

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## UN-INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART B CERTIFICATION REQUIREMENT

OF

**Product Name:** 3G Data Module

**Brand Name:** N/A

**Model Name:** ZOE

**Model Difference:** N/A

**FCC ID:** QDJZOE

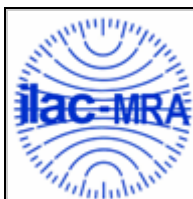
**Report No.:** EI/2011/10004

**Issue Date:** Feb. 14, 2011

**FCC Rule Part:** Part 15 B, Class B

**Prepared for:** CHI MEI COMMUNICATION SYSTEMS, INC.  
No.4, Ming Sheng St., TuCheng City, Taipei  
County 236, Taiwan (R.O.C.)

**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
No. 134, Wu Kung Rd., Wuku Industrial Zone,  
Taipei County, Taiwan.



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## VERIFICATION OF COMPLIANCE

**Applicant:** CHI MEI COMMUNICATION SYSTEMS, INC.  
No.4, Ming Sheng St., TuCheng City, Taipei County 236, Taiwan  
(R.O.C.)

**Product Description:** 3G Data Module

**Brand Name:** N/A

**Model No.:** ZOE

**Model Difference:** N/A

**FCC ID:** QDJZOE

**File Number:** EI/2011/10004

**Date of test:** Jan. 15, 2011 ~ Feb. 14, 2011

**Date of EUT Receive:** Jan. 15, 2011

## 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 15B, Class B.

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

Test By:

Nick Lin

Date:

Feb. 14, 2011

Nick Lin / Engineer

Prepared By:

Cherry Chen

Date:

Feb. 14, 2011

Cherry Chen / Clerk

Approved By:

Willis Chen

Date:

Feb. 14, 2011

Willis Chen / Asst. Manager

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## Version

Version No.	Date	Description
00	Feb. 14, 2011	Initial creation of document

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## 1. GENERAL INFORMATION

### 1.1. Product Description

General:

Product Name	3G Data Module
Brand Name	N/A
Model Name	ZOE
Model Difference	N/A
Antenna Type	Dipole Antenna

GSM and WCDMA:

Cellular Phone Standards Frequency Range and Power:	Operating Frequency		Rated Power
	GPRS 850, Class 10	824 MHz– 849MHz	33 dBm
	EDGE 850, Class 10	824 MHz– 849MHz	27 dBm
	GPRS 1900, Class 10	1850MHz – 1910MHz	30 dBm
	EDGE 1900, Class 10	1850MHz – 1910MHz	26 dBm
	WCDMA/HSUPA/HSDPA Band II	1852.4MHz – 1907.6MHz	24 dBm
	WCDMA/HSUPA/HSDPA Band V	826.4 MHz - 846.6 MHz	24 dBm
Hardware Version:	DVT1.2		
Software Version:	1575.00.03.02		

The test report compliance for GPRS 850/1900,EDGE 850/1900,WCDMA B2 and WCDMA B5

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

This submittal(s) (test report) is intended for **FCC ID: QDJZOE** filing to comply with Part15 Subpart B, class B of the FCC CFR 47 Rules.

## 1.3. Test Methodology

Both conducted and radiated testing was 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. 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

## 1.5. 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 EUT was operated in the normal continuous transmitting and all function.

### 2.3. Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 7 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 placed on a 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 of ANSI C63.4: 2003.

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## 2.4. Limitation

### (1) Conducted Emission

According to section 15.107(a) Conducted Emission Limits is as following.

Frequency range MHz	Class B Limits dB (uV)	
	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.		

### (2) Radiated Emission

According to section 15.109(a) Radiated Emission Class B Limits is as following:

Frequency (MHz)	Field strength $\mu\text{V}/\text{m}$	Distance (m)	Field strength at 3m $\text{dB}\mu\text{V}/\text{m}$
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

Standard	Date	Description
CISPR 22	2006	Limits and methods of measurement of radio interference characteristics of information technology equipment.



## CISPR 22 Limit:

Frequency range MHz	Limits dBuV/m (10m)
	Quasi-peak
30 to 230	30
230 to 1000	37

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 3 meters.

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## 2.5. Configuration of Tested System

Fig. 2-1 Configuration of Tested System (Radiation)

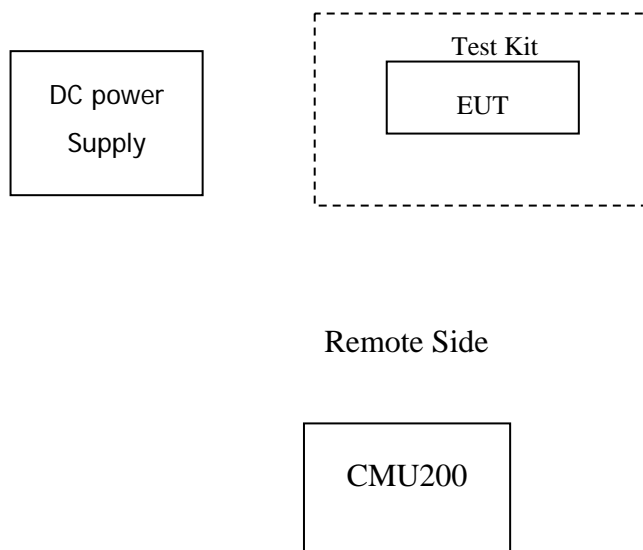


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Communication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	DC Power Supply	Topward	330D	981327	shielded	Un-shielded

### 3. Summary of Test Results

FCC Rules	Description Of Test	Result
§15.107	Conducted Emission Class B	N/A
§15.109	Radiated Emission Class B	Compliant

### 4. Description of test modes

The EUT was stayed in normal operation mode with all its ancillary functions being operated.(GPRS link with simulator).

Test Mode:

ZOE		Config 1	Config 2
	Applicable standard (FCC )	part 15B	part 15B
	Accessories	UE + Battery + Adaptor	UE + Battery + Adaptor
		<b>Full function</b>	<b>Full function</b>
		<b>GPRS</b>	<b>GPS</b>
EN No.	Description		
8.2	radiated emission (30-1GHz & 1-13GHz)	GPRS 850/1900 & WCDMA B2/5 link	GPS mode
8.3	conducted emission (DC Power)	NA	NA
8.4	conducted emission (AC Power)	NA	NA

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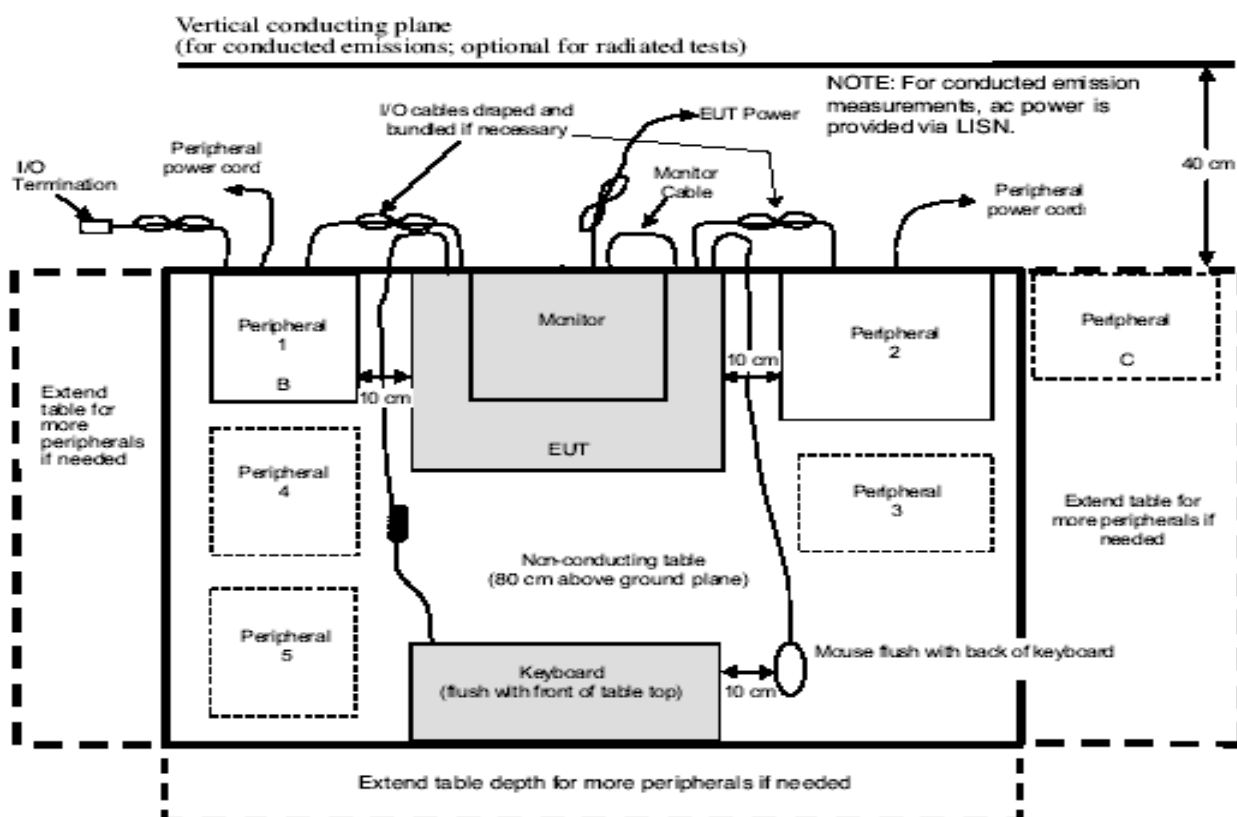
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## LEGEND:

- 1) Interconnecting cables that hang closer than 40 cm to the groundplane shall be folded back and forth in the center, forming a bundle 30 to 40 cm long (see 6.1.4 and 11.2.4).
- 2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated if required using the correct terminating impedance. The total length shall not exceed 1 m (see 6.1.4).
- 3) If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the groundplane with the receptacle flush with the groundplane (see 6.1.4).
- 4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use (see 6.2.1.3 and 11.2.4).
- 5) Non-EUT components of EUT system being tested (see also Figure 13).
- 6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop (see 6.2.1.1 and 6.2.1.2).
- 7) No vertical conducting plane used (see 5.2.2).

**Figure 11a—Test arrangement for radiated emissions tabletop equipment**



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**5.3. 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	09/15/2010	09/14/2011
LISN	Rolf-Heine	NNB-2/16Z	99012	02/02/2011	02/01/2012
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/02/2011	02/01/2012
Coaxial Cables	N/A	WK CE Cable	N/A	11/28/2010	11/27/2011

**5.4. Measurement Result:**

N/A

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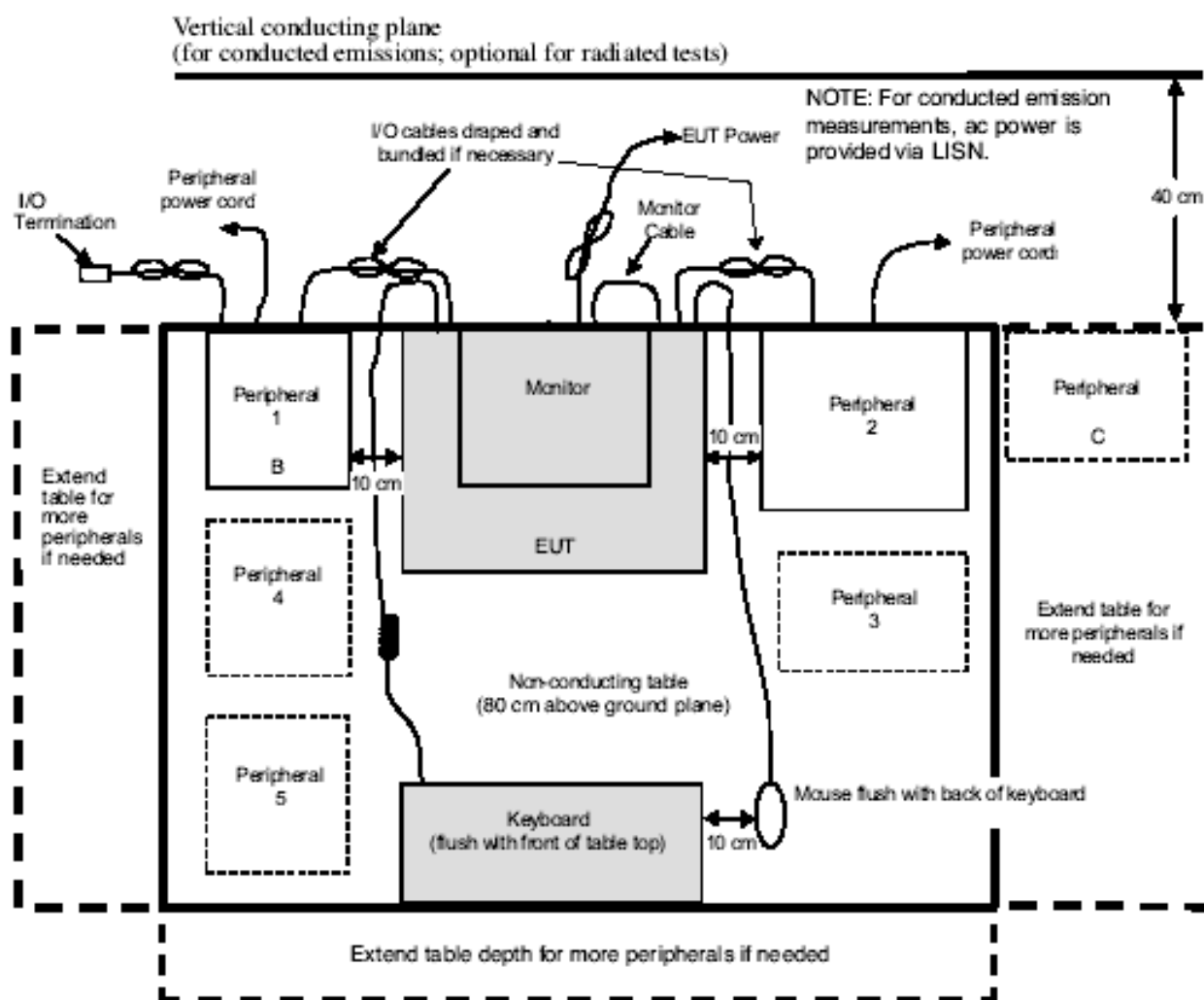
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## 6. Radiated Emission Test

### 6.1. Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

### 6.2. Test SET-UP (Block Diagram of Configuration)



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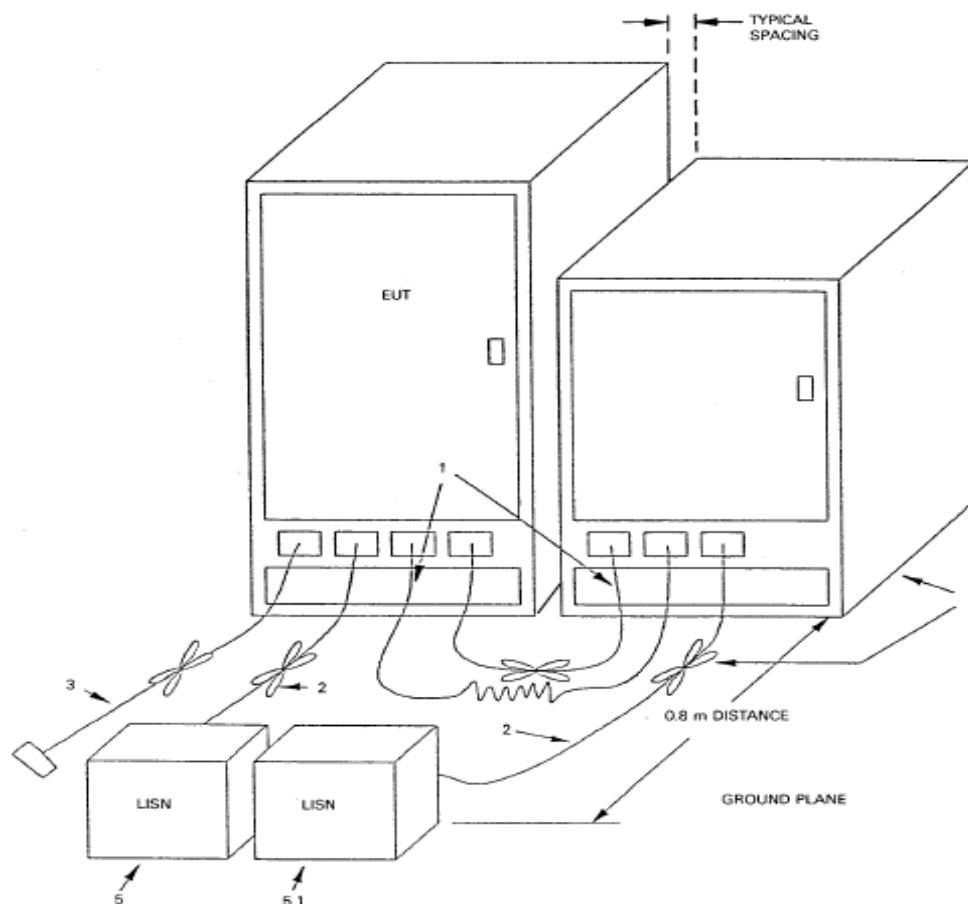
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## LEGEND:

- 1) Excess I/O cables shall be bundled in the center. If bundling is not possible, the cables shall be arranged in serpentine fashion. Bundling shall not exceed 40 cm in length (see 6.1.4 and 11.2.4).
- 2) Excess power cords shall be bundled in the center or shortened to appropriate length (see 7.2.1).
- 3) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. If bundling is not possible, the cable shall be arranged in serpentine fashion (see 6.1.4).
- 4) EUT and all cables shall be insulated, if required, from the groundplane by up to 12 mm of insulating material (see 6.1.4 and 6.2.2).
- 5) EUT connected to one LISN. LISN can be placed on top of, or immediately beneath, the groundplane. 5.1) All other equipment powered from a second LISN or additional LISN(s) (see 5.2.3 and 7.2.1). 5.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

**Figure 10b—Test arrangement for conducted emissions floor-standing equipment**

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### 6.3. Measurement Equipment Used:

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

### 6.4. 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	

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## 6.5. Measurement Result:

### GPRS 850 mode

Test Mode: Config 1

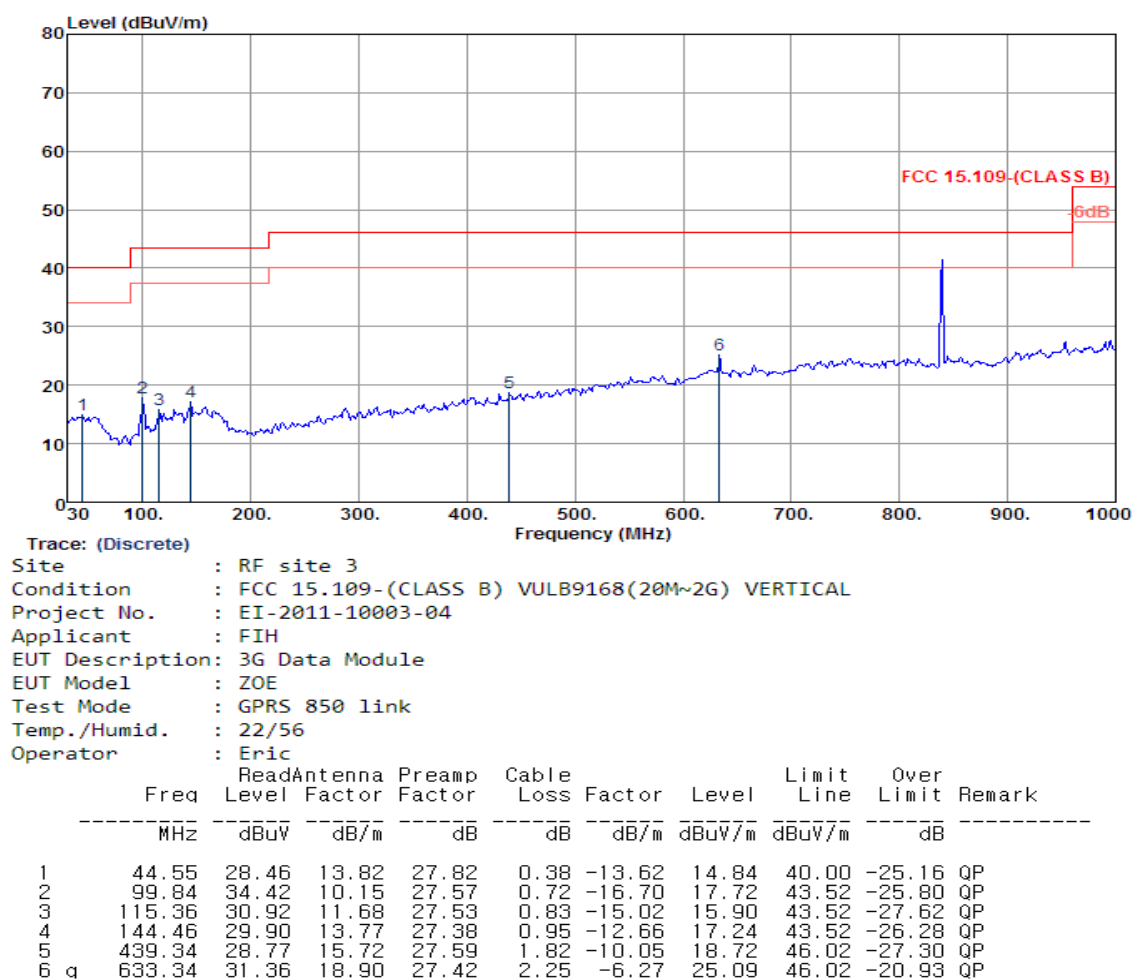
Test Date : Feb 11, 2010

Detector Function: QP

Test By: Nick

Frequency Range: 30MHz-1000MHz

Pol: Vertical



### Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

**Measurement Result:**

Test Mode: Config 1

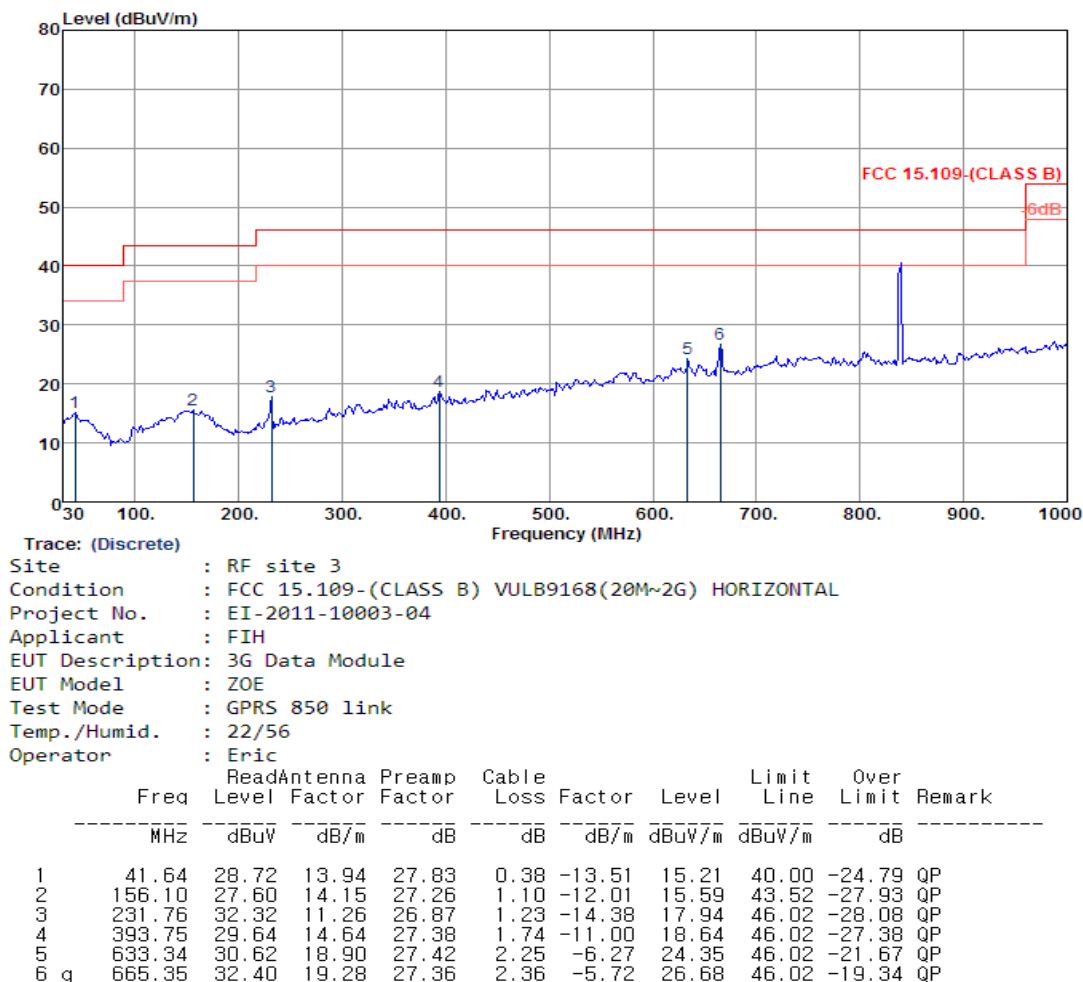
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol.: Horizontal

**Remark :**

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

## Measurement Result Above 1GHz :

Test Mode : Config 1

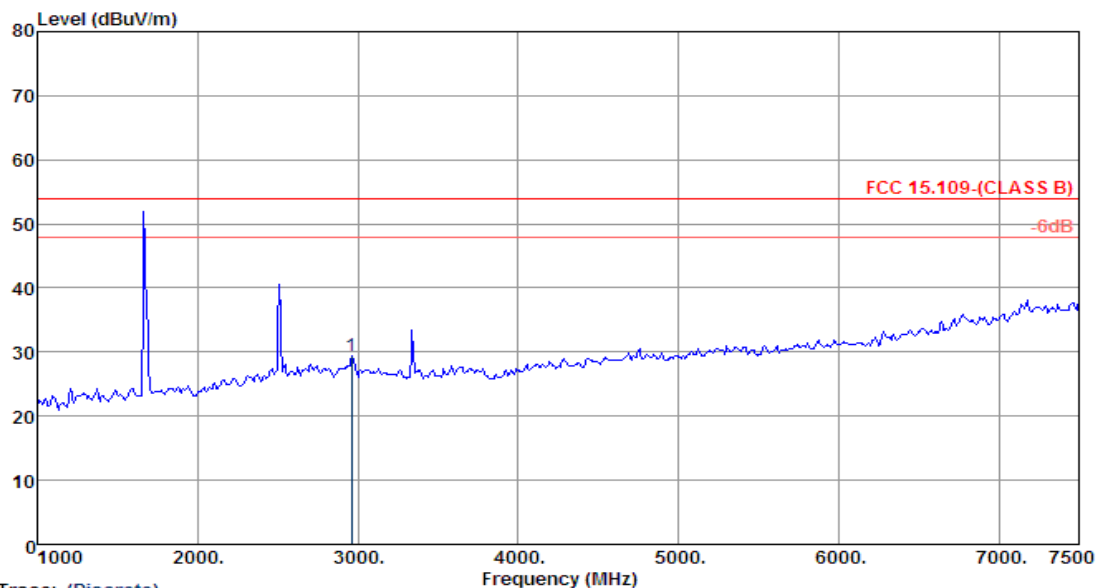
Detector Function: Peak

Frequency Range: Over 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPRS 850 link

Temp./Humid. : 22/56

Operator : Eric

	Read	Antenna	Preamp	Cable		Limit	Over	
Freq	Level	Factor	Factor	Loss	Factor	Level	Line	Limit
MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1 p 2963.00	28.80	28.17	32.78	5.25	0.64	29.44	54.00	-24.56 Peak

## Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 1

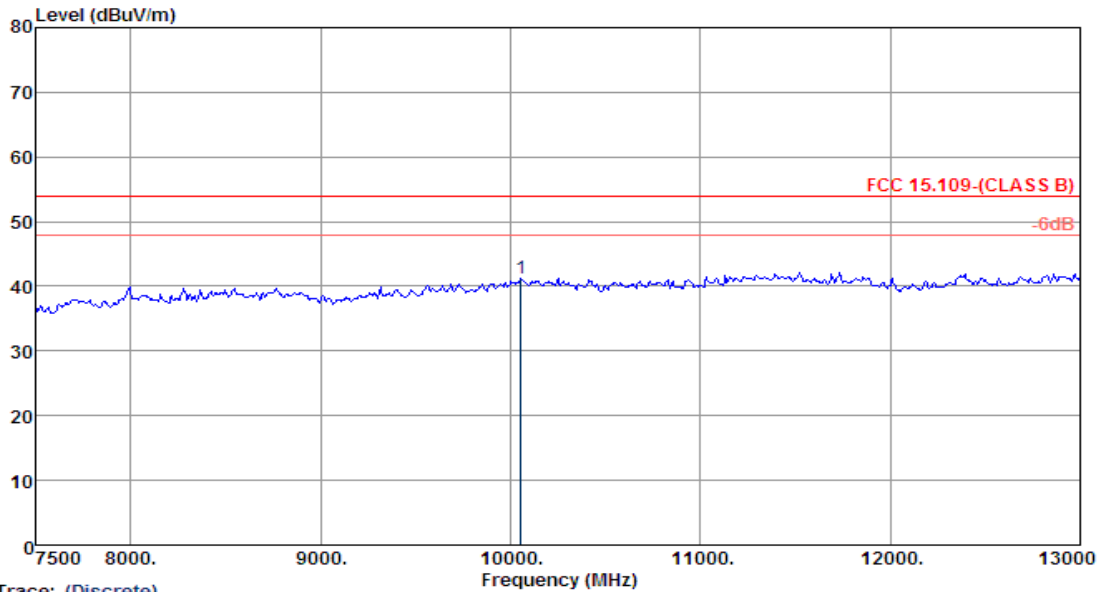
Detector Function: Peak

Frequency Range: Over 7.5 – 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3  
Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL  
Project No. : EI-2011-10003-04  
Applicant : FIH  
EUT Description: 3G Data Module  
EUT Model : ZOE  
Test Mode : GPRS 850 link  
Temp./Humid. : 22/56  
Operator : Eric

Freq	Read	Antenna	Preampl	Cable	Factor	Level	Limit	Over	Remark
MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1 p 10057.50	24.55	38.24	32.11	10.49	16.62	41.17	54.00	-12.83	Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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Test Mode : Config 1

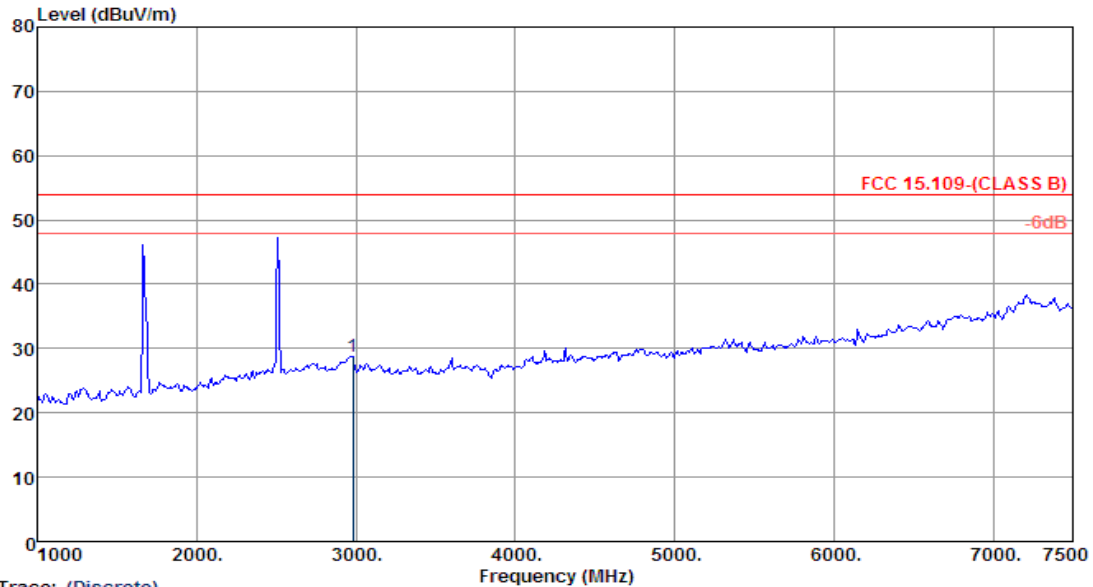
Detector Function: Peak

Frequency Range: 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3  
 Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL  
 Project No. : EI-2011-10003-04  
 Applicant : FIH  
 EUT Description: 3G Data Module  
 EUT Model : ZOE  
 Test Mode : GPRS 850 link  
 Temp./Humid. : 22/56  
 Operator : Eric

	Read	Antenna	Preampl	Cable		Limit	Over	
Freq	Level	Factor	Factor	Loss	Factor	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1 p 2982.50	28.07	28.22	32.82	5.38	0.78	28.85	54.00	-25.15 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 1

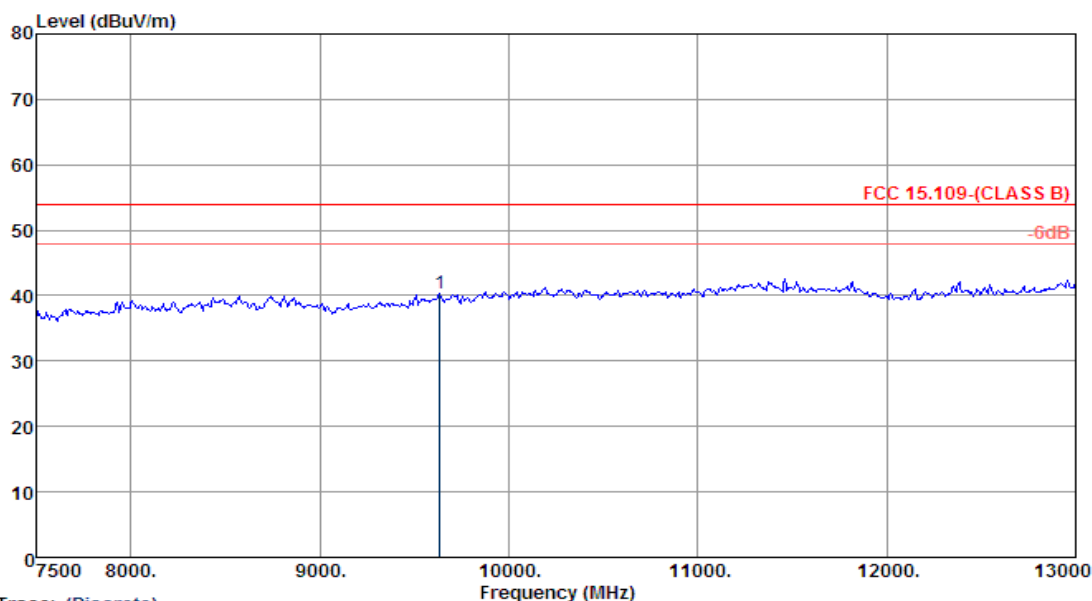
Detector Function: Peak

Frequency Range: 7.5 - 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3  
Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL  
Project No. : EI-2011-10003-04  
Applicant : FIH  
EUT Description: 3G Data Module  
EUT Model : ZOE  
Test Mode : GPRS 850 link  
Temp./Humid. : 22/56  
Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Factor	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1 p	9634.00	24.28	37.94	32.17	10.22	15.99	40.27	54.00	-13.73 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

## Measurement Result:

### GPRS 1900 mode

Test Mode: Config 1

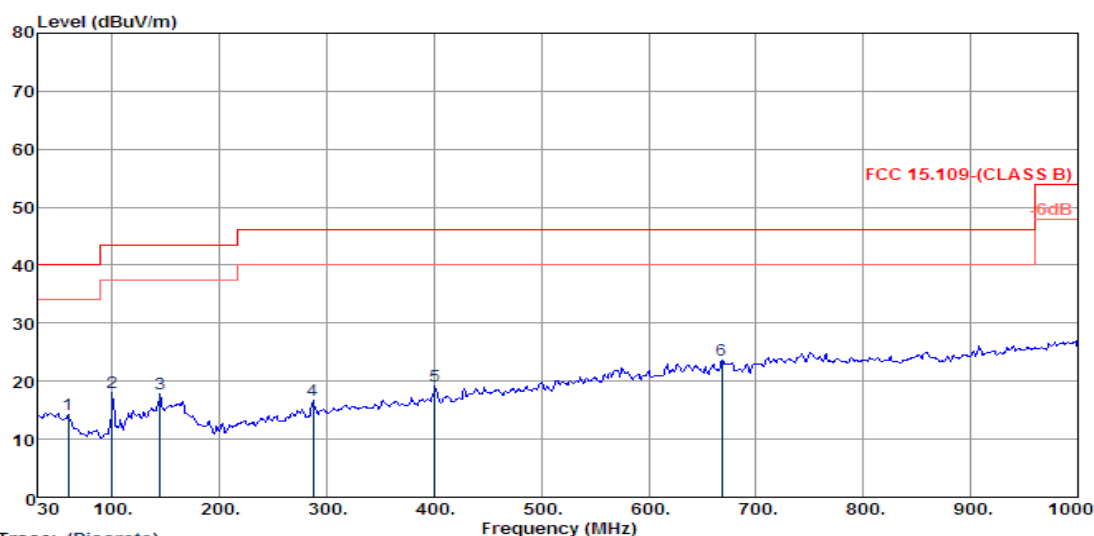
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb 11, 2010

Test By: Nick

Pol: Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) VULB9168(20M~2G) VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPRS 1900 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	ReadLevel	AntennaFactor	PreampFactor	CableLoss	Factor	Level	LimitLine	OverLimit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1	59.10	28.68	12.75	27.82	0.55	-14.52	14.16	40.00	-25.84	QP
2	99.84	34.68	10.15	27.57	0.72	-16.70	17.98	43.52	-25.54	QP
3	144.46	30.53	13.77	27.38	0.95	-12.66	17.87	43.52	-25.65	QP
4	287.05	29.40	12.54	26.74	1.43	-12.77	16.63	46.02	-29.39	QP
5	400.54	30.01	14.74	27.43	1.78	-10.91	19.10	46.02	-26.92	QP
6 a	668.26	29.43	19.30	27.36	2.36	-5.70	23.73	46.02	-22.29	QP

## Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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## Measurement Result:

Test Mode: Config 1

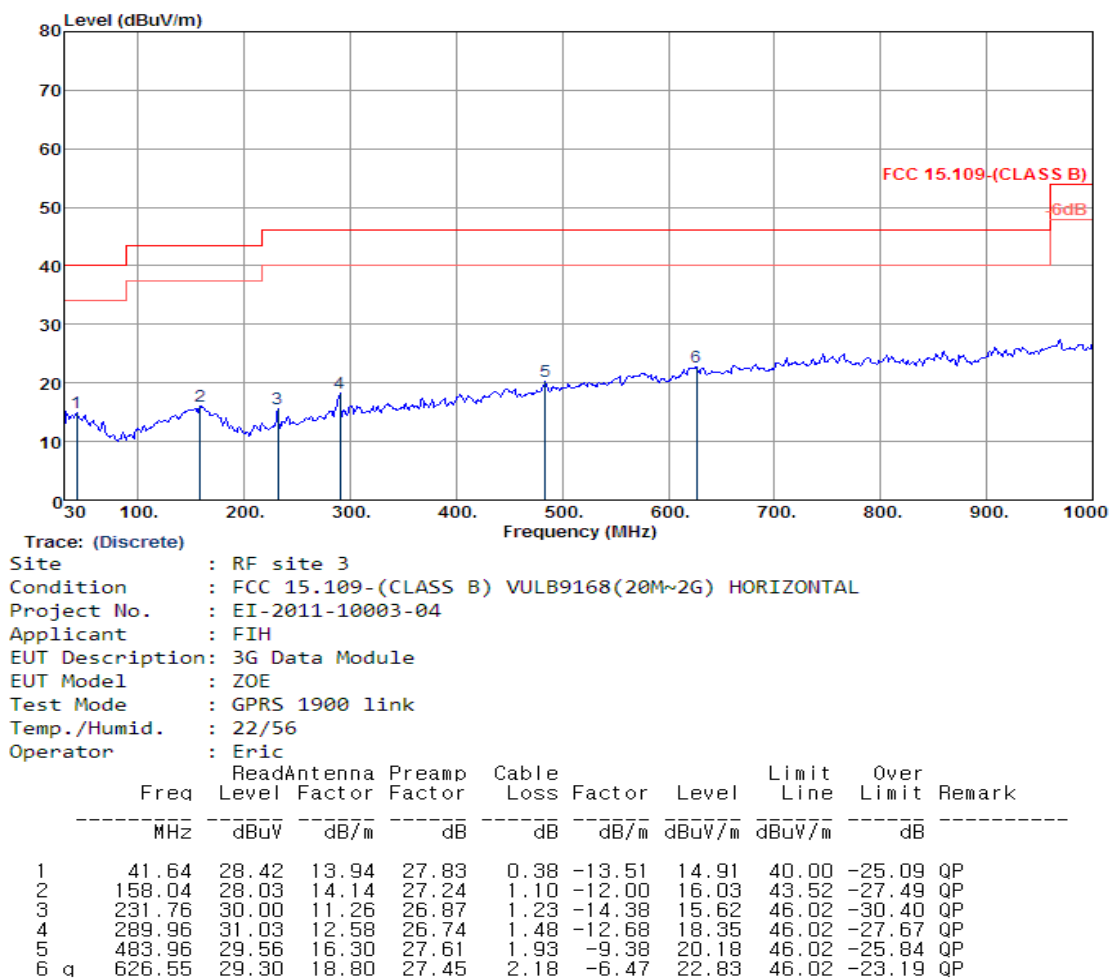
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol.: Horizontal



## Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

**Measurement Result Above 1GHz :**

Test Mode : Config 1

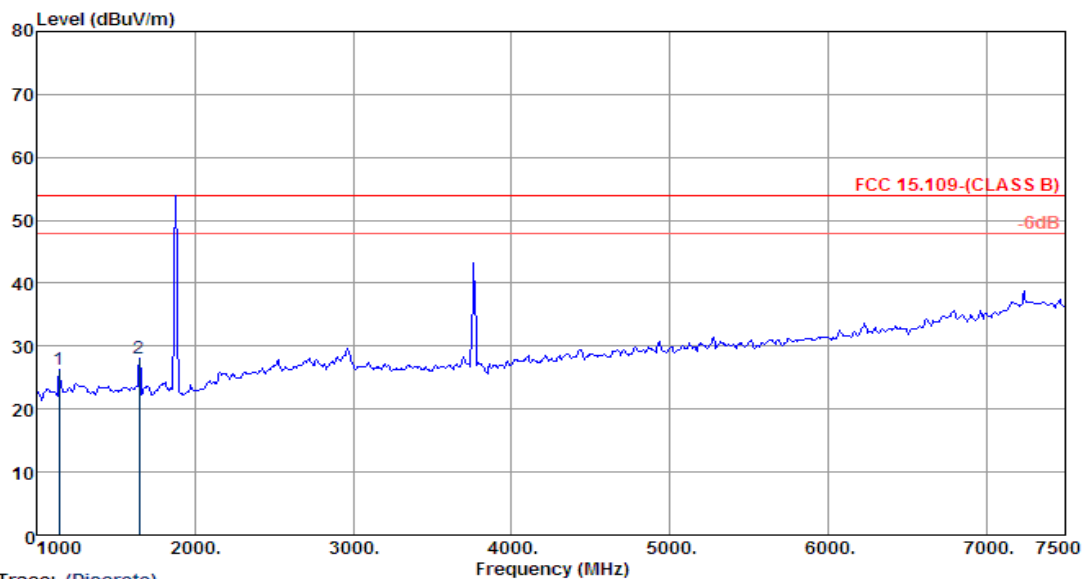
Detector Function: Peak

Frequency Range: Over 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPRS 1900 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Level	Limit	Over	
	MHz	Level	Factor	Factor	Loss	Factor	dBuV/m	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1	1143.00	31.98	24.43	33.27	3.22	-5.62	26.36	54.00	-27.64	Peak
2 p	1650.00	32.12	25.20	33.06	3.86	-4.00	28.12	54.00	-25.88	Peak

**Remark :**

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 1

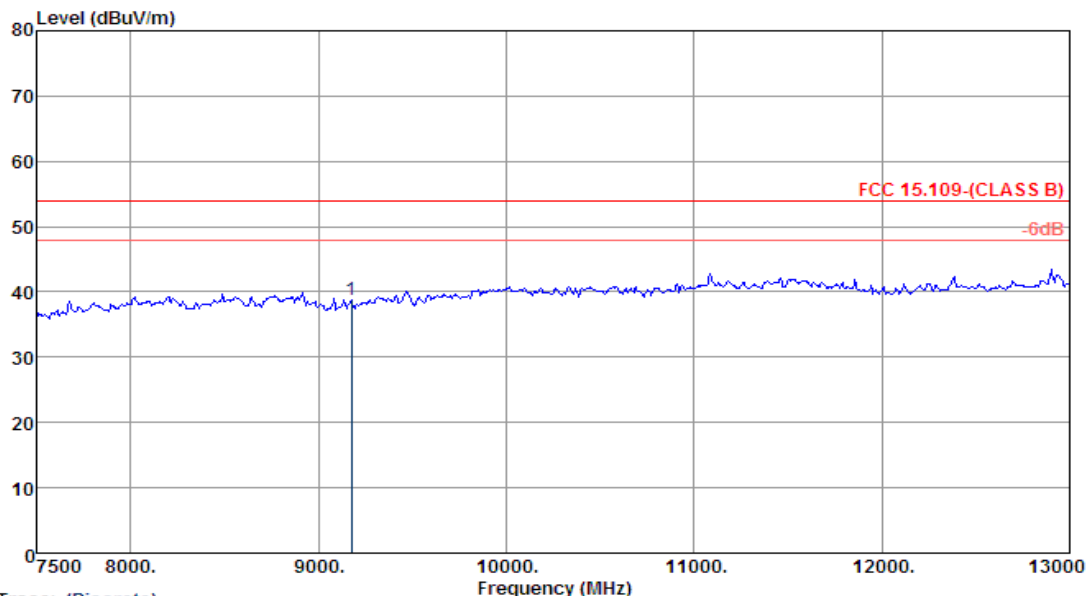
Detector Function: Peak

Frequency Range: Over 7.5 – 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPRS 1900 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 p	9177.50	23.56	37.56	32.44	10.02	15.14	38.70	54.00	-15.30 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 1

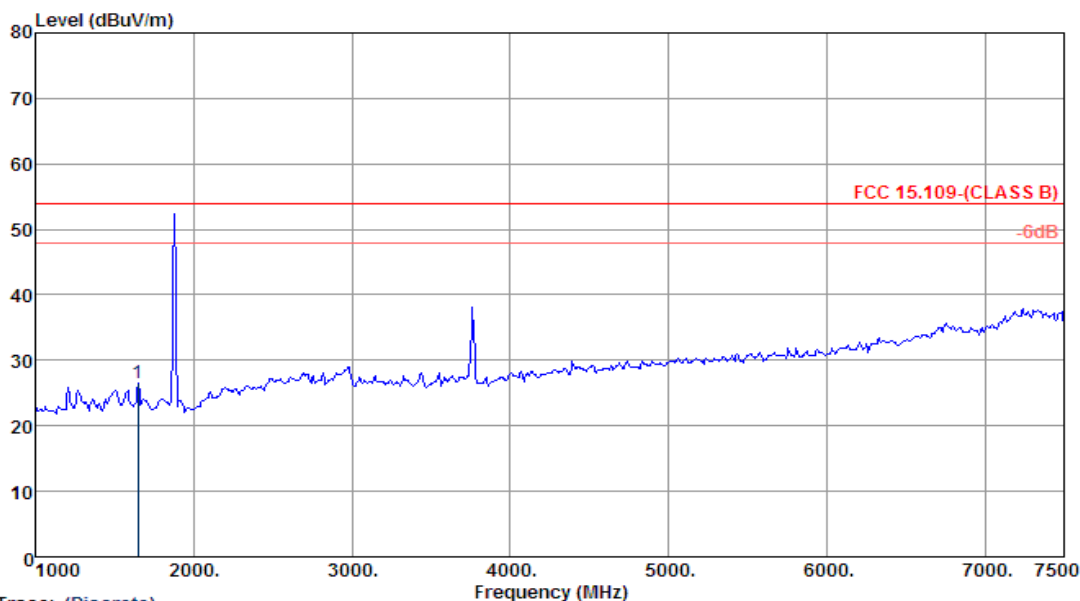
Detector Function: Peak

Frequency Range: 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3  
Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL  
Project No. : EI-2011-10003-04  
Applicant : FIH  
EUT Description: 3G Data Module  
EUT Model : ZOE  
Test Mode : GPRS 1900 link  
Temp./Humid. : 22/56  
Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1 p	1650.00	30.52	25.20	33.06	3.86	-4.00	26.52	54.00	-27.48 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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Test Mode : Config 1

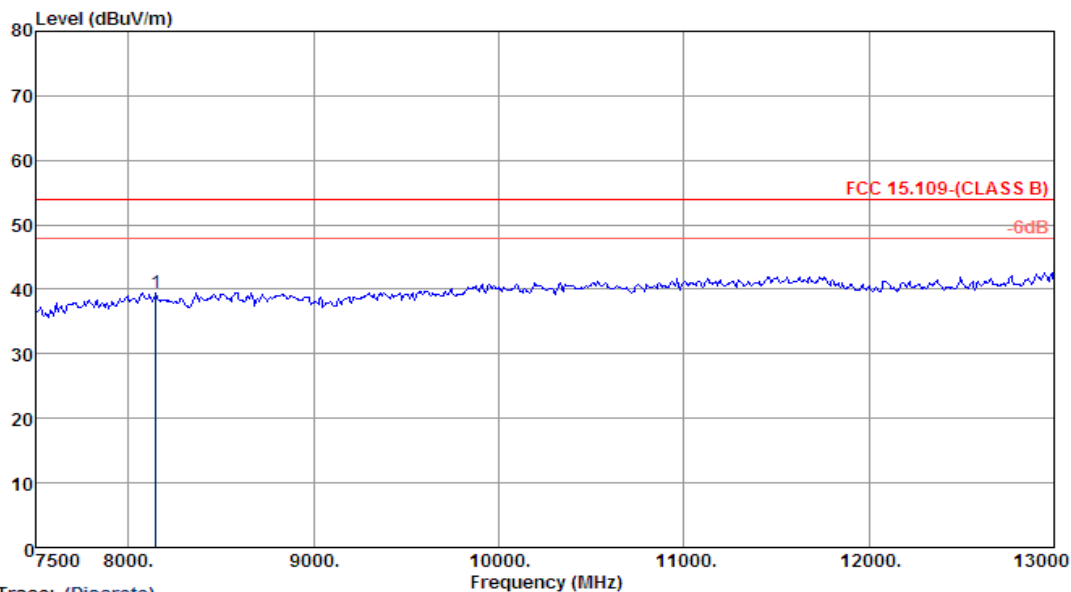
Detector Function: Peak

Frequency Range: 7.5 - 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPRS 1900 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preampl	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 p	8149.00	25.32	37.07	32.33	9.31	14.05	39.37	54.00	-14.63 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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## Measurement Result:

### WCDMA BAND 2 mode

Test Mode: Config 1

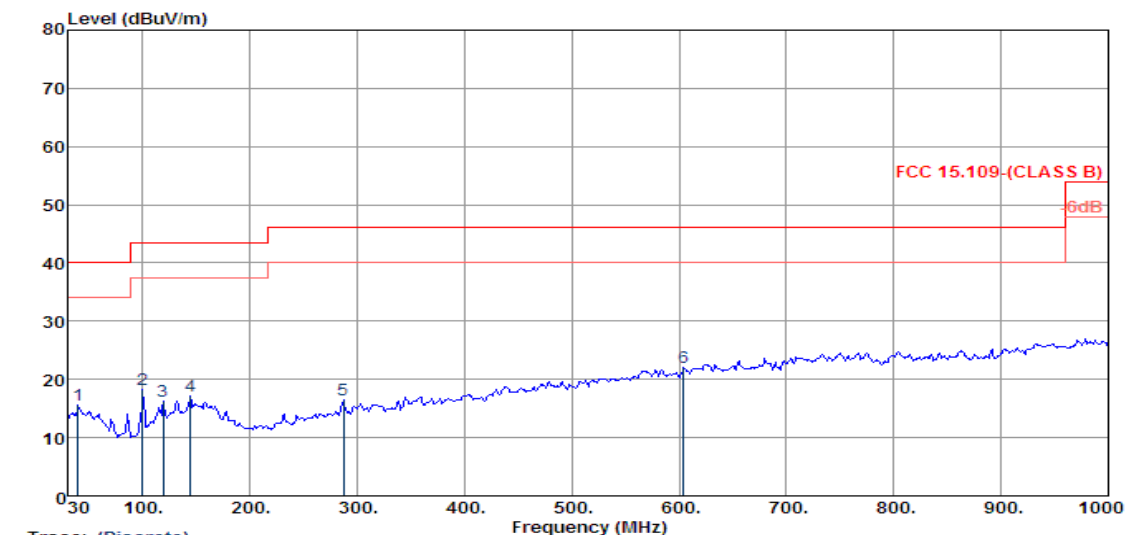
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb 11, 2010

Test By: Nick

Pol: Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) VULB9168(20M~2G) VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : WCDMA B2 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable	Factor	Level	Limit	Over	Remark
	MHz	Level	Factor	Factor	Loss		dBuV/m	Line	Limit	
		dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1	39.70	28.94	14.07	27.83	0.38	-13.38	15.56	40.00	-24.44	QP
2	99.84	35.05	10.15	27.57	0.72	-16.70	18.35	43.52	-25.17	QP
3	119.24	30.95	12.06	27.52	0.83	-14.63	16.32	43.52	-27.20	QP
4	144.46	29.79	13.77	27.38	0.95	-12.66	17.13	43.52	-26.39	QP
5	287.05	29.19	12.54	26.74	1.43	-12.77	16.42	46.02	-29.60	QP
6	604.24	28.93	18.39	27.53	2.17	-6.97	21.96	46.02	-24.06	QP

### Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

## Measurement Result:

Test Mode: Config 1

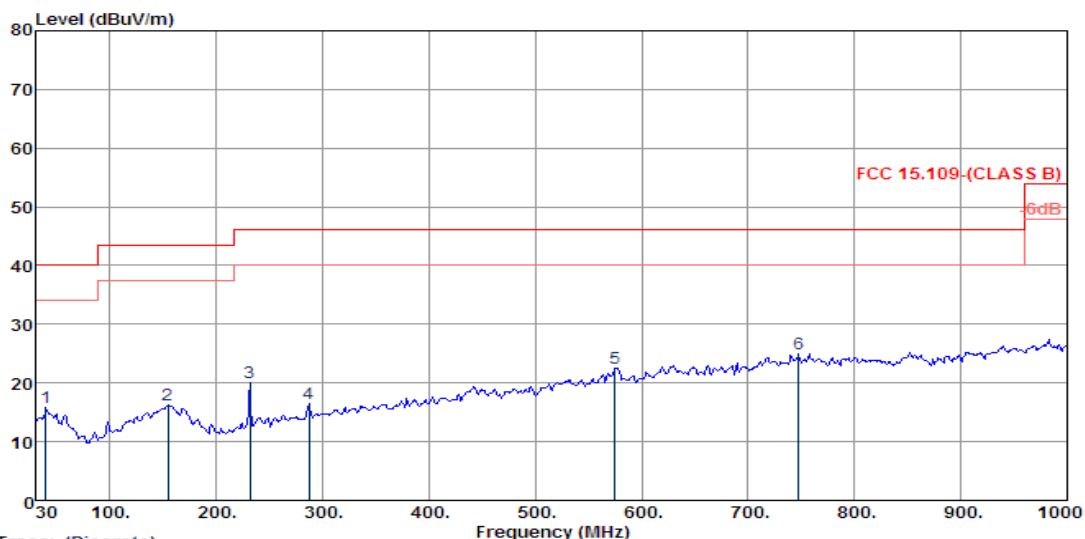
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol.: Horizontal



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) VULB9168(20M~2G) HORIZONTAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : WCDMA B2 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Factor	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1	39.70	29.30	14.07	27.83	0.38	-13.38	15.92	40.00	-24.08 QP
2	154.16	28.38	14.15	27.28	0.95	-12.18	16.20	43.52	-27.32 QP
3	231.76	34.39	11.26	26.87	1.23	-14.38	20.01	46.02	-26.01 QP
4	287.05	29.22	12.54	26.74	1.43	-12.77	16.45	46.02	-29.57 QP
5	575.14	30.22	17.81	27.57	2.13	-7.63	22.59	46.02	-23.43 QP
6	747.80	29.31	20.25	27.09	2.47	-4.37	24.94	46.02	-21.08 QP

## Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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## Measurement Result Above 1GHz :

Test Mode : Config 1

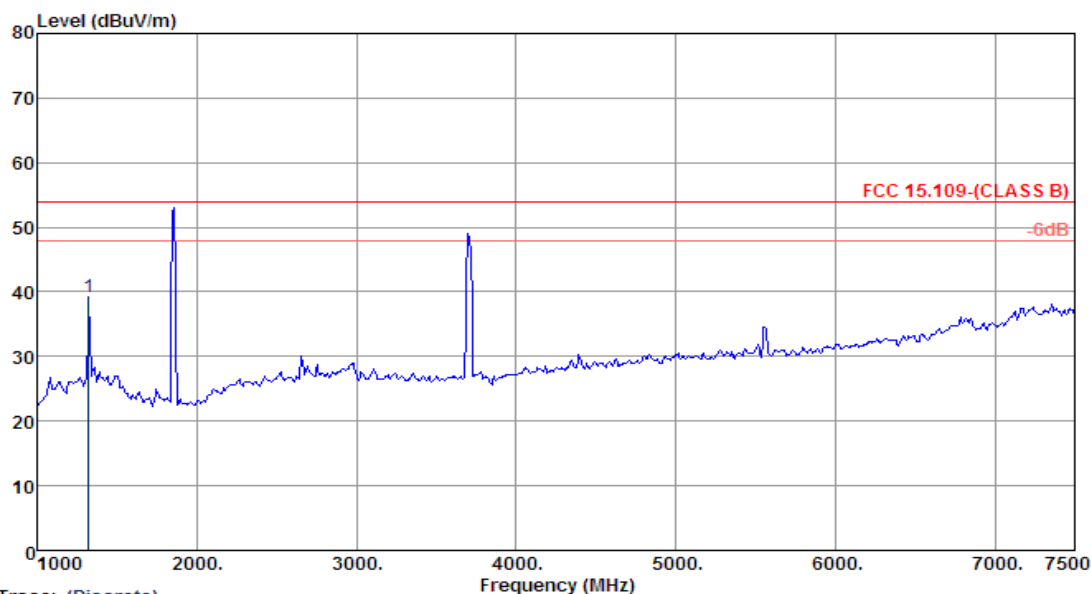
Detector Function: Peak

Frequency Range: Over 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3  
 Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL  
 Project No. : EI-2011-10003-04  
 Applicant : FIH  
 EUT Description: 3G Data Module  
 EUT Model : ZOE  
 Test Mode : WCDMA B2 link  
 Temp./Humid. : 22/56  
 Operator : Eric

	Freq	Read	Antenna	Preamp	Cable	Factor	Level	Limit	Over	
	MHz	dBuV	Factor	Factor	Loss	dB/m	dBuV/m	dBuV/m	Limit	Remark
					dB				dB	
1 p	1325.00	44.07	24.68	32.91	3.43	-4.80	39.27	54.00	-14.73	Peak

## Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz



Test Mode : Config 1

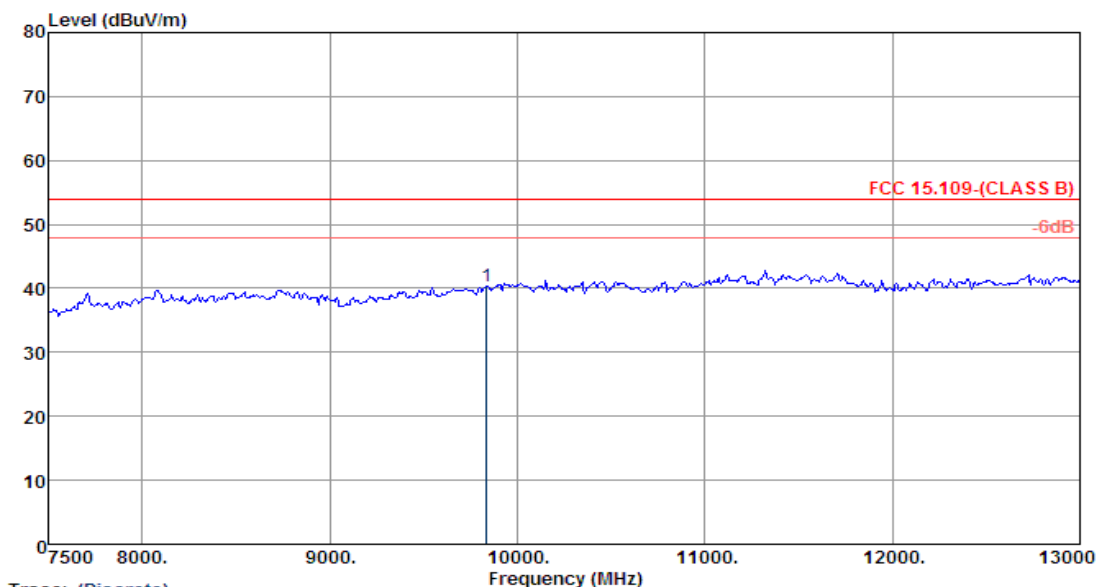
Detector Function: Peak

Frequency Range: Over 7.5 – 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3  
 Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL  
 Project No. : EI-2011-10003-04  
 Applicant : FIH  
 EUT Description: 3G Data Module  
 EUT Model : ZOE  
 Test Mode : WCDMA B2 link  
 Temp./Humid. : 22/56  
 Operator : Eric

	Freq	Read	Antenna	Preampl	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1 p	9837.50	24.12	38.05	32.13	10.34	16.26	40.38	54.00	-13.62 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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Test Mode : Config 1

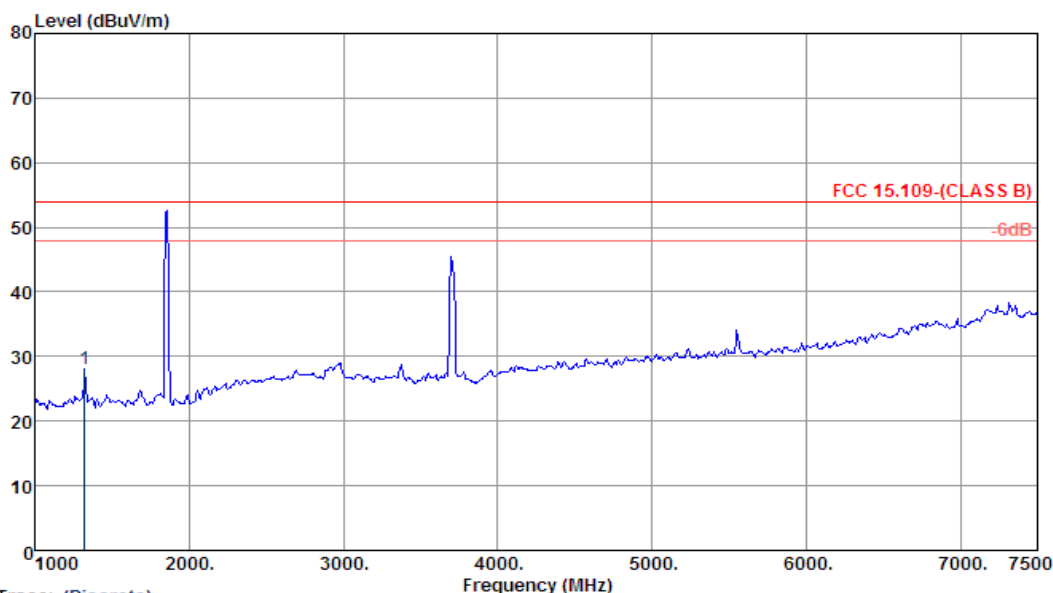
Detector Function: Peak

Frequency Range: 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3  
 Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL  
 Project No. : EI-2011-10003-04  
 Applicant : FIH  
 EUT Description: 3G Data Module  
 EUT Model : ZOE  
 Test Mode : WCDMA B2 link  
 Temp./Humid. : 22/56  
 Operator : Eric

	Freq	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Factor	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1 p	1325.00	32.98	24.68	32.91	3.43	-4.80	28.18	54.00	-25.82	Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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Test Mode : Config 1

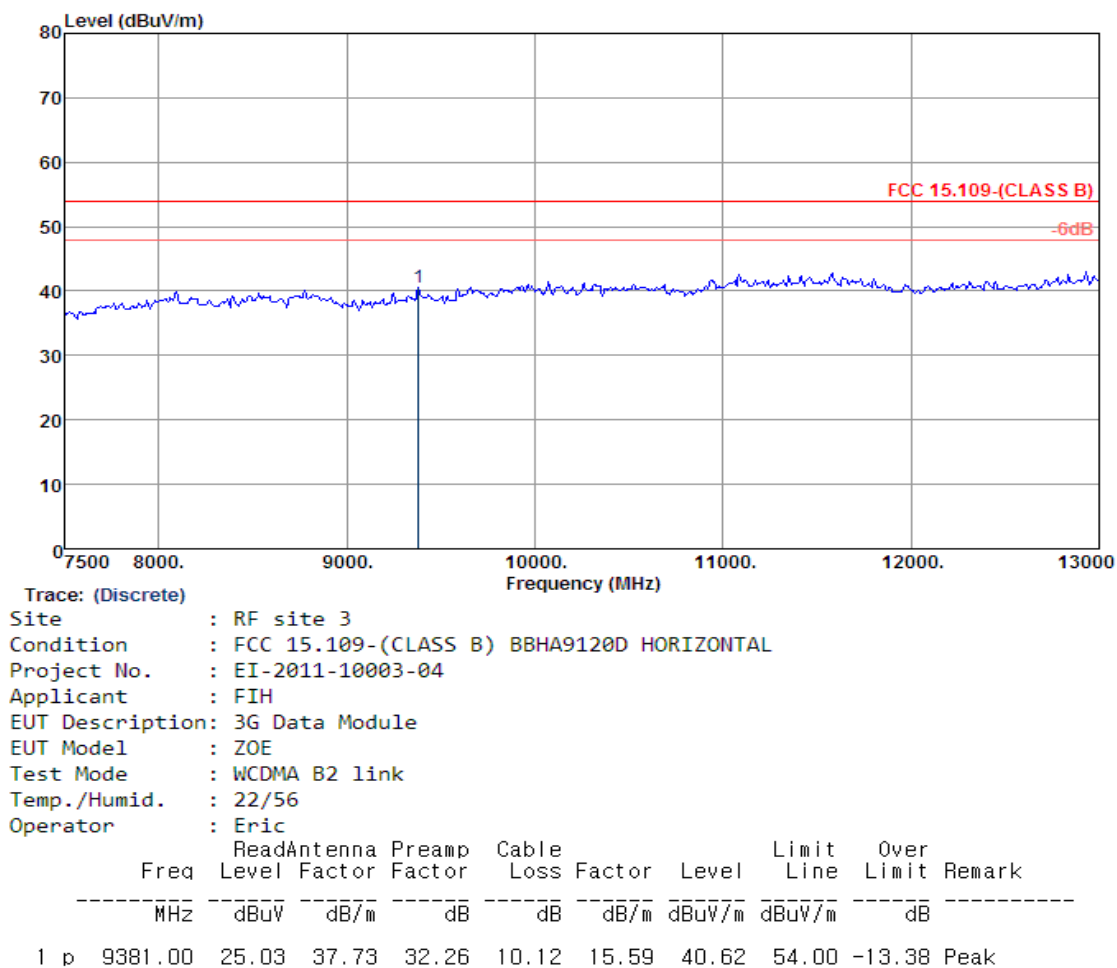
Detector Function: Peak

Frequency Range: 7.5 - 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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## Measurement Result: WCDMA BAND 5 mode

Test Mode: Config 1

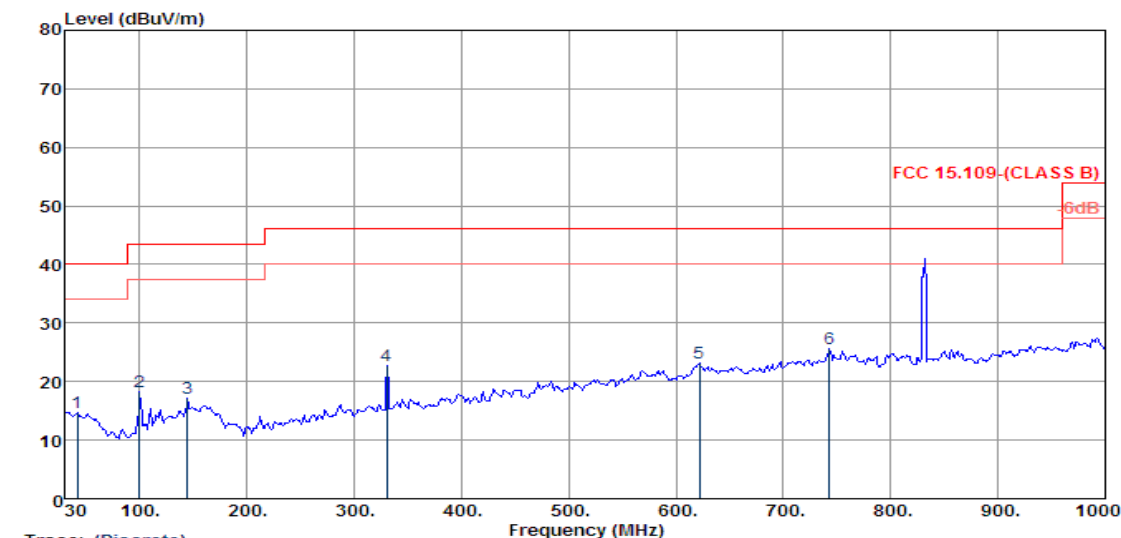
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb 11, 2010

Test By: Nick

Pol: Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) VULB9168(20M~2G) VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : WCDMA B5 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Level	Limit	Over	Remark
	MHz	Level	Factor	Factor	Loss	Factor	dBuV/m	dBuV/m	Limit	
		dBuV	dB/m	dB	dB	dB/m			dB	
1	41.64	28.32	13.94	27.83	0.38	-13.51	14.81	40.00	-25.19	QP
2	99.84	34.90	10.15	27.57	0.72	-16.70	18.20	43.52	-25.32	QP
3	144.46	29.72	13.77	27.38	0.95	-12.66	17.06	43.52	-26.46	QP
4	330.70	34.48	13.52	26.90	1.53	-11.85	22.63	46.02	-23.39	QP
5	621.70	29.75	18.73	27.46	2.18	-6.55	23.20	46.02	-22.82	QP
6	742.95	30.17	20.18	27.12	2.47	-4.47	25.70	46.02	-20.32	QP

### Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

## Measurement Result:

Test Mode: Config 1

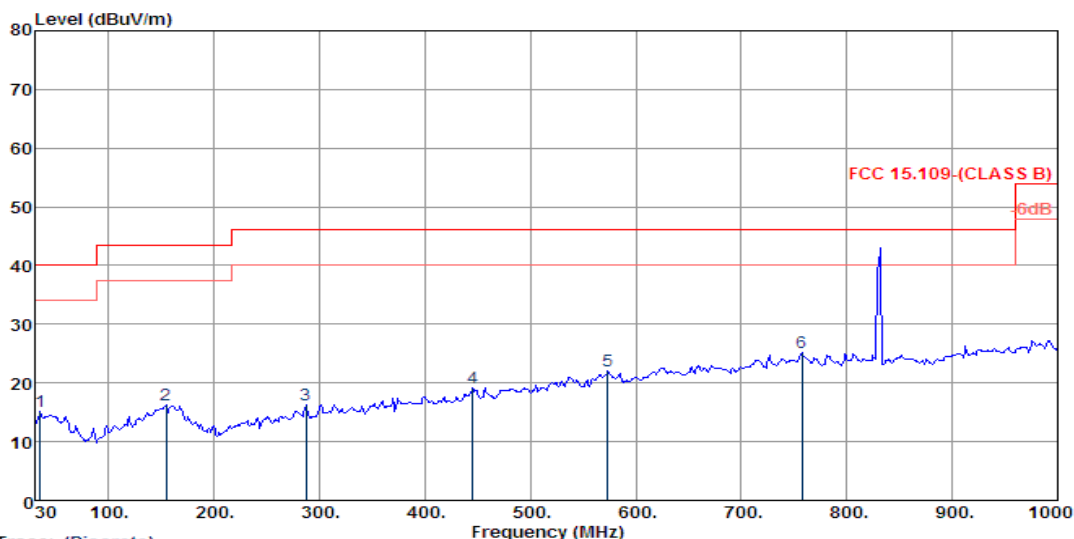
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol.: Horizontal



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) VULB9168(20M~2G) HORIZONTAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : WCDMA B5 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Factor	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1	34.85	29.17	13.39	27.85	0.38	-14.08	15.09	40.00	-24.91 QP
2	154.16	28.35	14.15	27.28	0.95	-12.18	16.17	43.52	-27.35 QP
3	287.05	29.13	12.54	26.74	1.43	-12.77	16.36	46.02	-29.66 QP
4	445.16	29.16	15.87	27.61	1.82	-9.92	19.24	46.02	-26.78 QP
5	573.20	29.66	17.77	27.57	2.13	-7.67	21.99	46.02	-24.03 QP
6	757.50	29.33	20.34	27.05	2.47	-4.24	25.09	46.02	-20.93 QP

## Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

## Measurement Result Above 1GHz :

Test Mode : Config 1

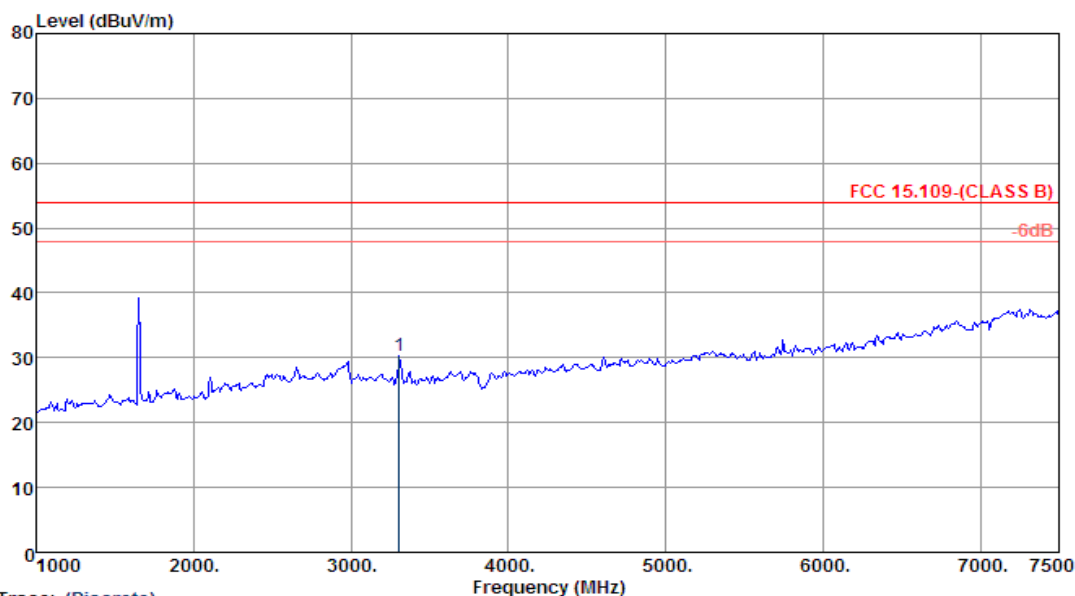
Detector Function: Peak

Frequency Range: Over 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : WCDMA B5 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1 p	3307.50	29.26	28.40	33.03	5.62	0.99	30.25	54.00	-23.75	Peak

## Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 1

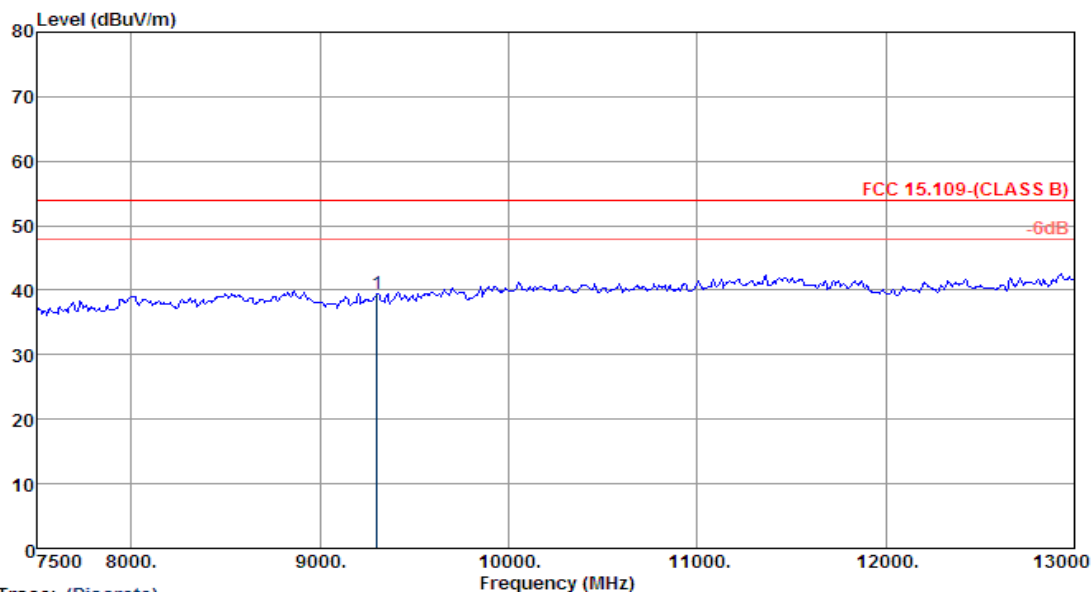
Detector Function: Peak

Frequency Range: Over 7.5 – 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : WCDMA B5 link

Temp./Humid. : 22/56

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Factor	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1 p	9304.00	24.09	37.66	32.35	10.08	15.39	39.48	54.00	-14.52 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 1

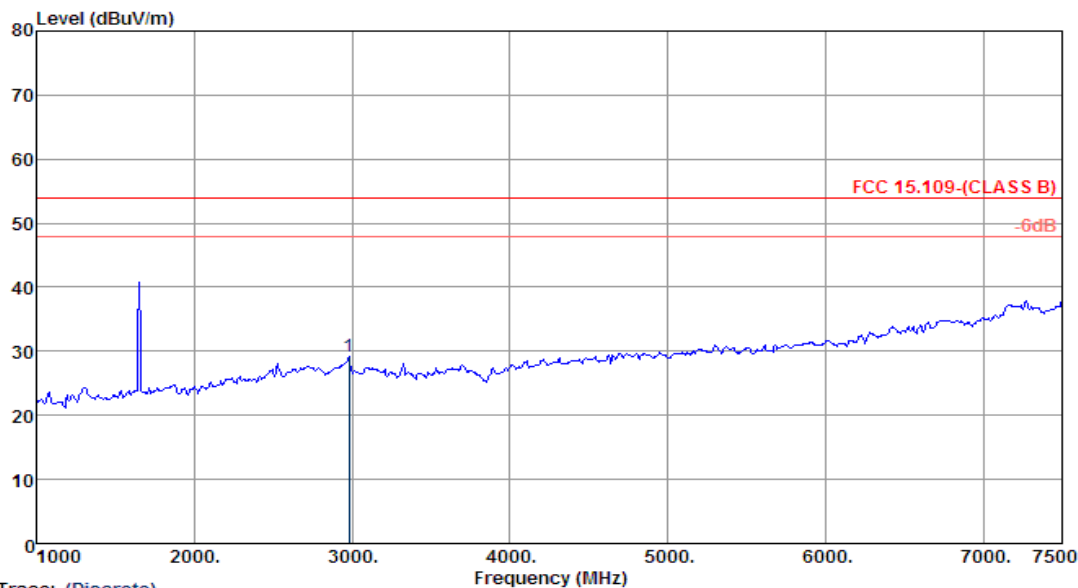
Detector Function: Peak

Frequency Range: 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3  
 Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL  
 Project No. : EI-2011-10003-04  
 Applicant : FIH  
 EUT Description: 3G Data Module  
 EUT Model : ZOE  
 Test Mode : WCDMA B5 link  
 Temp./Humid. : 22/56  
 Operator : Eric

	Freq	Read	Antenna	Preampl	Cable	Level	Limit	Over	
	MHz	Level	Factor	Factor	Loss	dBuV/m	Line	Limit	Remark
		dBuV	dB/m	dB	dB	dB/m	dBuV/m	dB	
1 p	2982.50	28.44	28.22	32.82	5.38	0.78	29.22	54.00	-24.78 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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Test Mode : Config 1

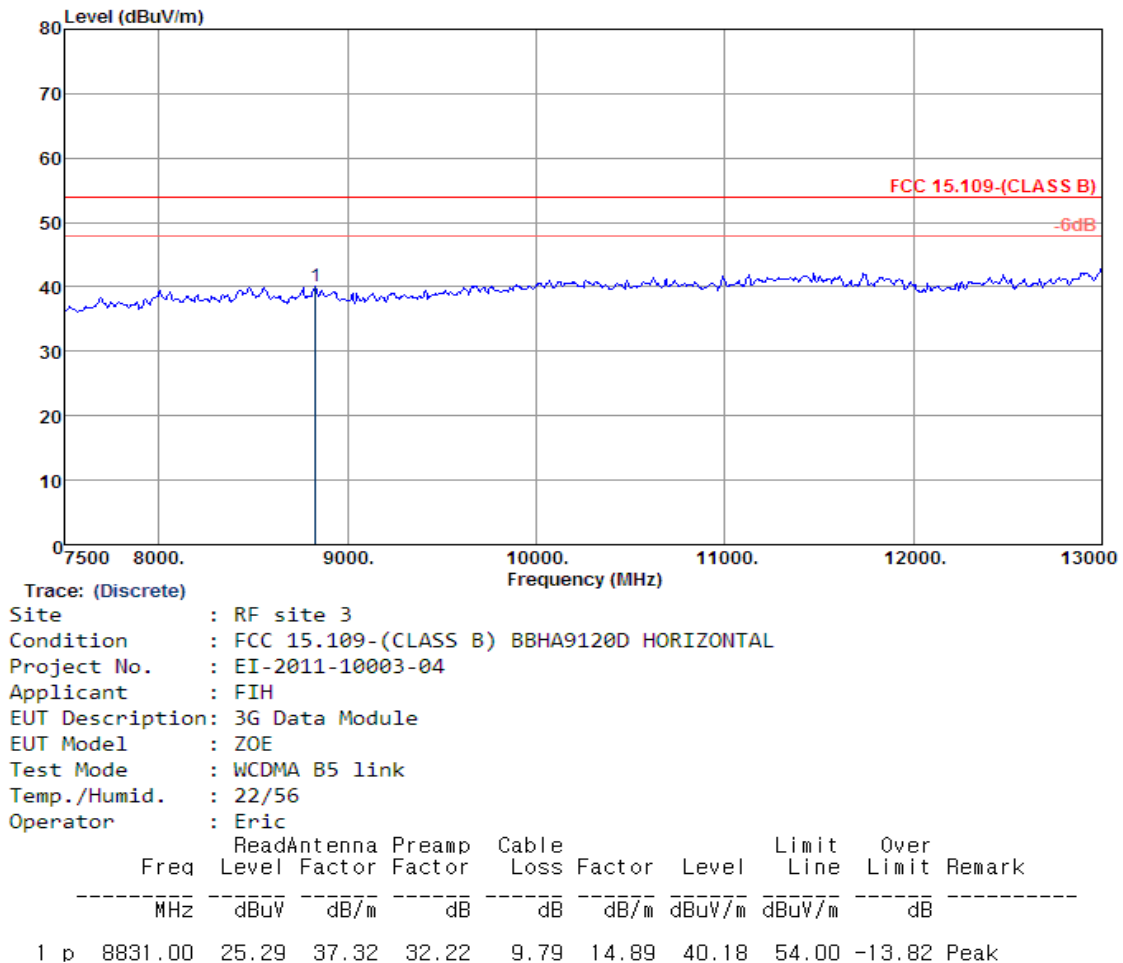
Detector Function: Peak

Frequency Range: 7.5 - 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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**Measurement Result:****GPS mode**

Test Mode: Config 2

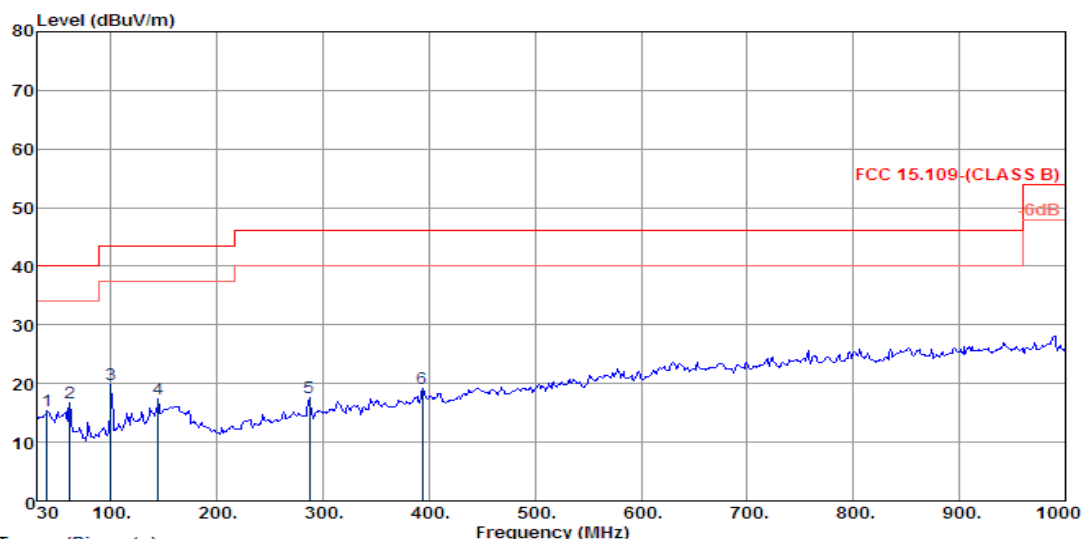
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb 11, 2010

Test By: Nick

Pol: Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) VULB9168(20M~2G) VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPS mode

Temp./Humid. : 24/60

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Level	Limit	Over	Remark
	MHz	Level	Factor	Factor	Loss	Factor	dBuV/m	Line	Limit	
		dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB	
1	39.70	28.67	14.07	27.83	0.38	-13.38	15.29	40.00	-24.71	QP
2	61.04	31.55	12.36	27.81	0.55	-14.90	16.65	40.00	-23.35	QP
3	99.84	36.46	10.15	27.57	0.72	-16.70	19.76	43.52	-23.76	QP
4	144.46	30.06	13.77	27.38	0.95	-12.66	17.40	43.52	-26.12	QP
5	287.05	30.44	12.54	26.74	1.43	-12.77	17.67	46.02	-28.35	QP
6	393.75	30.27	14.64	27.38	1.74	-11.00	19.27	46.02	-26.75	QP

**Remark :**

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

## Measurement Result:

Test Mode: Config 2

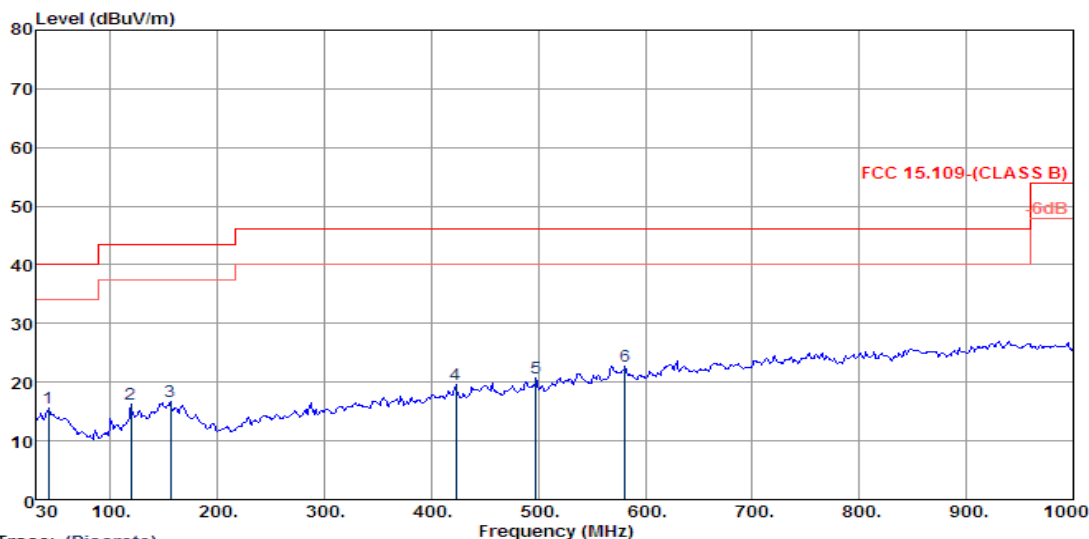
Detector Function: QP

Frequency Range: 30MHz-1000MHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol.: Horizontal



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) VULB9168(20M~2G) HORIZONTAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPS mode

Temp./Humid. : 24/60

Operator : Eric

	Freq	ReadAntenna	Preampl	Cable		Level	Limit	Over	Remark
	MHz	dBuV	Factor	Loss	Factor	dBuV/m	dBuV/m	Limit	
				dB	dB/m			dB	
1	41.64	29.04	13.94	27.83	0.38	-13.51	15.53	40.00	-24.47 QP
2	119.24	30.94	12.06	27.52	0.83	-14.63	16.31	43.52	-27.21 QP
3	156.10	28.67	14.15	27.26	1.10	-12.01	16.66	43.52	-26.86 QP
4	422.85	29.95	15.28	27.52	1.82	-10.42	19.53	46.02	-26.49 QP
5	497.54	29.87	16.48	27.60	1.93	-9.19	20.68	46.02	-25.34 QP
6	580.96	30.27	17.93	27.56	2.17	-7.46	22.81	46.02	-23.21 QP

## Remark :

- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

## Measurement Result Above 1GHz :

Test Mode : Config 2

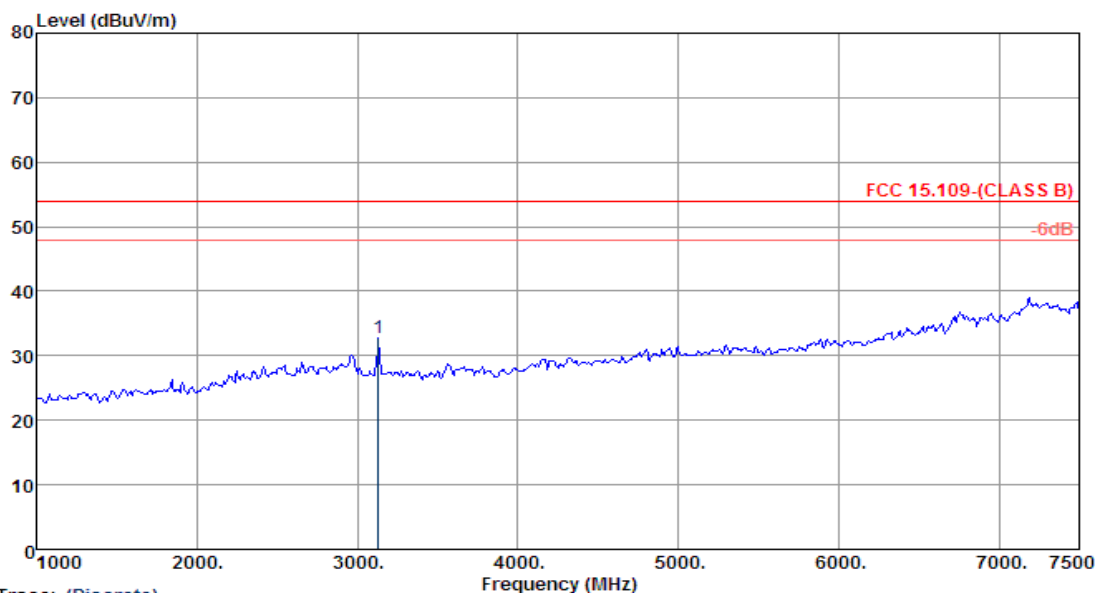
Detector Function: Peak

Frequency Range: Over 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3  
Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL  
Project No. : EI-2011-10003-04  
Applicant : FIH  
EUT Description: 3G Data Module  
EUT Model : ZOE  
Test Mode : GPS mode  
Temp./Humid. : 24/60  
Operator : Eric

	Read	Antenna	Preamp	Cable		Limit	Over	
Freq	Level	Factor	Factor	Loss	Factor	Level	Line	Limit
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
1 p 3132.00	31.84	28.30	32.88	5.49	0.91	32.75	54.00	-21.25 Peak

## Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 2

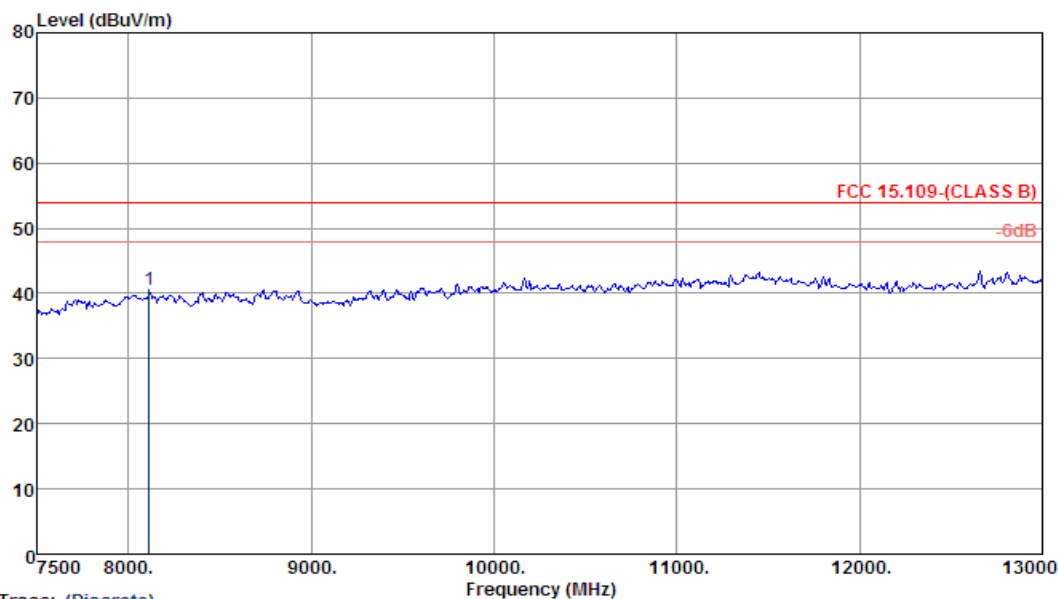
Detector Function: Peak

Frequency Range: Over 7.5 – 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Vertical



Trace: (Discrete)

Site : RF site 3

Condition : FCC 15.109-(CLASS B) BBHA9120D VERTICAL

Project No. : EI-2011-10003-04

Applicant : FIH

EUT Description: 3G Data Module

EUT Model : ZOE

Test Mode : GPS mode

Temp./Humid. : 24/60

Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 p	8116.00	26.49	37.06	32.34	9.29	14.01	40.50	54.00	-13.50 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

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Test Mode : Config 2

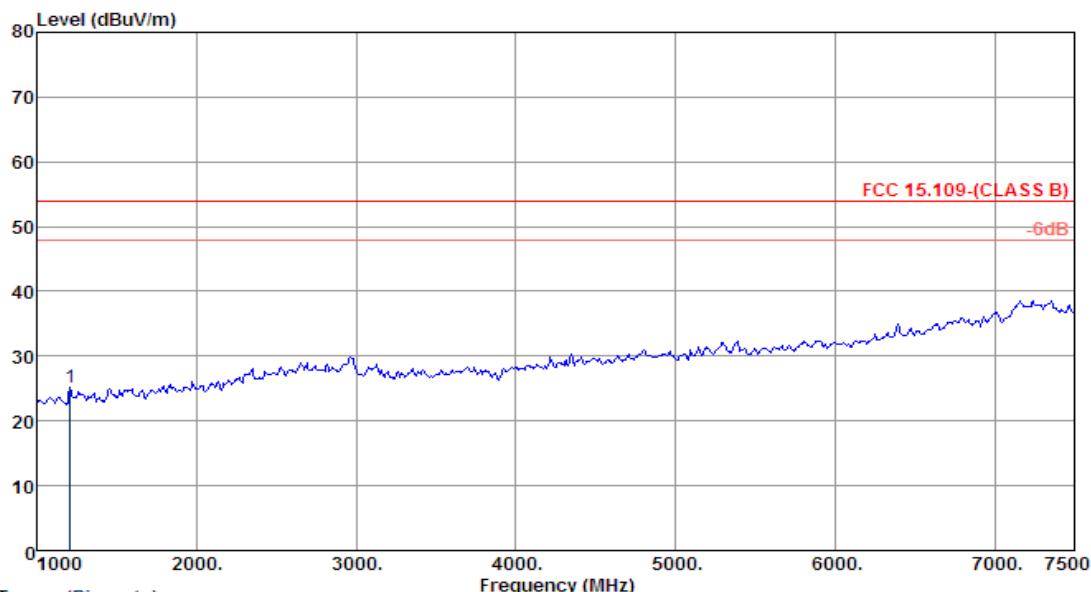
Detector Function: Peak

Frequency Range: 1 – 7.5GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3  
 Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL  
 Project No. : EI-2011-10003-04  
 Applicant : FIH  
 EUT Description: 3G Data Module  
 EUT Model : ZOE  
 Test Mode : GPS mode  
 Temp./Humid. : 24/60  
 Operator : Eric

	Freq	Read	Antenna	Preamp	Cable		Limit	Over	
	MHz	Level	Factor	Factor	Loss	Factor	Line	Limit	Remark
		dBuV	dB/m	dB	dB	dB/m	dBuV/m	dB	
1 p	1208.00	30.59	24.52	33.17	3.31	-5.34	25.25	54.00	-28.75 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

Test Mode : Config 2

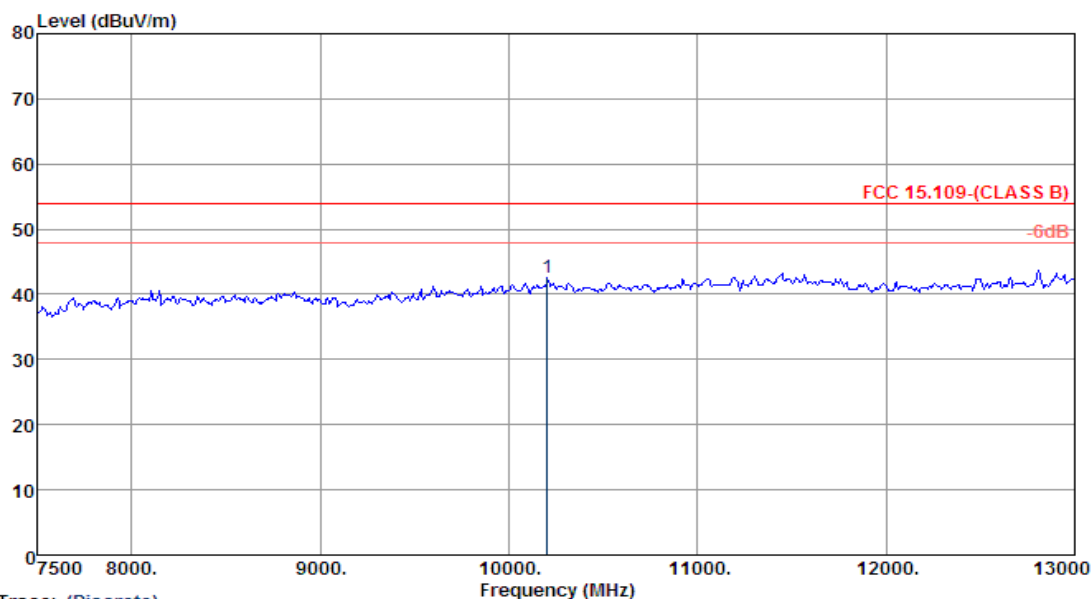
Detector Function: Peak

Frequency Range: 7.5 - 13GHz

Test Date : Feb. 11, 2010

Test By: Nick

Pol. Horizontal



Trace: (Discrete)

Site : RF site 3  
 Condition : FCC 15.109-(CLASS B) BBHA9120D HORIZONTAL  
 Project No. : EI-2011-10003-04  
 Applicant : FIH  
 EUT Description: 3G Data Module  
 EUT Model : ZOE  
 Test Mode : GPS mode  
 Temp./Humid. : 24/60  
 Operator : Eric

	Read	Antenna	Preamp	Cable		Limit	Over	
Freq	Level	Factor	Factor	Loss	Factor	Level	Line	Limit
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dB/m	dBuV/m	dBuV/m	dB
-----	-----	-----	-----	-----	-----	-----	-----	-----
1 p 10206.00	25.66	38.50	32.24	10.60	16.86	42.52	54.00	-11.48 Peak

Remark :

- (1) All Readings above 1GHz are Peak and Average measurement as necessary.
- (2) The IF bandwidth of SPA 30MHz to 1GHz was 100KHz and 1GHz to 10GHz was 1MHz

~End of report ~