

Report No.: EH/2010/A0038 Issue Date: Nov. 15, 2010

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ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Product Name: CDMA TS006

Fujitsu Toshiba Mobile Communications Brand Name:

Limited

Model Name: TS006

Model Different: N/A

FCC ID: YUW-TS006

Report No.: EH/2010/A0038

Issue Date: Nov. 15, 2010

FCC Rule Part: §15.247, Cat: DSS

Fujitsu Toshiba Mobile Communications Prepared for:

Limited

1-1, Kamikodanaka 4-chome, Nakahara-ku,

Kawasaki

SGS Taiwan Ltd. Prepared by:

> **Electronics & Communication Laboratory** No. 134, Wu Kung Rd., Wuku Industrial

Zone, Taipei County, Taiwan





Testing Laboratory 0513

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VERIFICATION OF COMPLIANCE

Fujitsu Toshiba Mobile Communications Limited **Applicant:**

1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki

Equipment Under Test: CDMA TS006

Brand Name: Fujitsu Toshiba Mobile Communications Limited

TS006 Model No.:

Model Difference: N/A

FCC ID: YUW-TS006

File Number: EH/2010/A0038

Oct. 27, 2010 ~ Nov. 11, 2010 Date of test:

Oct. 27, 2010 **Date of EUT Received:**

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:	Nov. 15, 2010	
	Jazz Huang / Engineer			
Prepared By:	Gigi yeh	Date:	Nov. 15, 2010	
	Gigi Yeh / Clerk			
Approved By:	Almo Hsieh	Date:	Nov. 15, 2010	
-	Arno Hsieh / Asst. Supervisor			

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Version

Version No.	Date	Description
00	Nov. 15, 2010	Initial creation of document

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1. GENERAL INFORMATION

General:

Product Name	CDMA TS006		
Brand Name	Fujitsu Toshiba Mobile Communications Limited		
Model Name	TS006		
D C1	3.7Vdc Li-Ion battery		
Power Supply	Battery:	Model No.TSY01UAA, Supplier: au by KDDI	

CDMA:

CDIVILI					
DUT Standards	CDMA2000	Frequency Range		Maximum Rated EIRP Power	
And Power:	C 11 1	TX:	824.70-848.31 MHz	25	1D
	Cellular	RX:	869.70-893.31 MHz	25 dBm	авт
Type of Emission		CDM	A2000 Cellular: 1M27F9W		
Hardware Version		Ver.2.0.0			
Software Version		V65.19.01			

Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
CDMA2000 Cellular	3.7Vdc	230

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Bluetooth:

Bluetooth Version:	$V2.1 + EDR (GFSK + \pi/4DQPSK + 8DPSK)$
Channel number:	79 channels
Modulation type:	Frequency Hopping Spread Spectrum
Transmit Power:	8.23 dBm (Peak)
Frequency Range:	2.402GHz – 2.480GHz
Dwell Time:	<= 0.4s
Operating Mode:	Point-to-Point
Antenna Designation:	1/4 lambda monopole Antenna: -0.39dBi.

The EUT is compliance with Bluetooth 2.1 + EDR Standard.

This report applies for Bluetooth



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

This submittal(s) (test report) is intended for FCC ID: <u>YUW-TS006</u> filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

1.2. 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.

Tested in accordance with FCC Public Notice DA 00-705

1.3. 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 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-4.

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.

1.4. Special Accessories

Not available for this EUT intended for grant.

1.5. Equipment Modifications

Not available for this EUT intended for grant.

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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 EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

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 and 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 and DA 00-705.

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2.4. Configuration of Tested System

Fig. 2-1 AC Power line and Radiated Emission Configuration

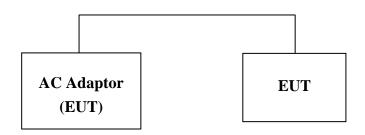


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1	Bluetooth Software	Bluesuite 1.22	CSR	Version 1.22	N/A	N/A
2.	Adaptor	AU by KDDI	MT-WEA	N/A	N/A	Un-shielded

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3. SUMMARY OF TEST RESULTS

FCC Rules	Rules Description Of Test	
§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 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
§15.247(a)(1)	20dB Bandwidth	No Limit
§15.203, §15.247(c)	Antenna Requirement	Compliant

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Test program used to control the EUT for staying in continuous transmitting is programmed.

Channel low (2402MHz) · mid (2441MHz) and high (2480MHz) with highest data rate are chosen 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 H position was reported.

The function of WiFi is only limited to be used in Japan. Therefore no only test with respect to WiFi will be performed for this application.

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5. CONDUCTED EMISSION TEST

5.1. Standard Applicable

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

Frequency range		mits (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

1.1. Measurement Equipment Used:

AC Power Line Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
EMI Test Receiver	R&S	ESCS30	828985/004	09/15/2010	09/14/2011				
LISN	Rolf-Heine	NNB-2/16Z	99012	02/02/2010	02/01/2011				
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/02/2010	02/01/2011				
Coaxial Cables	N/A	WK CE Cable	N/A	11/28/2009	11/27/2010				

1.2. 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 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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1.3. 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.

1.4. 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.

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

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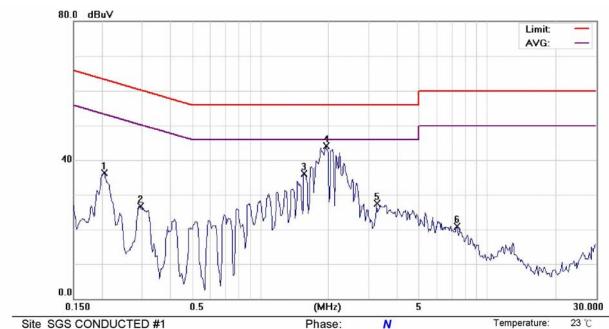


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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Normal mode			Test Date:	Nov. 02, 2010
Temperature:	23 °C	Humidity:	56 %	Test By:	Jazz



Site SGS CONDUCTED #1

Limit: FCC Class B Conduction(QP)

EUT: Mobile Phone

M/N: KD57 Note: BT MODE

AC 120V/60Hz	Humidity:	56 %
	Air Pressure:	hpa
	AC 120V/60HZ	AC 120V/60Hz Humidity: Air Pressure:

No. I	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2050	36.20	0.13	36.33	63.41	-27.08	peak	
2		0.2950	26.67	0.12	26.79	60.38	-33.59	peak	
3		1.5600	35.91	0.15	36.06	56.00	-19.94	peak	
4	*	1.9500	44.00	0.16	44.16	56.00	-11.84	peak	
5		3.2700	27.38	0.19	27.57	56.00	-28.43	peak	
6		7.3600	20.55	0.33	20.88	60.00	-39.12	peak	

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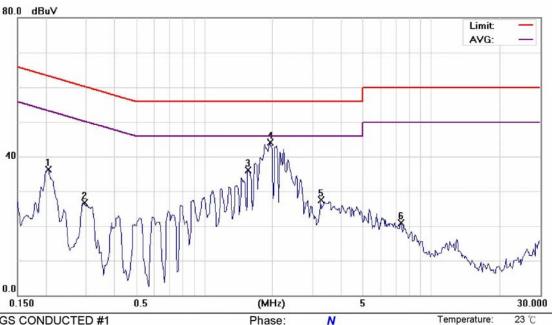
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Humidity:

Air Pressure:

hpa



Site SGS CONDUCTED #1

Limit: FCC Class B Conduction(QP)

EUT: Mobile Phone

M/N: KD57 Note: BT MODE

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	0.2050	36.20	0.13	36.33	63.41	-27.08	peak		
2	0.2950	26.67	0.12	26.79	60.38	-33.59	peak		
3	1.5600	35.91	0.15	36.06	56.00	-19.94	peak		
4 *	1.9500	44.00	0.16	44.16	56.00	-11.84	peak		
5	3.2700	27.38	0.19	27.57	56.00	-28.43	peak		
6	7.3600	20.55	0.33	20.88	60.00	-39.12	peak		

Power:

Distance:

AC 120V/60Hz

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6. PEAK OUTPUT POWER MEASUREMENT

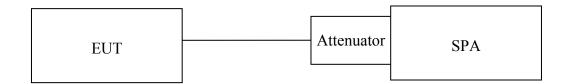
6.1. Standard Applicable

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 Equipment Used

oiz. Wiedsurement	Conducted Emission Test Site										
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.						
TYPE		NUMBER	NUMBER	CAL.							
Power Sensor	Anritsu	MA2411B	917032	01/21/2010	01/20/2012						
Power Meter	Anritsu	ML2495A	1005007	02/17/2010	02/16/2012						
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2010	04/18/2012						
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/25/2010	01/24/2011						
DC Block	Agilent	BLK-18	155452	07/05/2010	07/04/2011						
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2010	01/04/2011						
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2010	07/04/2011						
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2010	07/04/2011						
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2010	07/04/2011						
Splitter	Agilent	11636B	N/A	07/05/2010	07/04/2011						

6.3. .Test Set-up:



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6.4. 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 peak function, RBW, VBW = >20dB bandwidth)
- 3. Record the max. reading.
- 4. Repeat above procedures until all frequency measured were complete.

6.5. Measurement Result

BDR mode:

Frequency (MHz)	Reading Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
2402.00	8.23	8.23	0.00665	1
2441.00	8.15	8.15	0.00653	1
2480.00	7.45	7.45	0.00556	1

EDR mode:

Frequency (MHz)	Reading Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
2402.00	7.07	7.07	0.00509	1
2441.00	7.02	7.02	0.00504	1
2480.00	6.41	6.41	0.00438	1

NOTE: offset: 0.7dB

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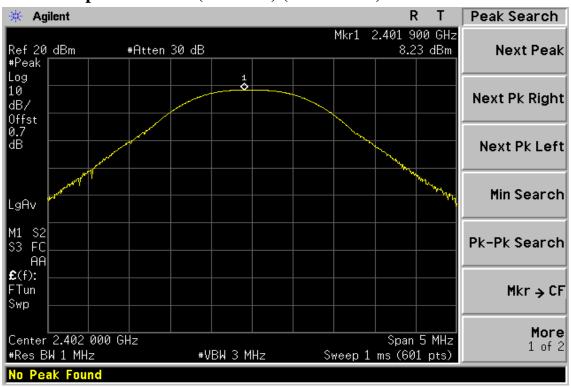
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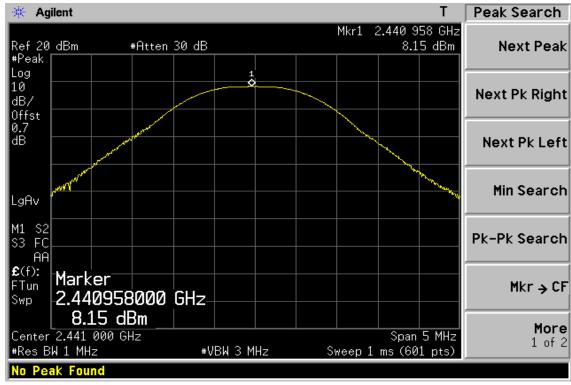
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Peak Power Output Data Plot (CH Low) (BDR mode)



Peak Power Output Data Plot (CH Mid) (BDR mode)



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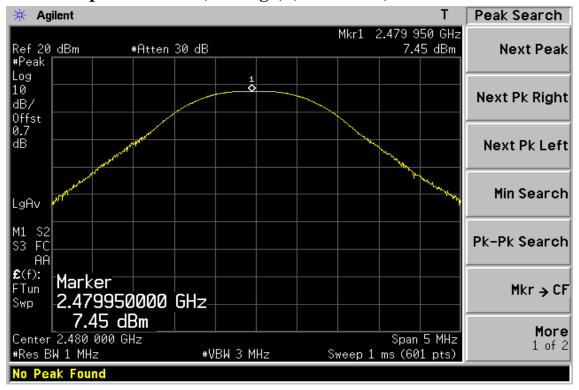
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Peak Power Output Data Plot (CH High) (BDR mode)



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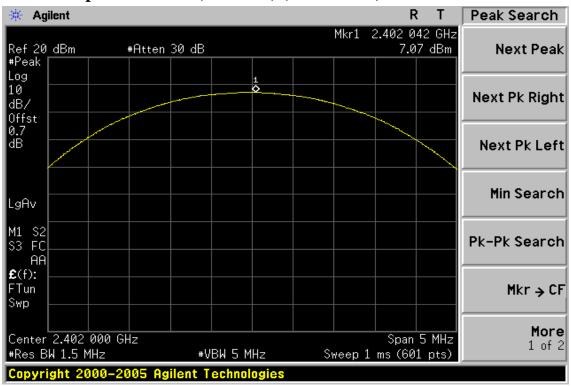
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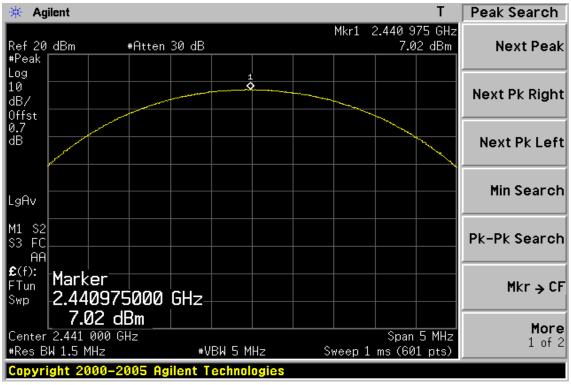
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Peak Power Output Data Plot (CH Low) (EDR mode)



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



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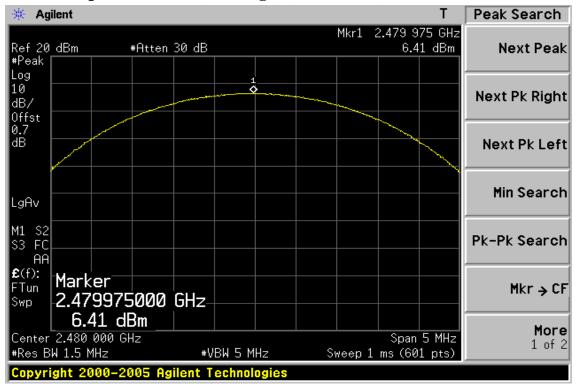
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Peak Power Output Data Plot (CH High) (EDR mode)



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100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

7.1. 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 in 15.209(a).

7.2. Measurement Equipment Used

7.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

7.2.2. Radiated emission:

	966 Chamber										
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.						
TYPE		NUMBER	NUMBER	CAL.							
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2010	02/11/2011						
Bilog Antenna	SCHWAZBECK	VULB9160	3136	11/19/2009	11/18/2010						
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	03/09/2009	03/08/2011						
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2009	11/28/2010						
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2010	01/04/2011						
Radio Communication Analyzer	R & S	CMU200	111787	10/31/2010	10/30/2012						
DC Block	Agilent	BLK-18	155452	07/05/2010	07/04/2011						
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	01/05/2010	01/04/2011						
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2010	01/04/2011						
3m Site	SGS	966 chamber	N/A	11/08/2009	11/09/2010						

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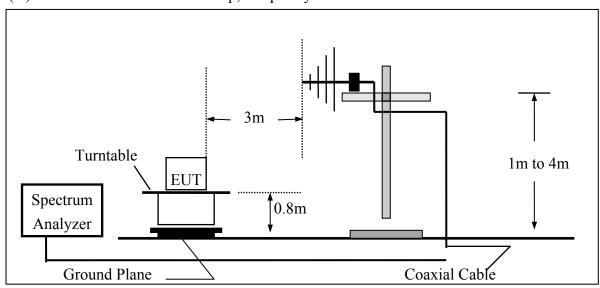
7.3. Test SET-UP:

7.3.1. Conducted Emission at antenna port:

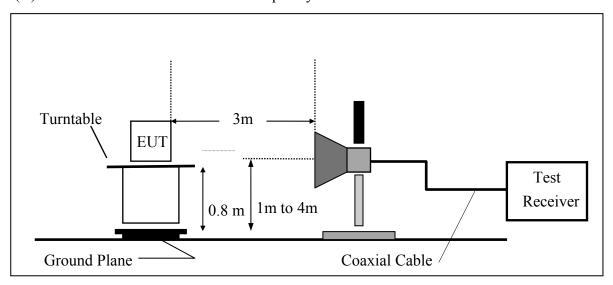
Refer to section 6.3 for details.

7.3.2. 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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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 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.

7.5. 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	

7.6. Measurement Result

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

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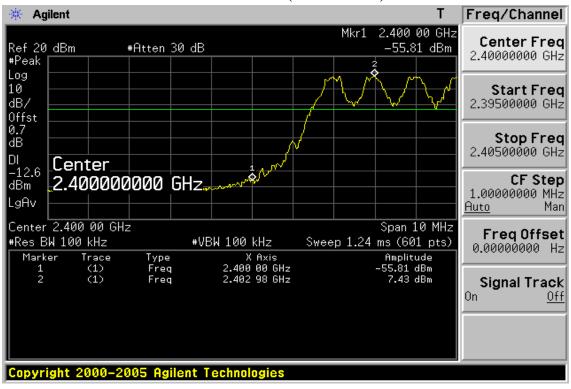
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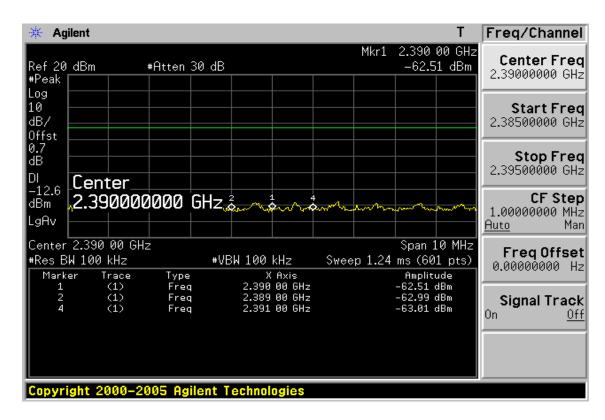


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Conducted Emission: Test Data CH-Low (BDR mode)





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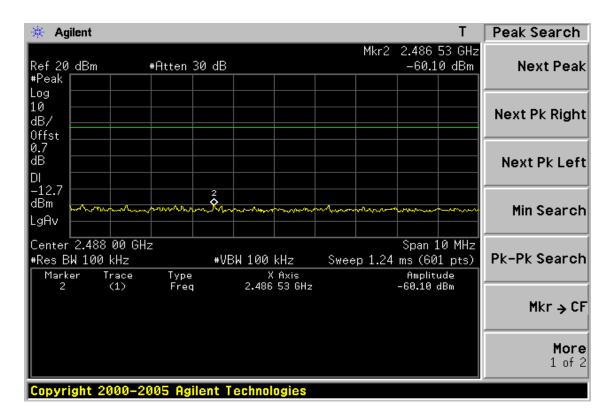


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Conducted Emission: Test Data CH-High





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Radiated Emission: (BDR mode)

TX CH Low Operation Mode Test Date Nov. 02, 2010 Fundamental Frequency 2402 MHz Test By Jazz Pol Temperature 25 °C Ver. Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant/CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/n	1) (dB)	
2389.00	33.77		-1.40	32.37		74.00	54.00	-21.63	Peak
2390.00	33.55		-1.39	32.16		74.00	54.00	-21.84	Peak
2391.00	33.09		-1.39	31.70		74.00	54.00	-22.30	Peak
Operation	Mode	TX C	CH Low			Tes	t Date	Nov. 02, 2	010
Fundamen	tal Freque	ncy 2402	MHz			Tes	t By	Jazz	
Temperatu	ire	25 ℃				Pol		Hor.	
Humidity		65 %							

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant/CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2389.00	33.38		-1.40	31.98		74.00	54.00	-22.02	Peak
2390.00	33.96		-1.39	32.57		74.00	54.00	-21.43	Peak
2391.00	33.94		-1.39	32.55		74.00	54.00	-21.45	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 o
- (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.

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Radiated Emission: (BDR mode)

TX CH High Operation Mode Nov. 02, 2010 Test Date

Fundamental Frequency 2480 MHz Test By Jazz Pol Temperature 25 °C Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/n	n) (dB)	
2483.50	34.56		-0.92	33.64		74.00	54.00	-20.36	Peak
Operation Fundamen Temperatu Humidity	tal Freque					Test Test Pol		Nov. 02, 2 Jazz Hor.	010
	Peak	\mathbf{AV}		Actu	ıal FS	Peak	\mathbf{AV}		

		Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
	(MHz)	(dBuV)	(dBuV)	$\mathbf{C}\mathbf{F}(\mathbf{dB})$	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
,	2483.50	33.42		-0.92	32.50		74.00	54.00	-21.50	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 o
- (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.

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8. SPURIOUS RADIATED EMISSION TEST

8.1. 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.

8.2. Measurement Equipment Used:

8.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

8.2.2. Radiated emission:

Refer to section 7.2 for details.

8.3. Test SET-UP:

8.3.1. Conducted Emission at antenna port:

Refer to section 6.3 for details.

8.3.2. Radiated emission:

Refer to section 7.3 for details.

8.4. 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.

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8.5. 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					

8.6. Measurement Result:

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

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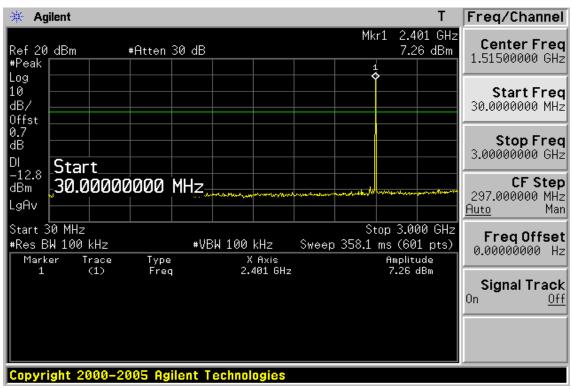
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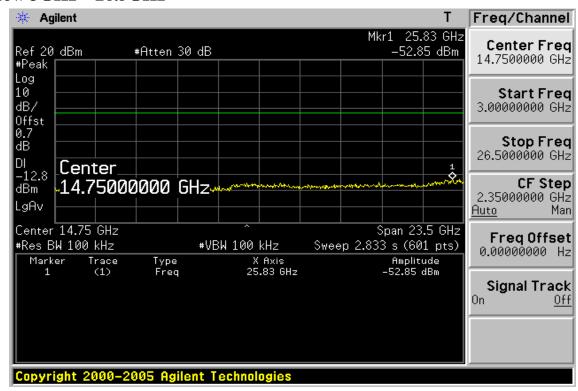
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Conducted Spurious Emission Measurement Result (BDR mode) Ch Low 30MHz - 3GHz



Ch Low 3GHz – 26.5GHz



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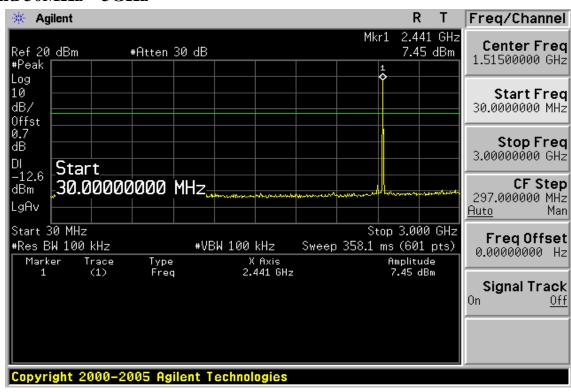
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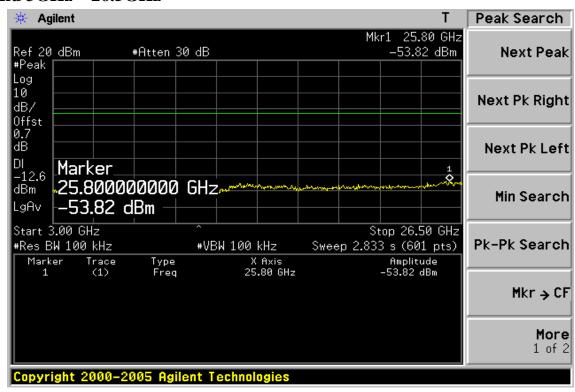
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Ch Mid 30MHz - 3GHz



Ch Mid 3GHz – 26.5GHz



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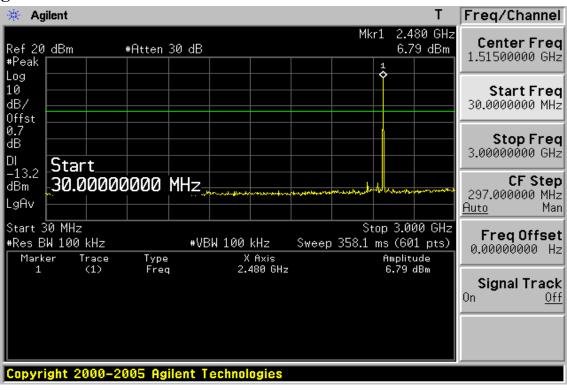
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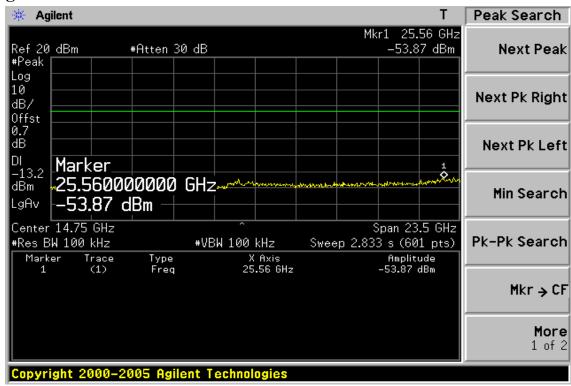
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Ch High 30MHz – 3GHz



Ch High 3GHz – 26.5GHz



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Radiated Spurious Emission Measurement Result (below 1GHz) (BDR mode)

Operation Mode TX CH Low Test Date Nov. 02, 2010

Fundamental Frequency 2402MHz Test By Jazz Temperature 25 °C Pol Ver./Hor.

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
56.19	V	Peak	44.33	-14.63	29.70	40.00	-10.30
90.14	V	Peak	49.66	-17.62	32.04	43.50	-11.46
104.69	V	Peak	48.75	-16.63	32.12	43.50	-11.38
208.49	V	Peak	34.92	-15.32	19.60	43.50	-23.90
497.54	V	Peak	32.34	-8.51	23.83	46.00	-22.17
654.68	V	Peak	32.64	-4.97	27.67	46.00	-18.33
38.73	Н	Peak	43.65	-13.84	29.81	40.00	-10.19
92.08	Н	Peak	45.34	-17.38	30.74	43.50	-12.76
148.34	Н	Peak	34.48	-12.90	21.58	43.50	-21.92
208.48	Н	Peak	38.81	-15.32	23.49	43.50	-20.01
383.08	Н	Peak	3268	-10.57	31.28	46.00	-14.72
640.13 Remark:	Н	Peak	32.73	-5.19	27.54	46.00	-18.46

- 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.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode TX CH Mid Nov. 02, 2010 Test Date

Fundamental Frequency 2441MHz Test By Jazz Pol Temperature 25 °C Ver./Hor.

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
56.19	V	Peak	44.49	-14.63	29.86	40.00	-10.14
90.14	V	Peak	48.94	-17.62	31.32	43.50	-12.18
104.69	V	Peak	48.91	-16.63	32.28	43.50	-11.22
153.19	V	Peak	33.40	-13.00	31.13	43.50	-12.37
208.48	V	Peak	35.01	-15.32	19.69	43.50	-23.81
618.78	V	Peak	32.67	-5.64	31.32	46.00	-14.68
38.73	Н	Peak	43.65	-13.84	29.81	40.00	-10.19
92.08	Н	Peak	44.67	-17.38	27.29	43.50	-16.21
208.48	Н	Peak	38.25	-15.32	22.93	43.50	-20.57
441.28	Н	Peak	32.73	-8.76	23.97	46.00	-22.03
659.53	Н	Peak	33.03	-4.99	28.04	46.00	-17.96
856.44	Н	Peak	32.28	-1.89	30.39	46.00	-15.61
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.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode TX CH High Nov. 02, 2010 Test Date

Fundamental Frequency 2480MHz Test By Jazz Temperature 25 °C Pol Ver./Hor.

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
72.68	V	Peak	47.03	-16.62	30.41	40.00	-9.59
90.14	V	Peak	49.21	-17.62	31.59	43.50	-11.91
104.69	V	Peak	48.15	-16.63	31.52	43.50	-11.98
150.28	V	Peak	33.69	-12.83	20.86	43.50	-22.64
458.74	V	Peak	33.30	-8.61	24.69	46.00	-21.31
659.53	V	Peak	32.65	-4.99	27.66	46.00	-18.34
38.73	Н	Peak	43.73	-13.84	29.89	40.00	-10.11
70.74	Н	Peak	41.72	-16.27	25.45	40.00	-14.55
92.08	Н	Peak	44.93	-17.38	27.55	43.50	-15.95
208.48	Н	Peak	38.46	-15.32	23.14	43.50	-20.36
431.58	Н	Peak	32.64	-9.09	23.55	46.00	-22.45
659.53 Remark:	Н	Peak	32.53	-4.99	27.54	46.00	-18.46

- 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.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH Low Nov. 02, 2010 Test Date

Fundamental Frequency 2402 MHz Test By Jazz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
4804.0	38.61		5.99	44.60		74.00	54.00	-9.40
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:

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

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH Low Nov. 02, 2010 Test Date

Fundamental Frequency 2402 MHz Test By Jazz Temperature 25 °C Pol Hor.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
4804.0	37.22		5.99	43.21		74.00	54.00	-10.79
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
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH Mid Nov. 02, 2010 Test Date

Fundamental Frequency 2441 MHz Test By Jazz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
4882.0	34.83		6.17	41.00		74.00	54.00	-13.00
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
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH Mid Nov. 02, 2010 Test Date

Fundamental Frequency 2441 MHz Test By Jazz Temperature 25 °C Pol Hor.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
4882.0	36.75		6.17	42.92		74.00	54.00	-11.08
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
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH High Nov. 02, 2010 Test Date

Fundamental Frequency 2480 MHz Test By Jazz Temperature 25 °C Pol Ver.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
4960.0	40.37		6.36	46.73		74.00	54.00	-7.27
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
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



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Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode TX CH High Nov. 02, 2010 Test Date

Fundamental Frequency 2480 MHz Test By Jazz Temperature 25 °C Pol Hor.

Humidity 65 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}	
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
4960.0	37.24		6.36	43.60		74.00	54.00	-10.40
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
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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9. FREQUENCY SEPARATION

9.1. 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.

9.2. Measurement Equipment Used:

Refer to section 6.2 for details.

9.3. Test Set-up:

Refer to section 6.3 for details.

9.4. 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=100KHz, Adjust Span to 3.0 MHz, Sweep = auto.
- 5. Max hold. Mark 3 Peaks of hopping channel and record the 3 peaks frequency.

9.5. Measurement Result:

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

Note: Refer to next page for plots.

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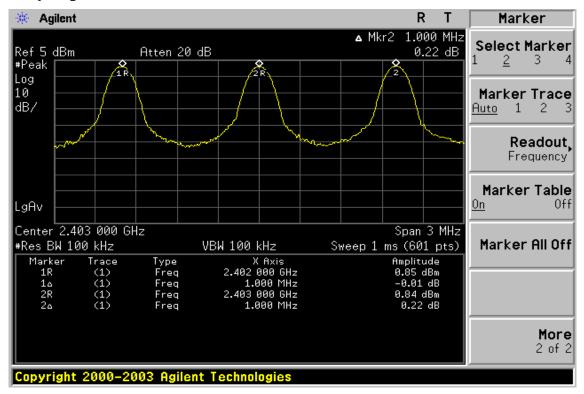
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Frequency Separation Test Data



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10. NUMBER OF HOPPING FREQUENCY

10.1. 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.

10.2. Measurement Equipment Used:

Refer to section 6.2 for details.

10.3. Test Set-up:

Refer to section 6.3 for details.

10.4. 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=430KHz, VBW=1.3MHz.
- 5. Max hold, view and count how many channel in the band.

10.5. Measurement Result:

Note: Refer to next page for plots.

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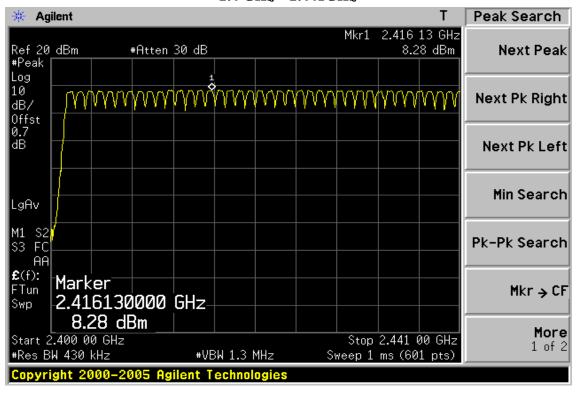


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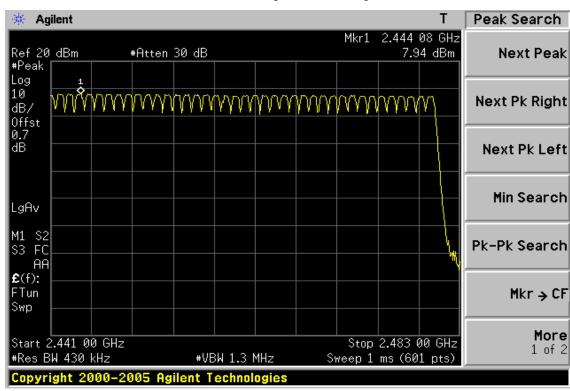
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Channel Number

2.4 GHz - 2.441GHz



2.441 GHz - 2.4835GHz



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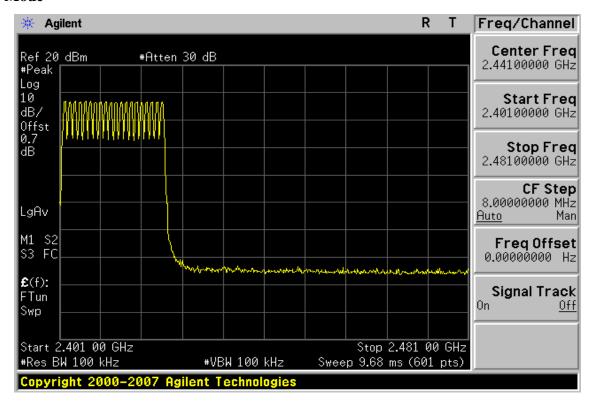
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AFH Mode



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11. TIME OF OCCUPANCY (DWELL TIME)

11.1. 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.

11.2. Measurement Equipment Used:

Refer to section 6.2 for details.

11.3. Test Set-up:

Refer to section 6.3 for details.

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 = operating frequency.
- 4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Adjust Sweep = $2\sim15$ ms.
- 5. Repeat above procedures until all frequency measured were complete.

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11.5. 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)

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

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)

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

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)

Note: Refer to next page for plots.

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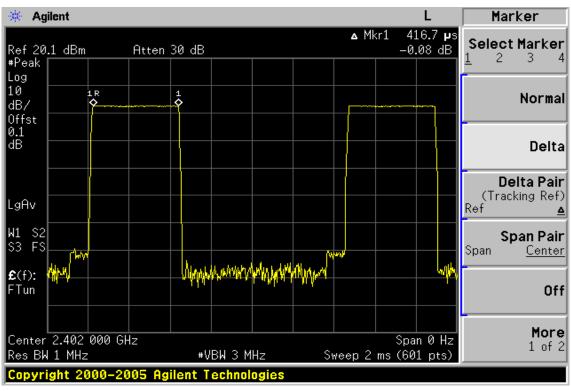
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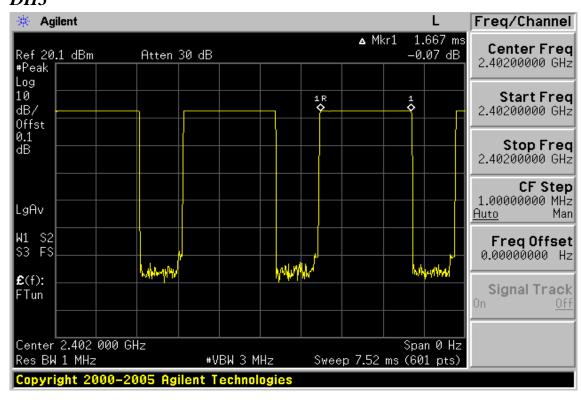
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CH-Low DH1



DH3



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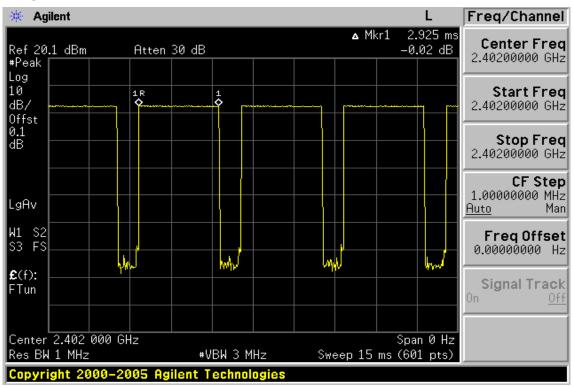
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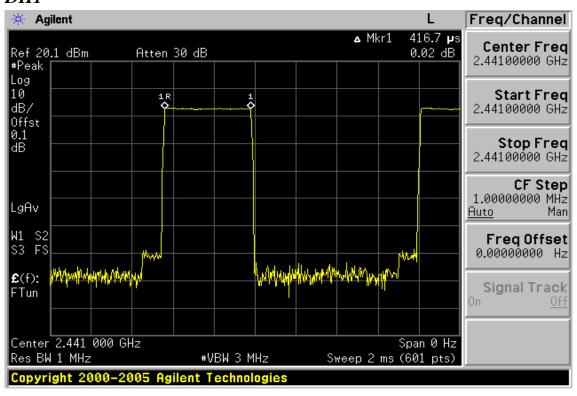
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DH5



CH-Mid DH1



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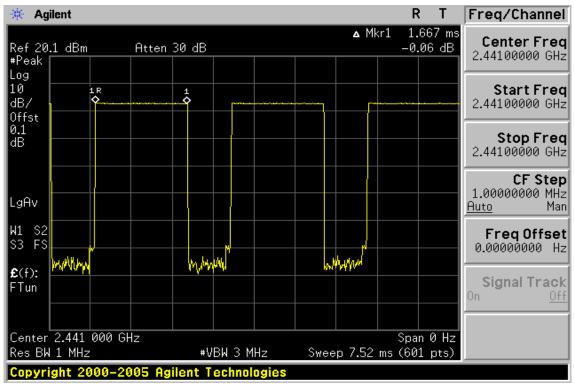
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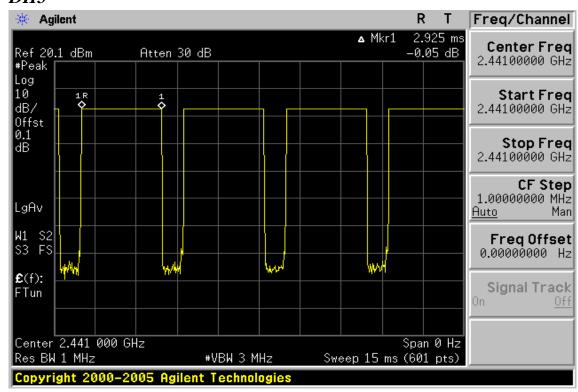
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DH3



DH5



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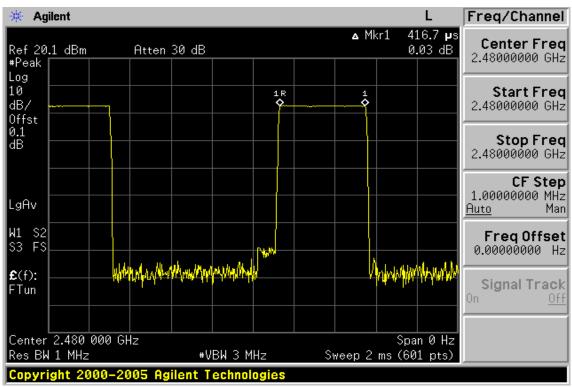
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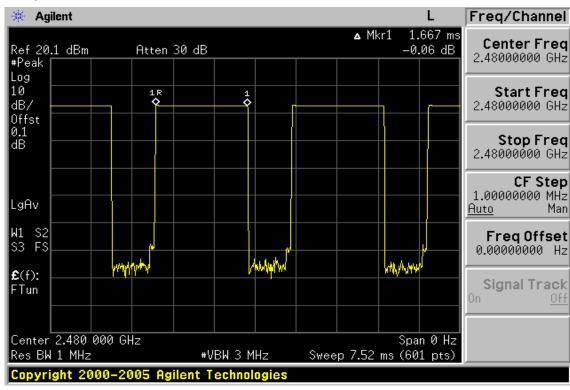
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CH-High DH1



DH3



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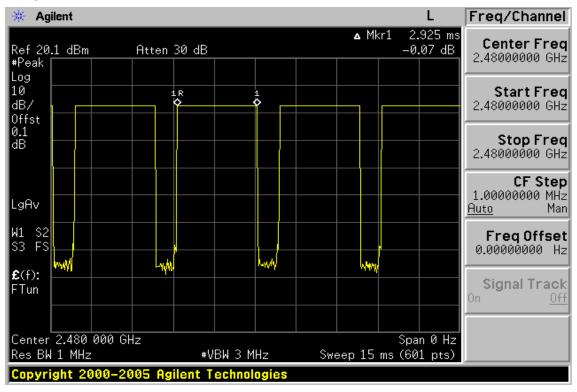
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DH5



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12. Peak Power Spectral Density

12.1. 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.

12.2. Measurement Equipment Used:

Refer to section 6.2 for details.

12.3. Test Set-up:

Refer to section 6.3 for details.

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 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.

12.5. Measurement Result:

BDR Mode

СН	RF Power Density	Cable loss	RF Power Density	Maximum Limit
	Reading (dBm)	(dB)	Level (dBm)	(dBm)
Low	-1.58	0.00	-1.58	8
Mid	-1.66	0.00	-1.66	8
High	-3.03	0.00	-3.03	8

offset 0.7dB

Note: Refer to next page for plots.

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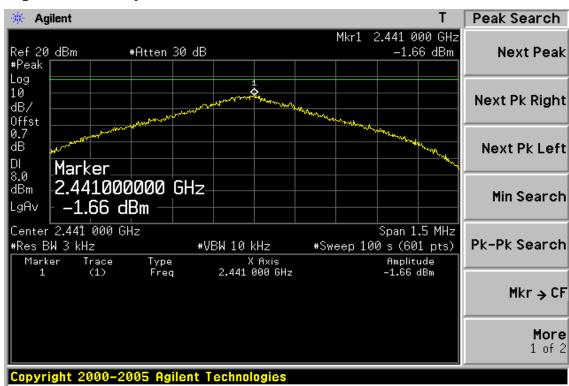
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Power Spectral Density Test Plot (CH-Low) (BDR)



Power Spectral Density Test Plot (CH-Mid) (BDR)



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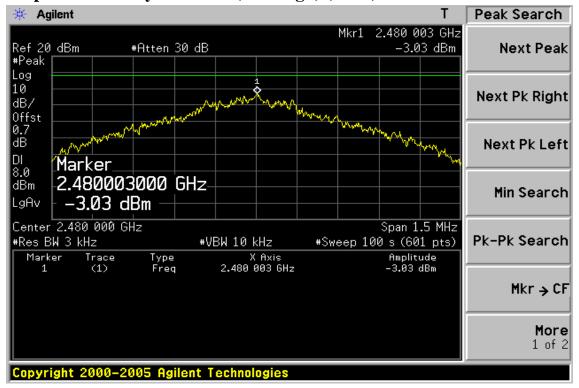
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Power Spectral Density Test Plot (CH-High) (BDR)



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13. 20dB BAND WIDTH

13.1. Standard Applicable

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

13.2. Measurement Equipment Used

Refer to section 6.2 for details.

13.3. Test Set-up

Refer to section 6.3 for details.

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 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.

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13.5. Measurement Result:

BDR mode:

СН	Bandwidth
	(kHz)
Lower	947.384
Mid	962.826
Higher	936.807

EDR mode:

СН	Bandwidth	2/3 Bandwidth
	(MHz)	(MHz)
Lower	1.266	0.844
Mid	1.262	0.841
Higher	1.253	0.835



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20dB Band Width Test Data CH-Low (BDR mode)



20dB Band Width Test Data CH-Mid (BDR mode)



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20dB Band Width Test Data CH-High (BDR mode)



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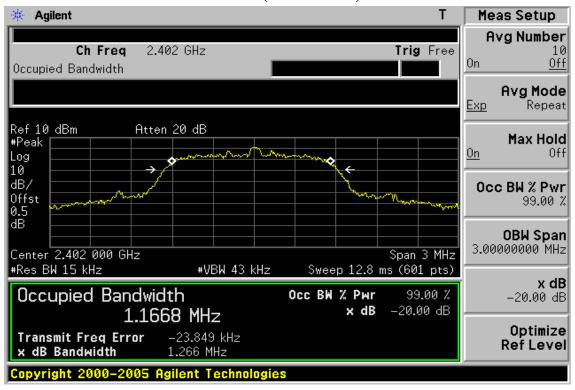
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20dB Band Width Test Data CH-Low (EDR mode)



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



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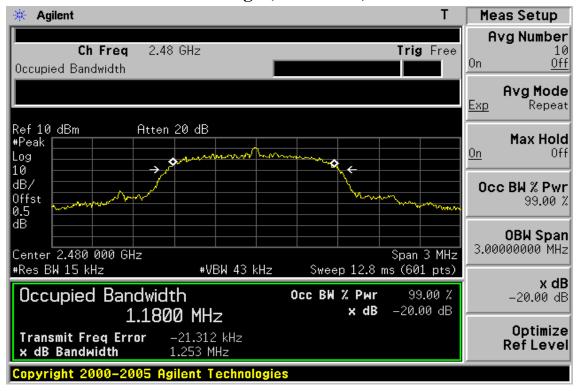
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20dB Band Width Test Data CH-High (EDR mode)



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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.

And according to §15.247(4)(1), system operating in the 2400-2483.5MHz bands that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 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 -0.39dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

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15. RF EXPOSURE

15.1. Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Portable device.

15.2. Measurement Result:

This is a portable device and the Max peak output power is 8.23dBm (0.00665 W) lower than low threshold 60/fGHz mW (24.48mW), d<2.5cm in general population category.

The SAR measurement is not necessary.

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