

**FCC 47 CFR PART 15 SUBPART C AND ANSI C63.10:2013
TEST REPORT**

For

IP Phone

Model: OBi2182

Data Applies To: OBi2162

Trade Name: OBIHAI

Issued for

Obihai Technology, Inc.

51 E Campbell Ave. Campbell CA 95008 United States

Issued by

Compliance Certification Services Inc.

Hsinchu Lab.

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	12/15/2017	Initial Issue	All Page 116	Gloria Chang
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1. TEST REPORT CERTIFICATION

Applicant : Obihai Technology, Inc.
Address : 51 E Campbell Ave. Campbell CA 95008 United States
Equipment Under Test : IP Phone
Model : OBi2182
Data Apples To : OBi2162
Trade Name : OBIHAI
Tested Date : September 19 ~ October 19, 2017

APPLICABLE STANDARD	
Standard	Test Result
FCC Part 15 Subpart C AND ANSI C63.10:2013	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:



Rueyyan Lin
Sr. Engineer

Reviewed by:



Gundam Lin
Sr. Engineer

2. EUT DESCRIPTION

Product Name	IP Phone
Model Number	OBI2182
Data Applies To	OBI2162
Identify Number	T170919S08
Received Date	September 19, 2017
Frequency Range	WiFi Mode: IEEE 802.11b/g, 802.11gn HT20 Mode: 2412MHz ~ 2462MHz IEEE 802.11gn HT40 Mode: 2422MHz ~ 2452MHz Bluetooth 4.0 Mode: 2402MHz ~ 2480MHz
Transmit Power	WiFi Mode: IEEE 802.11b Mode: 22.63 dBm (0.1832 W) IEEE 802.11g Mode: 24.13 dBm (0.2588 W) IEEE 802.11gn HT20 Mode: 24.39 dBm (0.2748 W) IEEE 802.11gn HT40 Mode: 23.77 dBm (0.2382 W) Bluetooth 4.0 Mode: 4.83 dBm (0.0030 W)
Channel Spacing	WiFi Mode: IEEE 802.11b/g, 802.11gn HT20/HT40 Mode: 5MHz Bluetooth 4.0 Mode: 2MHz
Channel Number	IEEE 802.11b/g, 802.11gn HT20 Mode: 11 Channels IEEE 802.11gn HT40 Mode: 7 Channels Bluetooth 4.0 Mode: 40 Channels
Transmit Data Rate	WiFi Mode: IEEE 802.11b Mode: up to 11 Mbps IEEE 802.11g Mode: up to 54 Mbps IEEE 802.11gn HT20 Mode (800ns GI): up to 65.00 Mbps IEEE 802.11gn HT20 Mode (400ns GI): up to 72.20 Mbps IEEE 802.11gn HT40 Mode (800ns GI): up to 135.0 Mbps IEEE 802.11gn HT40 Mode (400ns GI): up to 150.00 Mbps Bluetooth 4.0 Mode: 1Mbps
Type of Modulation	WiFi Mode: IEEE 802.11b Mode: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g Mode: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11gn HT20/40 Mode: OFDM (64QAM, 16QAM, QPSK, BPSK) Bluetooth 4.0 Mode: GFSK
Antenna Type	PCB Antenna x 1, Antenna Gain: 2.68 dBi

Power Rating	12Vdc
Test Voltage	120Vac, 60Hz
DC Power Cable Type	Non-shielded cable, 1.8 m x 1 (Non-detachable)
I/O Port	RJ-9 Port x 2, RJ-11 Port x 1, RJ-45 Port x 2, USB Port x 2, Audio Port x 1, Power Port x 1
Signal Cable	Non-shielded RJ-9 cable, 0.65m x 1 (Detachable)
Support Equipment	Telephone handset

Power Adapter:

No.	Manufacturer	Model No.	Power Input	Power Output
1	AOEM	ADS012T-W120100	100-240Vac, 0.5A, 50-60Hz	12Vdc, 1.0A

The difference of the series model

Model Number	Difference		
	WiFi	Bluetooth	Number of line keys
OBI2182	V	V	12
OBI2162	V	V	6

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: 2ADXF-OBI2182 filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.
4. The model OBI2182 was considered the main model for testing.

3. DESCRIPTION OF TEST MODES

The EUT (IP Phone) had been tested under operating condition.

For WiFi Mode:

IEEE 802.11b/g, 802.11gn HT20/HT40 Mode: 1TX / 1RX.

For Bluetooth 4.0 Mode: 1TX / 1RX.

Conducted Emission / Radiated Emission Test (Below 1 GHz)

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

No.	Pre-Test mode
1	TX Mode

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

Final Test mode		
Emission	Radiated Emission	Mode 1
	Conducted Emission	

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

Conducted / Radiated Emission Test (Above 1 GHz)

For WiFi Mode:

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

Mode	Channel	Frequency (MHz)
IEEE 802.11b	Low	2412
IEEE 802.11g	Middle	2437
IEEE 802.11gn HT20	High	2462
IEEE 802.11gn HT40	Low	2422
	Middle	2437
	High	2452

IEEE 802.11b Mode: 1Mbps data rate (worst case) was chosen for full testing.

IEEE 802.11g Mode: 6Mbps data rate (worst case) was chosen for full testing.

IEEE 802.11gn HT20 MCS0 Mode: 6.5Mbps data rate (worst case) was chosen for full testing.

IEEE 802.11gn HT40 MCS0 Mode: 13.5Mbps data rate (worst case) was chosen for full testing.

For Bluetooth 4.0 Mode:

The EUT had been tested under operating condition.

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

Channel	Frequency (MHz)
Low	2402
Middle	2440
High	2480

Remark : *The field strength of spurious emission was measured in the following position: EUT stand-up position(Y axis), lie-down position(X, Z axis). The worst emission was found in stand-up position(Y axis) and the worst case was recorded.*

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10:2013 and FCC CFR 47, 15.207, 15.209, 15.247 and KDB 558074 D01 (DTS Measurement Guidance) v04.

5. FACILITIES AND ACCREDITATION

5.1 FACILITIES

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

No.989-1, Wenshan Rd., Shangshan Village,
Qionglin Township, Hsinchu County 30741, Taiwan (R.O.C.)

The sites are constructed in conformance with the requirements of ANSI C63.10:2013 and CISPR 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4 and 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
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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>

Remark: FCC Designation Number TW0240.

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_C) / Radiated Emission, 30 to 1000 MHz	+/- 3.97
Semi Anechoic Chamber (966 Chamber_C) / Radiated Emission, 1 to 18GHz	+/- 3.58
Semi Anechoic Chamber (966 Chamber_C) / Radiated Emission, 18 to 26 GHz	+/- 3.59
Semi Anechoic Chamber (966 Chamber_C) / 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 based on the results of the compliance measurement. Consequently the measured emissions being less than the maximum allowed emission result in this being a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is based 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.
1	Notebook PC	IBM (Lenovo)	ThinkPad T61 7663-AS6	L3F3864

No.	Signal Cable Description
1	Non-shielded RJ-45 cable, 12m x 1

SETUP DIAGRAM FOR TESTS

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

EUT OPERATING CONDITION

WiFi Mode:

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

2. TX mode:

⇒ **TX Data Rate:** 1Mbps Bandwidth 20 (IEEE 802.11b Mode)

6Mbps Bandwidth 20 (IEEE 802.11g Mode)

6.5Mbps Bandwidth 20 (IEEE 802.11gn HT20 MCS0 Mode)

13.5Mbps Bandwidth 40 (IEEE 802.11gn HT40 MCS0 Mode)

⇒ **Power control**

Mode	Channel	Frequency (MHz)	Power Set
IEEE 802.11b	Low	2412	45
	Middle	2437	55
	High	2462	49
IEEE 802.11g	Low	2412	53
	Middle	2437	58
	High	2462	53
IEEE 802.11gn HT20 MCS0	Low	2412	52
	Middle	2437	58
	High	2462	51
IEEE 802.11gn HT40 MCS0	Low	2422	46
	Middle	2437	52
	High	2452	48

3. All of the functions are under run.

4. Start test.

Bluetooth 4.0 Mode:

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. TX mode:
 - ⇒ **Power control:**
 - Channel Low (2402MHz) Power set 25.
 - Channel Mid (2440MHz) Power set 25.
 - Channel High (2480MHz) Power set 26.
3. All of the functions are under run.
4. Start test

7. FCC PART 15.247 REQUIREMENTS

7.1 DUTY CYCLE CORRECTION FACTOR

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25
Test Mode	TX Mode	Temp. & Humidity	25°C, 50%

Mode	TX on (ms)	TX on + off (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T Minimum VBW (kHz)
IEEE 802.11b	12.420	12.550	98.96%	0.05	0.010
IEEE 802.11g	2.066	2.192	94.25%	0.26	0.484
IEEE 802.11gn HT20	1.922	2.048	93.85%	0.28	0.520
IEEE 802.11gn HT40	0.947	1.027	92.20%	0.35	1.056
Bluetooth 4.0	0.393	0.625	62.87%	2.02	2.546

7.2 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
EXA Signal Analyzer	Agilent	N9010A	MY52220817	03/07/2018
Test S/W	N/A			

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 RBW = 100 kHz.
3. Set the video bandwidth (VBW) $\geq 3 \times$ 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 frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST RESULTS

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/16
Test Mode	TX Mode	Temp. & Humidity	27°C, 56%

For WiFi Mode:

IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Result
Low	2412	10.03	500	PASS
Middle	2437	10.07	500	PASS
High	2462	10.06	500	PASS

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Result
Low	2412	16.34	500	PASS
Middle	2437	16.34	500	PASS
High	2462	16.33	500	PASS

IEEE 802.11gn HT20 MCS0 Mode

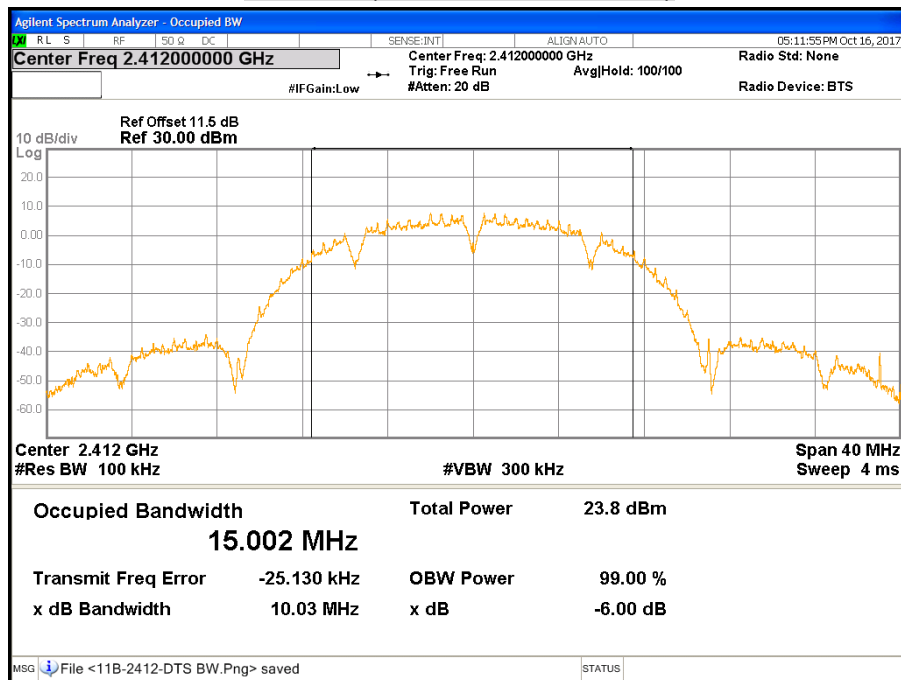
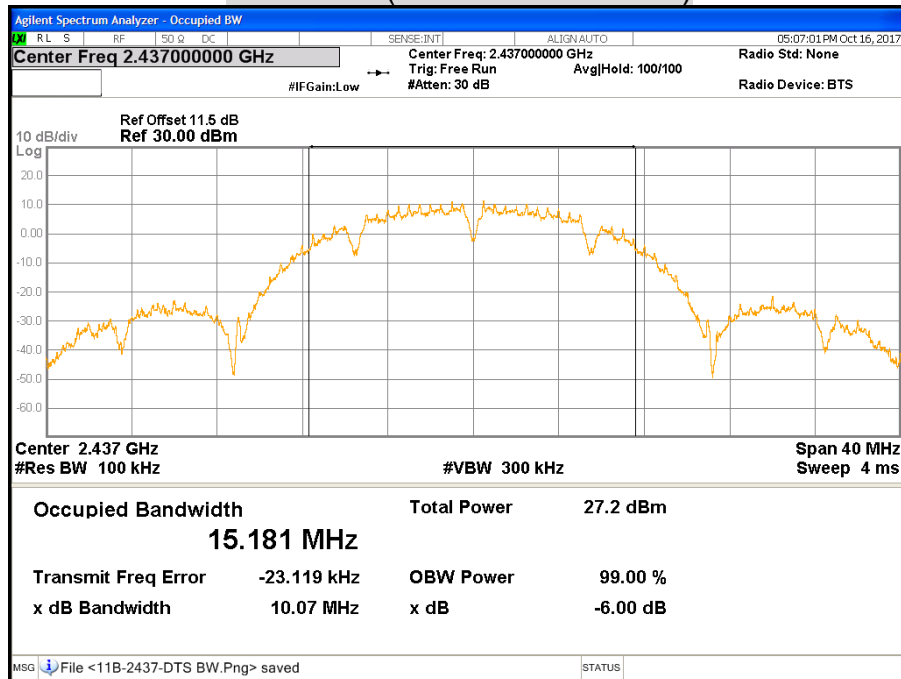
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Result
Low	2412	17.01	500	PASS
Middle	2437	17.05	500	PASS
High	2462	17.28	500	PASS

IEEE 802.11gn HT40 MCS0 Mode

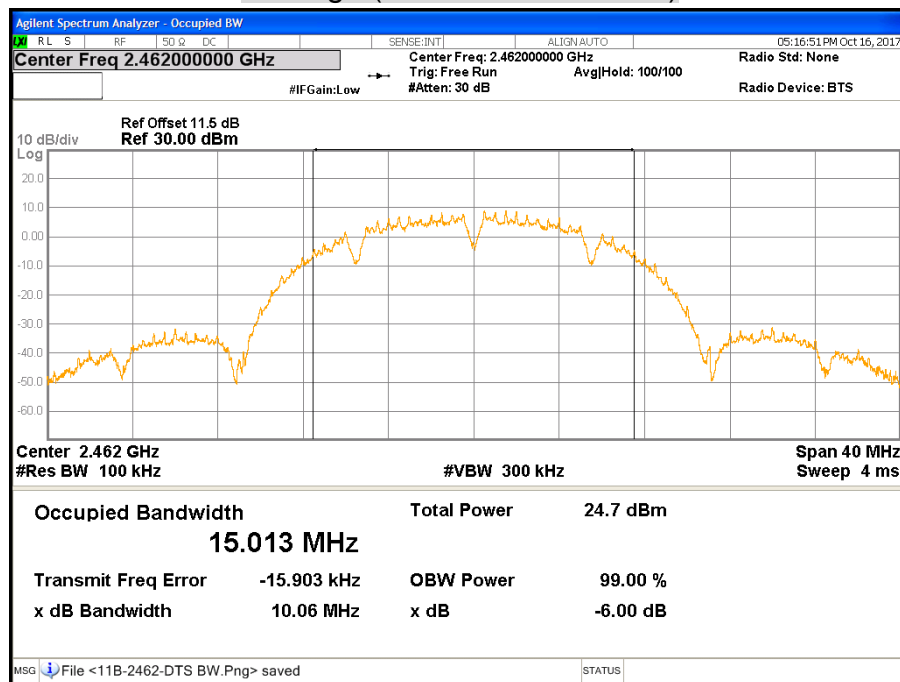
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Result
Low	2422	35.42	500	PASS
Middle	2437	35.51	500	PASS
High	2452	35.80	500	PASS

For Bluetooth 4.0 Mode:

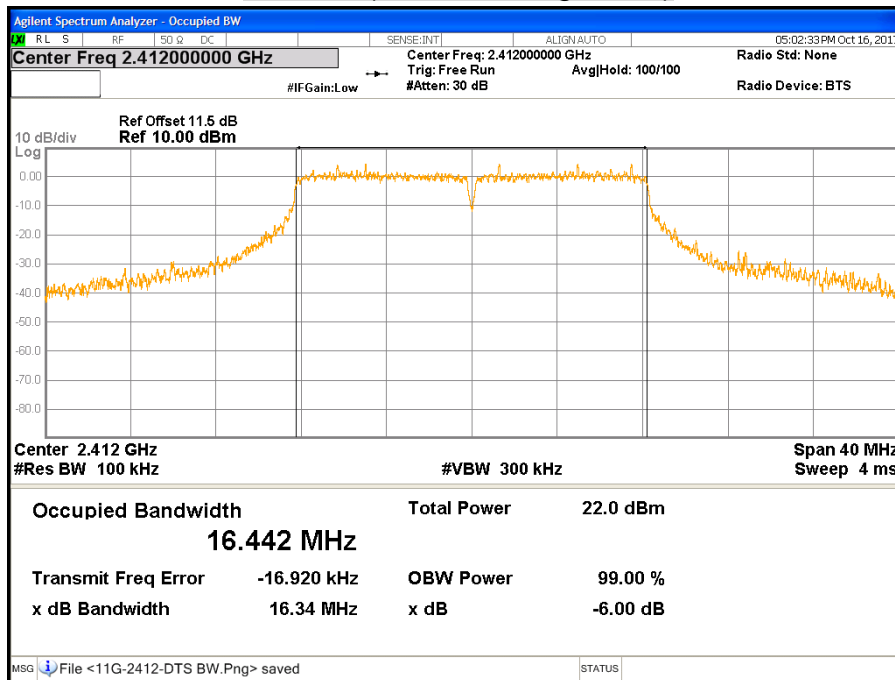
Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)	Result
Low	2402	0.683	500	PASS
Middle	2440	0.736	500	PASS
High	2480	0.713	500	PASS

6dB BANDWIDTH**CH Low (IEEE 802.11b Mode)****CH Middle (IEEE 802.11b Mode)**

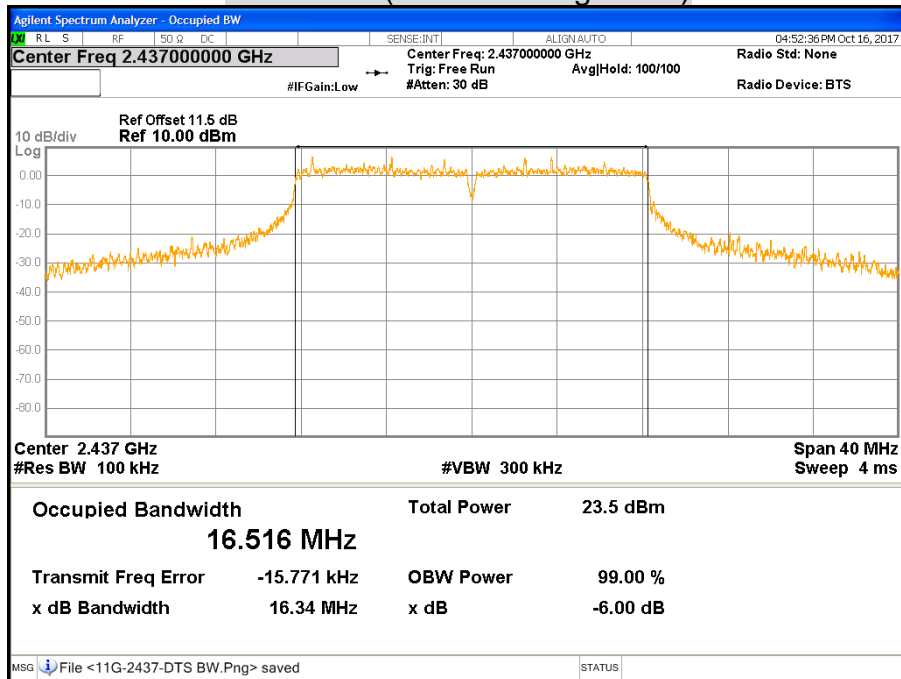
CH High (IEEE 802.11b Mode)



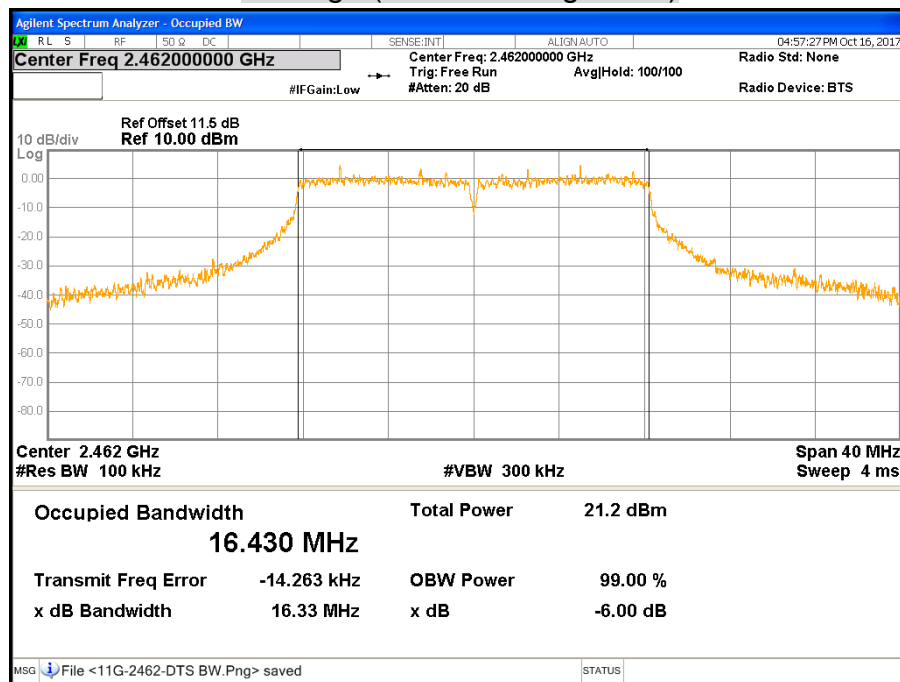
CH Low (IEEE 802.11g Mode)



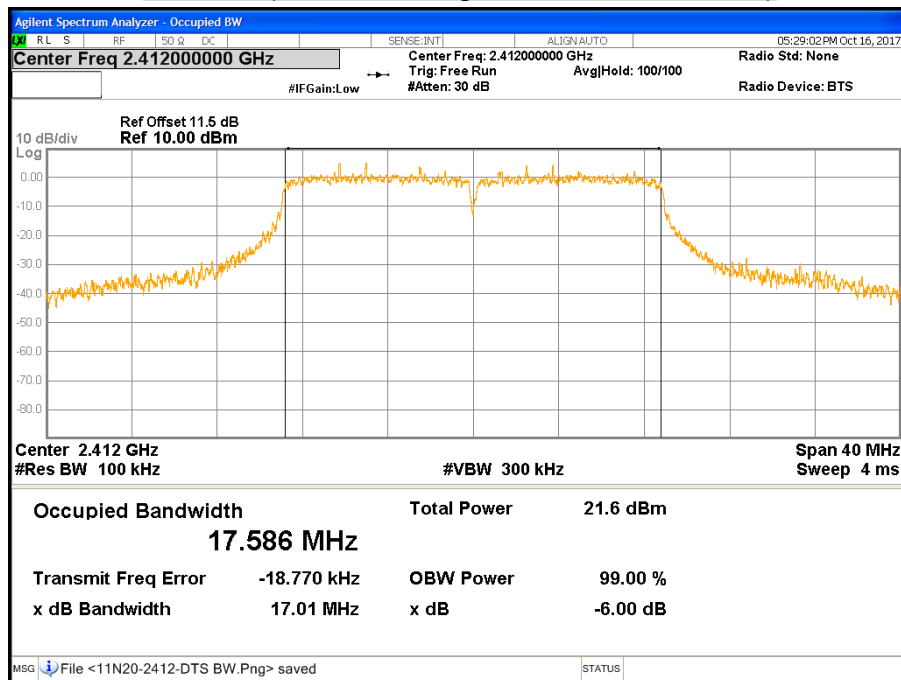
CH Middle (IEEE 802.11g Mode)



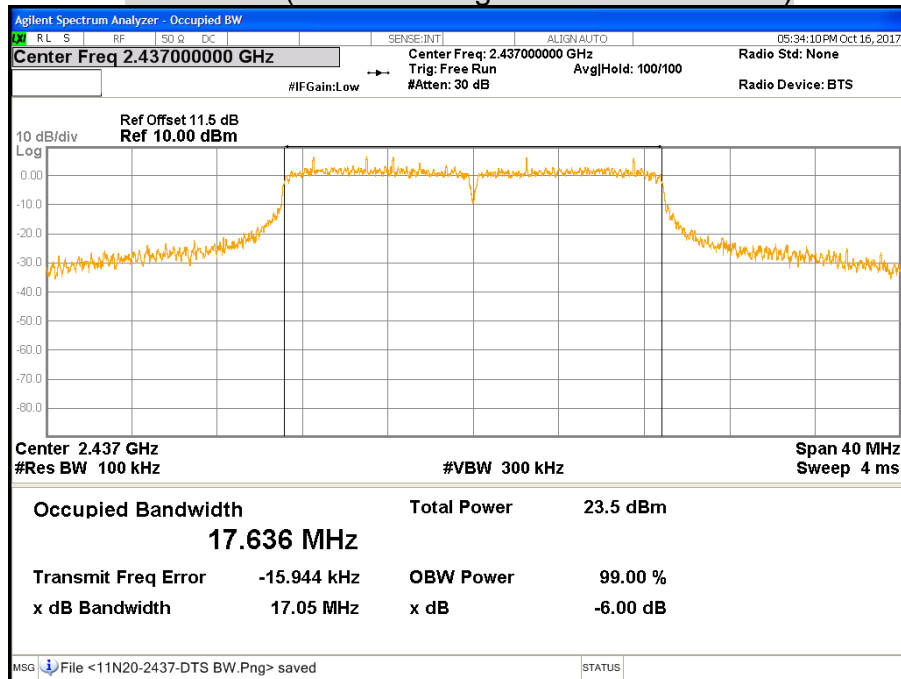
CH High (IEEE 802.11g Mode)



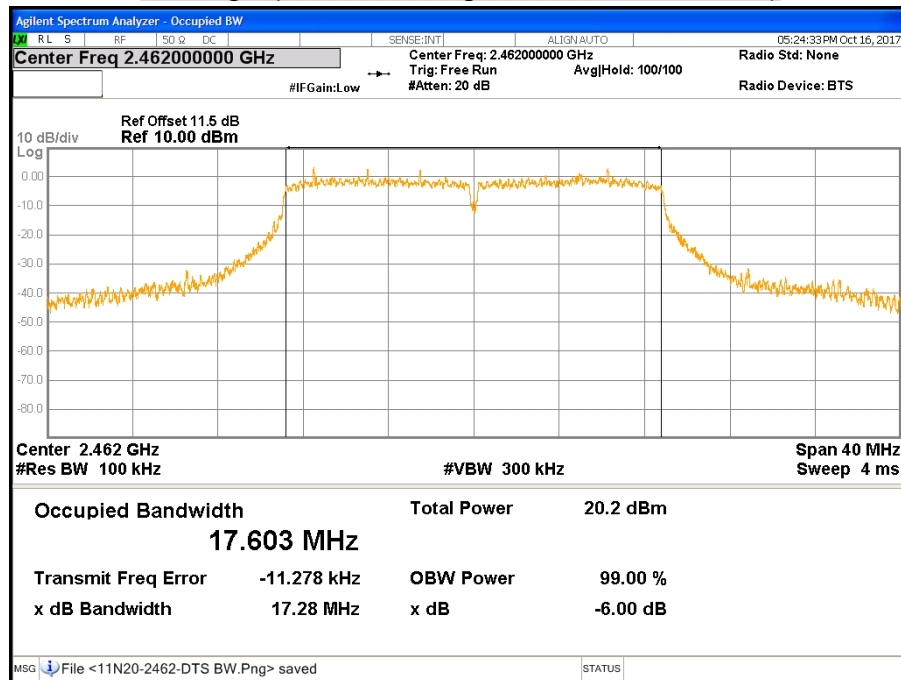
CH Low (IEEE 802.11gn HT20 MCS0 Mode)



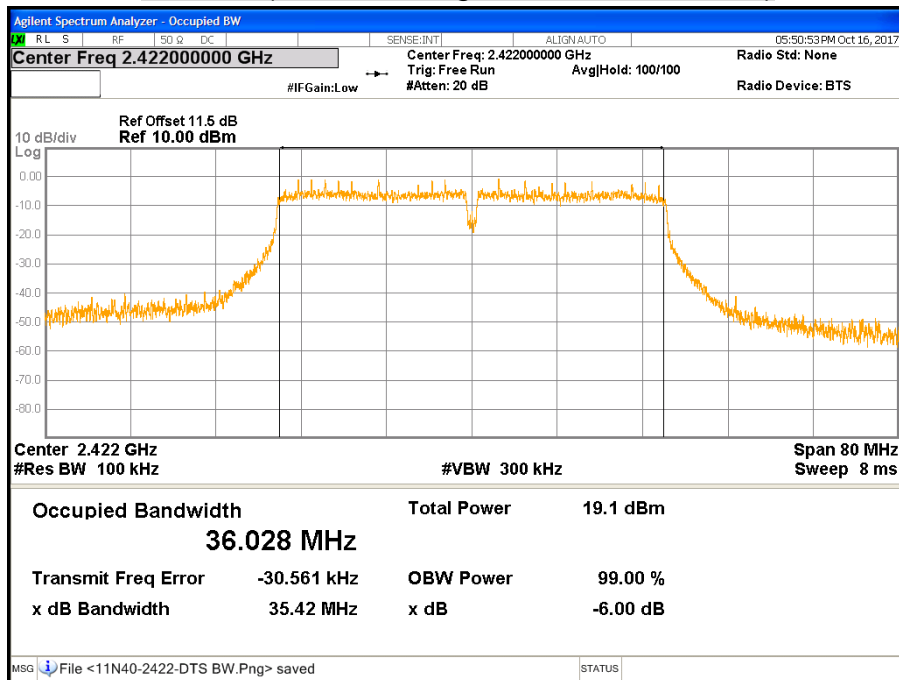
CH Middle (IEEE 802.11gn HT20 MCS0 Mode)



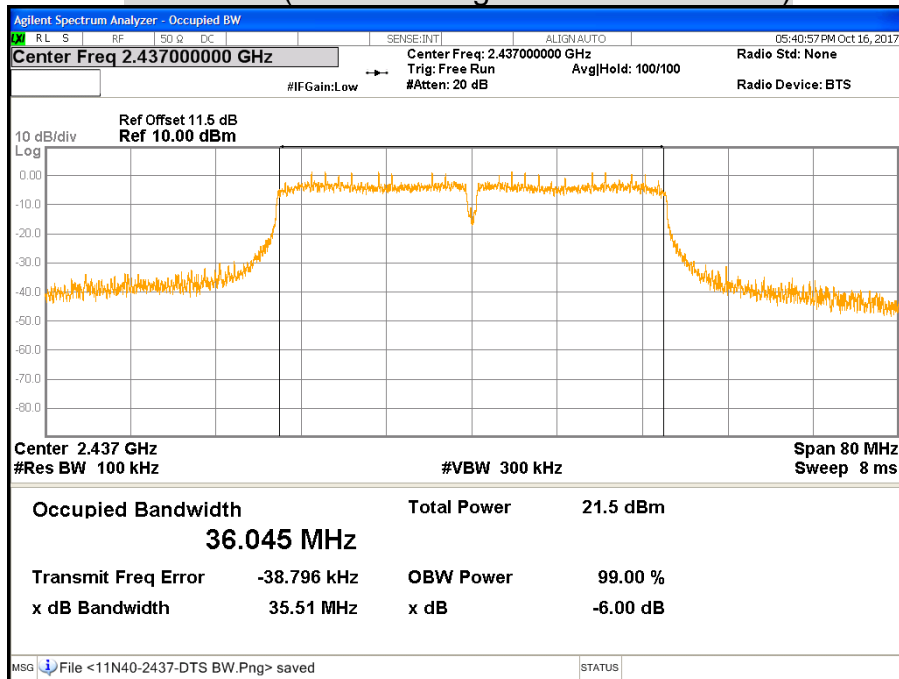
CH High (IEEE 802.11gn HT20 MCS0 Mode)



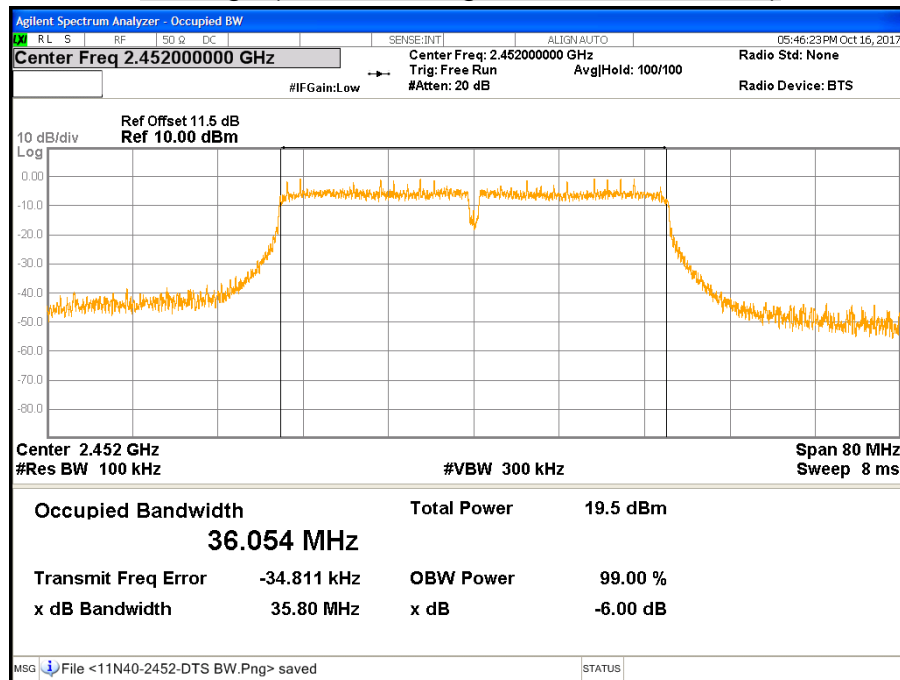
CH Low (IEEE 802.11gn HT40 MCS0 Mode)



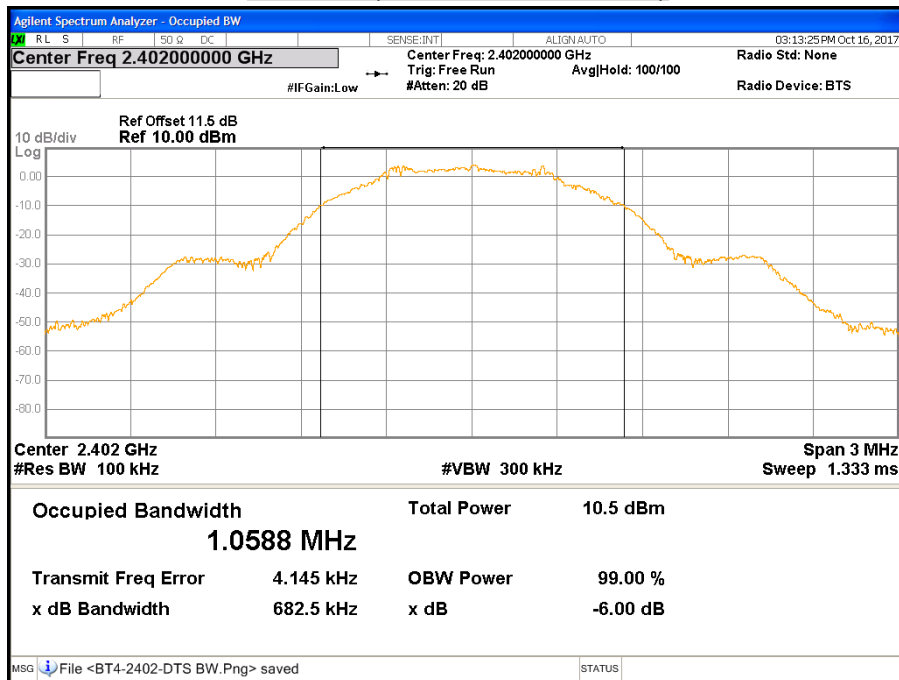
CH Middle (IEEE 802.11gn HT40 MCS0 Mode)



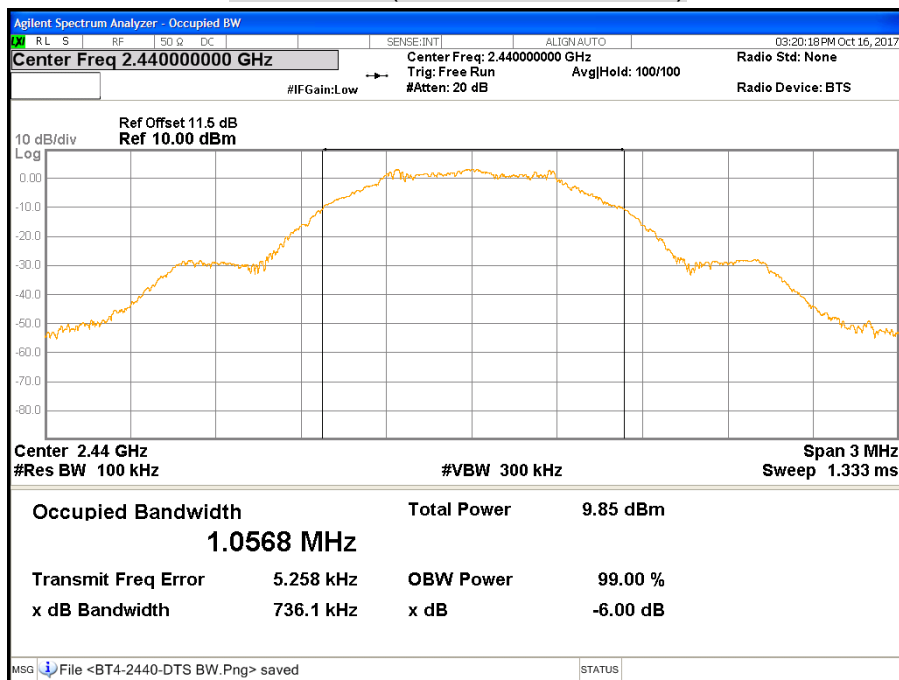
CH High (IEEE 802.11gn HT40 MCS0 Mode)



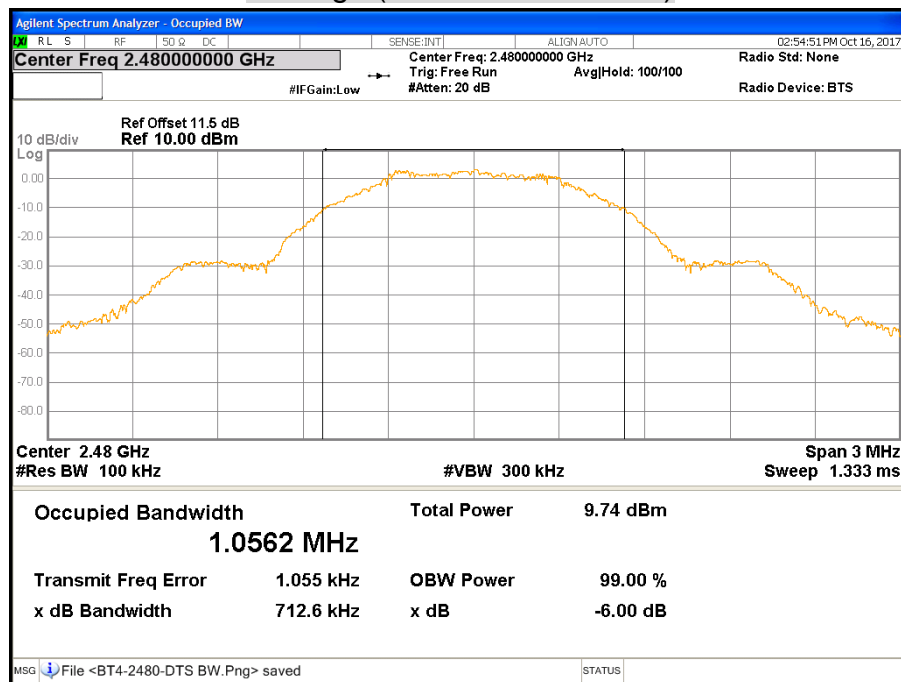
CH Low (Bluetooth 4.0 Mode)



CH Middle (Bluetooth 4.0 Mode)



CH High (Bluetooth 4.0 Mode)



7.3 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.

§ KDB 662911:

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

If antenna gains are not equal, the user may use either of the following methods to calculate directional gain, provided that each transmit antenna is driven by only one spatial stream:

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain; or,

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1149001	12/05/2017
Power Sensor	Anritsu	MA2411B	1126148	12/05/2017
Test S/W	N/A			

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

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/16
Test Mode	TX Mode	Temp. & Humidity	27°C, 56%

For WiFi Mode:**IEEE 802.11b Mode**

Channel	Channel Frequency (MHz)	Maximum Peak Output Power		Limit		Result
		(dBm)	(W)	(dBm)	(W)	
Low	2412	20.02	0.1005	30.00	1.0000	PASS
Middle	2437	22.63	0.1832	30.00	1.0000	PASS
High	2462	20.41	0.1099	30.00	1.0000	PASS

Remark:

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 30 dBm.

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	Maximum Peak Output Power		Limit		Result
		(dBm)	(W)	(dBm)	(W)	
Low	2412	23.89	0.2449	30.00	1.0000	PASS
Middle	2437	24.13	0.2588	30.00	1.0000	PASS
High	2462	23.32	0.2148	30.00	1.0000	PASS

Remark:

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 30 dBm.

IEEE 802.11gn HT20 MCS0 Mode

Channel	Channel Frequency (MHz)	Maximum Peak Output Power		Limit		Result
		(dBm)	(W)	(dBm)	(W)	
Low	2412	23.73	0.2360	30.00	1.0000	PASS
Middle	2437	24.39	0.2748	30.00	1.0000	PASS
High	2462	22.59	0.1816	30.00	1.0000	PASS

Remark:

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 30 dBm.

IEEE 802.11gn HT40 MCS0 Mode

Channel	Channel Frequency (MHz)	Maximum Peak Output Power		Limit		Result
		(dBm)	(W)	(dBm)	(W)	
Low	2422	21.68	0.1472	30.00	1.0000	PASS
Middle	2437	23.77	0.2382	30.00	1.0000	PASS
High	2452	21.71	0.1483	30.00	1.0000	PASS

Remark:

1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 30 dBm.

For Bluetooth 4.0 Mode:

Channel	Channel Frequency (MHz)	Maximum Peak Output Power				Result
		Measured Value		Limit		
		(dBm)	(W)	(dBm)	(W)	
Low	2402	4.83	0.0030	30.00	1.0000	PASS
Middle	2440	4.25	0.0027	30.00	1.0000	PASS
High	2480	4.12	0.0026	30.00	1.0000	PASS

Remark:

1. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.
2. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 30 dBm.

7.4 AVERAGE POWER

LIMITS

None: For reporting purposes only.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Power Meter	Anritsu	ML2495A	1149001	12/05/2017
Power Sensor	Anritsu	MA2411B	1126148	12/05/2017
Test S/W	N/A			

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 average power detection.

TEST RESULTS

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/16
Test Mode	TX Mode	Temp. & Humidity	27°C, 56%

For WiFi Mode:

IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	17.22
Middle	2437	20.60
High	2462	18.24

Remark:

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	16.02
Middle	2437	17.55
High	2462	15.32

Remark:

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11gn HT20 MCS0 Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	15.60
Middle	2437	17.58
High	2462	14.27

Remark:

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11gn HT40 MCS0 Mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2422	13.04
Middle	2437	15.36
High	2452	13.49

Remark:

1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

For Bluetooth 4.0 Mode:

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2402	4.50
Middle	2440	3.90
High	2480	3.82

Remark: The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

7.5 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.

§ KDB 662911:

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

If antenna gains are not equal, the user may use either of the following methods to calculate directional gain, provided that each transmit antenna is driven by only one spatial stream:

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain; or,

$$Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EXA Signal Analyzer	Agilent	N9010A	MY52220817	03/07/2018
Test S/W	N/A			

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 to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
5. Set the VBW $\geq 3 \times \text{RBW}$.
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 within the RBW.
11. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST RESULTS

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/16
Test Mode	TX Mode	Temp. & Humidity	27°C, 56%

For WiFi Mode:

IEEE 802.11b Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Result
		Measured Value	Limit	
Low	2412	-0.65	8	PASS
Middle	2437	2.35	8	PASS
High	2462	1.05	8	PASS

Remark:

1. At final test to get the worst-case emission at 1Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 8 dBm.

IEEE 802.11g Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Result
		Measured Value	Limit	
Low	2412	-4.45	8	PASS
Middle	2437	-2.70	8	PASS
High	2462	-4.24	8	PASS

Remark:

1. At final test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 8 dBm.

IEEE 802.11gn HT20 MCS0 Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Result
		Measured Value	Limit	
Low	2412	-4.29	8	PASS
Middle	2437	-1.96	8	PASS
High	2462	-4.87	8	PASS

Remark:

1. At final test to get the worst-case emission at 6.5Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 8 dBm.

IEEE 802.11gn HT40 MCS0 Mode

Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Result
		Measured Value	Limit	
Low	2422	-10.21	8	PASS
Middle	2437	-6.99	8	PASS
High	2452	-9.84	8	PASS

Remark:

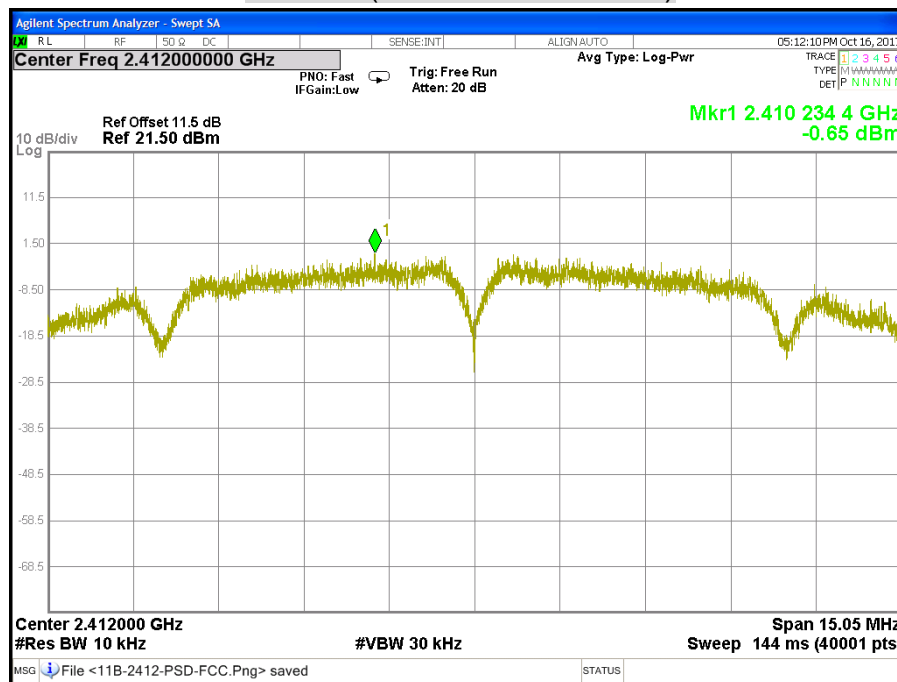
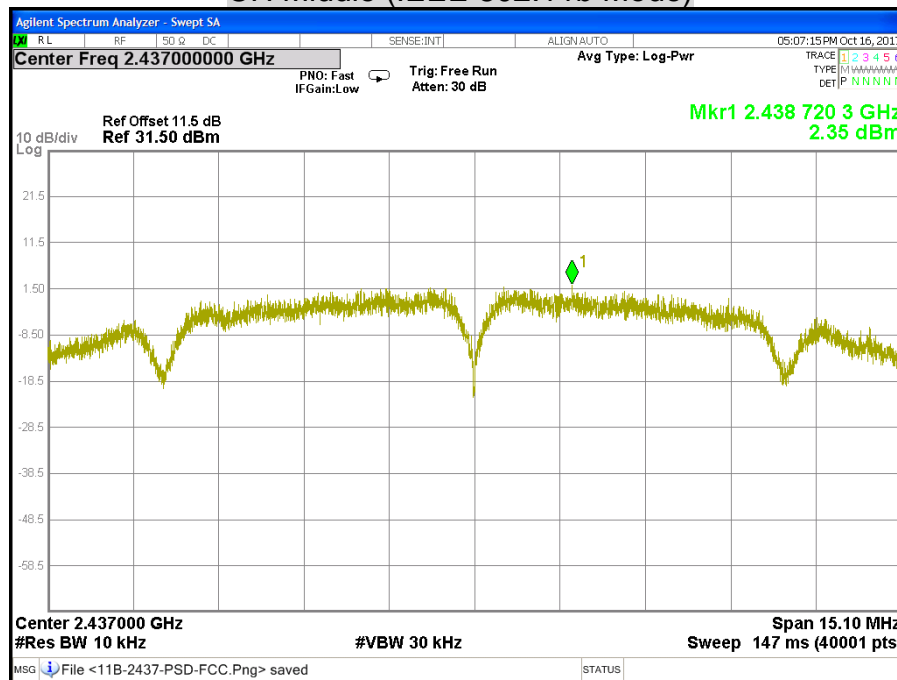
1. At final test to get the worst-case emission at 13.5Mbps.
2. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.
3. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 8 dBm.

Bluetooth 4.0 Mode

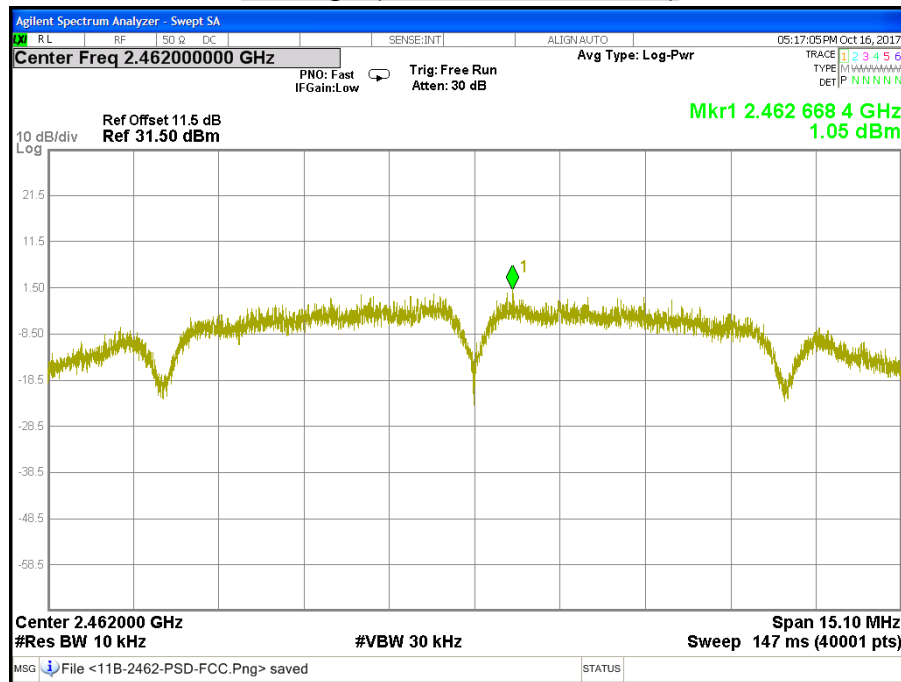
Channel	Channel Frequency (MHz)	Final RF Power Level in 3KHz BW (dBm)		Result
		Measured Value	Limit	
Low	2402	-3.73	8	PASS
Middle	2440	-4.18	8	PASS
High	2480	-4.30	8	PASS

Remark:

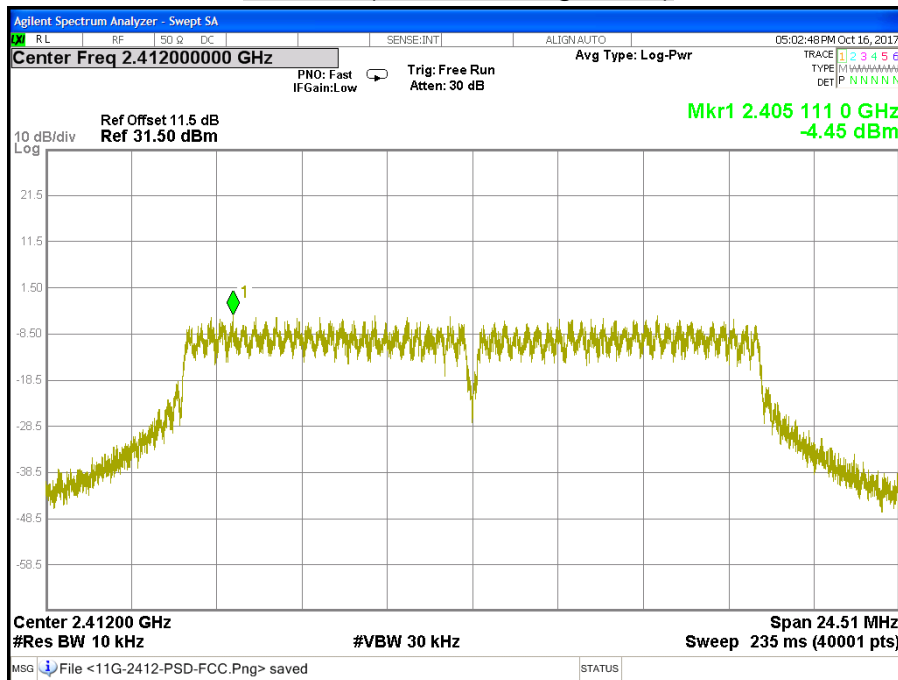
1. The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.
2. The maximum antenna gain is 2.68 dBi which is less than 6dBi, the limit should be 8 dBm.

POWER SPECTRAL DENSITY**CH Low (IEEE 802.11b Mode)****CH Middle (IEEE 802.11b Mode)**

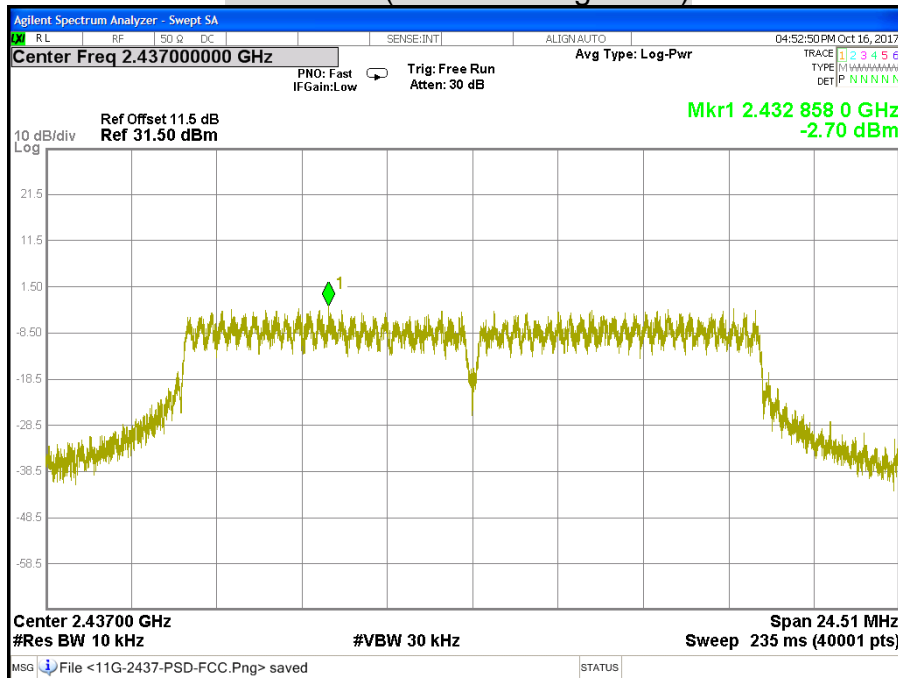
CH High (IEEE 802.11b Mode)



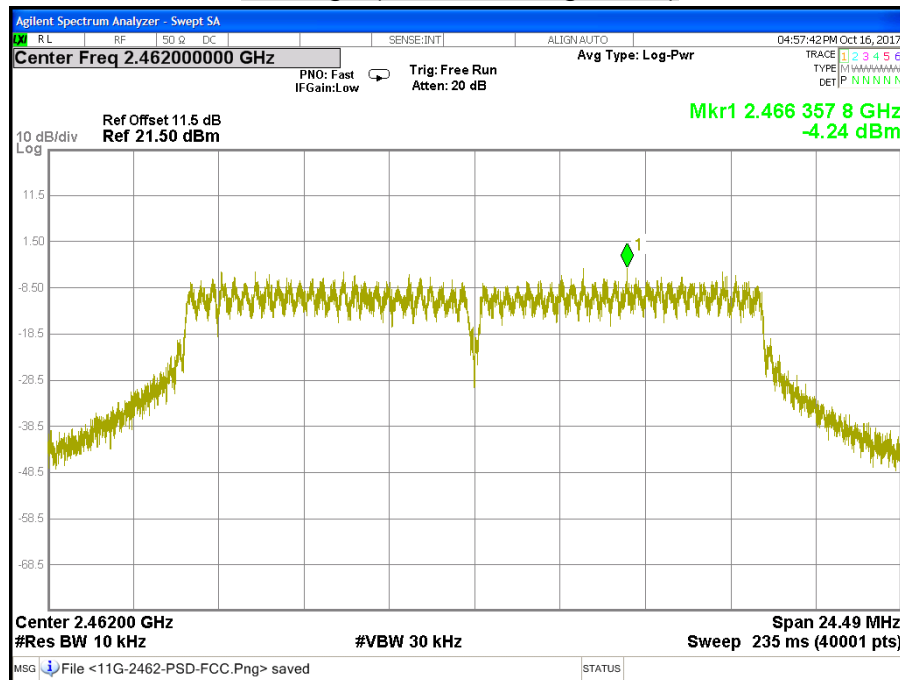
CH Low (IEEE 802.11g Mode)



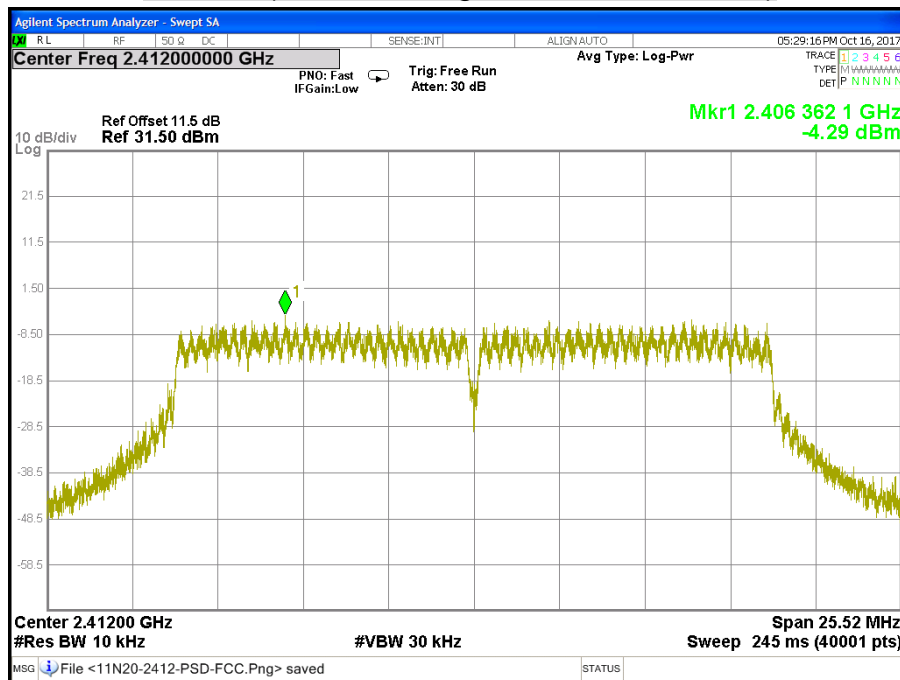
CH Middle (IEEE 802.11g Mode)



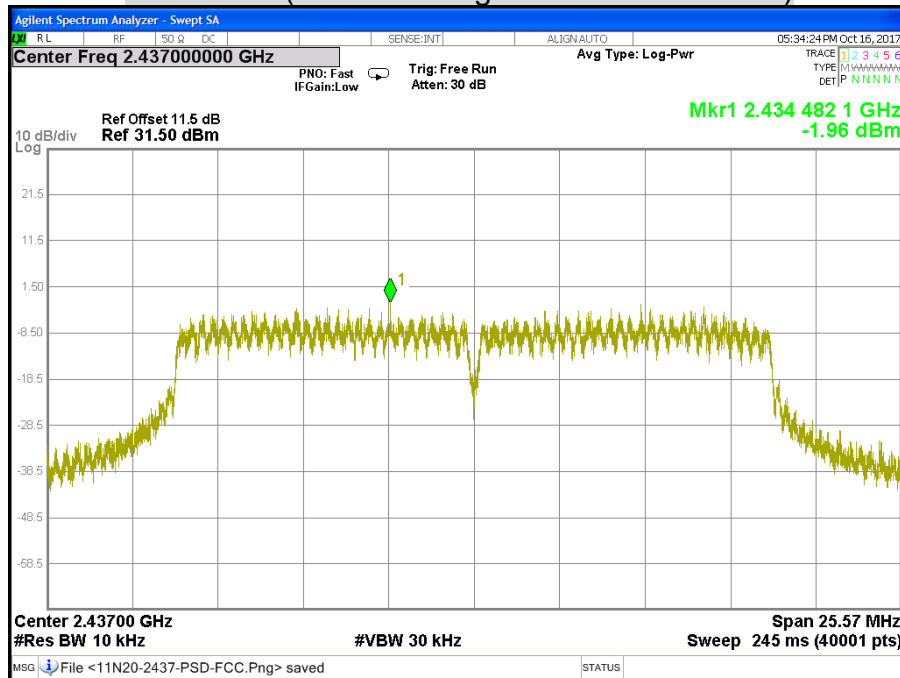
CH High (IEEE 802.11g Mode)



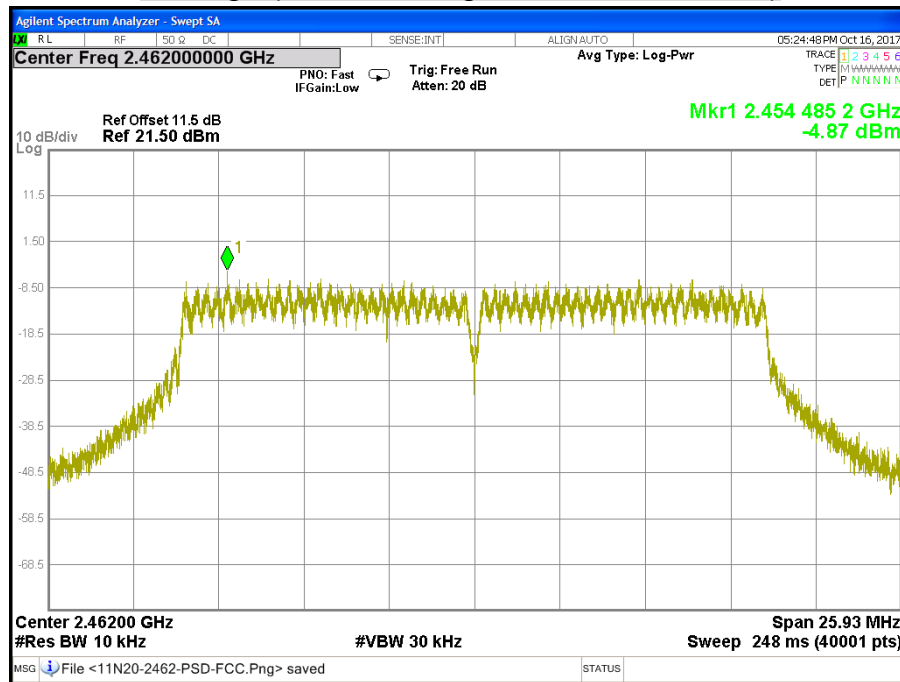
CH Low (IEEE 802.11gn HT20 MCS0 Mode)



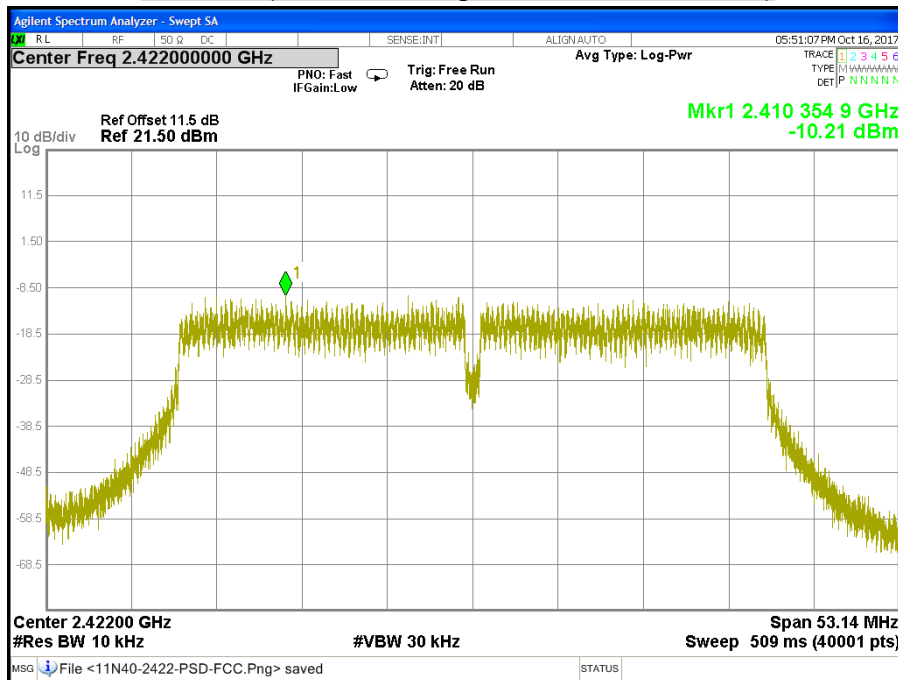
CH Middle (IEEE 802.11gn HT20 MCS0 Mode)



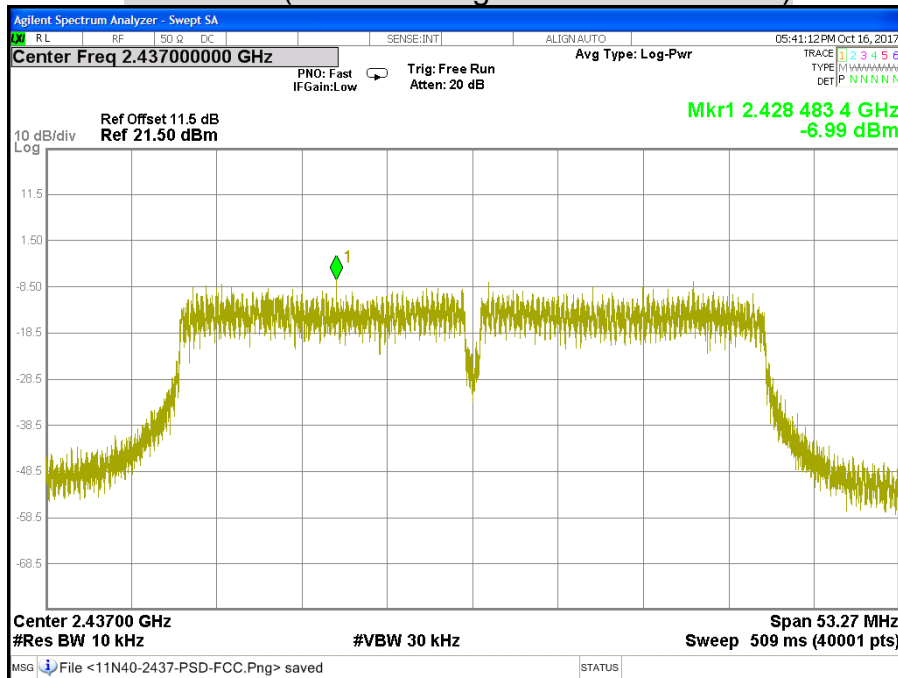
CH High (IEEE 802.11gn HT20 MCS0 Mode)



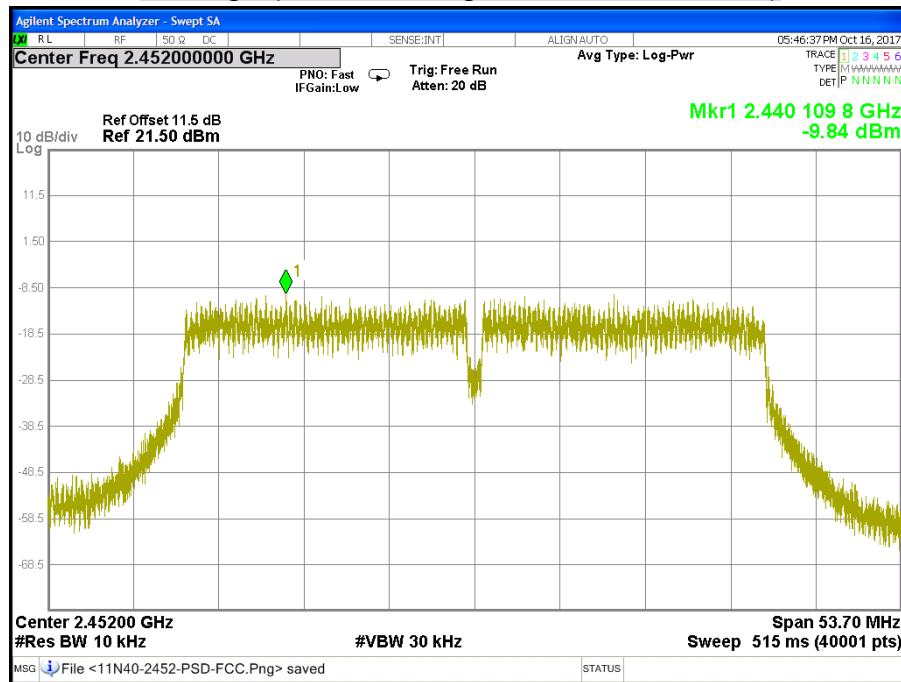
CH Low (IEEE 802.11gn HT40 MCS0 Mode)



CH Middle (IEEE 802.11gn HT40 MCS0 Mode)



CH High (IEEE 802.11gn HT40 MCS0 Mode)



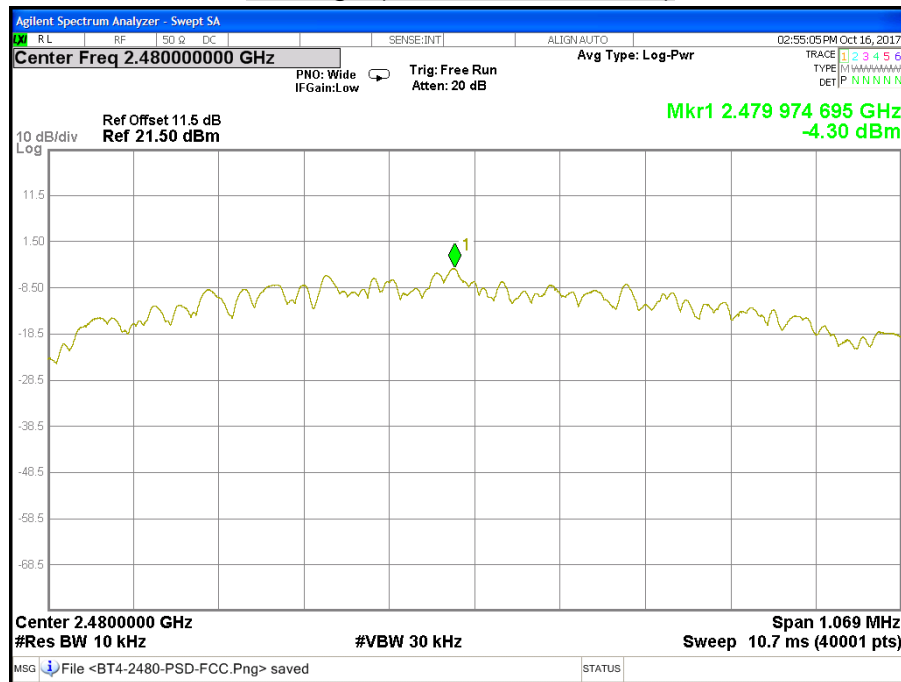
CH Low (Bluetooth 4.0 Mode)



CH Middle (Bluetooth 4.0 Mode)



CH High (Bluetooth 4.0 Mode)



7.6 CONDUCTED SPURIOUS EMISSION

LIMITS

§ 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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
EXA Signal Analyzer	Agilent	N9010A	MY52220817	03/07/2018
Test S/W	N/A			

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

TEST SETUP



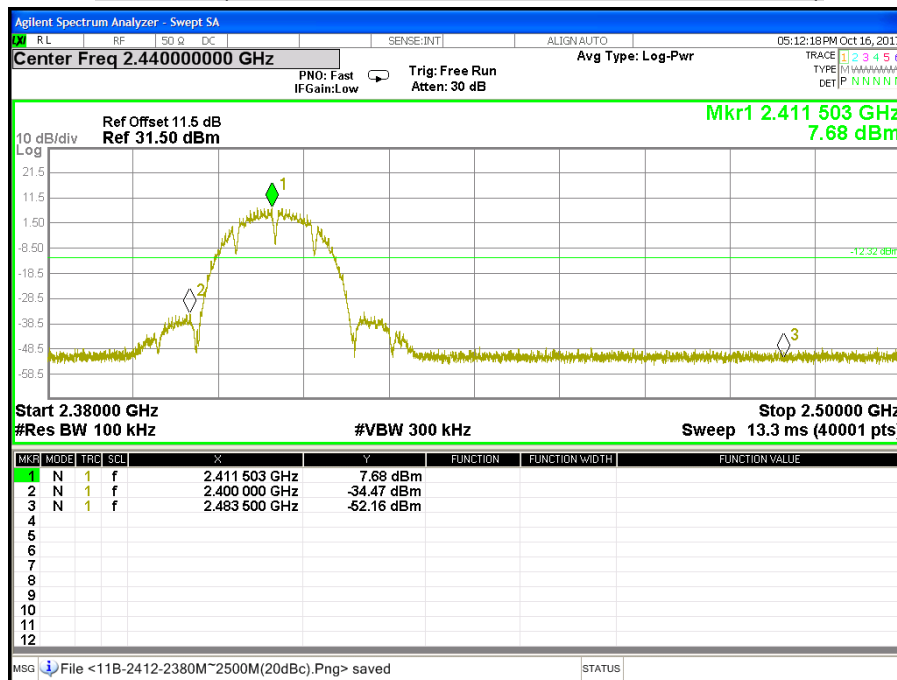
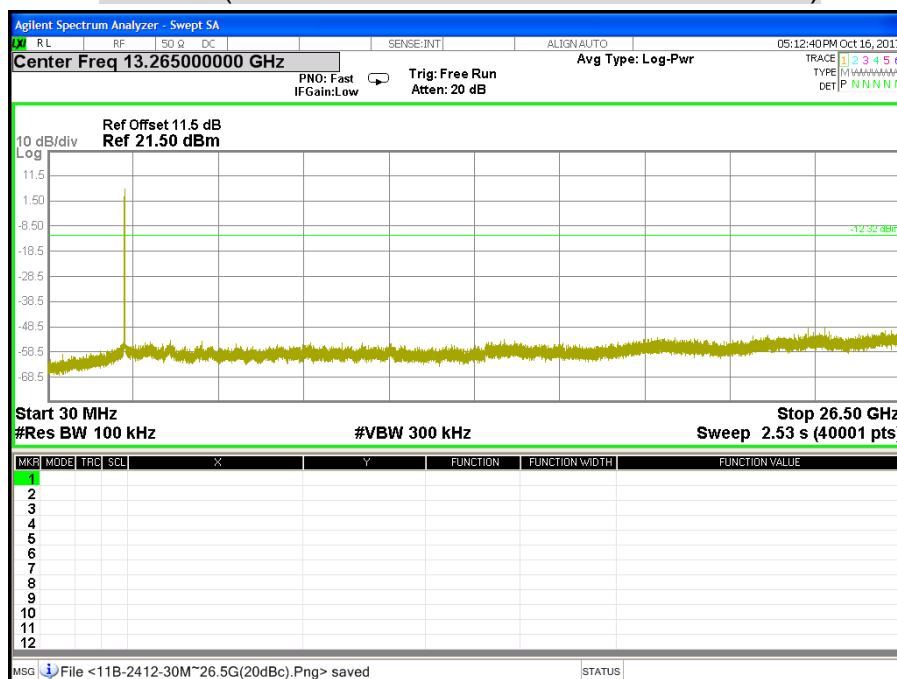
TEST PROCEDURE

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.

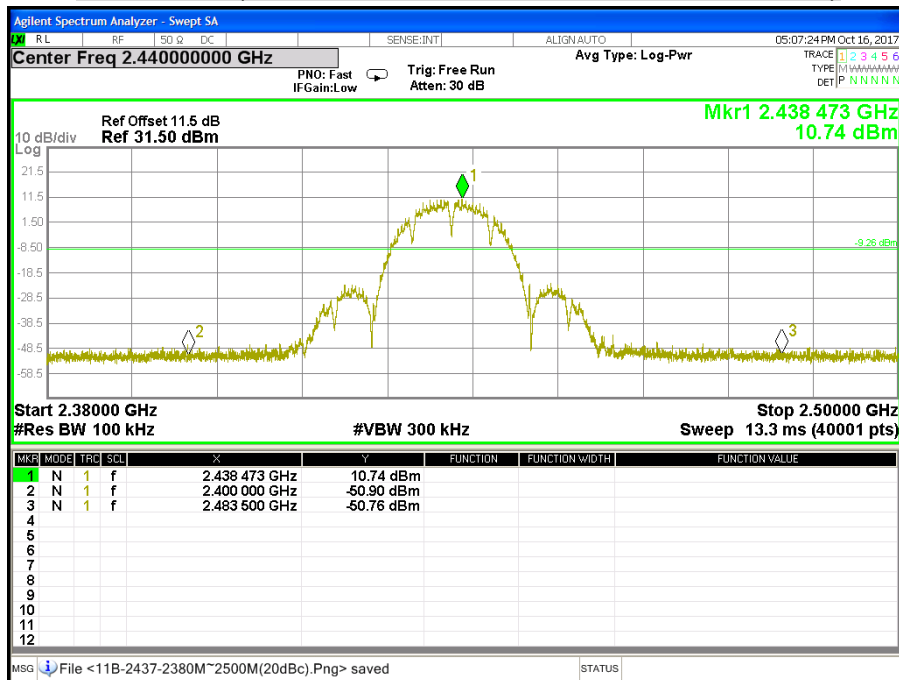
The spectrum from 30 MHz to 26.5 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

TEST RESULTS

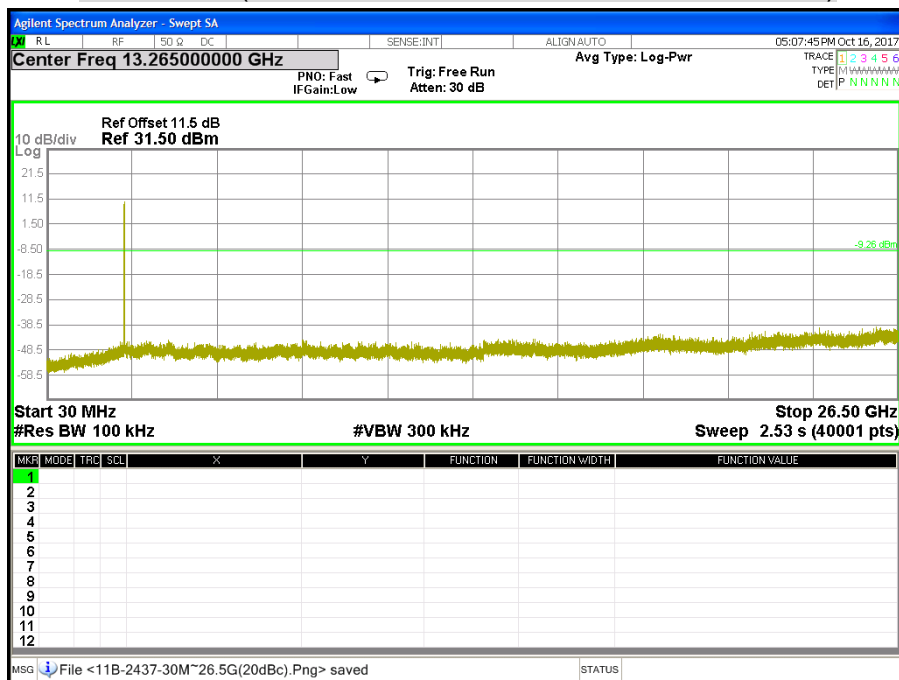
Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/16
Test Mode	TX Mode	Temp. & Humidity	27°C, 56%

OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT**CH Low (2.38GHz ~ 2.5GHz / IEEE 802.11b Mode)****CH Low (30MHz ~ 26.5GHz / IEEE 802.11b Mode)**

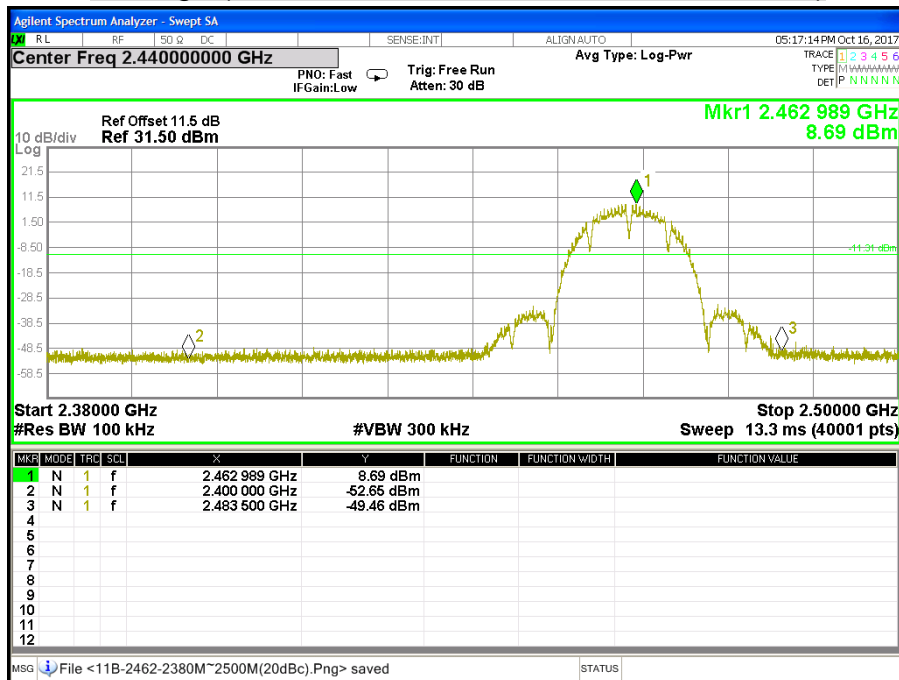
CH Middle (2.38GHz ~ 2.5GHz / IEEE 802.11b Mode)



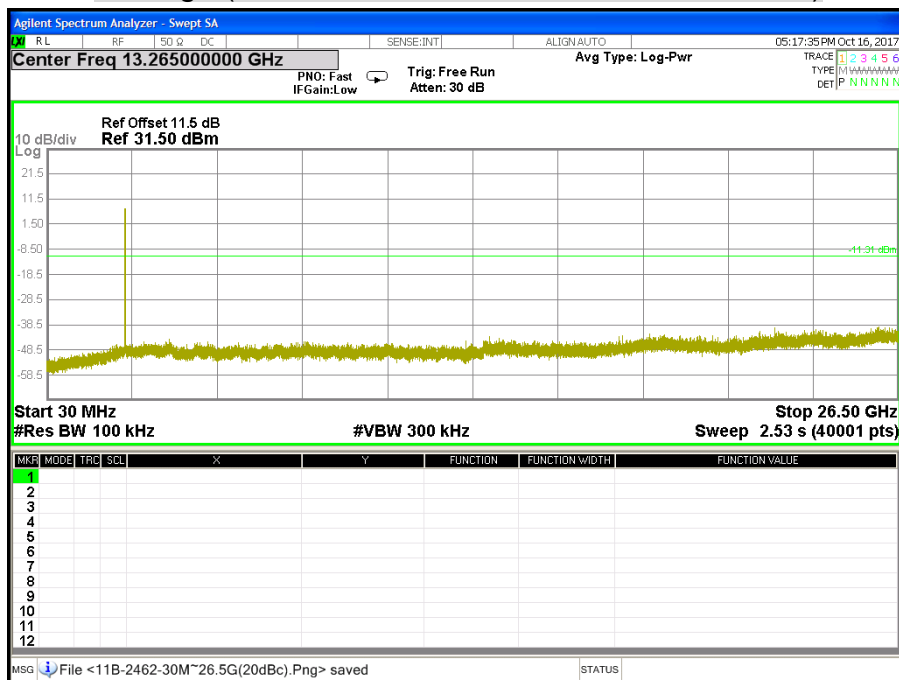
CH Middle (30MHz ~ 26.5GHz / IEEE 802.11b Mode)



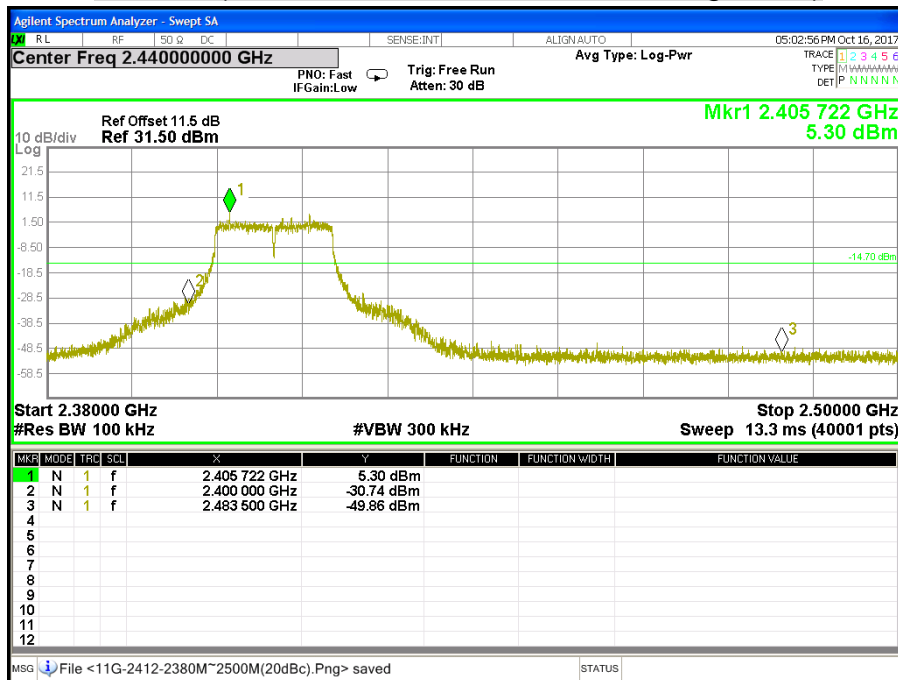
CH High (2.38GHz ~ 2.5GHz / IEEE 802.11b Mode)



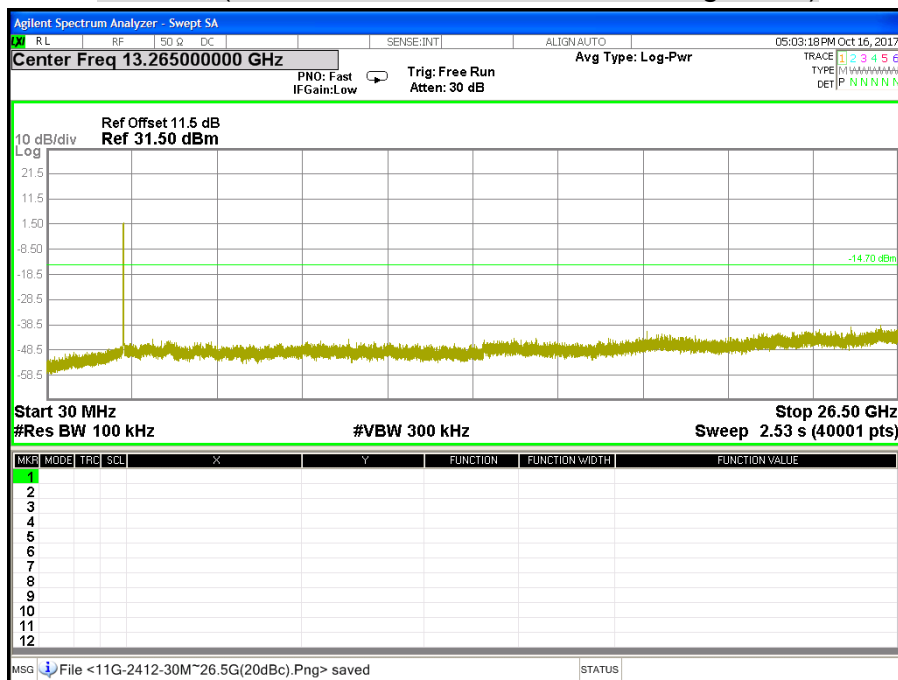
CH High (30MHz ~ 26.5GHz / IEEE 802.11b Mode)



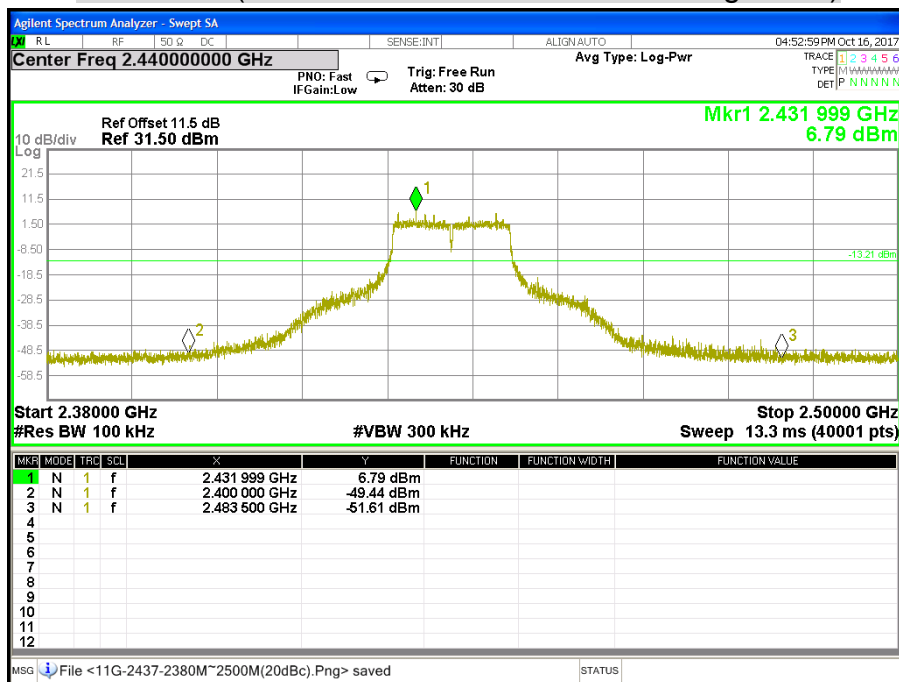
CH Low (2.38GHz ~ 2.5GHz / IEEE 802.11g Mode)



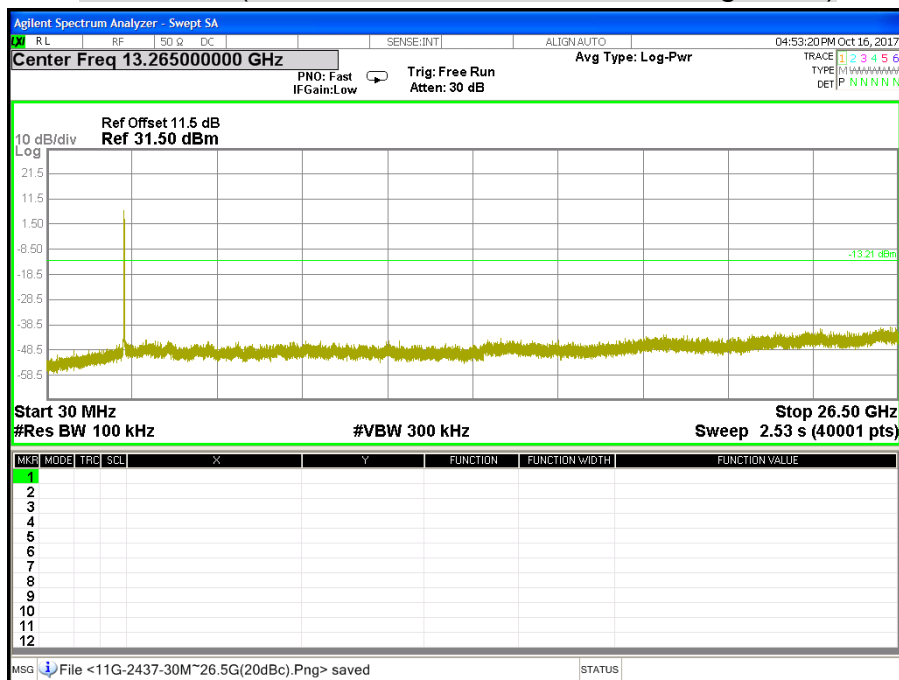
CH Low (30MHz ~ 26.5GHz / IEEE 802.11g Mode)



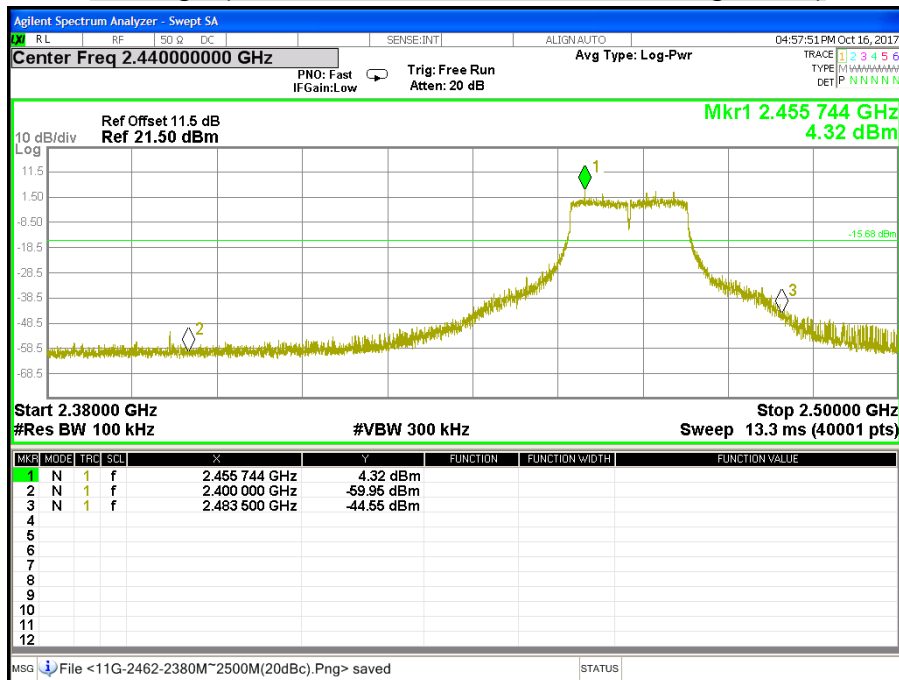
CH Middle (2.38GHz ~ 2.5GHz / IEEE 802.11g Mode)



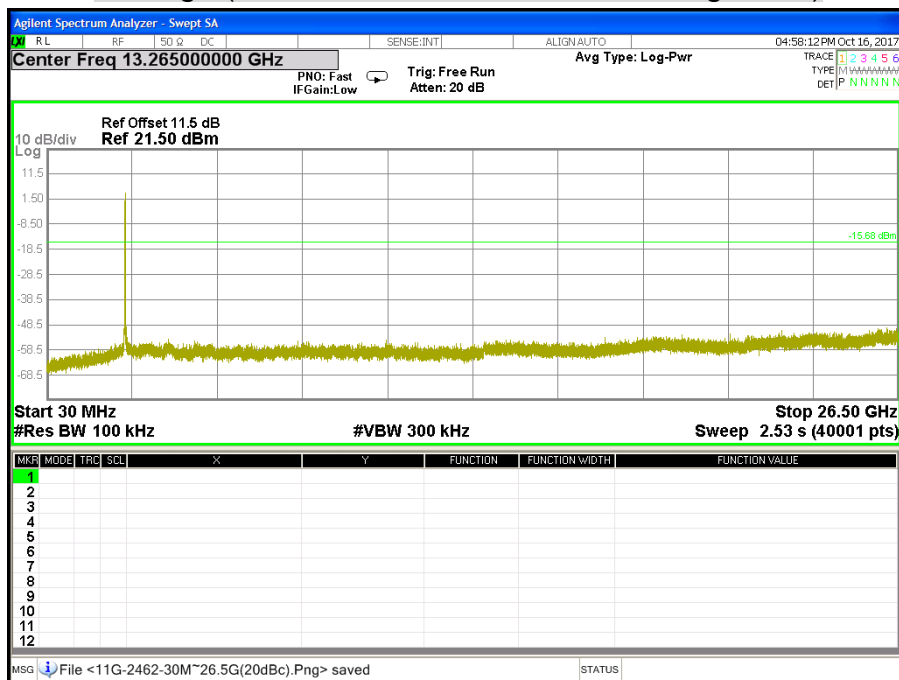
CH Middle (30MHz ~ 26.5GHz / IEEE 802.11g Mode)



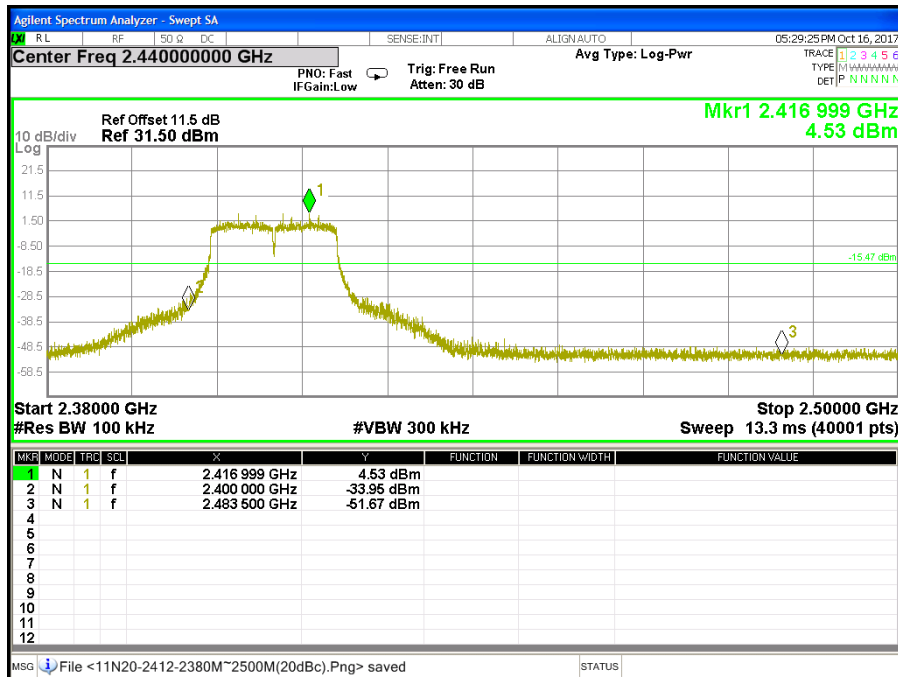
CH High (2.38GHz ~ 2.5GHz / IEEE 802.11g Mode)



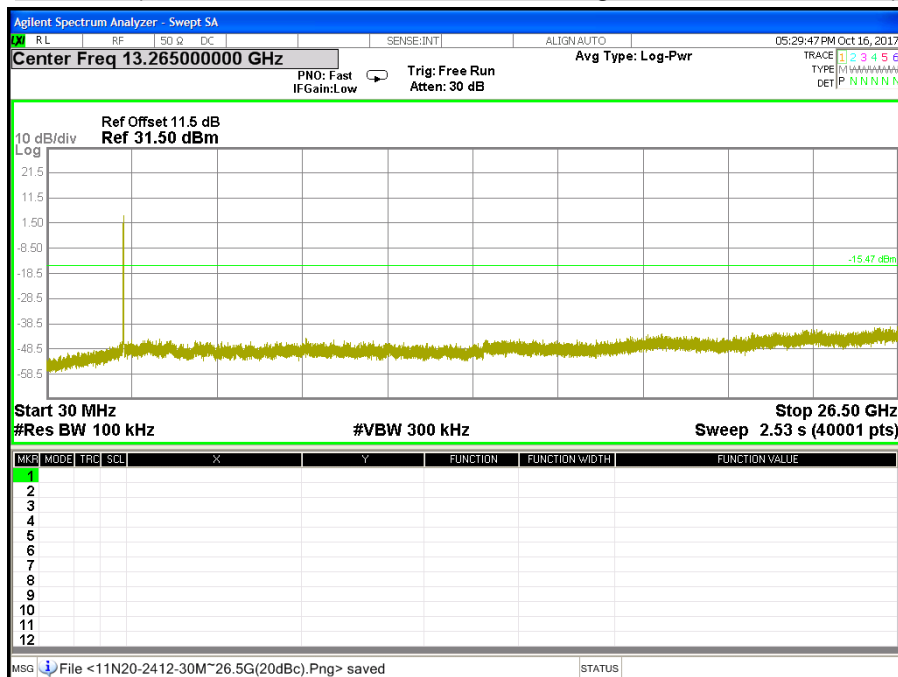
CH High (30MHz ~ 26.5GHz / IEEE 802.11g Mode)



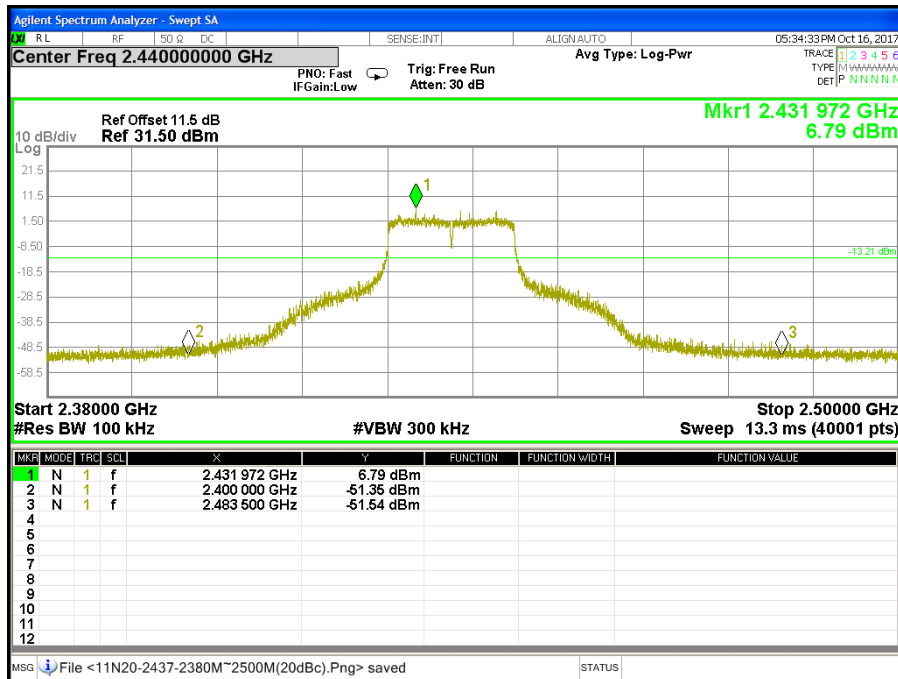
CH Low (2.38GHz ~ 2.5GHz / IEEE 802.11gn HT20 MCS0 Mode)



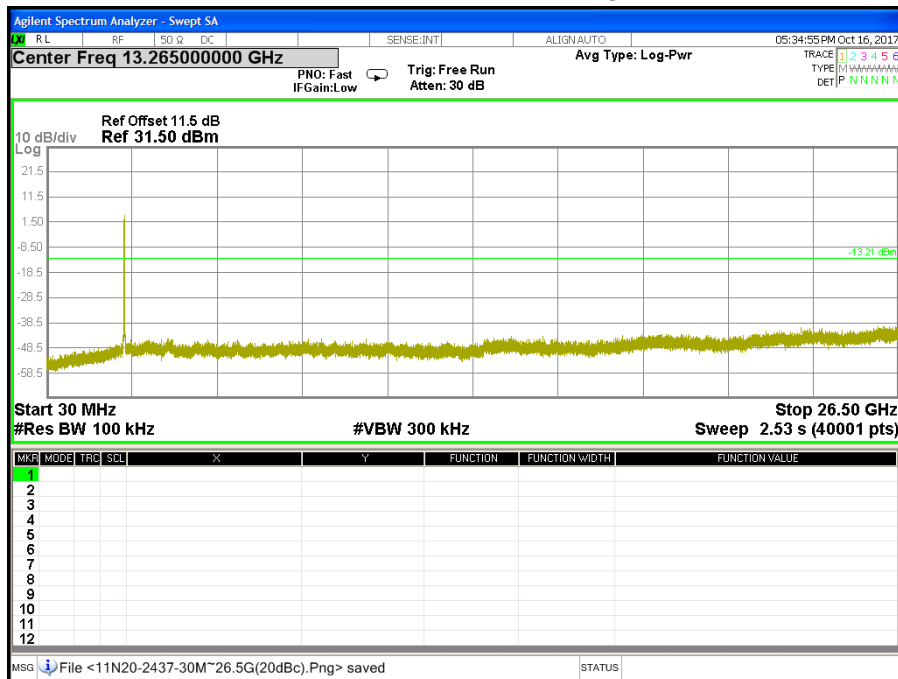
CH Low (30MHz ~ 26.5GHz / IEEE 802.11gn HT20 MCS0 Mode)



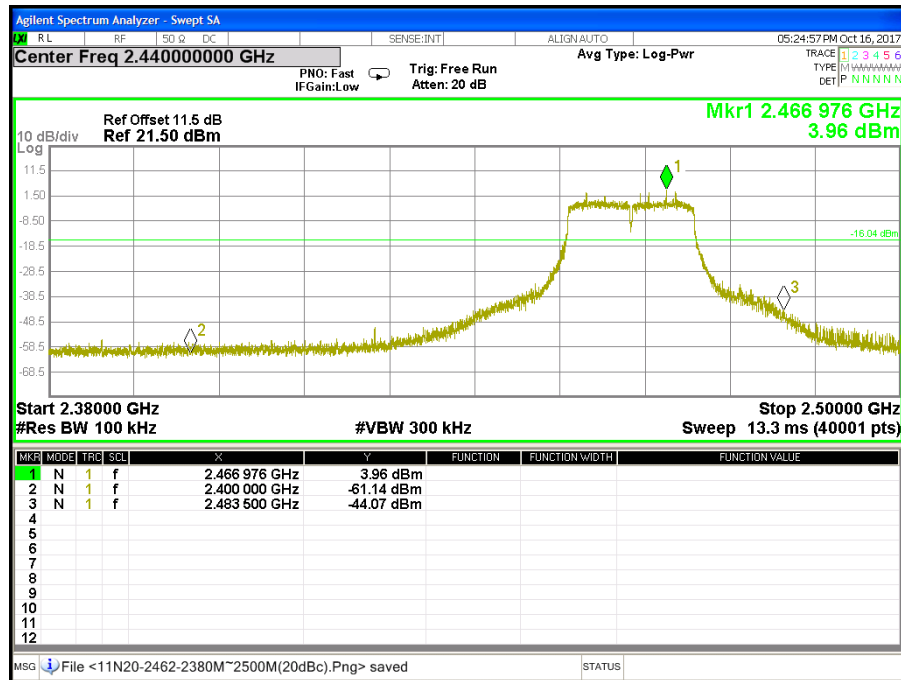
CH Middle (2.38GHz ~ 2.5GHz / IEEE 802.11gn HT20 MCS0 Mode)



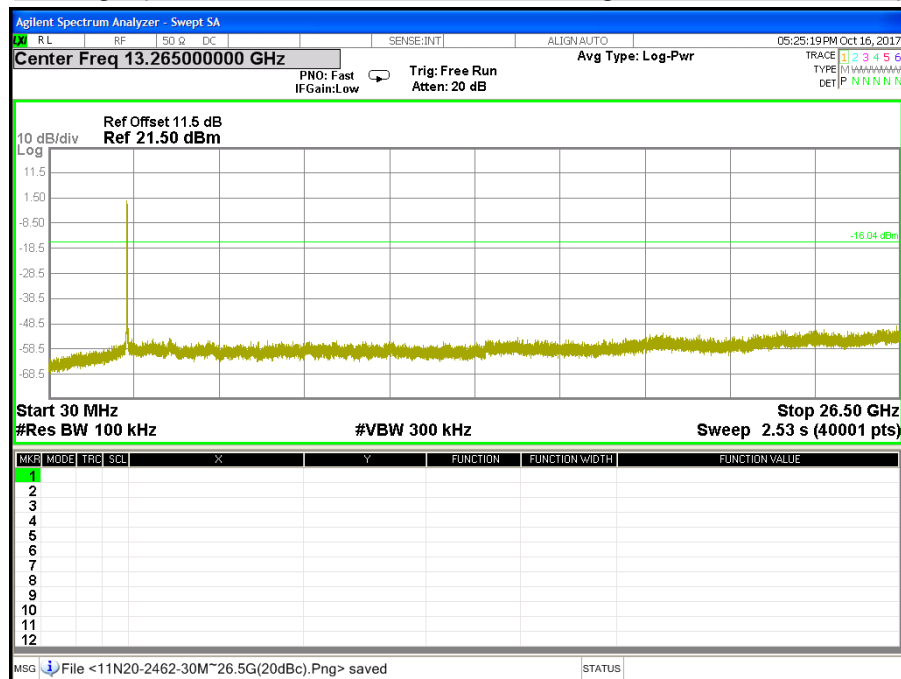
CH Middle (30MHz ~ 26.5GHz / IEEE 802.11gn HT20 MCS0 Mode)



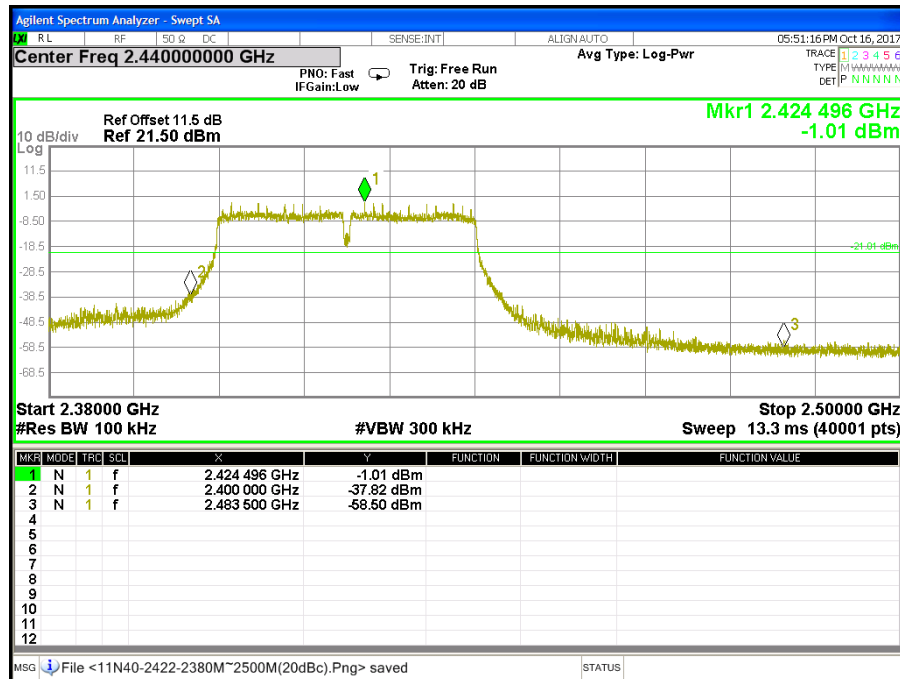
CH High (2.38GHz ~ 2.5GHz / IEEE 802.11gn HT20 MCS0 Mode)



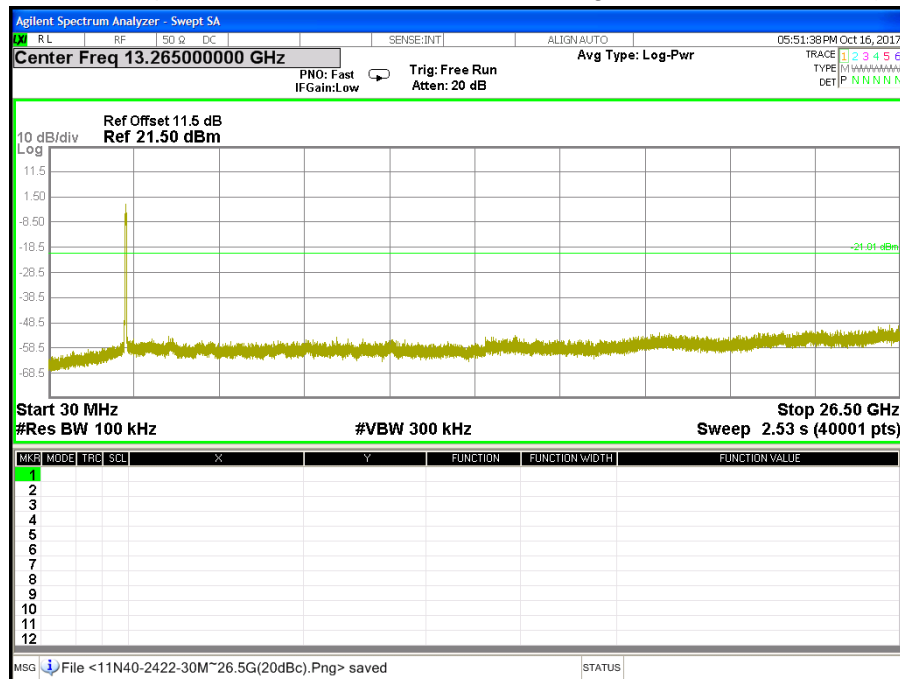
CH High (30MHz ~ 26.5GHz / IEEE 802.11gn HT20 MCS0 Mode)



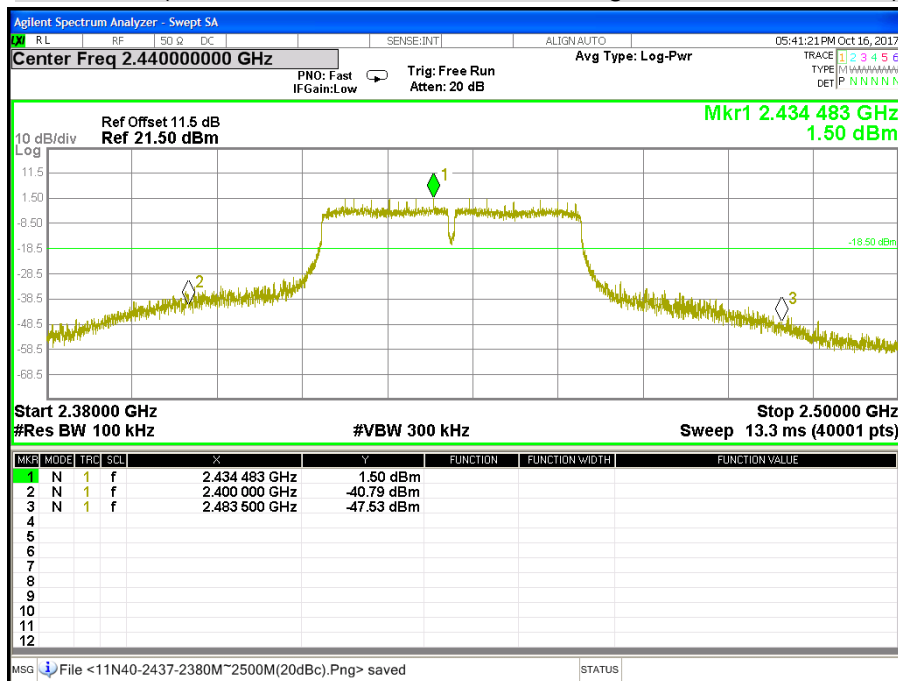
CH Low (2.38GHz ~ 2.5GHz / IEEE 802.11gn HT40 MCS0 Mode)



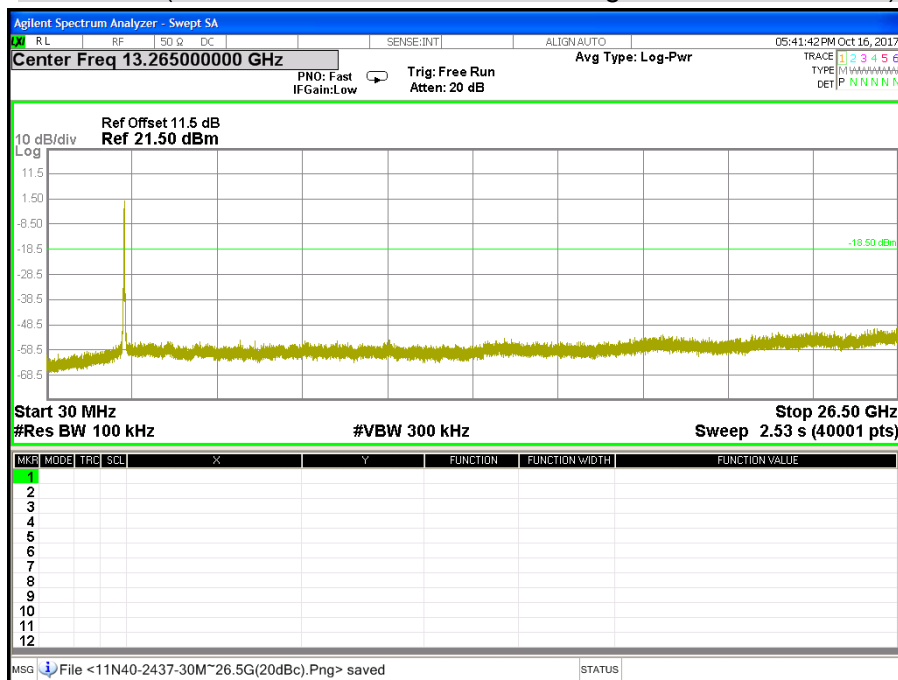
CH Low (30MHz ~ 26.5GHz / IEEE 802.11gn HT40 MCS0 Mode)



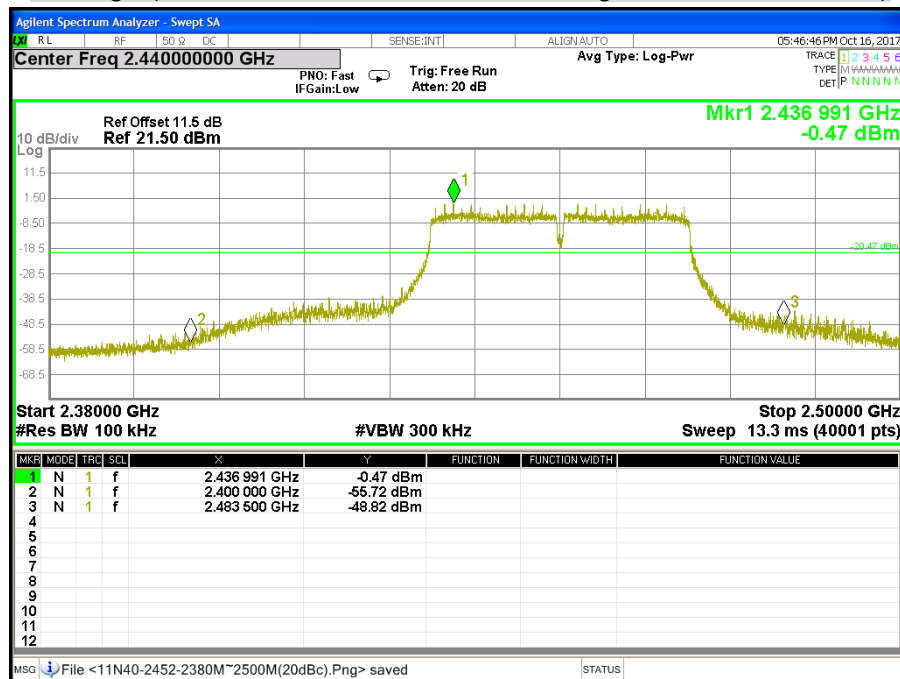
CH Middle (2.38GHz ~ 2.5GHz / IEEE 802.11gn HT40 MCS0 Mode)



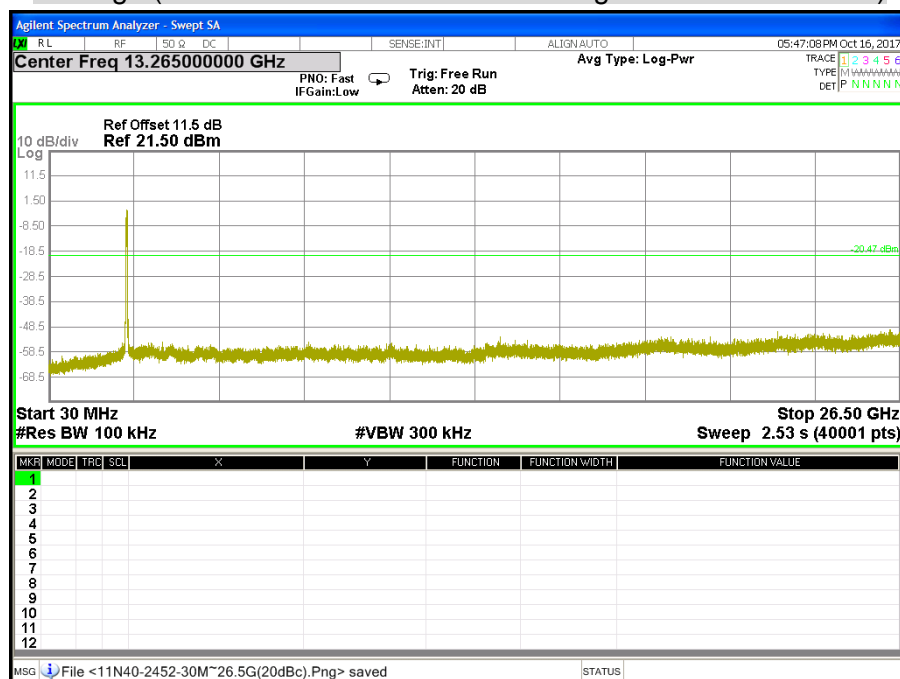
CH Middle (30MHz ~ 26.5GHz / IEEE 802.11gn HT40 MCS0 Mode)



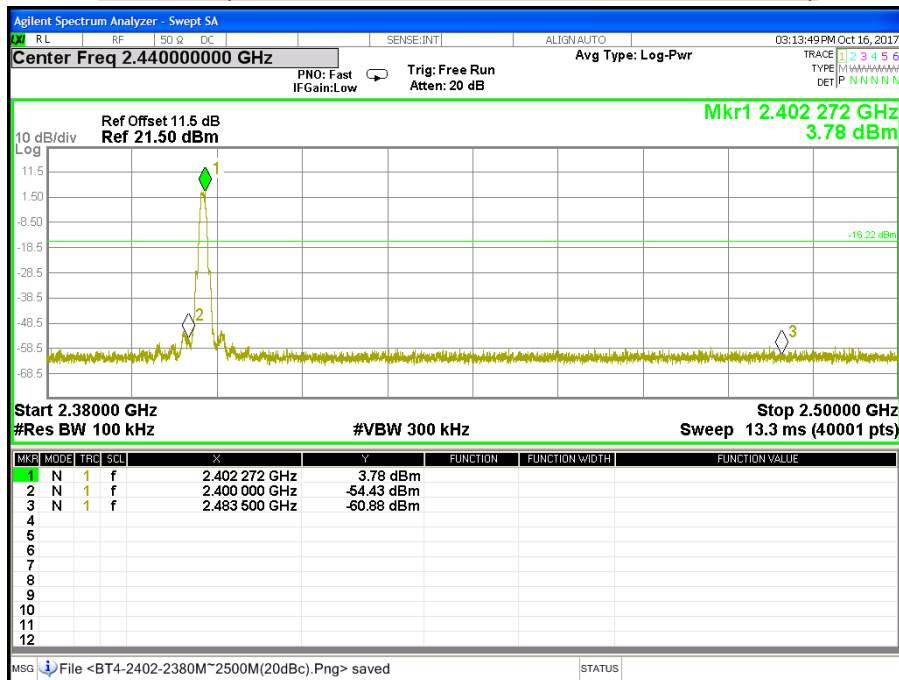
CH High (2.38GHz ~ 2.5GHz / IEEE 802.11gn HT40 MCS0 Mode)



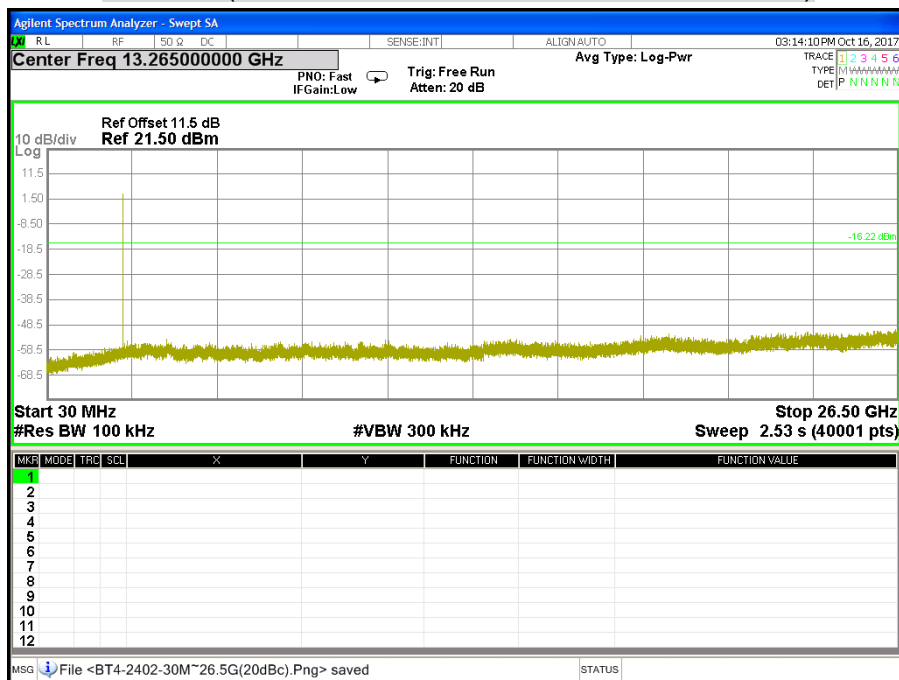
CH High (30MHz ~ 26.5GHz / IEEE 802.11gn HT40 MCS0 Mode)



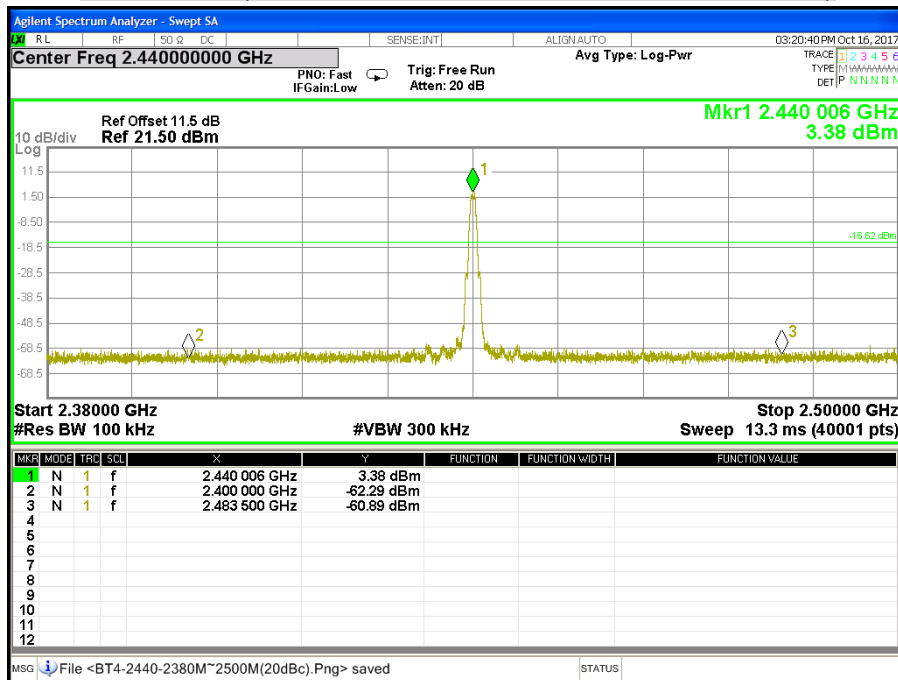
CH Low (2.38GHz ~ 2.5GHz / Bluetooth 4.0 Mode)



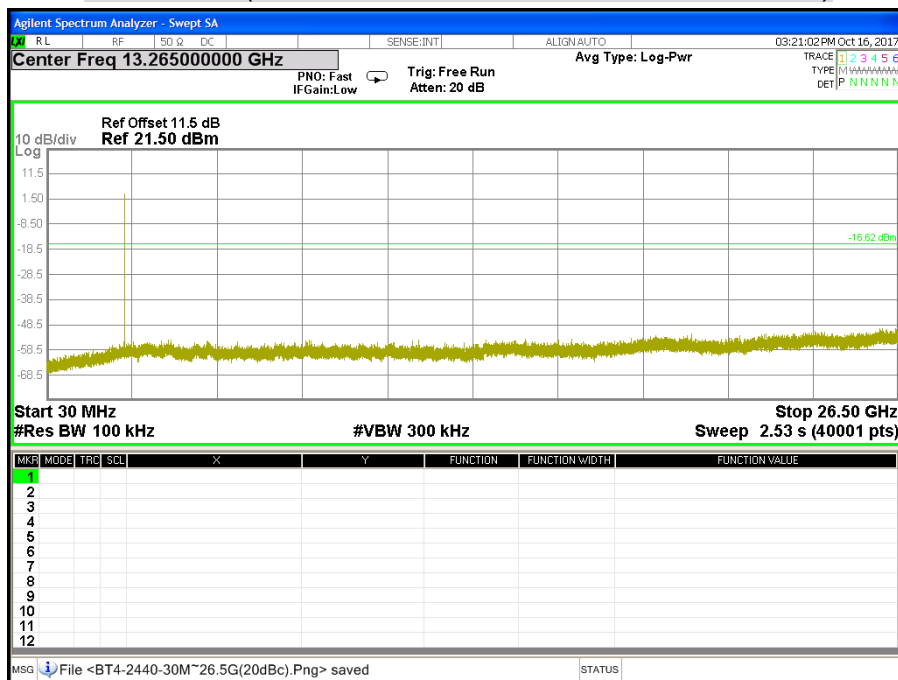
CH Low (30MHz ~ 26.5GHz / Bluetooth 4.0 Mode)



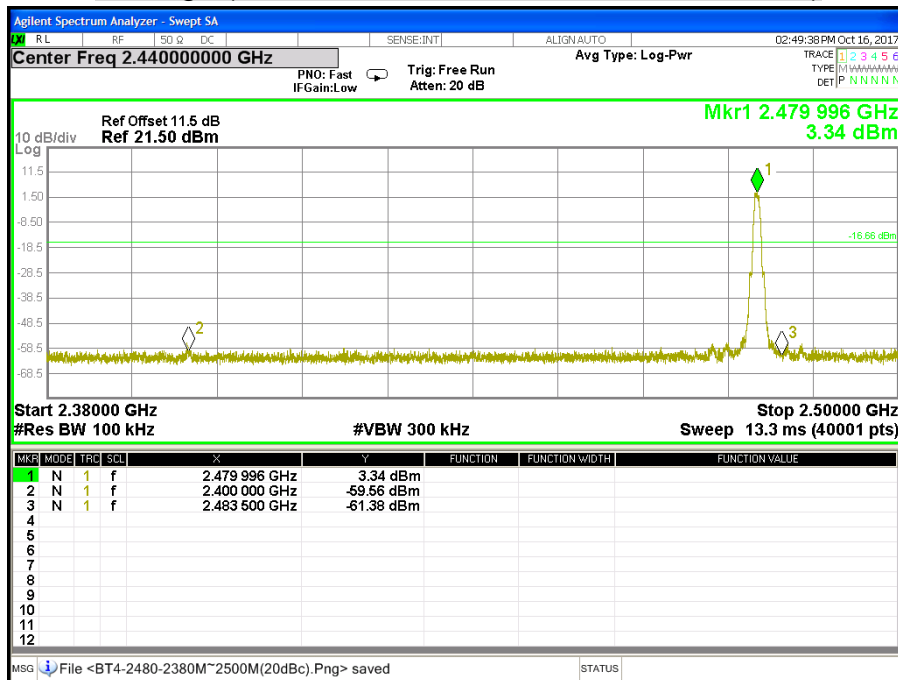
CH Middle (2.38GHz ~ 2.5GHz / Bluetooth 4.0 Mode)



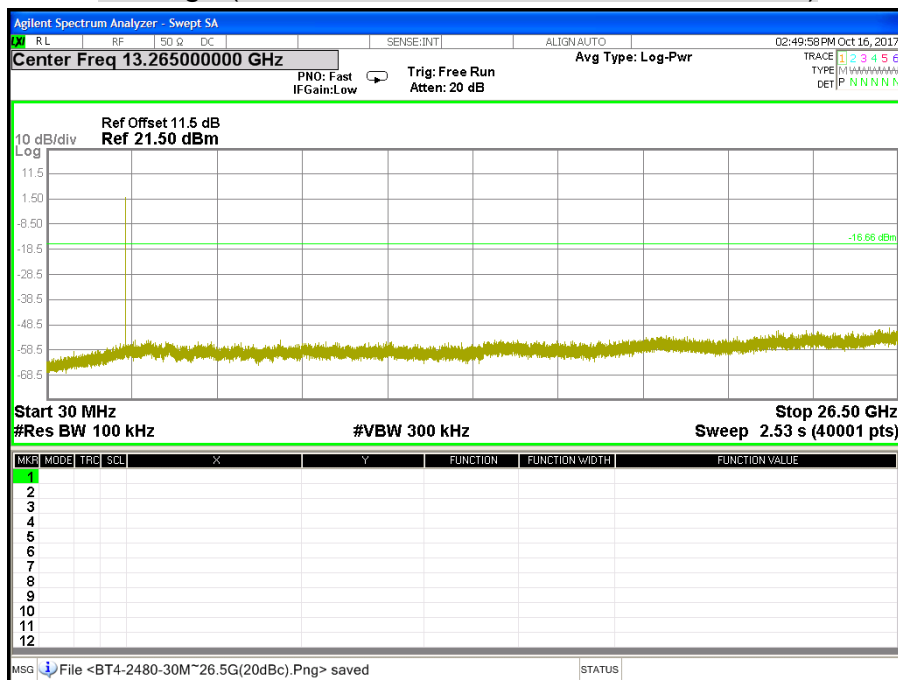
CH Middle (30MHz ~ 26.5GHz / Bluetooth 4.0 Mode)



CH High (2.38GHz ~ 2.5GHz / Bluetooth 4.0 Mode)



CH High (30MHz ~ 26.5GHz / Bluetooth 4.0 Mode)



7.7 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 in 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.

TEST EQUIPMENT

Radiated Emission / 966Chamber_C

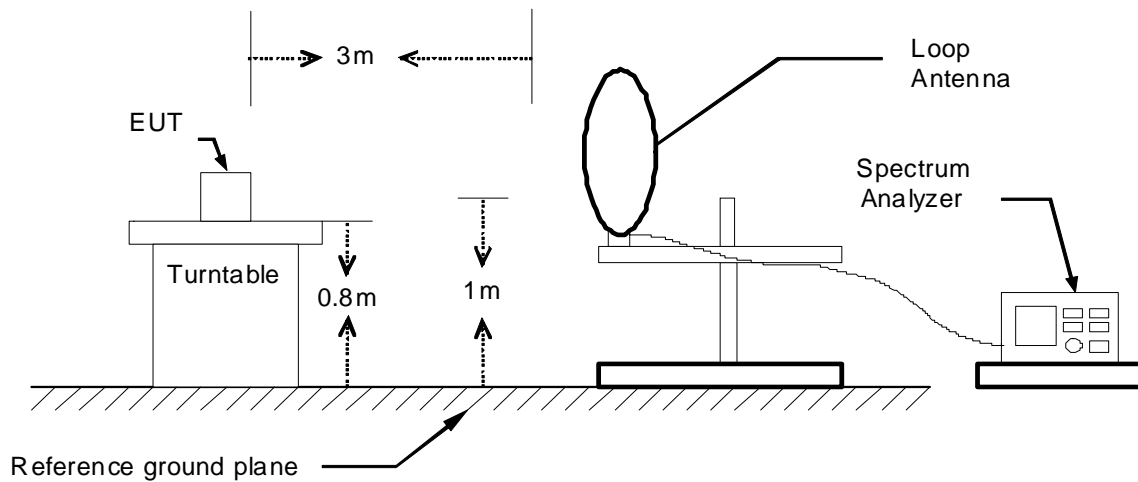
Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY48250064	04/19/2018
EMI Test Receiver	Rohde & Schwarz	ESCI	100782	06/11/2018
Bi-log Antenna	TESEQ	CBL 6112D	35404	08/06/2018
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-285	04/24/2018
Pre-Amplifier	EMCI	EMC001625	980243	04/10/2018
Pre-Amplifier	COM-POWER	PAM-118A	551043	04/10/2018
Double Ridged Guide Horn Antenna	ETS • LINDGREN	3117	00078732	07/05/2018
Horn Antenna	COM-POWER	AH-840	03077	12/01/2017
Loop Antenna	COM-POWER	AL-130	121060	05/14/2018
Test S/W	E3.815206a			

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

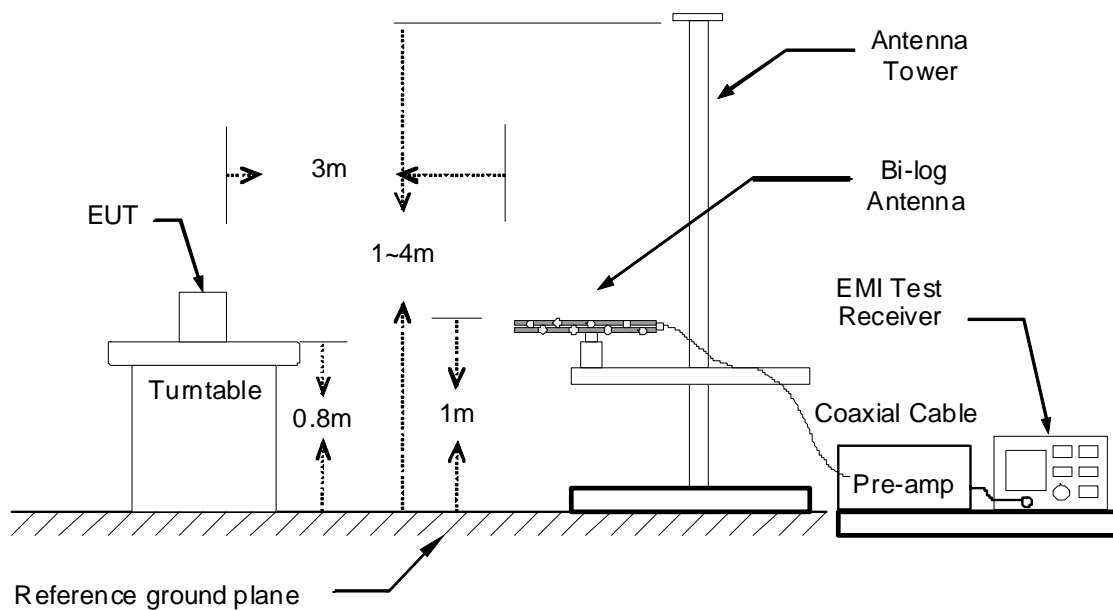
TEST SETUP

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

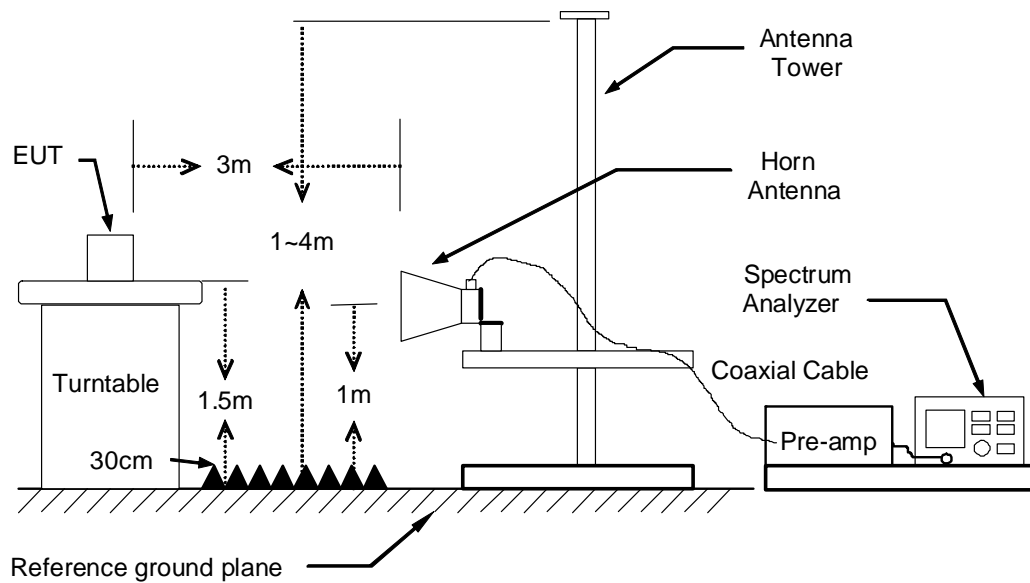
9kHz ~ 30MHz



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 and 1.5 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	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/12
Test Mode	WiFi Mode / Mode 1	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
135.73	41.66	-6.79	34.87	43.50	-8.63	256	200	Peak
238.55	43.21	-6.67	36.54	46.00	-9.46	318	100	Peak
250.19	45.01	-5.40	39.61	46.00	-6.39	243	100	Peak
306.45	40.74	-4.82	35.92	46.00	-10.08	359	100	Peak
375.32	45.67	-3.04	42.63	46.00	-3.37	334	100	Peak
750.71	32.49	2.38	34.87	46.00	-11.13	191	100	Peak
875.84	36.40	2.79	39.19	46.00	-6.81	170	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
54.25	46.00	-11.22	34.78	40.00	-5.22	40	100	Peak
250.19	40.78	-5.40	35.38	46.00	-10.62	208	200	Peak
375.32	40.71	-3.04	37.67	46.00	-8.33	159	100	Peak
511.12	34.67	-0.20	34.47	46.00	-11.53	36	100	Peak
585.81	35.46	0.68	36.14	46.00	-9.86	28	100	Peak
610.06	36.51	0.80	37.31	46.00	-8.69	6	100	Peak
941.80	30.87	2.88	33.75	46.00	-12.25	342	100	Peak

Remark:

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

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/12
Test Mode	Bluetooth 4.0 Mode / Mode 1	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
=====								
89.17	38.73	-9.50	29.23	43.50	-14.27	247	200	Peak
250.19	41.87	-5.40	36.47	46.00	-9.53	245	100	Peak
375.32	43.98	-3.04	40.94	46.00	-5.06	211	200	Peak
625.58	41.30	1.05	42.35	46.00	-3.65	121	100	Peak
675.05	31.86	1.40	33.26	46.00	-12.74	132	100	Peak
750.71	36.28	2.38	38.66	46.00	-7.34	210	100	Peak
875.84	39.53	2.79	42.32	46.00	-3.68	158	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
=====								
45.52	40.51	-8.54	31.97	40.00	-8.03	99	100	Peak
250.19	38.40	-5.40	33.00	46.00	-13.00	191	200	Peak
375.32	44.88	-3.04	41.84	46.00	-4.16	169	200	Peak
512.09	34.43	-0.17	34.26	46.00	-11.74	334	100	Peak
625.58	39.42	1.05	40.47	46.00	-5.53	320	100	Peak
750.71	32.93	2.38	35.31	46.00	-10.69	324	100	Peak
875.84	37.74	2.79	40.53	46.00	-5.47	314	100	Peak

Remark:

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

Above 1 GHz

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11b Mode / TX / CH Low	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1874.00	55.98	-5.67	50.31	74.00	-23.69	36	200	Peak
2586.00	53.02	-3.29	49.73	74.00	-24.27	83	100	Peak
4734.00	43.76	2.53	46.29	74.00	-27.71	188	200	Peak
5568.00	42.87	4.18	47.05	74.00	-26.95	181	100	Peak
6180.00	41.05	8.53	49.58	74.00	-24.42	240	200	Peak
7896.00	41.40	9.85	51.25	74.00	-22.75	125	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	56.48	-5.67	50.81	74.00	-23.19	343	200	Peak
2710.00	53.07	-2.93	50.14	74.00	-23.86	359	200	Peak
4824.00	42.75	2.77	45.52	74.00	-28.48	27	200	Peak
5874.00	42.03	5.26	47.29	74.00	-26.71	162	100	Peak
6432.00	41.68	8.27	49.95	74.00	-24.05	355	200	Peak
7824.00	41.90	9.86	51.76	74.00	-22.24	112	100	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. 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.
4. Result = Reading + Correction Factor
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)
Remark AVG = Result(AV) – Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/26 2017/10/03
Test Mode	IEEE 802.11b Mode / TX / CH Middle	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	55.38	-5.67	49.71	74.00	-24.29	41	200	Peak
2746.00	52.45	-2.83	49.62	74.00	-24.38	184	100	Peak
4875.00	48.66	2.90	51.56	74.00	-22.44	99	200	Peak
5628.00	41.37	4.39	45.76	74.00	-28.24	67	200	Peak
6060.00	40.75	8.65	49.40	74.00	-24.60	75	200	Peak
7752.00	42.02	9.87	51.89	74.00	-22.11	144	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	57.24	-5.67	51.57	74.00	-22.43	50	200	Peak
2390.00	49.20	-3.95	45.25	54.00	-8.75	9	200	Average
2390.00	58.95	-3.95	55.00	74.00	-19.00	9	200	Peak
2526.00	55.96	-3.46	52.50	74.00	-21.50	134	200	Peak
4875.00	49.50	2.90	52.40	54.00	-1.60	56	200	Average
4875.00	50.60	2.90	53.50	74.00	-20.50	56	200	Peak
5757.00	41.08	4.85	45.93	74.00	-28.07	53	100	Peak
6504.00	41.26	8.20	49.46	74.00	-24.54	360	200	Peak
7920.00	42.30	9.85	52.15	74.00	-21.85	209	100	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. 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.
4. Result = Reading + Correction Factor
 Margin = Result - Limit
 Remark Peak = Result(PK) - Limit(PK)
 Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11b Mode / TX / CH High	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	55.96	-5.67	50.29	74.00	-23.71	36	200	Peak
2390.00	50.92	-3.95	46.97	74.00	-27.03	122	200	Peak
4923.00	44.17	3.02	47.19	74.00	-26.81	102	200	Peak
5943.00	41.02	5.51	46.53	74.00	-27.47	261	100	Peak
6168.00	41.60	8.54	50.14	74.00	-23.86	37	100	Peak
7788.00	42.66	9.87	52.53	74.00	-21.47	285	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	57.23	-5.67	51.56	74.00	-22.44	342	100	Peak
2390.00	52.60	-3.95	48.65	74.00	-25.35	130	200	Peak
4923.00	47.98	3.02	51.00	74.00	-23.00	152	200	Peak
5871.00	41.44	5.25	46.69	74.00	-27.31	21	100	Peak
7416.00	41.98	9.71	51.69	74.00	-22.31	332	200	Peak
8400.00	41.26	11.05	52.31	74.00	-21.69	99	200	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. 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.
4. Result = Reading + Correction Factor
 Margin = Result – Limit
 Remark Peak = Result(PK) – Limit(PK)
 Remark AVG = Result(AV) – Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11g Mode / TX / CH Low	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1874.00	55.94	-5.67	50.27	74.00	-23.73	43	200	Peak
2894.00	52.72	-2.40	50.32	74.00	-23.68	236	200	Peak
4827.00	42.45	2.77	45.22	74.00	-28.78	104	200	Peak
5508.00	42.50	3.97	46.47	74.00	-27.53	192	200	Peak
6276.00	41.00	8.43	49.43	74.00	-24.57	223	200	Peak
7872.00	41.38	9.86	51.24	74.00	-22.76	24	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	57.49	-5.67	51.82	74.00	-22.18	338	100	Peak
2502.00	42.60	-3.53	39.07	54.00	-14.93	24	200	Average
2502.00	57.01	-3.53	53.48	74.00	-20.52	24	200	Peak
4824.00	44.41	2.77	47.18	74.00	-26.82	224	200	Peak
5676.00	41.78	4.56	46.34	74.00	-27.66	73	100	Peak
6024.00	41.13	8.69	49.82	74.00	-24.18	72	200	Peak
7920.00	41.31	9.85	51.16	74.00	-22.84	145	200	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. 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.
4. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(PK)
Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11g Mode / TX / CH Middle	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2388.00	54.28	-3.96	50.32	74.00	-23.68	270	200	Peak
2486.00	42.30	-3.59	38.71	54.00	-15.29	323	200	Average
2486.00	57.08	-3.59	53.49	74.00	-20.51	323	200	Peak
4686.00	42.84	2.41	45.25	74.00	-28.75	283	100	Peak
5811.00	41.46	5.04	46.50	74.00	-27.50	222	100	Peak
6456.00	41.15	8.24	49.39	74.00	-24.61	194	100	Peak
8136.00	40.58	10.25	50.83	74.00	-23.17	198	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2374.00	46.30	-4.01	42.29	54.00	-11.71	0	100	Average
2374.00	56.95	-4.01	52.94	74.00	-21.06	0	100	Peak
2390.00	55.09	-3.95	51.14	74.00	-22.86	150	200	Peak
2486.00	48.50	-3.59	44.91	54.00	-9.09	133	200	Average
2486.00	63.42	-3.59	59.83	74.00	-14.17	133	200	Peak
4662.00	42.87	2.35	45.22	74.00	-28.78	91	200	Peak
4872.00	43.95	2.89	46.84	74.00	-27.16	29	200	Peak
6048.00	41.14	8.66	49.80	74.00	-24.20	27	100	Peak
7740.00	42.44	9.88	52.32	74.00	-21.68	74	100	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. 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.
4. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(PK)
Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11g Mode / TX / CH High	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	56.81	-5.67	51.14	74.00	-22.86	329	200	Peak
2390.00	50.66	-3.95	46.71	74.00	-27.29	38	200	Peak
4692.00	43.41	2.43	45.84	74.00	-28.16	302	200	Peak
5922.00	41.57	5.43	47.00	74.00	-27.00	102	200	Peak
6216.00	41.21	8.49	49.70	74.00	-24.30	125	100	Peak
8172.00	40.70	10.36	51.06	74.00	-22.94	286	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1874.00	56.34	-5.67	50.67	74.00	-23.33	340	200	Peak
2382.00	54.60	-3.98	50.62	74.00	-23.38	150	200	Peak
4683.00	43.13	2.40	45.53	74.00	-28.47	202	100	Peak
5439.00	43.20	3.85	47.05	74.00	-26.95	198	100	Peak
6168.00	40.68	8.54	49.22	74.00	-24.78	240	200	Peak
8160.00	41.45	10.32	51.77	74.00	-22.23	264	200	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. 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.
4. Result = Reading + Correction Factor
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)
Remark AVG = Result(AV) – Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11gn HT20 MCS0 Mode / TX / CH Low	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1874.00	55.50	-5.67	49.83	74.00	-24.17	20	200	Peak
2484.00	51.82	-3.60	48.22	74.00	-25.78	109	100	Peak
4701.00	43.24	2.45	45.69	74.00	-28.31	20	100	Peak
5463.00	42.05	3.89	45.94	74.00	-28.06	137	100	Peak
6144.00	41.03	8.56	49.59	74.00	-24.41	251	100	Peak
7944.00	40.97	9.85	50.82	74.00	-23.18	122	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1874.00	57.46	-5.67	51.79	74.00	-22.21	342	200	Peak
2490.00	45.30	-3.58	41.72	54.00	-12.28	16	200	Average
2490.00	60.15	-3.58	56.57	74.00	-17.43	16	200	Peak
4815.00	43.70	2.74	46.44	74.00	-27.56	31	200	Peak
5571.00	42.14	4.19	46.33	74.00	-27.67	291	200	Peak
6120.00	40.69	8.59	49.28	74.00	-24.72	339	200	Peak
7740.00	41.49	9.88	51.37	74.00	-22.63	262	100	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. 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.
4. Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(PK)
Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11gn HT20 MCS0 Mode / TX / CH Middle	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	56.74	-5.67	51.07	74.00	-22.93	321	200	Peak
2484.00	42.30	-3.60	38.70	54.00	-15.30	323	200	Average
2484.00	57.64	-3.60	54.04	74.00	-19.96	323	200	Peak
4584.00	43.11	2.15	45.26	74.00	-28.74	348	100	Peak
5409.00	42.38	3.81	46.19	74.00	-27.81	40	200	Peak
6132.00	41.18	8.58	49.76	74.00	-24.24	34	200	Peak
7692.00	42.08	9.88	51.96	74.00	-22.04	156	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	49.60	-3.95	45.65	54.00	-8.35	344	200	Average
2390.00	59.35	-3.95	55.40	74.00	-18.60	344	200	Peak
2483.50	50.20	-3.60	46.60	54.00	-7.40	359	200	Average
2483.50	65.99	-3.60	62.39	74.00	-11.61	359	200	Peak
4869.00	43.74	2.88	46.62	74.00	-27.38	30	200	Peak
5775.00	41.59	4.91	46.50	74.00	-27.50	102	200	Peak
6168.00	40.79	8.54	49.33	74.00	-24.67	242	100	Peak
7944.00	42.61	9.85	52.46	74.00	-21.54	299	200	Peak

Remark:

- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Average test would be performed if the peak result were greater than the average limit.
- 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.
- Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(PK)
Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/09/26
Test Mode	IEEE 802.11gn HT20 MCS0 Mode / TX / CH High	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	56.29	-5.67	50.62	74.00	-23.38	29	100	Peak
2390.00	50.51	-3.95	46.56	74.00	-27.44	185	200	Peak
4716.00	43.46	2.49	45.95	74.00	-28.05	91	200	Peak
5634.00	42.10	4.41	46.51	74.00	-27.49	62	200	Peak
6120.00	41.63	8.59	50.22	74.00	-23.78	282	200	Peak
7896.00	41.51	9.85	51.36	74.00	-22.64	15	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1876.00	57.89	-5.67	52.22	74.00	-21.78	338	200	Peak
2390.00	51.97	-3.95	48.02	74.00	-25.98	319	200	Peak
4704.00	43.08	2.46	45.54	74.00	-28.46	167	200	Peak
5670.00	42.59	4.54	47.13	74.00	-26.87	190	100	Peak
6132.00	40.84	8.58	49.42	74.00	-24.58	46	200	Peak
7740.00	41.46	9.88	51.34	74.00	-22.66	95	200	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. 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.
4. Result = Reading + Correction Factor
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)
Remark AVG = Result(AV) – Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/26
Test Mode	IEEE 802.11gn HT40 MCS0 Mode / TX / CH Low	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
=====								
1874.00	55.88	-5.67	50.21	74.00	-23.79	25	100	Peak
2950.00	53.22	-2.23	50.99	74.00	-23.01	43	100	Peak
4746.00	42.99	2.56	45.55	74.00	-28.45	359	100	Peak
5355.00	42.86	3.73	46.59	74.00	-27.41	236	100	Peak
6036.00	41.49	8.67	50.16	74.00	-23.84	256	100	Peak
7908.00	41.03	9.85	50.88	74.00	-23.12	48	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
=====								
1876.00	57.43	-5.67	51.76	74.00	-22.24	329	200	Peak
2483.50	52.78	-3.60	49.18	74.00	-24.82	359	200	Peak
4734.00	43.09	2.53	45.62	74.00	-28.38	168	100	Peak
5571.00	42.04	4.19	46.23	74.00	-27.77	358	100	Peak
6456.00	41.26	8.24	49.50	74.00	-24.50	359	200	Peak
7944.00	41.76	9.85	51.61	74.00	-22.39	352	200	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. 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.
4. Result = Reading + Correction Factor
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)
Remark AVG = Result(AV) – Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/25 2017/10/03
Test Mode	IEEE 802.11gn HT40 MCS0 Mode / TX / CH Middle	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	44.90	-3.95	40.95	54.00	-13.05	345	200	Average
2390.00	61.40	-3.95	57.45	74.00	-16.55	345	200	Peak
2483.50	47.90	-3.60	44.30	54.00	-9.70	319	200	Average
2483.50	61.83	-3.60	58.23	74.00	-15.77	319	200	Peak
4701.00	43.43	2.45	45.88	74.00	-28.12	326	100	Peak
5523.00	42.03	4.02	46.05	74.00	-27.95	279	100	Peak
6036.00	41.09	8.67	49.76	74.00	-24.24	64	100	Peak
7764.00	41.47	9.87	51.34	74.00	-22.66	100	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	43.90	-3.95	39.95	54.00	-14.05	0	100	Average
2390.00	61.87	-3.95	57.92	74.00	-16.08	0	100	Peak
2483.50	56.40	-3.60	52.80	54.00	-1.20	360	200	Average
2483.50	70.31	-3.60	66.71	74.00	-7.29	360	200	Peak
4881.00	42.45	2.91	45.36	74.00	-28.64	167	200	Peak
5532.00	42.18	4.05	46.23	74.00	-27.77	166	100	Peak
6036.00	40.74	8.67	49.41	74.00	-24.59	0	100	Peak
7764.00	42.20	9.87	52.07	74.00	-21.93	212	100	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. 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.
4. Result = Reading + Correction Factor
 Margin = Result - Limit
 Remark Peak = Result(PK) - Limit(PK)
 Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/09/26
Test Mode	IEEE 802.11gn HT40 MCS0 Mode / TX / CH High	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
=====								
1876.00	55.49	-5.67	49.82	74.00	-24.18	33	100	Peak
2362.00	54.13	-4.05	50.08	74.00	-23.92	330	200	Peak
4719.00	43.14	2.50	45.64	74.00	-28.36	4	200	Peak
5589.00	43.49	4.26	47.75	74.00	-26.25	315	100	Peak
6060.00	40.27	8.65	48.92	74.00	-25.08	267	200	Peak
7956.00	41.94	9.85	51.79	74.00	-22.21	95	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
=====								
1874.00	55.20	-5.67	49.53	54.00	-4.47	340	125	Average
1874.00	58.55	-5.67	52.88	74.00	-21.12	340	200	Peak
2390.00	51.81	-3.95	47.86	74.00	-26.14	48	200	Peak
4815.00	42.91	2.74	45.65	74.00	-28.35	315	100	Peak
5316.00	42.59	3.68	46.27	74.00	-27.73	315	100	Peak
6036.00	40.91	8.67	49.58	74.00	-24.42	102	100	Peak
7776.00	41.71	9.87	51.58	74.00	-22.42	243	200	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. 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.
4. Result = Reading + Correction Factor
 Margin = Result - Limit
 Remark Peak = Result(PK) - Limit(PK)
 Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/11 2017/10/12
Test Mode	Bluetooth 4.0 Mode / TX / CH Low	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1500.00	52.14	-6.49	45.65	74.00	-28.35	350	200	Peak
1874.00	54.93	-5.67	49.26	74.00	-24.74	38	100	Peak
4836.00	42.12	2.80	44.92	74.00	-29.08	257	100	Peak
5976.00	40.35	5.63	45.98	74.00	-28.02	137	100	Peak
6468.00	39.45	8.23	47.68	74.00	-26.32	52	200	Peak
7800.00	40.99	9.87	50.86	74.00	-23.14	289	100	Peak
8532.00	40.75	11.39	52.14	74.00	-21.86	161	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1874.00	57.67	-5.67	52.00	74.00	-22.00	336	200	Peak
1910.00	53.33	-5.60	47.73	74.00	-26.27	167	200	Peak
4875.00	41.85	2.90	44.75	74.00	-29.25	85	100	Peak
5880.00	40.61	5.29	45.90	74.00	-28.10	115	100	Peak
6408.00	38.67	8.29	46.96	74.00	-27.04	289	100	Peak
7788.00	41.83	9.87	51.70	74.00	-22.30	130	200	Peak
8712.00	40.02	11.61	51.63	74.00	-22.37	246	100	Peak

Remark:

- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Average test would be performed if the peak result were greater than the average limit.
- 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.
- Result = Reading + Correction Factor
Margin = Result - Limit
Remark Peak = Result(PK) - Limit(PK)
Remark AVG = Result(AV) - Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/11 2017/10/12
Test Mode	Bluetooth 4.0 Mode / TX / CH Middle	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1500.00	52.99	-6.49	46.50	74.00	-27.50	359	200	Peak
1874.00	55.42	-5.67	49.75	74.00	-24.25	39	200	Peak
5058.00	41.47	3.30	44.77	74.00	-29.23	34	100	Peak
5505.00	41.92	3.96	45.88	74.00	-28.12	38	100	Peak
6348.00	38.86	8.36	47.22	74.00	-26.78	183	100	Peak
7764.00	41.32	9.87	51.19	74.00	-22.81	65	200	Peak
8520.00	40.68	11.37	52.05	74.00	-21.95	179	100	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1500.00	52.54	-6.49	46.05	74.00	-27.95	338	200	Peak
1876.00	57.70	-5.67	52.03	74.00	-21.97	346	200	Peak
1934.00	53.40	-5.54	47.86	74.00	-26.14	321	200	Peak
4926.00	41.72	3.03	44.75	74.00	-29.25	181	200	Peak
5913.00	40.80	5.40	46.20	74.00	-27.80	338	100	Peak
6324.00	38.75	8.38	47.13	74.00	-26.87	301	100	Peak
7764.00	41.01	9.87	50.88	74.00	-23.12	159	100	Peak
8556.00	40.72	11.42	52.14	74.00	-21.86	103	100	Peak

Remark:

- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Average test would be performed if the peak result were greater than the average limit.
- 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.
- Result = Reading + Correction Factor
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)
Remark AVG = Result(AV) – Limit(AV)

Product Name	IP Phone	Test By	Rex Chiu
Test Model	OBI2182	Test Date	2017/10/11 2017/10/12
Test Mode	Bluetooth 4.0 Mode / TX / CH High	Temp. & Humidity	25°C, 50%

966Chamber_C at 3Meter / Horizontal

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1756.00	54.18	-5.93	48.25	74.00	-25.75	172	100	Peak
1876.00	57.15	-5.67	51.48	74.00	-22.52	60	200	Peak
4845.00	41.94	2.82	44.76	74.00	-29.24	262	100	Peak
5565.00	41.83	4.17	46.00	74.00	-28.00	77	200	Peak
6408.00	39.79	8.29	48.08	74.00	-25.92	162	100	Peak
7764.00	41.53	9.87	51.40	74.00	-22.60	47	100	Peak
8460.00	41.19	11.23	52.42	74.00	-21.58	18	200	Peak

966Chamber_C at 3Meter / Vertical

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
1500.00	53.06	-6.49	46.57	74.00	-27.43	325	200	Peak
1874.00	57.65	-5.67	51.98	74.00	-22.02	342	200	Peak
1922.00	51.72	-5.57	46.15	74.00	-27.85	33	100	Peak
5172.00	41.82	3.47	45.29	74.00	-28.71	302	100	Peak
5949.00	41.31	5.53	46.84	74.00	-27.16	224	100	Peak
6528.00	39.90	8.23	48.13	74.00	-25.87	359	200	Peak
7740.00	41.18	9.88	51.06	74.00	-22.94	71	100	Peak
8688.00	40.64	11.58	52.22	74.00	-21.78	340	200	Peak

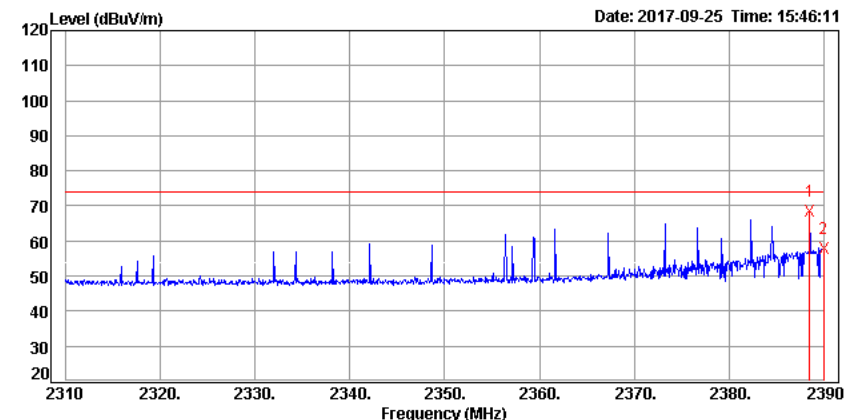
Remark:

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. 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.
4. 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****CH Low (IEEE 802.11b Mode)**

Data: 40

Date: 2017-09-25 Time: 15:46:11



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2388.56	72.51	-3.95	68.56	74.00	-5.44			Peak
2390.00	61.69	-3.95	57.74	74.00	-16.26			Peak

Remark: Result = Reading + Correction Factor

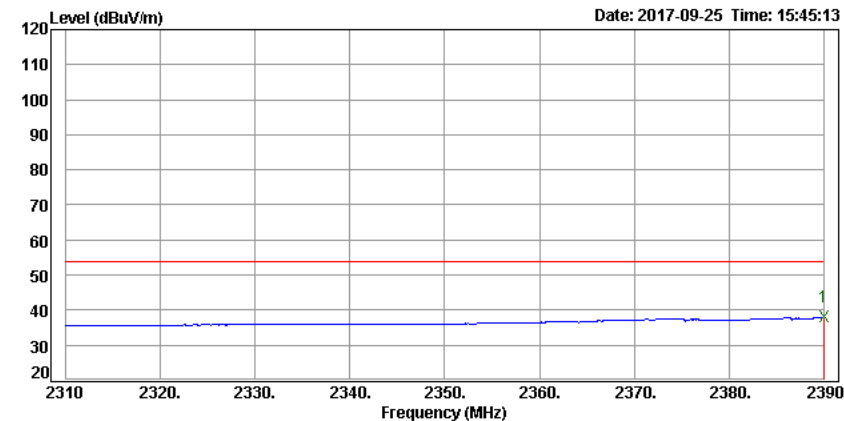
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Horizontal****CH Low (IEEE 802.11b Mode)**

Data: 39

Date: 2017-09-25 Time: 15:45:13



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	41.93	-3.95	37.98	54.00	-16.02			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

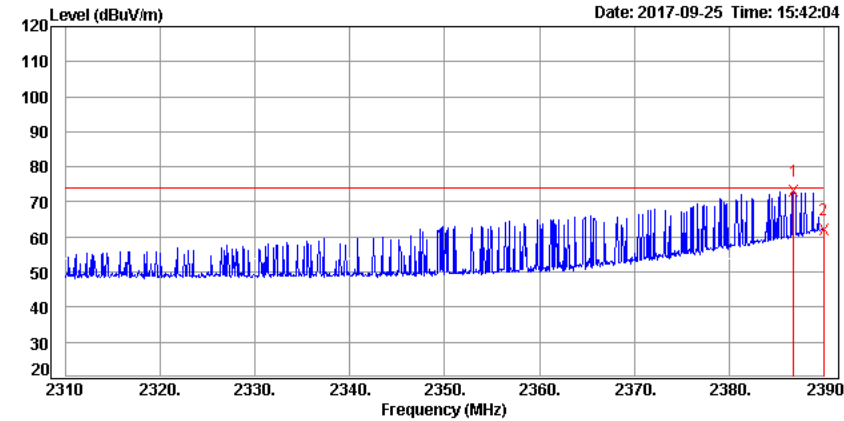
Detector Mode: Peak

Polarity: Vertical

CH Low (IEEE 802.11b Mode)

Data: 38

Date: 2017-09-25 Time: 15:42:04



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2386.88	77.16	-3.96	73.20	74.00	-0.80			Peak
2390.00	66.15	-3.95	62.20	74.00	-11.80			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

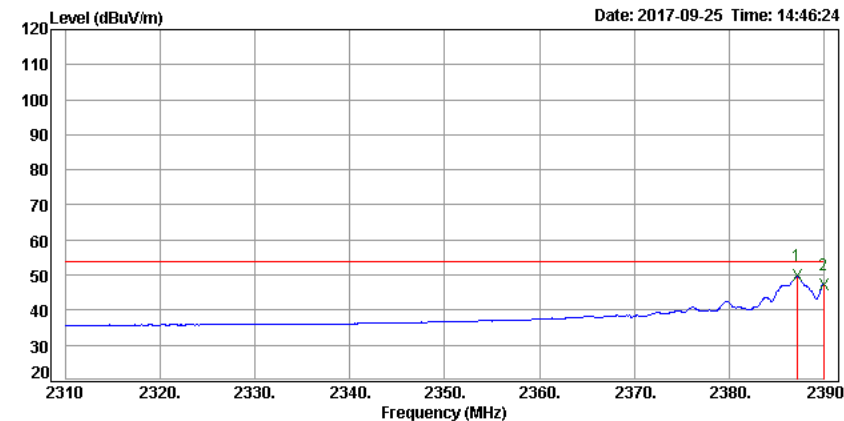
Detector Mode: Average

Polarity: Vertical

CH Low (IEEE 802.11b Mode)

Data: 37

Date: 2017-09-25 Time: 14:46:24



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2387.20	53.79	-3.96	49.83	54.00	-4.17			Average
2390.00	51.22	-3.95	47.27	54.00	-6.73			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

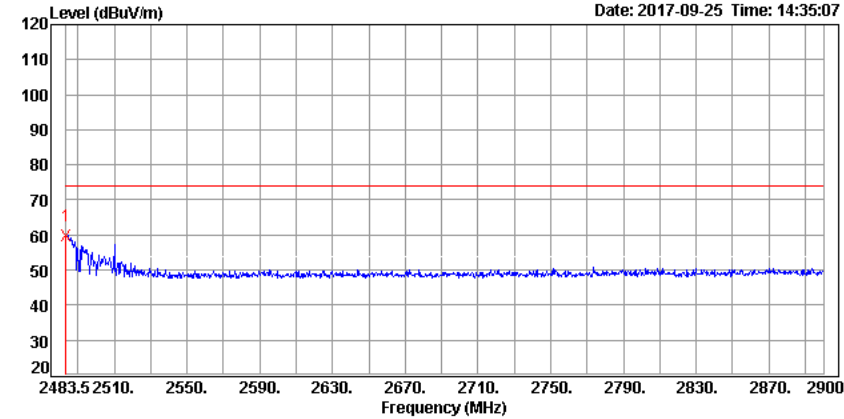
Detector Mode: Peak

Polarity: Horizontal

CH High (IEEE 802.11b Mode)

Data: 36

Date: 2017-09-25 Time: 14:35:07



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	63.48	-3.60	59.88	74.00	-14.12			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

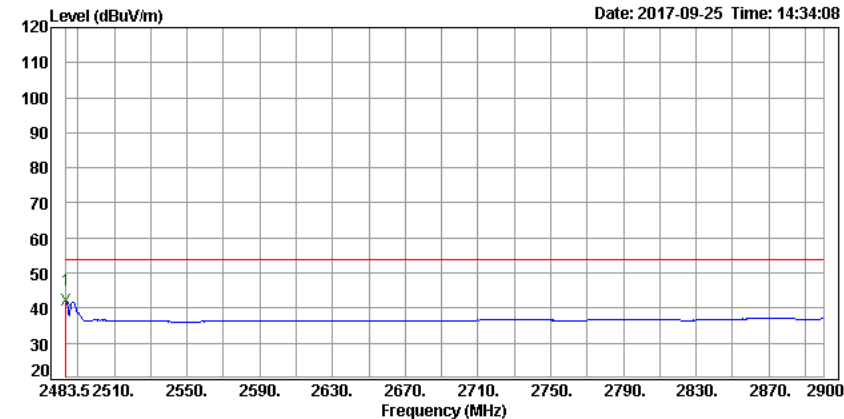
Detector Mode: Average

Polarity: Horizontal

CH High (IEEE 802.11b Mode)

Data: 35

Date: 2017-09-25 Time: 14:34:08



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	45.88	-3.60	42.28	54.00	-11.72			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

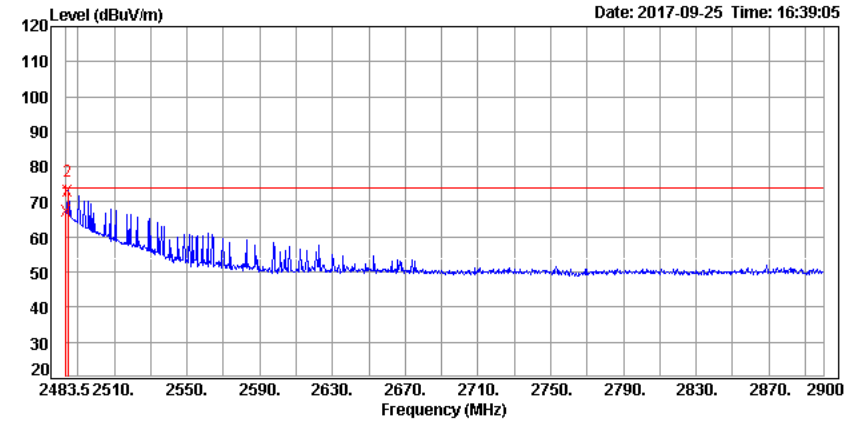
Detector Mode: Peak

Polarity: Vertical

CH High (IEEE 802.11b Mode)

Data: 47

Date: 2017-09-25 Time: 16:39:05



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	70.88	-3.60	67.28	74.00	-6.72			Peak
2484.33	76.72	-3.60	73.12	74.00	-0.88			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

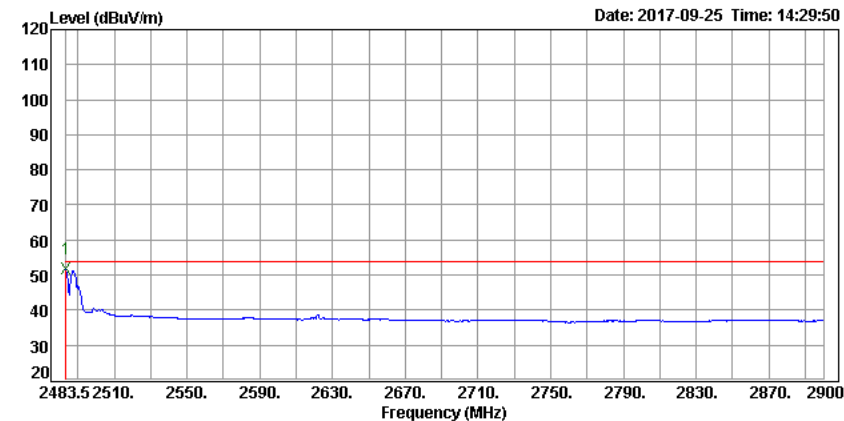
Detector Mode: Average

Polarity: Vertical

CH High (IEEE 802.11b Mode)

Data: 33

Date: 2017-09-25 Time: 14:29:50



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	55.27	-3.60	51.67	54.00	-2.33			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

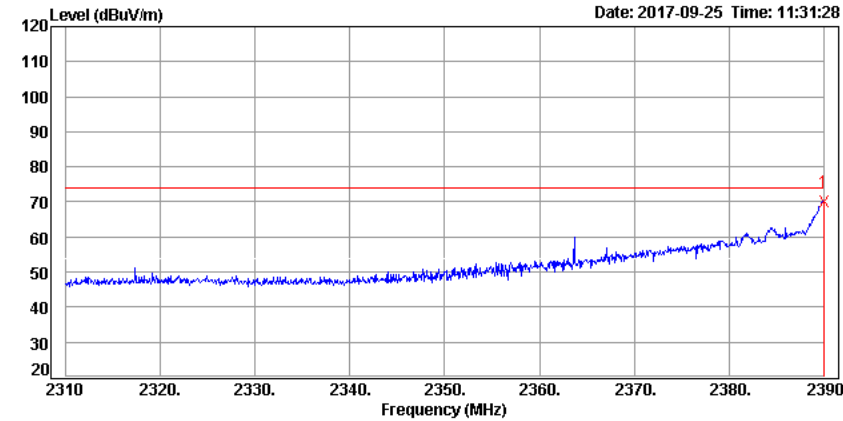
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak

Polarity: Horizontal

CH Low (IEEE 802.11g Mode)

Data: 10



Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	74.09	-3.95	70.14	74.00	-3.86			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

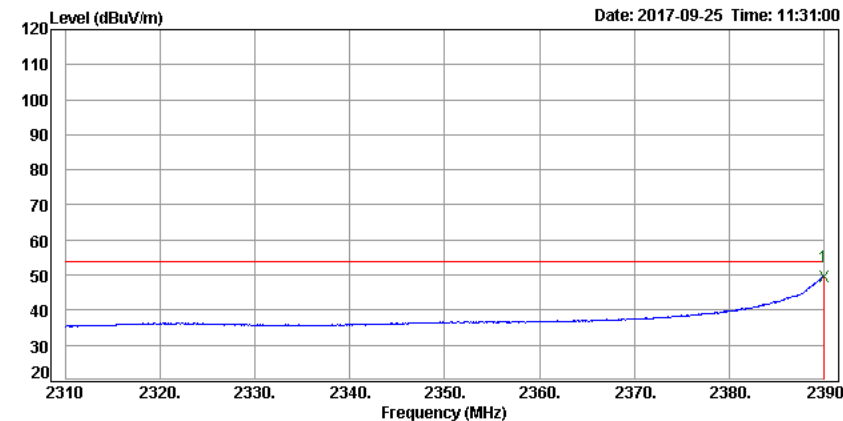
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average

Polarity: Horizontal

CH Low (IEEE 802.11g Mode)

Data: 9



Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	53.48	-3.95	49.53	54.00	-4.47			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

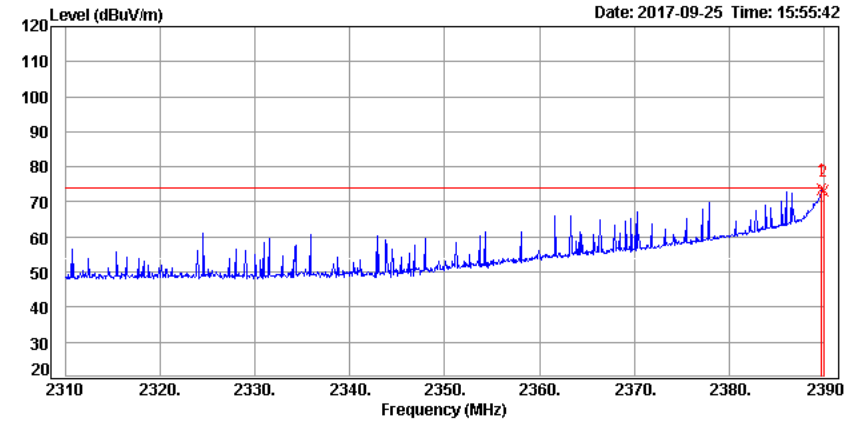
Detector Mode: Peak

Polarity: Vertical

CH Low (IEEE 802.11g Mode)

Data: 41

Date: 2017-09-25 Time: 15:55:42



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2389.84	77.23	-3.95	73.28	74.00	-0.72			Peak
2390.00	77.17	-3.95	73.22	74.00	-0.78			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

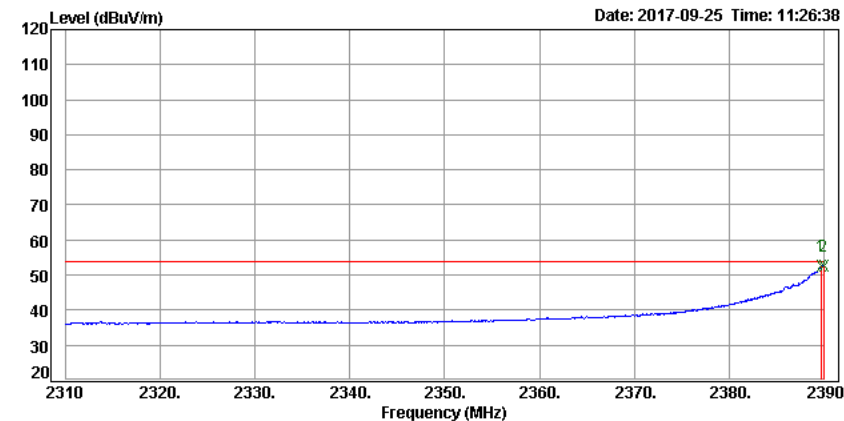
Detector Mode: Average

Polarity: Vertical

CH Low (IEEE 802.11g Mode)

Data: 7

Date: 2017-09-25 Time: 11:26:38



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2389.76	56.56	-3.95	52.61	54.00	-1.39			Average
2390.00	56.55	-3.95	52.60	54.00	-1.40			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

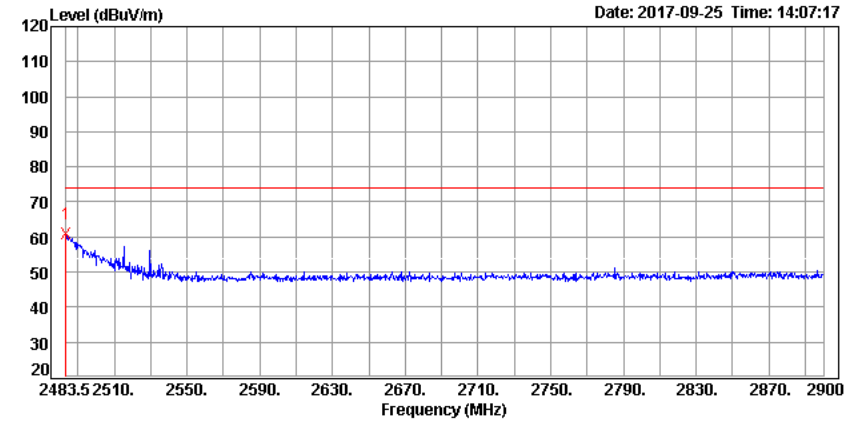
Detector Mode: Peak

Polarity: Horizontal

CH High (IEEE 802.11g Mode)

Data: 30

Date: 2017-09-25 Time: 14:07:17



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	64.49	-3.60	60.89	74.00	-13.11			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

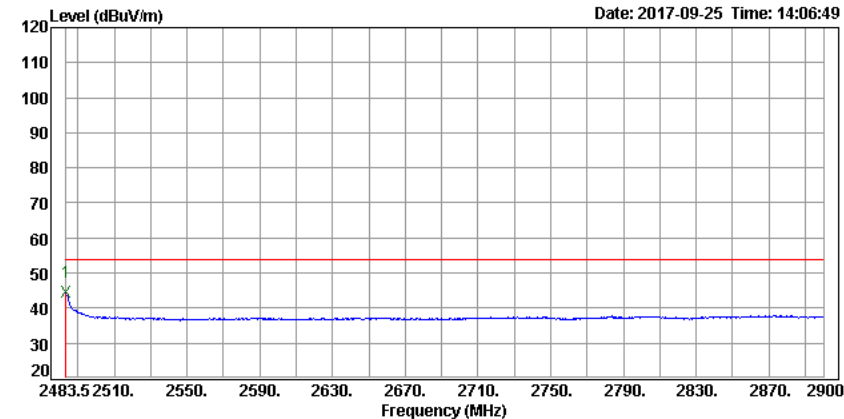
Detector Mode: Average

Polarity: Horizontal

CH High (IEEE 802.11g Mode)

Data: 29

Date: 2017-09-25 Time: 14:06:49



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	48.03	-3.60	44.43	54.00	-9.57			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

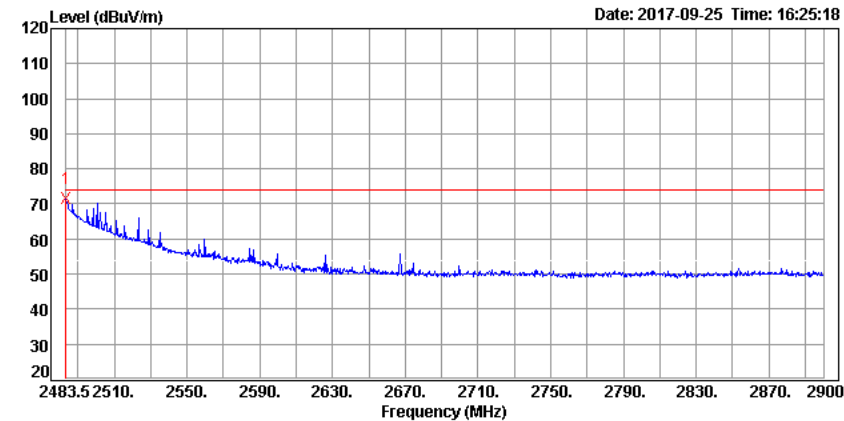
Detector Mode: Peak

Polarity: Vertical

CH High (IEEE 802.11g Mode)

Data: 46

Date: 2017-09-25 Time: 16:25:18



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	75.12	-3.60	71.52	74.00	-2.48			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

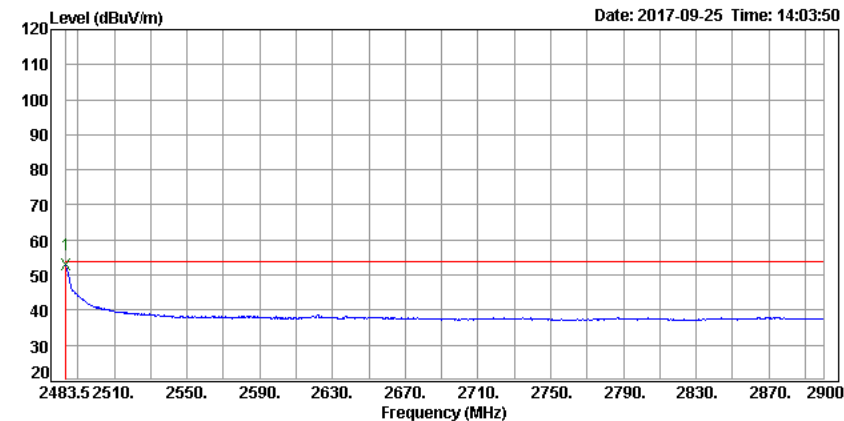
Detector Mode: Average

Polarity: Vertical

CH High (IEEE 802.11g Mode)

Data: 27

Date: 2017-09-25 Time: 14:03:50



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	56.32	-3.60	52.72	54.00	-1.28			Average

Remark: Result = Reading + Correction Factor

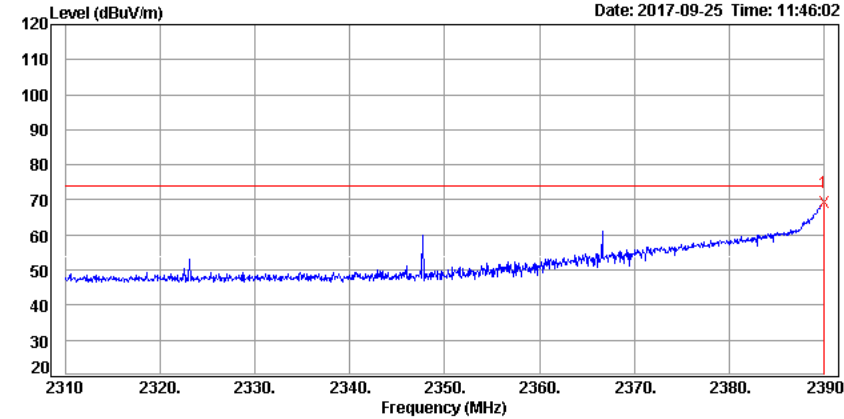
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Horizontal****CH Low (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 14

Date: 2017-09-25 Time: 11:46:02



Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	73.19	-3.95	69.24	74.00	-4.76			Peak

Remark: Result = Reading + Correction Factor

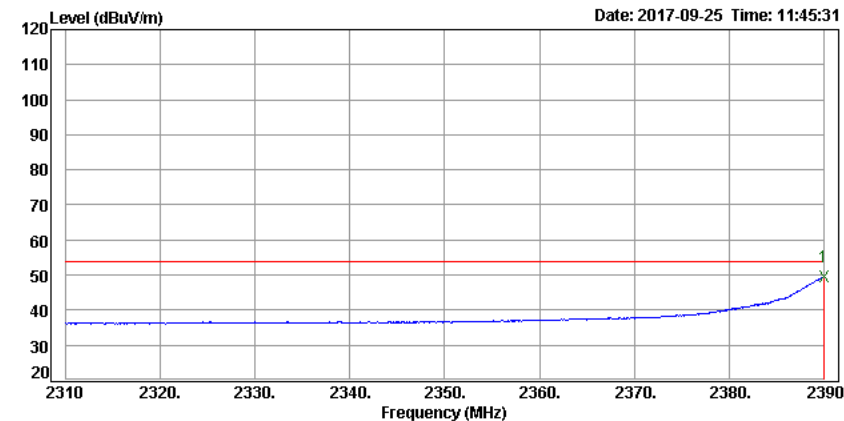
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Horizontal****CH Low (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 13

Date: 2017-09-25 Time: 11:45:31



Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	53.39	-3.95	49.44	54.00	-4.56			Average

Remark: Result = Reading + Correction Factor

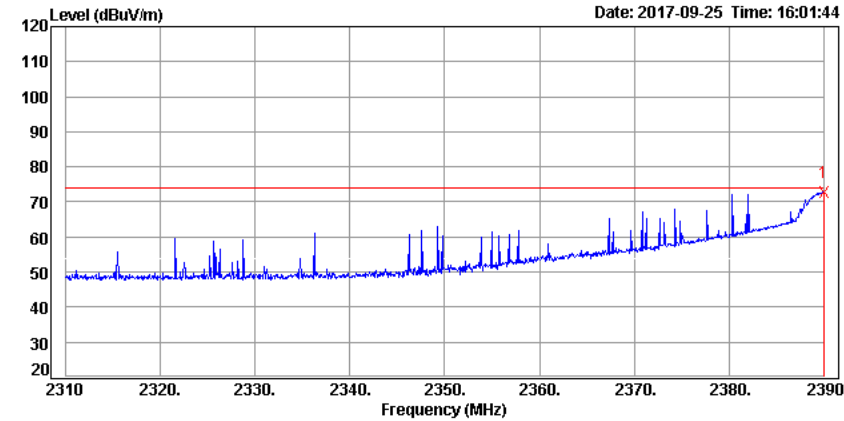
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Vertical****CH Low (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 42

Date: 2017-09-25 Time: 16:01:44



Freq. MHz	Reading dBUV	C.F. dB/m	Result dBUV/m	Limit dBUV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	76.72	-3.95	72.77	74.00	-1.23			Peak

Remark: Result = Reading + Correction Factor

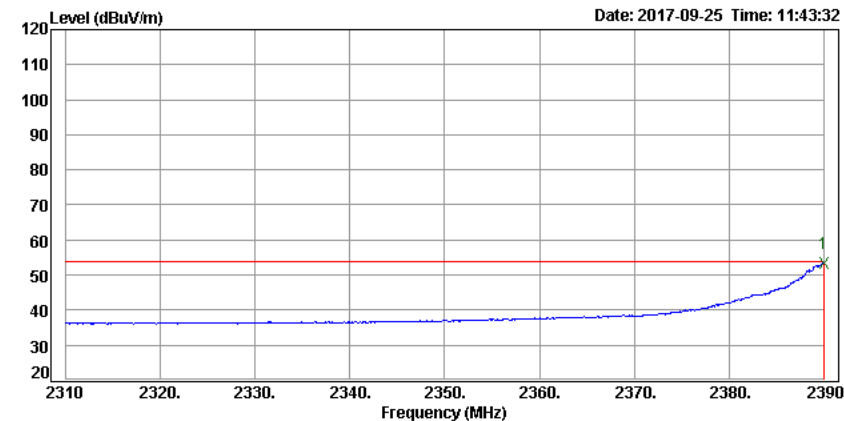
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Vertical****CH Low (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 11

Date: 2017-09-25 Time: 11:43:32



Freq. MHz	Reading dBUV	C.F. dB/m	Result dBUV/m	Limit dBUV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	57.35	-3.95	53.40	54.00	-0.60			Average

Remark: Result = Reading + Correction Factor

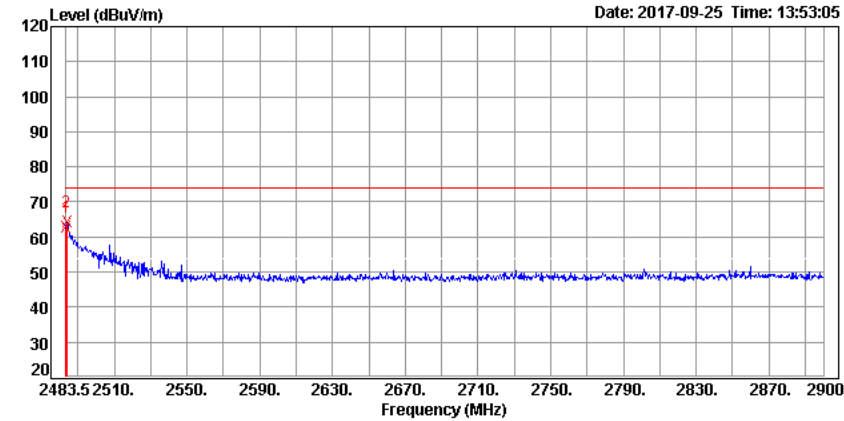
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Horizontal****CH High (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 26

Date: 2017-09-25 Time: 13:53:05



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	66.37	-3.60	62.77	74.00	-11.23			Peak
2483.92	67.72	-3.60	64.12	74.00	-9.88			Peak

Remark: Result = Reading + Correction Factor

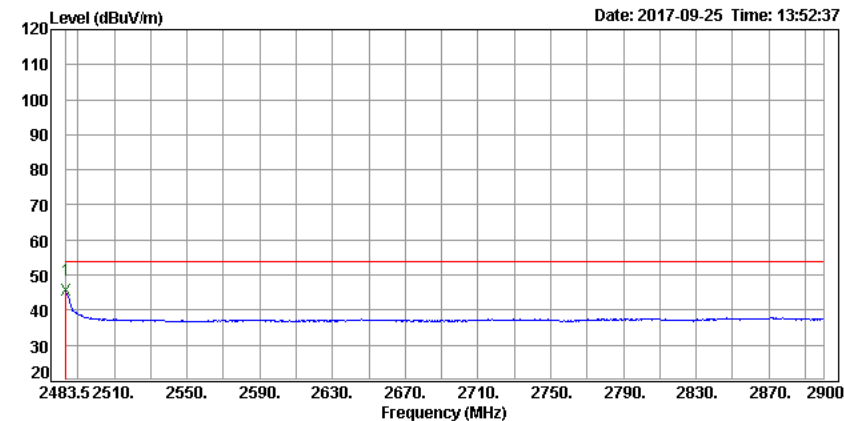
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Horizontal****CH High (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 25

Date: 2017-09-25 Time: 13:52:37



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	49.21	-3.60	45.61	54.00	-8.39			Average

Remark: Result = Reading + Correction Factor

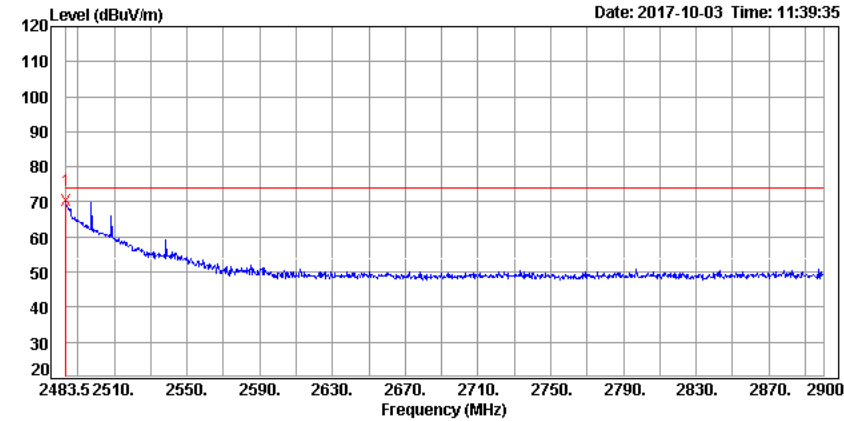
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Vertical****CH High (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 125

Date: 2017-10-03 Time: 11:39:35



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	73.82	-3.60	70.22	74.00	-3.78			Peak

Remark: Result = Reading + Correction Factor

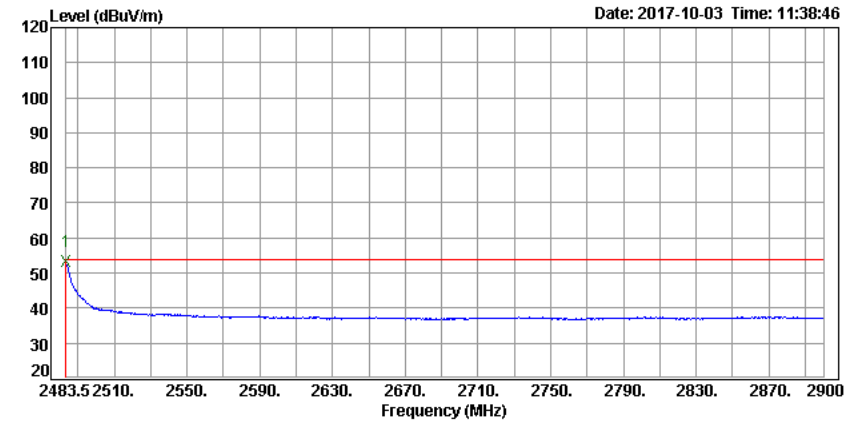
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Vertical****CH High (IEEE 802.11gn HT20 MCS0 Mode)**

Data: 124

Date: 2017-10-03 Time: 11:38:46



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	56.95	-3.60	53.35	54.00	-0.65			Average

Remark: Result = Reading + Correction Factor

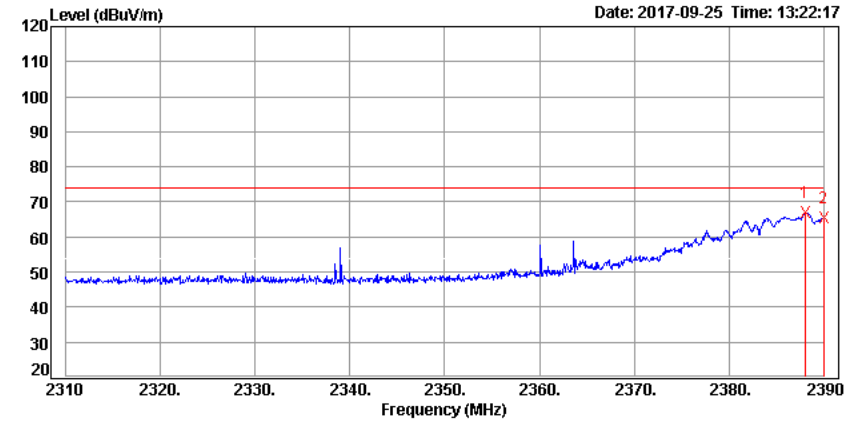
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Horizontal****CH Low (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 18

Date: 2017-09-25 Time: 13:22:17



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2388.08	70.92	-3.96	66.96	74.00	-7.04			Peak
2390.00	69.39	-3.95	65.44	74.00	-8.56			Peak

Remark: Result = Reading + Correction Factor

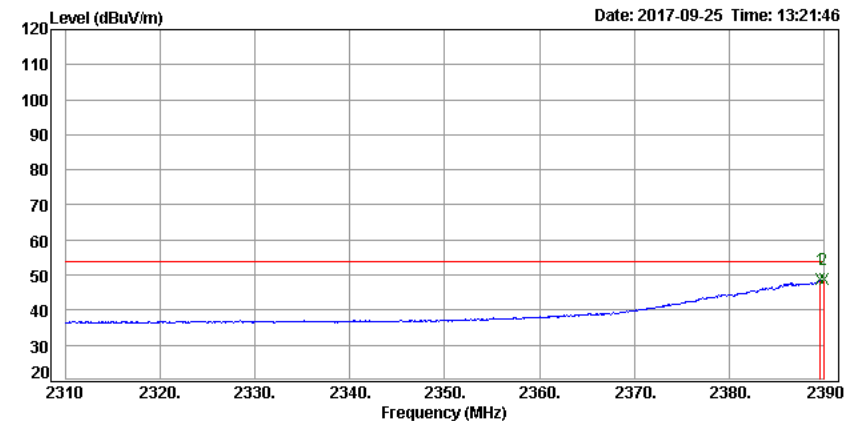
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Horizontal****CH Low (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 17

Date: 2017-09-25 Time: 13:21:46



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2389.68	52.64	-3.95	48.69	54.00	-5.31			Average
2390.00	52.58	-3.95	48.63	54.00	-5.37			Average

Remark: Result = Reading + Correction Factor

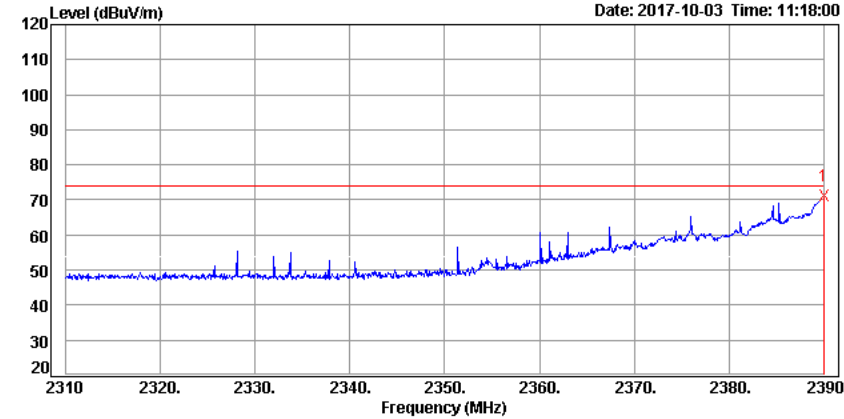
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Vertical****CH Low (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 121

Date: 2017-10-03 Time: 11:18:00



Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	75.05	-3.95	71.10	74.00	-2.90			Peak

Remark: Result = Reading + Correction Factor

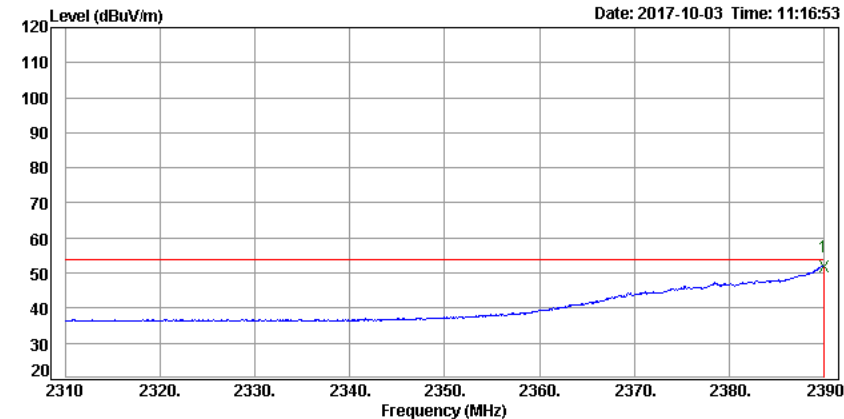
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Vertical****CH Low (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 120

Date: 2017-10-03 Time: 11:16:53



Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2390.00	55.75	-3.95	51.80	54.00	-2.20			Average

Remark: Result = Reading + Correction Factor

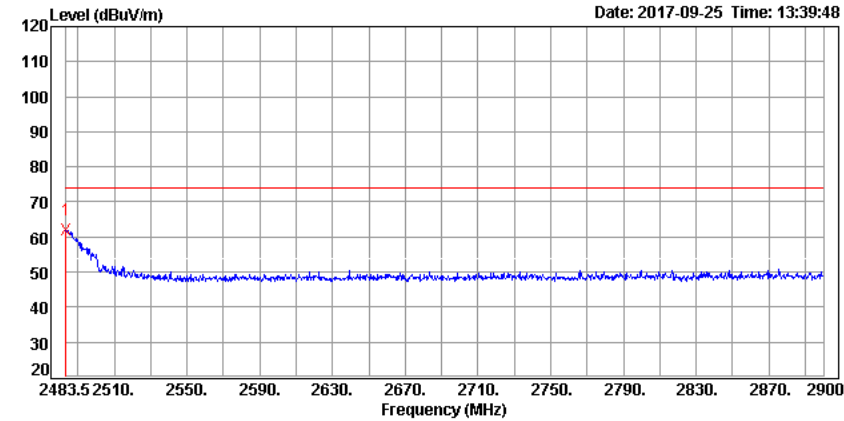
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Horizontal****CH High (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 22

Date: 2017-09-25 Time: 13:39:48



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	65.61	-3.60	62.01	74.00	-11.99			Peak

Remark: Result = Reading + Correction Factor

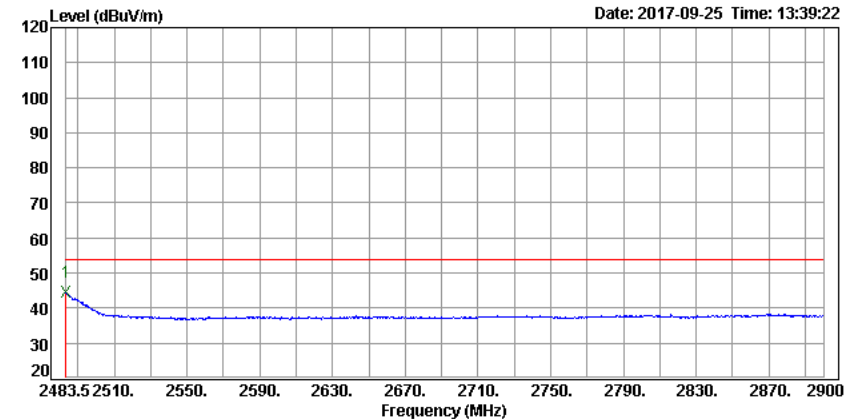
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Horizontal****CH High (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 21

Date: 2017-09-25 Time: 13:39:22



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	48.11	-3.60	44.51	54.00	-9.49			Average

Remark: Result = Reading + Correction Factor

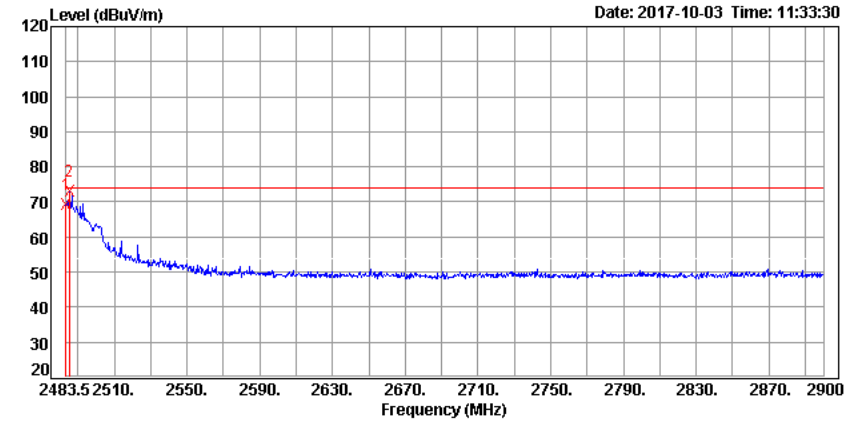
Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Vertical****CH High (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 123

Date: 2017-10-03 Time: 11:33:30



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	72.66	-3.60	69.06	74.00	-4.94			Peak
2485.17	76.48	-3.60	72.88	74.00	-1.12			Peak

Remark: Result = Reading + Correction Factor

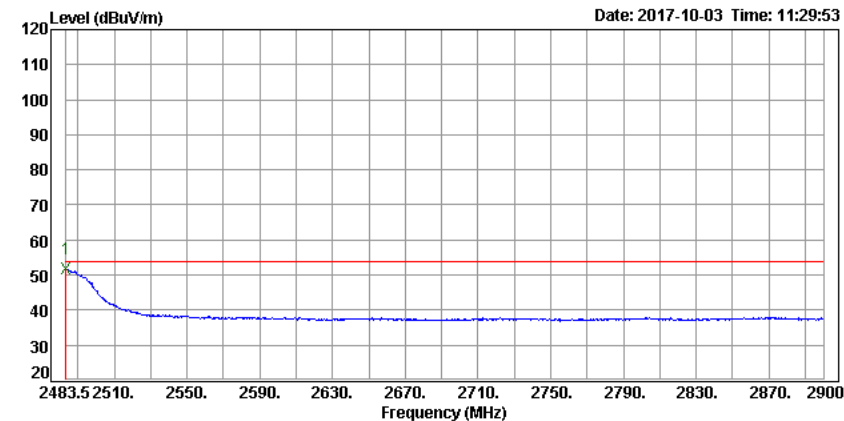
Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Vertical****CH High (IEEE 802.11gn HT40 MCS0 Mode)**

Data: 122

Date: 2017-10-03 Time: 11:29:53



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	55.48	-3.60	51.88	54.00	-2.12			Average

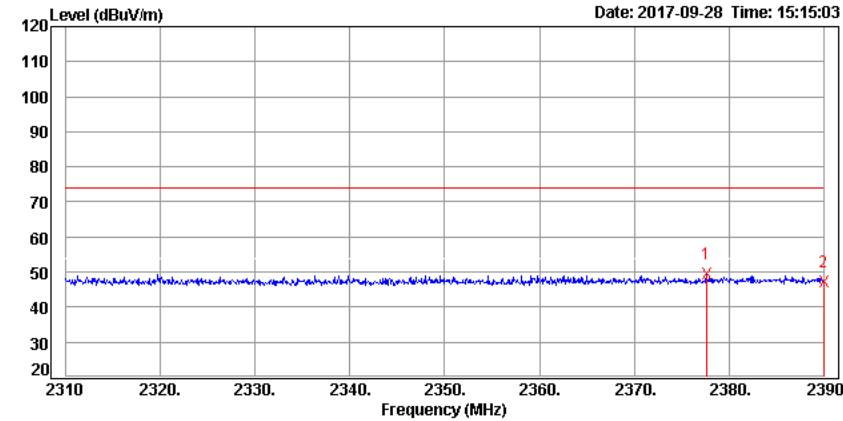
Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Horizontal****CH Low (Bluetooth 4.0 Mode)**

Data: 3



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2377.60	53.36	-4.00	49.36	74.00	-24.64			Peak
2390.00	51.27	-3.95	47.32	74.00	-26.68			Peak

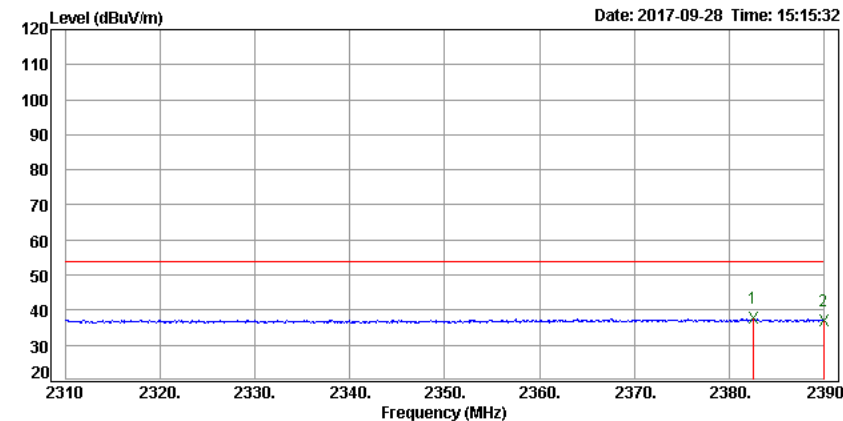
Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Horizontal****CH Low (Bluetooth 4.0 Mode)**

Data: 4



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2382.56	41.67	-3.98	37.69	54.00	-16.31			Average
2390.00	40.91	-3.95	36.96	54.00	-17.04			Average

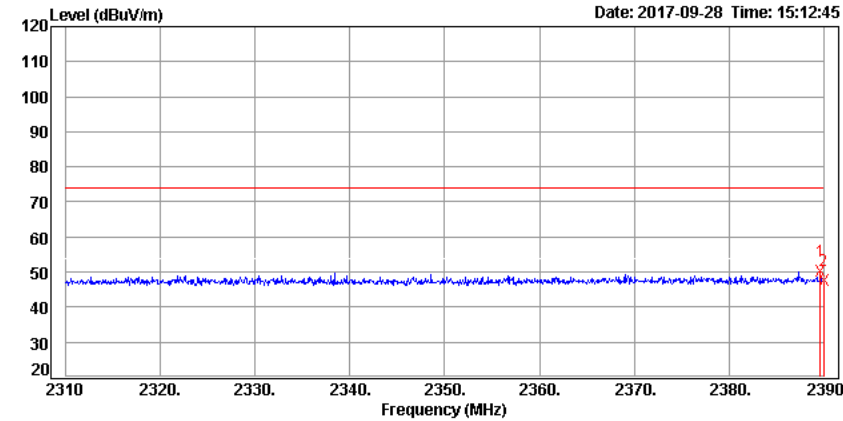
Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Vertical****CH Low (Bluetooth 4.0 Mode)**

Data: 2



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2389.68	54.27	-3.95	50.32	74.00	-23.68			Peak
2390.00	51.36	-3.95	47.41	74.00	-26.59			Peak

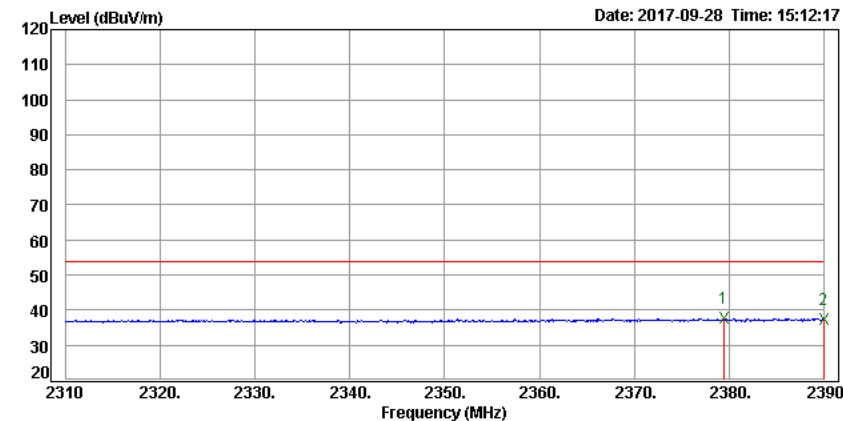
Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Vertical****CH Low (Bluetooth 4.0 Mode)**

Data: 1



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2379.44	41.83	-3.99	37.84	54.00	-16.16			Average
2390.00	41.36	-3.95	37.41	54.00	-16.59			Average

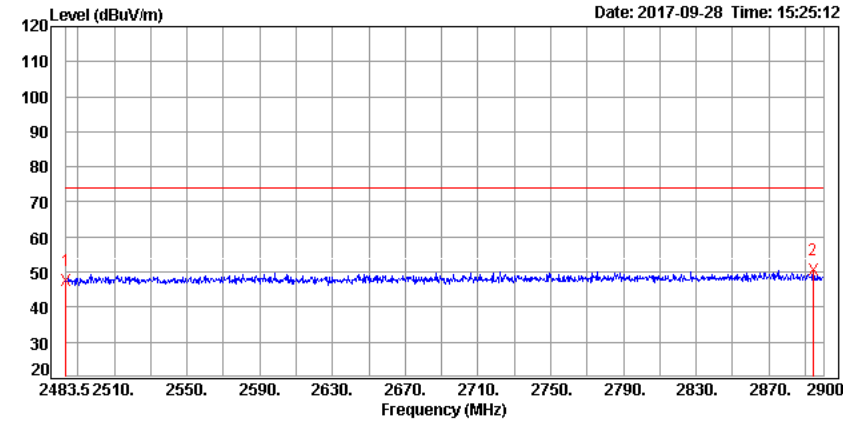
Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak**Polarity: Horizontal****CH High (Bluetooth 4.0 Mode)**

Data: 7



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	51.07	-3.60	47.47	74.00	-26.53			Peak
2894.17	53.07	-2.40	50.67	74.00	-23.33			Peak

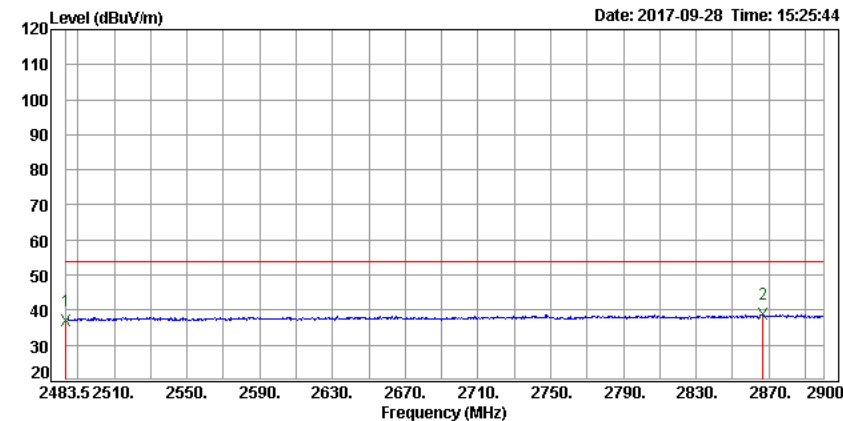
Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average**Polarity: Horizontal****CH High (Bluetooth 4.0 Mode)**

Data: 8



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	40.59	-3.60	36.99	54.00	-17.01			Average
2866.68	41.20	-2.48	38.72	54.00	-15.28			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

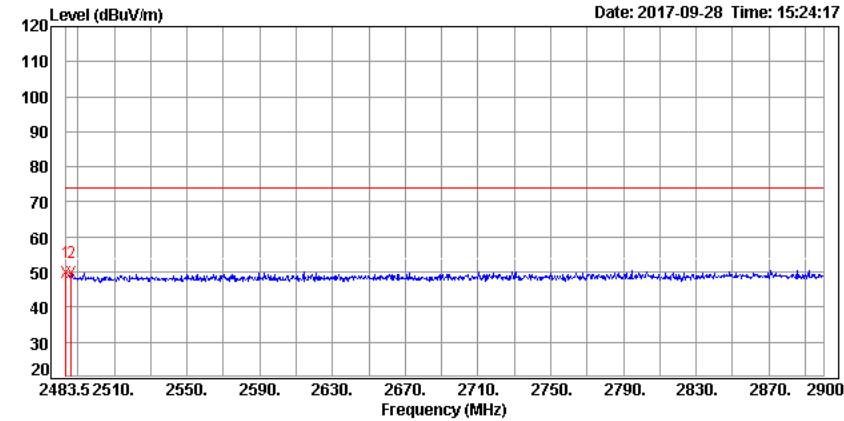
Detector Mode: Peak

Polarity: Vertical

CH High (Bluetooth 4.0 Mode)

Data: 6

Date: 2017-09-28 Time: 15:24:17



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	53.53	-3.60	49.93	74.00	-24.07			Peak
2486.42	53.53	-3.59	49.94	74.00	-24.06			Peak

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark Peak = Result(PK) – Limit(PK)

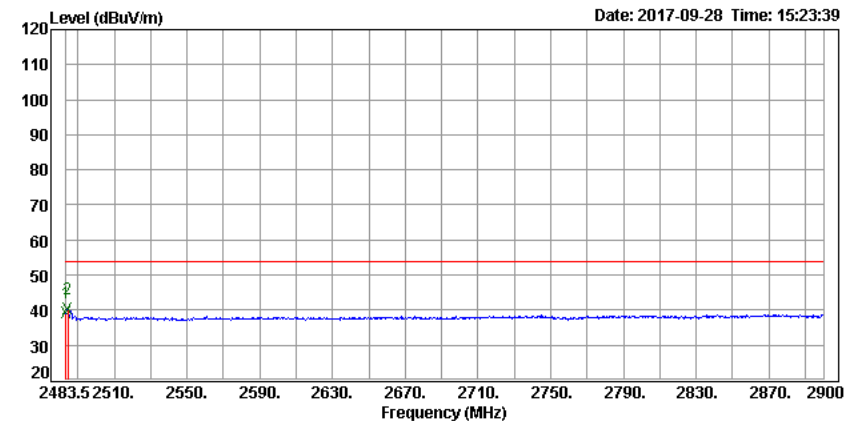
Detector Mode: Average

Polarity: Vertical

CH High (Bluetooth 4.0 Mode)

Data: 5

Date: 2017-09-28 Time: 15:23:39



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2483.50	42.78	-3.60	39.18	54.00	-14.82			Average
2484.33	44.05	-3.60	40.45	54.00	-13.55			Average

Remark: Result = Reading + Correction Factor

Margin = Result – Limit

Remark AVG = Result(AV) – Limit(AV)

7.8 CONDUCTED EMISSION

LIMITS

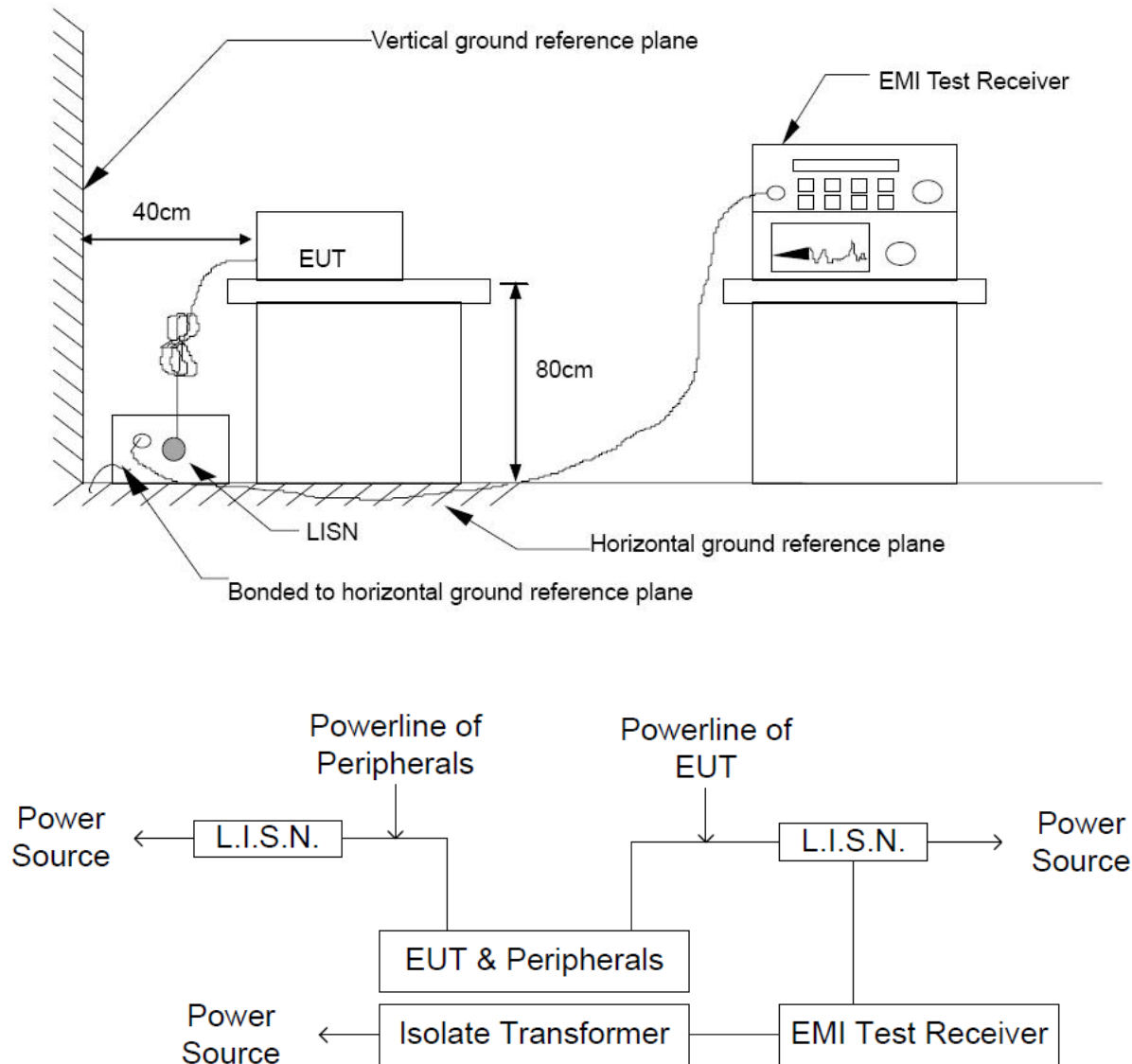
§ 15.207 (a) Except as shown in paragraph (b) and (c) this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/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 (dB μ v)	
	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	8127465	08/14/2018
L.I.S.N	Schwarzbeck	NSLK 8127	8127473	03/12/2018
EMI Test Receiver	Rohde & Schwarz	ESHS 30	838550/003	10/25/2017
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100111	06/26/2018
Test S/W	E3.815206a			

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 C63.10:2013.

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

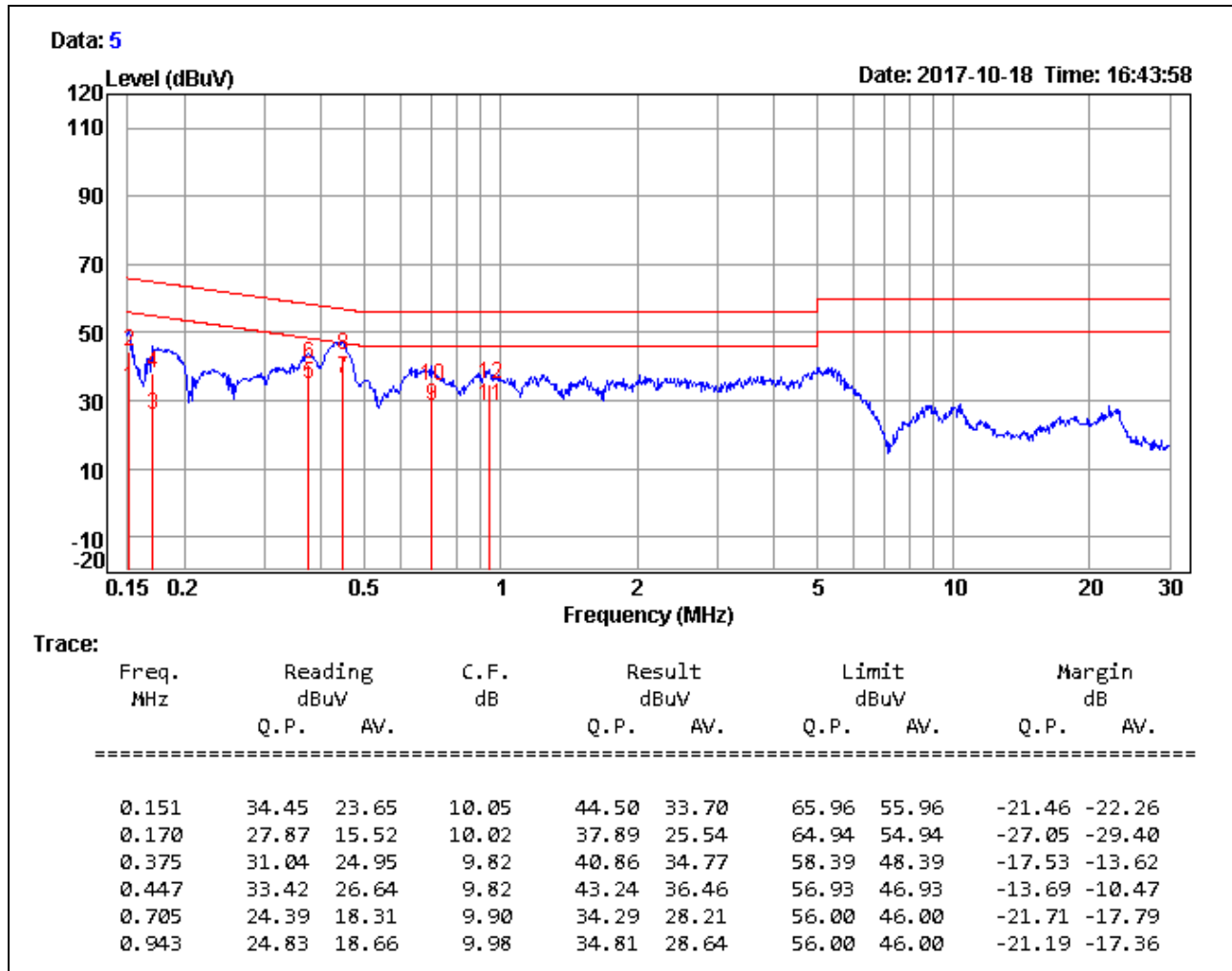
The EUT along with its peripherals were placed on a 1.0m (W) × 1.5m (L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.

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.

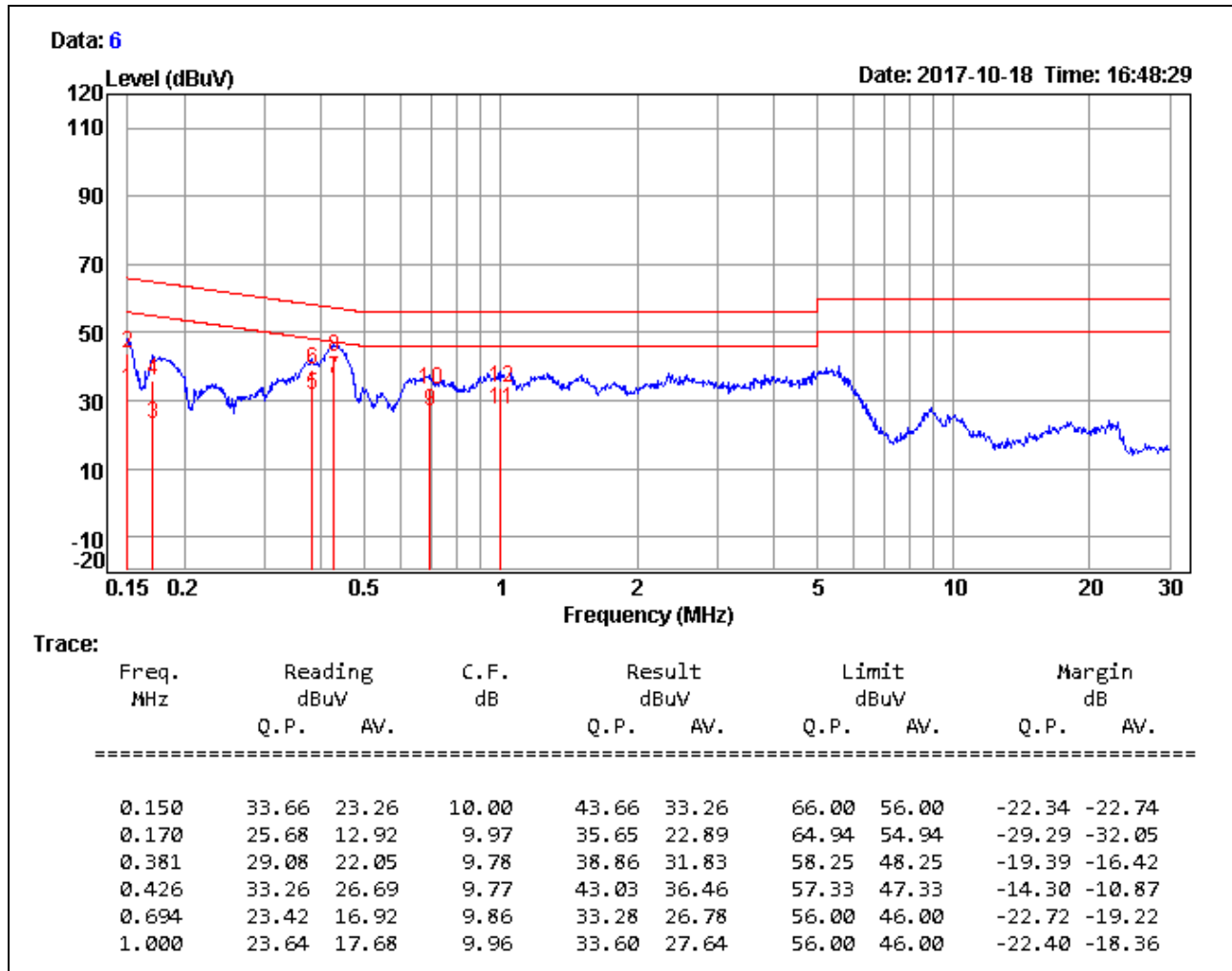
TEST RESULTS

Product Name	IP Phone	Test By	Waternil Guan
Test Model	OBI2182	Test Date	2017/10/18
Test Mode	WiFi Mode / Mode 1	Temp. & Humidity	28.9°C, 52%

LINE**Remark:**

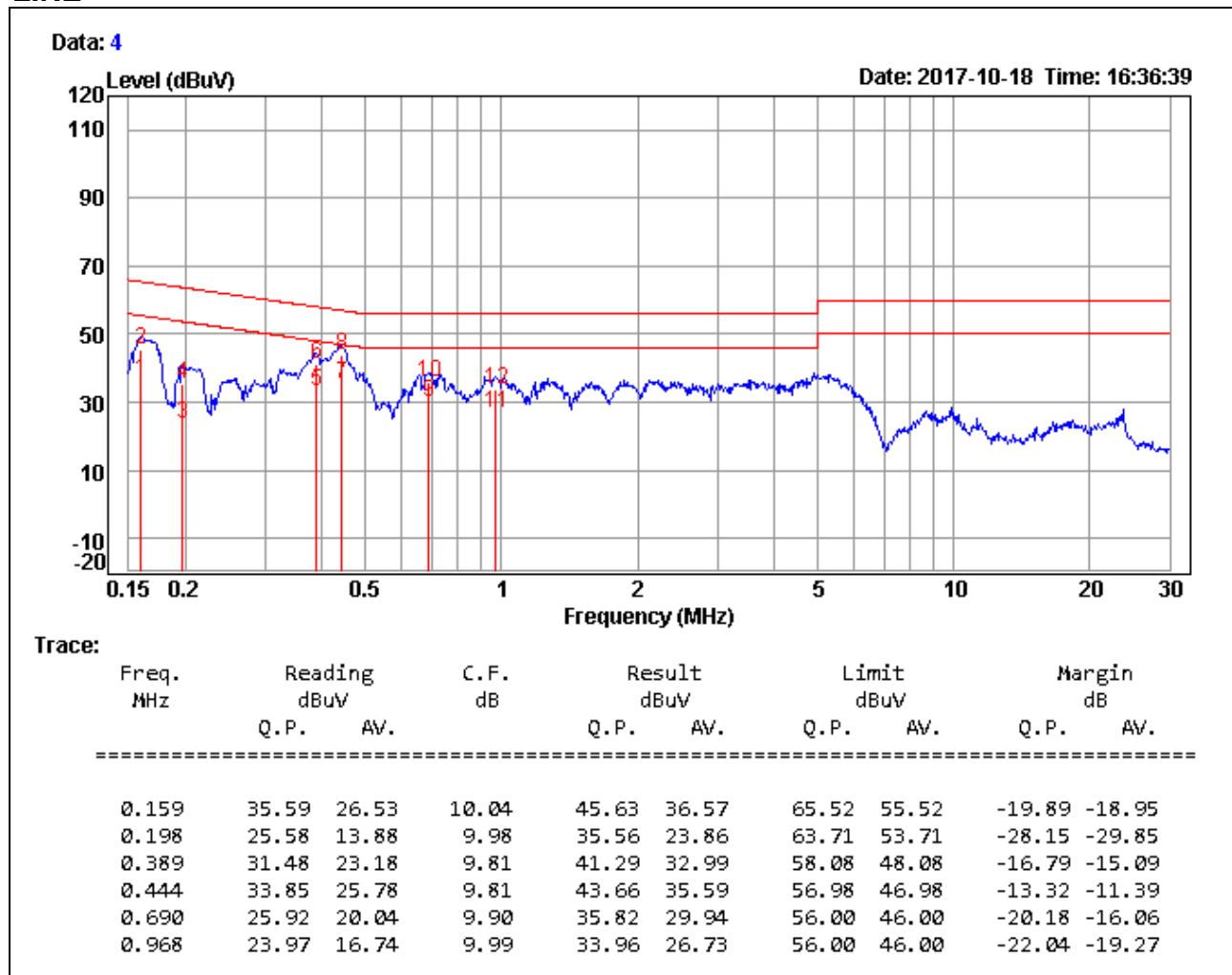
1. Correction Factor = Insertion loss + Cable loss
2. Result level = Reading Value + Correction factor
3. Margin value = Result level – Limit value

Product Name	IP Phone	Test By	Waternil Guan
Test Model	OBI2182	Test Date	2017/10/18
Test Mode	WiFi Mode / Mode 1	Temp. & Humidity	28.9°C, 52%

NEUTRAL**Remark:**

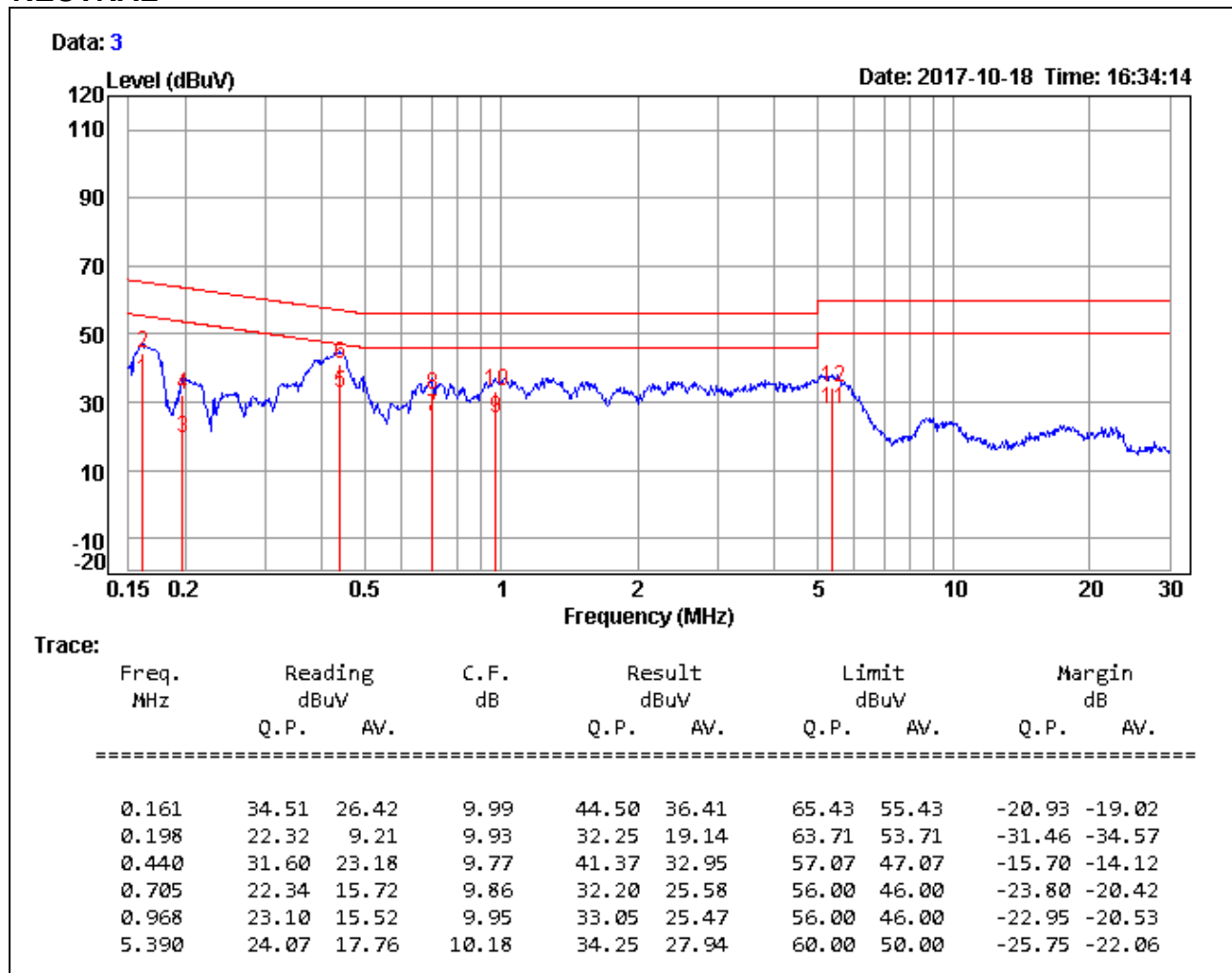
1. Correction Factor = Insertion loss + Cable loss
2. Result level = Reading Value + Correction factor
3. Margin value = Result level – Limit value

Product Name	IP Phone	Test By	Waternil Guan
Test Model	OBI2182	Test Date	2017/10/18
Test Mode	Bluetooth 4.0 Mode / Mode 1	Temp. & Humidity	28.9°C, 52%

LINE**Remark:**

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Product Name	IP Phone	Test By	Waternil Guan
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2. Result level = Reading Value + Correction factor
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