FCC 47 CFR PART 15 SUBPART C AND ANSI C63.4:2009
TEST REPORT

For

J2013

Model : J2013

Trade Name : JAWBONE

Issued for

Aliph com

99 Rhode Island Street, 3rd Floor.
San Francisco, CA 94103 United States

Issued by

Compliance Certification Services Inc.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	06/06/2013	Initial Issue	All Page 40	Gloria Chang
01	07/04/2013	Deleted RF Exposure Evaluation in EUT Description & Revised Appendix	All Page 41 P.5, P.41	Gloria Chang

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1. TEST REPORT CERTIFICATION

Applicant	：	Aliph com
Address	：	99 Rhode Island Street, 3rd Floor. San Francisco, CA 94103 United States
Equipment Under Test	：	J2013
Model	：	J2013
Trade Name	：	JAWBONE
Tested Date	：	May 15 ~ June 06, 2013

APPLICABLE STANDARD	
Standard	**Test Result**
FCC Part 15 Subpart C AND ANSI C63.4:2009	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
Sr. Engineer

2. EUT DESCRIPTION

Product Name	J2013
Model Number	J2013
Identify Number	T130605S03
Received Date	May 15, 2013
Frequency Range	2402MHz～2480MHz
Transmit Power	8.77 dBm (0.0075W)
Channel Spacing	2MHz
Channel Number	40 Channels
Transmit Data Rate	GFSK (1Mbps)
Type of Modulation	Frequency Hopping Spread Spectrum
Frequency Selection	by software / firmware
Antenna Type	Monopole Antenna, Antenna Gain : 1.30 dBi
Power Rating	3.7Vdc, 900mAh, 3.3Wh (For Battery) 5Vdc (For Charging)
Test Voltage	120Vac/60Hz
DC Power Cable Type	Shielded micro USB cable 0.6m × 1 (Detachable)
I/O Port	Micro USB Port × 1, Audio In Port × 1
Signal Cable	Audio cable 1m × 1

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: V3J-J2013 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*

3. DESCRIPTION OF TEST MODES

Radiated Emission (Below 1 GHz) and Conducted Emission Test

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

No.	Pre-Test Mode
1	Normal Mode (Only BT Link)
2	Normal Mode + Audio In (BT+ iPod Audio In)
3	Charge Mode (NB Charge + BT Link)
4	Charge Mode + Audio In (NB Charge + BT Link + iPod Audio In)
5	USB Traffic Mode (Power Switch Off, USB Traffic. No Bluetooth)

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

Final Test Mode		
Emission	Radiated Emission	Charge Mode + Audio In (NB Charge + BT Link + iPod Audio In)
	Conducted Emission	Charge Mode + Audio In (NB Charge + BT Link + iPod Audio In)

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

Radiated Emission (Above 1 GHz) and Conducted Emission Test

The EUT had been tested under operating condition.

There are three channels have been tested as following :

Channel	Frequency (MHz)
Low	2402
Middle	2440
High	2480

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4: 2009 and FCC CFR 47, 15.207, 15.209 and 15.247.

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 C63.4:2009 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.

Canada	INDUSTRY CANADA
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
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 30 to 1000 MHz	+/- 3.97
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 1 to 18GHz	+/- 3.58
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 18 to 26 GHz	+/- 3.59
Semi Anechoic Chamber (966 Chamber_B) / Radiated Emission, 26 to 40 GHz	+/- 3.81
Conducted Emission (Mains Terminals), 9kHz to 30MHz	+/- 2.48

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, 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	HP	ProBook 4421s	CNF03242PM	DoC
2	iPod	APPLE	A1099	JQ529LM6SAZ	---
3	Monitor	Dell	ST2220Lb	CN-0P9H7F-74261-19K-1PLM	DoC
4	Mouse	HP	M-UAE96	265986-011	DoC
5	Printer	HP	C6431D	CN19T6S011	---

SETUP DIAGRAM FOR TESTS

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

EUT OPERATING CONDITION

RF Mode

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. Run CSR Blue Test software.
3. Select the following settings.
   Transport type: USB
4. BLE TX mode
   Freq: 2402, 2440, 2480 (Channel 0 ,19 ,39)
5. After RF command load in EUT remove use cable to test.
6. All of the functions are under run
7. Start test.

Normal Mode :

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. Power on all equipments.
3. (1) Use BT Build up a connection between EUT and Notebook (Play music).
   (2) Audio in with iPod (Play music).
   (3) Charge mode.
4. All of the functions are under run.
5. Start test.

7. FCC PART 15.247 REQUIREMENTS

7.1 6dB BANDWIDTH

LIMITS

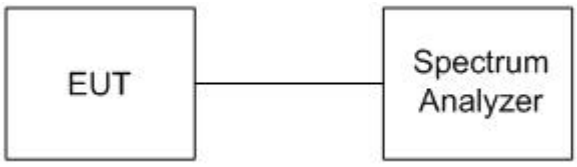
§ 15.247(a) (2) For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	09/12/2013

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

TEST SETUP



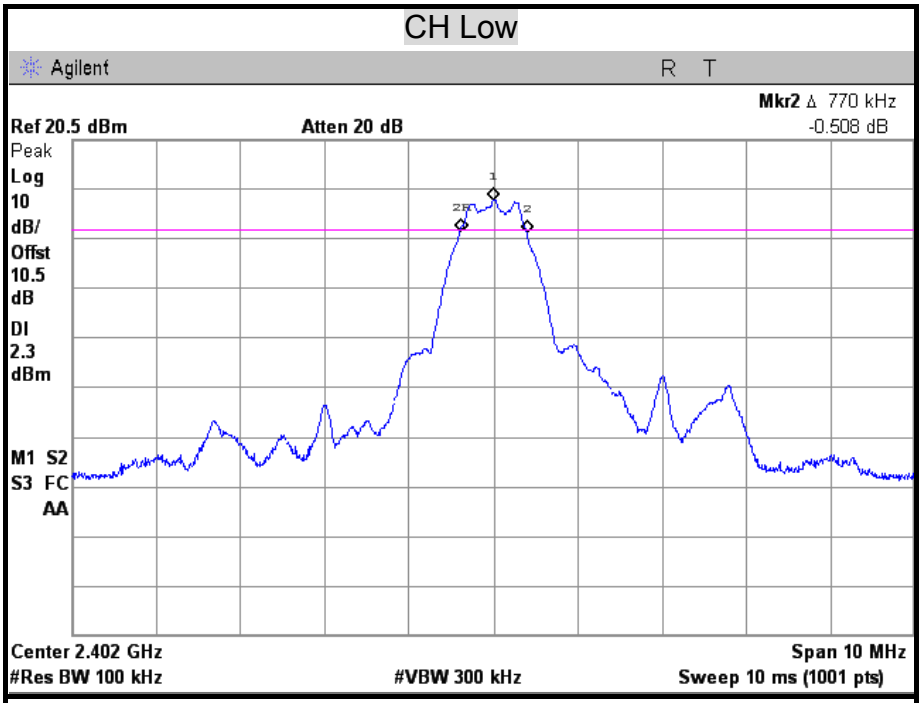
TEST PROCEDURE

1. The transmitter output was connected to a spectrum analyzer.
2. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
3. Set the video bandwidth (VBW) ≥ 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

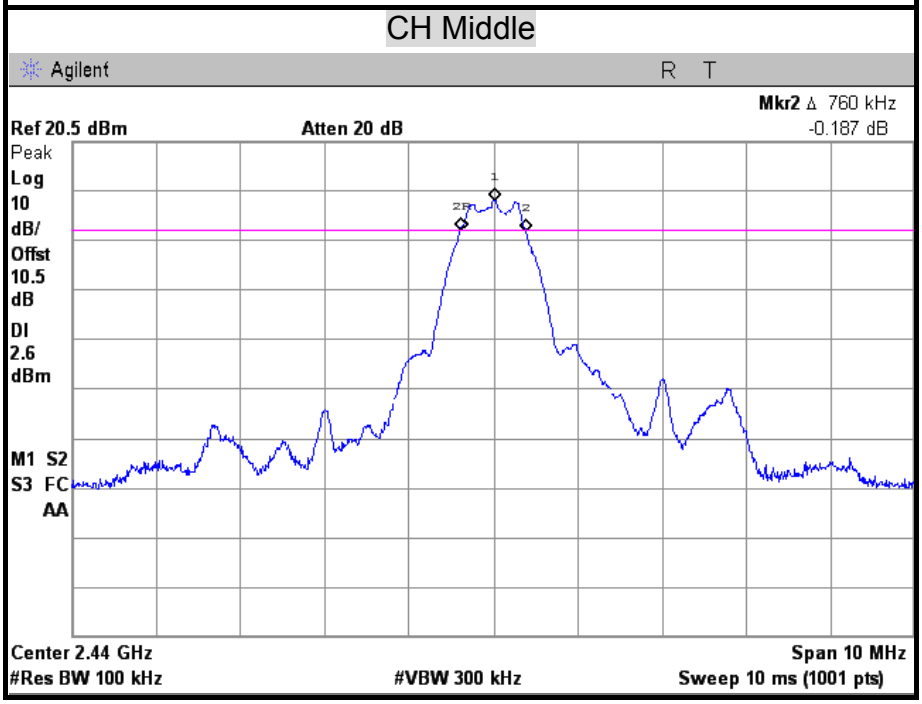
TEST RESULTS

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)	Minimum Limit (kHz)	Pass / Fail
Low	2402	770	500	PASS
Middle	2440	760	500	PASS
High	2480	760	500	PASS

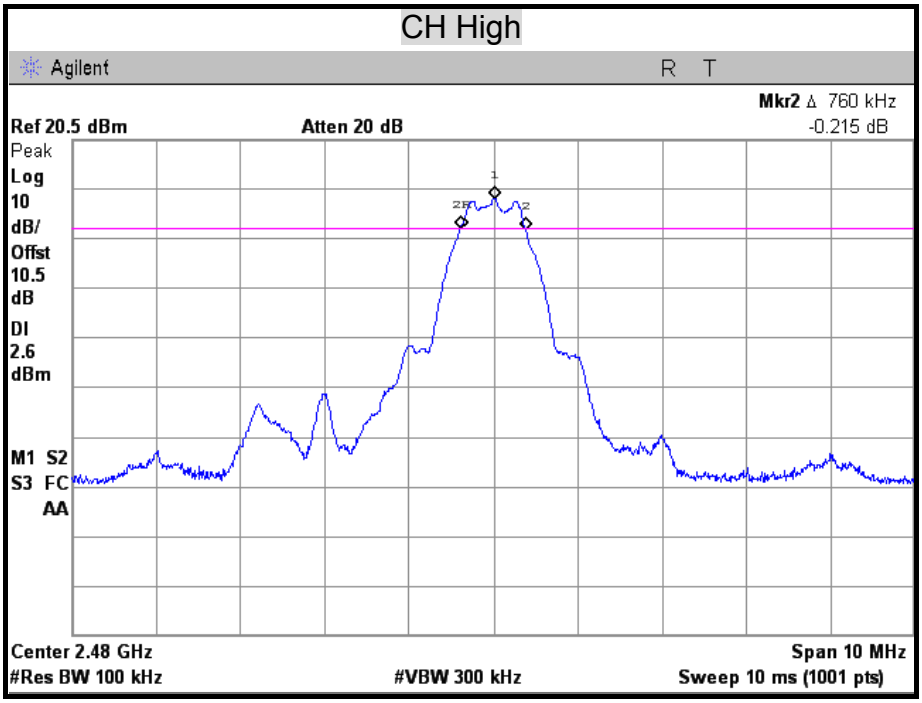
CH Low



CH Middle



CH High



7.2 MAXIMUM PEAK OUTPUT POWER

LIMITS

§ 15.247(b) The maximum peak output power of the intentional radiator shall not exceed the following :

§ 15.247(b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands : 1 watt.

§ 15.247(b) (4) Except as shown in paragraphs (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1149001	12/06/2013
Power Sensor	Anritsu	MA2411B	1126148	12/07/2013

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

TEST SETUP

TEST PROCEDURE

The transmitter output is connected to the Power Meter. The Power Meter is set to the peak power detection.

TEST RESULTS

Channel	Channel Frequency (MHz)	Peak Power		Peak Power Limit		Pass / Fail
		(dBm)	(W)	(dBm)	(W)	
Low	2402	8.52	0.0071	30	1	PASS
Middle	2440	8.67	0.0074	30	1	PASS
High	2480	8.77	0.0075	30	1	PASS

Remark: *The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the power meter to allow for direct reading of power.*

7.3 POWER SPECTRAL DENSITY

LIMITS

§ 15.247(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	09/12/2013

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

TEST SETUP

TEST PROCEDURE

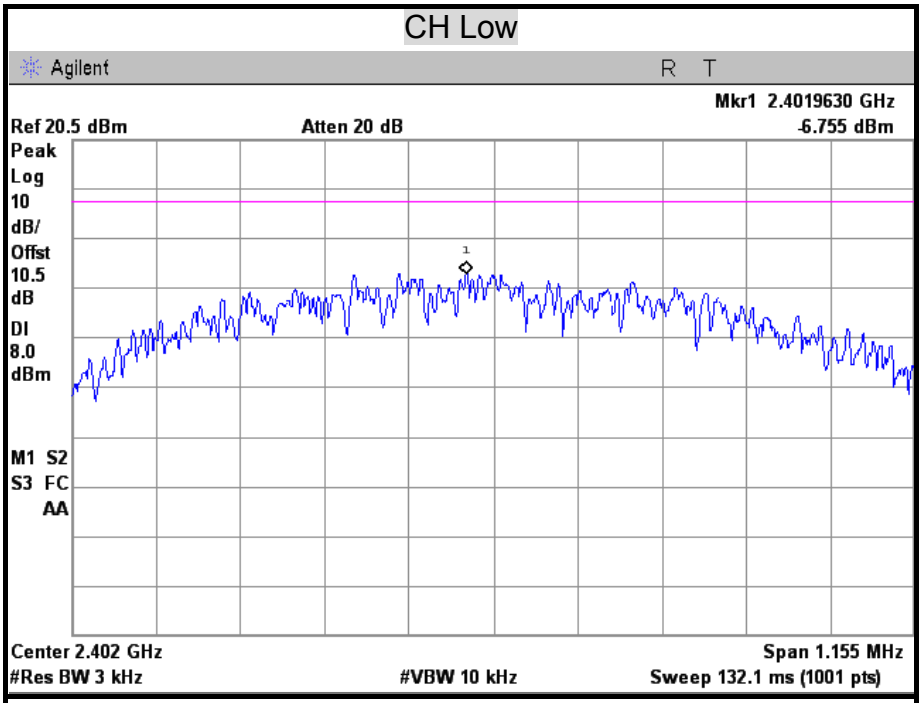
1. The transmitter output was connected to the spectrum analyzer.
2. Set analyzer center frequency to DTS channel center frequency.
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW ≥ 3 kHz.
5. Set the VBW ≥ 3 x RBW.
6. Detector = peak.
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use the peak marker function to determine the maximum amplitude level.
11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST RESULTS

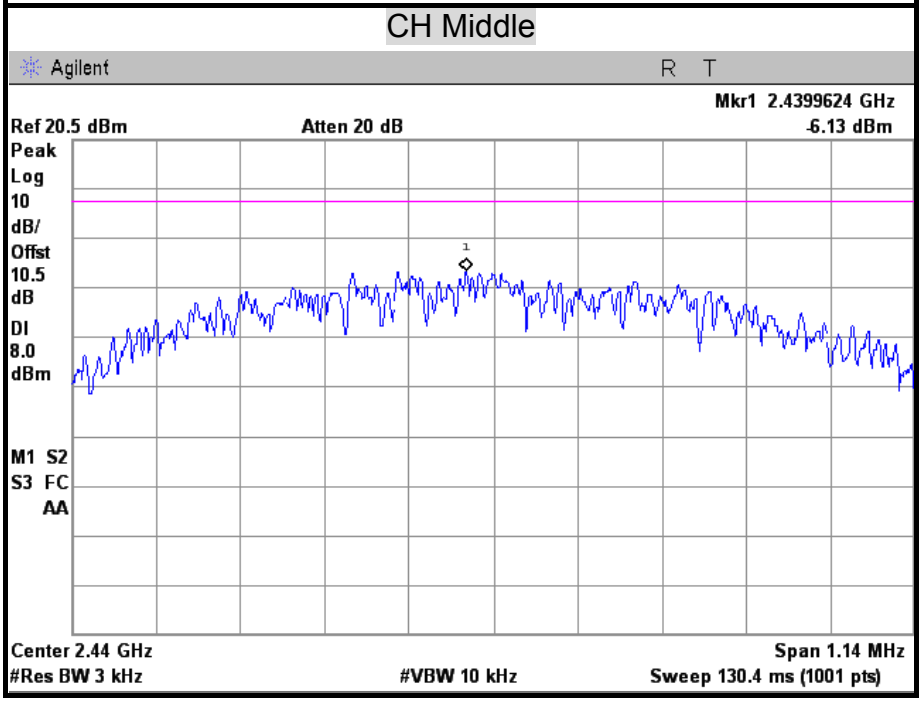
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)	Minimum Limit (dBm)	Pass / Fail
Low	2402	-6.755	8	PASS
Middle	2440	-6.130	8	PASS
High	2480	-6.233	8	PASS

Remark: *The cable assembly insertion loss of 10.5dB (including 10 dB pad and 0.5 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.*

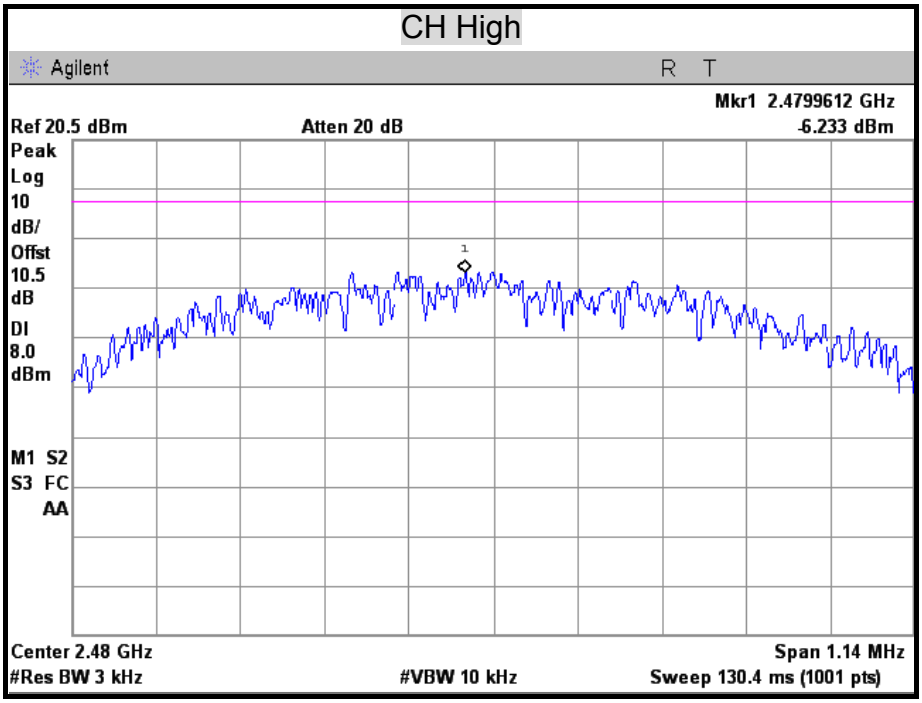
CH Low



CH Middle



CH High



7.4 CONDUCTED SPURIOUS EMISSION

LIMITS

§ 15.247(d) 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. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4407B	US41443108	09/12/2013

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

TEST SETUP

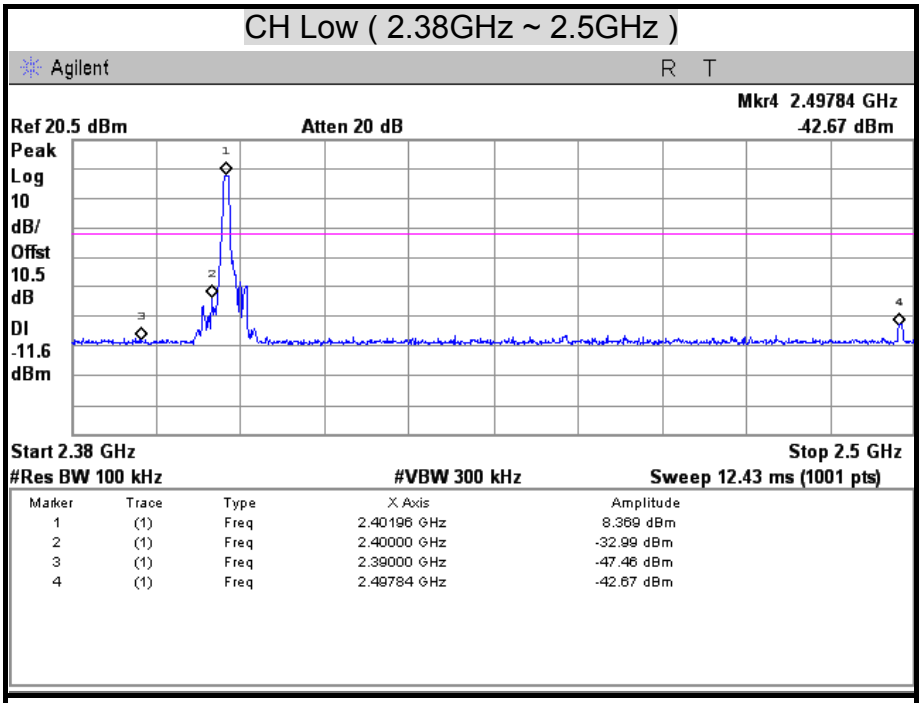
TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

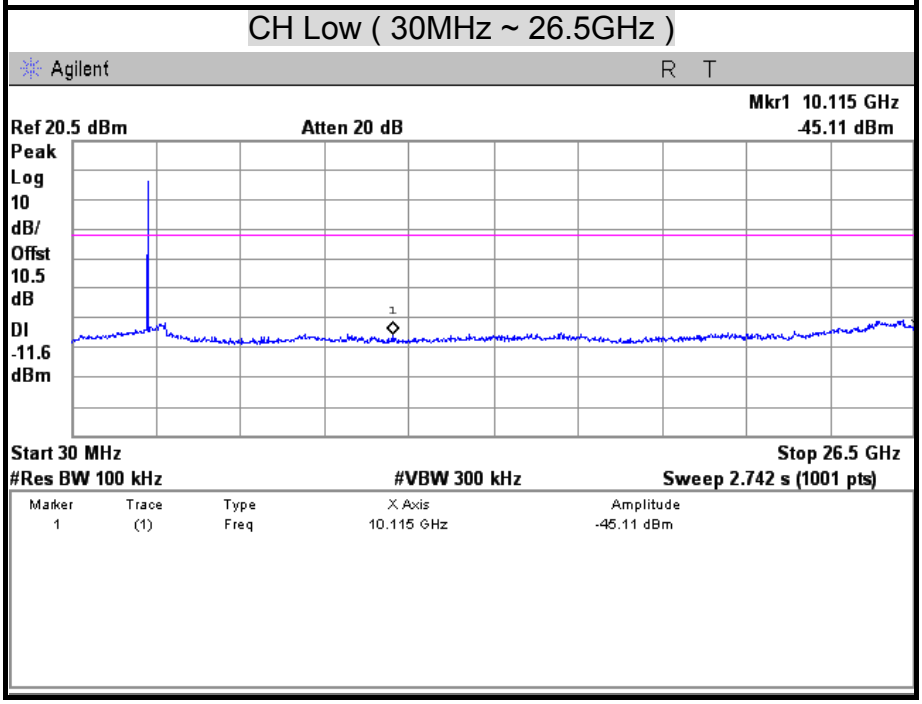
The spectrum from 30 MHz to 26.5 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

TEST RESULTS

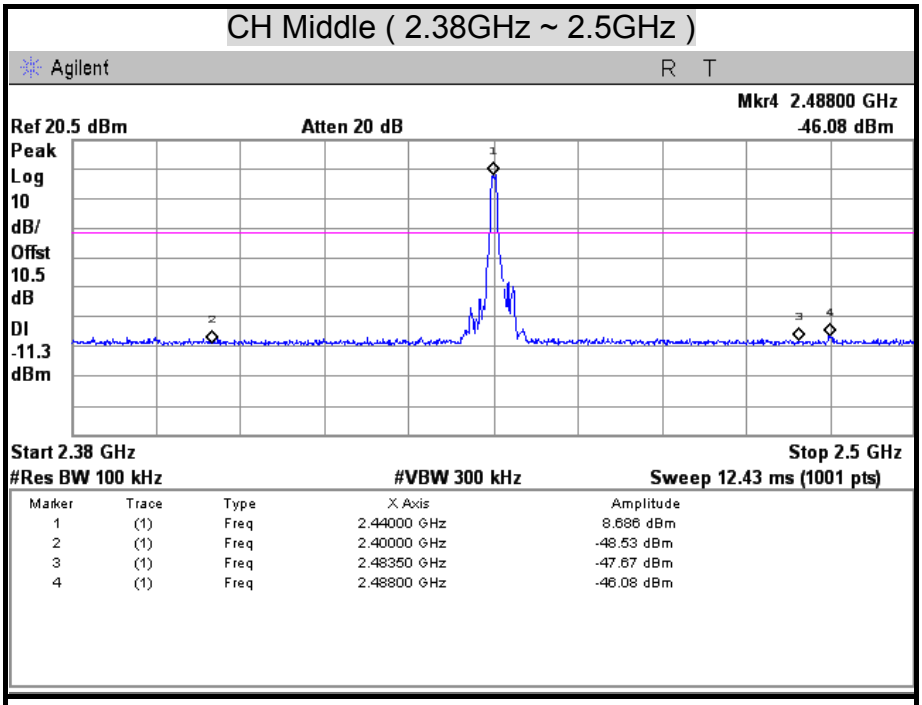
CH Low (2.38GHz ~ 2.5GHz)



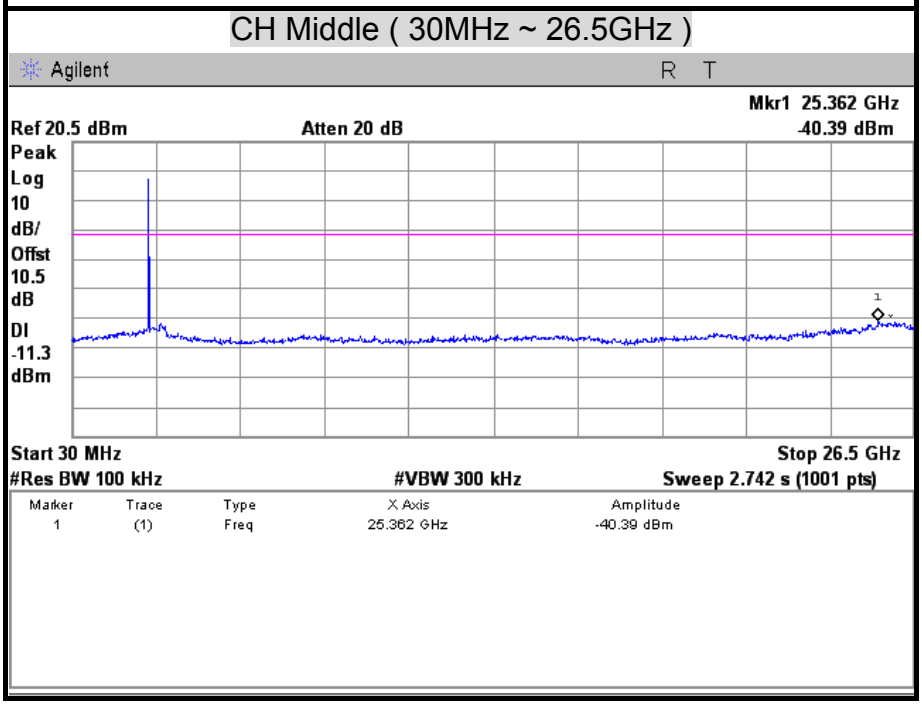
CH Low (30MHz ~ 26.5GHz)



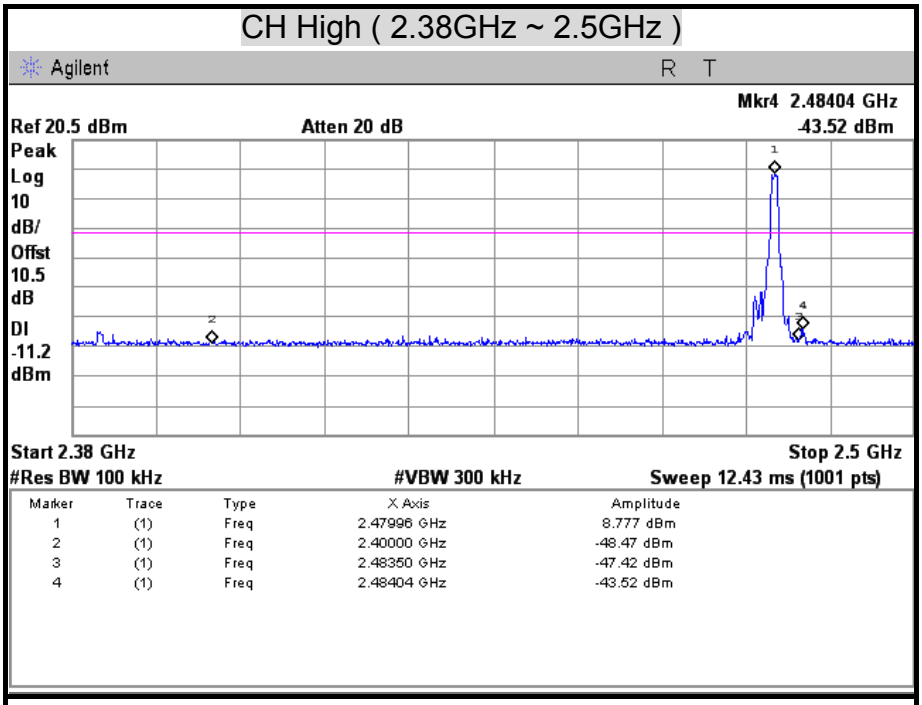
CH Middle (2.38GHz ~ 2.5GHz)



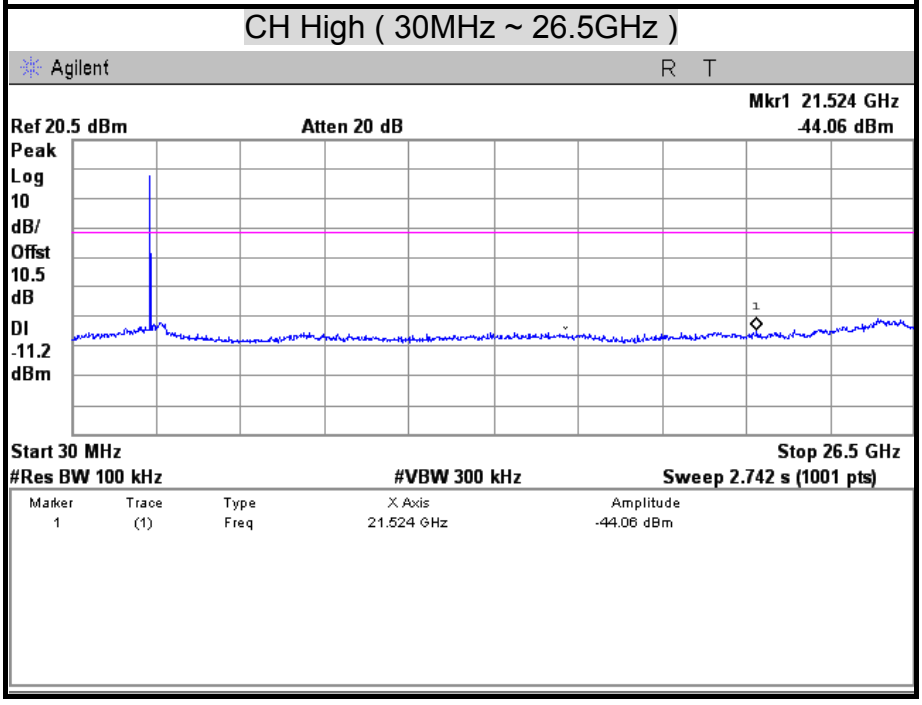
CH Middle (30MHz ~ 26.5GHz)



CH High (2.38GHz ~ 2.5GHz)



CH High (30MHz ~ 26.5GHz)



7.5 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) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §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.

TEST EQUIPMENT

Radiated Emission / 966Chamber_B

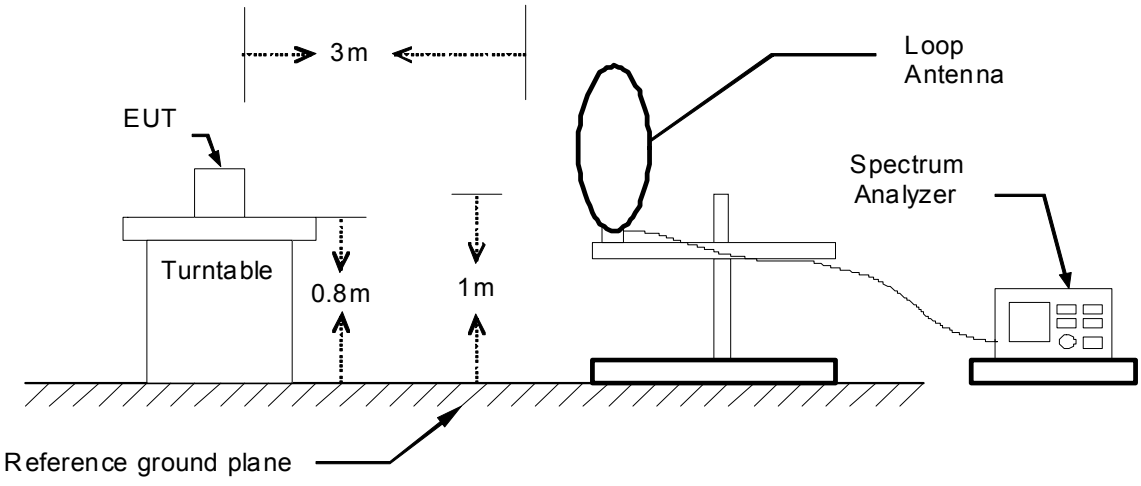
Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY46180323	04/15/2014
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101131	01/14/2014
Bi-log Antenna	SCHWARZBECK	VULB 9168	9168-250	09/26/2013
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078733	12/11/2013
Horn Antenna	COM-POWER	AH-840	03077	12/20/2013
Pre-Amplifier	Agilent	8447D	2944A10052	07/17/2013
Pre-Amplifier	Agilent	8449B	3008A01916	07/17/2013
LOOP Antenna	EMCO	6502	8905-2356	06/10/2013
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.

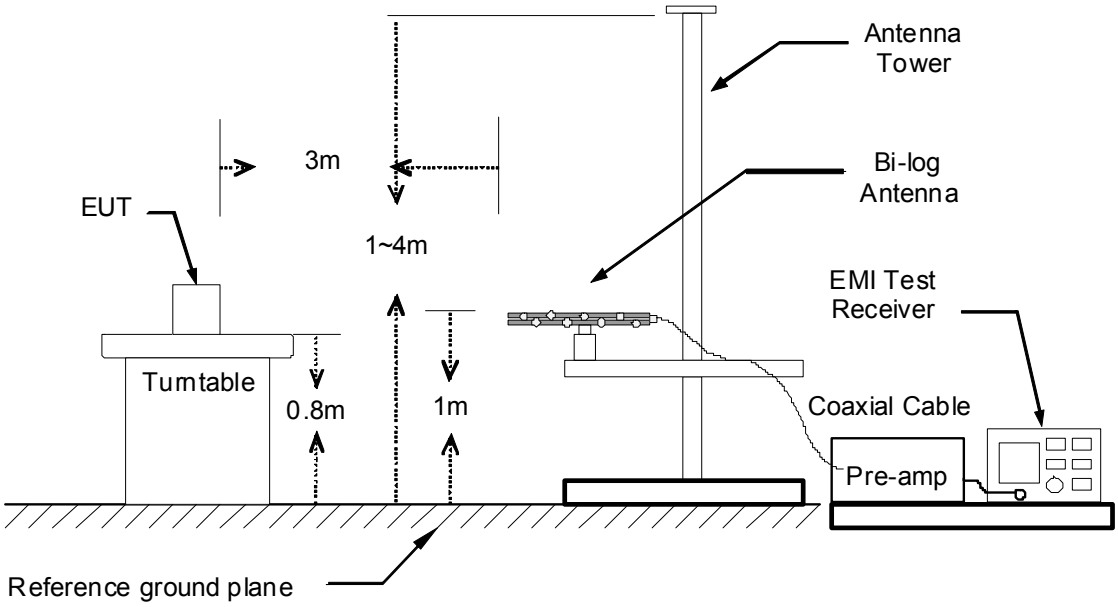
TEST SETUP

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

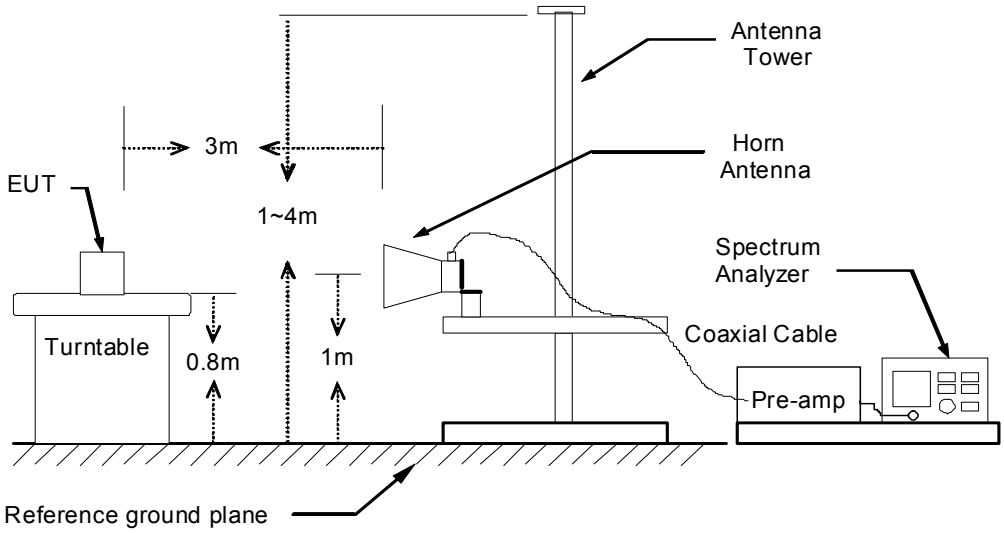
9kHz ~ 30MHz



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. 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	J2013	Test By	Waternil Guan
Test Model	J2013	Test Date	2013/05/15
Test Mode	Charge Mode + Audio In	Temp. & Humidity	26°C, 52%

966 Chamber_B at 3Meter / Horizontal						
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
134.76	48.34	-14.36	33.98	43.50	-9.52	Peak
239.52	46.10	-13.65	32.45	46.00	-13.55	Peak
312.27	41.70	-11.10	30.60	46.00	-15.40	Peak
460.68	48.33	-8.15	40.18	46.00	-5.82	Peak
504.33	45.24	-7.71	37.53	46.00	-8.47	Peak
551.86	42.47	-6.78	35.69	46.00	-10.31	Peak
576.11	42.83	-6.04	36.79	46.00	-9.21	Peak
640.13	37.67	-5.10	32.57	46.00	-13.43	Peak

966 Chamber_B at 3Meter / Vertical						
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
121.18	48.89	-15.66	33.23	43.50	-10.27	Peak
212.36	49.60	-15.34	34.26	43.50	-9.24	Peak
312.27	43.95	-11.10	32.84	46.00	-13.16	Peak
455.83	45.73	-8.20	37.53	46.00	-8.47	Peak
504.33	49.40	-7.71	41.69	46.00	-4.31	Peak
534.40	44.12	-7.14	36.98	46.00	-9.02	Peak
576.11	41.81	-6.04	35.77	46.00	-10.23	Peak
623.64	38.56	-5.18	33.38	46.00	-12.62	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	J2013	Test By	Waternil Guan
Test Model	J2013	Test Date	2013/05/17
Test Mode	CH Low	Temp. & Humidity	25°C, 47%

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
2498.00	45.53	---	3.94	49.47	---	74.00	54.00	-24.53	Peak
2522.00	45.28	---	4.00	49.28	---	74.00	54.00	-24.72	Peak
2546.00	44.98	---	4.05	49.03	---	74.00	54.00	-24.97	Peak
3900.00	41.62	---	6.95	48.57	---	74.00	54.00	-25.43	Peak
4800.00	50.65	44.54	9.16	59.81	53.70	74.00	54.00	-0.30	AVG
6090.00	39.33	---	11.77	51.10	---	74.00	54.00	-22.90	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
2014.00	43.63	---	2.30	45.93	---	74.00	54.00	-28.07	Peak
2728.00	43.17	---	4.43	47.60	---	74.00	54.00	-26.40	Peak
2932.00	42.64	---	4.86	47.50	---	74.00	54.00	-26.50	Peak
3210.00	42.46	---	5.43	47.89	---	74.00	54.00	-26.11	Peak
3975.00	41.14	---	7.12	48.26	---	74.00	54.00	-25.74	Peak
4800.00	41.47	---	9.16	50.63	---	74.00	54.00	-23.37	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. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(PK)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	J2013	Test By	Waternil Guan
Test Model	J2013	Test Date	2013/05/17
Test Mode	CH Middle	Temp. & Humidity	25°C, 47%

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
1656.00	43.98	---	-0.85	43.13	---	74.00	54.00	-30.87	Peak
2296.00	43.56	---	3.26	46.82	---	74.00	54.00	-27.18	Peak
2536.00	44.15	---	4.03	48.18	---	74.00	54.00	-25.82	Peak
3210.00	42.66	---	5.43	48.09	---	74.00	54.00	-25.91	Peak
4110.00	41.68	---	7.44	49.12	---	74.00	54.00	-24.88	Peak
4875.00	46.56	40.44	9.36	55.92	49.80	74.00	54.00	-4.20	AVG

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
1984.00	43.28	---	2.11	45.39	---	74.00	54.00	-28.61	Peak
2666.00	42.32	---	4.30	46.62	---	74.00	54.00	-27.38	Peak
2838.00	42.53	---	4.66	47.19	---	74.00	54.00	-26.81	Peak
3165.00	42.68	---	5.34	48.02	---	74.00	54.00	-25.98	Peak
3990.00	41.00	---	7.16	48.16	---	74.00	54.00	-25.84	Peak
4920.00	40.52	---	9.48	50.00	---	74.00	54.00	-24.00	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. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(PK)
   Remark AVG = Result(AV) – Limit(AV)

Product Name	J2013	Test By	Waternil Guan
Test Model	J2013	Test Date	2013/05/17
Test Mode	CH High	Temp. & Humidity	25°C, 47%

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
2296.00	44.68	---	3.26	47.94	---	74.00	54.00	-26.06	Peak
2536.00	44.16	---	4.03	48.19	---	74.00	54.00	-25.81	Peak
2652.00	42.56	---	4.27	46.83	---	74.00	54.00	-27.17	Peak
3915.00	41.69	---	6.98	48.67	---	74.00	54.00	-25.33	Peak
4260.00	40.82	---	7.80	48.62	---	74.00	54.00	-25.38	Peak
4965.00	41.63	---	9.60	51.23	---	74.00	54.00	-22.77	Peak

966 Chamber_B at 3Meter / Vertical

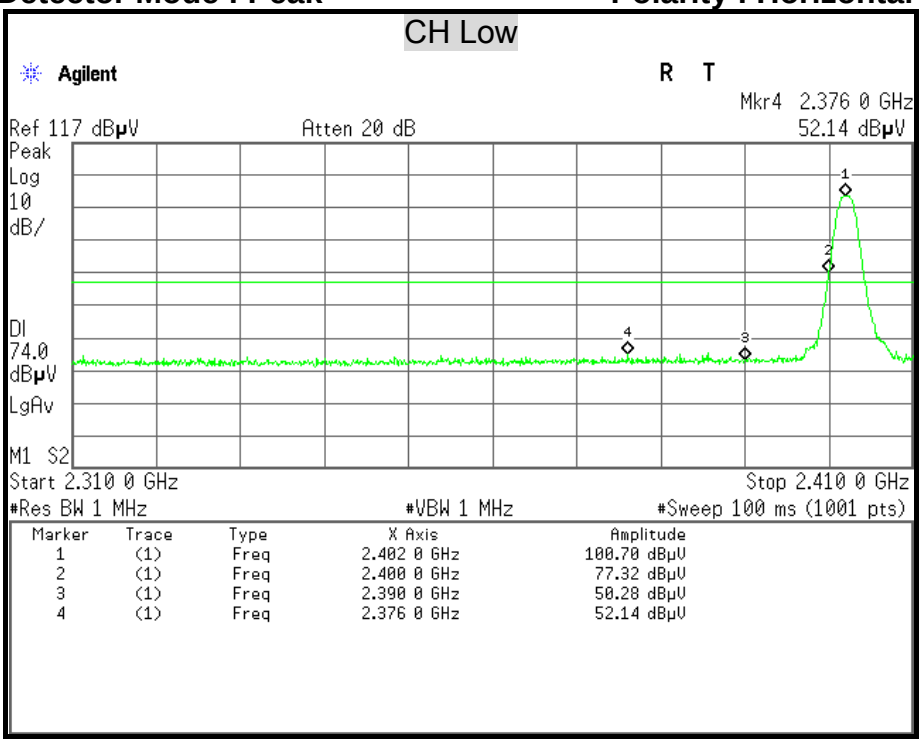
Frequency (MHz)	Reading-PK (dBuV)	Reading-AV (dBuV)	Correction Factor (dB/m)	Result-PK (dBuV/m)	Result-AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Remark
1952.00	43.75	---	1.82	45.57	---	74.00	54.00	-28.43	Peak
2112.00	43.42	---	2.63	46.05	---	74.00	54.00	-27.95	Peak
2710.00	42.46	---	4.39	46.85	---	74.00	54.00	-27.15	Peak
3780.00	41.93	---	6.67	48.60	---	74.00	54.00	-25.40	Peak
4380.00	40.63	---	8.08	48.71	---	74.00	54.00	-25.29	Peak
4950.00	39.47	---	9.56	49.03	---	74.00	54.00	-24.97	Peak

Remark:

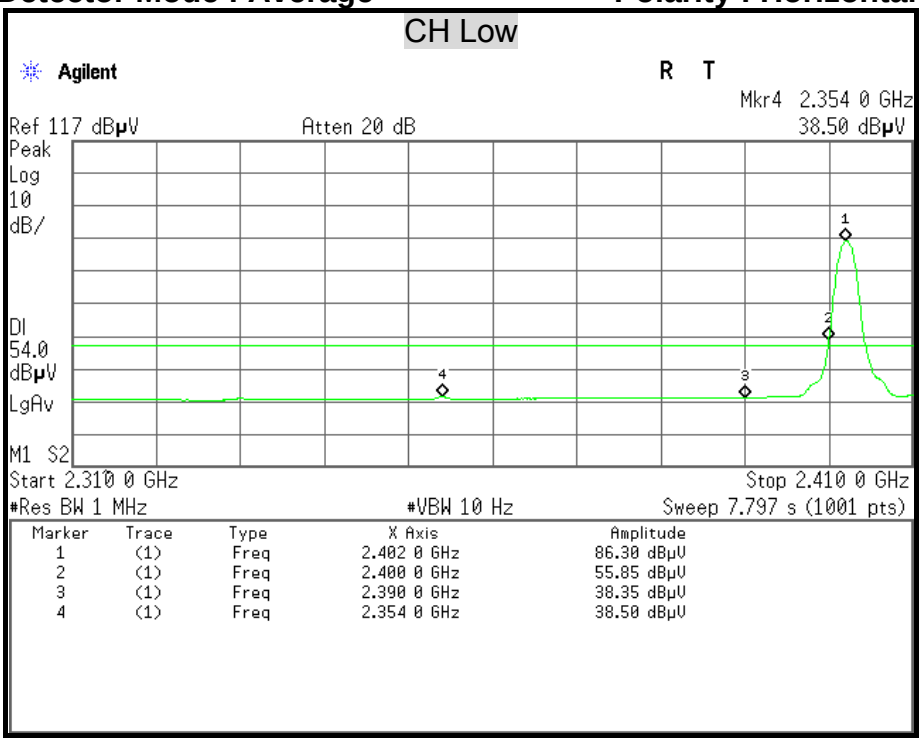
1. *Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.*
2. *Average test would be performed if the peak result were greater than the average limit.*
3. *Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions 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. *Result = Reading + Correction Factor*
   Margin = Result – Limit
   Remark Peak = Result(PK) – Limit(PK)
   Remark AVG = Result(AV) – Limit(AV)

Restricted Band Edges

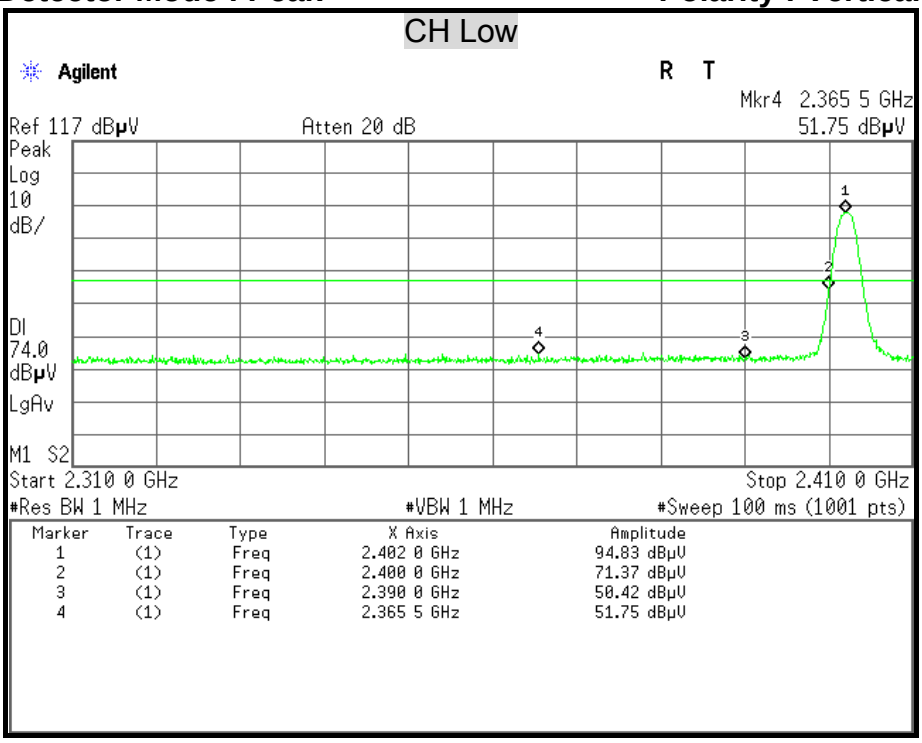
Detector Mode : Peak **Polarity : Horizontal**



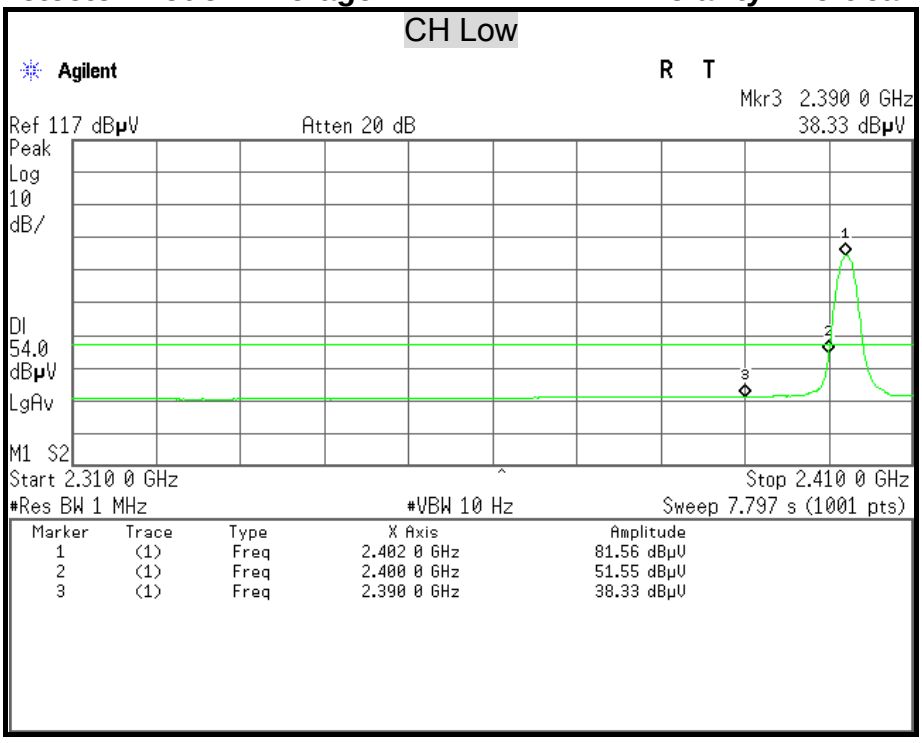
Detector Mode : Average **Polarity : Horizontal**



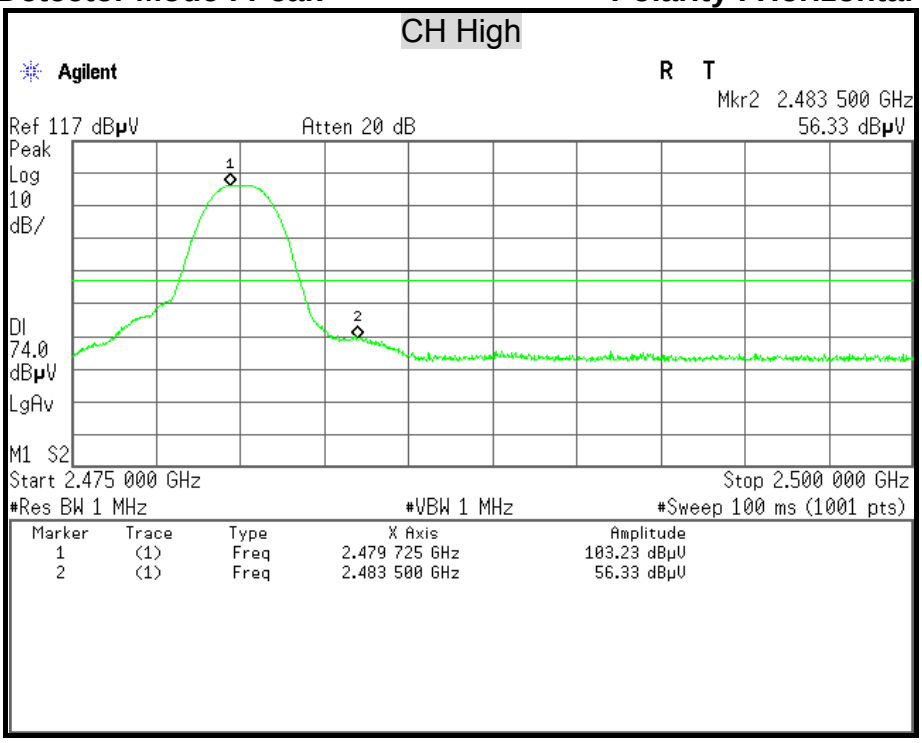
Detector Mode : Peak **Polarity : Vertical**



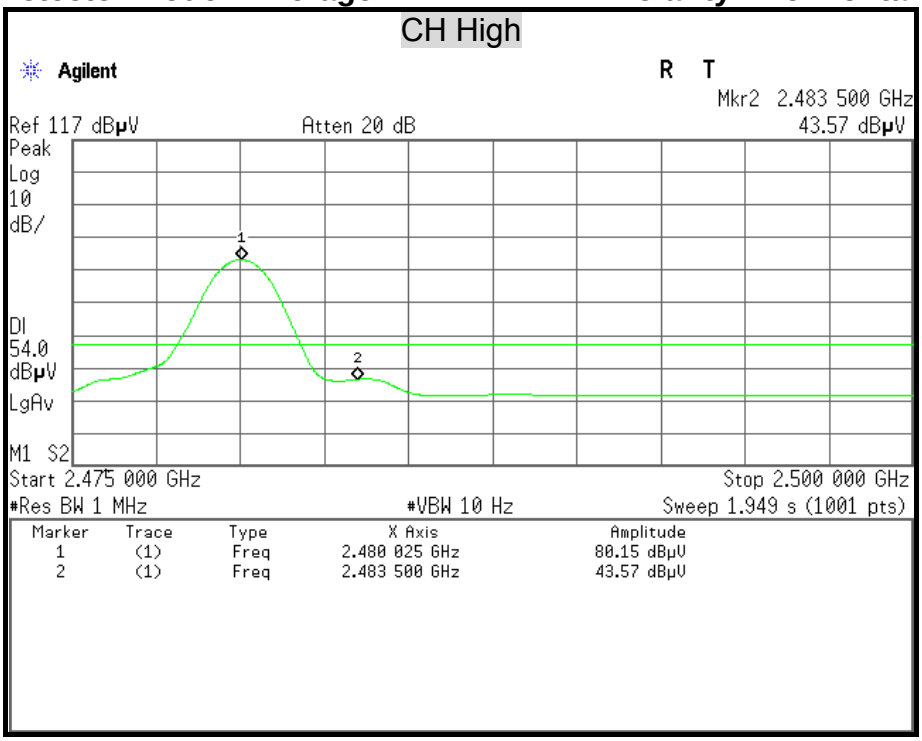
Detector Mode : Average **Polarity : Vertical**



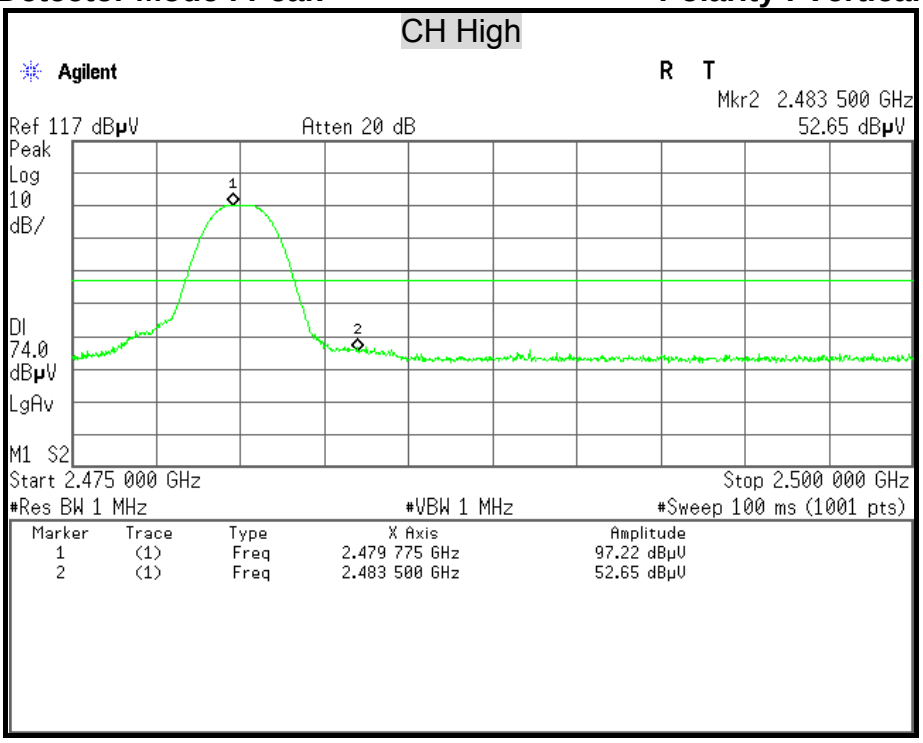
Detector Mode : Peak **Polarity : Horizontal**



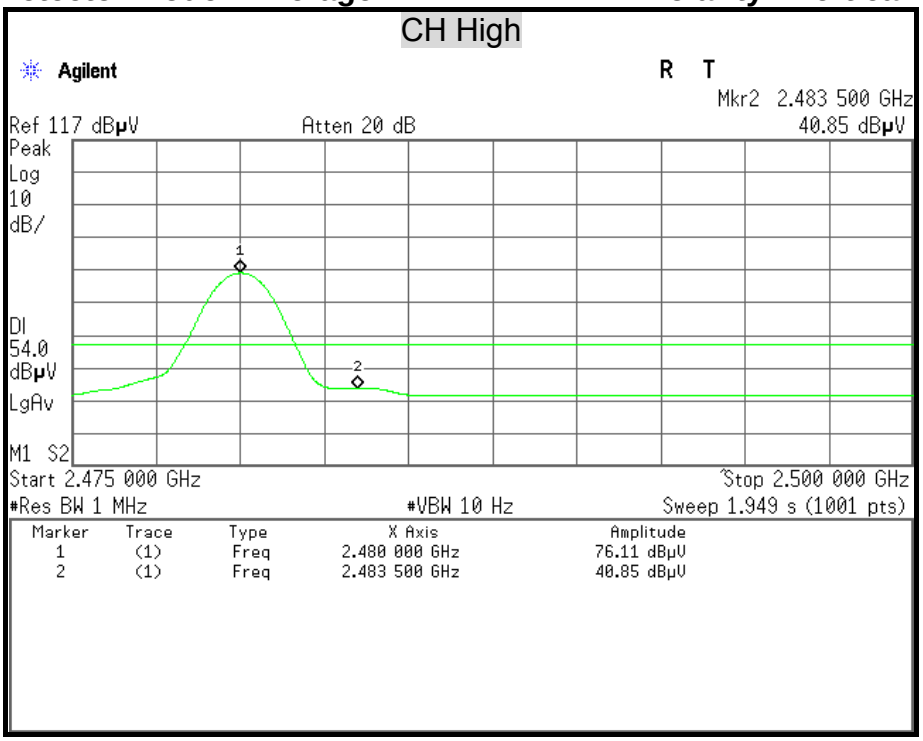
Detector Mode : Average **Polarity : Horizontal**



Detector Mode : Peak **Polarity : Vertical**



Detector Mode : Average **Polarity : Vertical**



7.6 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.

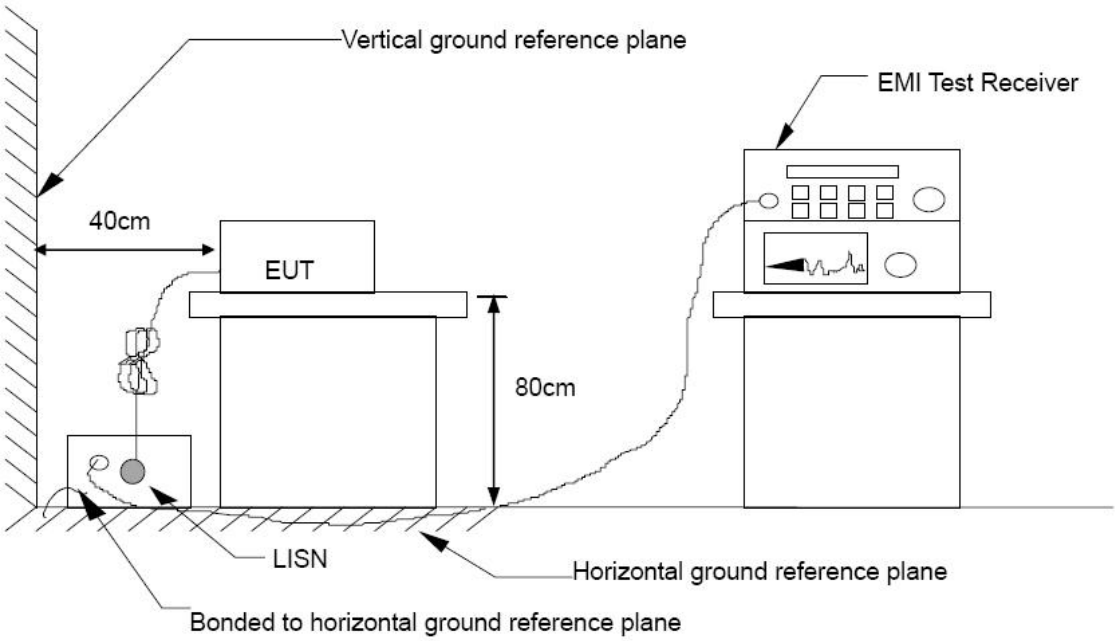
Frequency Range (MHz)	Conducted Limit (dBμv)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5.00	56	46
5.00 - 30.0	60	50

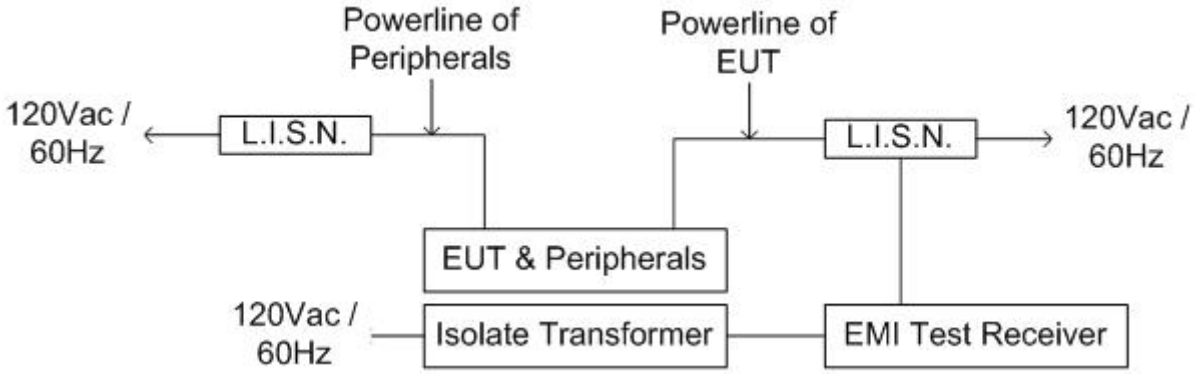
TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-465	08/07/2013
L.I.S.N	SCHWARZBECK	NSLK 8127	8127-473	03/07/2014
EMI Receiver	ROHDE & SCHWARZ	ESCS 30	835418/008	10/16/2013
Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	100117	07/03/2013

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 C63.4:2009.

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.

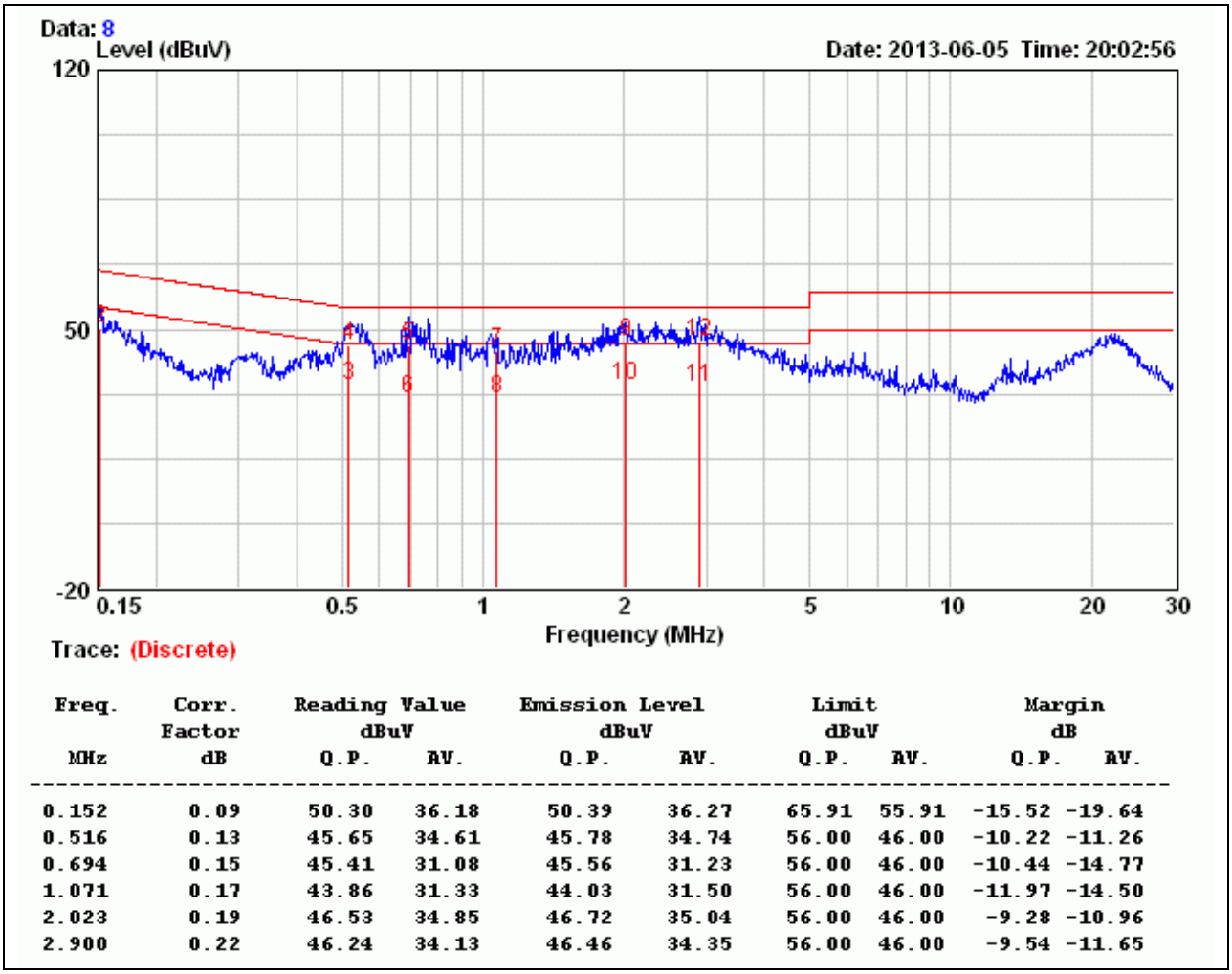
The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chassis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

Product Name	J2013	Test By	Rueyyan Lin
Test Model	J2013	Test Date	2013/06/05
Test Mode	Charge Mode + Audio In	Temp. & Humidity	21°C, 51%

LINE



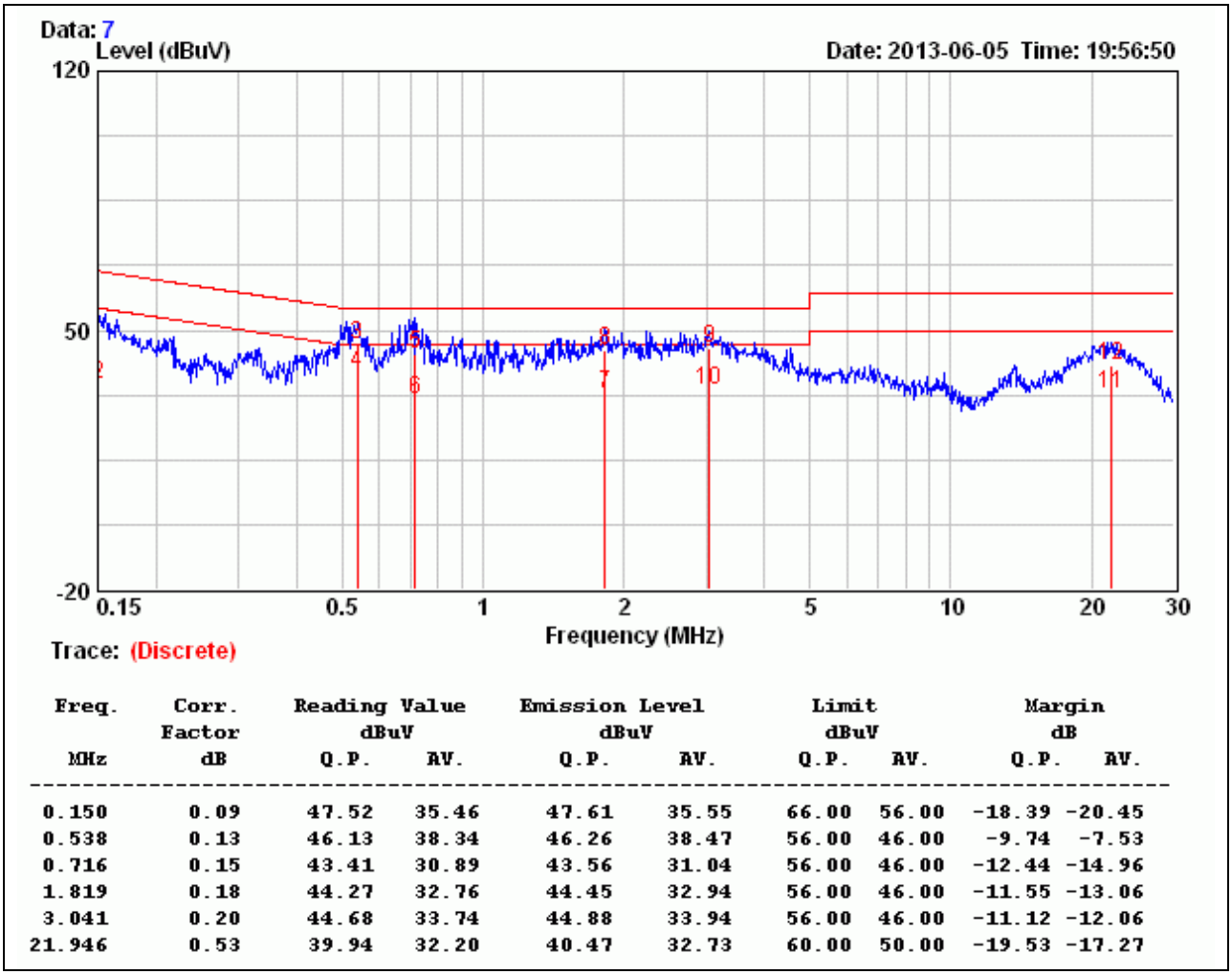
Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV AV.	Emission Level dBuV Q.P.	Emission Level dBuV AV.	Limit dBuV Q.P.	Limit dBuV AV.	Margin dB Q.P.	Margin dB AV.
0.152	0.09	50.30	36.18	50.39	36.27	65.91	55.91	-15.52	-19.64
0.516	0.13	45.65	34.61	45.78	34.74	56.00	46.00	-10.22	-11.26
0.694	0.15	45.41	31.08	45.56	31.23	56.00	46.00	-10.44	-14.77
1.071	0.17	43.86	31.33	44.03	31.50	56.00	46.00	-11.97	-14.50
2.023	0.19	46.53	34.85	46.72	35.04	56.00	46.00	-9.28	-10.96
2.900	0.22	46.24	34.13	46.46	34.35	56.00	46.00	-9.54	-11.65

Remark:

1. Correction Factor = Insertion loss + Cable loss
2. Emission level = Reading Value + Correction factor
3. Margin value = Emission level – Limit value

Product Name	J2013	Test By	Rueyyan Lin
Test Model	J2013	Test Date	2013/06/05
Test Mode	Charge Mode + Audio In	Temp. & Humidity	21°C, 51%

NEUTRAL



Freq. MHz	Corr. Factor dB	Reading Value dBuV Q.P.	Reading Value dBuV AV.	Emission Level dBuV Q.P.	Emission Level dBuV AV.	Limit dBuV Q.P.	Limit dBuV AV.	Margin dB Q.P.	Margin dB AV.
0.150	0.09	47.52	35.46	47.61	35.55	66.00	56.00	-18.39	-20.45
0.538	0.13	46.13	38.34	46.26	38.47	56.00	46.00	-9.74	-7.53
0.716	0.15	43.41	30.89	43.56	31.04	56.00	46.00	-12.44	-14.96
1.819	0.18	44.27	32.76	44.45	32.94	56.00	46.00	-11.55	-13.06
3.041	0.20	44.68	33.74	44.88	33.94	56.00	46.00	-11.12	-12.06
21.946	0.53	39.94	32.20	40.47	32.73	60.00	50.00	-19.53	-17.27

Remark:

1. Correction Factor = Insertion loss + Cable loss
2. Emission level = Reading Value + Correction factor
3. Margin value = Emission level – Limit value

APPENDIX I RADIO FREQUENCY EXPOSURE PROCEDURES

According to § 15.247 (i) and § 1.1307(b)(1), system operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

KDB 447498 D01: Approximate SAR test exclusion power thresholds at selected frequencies and test separation distances are illustrated in the following table:

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ▪ [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

• $f_{(GHz)}$ is the RF channel transmit frequency in GHz
• Power and distance are rounded to the nearest mW and mm before calculation
• The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Maximum Measured Transmitter Power:

Channel Frequency (MHz)	Maximum Peak Conducted Output Power		Max Antenna Gain (dBi)	Numeric antenna gain (mW)
	(dBm)	(mW)		
2480	8.77	7.5	1.30	1.35

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ▪ [$\sqrt{f_{(GHz)}}$] = 7.8/10*$\sqrt{2.48}$ = 1.23 ≤ 3.0

Threshold at which no SAR required is 19mW and ≤ 3.0 for 1-g SAR, Separation distance is 10mm.

Conclusion : The SAR measurement is exempt.