ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Product Name:	**ZigBee server**
Brand Name:	**AmRoad**
Model Name:	**ZS211H, ZS212H, UBIQ520**
Model Diffence:	**1. ZS211H, ZS212H are metal cover** **2. UBIQ520 is the plastic cover** **3. ZS212H has the POE function.**
FCC ID:	**WUG00100AMROAD**
Report No.:	**ER/2008/A0006**
Issue Date:	**Nov. 03, 2008**
FCC Rule Part:	**§15.249**
Prepared for:	**AmRoad Technology Inc.** **18F-3, No. 150, Chien I Rd., Chung Ho City, Taipei Hsien, Taiwan, R.O.C.**
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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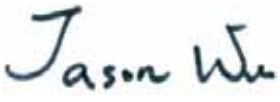
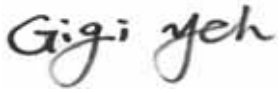
VERIFICATION OF COMPLIANCE

Applicant:	AmRoad Technology Inc. 18F-3, No. 150, Chien I Rd., Chung Ho City, Taipei Hsien, Taiwan, R.O.C.
Product Description:	ZigBee server
Brand Name:	AmRoad
FCC ID Number:	WUG00100AMROAD
Model No.:	ZS211H, ZS212H, UBIQ520
Model Difference:	1. ZS211H, ZS212H are metal cover 2. UBIQ520 is the plastic cover 3. ZS212H has the POE function.
File Number:	ER/2008/A0006
Date of test:	Oct. 15, 2008 ~ Nov. 01, 2008
Date of EUT Received:	Oct. 15, 2008

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (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 15.249.

The test results of this report relate only to the tested sample identified in this report.

Test By:		***Date:***	Nov. 03, 2008
	Jason Wu / Asst. Supervisor		
Prepared By:		***Date:***	Nov. 03, 2008
	Gigi Yeh / Clerk		
Approved By:		***Date:***	Nov. 03, 2008
	Vincent Su / Manager		

Version

Version No.	Date	Description
00	Nov. 03, 2008	Initial creation of document

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1. GENERAL INFORMATION

1.1 Product Description

General:

Product Name:	ZigBee server
Brand Name:	AmRoad
Model Name:	ZS211H, ZS212H, UBIQ520
Model Difference:	1. ZS211H, ZS212H are metal cover 2. UBIQ520 is the plastic cover 3. ZS212H has the POE function.
Frequency Range:	2405~2480 MHz
Channel number:	16 channels, 5MHz step
Power Supply	5Vdc for AC/DC Adapter, model: LTE12W-S2
Antenna Designation:	Dipole Antenna / 2 dBi

All tests were carried out for worst model number: UBIQ520

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **WUG00100AMROAD** filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules. The composite system (digital device) is compliance with Subpart B is authorized under a DoC procedure.

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: 94644.

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 Transmitter was operated in the engineering operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1Conducted 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.

2.3.2Radiated 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 Limitation

(1) Conducted Emission

According to section 15.207(a) Conducted Emission Limits is as following.

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 – 0.5	66 - 56	56 - 46
0.5 – 5	56	46
5 - 30	60	50

(2) Radiated Emission 15.249(a)

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following.

Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)
902 - 928	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
2400 – 2483.5	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
5725 – 5875	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
24.0 – 24.25 GHz	250 mV/m (107.95dBuV/m)	2500 uV/m (67.95dBuV/m)	3

(3) Radiated Emission15.249 (d)

Emission Radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in Section 15.209 as below, whichever is the lesser attenuation.

Frequency (MHz)	Field strength μV/m	Distance (m)	Field strength at 3m dBμV/m
1.705-30	30	30	69.54
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

(4) Radiated Emission 15.249(e)

For frequencies above 1000MHz, the above field strength limits are based on average limits. The peak filed strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation.

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205
4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of ξ15.205, then the general radiated emission limits in ξ 15.209 apply.

2.5 Configuration of Tested System

Fig. 2-1 Configuration of TX

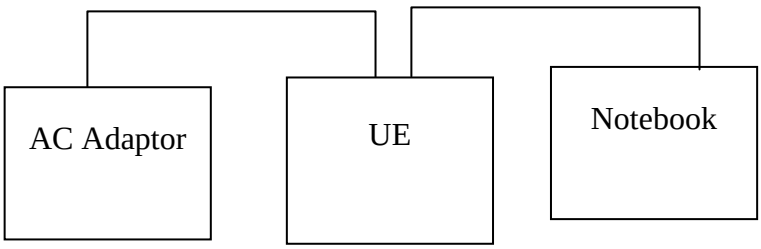


Table 2-2 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Notebook	IMB	T60	L3DK794	Shielded	Un-shielded

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

3. Summary Of Test Results

FCC Rules	Description Of Test	Result
§15.207	Conducted Emission	Compliant
§15.249(a)(e)	Radiated Emission	Compliant
§15.249(d)	26dB band width Measurement	Compliant

Description of test modes

The EUT has been tested under engineering testing condition.

EUT is staying in continuous transmitting mode is programmed.

Channel low (2405MHz)、mid (2440MHz) and high (2480MHz) with highest data rate for model UBIQ520 are chosen for full testing.

4. Conducted Emissions Test

4.1 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.

4.2 Test SET-UP (Block Diagram of Configuration)

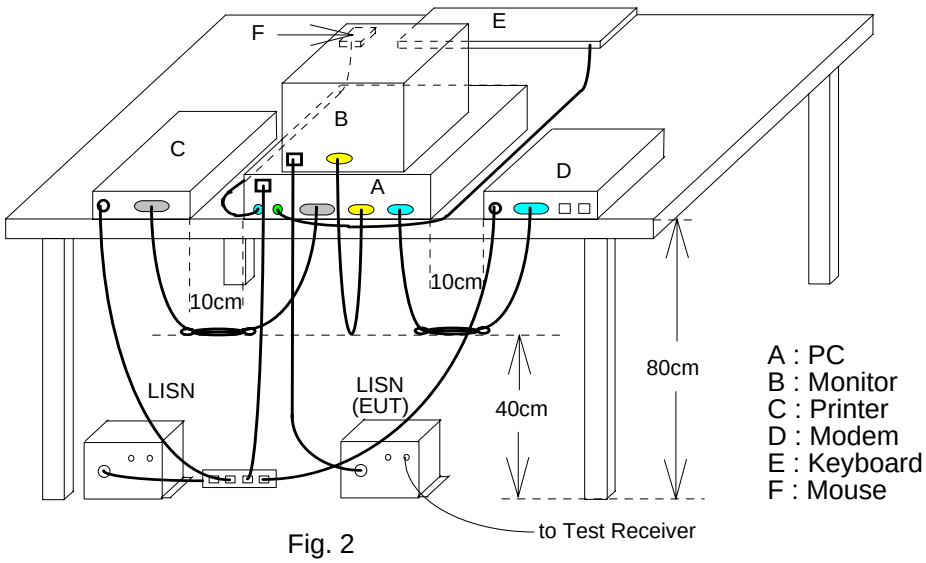


Fig. 2

4.3 Measurement Equipment Used:

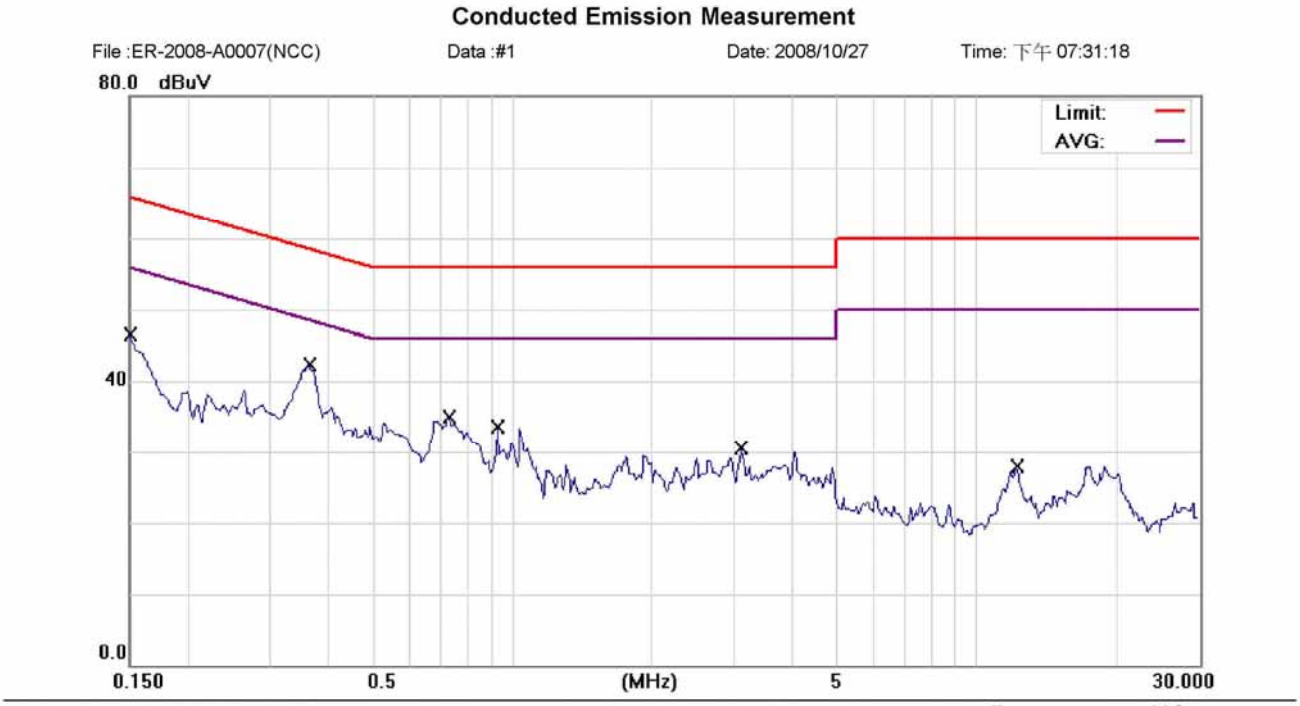
Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2008	09/15/2009
LISN	Rolf-Heine	NNB-2/16Z	99012	02/18/2008	02/17/2009
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/18/2008	02/17/2009
Transient Limiter	R&S	ESH3Z2	357.8810.52	05/19/2008	05/18/2009
50Ohms terminator	N/A	EMC-049-1	N/A	06/04/2008	06/03/2009
Coaxial Cables	N/A	WK CE Cable	N/A	11/30/2007	11/29/2008

4.4 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.

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	OPERATION			Test Date:	Oct. 27, 2008
Temperature:	26 ℃	Humidity:	62%	Test By:	Jason



Site SGS CONDUCTED #1
Limit: CISPR22/11 Class B Conduction(QP)
EUT: ZigBee Server
M/N: ZS211H
Note: Operation Mode

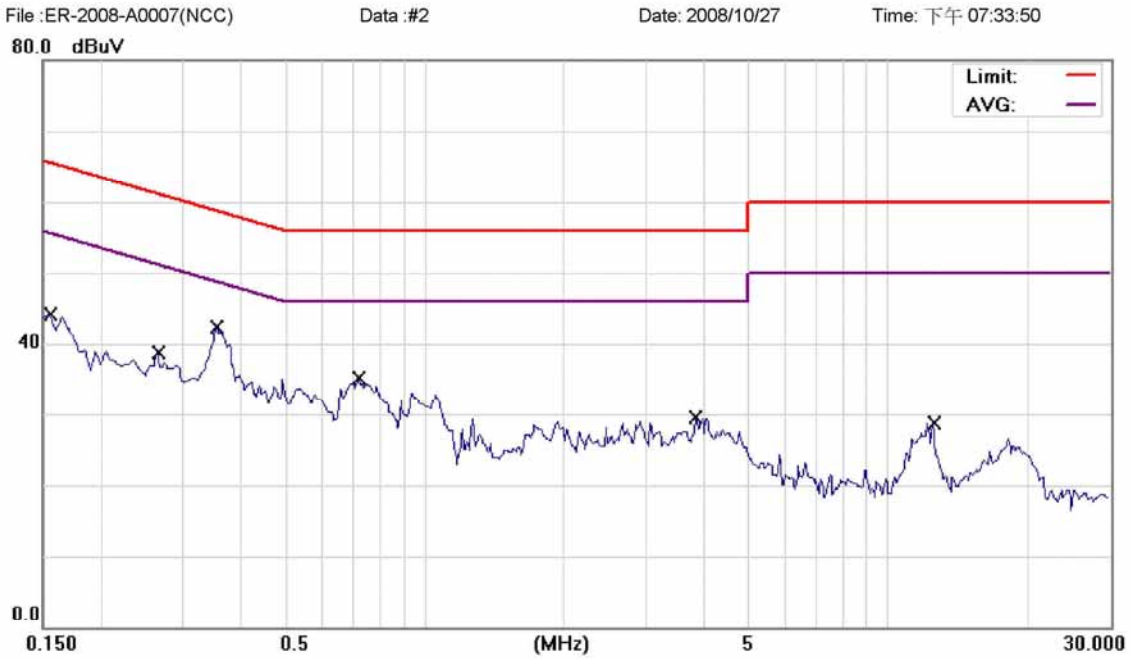
Phase: L1
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 62 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	46.06	0.41	46.47	66.00	-19.53	QP	
2	*	0.3650	42.22	0.10	42.32	58.61	-16.29	QP	
3		0.7300	34.78	0.05	34.83	56.00	-21.17	QP	
4		0.9300	33.38	0.04	33.42	56.00	-22.58	QP	
5		3.1200	30.51	0.05	30.56	56.00	-25.44	QP	
6		12.2000	27.86	0.12	27.98	60.00	-32.02	QP	

Operation Mode:	OPERATION			Test Date:	Oct. 27, 2008
Temperature:	26 ℃	Humidity:	62%	Test By:	Jason

Conducted Emission Measurement



Site SGS CONDUCTED #1
Limit: CISPR22/11 Class B Conduction(QP)
EUT: ZigBee Server
M/N: ZS211H
Note: Operation Mode

Phase: *N*
Power: AC 110V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 62 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1550	43.71	0.37	44.08	65.73	-21.65	QP	
2		0.2650	38.66	0.12	38.78	61.27	-22.49	QP	
3	*	0.3550	42.18	0.09	42.27	58.84	-16.57	QP	
4		0.7200	35.16	0.04	35.20	56.00	-20.80	QP	
5		3.8600	29.45	0.04	29.49	56.00	-26.51	QP	
6		12.5200	28.53	0.22	28.75	60.00	-31.25	QP	

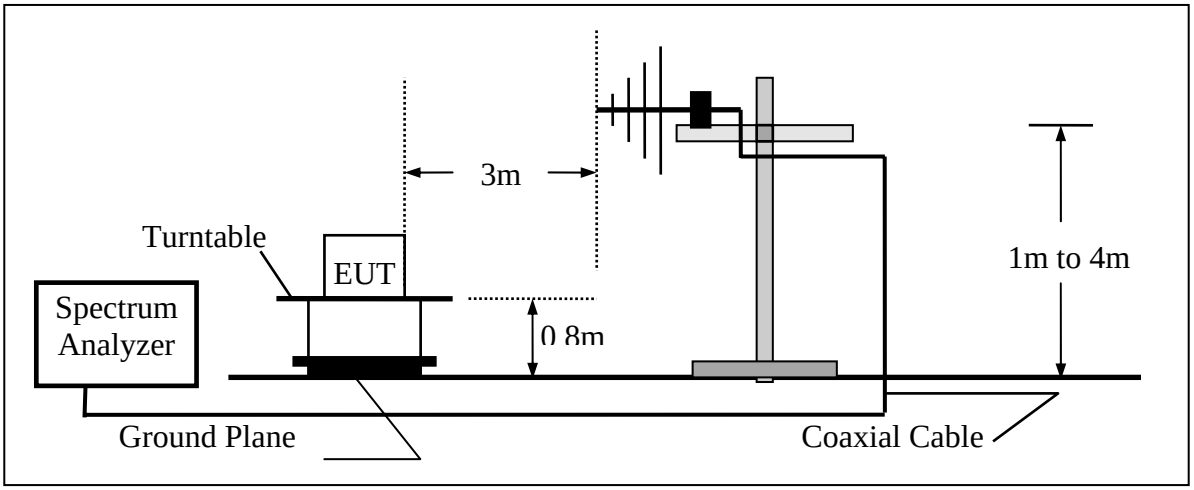
5. Radiated Emission Test

5.1 Measurement Procedure

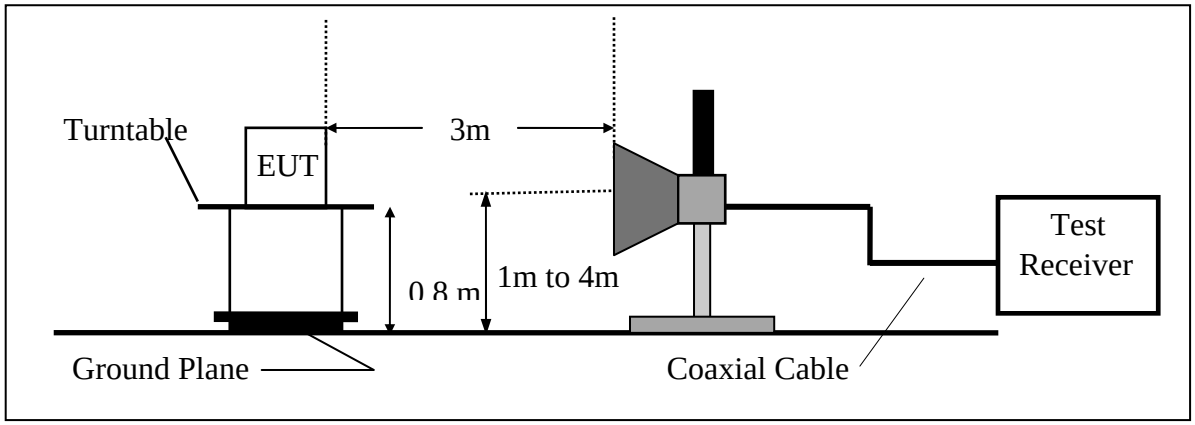
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. When measurement procedures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

5.2 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



5.3 Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	R & S	FSP 40	100034	02/22/2008	02/21/2009
RF-Amplifier	Agilent	8447D	1937A02834	11/30/2007	11/29/2008
RF-Amplifier	EM Electronics	EM30180	6031802	11/30/2007	11/29/2008
Broadband Antenna	SCHWAZBECK	VULB9160	3136	11/15/2007	11/14/2008
Horn Antenna	Agilent	BBHA9120D	320	03/14/2008	03/13/2009
Low Loss Cable	N/A	966 RE Cable	10m	11/30/2007	11/29/2008
Turn Table	HD	DT420	420/542	N/A	N/A
Antenna Master	HD	MA 240	240/515	N/A	N/A
Controller	HD	HD 100	100/589	N/A	N/A
966 3m Site	TDK	N/A	N/A	10/01/2008	09/30/2009

5.4 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	

5.5 Measurement Result

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX	Test Date	Oct. 25, 2008
Fundamental Frequency	CH Low / 2405MHz	Test By	Jason
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)
31.94	V	Peak	45.78	-14.82	30.96	40.00	-9.04
101.78	V	Peak	47.83	-16.87	30.96	43.50	-12.54
198.78	V	Peak	44.99	-15.56	29.43	43.50	-14.07
331.67	V	Peak	43.97	-12.20	31.77	46.00	-14.23
397.63	V	Peak	44.40	-10.09	34.31	46.00	-11.69
532.46	V	Peak	41.42	-7.97	33.45	46.00	-12.55
598.42	V	Peak	37.91	-6.06	31.85	46.00	-14.15
863.23	V	Peak	36.30	-1.70	34.60	46.00	-11.40
39.70	H	Peak	41.26	-13.73	27.53	40.00	-12.47
198.78	H	Peak	50.49	-15.56	34.93	43.50	-8.57
331.67	H	Peak	47.09	-12.20	34.89	46.00	-11.11
346.22	H	Peak	40.33	-11.88	28.45	46.00	-17.55
497.54	H	Peak	37.02	-8.51	28.51	46.00	-17.49
653.71	H	Peak	35.03	-4.97	30.06	46.00	-15.94
797.27	H	Peak	34.48	-3.11	31.37	46.00	-14.63

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) Datas 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, VBW=300KHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX	Test Date	Oct. 25, 2008
Fundamental Frequency	CH Mid / 2440MHz	Test By	Jason
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)
30.00	V	Peak	46.32	-14.97	31.35	40.00	-8.65
105.66	V	Peak	48.71	-16.56	32.15	43.50	-11.35
265.71	V	Peak	47.24	-13.59	33.65	46.00	-12.35
331.67	V	Peak	46.82	-12.20	34.62	46.00	-11.38
532.46	V	Peak	45.25	-7.97	37.28	46.00	-8.72
866.14	V	Peak	42.26	-1.65	40.61	46.00	-5.39
66.86	H	Peak	42.25	-15.34	26.91	40.00	-13.09
198.78	H	Peak	50.65	-15.56	35.09	43.50	-8.41
466.50	H	Peak	45.08	-8.54	36.54	46.00	-9.46
598.42	H	Peak	43.59	-6.06	37.53	46.00	-8.47
731.31	H	Peak	43.50	-4.53	38.97	46.00	-7.03
932.10	H	Peak	35.66	-1.04	34.62	46.00	-11.38

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) Datas 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, VBW=300KHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	TX	Test Date	Oct. 25, 2008
Fundamental Frequency	CH High / 2480MHz	Test By	Jason
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)
30.00	V	Peak	47.61	-14.97	32.64	40.00	-7.36
101.78	V	Peak	46.69	-16.87	29.82	43.50	-13.68
198.78	V	Peak	48.72	-15.56	33.16	43.50	-10.34
397.63	V	Peak	39.33	-10.09	29.24	46.00	-16.76
532.46	V	Peak	41.16	-7.97	33.19	46.00	-12.81
598.42	V	Peak	37.88	-6.06	31.82	46.00	-14.18
731.31	V	Peak	41.33	-4.53	36.80	46.00	-9.20
866.14	V	Peak	41.90	-1.65	40.25	46.00	-5.75
30.00	H	Peak	45.11	-14.97	30.14	40.00	-9.86
66.86	H	Peak	42.54	-15.34	27.20	40.00	-12.80
102.75	H	Peak	42.61	-16.78	25.83	43.50	-17.67
265.71	H	Peak	43.57	-13.59	29.98	46.00	-16.02
598.42	H	Peak	35.52	-6.06	29.46	46.00	-16.54
665.35	H	Peak	36.90	-5.02	31.88	46.00	-14.12

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) Datas 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, VBW=300KHz.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode:	TX	Test Date :	Oct. 25, 2008
Fundamental Frequency:	CH Low / 2405MHz	Test By:	Jason
Temperature :	25 ℃	Pol:	Vertical
Humidity :	65 %		

Freq. (MHz)	Ant.Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Actual Peak FS (dBuV/m)	Actual AV FS (dBuV/m)	Peak Limit at 3m (dBuV/m)	AV Limit at 3m (dBuV/m)	Margin (dB)	
2405.0	V	97.01	64.17	-1.30	95.71	62.87	114.00	94.00	-31.13	F
1325.0	V	42.00	--	-6.68	35.32	--	74.00	54.00	-18.68	S
1585.0	V	43.31	--	-5.52	37.79	--	74.00	54.00	-16.21	S
3203.5	V	39.71	--	1.07	40.78	--	74.00	54.00	-13.22	S
3983.5	V	35.63	--	3.68	39.31	--	74.00	54.00	-14.69	S
4810.0	V	41.91	--	6.04	47.95	--	74.00	54.00	-6.05	H
7215.0	V	--	--			--	74.00	54.00		H
9620.0	V	--	--			--	74.00	54.00		H
12025.0	V	--	--			--	74.00	54.00		H
14430.0	V	--	--			--	74.00	54.00		H
16835.0	V	--	--			--	74.00	54.00		H
19240.0	V	--	--			--	74.00	54.00		H
21645.0	V	--	--			--	74.00	54.00		H
24050.0	V	--	--			--	74.00	54.00		H

Remark：

(1) Measuring frequencies from 30MHz to the 10tth of fundamental frequency。

(2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB

(3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.

(4) Datas 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.

(5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

(6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode:	TX	Test Date :	Oct. 25, 2008
Fundamental Frequency:	CH Low / 2405MHz	Test By:	Jason
Temperature :	25 ℃	Pol:	Horizontal
Humidity :	68 %		

Freq. (MHz)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Actual Peak FS (dBuV/m)	Actual AV FS (dBuV/m)	Peak Limit at 3m (dBuV/m)	AV Limit at 3m (dBuV/m)	Margin (dB)	
2405.0	H	92.51	--	-1.30	91.21	--	114.00	94.00	-2.79	F
1377.0	H	42.86	--	-6.47	36.39	--	74.00	54.00	-17.61	S
1591.5	H	40.73	--	-5.48	35.25	--	74.00	54.00	-18.75	S
3203.5	H	48.32	--	1.07	49.39	--	74.00	54.00	-4.61	S
4810.0	H	37.21	--	6.04	43.25	--	74.00	54.00	-10.75	H
6713.5	H	35.64	--	11.04	46.68	--	74.00	54.00	-7.32	S
7215.0	H	35.55	--	12.85	48.40	--	74.00	54.00	-5.60	H
9620.0	H	--	--			--	74.00	54.00		H
12025.0	H	--	--			--	74.00	54.00		H
14430.0	H	--	--			--	74.00	54.00		H
16835.0	H	--	--			--	74.00	54.00		H
19240.0	H	--	--			--	74.00	54.00		H
21645.0	H	--	--			--	74.00	54.00		H
24050.0	H	--	--			--	74.00	54.00		H

Remark：

(1) Measuring frequencies from 30MHz to the 10tth of fundamental frequency。

(2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB

(3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.

(4) Datas 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.

(5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

(6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode:	TX	Test Date :	Oct. 25, 2008
Fundamental Frequency:	CH Mid / 2440MHz	Test By:	Jason
Temperature :	25 ℃	Pol:	Vertical
Humidity :	65 %		

Freq. (MHz)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Actual Peak FS (dBuV/m)	Actual AV FS (dBuV/m)	Peak Limit at 3m (dBuV/m)	AV Limit at 3m (dBuV/m)	Margin (dB)	
2440.0	V	97.17	64.11	-1.13	96.04	62.98	114.00	94.00	-31.02	F
1325.0	V	39.67	--	-6.68	32.99	--	74.00	54.00	-21.01	S
1617.5	V	39.42	--	-5.37	34.05	--	74.00	54.00	-19.95	S
2059.5	V	37.40	--	-3.14	34.26	--	74.00	54.00	-19.74	S
3249.0	V	42.21	--	1.23	43.44	--	74.00	54.00	-10.56	S
4880.0	V	34.53	--	6.17	40.70	--	74.00	54.00	-13.30	H
7320.0	V	33.15	--	12.92	46.07	--	74.00	54.00	-7.93	H
9760.0	V	--	--			--	74.00	54.00		H
12200.0	V	--	--			--	74.00	54.00		H
14640.0	V	--	--			--	74.00	54.00		H
17080.0	V	--	--			--	74.00	54.00		H
19520.0	V	--	--			--	74.00	54.00		H
21960.0	V	--	--			--	74.00	54.00		H
24400.0	V	--	--			--	74.00	54.00		H

Remark：

(1) Measuring frequencies from 30MHz to the 10tth of fundamental frequency。

(2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB

(3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.

(4) Datas 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.

(5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

(6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode:	TX	Test Date :	Oct. 25, 2008
Fundamental Frequency:	CH Mid / 2440MHz	Test By:	Jason
Temperature :	25 ℃	Pol:	Horizontal
Humidity :	68 %		

Freq. (MHz)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Actual Peak FS (dBuV/m)	Actual AV FS (dBuV/m)	Peak Limit at 3m (dBuV/m)	AV Limit at 3m (dBuV/m)	Margin (dB)	
2440.0	H	91.28	--	-1.13	90.15	--	114.00	94.00	-3.85	F
1045.5	H	42.99	--	-7.91	35.08	--	74.00	54.00	-18.92	S
1123.5	H	42.76	--	-7.62	35.14	--	74.00	54.00	-18.86	S
1617.5	H	41.87	--	-5.37	36.50	--	74.00	54.00	-17.50	S
3249.0	H	46.06	--	1.23	47.29	--	74.00	54.00	-6.71	S
4880.0	H	37.62	--	6.17	43.79	--	74.00	54.00	-10.21	H
7320.0	H	33.82	--	12.92	46.74	--	74.00	54.00	-7.26	H
9760.0	H	--	--			--	74.00	54.00		H
12200.0	H	--	--			--	74.00	54.00		H
14640.0	H	--	--			--	74.00	54.00		H
17080.0	H	--	--			--	74.00	54.00		H
19520.0	H	--	--			--	74.00	54.00		H
21960.0	H	--	--			--	74.00	54.00		H
24400.0	H	--	--			--	74.00	54.00		H

Remark：

(1) Measuring frequencies from 30MHz to the 10tth of fundamental frequency。

(2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB

(3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.

(4) Datas 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.

(5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

(6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode:	TX	Test Date :	Oct. 25, 2008
Fundamental Frequency:	CH High / 2480MHz	Test By:	Jason
Temperature :	25 ℃	Pol:	Vertical
Humidity :	65 %		

Freq. (MHz)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Actual Peak FS (dBuV/m)	Actual AV FS (dBuV/m)	Peak Limit at 3m (dBuV/m)	AV Limit at 3m (dBuV/m)	Margin (dB)	
2480.0	V	95.83	65.37	-0.92	94.91	64.45	114.00	94.00	-29.55	F
1253.5	V	44.13	--	-7.01	37.12	--	74.00	54.00	-16.88	S
1325.0	V	46.34	--	-6.68	39.66	--	74.00	54.00	-14.34	S
1643.5	V	39.63	--	-5.22	34.41	--	74.00	54.00	-19.59	S
3301.0	V	44.20	--	1.42	45.62	--	74.00	54.00	-8.38	S
4960.0	V	34.71	--	6.32	41.03	--	74.00	54.00	-12.97	H
7440.0	V	34.82	--	12.92	47.74	--	74.00	54.00	-6.26	H
9920.0	V	--	--			--	74.00	54.00		H
12400.0	V	--	--			--	74.00	54.00		H
14880.0	V	--	--			--	74.00	54.00		H
17360.0	V	--	--			--	74.00	54.00		H
19840.0	V	--	--			--	74.00	54.00		H
22320.0	V	--	--			--	74.00	54.00		H
24800.0	V	--	--			--	74.00	54.00		H

Remark：

(1) Measuring frequencies from 30MHz to the 10tth of fundamental frequency。

(2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB

(3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.

(4) Datas 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.

(5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

(6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode:	TX	Test Date :	Oct. 25, 2008
Fundamental Frequency:	CH High / 2480MHz	Test By:	Jason
Temperature :	25 ℃	Pol:	Horizontal
Humidity :	68 %		

Freq. (MHz)	Ant.Pol. H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Factor (dB)	Actual Peak FS (dBuV/m)	Actual AV FS (dBuV/m)	Peak Limit at 3m (dBuV/m)	AV Limit at 3m (dBuV/m)	Margin (dB)	
2480.0	H	92.66	--	-0.92	91.74	--	114.00	94.00	-2.26	F
1045.5	H	43.26	--	-7.91	35.35	--	74.00	54.00	-18.65	S
1643.5	H	43.97	--	-5.22	38.75	--	74.00	54.00	-15.25	S
3301.0	H	47.05	--	1.42	48.47	--	74.00	54.00	-5.53	S
3951.0	H	36.07	--	3.51	39.58	--	74.00	54.00	-14.42	S
4960.0	H	34.35	--	6.36	40.71	--	74.00	54.00	-13.29	H
3951.0	H	35.95	--	9.22	45.17	--	74.00	54.00	-8.83	S
7440.0	H	--	--			--	74.00	54.00		H
9920.0	H	--	--			--	74.00	54.00		H
12400.0	H	--	--			--	74.00	54.00		H
14880.0	H	--	--			--	74.00	54.00		H
17360.0	H	--	--			--	74.00	54.00		H
19840.0	H	--	--			--	74.00	54.00		H
22320.0	H	--	--			--	74.00	54.00		H
24800.0	H	--	--			--	74.00	54.00		H

Remark：

(1) Measuring frequencies from 30MHz to the 10tth of fundamental frequency。

(2) Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB

(3) “F” denotes fundamental frequency; “H” denotes harmonics frequency. “S” denotes spurious frequency.

(4) Datas 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.

(5) Spectrum Peak mode IF bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

(6) Spectrum AV mode IF B bandwidth Setting : 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

6. 26 dB Band Width Measurement

6.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set ETU normal operating mode.
3. Set SPA Center Frequency = fundamental frequency, RBW, VBW = 100KHz, Span =3MHz.
4. Set SPA Max hold. Mark peak, -26dB.

6.2 Test SET-UP (Block Diagram of Configuration)

Same as 4.2 Radiated Emission Measurement.

6.3 Measurement Equipment Used:

Same as 4.2 Radiated Emission Measurement.

6.4 Measurement Results:

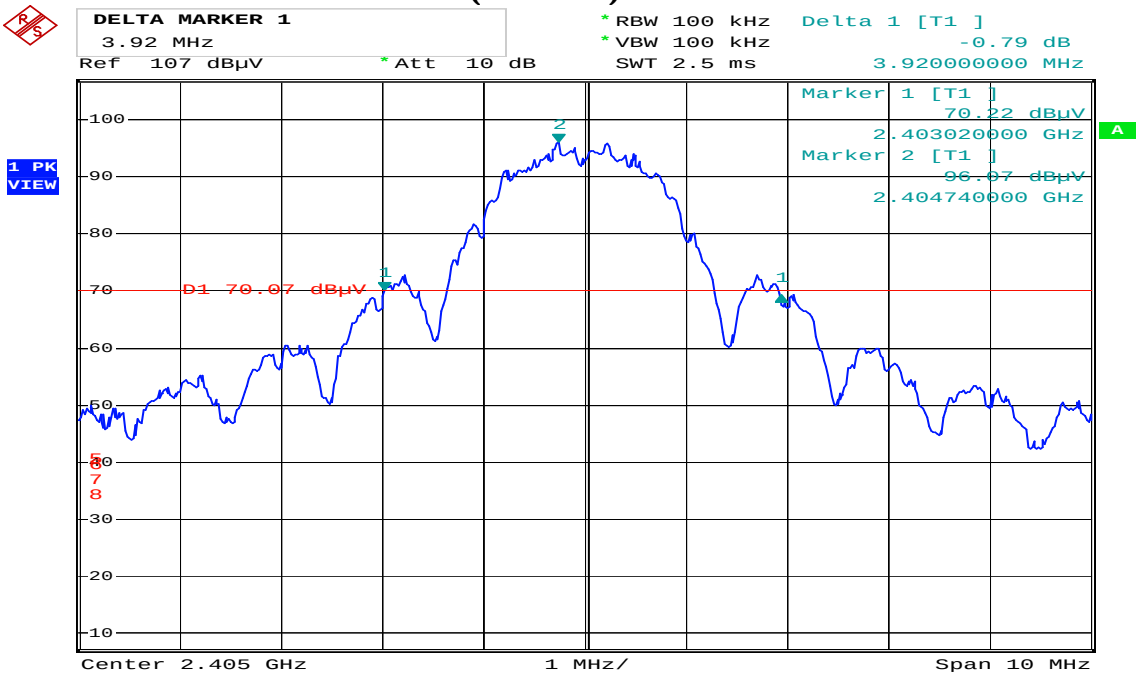
Ch Low 26dB Bandwidth = 3.920MHz

Ch Mid 26dB Bandwidth = 3.900MHz

Ch High 26dB Bandwidth = 3.920MHz

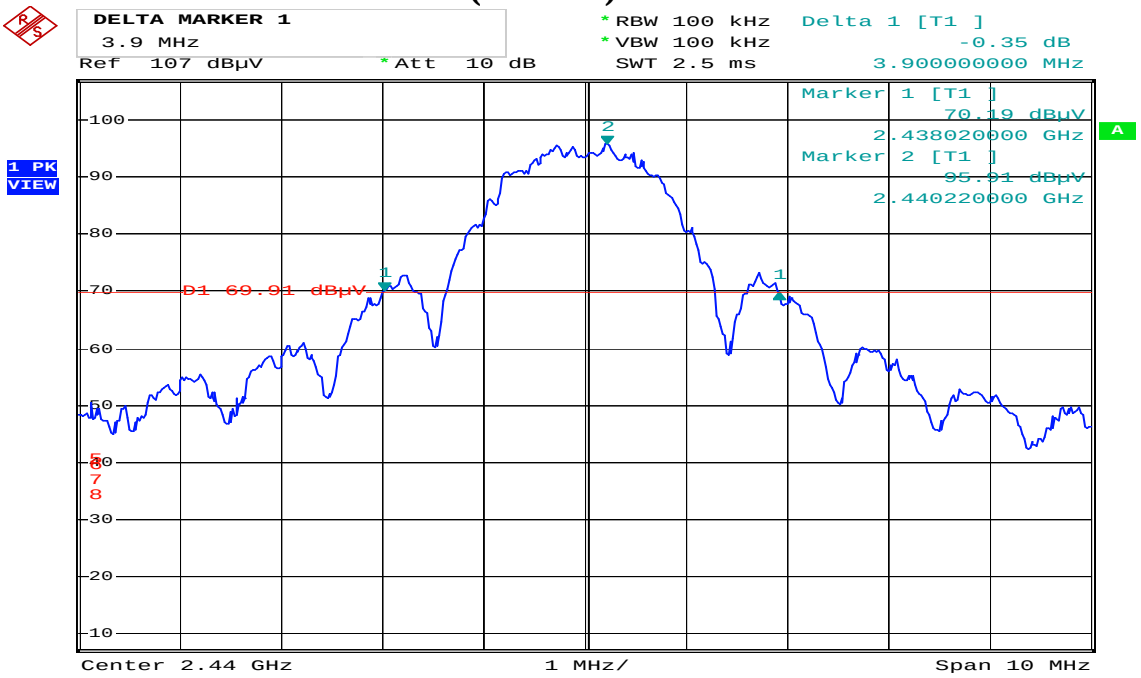
Refer to attached data chart.

26 dB Band Width test Plot (Ch Low)



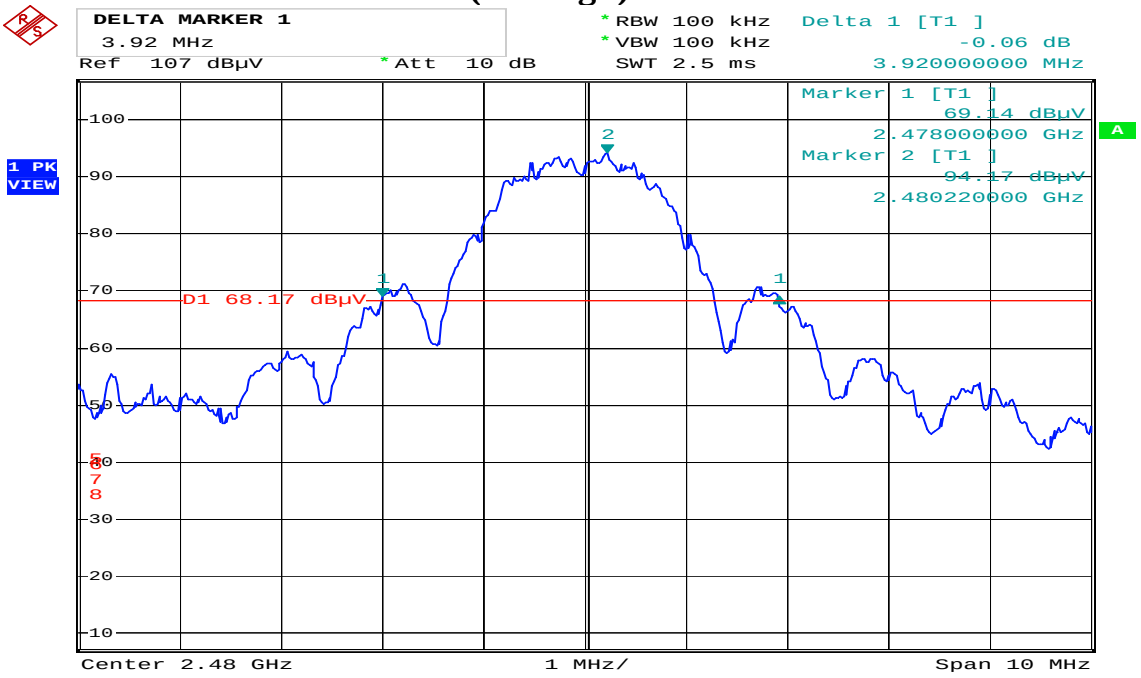
Comment: 1
Date: 27.OCT.2008 21:48:25

26 dB Band Width test Plot (Ch Mid)



Comment: 1
Date: 27.OCT.2008 21:40:05

26 dB Band Width test Plot (Ch High)



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Date: 27.OCT.2008 21:44:57