FCC 47 CFR PART 15 SUBPART C AND ANSI C63.4:2003
TEST REPOR1T

For

Writer

Model : W1

Data Applies To : W2

Trade Name : Writer

Issued for

Adonit Corp.

15F., NO.482, SEC. 5, ZHONGXIAO E. RD.,XINYI DIST.,
TAIPEI CITY 11083, TAIWAN

Issued by

Compliance Certification Services Inc.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	03/22/2011	Initial Issue	All Page 27	Winnie Chen
01	06/20/2011	Add Model Number	Page 1, 4, 5	Winnie Chen

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1. TEST REPORT CERTIFICATION

Applicant	：	Adonit Corp.
Address	：	15F., NO.482, SEC. 5, ZHONGXIAO E. RD., XINYI DIST., TAIPEI CITY 11083, TAIWAN
Equipment Under Test	：	Writer
Model	：	W1
Data Applies To	：	W2
Trade Name	：	Writer
Tested Date	：	February 17 ~ March 21, 2011

APPLICABLE STANDARD	
Standard	**Test Result**
FCC Part 15 Subpart C AND ANSI C63.4:2003	PASS

WE HEREBY CERTIFY THAT: The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:

Sb Lu
Sr. Engineer

Reviewed by:

Gundam Lin
Team Leader

2. EUT DESCRIPTION

2.1 DESCRIPTION OF EUT & POWER

Product Name	Writer
Model Number	W1
Data Applies To	W2
Received Date	February 17, 2011
Frequency Range	2402MHz to 2480MHz f = 2402 + nMHz, n = 0, …..78
Transmit Power	84.11 dBμV/m
Channel Spacing	1MHz
Channel Number	79 Channels
Transmit Data Rate	GFSK (1Mbps)
Type of Modulation	Frequency Hopping Spread Spectrum
Frequency Selection	by software / firmware
Antenna Type	PCB Antenna, Antenna Gain 0 dBi
Power Rating	4.5Vdc
Power Source	4.5Vdc (From AAA Battery × 3)

The difference of the series model

Mode Number	Difference
W1	1. Plastic cover frame is a different shape. (same material) 2. Fabric wrap is a different shape and replaces the strap with magnets. (same material) 3. Center connector is a different shape. (same material)
W2	

Remark :

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *For more details, please refer to the User's manual of the EUT.*
3. *This submittal(s) (test report) is intended for FCC ID: ZCC-W10001 filing to comply with Section 15.207, 15.209 and 15.249 of the FCC Part 15, Subpart C Rules.*
4. *Client consigns only one sample to test (model number: W1). Therefore, the testing Lab. just guarantees the unit, which has been tested.*

3. DESCRIPTION OF TEST MODES

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2402
Middle	2441
High	2480

Conducted Emission / Radiated Emission Test (Below 1 GHz)

1. The following test modes were scanned during the preliminary test:

No.	Pre-Test Mode
1	Normal Operating

2. After the preliminary scan, the following test mode was found to produce the highest emission level.

Final Test Mode		
Emission	Radiated Emission	Normal Operating
	Conducted Emission	N/A

Remark : *Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.*

Radiated Emission Test (Above 1 GHz):

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

Tested Channel	Modulation Technology	Modulation Type
Low, Mid, High	FHSS	GFSK

Bandedge Measurement :

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Following channel(s) was (were) selected for the final test as listed below.

Tested Channel	Modulation Technology	Modulation Type
Low, High	FHSS	GFSK

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4: 2003 and FCC CFR 47, 15.207, 15.209 and 15.249.

5. FACILITIES AND ACCREDITATION

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

NO. 989-1 Wen Shan Rd., Shang Shan Village,
Qionglin Shiang Hsinchu County 30741, Taiwan, R.O.C

The sites are constructed in conformance with the requirements of ANSI C63.4:2003 and CISPR 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4, CISPR 16-1-5.

5.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Taiwan	TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Japan	VCCI
Taiwan	BSMI
USA	FCC MRA

Copies of granted accreditation certificates are available for downloading from our web site, http:///www.ccsrf.com

5.3 MEASUREMENT UNCERTAINTY

The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4-2.

PARAMETER	UNCERTAINTY
Open Area Test Site (OATS No.3) / Radiated Emission, 30 to 200 MHz	+/- 3.6037
Open Area Test Site (OATS No.3) / Radiated Emission, 200 to 1000 MHz	+/- 3.5800
Semi Anechoic Chamber (966 Chamber) / Radiated Emission, 30 to 200 MHz	+/- 3.1747
Semi Anechoic Chamber (966 Chamber) / Radiated Emission, 200 to 1000 MHz	+/- 2.9091
Semi Anechoic Chamber (966 Chamber) / Radiated Emission, 1 to 18GHz	+/- 2.8272
Semi Anechoic Chamber (966 Chamber) / Radiated Emission, 18 to 26 GHz	+/- 2.8097
Semi Anechoic Chamber (966 Chamber) / Radiated Emission, 26 to 40 GHz	+/- 3.0510
Conducted Emission, 9kHz to 30MHz	+/- 1.5384

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

Consistent with industry standard (e.g. CISPR 22: 2006, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.6dB and 5.2dB respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Serial No.	FCC ID
1	Notebook PC	Lenovo	S10e 4068	L3CEV2D	DoC
2	Notebook PC	IBM (Lenovo)	ThinkPad T61 7663-AS6	L3F3864	DoC
3	Printer	HP	C6431D	CN19T6S011	---

SETUP DIAGRAM FOR TESTS

EUT & peripherals setup diagram is shown in appendix setup photos.

EUT OPERATING CONDITION

RF Mode

1. Setup all computers like the setup diagram.
2. Run Blue Tool
3. Select the following settings,
   Transport :HCI Control
   UART :Com 4 / 38400 / CTS flow control
4. Select
   (a) 7.3:Host Controller & Baseband Commands(3 key)→Reset/Write Scan Enable
   (b) 7.4:Informational Parameters (4 key)→Read_BD_ADDR
   (c) 0: Vendor-specific Commands (0 key)→Set_Tx_Carrier_Frequency_8051
5. TX mode (GFSK)
   Carrier_Frequency : 2402, 2441, 2480
   Mode : Modulated PRBS9
   Pattern : 0 0x0
   Transmit_Power : 0dBm
6. All of the functions are under run.
7. Start test.

Normal Mode

All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

1. Setup whole system for test as shown on diagram
2. EUT link to Notebook PC with Bluetooth
3. EUT H continuous input character
4. All of the functions are under run.
5. Start test.

7. FCC PART 15.249 REQUIREMENTS

7.1 RADIATED EMISSION

LIMITS

(1) According to § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 -1710	10.6 -12.7
6.26775 - 6.26825	108 -121.94	1718.8 - 1722.2	13.25 -13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 -16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	([2])
13.36 - 13.41			

Remark:
1. [1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
2. [2] Above 38.6

(2) According to § 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

(3) According to § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(KHz)	300
0.490 - 1.705	24000/F(KHz)	30
1.705 - 30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

Remark: ***Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

(4) According to § 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

(5) According to § 15.249 (a) Except as provided in paragraph (b) of this section, the field strength of emission from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (millivolts/meter)	Measurement Distance of Harmonics (microvolts/meter)
902 - 928	50	500
2400 - 2483.5	50	500
5725 - 5875	50	500
24000 - 24250	250	2500

TEST EQUIPMENT

Radiated Emission above 1GHz / 966Chamber_B

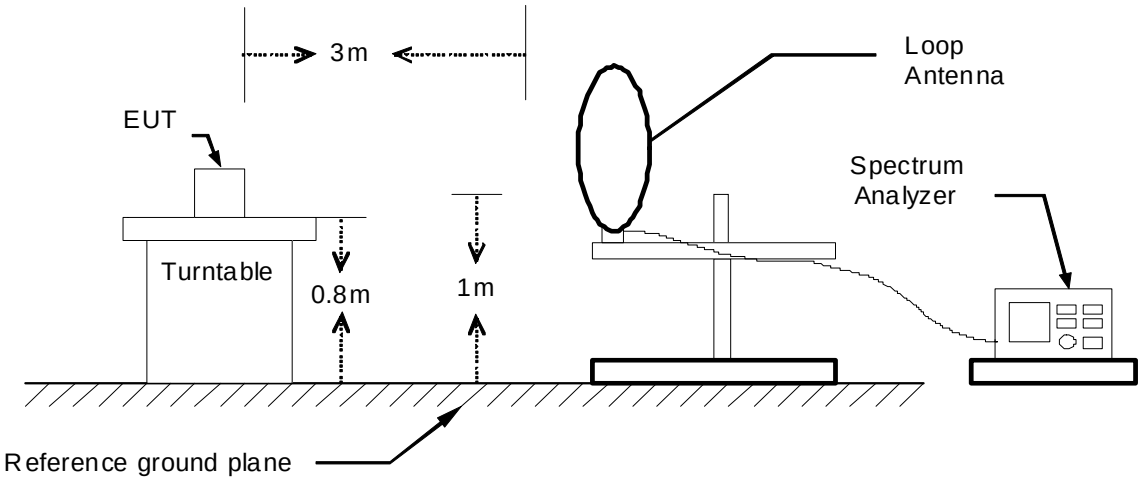
Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY43360132	06/20/2011
EMI Receiver	ROHDE & SCHWARZ	ESCS 30	826547/004	11/15/2011
Broadband Hybrid Bi-Log Antenna	Sunol Sciences	JB1	A100209-4	10/07/2011
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078732	07/05/2011
Pre-Amplifier	Miteq	AM-1652-3000	1490937	10/10/2011
Pre-Amplifier	Agilent	8449B	3008A01916	09/21/2011
RF Coaxial Cable	HUBER-SUHNER	SUCOFLEX 104PEA	31346	10/07/2011
RF Coaxial Cable	HUBER-SUHNER	SUCOFLEX 104PEA	33957	10/07/2011
RF Coaxial Cable	HUBER-SUHNER	SUCOFLEX 104PEA	33958	10/07/2011
LOOP Antenna	EMCO	6502	8905-2356	06/09/2011
Notch Filters Band Reject	Micro-Tronics	BRM05702-01	026	N.C.R

Remark: *1. Each piece of equipment is scheduled for calibration once a year.*
2. N.C.R = No Calibration Request.

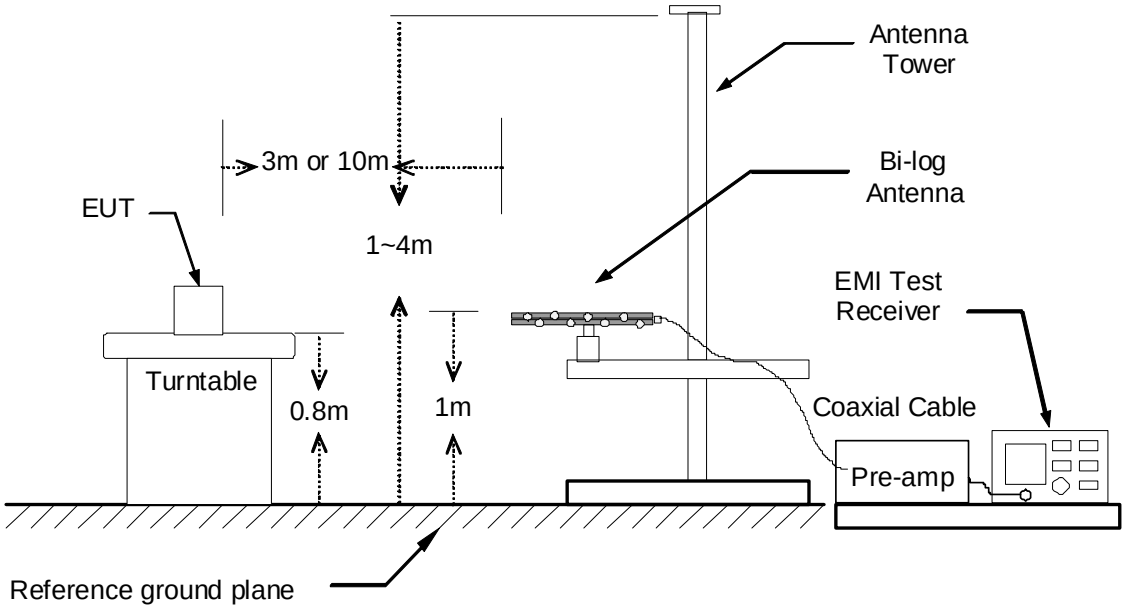
TEST SETUP

The diagram below shows the test setup that is utilized to make the measurements for emission from below 1GHz.

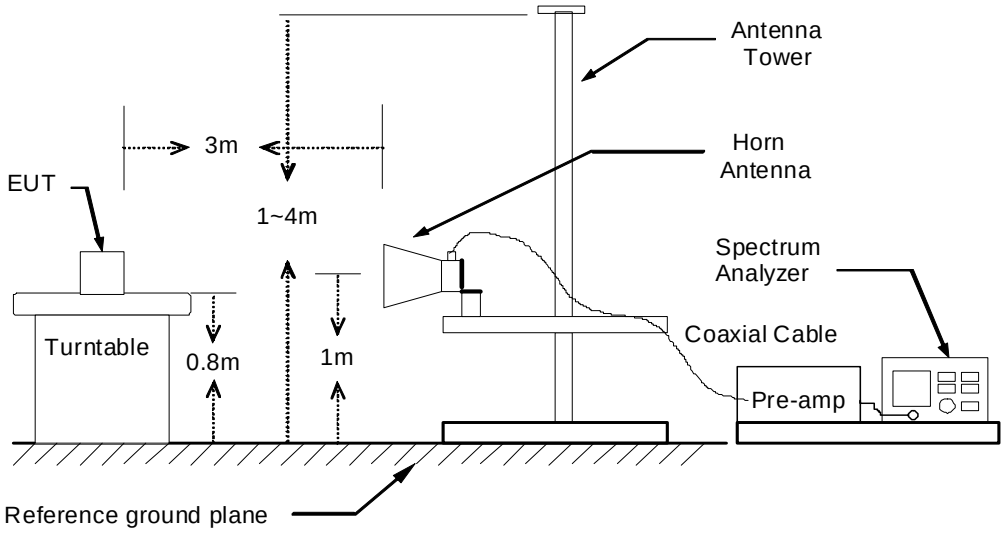
9kHz ~ 30MHz



30MHz ~ 1GHz



The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.



TEST PROCEDURE

1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
2. While measuring the radiated emission below 1GHz, the EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. While measuring the radiated emission above 1GHz, the EUT was set 3 meters away from the interference-receiving antenna.
3. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Remark：

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

TEST RESULTS

Below 1 GHz (9kHz ~ 30MHz)

No emission found between lowest internal used/generated frequency to 30MHz.

Below 1 GHz (30MHz ~ 1GHz)

Product Name	Writer	Test By	Bell Huang
Model	W1	Test Date	2011/03/16
Test Mode	Normal operating	TEMP & Humidity	20°C, 51%

966 Chamber_B at 3Meter / Horizontal						
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
30.00	40.96	-20.26	20.70	40.00	-19.30	Peak
167.74	51.49	-29.36	22.13	43.50	-21.37	Peak
207.51	51.11	-28.17	22.94	43.50	-20.56	Peak
331.67	54.17	-25.63	28.54	46.00	-17.46	Peak
527.61	45.96	-20.92	25.03	46.00	-20.97	Peak
666.32	55.37	-18.34	37.03	46.00	-8.97	Peak
832.19	45.16	-15.66	29.50	46.00	-16.50	Peak
999.03	52.38	-13.72	38.66	54.00	-15.34	Peak

966 Chamber_B at 3Meter / Vertical						
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
132.82	53.96	-27.57	26.39	43.50	-17.11	Peak
204.60	58.55	-28.09	30.46	43.50	-13.04	Peak
212.36	60.09	-28.31	31.78	43.50	-11.72	Peak
232.73	55.72	-28.80	26.92	46.00	-19.08	Peak
415.09	45.79	-23.36	22.43	46.00	-23.57	Peak
666.32	56.15	-18.34	37.80	46.00	-8.20	Peak
871.96	48.15	-15.20	32.96	46.00	-13.04	Peak

Remark:

1. *Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit.*
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. *Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) – PreAmp.Gain (dB)*
4. *Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)*
5. *Margin (dB) = Remark result (dBuV/m) - Quasi-peak limit (dBuV/m).*

Above 1 GHz

Product Name	Writer	Test By	Waternil Guan
Model	W1	Test Date	2011/02/17
Test Mode	TX / CH Low	TEMP & Humidity	23°C, 66%

966 Chamber_B at 3Meter / Horizontal									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1602.00	46.06	---	-2.65	43.41	---	74.00	54.00	-10.59	Peak
1658.00	44.63	---	-2.12	42.51	---	74.00	54.00	-11.49	Peak
* 2402.00	81.98	81.46	2.07	84.05	83.53	114.00	94.00	-10.47	AVG
2656.00	43.59	---	3.02	46.61	---	74.00	54.00	-7.39	Peak
4342.50	41.09	---	6.93	48.02	---	74.00	54.00	-5.98	Peak
4777.50	40.86	---	8.15	49.01	---	74.00	54.00	-4.99	Peak
5017.50	40.88	---	8.62	49.50	---	74.00	54.00	-4.50	Peak

966 Chamber_B at 3Meter / Vertical									
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	49.10	---	-3.62	45.48	---	74.00	54.00	-8.52	Peak
1660.00	46.59	---	-2.10	44.49	---	74.00	54.00	-9.51	Peak
* 2402.00	75.55	74.88	2.07	77.62	76.95	114.00	94.00	-17.05	AVG
2810.00	43.23	---	3.73	46.96	---	74.00	54.00	-7.04	Peak
3165.00	42.49	---	4.54	47.03	---	74.00	54.00	-6.97	Peak
3682.50	42.11	---	4.80	46.91	---	74.00	54.00	-7.09	Peak
4830.00	40.21	---	8.25	48.46	---	74.00	54.00	-5.54	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
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. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)
7. *(*) Fundamental*

Product Name	Writer	Test By	Waternil Guan
Model	W1	Test Date	2011/02/17
Test Mode	TX / CH Middle	TEMP & Humidity	23°C, 66%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1628.00	47.28	---	-2.40	44.88	---	74.00	54.00	-9.12	Peak
2326.00	48.82	---	1.89	50.72	---	74.00	54.00	-3.28	Peak
* 2441.00	81.95	81.31	2.16	84.11	83.47	114.00	94.00	-10.53	AVG
2662.00	42.67	---	3.05	45.72	---	74.00	54.00	-8.28	Peak
4117.50	40.60	---	6.00	46.60	---	74.00	54.00	-7.40	Peak
4470.00	40.04	---	7.46	47.49	---	74.00	54.00	-6.51	Peak
4882.50	39.27	---	8.36	47.63	---	74.00	54.00	-6.37	Peak

966 Chamber_B at 3Meter / Vertical

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1500.00	49.13	---	-3.62	45.51	---	74.00	54.00	-8.49	Peak
1666.00	48.64	---	-2.04	46.60	---	74.00	54.00	-7.40	Peak
* 2441.00	75.80	75.13	2.16	77.96	77.29	114.00	94.00	-16.71	AVG
2816.00	42.58	---	3.76	46.34	---	74.00	54.00	-7.66	Peak
3870.00	41.04	---	5.22	46.26	---	74.00	54.00	-7.74	Peak
4470.00	40.51	---	7.46	47.97	---	74.00	54.00	-6.03	Peak
4882.50	38.46	---	8.36	46.82	---	74.00	54.00	-7.18	Peak

Remark:

1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
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. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)
7. *(*) Fundamental*

Product Name	Writer	Test By	Waternil Guan
Model	W1	Test Date	2011/02/17
Test Mode	TX / CH High	TEMP & Humidity	23°C, 66%

966 Chamber_B at 3Meter / Horizontal

Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1654.00	47.93	---	-2.16	45.77	---	74.00	54.00	-8.23	Peak
2062.00	44.36	---	1.28	45.64	---	74.00	54.00	-8.36	Peak
* 2480.00	81.19	80.52	2.25	83.44	82.77	114.00	94.00	-11.23	AVG
2836.00	42.70	---	3.85	46.55	---	74.00	54.00	-7.45	Peak
3232.50	43.15	---	4.51	47.66	---	74.00	54.00	-6.34	Peak
4912.50	39.94	---	8.42	48.36	---	74.00	54.00	-5.64	Peak
5242.50	40.97	---	8.90	49.87	---	74.00	54.00	-4.13	Peak

966 Chamber_B at 3Meter / Vertical

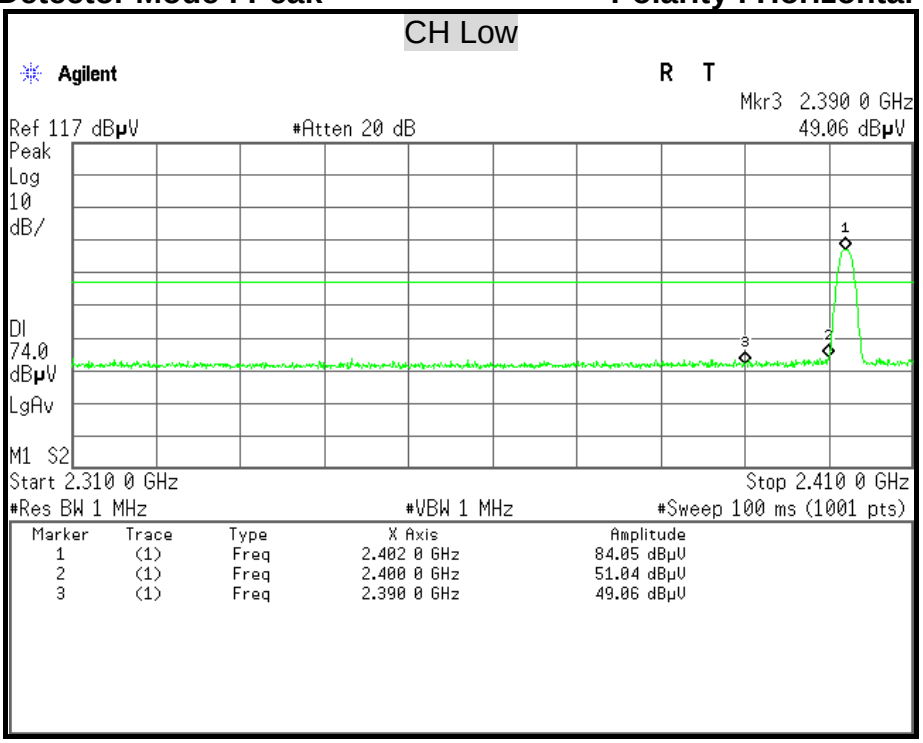
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1660.00	50.59	---	-2.10	48.49	---	74.00	54.00	-5.51	Peak
2096.00	43.64	---	1.35	44.99	---	74.00	54.00	-9.01	Peak
* 2480.00	77.23	76.46	2.25	79.48	78.71	114.00	94.00	-15.29	AVG
2910.00	42.38	---	4.19	46.57	---	74.00	54.00	-7.43	Peak
3915.00	41.82	---	5.32	47.14	---	74.00	54.00	-6.86	Peak
4267.50	41.05	---	6.62	47.67	---	74.00	54.00	-6.33	Peak
4965.00	40.04	---	8.53	48.57	---	74.00	54.00	-5.43	Peak

Remark:

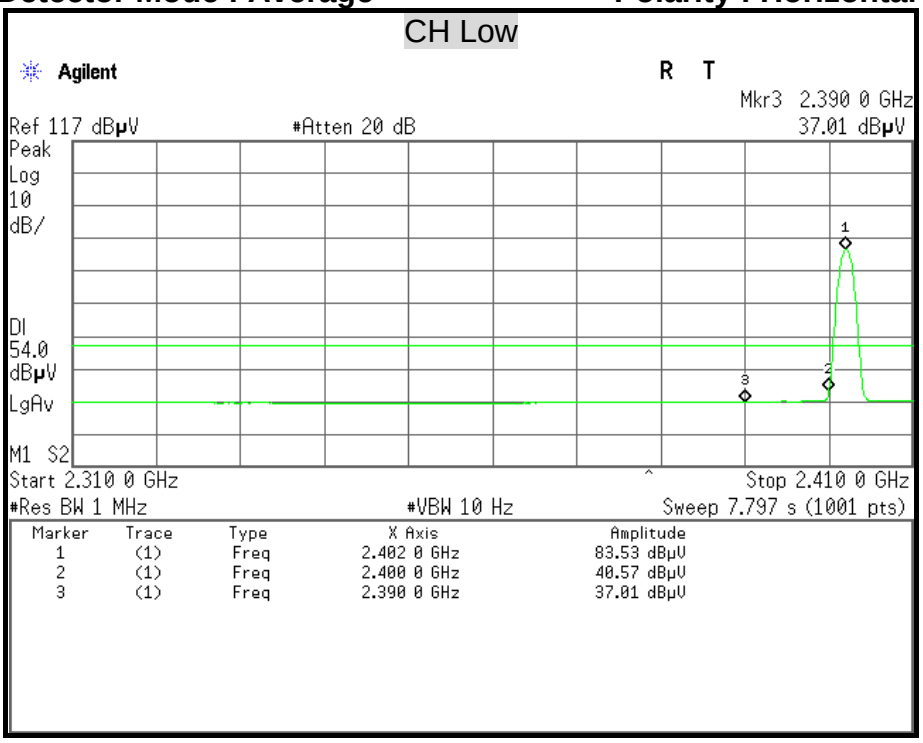
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*
4. *Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.*
5. *In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.*
6. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(AV)
   Remark AVG = Result(AV) – Limit(AV)
7. *(*) Fundamental*

Restricted Band Edges

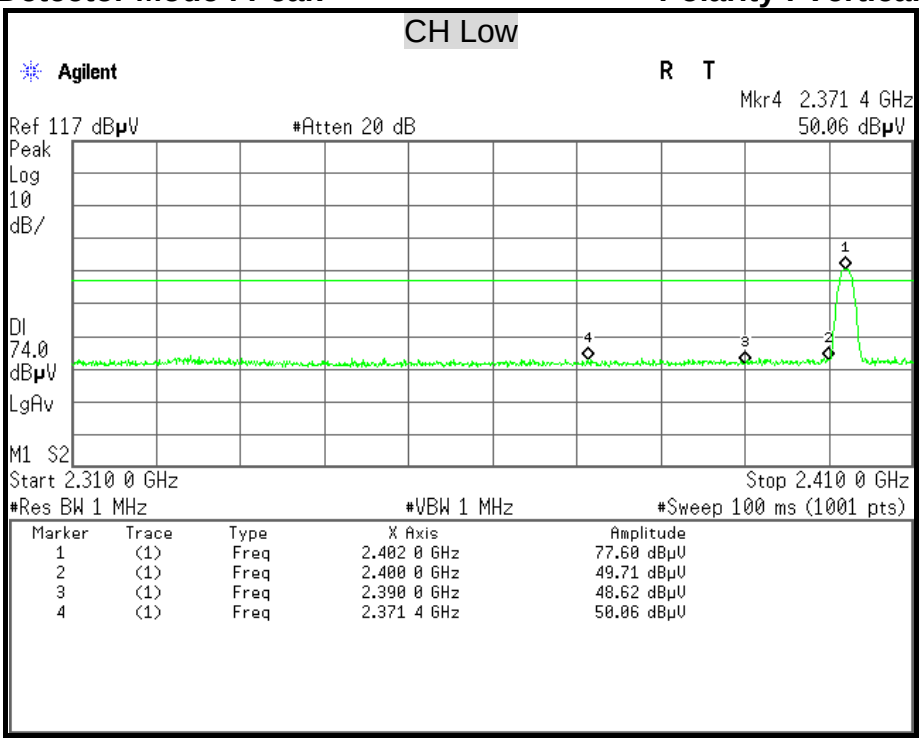
Detector Mode : Peak **Polarity : Horizontal**



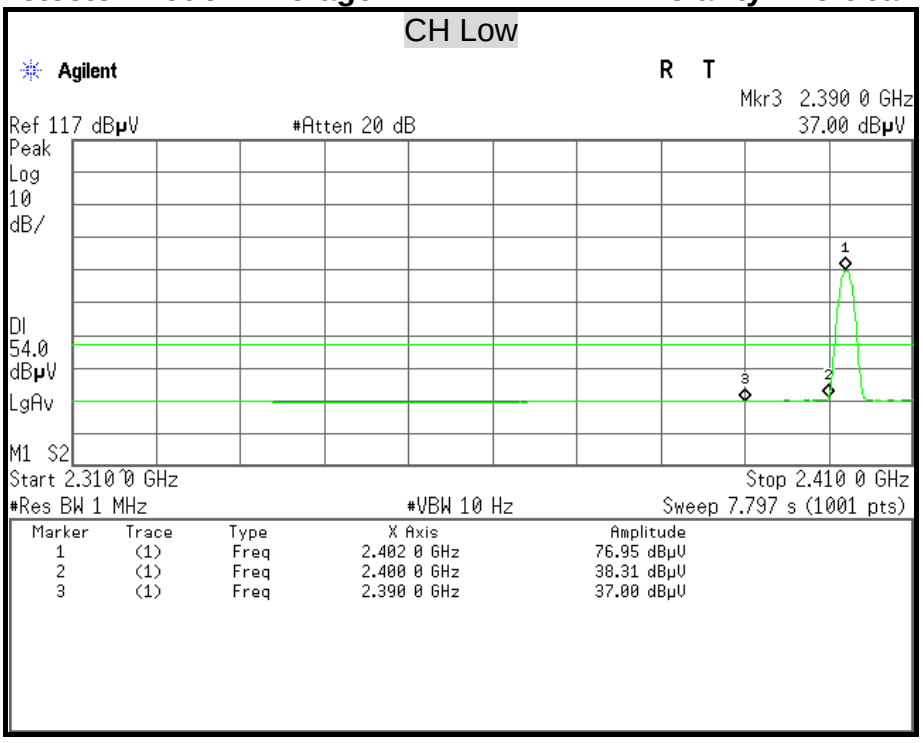
Detector Mode : Average **Polarity : Horizontal**



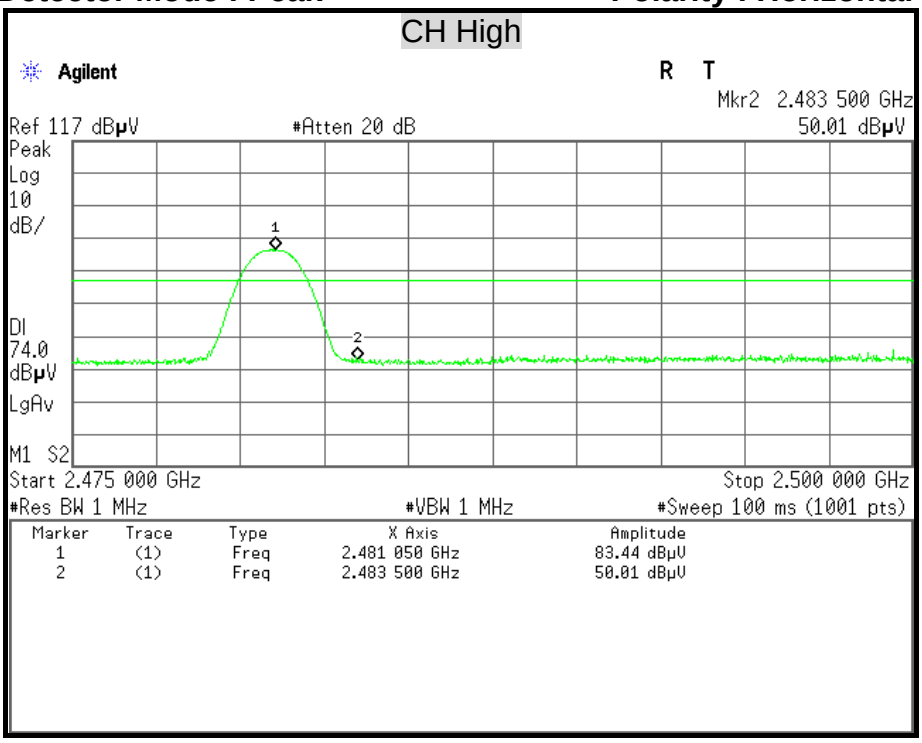
Detector Mode : Peak **Polarity : Vertical**



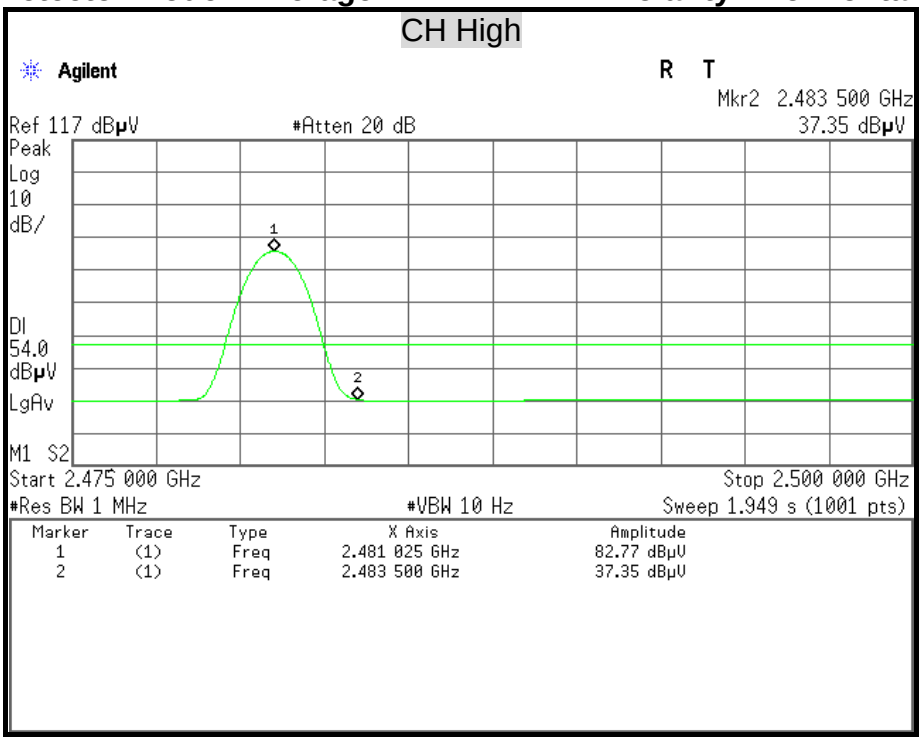
Detector Mode : Average **Polarity : Vertical**



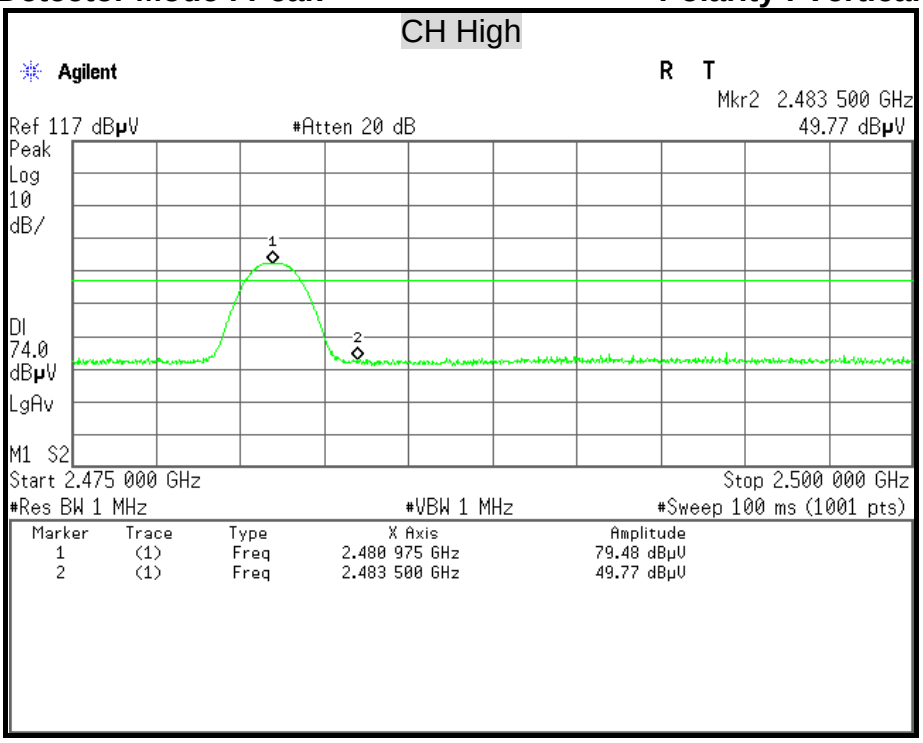
Detector Mode : Peak **Polarity : Horizontal**



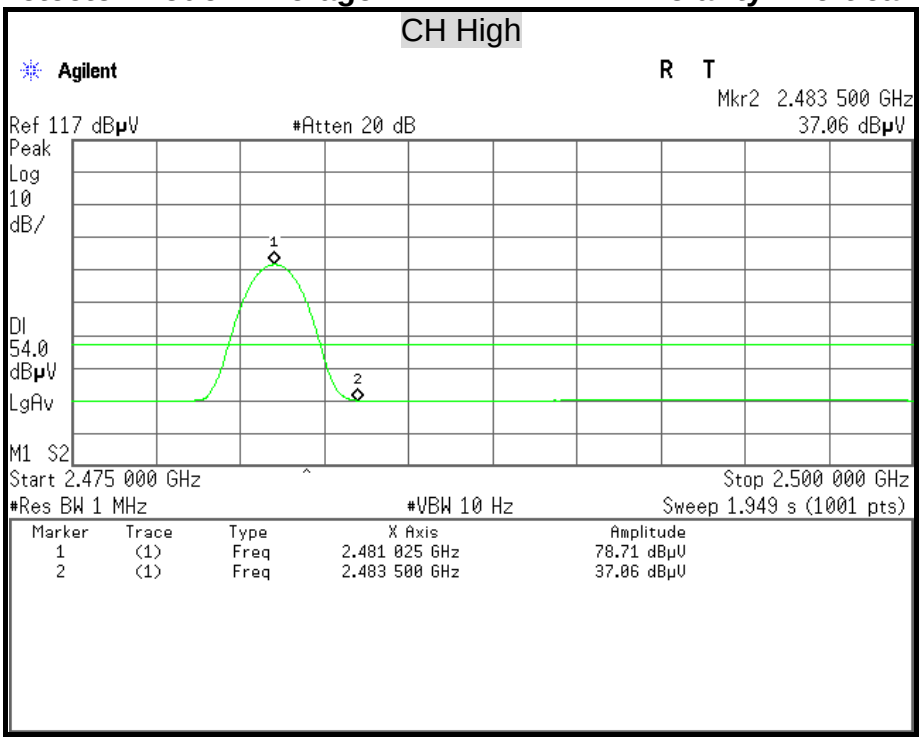
Detector Mode : Average **Polarity : Horizontal**



Detector Mode : Peak **Polarity : Vertical**



Detector Mode : Average **Polarity : Vertical**



7.2 CONDUCTED EMISSION

LIMITS

§ 15.207 (a) Except as shown in paragraph (b) and (c) this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

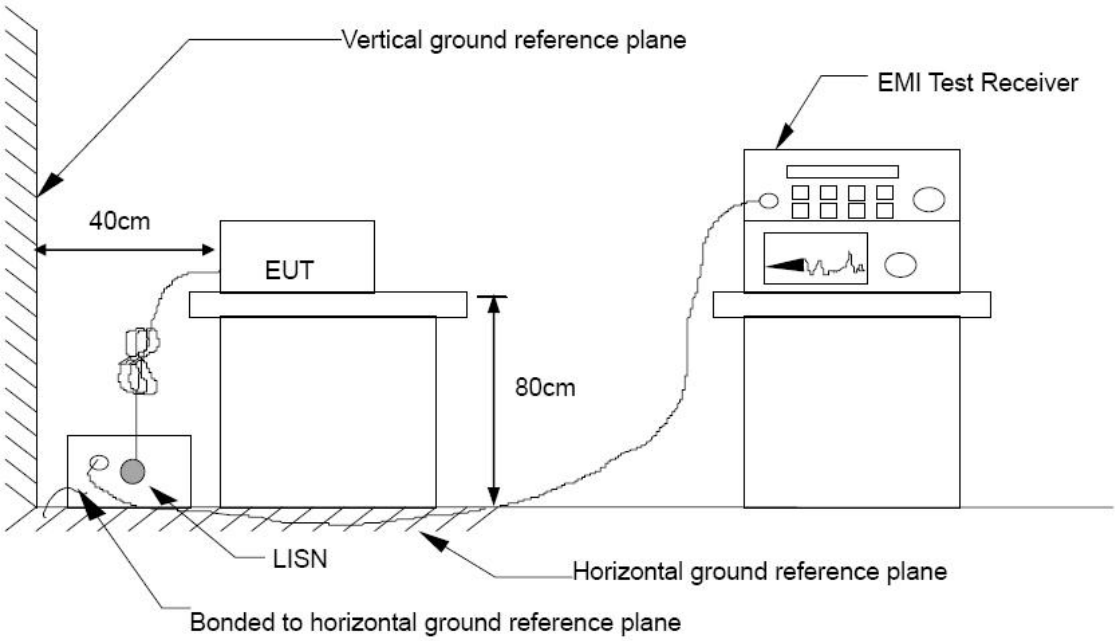
Frequency Range (MHz)	Conducted Limit (dBμv)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5.00	56	46
5.00 - 30.0	60	50

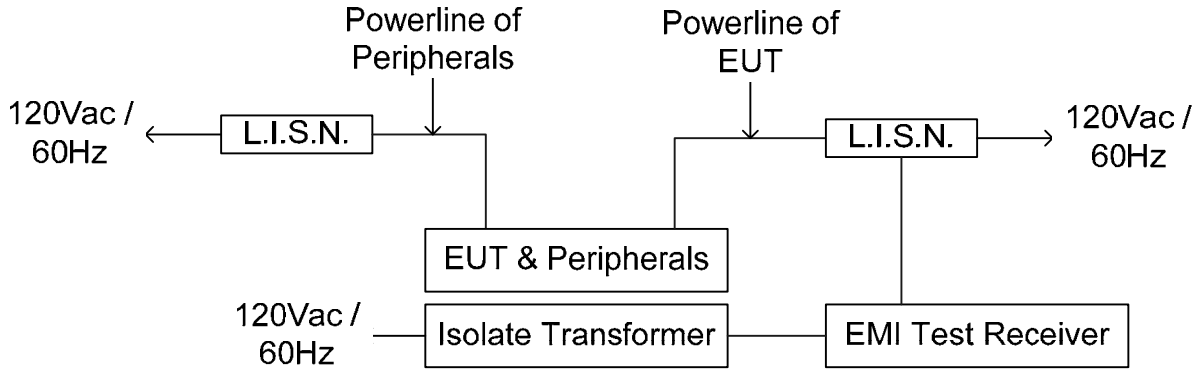
TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-465	08/08/2011
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-473	03/14/2012
EMI Receiver	ROHDE & SCHWARZ	ESCS 30	835418/008	10/24/2011
Pulse Limit	ROHDE & SCHWARZ	ESH3-Z2	100117	09/17/2011
N Type Coaxial Cable	BELDEN	8268 M17/164	003	07/09/2011

Remark: *Each piece of equipment is scheduled for calibration once a year.*

TEST SETUP





TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4:2003.

The test procedure is performed in a 4m × 3m × 2.4m (L×W×H) shielded room.

The EUT along with its peripherals were placed on a 1.0m (W) × 1.5m (L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.

The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.

The EUT was located so that the distance between the boundary of the EUT and the closest surface of the LISN is 0.8 m. Where a mains flexible cord was provided by the manufacturer shall be 1 m long, or if in excess of 1 m, the excess cable was folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

TEST RESULTS

Since the EUT is powered by Battery Powered, this test item is not applicable.