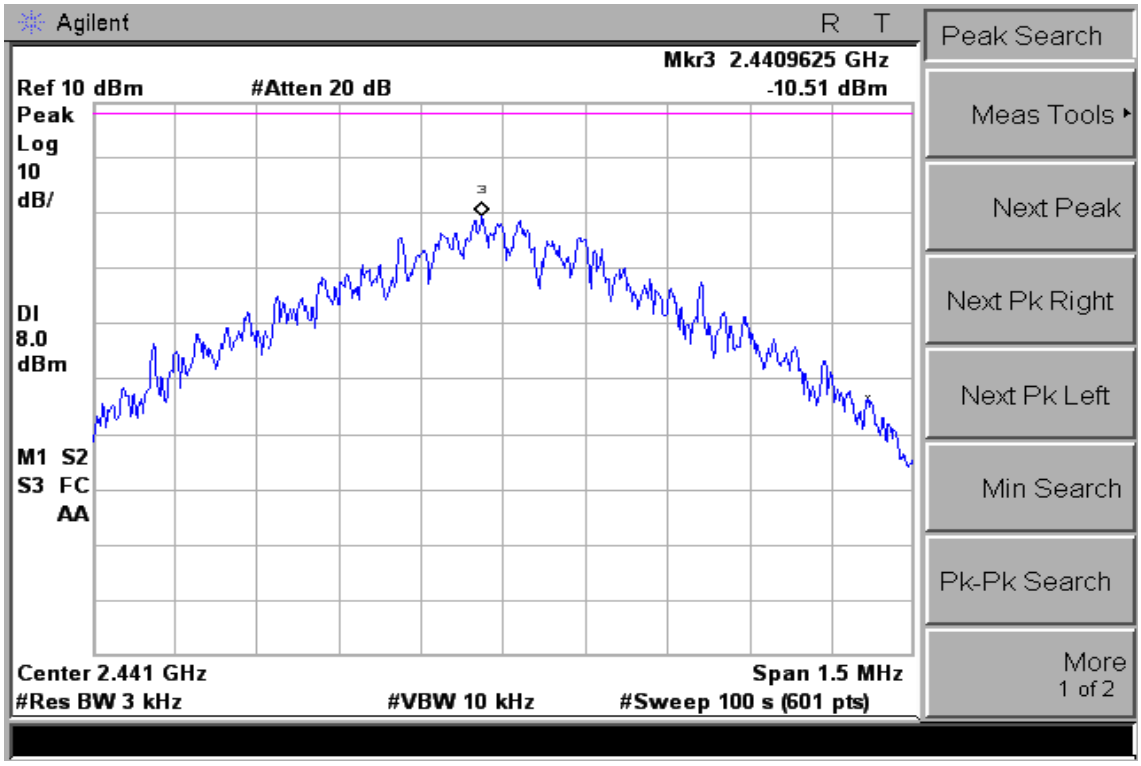
Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/23/2008	01/22/2010
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	02/13/2008	02/12/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009

BDR Mode

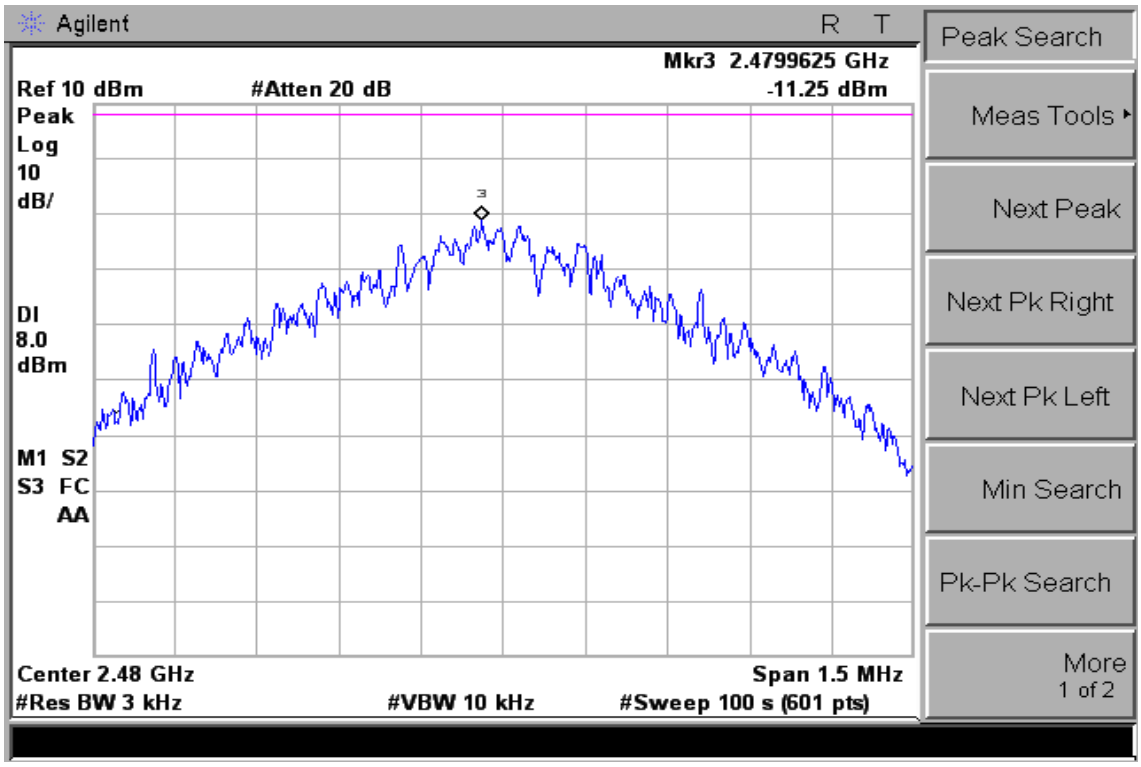
Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)

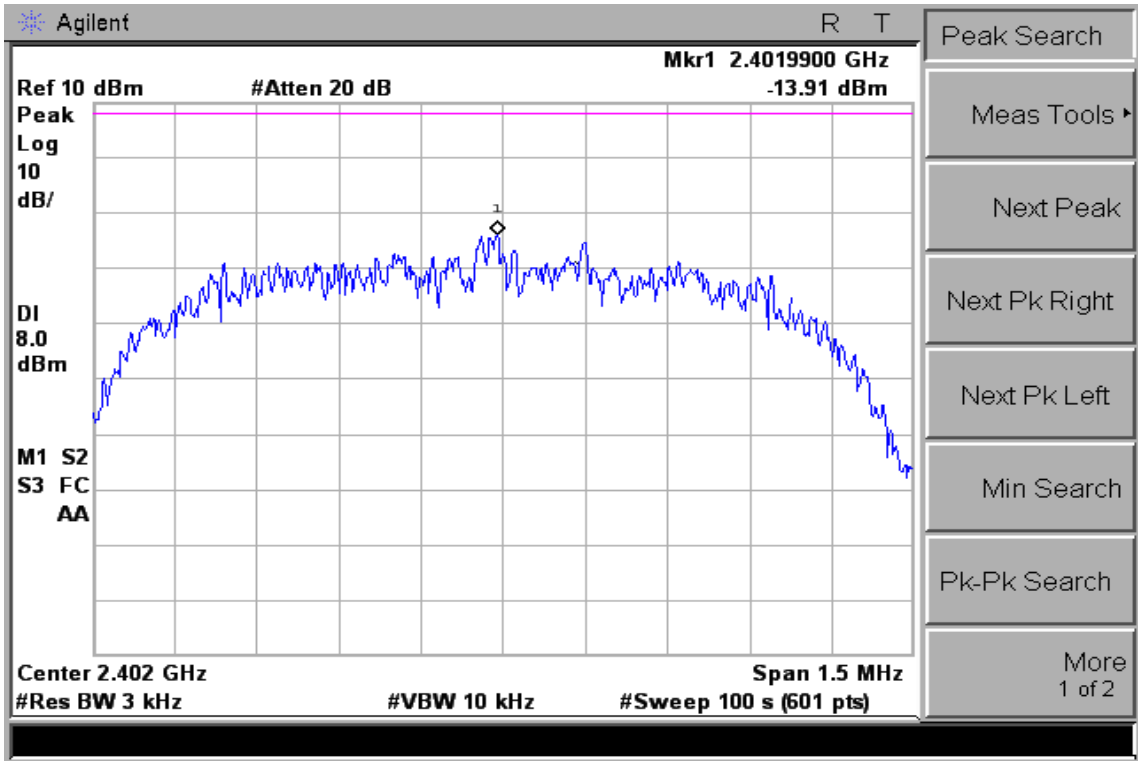


Power Spectral Density Test Plot (CH-High)

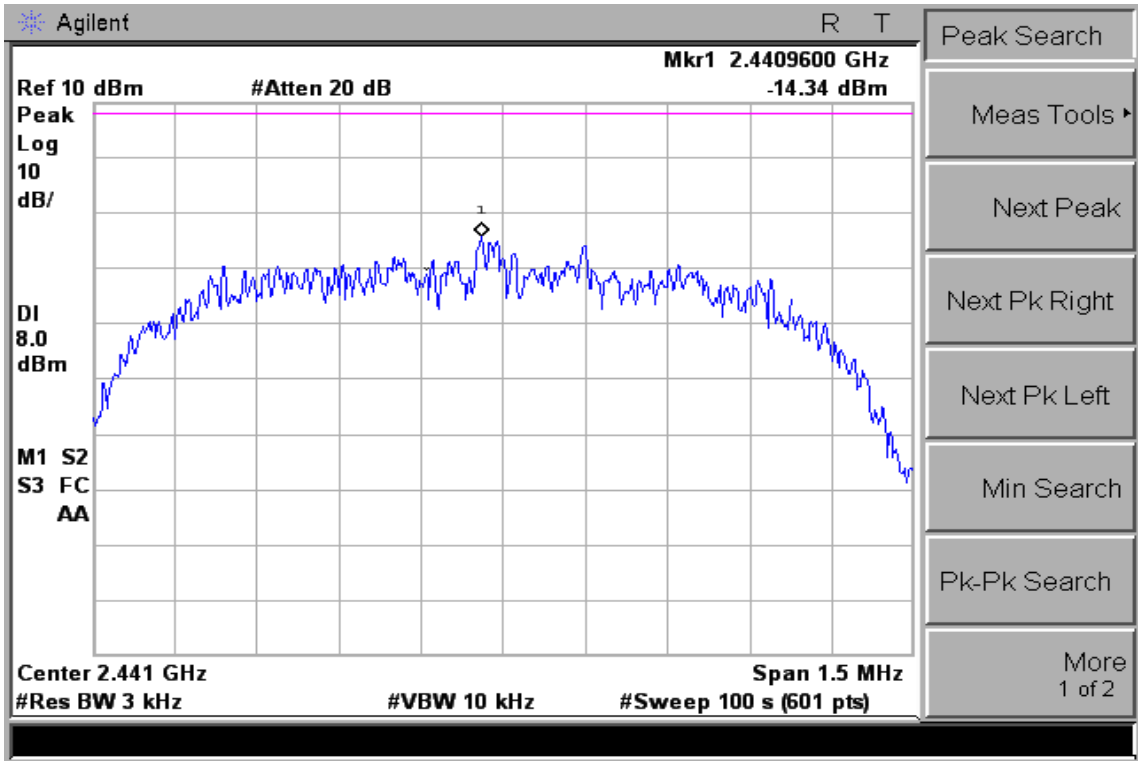


EDR Mode

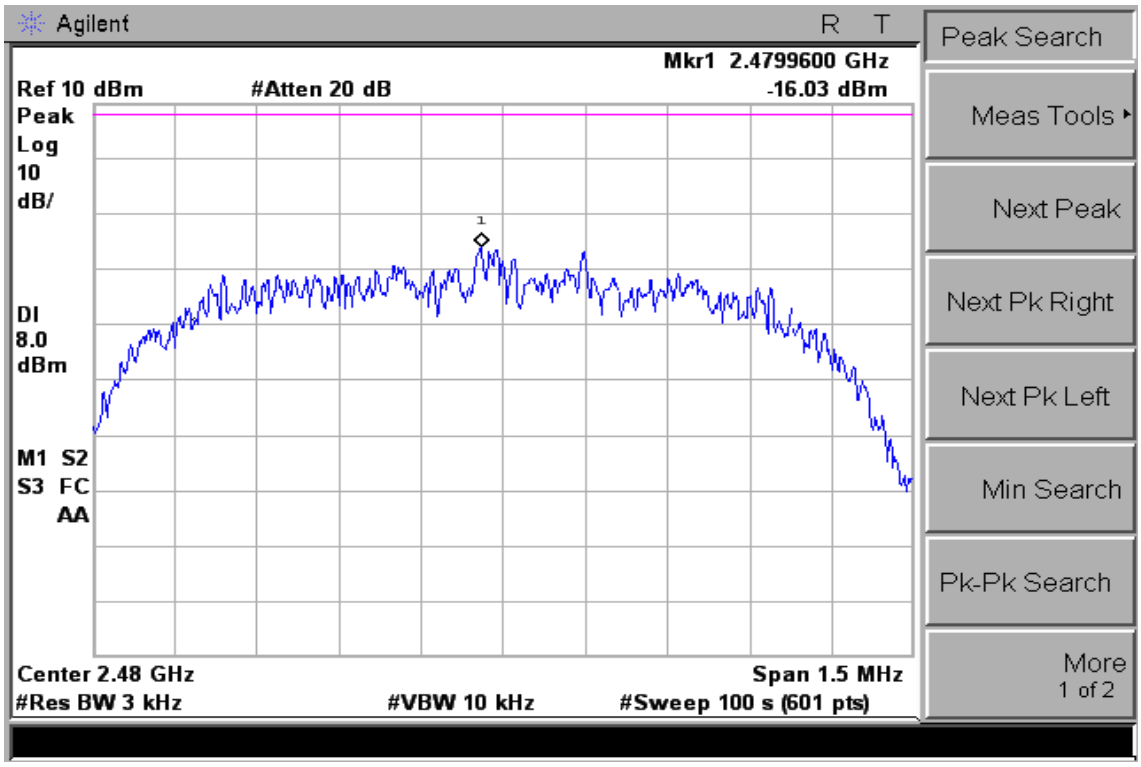
Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)



Power Spectral Density Test Plot (CH-High)



14. ANTENNA REQUIREMENT

14.1. Standard Applicable

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.

And according to §15.246(1), if transmitting antennas of directional gain greater than 6dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

14.2. Antenna Connected Construction

The directional gains of antenna used for transmitting is 2.1dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.