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

For

Display Unit

Model: EEMS330xxxxxxx ; EEMSyy330xxxxxxx
(where "x" or "y" may be any alphanumeric character or blank and where "y" is a country code)

Trade Name: Snap-on

Issued for

Snap-on Diagnostics

420 Barclay Blvd, Lincolnshire, Illinois, USA

Issued by

Compliance Certification Services Inc.
Hsinchu Lab.
NO. 989-1 Wen Shan Rd., Shang Shan Village,
Qionglin Township, Hsinchu County 30741, Taiwan (R.O.C.)
TEL: +886-3-5921698
FAX: +886-3-5921108

http://www.ccsrf.com
E-Mail: service@ccsrf.com

Issued Date: April 07, 2017

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	03/28/2017	Initial Issue	All Page 195	Dola Hsieh
01	04/05/2017	Added Setup Photo	All Page 196	Dola Hsieh
02	04/07/2017	Added Operation Mode	Page.6	Dola Hsieh

TABLE OF CONTENTS

1. TEST REPORT CERTIFICATION

Applicant	:	Snap-on Diagnostics
Address	:	420 Barclay Blvd, Lincolnshire, Illinois, USA
Equipment Under Test	:	Display Unit
Model	:	EEMS330xxxxxxx ; EEMSyy330xxxxxxx (where "x" or "y" may be any alphanumeric character or blank and where "y" is a country code)
Trade Name	:	Snap-on
Tested Date	:	April 28 ~ June 25, 2015 ; December 23, 2016 ~ March 15, 2017

APPLICABLE STANDARD	
Standard	**Test Result**
FCC Part 15 Subpart E 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:

Sb. Lu
Sr. Engineer

Reviewed by:

Gundam Lin
Sr. Engineer

2. EUT DESCRIPTION

Product Name	Display Unit
Model Number	EEMS330xxxxxxx ; EEMSyy330xxxxxxx (where “x” or “y” may be any alphanumeric character or blank and where “y” is a country code)
Identify Number	T161223D11
Received Date	April 28, 2015
Frequency Range	UNII Band 1: IEEE 802.11a, 802.11an HT20 : 5180MHz ~ 5240MHz IEEE 802.11an HT40 : 5190MHz ~ 5230MH UNII Band 2A: IEEE 802.11a, 802.11an HT20 : 5260MHz ~ 5320MHz IEEE 802.11an HT40 : 5270MHz ~ 5310MHz UNII Band 3: IEEE 802.11a, 802.11an HT20 : 5745MHz ~ 5825MHz IEEE 802.11an HT40 : 5755MHz ~ 5795MHz
Transmit Power	UNII Band 1: IEEE 802.11a Mode: 18.24 dBm (0.0677 W) IEEE 802.11an HT20 NSS1/MCS0 Mode: 21.23 dBm (0.1327 W) IEEE 802.11an HT40 NSS1/MCS0 Mode: 17.39 dBm (0.0548 W) UNII Band 2A: IEEE 802.11a Mode: 18.15 dBm (0.0653W) IEEE 802.11an HT20 NSS1/MCS0 Mode: 21.25 dBm (0.1334 W) IEEE 802.11an HT40 NSS1/MCS0 Mode: 17.65 dBm (0.0582 W) UNII Band 3: IEEE 802.11a Mode: 15.78 dBm (0.0378 W) IEEE 802.11an HT20 NSS1/MCS0 Mode: 17.30 dBm (0.0537 W) IEEE 802.11an HT40 NSS1/MCS0 Mode: 17.03 dBm (0.0505 W)
Channel Spacing	IEEE 802.11a, 802.11an HT20 Mode: 20MHz IEEE 802.11an HT40 Mode: 40MHz

Channel Number	IEEE 802.11a, 802.11an HT20 Mode: 5150MHz ~ 5250MHz: 4 Channels 5250MHz ~ 5350MHz: 4 Channels 5725MHz ~ 5850MHz: 5 Channels IEEE 802.11an HT40 Mode: 5150MHz ~ 5250MHz: 2 Channels 5250MHz ~ 5350MHz: 2 Channels 5725MHz ~ 5850MHz: 2 Channels
Transmit Data Rate	IEEE 802.11a Mode: up to 54 Mbps IEEE 802.11an HT20 Mode (800ns GI): up to 130.00 Mbps IEEE 802.11an HT20 Mode (400ns GI): up to 144.40 Mbps IEEE 802.11an HT40 Mode (800ns GI): up to 270.00 Mbps IEEE 802.11an HT40 Mode (400ns GI): up to 300.00 Mbps
Type of Modulation	IEEE 802.11a Mode: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11an HT20/40 Mode: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Type	PIFA Antenna × 2 Ant. 0/Main (Chain 0), Antenna Gain: 3.02 dBi Ant. 1/Aux (Chain 1), Antenna Gain: 3.47 dBi
Power Rating	11.1Vdc, 5200mAh/58Wh (For Battery) 19Vdc (For Charging)
Test Voltage	120Vac, 60Hz
I/O Port	EUT : RJ-45 Port × 1, USB Port × 2, Power Port × 1, SD Card Port × 1, Audio Port × 1, RS232 Port × 1, Single Port × 5, Control Port × 1(For Docking) Ducking : USB Port × 4, HDMI Port × 1, Power Port × 1, VGA Port × 1, Control Port × 1
Operation Mode	☒CDD Mode ☐Beamforming Mode ☐Other

The difference of the series model

Model Number	Difference
EEMS330xxxxxxx	1. For marketing purpose only. 2. where "x" or "y" may be any alphanumeric character or blank and where "y" is a country code
EEMSyy330xxxxxxx	

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: STO-EEMS330E filing to comply with Section 15.207, 15.209 and 15.407 of the FCC Part 15, Subpart E Rules.*
4. *The model EEMS330 was considered the main model for testing.*
5. *This report is modified from T150428L12-RP1-2.*

3. DESCRIPTION OF TEST MODES

The EUT (Display Unit) had been tested under operating condition.
For IEEE 802.11a Mode: (1TX / 1RX): Ant.0/Main (Chain 0) transmit/receive.
For IEEE 802.11an HT20/HT40 Mode (2TX / 2RX):
Ant.0/Main (Chain 0) and Ant.1/Aux (Chain 1) transmit/receive.

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
	Radiated Emission	Mode 1

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)

IEEE 802.11a, 802.11an HT20 Mode

The EUT had been tested under operating condition.

There are three channels have been tested as following:

UNII Band	Channel	Frequency (MHz)
Band 1	Low	5180
	Middle	5200
	High	5240
Band 2A	Low	5260
	Middle	5300
	High	5320
Band 3	Low	5745
	Middle	5785
	High	5825

IEEE 802.11a Mode: 6Mbps data rate (worst case) was chosen for full testing.
IEEE 802.11an HT20 NSS1/MCS0 Mode: 6.5Mbps data rate (worst case) was chosen for full testing.

IEEE 802.11an HT40 Mode:

The EUT had been tested under operating condition.

There are two channels have been tested as following:

UNII Band	Channel	Frequency (MHz)
Band 1	Low	5190
	High	5230
Band 2A	Low	5270
	High	5310
Band 3	Low	5755
	High	5795

IEEE 802.11an HT40 NSS1/MCS0 Mode: 13.5Mbps data rate (worst case) was chosen for full testing.

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 lie-down position(Z 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. 407 and FCC 16-24.

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, CISPR 16-1-5.

5.2 ACCREDITATIONS

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

Taiwan	TAF

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

Canada	INDUSTRY CANADA
Japan	VCCI
Taiwan	BSMI
USA	FCC MRA

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

Remark: *FCC Designation Number TW1027.*

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

6. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

No.	Product	Manufacturer	Model No.	Power Input	Power Output
1	Power Adapter	FSP GROUP INC.	FSP065-REBN2	100-240Vac, 1.5A, 50-60Hz	19Vdc, 3.42A

SETUP DIAGRAM FOR TESTS

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

EUT OPERATING CONDITION

1. EUT & peripherals setup diagram is shown in appendix setup photos.
2. Run Test software. “artqui”
3. TX Mode:

⇨ **Data Rate:** 6Mbps Bandwidth 20 (IEEE 802.11a Mode)
6.5Mbps Bandwidth 20 (IEEE 802.11an HT20 NSS1/MCS0 Mode)
13.5Mbps Bandwidth 40 (IEEE 802.11an HT40 NSS1/MCS0 Mode)

⇨ **Power control**

IEEE 802.11a Mode

UNII Band	Channel	Frequency (MHz)	Chain	Power Set
Band 1	Low	5180	0	16
	Middle	5200	0	20
	High	5240	0	20
Band 2A	Low	5260	0	20
	Middle	5300	0	20
	High	5320	0	18
Band 3	Low	5745	0	10
	Middle	5785	0	18
	High	5825	0	15

IEEE 802.11an HT20 NSS1/MCS0 Mode

UNII Band	Channel	Frequency (MHz)	Chain	Power Set
Band 1	Low	5180	0/1	15
	Middle	5200	0/1	20
	High	5240	0/1	20
Band 2A	Low	5260	0/1	20
	Middle	5300	0/1	20
	High	5320	0/1	16
Band 3	Low	5745	0/1	8
	Middle	5785	0/1	16
	High	5825	0/1	10

IEEE 802.11an HT40 NSS1/MCS0 Mode

UNII Band	Channel	Frequency (MHz)	Chain	Power Set
Band 1	Low	5190	0/1	8
	High	5230	0/1	16
Band 2A	Low	5270	0/1	16
	High	5310	0/1	9
Band 3	Low	5755	0/1	6
	High	5795	0/1	16

4. All of the functions are under run.
5. Start test.

7. FCC PART 15.407 REQUIREMENTS

7.1 DUTY CYCLE MEASUREMENT

Product Name	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/20
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 802.11a	1.352	1.404	96.30%	0.16	0.740
IEEE 802.11an HT20	1.272	1.316	96.66%	0.15	0.786
IEEE 802.11an HT40	0.632	0.664	95.22%	0.21	1.582

7.2 26dB BANDWIDTH

LIMITS

None: For reporting purposes only.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EXA Signal Analyzer	Agilent	N9010A	MY52220817	03/19/2016
Test S/W	N/A			

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

TEST SETUP

TEST PROCEDURE

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

TEST RESULTS

Product Name	Display Unit	Test By	Davis Tseng
Test Model	EEMS330	Test Date	2015/06/04
Test Mode	TX Mode	Temp. & Humidity	24°C, 51%

IEEE 802.11a Mode

U-NII Band	Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)
			Chain 0
Band 2A	Low	5260	30.00
	Middle	5300	29.61
	High	5320	28.53

IEEE 802.11an HT20 NSS1/MCS0 Mode (2TX)

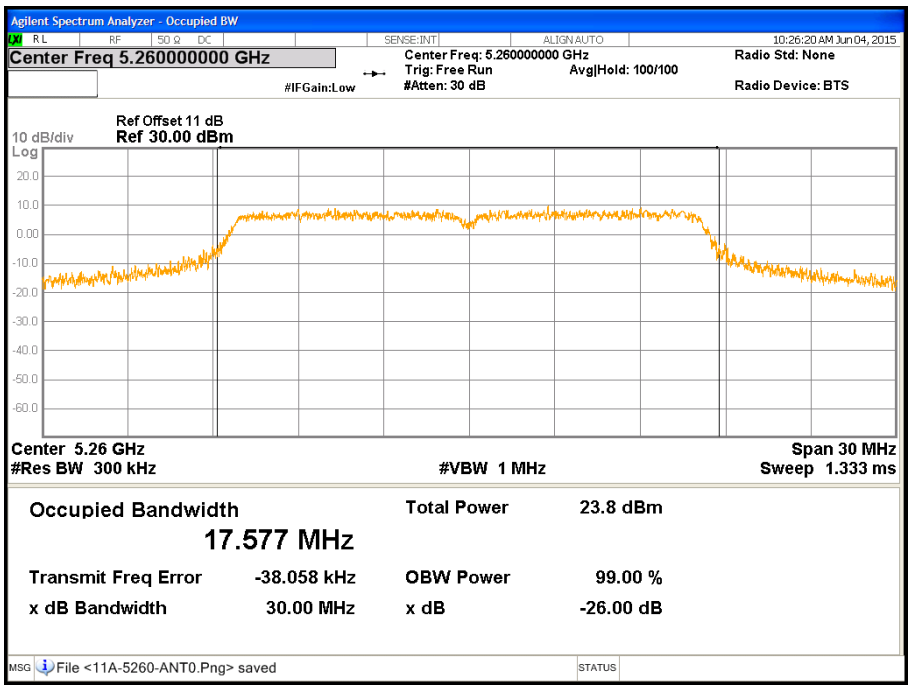
U-NII Band	Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	
			Chain 0	Chain 1
Band 2A	Low	5260	29.98	30.00
	Middle	5300	30.00	30.00
	High	5320	29.61	29.14

IEEE 802.11an HT40 NSS1/MCS0 Mode (2TX)

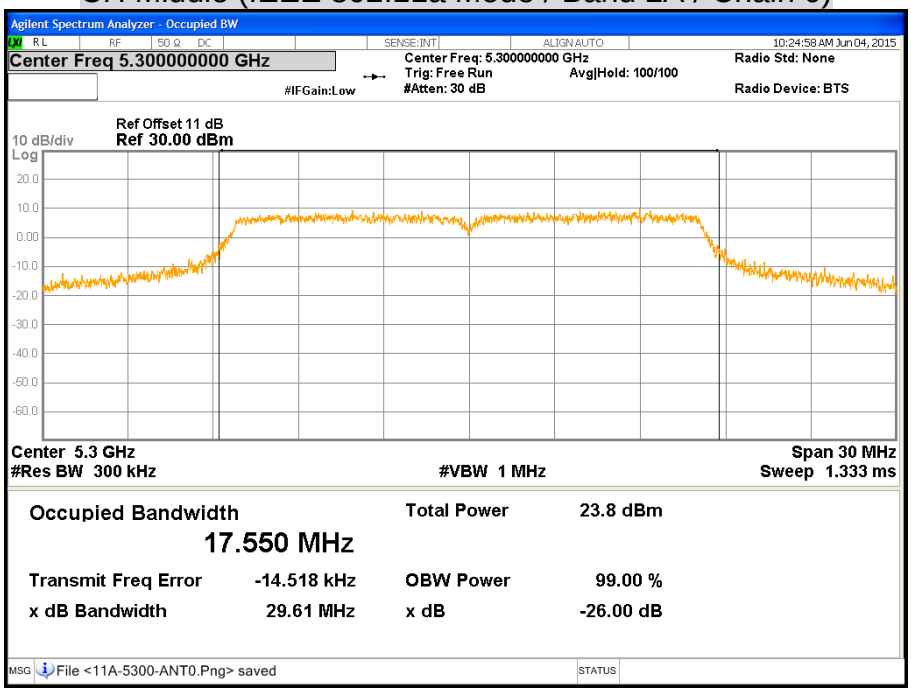
U-NII Band	Channel	Channel Frequency (MHz)	26dB Bandwidth (MHz)	
			Chain 0	Chain 1
Band 2A	Low	5270	55.71	57.83
	High	5310	49.15	45.93

26dB BANDWIDTH

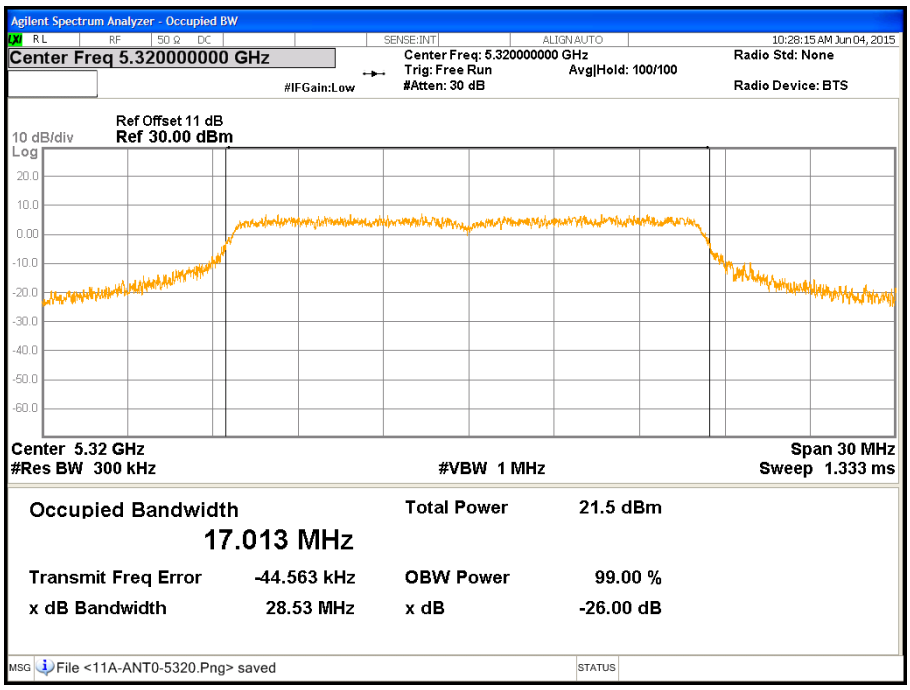
CH Low (IEEE 802.11a Mode / Band 2A / Chain 0)



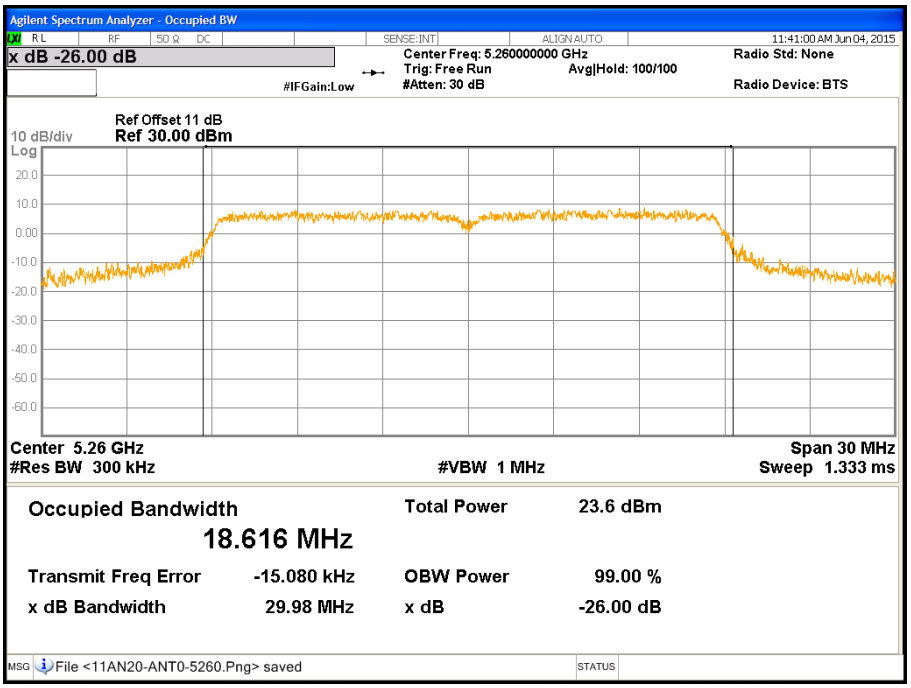
CH Middle (IEEE 802.11a Mode / Band 2A / Chain 0)



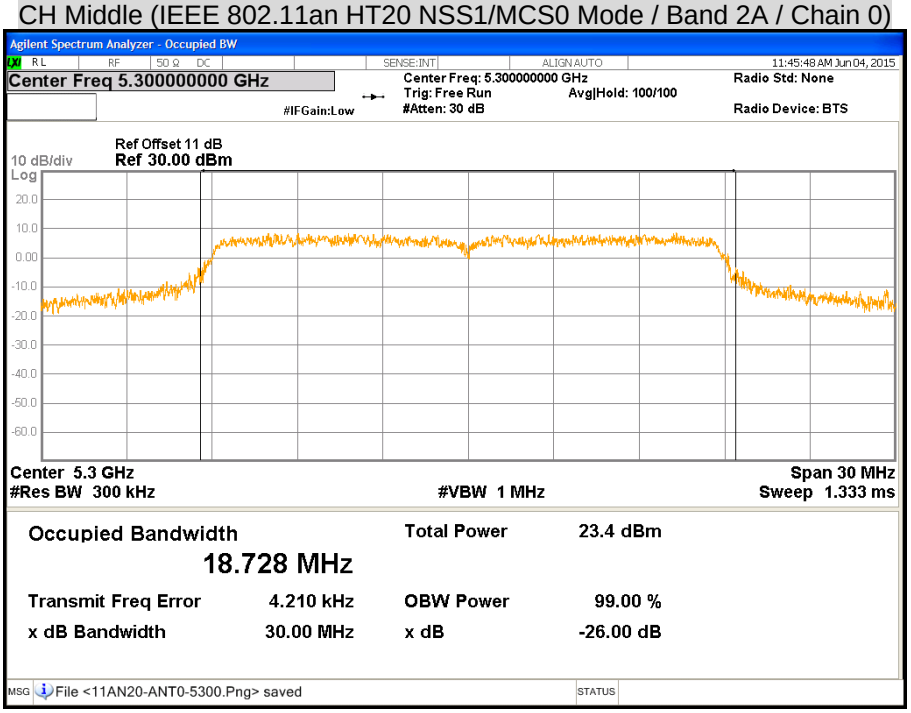
CH High (IEEE 802.11a Mode / Band 2A / Chain 0)



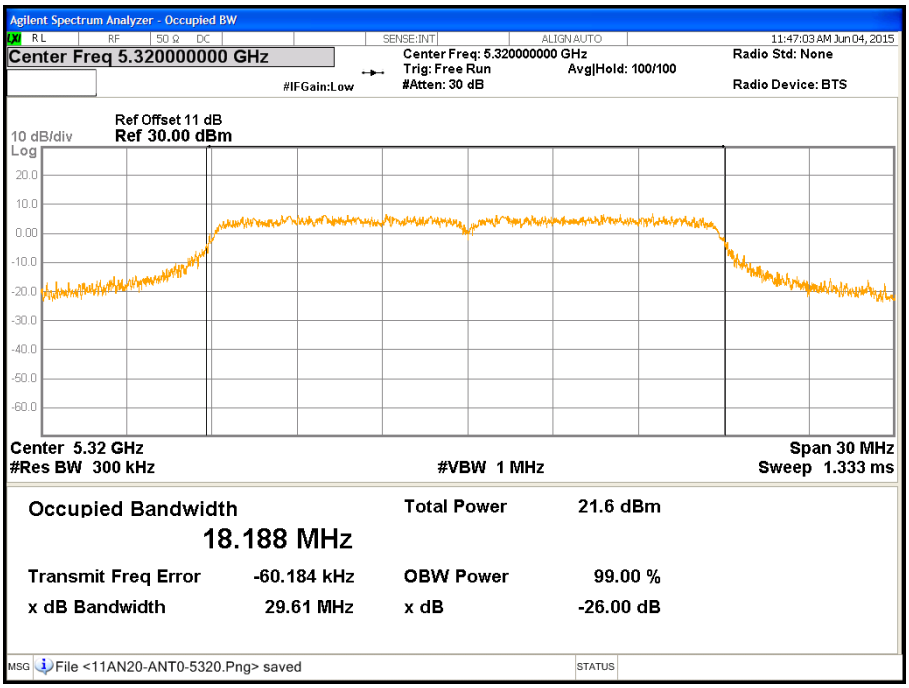
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 0)



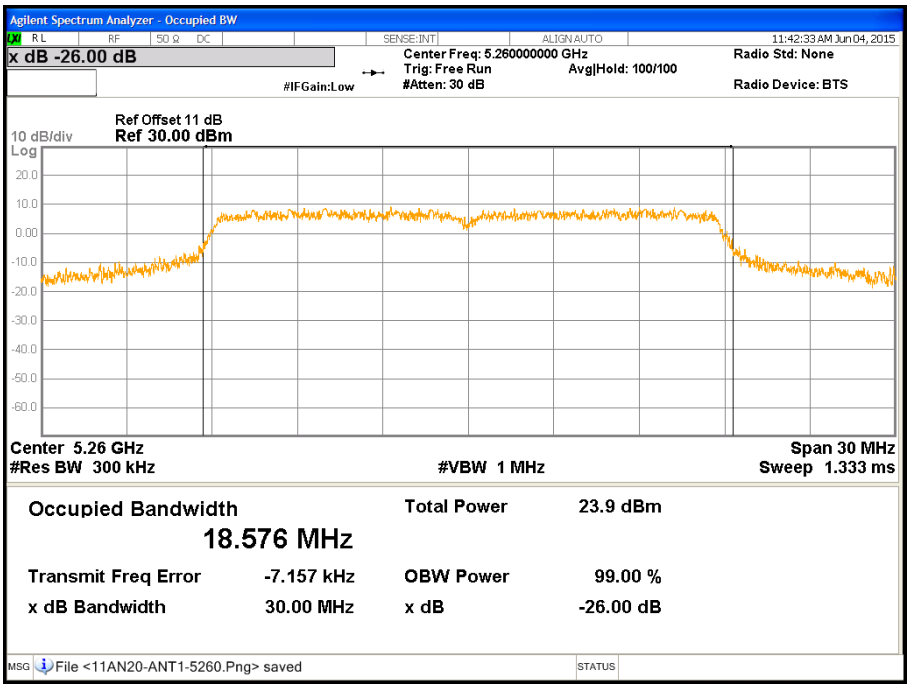
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 0)



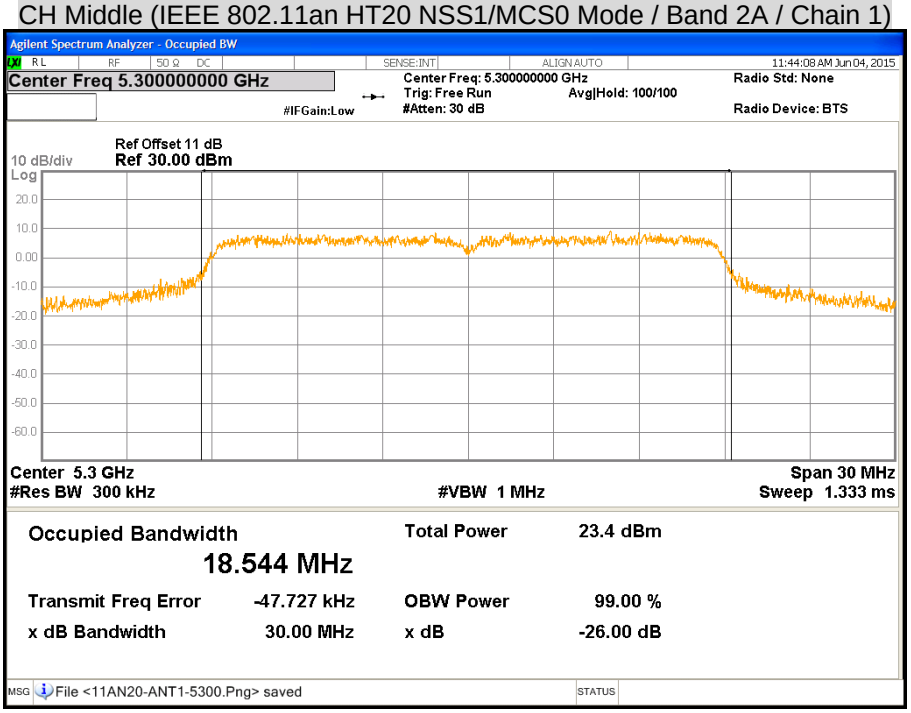
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 0)



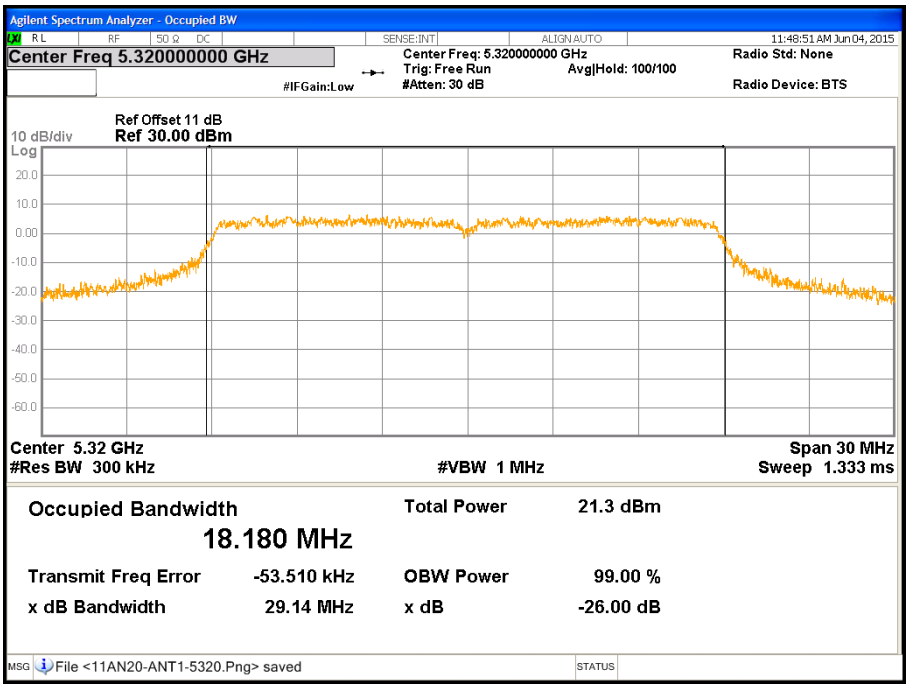
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 1)



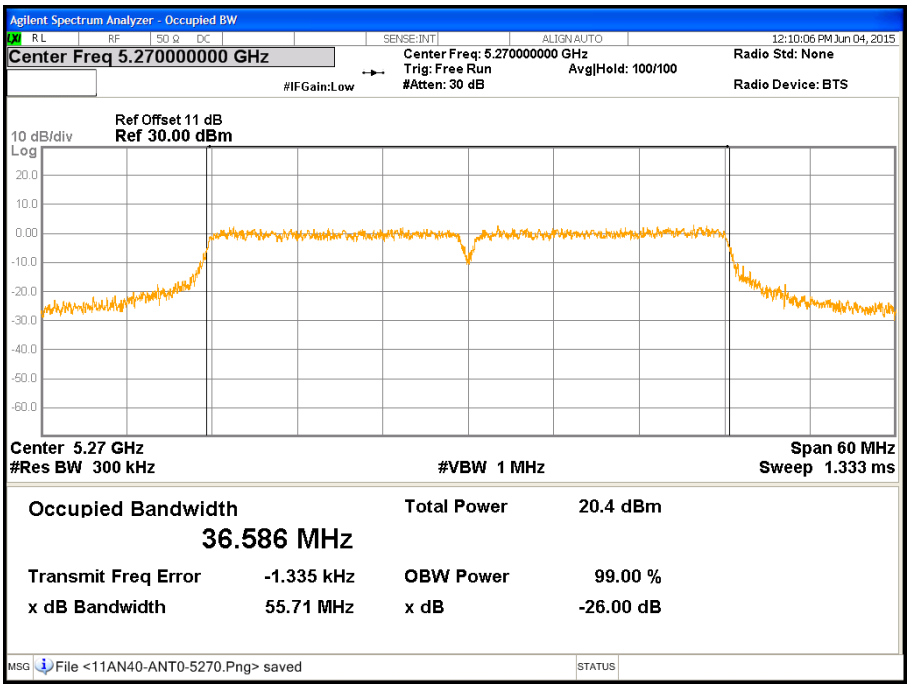
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 1)



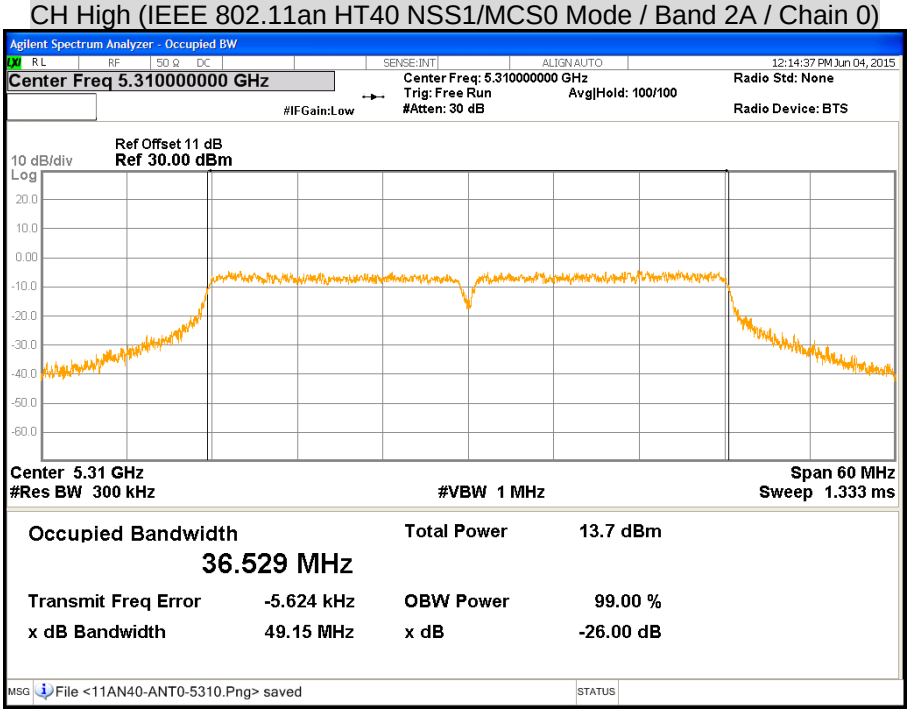
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 1)



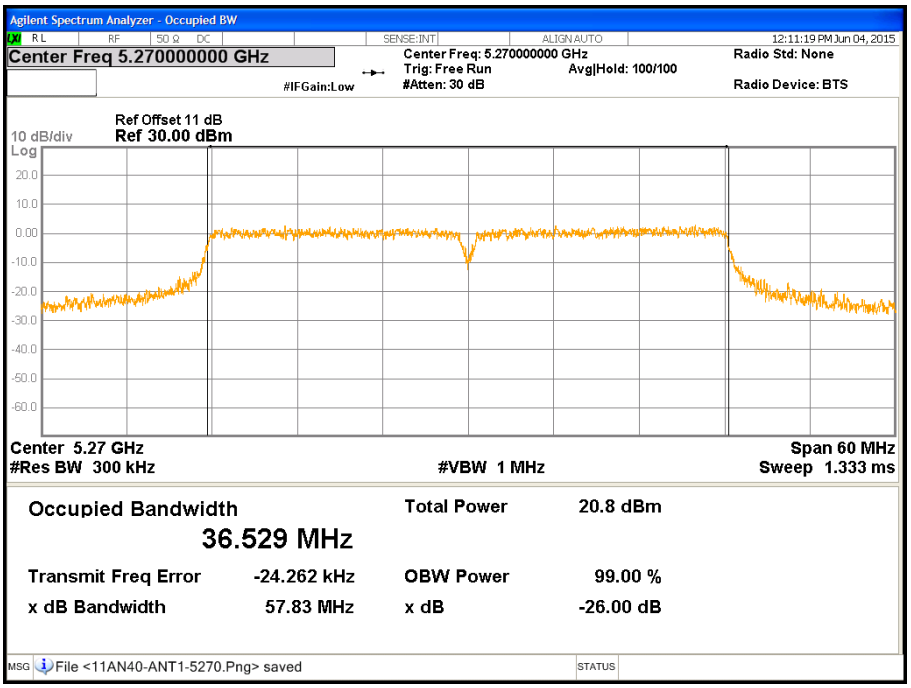
CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 0)



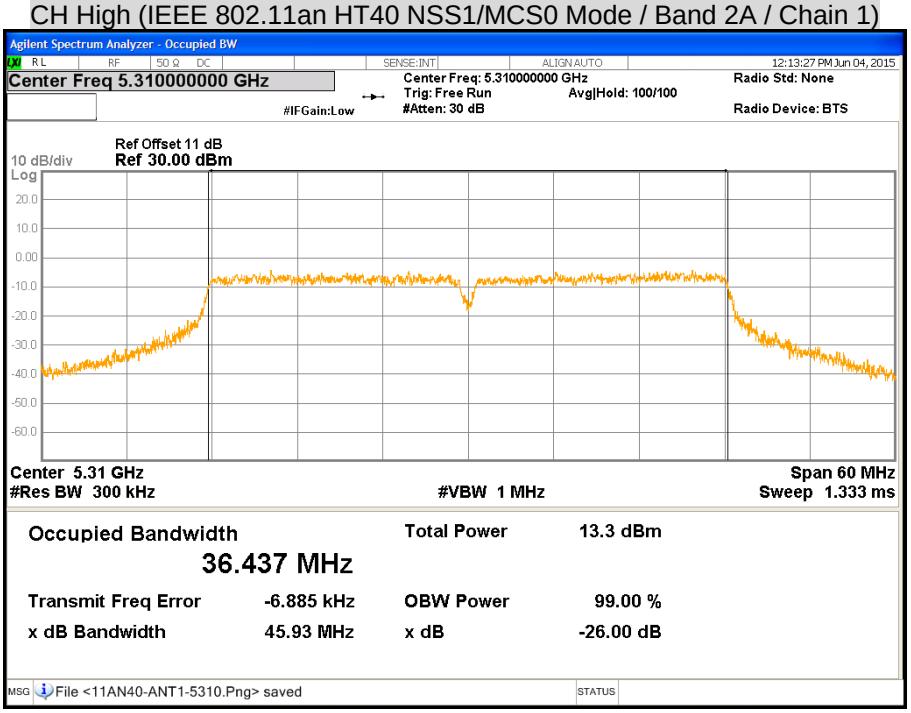
CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 0)



CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 1)



CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 1)



7.3 6dB BANDWIDTH

LIMITS

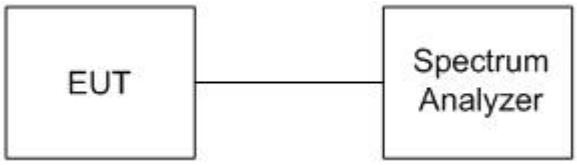
According to§ 15.407 (e), within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EXA Signal Analyzer	Agilent	N9010A	MY52220817	03/19/2016
Test S/W	N/A			

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

TEST SETUP



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Sweep = auto.
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.

TEST RESULTS

Product Name	Display Unit	Test By	Davis Tseng
Test Model	EEMS330	Test Date	2015/06/04
Test Mode	TX Mode	Temp. & Humidity	24°C, 51%

IEEE 802.11a Mode

U-NII Band	Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (kHz)
			Chain 0	
Band 3	Low	5745	16.44	500
	Middle	5785	16.38	500
	High	5825	16.57	500

IEEE 802.11an HT20 NSS1/MCS0 Mode (2TX)

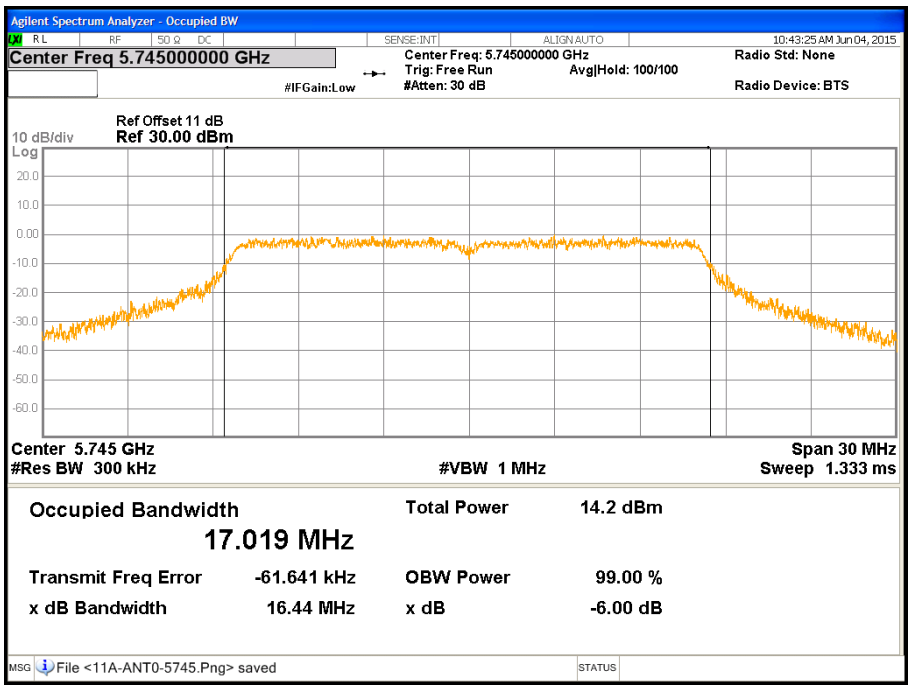
U-NII Band	Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)
			Chain 0	Chain 1	
Band 3	Low	5745	17.65	17.75	500
	Middle	5785	17.61	17.72	500
	High	5825	17.61	17.66	500

IEEE 802.11an HT40 NSS1/MCS0 Mode (2TX)

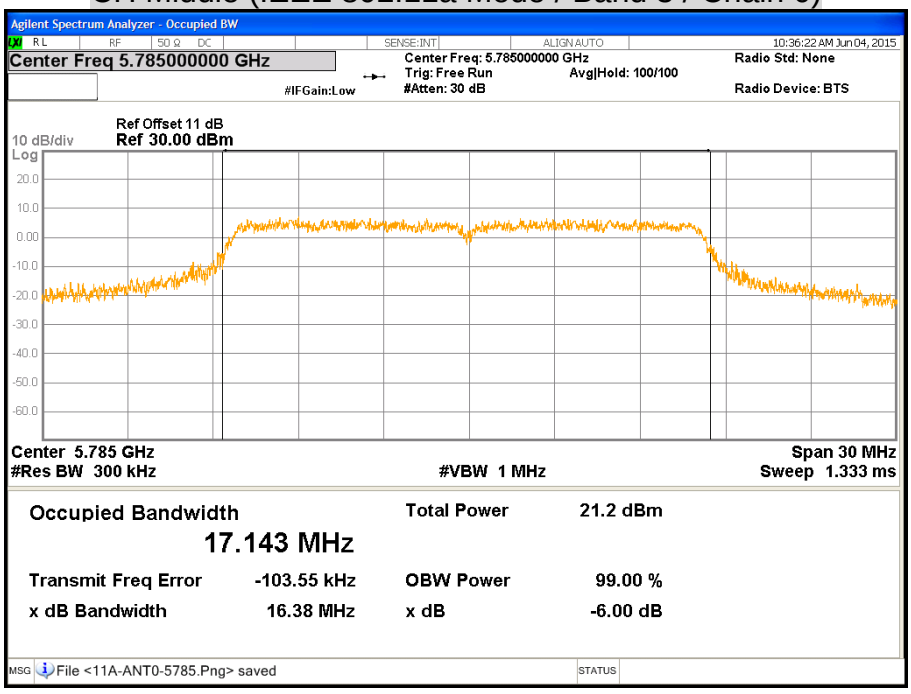
U-NII Band	Channel	Channel Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (kHz)
			Chain 0	Chain 1	
Band 3	Low	5755	36.46	36.39	500
	High	5795	36.46	36.45	500

6dB BANDWIDTH

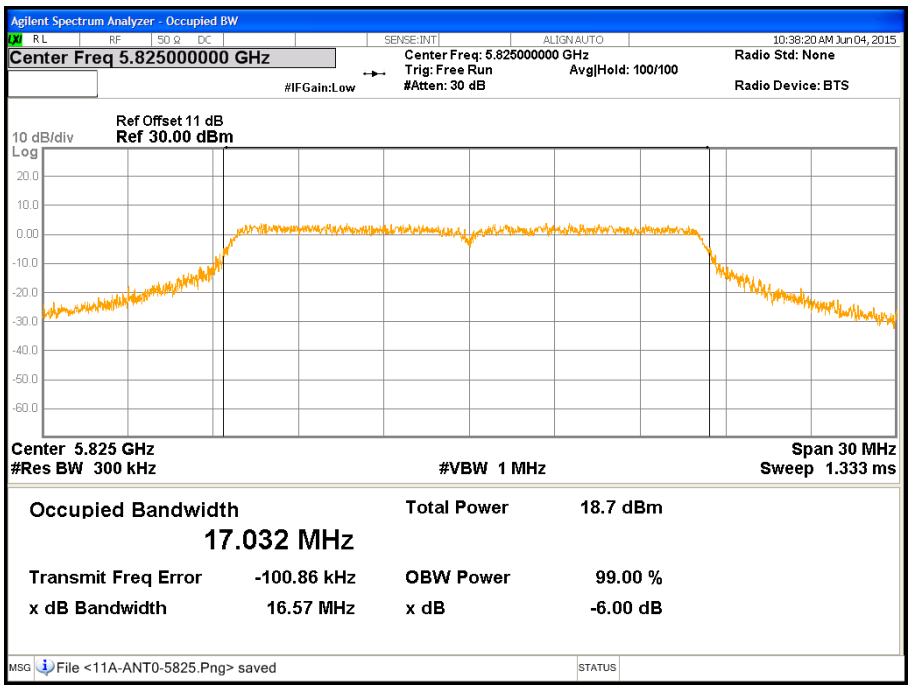
CH Low (IEEE 802.11a Mode / Band 3 / Chain 0)



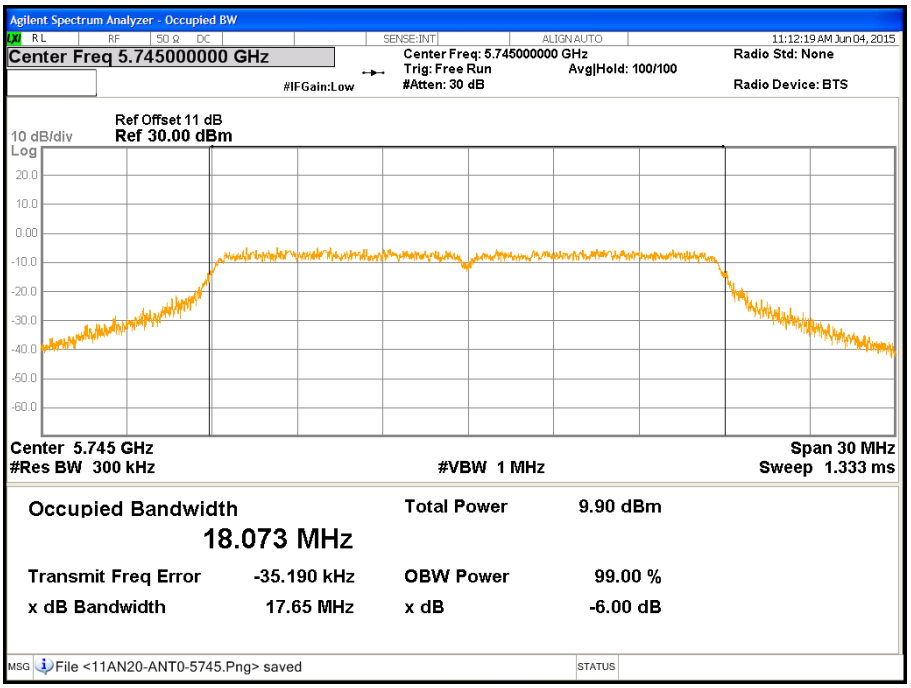
CH Middle (IEEE 802.11a Mode / Band 3 / Chain 0)



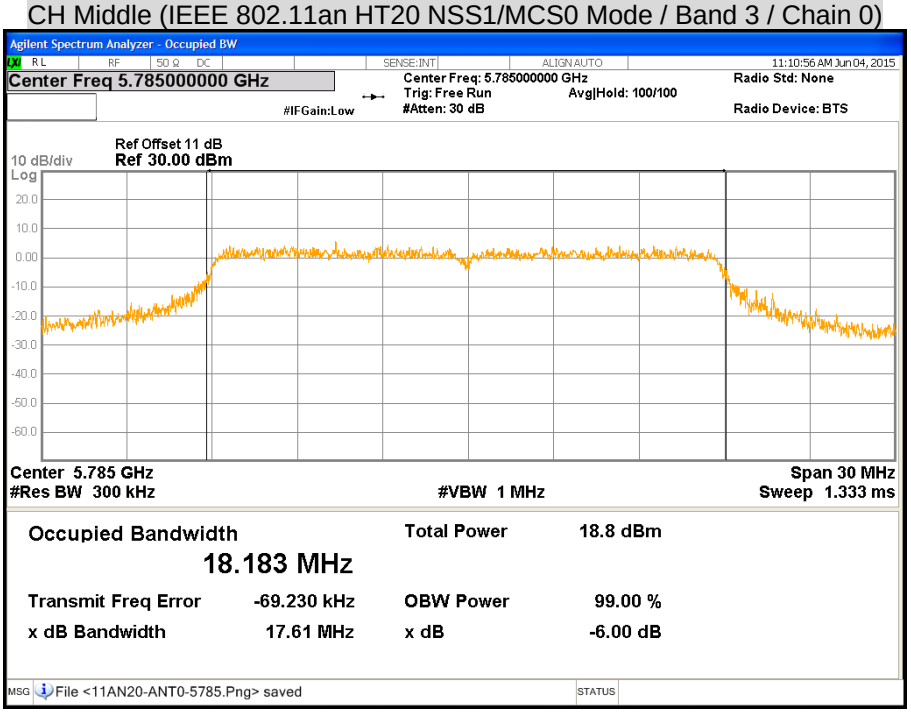
CH High (IEEE 802.11a Mode / Band 3 / Chain 0)



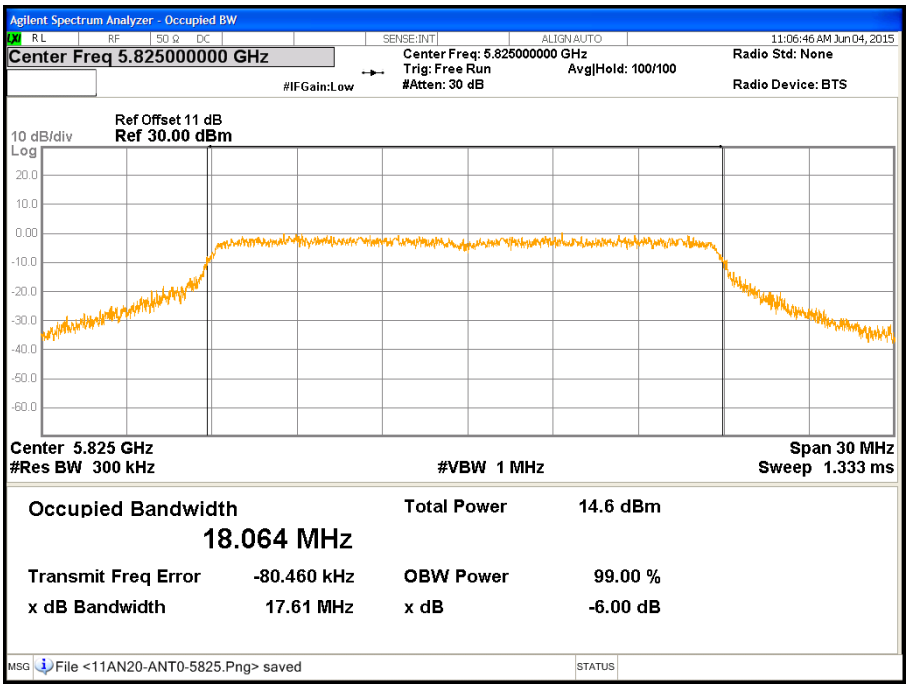
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 0)



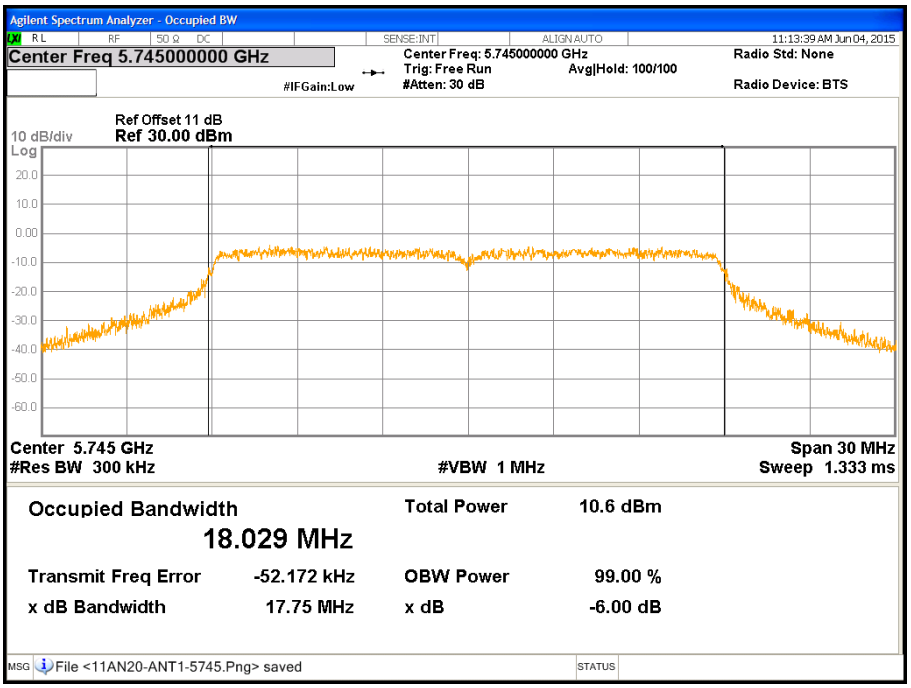
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 0)



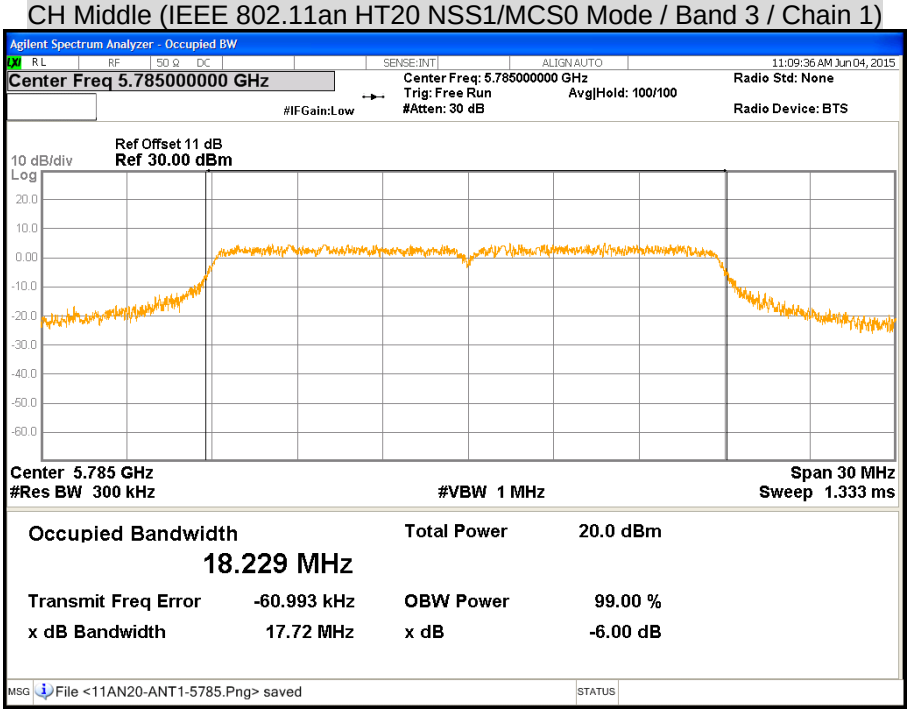
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 0)



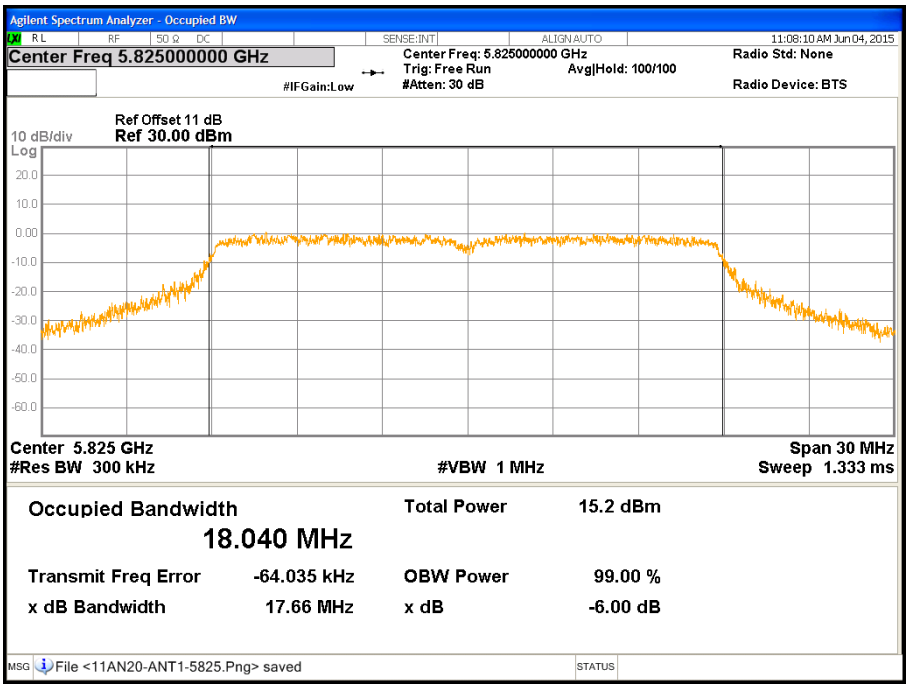
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 1)



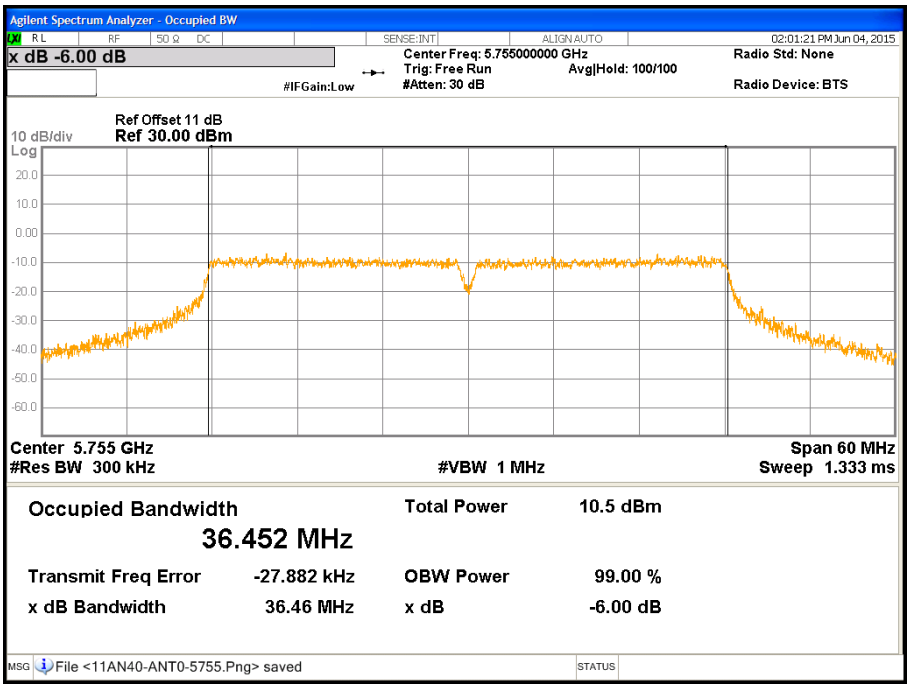
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 1)



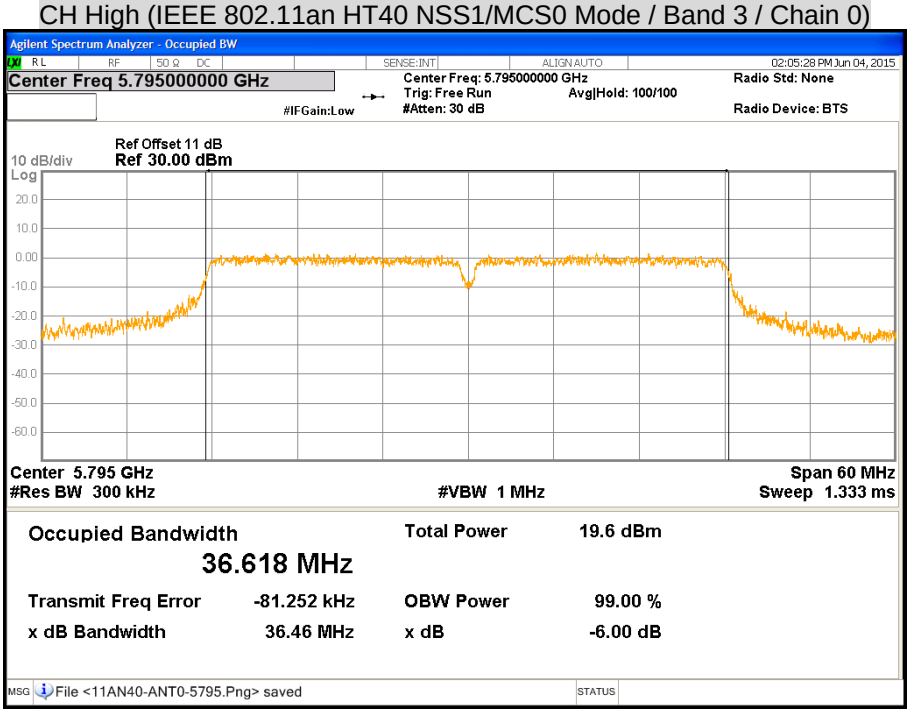
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 1)



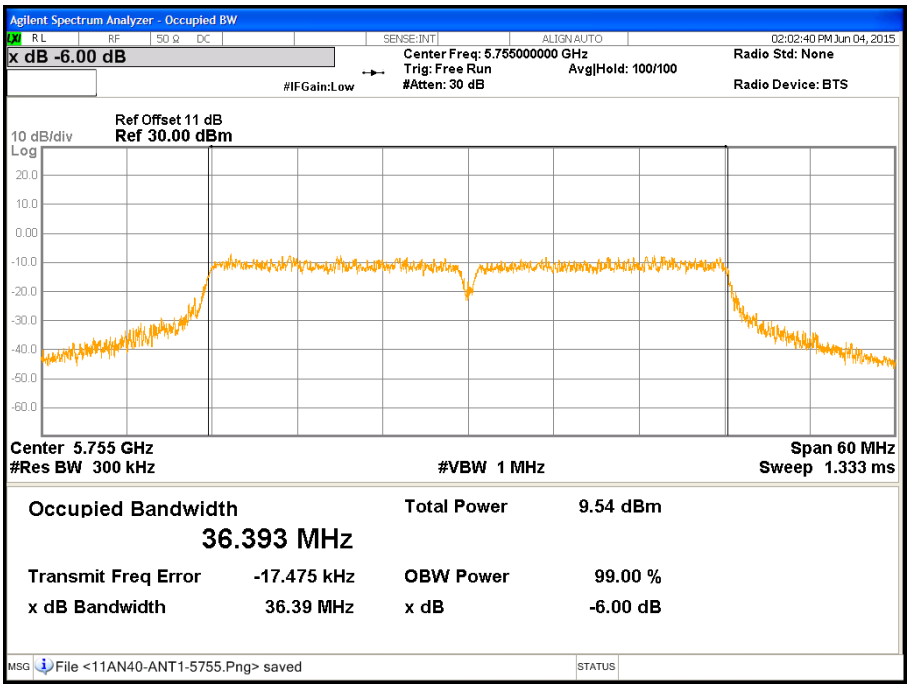
CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 0)



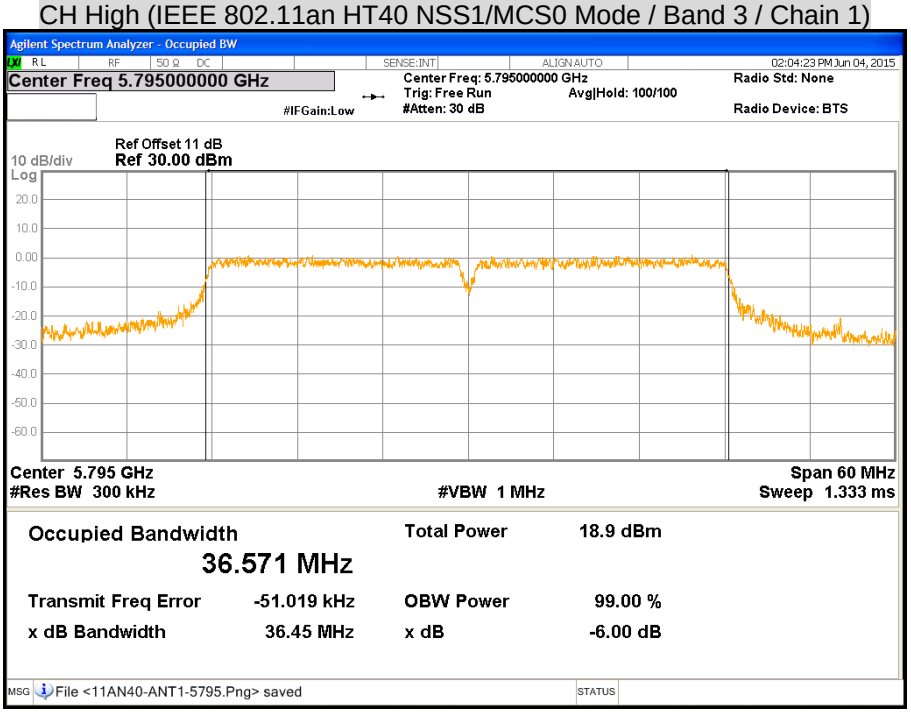
CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 0)



CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 1)



CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 1)



7.4 MAXIMUM CONDUCTED OUTPUT POWER

LIMITS

§ 15.407(a)

(1) For the band 5.15-5.25 GHz,

(I) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(II) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

(III) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(IV) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

§ 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	12/11/2015
Power Sensor	Anritsu	MA2411B	1126148	12/11/2015
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 power detection.

TEST RESULTS

Product Name	Display Unit	Test By	Davis Tseng
Test Model	EEMS330	Test Date	2015/06/03
Test Mode	TX Mode	Temp. & Humidity	24°C, 51%

The power shall not exceed the limit as follows:

IEEE 802.11a Mode

UNII Band	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)	11dBm + 10 Log B (dBm)	Maximum Conducted Output Power Limit (dBm)
		Chain 0		
Band 2A	5260	30.00	25.7712	24
	5300	29.61	25.7144	24
	5320	28.53	25.5530	24

IEEE 802.11an HT20 NSS1/MCS0 Mode (2TX)

UNII Band	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)		11dBm + 10 Log B (dBm)		Maximum Conducted Output Power Limit (dBm)
		Chain 0	Chain 1	Chain 0	Chain 1	
Band 2A	5260	29.98	30.00	25.7683	25.7712	24
	5300	30.00	30.00	25.7712	25.7712	24
	5320	29.61	29.14	25.7144	25.6449	24

IEEE 802.11an HT40 NSS1/MCS0 Mode (2TX)

UNII Band	Channel Frequency (MHz)	26dB Bandwidth (B) (MHz)		11dBm + 10 Log B (dBm)		Maximum Conducted Output Power Limit (dBm)
		Chain 0	Chain 1	Chain 0	Chain 1	
Band 2A	5270	55.71	57.83	28.4593	28.6215	24
	5310	49.15	45.93	27.9152	27.6210	24

Product Name	Display Unit	Test By	Davis Tseng
Test Model	EEMS330	Test Date	2015/06/04
Test Mode	TX Mode	Temp. & Humidity	24°C, 51%

IEEE 802.11a Mode

UNII Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power				Result
			Chain 0		Limit		
			(dBm)	(W)	(dBm)	(W)	
Band 1	Low	5180	14.12	0.0258	24	0.250	PASS
	Middle	5200	18.19	0.0659	24	0.250	PASS
	High	5240	18.24	0.0667	24	0.250	PASS
Band 2A	Low	5260	18.15	0.0653	24	0.250	PASS
	Middle	5300	18.13	0.0650	24	0.250	PASS
	High	5320	16.21	0.0418	24	0.250	PASS
Band 3	Low	5745	8.82	0.0076	30	1.000	PASS
	Middle	5785	15.78	0.0378	30	1.000	PASS
	High	5825	12.81	0.0191	30	1.000	PASS

Remark:

1. *At finial test to get the worst-case emission at 6Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.*
3. *The maximum antenna gain is 3.02 dBi which is less than 6dBi, the limit should be 30 dBm.*

IEEE 802.11an HT20 NSS1/MCS0 Mode (2TX)

UNII Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power						Result
			Chain 0	Chain 1	Total		Limit		
			(dBm)	(dBm)	(dBm)	(W)	(dBm)	(W)	
Band 1	Low	5180	13.26	13.56	16.42	0.0439	24	0.250	PASS
	Middle	5200	17.42	17.65	20.55	0.1135	24	0.250	PASS
	High	5240	18.08	18.35	21.23	0.1327	24	0.250	PASS
Band 2A	Low	5260	18.19	18.28	21.25	0.1334	24	0.250	PASS
	Middle	5300	18.17	18.03	21.11	0.1291	24	0.250	PASS
	High	5320	14.58	14.51	17.56	0.0570	24	0.250	PASS
Band 3	Low	5745	7.02	7.48	10.27	0.0106	30	1.000	PASS
	Middle	5785	14.23	14.35	17.30	0.0537	30	1.000	PASS
	High	5825	8.98	9.54	12.28	0.0169	30	1.000	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.*
3. *Total output power = Chain 0 + Chain 1.*
4. *The maximum antenna gain is 3.17 dBi which is less than 6dBi, the limit should be 24 & 30dBm.*

IEEE 802.11an HT40 NSS1/MCS0 Mode (2TX)

UNII Band	Channel	Channel Frequency (MHz)	Maximum Conducted Output Power						Result
			Chain 0	Chain 1	Total		Limit		
			(dBm)	(dBm)	(dBm)	(W)	(dBm)	(W)	
Band 1	Low	5190	6.65	6.46	9.57	0.0091	24	0.250	PASS
	High	5230	14.23	14.52	17.39	0.0548	24	0.250	PASS
Band 2A	Low	5270	14.74	14.54	17.65	0.0582	24	0.250	PASS
	High	5310	8.45	7.40	10.97	0.0125	24	0.250	PASS
Band 3	Low	5755	5.73	5.74	8.75	0.0075	30	1.000	PASS
	High	5795	13.92	14.12	17.03	0.0505	30	1.000	PASS

Remark:

1. *At finial test to get the worst-case emission at 13.5Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.*
3. *Total output power = Chain 0 + Chain 1.*
4. *The maximum antenna gain is 3.17 dBi which is less than 6dBi, the limit should be 24 & 30dBm.*

7.5 PEAK POWER SPECTRAL DENSITY

LIMITS

§ 15.407 (a)

(1) For the band 5.15-5.25 GHz

(I) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(II) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

(III) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

§ 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,

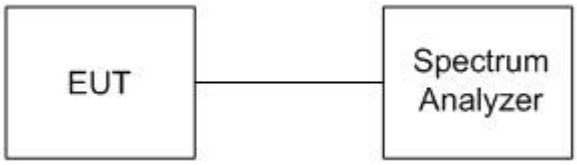
$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EXA Signal Analyzer	Agilent	N9010A	MY52220817	03/19/2016
Test S/W	N/A			

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

TEST SETUP



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
   Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 1MHz, VBW = 3MHz, Span = Sweep= AUTO
3. Record the max. reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.

TEST RESULTS

Product Name	Display Unit	Test By	Davis Tseng
Test Model	EEMS330	Test Date	2015/06/04
Test Mode	TX Mode	Temp. & Humidity	24°C, 51%

IEEE 802.11a Mode

U-NII Band	Channel	Channel Frequency (MHz)	Peak Power Spectral Density (dBm/MHz)		Result
			Chain 0	Limit	
Band 1	Low	5180	3.215	11	PASS
	Middle	5200	6.401	11	PASS
	High	5240	6.831	11	PASS
Band 2A	Low	5260	6.249	11	PASS
	Middle	5300	6.491	11	PASS
	High	5320	4.394	11	PASS

Remark:
1. *At finial test to get the worst-case emission at 6Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.*

U-NII Band	Channel	Channel Frequency (MHz)	Peak Power Spectral Density (dBm/500kHz)		Result
			Chain 0	Limit	
Band 3	Low	5745	-5.505	30	PASS
	Middle	5785	1.027	30	PASS
	High	5825	-1.509	30	PASS

Remark:
1. *At finial test to get the worst-case emission at 6Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.*

IEEE 802.11an HT20 NSS1/MCS0 Mode (2TX)

U-NII Band	Channel	Channel Frequency (MHz)	Peak Power Spectral Density (dBm/MHz)				Result
			Chain 0	Chain 1	Total	Limit	
Band 1	Low	5180	2.860	2.963	5.92	10.74	PASS
	Middle	5200	5.755	6.467	9.14	10.74	PASS
	High	5240	6.502	6.453	9.49	10.74	PASS
Band 2A	Low	5260	6.265	6.670	9.48	10.74	PASS
	Middle	5300	6.334	5.959	9.16	10.74	PASS
	High	5320	2.439	2.268	5.36	10.74	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.*
3. *Total power spectral density = Chain 0 + Chain 1.*
4. *The directional gain is 6.26 dBi which is more than 6dBi, the limit should be 10.74 dBm.*

U-NII Band	Channel	Channel Frequency (MHz)	Peak Power Spectral Density (dBm/500kHz)				Result
			Chain 0	Chain 1	Total	Limit	
Band 3	Low	5745	-4.365	-3.984	-1.16	29.74	PASS
	Middle	5785	-0.463	-0.343	2.61	29.74	PASS
	High	5825	-5.760	-4.813	-2.25	29.74	PASS

Remark:

1. *At finial test to get the worst-case emission at 6.5Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.*
3. *Total power spectral density = Chain 0 + Chain 1.*
4. *The directional gain is 6.26 dBi which is more than 6dBi, the limit should be 29.74 dBm.*

IEEE 802.11an HT40 NSS1/MCS0 Mode (2TX)

U-NII Band	Channel	Channel Frequency (MHz)	Peak Power Spectral Density (dBm/MHz)				Result
			Chain 0	Chain 1	Total	Limit	
Band 1	Low	5190	-7.489	-7.220	-4.34	10.74	PASS
	High	5230	0.311	0.570	3.45	10.74	PASS
Band 2A	Low	5270	0.309	0.475	3.40	10.74	PASS
	High	5310	-6.516	-6.671	-3.58	10.74	PASS

Remark:

1. *At finial test to get the worst-case emission at 13.5Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.*
3. *Total power spectral density = Chain 0 + Chain 1.*
4. *The directional gain is 6.26 dBi which is more than 6dBi, the limit should be 10.74 dBm.*

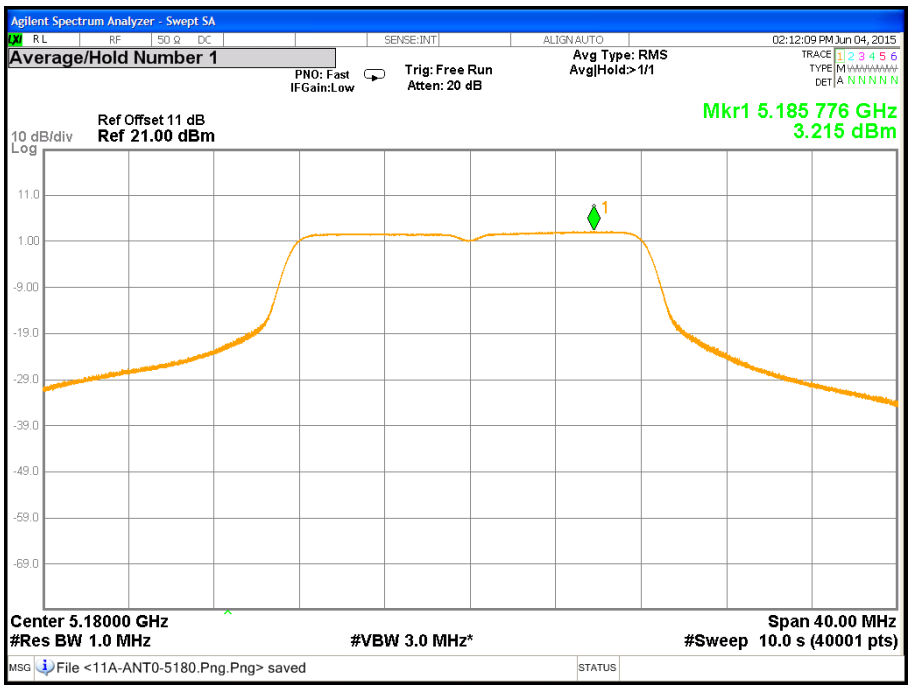
U-NII Band	Channel	Channel Frequency (MHz)	Peak Power Spectral Density (dBm/500kHz)				Result
			Chain 0	Chain 1	Total	Limit	
Band 3	Low	5755	-12.275	-12.216	-12.275	29.74	PASS
	High	5795	-3.109	-2.978	-3.109	29.74	PASS

Remark:

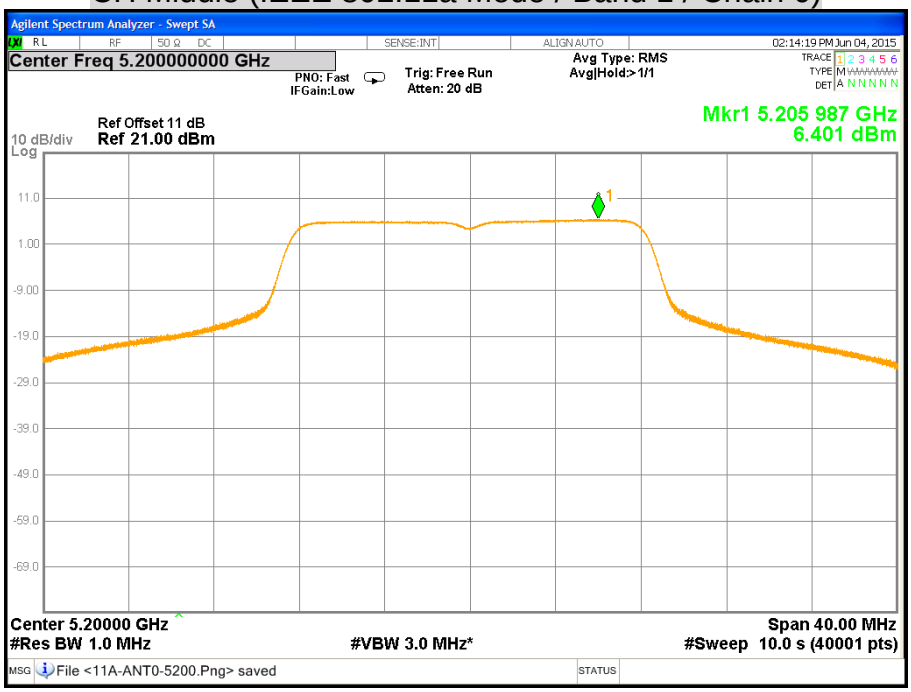
1. *At finial test to get the worst-case emission at 13.5Mbps.*
2. *The cable assembly insertion loss of 10.5 dB (including 10 dB pad and 0.5 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.*
3. *Total power spectral density = Chain 0 + Chain 1.*
4. *The directional gain is 6.26 dBi which is more than 6dBi, the limit should be 29.74 dBm.*

POWER SPECTRAL DENSITY

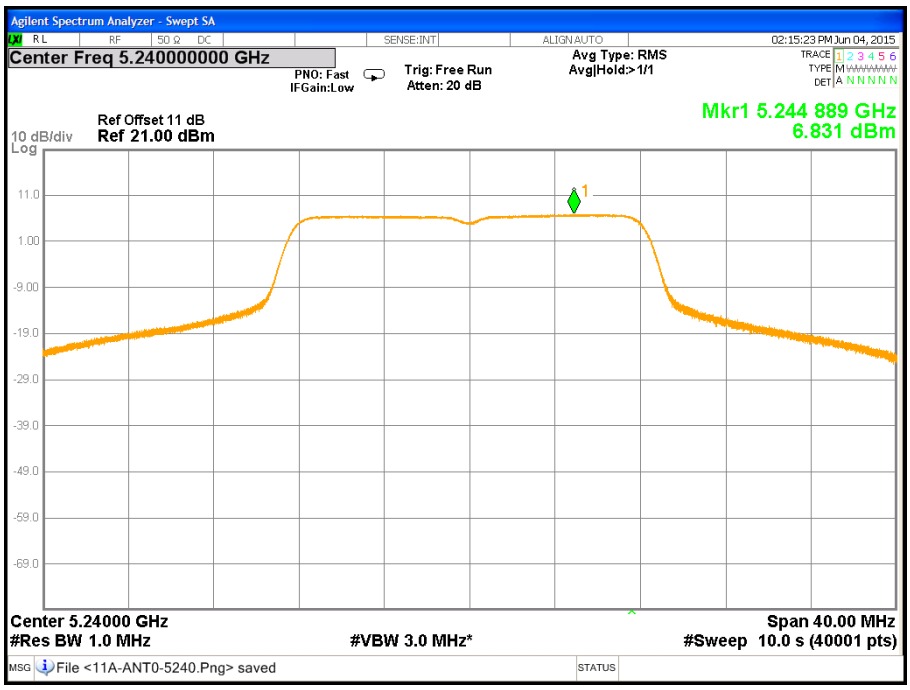
CH Low (IEEE 802.11a Mode / Band 1 / Chain 0)



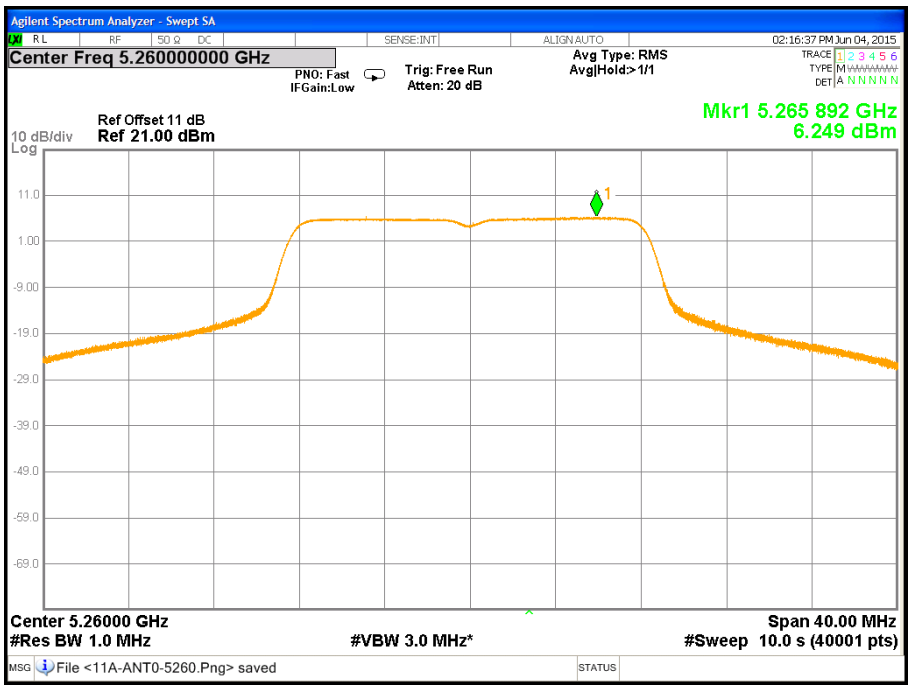
CH Middle (IEEE 802.11a Mode / Band 1 / Chain 0)



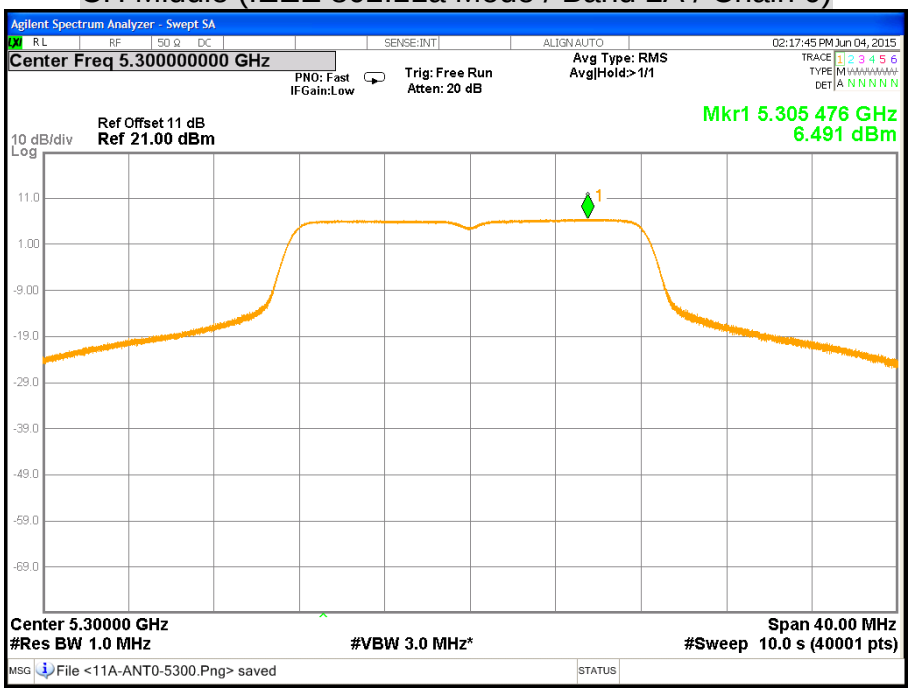
CH High (IEEE 802.11a Mode / Band 1 / Chain 0)



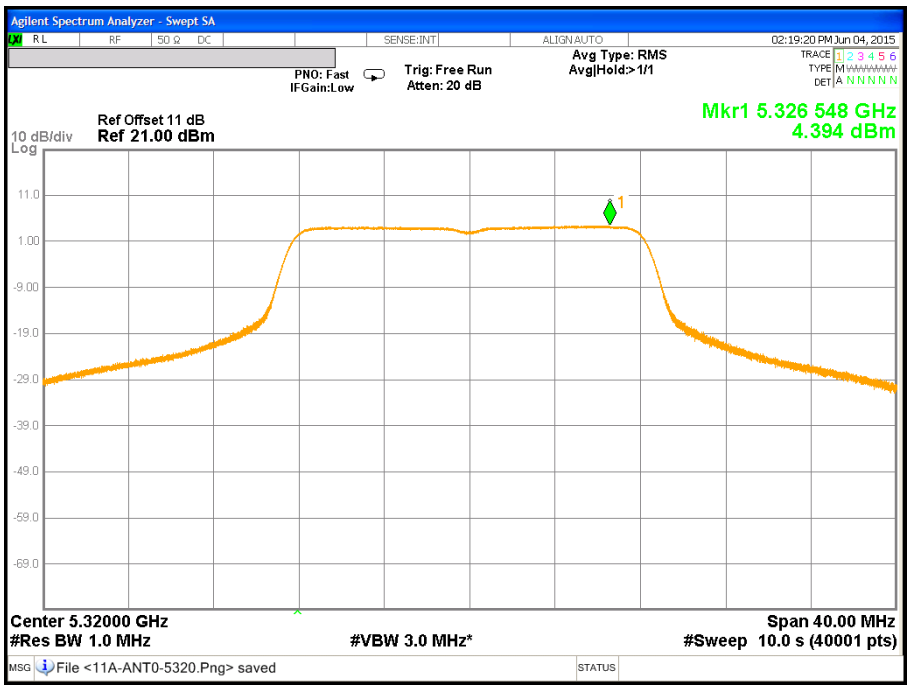
CH Low (IEEE 802.11a Mode / Band 2A / Chain 0)



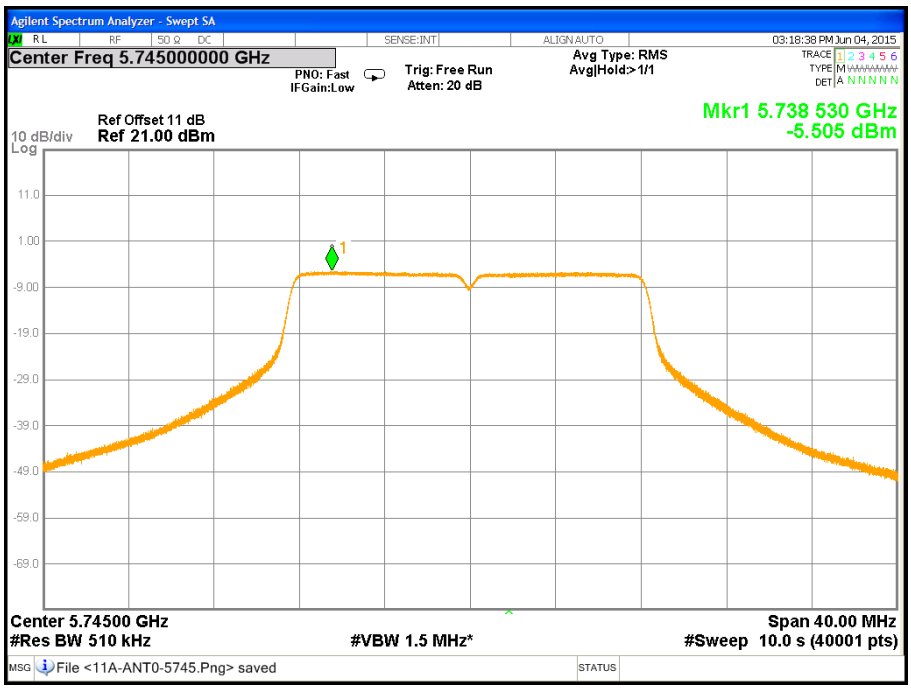
CH Middle (IEEE 802.11a Mode / Band 2A / Chain 0)



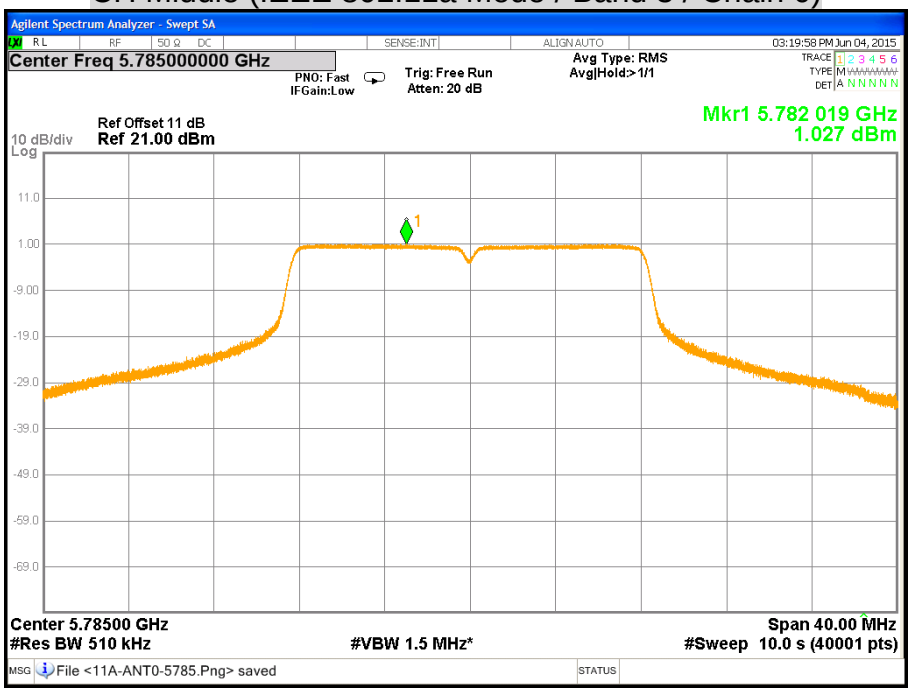
CH High (IEEE 802.11a Mode / Band 2A / Chain 0)



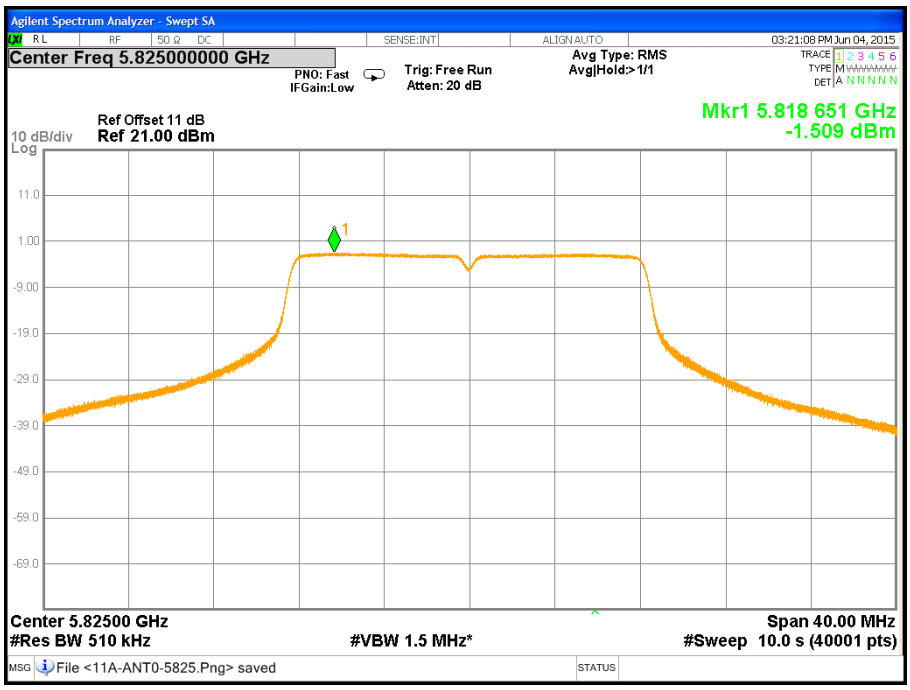
CH Low (IEEE 802.11a Mode / Band 3 / Chain 0)



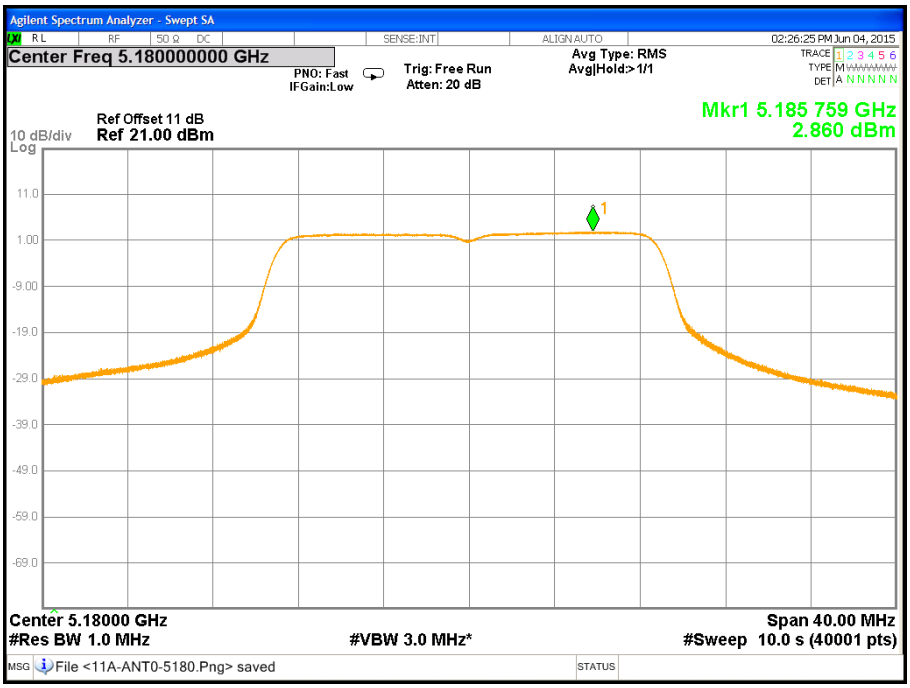
CH Middle (IEEE 802.11a Mode / Band 3 / Chain 0)



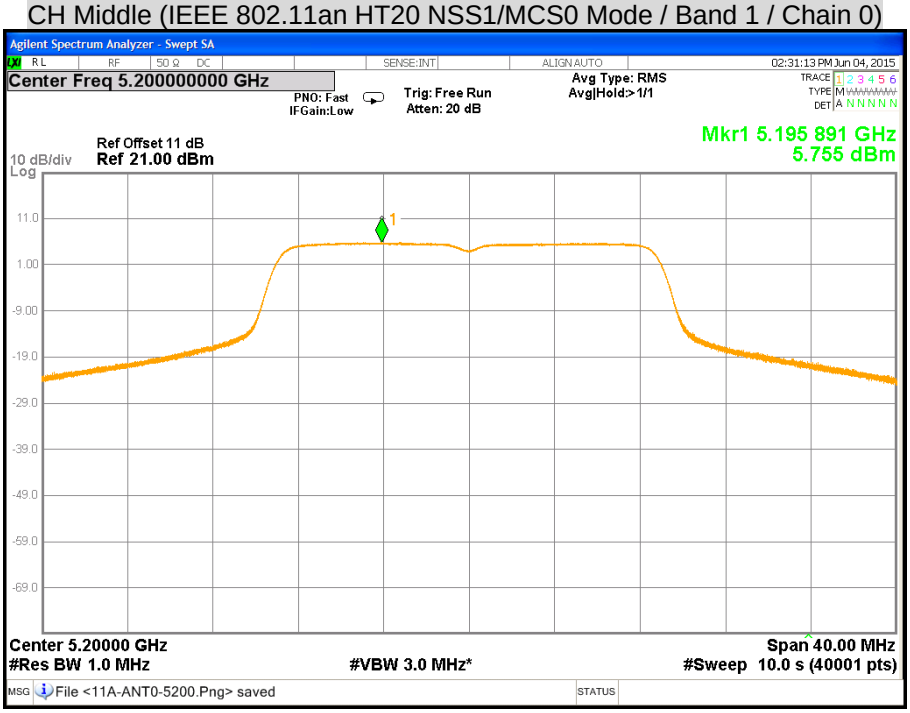
CH High (IEEE 802.11a Mode / Band 3 / Chain 0)



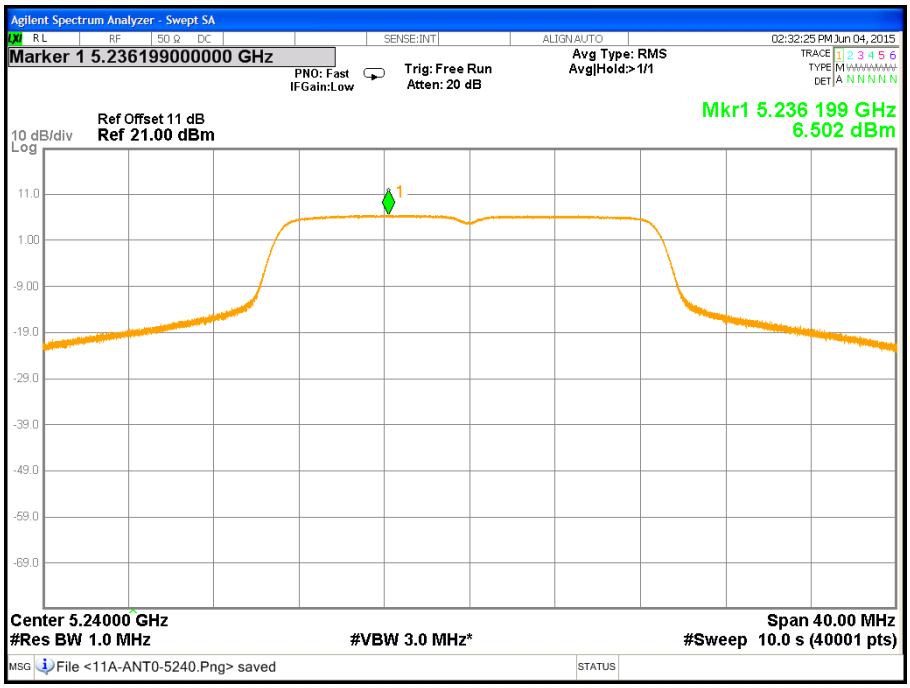
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1 / Chain 0)



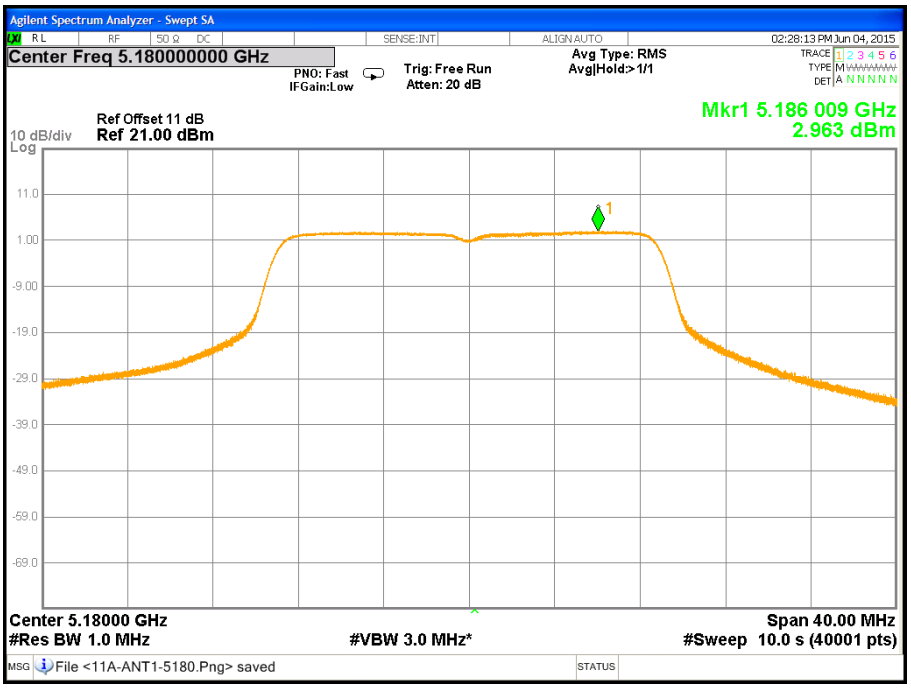
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1 / Chain 0)



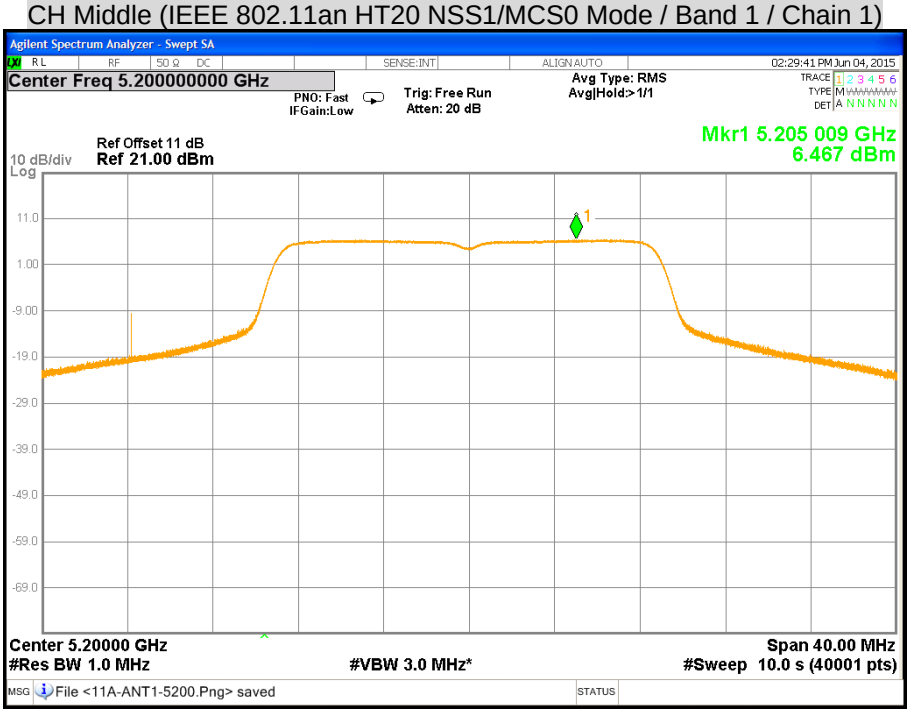
CH High (IEEE 802.11an HT20 NSS1/MCS0Mode / Band 1 / Chain 0)



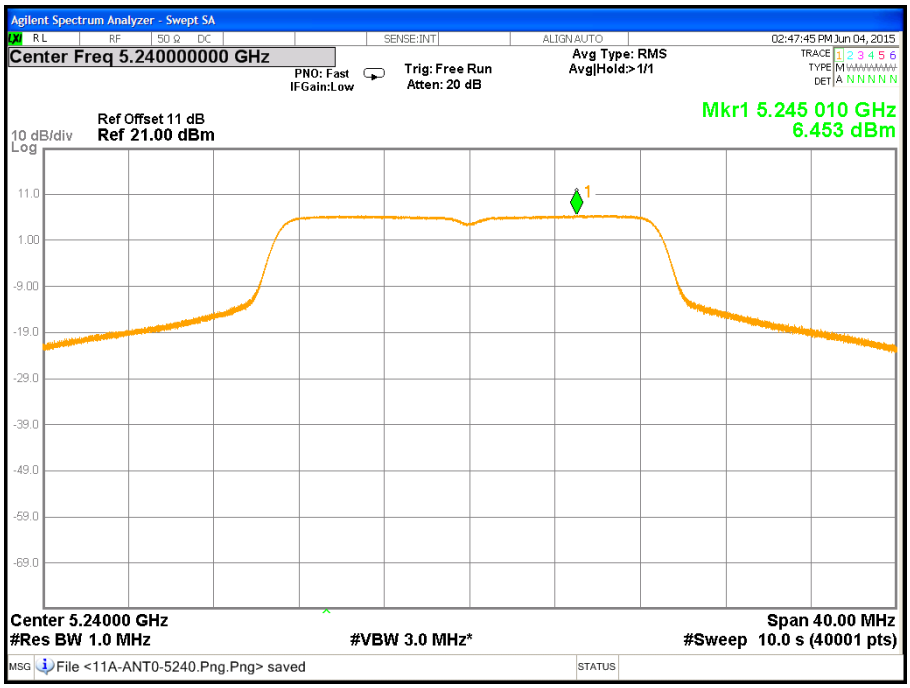
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1 / Chain 1)



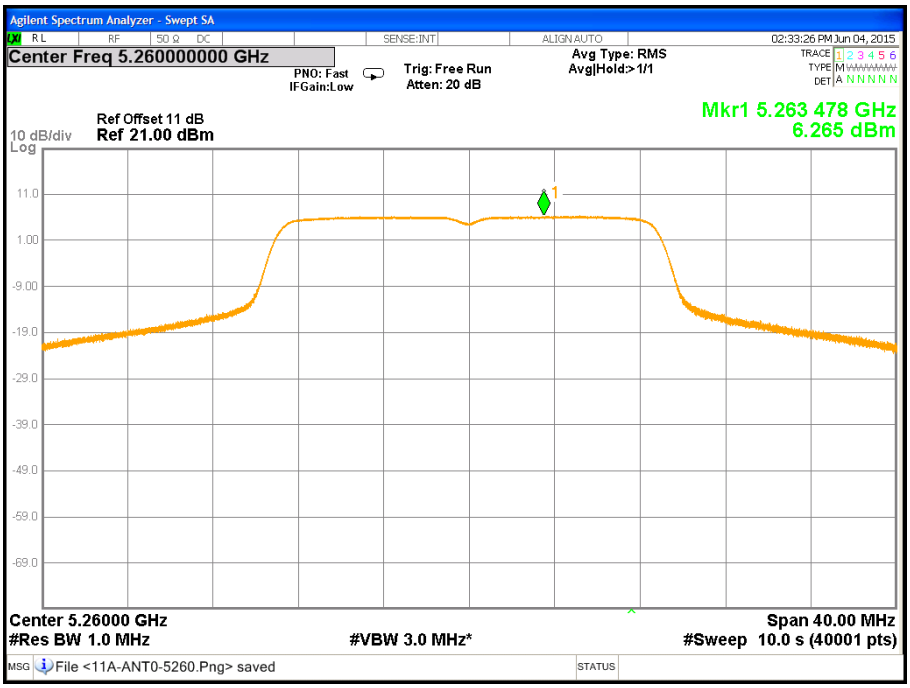
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1 / Chain 1)



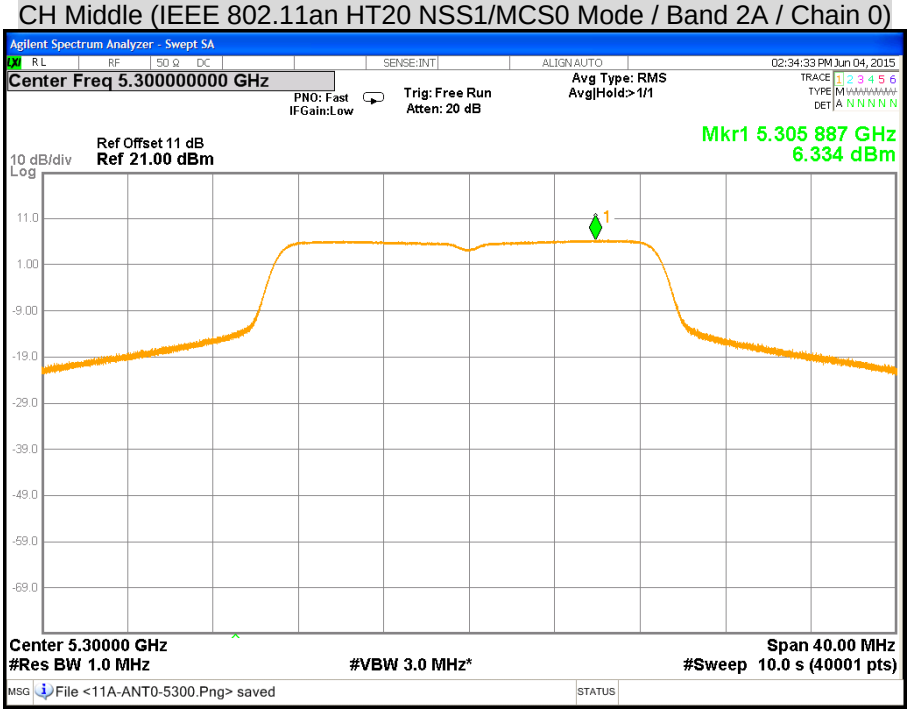
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1 / Chain 1)



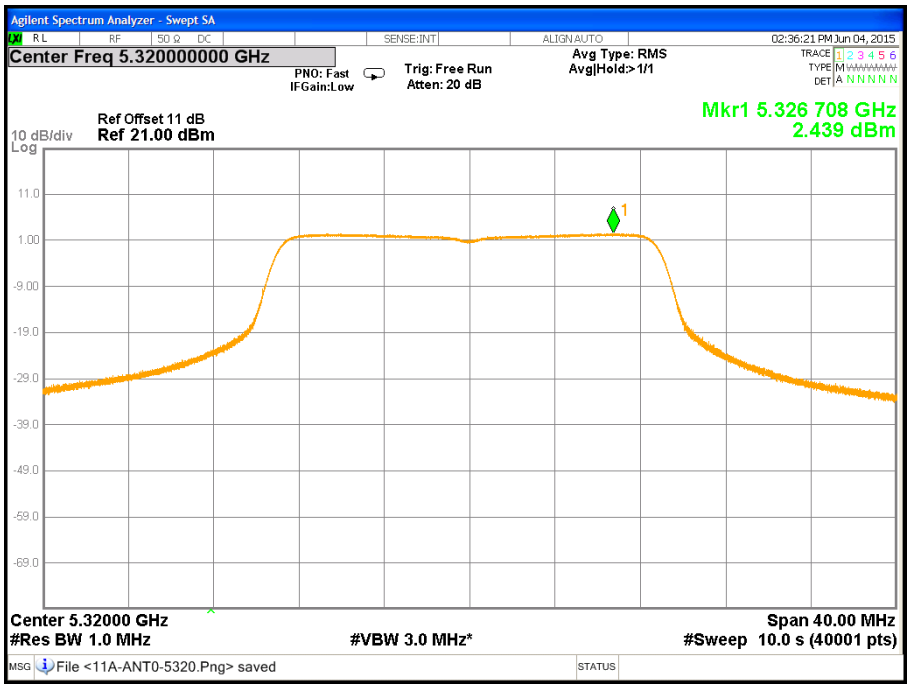
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 0)



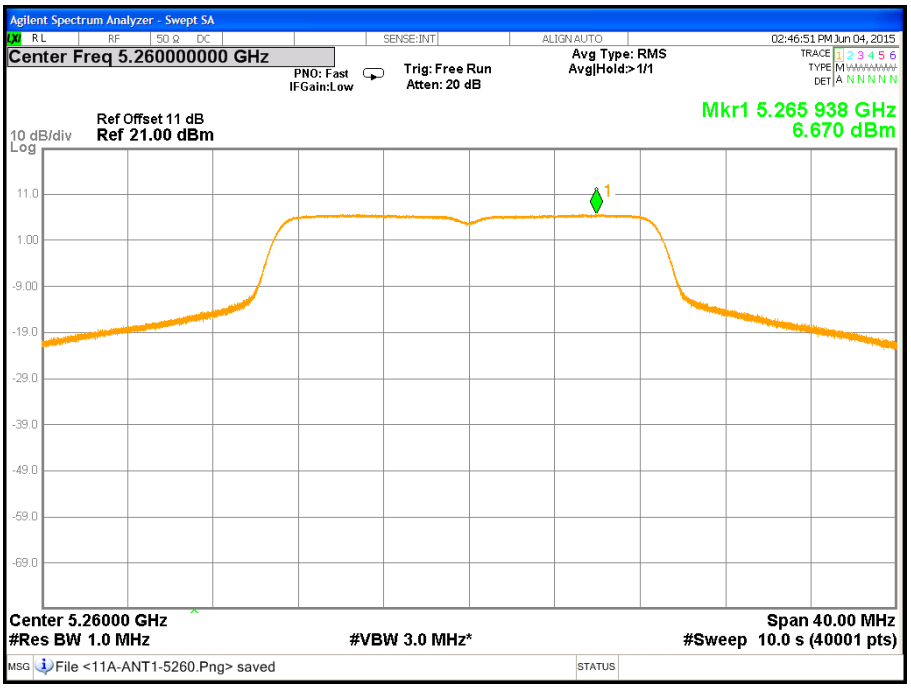
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 0)



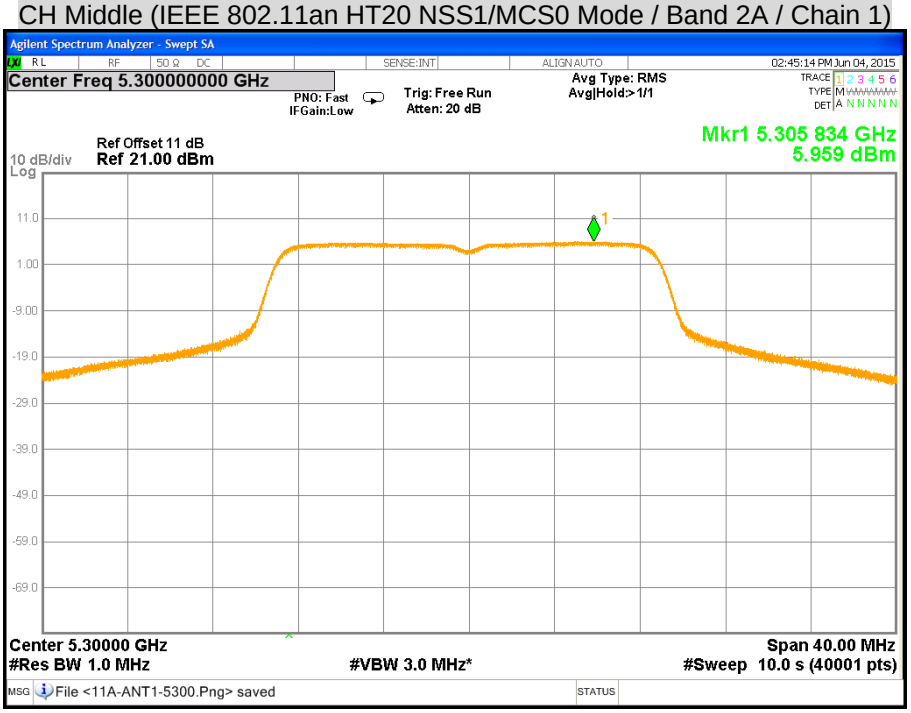
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 0)



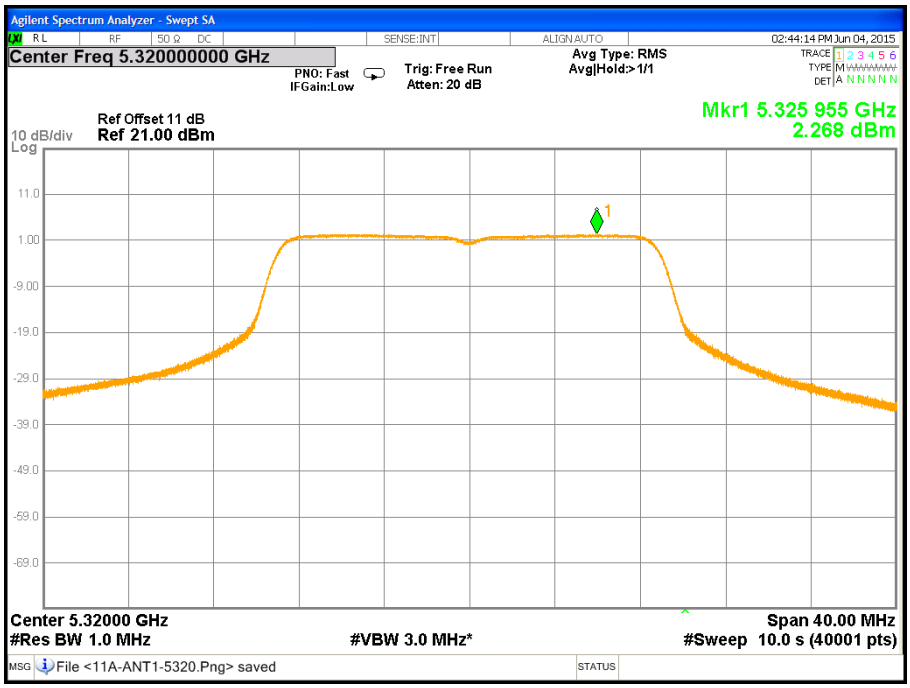
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 1)



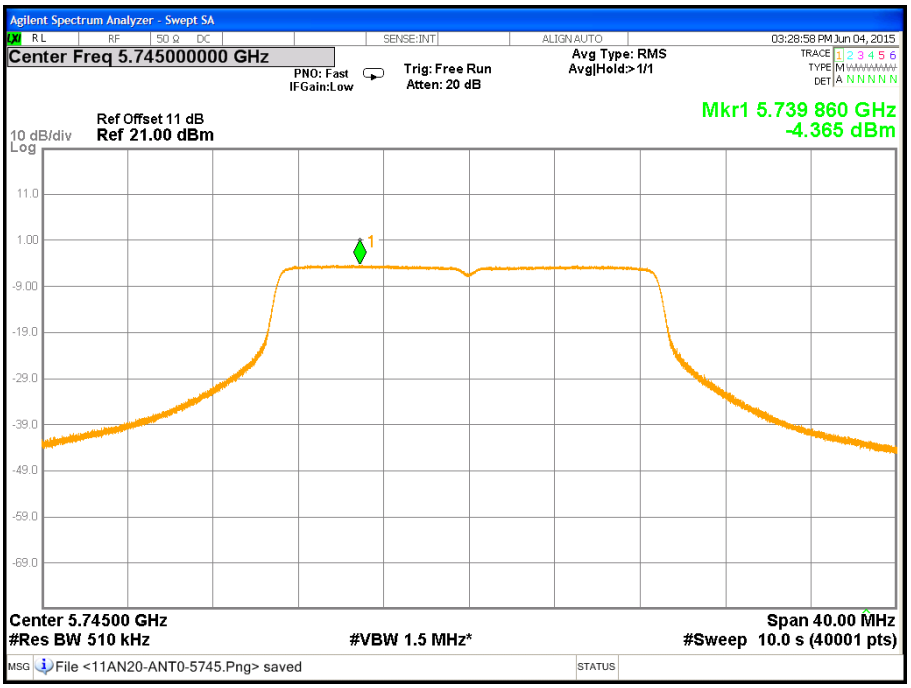
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 1)



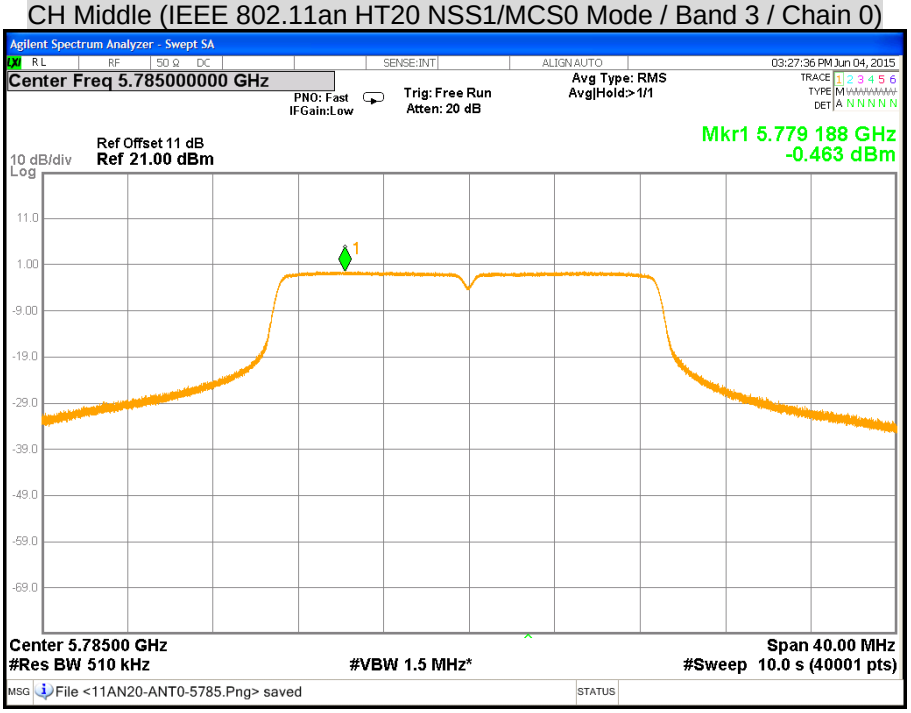
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A / Chain 1)



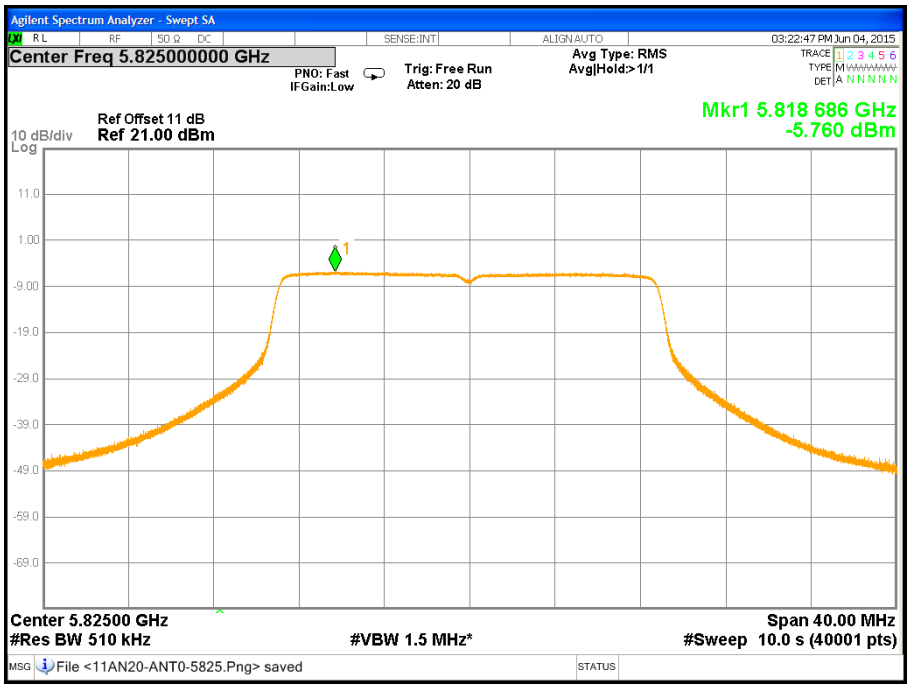
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 0)



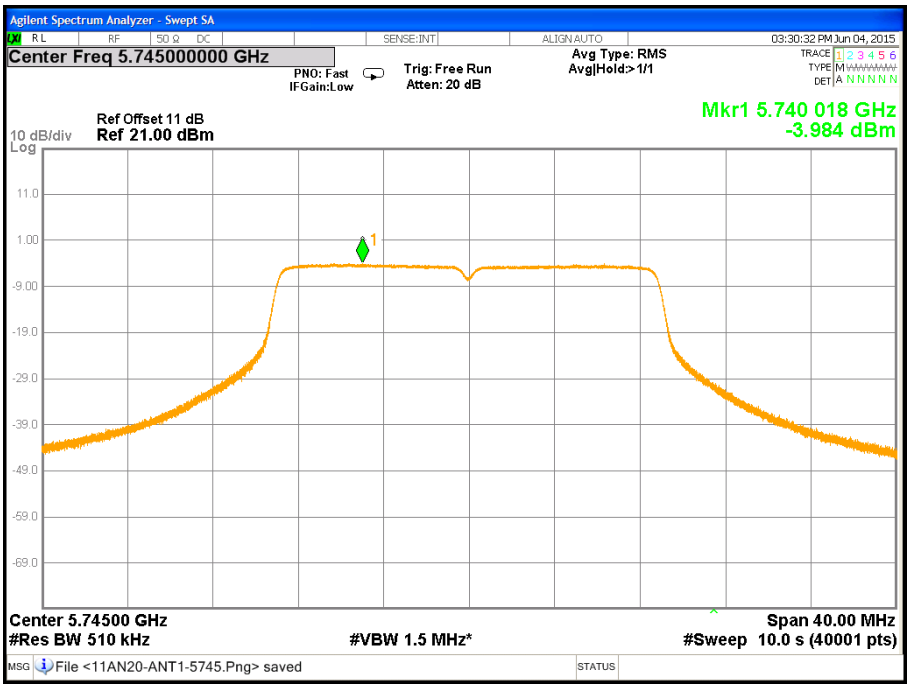
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 0)



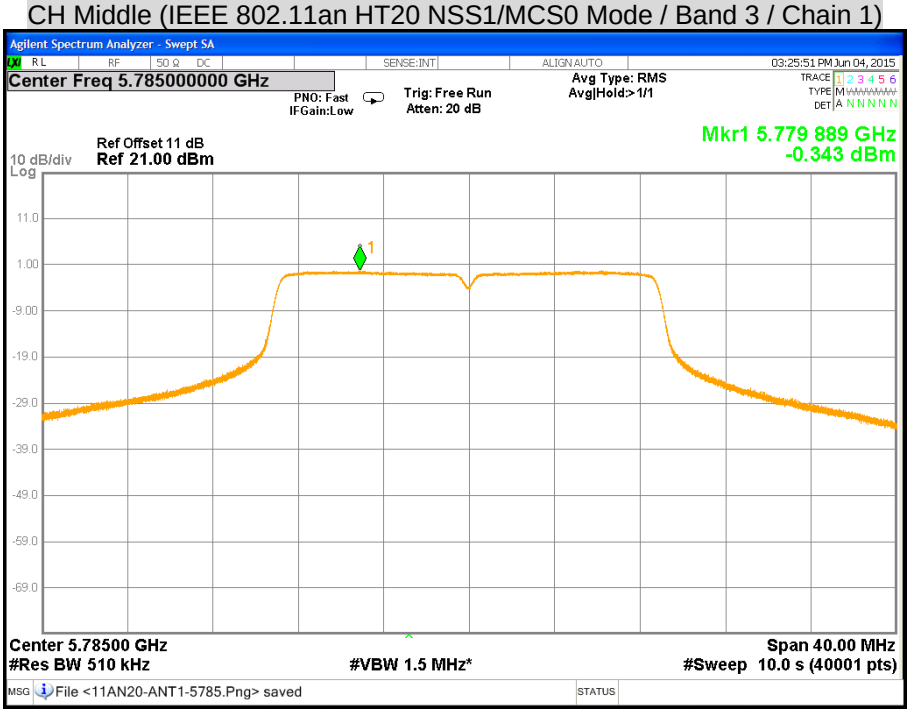
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 0)



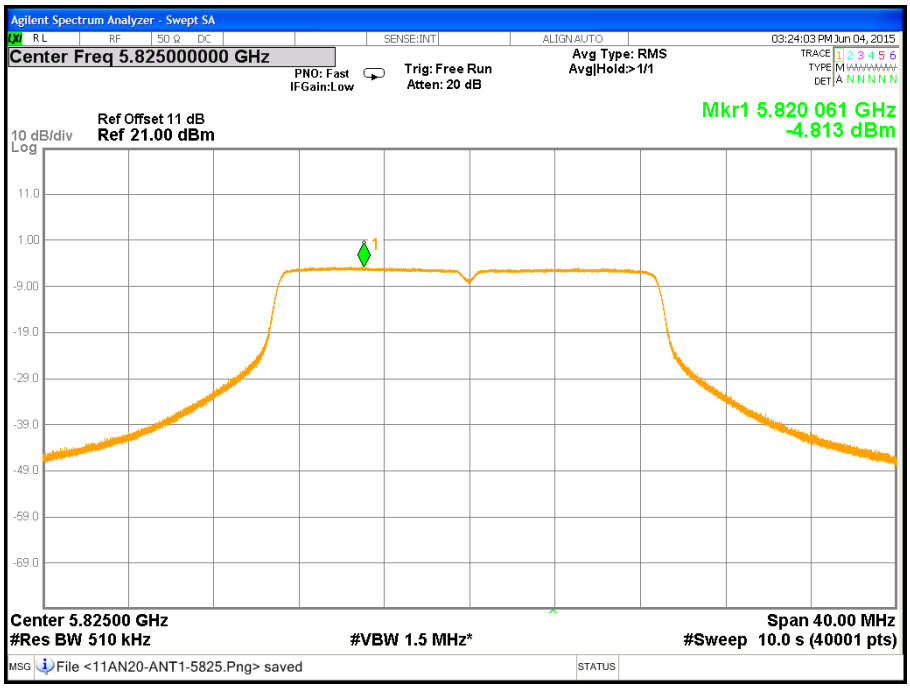
CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 1)



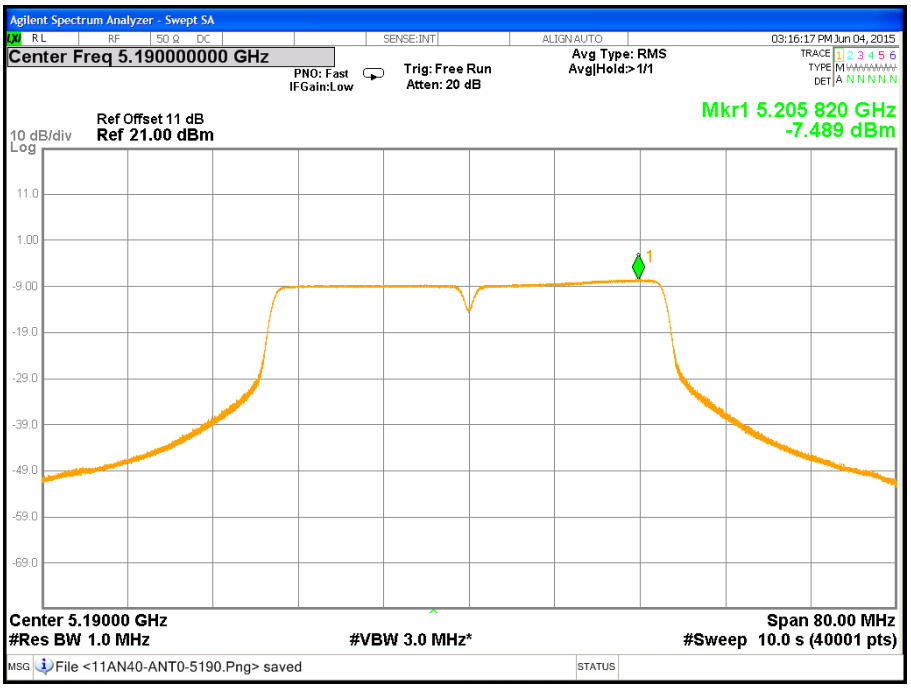
CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 1)



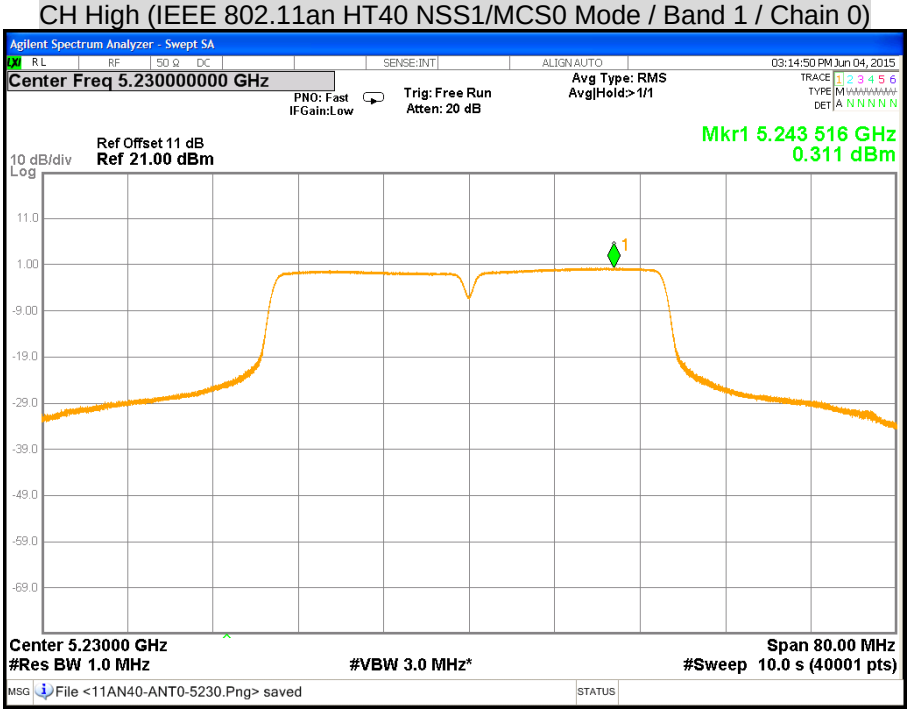
CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3 / Chain 1)



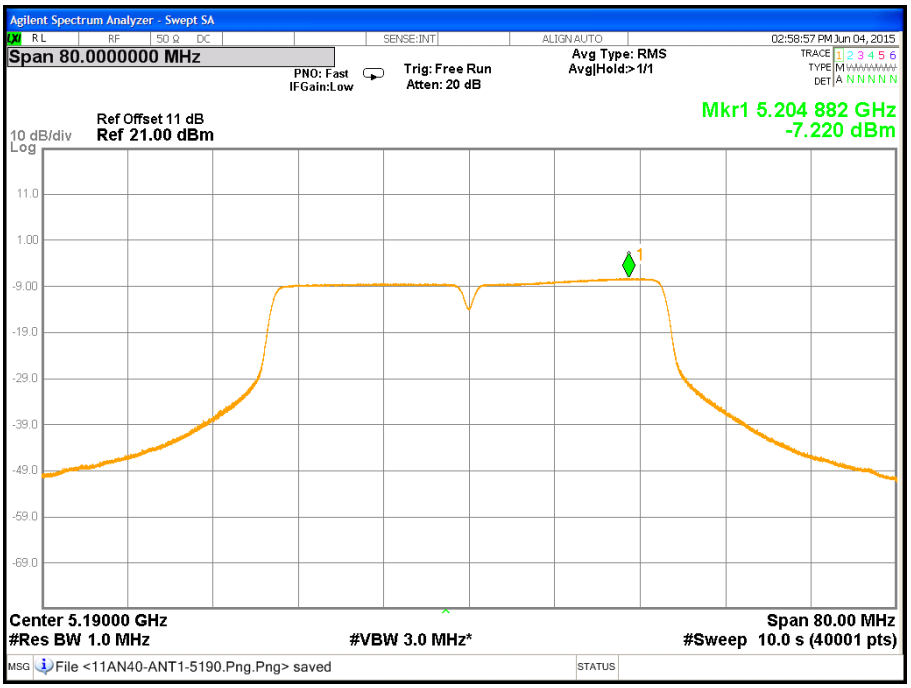
CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 1 / Chain 0)



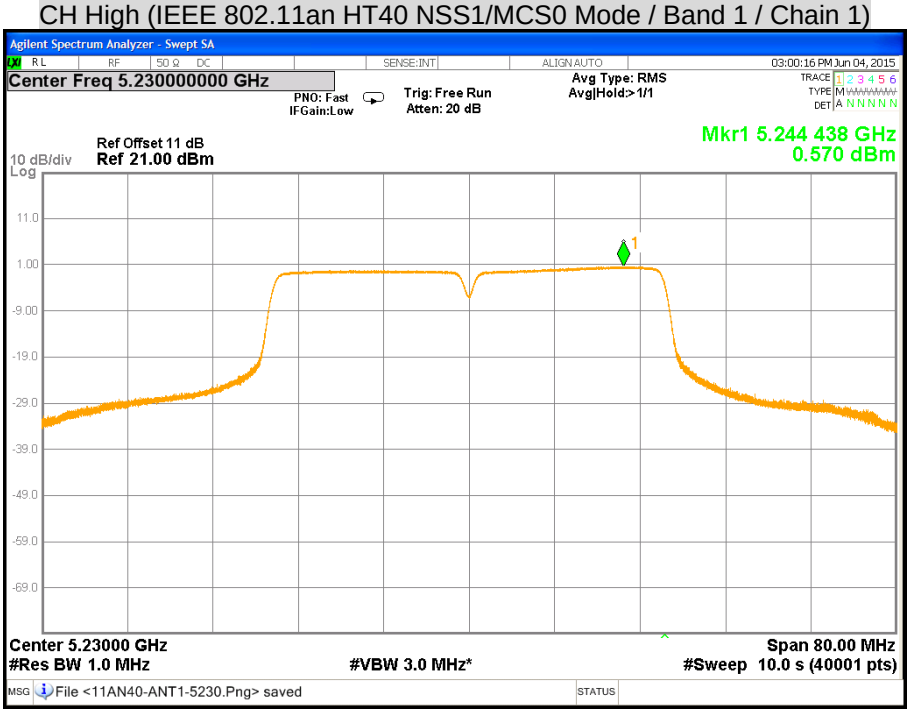
CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 1 / Chain 0)



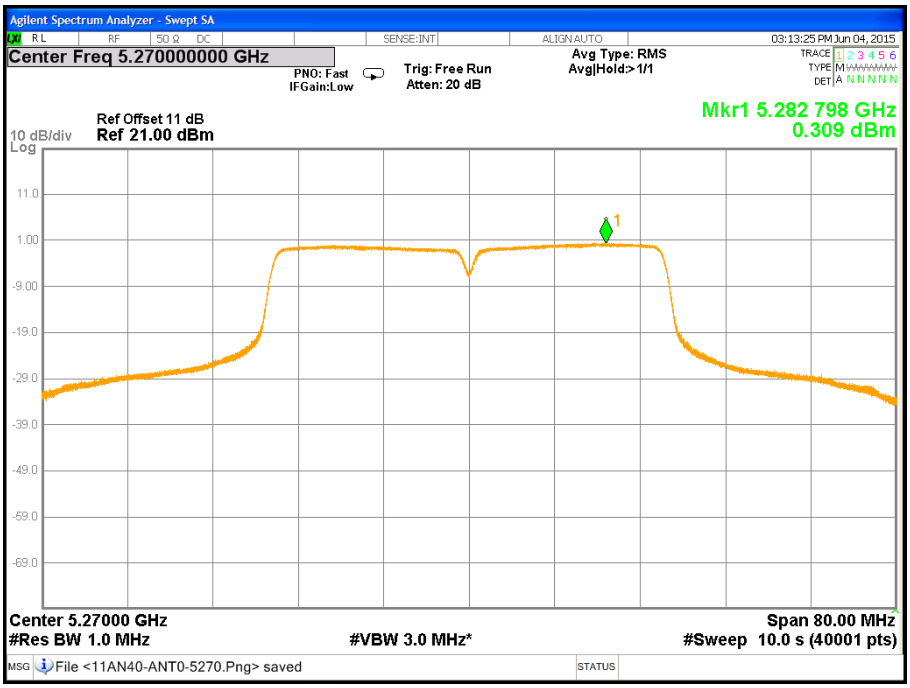
CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 1 / Chain 1)



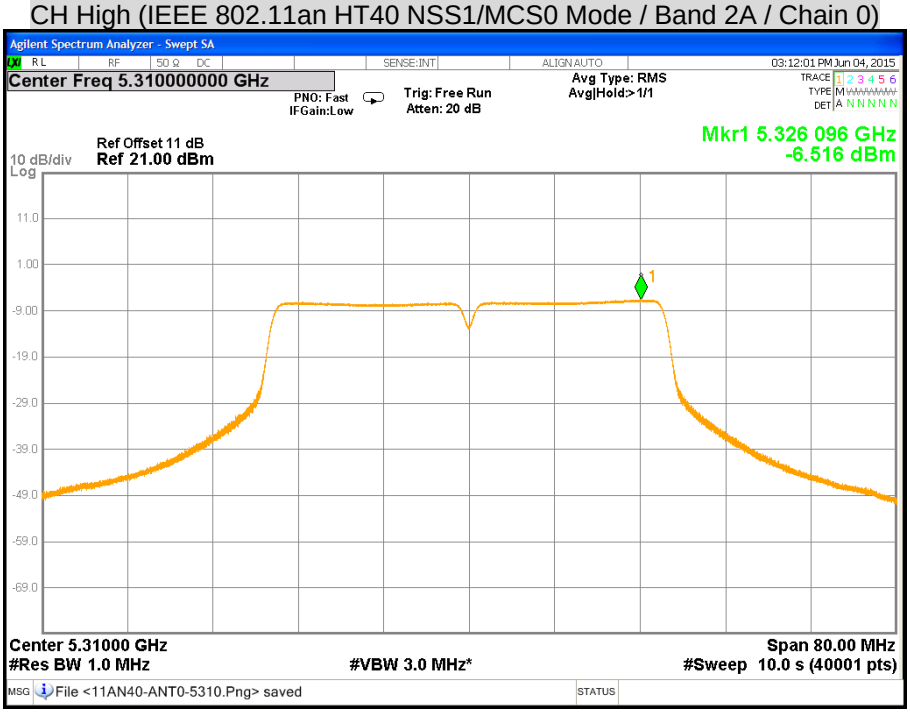
CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 1 / Chain 1)



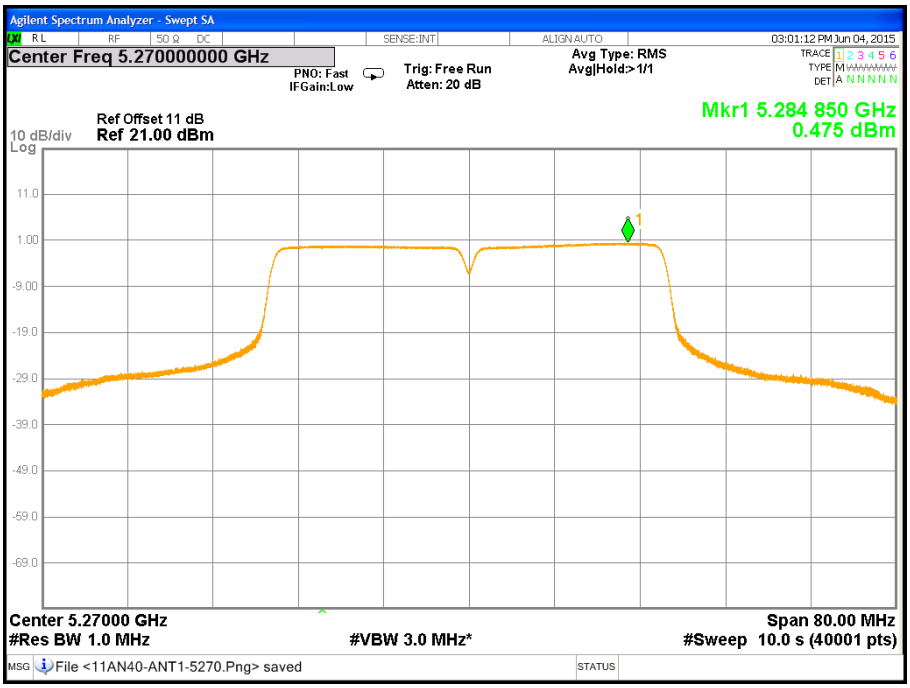
CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 0)



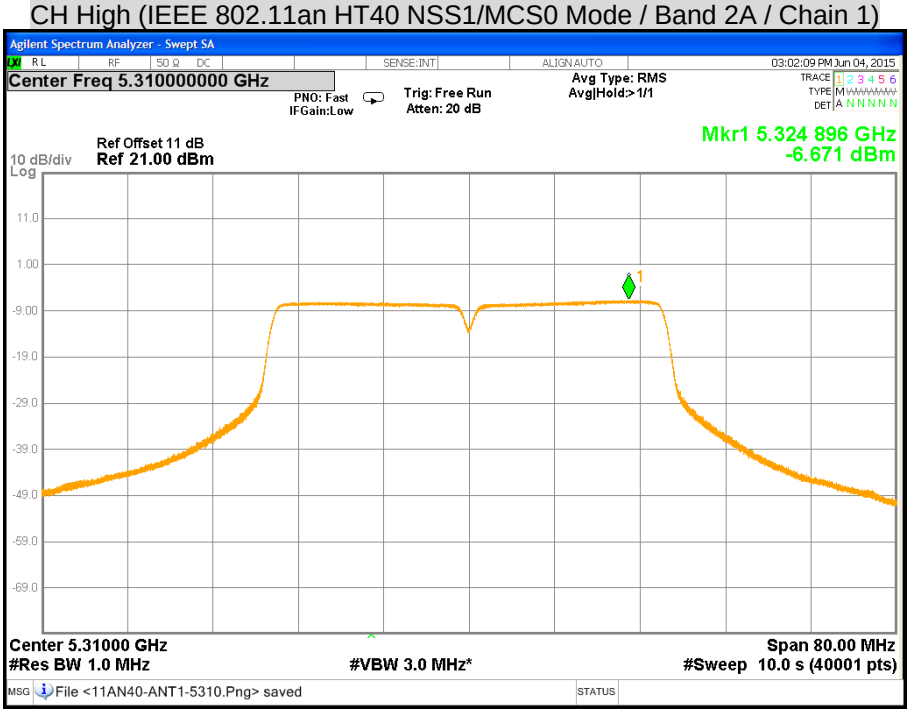
CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 0)



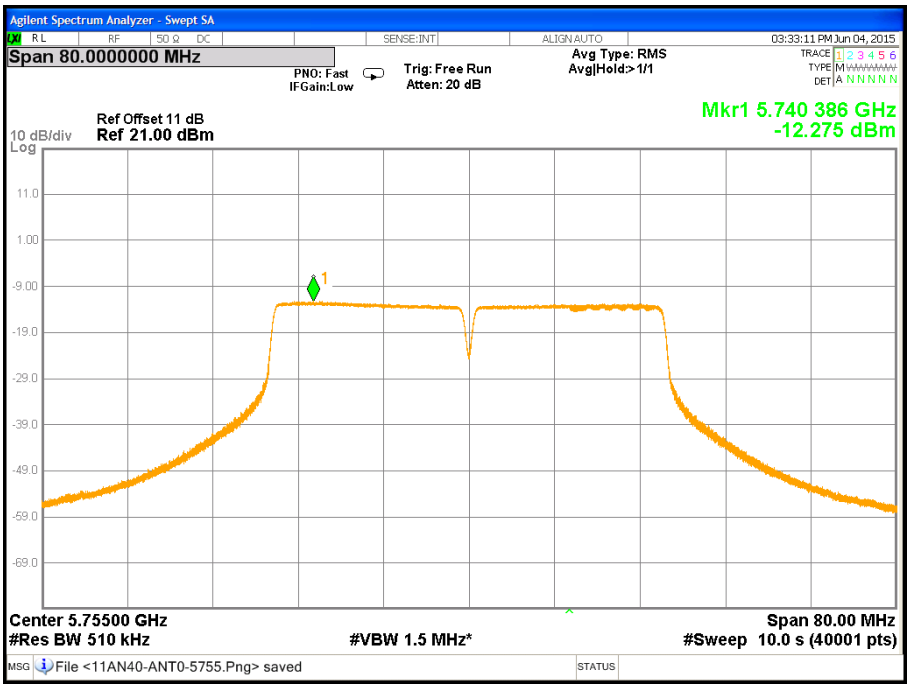
CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 1)



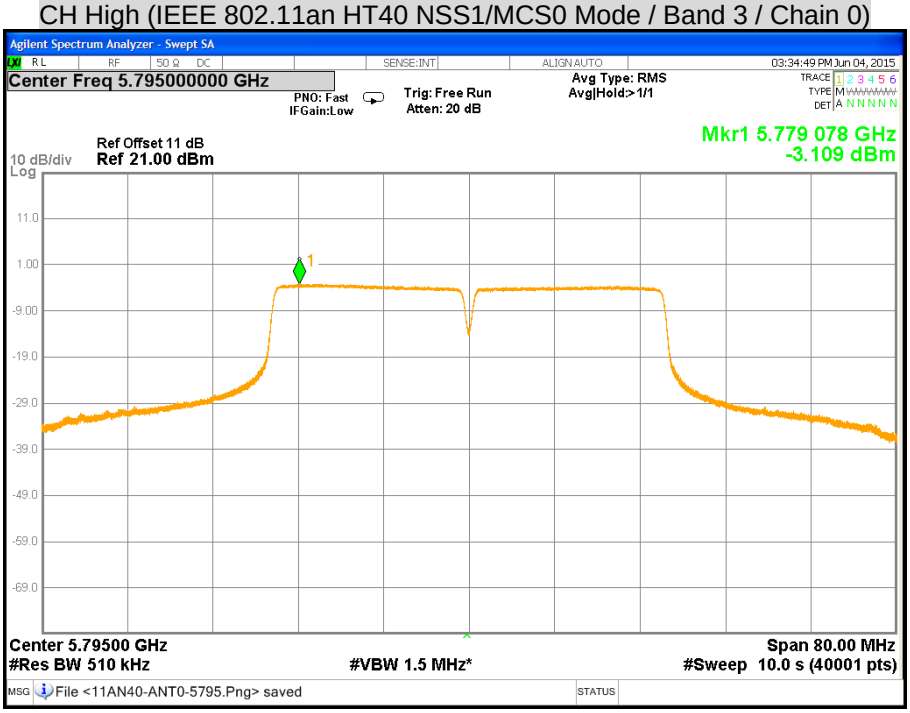
CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A / Chain 1)



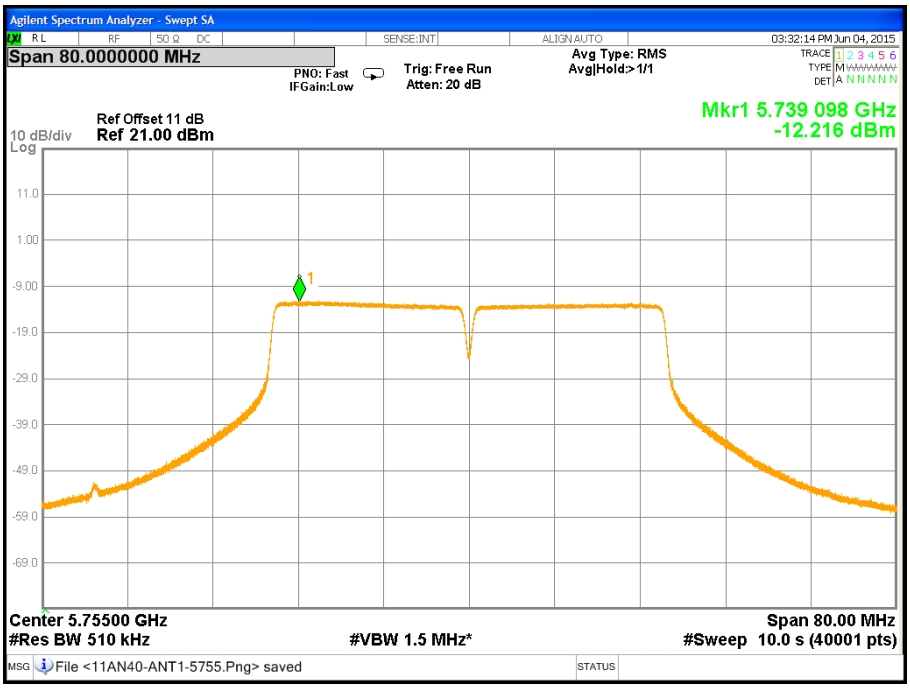
CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 0)



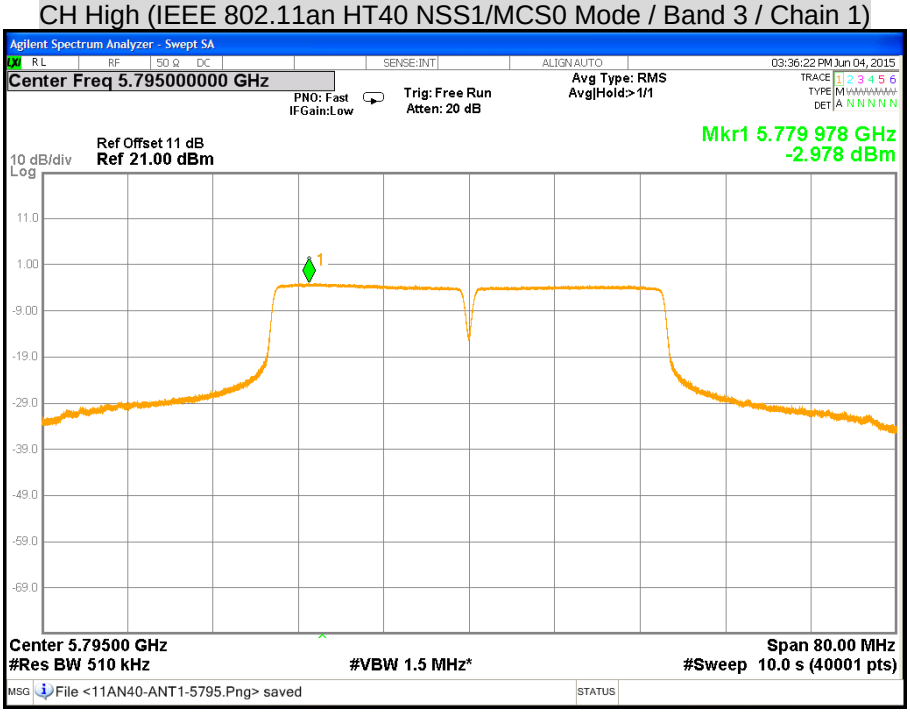
CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 0)



CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 1)



CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3 / Chain 1)



7.6 RADIATED EMISSION

LIMITS

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

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

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

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

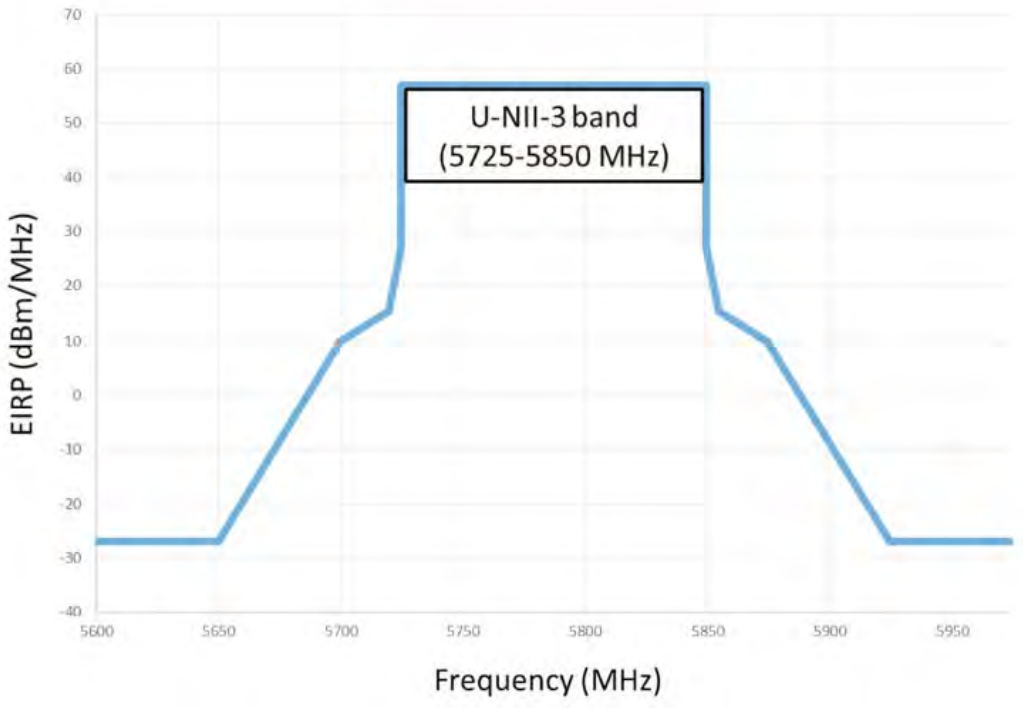
(3) According to § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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

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

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

(5) According to FCC 16-24, for transmitters operating in the 5.725-5.85 GHz band, all out-of-band emissions be limited to a level of -27 dBm/MHz at 75 MHz beyond the band edge, increasing linearly to 10 dBm/MHz at 25 MHz beyond the band edge, and from 25 MHz beyond the band edge, increasing linearly to a level of 17 dBm/MHz at the band edge. The OOBE limits in the 5 MHz closest to the band edge by allowing emissions to increase linearly to a maximum level of 27 dBm/MHz.



TEST EQUIPMENT

Radiated Emission / 966Chamber_C

Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY45280064	03/26/2016
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101387	10/05/2015
Bi-log Antenna	TESEQ	CBL 6112D	35404	02/24/2016
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078732	07/23/2015
Horn Antenna	COM-POWER	AH-840	03077	12/17/2015
Pre-Amplifier	EMCI	EMC001625	980243	04/12/2016
Pre-Amplifier	COM-POWER	PAM-118A	551043	04/12/2016
LOOP Antenna	EMCO	6502	8905-2356	09/23/2015
Notch Filters Band Reject	Micro-Tronics	BRM50702-01	009	N.C.R
Band Reject Filter	Micro-Tronics	BRC50703-01	004	N.C.R.
Band Reject Filter	Micro-Tronics	BRC50704-01	004	N.C.R.
Test S/W	E3.815206a			

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

Radiated Emission / 966Chamber_C

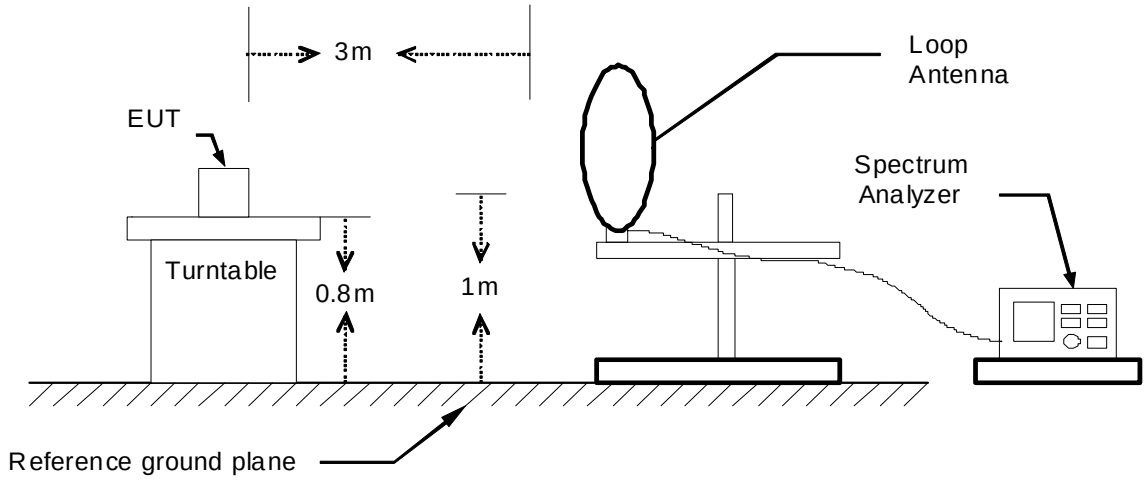
Name of Equipment	Manufacture	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY45280064	04/21/2017
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101387	10/04/2017
Bi-log Antenna	TESEQ	CBL 6112D	35404	07/22/2017
Double Ridged BroadBand Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-285	04/17/2017
Double-Ridged Waveguide Horn	ETS-LINDGREN	3117	00078732	07/10/2017
Horn Antenna	COM-POWER	AH-840	03077	12/01/2017
Loop Antenna	COM-POWER	AL-130	121060	05/23/2017
Pre-Amplifier	EMCI	EMC001625	980243	04/11/2017
Pre-Amplifier	COM-POWER	PAM-118A	551043	04/11/2017
Notch Filters Band Reject	Micro-Tronics	BRM50702-01	009	N.C.R
Band Reject Filter	Micro-Tronics	BRC50703-01	004	N.C.R.
Band Reject Filter	Micro-Tronics	BRC50704-01	004	N.C.R.
Test S/W	E3.815206a			

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

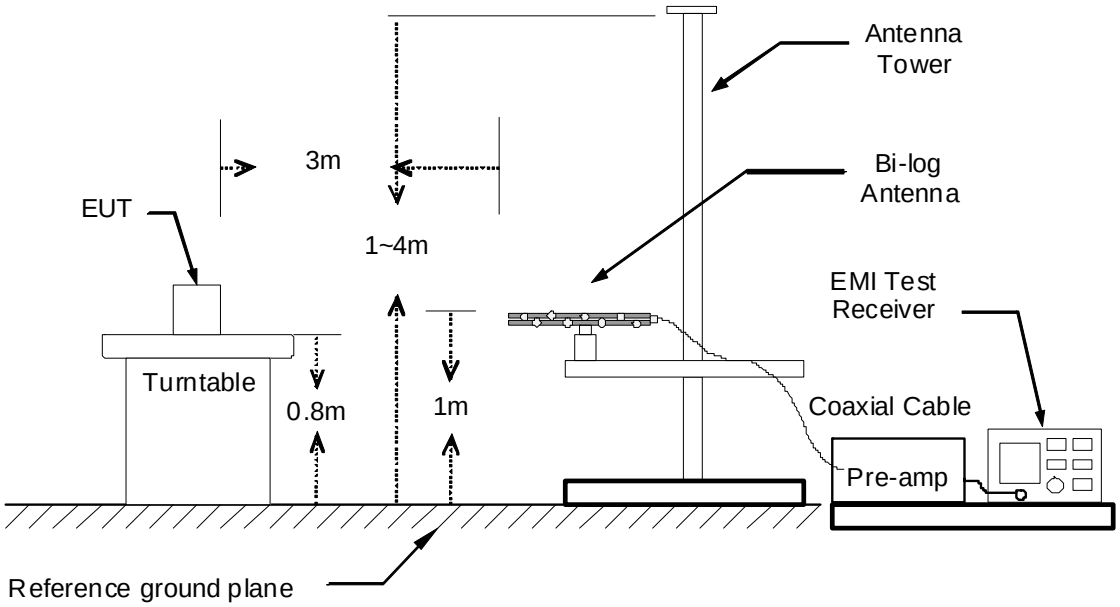
TEST SETUP

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

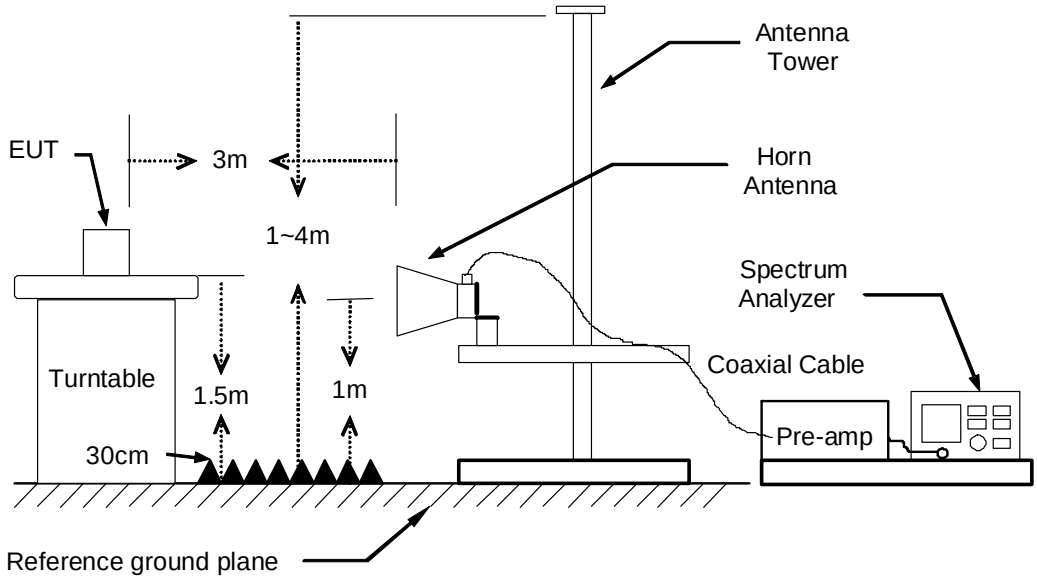
9kHz ~ 30MHz



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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/11
Test 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
107.60	52.84	-19.07	33.77	43.50	-9.73	133	400	Peak
322.94	53.75	-15.70	38.05	46.00	-7.95	18	100	Peak
386.96	54.90	-13.81	41.09	46.00	-4.91	309	100	Peak
506.27	53.02	-11.83	41.19	46.00	-4.81	328	200	Peak
515.00	51.64	-11.68	39.96	46.00	-6.04	237	200	Peak
760.41	47.31	-9.00	38.31	46.00	-7.69	295	100	Peak
773.99	49.90	-8.84	41.06	46.00	-4.94	341	100	Peak
919.49	47.97	-7.39	40.58	46.00	-5.42	86	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
33.88	42.82	-13.39	29.43	40.00	-10.57	23	100	Peak
109.54	52.67	-18.85	33.82	43.50	-9.68	155	100	Peak
130.88	47.59	-18.45	29.14	43.50	-14.36	227	100	Peak
386.96	49.25	-13.81	35.44	46.00	-10.56	259	200	Peak
506.27	50.94	-11.83	39.11	46.00	-6.89	360	100	Peak
515.00	45.69	-11.68	34.01	46.00	-11.99	273	200	Peak
644.98	42.38	-10.00	32.38	46.00	-13.62	260	100	Peak
967.02	45.41	-7.04	38.37	54.00	-15.63	159	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 1GHz

Product Name	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11a 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
1410.00	46.90	-0.98	45.92	74.00	-28.08	144	100	Peak
5000.00	43.67	9.25	52.92	74.00	-21.08	125	200	Peak
5350.00	40.31	10.45	50.76	74.00	-23.24	108	200	Peak
6960.00	43.29	2.69	45.98	74.00	-28.02	326	200	Peak
7728.00	44.59	3.09	47.68	74.00	-26.32	79	200	Peak
10356.00	42.41	5.56	47.97	54.00	-6.03	115	159	Average
10356.00	53.69	5.56	59.25	74.00	-14.75	115	159	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
1335.00	46.23	-0.96	45.27	74.00	-28.73	355	200	Peak
2280.00	44.39	3.89	48.28	74.00	-25.72	162	100	Peak
3425.00	40.86	6.53	47.39	74.00	-26.61	351	100	Peak
6912.00	44.13	2.70	46.83	74.00	-27.17	72	100	Peak
9252.00	43.85	4.08	47.93	74.00	-26.07	262	100	Peak
10368.00	44.21	5.58	49.79	54.00	-4.21	197	119	Average
10368.00	56.96	5.58	62.54	74.00	-11.46	197	119	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11a 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
2000.00	44.21	3.35	47.56	74.00	-26.44	1	100	Peak
5000.00	43.09	9.25	52.34	74.00	-21.66	121	200	Peak
5150.00	34.43	9.76	44.19	54.00	-9.81	112	159	Average
5150.00	56.37	9.76	66.13	74.00	-7.87	112	159	Peak
7656.00	44.44	3.04	47.48	74.00	-26.52	117	100	Peak
9348.00	43.75	4.10	47.85	74.00	-26.15	341	100	Peak
10404.00	45.41	5.63	51.04	54.00	-2.96	115	156	Average
10404.00	58.73	5.63	64.36	74.00	-9.64	115	156	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
2500.00	43.45	4.32	47.77	74.00	-26.23	236	100	Peak
2790.00	43.40	5.06	48.46	74.00	-25.54	211	200	Peak
5150.00	39.11	9.76	48.87	74.00	-25.13	102	100	Peak
7728.00	44.01	3.09	47.10	74.00	-26.90	308	200	Peak
9336.00	44.07	4.10	48.17	74.00	-25.83	9	200	Peak
10404.00	46.53	5.63	52.16	54.00	-1.84	197	119	Average
10404.00	58.46	5.63	64.09	74.00	-9.91	197	119	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11a 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
2000.00	44.70	3.35	48.05	74.00	-25.95	353	100	Peak
5000.00	40.85	9.25	50.10	54.00	-3.90	119	160	Average
5000.00	46.89	9.25	56.14	74.00	-17.86	119	160	Peak
5150.00	39.21	9.76	48.97	74.00	-25.03	14	200	Peak
7704.00	44.36	3.07	47.43	74.00	-26.57	180	200	Peak
10488.00	43.91	5.76	49.67	54.00	-4.33	115	156	Average
10488.00	56.57	5.76	62.33	74.00	-11.67	115	156	Peak
15720.00	38.41	9.85	48.26	54.00	-5.74	147	111	Average
15720.00	50.99	9.85	60.84	74.00	-13.16	147	111	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
2280.00	44.89	3.89	48.78	74.00	-25.22	337	100	Peak
2500.00	43.77	4.32	48.09	74.00	-25.91	268	100	Peak
5150.00	37.78	9.76	47.54	74.00	-26.46	177	100	Peak
8352.00	43.82	3.63	47.45	74.00	-26.55	167	200	Peak
10476.00	44.31	5.74	50.05	54.00	-3.95	200	122	Average
10476.00	58.39	5.74	64.13	74.00	-9.87	200	122	Peak
15720.00	39.70	9.85	49.55	54.00	-4.45	95	111	Average
15720.00	53.80	9.85	63.65	74.00	-10.35	95	111	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11an HT20 NSS1/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
1985.00	46.59	3.22	49.81	74.00	-24.19	287	100	Peak
2500.00	43.21	4.32	47.53	74.00	-26.47	170	100	Peak
5320.00	42.31	10.34	52.65	54.00	-1.35	106	150	Average
5320.00	49.22	10.34	59.56	74.00	-14.44	106	150	Peak
9372.00	43.44	4.11	47.55	74.00	-26.45	347	100	Peak
10368.00	40.37	5.58	45.95	54.00	-8.05	158	1224	Average
10368.00	53.23	5.58	58.81	74.00	-15.19	158	1224	Peak
11892.00	44.53	7.97	52.50	74.00	-21.50	177	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
2280.00	45.64	3.89	49.53	74.00	-24.47	173	100	Peak
2500.00	43.21	4.32	47.53	74.00	-26.47	268	100	Peak
2700.00	40.51	4.83	45.34	74.00	-28.66	1	100	Peak
7752.00	43.99	3.11	47.10	74.00	-26.90	173	200	Peak
9480.00	43.23	4.14	47.37	74.00	-26.63	126	100	Peak
10368.00	44.68	5.58	50.26	54.00	-3.74	81	100	Average
10368.00	58.44	5.58	64.02	74.00	-9.98	81	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11an HT20 NSS1/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
5000.00	43.01	9.25	52.26	74.00	-21.74	127	200	Peak
5150.00	40.90	9.76	50.66	54.00	-3.34	111	157	Average
5150.00	61.70	9.76	71.46	74.00	-2.54	111	157	Peak
5350.00	40.00	10.45	50.45	74.00	-23.55	191	200	Peak
8412.00	43.41	3.69	47.10	74.00	-26.90	219	200	Peak
10392.00	46.54	5.62	52.16	54.00	-1.84	115	158	Average
10392.00	61.31	5.62	66.93	74.00	-7.07	115	158	Peak
11784.00	44.17	7.70	51.87	74.00	-22.13	114	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
2000.00	45.42	3.35	48.77	74.00	-25.23	198	100	Peak
2500.00	43.20	4.32	47.52	74.00	-26.48	266	100	Peak
5150.00	31.50	9.76	41.26	54.00	-12.74	273	145	Average
5150.00	54.34	9.76	64.10	74.00	-9.90	273	145	Peak
6996.00	45.03	2.69	47.72	74.00	-26.28	341	200	Peak
9348.00	43.93	4.10	48.03	74.00	-25.97	143	100	Peak
10404.00	46.59	5.63	52.22	54.00	-1.78	79	100	Average
10404.00	57.65	5.63	63.28	74.00	-10.72	79	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11an HT20 NSS1/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
2500.00	42.59	4.32	46.91	74.00	-27.09	174	100	Peak
5000.00	43.23	9.25	52.48	74.00	-21.52	200	200	Peak
5150.00	41.92	9.76	51.68	74.00	-22.32	116	200	Peak
6948.00	45.06	2.70	47.76	74.00	-26.24	181	100	Peak
10476.00	45.98	5.74	51.72	54.00	-2.28	112	164	Average
10476.00	58.78	5.74	64.52	74.00	-9.48	112	164	Peak
15720.00	36.98	9.85	46.83	54.00	-7.17	71	100	Average
15720.00	51.64	9.85	61.49	74.00	-12.51	71	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
2000.00	45.50	3.35	48.85	74.00	-25.15	190	100	Peak
2280.00	44.88	3.89	48.77	74.00	-25.23	177	100	Peak
5150.00	37.62	9.76	47.38	74.00	-26.62	190	100	Peak
6960.00	44.07	2.69	46.76	74.00	-27.24	106	200	Peak
10476.00	47.63	5.74	53.37	54.00	-0.63	202	109	Average
10476.00	59.00	5.74	64.74	74.00	-9.26	202	109	Peak
15720.00	40.95	9.85	50.80	54.00	-3.20	102	100	Average
15720.00	53.69	9.85	63.54	74.00	-10.46	102	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11an HT40 NSS1/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
5000.00	43.13	9.25	52.38	74.00	-21.62	126	200	Peak
5350.00	39.64	10.45	50.09	74.00	-23.91	126	200	Peak
5560.00	41.46	11.10	52.56	74.00	-21.44	108	200	Peak
8904.00	43.29	3.96	47.25	74.00	-26.75	2	100	Peak
9588.00	43.87	4.30	48.17	74.00	-25.83	208	200	Peak
10812.00	42.17	6.40	48.57	74.00	-25.43	340	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
2000.00	43.78	3.35	47.13	74.00	-26.87	200	100	Peak
2785.00	43.84	5.04	48.88	74.00	-25.12	216	100	Peak
5350.00	38.29	10.45	48.74	74.00	-25.26	62	200	Peak
7788.00	43.75	3.13	46.88	74.00	-27.12	286	200	Peak
9348.00	43.82	4.10	47.92	74.00	-26.08	74	100	Peak
10392.00	43.93	5.62	49.55	74.00	-24.45	91	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 1 / IEEE 802.11an HT40 NSS1/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
5000.00	40.30	9.25	49.55	54.00	-4.45	119	165	Average
5000.00	48.04	9.25	57.29	74.00	-16.71	119	165	Peak
5150.00	40.97	9.76	50.73	54.00	-3.27	113	177	Average
5150.00	62.47	9.76	72.23	74.00	-1.77	113	177	Peak
5350.00	40.55	10.45	51.00	74.00	-23.00	47	200	Peak
5480.00	40.23	10.89	51.12	54.00	-2.88	126	179	Average
5480.00	47.33	10.89	58.22	74.00	-15.78	126	179	Peak
6960.00	44.46	2.69	47.15	74.00	-26.85	337	200	Peak
10452.00	43.56	5.71	49.27	54.00	-4.73	111	150	Average
10452.00	57.12	5.71	62.83	74.00	-11.17	111	150	Peak
12228.00	44.30	8.19	52.49	74.00	-21.51	164	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
2280.00	44.81	3.89	48.70	74.00	-25.30	174	100	Peak
5150.00	42.57	9.76	52.33	74.00	-21.67	315	200	Peak
5350.00	38.01	10.45	48.46	74.00	-25.54	34	100	Peak
7776.00	43.79	3.12	46.91	74.00	-27.09	42	100	Peak
10464.00	44.92	5.73	50.65	54.00	-3.35	200	100	Average
10464.00	56.10	5.73	61.83	74.00	-12.17	200	100	Peak
12228.00	44.04	8.19	52.23	74.00	-21.77	49	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11a 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
2500.00	43.97	4.32	48.29	74.00	-25.71	173	100	Peak
5000.00	42.55	9.25	51.80	74.00	-22.20	115	200	Peak
5350.00	39.68	10.45	50.13	74.00	-23.87	181	200	Peak
7776.00	44.25	3.12	47.37	74.00	-26.63	156	100	Peak
10524.00	44.98	5.83	50.81	54.00	-3.19	111	157	Average
10524.00	56.30	5.83	62.13	74.00	-11.87	111	157	Peak
11892.00	43.59	7.97	51.56	74.00	-22.44	301	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
2000.00	45.31	3.35	48.66	74.00	-25.34	6	100	Peak
5150.00	38.21	9.76	47.97	74.00	-26.03	83	200	Peak
5350.00	38.02	10.45	48.47	74.00	-25.53	287	100	Peak
6960.00	43.89	2.69	46.58	74.00	-27.42	289	200	Peak
10524.00	43.59	5.83	49.42	54.00	-4.58	198	100	Average
10524.00	55.23	5.83	61.06	74.00	-12.94	198	100	Peak
15792.00	38.63	9.81	48.44	54.00	-5.56	95	103	Average
15792.00	51.92	9.81	61.73	74.00	-12.27	95	103	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11a 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
5000.00	42.39	9.25	51.64	74.00	-22.36	76	200	Peak
5150.00	39.66	9.76	49.42	74.00	-24.58	297	200	Peak
5350.00	42.22	10.45	52.67	74.00	-21.33	190	200	Peak
6948.00	44.78	2.70	47.48	74.00	-26.52	224	100	Peak
9360.00	43.55	4.11	47.66	74.00	-26.34	333	200	Peak
10596.00	43.39	5.97	49.36	54.00	-4.64	111	137	Average
10596.00	56.32	5.97	62.29	74.00	-11.71	111	137	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
1335.00	50.80	-0.96	49.84	74.00	-24.16	194	100	Peak
2790.00	44.81	5.06	49.87	74.00	-24.13	215	200	Peak
5350.00	40.05	10.45	50.50	74.00	-23.50	278	100	Peak
6972.00	43.96	2.69	46.65	74.00	-27.35	317	200	Peak
8520.00	43.19	3.79	46.98	74.00	-27.02	204	200	Peak
10596.00	43.84	5.97	49.81	54.00	-4.19	199	100	Average
10596.00	55.29	5.97	61.26	74.00	-12.74	199	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11a 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
3205.00	41.42	6.04	47.46	74.00	-26.54	247	100	Peak
3910.00	40.79	6.65	47.44	74.00	-26.56	274	100	Peak
5000.00	43.67	9.25	52.92	74.00	-21.08	116	200	Peak
7740.00	43.95	3.10	47.05	74.00	-26.95	47	100	Peak
10632.00	42.74	6.04	48.78	54.00	-5.22	111	169	Average
10632.00	56.46	6.04	62.50	74.00	-11.50	111	169	Peak
13608.00	43.22	8.57	51.79	74.00	-22.21	300	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
2000.00	44.63	3.35	47.98	74.00	-26.02	192	100	Peak
2500.00	42.63	4.32	46.95	74.00	-27.05	235	100	Peak
3085.00	41.57	5.78	47.35	74.00	-26.65	333	100	Peak
6936.00	44.15	2.70	46.85	74.00	-27.15	305	100	Peak
9360.00	43.55	4.11	47.66	74.00	-26.34	270	100	Peak
10644.00	42.45	6.07	48.52	54.00	-5.48	204	100	Average
10644.00	54.07	6.07	60.14	74.00	-13.86	204	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11an HT20 NSS1/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
5150.00	39.48	9.76	49.24	74.00	-24.76	110	200	Peak
5350.00	40.79	10.45	51.24	74.00	-22.76	115	200	Peak
5480.00	41.68	10.89	52.57	74.00	-21.43	128	200	Peak
8004.00	44.10	3.29	47.39	74.00	-26.61	294	100	Peak
10368.00	43.96	5.58	49.54	74.00	-24.46	288	100	Peak
10524.00	45.87	5.83	51.70	54.00	-2.30	111	130	Average
10524.00	57.45	5.83	63.28	74.00	-10.72	111	130	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
2500.00	44.24	4.32	48.56	74.00	-25.44	268	100	Peak
5150.00	38.22	9.76	47.98	74.00	-26.02	0	200	Peak
5350.00	38.03	10.45	48.48	74.00	-25.52	123	100	Peak
7032.00	44.55	2.70	47.25	74.00	-26.75	262	100	Peak
10524.00	56.90	5.83	62.73	74.00	-11.27	105	100	Peak
15780.00	48.67	9.82	58.49	74.00	-15.51	105	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11an HT20 NSS1/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
5000.00	41.77	9.25	51.02	74.00	-22.98	122	200	Peak
5150.00	39.14	9.76	48.90	74.00	-25.10	254	200	Peak
5350.00	41.13	10.45	51.58	54.00	-2.42	110	157	Average
5350.00	54.16	10.45	64.61	74.00	-9.39	110	157	Peak
6912.00	44.09	2.70	46.79	74.00	-27.21	338	100	Peak
7752.00	44.08	3.11	47.19	74.00	-26.81	323	100	Peak
10608.00	44.06	5.99	50.05	54.00	-3.95	112	163	Average
10608.00	57.89	5.99	63.88	74.00	-10.12	112	163	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
2280.00	45.04	3.89	48.93	74.00	-25.07	335	100	Peak
5150.00	38.35	9.76	48.11	74.00	-25.89	260	200	Peak
5350.00	40.40	10.45	50.85	74.00	-23.15	241	200	Peak
9252.00	44.38	4.08	48.46	74.00	-25.54	14	200	Peak
10608.00	46.21	5.99	52.20	54.00	-1.80	200	100	Average
10608.00	59.28	5.99	65.27	74.00	-8.73	200	100	Peak
11904.00	43.31	8.00	51.31	74.00	-22.69	147	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11an HT20 NSS1/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
2500.00	43.02	4.32	47.34	74.00	-26.66	174	100	Peak
5000.00	42.89	9.25	52.14	74.00	-21.86	123	200	Peak
5520.00	35.46	11.01	46.47	54.00	-7.53	108	168	Average
5520.00	45.27	11.01	56.28	74.00	-17.72	108	168	Peak
6960.00	44.05	2.69	46.74	74.00	-27.26	81	100	Peak
7776.00	44.76	3.12	47.88	74.00	-26.12	261	100	Peak
10644.00	41.14	6.07	47.21	54.00	-6.79	133	166	Average
10644.00	54.45	6.07	60.52	74.00	-13.48	133	166	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
2280.00	47.58	3.89	51.47	74.00	-22.53	175	100	Peak
2500.00	43.89	4.32	48.21	74.00	-25.79	264	100	Peak
5160.00	40.30	9.80	50.10	74.00	-23.90	208	100	Peak
7776.00	43.63	3.12	46.75	74.00	-27.25	0	200	Peak
9360.00	43.64	4.11	47.75	74.00	-26.25	95	200	Peak
10632.00	42.99	6.04	49.03	54.00	-4.97	201	117	Average
10632.00	59.38	6.04	65.42	74.00	-8.58	201	117	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11an HT40 NSS1/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
5000.00	42.70	9.25	51.95	74.00	-22.05	202	200	Peak
5350.00	41.23	10.45	51.68	54.00	-2.32	110	162	Average
5350.00	55.59	10.45	66.04	74.00	-7.96	110	162	Peak
5480.00	41.08	10.89	51.97	54.00	-2.03	125	155	Average
5480.00	47.55	10.89	58.44	74.00	-15.56	125	155	Peak
6960.00	44.19	2.69	46.88	74.00	-27.12	110	400	Peak
10548.00	41.87	5.88	47.75	54.00	-6.25	113	131	Average
10548.00	54.46	5.88	60.34	74.00	-13.66	113	131	Peak
12240.00	43.95	8.18	52.13	74.00	-21.87	309	300	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
2000.00	46.17	3.35	49.52	74.00	-24.48	198	100	Peak
5150.00	37.62	9.76	47.38	74.00	-26.62	331	100	Peak
5350.00	39.17	10.45	49.62	74.00	-24.38	282	200	Peak
7644.00	43.91	3.03	46.94	74.00	-27.06	26	100	Peak
10536.00	45.61	5.85	51.46	54.00	-2.54	201	108	Average
10536.00	57.10	5.85	62.95	74.00	-11.05	201	108	Peak
15804.00	39.25	9.80	49.05	54.00	-4.95	95	108	Average
15804.00	51.27	9.80	61.07	74.00	-12.93	95	108	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 2A / IEEE 802.11an HT40 NSS1/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
5000.00	42.34	9.25	51.59	74.00	-22.41	125	200	Peak
5150.00	39.88	9.76	49.64	74.00	-24.36	106	200	Peak
5480.00	36.23	10.89	47.12	54.00	-6.88	256	127	Average
5480.00	44.12	10.89	55.01	74.00	-18.99	256	127	Peak
7632.00	44.43	3.02	47.45	74.00	-26.55	55	200	Peak
9336.00	43.76	4.10	47.86	74.00	-26.14	264	100	Peak
10944.00	42.91	6.66	49.57	74.00	-24.43	320	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
2785.00	43.02	5.04	48.06	74.00	-25.94	211	100	Peak
4930.00	40.66	9.07	49.73	74.00	-24.27	189	200	Peak
5150.00	37.51	9.76	47.27	74.00	-26.73	271	200	Peak
7008.00	44.12	2.69	46.81	74.00	-27.19	230	100	Peak
12228.00	31.85	8.19	40.04	54.00	-13.96	21	100	Average
12228.00	45.51	8.19	53.70	74.00	-20.30	21	100	Peak
15588.00	34.72	9.93	44.65	54.00	-9.35	32	136	Average
15588.00	46.06	9.93	55.99	74.00	-18.01	32	136	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11a 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
5000.00	42.66	9.25	51.91	74.00	-22.09	121	200	Peak
5725.00	41.86	11.49	53.35	54.00	-0.65	108	168	Average
5725.00	60.30	11.49	71.79	74.00	-2.21	108	168	Peak
5850.00	37.27	11.79	49.06	74.00	-24.94	199	200	Peak
7740.00	43.76	3.10	46.86	74.00	-27.14	66	200	Peak
10032.00	44.02	5.07	49.09	74.00	-24.91	35	200	Peak
11508.00	44.97	7.01	51.98	74.00	-22.02	114	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
2000.00	44.92	3.35	48.27	74.00	-25.73	191	100	Peak
5725.00	40.81	11.49	52.30	74.00	-21.70	49	200	Peak
5850.00	36.36	11.79	48.15	74.00	-25.85	235	200	Peak
6960.00	43.40	2.69	46.09	74.00	-27.91	14	100	Peak
8496.00	43.86	3.78	47.64	74.00	-26.36	176	100	Peak
11484.00	38.27	6.98	45.25	54.00	-8.75	156	112	Average
11484.00	54.25	6.98	61.23	74.00	-12.77	156	112	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11a 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
2000.00	46.10	3.35	49.45	74.00	-24.55	354	100	Peak
5725.00	39.05	11.49	50.54	74.00	-23.46	102	200	Peak
5850.00	36.92	11.79	48.71	74.00	-25.29	189	200	Peak
7656.00	43.96	3.04	47.00	74.00	-27.00	348	200	Peak
9288.00	43.93	4.09	48.02	74.00	-25.98	22	100	Peak
11568.00	36.35	7.16	43.51	54.00	-10.49	111	122	Average
11568.00	47.76	7.16	54.92	74.00	-19.08	111	122	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
2000.00	45.94	3.35	49.29	74.00	-24.71	196	100	Peak
5725.00	37.02	11.49	48.51	74.00	-25.49	285	200	Peak
5850.00	36.89	11.79	48.68	74.00	-25.32	334	200	Peak
7752.00	43.96	3.11	47.07	74.00	-26.93	205	100	Peak
10140.00	44.20	5.23	49.43	74.00	-24.57	356	100	Peak
11568.00	38.89	7.16	46.05	54.00	-7.95	157	117	Average
11568.00	51.83	7.16	58.99	74.00	-15.01	157	117	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11a 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
5000.00	42.89	9.25	52.14	74.00	-21.86	124	200	Peak
5725.00	37.62	11.49	49.11	74.00	-24.89	48	200	Peak
5850.00	38.53	11.79	50.32	54.00	-3.68	107	150	Average
5850.00	59.71	11.79	71.50	74.00	-2.50	107	150	Peak
7656.00	43.86	3.04	46.90	74.00	-27.10	75	200	Peak
10068.00	44.47	5.12	49.59	74.00	-24.41	69	200	Peak
11664.00	44.43	7.40	51.83	74.00	-22.17	112	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
3090.00	40.92	5.79	46.71	74.00	-27.29	119	200	Peak
5725.00	37.32	11.49	48.81	74.00	-25.19	56	200	Peak
5850.00	37.71	11.79	49.50	74.00	-24.50	54	200	Peak
9144.00	44.06	4.04	48.10	74.00	-25.90	286	200	Peak
10140.00	43.96	5.23	49.19	74.00	-24.81	188	200	Peak
11652.00	41.05	7.37	48.42	54.00	-5.58	70	127	Average
11652.00	52.99	7.37	60.36	74.00	-13.64	70	127	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11an HT20 NSS1/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
4800.00	39.97	8.75	48.72	74.00	-25.28	121	100	Peak
5725.00	42.00	11.49	53.49	54.00	-0.51	95	148	Average
5725.00	59.36	11.49	70.85	74.00	-3.15	95	148	Peak
5850.00	36.88	11.79	48.67	74.00	-25.33	154	200	Peak
7692.00	44.08	3.06	47.14	74.00	-26.86	104	100	Peak
11184.00	44.17	6.85	51.02	74.00	-22.98	195	200	Peak
11496.00	43.33	6.99	50.32	74.00	-23.68	122	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
3800.00	42.24	6.66	48.90	74.00	-25.10	76	100	Peak
5725.00	40.59	11.49	52.08	74.00	-21.92	324	200	Peak
5850.00	37.76	11.79	49.55	74.00	-24.45	219	100	Peak
7752.00	44.23	3.11	47.34	74.00	-26.66	269	100	Peak
8844.00	43.33	3.93	47.26	74.00	-26.74	337	200	Peak
11496.00	40.59	6.99	47.58	54.00	-6.42	71	122	Average
11496.00	53.68	6.99	60.67	74.00	-13.33	71	122	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11an HT20 NSS1/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
5320.00	43.12	10.34	53.46	54.00	-0.54	109	158	Average
5320.00	49.54	10.34	59.88	74.00	-14.12	109	158	Peak
5480.00	39.21	10.89	50.10	54.00	-3.90	118	158	Average
5480.00	46.58	10.89	57.47	74.00	-16.53	118	158	Peak
5725.00	39.02	11.49	50.51	74.00	-23.49	111	200	Peak
5850.00	37.92	11.79	49.71	74.00	-24.29	92	200	Peak
8544.00	44.11	3.80	47.91	74.00	-26.09	162	100	Peak
10440.00	43.84	5.69	49.53	74.00	-24.47	307	100	Peak
11568.00	44.10	7.16	51.26	74.00	-22.74	131	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
2790.00	43.01	5.06	48.07	74.00	-25.93	294	100	Peak
5725.00	37.70	11.49	49.19	74.00	-24.81	198	200	Peak
5850.00	36.91	11.79	48.70	74.00	-25.30	35	200	Peak
7608.00	44.01	3.00	47.01	74.00	-26.99	75	200	Peak
10056.00	44.30	5.11	49.41	74.00	-24.59	302	100	Peak
11568.00	39.53	7.16	46.69	54.00	-7.31	71	121	Average
11568.00	52.65	7.16	59.81	74.00	-14.19	71	121	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11an HT20 NSS1/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
5240.00	42.28	10.07	52.35	74.00	-21.65	112	200	Peak
5320.00	44.97	10.34	55.31	74.00	-18.69	109	200	Peak
5480.00	42.02	10.89	52.91	74.00	-21.09	103	200	Peak
5725.00	37.50	11.49	48.99	74.00	-25.01	76	200	Peak
5850.00	38.56	11.79	50.35	54.00	-3.65	116	158	Average
5850.00	61.58	11.79	73.37	74.00	-0.63	116	158	Peak
7776.00	44.82	3.12	47.94	74.00	-26.06	88	200	Peak
10140.00	43.79	5.23	49.02	74.00	-24.98	122	200	Peak
11652.00	37.54	7.37	44.91	54.00	-9.09	110	173	Average
11652.00	49.69	7.37	57.06	74.00	-16.94	110	173	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
3800.00	42.24	6.66	48.90	74.00	-25.10	75	100	Peak
5725.00	37.44	11.49	48.93	74.00	-25.07	189	200	Peak
5850.00	40.52	11.79	52.31	74.00	-21.69	38	200	Peak
10056.00	44.07	5.11	49.18	74.00	-24.82	317	100	Peak
11196.00	44.12	6.86	50.98	74.00	-23.02	76	100	Peak
11664.00	39.95	7.40	47.35	54.00	-6.65	73	124	Average
11664.00	54.09	7.40	61.49	74.00	-12.51	73	124	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11an HT40 NSS1/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
5280.00	45.82	10.21	56.03	74.00	-17.97	109	200	Peak
5320.00	44.97	10.34	55.31	74.00	-18.69	116	200	Peak
5725.00	41.82	11.49	53.31	54.00	-0.69	109	155	Average
5725.00	60.52	11.49	72.01	74.00	-1.99	109	155	Peak
5850.00	37.16	11.79	48.95	74.00	-25.05	80	200	Peak
10044.00	43.72	5.09	48.81	74.00	-25.19	46	100	Peak
11184.00	43.12	6.85	49.97	74.00	-24.03	121	200	Peak
11520.00	42.87	7.04	49.91	74.00	-24.09	140	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
2000.00	47.38	3.35	50.73	74.00	-23.27	198	100	Peak
5725.00	40.10	11.49	51.59	74.00	-22.41	320	200	Peak
5850.00	36.26	11.79	48.05	74.00	-25.95	166	200	Peak
7836.00	43.84	3.17	47.01	74.00	-26.99	313	200	Peak
9360.00	44.11	4.11	48.22	74.00	-25.78	84	100	Peak
11508.00	38.49	7.01	45.50	54.00	-8.50	72	122	Average
11508.00	52.63	7.01	59.64	74.00	-14.36	72	122	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	Display Unit	Test By	Waternil Guan
Test Model	EEMS330	Test Date	2015/05/27
Test Mode	UNII Band 3 / IEEE 802.11an HT40 NSS1/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
5280.00	42.04	10.21	52.25	74.00	-21.75	112	200	Peak
5725.00	37.70	11.49	49.19	54.00	-4.81	125	159	Average
5725.00	56.03	11.49	67.52	74.00	-6.48	125	159	Peak
5850.00	40.90	11.79	52.69	54.00	-1.31	108	154	Average
5850.00	60.03	11.79	71.82	74.00	-2.18	108	154	Peak
8640.00	42.99	3.84	46.83	74.00	-27.17	168	100	Peak
9996.00	44.57	5.01	49.58	74.00	-24.42	86	100	Peak
11088.00	43.66	6.81	50.47	74.00	-23.53	98	200	Peak

966Chamber_C at 3Meter / Vertical

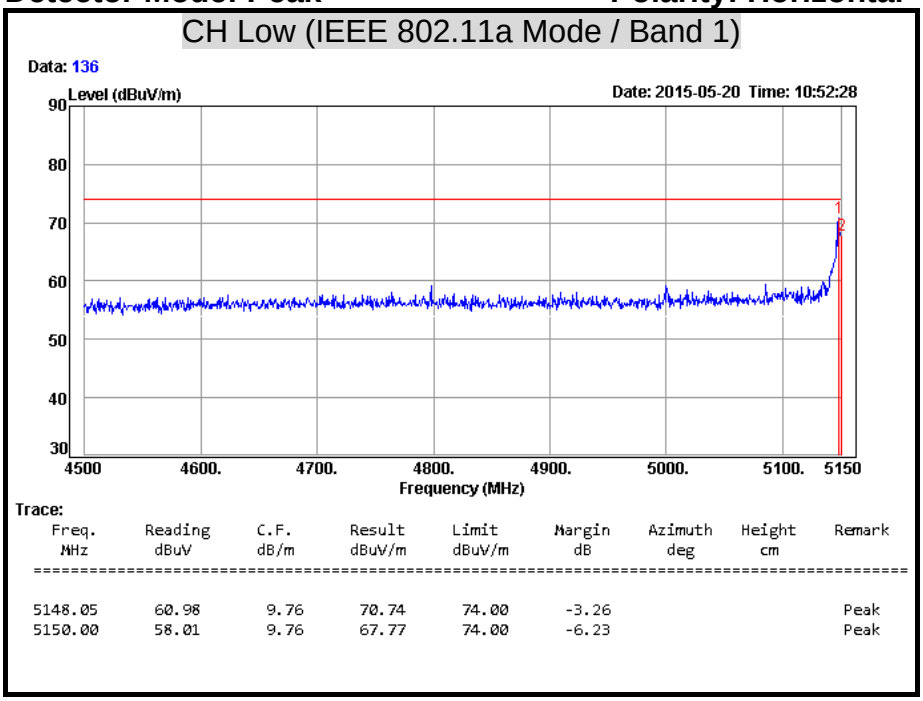
Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
2000.00	45.49	3.35	48.84	74.00	-25.16	198	100	Peak
5725.00	40.35	11.49	51.84	74.00	-22.16	359	200	Peak
5850.00	39.51	11.79	51.30	74.00	-22.70	41	100	Peak
8532.00	42.67	3.79	46.46	74.00	-27.54	29	100	Peak
10080.00	44.16	5.14	49.30	74.00	-24.70	46	200	Peak
11592.00	37.91	7.22	45.13	54.00	-8.87	76	125	Average
11592.00	50.81	7.22	58.03	74.00	-15.97	76	125	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**

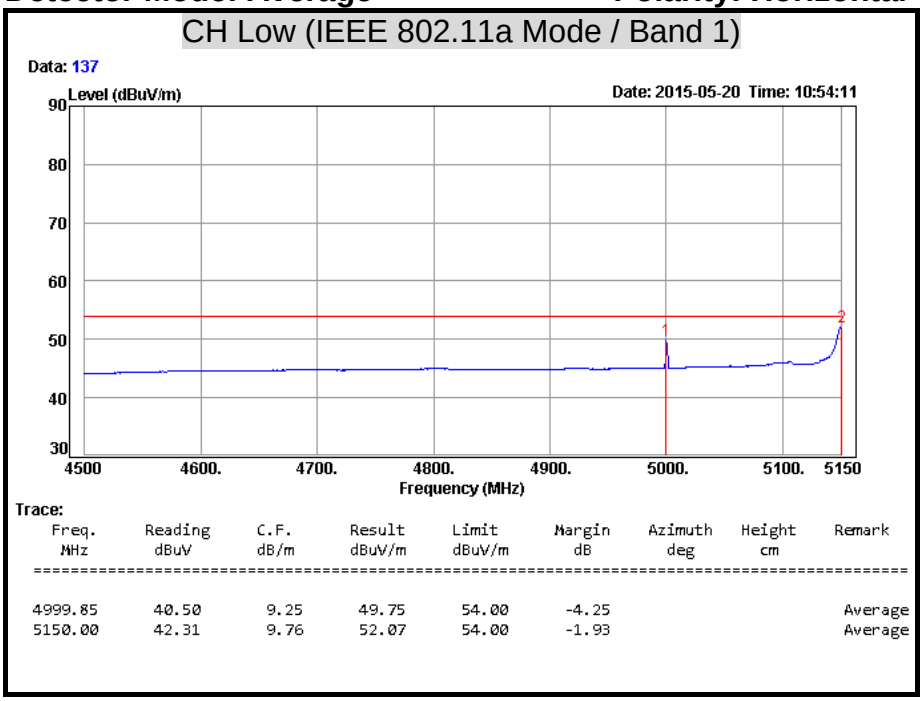


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5148.05	60.98	9.76	70.74	74.00	-3.26			Peak
5150.00	58.01	9.76	67.77	74.00	-6.23			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Horizontal**

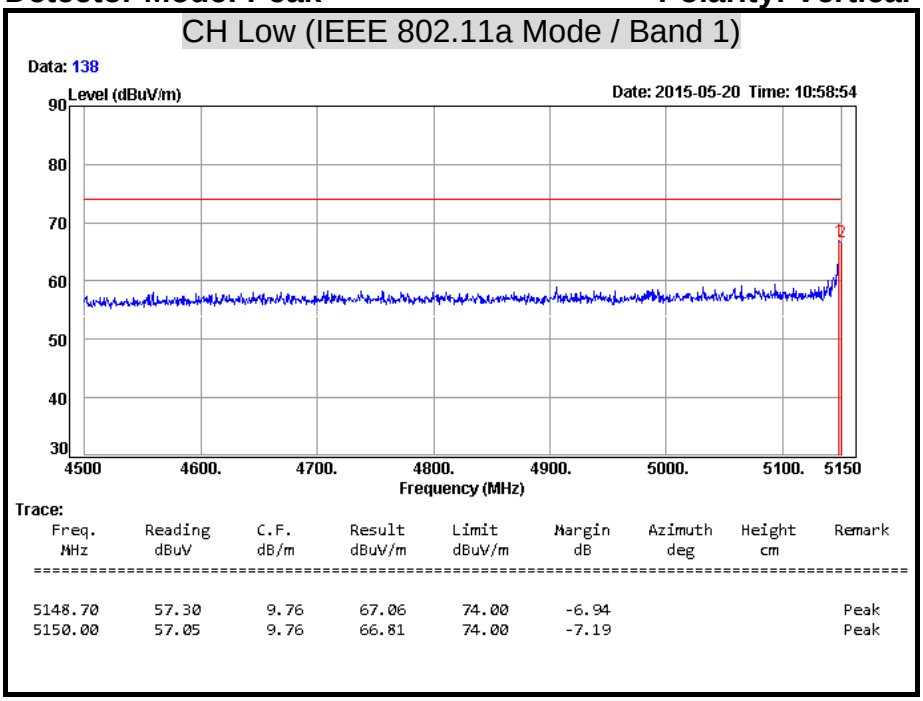


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
4999.85	40.50	9.25	49.75	54.00	-4.25			Average
5150.00	42.31	9.76	52.07	54.00	-1.93			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Vertical**

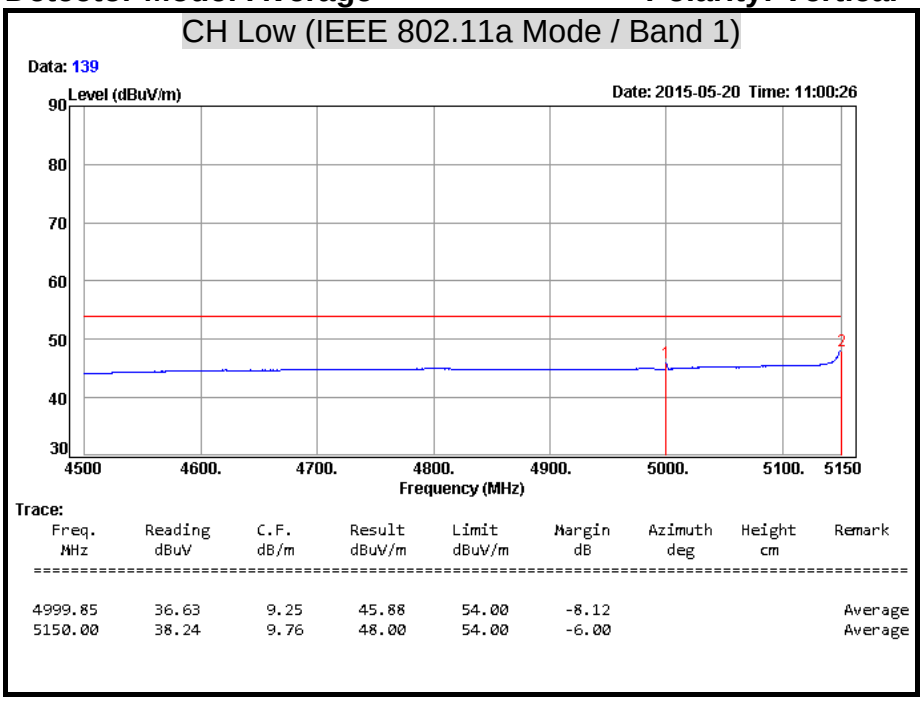


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5148.70	57.30	9.76	67.06	74.00	-6.94			Peak
5150.00	57.05	9.76	66.81	74.00	-7.19			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Vertical**



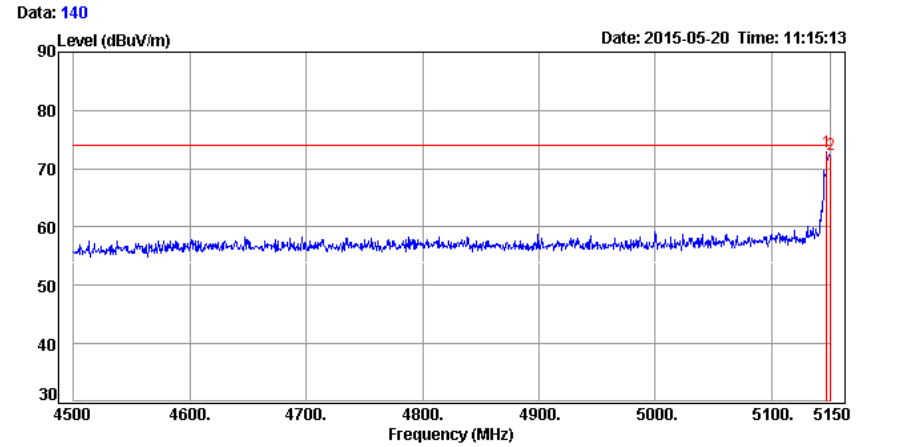
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
4999.85	36.63	9.25	45.88	54.00	-8.12			Average
5150.00	38.24	9.76	48.00	54.00	-6.00			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Horizontal**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1)



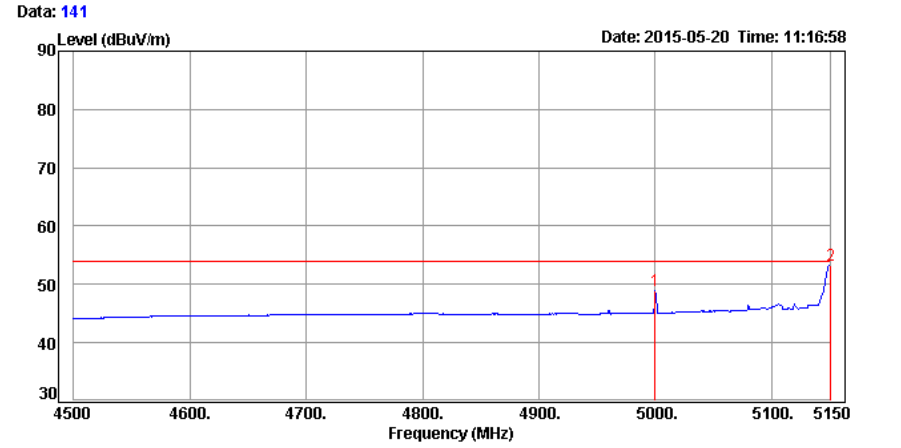
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5147.40	63.14	9.75	72.89	74.00	-1.11			Peak
5150.00	62.70	9.76	72.46	74.00	-1.54			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Horizontal**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1)



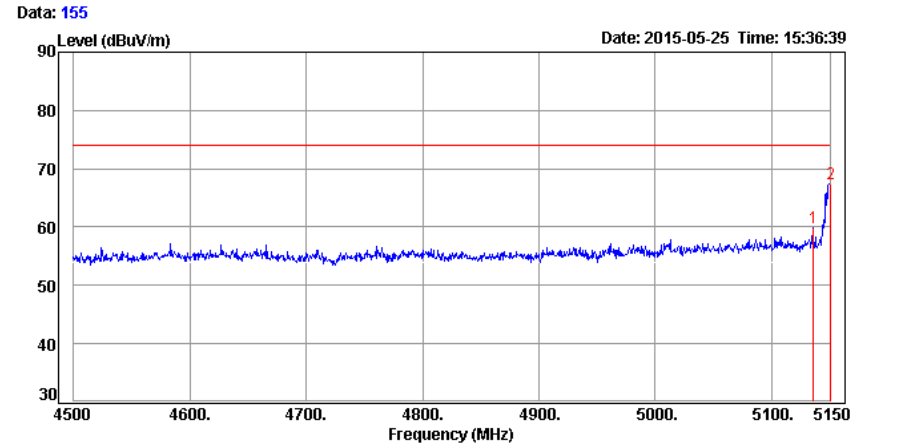
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
4999.85	39.70	9.25	48.95	54.00	-5.05			Average
5150.00	43.44	9.76	53.20	54.00	-0.80			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Vertical**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1)



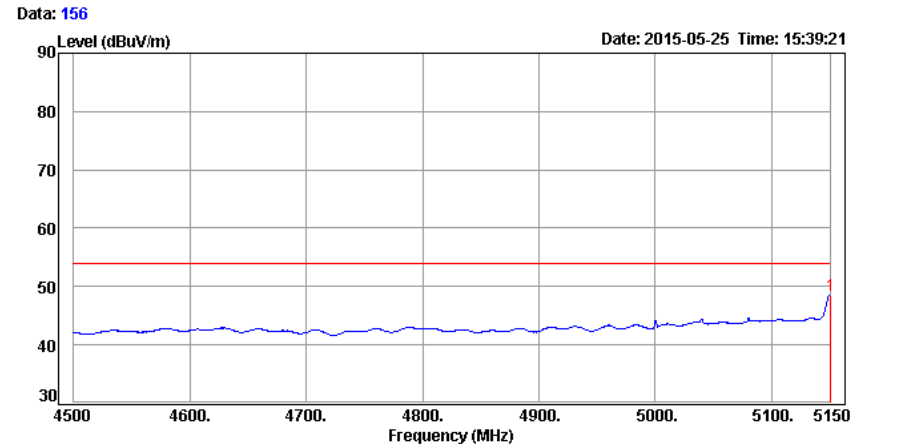
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5135.05	50.16	9.71	59.87	74.00	-14.13			Peak
5150.00	57.76	9.76	67.52	74.00	-6.48			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Vertical**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 1)



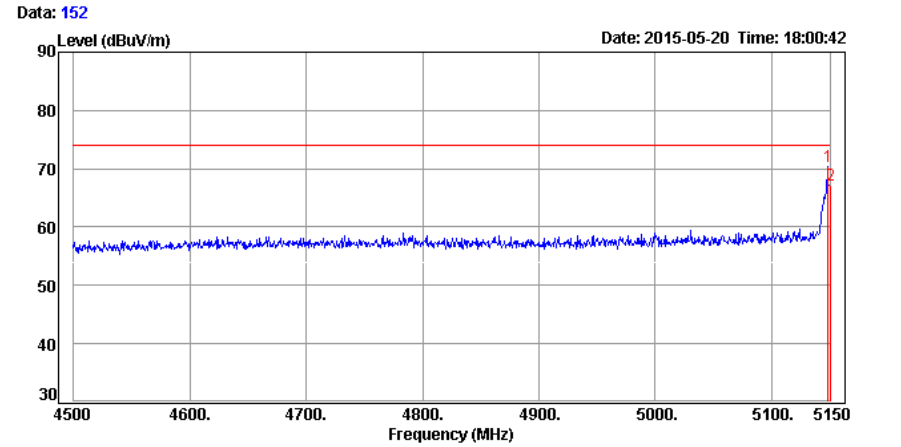
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5150.00	38.79	9.76	48.55	54.00	-5.45			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Horizontal**

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 1)



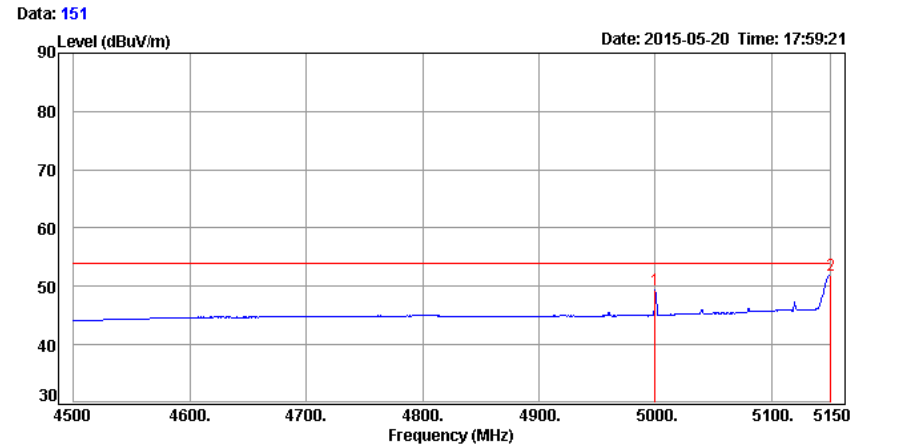
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5148.05	60.56	9.76	70.32	74.00	-3.68			Peak
5150.00	57.32	9.76	67.08	74.00	-6.92			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Horizontal**

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 1)

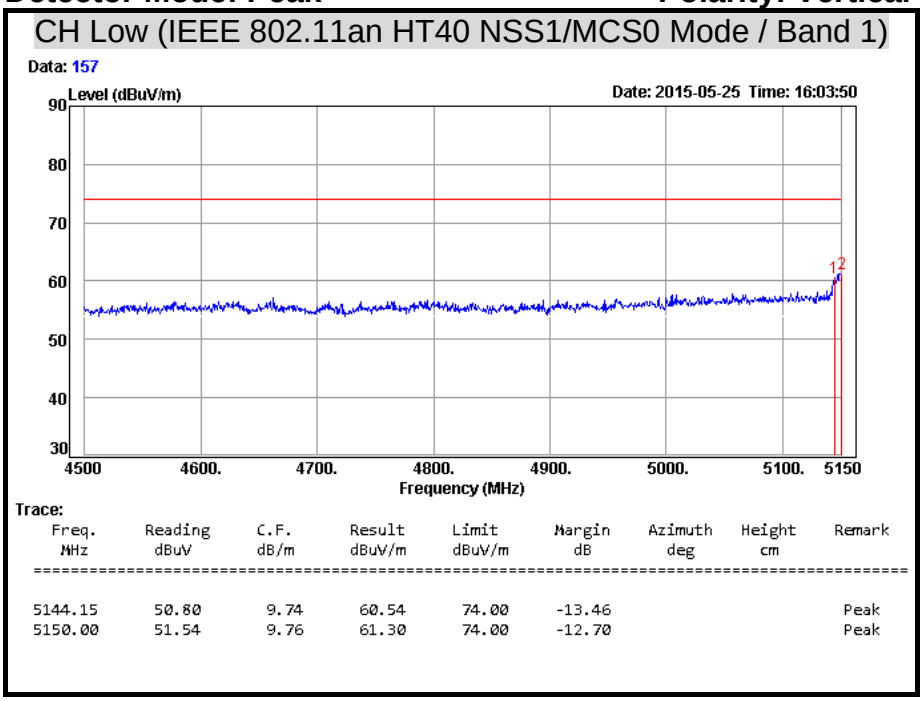


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
4999.85	40.10	9.25	49.35	54.00	-4.65			Average
5150.00	42.25	9.76	52.01	54.00	-1.99			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Vertical**

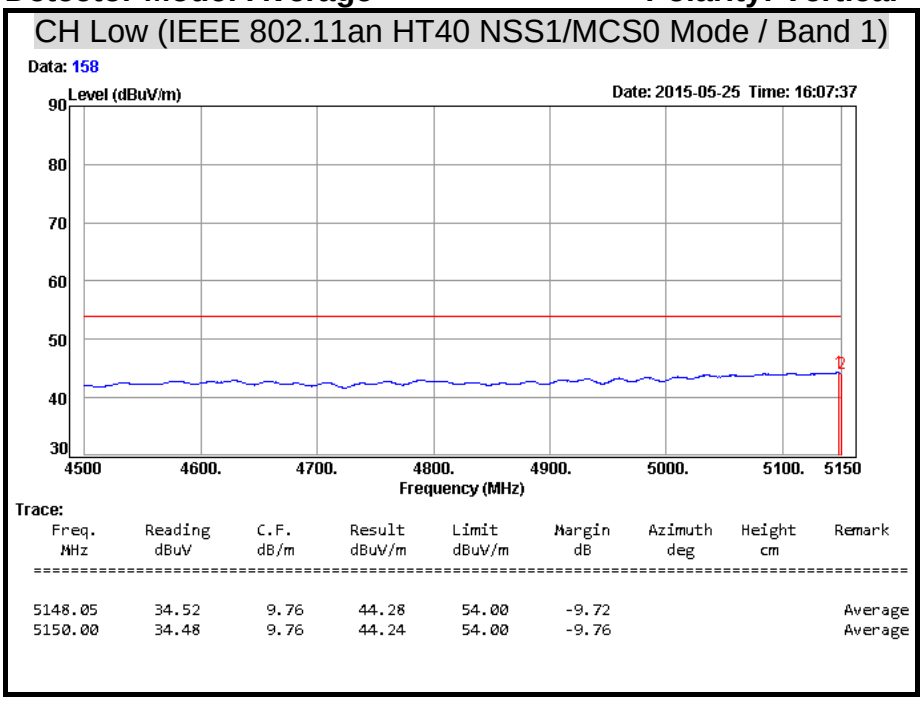


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5144.15	50.80	9.74	60.54	74.00	-13.46			Peak
5150.00	51.54	9.76	61.30	74.00	-12.70			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Vertical**



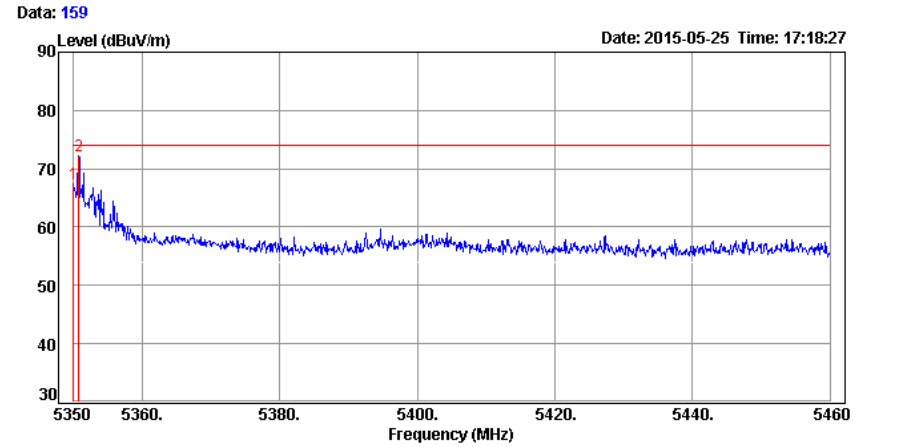
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5148.05	34.52	9.76	44.28	54.00	-9.72			Average
5150.00	34.48	9.76	44.24	54.00	-9.76			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Horizontal**

CH Low (IEEE 802.11a Mode / Band 2A)



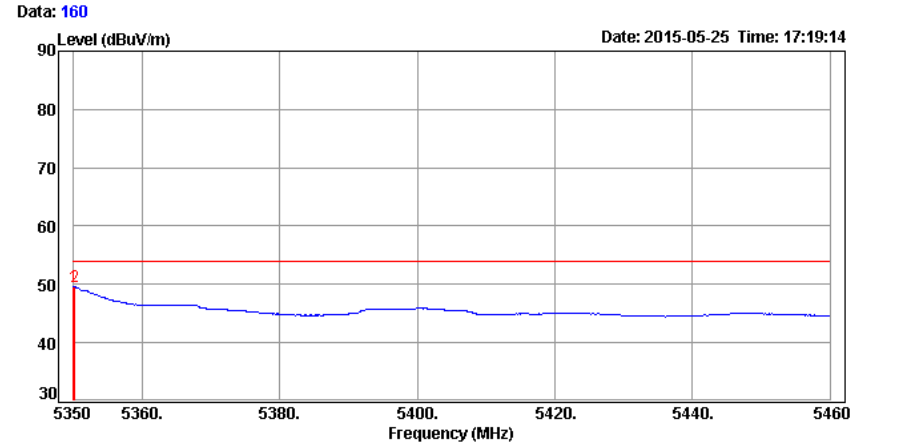
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	57.03	10.45	67.48	74.00	-6.52			Peak
5350.77	61.85	10.45	72.30	74.00	-1.70			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Horizontal**

CH Low (IEEE 802.11a Mode / Band 2A)



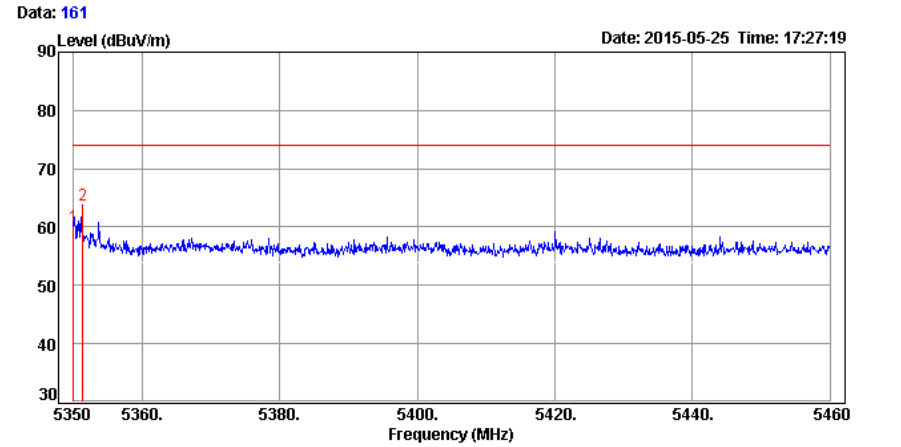
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	39.18	10.45	49.63	54.00	-4.37			Average
5350.11	39.20	10.45	49.65	54.00	-4.35			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Vertical**

CH Low (IEEE 802.11a Mode / Band 2A)



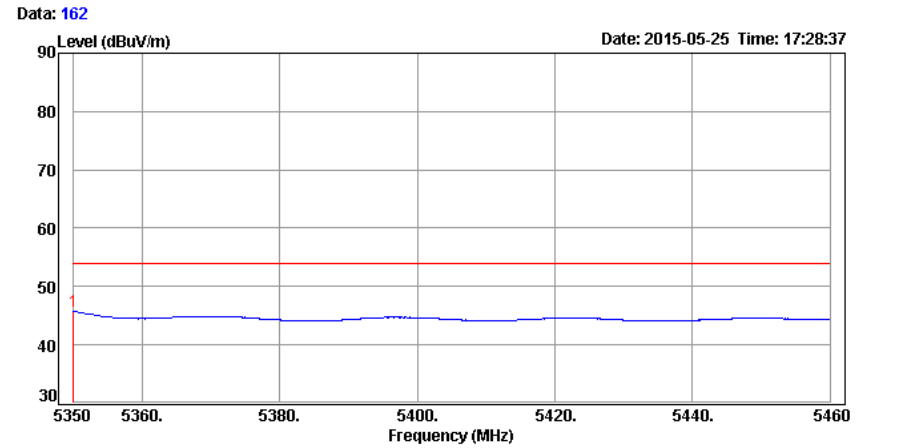
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	49.59	10.45	60.04	74.00	-13.96			Peak
5351.21	53.28	10.45	63.73	74.00	-10.27			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Vertical**

CH Low (IEEE 802.11a Mode / Band 2A)



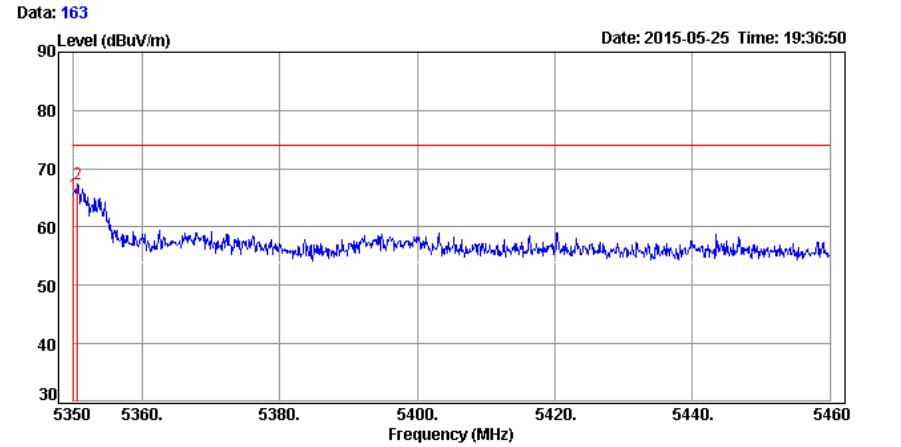
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	35.38	10.45	45.83	54.00	-8.17			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Horizontal**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A)



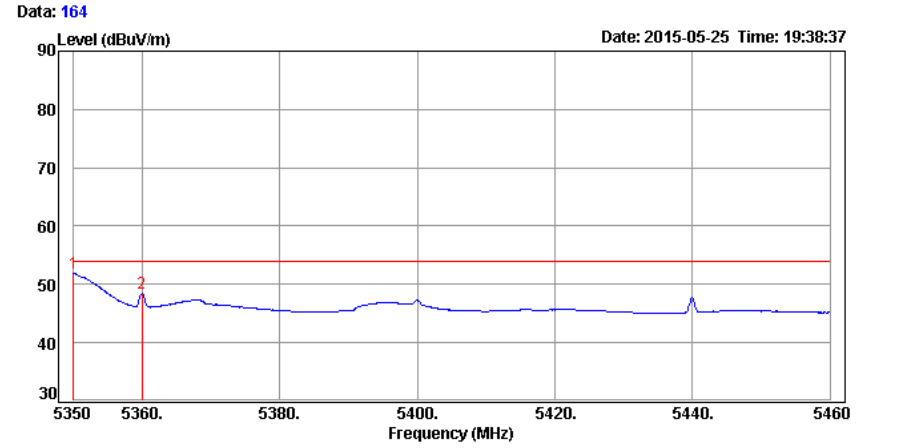
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	55.21	10.45	65.66	74.00	-8.34			Peak
5350.44	57.06	10.45	67.51	74.00	-6.49			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Horizontal**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A)



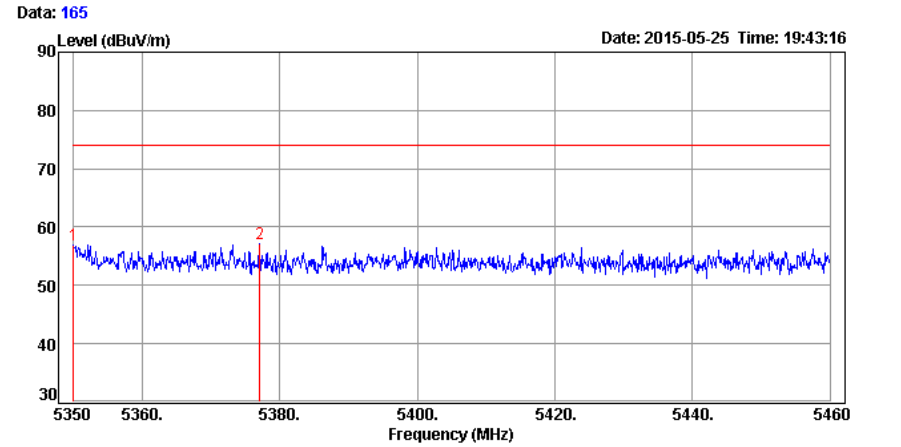
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	41.45	10.45	51.90	54.00	-2.10			Average
5359.90	37.99	10.48	48.47	54.00	-5.53			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Vertical**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A)



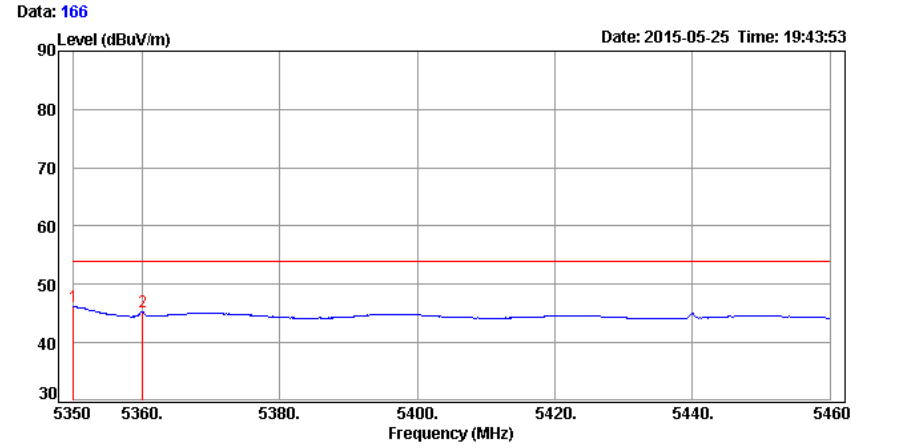
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	46.45	10.45	56.90	74.00	-17.10			Peak
5376.95	46.63	10.54	57.17	74.00	-16.83			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Vertical**

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 2A)



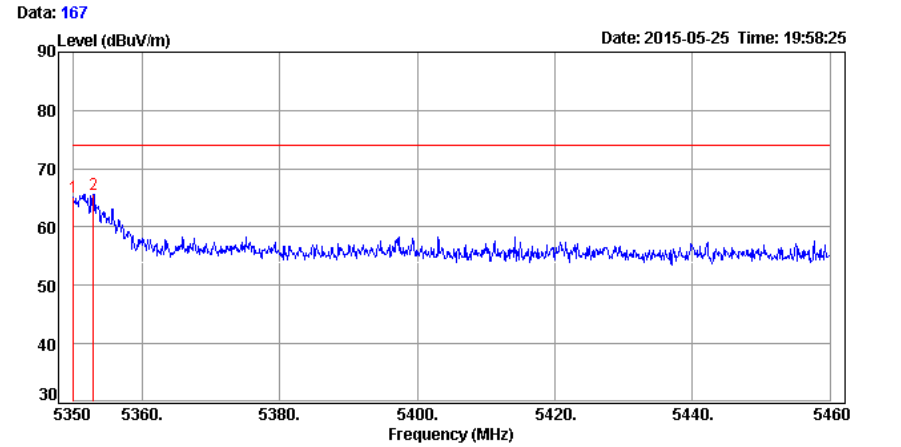
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	35.82	10.45	46.27	54.00	-7.73			Average
5360.01	34.79	10.48	45.27	54.00	-8.73			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Horizontal**

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A)



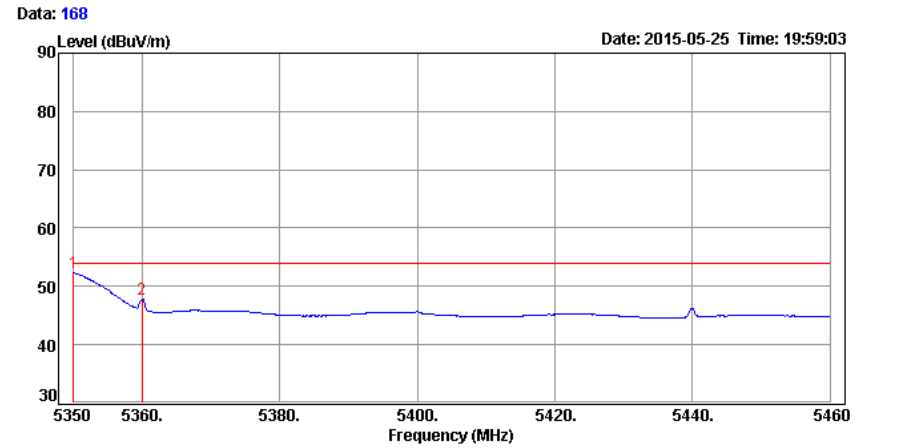
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	54.66	10.45	65.11	74.00	-8.89			Peak
5352.86	55.17	10.46	65.63	74.00	-8.37			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Horizontal**

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A)



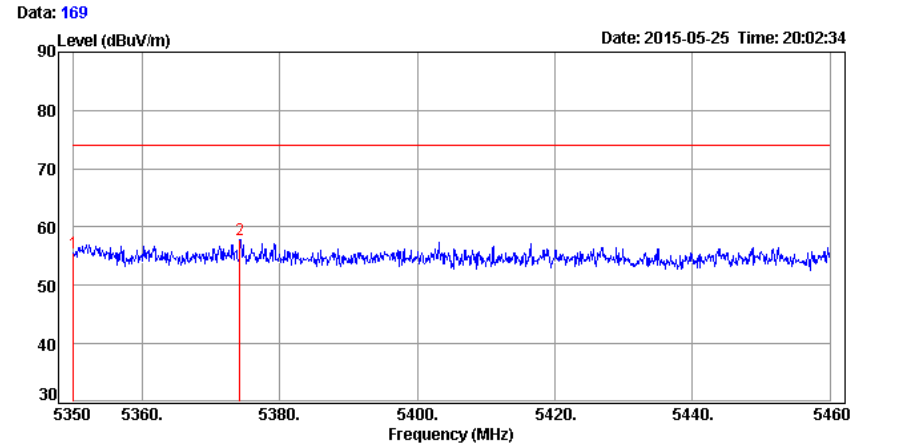
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	41.83	10.45	52.28	54.00	-1.72			Average
5359.90	37.28	10.48	47.76	54.00	-6.24			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Peak **Polarity: Vertical**

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A)



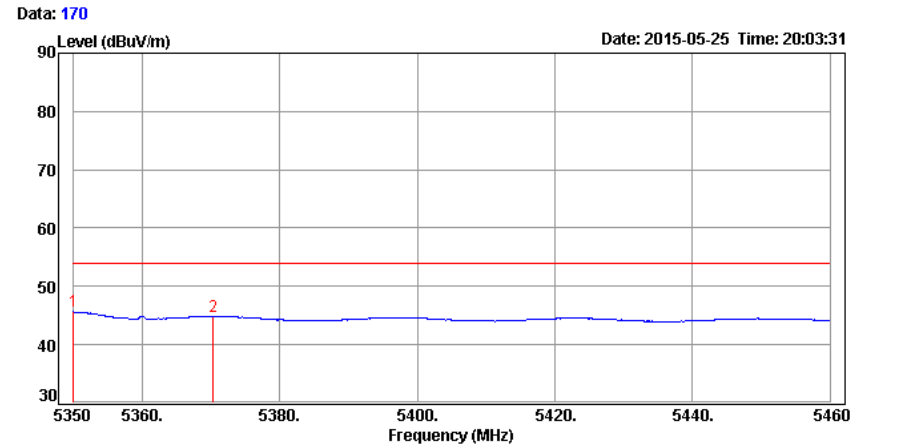
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	45.04	10.45	55.49	74.00	-18.51			Peak
5374.20	47.37	10.53	57.90	74.00	-16.10			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Average **Polarity: Vertical**

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 2A)

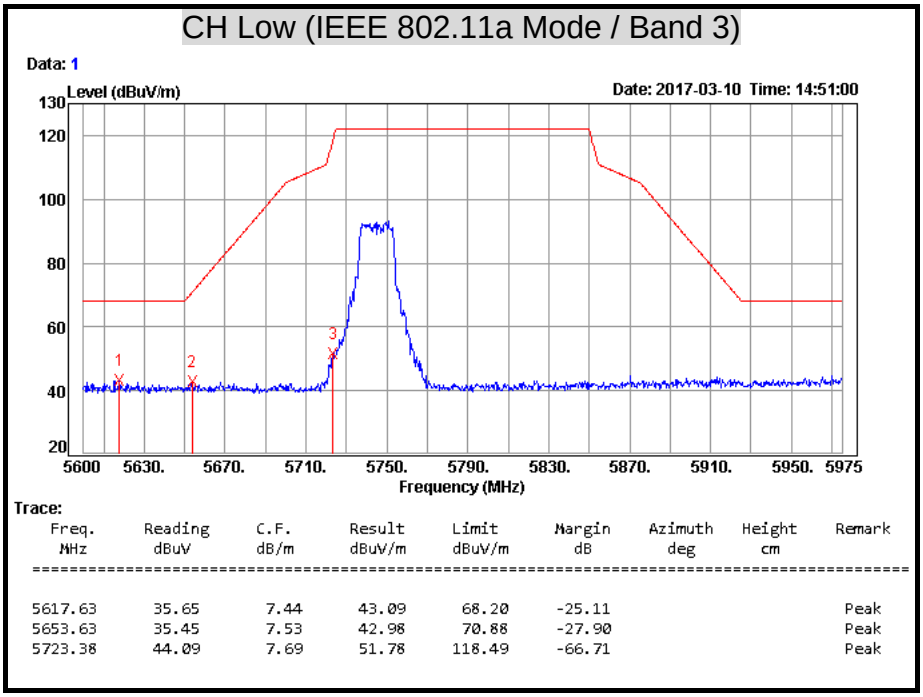


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5350.00	35.18	10.45	45.63	54.00	-8.37			Average
5370.35	34.34	10.52	44.86	54.00	-9.14			Average

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark AVG = Result(AV) – Limit(AV)

Detector Mode: Horizontal

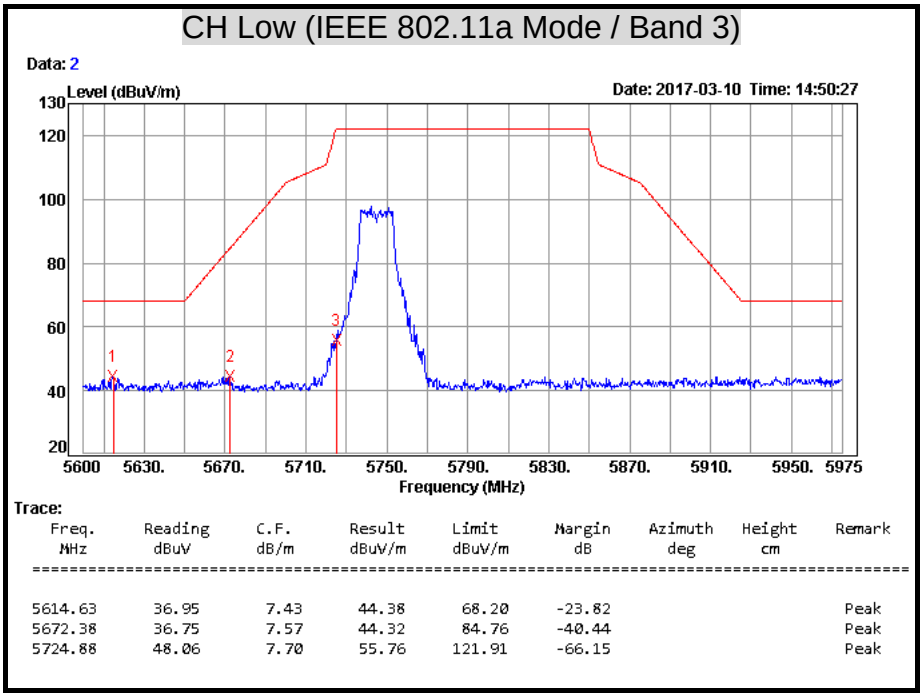


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5617.63	35.65	7.44	43.09	68.20	-25.11			Peak
5653.63	35.45	7.53	42.98	70.88	-27.90			Peak
5723.38	44.09	7.69	51.78	118.49	-66.71			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical



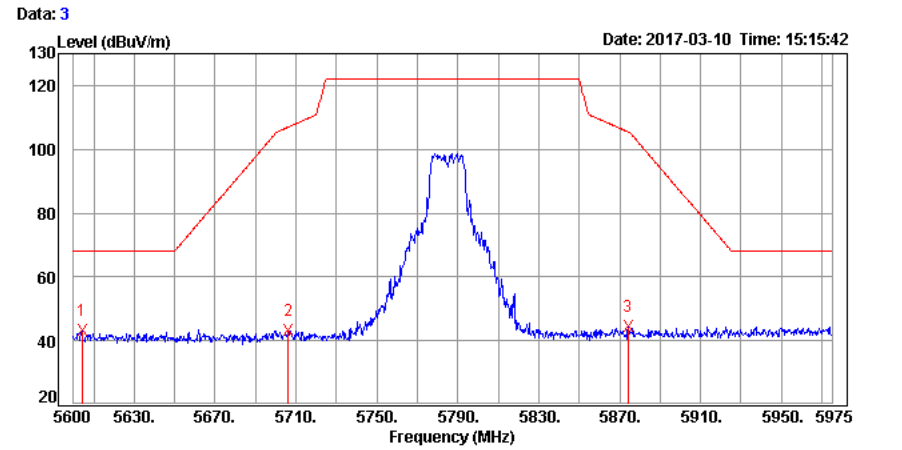
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5614.63	36.95	7.43	44.38	68.20	-23.82			Peak
5672.38	36.75	7.57	44.32	84.76	-40.44			Peak
5724.88	48.06	7.70	55.76	121.91	-66.15			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Horizontal

CH Middle (IEEE 802.11a Mode / Band 3)



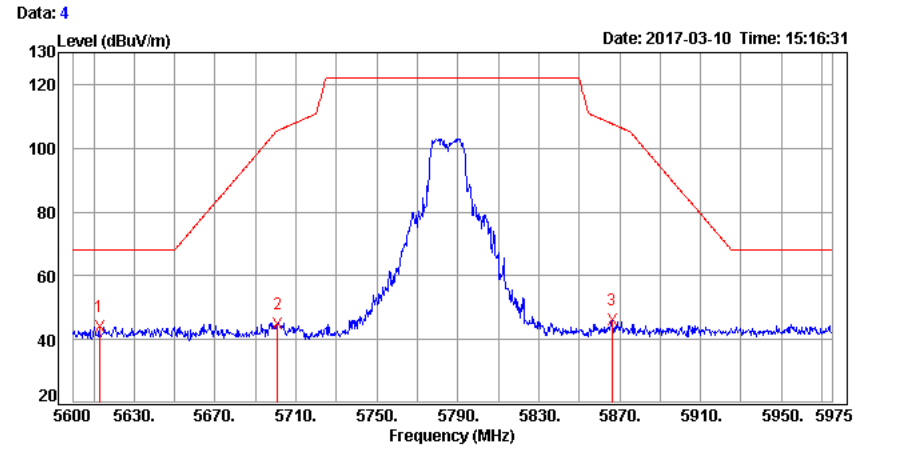
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5604.13	35.70	7.41	43.11	68.20	-25.09			Peak
5706.13	35.61	7.65	43.26	106.92	-63.66			Peak
5874.13	36.25	8.05	44.30	105.44	-61.14			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical

CH Middle (IEEE 802.11a Mode / Band 3)

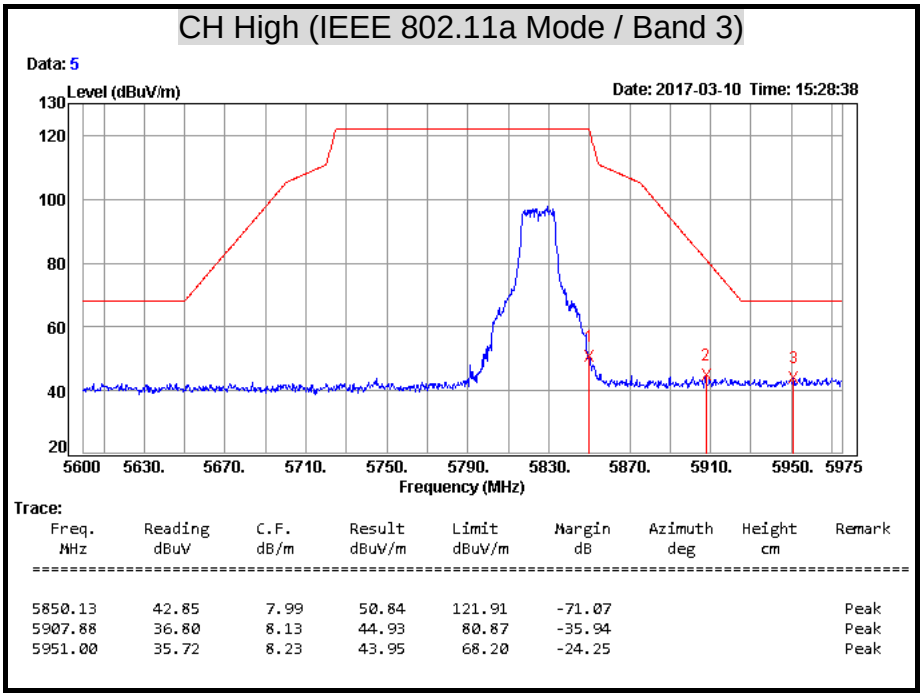


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5612.75	36.69	7.43	44.12	68.20	-24.08			Peak
5700.88	37.41	7.64	45.05	105.44	-60.39			Peak
5866.25	37.94	8.03	45.97	107.65	-61.68			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Horizontal

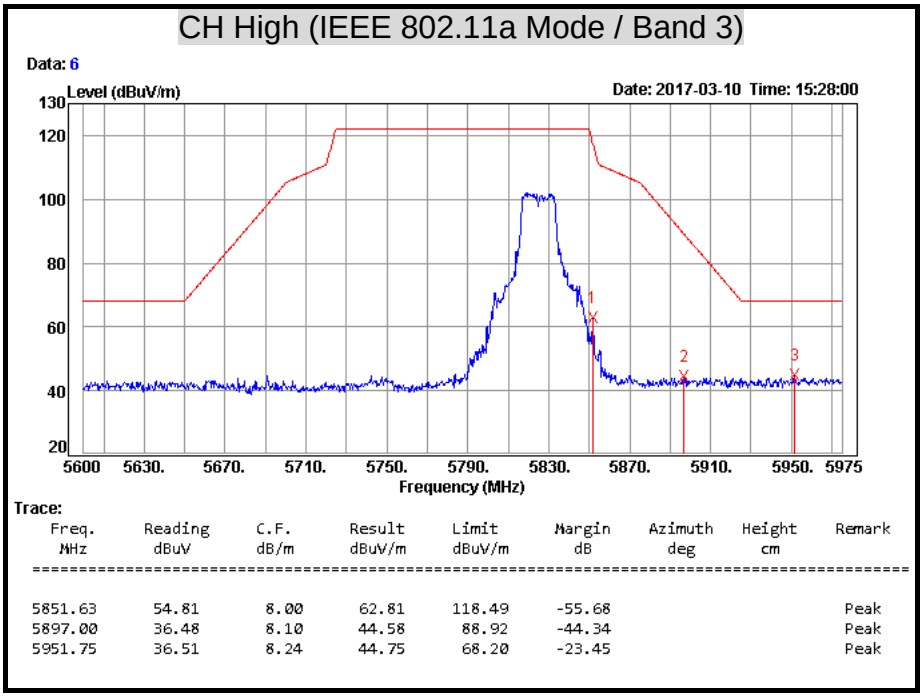


Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5850.13	42.85	7.99	50.84	121.91	-71.07			Peak
5907.88	36.80	8.13	44.93	80.87	-35.94			Peak
5951.00	35.72	8.23	43.95	68.20	-24.25			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical



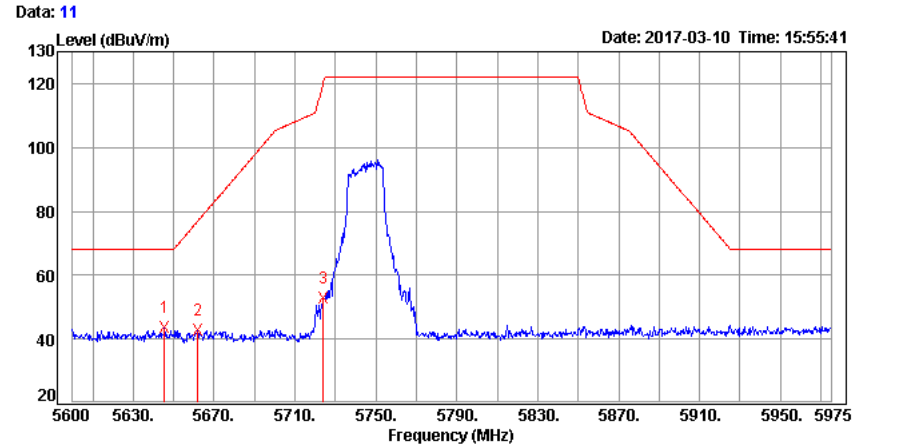
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5851.63	54.81	8.00	62.81	118.49	-55.68			Peak
5897.00	36.48	8.10	44.58	88.92	-44.34			Peak
5951.75	36.51	8.24	44.75	68.20	-23.45			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Horizontal

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3)



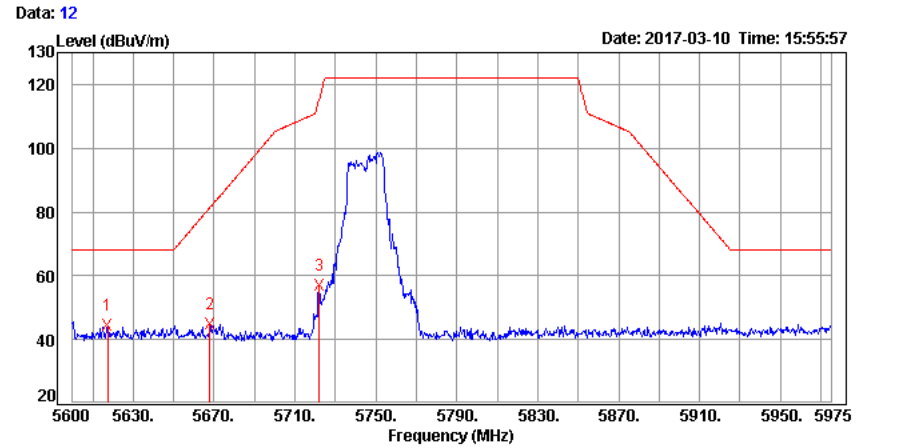
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5645.38	36.01	7.51	43.52	68.20	-24.68			Peak
5661.88	35.17	7.55	42.72	76.99	-34.27			Peak
5724.13	45.26	7.69	52.95	120.21	-67.26			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical

CH Low (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3)



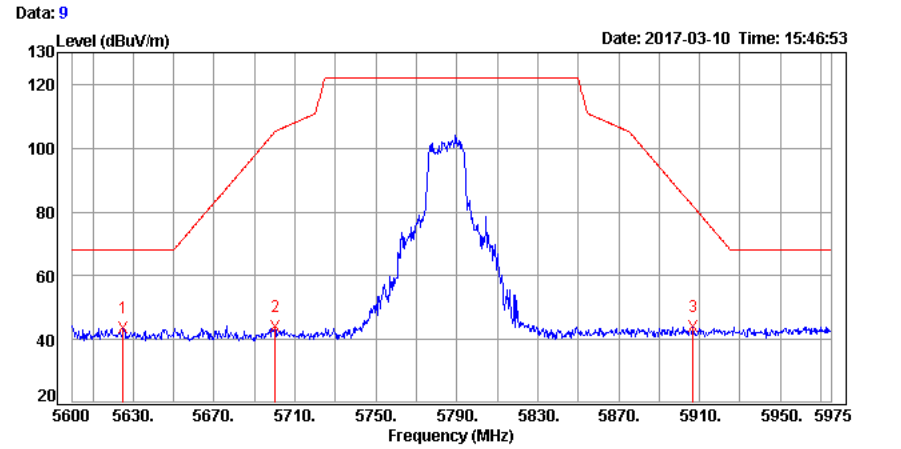
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5617.25	37.01	7.44	44.45	68.20	-23.75			Peak
5667.88	37.40	7.56	44.96	81.43	-36.47			Peak
5721.88	49.48	7.69	57.17	115.07	-57.90			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Horizontal

CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3)



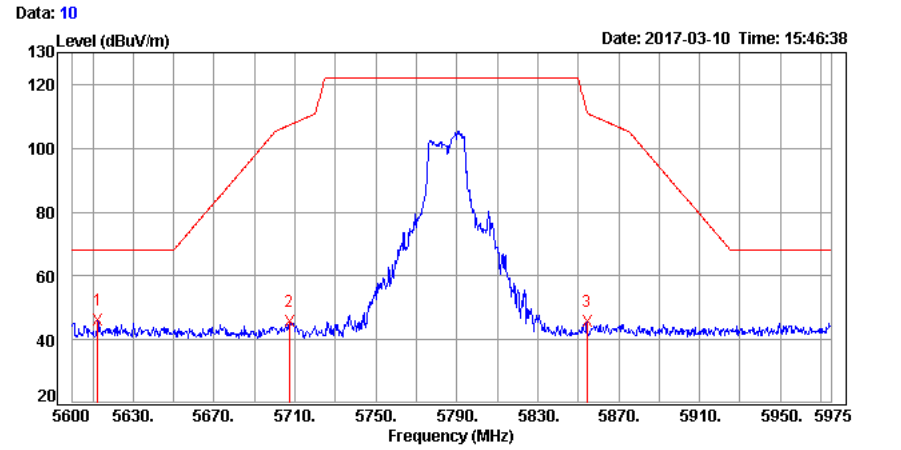
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5625.13	36.04	7.46	43.50	68.20	-24.70			Peak
5700.13	36.49	7.64	44.13	105.24	-61.11			Peak
5906.75	35.90	8.13	44.03	81.70	-37.67			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical

CH Middle (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3)



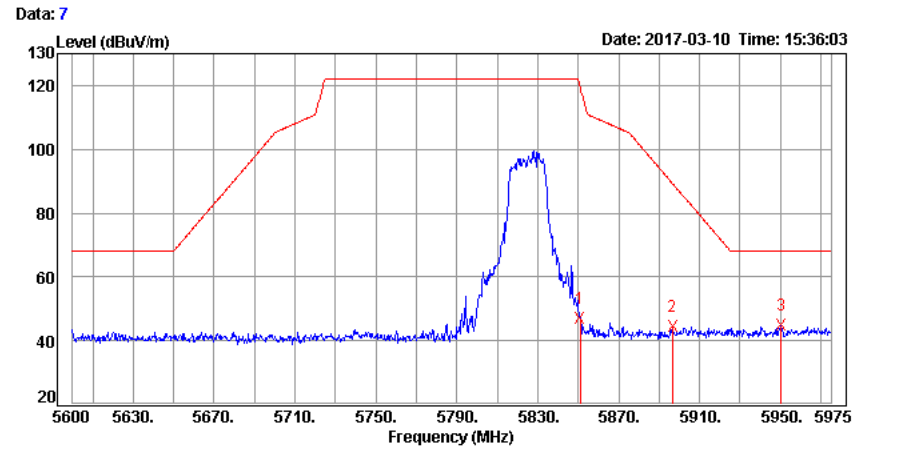
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5612.38	38.57	7.43	46.00	68.20	-22.20			Peak
5707.25	38.23	7.65	45.88	107.23	-61.35			Peak
5854.25	37.67	8.00	45.67	112.51	-66.84			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Horizontal

CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3)



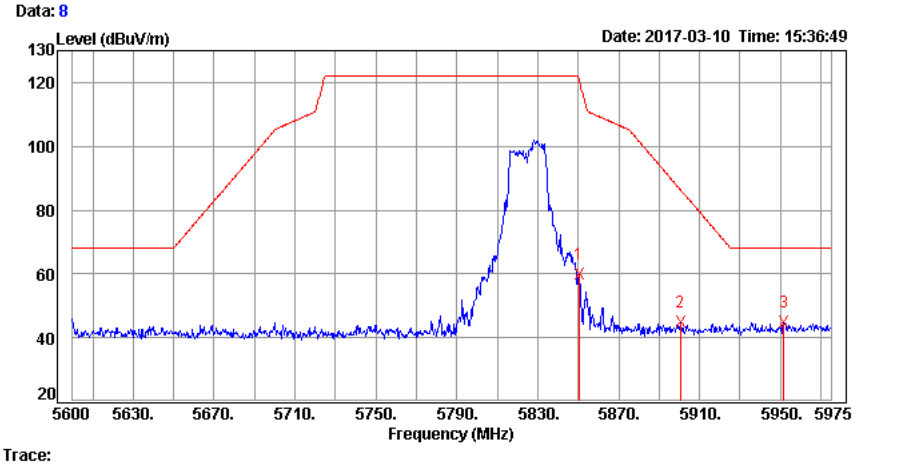
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5850.88	38.87	8.00	46.87	120.21	-73.34			Peak
5896.63	36.38	8.10	44.48	89.20	-44.72			Peak
5950.25	36.52	8.23	44.75	68.20	-23.45			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical

CH High (IEEE 802.11an HT20 NSS1/MCS0 Mode / Band 3)



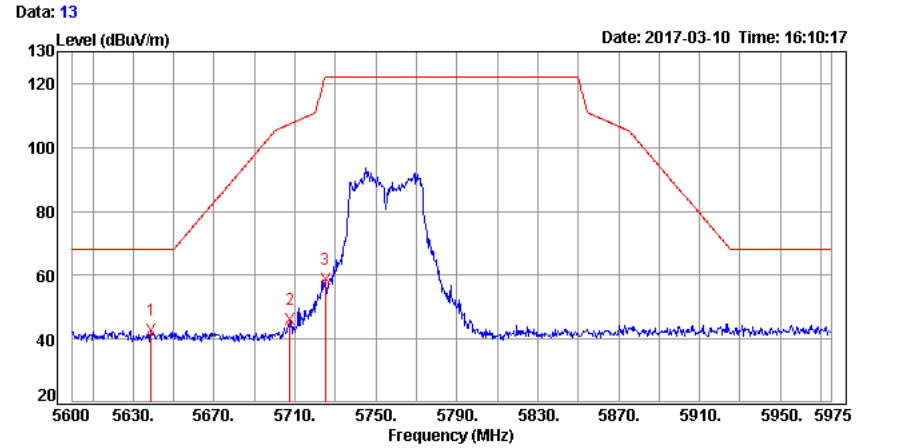
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5850.50	52.02	7.99	60.01	121.06	-61.05	113	200	Peak
5900.38	36.70	8.11	44.81	86.42	-41.61			Peak
5951.75	36.49	8.24	44.73	68.20	-23.47			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Horizontal

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3)



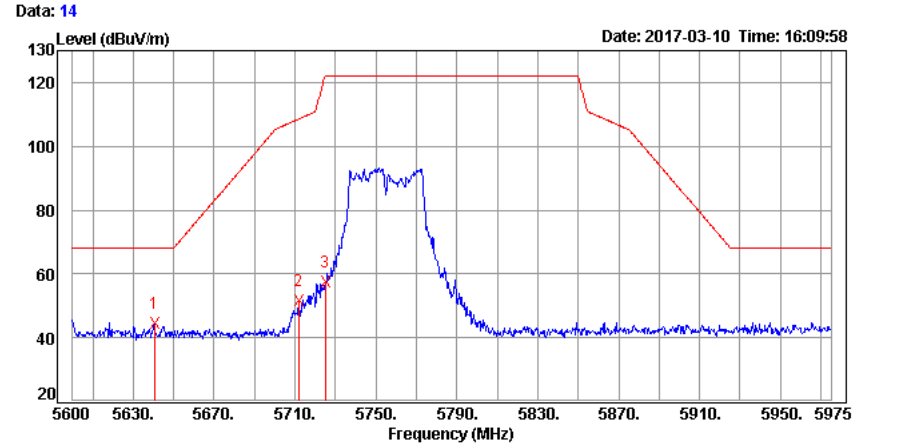
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5639.00	35.30	7.49	42.79	68.20	-25.41			Peak
5707.63	38.54	7.65	46.19	107.33	-61.14			Peak
5724.88	51.12	7.70	58.82	121.91	-63.09			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical

CH Low (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3)



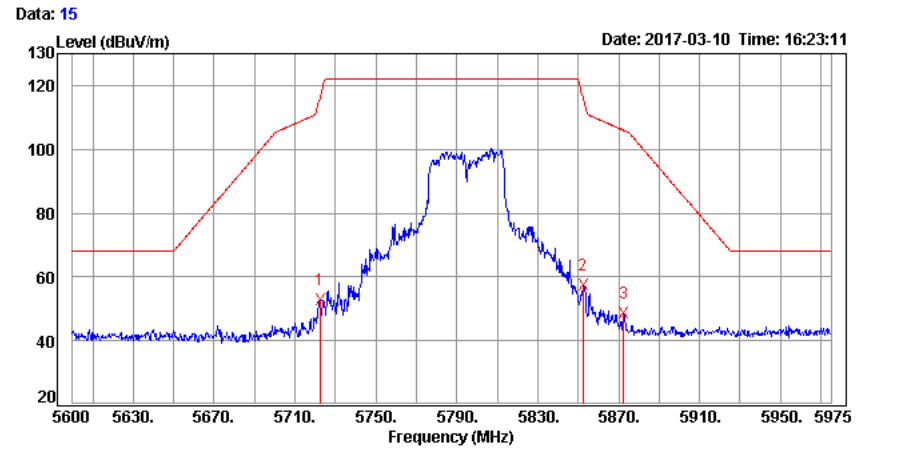
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5640.50	36.82	7.49	44.31	68.20	-23.89			Peak
5711.75	44.00	7.66	51.66	108.49	-56.83			Peak
5724.88	49.79	7.70	57.49	121.91	-64.42			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Horizontal

CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3)



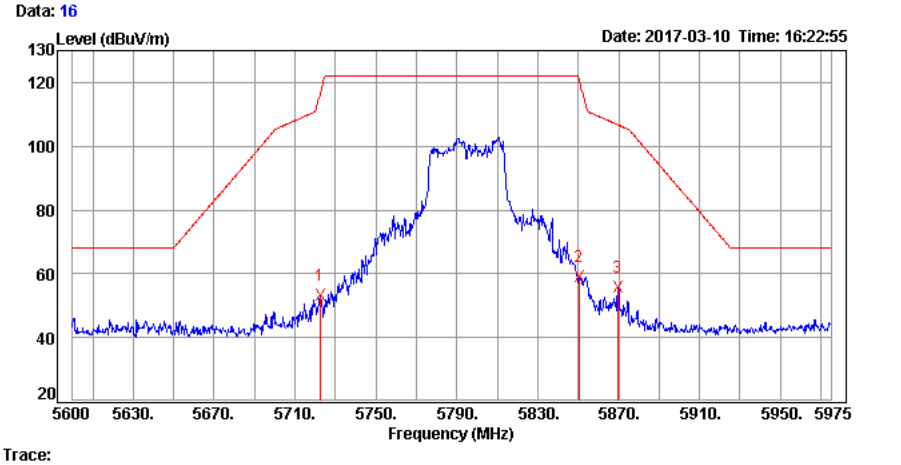
Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5722.25	45.07	7.69	52.76	115.93	-63.17			Peak
5852.38	49.34	8.00	57.34	116.79	-59.45			Peak
5872.63	40.71	8.05	48.76	105.86	-57.10			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

Detector Mode: Vertical

CH High (IEEE 802.11an HT40 NSS1/MCS0 Mode / Band 3)



Trace:

Freq. MHz	Reading dBuV	C.F. dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Azimuth deg	Height cm	Remark
5722.25	45.37	7.69	53.06	115.93	-62.87			Peak
5850.50	51.07	7.99	59.06	121.06	-62.00			Peak
5869.63	47.65	8.04	55.69	106.71	-51.02			Peak

Remark: *Result = Reading + Correction Factor*
Margin = Result – Limit
Remark Peak = Result(PK) – Limit(PK)

7.7 CONDUCTED EMISSION

LIMITS

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

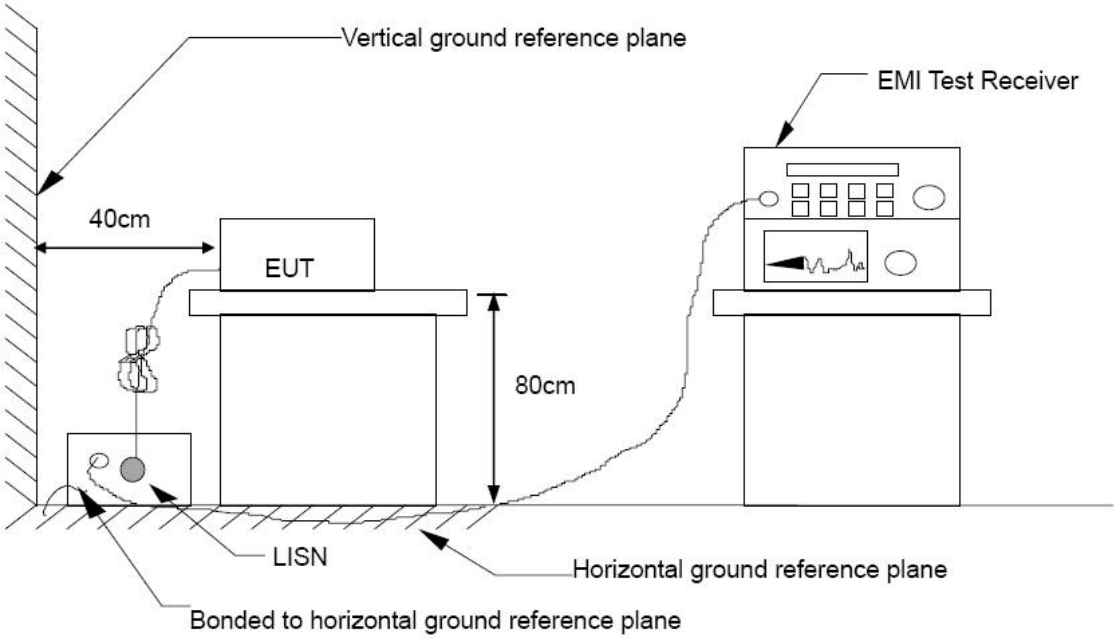
Frequency Range (MHz)	Conducted Limit (dBμv)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5.00	56	46
5.00 - 30.0	60	50

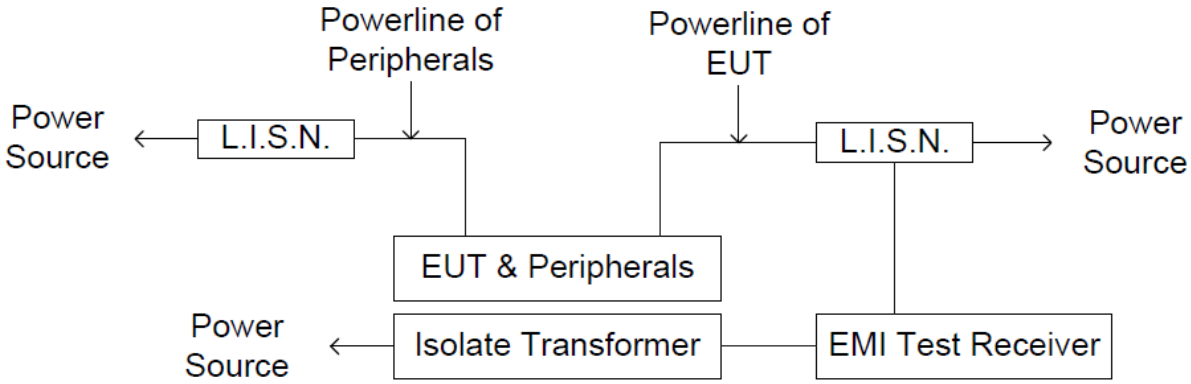
TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
L.I.S.N	Schwarzbeck	NSLK 8127	8127465	08/06/2015
L.I.S.N	Schwarzbeck	NSLK 8127	8127473	03/09/2016
EMI Test Receiver	Rohde & Schwarz	ESHS 30	838550/003	11/02/2015
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100111	06/30/2015
Test S/W	E3.815206a			

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

TEST SETUP





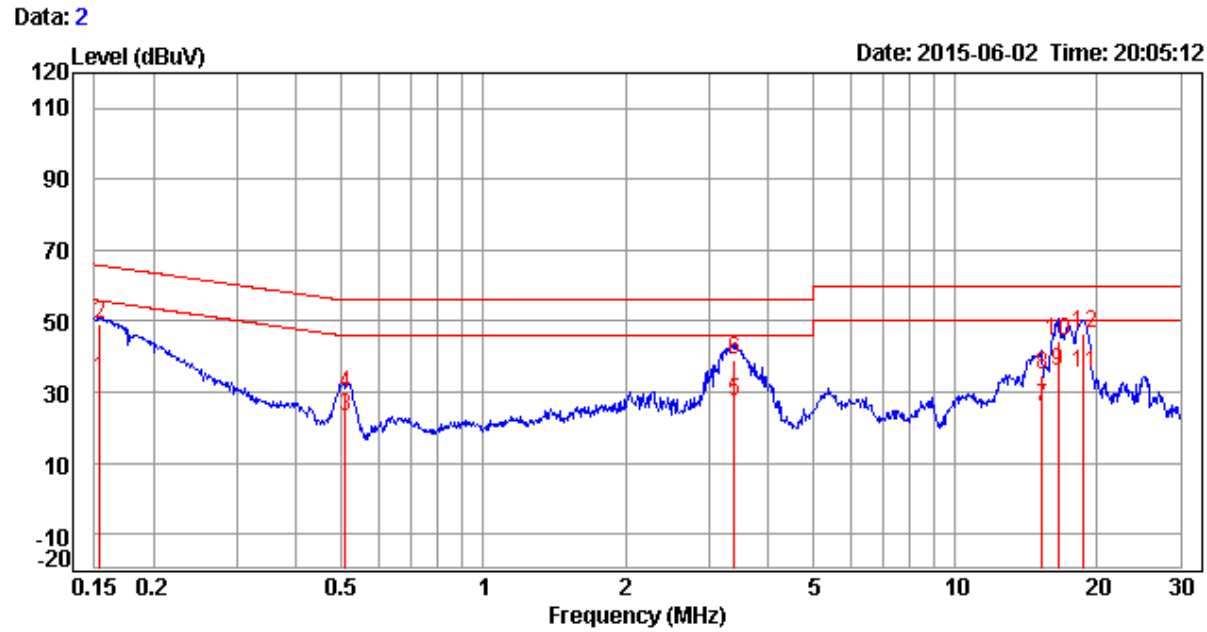
TEST PROCEDURE

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	Display Unit	Test By	Crystal Wu
Test Model	EEMS330	Test Date	2015/06/02
Test Mode	Mode 1	Temp. & Humidity	27.1°C, 54%

LINE



Trace:

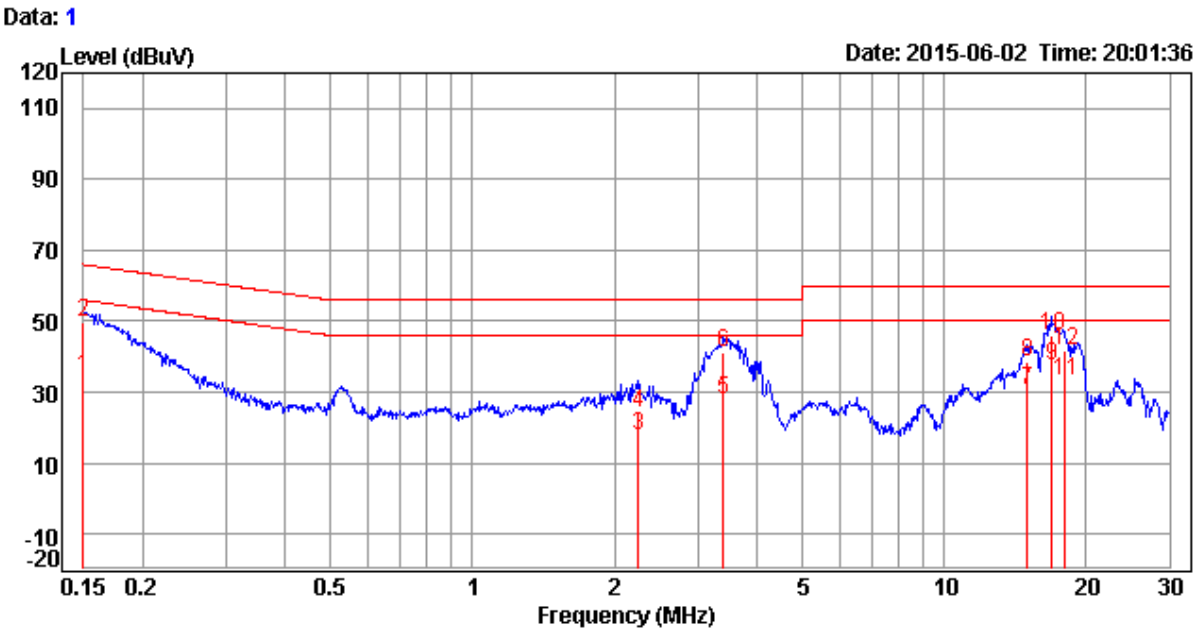
Freq. MHz	Reading dBuV Q.P.	Reading dBuV AV.	C.F. dB	Result dBuV Q.P.	Result dBuV AV.	Limit dBuV Q.P.	Limit dBuV AV.	Margin dB Q.P.	Margin dB AV.
0.154	39.34	24.07	9.88	49.22	33.95	65.78	55.78	-16.56	-21.83
0.510	19.66	13.04	9.94	29.60	22.98	56.00	46.00	-26.40	-23.02
3.399	28.76	17.24	10.09	38.85	27.33	56.00	46.00	-17.15	-18.67
15.307	24.01	15.00	10.58	34.59	25.58	60.00	50.00	-25.41	-24.42
16.486	33.85	25.27	10.63	44.48	35.90	60.00	50.00	-15.52	-14.10
18.721	35.98	24.52	10.73	46.71	35.25	60.00	50.00	-13.29	-14.75

Remark:

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

Product Name	Display Unit	Test By	Crystal Wu
Test Model	EEMS330	Test Date	2015/06/02
Test Mode	Mode 1	Temp. & Humidity	27.1°C, 54%

NEUTRAL



Trace:

Freq. MHz	Reading dBuV Q.P.	Reading dBuV AV.	C.F. dB	Result dBuV Q.P.	Result dBuV AV.	Limit dBuV Q.P.	Limit dBuV AV.	Margin dB Q.P.	Margin dB AV.
0.150	39.84	24.14	9.90	49.74	34.04	66.00	56.00	-16.26	-21.96
2.237	14.27	7.64	10.06	24.33	17.70	56.00	46.00	-31.67	-28.30
3.399	30.99	17.59	10.10	41.09	27.69	56.00	46.00	-14.91	-18.31
14.986	28.21	19.96	10.41	38.62	30.37	60.00	50.00	-21.38	-19.63
16.839	35.29	26.83	10.46	45.75	37.29	60.00	50.00	-14.25	-12.71
18.039	31.04	22.68	10.49	41.53	33.17	60.00	50.00	-18.47	-16.83

Remark:

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

7.8 FREQUENCY STABILITY

LIMITS

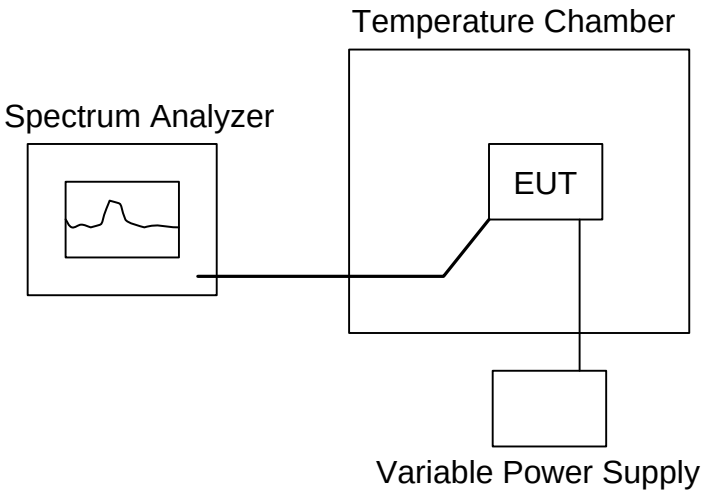
§ 15.407 (g) manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

TEST EQUIPMENT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Temp. & Humid. Chamber	TERCHY	MHC-120L	960424	09/09/2015
EXA Signal Analyzer	Agilent	N9010A	MY52220817	03/19/2016
Test S/W	N/A			

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

TEST SETUP



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the environment into appropriate environment.
4. Set the spectrum analyzer as RBW=1kHz, VBW = RBW, Span = 200kHz, Sweep = auto.
5. Mark the peak frequency and measure the frequency tolerance using frequency counter function.
6. Repeat until all the results are investigated.

TEST RESULTS

Product Name	Display Unit	Test By	Davis Tseng
Test Model	EEMS330	Test Date	2015/06/03
Test Mode	TX Mode	Temp. & Humidity	24°C, 51%

IEEE 802.11a Mode

U-NII Band	Channel	Channel Frequency (MHz)	Measured Frequency (MHz)	Delta Frequency (kHz)	20 ppm Limit (kHz)	Margin (kHz)
Band 1	Low	5180	5179.995200	-4.80	103.60	-98.80
	Middle	5200	5199.954100	-45.90	104.00	-58.10
	High	5240	5239.955000	-45.00	104.80	-59.80
Band 2A	Low	5260	5259.954400	-45.60	105.20	-59.60
	Middle	5300	5299.955920	-44.08	106.00	-61.92
	High	5320	5319.955640	-44.36	106.40	-62.04
Band 3	Low	5745	5744.952600	-47.40	114.90	-67.50
	Middle	5785	5784.952600	-47.40	115.70	-68.30
	High	5825	5824.952300	-47.70	116.50	-68.80

IEEE 802.11an HT20 NSS1/MCS0 Mode

U-NII Band	Channel	Channel Frequency (MHz)	Measured Frequency (MHz)	Delta Frequency (kHz)	20 ppm Limit (kHz)	Margin (kHz)
Band 1	Low	5180	5179.954230	-45.77	103.60	-57.83
	Middle	5200	5199.952360	-47.64	104.00	-56.36
	High	5240	5239.955630	-44.37	104.80	-60.43
Band 2A	Low	5260	5259.956640	-43.36	105.20	-61.84
	Middle	5300	5299.955400	-44.60	106.00	-61.40
	High	5320	5319.956480	-43.52	106.40	-62.88
Band 3	Low	5745	5744.956630	-43.37	114.90	-71.53
	Middle	5785	5784.956620	-43.38	115.70	-72.32
	High	5825	5824.966310	-33.69	116.50	-82.81

IEEE 802.11an HT40 NSS1/MCS0 Mode

U-NII Band	Channel	Channel Frequency (MHz)	Measured Frequency (MHz)	Delta Frequency (kHz)	20 ppm Limit (kHz)	Margin (kHz)
Band 1	Low	5190	5189.944250	-55.75	103.80	-48.05
	High	5230	5229.954620	-45.38	104.60	-59.22
Band 2A	Low	5270	5269.955633	-44.37	105.40	-61.03
	High	5310	5309.957140	-42.86	106.20	-63.34
Band 3	Low	5755	5754.968520	-31.48	115.10	-83.62
	High	5795	5794.958240	-41.76	115.90	-74.14