FCC 47 CFR PART 15 SUBPART E
ISED CANADA RSS-247 ISSUE 2

CERTIFICATION TEST REPORT

FOR

WIFI COMMUNICATIONS MODULE

MODEL NUMBER: COM2

FCC ID: 2AHES-COM2
IC: 21152-COM2

REPORT NUMBER: R11673430-E2

ISSUE DATE: 2017-12-19

Prepared for
BSH HOME APPLIANCES CORPORATION
100 BOSCH BLVD
NEW BERN, NORTH CAROLINA, 28562-6924 USA

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NVLAP TESTING

NVLAP LAB CODE 200246-0

Revision History

Ver.	Issue Date	Revisions	Revised By
1	2017-10-26	Initial Issue	Brian Kiewra
2	2017-11-29	Corrected calibration due dates in Section 6	Brian Kiewra
3	2017-12-19	Added C63.10:2013 reference for AC Mains in Section 7. Clarified radiated data using “Internal Chain 0, Internal Chain 1, and External Chain 0” monikers.	Brian Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: BSH Home Appliance Corporation
100 Bosch Blvd
New Bern, NC, 28562-6924

EUT DESCRIPTION: WiFi Communications Module

MODEL: COM2

SERIAL NUMBER: Non-Serialized

DATE TESTED: 2017-06-22 to 2017-10-19

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass
INDUSTRY CANADA RSS-247 Issue 2	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Approved & Released
For UL LLC By:

Jeffrey Moser
Operations Leader
UL – Consumer Technology Division

Prepared By:

Brian Kiewra
Project Engineer
UL – Consumer Technology Division

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, RSS-GEN Issue 4, RSS-247 Issue 2.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA and 2800 Perimeter Park Dr., Suite B, Morrisville, NC 27560, USA.

12 Laboratory Dr., RTP, NC 27709
☐ Chamber A
☐ Chamber C

2800 Suite B Perimeter Park Dr., Morrisville, NC 27560
☐ Chamber NORTH
☒ Chamber SOUTH

The onsite chambers are covered under Industry Canada company address code 2180C with site numbers 2180C -1 through 2180C-4, respectively.

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0. The full scope of accreditation can be viewed at http://www.nist.gov/nvlap/.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY	Required by standard
Occupied Channel Bandwidth	2.00%	±5 %
RF output power, conducted	1.3 dB	±1,5 dB
Power Spectral Density, conducted	2.47 dB	±3 dB
Unwanted Emissions, conducted	2.94 dB	±3 dB
All emissions, radiated	5.36 dB	±6 dB
Temperature	2.26 °C	±3 °C
Supply voltages	2.40%	±3 %
Time	3.39%	±5 %

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11a/b/g/n transceiver module. It is a SISO module that contains two antenna ports for diversity. Additionally, there is an option to install an external antenna on internal chain 0 for improved performance. The external antenna in not intended to be installed on internal chain 1.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180 - 5240	802.11a	15.53	35.73
5180 - 5240	802.11n HT20	15.38	34.51
5190 - 5230	802.11n HT40	16.73	47.10
5260 - 5320	802.11a	17.04	50.58
5260 - 5320	802.11n HT20	17.06	50.82
5270 - 5310	802.11n HT40	16.87	48.64
5500 - 5700	802.11a	15.3	33.88
5500 - 5700	802.11n HT20	14.86	30.62
5510 - 5670	802.11n HT40	14.18	26.18
5745 - 5825	802.11a	15.05	31.99
5745 - 5825	802.11n HT20	14.76	29.92
5755 - 5795	802.11n HT40	13.3	21.38

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes two inverted-f antennas for diversity, with a maximum gain of 0 dBi.
The radio also utilizes an external PCB slot antenna, with a maximum gain of -6 dBi. This external antenna is only intended to be installed on Chain 0.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 7.76.1.3 (r665631 WLTEST) FWID 01-f0b2ff00.

The EUT driver software installed during testing was FTDI CDM driver 2.12.26.

The test utility software used during testing was 7.16, RC99.19.

5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario, unless otherwise documented.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, and Z for the two internal antennas, internal chains 0 and 1. It was determined that the X orientation for both internal antennas were the worst-case orientations, therefore, all final radiated testing was performed in the X orientation using the internal antennas.

Additionally, the fundamental of the EUT was investigated in three orthogonal orientations X, Y, and Z, for the external antenna, external chain 0. It was determined that the Y orientation with the external antenna was worst-case orientation; therefore, all final radiated testing was performed with the EUT in the Y orientation using the external antenna.

Based on the baseline scan, the worst-case data rates were:

802.11a mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40mode: MCS0

Note Regarding desired powered for each mode:

- 802.11a, 802.11n HT20 – These modes were set so the channels had a stair-step power setting: Channels 36 to 40 and 100 to 104 were stepped up in power, with 40 and 104, reaching the same maximum power setting as the middle channel. Channels 60 to 64 and 136 to 140 were stepped down in power, where 60 and 136 were the same maximum power setting as the middle channel

- 802.11n HT40 – This mode was set so the channels had a stair-step power setting: Channels 38 to 46 and 102 to 110 were stepped up in power, with 46 and 110 reaching the same maximum power setting as the middle channel. Channels 54 to 62 and 126 to 134 were stepped down in power, where 54 and 126 were the same maximum power setting as the middle channel. Channels 151 and 159 were not stair stepped.

It was also discovered that excessive duty cycle caused the EUT to enter unstable states, therefore some bandedge scans were run at lowered 10% duty cycle to prevent this.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	T450s	PC-0A2UQS 16/01	NA
Power Supply	Lenovo	ADLX65NLC2A	11S45N0259Z1Z9743D21T	NA
USB-Serial Port Adaptor	N/A	N/A	N/A	N/A

I/O CABLES

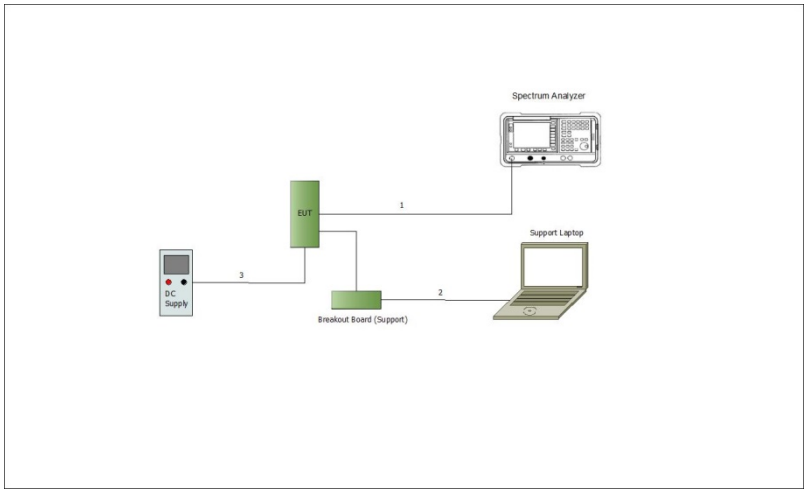
I/O Cable List						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Antenna	1	SMA	RF	<3m	None
2	USB	1	USB	USB	<3m	Used to configure EUT
3	DC	1	DC	DC	<3m	N/A

TEST SETUP

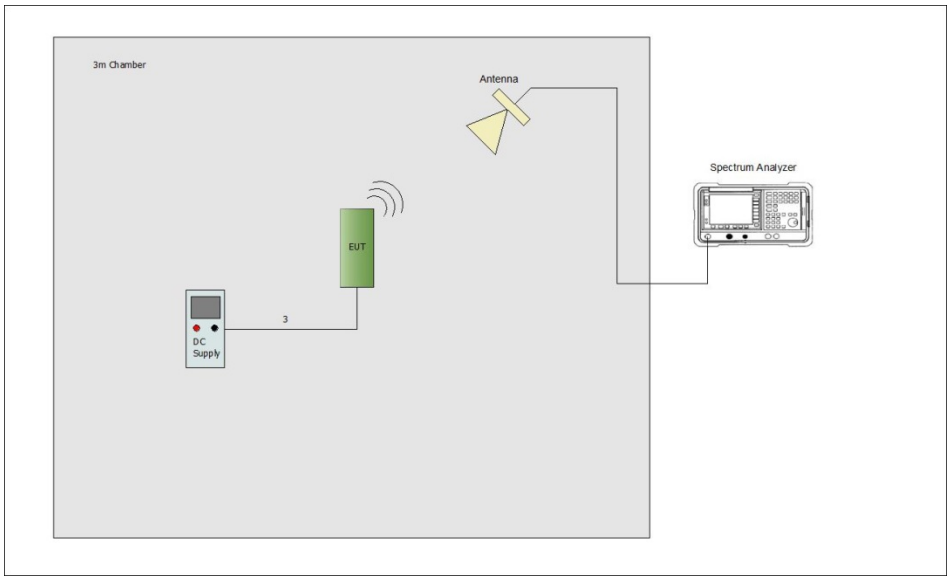
The EUT is a wireless communications module. Test software exercised the radio card. Two configurations were used during the testing. One configuration utilized the two internal trace antenna chains in a SISO mode for diversity. The second configuration utilized an external antenna on chain 0 only for improved performance, while antenna chain 1 remained an internal trace antenna. Therefore, intenal chain 1 was only tested once.

SETUP DIAGRAM FOR TESTS

Conducted Setup



Radiated Setup



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville - South Chamber)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
0.009-30MHz (Loop Ant.)					
AT0079	Active Loop Antenna	ETS-Lindgren	6502	2016-12-28	2017-12-31
1-18 GHz					
AT0069	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2017-04-05	2018-04-05
18-40 GHz					
AT0063	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2016-09-27	2017-09-30
AT0061	Horn Antenna, 26-40GHz	ARA	MWH-2640/B	2016-09-27	2017-09-30
AT0076	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2016-09-06	2017-09-06
AT0077	Horn Antenna, 26-40GHz	ARA	MWH-2640/B	2016-09-06	2017-09-06
Gain-Loss Chains					
S-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2016-10-04	2017-10-04
S-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2017-09-15	2018-09-15
S-SAC03	Gain-loss string: 1-18GHz	Various	Various	2016-08-28	2017-08-28
S-SAC03	Gain-loss string: 1-18GHz	Various	Various	2017-08-18	2018-08-18
S-SAC04	Gain-loss string: 18-40GHz	Various	Various	2017-03-03	2018-03-03
Receiver & Software					
SA0025	Spectrum Analyzer	Agilent	N9030A	2017-04-10	2018-04-10
SA0026 (18-40GHz RSE)	Spectrum Analyzer	Agilent	N9030A	2017-02-17	2018-02-28
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
Additional Equipment used					
s/n 161024887	Environmental Meter	Fisher Scientific	15-077-963	2016-12-23	2018-12-23

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Conducted Room 1					
SA0020	Spectrum Analyzer	Agilent Technologies	E4446A	2017-04-25	2018-04-25
PWS001	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2017-05-18	2018-05-18
PWM001	RF Power Meter	Keysight Technologies	N1912A	2017-05-23	2018-05-23
SN 161024885	Environmental Meter	Fisher Scientific	15-077-963	2016-12-23	2018-12-23
76022	DC Regulated Power Supply	CircuitSpecialists .com	CSI3005X5	N/A	N/A

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL076	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3476-240	2017-06-12	2018-06-12
s/n 160938893	Environmental Meter	Fisher Scientific	14-650-118	2016-11-02	2018-11-02
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2017-08-22	2018-08-22
PRE0101521 (75141)	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2017-08-23	2018-08-23
TL001	Transient Limiter, 0.009-30MHz	Com-Power	LIT-930A	2017-06-12	2018-06-12
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
Miscellaneous (if needed)					
MM0168	Multi-meter	Agilent	U1232A	2016-10-07	2017-10-31
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2017-07-03	2018-07-03
LISN008	LISN, 50-ohm/50-uH, 2-conductor, 25A (For support gear only.)	Solar Electronics	8012-50-R-24-BNC	2017-08-22	2018-08-22

7. MEASUREMENT METHODS

On Time and Duty Cycle: KDB 789033 D02 v01r04, Section B.

26 dB Emission BW: KDB 789033 D02 v01r04, Section C.

99% Occupied BW: KDB 789033 D02 v01r04, Section D.

Conducted Output Power: KDB 789033 D02 v01r04, Section E.3.b (Method PM-G).

Power Spectral Density: KDB 789033 D02 v01r04, Section F.

Unwanted emissions in restricted bands: KDB 789033 D02 v01r04, Sections G.1, G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v01r04, Sections G.1, G.3, G.4, and G.5.

Use of IEEE 802.11 channels that straddle the UNII-2C and UNII-3 bands at 5725 MHz: KDB 789033 D02 v01r04, Section III

AC Mains: ANSI C63.10:2013 Section 6.2

8. ANTENNA PORT TEST RESULTS

Note – This note is regarding all Antenna Port test results. The EUT has two internal antennas for diversity (includes an RF diversity switch) and can also be deployed with an external antenna. The EUT only employs one antenna port. Therefore, only one set of antenna port measurements were performed. If the external antenna is installed, the internal antennas are bypassed.

8.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

EUT initially had duty cycle of 96% (a/n very close), but during operation would drop to 40%. 40% DC was used for most of testing, but for some testing, customer had concerns for stability of the unit due to continual heating issues; therefore, duty cycle was lowered to 10% for remaining test. Differences in duty cycle noted throughout report. Duty cycle for a/n checked relative to each other and found to be the same. Therefore, the 11n plots represent 11a/n.

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11n HT20 1TX	1.31	3.40	0.384	38.40%	4.16	0.765
802.11n HT40 1TX	0.65	1.65	0.390	39.00%	4.09	1.550

ON TIME AND DUTY CYCLE RESULTS FOR 10% DC

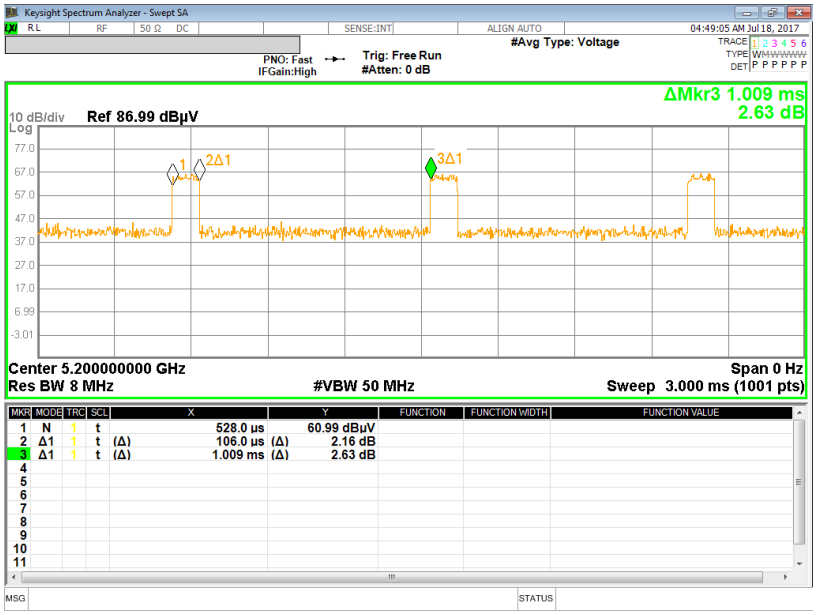
Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11a 1TX	0.11	1.01	0.105	10.51%	9.79	9.434
802.11n HT20 1TX	0.10	1.01	0.099	9.85%	10.07	10.101
802.11n HT40 1TX	0.10	1.01	0.101	10.15%	9.94	9.804

DUTY CYCLE PLOTS

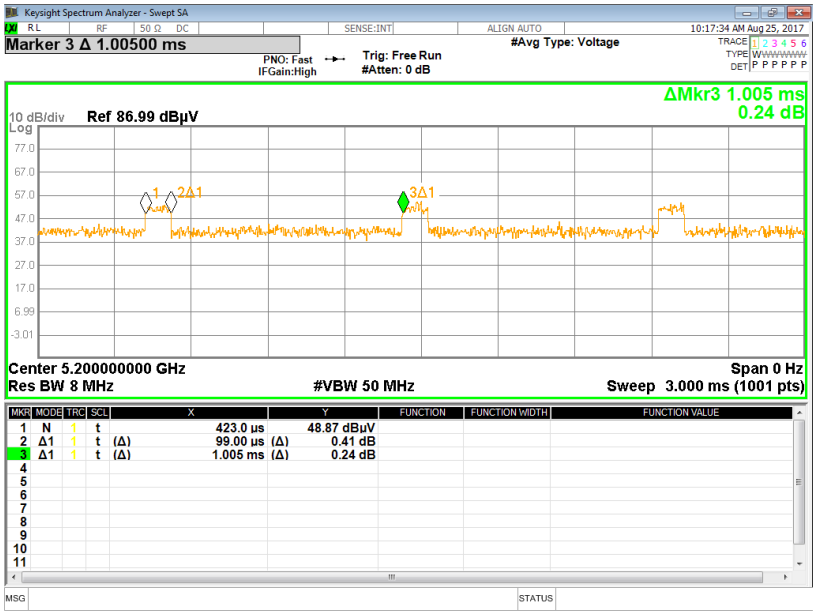
DUTY CYCLE 802.11n HT40 1TX MODE

DUTY CYCLE PLOTS FOR 10% DUTY CYCLE

DUTY CYCLE 802.11a 1TX MODE



DUTY CYCLE 802.11n HT20 1TX MODE



DUTY CYCLE 802.11n HT40 1TX MODE

8.2. 802.11a MODE IN THE 5.2 GHz BAND

8.2.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

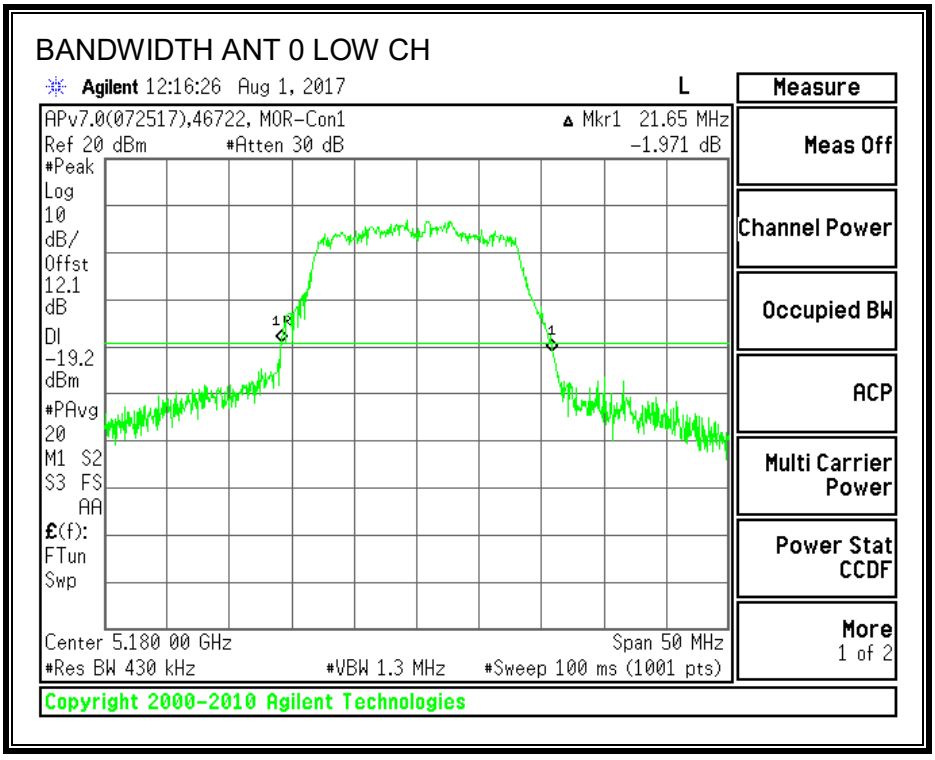
Channel	Frequency (MHz)	26 dB BW ANT 0 (MHz)
Low	5180	21.65
Mid	5200	24.35
High	5240	23.30

Test Information

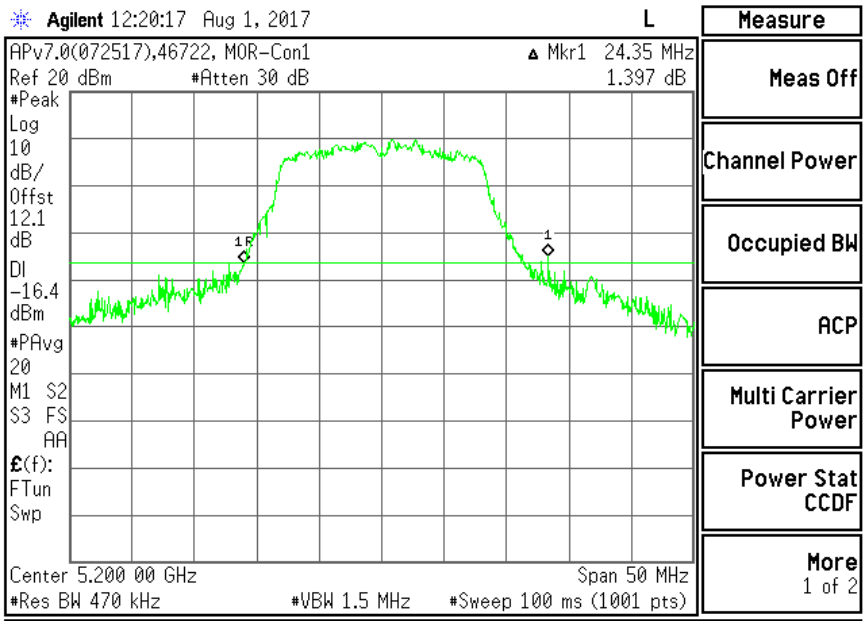
Date: 2017-08-01

Tester: John Manser

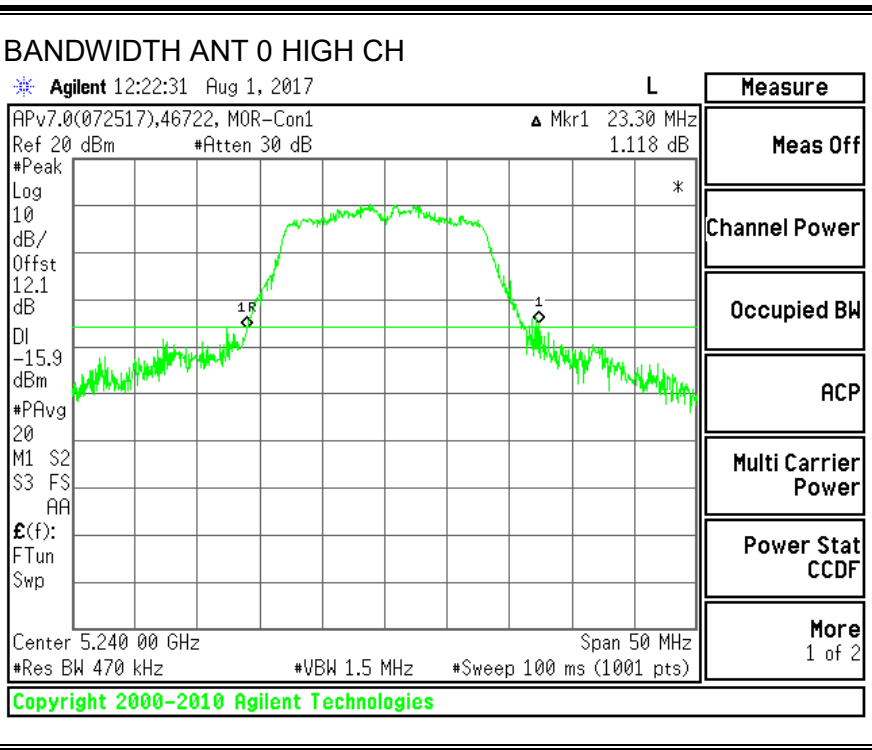
26 dB BANDWIDTH, ANT 0



BANDWIDTH ANT 0 MID CH



BANDWIDTH ANT 0 HIGH CH



8.2.2. 99% BANDWIDTH

LIMITS

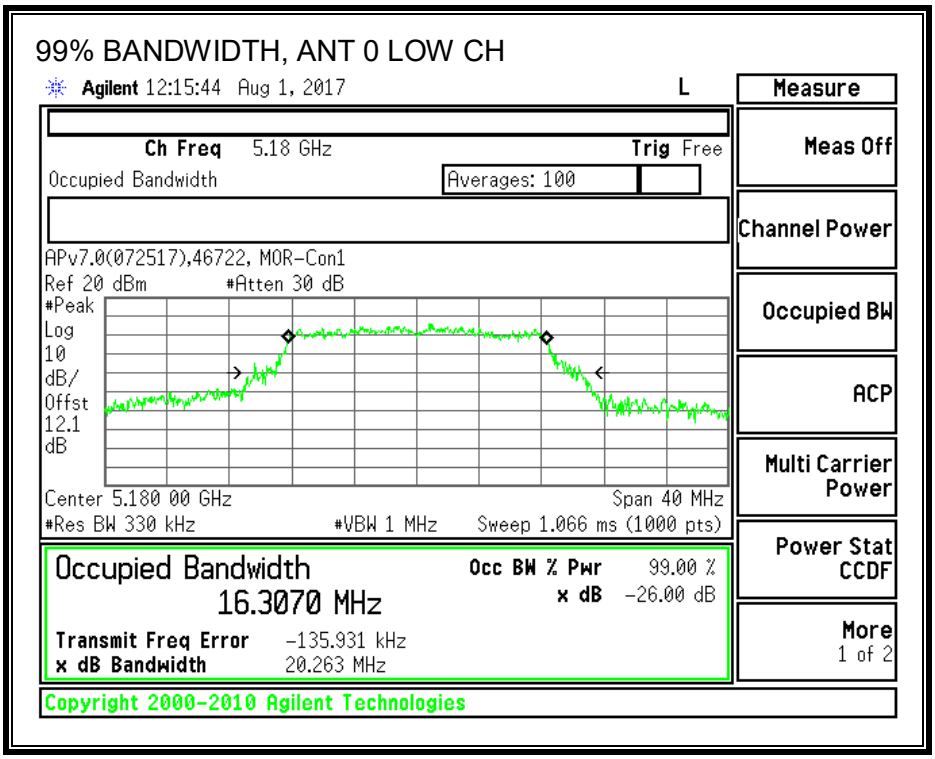
None; for reporting purposes only.

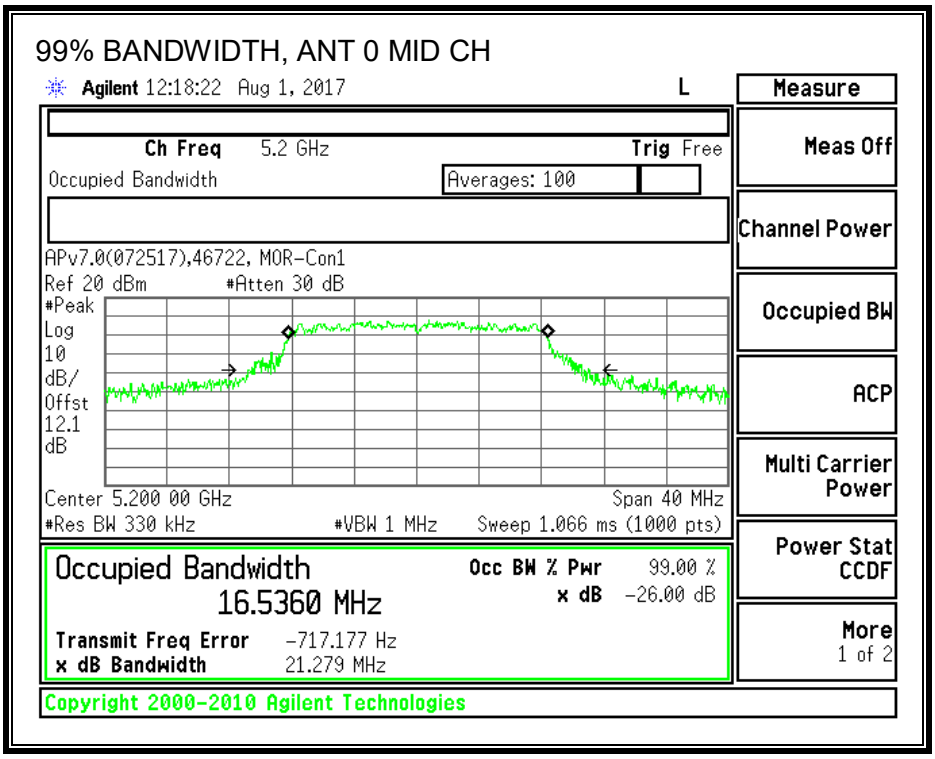
Channel	Frequency (MHz)	99% BW INT 0 (MHz)
Low	5180	16.3070
Mid	5200	16.5360
High	5240	15.9155

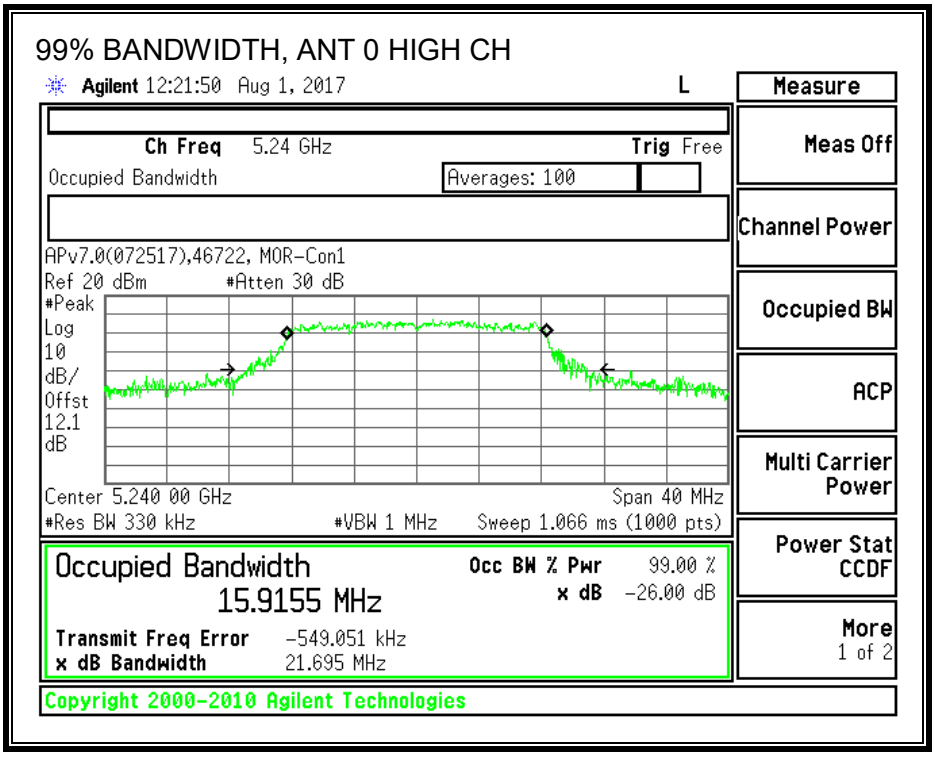
Test Information

Date: 2017-08-01
Tester: John Manser

99% BANDWIDTH, ANT 0







8.2.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)
(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 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 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 6 dBi.
(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.

DIRECTIONAL ANTENNA GAIN

There are two internal and one external antennas for diversity, therefore directional gain is equal to antenna gain.

Antenna Gain and Limits

Channel	Frequency (MHz)	Antenna Gain Internal (dBi)	Antenna Gain External (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	0.00	-6.00	24.00	11.00
Mid	5200	0.00	-6.00	24.00	11.00
High	5240	0.00	-6.00	24.00	11.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.97	24.00	-11.03
Mid	5200	15.53	24.00	-8.47
High	5240	15.50	24.00	-8.50

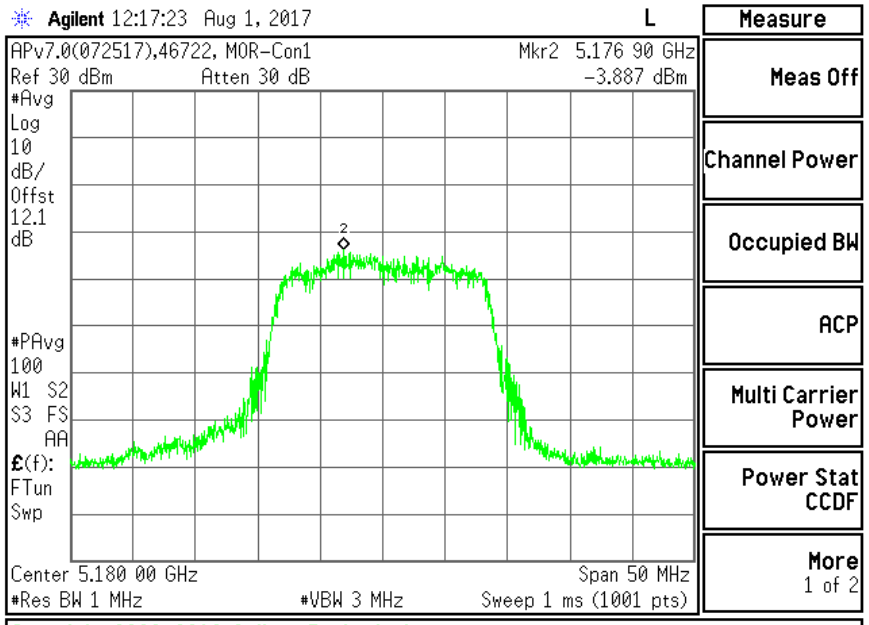
PSD Results

Channel	Frequency (MHz)	INT 0 Meas PSD (dBm)	INT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-3.89	6.18	11.00	-4.82
Mid	5200	-0.55	9.52	11.00	-1.48
High	5240	-1.37	8.71	11.00	-2.30

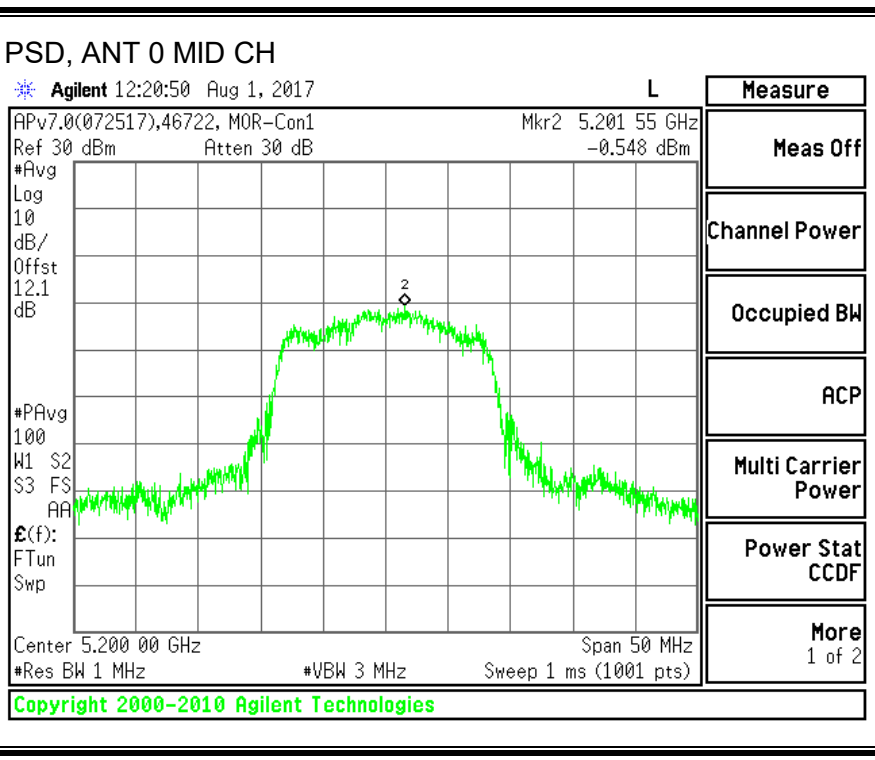
Note: Power is a gated measurement.

PSD, ANT 0

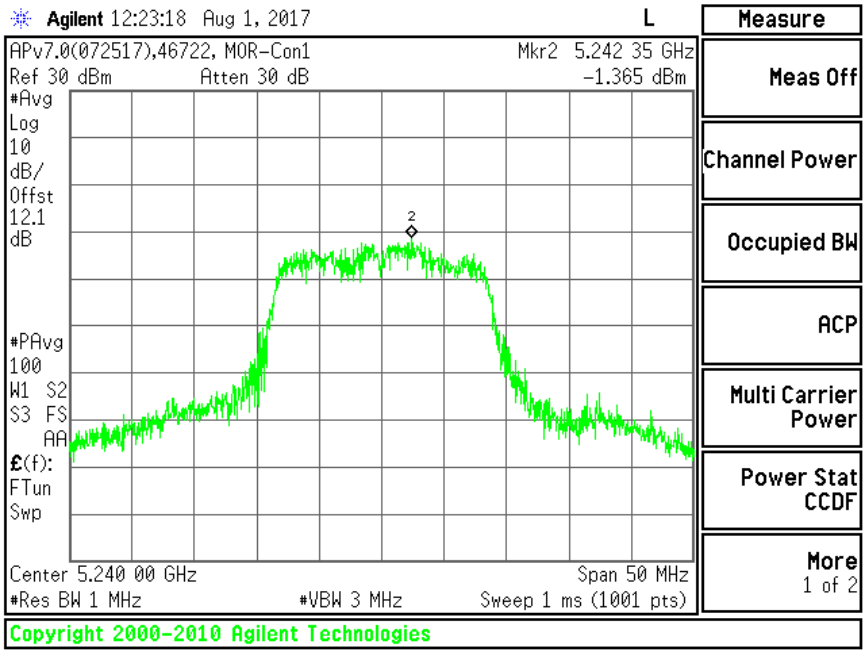
PSD, ANT 0 LOW CH



PSD, ANT 0 MID CH



PSD, ANT 0 HIGH CH



Test Information

Date: 2017-08-01

Tester: John Manser

8.2.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.1 [1])

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

There are two internal and one external antennas for diversity, therefore directional gain is equal to antenna gain.

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	16.3070	0	0
Mid	5200	16.5360	0	0
High	5240	15.9155	0	0

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC eirp PSD Limit (dBm)
Low	5180	22.12	10.00
Mid	5200	22.18	10.00
High	5240	22.02	10.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PPSD

Output Power Results

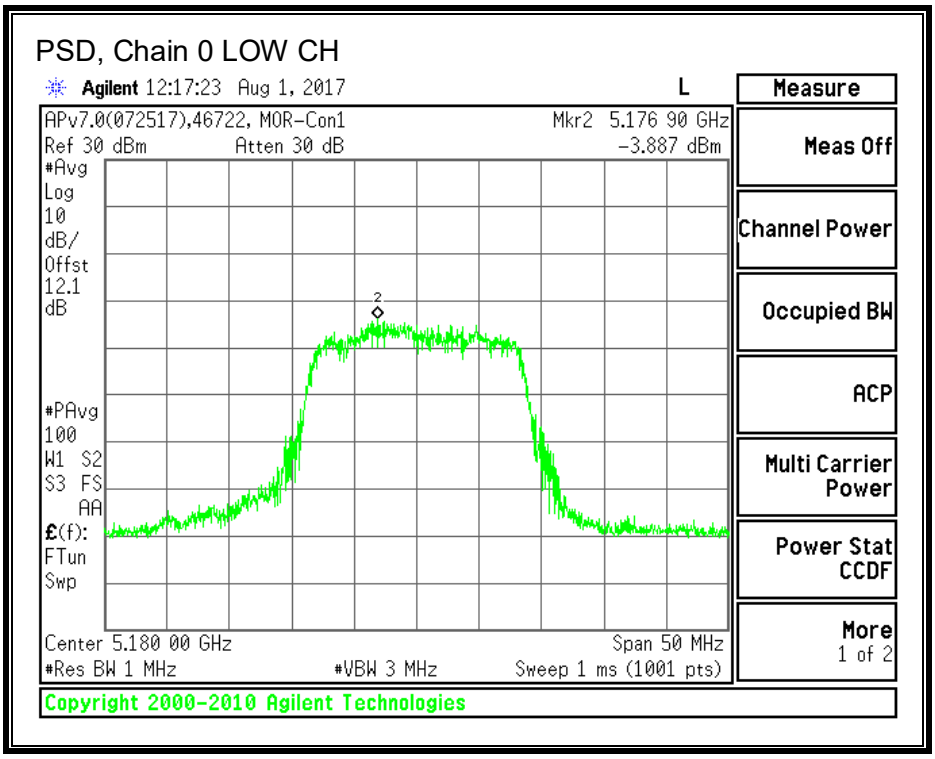
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.97	12.97	22.12	-9.15
Mid	5200	15.53	15.53	22.18	-6.65
High	5240	15.50	15.50	22.02	-6.52

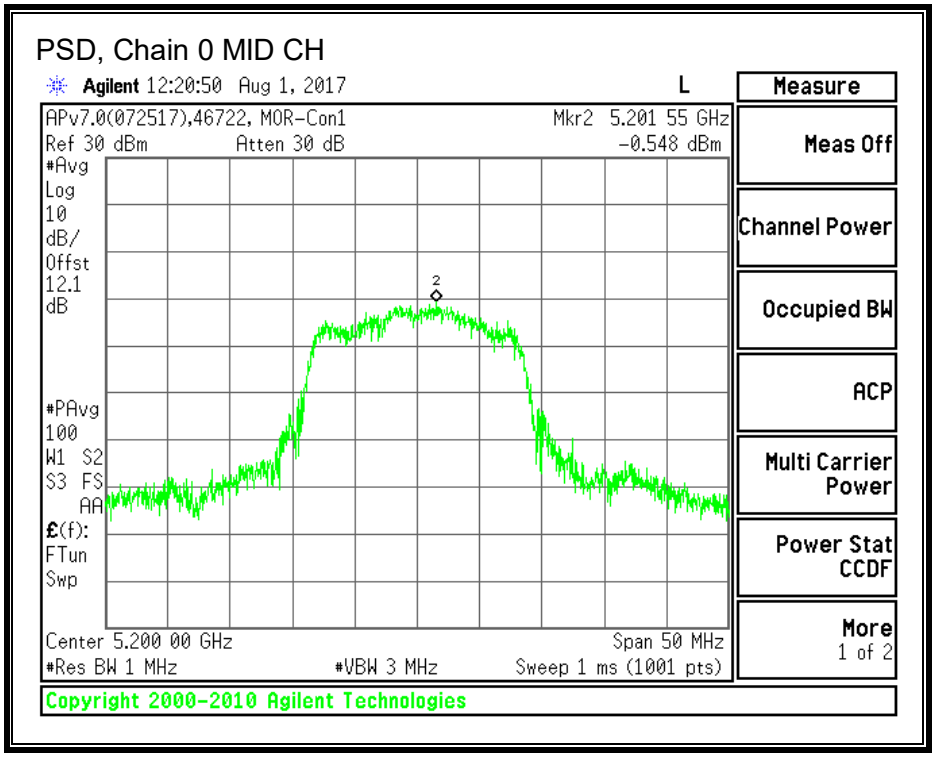
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-3.89	6.18	10.00	-3.82
Mid	5200	-0.55	9.52	10.00	-0.48
High	5240	-1.37	8.70	10.00	-1.30

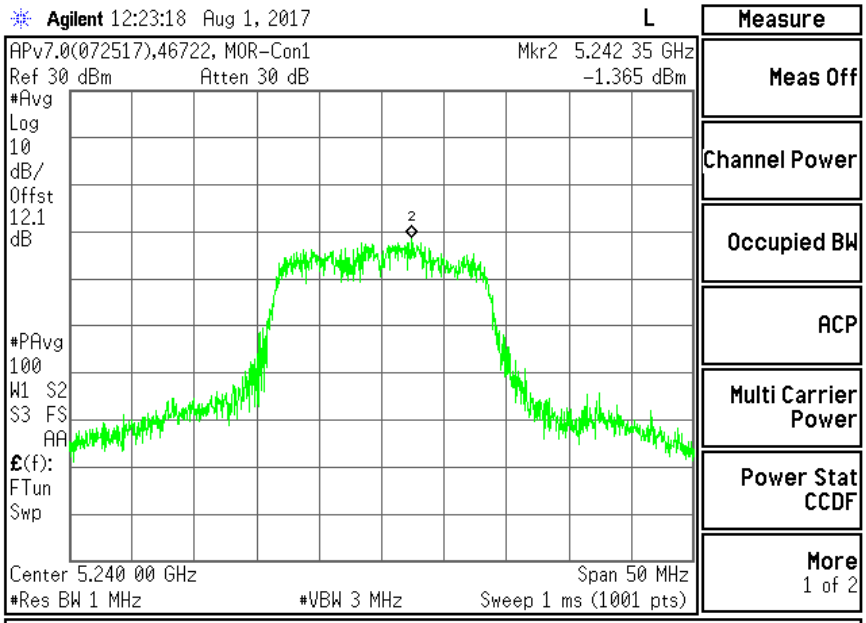
Note: Power is a gated measurement.

PSD, Chain 0





PSD, Chain 0 HIGH CH



8.3. 802.11n HT20 MODE IN THE 5.2 GHz BAND

8.3.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

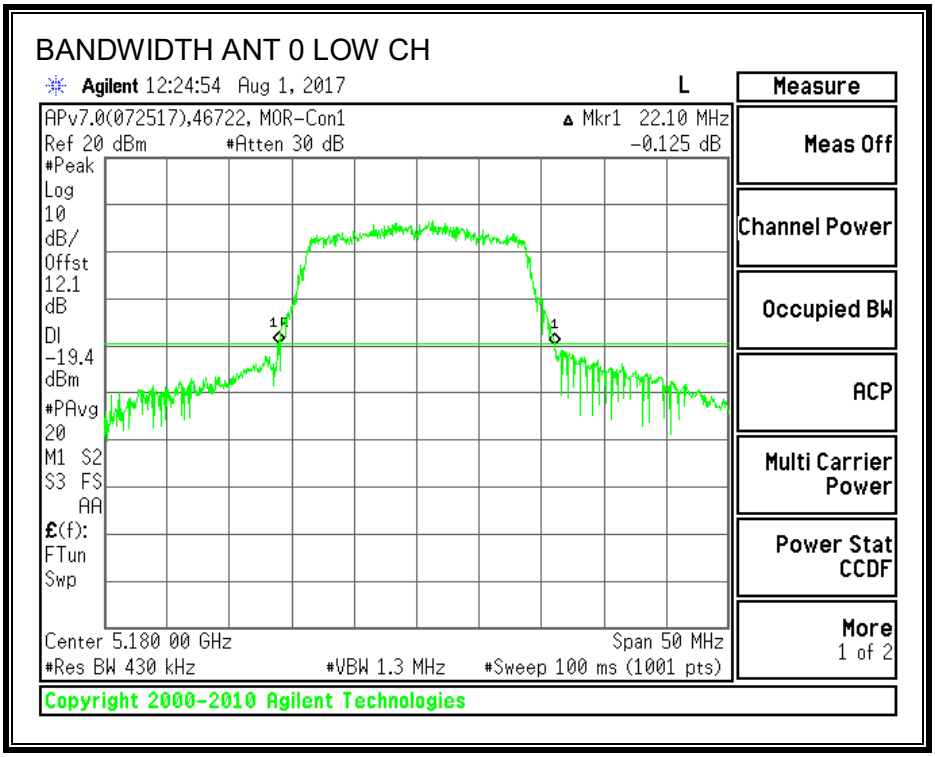
Channel	Frequency (MHz)	26 dB BW INT 0 (MHz)
Low	5180	22.10
Mid	5200	25.70
High	5240	25.70

Test Information

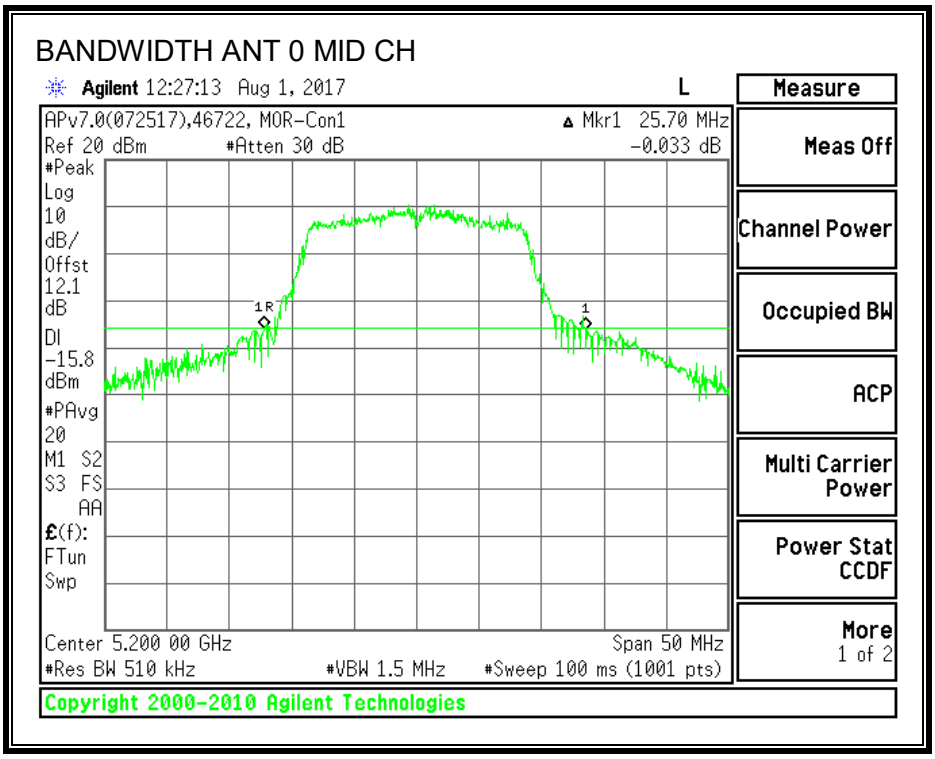
Date: 2017-08-01

Tester: John Manser

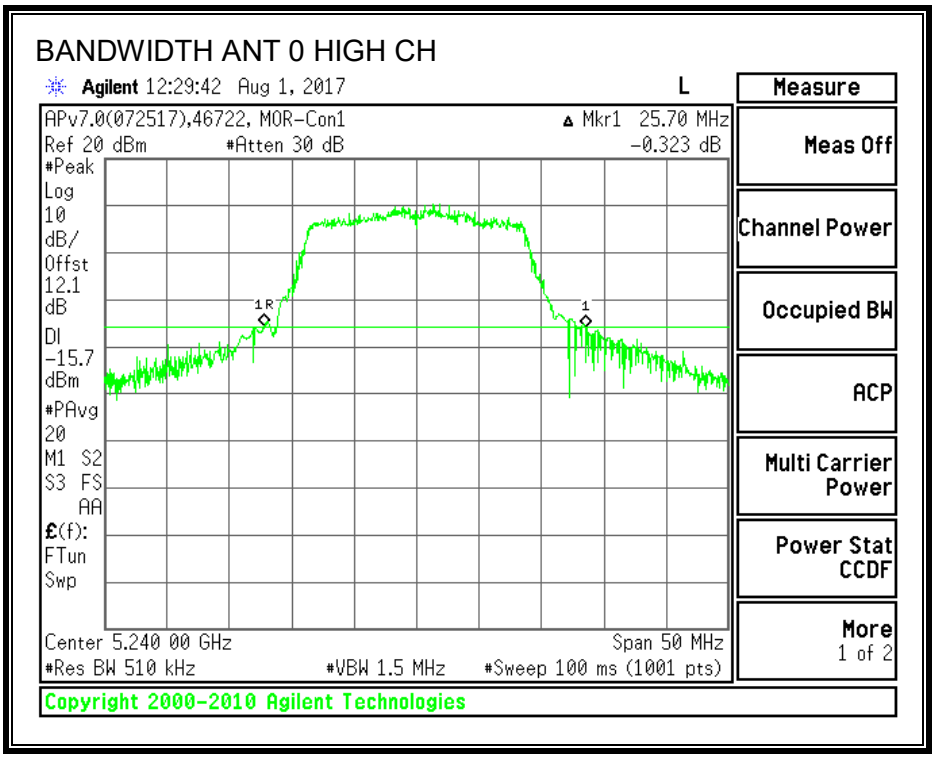
26 dB BANDWIDTH, ANT 0



BANDWIDTH ANT 0 MID CH



BANDWIDTH ANT 0 HIGH CH



8.3.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

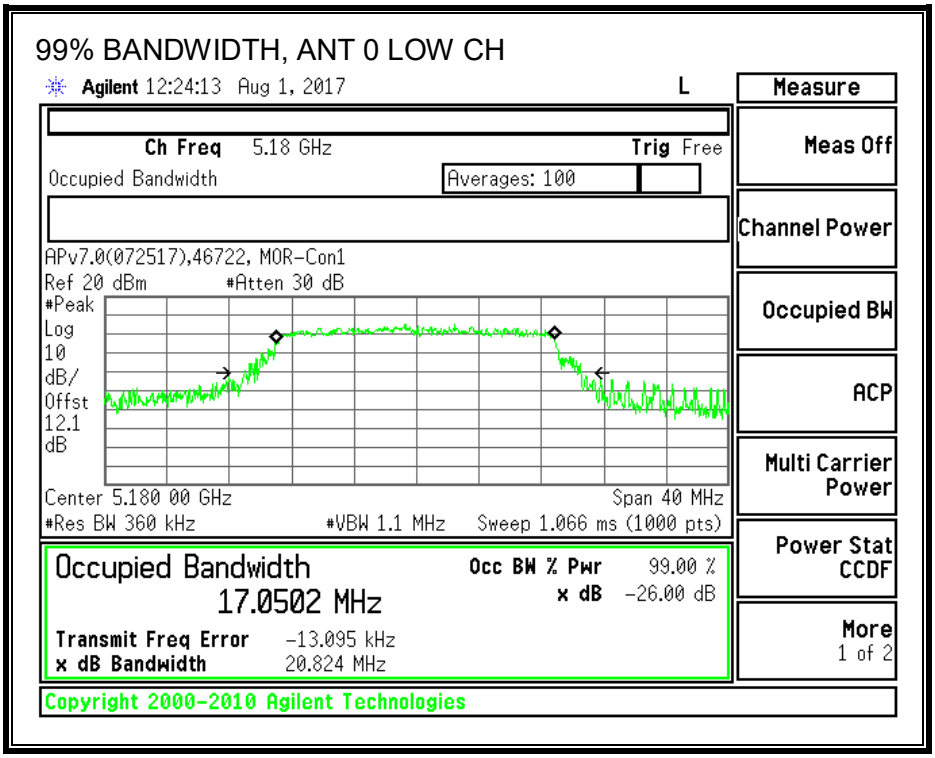
Channel	Frequency (MHz)	99% BW ANT 0 (MHz)
Low	5180	17.0502
Mid	5200	17.1264
High	5240	16.9312

Test Information

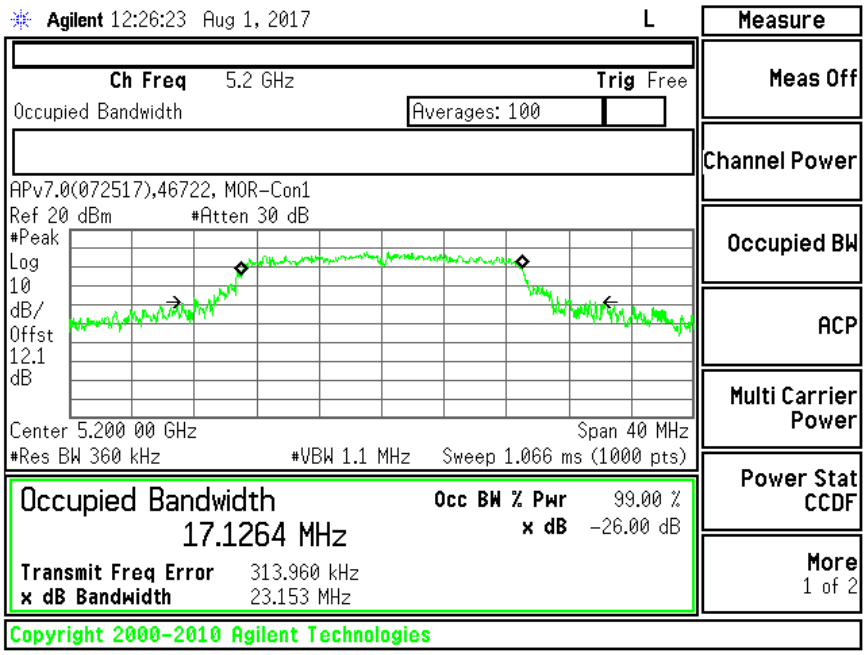
Date: 2017-08-01

Tester: John Manser

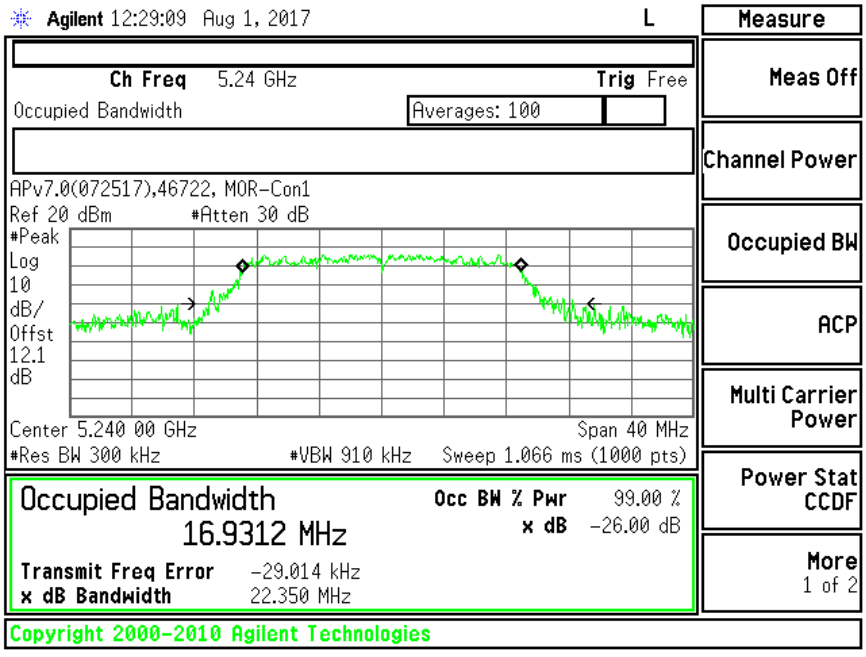
99% BANDWIDTH, INT A



99% BANDWIDTH, ANT 0 MID CH



99% BANDWIDTH, ANT 0 HIGH CH



8.3.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)
(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 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 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 6 dBi.
(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.

DIRECTIONAL ANTENNA GAIN

There are two internal and one external antennas for diversity, therefore directional gain is equal to antenna gain.

Antenna Gain and Limits

Channel	Frequency (MHz)	Antenna Gain Internal (dBi)	Antenna Gain External (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5180	0.00	-6.00	24.00	11.00
Mid	5200	0.00	-6.00	24.00	11.00
High	5240	0.00	-6.00	24.00	11.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.55	24.00	-11.45
Mid	5200	15.38	24.00	-8.62
High	5240	15.14	24.00	-8.86

PSD Results

Channel	Frequency (MHz)	ANT 0 Meas PSD (dBm)	ANT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5180	-5.86	4.21	11.00	-6.79
Mid	5200	-1.41	8.67	11.00	-2.34
High	5240	-2.59	7.48	11.00	-3.52

Note: Power is a gated measurement.

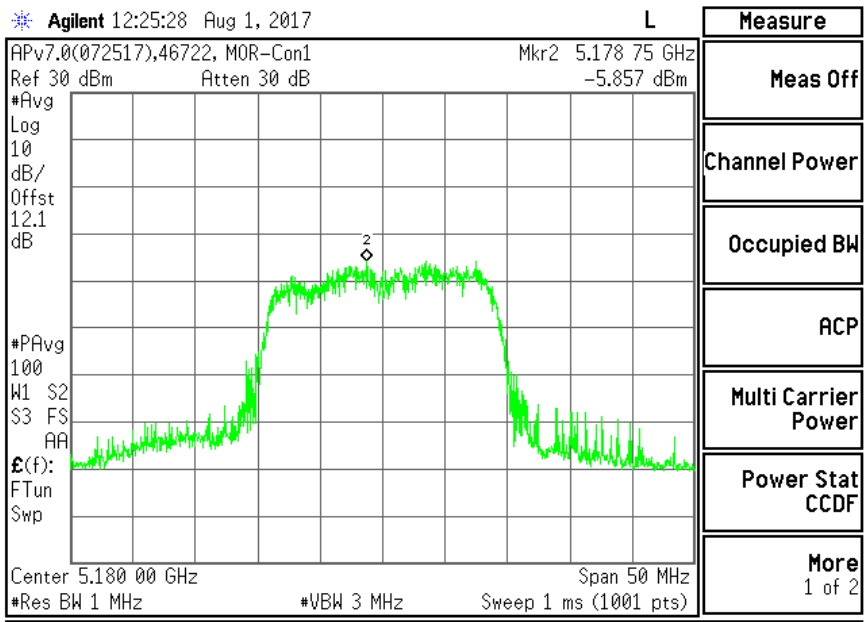
Test Information

Date: 2017-08-01

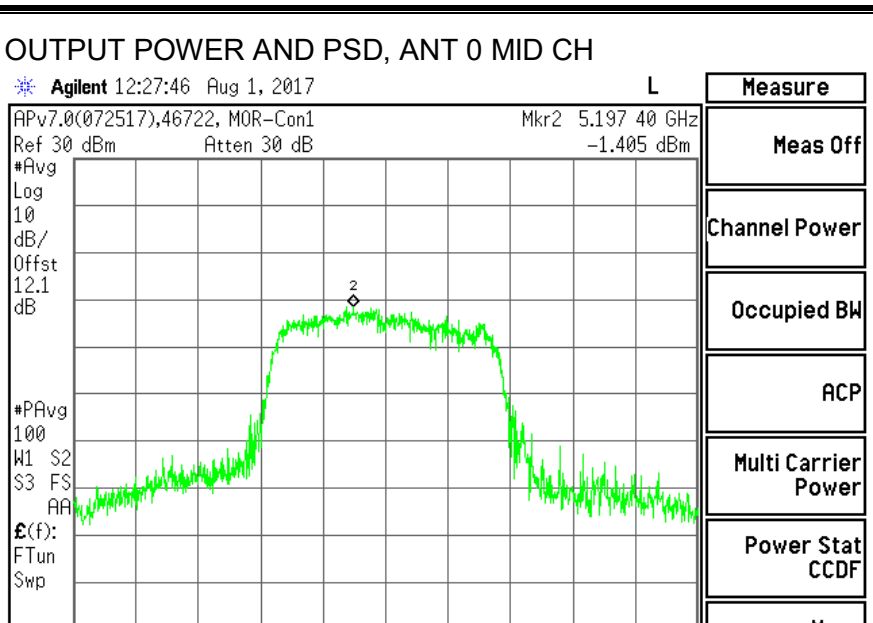
Tester: John Manser

OUTPUT POWER AND PSD, ANT 0

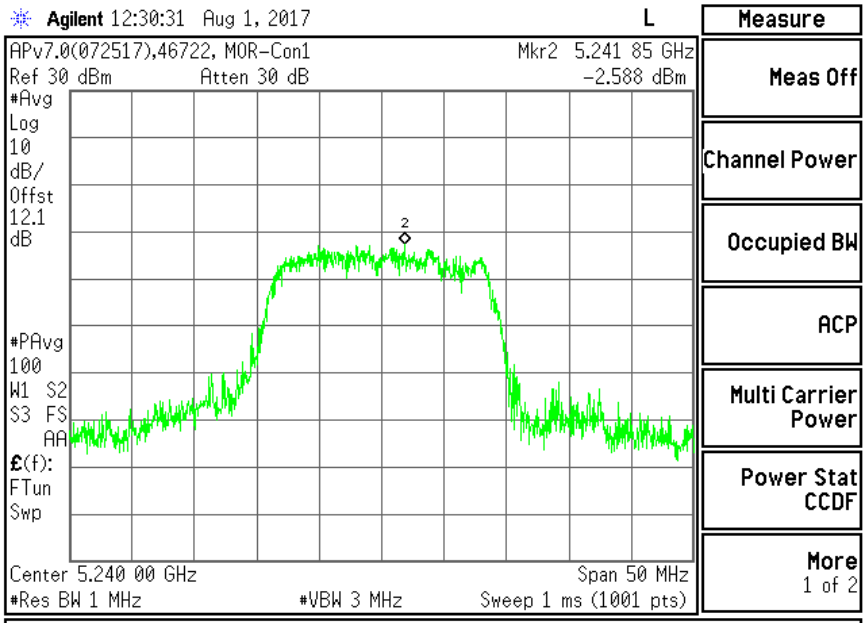
OUTPUT POWER AND PSD, ANT 0 LOW CH



OUTPUT POWER AND PSD, ANT 0 MID CH



OUTPUT POWER AND PSD, ANT 0 HIGH CH



8.3.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.1 [1])

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5180	17.0502	0.0000	0.0000
Mid	5200	17.1264	0.0000	0.0000
High	5240	16.9312	0.0000	0.0000

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC eirp PSD Limit (dBm)
Low	5180	22.32	10.00
Mid	5200	22.34	10.00
High	5240	22.29	10.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PPSD

Output Power Results

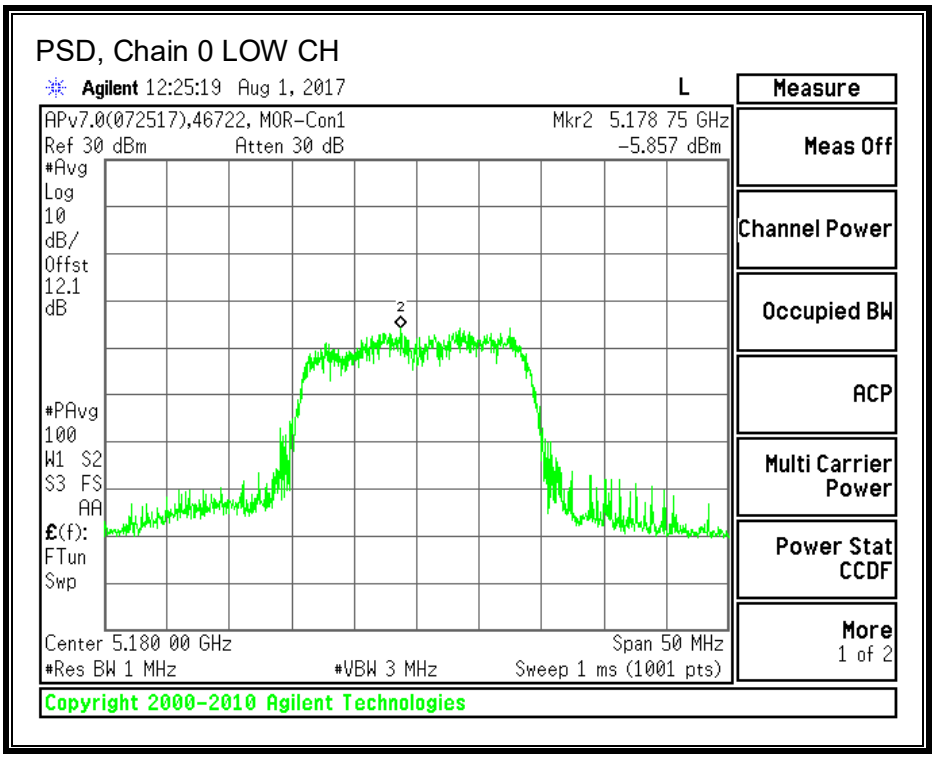
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	12.55	12.55	22.32	-9.77
Mid	5200	15.38	15.38	22.34	-6.96
High	5240	15.14	15.14	22.29	-7.15

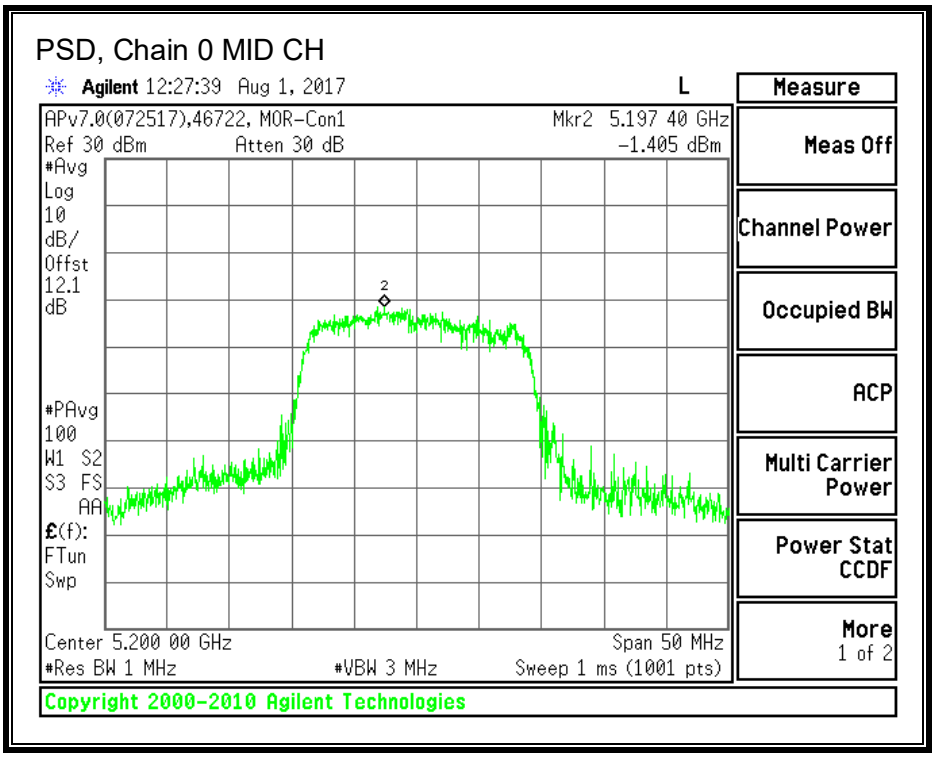
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5180	-5.86	4.21	10.00	-5.79
Mid	5200	-1.41	8.66	10.00	-1.34
High	5240	-2.59	7.48	10.00	-2.52

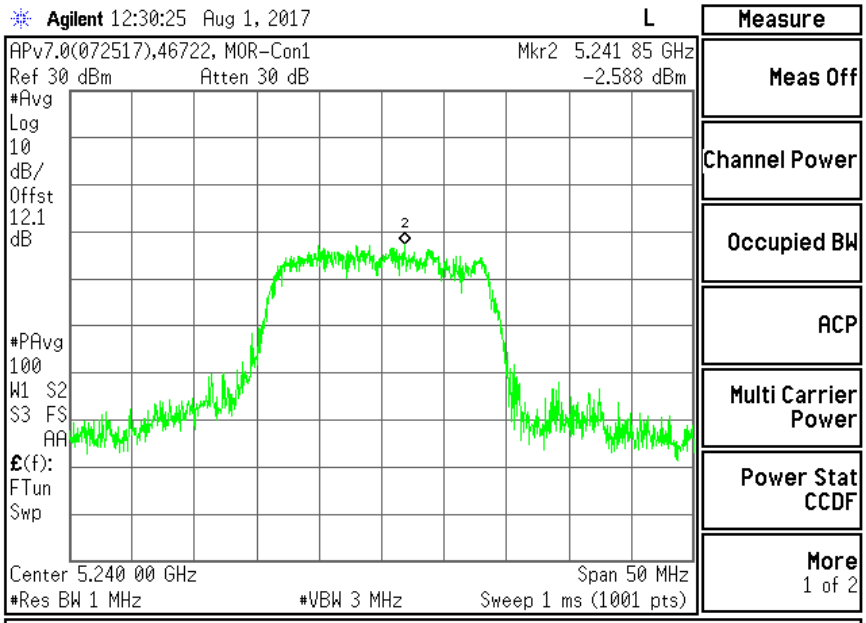
Note: Power is a gated measurement.

PSD, Chain 0





PSD, Chain 0 HIGH CH



8.4. 802.11n HT40 MODE IN THE 5.2 GHz BAND

8.4.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

Ant 0

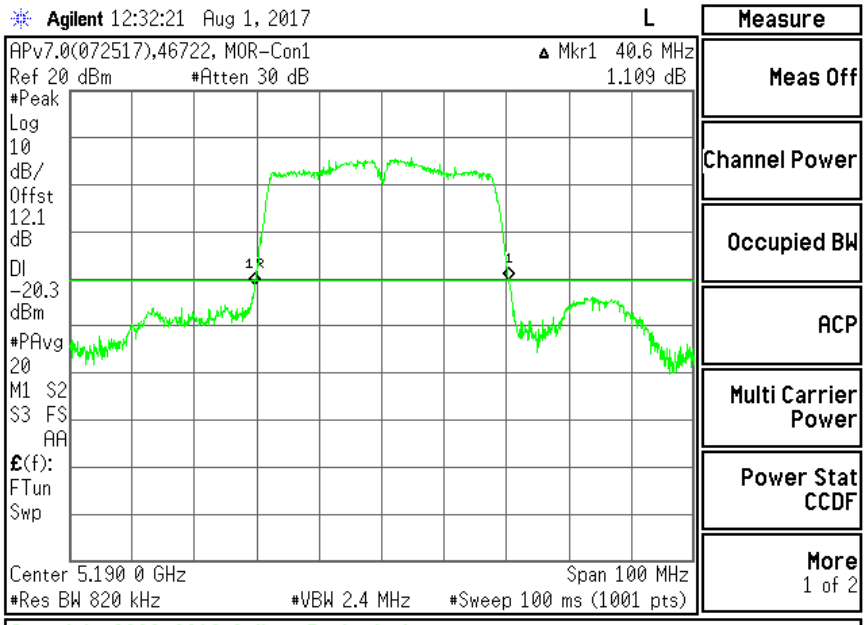
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5190	40.60
High	5230	71.70

Test Information

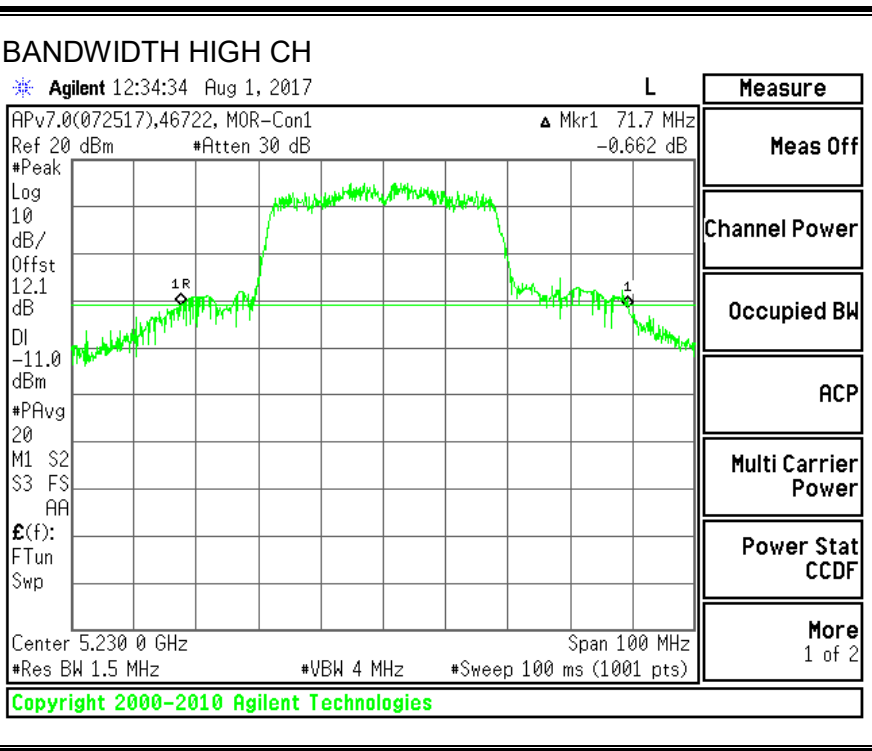
Date: 2017-08-01
Tester: John Manser

26 dB BANDWIDTH

BANDWIDTH LOW CH



BANDWIDTH HIGH CH



8.4.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

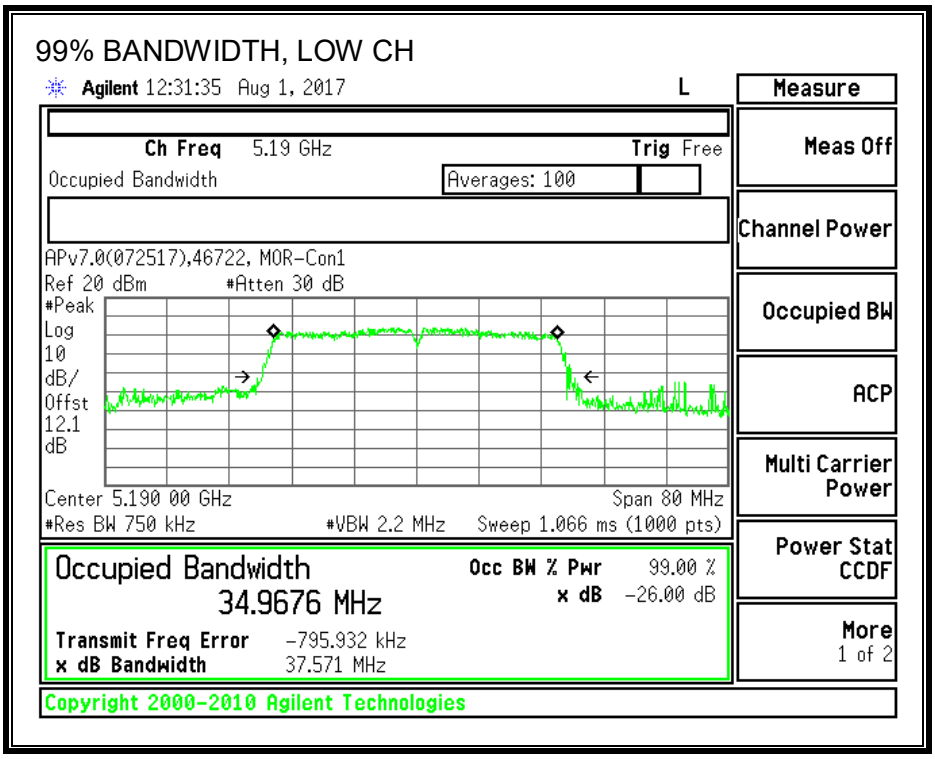
RESULTS

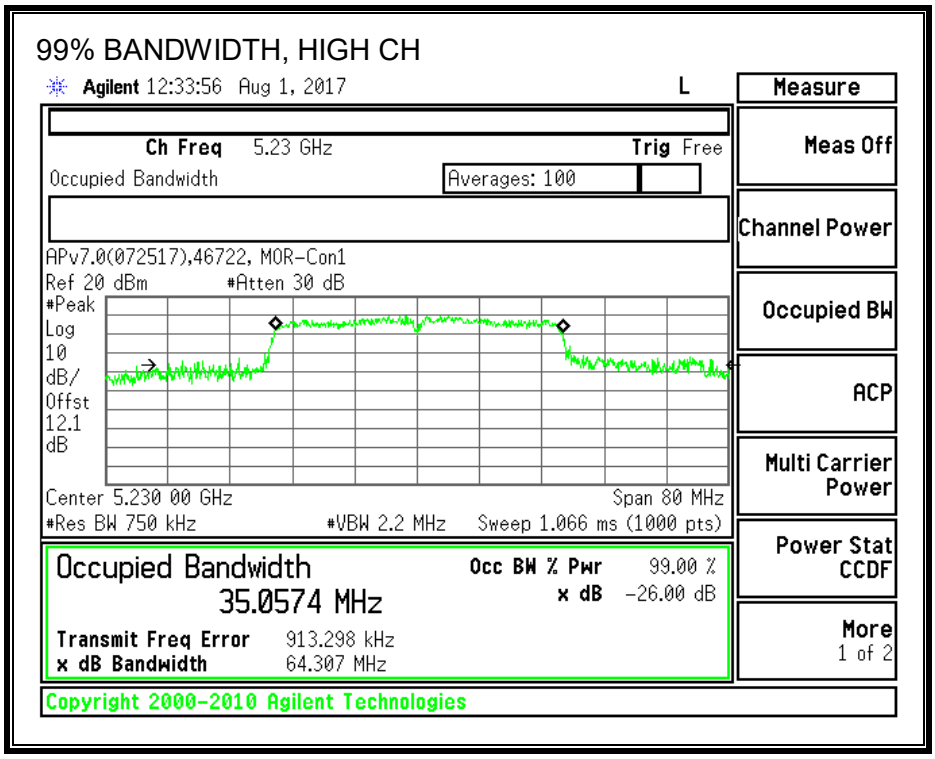
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5190	34.9676
High	5230	35.0574

Test Information

Date: 2017-08-01
Tester: John Manser

99% BANDWIDTH





8.4.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (1)
(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 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 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 6 dBi.
(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.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

Antenna Gain and Limits

Channel	Frequency (MHz)	Antenna Gain Internal (dBi)	Antenna Gain External (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5190	0.00	-6.00	24.00	11.00
High	5230	0.00	-6.00	24.00	11.00

Duty Cycle CF (dB)	10.07	Included in Calculations of PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	11.53	24.00	-12.47
High	5230	16.73	24.00	-7.27

PSD Results

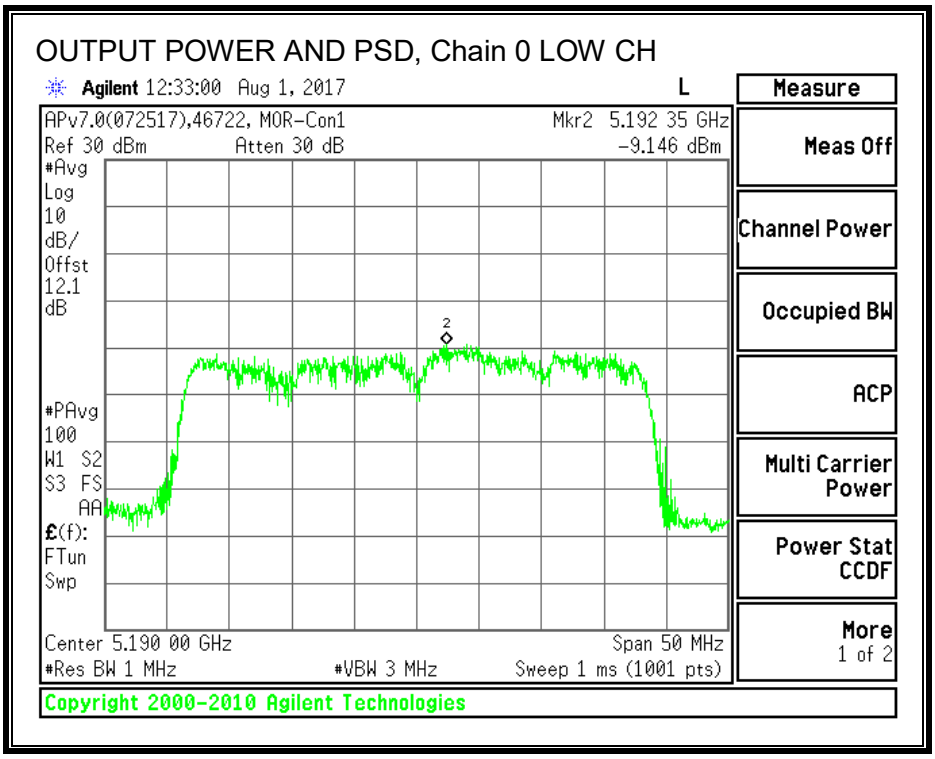
Channel	Frequency (MHz)	ANT 0 Meas PSD (dBm)	ANT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5190	-9.15	0.92	11.00	-10.08
High	5230	-4.01	6.06	11.00	-4.94

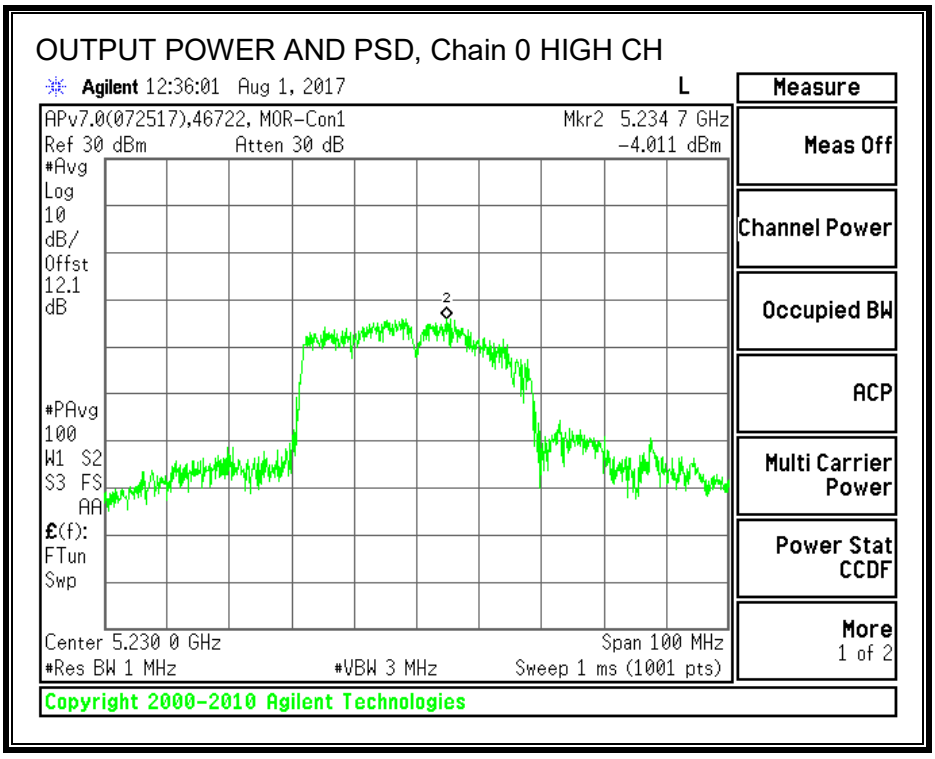
Note: Power is a gated measurement.

Test Information

Date: 2017-08-01
Tester: John Manser

OUTPUT POWER AND PSD, Chain 0





8.4.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.1 [1])

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5190	34.9676	0.0000	0.0000
High	5230	35.0574	0.0000	0.0000

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC eirp PSD Limit (dBm)
Low	5190	23.00	10.00
High	5230	23.00	10.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PPSD

Output Power Results

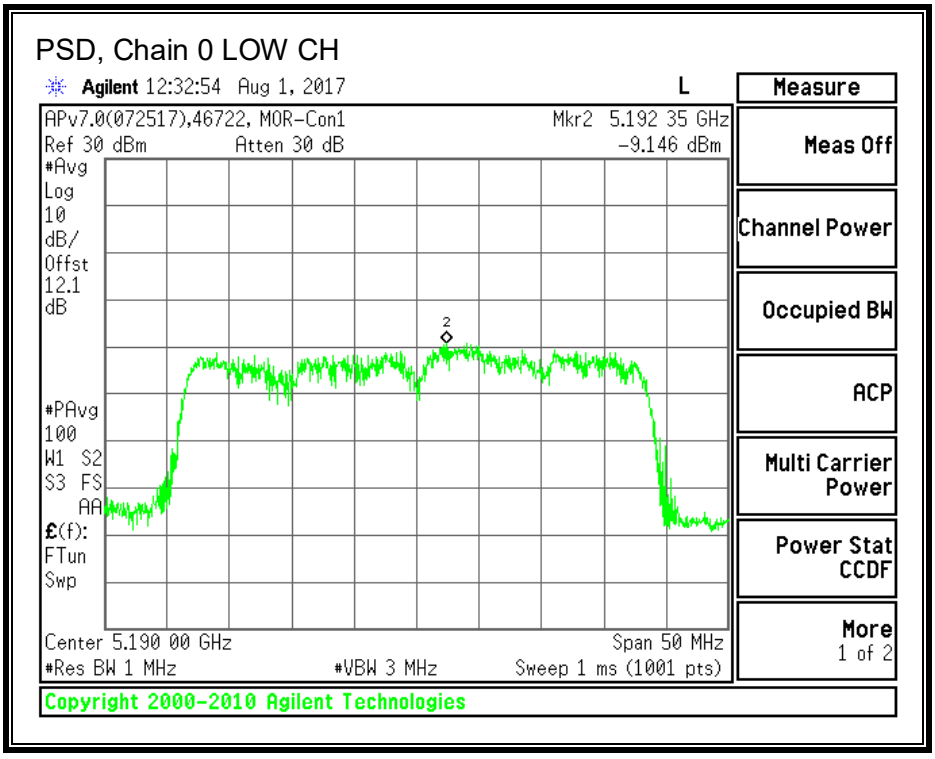
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	11.53	11.53	23.00	-11.47
High	5230	16.73	16.73	23.00	-6.27

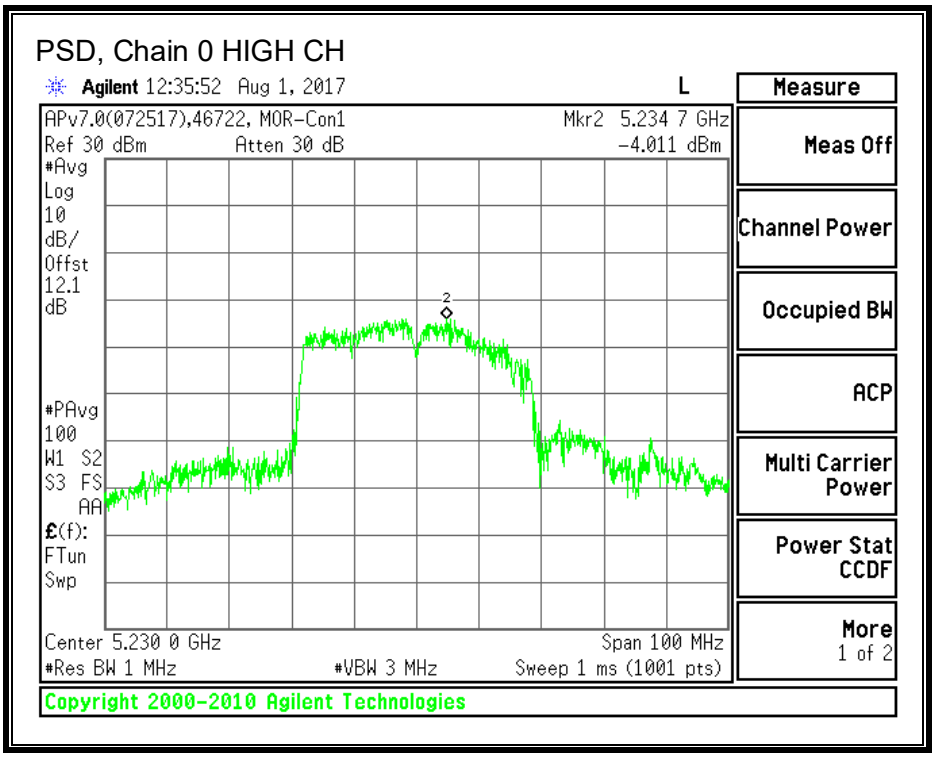
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5190	-9.15	0.92	10.00	-9.08
High	5230	-4.01	6.06	10.00	-3.94

Note: Power is a gated measurement.

PSD, Chain 0





8.5. 802.11a MODE IN THE 5.3 GHz BAND

8.5.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

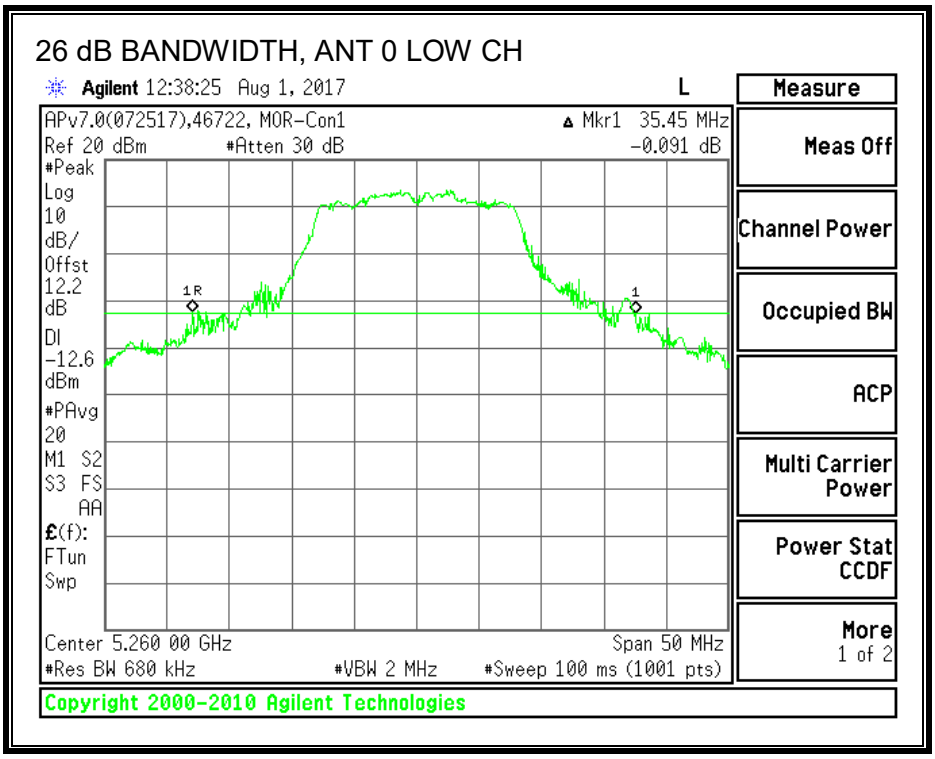
RESULTS

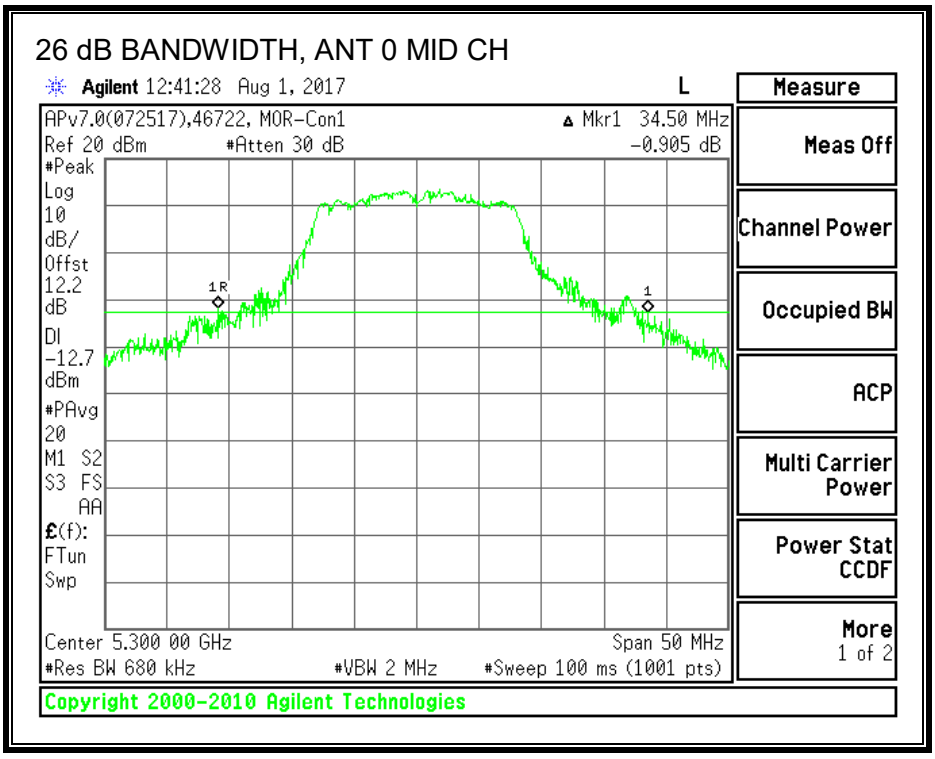
Channel	Frequency (MHz)	26 dB BW ANT 0 (MHz)
Low	5260	35.45
Mid	5300	34.50
High	5320	21.45

Test Information

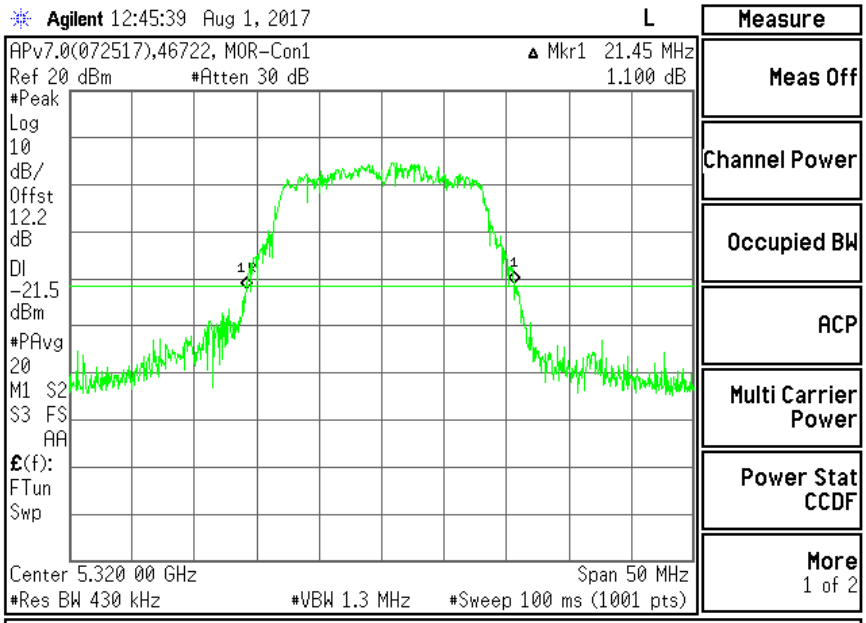
Date: 2017-08-01
Tester: John Manser

26 dB BANDWIDTH, ANT 0





26 dB BANDWIDTH, ANT 0 HIGH CH



8.5.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

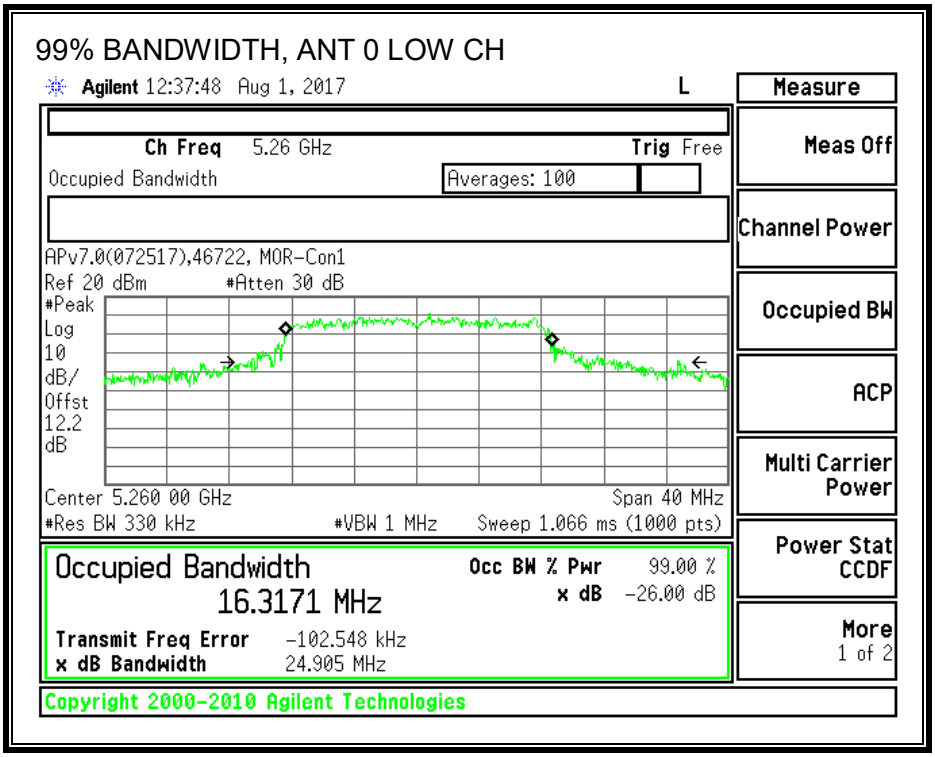
RESULTS

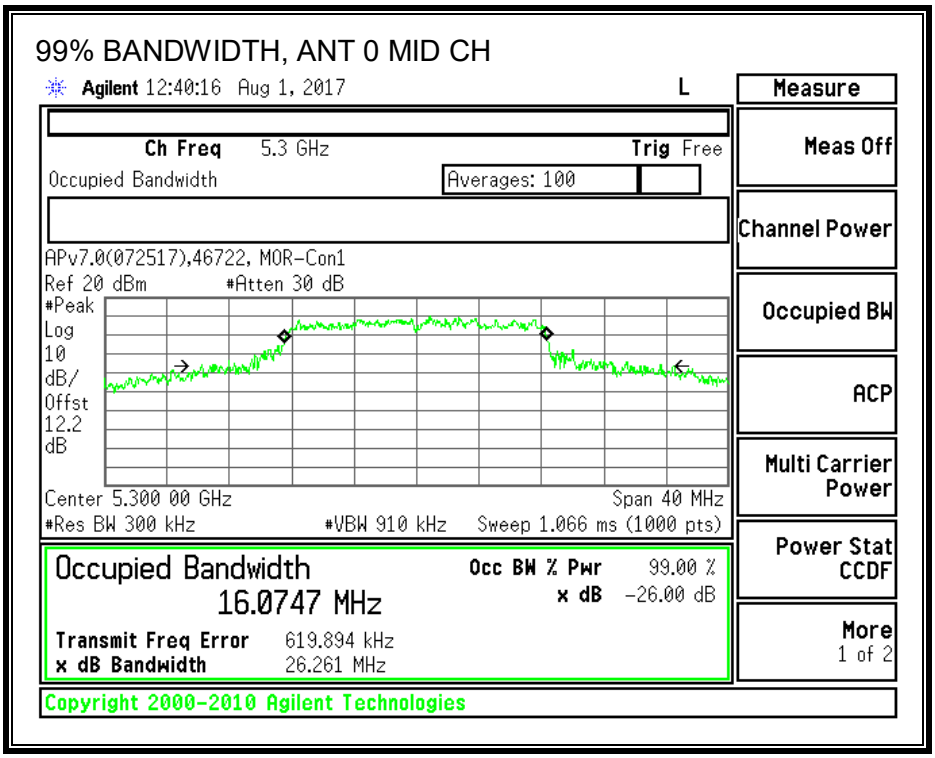
Channel	Frequency (MHz)	99% BW INT 0 (MHz)
Low	5260	16.3171
Mid	5300	16.0747
High	5320	16.4409

Test Information

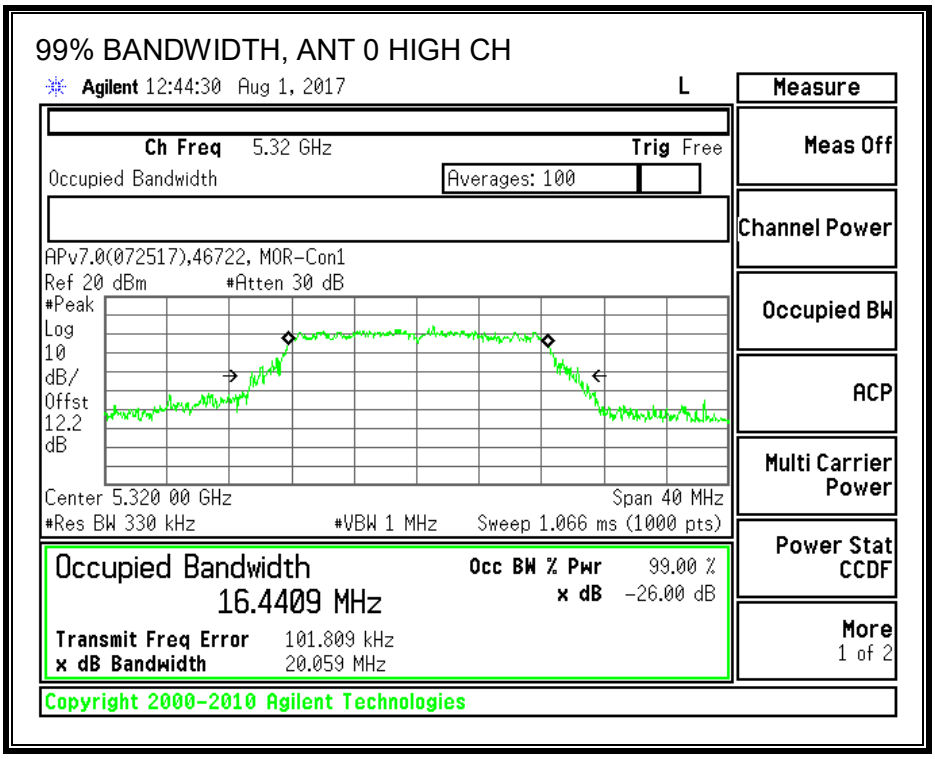
Date: 2017-08-01
Tester: John Manser

99% BANDWIDTH, ANT 0





99% BANDWIDTH, ANT 0 HIGH CH



8.5.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band 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 MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There are two internal and one external antennas for diversity; therefore directional gain equals antenna gain.

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Antenna Gain Internal (dBi)	Power Limit Internal (dBm)
Low	5260	35.45	0.00	24.00
Mid	5300	34.50	0.00	24.00
High	5320	21.45	0.00	24.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 0 Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	16.58	16.58	24.00	-7.42
Mid	5300	17.04	17.04	24.00	-6.96
High	5320	10.03	10.03	24.00	-13.97

Note: Power is a gated measurement.

Antenna Gain and Limits

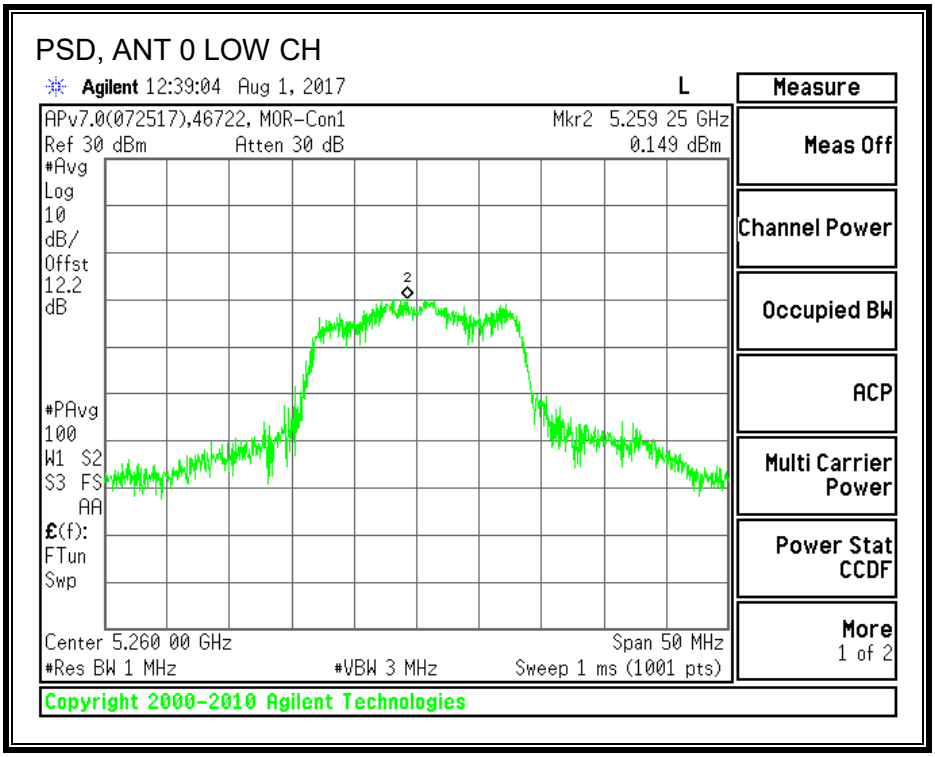
Channel	Frequency (MHz)	Antenna Gain Internal (dBi)	PSD Limit (dBm)
Low	5260	0.00	11.00
Mid	5300	0.00	11.00
High	5320	0.00	11.00

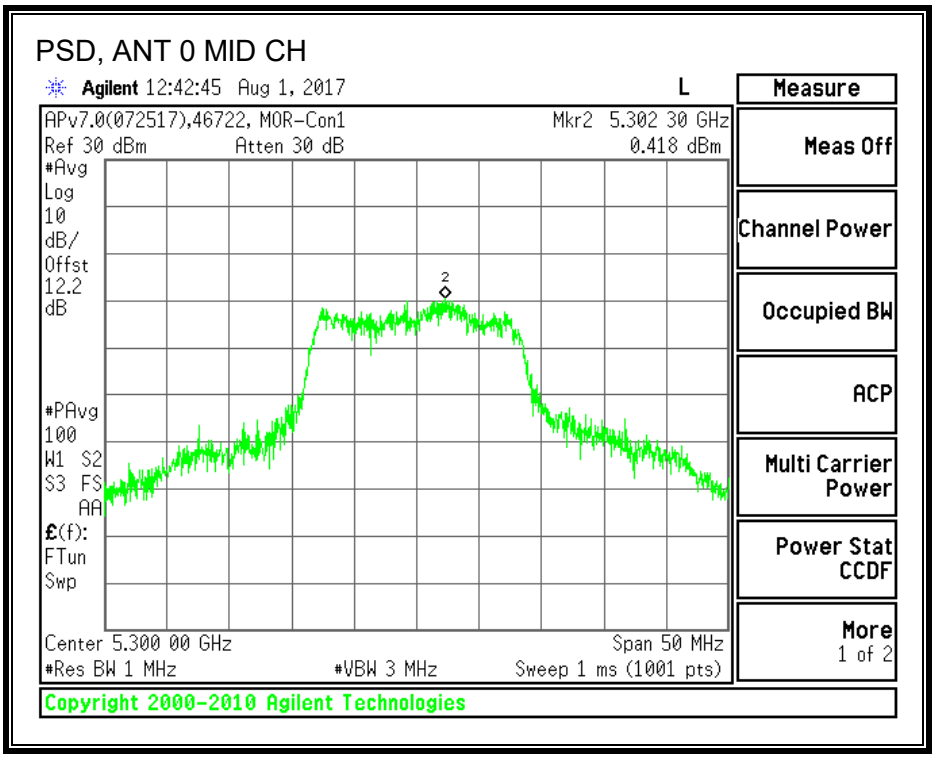
Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PSD

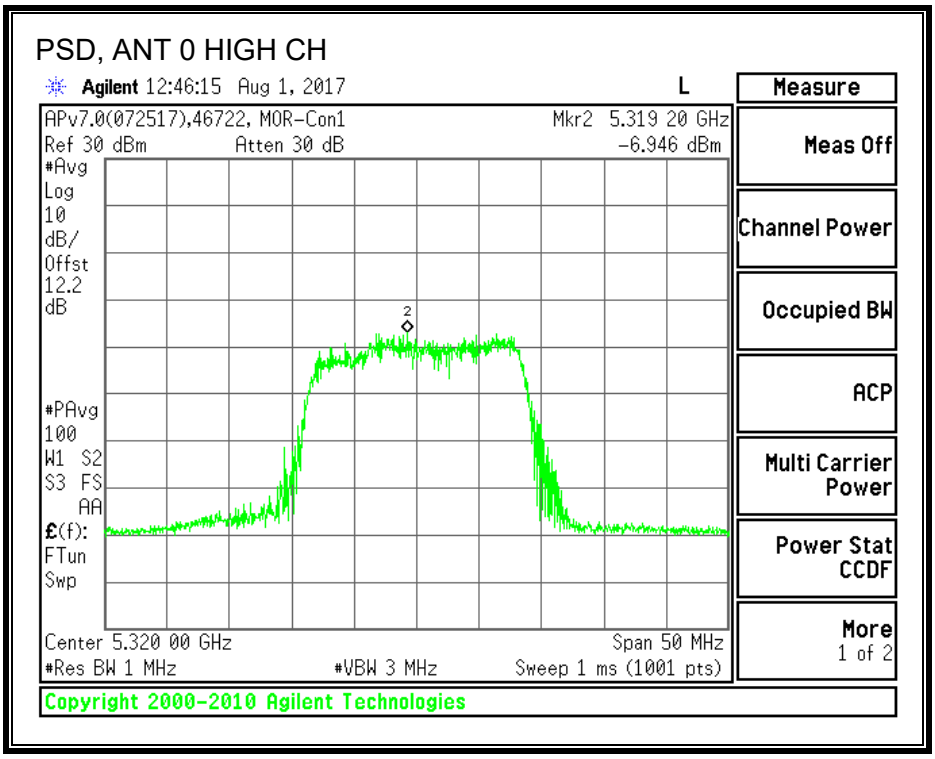
PSD Results

Channel	Frequency (MHz)	INT 0 Meas PSD (dBm)	INT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	0.15	10.22	11.00	-0.78
Mid	5300	0.42	10.49	11.00	-0.51
High	5320	-6.95	3.12	11.00	-7.88

PSD, ANT 0







TEST INFORMATION

Date: 2017-08-01
Tester: John Manser

8.5.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.2 [1])

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	16.3171	0.00	0.00
Mid	5300	16.0747	0.00	0.00
High	5320	16.4409	0.00	0.00

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC PSD Limit (dBm)	IC Output Power Limit (dBm)
Low	5260	29.13	11.00	23.13
Mid	5300	29.06	11.00	23.06
High	5320	29.16	11.00	23.16

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'dPPSD

Output Power Results

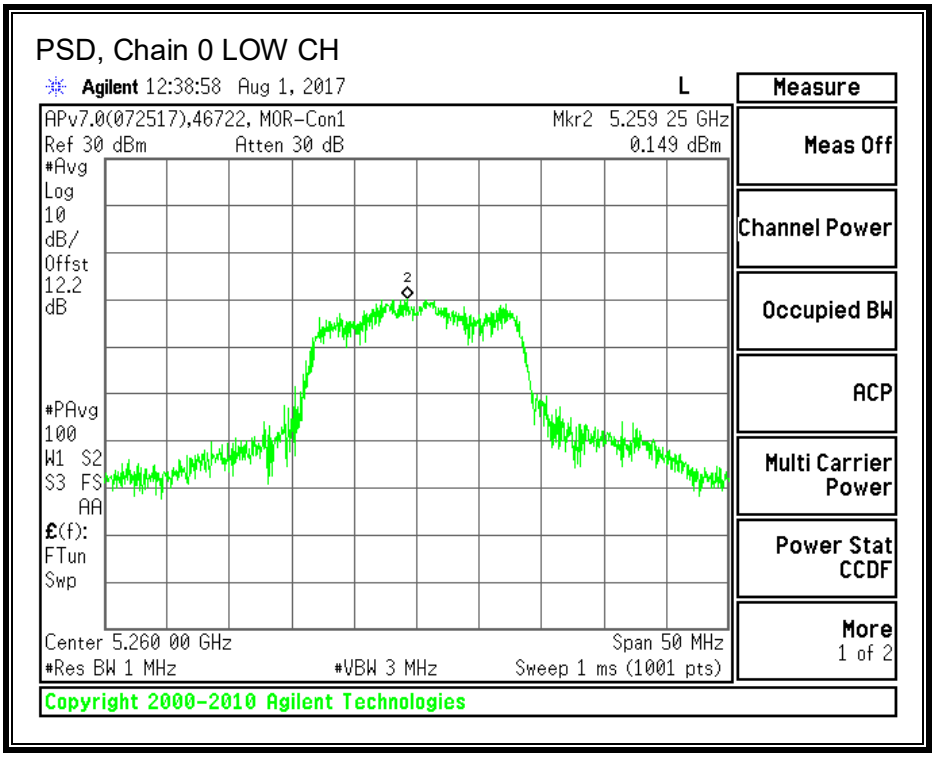
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)	Power Limit (dBm)	Power Margin (dB)
Low	5260	16.58	16.58	29.13	-12.55	23.13	-6.55
Mid	5300	17.04	17.04	29.06	-12.02	23.06	-6.02
High	5320	10.03	10.03	29.16	-19.13	23.16	-13.13

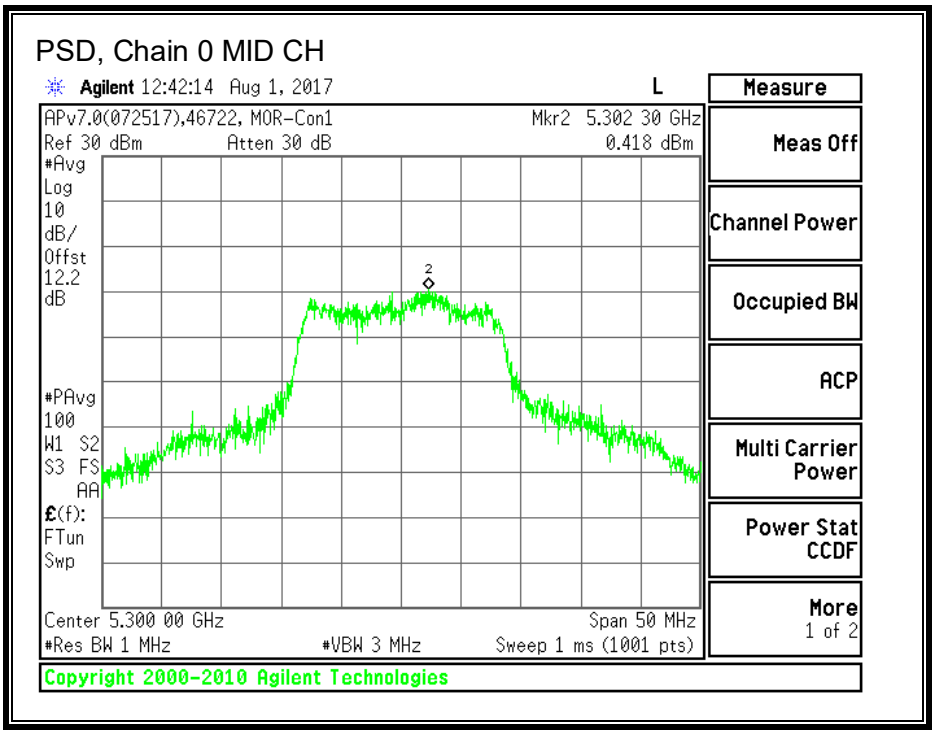
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	0.15	10.22	11.00	-0.78
Mid	5300	0.42	10.49	11.00	-0.51
High	5320	-6.95	3.12	11.00	-7.88

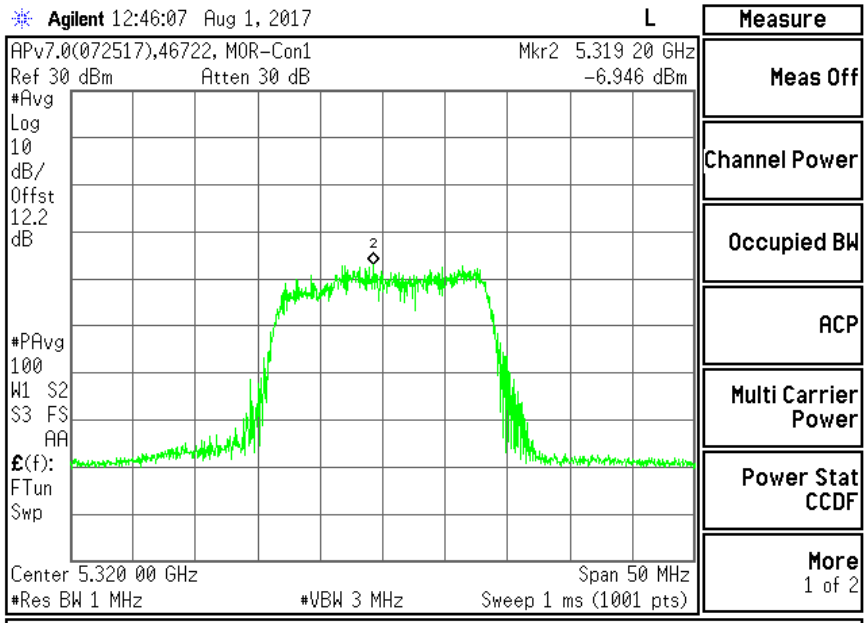
Note: Power is a gated measurement.

PSD, Chain 0





PSD, Chain 0 HIGH CH



8.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

8.6.1. 26 dB BANDWIDTH

LIMITS

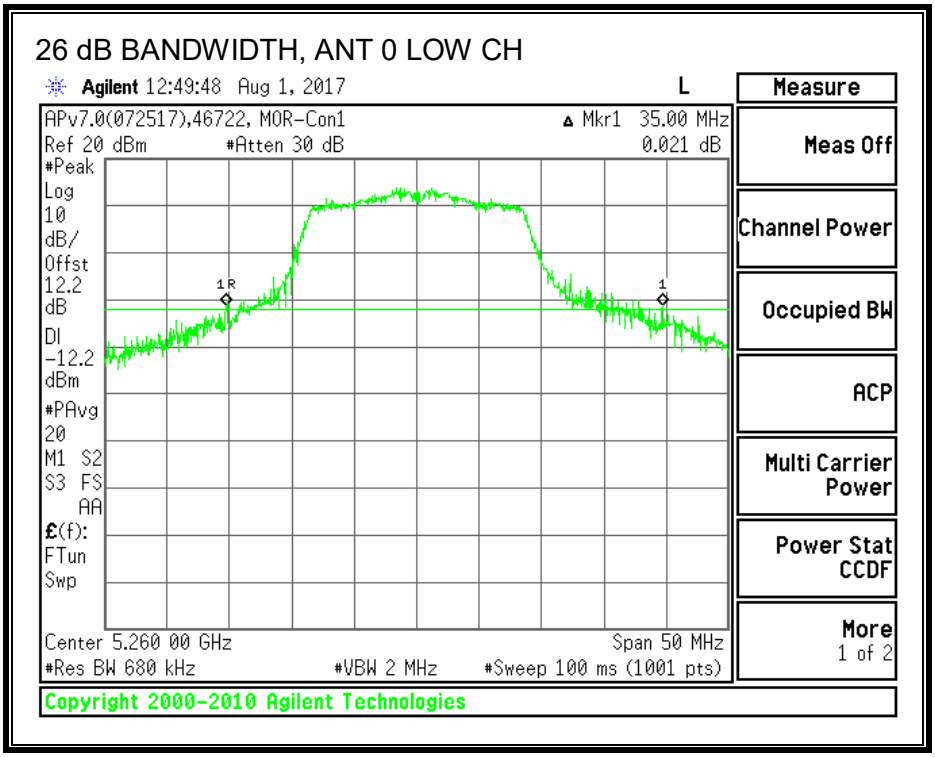
None; for reporting purposes only.

Channel	Frequency (MHz)	26 dB BW ANT 0 (MHz)
Low	5260	35.00
Mid	5300	35.15
High	5320	22.05

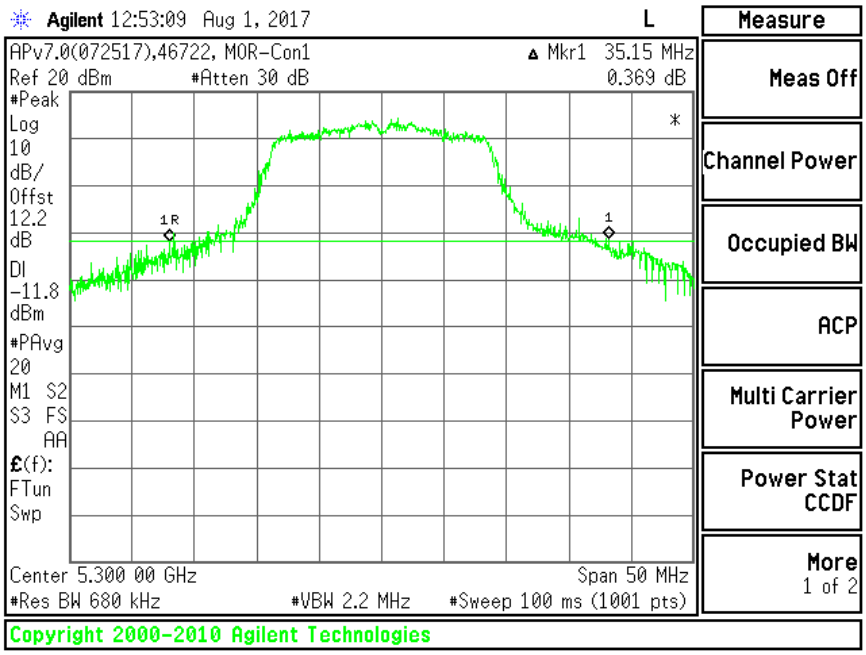
Test Information

Date: 2017-08-01
Tester: John Manser

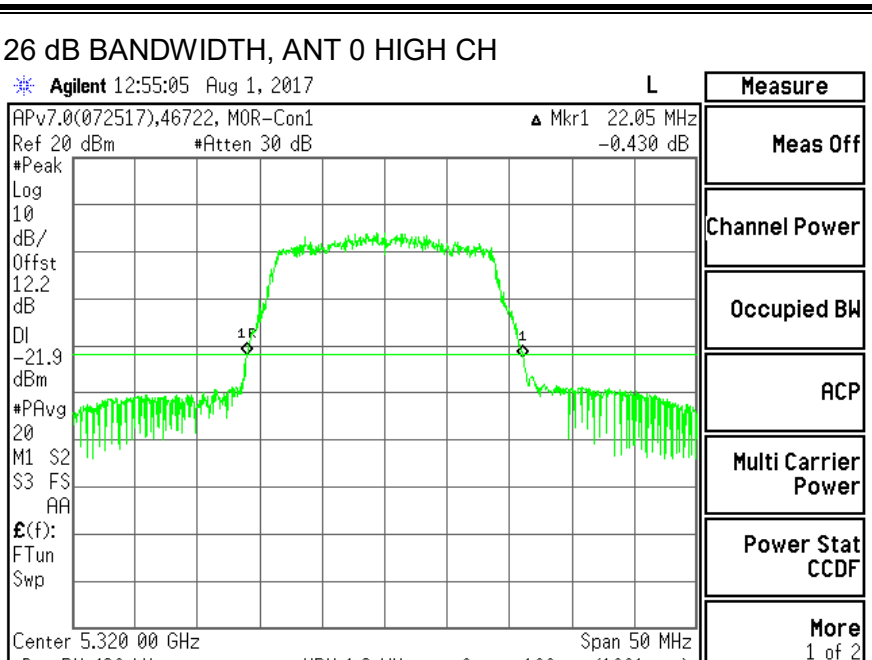
26 dB BANDWIDTH, ANT 0



26 dB BANDWIDTH, ANT 0 MID CH



26 dB BANDWIDTH, ANT 0 HIGH CH



8.6.2. 99% BANDWIDTH

LIMITS

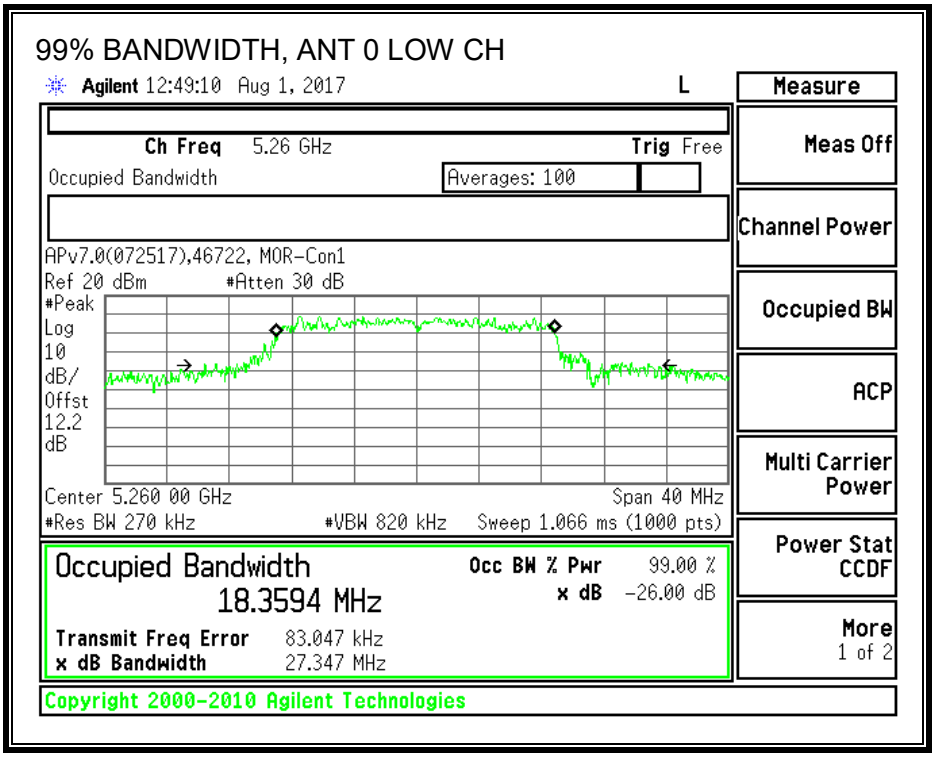
None; for reporting purposes only.

Channel	Frequency (MHz)	99% BW ANT 0 (MHz)
Low	5260	18.3594
Mid	5300	16.4623
High	5320	17.8549

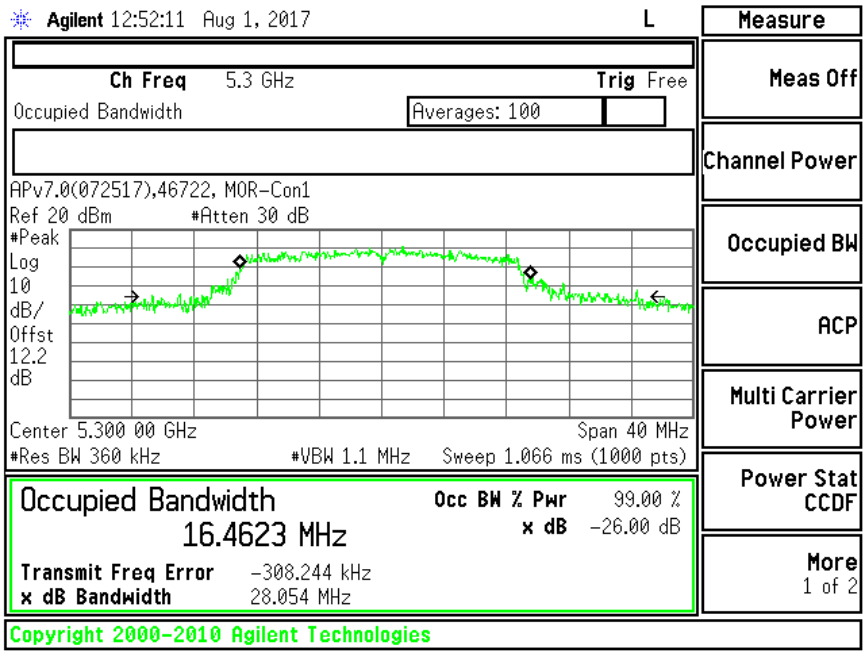
Test Information

Date: 2017-08-01
Tester: John Manser

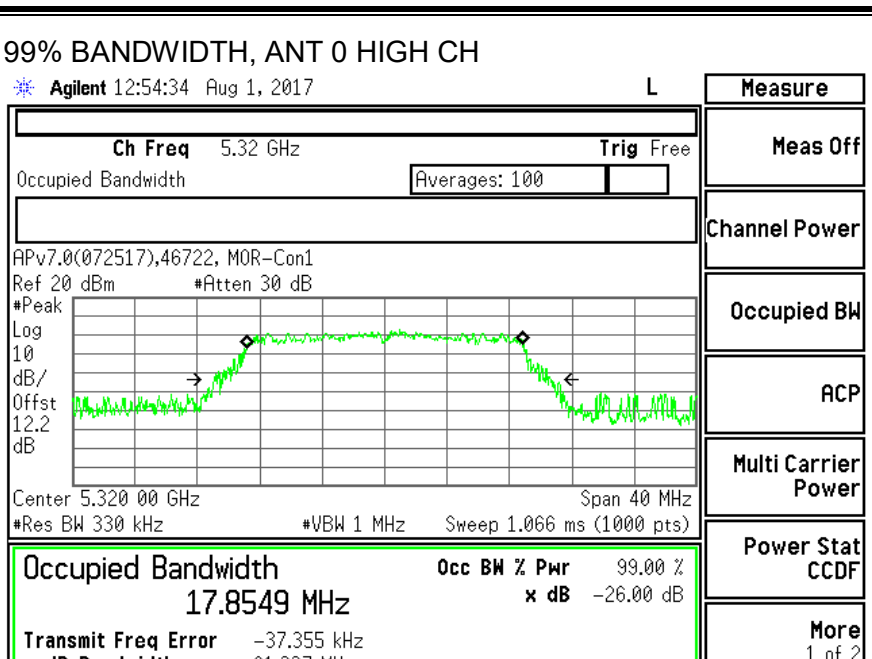
99% BANDWIDTH, ANT 0



99% BANDWIDTH, ANT 0 MID CH



99% BANDWIDTH, ANT 0 HIGH CH



8.6.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band 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 MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There are two internal and one external antennas for diversity; therefore directional gain equals antenna gain.

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Antenna Gain Internal (dBi)	Power Limit Internal (dBm)
Low	5260	35.00	0.00	24.00
Mid	5300	35.15	0.00	24.00
High	5320	22.05	0.00	24.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	13.56	24.00	-10.44
Mid	5300	16.76	24.00	-7.24
High	5320	10.24	24.00	-13.76

Antenna Gain and Limits

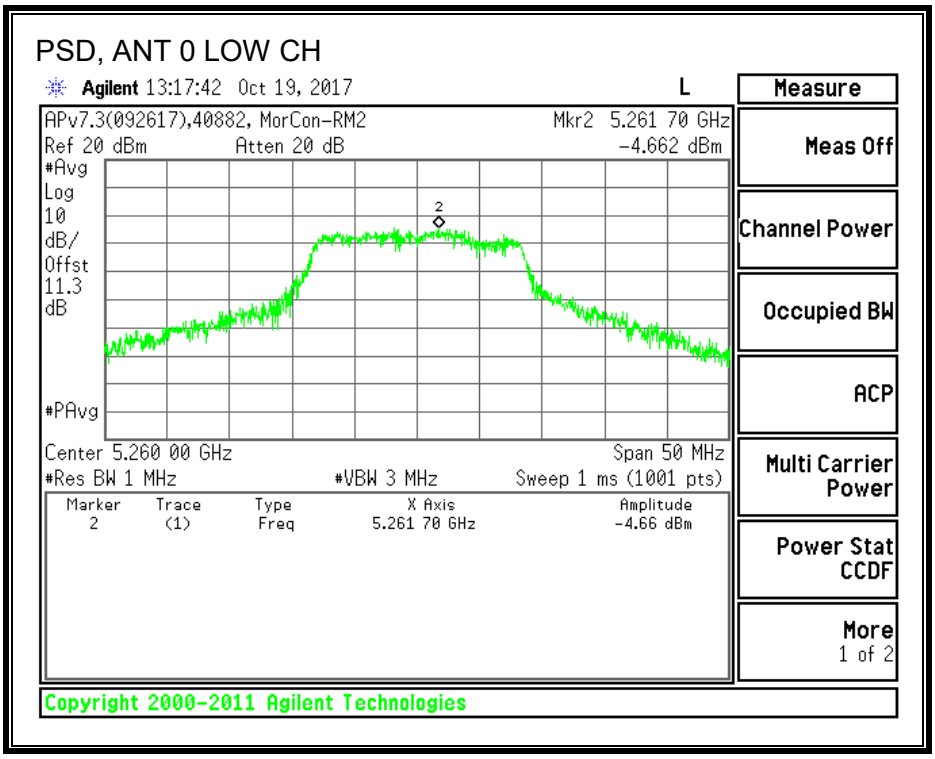
Channel	Frequency (MHz)	Antenna Gain Internal (dBi)	PSD Limit (dBm)
Low	5260	0.00	11.00
Mid	5300	0.00	11.00
High	5320	0.00	11.00

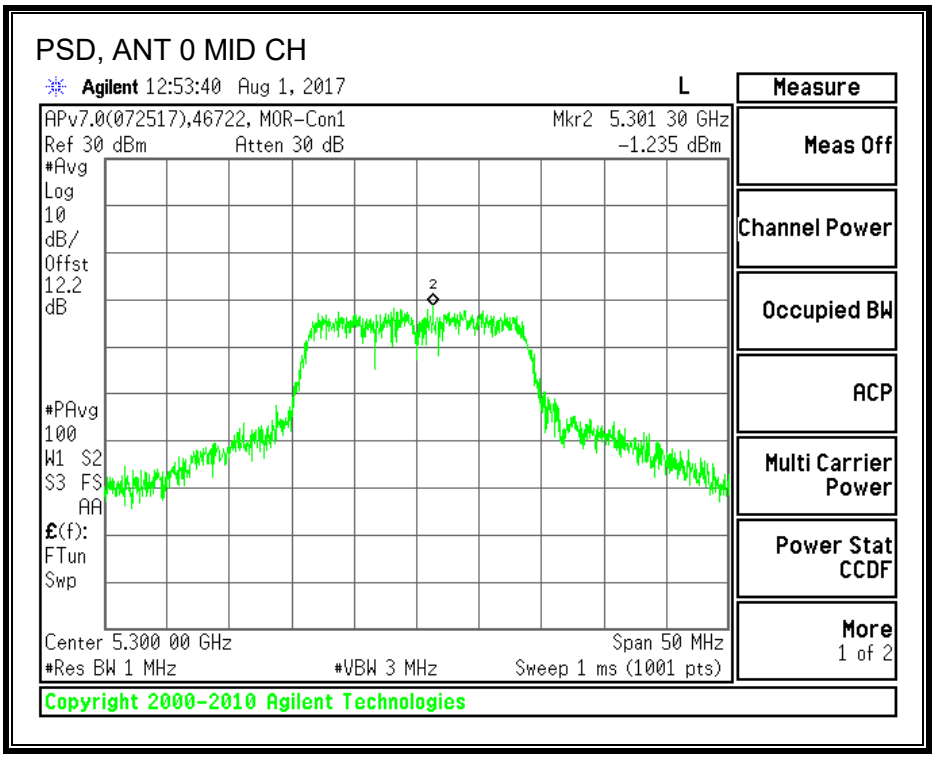
Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PSD

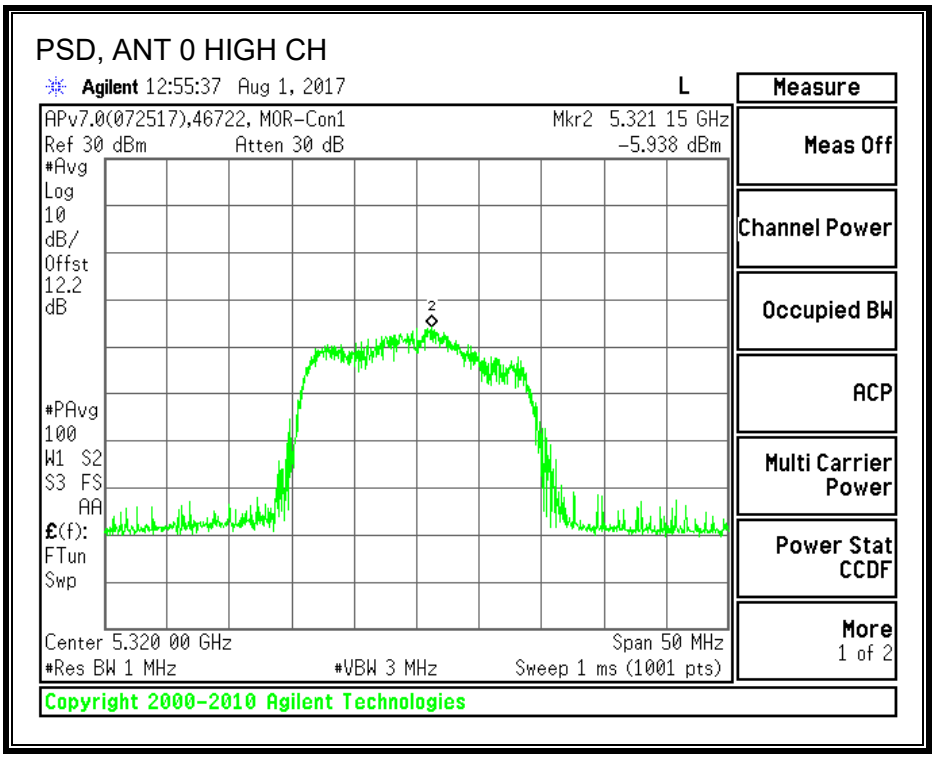
PSD Results

Channel	Frequency (MHz)	INT 0 Meas PSD (dBm)	INT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5260	-4.66	5.41	11.00	-5.59
Mid	5300	-1.24	8.84	11.00	-2.17
High	5320	-5.94	4.13	11.00	-6.87

PSD, ANT 0







TEST INFORMATION

Date: 2017-08-01 / 2017-10-19

Tester: John Manser / Jeffrey Cabrera

8.6.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.2 [1])

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5260	18.3594	0.00	0.00
Mid	5300	16.4623	0.00	0.00
High	5320	17.8549	0.00	0.00

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC PSD Limit (dBm)	IC Output Power Limit (dBm)
Low	5260	29.64	11.00	23.64
Mid	5300	29.16	11.00	23.16
High	5320	29.52	11.00	23.52

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power
Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'dPPSD

Output Power Results

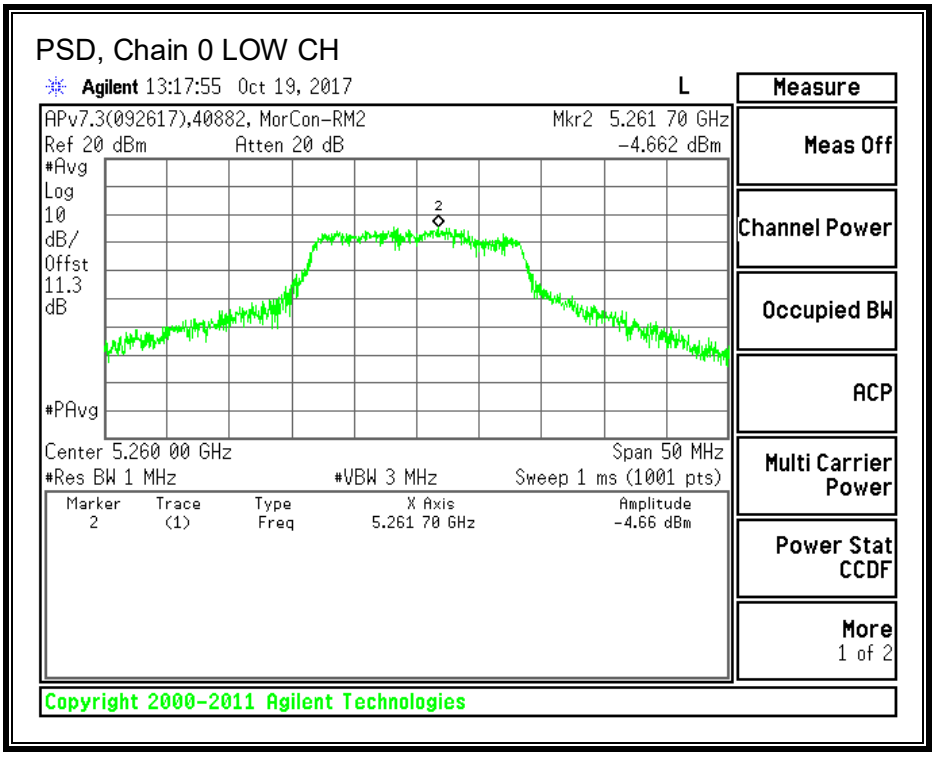
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)	Power Limit (dBm)	Power Margin (dB)
Low	5260	17.06	17.06	29.64	-12.58	23.64	-6.58
Mid	5300	16.76	16.76	29.16	-12.40	23.16	-6.40
High	5320	10.24	10.24	29.52	-19.28	23.52	-13.28

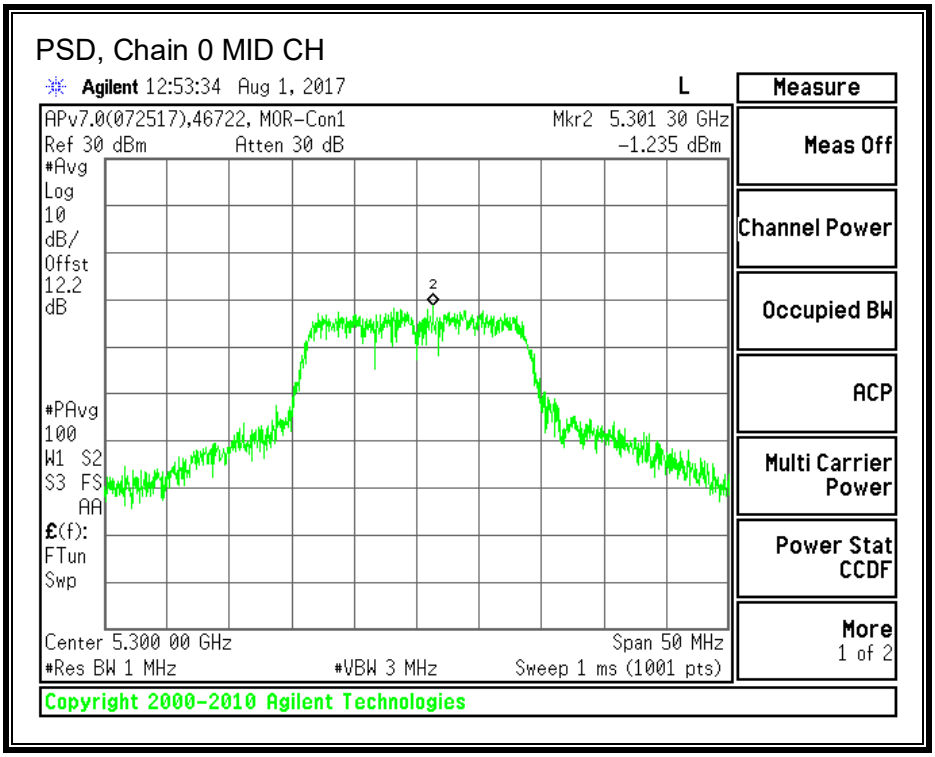
PPSD Results

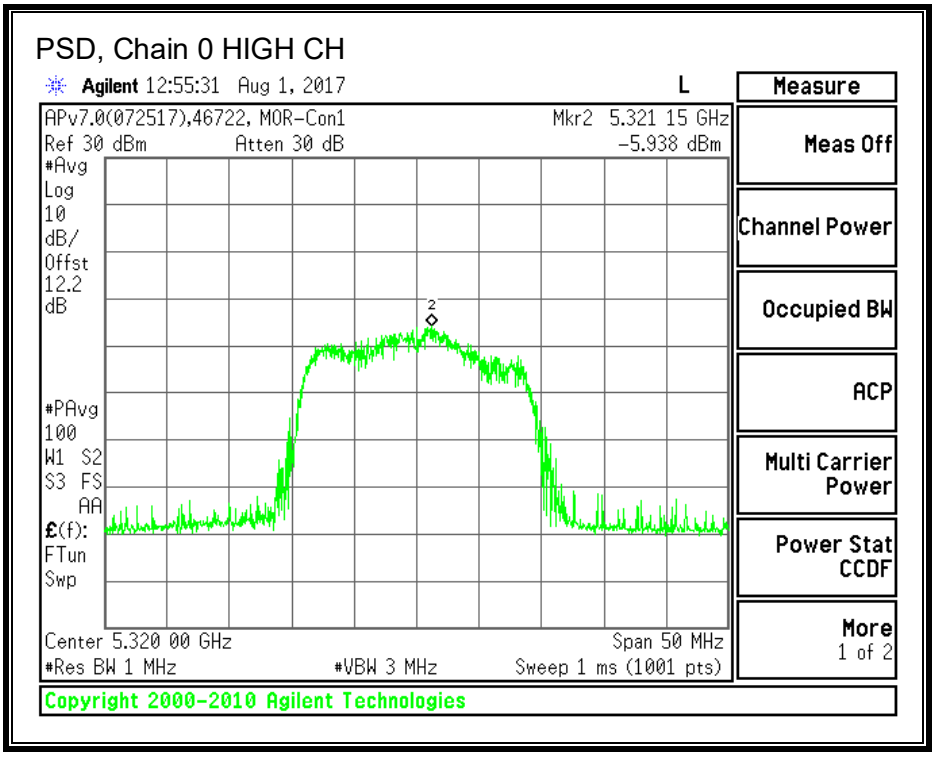
Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5260	-4.66	5.41	11.00	-5.59
Mid	5300	-1.24	8.83	11.00	-2.17
High	5320	-5.94	4.13	11.00	-6.87

Note: Power is a gated measurement.

PSD, Chain 0







TEST INFORMATION

Date: 2017-08-01 / 2017-10-19

Tester: John Manser / Jeffrey Cabrera

8.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

8.7.1. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

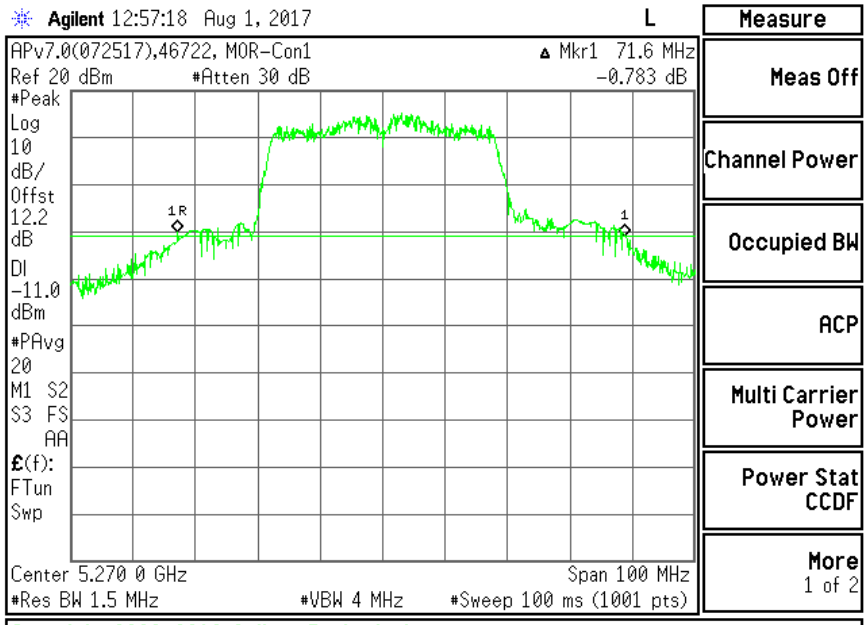
Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5270	71.60
High	5310	40.20

TEST INFORMATION

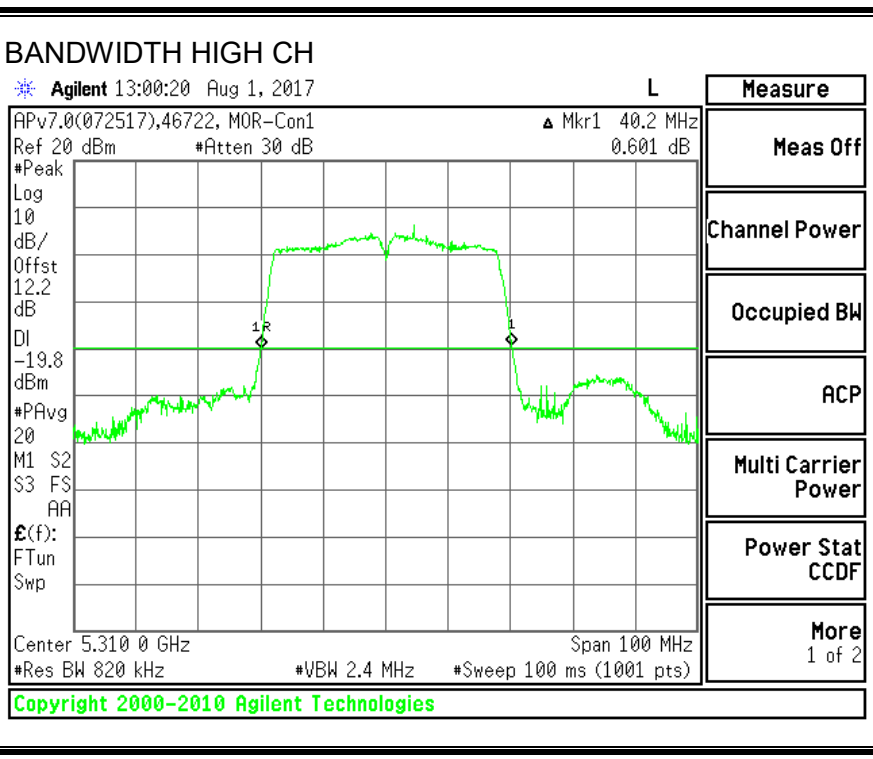
Date: 2017-08-01
Tester: John Manser

26 dB BANDWIDTH

BANDWIDTH LOW CH



BANDWIDTH HIGH CH



8.7.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

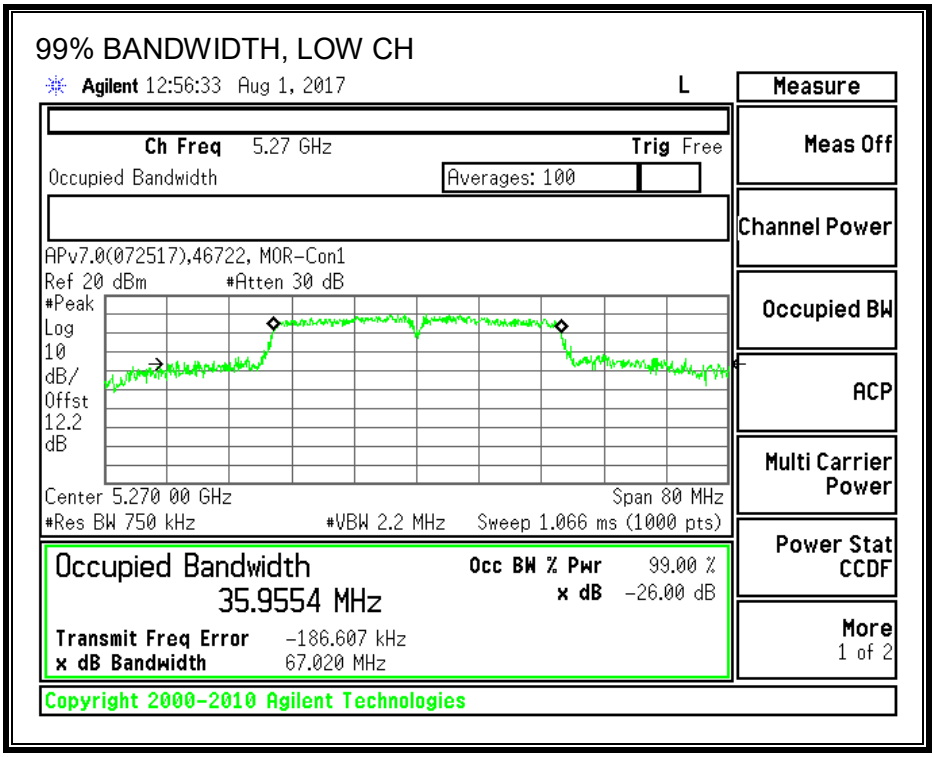
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5270	35.9554
High	5310	35.9092

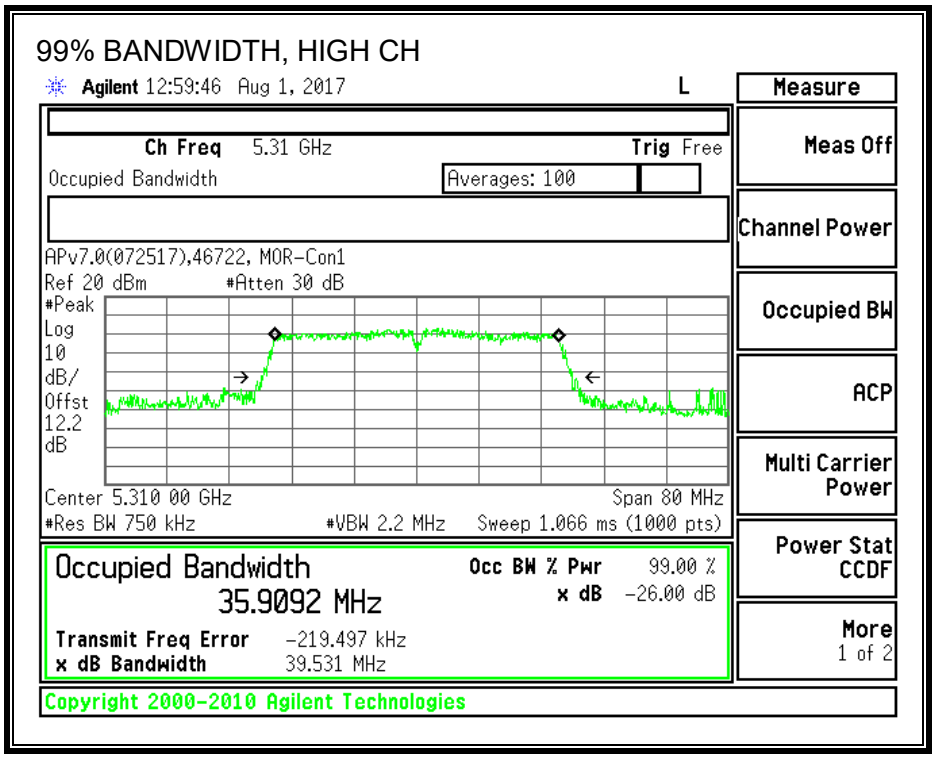
TEST INFORMATION

Date: 2017-08-01
Tester: John Manser

99% BANDWIDTH



99% BANDWIDTH, HIGH CH



8.7.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.25–5.35 GHz, the maximum conducted output power over the frequency band 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 MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5270	71.60	0.00	24.00	11.00
High	5310	40.20	0.00	24.00	11.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd Power & PSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	16.87	24.00	-7.13
High	5310	9.58	24.00	-14.42

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5270	-3.82	6.26	11.00	-4.75
High	5310	-8.64	1.44	11.00	-9.57

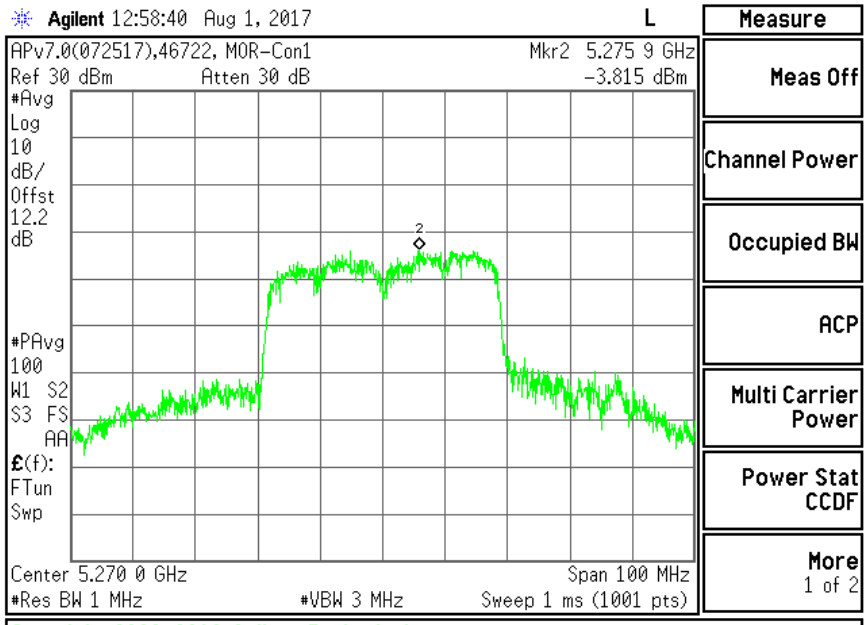
Note: Power is a gated measurement.

TEST INFORMATION

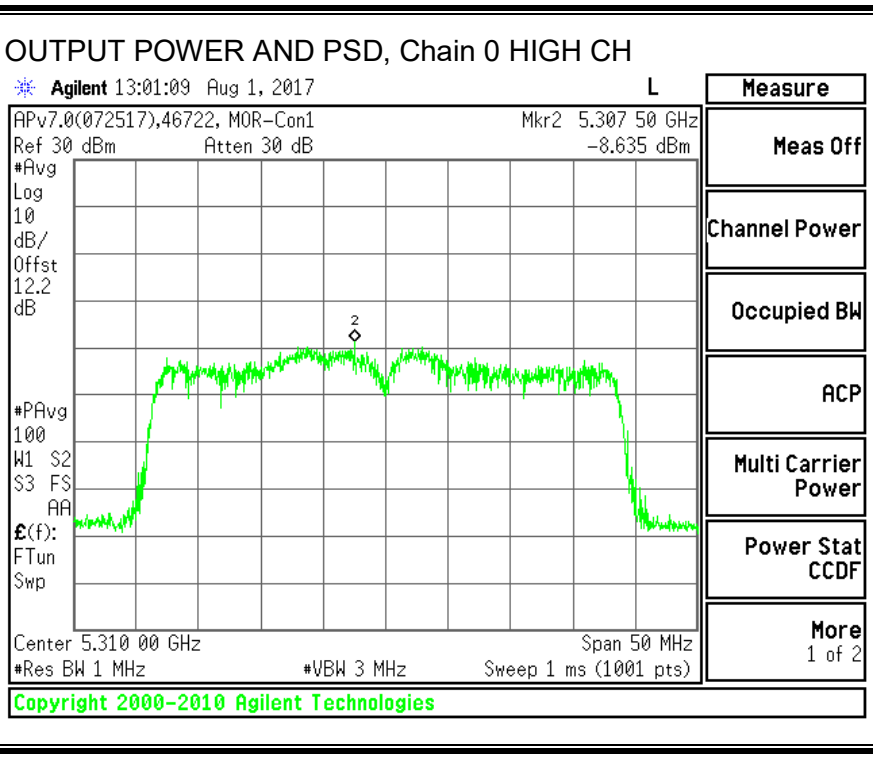
Date: 2017-08-01
Tester: John Manser

OUTPUT POWER AND PSD, Chain 0

OUTPUT POWER AND PSD, Chain 0 LOW CH



OUTPUT POWER AND PSD, Chain 0 HIGH CH



8.7.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.2 [1])

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5270	35.9554	0.00	0.00
High	5310	35.9092	0.00	0.00

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC PSD Limit (dBm)	IC Output Power Limit (dBm)
Low	5270	30.00	11.00	24.00
High	5310	30.00	11.00	24.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PPSD

Output Power Results

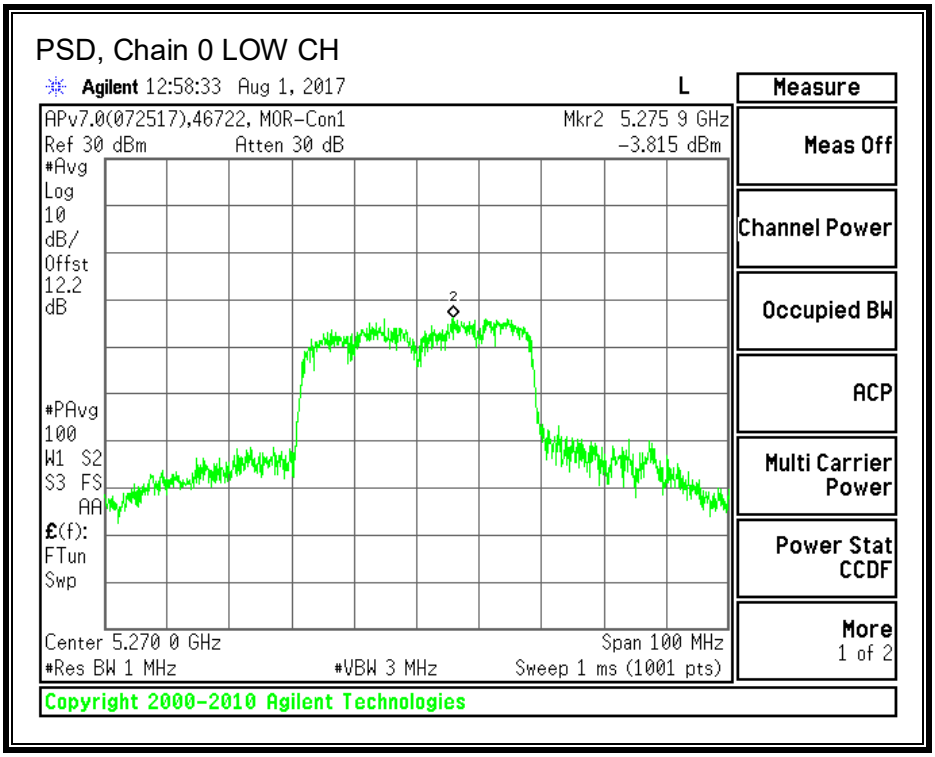
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)	Power Limit (dBm)	Power Margin (dB)
Low	5270	16.87	16.87	30.00	-13.13	24.00	-7.13
High	5310	9.58	9.58	30.00	-20.42	24.00	-14.42

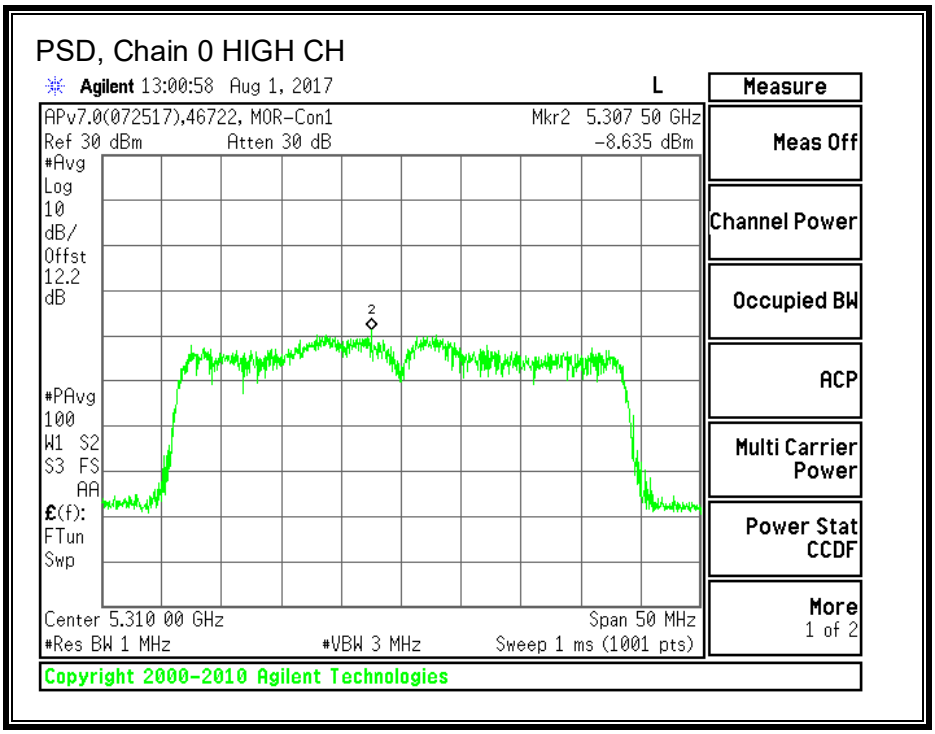
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5270	-3.82	6.25	11.00	-4.75
High	5310	-8.64	1.43	11.00	-9.57

Note: Power is a gated measurement.

PSD, Chain 0





8.8. 802.11a MODE IN THE 5.6 GHz BAND

8.8.1. 26 dB BANDWIDTH

LIMITS

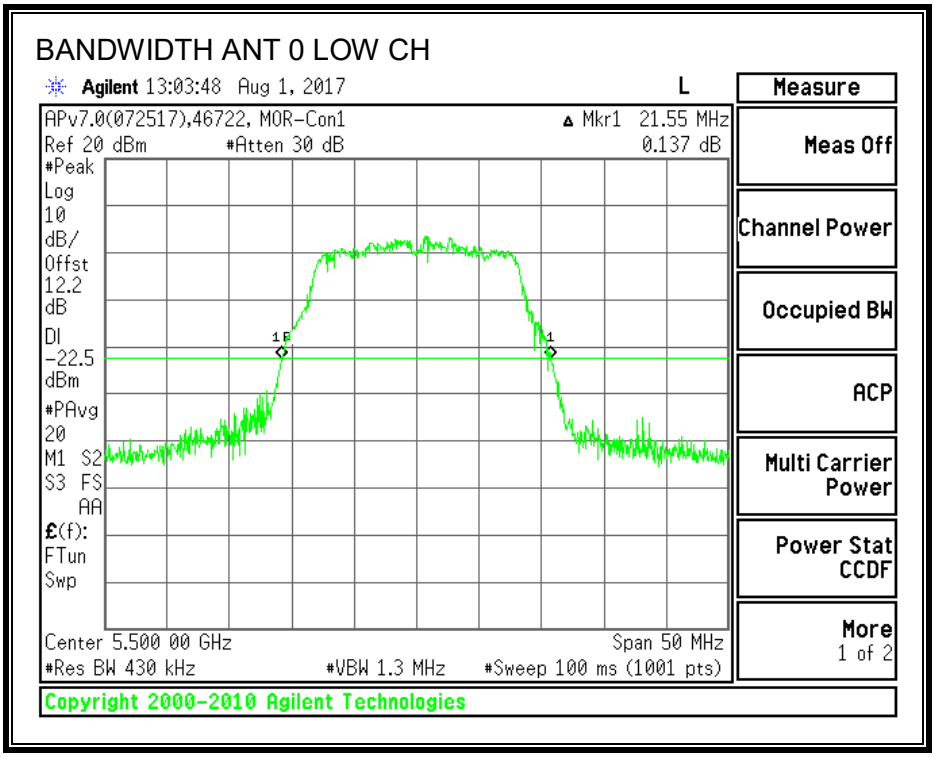
None; for reporting purposes only.

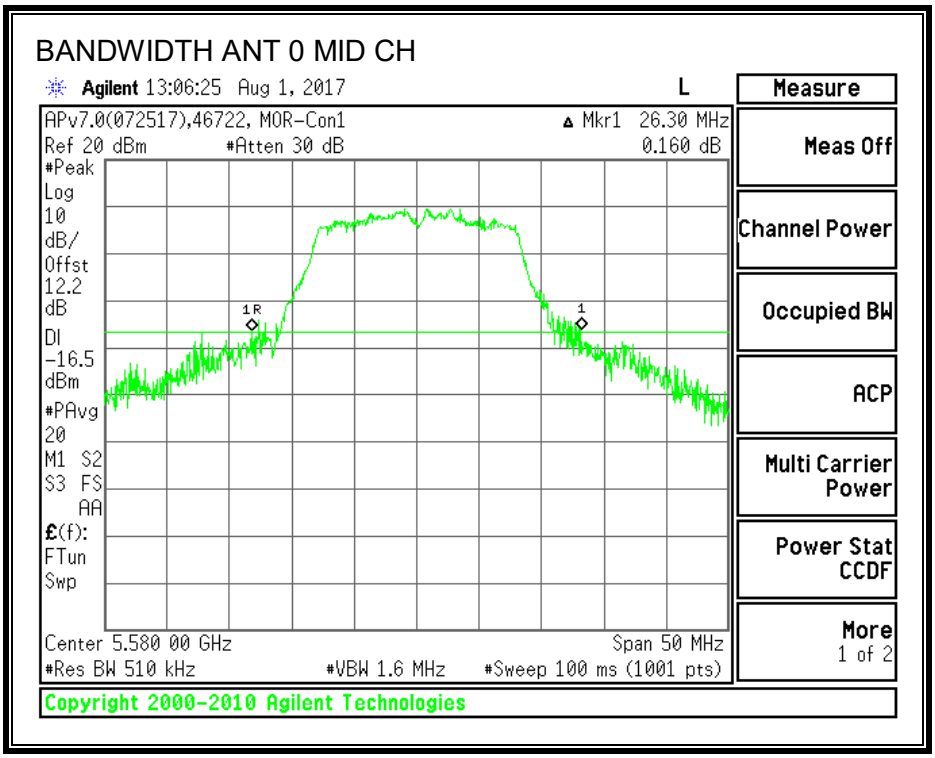
Channel	Frequency (MHz)	26 dB BW ANT 0 (MHz)
Low	5500	21.55
Mid	5580	26.30
High	5700	21.55
144	5720	21.40

TEST INFORMATION

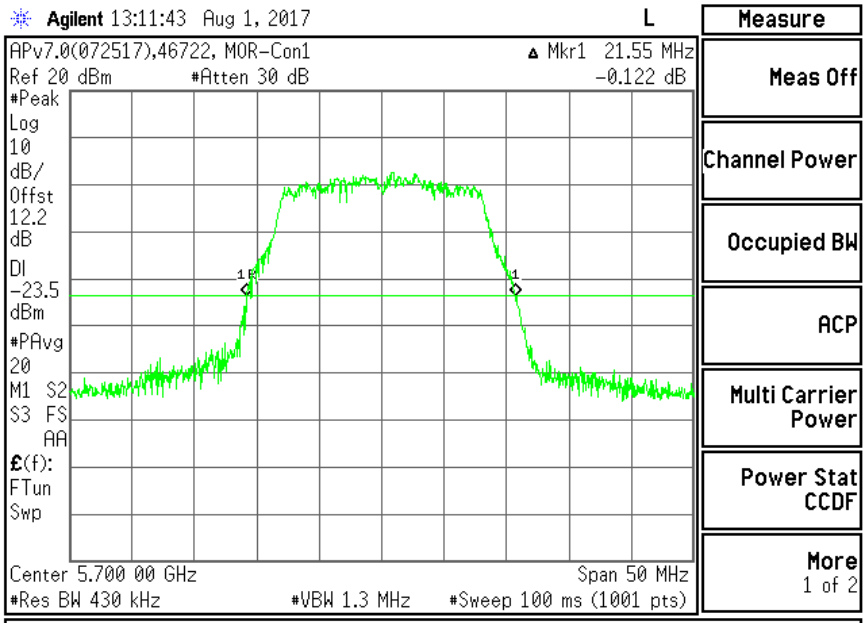
Date: 2017-08-01
Tester: John Manser

26 dB BANDWIDTH, ANT 0

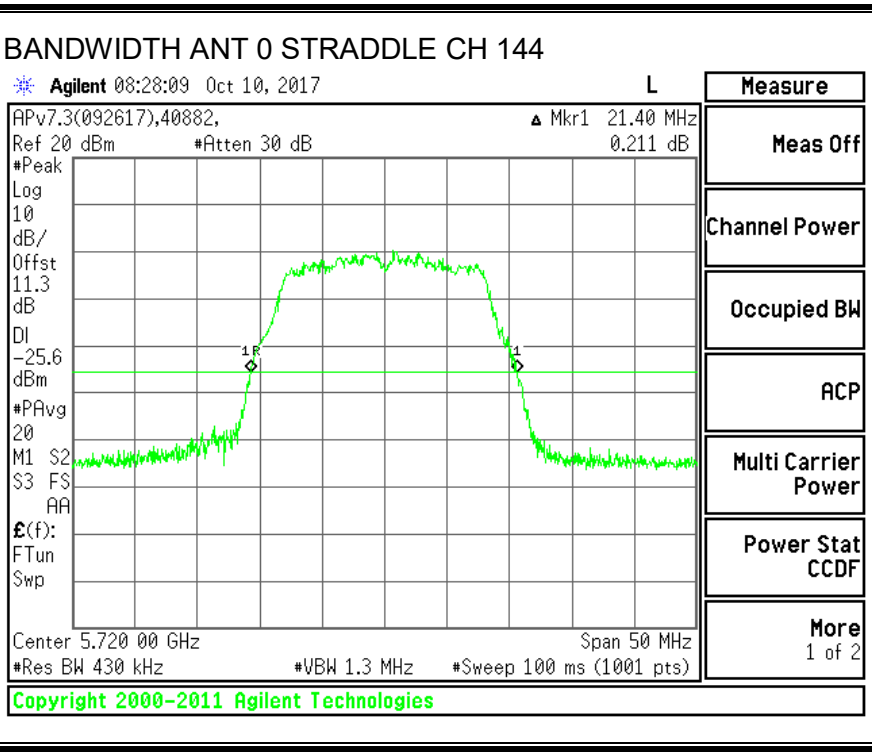




BANDWIDTH ANT 0 HIGH CH



BANDWIDTH ANT 0 STRADDLE CH 144



8.8.2. 99% BANDWIDTH

LIMITS

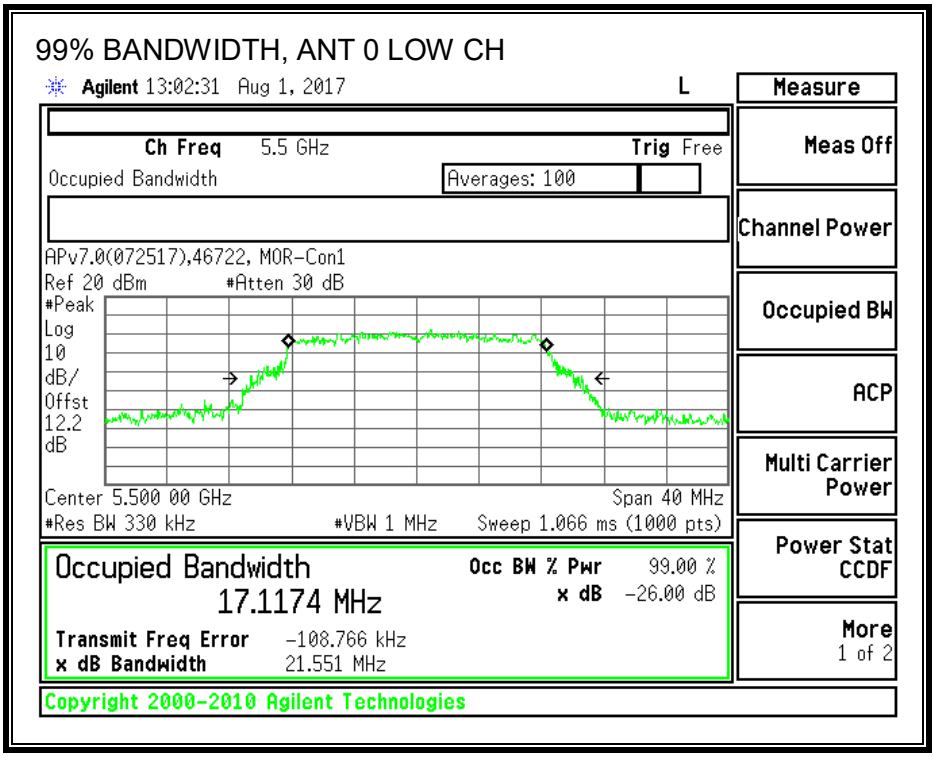
None; for reporting purposes only.

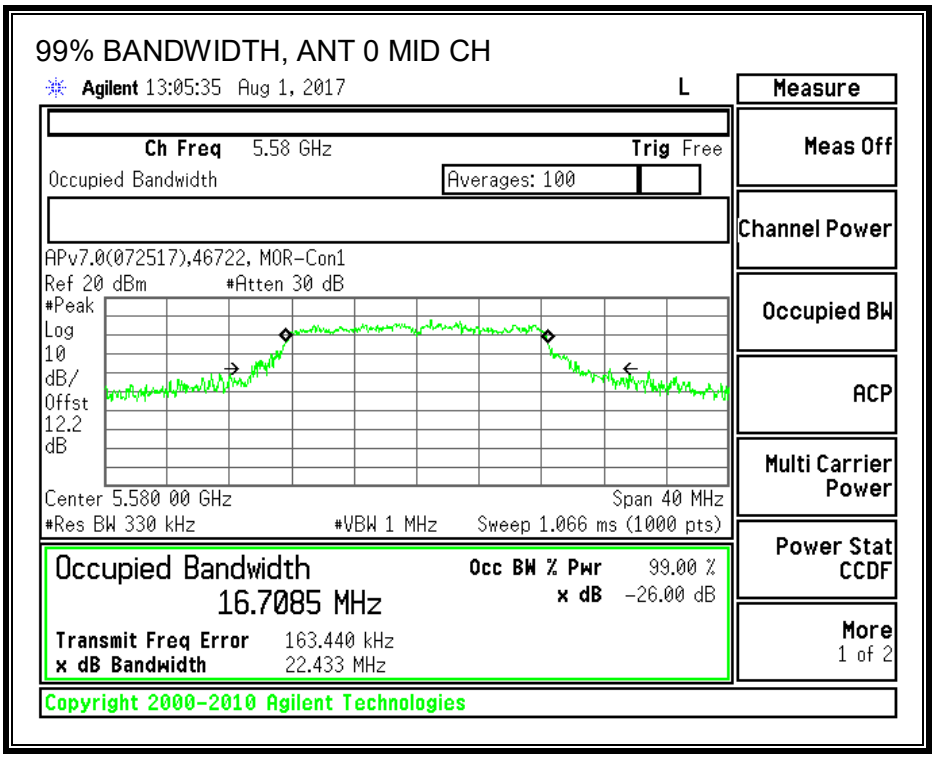
Channel	Frequency (MHz)	26 dB BW ANT 0 (MHz)
Low	5500	17.12
Mid	5580	16.71
High	5700	16.67
144	5720	16.69

TEST INFORMATION

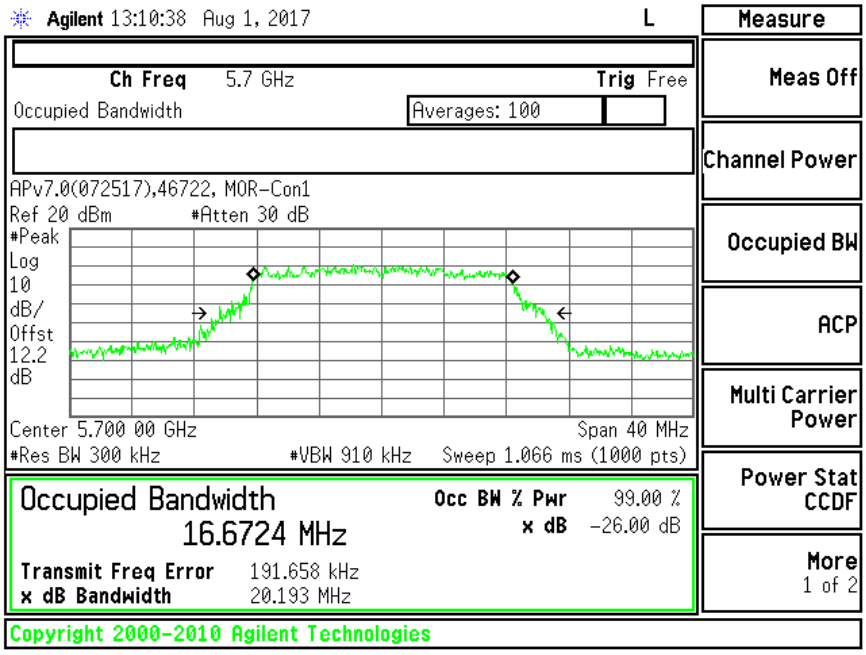
Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

99% BANDWIDTH, ANT 0

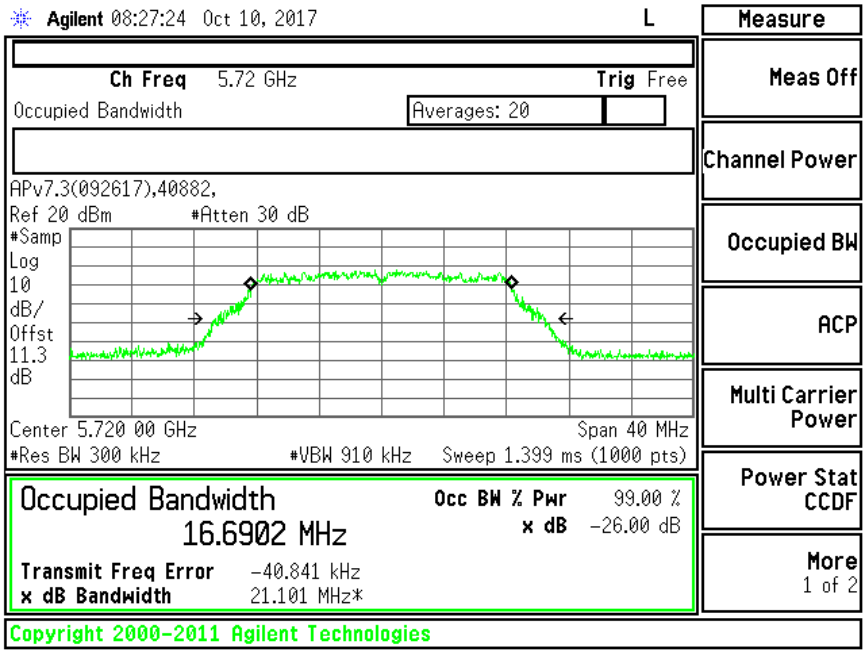




99% BANDWIDTH, ANT 0 HIGH CH



99% BANDWIDTH, ANT 0 STRADDLE CH 144



8.8.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band 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 MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There are two internal and one external antennas for diversity; therefore directional gain equals antenna gain.

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Antenna Gain Internal (dBi)	Power Limit Internal (dBm)	Power Limit External (dBm)
Low	5500	21.55	0.00	24.00	24.00
Mid	5580	26.30	0.00	24.00	24.00
High	5700	21.55	0.00	24.00	24.00
Straddle	5720	21.40	0.00	24.00	24.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.67	24.00	-14.33
Low	5520	15.30	24.00	-8.70
Mid	5580	14.85	24.00	-9.15
High	5680	14.86	24.00	-9.14
High	5700	8.82	24.00	-15.18
Straddle	5720	6.84	24.00	-17.16

Antenna Gain and Limits

Channel	Frequency (MHz)	Antenna Gain Internal (dBi)	Antenna Gain External (dBi)	PSD Limit (dBm)
Low	5500	0.00	-6.00	11.00
Mid	5580	0.00	-6.00	11.00
High	5700	0.00	-6.00	11.00
Straddle	5720	0.00	-6.00	11.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PSD

PSD Results

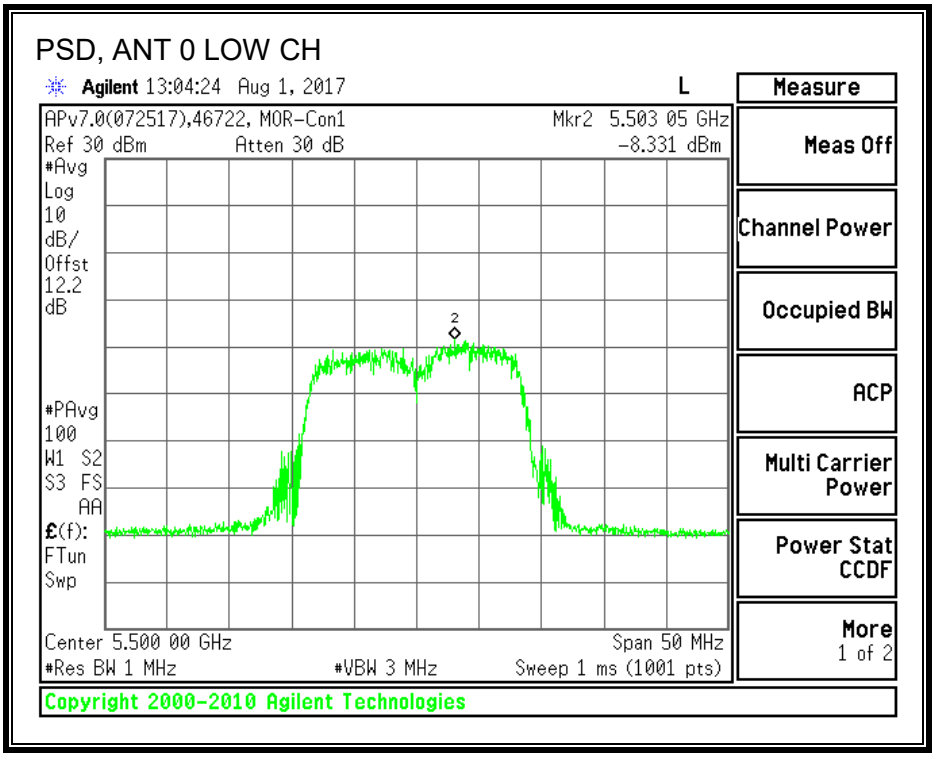
Channel	Frequency (MHz)	INT 0 Meas PSD (dBm)	INT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	-8.33	1.74	11.00	-9.26
Mid	5580	-0.85	9.22	11.00	-1.78
High	5700	-8.54	1.54	11.00	-9.47
Straddle	5720	-11.22	-1.15	11.00	-12.15

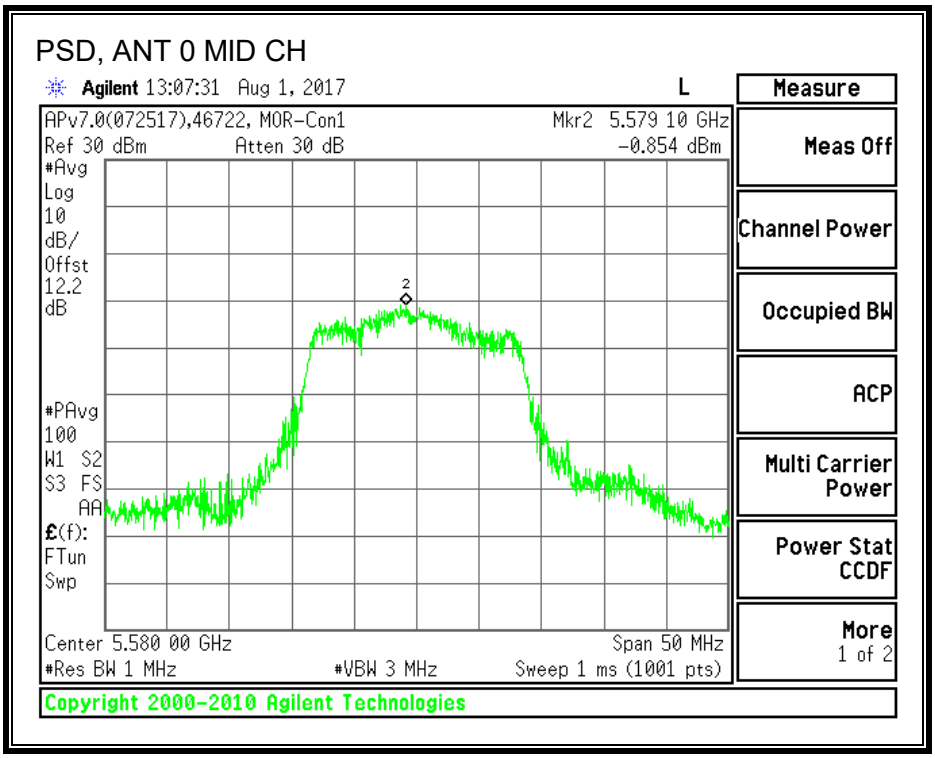
TEST INFORMATION

Date: 2017-08-01 / 2017-10-10

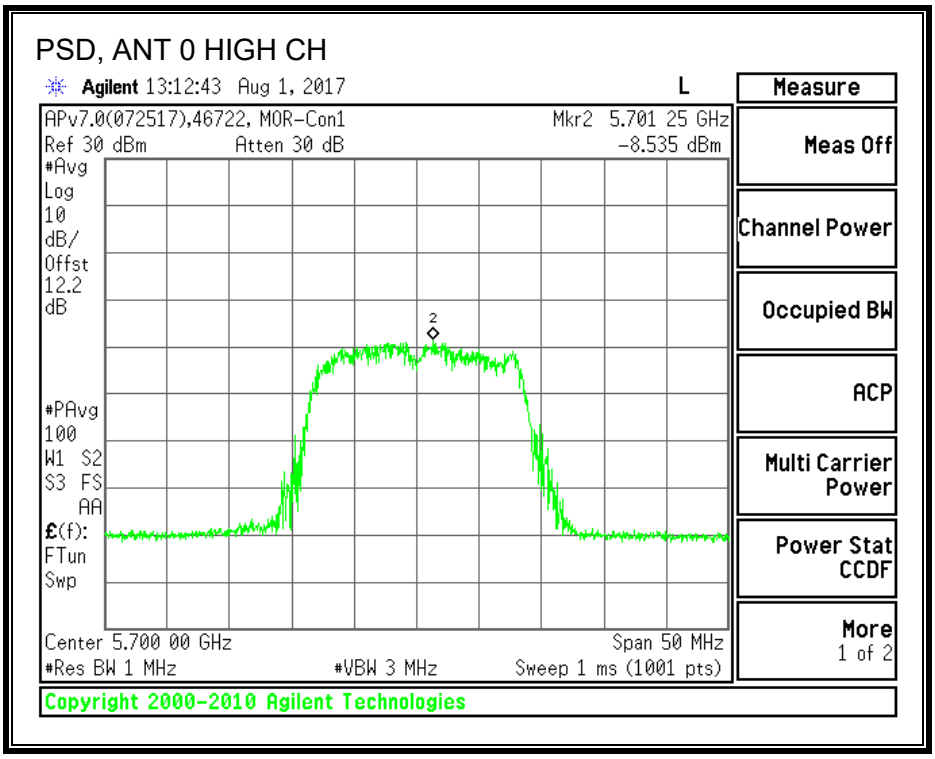
Tester: John Manser / Jeffrey Cabrera

PSD, ANT 0

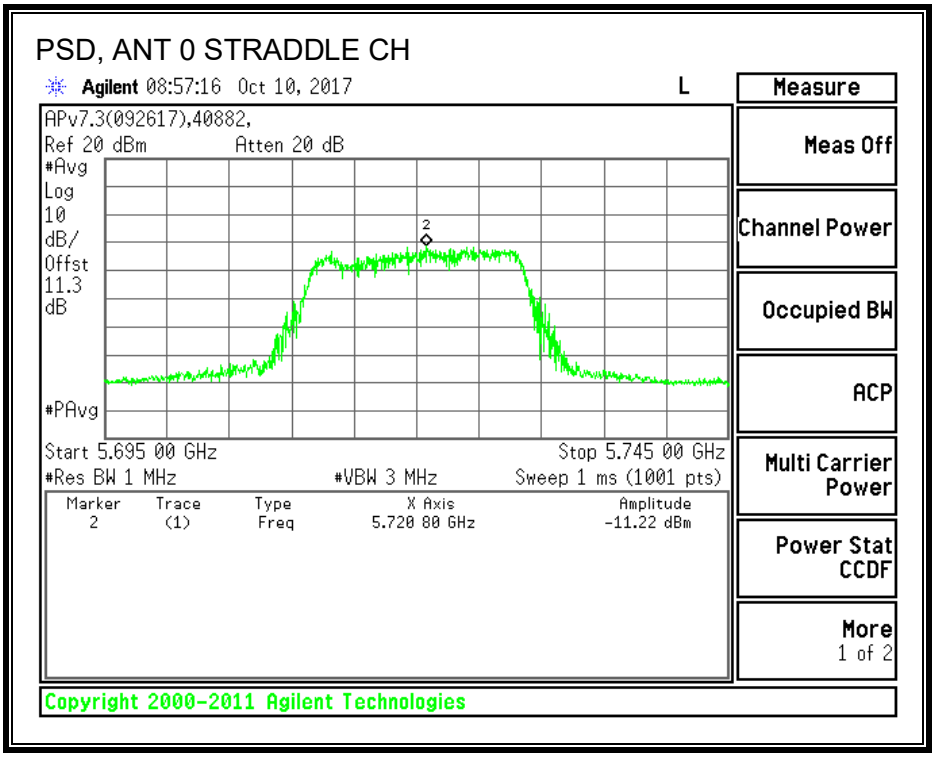




PSD, ANT 0 HIGH CH



PSD, ANT 0 STRADDLE CH



8.8.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.3 [1])

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

TEST INFORMATION

Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	17.1174	0.00	0.00
104	5520	16.6724	0.00	0.00
Mid	5580	16.7085	0.00	0.00
136	5680	16.6724	0.00	0.00
High	5700	16.6724	0.00	0.00
Straddle	5720	16.6900	0.00	0.00

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC PSD Limit (dBm)	IC Output Power Limit (dBm)
Low	5500	29.33	11.00	23.33
104	5520	29.22	11.00	23.22
Mid	5580	29.23	11.00	23.23
136	5680	29.22	11.00	23.22
High	5700	29.22	11.00	23.22
Straddle	5720	29.22	11.00	23.22

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.67	9.67	29.33	-19.66	23.33	-13.66
104	5520	15.30	15.30	29.22	-13.92	23.22	-7.92
Mid	5580	14.85	14.85	29.23	-14.38	23.23	-8.38
136	5680	14.86	14.86	29.22	-14.36	23.22	-8.36
High	5700	8.82	8.82	29.22	-20.40	23.22	-14.40
Straddle	5720	6.84	6.84	29.22	-22.38	23.22	-16.38

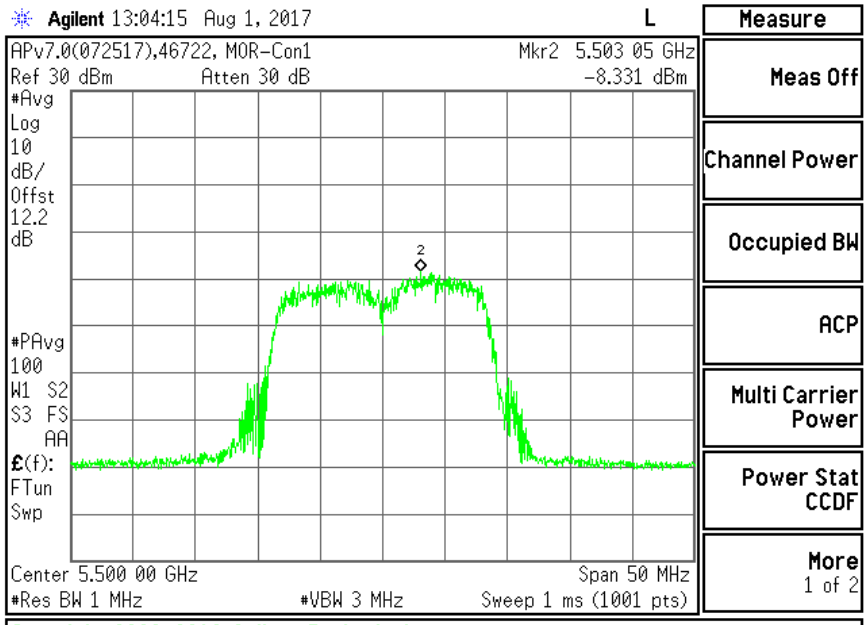
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-8.33	1.74	11.00	-9.26
Mid	5580	-0.85	9.22	11.00	-1.78
High	5700	-8.54	1.53	11.00	-9.47
Straddle	5720	-11.22	-1.15	11.00	-12.15

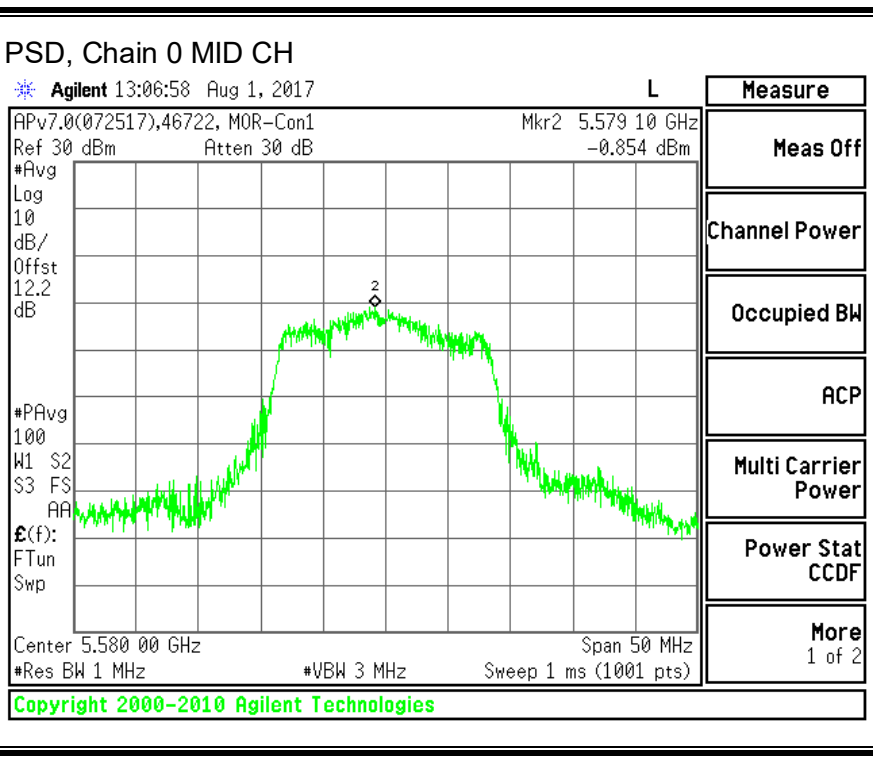
Note – Used worst-case 99% OBW for channels 104 and 136.

PSD, Chain 0

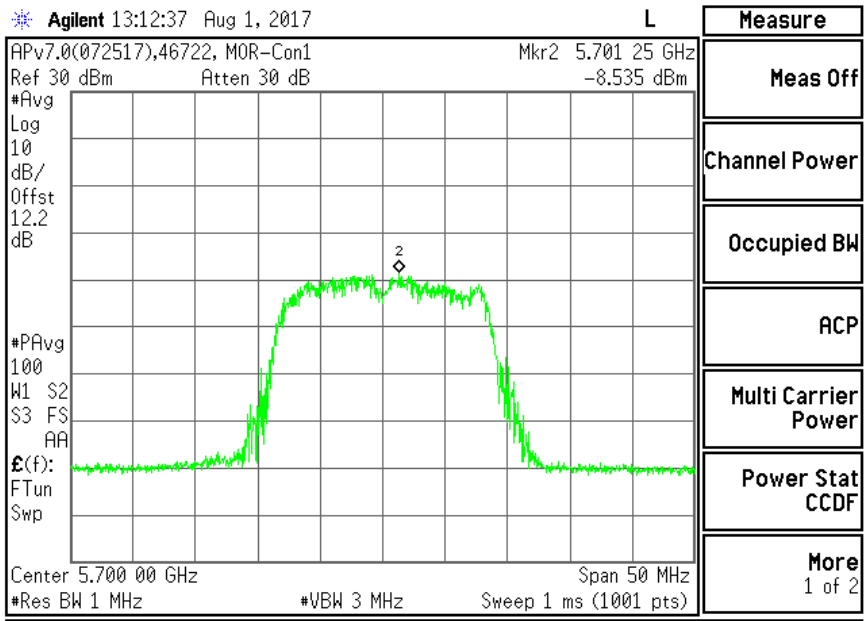
PSD, Chain 0 LOW CH



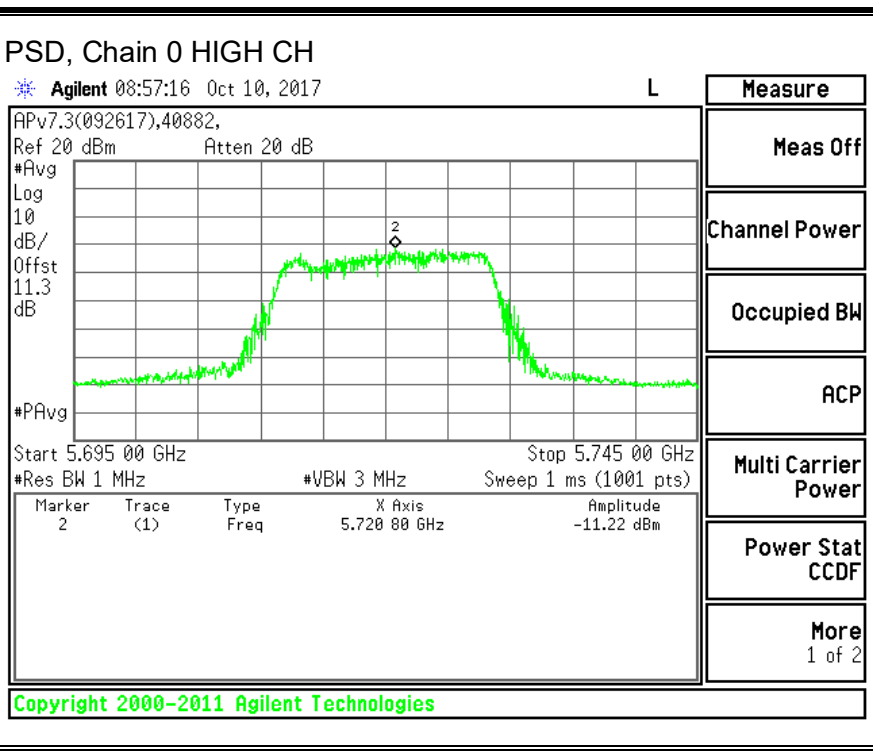
PSD, Chain 0 MID CH



PSD, Chain 0 HIGH CH



PSD, Chain 0 HIGH CH



8.9. 802.11n HT20 MODE IN THE 5.6 GHz BAND

8.9.1. 26 dB BANDWIDTH

LIMITS

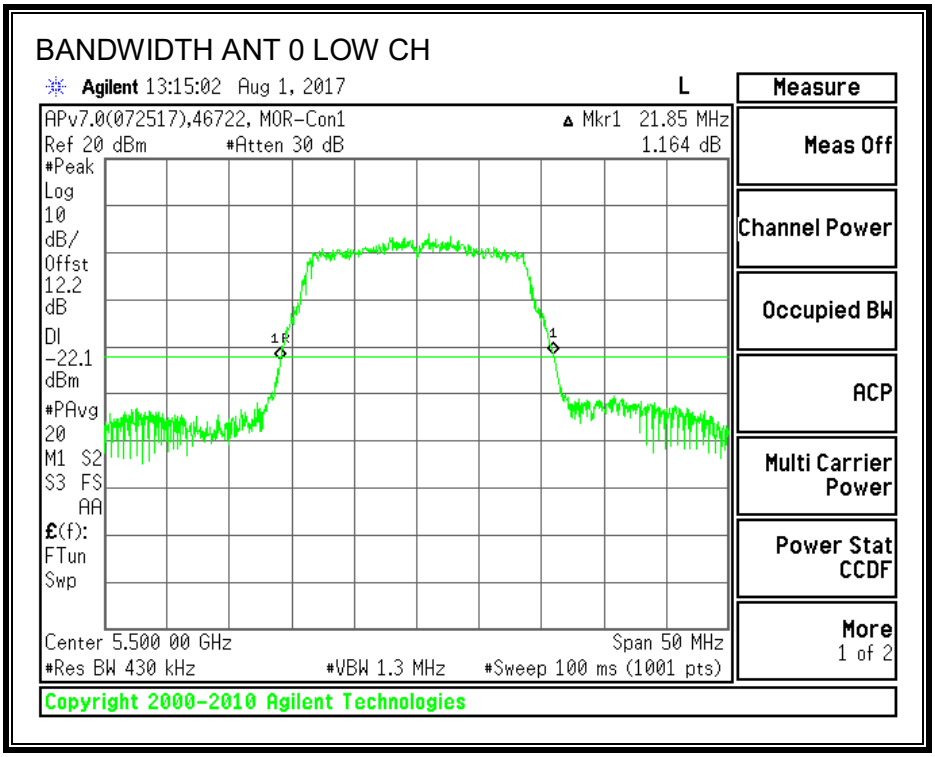
None; for reporting purposes only.

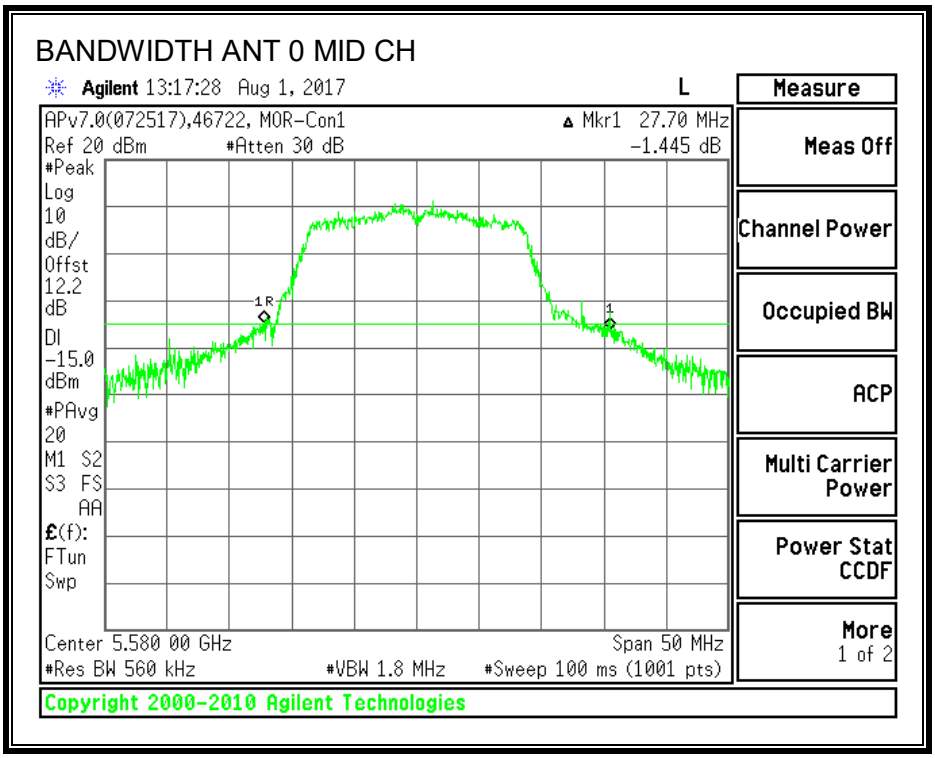
Channel	Frequency (MHz)	26 dB BW ANT 0 (MHz)
Low	5500	21.85
Mid	5580	27.70
High	5700	22.10
144	5720	22.10

TEST INFORMATION

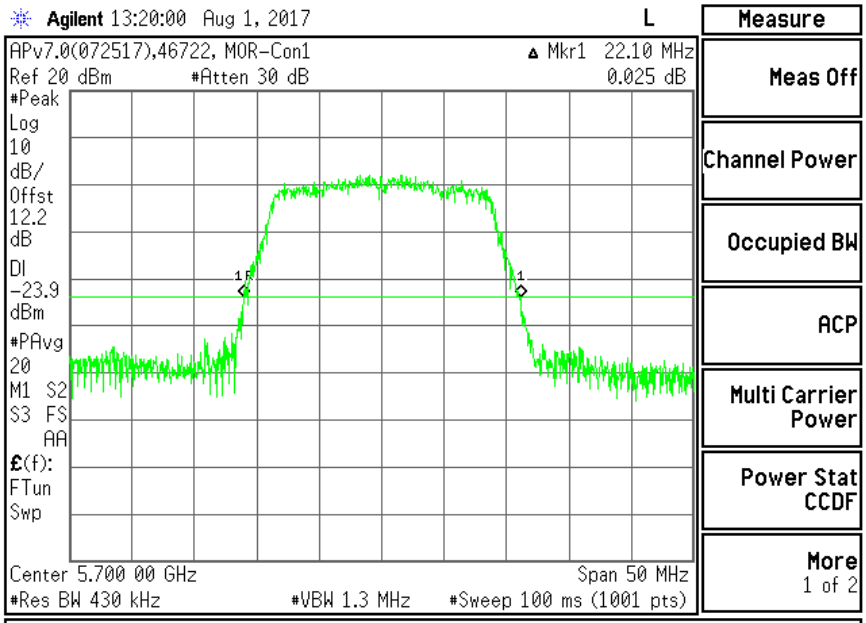
Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

26 dB BANDWIDTH, ANT 0

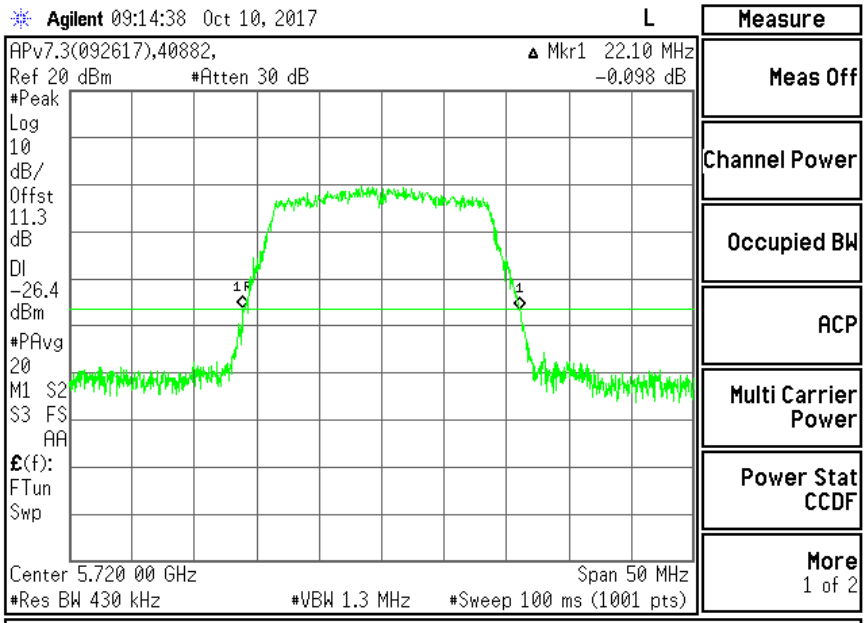




BANDWIDTH ANT 0 HIGH CH



BANDWIDTH ANT 0 STRADDLE CH 144



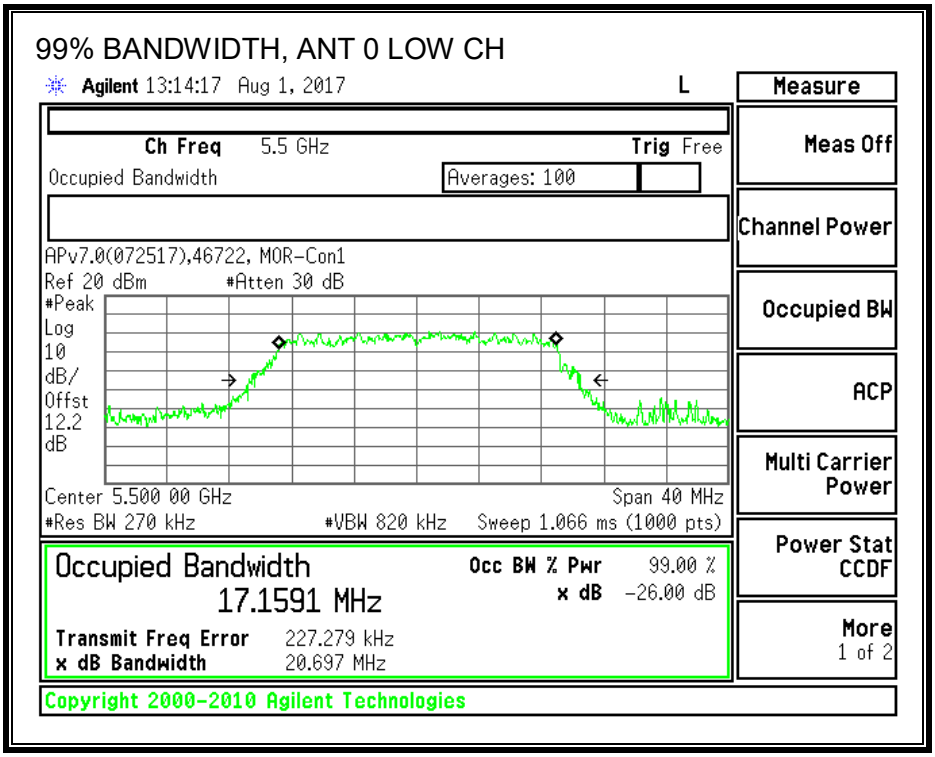
8.9.2. 99% BANDWIDTH

LIMITS

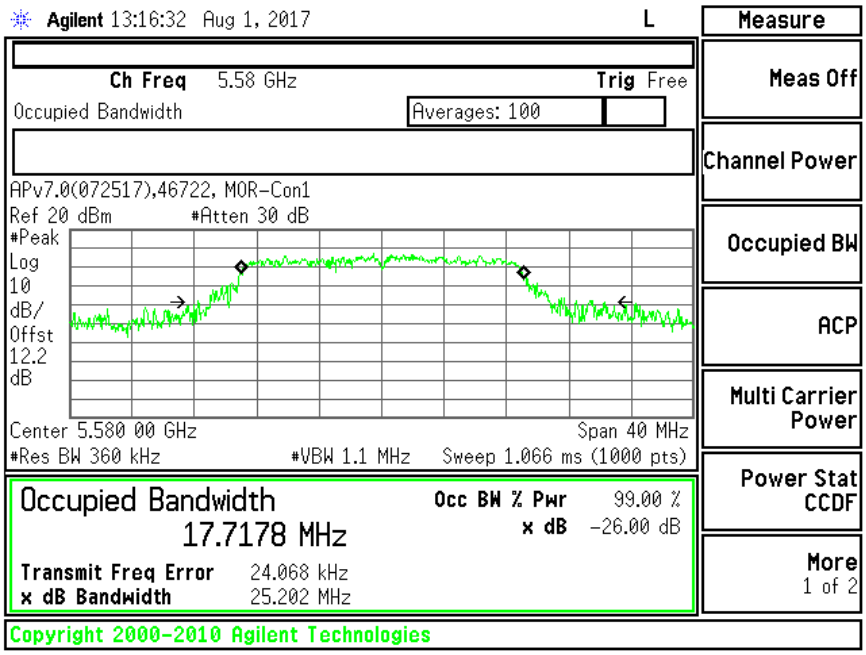
None; for reporting purposes only.

Channel	Frequency (MHz)	99% BW ANT 0 (MHz)
Low	5500	17.16
Mid	5580	17.72
High	5700	16.45
144	5720	17.81

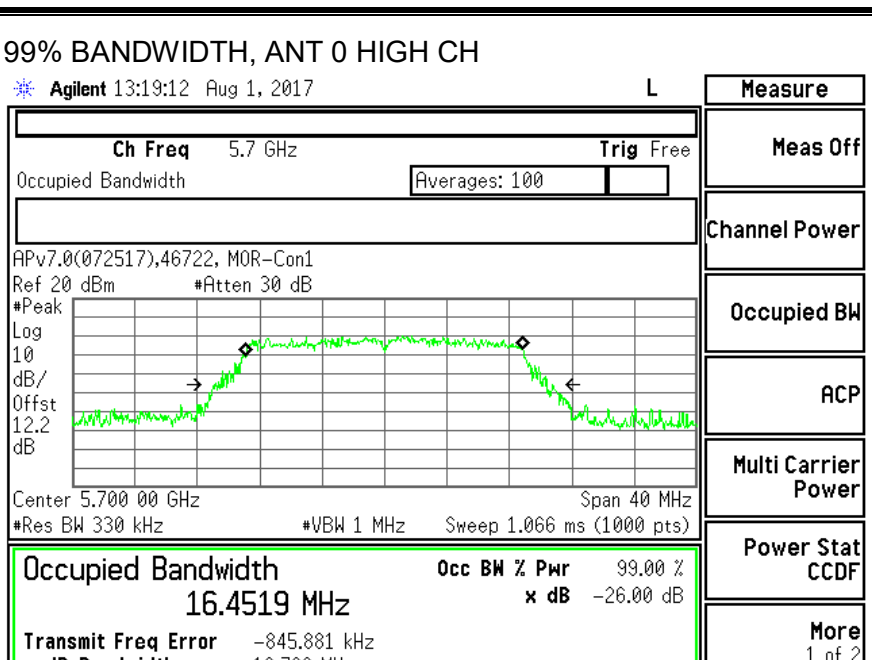
99% BANDWIDTH, ANT 0

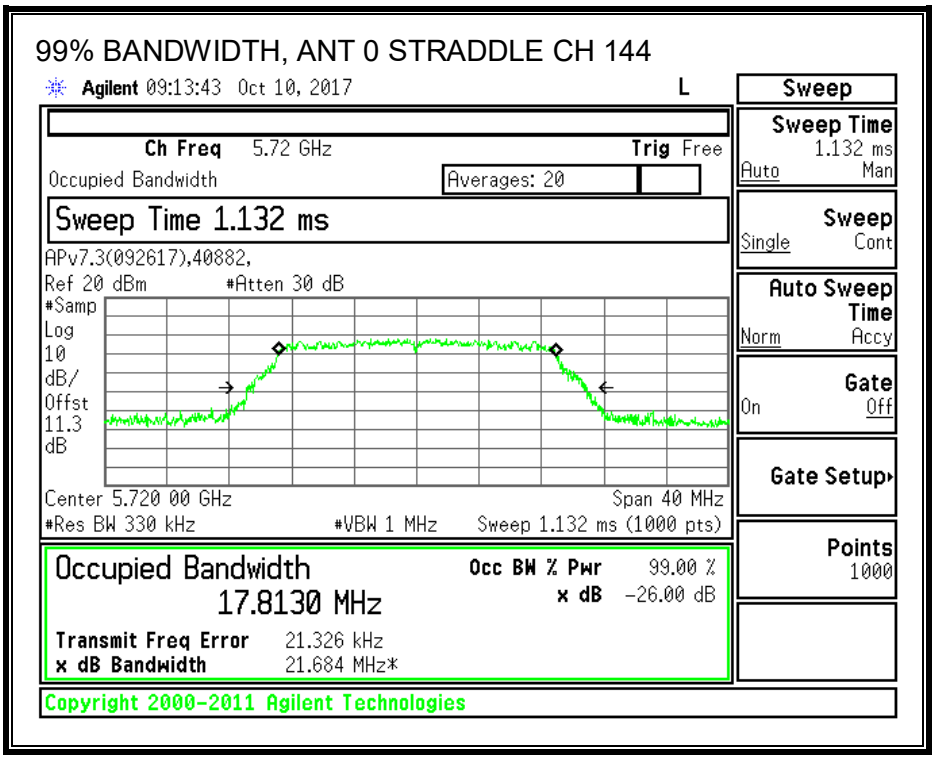


99% BANDWIDTH, ANT 0 MID CH



99% BANDWIDTH, ANT 0 HIGH CH





TEST INFORMATION

Date: 2017-08-01 / 2017-10-10

Tester: John Manser / Jeffrey Cabrera

8.9.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band 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 MHz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There are two internal and one external antennas for diversity; therefore directional gain equals antenna gain.

Bandwidth, Antenna Gain and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Antenna Gain Internal (dBi)	Power Limit Internal (dBm)
Low	5500	21.85	0.00	24.00
Mid	5580	27.70	0.00	24.00
High	5700	22.10	0.00	24.00
Straddle	5720	22.10	0.00	24.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 0 Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.35	9.35	24.00	-14.65
Low	5520	14.86	14.86	24.00	-9.14
Mid	5580	14.65	14.65	24.00	-9.35
High	5680	14.79	14.79	24.00	-9.21
High	5700	8.33	8.33	24.00	-15.67
Straddle	5720	5.81	5.81	24.00	-18.19

Antenna Gain and Limits

Channel	Frequency (MHz)	Antenna Gain Internal (dBi)	PSD Limit (dBm)
Low	5500	0.00	11.00
Mid	5580	0.00	11.00
High	5700	0.00	11.00
Straddle	5720	0.00	11.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PSD

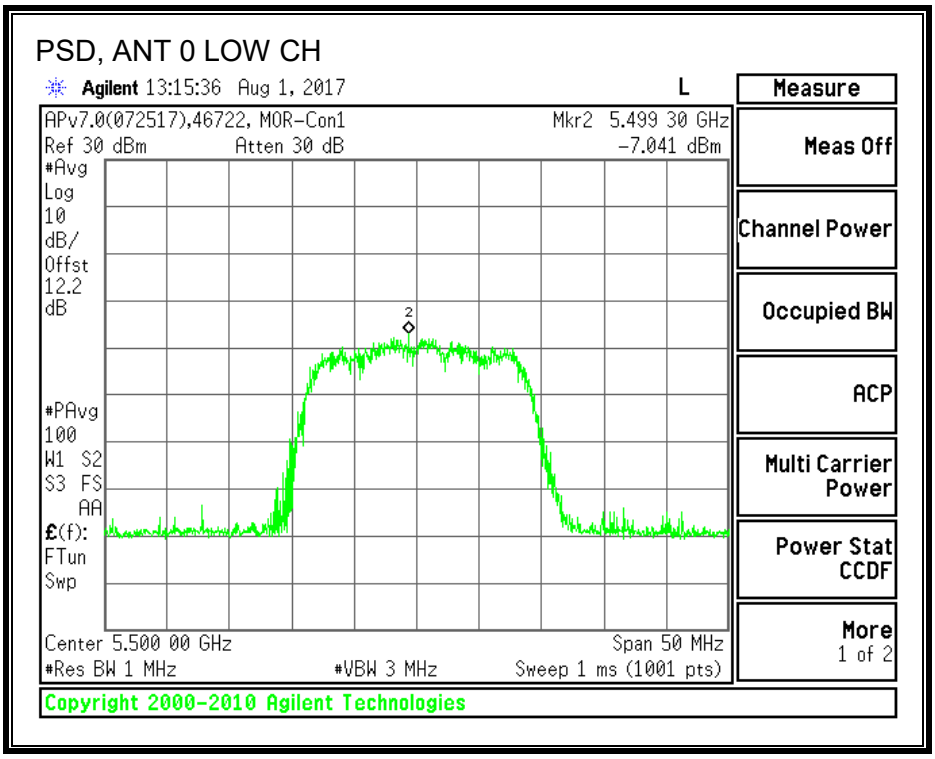
PSD Results

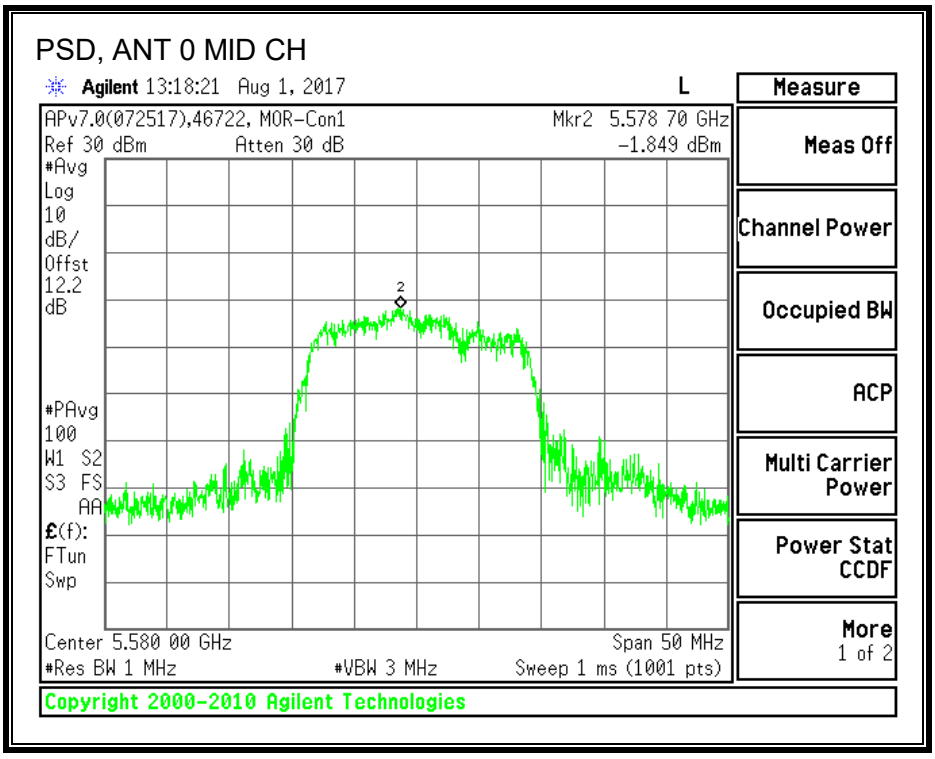
Channel	Frequency (MHz)	ANT 0 Meas PSD (dBm)	ANT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5500	-7.04	3.03	11.00	-7.97
Mid	5580	-1.85	8.22	11.00	-2.78
High	5700	-8.59	1.48	11.00	-9.52
Straddle	5720	-10.28	-0.21	11.00	-11.21

Test Information

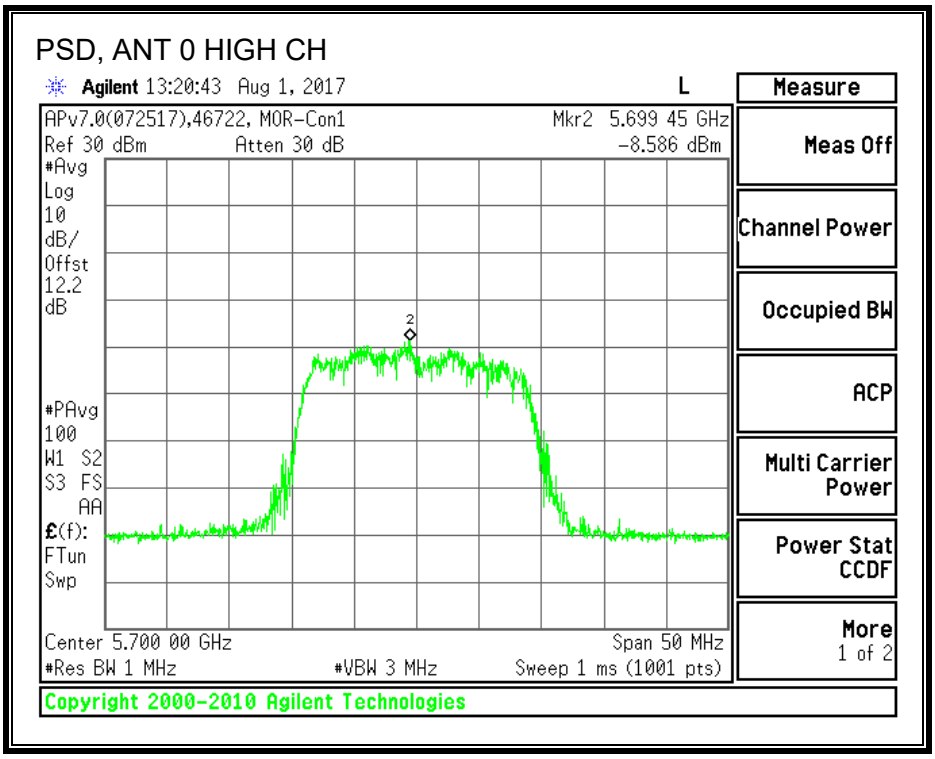
Date; 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

PSD, ANT 0

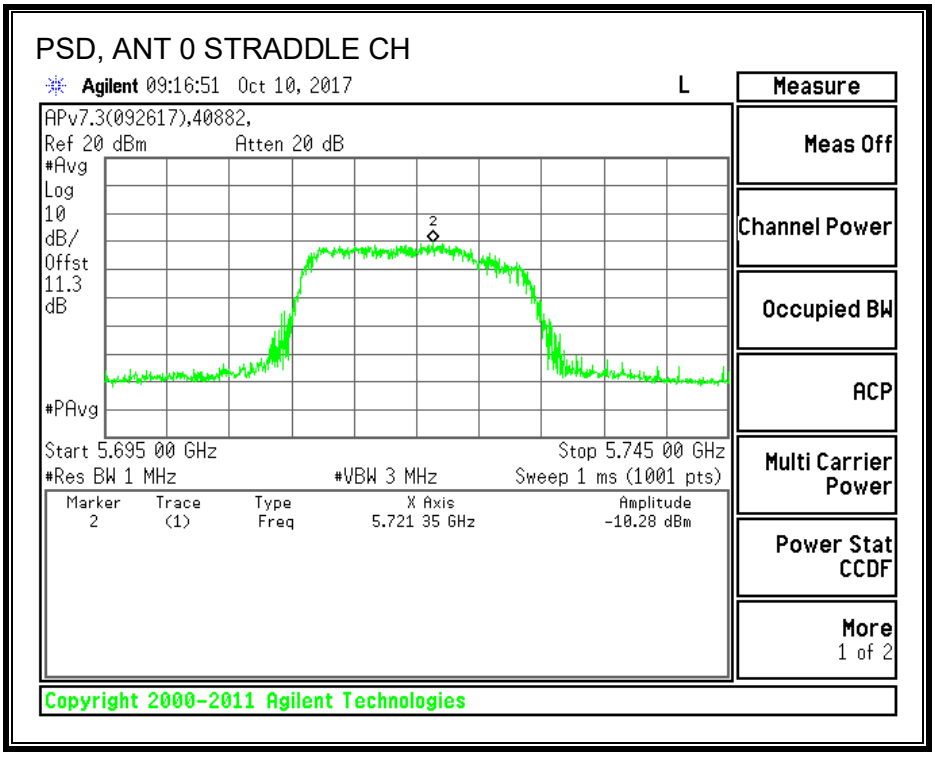




PSD, ANT 0 HIGH CH



PSD, ANT 0 STRADDLE CH



8.9.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.3 [1])

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

Test Information

Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5500	17.1591	0.00	0.00
104	5520	16.4519	0.00	0.00
Mid	5580	17.7178	0.00	0.00
136	5680	16.4519	0.00	0.00
High	5700	16.4519	0.00	0.00
Straddle	5720	17.8130	0.00	0.00

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC PSD Limit (dBm)	IC Output Power Limit (dBm)
Low	5500	29.34	11.00	23.34
104	5520	29.16	11.00	23.16
Mid	5580	29.48	11.00	23.48
136	5680	29.16	11.00	23.16
High	5700	29.16	11.00	23.16
Straddle	5720	29.51	11.00	23.51

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PPSD

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)	Power Limit (dBm)	Power Margin (dB)
Low	5500	9.35	9.35	29.34	-19.99	23.34	-13.99
104	5520	14.86	14.86	29.16	-14.30	23.16	-8.30
Mid	5580	14.65	14.65	29.48	-14.83	23.48	-8.83
136	5680	14.79	14.79	29.16	-14.37	23.16	-8.37
High	5700	8.33	8.33	29.16	-20.83	23.16	-14.83
Straddle	5720	5.81	5.81	29.51	-23.70	23.51	-17.70

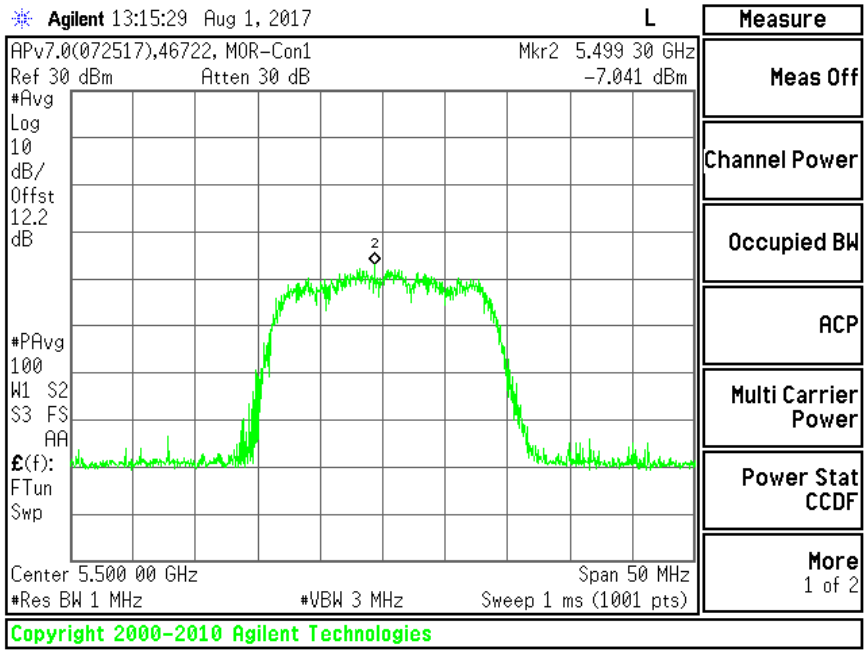
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	-7.04	3.03	11.00	-7.97
Mid	5580	-1.85	8.22	11.00	-2.78
High	5700	-8.59	1.48	11.00	-9.52
Straddle	5720	-10.28	-0.21	11.00	-11.21

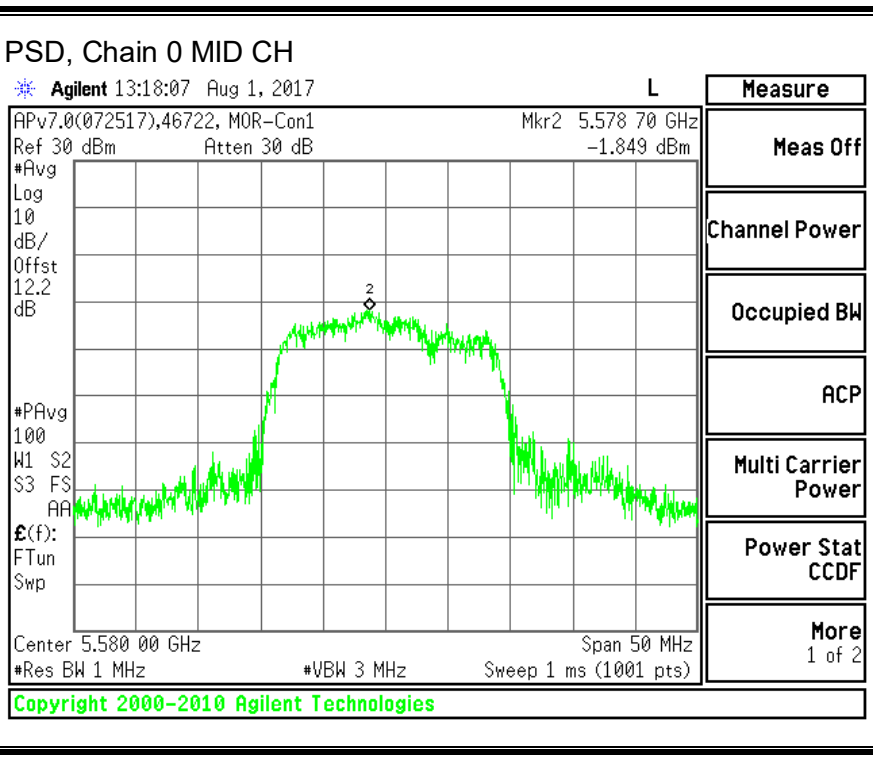
Note – Used worst-case 99% OBW for channels 104 and 136.

PSD, Chain 0

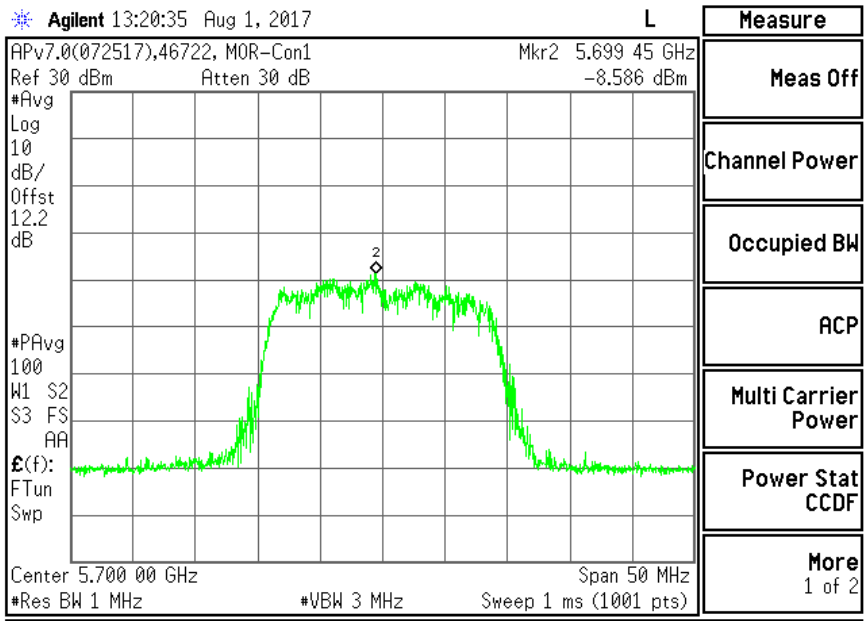
PSD, Chain 0 LOW CH



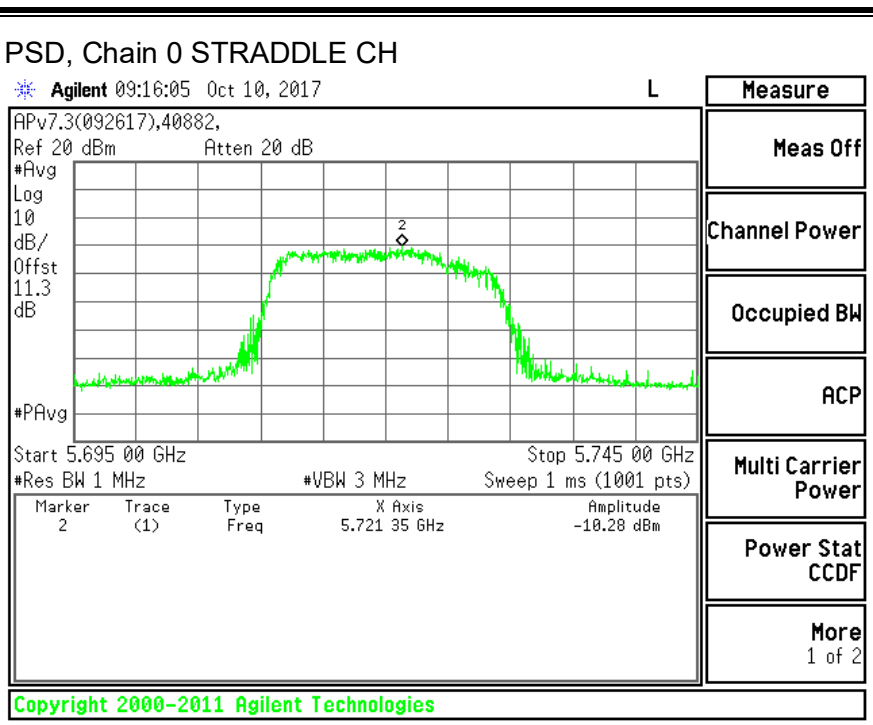
PSD, Chain 0 MID CH



PSD, Chain 0 HIGH CH



PSD, Chain 0 STRADDLE CH



8.10. 802.11n HT40 MODE IN THE 5.6 GHz BAND

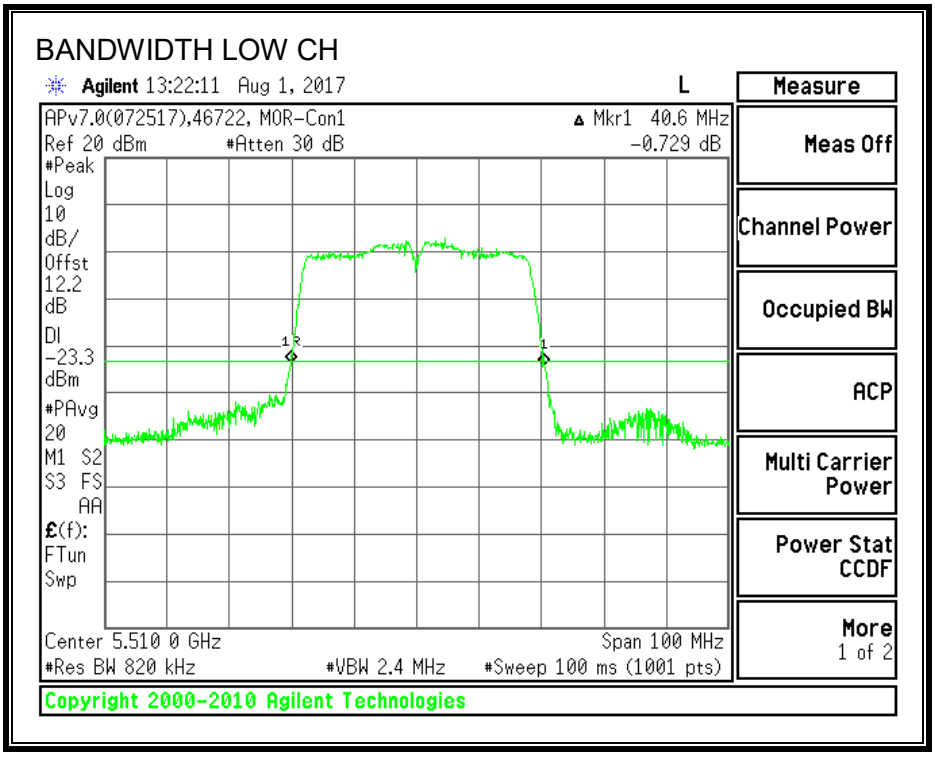
8.10.1. 26 dB BANDWIDTH

LIMITS

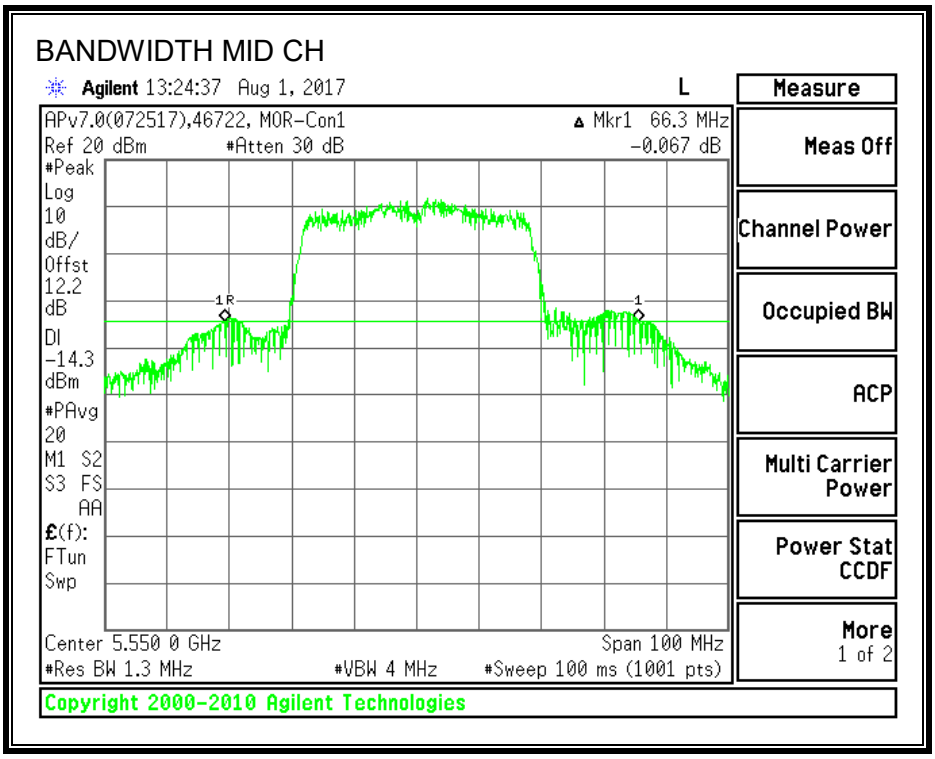
None; for reporting purposes only.

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
Low	5510	40.60
Mid	5550	66.30
High	5670	64.80
Straddle	5710	40.70

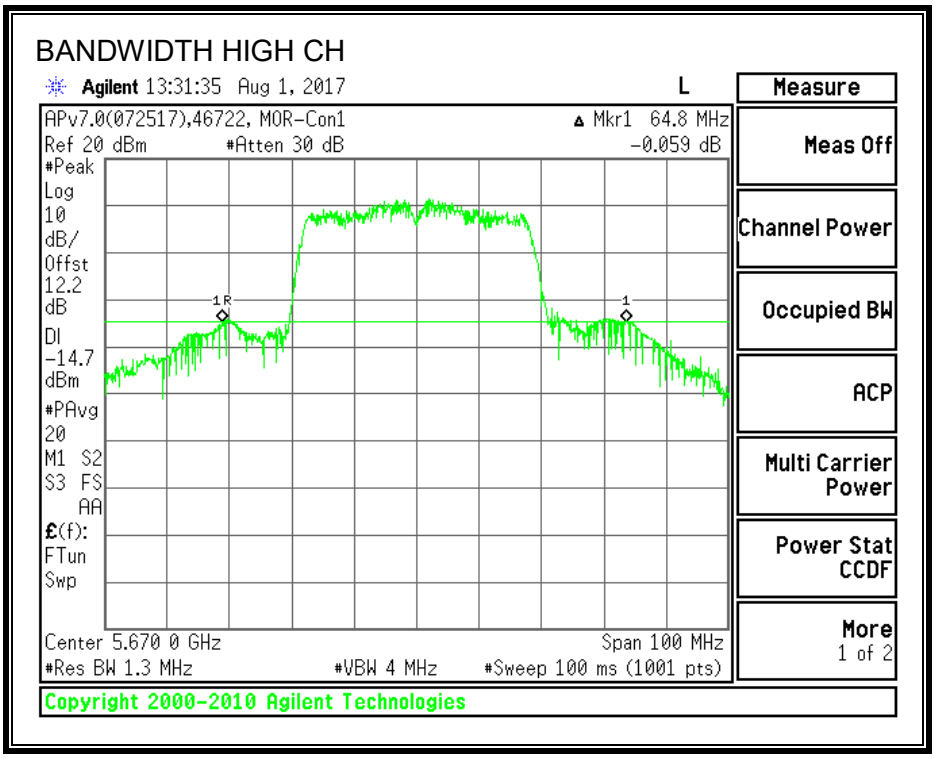
26 dB BANDWIDTH

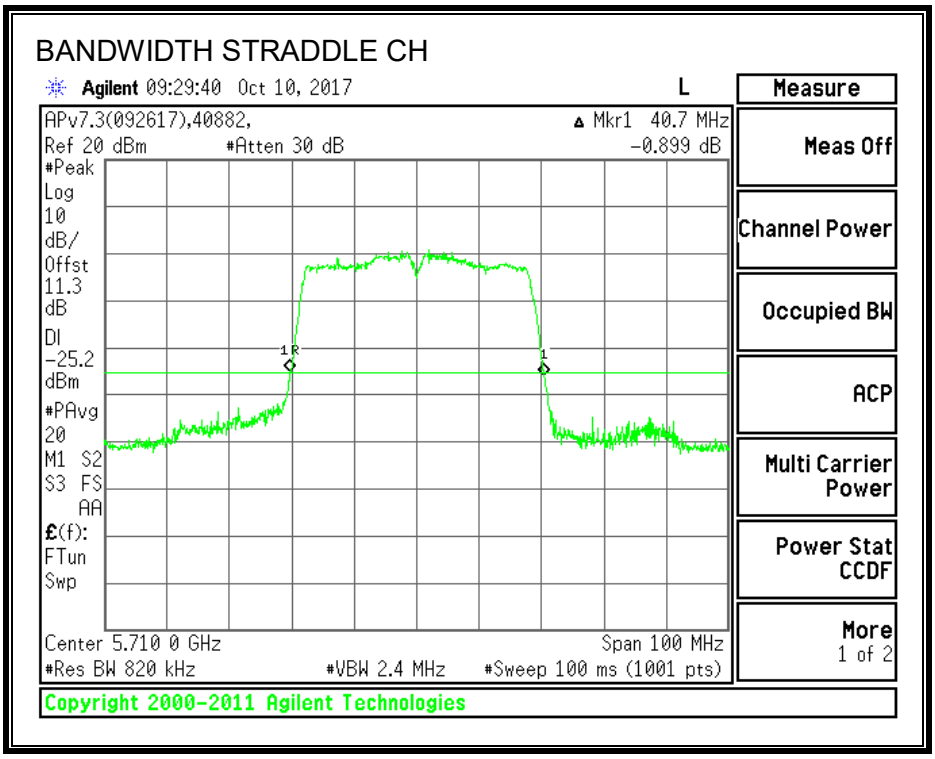


BANDWIDTH MID CH



BANDWIDTH HIGH CH





Test Information

Date; 2017-08-01 / 2017-10-10

Tester: John Manser / Jeffrey Cabrera

8.10.2. 99% BANDWIDTH

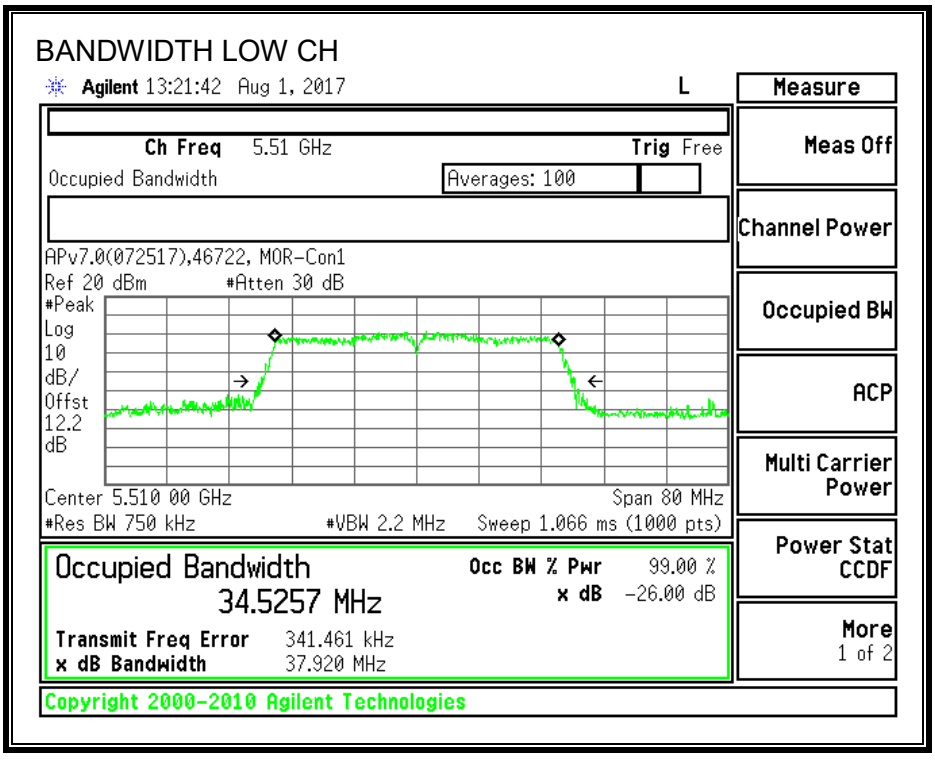
LIMITS

None; for reporting purposes only.

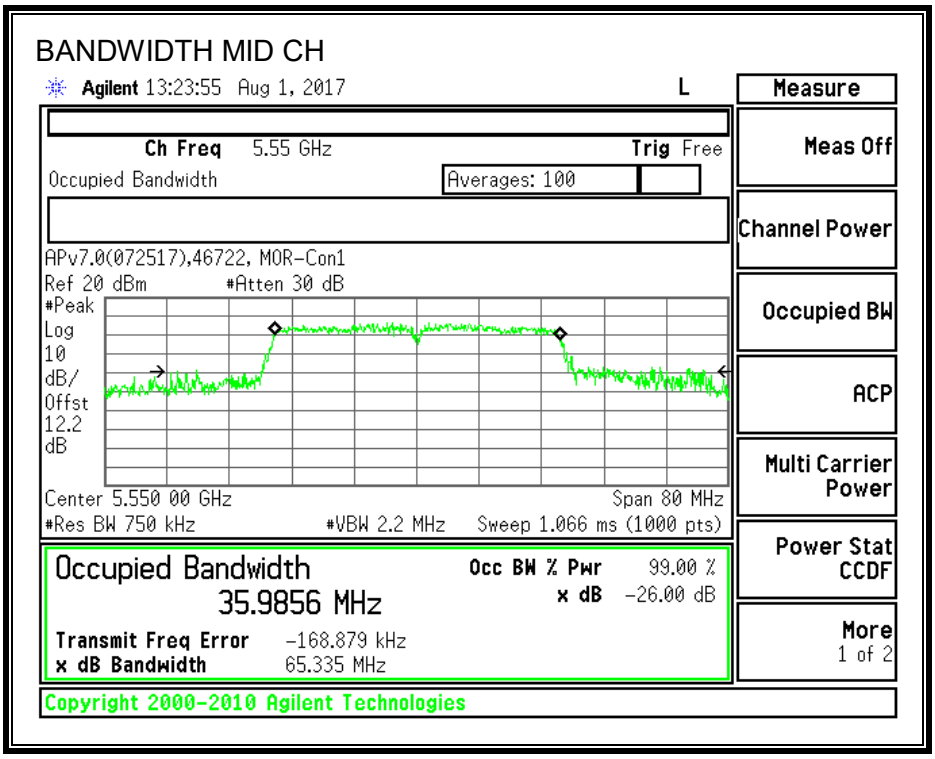
RESULTS

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	5510	34.5257
Mid	5550	35.9856
High	5670	33.0219
Straddle	5710	32.5930

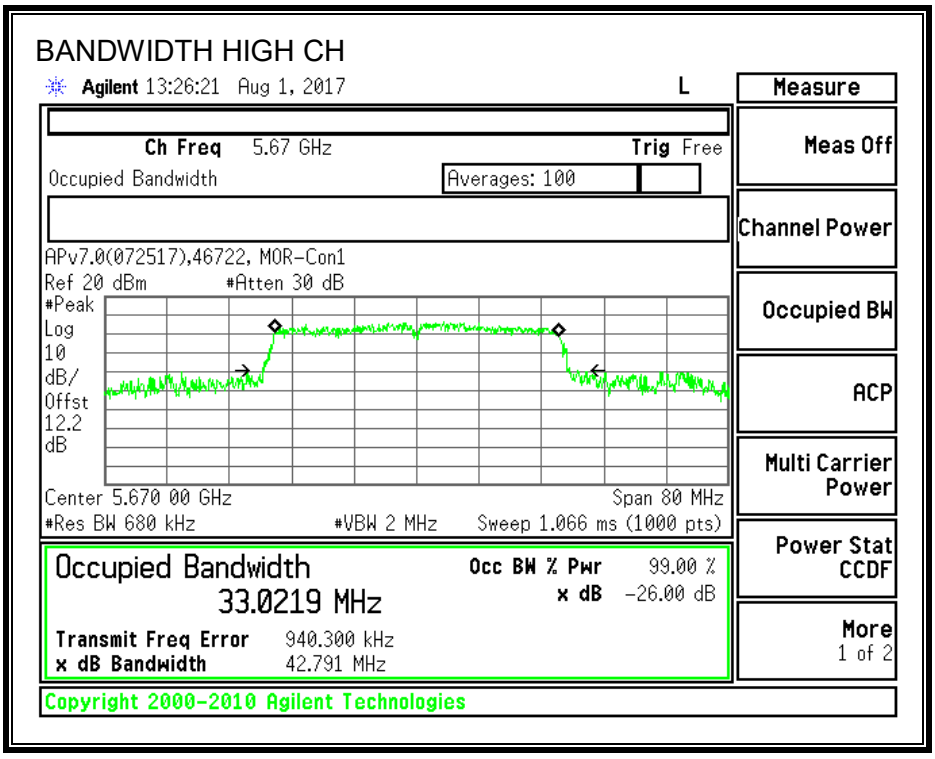
99% BANDWIDTH

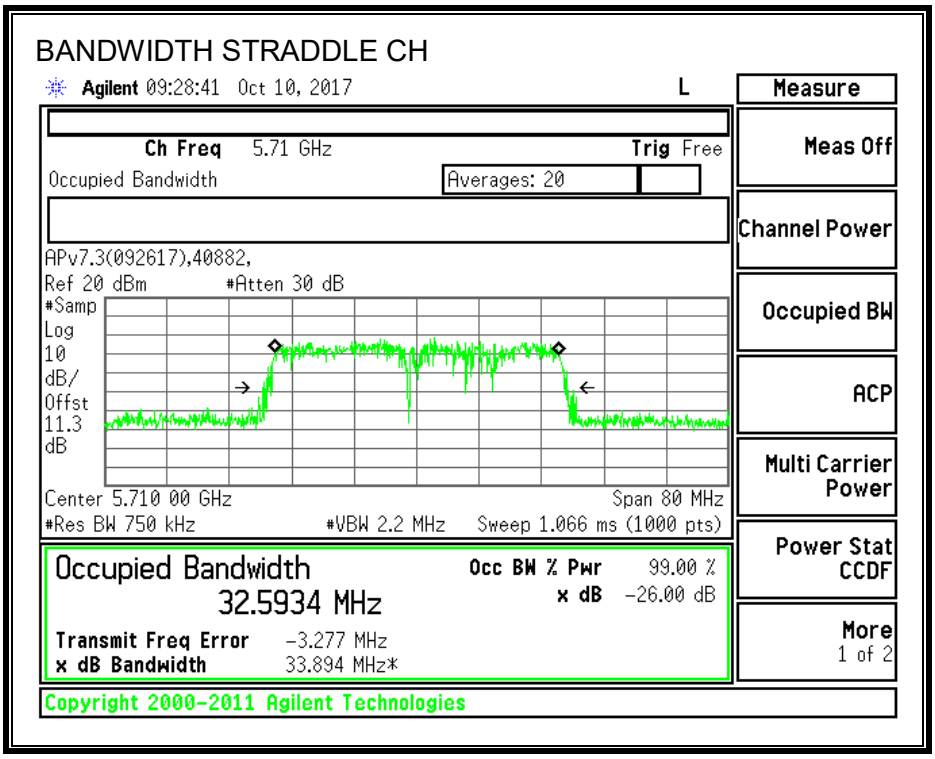


BANDWIDTH MID CH



BANDWIDTH HIGH CH





Test Information

Date; 2017-08-01 / 2017-10-10

Tester: John Manser / Jeffrey Cabrera

8.10.3. OUTPUT POWER AND PSD

LIMITS

FCC §15.407 (a) (2)

For the band 5.47–5.725 GHz, the maximum conducted output power over the frequency band 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 MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

Test Information

Date; 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

RESULTS

Bandwidth, Antenna Gain, and Limits

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Directional Gain (dBi)	Power Limit (dBm)	PSD Limit (dBm)
Low	5510	40.60	0.00	24.00	11.00
Mid	5550	66.30	0.00	24.00	11.00
High	5670	64.80	0.00	24.00	11.00
Straddle	5710	40.70	0.00	24.00	11.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd Power & PSD

Output Power Results

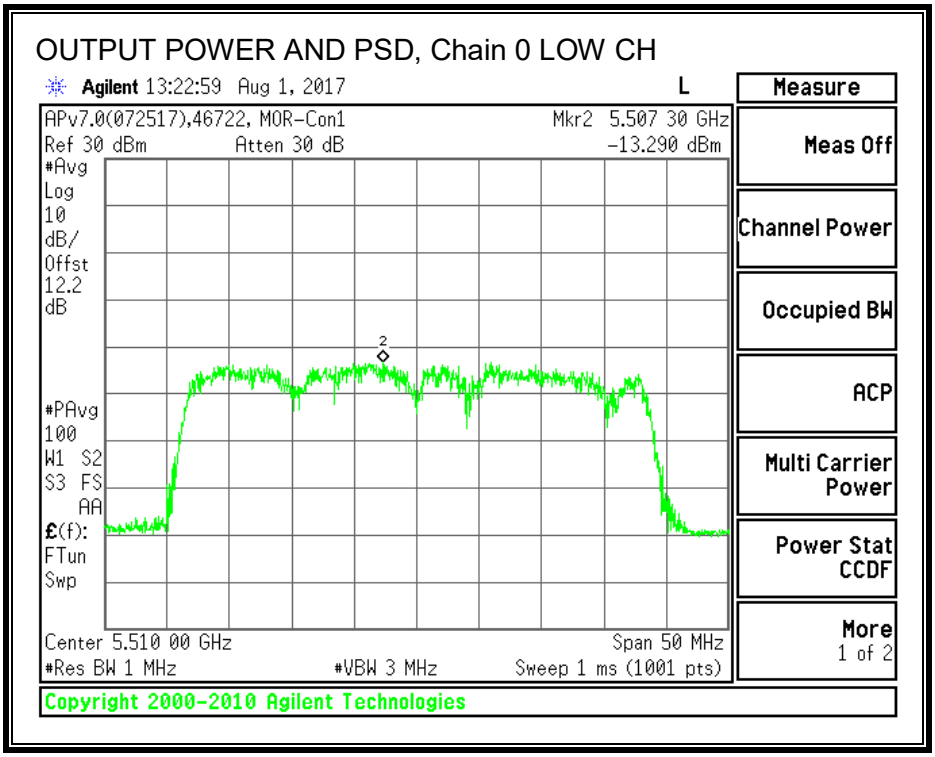
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	16.87	24.00	-7.13
Mid	5550	16.87	24.00	-7.13
High	5670	9.58	24.00	-14.42
Straddle	5710	5.81	24.00	-18.19

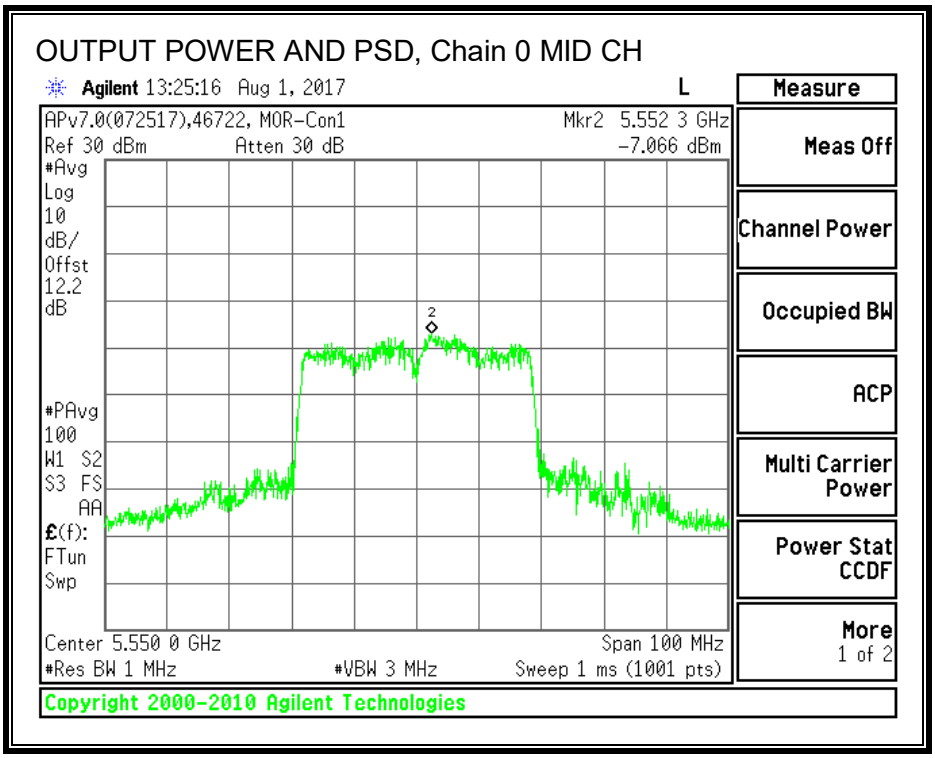
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Low	5510	-13.29	-3.22	11.00	-14.22
Mid	5550	-7.07	3.00	11.00	-8.00
High	5670	-7.31	2.76	11.00	-8.24
Straddle	5710	-13.70	-3.63	11.00	-14.63

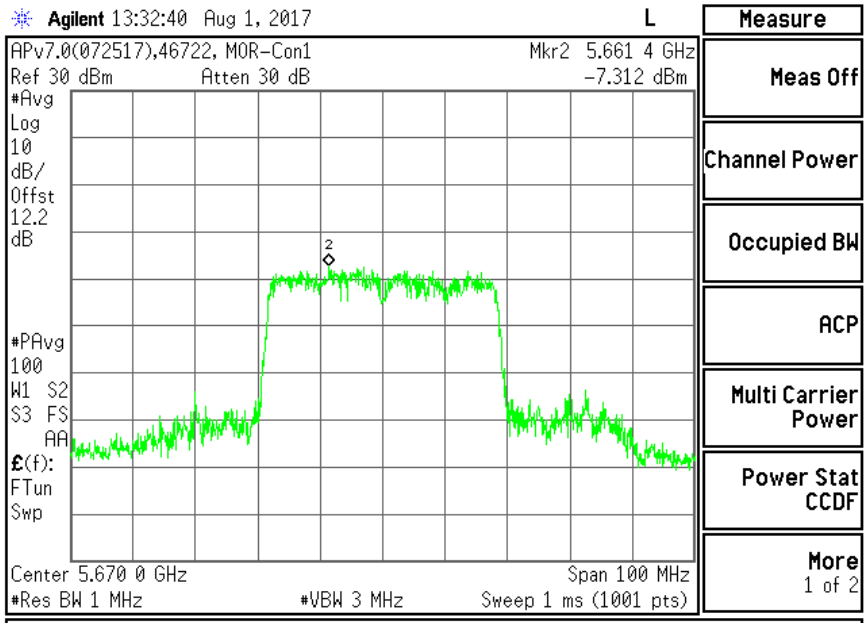
Note: Power is a gated measurement.

OUTPUT POWER AND PSD, Chain 0

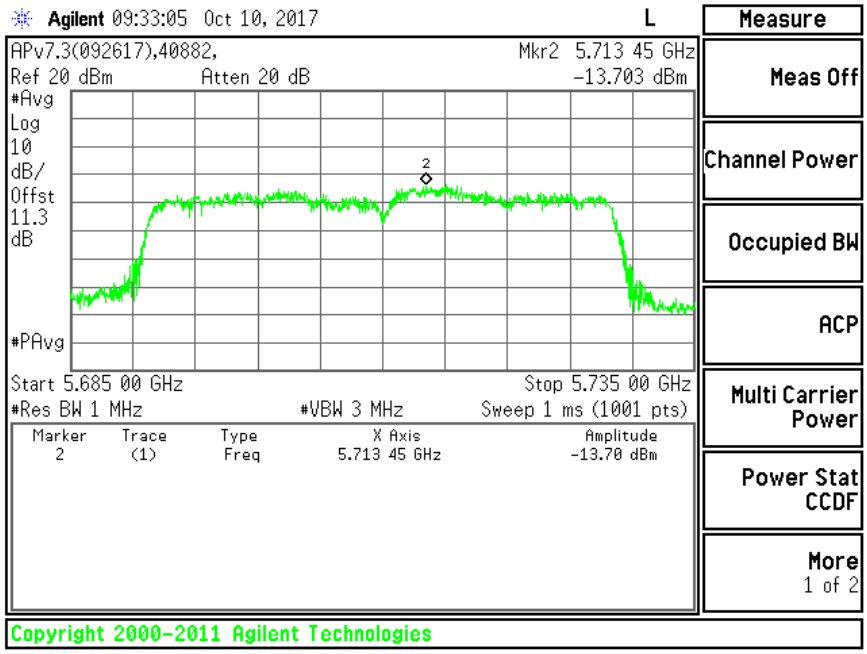




OUTPUT POWER AND PSD, Chain 0 HIGH CH



OUTPUT POWER AND PSD, Chain 0 STRADDLE CH



8.10.4. OUTPUT POWER AND PSD

LIMITS

IC RSS-247 (6.2.3 [1])

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10 B, dBm, whichever power is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

Test Information
Date; 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)	Directional Gain for PPSD (dBi)
Low	5510	34.5257	0.00	0.00
Mid	5550	35.9856	0.00	0.00
High	5670	33.0219	0.00	0.00
Straddle	5710	33.0219	0.00	0.00

Limits

Channel	Frequency (MHz)	IC EIRP Limit (dBm)	IC PSD Limit (dBm)	IC Output Power Limit (dBm)
Low	5510	30.00	11.00	24.00
Mid	5550	30.00	11.00	24.00
High	5670	30.00	11.00	24.00
Straddle	5710	30.00	11.00	24.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PPSD

Output Power Results

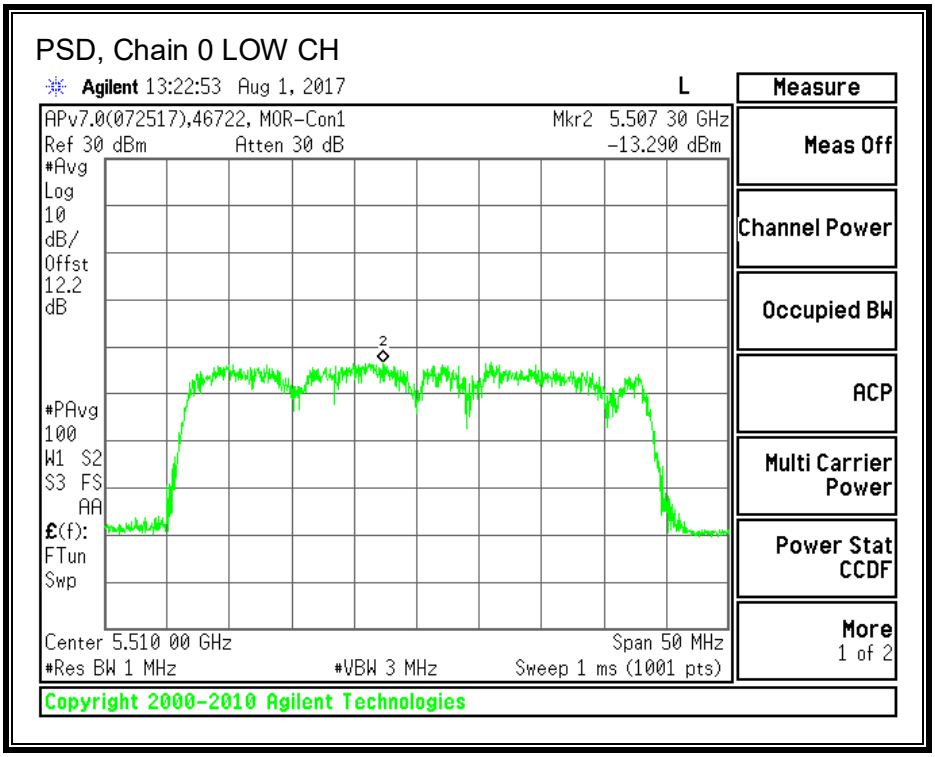
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)	Power Limit (dBm)	Power Margin (dB)
Low	5510	7.62	7.62	30.00	-22.38	24.00	-16.38
Mid	5550	14.18	14.18	30.00	-15.82	24.00	-9.82
High	5670	13.43	13.43	30.00	-16.57	24.00	-10.57
Straddle	5710	5.81	5.81	30.00	-24.19	24.00	-18.19

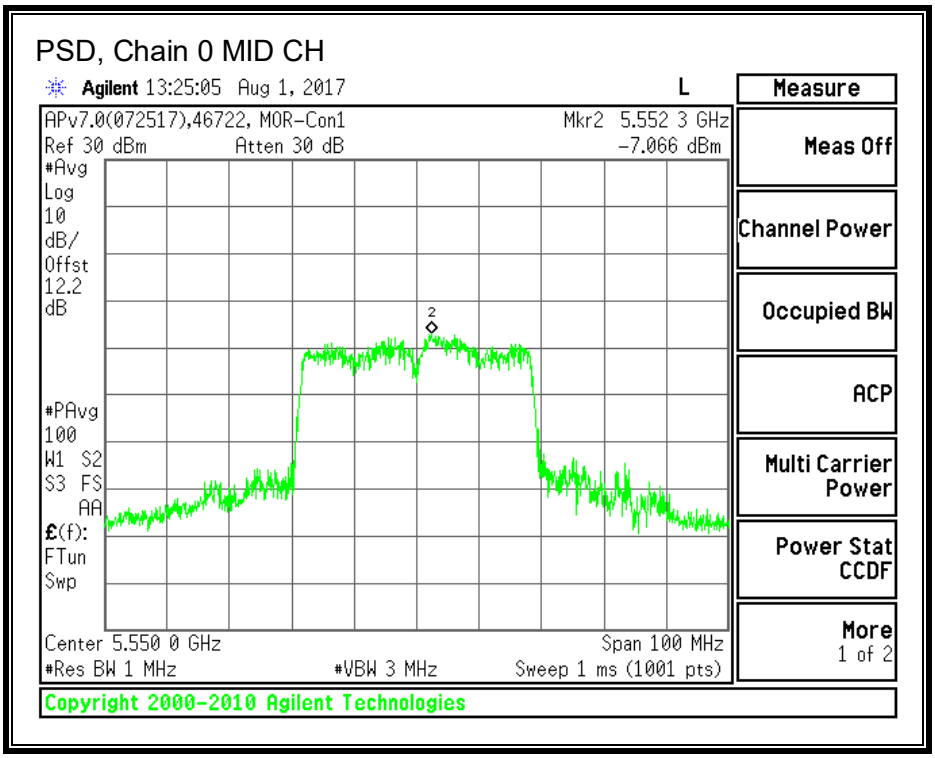
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-13.29	-3.22	11.00	-14.22
Mid	5550	-7.07	3.00	11.00	-8.00
High	5670	-7.31	2.76	11.00	-8.24
Straddle	5710	-13.70	-3.63	11.00	-14.63

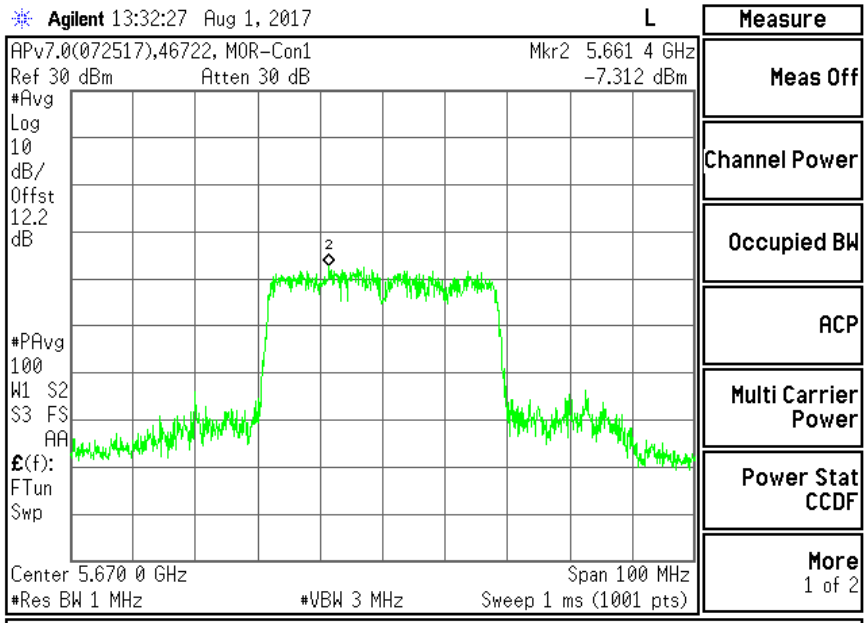
Note: Power is a gated measurement.

PSD, Chain 0

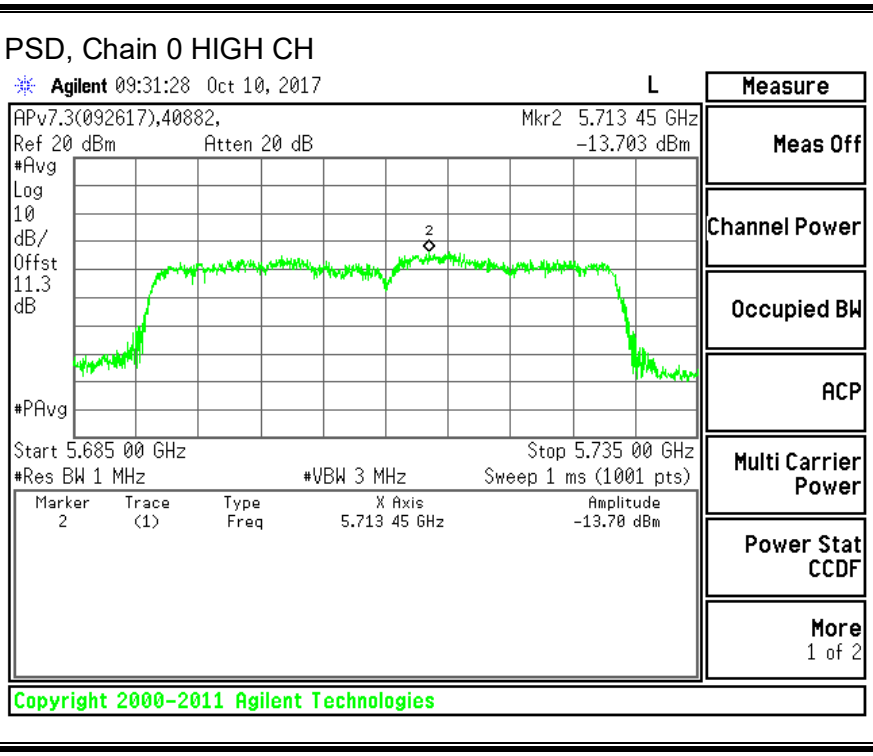




PSD, Chain 0 HIGH CH



PSD, Chain 0 HIGH CH



8.11. 802.11a MODE IN THE 5.8 GHz BAND

8.11.1. 6 dB BANDWIDTH

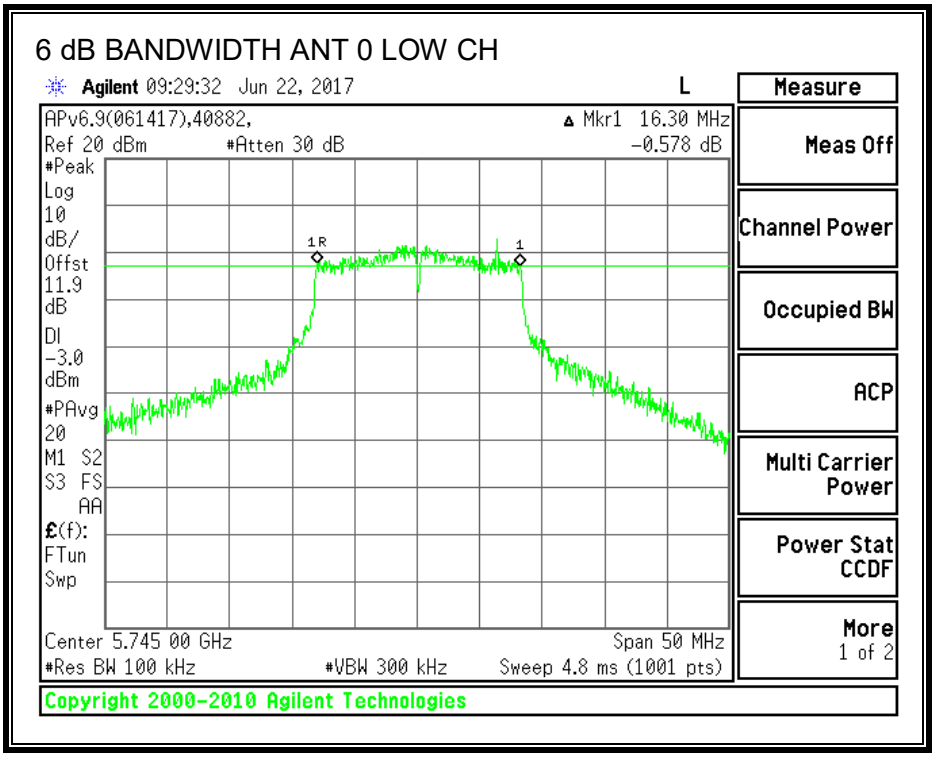
LIMITS

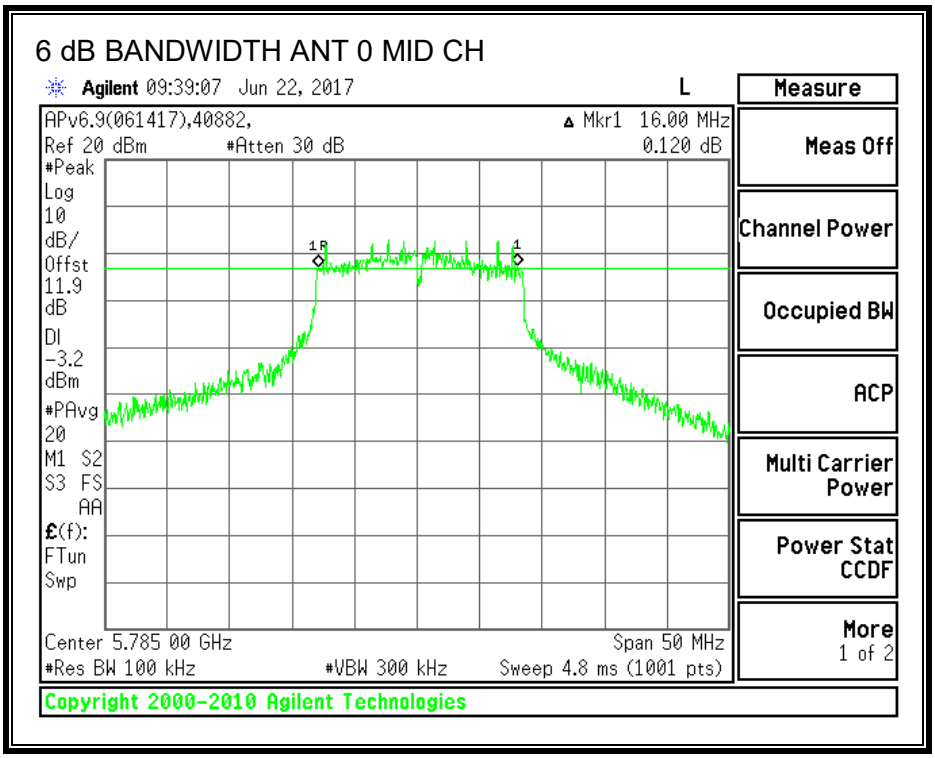
FCC §15.407 (e)

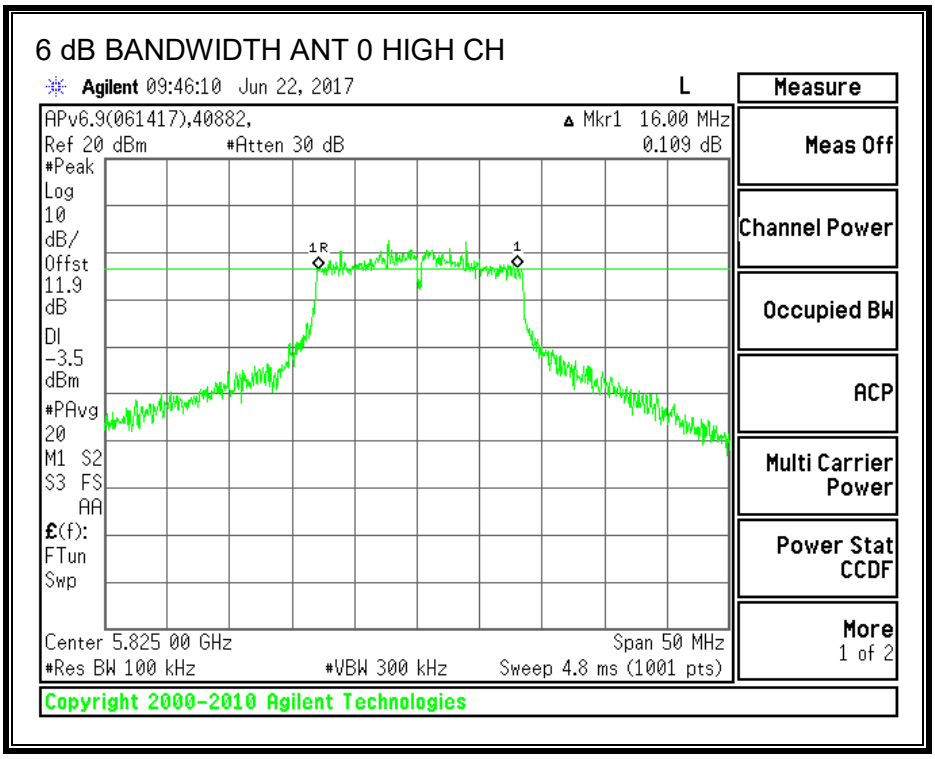
The minimum 6 dB bandwidth shall be at least 500 kHz.

Channel	Frequency (MHz)	6 dB BW ANT 0 (MHz)	Minimum Limit (MHz)
Low	5745	16.3000	0.5
Mid	5785	16.0000	0.5
High	5825	16.0000	0.5

6 dB BANDWIDTH, ANT 0







Test Information

Date; 2017-06-22

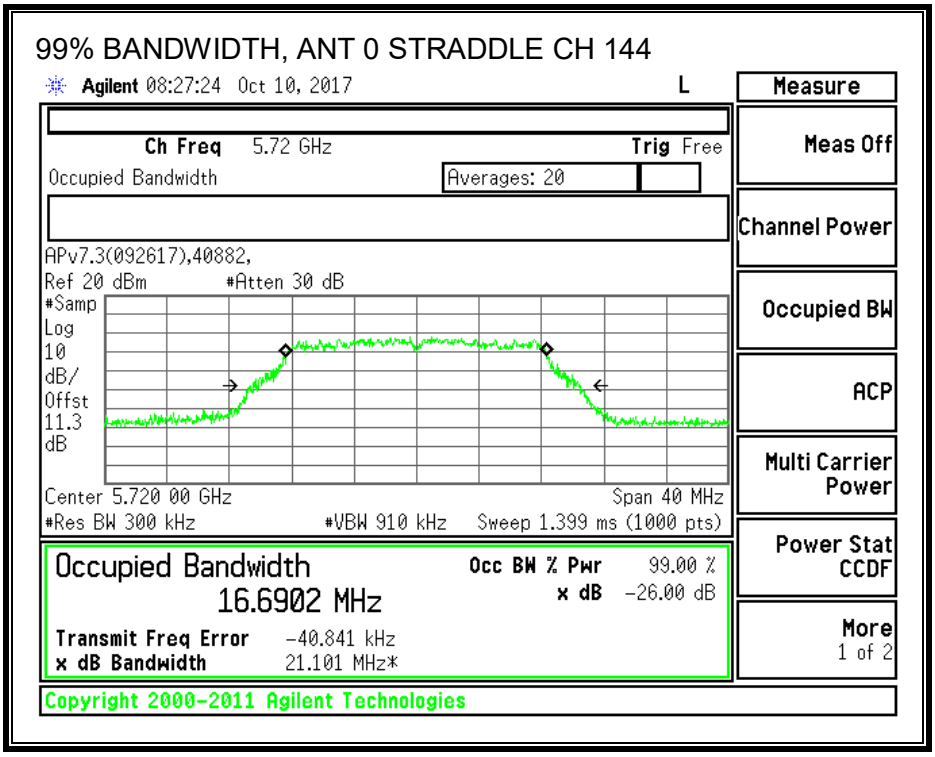
Tester: Jeffrey Cabrera

8.11.2. 99% BANDWIDTH

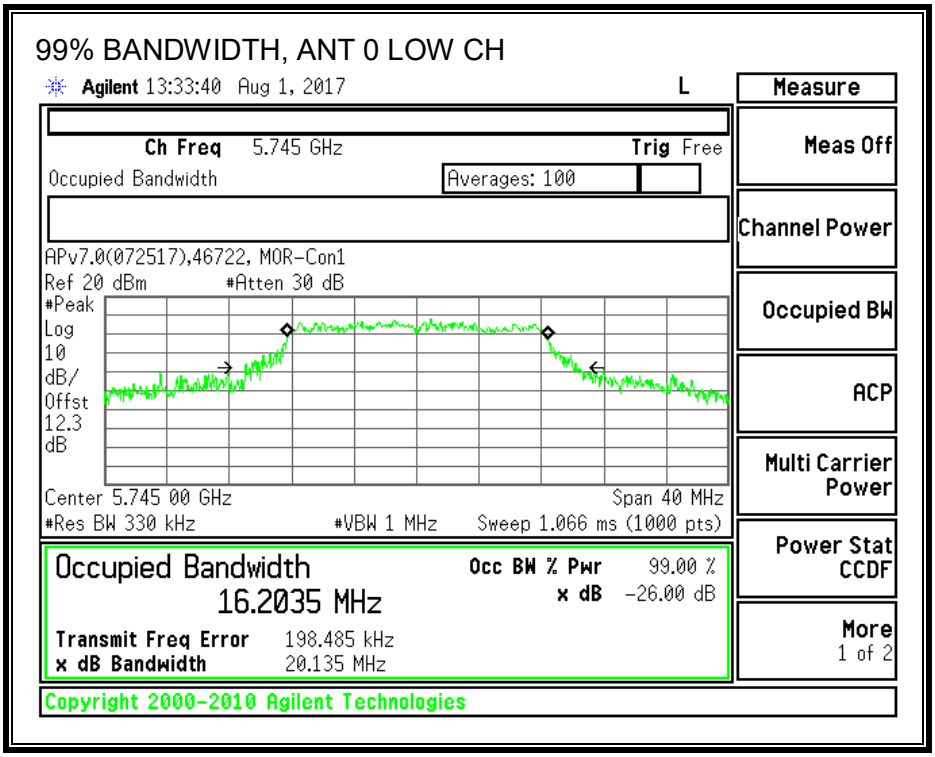
LIMITS

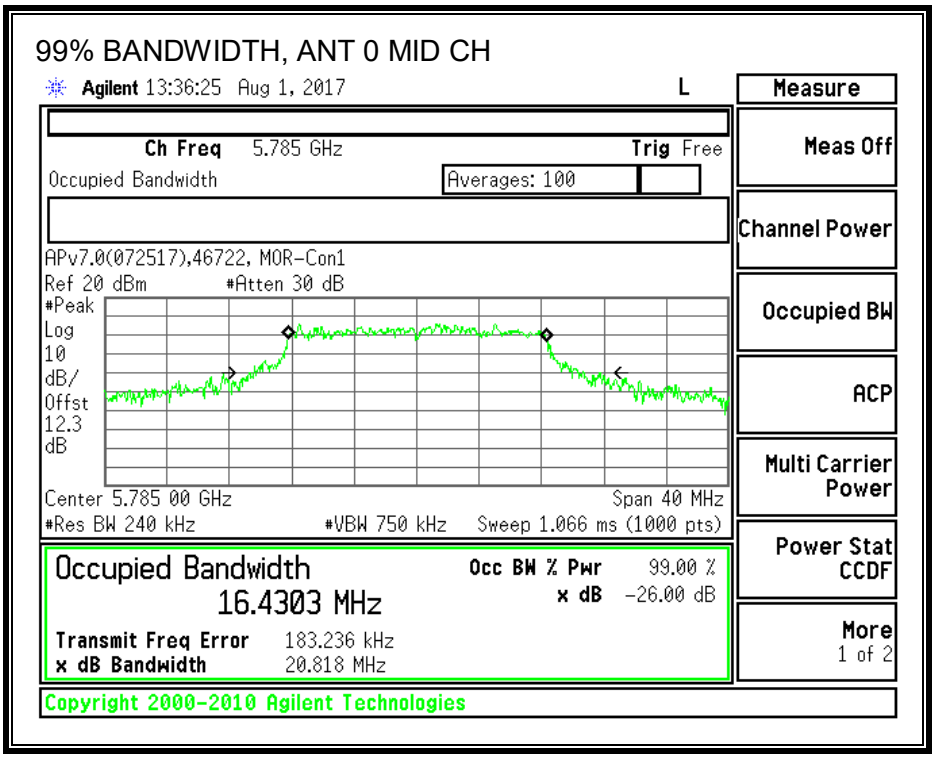
None; for reporting purposes only.

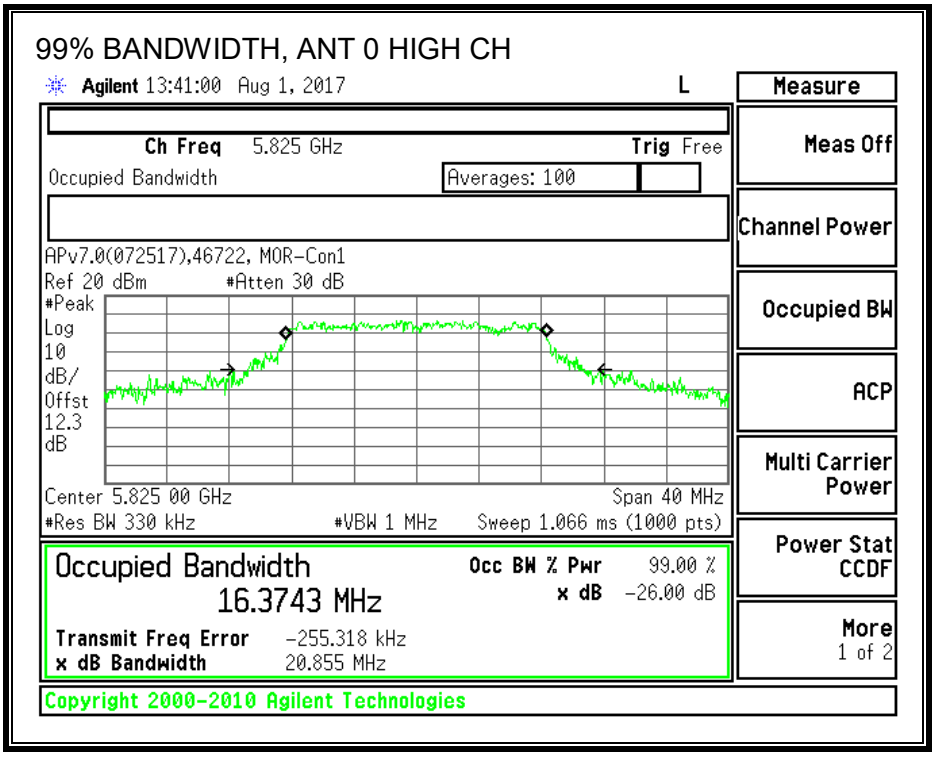
Channel	Frequency (MHz)	99% BW ANT 0 (MHz)
Straddle	5720	16.6900
Low	5745	16.2035
Mid	5785	16.4303
High	5825	16.3743



99% BANDWIDTH, ANT 0







Test Information

Date:; 2017-08-01 / 2017-10-10

Tester: John Manser / Jeffrey Cabrera

8.11.3. OUTPUT POWER

LIMITS

FCC §15.407 (a) (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.

DIRECTIONAL ANTENNA GAIN

Two internal and one external antenna for diversity; therefore directional gain equals antenna gain.

Antenna Gain and Limit

Channel	Frequency (MHz)	Internal Gain for Power (dBi)	Power Limit Internal (dBm)	Power Limit External (dBm)
Straddle	5720	0.00	30.00	30.00
Low	5745	0.00	30.00	30.00
Mid	5785	0.00	30.00	30.00
High	5825	0.00	30.00	30.00

Output Power Results

Channel	Frequency (MHz)	INT 0 Meas Power (dBm)	INT 0 Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Straddle	5720	6.84	6.84	30.00	-23.16
Low	5745	15.05	15.05	30.00	-14.95
Mid	5785	14.91	14.91	30.00	-15.09
High	5825	14.90	14.90	30.00	-15.10

Note: Power is a gated measurement.

Test Information

Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

8.11.4. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (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.

DIRECTIONAL ANTENNA GAIN

Two antennas for diversity; therefore directional gain equals antenna gain.

RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Internal Gain (dBi)	PSD Int Limit (dBm)
Straddle	5720	0.00	30.00
Low	5745	0.00	30.00
Mid	5785	0.00	30.00
High	5825	0.00	30.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PSD

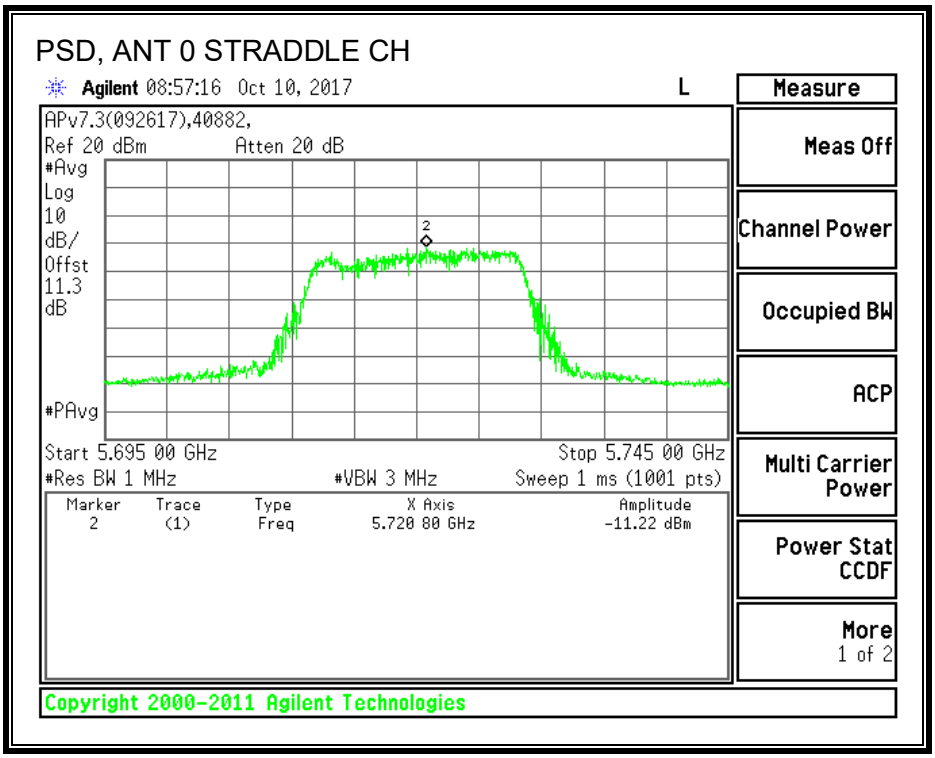
PSD Results

Channel	Frequency (MHz)	INT 0 Meas PSD (dBm)	INT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Straddle	5720	-11.22	-1.15	30.00	-31.15
Low	5745	-4.18	5.89	30.00	-24.11
Mid	5785	-4.66	5.41	30.00	-24.59
High	5825	-4.81	5.26	30.00	-24.74

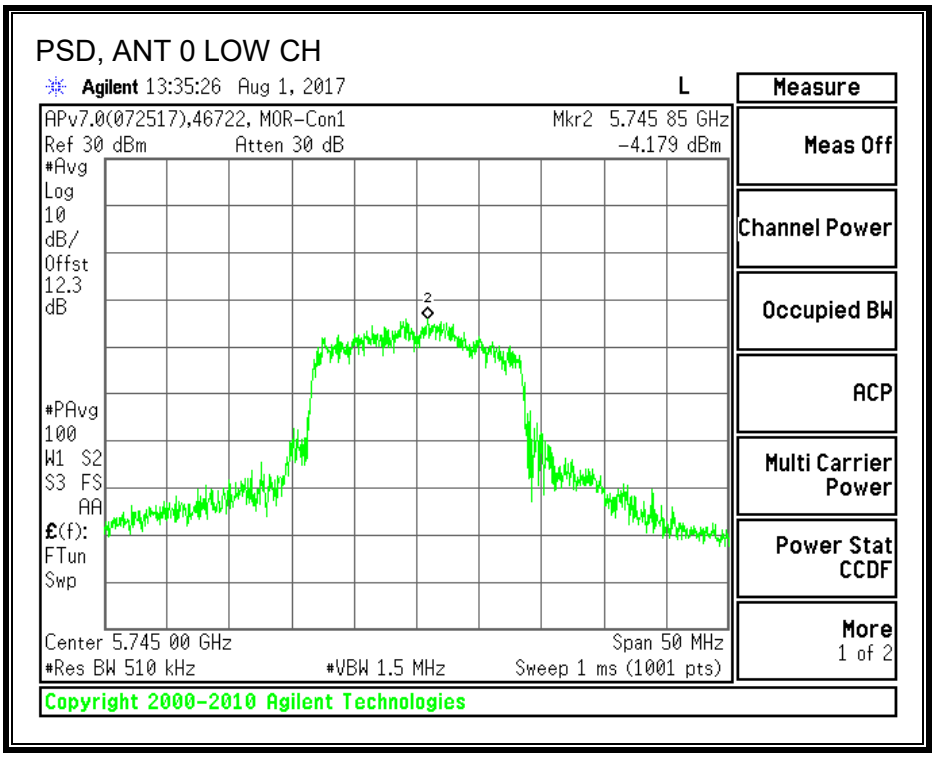
Test Information

Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

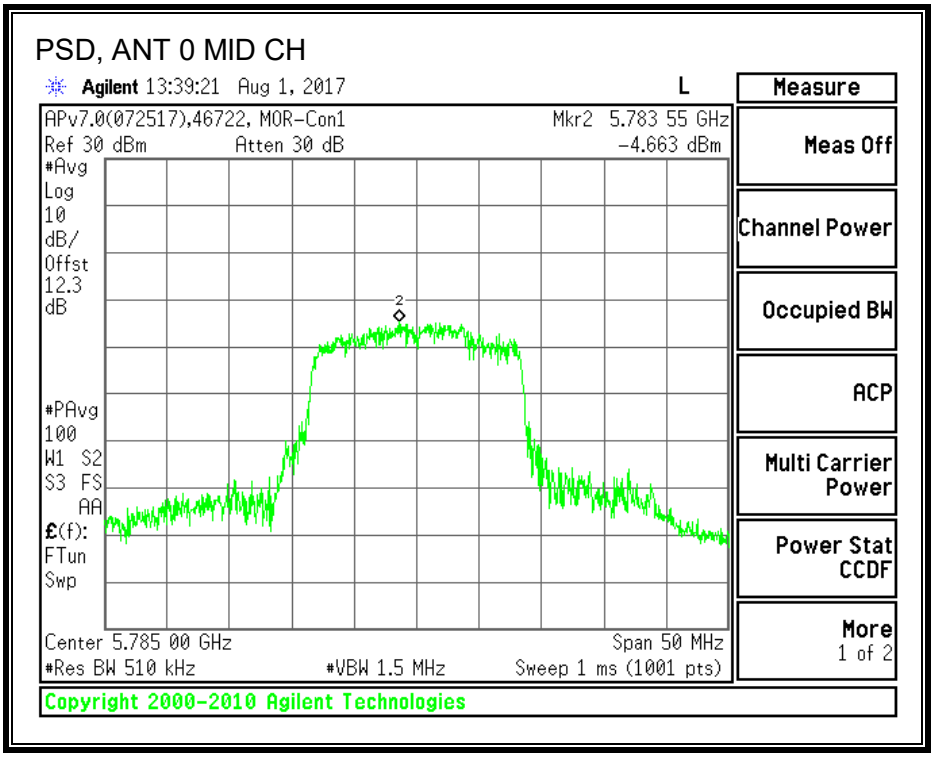
PSD, ANT 0



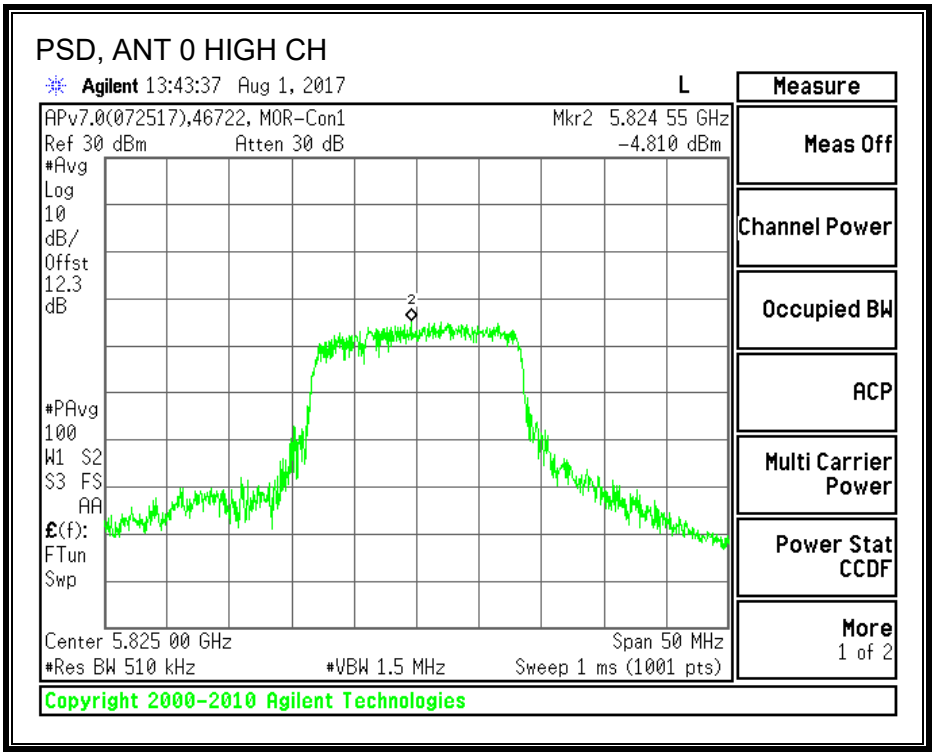
Note – Straddle channel tested to 5.6 GHz band settings as this is considered worst-case.



PSD, ANT 0 MID CH



PSD, ANT 0 HIGH CH



8.12. 802.11n HT20 MODE IN THE 5.8 GHz BAND

8.12.1. 6 dB BANDWIDTH

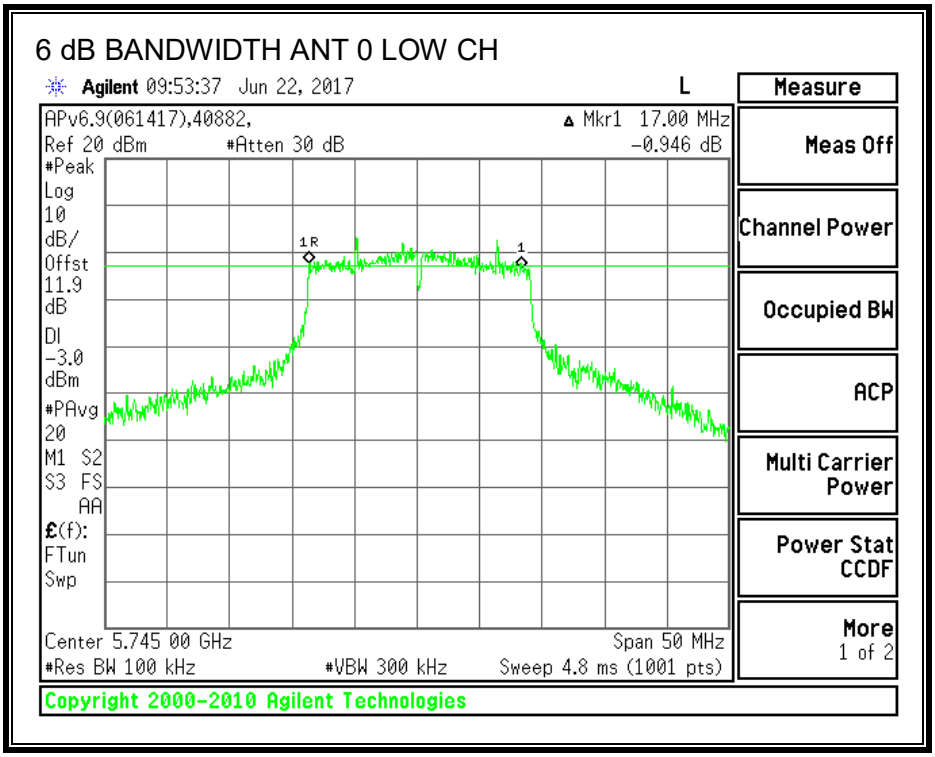
LIMITS

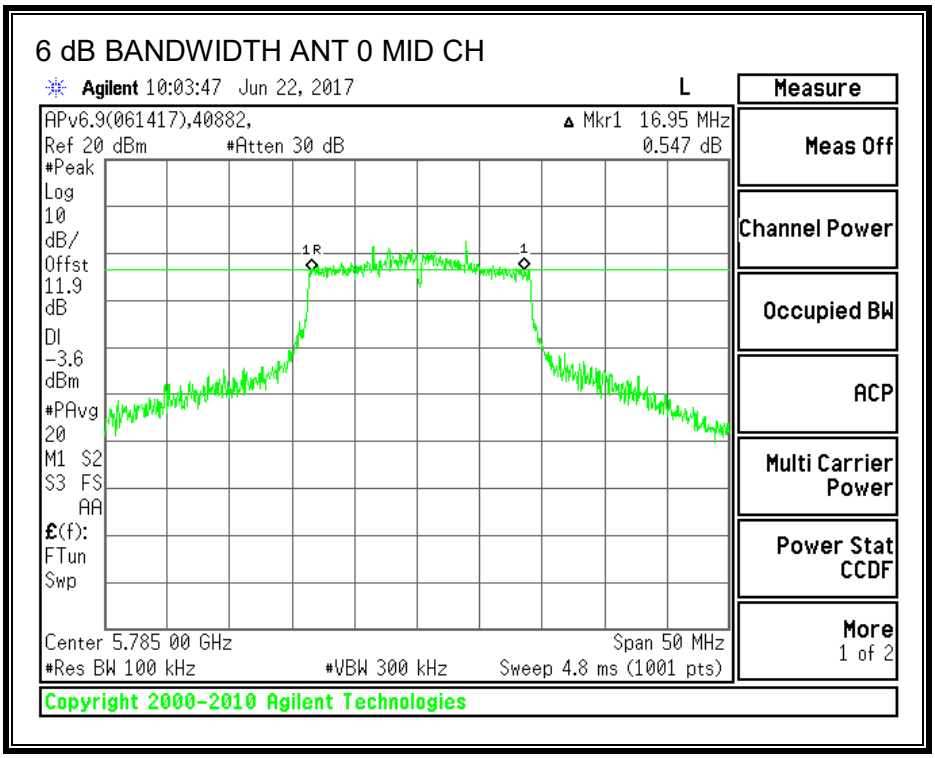
FCC §15.407 (e)

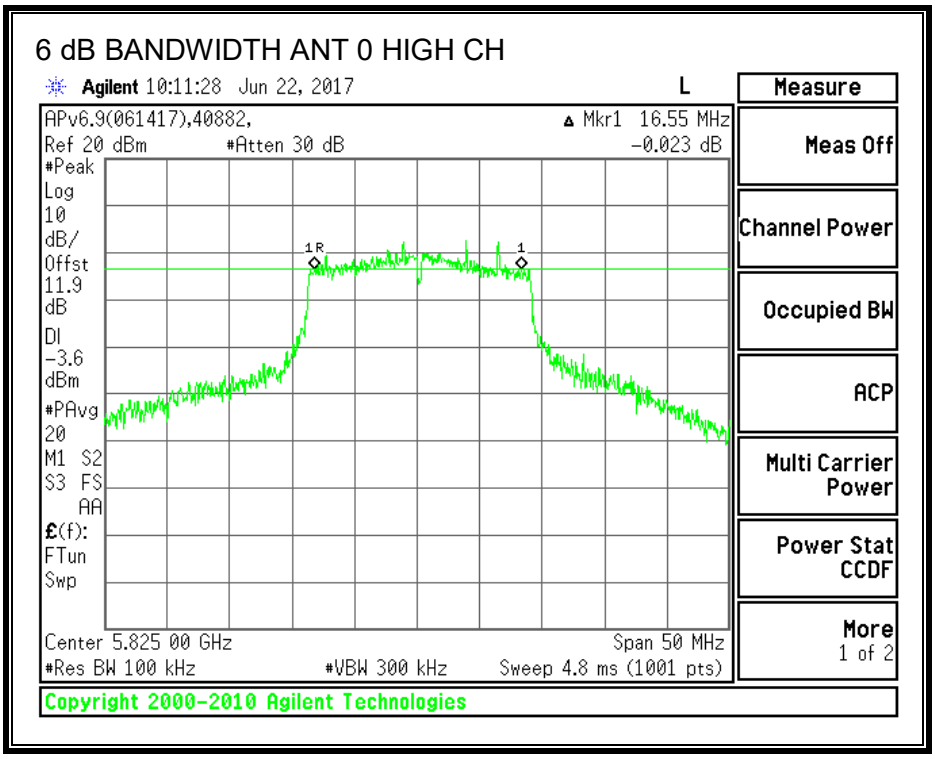
The minimum 6 dB bandwidth shall be at least 500 kHz.

Channel	Frequency (MHz)	6 dB BW ANT 0 (MHz)	Minimum Limit (MHz)
Low	5745	17.0000	0.5
Mid	5785	16.9500	0.5
High	5825	16.5500	0.5

6 dB BANDWIDTH, ANT 0







Test Information

Date; 2017-08-01

Tester: John Manser

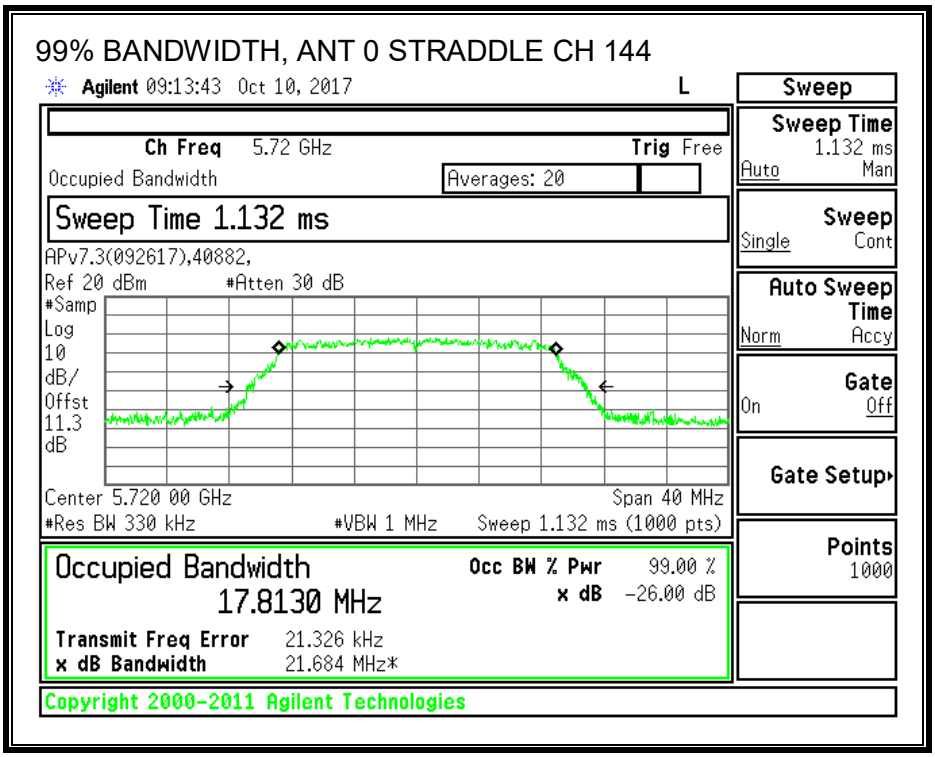
8.12.2. 99% BANDWIDTH

LIMITS

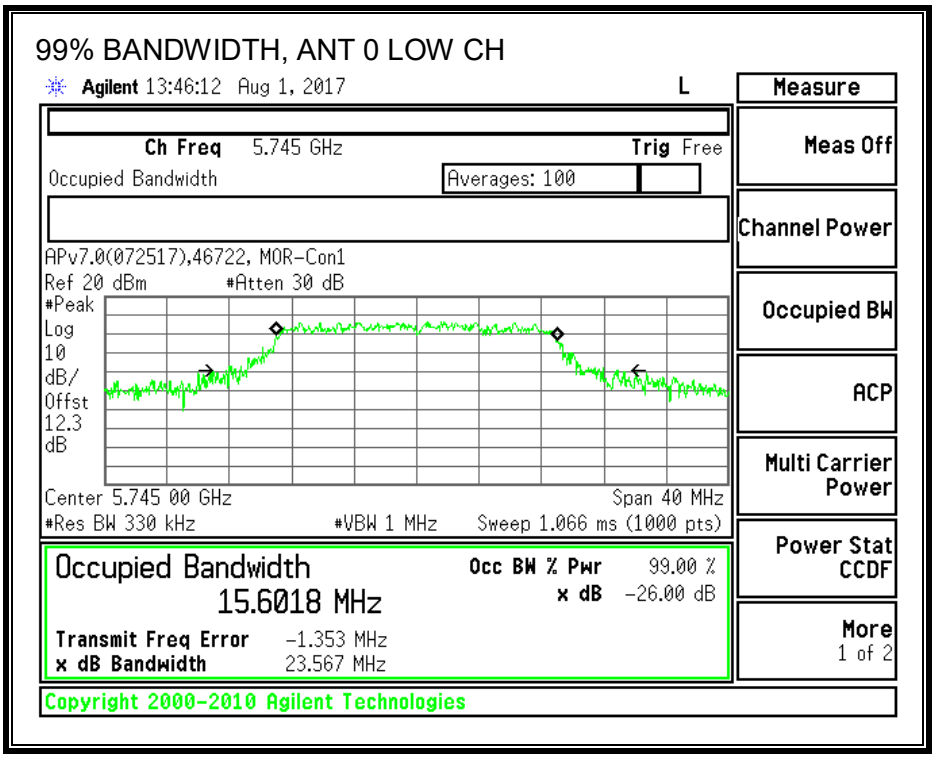
None; for reporting purposes only.

Channel	Frequency (MHz)	99% BW ANT 0 (MHz)
Straddle	5720	17.8130
Low	5745	15.6018
Mid	5785	17.6098
High	5825	17.1821

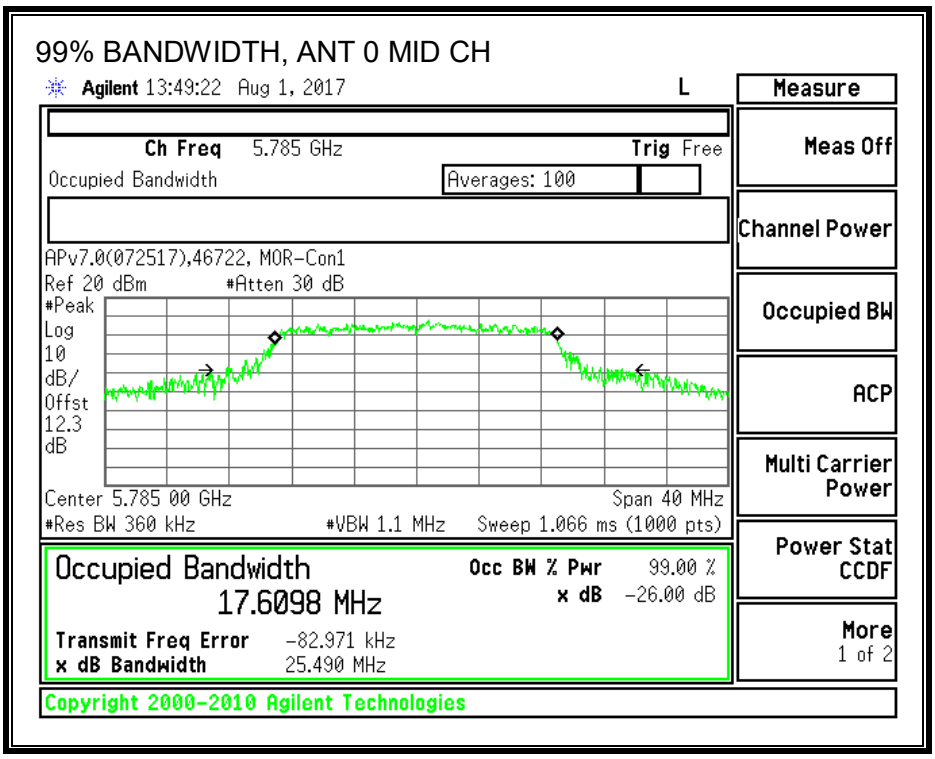
99% BANDWIDTH, ANT 0

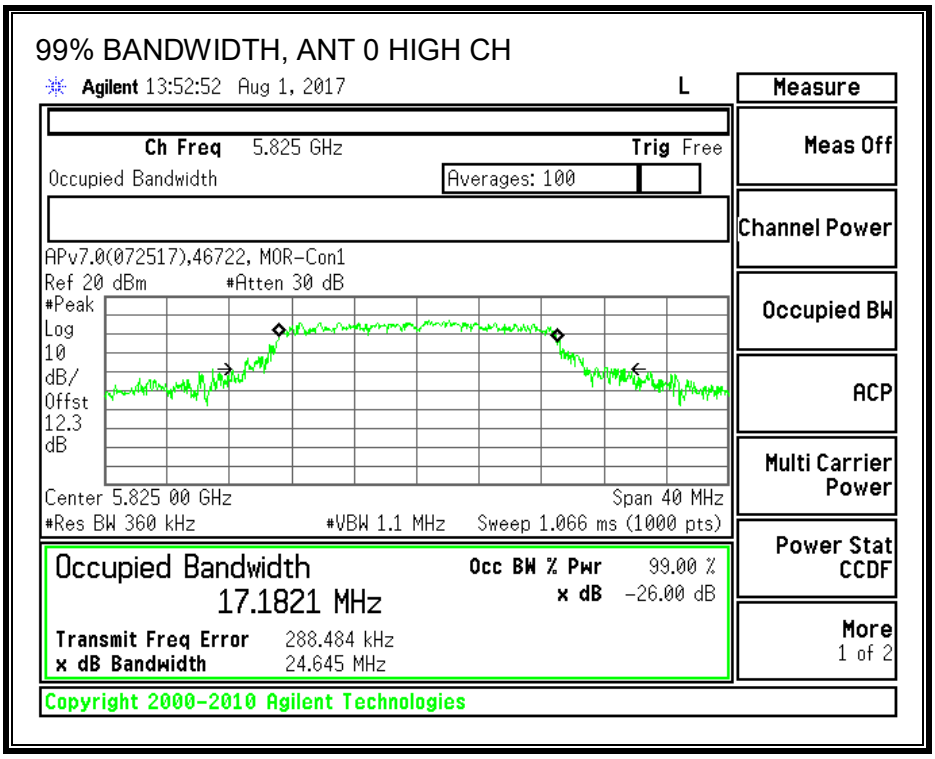


99% BANDWIDTH, ANT 0 LOW CH



99% BANDWIDTH, ANT 0 MID CH





Test Information

Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

8.12.3. OUTPUT POWER

LIMITS

FCC §15.407 (a) (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.

DIRECTIONAL ANTENNA GAIN

Two internal and one external antenna for diversity; therefore directional gain equals antenna gain.

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Internal Gain for Power (dBi)	Power Limit Internal (dBm)
Straddle	5720	0.00	30.00
Low	5745	0.00	30.00
Mid	5785	0.00	30.00
High	5825	0.00	30.00

Output Power Results

Channel	Frequency (MHz)	INT 0 Meas Power (dBm)	INT 0 Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Straddle	5720	5.81	5.81	30.00	-24.19
Low	5745	14.76	14.76	30.00	-15.24
Mid	5785	14.73	14.73	30.00	-15.27
High	5825	14.68	14.68	30.00	-15.32

Note: Power is a gated measurement.

TEST INFORMATION

Date: 2017-07-31
Tester: John Manser

8.12.4. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (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.

DIRECTIONAL ANTENNA GAIN

Two antennas for diversity; therefore directional gain equals antenna gain.

RESULTS

Antenna Gain and Limits

Channel	Frequency (MHz)	Internal Gain (dBi)	PSD Int Limit (dBm)
Straddle	5720	0.00	30.00
Low	5745	0.00	30.00
Mid	5785	0.00	30.00
High	5825	0.00	30.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PSD

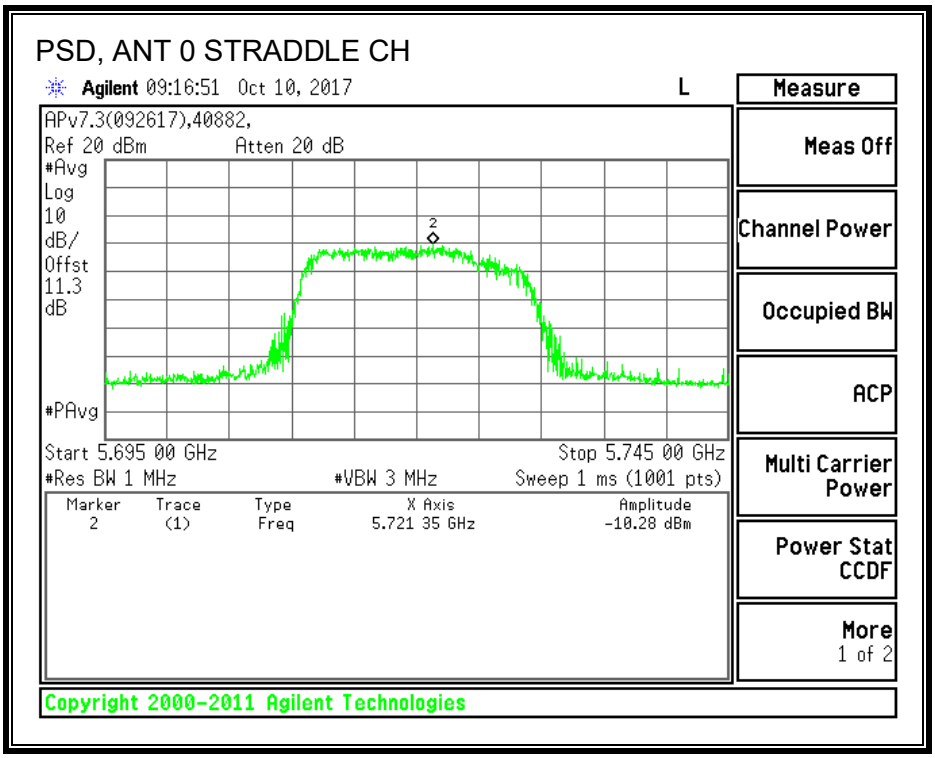
PSD Results

Channel	Frequency (MHz)	ANT 0 Meas PSD (dBm)	ANT 0 Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Straddle	5720	-10.28	-0.21	30.00	-30.21
Low	5745	-6.15	3.92	30.00	-26.08
Mid	5785	-6.14	3.93	30.00	-26.07
High	5825	-6.60	3.48	30.00	-26.53

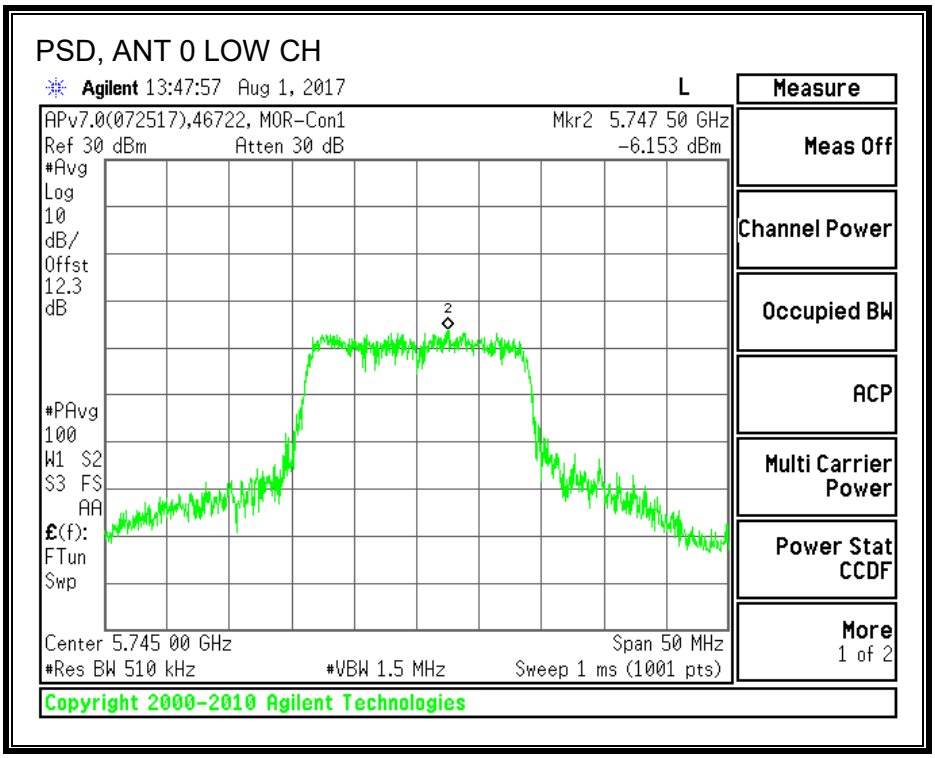
TEST INFORMATION

Date: 2017-08-01 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

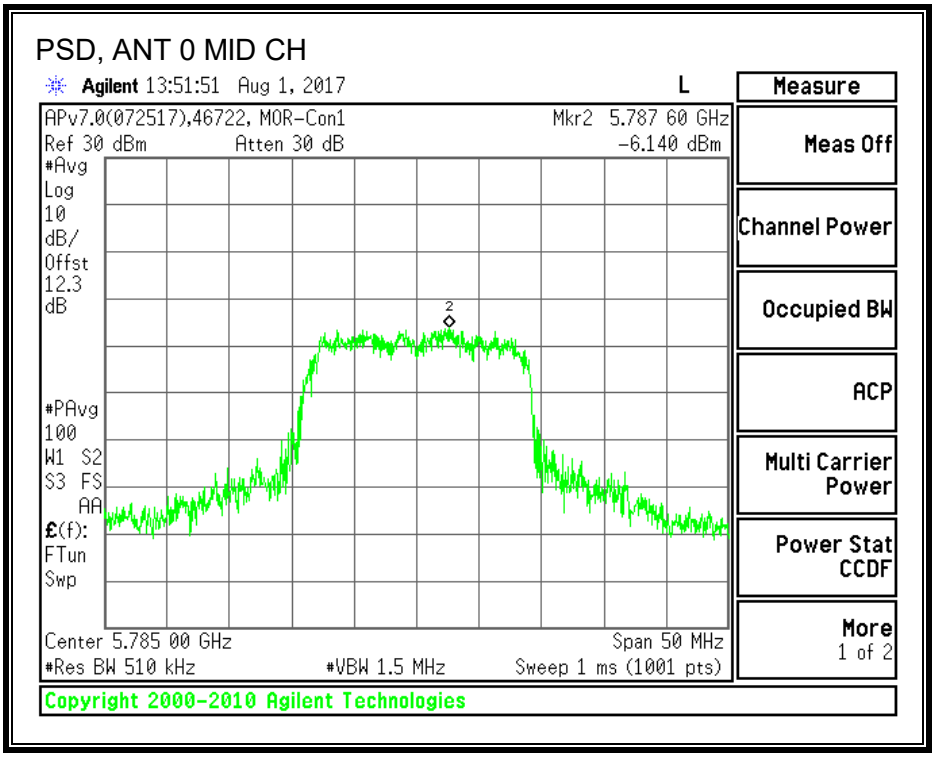
PSD, ANT 0



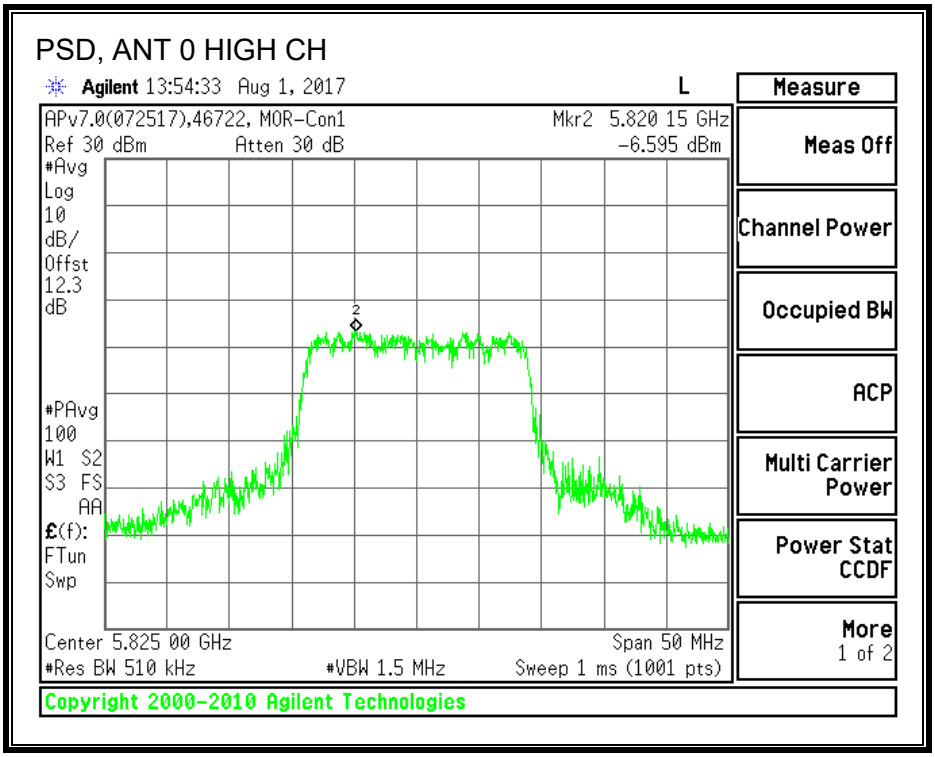
Note – Straddle channel tested to 5.6 GHz band settings as this is considered worst-case.



PSD, ANT 0 MID CH



PSD, ANT 0 HIGH CH



8.13. 802.11n HT40 MODE IN THE 5.8 GHz BAND

8.13.1. 6 dB BANDWIDTH

LIMITS

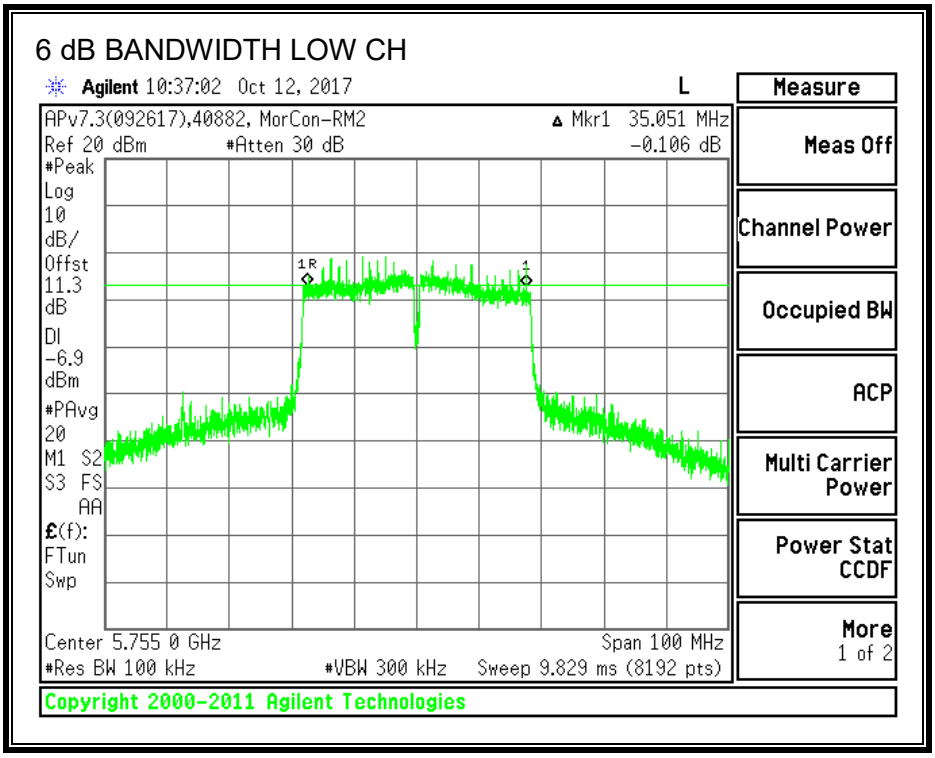
FCC §15.407 (e)
ISED RSS-247 6.2.4.1

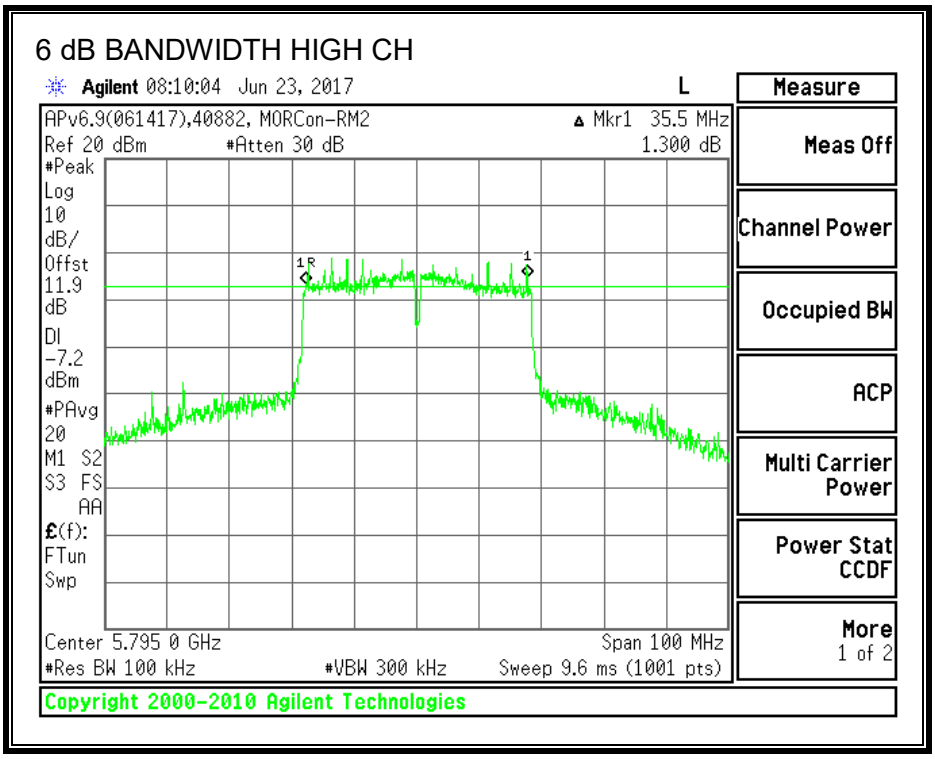
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	5755	35.0510	0.5
High	5795	35.5000	0.5

6 dB BANDWIDTH





TEST INFORMATION

Date: 2017-06-23

Tester: Jeffrey Cabrera

8.13.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

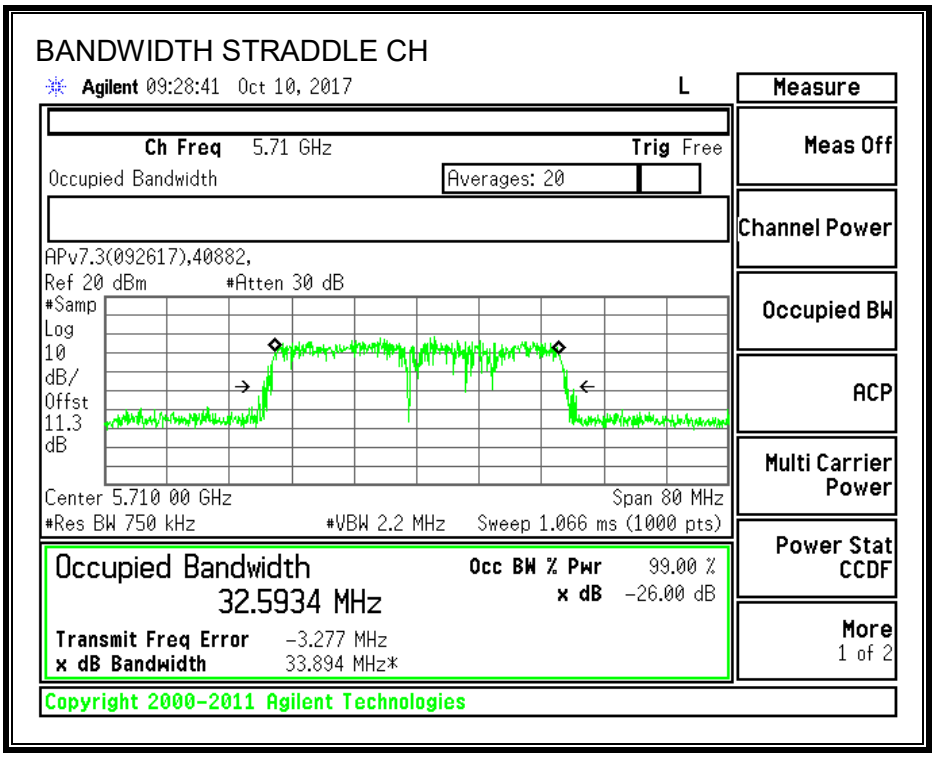
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Straddle	5710	32.5934
Low	5755	35.2511
High	5795	35.7470

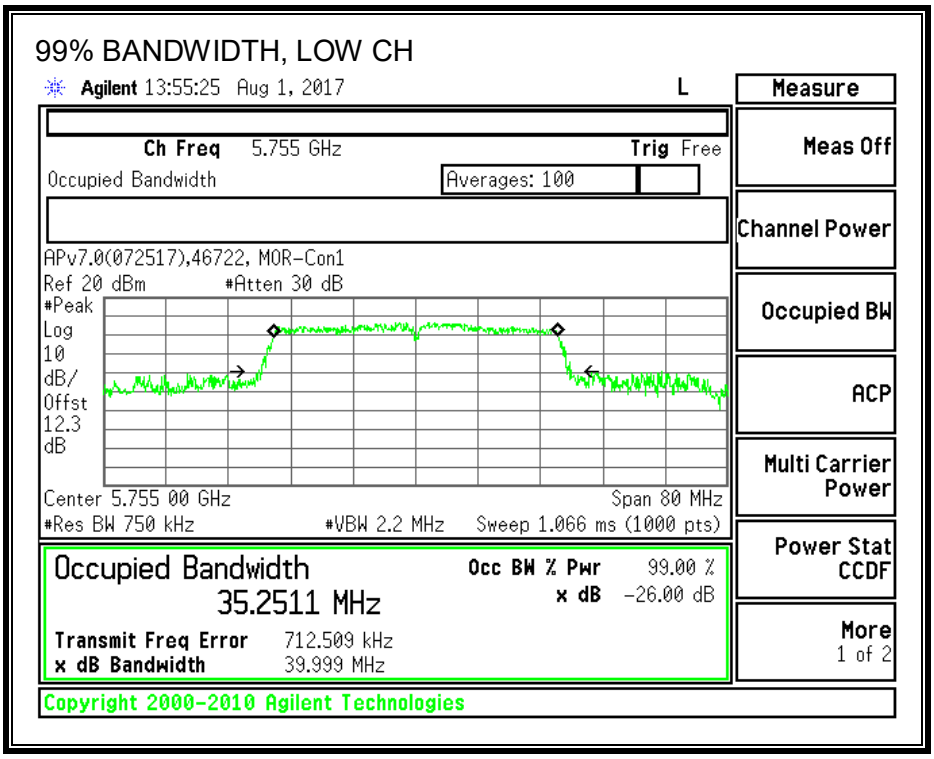
TEST INFORMATION

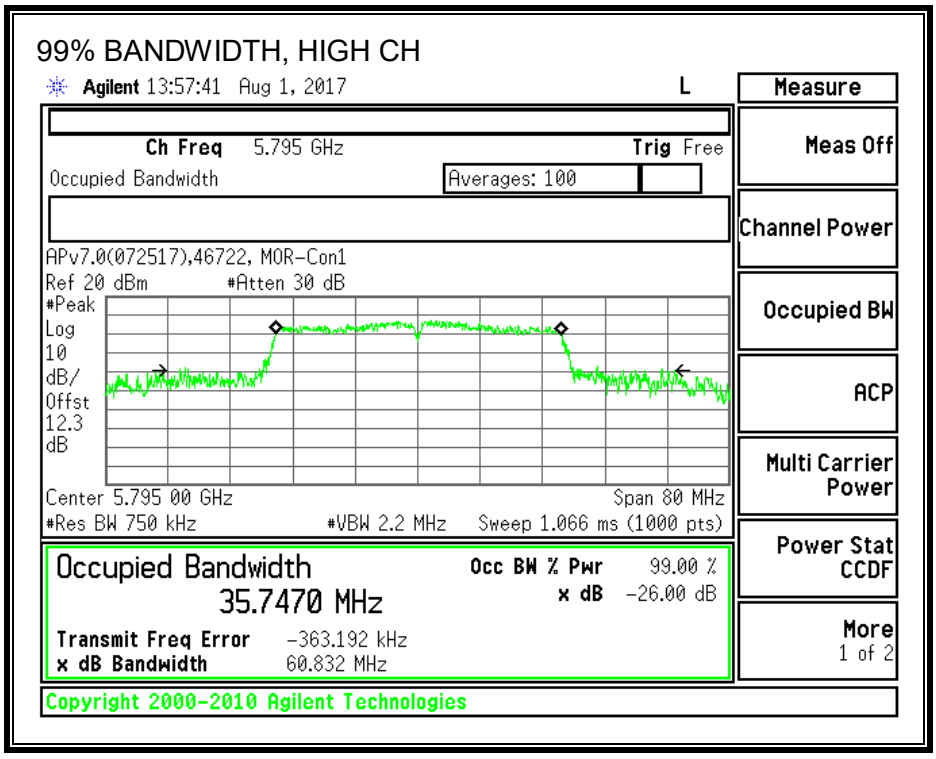
Date: 2017-08-01 / 2017-10-10

Tester: John Manser / Jeffrey Cabrera

99% BANDWIDTH







8.13.3. OUTPUT POWER

LIMITS

FCC §15.407 (a) (3)
ISED RSS-247 6.2.4.1

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.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain (dBi)	Power Limit (dBm)
Straddle	5710	0.00	30.00
Low	5755	0.00	30.00
High	5795	0.00	30.00

Output Power Results

Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Straddle	5710	5.81	5.81	30.00	-24.19
Low	5755	13.30	13.30	30.00	-16.70
High	5795	12.72	12.72	30.00	-17.28

Note: Power is a gated measurement.

TEST INFORMATION

Date: 2017-07-31 / 2017-10-10
Tester: John Manser / Jeffrey Cabrera

8.13.4. Maximum Power Spectral Density (PSD)

LIMITS

FCC §15.407 (a) (3)
ISED RSS-247 6.2.4.1

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.

DIRECTIONAL ANTENNA GAIN

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

Antenna Gain and Limits

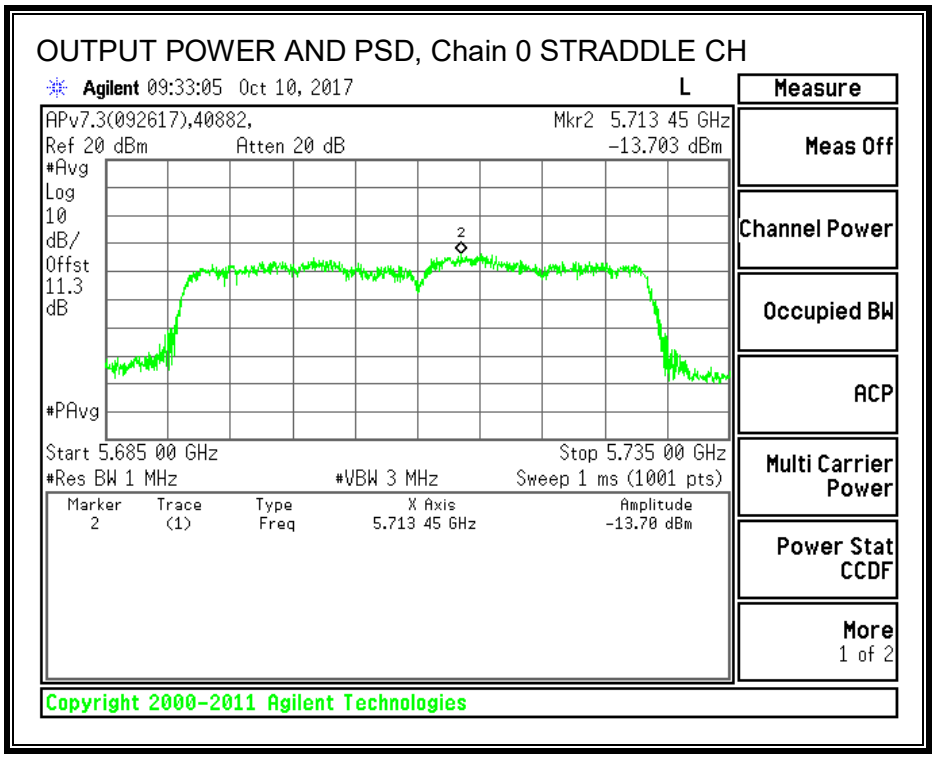
Channel	Frequency (MHz)	Directional Gain (dBi)	PSD Limit (dBm)
Straddle	5710	0.00	30.00
Low	5755	0.00	30.00
High	5795	0.00	30.00

Duty Cycle CF (dB)	10.07	Included in Calculations of Corr'd PSD

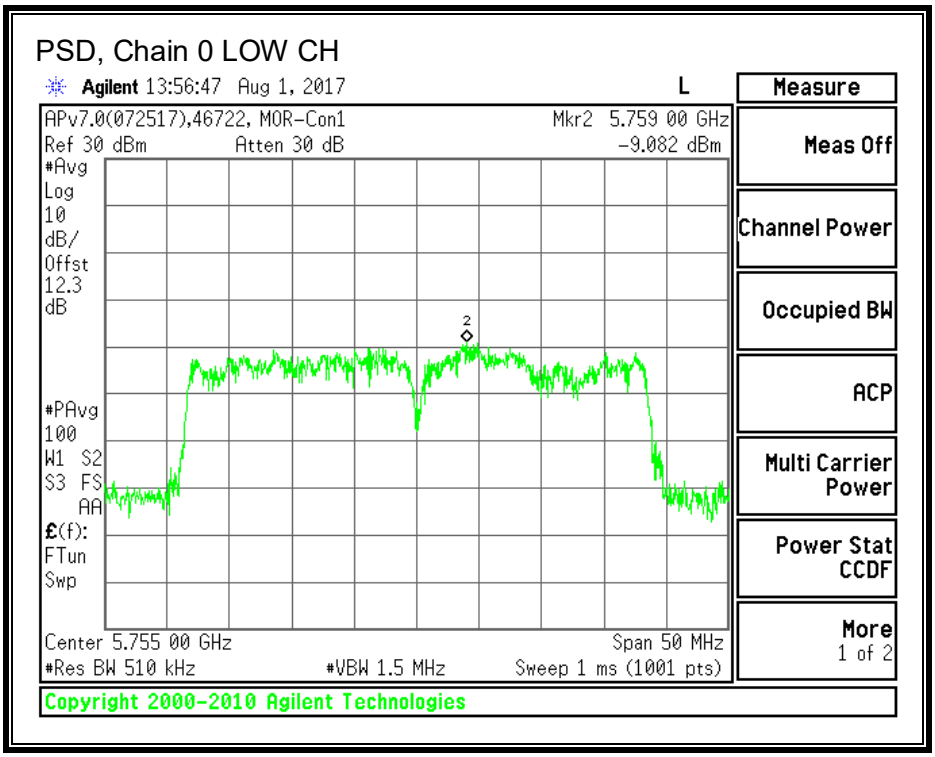
PSD Results

Channel	Frequency (MHz)	Chain 0 Meas PSD (dBm)	Total Corr'd PSD (dBm)	PSD Limit (dBm)	PSD Margin (dB)
Straddle	5710	-13.70	-3.63	30.00	-33.63
Low	5755	-9.08	0.99	30.00	-29.01
High	5795	-8.81	1.26	30.00	-28.74

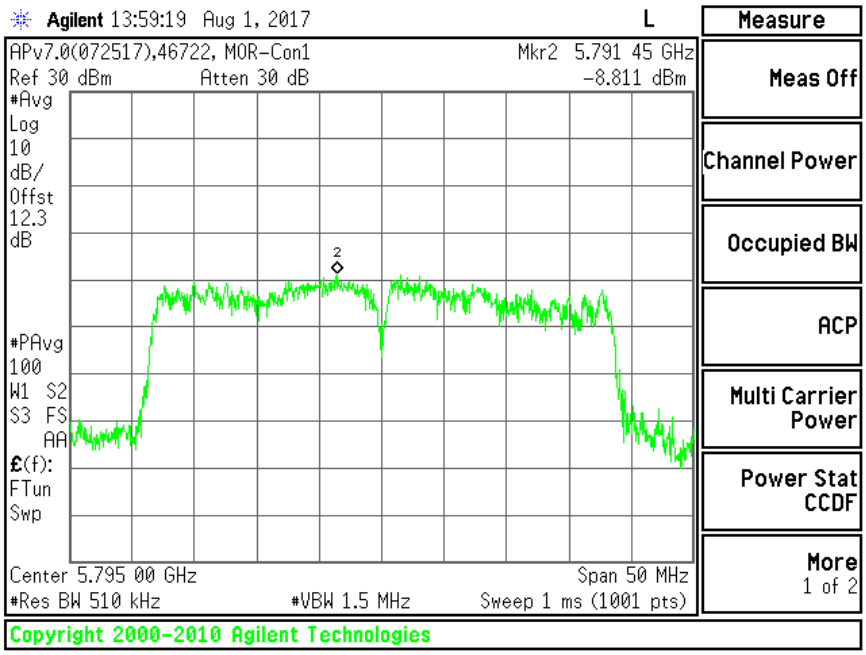
PSD, Chain 0



Note – Straddle channel tested to 5.6 GHz band settings as this is considered worst-case.



PSD, Chain 0 HIGH CH



TEST INFORMATION

Date: 2017-08-01 / 2017-10-10

Tester: John Manser / Jeffrey Cabrera

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz measurements and 1.5 m above the ground plane for above 1GHz measurements. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 120 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements for the 30-1000 MHz range, 9 kHz for peak detection measurements or 9 kHz for quasi-peak detection measurements for the 0.15-30 MHz range and 200 Hz for peak detection measurements or 200 Hz for quasi-peak detection measurements for the 9 to 150 kHz range. Peak detection is used unless otherwise noted as quasi-peak.

For peak measurements above 1 GHz, the resolution bandwidth is set to 1 MHz and the video bandwidth is set to 3 MHz. For average measurements above 1GHz, the resolution bandwidth and video bandwidth are set as described in ANSI C63.10:2013 for the applicable measurement. The particular averaging method used for this test program was by RMS Averaging.

The spectrum from 1 to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. For below 1GHz and above 18 GHz, the worst-case channel was measured.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

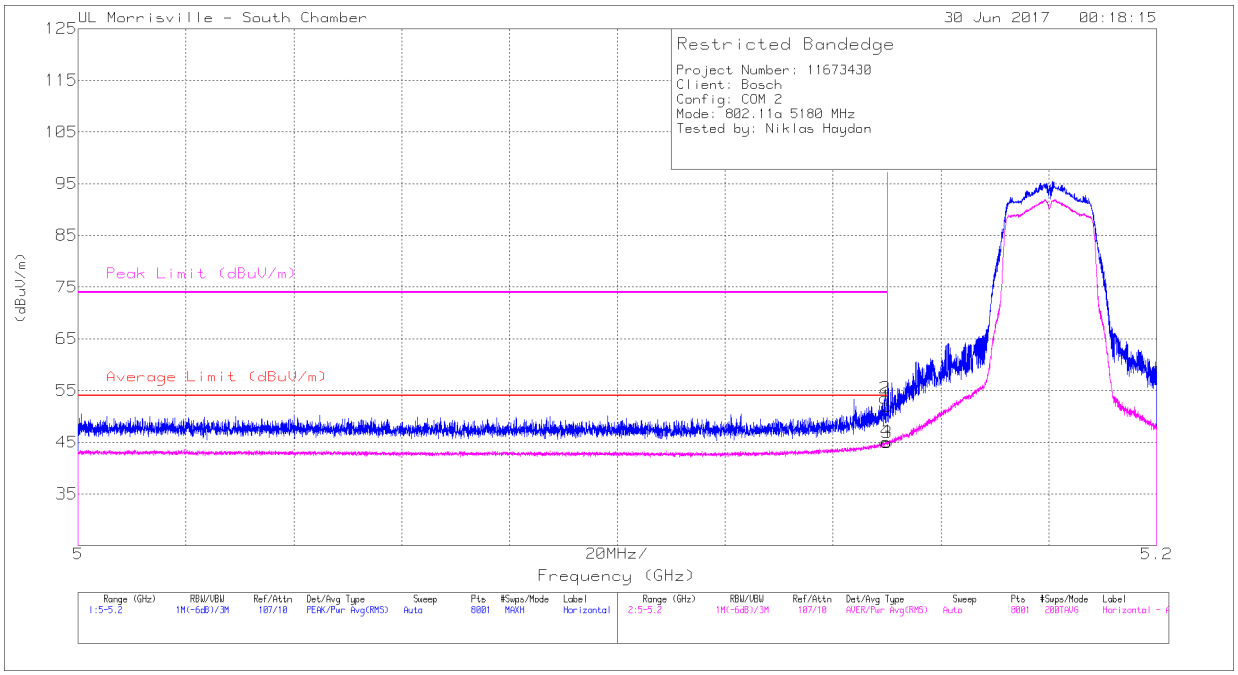
Note: Initially testing was performed using a script that started at 96% duty cycle, but when the radio circuit heated, some instability was observed and the duty cycle dropped off to ~40% (duty cycle correction factor of 4.09 used as worst-case). The customer was concerned regarding sample stability due to the overheating, so any marginal results were tested using a 10% duty cycle script (10.07 duty cycle correction factor).

Additionally, regarding the measurements performed where the EUT had 40% duty cycle: The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

9.2. TRANSMITTER ABOVE 1 GHz

9.3. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

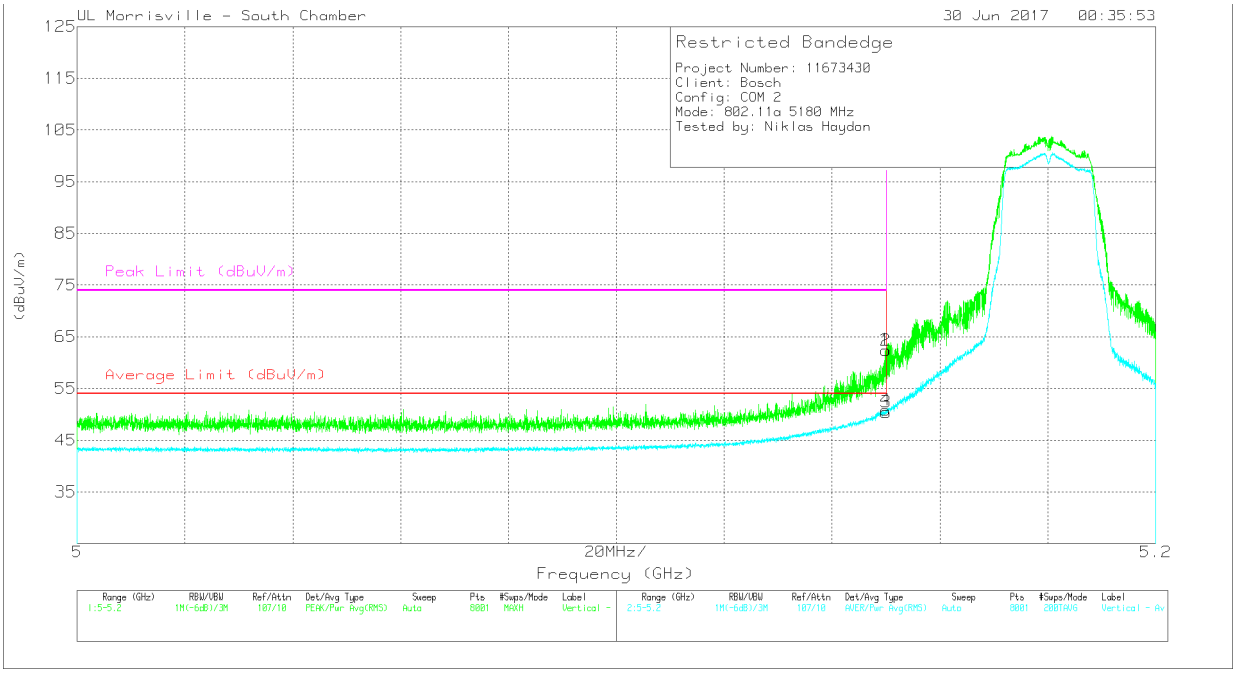
RESTRICTED BANDEDGE (LOW CHANNEL INTERNAL CHAIN 0)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.52	Pk	34.1	-22.7	0	51.92	-	-	74	-22.08	37	344	H
2	* 5.15	42.15	Pk	34.1	-22.7	0	53.55	-	-	74	-20.45	37	344	H
3	* 5.15	29.46	RMS	34.1	-22.7	4.09	44.95	54	-9.05	-	-	37	344	H
4	* 5.15	29.62	RMS	34.1	-22.7	4.09	45.11	54	-8.89	-	-	37	344	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

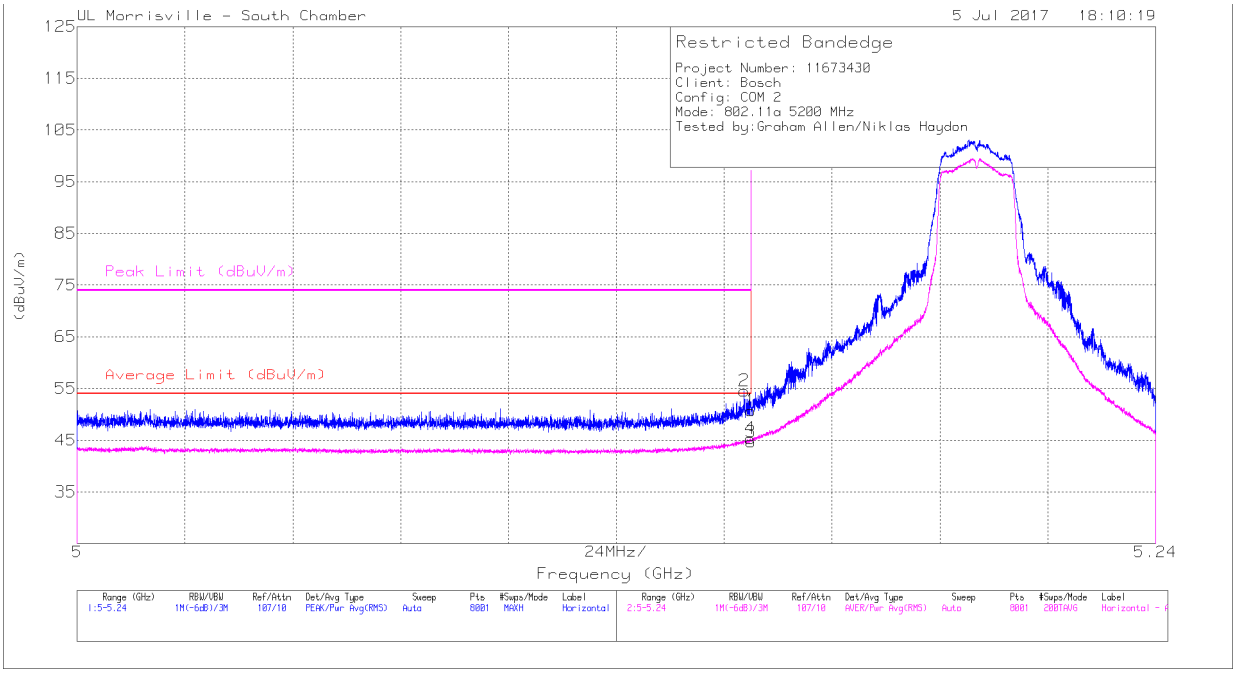
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	51.02	Pk	34.1	-22.7	0	62.42	-	-	74	-11.58	229	112	V
2	* 5.15	51	Pk	34.1	-22.7	0	62.4	-	-	74	-11.6	229	112	V
3	* 5.15	34.92	RMS	34.1	-22.7	4.09	50.41	54	-3.59	-	-	229	112	V
4	* 5.15	35.31	RMS	34.1	-22.7	4.09	50.8	54	-3.2	-	-	229	112	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

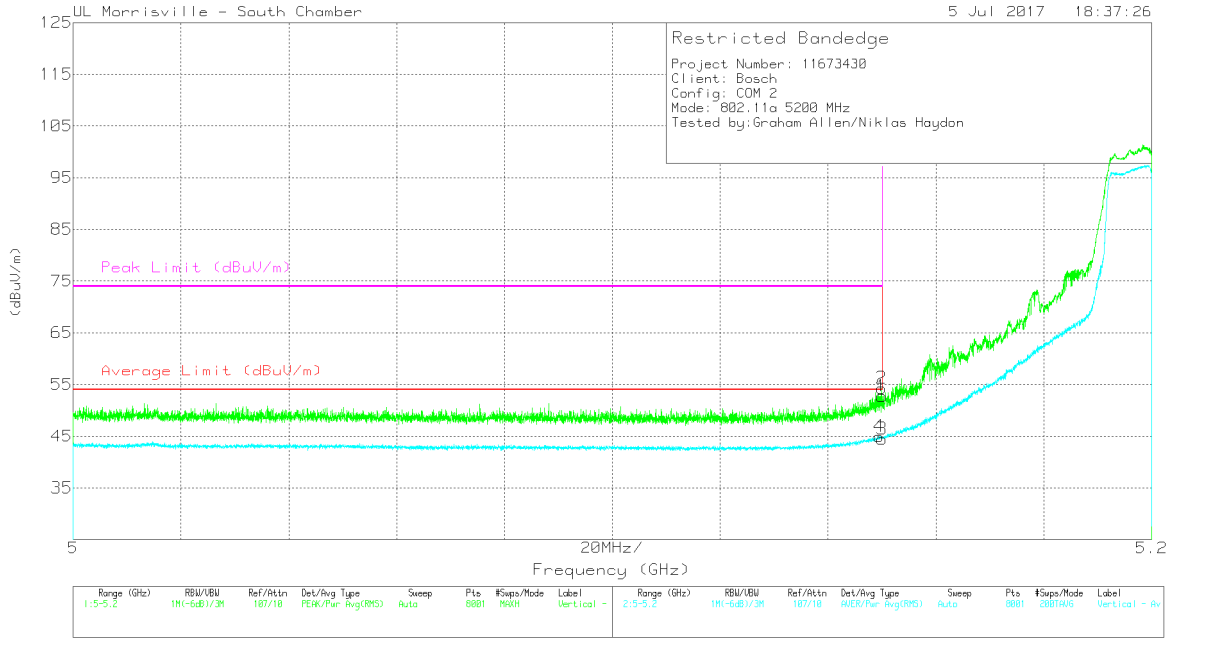
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	39.37	Pk	34.1	-22.7	0	50.77	-	-	74	-23.23	103	124	H
2	* 5.148	43.17	Pk	34.1	-22.7	0	54.57	-	-	74	-19.43	103	124	H
3	* 5.15	29.21	RMS	34.1	-22.7	4.09	44.7	54	-9.3	-	-	103	124	H
4	* 5.15	29.85	RMS	34.1	-22.7	4.09	45.34	54	-8.66	-	-	103	124	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

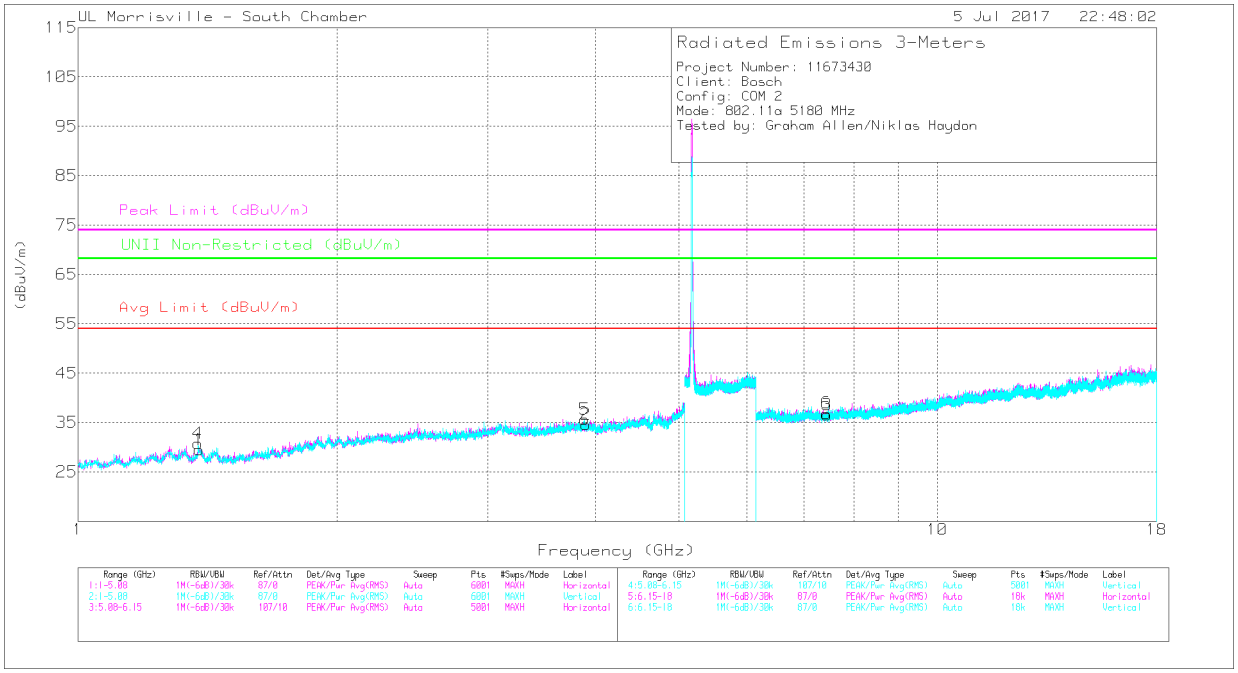


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	41.35	Pk	34.1	-22.7	0	52.75	-	-	74	-21.25	11	343	V
2	* 5.15	42.91	Pk	34.1	-22.7	0	54.31	-	-	74	-19.69	11	343	V
3	* 5.15	28.99	RMS	34.1	-22.7	4.09	44.48	54	-9.52	-	-	11	343	V
4	* 5.149	29.48	RMS	34.1	-22.7	4.09	44.97	54	-9.03	-	-	11	343	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

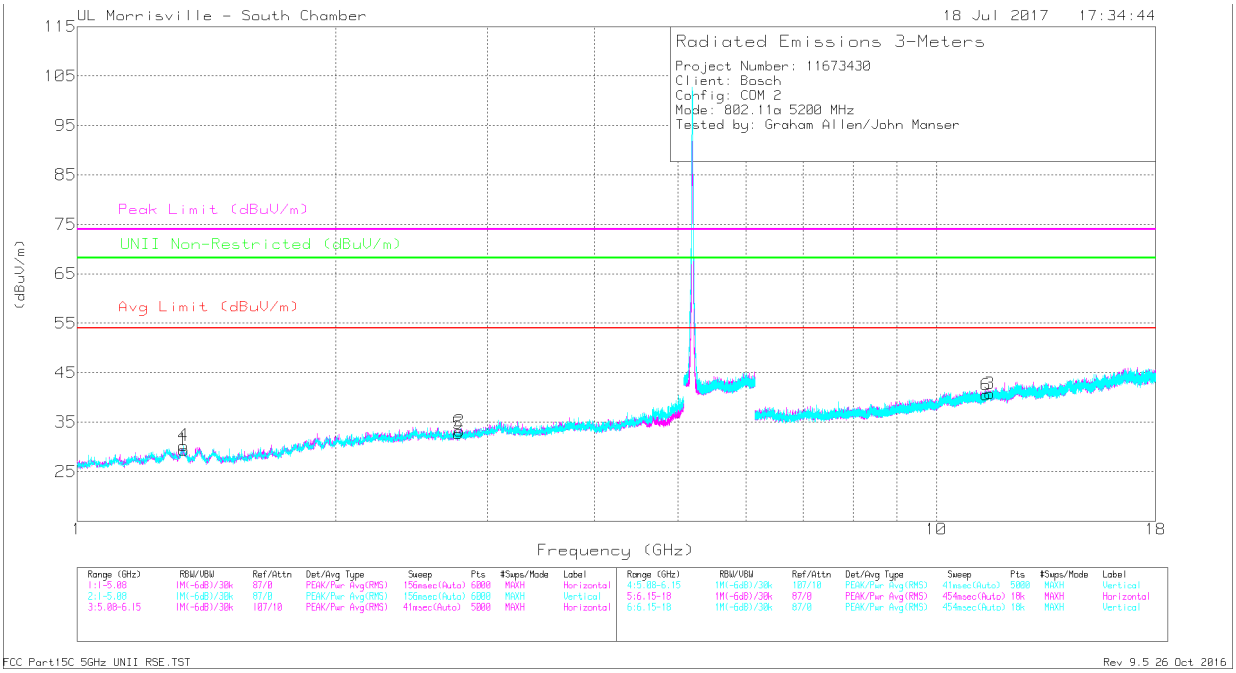
HARMONICS AND SPURIOUS EMISSIONS – INTERNAL CHAIN 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.385	42.27	PK-U	28.9	-34.8	0	36.37	-	-	74	-37.63	-	-	58	296	H
	* 1.383	30.46	ADR	28.9	-34.8	4.09	28.65	54	-25.35	-	-	-	-	58	296	H
2	* 3.899	40.47	PK-U	33.3	-32.5	0	41.27	-	-	74	-32.73	-	-	0	302	H
	* 3.899	28.5	ADR	33.3	-32.5	4.09	33.39	54	-20.61	-	-	-	-	0	302	H
3	* 7.444	37.01	PK-U	35.5	-28.2	0	44.31	-	-	74	-29.69	-	-	353	283	H
	* 7.443	24.33	ADR	35.5	-28.2	4.09	35.72	54	-18.28	-	-	-	-	353	283	H
4	* 1.38	43.2	PK-U	28.9	-34.8	0	37.3	-	-	74	-36.7	-	-	304	298	V
	* 1.38	30.28	ADR	28.9	-34.8	4.09	28.47	54	-25.53	-	-	-	-	304	298	V
5	* 3.884	41.12	PK-U	33.3	-32.7	0	41.72	-	-	74	-32.28	-	-	27	362	V
	* 3.884	28.95	ADR	33.3	-32.7	4.09	33.64	54	-20.36	-	-	-	-	27	362	V
6	* 7.426	38.45	PK-U	35.5	-28.5	0	45.45	-	-	74	-28.55	-	-	204	138	V
	* 7.426	24.61	ADR	35.5	-28.5	4.09	35.7	54	-18.3	-	-	-	-	204	138	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

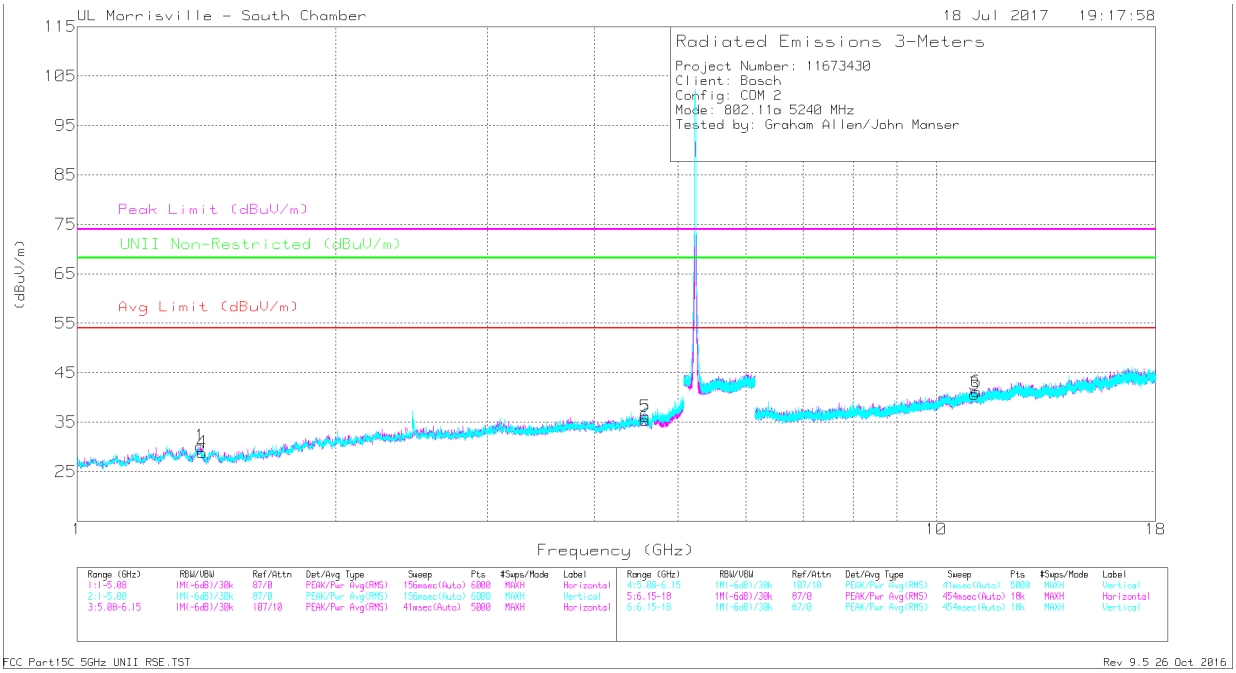
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.332	42.36	PK-U	28.7	-34.8	0	36.26	-	-	74	-37.74	-	-	229	238	H
	* 1.332	30.43	ADR	28.7	-34.8	4.09	28.42	54	-25.58	-	-	-	-	229	238	H
2	* 2.792	41.34	PK-U	32.2	-33.8	0	39.74	-	-	74	-34.26	-	-	182	172	H
	* 2.792	29.31	ADR	32.2	-33.8	4.09	31.8	54	-22.2	-	-	-	-	182	172	H
3	* 11.543	34.65	PK-U	38.3	-24.9	0	48.05	-	-	74	-25.95	-	-	201	195	H
	* 11.544	22.55	ADR	38.3	-24.9	4.09	40.04	54	-13.96	-	-	-	-	201	195	H
4	* 1.329	42.49	PK-U	28.8	-34.9	0	36.39	-	-	74	-37.61	-	-	243	269	V
	* 1.33	30.42	ADR	28.8	-34.8	4.09	28.51	54	-25.49	-	-	-	-	243	269	V
5	* 2.778	41.9	PK-U	32.2	-33.8	0	40.3	-	-	74	-33.7	-	-	57	263	V
	* 2.778	29.1	ADR	32.2	-33.8	4.09	31.59	54	-22.41	-	-	-	-	57	263	V
6	* 11.424	34.69	PK-U	38.2	-25.1	0	47.79	-	-	74	-26.21	-	-	206	143	V
	* 11.426	22.63	ADR	38.2	-25.1	4.09	39.82	54	-14.18	-	-	-	-	206	143	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

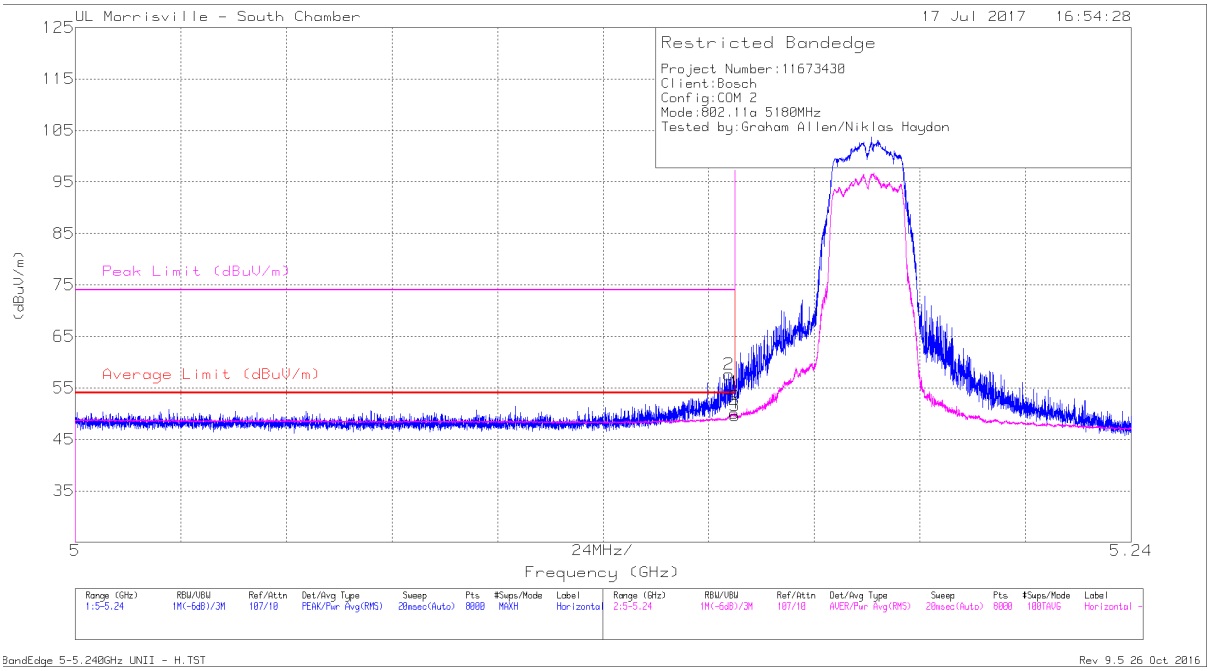


Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.391	42.9	PK-U	28.8	-34.8	0	36.9	-	-	74	-37.1	-	-	233	163	H
	* 1.391	30.33	ADR	28.8	-34.8	4.09	28.42	54	-25.58	-	-	-	-	233	163	H
2	* 4.583	39.96	PK-U	33.9	-31.7	0	42.16	-	-	74	-31.84	-	-	352	148	H
	* 4.583	28.09	ADR	33.9	-31.7	4.09	34.38	54	-19.62	-	-	-	-	352	148	H
3	* 11.078	34.55	PK-U	37.9	-25.1	0	47.35	-	-	74	-26.65	-	-	243	327	H
	* 11.078	22.57	ADR	37.9	-25.1	4.09	39.46	54	-14.54	-	-	-	-	243	327	H
4	* 1.396	41.9	PK-U	28.7	-34.9	0	35.7	-	-	74	-38.3	-	-	340	303	V
	* 1.396	29.86	ADR	28.7	-34.9	4.09	27.75	54	-26.25	-	-	-	-	340	303	V
5	* 4.582	40.86	PK-U	33.9	-31.7	0	43.06	-	-	74	-30.94	-	-	193	133	V
	* 4.582	28.3	ADR	33.9	-31.7	4.09	34.59	54	-19.41	-	-	-	-	193	133	V
6	* 11.138	34.59	PK-U	37.9	-25.1	0	47.39	-	-	74	-26.61	-	-	287	142	V
	* 11.138	22.3	ADR	37.9	-25.1	4.09	39.19	54	-14.81	-	-	-	-	287	142	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

RESTRICTED BANDEDGE (LOW CHANNEL INTERNAL CHAIN 1)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	42.83	Pk	34.1	-22.7	0	54.23	-	-	74	-19.77	351	164	H
2	* 5.149	46.21	Pk	34.1	-22.7	0	57.61	-	-	74	-16.39	351	164	H
3	* 5.15	28.38	RMS	34.1	-22.7	10.07	49.85	54	-4.15	-	-	351	164	H
4	* 5.15	28.86	RMS	34.1	-22.7	10.07	50.33	54	-3.67	-	-	351	164	H

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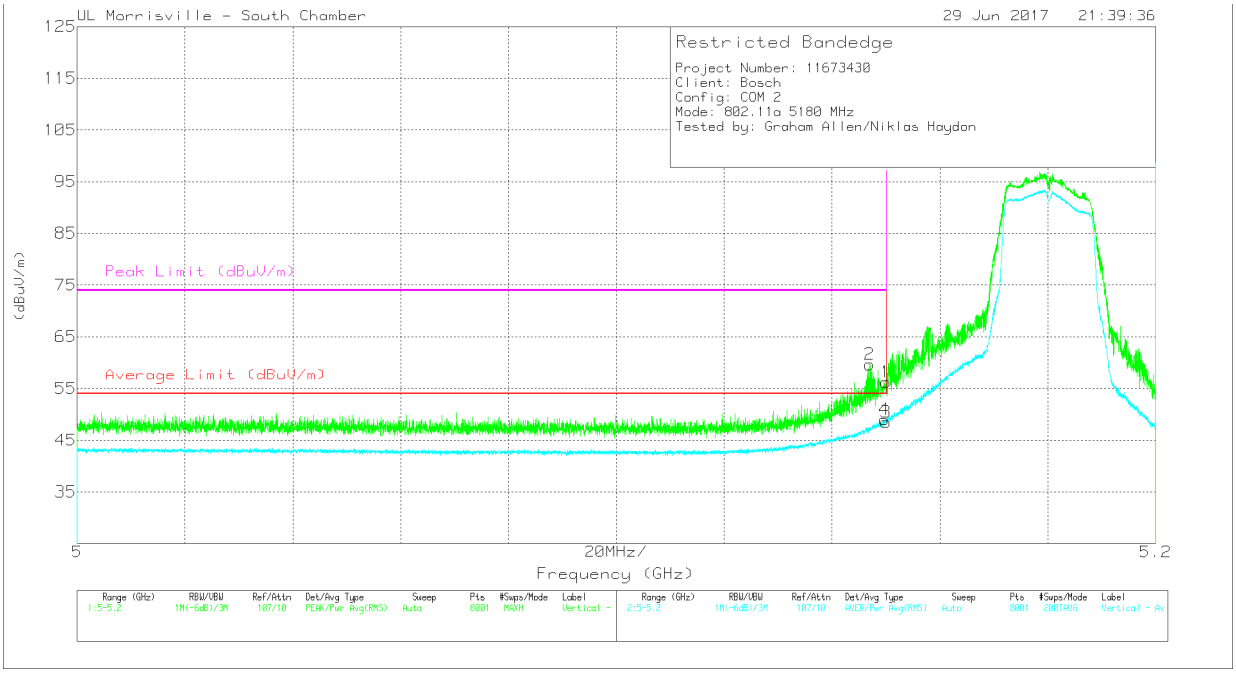
Pk - Peak detector
RMS - RMS detection

10%DC



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.81	Pk	34.1	-22.7	0	56.21	-	-	74	-17.79	301	389	V
2	* 5.147	48.24	Pk	34.1	-22.7	0	59.64	-	-	74	-14.36	301	389	V
3	* 5.15	33	RMS	34.1	-22.7	4.09	48.49	54	-5.51	-	-	301	389	V
4	* 5.15	33.52	RMS	34.1	-22.7	4.09	49.01	54	-4.99	-	-	301	389	V

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Pk - Peak detector
RMS - RMS detection

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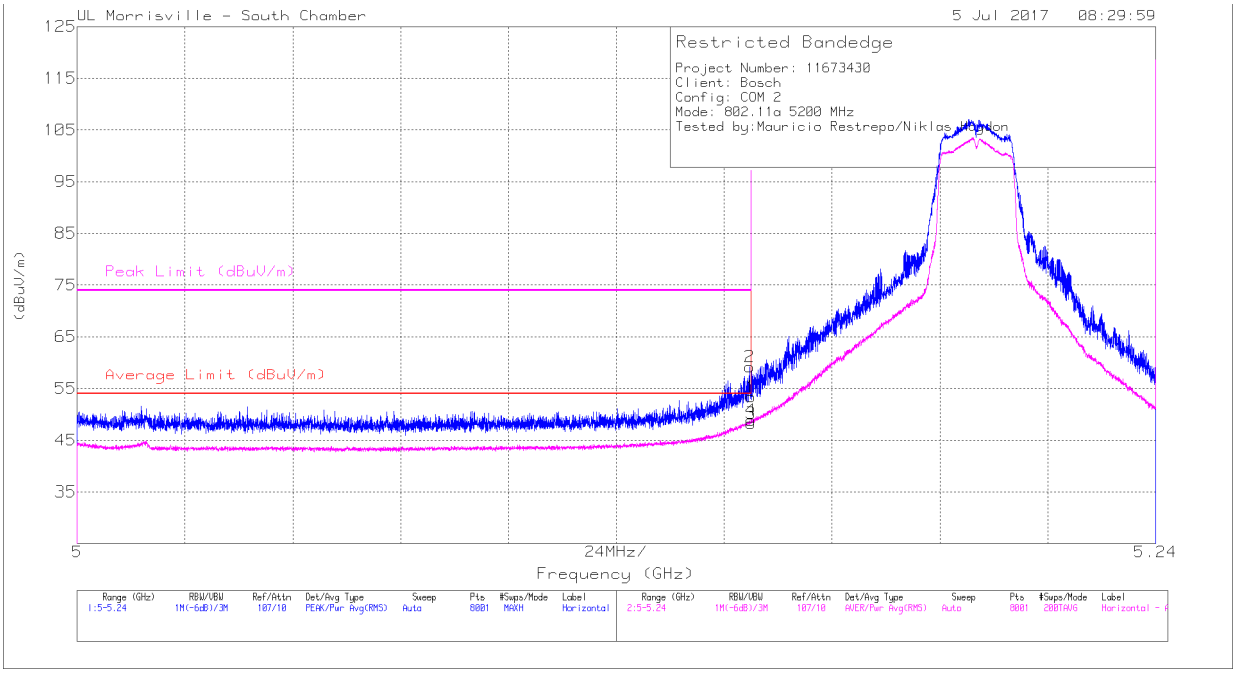

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	41.99	Pk	34.1	-22.7	0	53.39	-	-	74	-20.61	325	110	H
2	* 5.15	47.8	Pk	34.1	-22.7	0	59.2	-	-	74	-14.8	325	110	H
3	* 5.15	32.75	RMS	34.1	-22.7	4.09	48.24	54	-5.76	-	-	325	110	H
4	* 5.15	33.38	RMS	34.1	-22.7	4.09	48.87	54	-5.13	-	-	325	110	H

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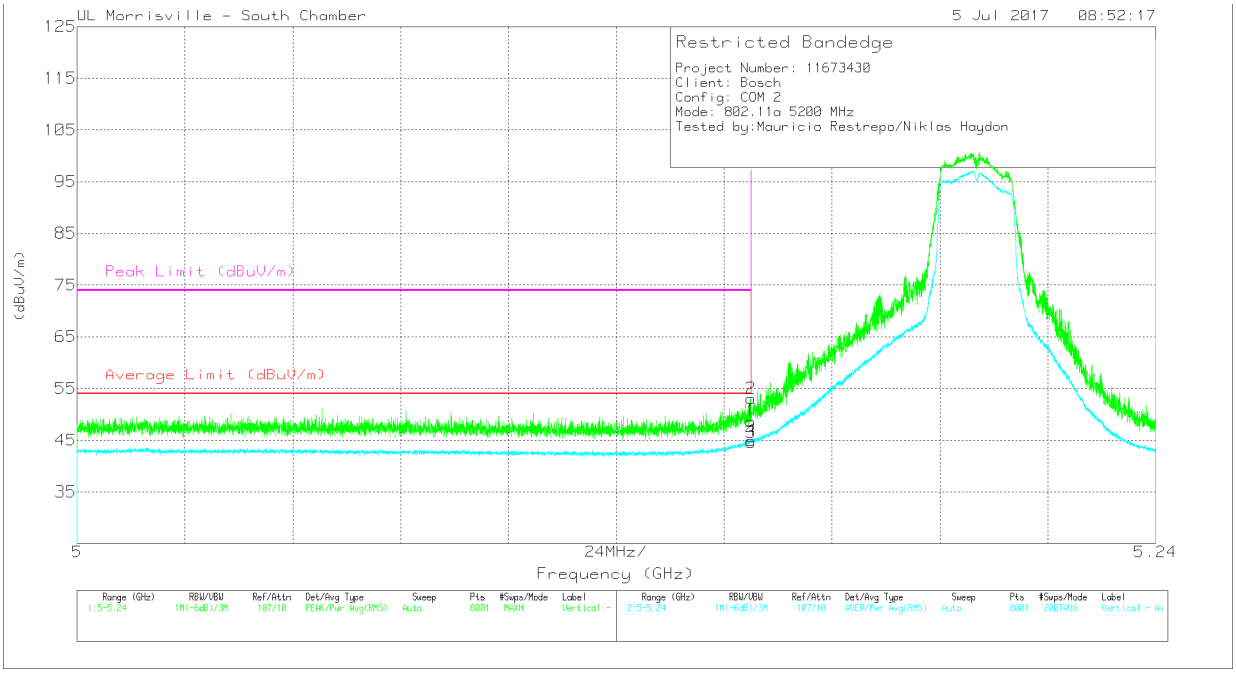

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.28	Pk	34.1	-22.7	0	48.68	-	-	74	-25.32	288	387	V
2	* 5.15	41.64	Pk	34.1	-22.7	0	53.04	-	-	74	-20.96	288	387	V
3	* 5.15	29.12	RMS	34.1	-22.7	4.09	44.61	54	-9.39	-	-	288	387	V
4	* 5.15	29.44	RMS	34.1	-22.7	4.09	44.93	54	-9.07	-	-	288	387	V

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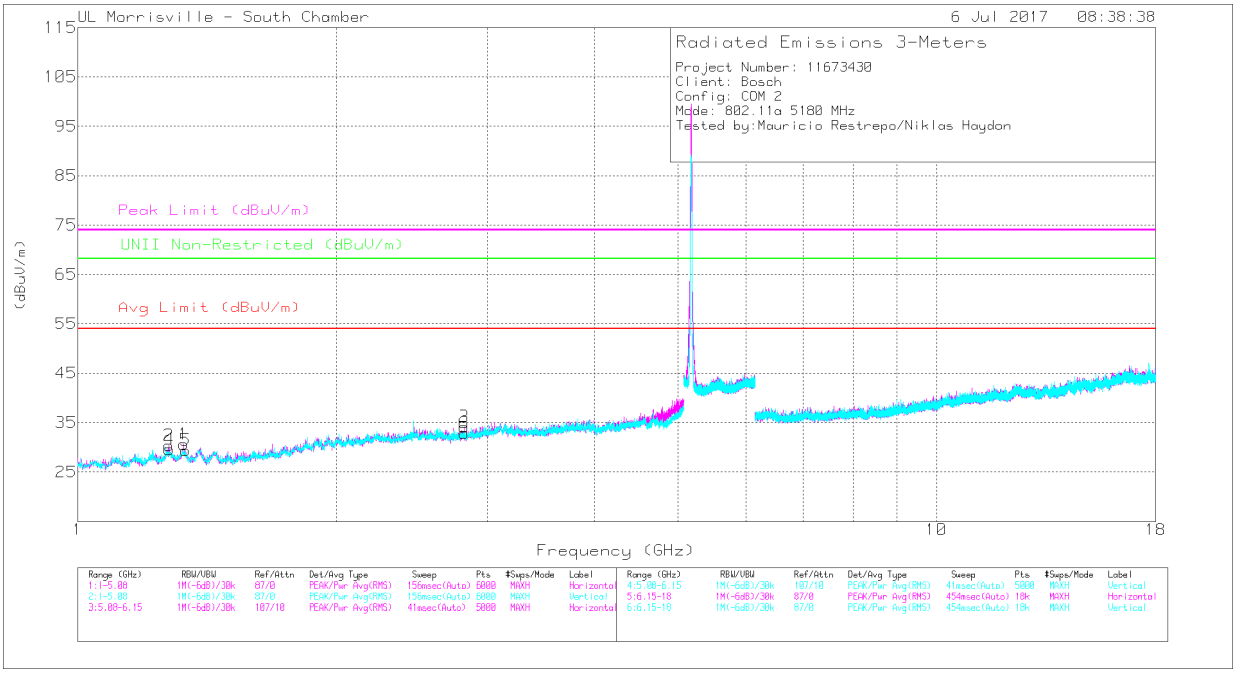
HARMONICS AND SPURIOUS EMISSIONS – INTERNAL CHAIN 1



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.278	42.22	PK-U	29	-35.1	0	36.12	-	-	74	-37.88	-	-	288	298	H
	* 1.276	30.56	ADR	29	-35.1	4.09	28.55	54	-25.45	-	-	-	-	288	298	H
3	* 2.819	41.72	PK-U	32.2	-33.9	0	40.02	-	-	74	-33.98	-	-	112	266	H
	* 2.819	29.51	ADR	32.2	-33.9	4.09	31.9	54	-22.1	-	-	-	-	112	266	H
1	* 1.329	42.56	PK-U	28.8	-34.8	0	36.56	-	-	74	-37.44	-	-	179	381	H
	* 1.329	30.47	ADR	28.8	-34.8	4.09	28.56	54	-25.44	-	-	-	-	179	381	H
4	* 1.279	42.7	PK-U	29	-35.1	0	36.6	-	-	74	-37.4	-	-	40	108	V
	* 1.277	30.51	ADR	29	-35.1	4.09	28.5	54	-25.5	-	-	-	-	40	108	V
5	* 1.335	42.57	PK-U	28.7	-34.8	0	36.47	-	-	74	-37.53	-	-	301	234	V
	* 1.334	30.47	ADR	28.7	-34.8	4.09	28.46	54	-25.54	-	-	-	-	301	234	V
6	* 2.822	41.89	PK-U	32.2	-33.9	0	40.19	-	-	74	-33.81	-	-	79	367	V
	* 2.818	29.49	ADR	32.2	-33.9	4.09	31.88	54	-22.12	-	-	-	-	79	367	V

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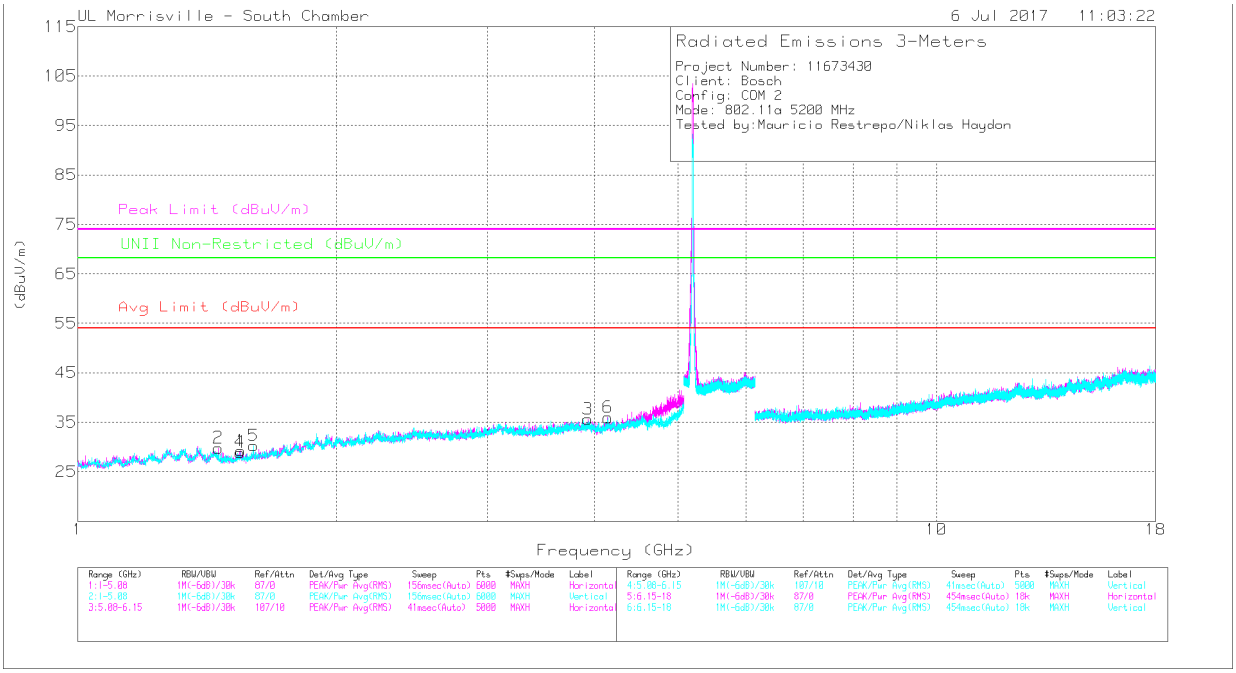

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.458	42.04	PK-U	28.5	-35.2	0	35.34	-	-	74	-38.66	-	-	288	132	H
	* 1.456	30.05	ADR	28.6	-35.1	4.09	27.64	54	-26.36	-	-	-	-	288	132	H
3	* 3.929	40.39	PK-U	33.3	-32.3	0	41.39	-	-	74	-32.61	-	-	227	328	H
	* 3.926	28.73	ADR	33.3	-32.3	4.09	33.82	54	-20.18	-	-	-	-	227	328	H
1	* 1.551	42.55	PK-U	28.1	-35	0	35.65	-	-	74	-38.35	-	-	127	371	H
	* 1.551	30.23	ADR	28.1	-35	4.09	27.42	54	-26.58	-	-	-	-	127	371	H
4	* 1.546	42.35	PK-U	28.1	-35	0	35.45	-	-	74	-38.55	-	-	260	291	V
	* 1.546	30.4	ADR	28.1	-35	4.09	27.59	54	-26.41	-	-	-	-	260	291	V
5	* 1.604	41.96	PK-U	28.4	-34.5	0	35.86	-	-	74	-38.14	-	-	68	203	V
	* 1.604	30.03	ADR	28.4	-34.5	4.09	28.02	54	-25.98	-	-	-	-	68	203	V
6	* 4.143	39.71	PK-U	33.3	-31.8	0	41.21	-	-	74	-32.79	-	-	128	393	V
	* 4.145	28.15	ADR	33.3	-31.8	4.09	33.74	54	-20.26	-	-	-	-	128	393	V

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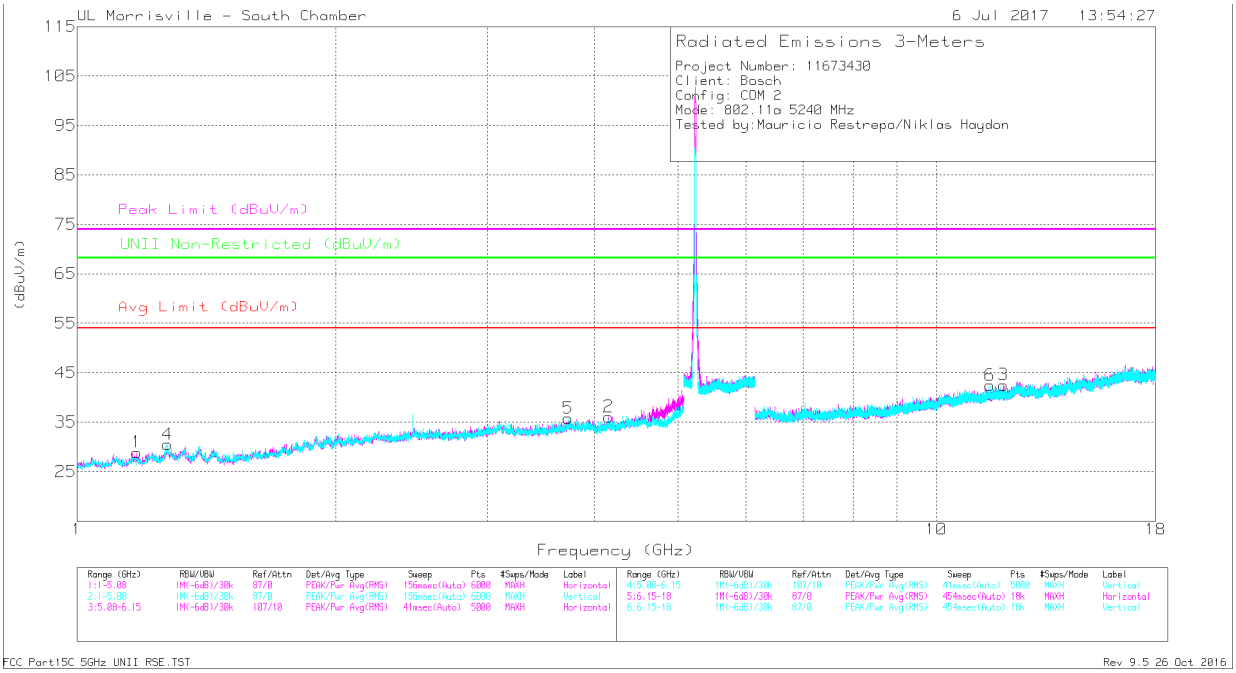

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.172	42.57	PK-U	28	-35.4	0	35.17	-	-	74	-38.83	-	-	315	198	H
	* 1.172	30.86	ADR	28	-35.4	4.09	27.55	54	-26.45	-	-	-	-	315	198	H
2	* 4.156	39.84	PK-U	33.3	-31.6	0	41.54	-	-	74	-32.46	-	-	191	210	H
	* 4.154	28.16	ADR	33.3	-31.6	4.09	33.95	54	-20.05	-	-	-	-	191	210	H
4	* 1.273	42.38	PK-U	29	-35.1	0	36.28	-	-	74	-37.72	-	-	211	366	V
	* 1.276	30.6	ADR	29	-35.1	4.09	28.59	54	-25.41	-	-	-	-	211	366	V
5	* 3.73	40.63	PK-U	33.3	-32.6	0	41.33	-	-	74	-32.67	-	-	311	245	V
	* 3.73	28.71	ADR	33.3	-32.6	4.09	33.5	54	-20.5	-	-	-	-	311	245	V
3	* 11.967	34.33	PK-U	38.7	-25.2	0	47.83	-	-	74	-26.17	-	-	45	215	H
	* 11.968	22.7	ADR	38.7	-25.2	4.09	40.29	54	-13.71	-	-	-	-	45	215	H
6	* 11.541	34.26	PK-U	38.3	-24.9	0	47.66	-	-	74	-26.34	-	-	155	141	V
	* 11.54	22.82	ADR	38.3	-24.9	4.09	40.31	54	-13.69	-	-	-	-	155	141	V

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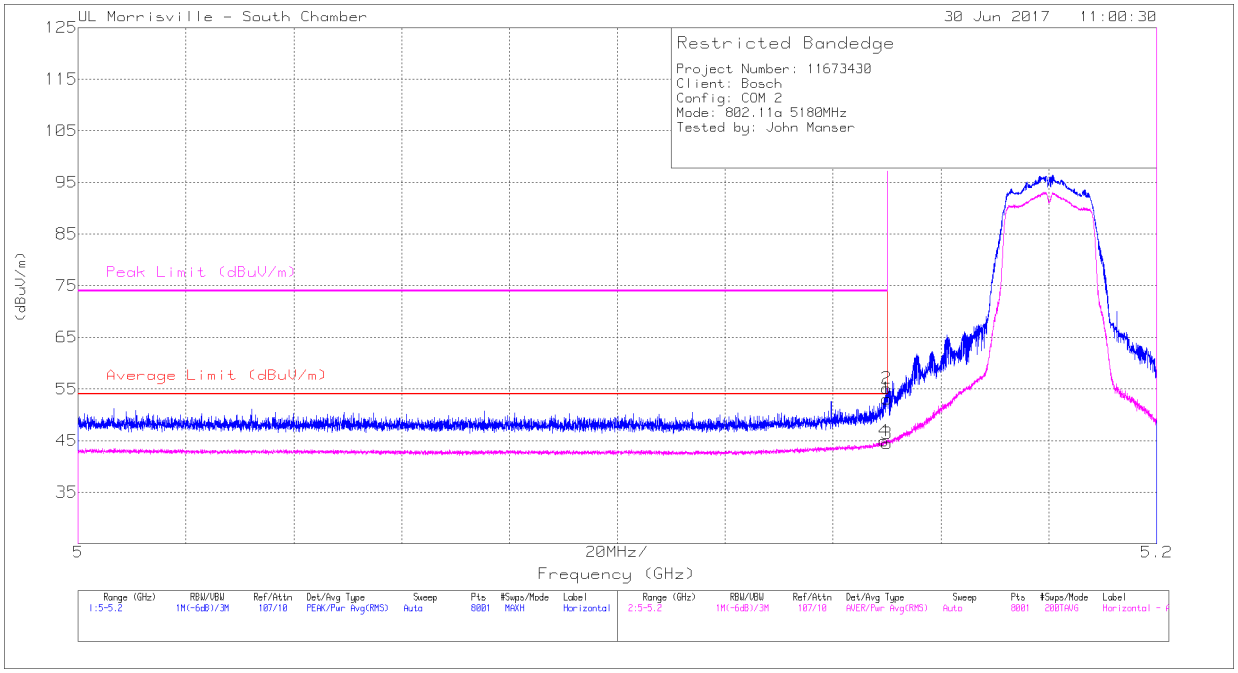
RESTRICTED BANDEDGE (LOW CHANNEL EXTERNAL CHAIN 0)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	41.71	Pk	34.1	-22.7	0	53.11	-	-	74	-20.89	323	138	H
2	* 5.15	43.71	Pk	34.1	-22.7	0	55.11	-	-	74	-18.89	323	138	H
3	* 5.15	28.97	RMS	34.1	-22.7	4.09	44.46	54	-9.54	-	-	323	138	H
4	* 5.149	29.47	RMS	34.1	-22.7	4.09	44.96	54	-9.04	-	-	323	138	H

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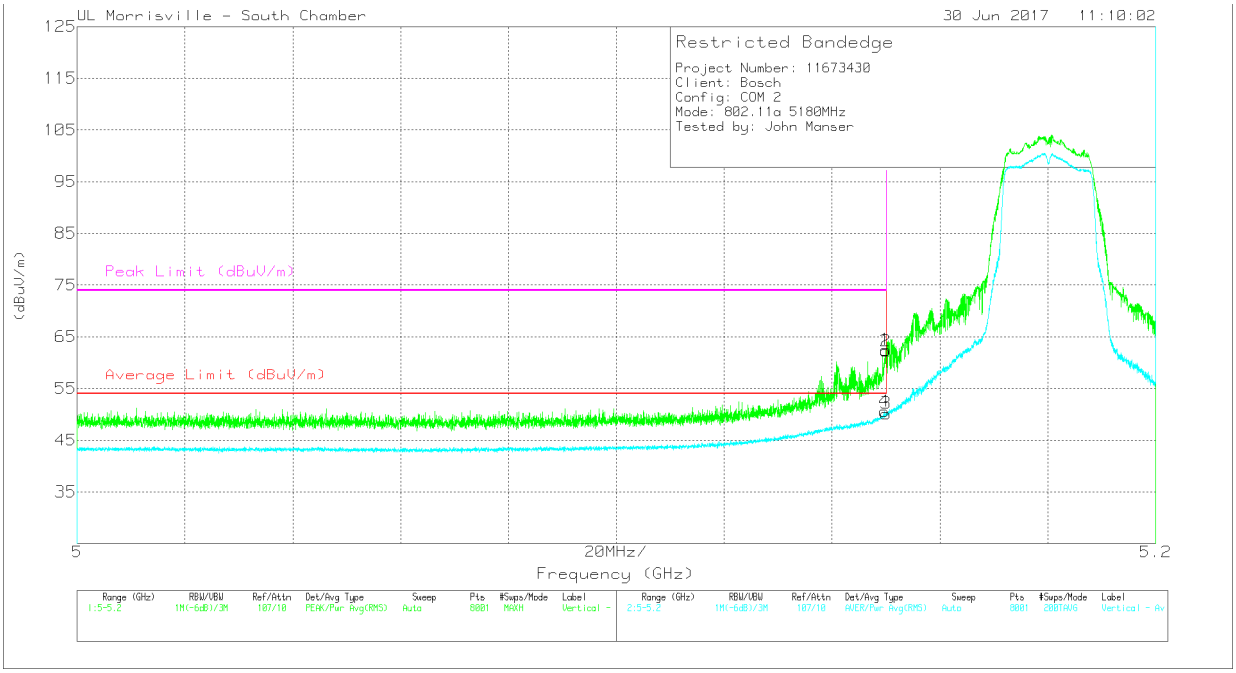
RMS - RMS detection

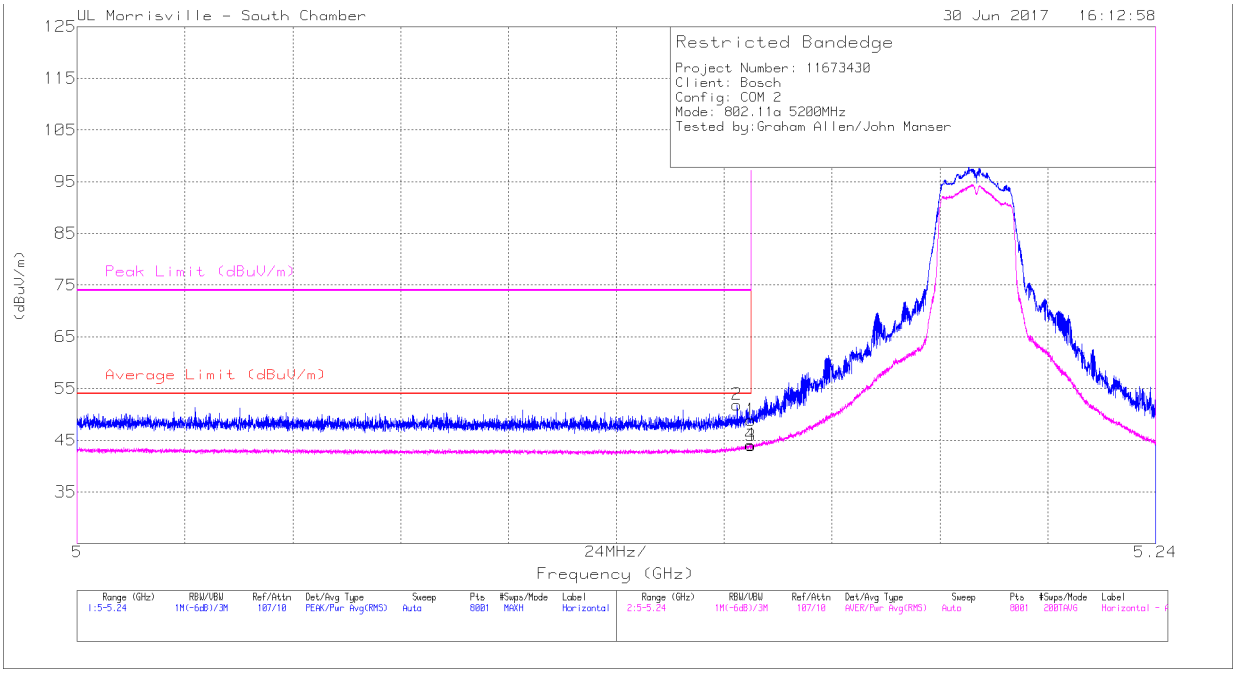
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



AR	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	51.06	Pk	34.1	-22.7	0	62.46	-	-	74	-11.54	226	103	V
2	* 5.15	50.87	Pk	34.1	-22.7	0	62.27	-	-	74	-11.73	226	103	V
3	* 5.15	34.67	RMS	34.1	-22.7	4.09	50.16	54	-3.84	-	-	226	103	V
4	* 5.15	35.09	RMS	34.1	-22.7	4.09	50.58	54	-3.42	-	-	226	103	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

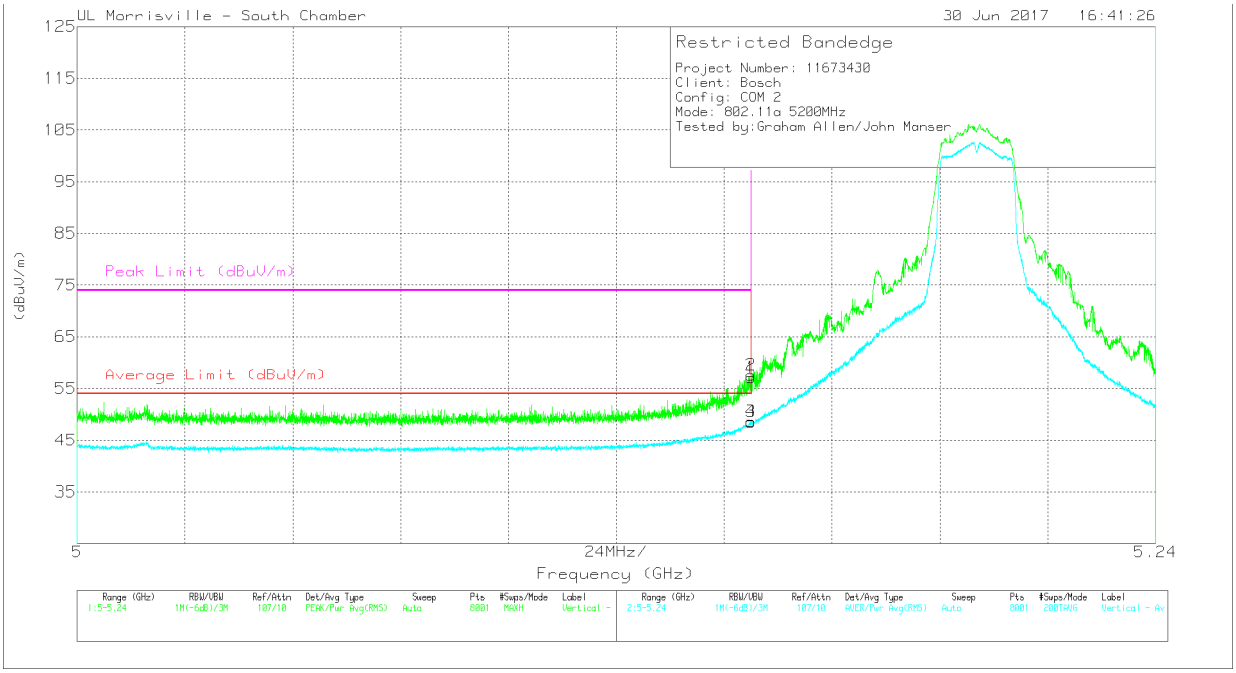
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.53	Pk	34.1	-22.7	0	48.93	-	-	74	-25.07	320	110	H
2	* 5.147	40.48	Pk	34.1	-22.7	0	51.88	-	-	74	-22.12	320	110	H
3	* 5.15	28.45	RMS	34.1	-22.7	4.09	43.94	54	-10.06	-	-	320	110	H
4	* 5.15	28.63	RMS	34.1	-22.7	4.09	44.12	54	-9.88	-	-	320	110	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

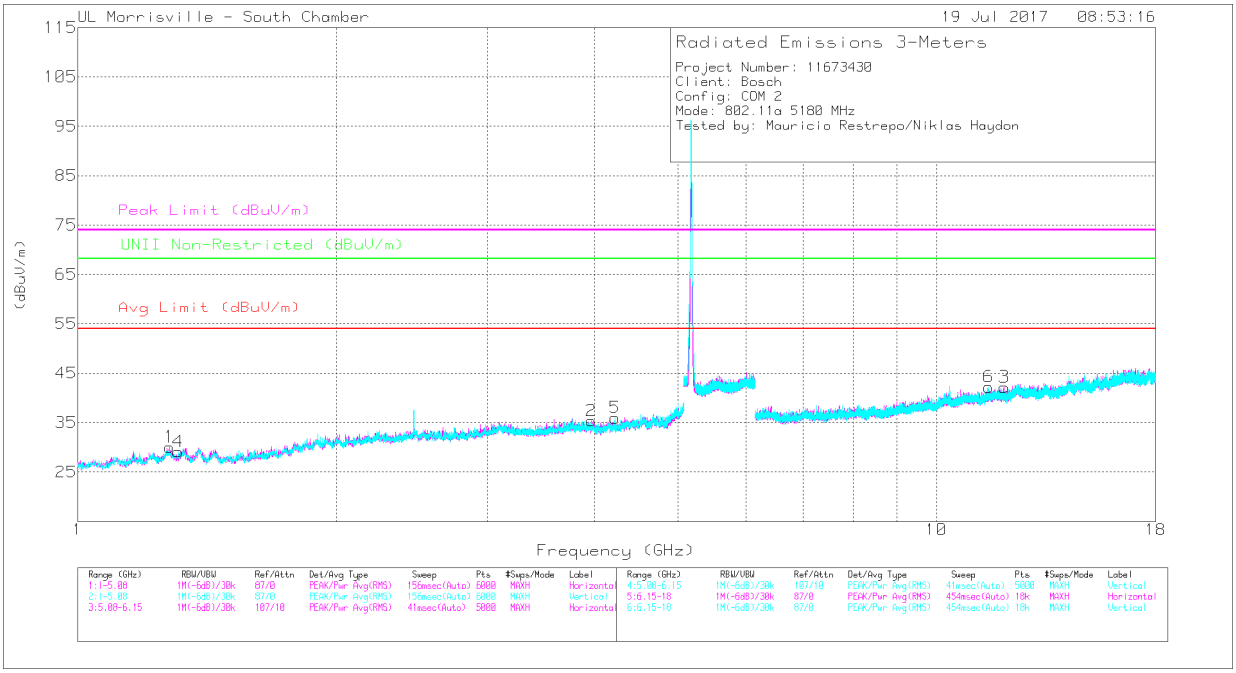


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	45.71	Pk	34.1	-22.7	0	57.11	-	-	74	-16.89	225	103	V
2	* 5.15	46.19	Pk	34.1	-22.7	0	57.59	-	-	74	-16.41	225	103	V
3	* 5.15	33.07	RMS	34.1	-22.7	4.09	48.56	54	-5.44	-	-	225	103	V
4	* 5.15	33.15	RMS	34.1	-22.7	4.09	48.64	54	-5.36	-	-	225	103	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

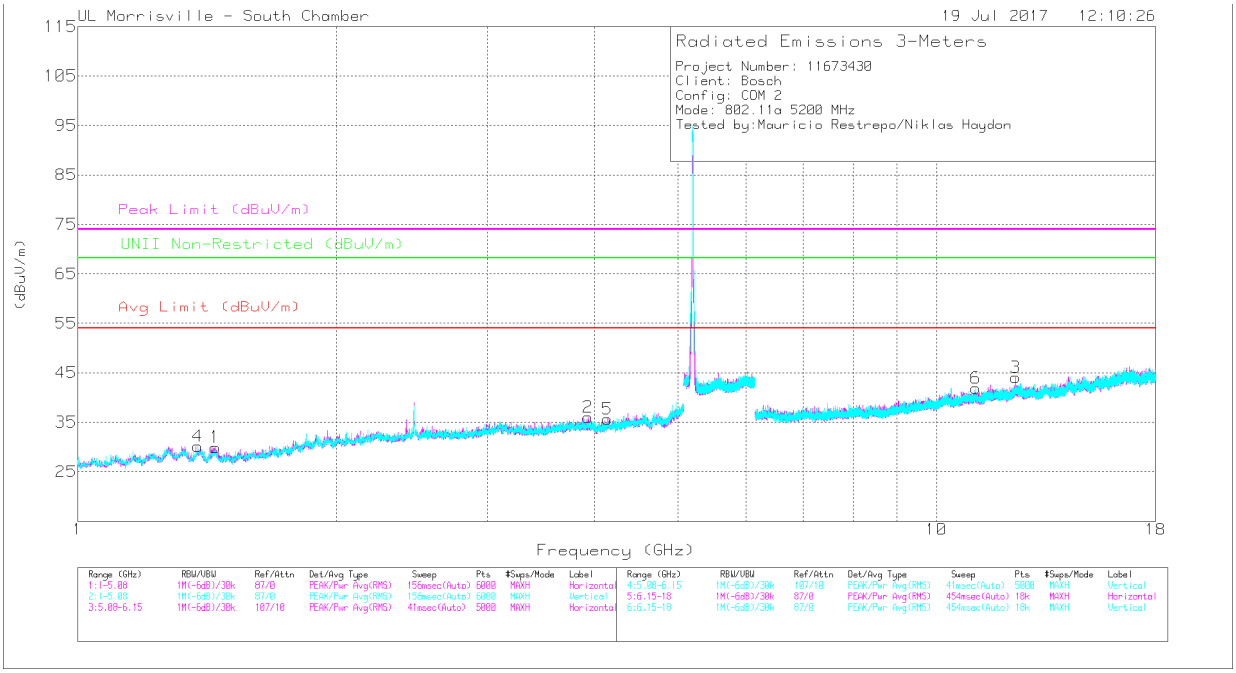
HARMONICS AND SPURIOUS EMISSIONS – EXTERNAL CHAIN 0



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.965	39.21	PK-U	33.3	-32	0	40.51	-	-	74	-33.49	-	-	102	296	H
	* 3.965	27.65	ADR	33.3	-32	4.09	33.04	54	-20.96	-	-	-	-	102	296	H
1	* 1.279	42.24	PK-U	29	-35.1	0	36.14	-	-	74	-37.86	-	-	123	146	H
	* 1.279	30.37	ADR	29	-35.1	4.09	28.36	54	-25.64	-	-	-	-	123	146	H
3	* 11.997	34.18	PK-U	38.7	-25.2	0	47.68	-	-	74	-26.32	-	-	31	199	H
	* 11.999	22.32	ADR	38.7	-25.2	4.09	39.91	54	-14.09	-	-	-	-	31	199	H
4	* 1.309	41.6	PK-U	29.1	-35	0	35.7	-	-	74	-38.3	-	-	281	235	V
	* 1.311	29.36	ADR	29.1	-35	4.09	27.55	54	-26.45	-	-	-	-	281	235	V
5	* 4.223	39.69	PK-U	33.3	-32.1	0	40.89	-	-	74	-33.11	-	-	229	234	V
	* 4.222	28.03	ADR	33.3	-32	4.09	33.42	54	-20.58	-	-	-	-	229	234	V
6	* 11.501	34.76	PK-U	38.3	-24.8	0	48.26	-	-	74	-25.74	-	-	266	267	V
	* 11.501	22.62	ADR	38.3	-24.8	4.09	40.21	54	-13.79	-	-	-	-	266	267	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

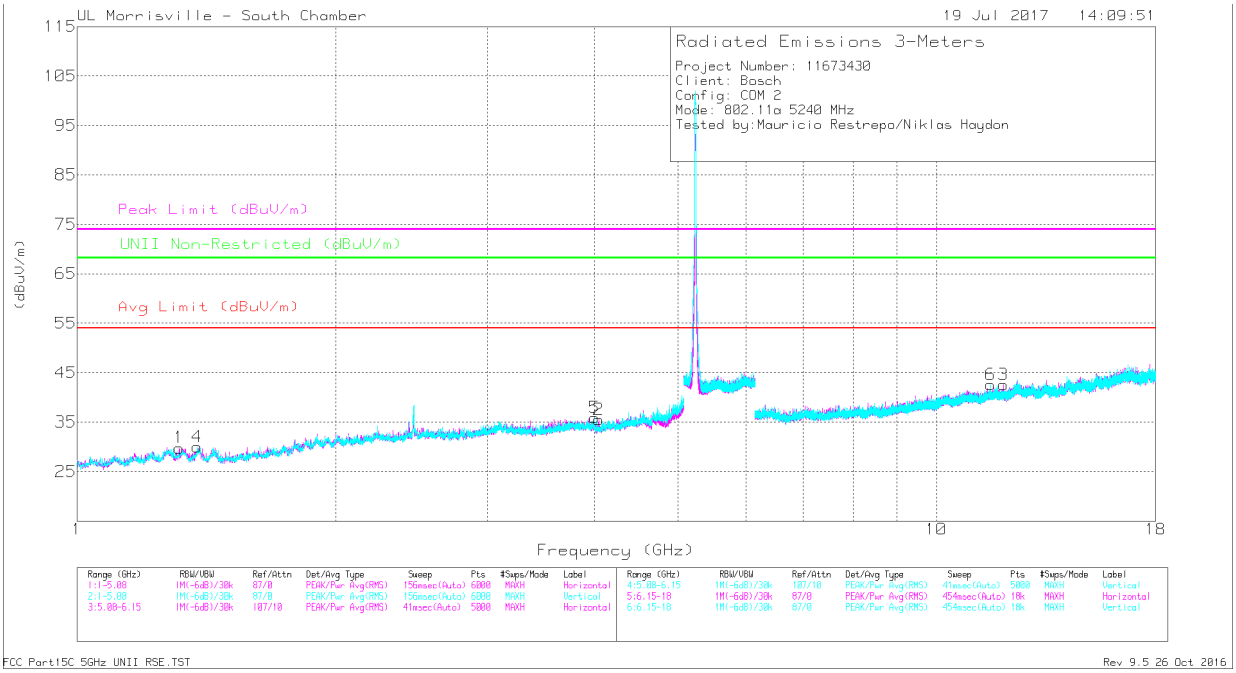
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.931	39.6	PK-U	33.3	-32.3	0	40.6	-	-	74	-33.4	-	-	23	249	H
	* 3.93	28.55	ADR	33.3	-32.3	4.09	33.64	54	-20.36	-	-	-	-	23	249	H
1	* 1.446	42.18	PK-U	28.7	-35	0	35.88	-	-	74	-38.12	-	-	245	256	H
	* 1.445	30.26	ADR	28.7	-35	4.09	28.05	54	-25.95	-	-	-	-	245	256	H
3	* 12.367	35.21	PK-U	38.9	-24.6	0	49.51	-	-	74	-24.49	-	-	151	188	H
	* 12.369	22.69	ADR	38.9	-24.5	4.09	41.18	54	-12.82	-	-	-	-	151	188	H
4	* 1.381	41.79	PK-U	28.9	-34.8	0	35.89	-	-	74	-38.11	-	-	24	293	V
	* 1.382	30.3	ADR	28.9	-34.8	4.09	28.49	54	-25.51	-	-	-	-	24	293	V
5	* 4.14	39.67	PK-U	33.3	-31.7	0	41.27	-	-	74	-32.73	-	-	86	296	V
	* 4.141	27.97	ADR	33.3	-31.7	4.09	33.66	54	-20.34	-	-	-	-	86	296	V
6	* 11.114	34.52	PK-U	37.9	-25	0	47.42	-	-	74	-26.58	-	-	106	123	V
	* 11.114	22.57	ADR	37.9	-25	4.09	39.56	54	-14.44	-	-	-	-	106	123	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



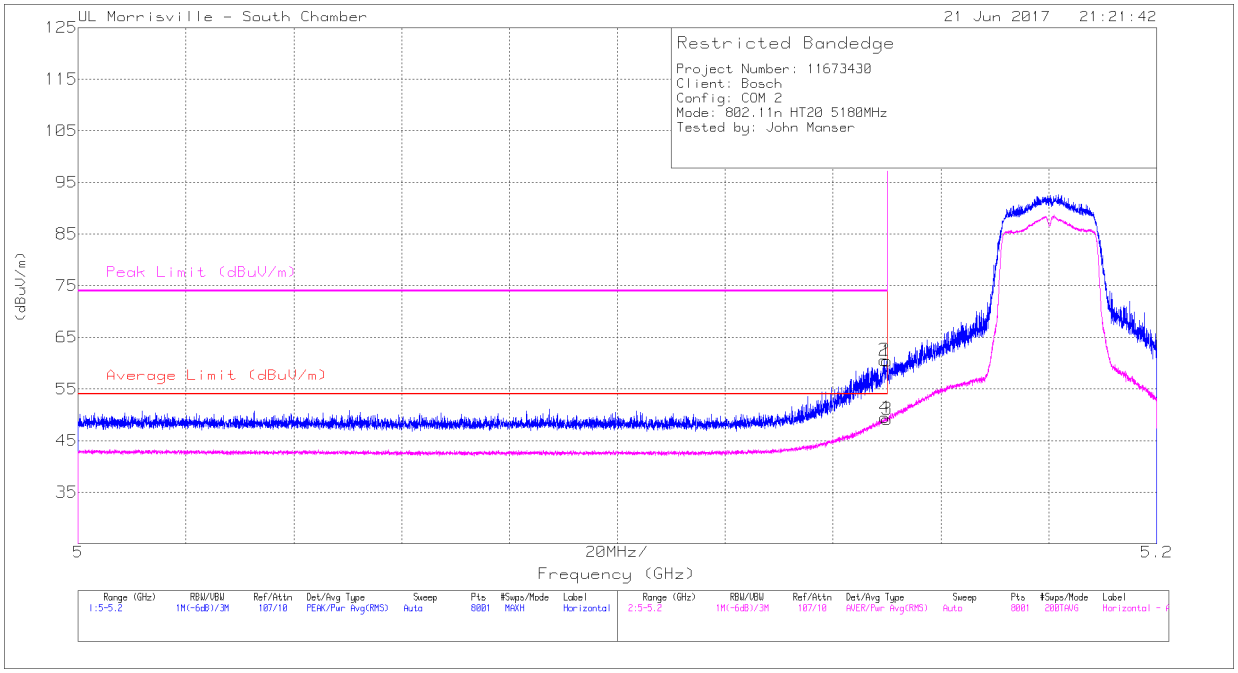
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.314	41.96	PK-U	29	-35	0	35.96	-	-	74	-38.04	-	-	95	201	H
	* 1.315	29.93	ADR	29	-35	4.09	28.02	54	-25.98	-	-	-	-	95	201	H
2	* 4.044	40.71	PK-U	33.3	-32.9	0	41.11	-	-	74	-32.89	-	-	136	377	H
	* 4.046	28.6	ADR	33.3	-32.9	4.09	33.09	54	-20.91	-	-	-	-	136	377	H
4	* 1.381	42.15	PK-U	28.9	-34.8	0	36.25	-	-	74	-37.75	-	-	154	124	V
	* 1.381	30.26	ADR	28.9	-34.8	4.09	28.45	54	-25.55	-	-	-	-	154	124	V
5	* 4.002	39.6	PK-U	33.3	-32.3	0	40.6	-	-	74	-33.4	-	-	73	248	V
	* 3.999	28.12	ADR	33.3	-32.3	4.09	33.21	54	-20.79	-	-	-	-	73	248	V
3	* 11.967	33.97	PK-U	38.7	-25.2	0	47.47	-	-	74	-26.53	-	-	344	343	H
	* 11.971	22.56	ADR	38.7	-25.2	4.09	40.15	54	-13.85	-	-	-	-	344	343	H
6	* 11.558	34.53	PK-U	38.3	-25	0	47.83	-	-	74	-26.17	-	-	189	189	V
	* 11.558	22.53	ADR	38.3	-25	4.09	39.92	54	-14.08	-	-	-	-	189	189	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

9.4. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL INTERNAL CHAIN 0)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	49.05	Pk	34.1	-22.7	0	60.45	-	-	74	-13.55	351	156	H
2	* 5.15	49.2	Pk	34.1	-22.7	0	60.6	-	-	74	-13.4	351	156	H
3	* 5.15	33.68	RMS	34.1	-22.7	4.09	49.17	54	-4.83	-	-	351	156	H
4	* 5.15	33.96	RMS	34.1	-22.7	4.09	49.45	54	-4.55	-	-	351	156	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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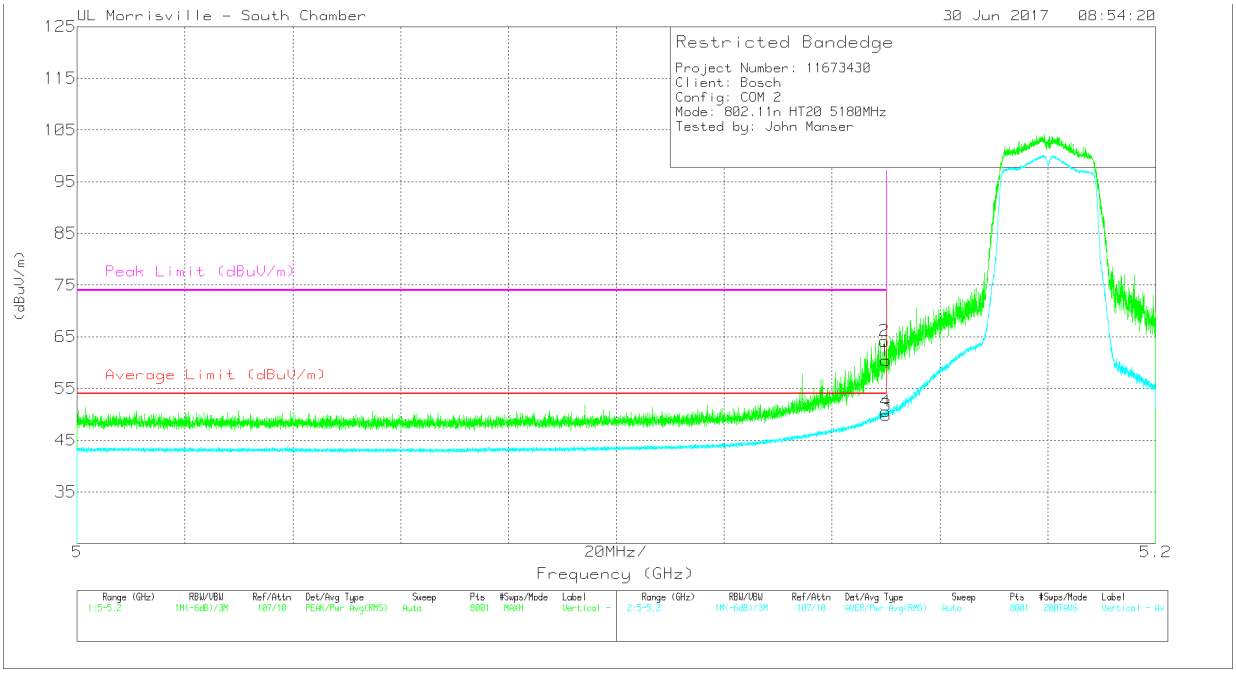

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	49	Pk	34.1	-22.7	0	60.4	-	-	74	-13.6	228	113	V
2	* 5.15	52.78	Pk	34.1	-22.7	0	64.18	-	-	74	-9.82	228	113	V
3	* 5.15	34.36	RMS	34.1	-22.7	4.09	49.85	54	-4.15	-	-	228	113	V
4	* 5.15	35.12	RMS	34.1	-22.7	4.09	50.61	54	-3.39	-	-	228	113	V

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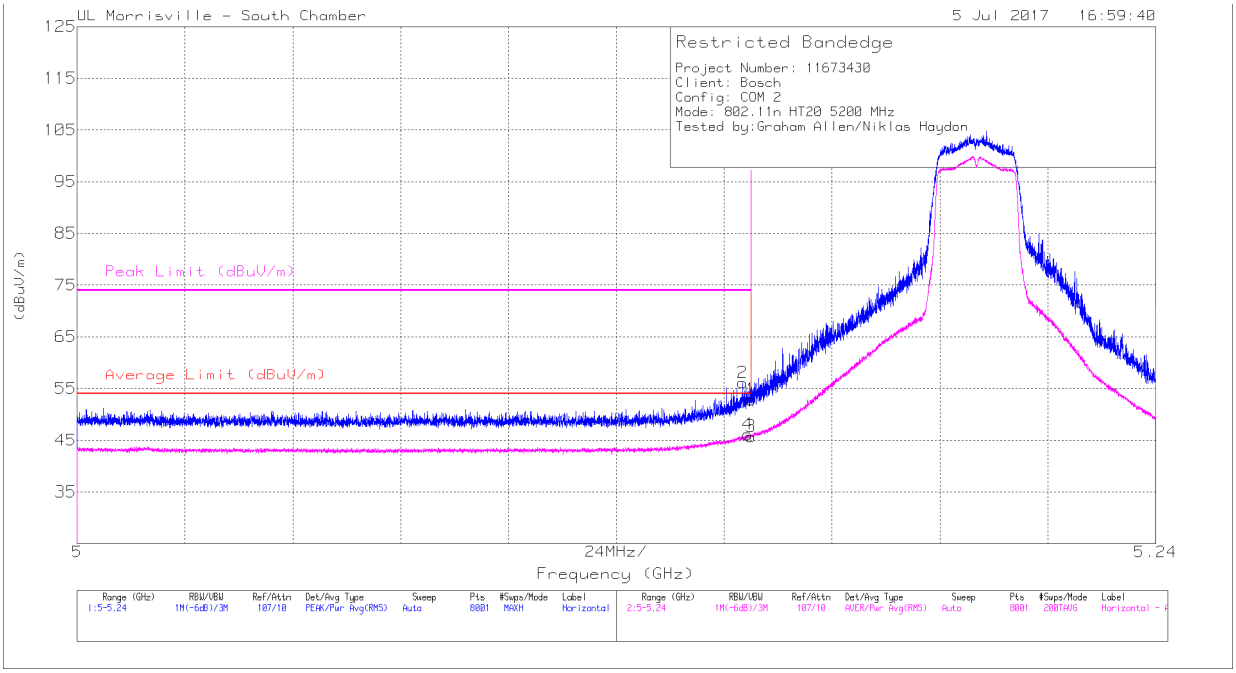
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	41.46	Pk	34.1	-22.7	0	52.86	-	-	74	-21.14	98	113	H
2	* 5.148	44.74	Pk	34.1	-22.7	0	56.14	-	-	74	-17.86	98	113	H
3	* 5.15	30.23	RMS	34.1	-22.7	4.09	45.72	54	-8.28	-	-	98	113	H
4	* 5.149	30.62	RMS	34.1	-22.7	4.09	46.11	54	-7.89	-	-	98	113	H

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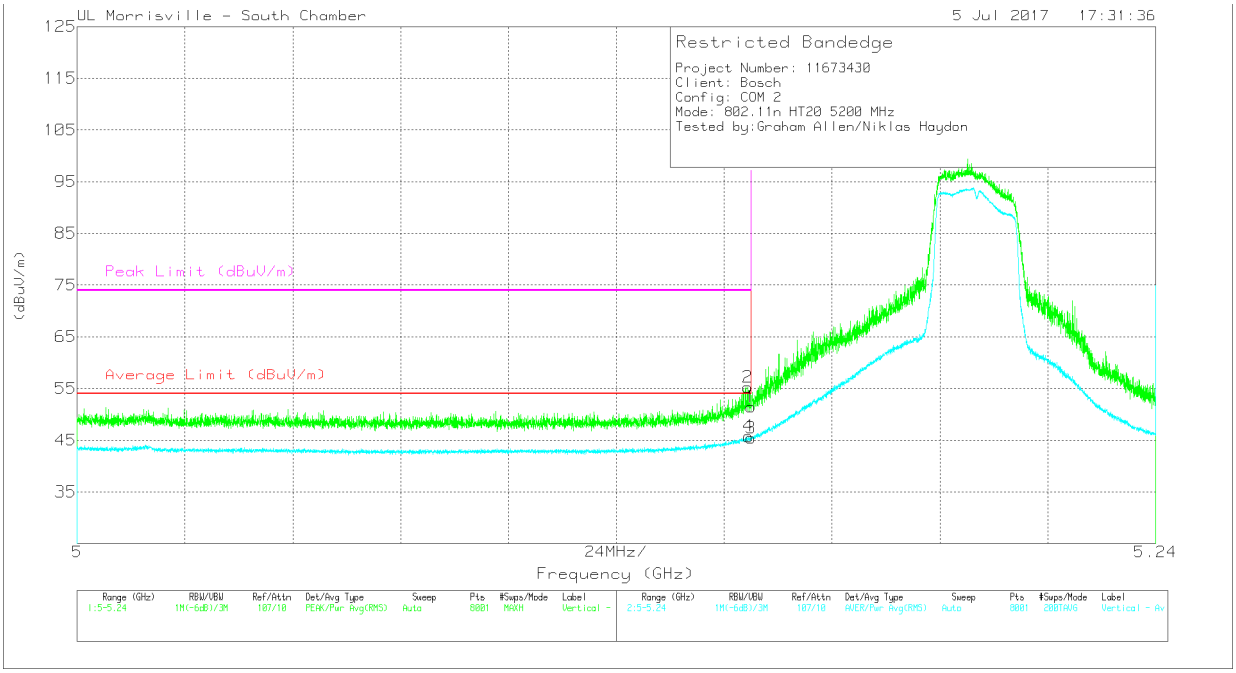

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.03	Pk	34.1	-22.7	0	51.43	-	-	74	-22.57	10	347	V
2	* 5.149	43.86	Pk	34.1	-22.7	0	55.26	-	-	74	-18.74	10	347	V
3	* 5.15	29.92	RMS	34.1	-22.7	4.09	45.41	54	-8.59	-	-	10	347	V
4	* 5.149	30.25	RMS	34.1	-22.7	4.09	45.74	54	-8.26	-	-	10	347	V

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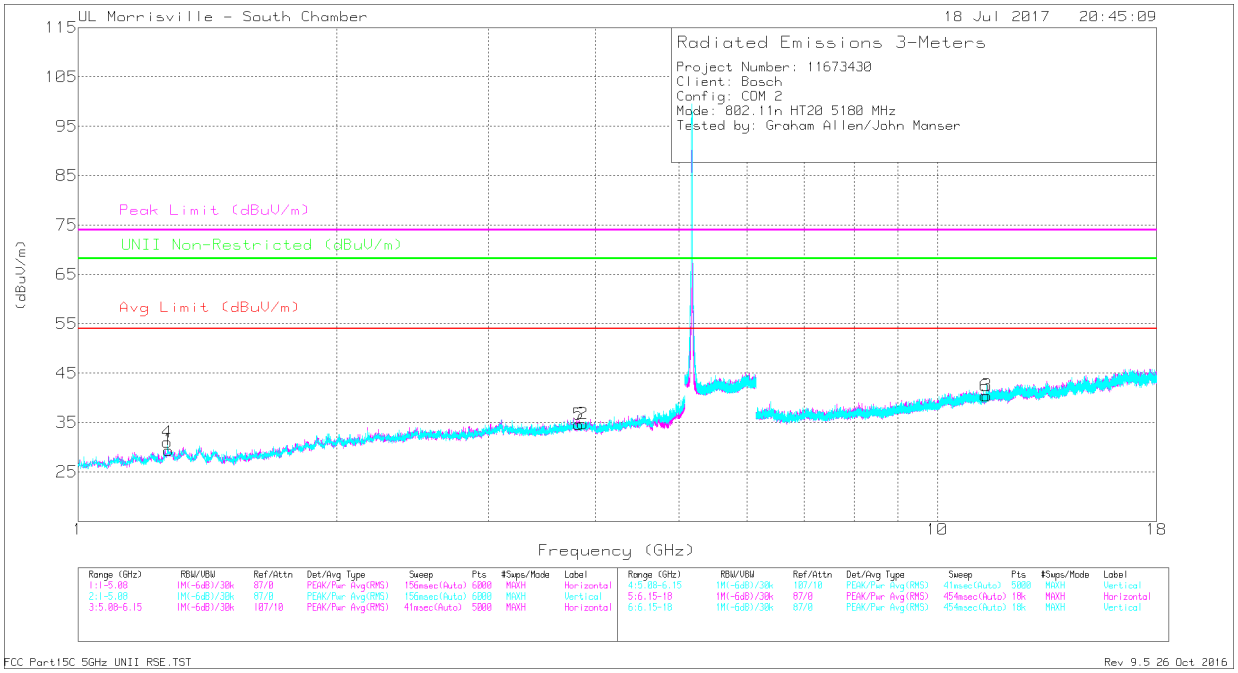
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

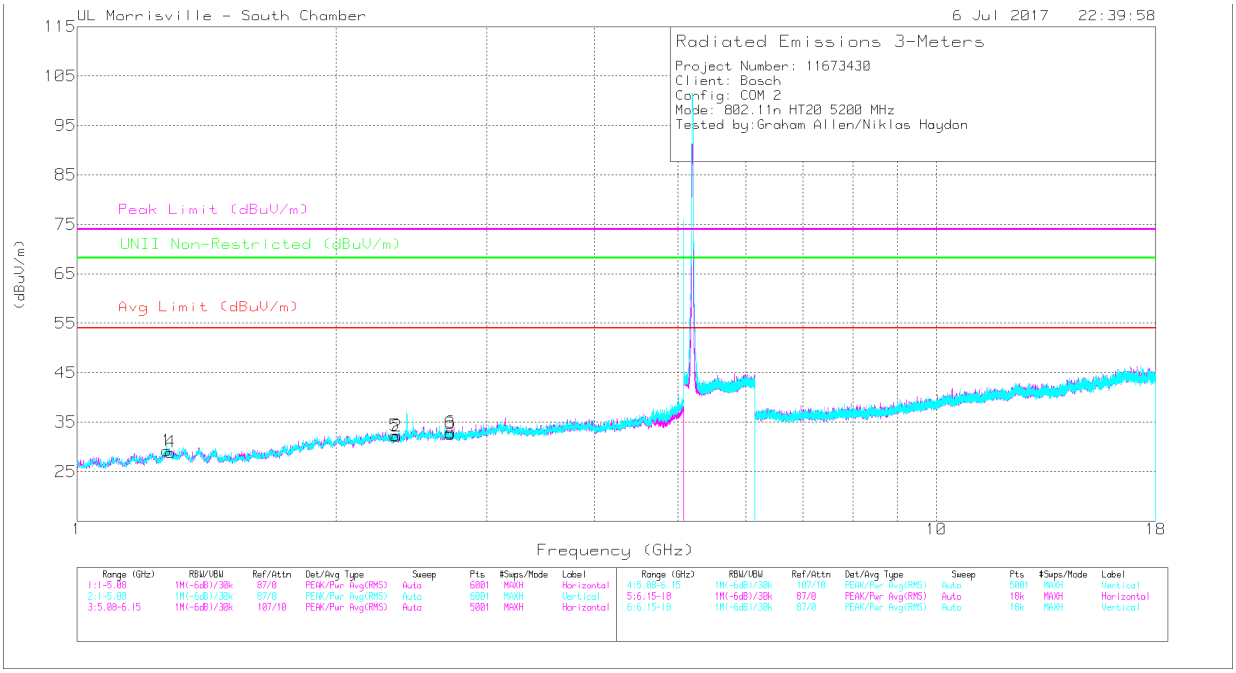
HARMONICS AND SPURIOUS EMISSIONS – INTERNAL CHAIN 0



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.272	43.14	PK-U	29	-35.1	0	37.04	-	-	74	-36.96	-	-	210	200	H
	* 1.273	30.48	ADR	29	-35.1	4.09	28.47	54	-25.53	-	-	-	-	210	200	H
2	* 3.869	41.55	PK-U	33.3	-32.8	0	42.05	-	-	74	-31.95	-	-	69	353	H
	* 3.869	28.94	ADR	33.3	-32.8	4.09	33.53	54	-20.47	-	-	-	-	69	353	H
3	* 11.428	34.84	PK-U	38.2	-25.1	0	47.94	-	-	74	-26.06	-	-	12	315	H
	* 11.428	22.69	ADR	38.2	-25.1	4.09	39.88	54	-14.12	-	-	-	-	12	315	H
4	* 1.272	42.49	PK-U	29	-35.1	0	36.39	-	-	74	-37.61	-	-	182	400	V
	* 1.271	30.43	ADR	29	-35.1	4.09	28.42	54	-25.58	-	-	-	-	182	400	V
5	* 3.827	41.05	PK-U	33.4	-33	0	41.45	-	-	74	-32.55	-	-	29	241	V
	* 3.827	29.06	ADR	33.4	-33	4.09	33.55	54	-20.45	-	-	-	-	29	241	V
6	* 11.362	34.12	PK-U	38.1	-24.9	0	47.32	-	-	74	-26.68	-	-	184	147	V
	* 11.363	22.2	ADR	38.1	-24.9	4.09	39.49	54	-14.51	-	-	-	-	184	147	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

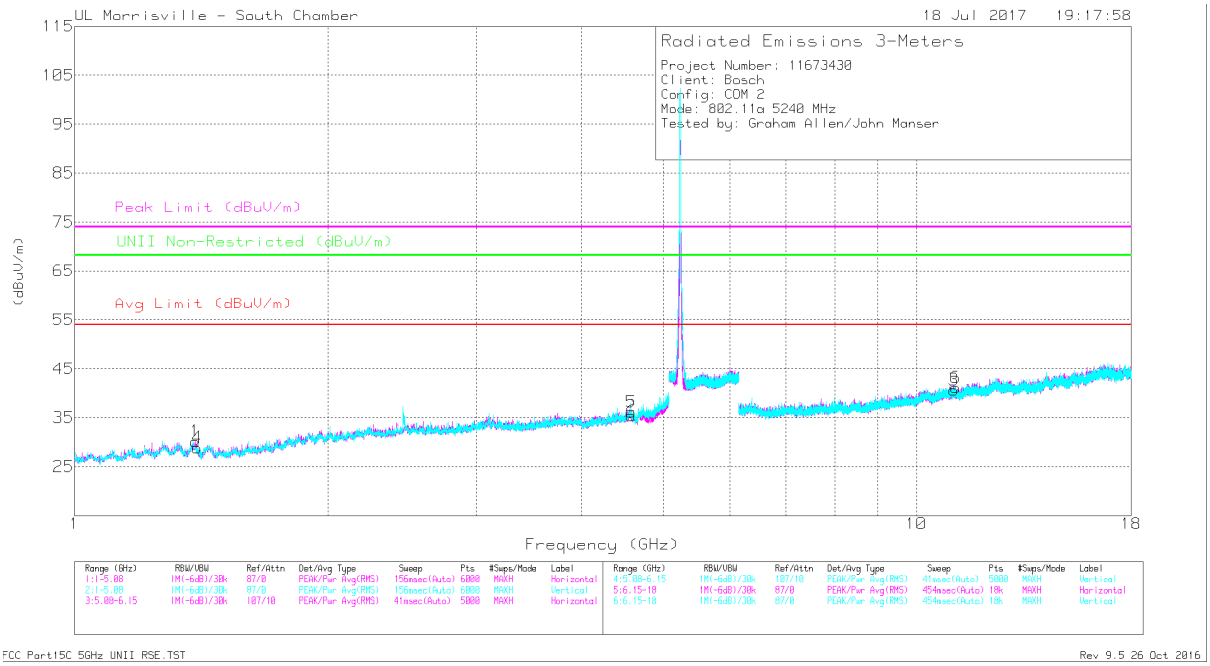
Note - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz Duty Cycles.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.274	42.74	PK-U	29	-35.1	0	36.64	-	-	74	-37.36	-	-	207	298	H
	* 1.273	30.56	ADR	29	-35.1	4.09	28.55	54	-25.45	-	-	-	-	207	298	H
2	* 2.358	41.51	PK-U	31.8	-34.2	0	39.11	-	-	74	-34.89	-	-	67	339	H
	* 2.359	29.79	ADR	31.8	-34.2	4.09	31.48	54	-22.52	-	-	-	-	67	339	H
3	* 2.716	41.49	PK-U	32.1	-33.9	0	39.69	-	-	74	-34.31	-	-	231	316	H
	* 2.715	29.21	ADR	32.1	-33.9	4.09	31.5	54	-22.5	-	-	-	-	231	316	H
4	* 1.286	42.5	PK-U	29.1	-35.1	0	36.5	-	-	74	-37.5	-	-	3	366	V
	* 1.284	30.15	ADR	29	-35.1	4.09	28.14	54	-25.86	-	-	-	-	3	366	V
5	* 2.347	41.56	PK-U	31.7	-34.2	0	39.06	-	-	74	-34.94	-	-	151	178	V
	* 2.346	29.56	ADR	31.7	-34.2	4.09	31.15	54	-22.85	-	-	-	-	151	178	V
6	* 2.721	41.8	PK-U	32.1	-33.8	0	40.1	-	-	74	-33.9	-	-	126	258	V
	* 2.719	29.23	ADR	32.1	-33.8	4.09	31.62	54	-22.38	-	-	-	-	126	258	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

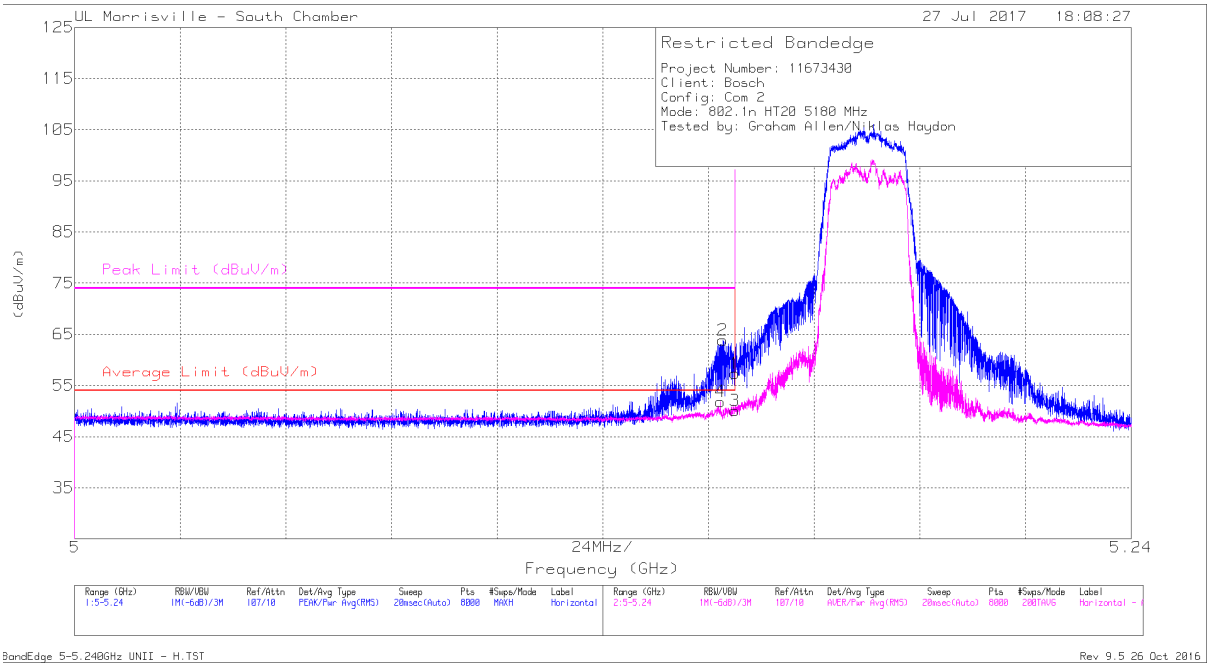


Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.391	42.9	PK-U	28.8	-34.8	0	36.9	-	-	74	-37.1	-	-	233	163	H
	* 1.391	30.33	ADR	28.8	-34.8	4.09	28.42	54	-25.58	-	-	-	-	233	163	H
2	* 4.583	39.96	PK-U	33.9	-31.7	0	42.16	-	-	74	-31.84	-	-	352	148	H
	* 4.583	28.09	ADR	33.9	-31.7	4.09	34.38	54	-19.62	-	-	-	-	352	148	H
3	* 11.078	34.55	PK-U	37.9	-25.1	0	47.35	-	-	74	-26.65	-	-	243	327	H
	* 11.078	22.57	ADR	37.9	-25.1	4.09	39.46	54	-14.54	-	-	-	-	243	327	H
4	* 1.396	41.9	PK-U	28.7	-34.9	0	35.7	-	-	74	-38.3	-	-	340	303	V
	* 1.396	29.86	ADR	28.7	-34.9	4.09	27.75	54	-26.25	-	-	-	-	340	303	V
5	* 4.582	40.86	PK-U	33.9	-31.7	0	43.06	-	-	74	-30.94	-	-	193	133	V
	* 4.582	28.3	ADR	33.9	-31.7	4.09	34.59	54	-19.41	-	-	-	-	193	133	V
6	* 11.138	34.59	PK-U	37.9	-25.1	0	47.39	-	-	74	-26.61	-	-	287	142	V
	* 11.138	22.3	ADR	37.9	-25.1	4.09	39.19	54	-14.81	-	-	-	-	287	142	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

RESTRICTED BANDEDGE (LOW CHANNEL INTERNAL CHAIN 1)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	45.93	Pk	34.1	-22.7	0	57.33	-	-	74	-16.67	343	104	H
2	* 5.147	52.48	Pk	34.1	-22.7	0	63.88	-	-	74	-10.12	343	104	H
3	* 5.15	28.9	RMS	34.1	-22.7	10.07	50.37	54	-3.63	-	-	343	104	H
4	* 5.147	30.66	RMS	34.1	-22.7	10.07	52.13	54	-1.87	-	-	343	104	H

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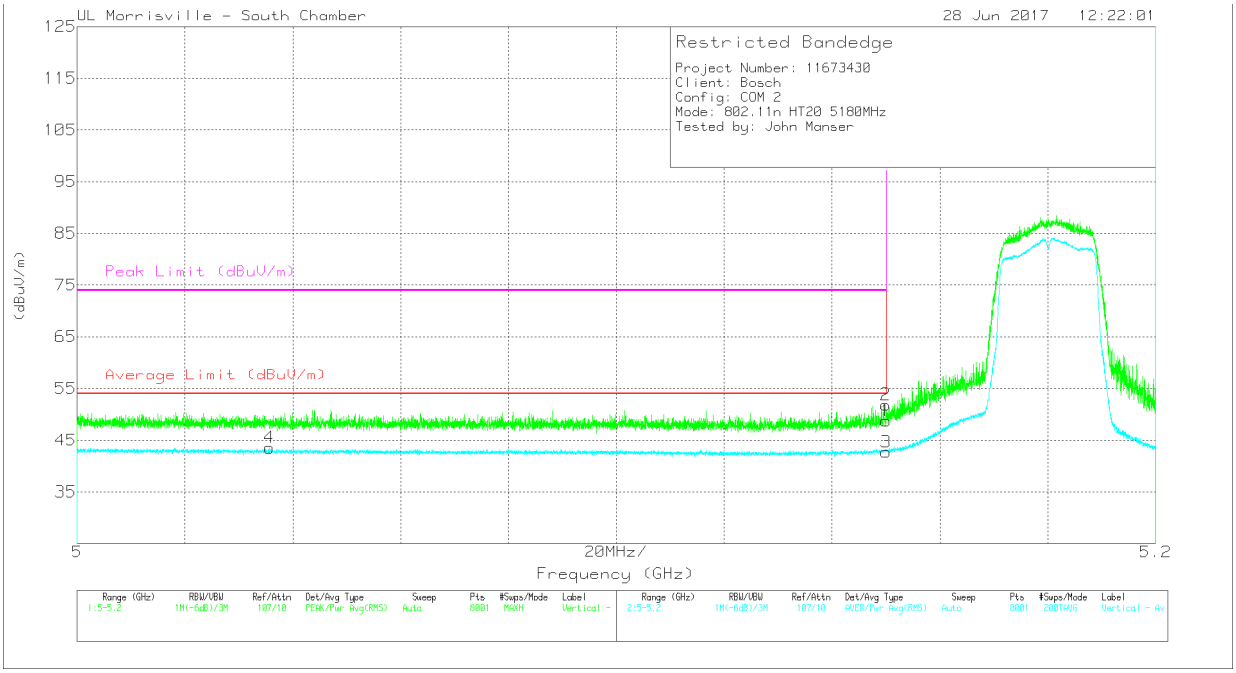
Pk - Peak detector
RMS - RMS detection

10%DC



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.37	Pk	34.1	-22.7	0	48.77	-	-	74	-25.23	18	162	V
2	* 5.15	40.46	Pk	34.1	-22.7	0	51.86	-	-	74	-22.14	18	162	V
3	* 5.15	27.21	RMS	34.1	-22.7	4.09	42.7	54	-11.3	-	-	18	162	V
4	* 5.036	27.95	RMS	34	-22.5	4.09	43.54	54	-10.46	-	-	18	162	V

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RMS - RMS detection

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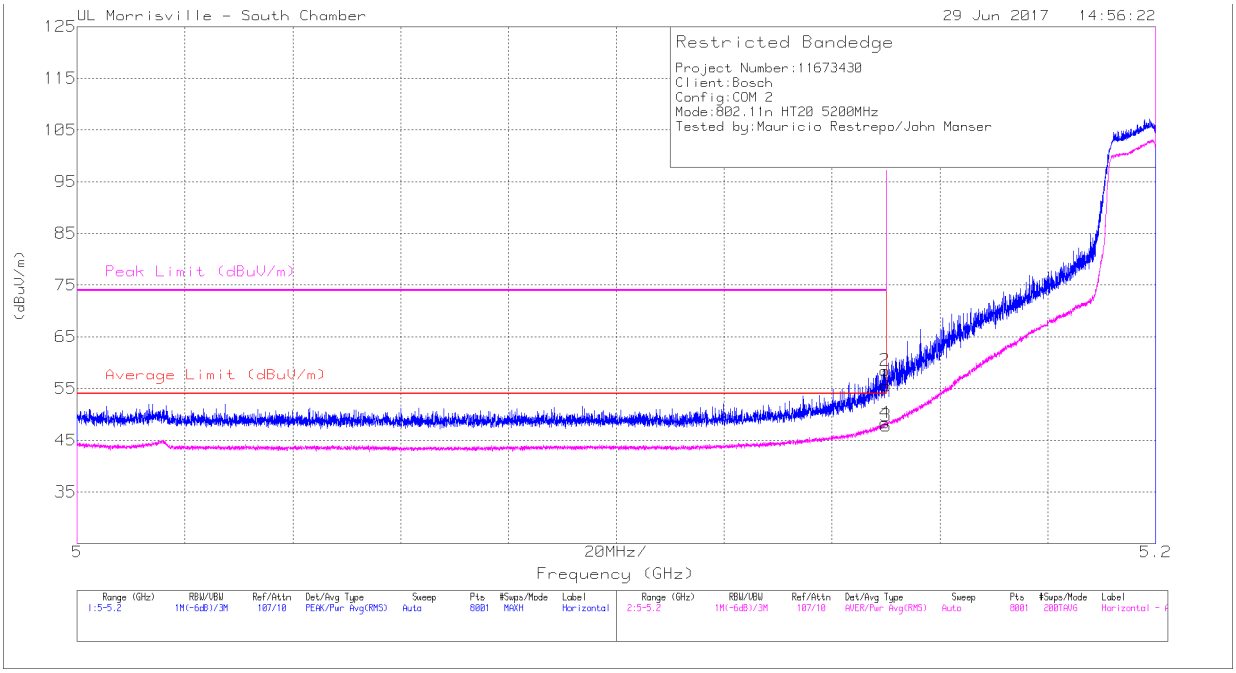

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.07	Pk	34.1	-22.7	0	55.47	-	-	74	-18.53	339	102	H
2	* 5.15	47.1	Pk	34.1	-22.7	0	58.5	-	-	74	-15.5	339	102	H
3	* 5.15	32.32	RMS	34.1	-22.7	4.09	47.81	54	-6.19	-	-	339	102	H
4	* 5.15	32.9	RMS	34.1	-22.7	4.09	48.39	54	-5.61	-	-	339	102	H

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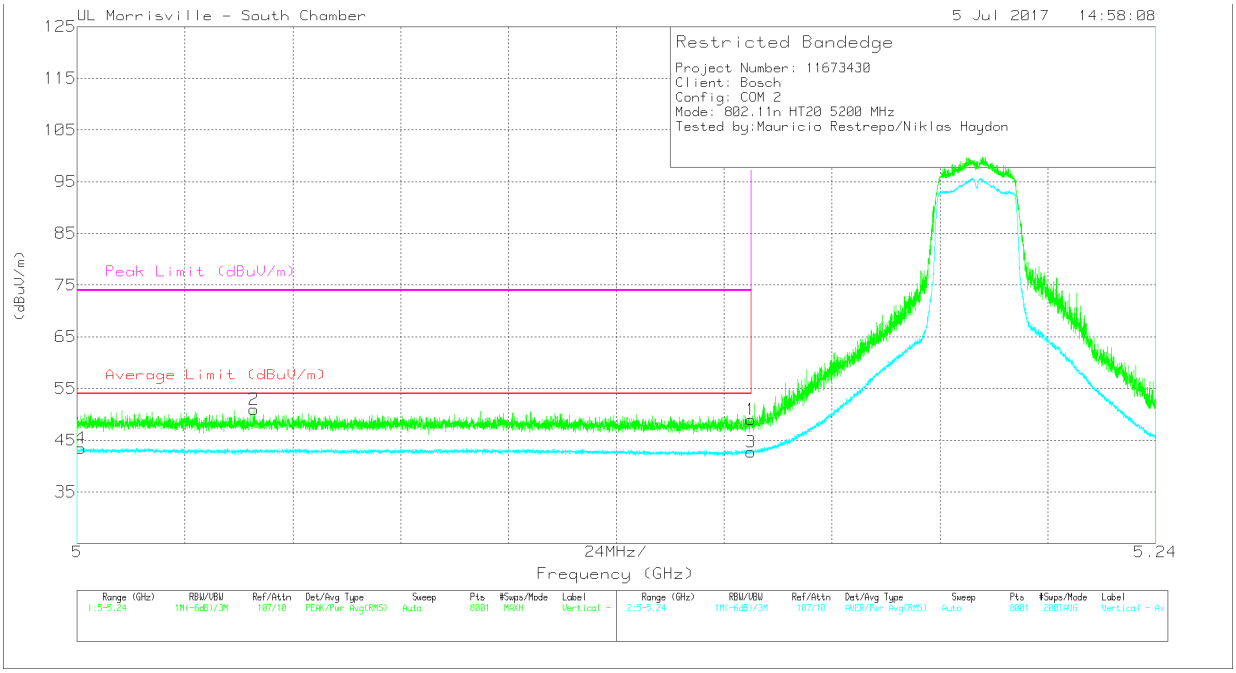
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.55	Pk	34.1	-22.7	0	48.95	-	-	74	-25.05	325	356	V
2	* 5.039	39.46	Pk	34	-22.5	0	50.96	-	-	74	-23.04	325	356	V
3	* 5.15	27.2	RMS	34.1	-22.7	4.09	42.69	54	-11.31	-	-	325	356	V
4	* 5.001	27.69	RMS	34	-22.3	4.09	43.48	54	-10.52	-	-	325	356	V

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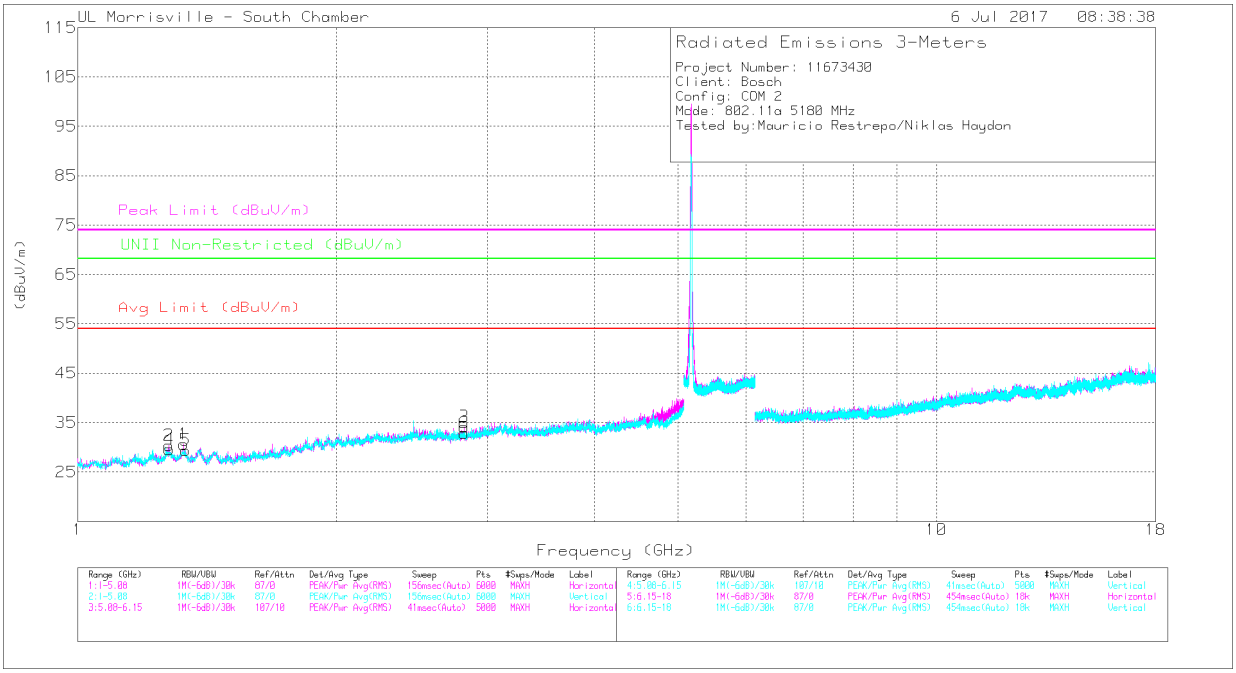
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

HARMONICS AND SPURIOUS EMISSIONS – INTERNAL CHAIN 1



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.278	42.22	PK-U	29	-35.1	0	36.12	-	-	74	-37.88	-	-	288	298	H
	* 1.276	30.56	ADR	29	-35.1	4.09	28.55	54	-25.45	-	-	-	-	288	298	H
3	* 2.819	41.72	PK-U	32.2	-33.9	0	40.02	-	-	74	-33.98	-	-	112	266	H
	* 2.819	29.51	ADR	32.2	-33.9	4.09	31.9	54	-22.1	-	-	-	-	112	266	H
1	* 1.329	42.56	PK-U	28.8	-34.8	0	36.56	-	-	74	-37.44	-	-	179	381	H
	* 1.329	30.47	ADR	28.8	-34.8	4.09	28.56	54	-25.44	-	-	-	-	179	381	H
4	* 1.279	42.7	PK-U	29	-35.1	0	36.6	-	-	74	-37.4	-	-	40	108	V
	* 1.277	30.51	ADR	29	-35.1	4.09	28.5	54	-25.5	-	-	-	-	40	108	V
5	* 1.335	42.57	PK-U	28.7	-34.8	0	36.47	-	-	74	-37.53	-	-	301	234	V
	* 1.334	30.47	ADR	28.7	-34.8	4.09	28.46	54	-25.54	-	-	-	-	301	234	V
6	* 2.822	41.89	PK-U	32.2	-33.9	0	40.19	-	-	74	-33.81	-	-	79	367	V
	* 2.818	29.49	ADR	32.2	-33.9	4.09	31.88	54	-22.12	-	-	-	-	79	367	V

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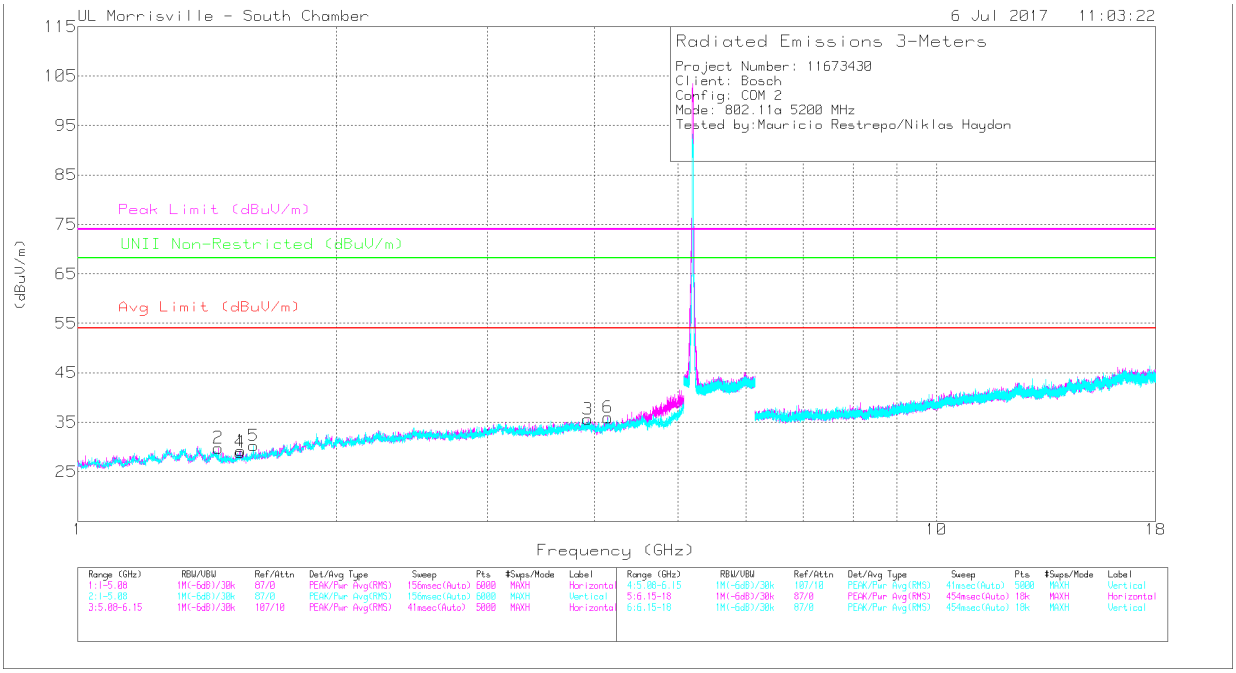

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 1.458	42.04	PK-U	28.5	-35.2	0	35.34	-	-	74	-38.66	-	-	288	132	H
	* 1.456	30.05	ADR	28.6	-35.1	4.09	27.64	54	-26.36	-	-	-	-	288	132	H
3	* 3.929	40.39	PK-U	33.3	-32.3	0	41.39	-	-	74	-32.61	-	-	227	328	H
	* 3.926	28.73	ADR	33.3	-32.3	4.09	33.82	54	-20.18	-	-	-	-	227	328	H
1	* 1.551	42.55	PK-U	28.1	-35	0	35.65	-	-	74	-38.35	-	-	127	371	H
	* 1.551	30.23	ADR	28.1	-35	4.09	27.42	54	-26.58	-	-	-	-	127	371	H
4	* 1.546	42.35	PK-U	28.1	-35	0	35.45	-	-	74	-38.55	-	-	260	291	V
	* 1.546	30.4	ADR	28.1	-35	4.09	27.59	54	-26.41	-	-	-	-	260	291	V
5	* 1.604	41.96	PK-U	28.4	-34.5	0	35.86	-	-	74	-38.14	-	-	68	203	V
	* 1.604	30.03	ADR	28.4	-34.5	4.09	28.02	54	-25.98	-	-	-	-	68	203	V
6	* 4.143	39.71	PK-U	33.3	-31.8	0	41.21	-	-	74	-32.79	-	-	128	393	V
	* 4.145	28.15	ADR	33.3	-31.8	4.09	33.74	54	-20.26	-	-	-	-	128	393	V

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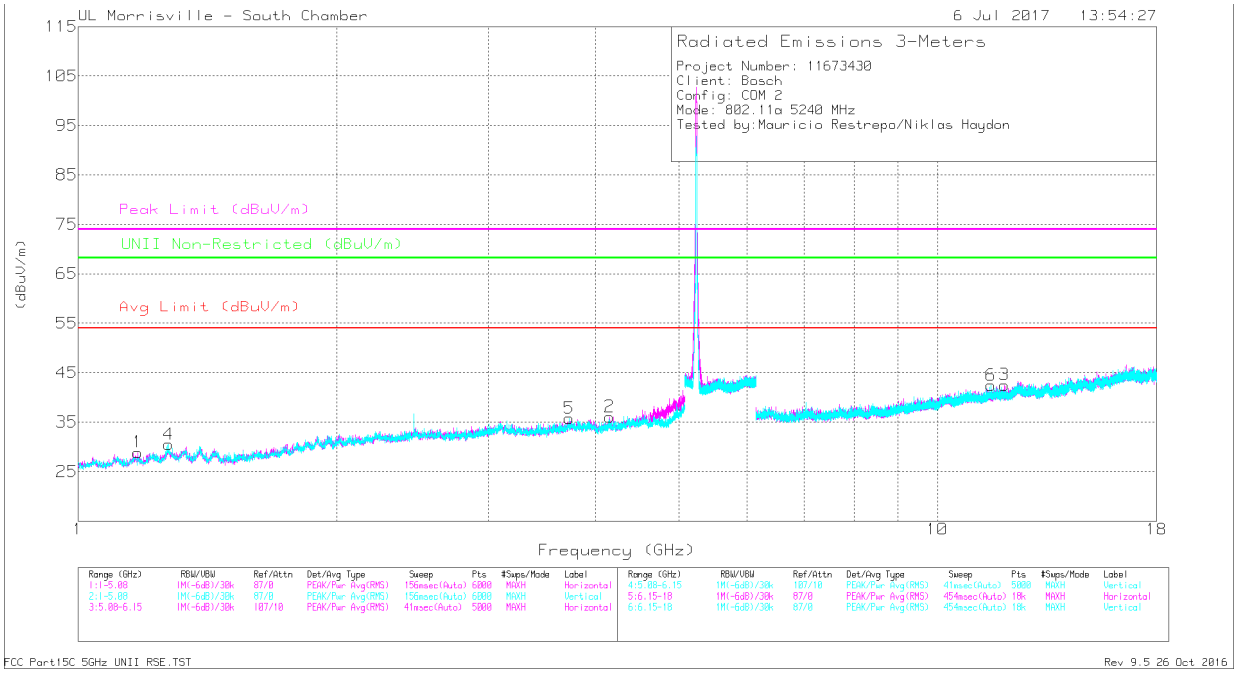

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.172	42.57	PK-U	28	-35.4	0	35.17	-	-	74	-38.83	-	-	315	198	H
	* 1.172	30.86	ADR	28	-35.4	4.09	27.55	54	-26.45	-	-	-	-	315	198	H
2	* 4.156	39.84	PK-U	33.3	-31.6	0	41.54	-	-	74	-32.46	-	-	191	210	H
	* 4.154	28.16	ADR	33.3	-31.6	4.09	33.95	54	-20.05	-	-	-	-	191	210	H
4	* 1.273	42.38	PK-U	29	-35.1	0	36.28	-	-	74	-37.72	-	-	211	366	V
	* 1.276	30.6	ADR	29	-35.1	4.09	28.59	54	-25.41	-	-	-	-	211	366	V
5	* 3.73	40.63	PK-U	33.3	-32.6	0	41.33	-	-	74	-32.67	-	-	311	245	V
	* 3.73	28.71	ADR	33.3	-32.6	4.09	33.5	54	-20.5	-	-	-	-	311	245	V
3	* 11.967	34.33	PK-U	38.7	-25.2	0	47.83	-	-	74	-26.17	-	-	45	215	H
	* 11.968	22.7	ADR	38.7	-25.2	4.09	40.29	54	-13.71	-	-	-	-	45	215	H
6	* 11.541	34.26	PK-U	38.3	-24.9	0	47.66	-	-	74	-26.34	-	-	155	141	V
	* 11.54	22.82	ADR	38.3	-24.9	4.09	40.31	54	-13.69	-	-	-	-	155	141	V

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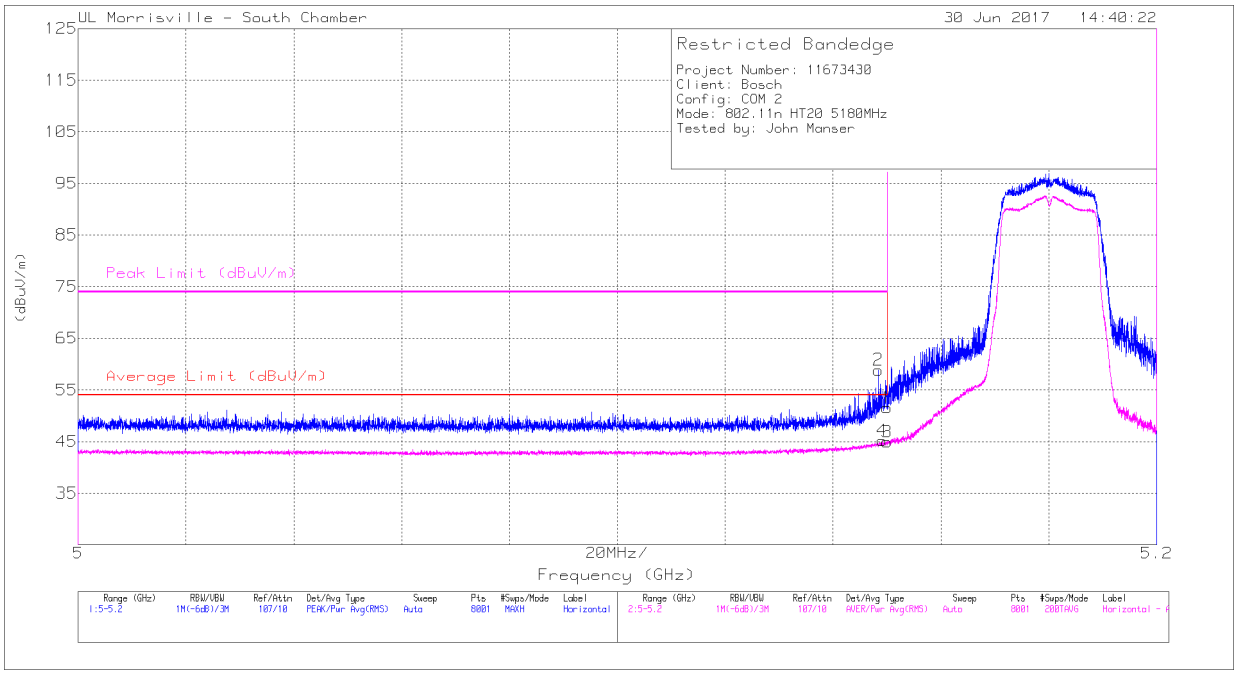
RESTRICTED BANDEDGE (LOW CHANNEL EXTERNAL CHAIN 0)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.15	Pk	34.1	-22.7	0	51.55	-	-	74	-22.45	44	276	H
2	* 5.148	47.46	Pk	34.1	-22.7	0	58.86	-	-	74	-15.14	44	276	H
3	* 5.15	29.47	RMS	34.1	-22.7	4.09	44.96	54	-9.04	-	-	44	276	H
4	* 5.149	29.65	RMS	34.1	-22.7	4.09	45.14	54	-8.86	-	-	44	276	H

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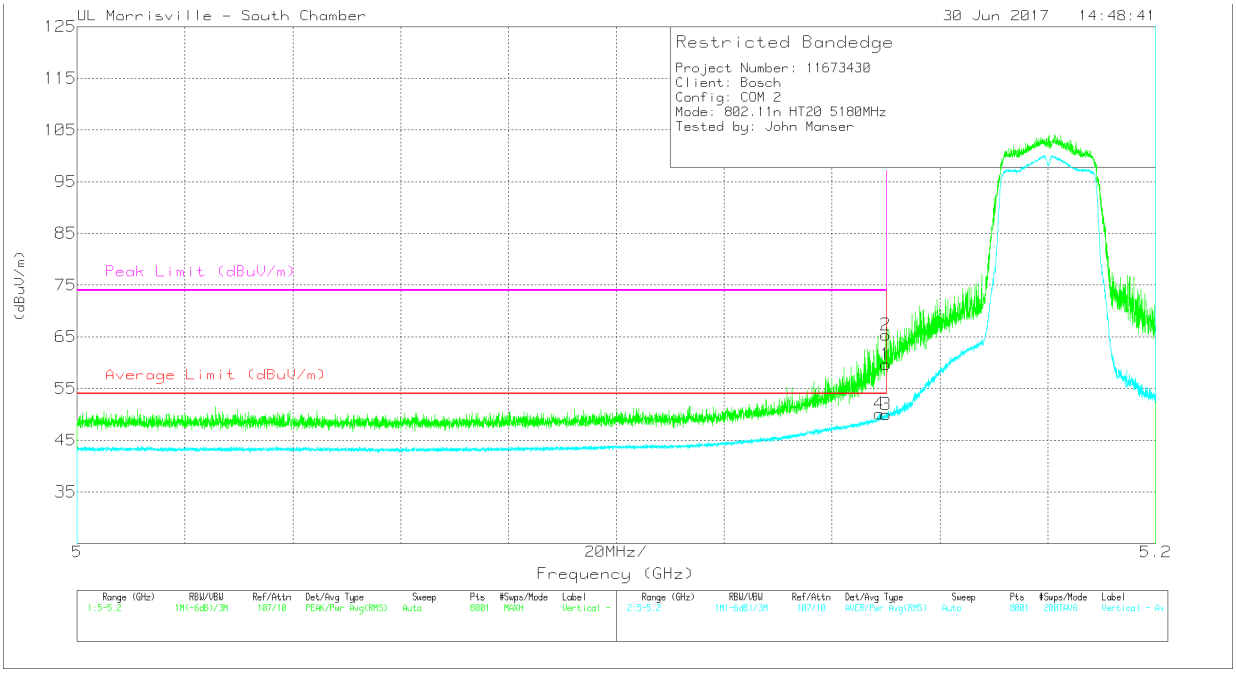
RMS - RMS detection

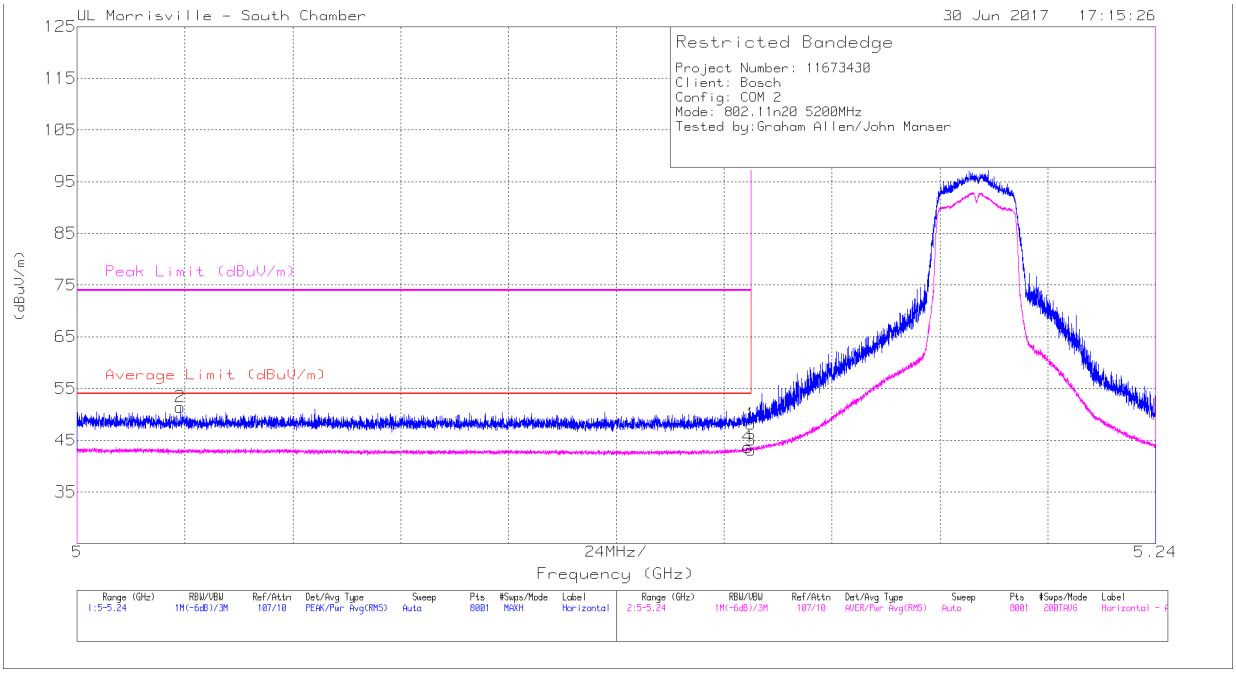
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	48.29	Pk	34.1	-22.7	0	59.69	-	-	74	-14.31	226	107	V
2	* 5.15	53.98	Pk	34.1	-22.7	0	65.38	-	-	74	-8.62	226	107	V
3	* 5.15	34.52	RMS	34.1	-22.7	4.09	50.01	54	-3.99	-	-	226	107	V
4	* 5.149	34.64	RMS	34.1	-22.7	4.09	50.13	54	-3.87	-	-	226	107	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	36.76	Pk	34.1	-22.7	0	48.16	-	-	74	-25.84	319	123	H
2	* 5.023	39.9	Pk	34	-22.5	0	51.4	-	-	74	-22.6	319	123	H
3	* 5.15	27.61	RMS	34.1	-22.7	4.09	43.1	54	-10.9	-	-	319	123	H
4	* 5.149	28.16	RMS	34.1	-22.7	4.09	43.65	54	-10.35	-	-	319	123	H

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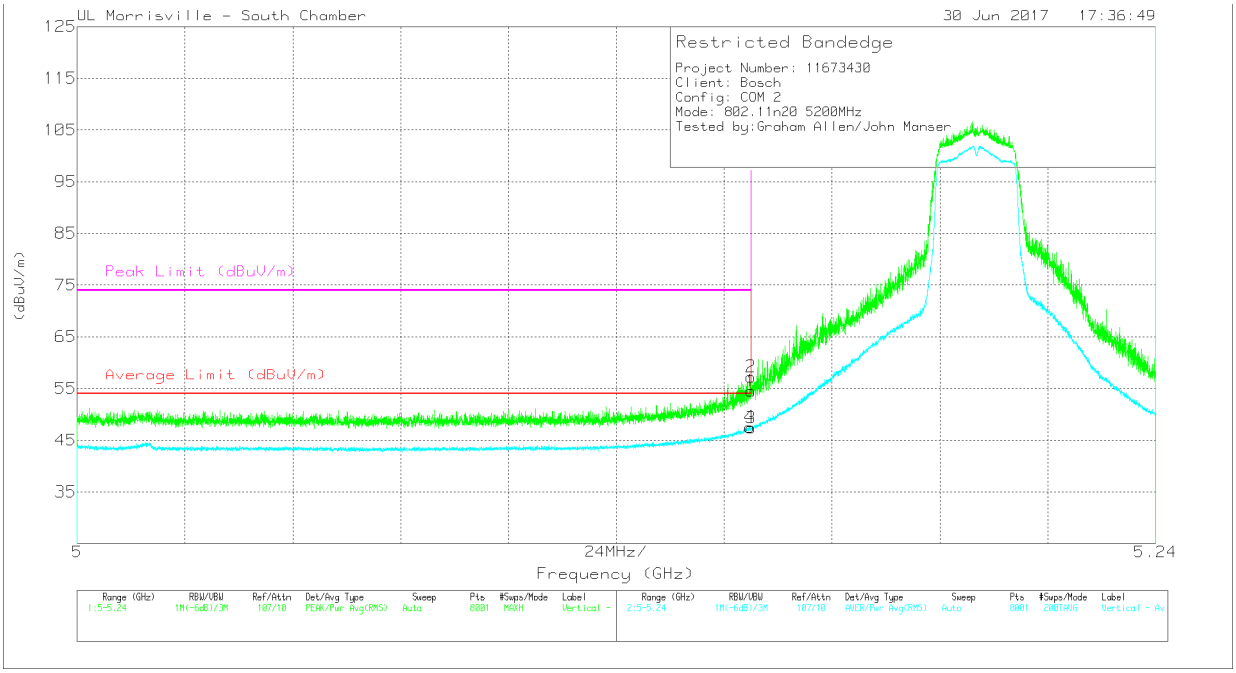
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

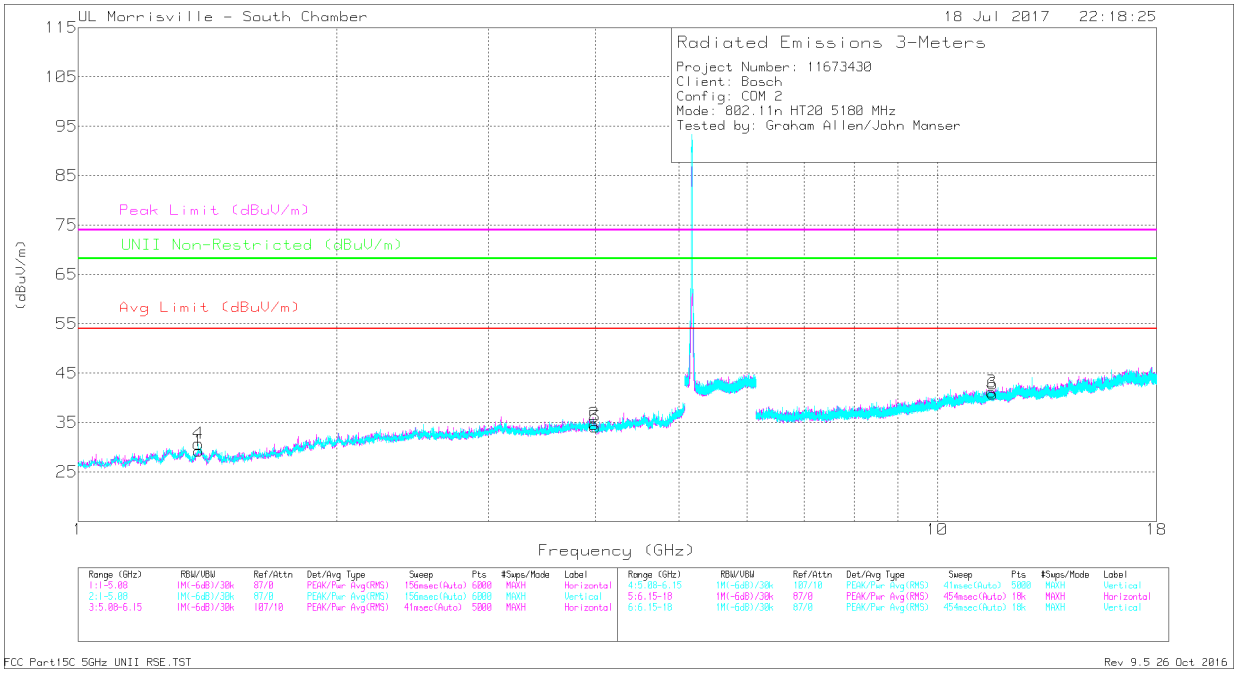


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	43.11	Pk	34.1	-22.7	0	54.51	-	-	74	-19.49	226	117	V
2	* 5.15	45.86	Pk	34.1	-22.7	0	57.26	-	-	74	-16.74	226	117	V
3	* 5.15	31.89	RMS	34.1	-22.7	4.09	47.38	54	-6.62	-	-	226	117	V
4	* 5.15	32.06	RMS	34.1	-22.7	4.09	47.55	54	-6.45	-	-	226	117	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

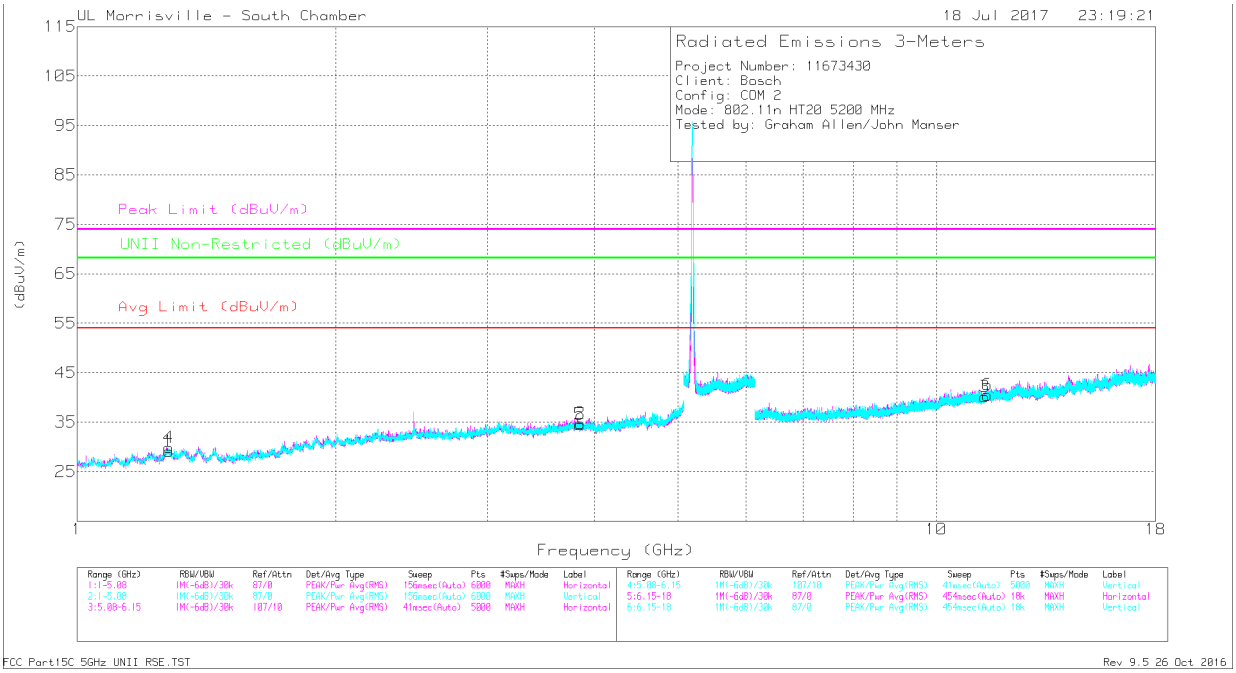
HARMONICS AND SPURIOUS EMISSIONS – EXTERNAL CHAIN 0



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.383	42.55	PK-U	28.9	-34.8	0	36.65	-	-	74	-37.35	-	-	140	349	H
	* 1.383	30.37	ADR	28.9	-34.8	4.09	28.56	54	-25.44	-	-	-	-	140	349	H
2	* 3.984	40.13	PK-U	33.3	-32.1	0	41.33	-	-	74	-32.67	-	-	42	125	H
	* 3.984	28.23	ADR	33.3	-32.1	4.09	33.52	54	-20.48	-	-	-	-	42	125	H
3	* 11.561	34.41	PK-U	38.3	-25.1	0	47.61	-	-	74	-26.39	-	-	227	236	H
	* 11.562	22.61	ADR	38.3	-25.1	4.09	39.9	54	-14.1	-	-	-	-	227	236	H
4	* 1.381	42.57	PK-U	28.9	-34.8	0	36.67	-	-	74	-37.33	-	-	323	330	V
	* 1.382	30.29	ADR	28.9	-34.8	4.09	28.48	54	-25.52	-	-	-	-	323	330	V
5	* 3.998	40.34	PK-U	33.3	-32.3	0	41.34	-	-	74	-32.66	-	-	324	106	V
	* 3.999	28.06	ADR	33.3	-32.3	4.09	33.15	54	-20.85	-	-	-	-	324	106	V
6	* 11.602	35.38	PK-U	38.3	-25.2	0	48.48	-	-	74	-25.52	-	-	249	284	V
	* 11.602	22.65	ADR	38.3	-25.2	4.09	39.84	54	-14.16	-	-	-	-	249	284	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

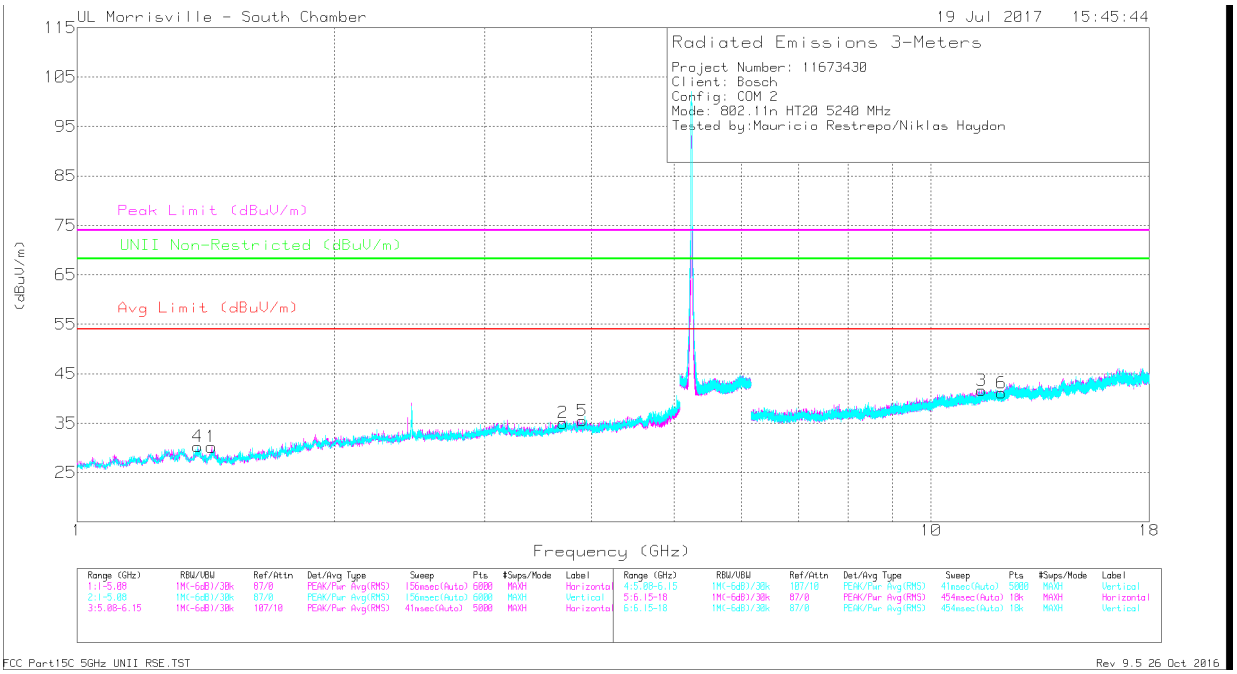
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.279	42.43	PK-U	29	-35.1	0	36.33	-	-	74	-37.67	-	-	43	203	H
	* 1.279	30.35	ADR	29	-35.1	4.09	28.34	54	-25.66	-	-	-	-	43	203	H
2	* 3.851	40.81	PK-U	33.3	-32.8	0	41.31	-	-	74	-32.69	-	-	218	235	H
	* 3.851	28.73	ADR	33.3	-32.8	4.09	33.32	54	-20.68	-	-	-	-	218	235	H
3	* 11.389	34.45	PK-U	38.1	-25	0	47.55	-	-	74	-26.45	-	-	182	379	H
	* 11.389	22.43	ADR	38.1	-25	4.09	39.62	54	-14.38	-	-	-	-	182	379	H
4	* 1.277	42.62	PK-U	29	-35.1	0	36.52	-	-	74	-37.48	-	-	321	282	V
	* 1.277	30.43	ADR	29	-35.1	4.09	28.42	54	-25.58	-	-	-	-	321	282	V
5	* 3.85	40.58	PK-U	33.3	-32.8	0	41.08	-	-	74	-32.92	-	-	8	279	V
	* 3.85	28.67	ADR	33.3	-32.8	4.09	33.26	54	-20.74	-	-	-	-	8	279	V
6	* 11.462	34.72	PK-U	38.2	-25	0	47.92	-	-	74	-26.08	-	-	56	162	V
	* 11.461	22.62	ADR	38.2	-25	4.09	39.91	54	-14.09	-	-	-	-	56	162	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



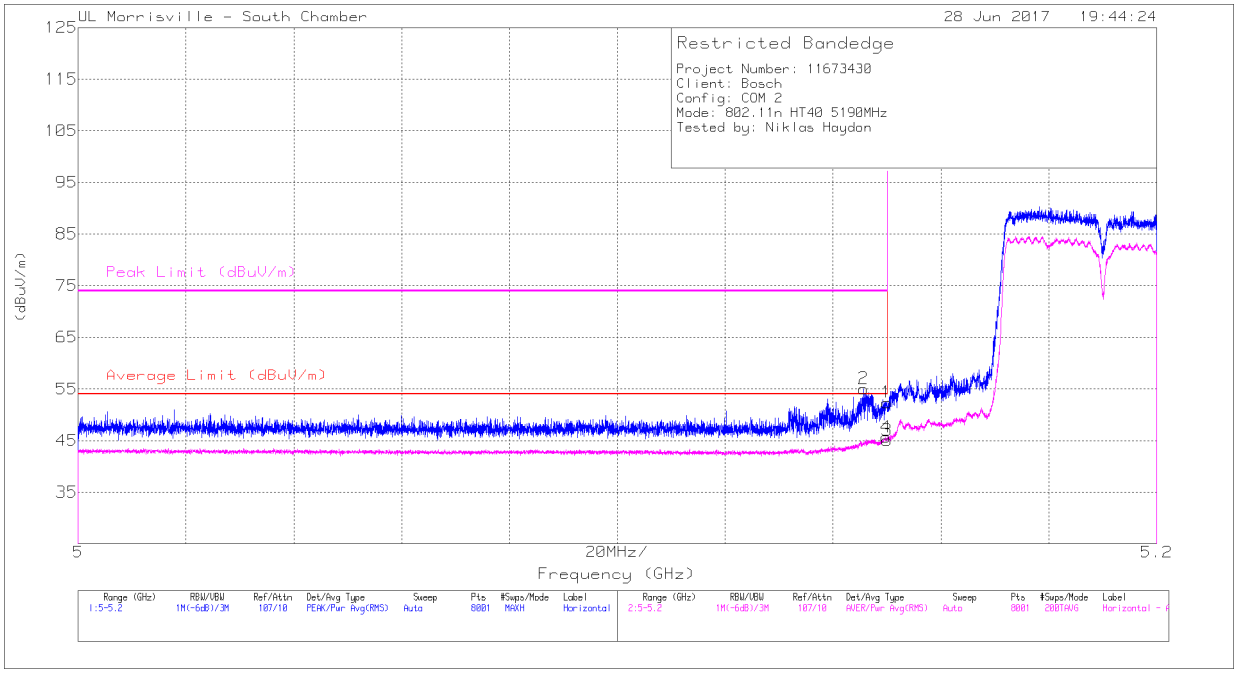
Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.437	42.73	PK-U	28.7	-35	0	36.43	-	-	74	-37.57	-	-	288	385	H
	* 1.437	30.29	ADR	28.7	-35	4.09	28.08	54	-25.92	-	-	-	-	288	385	H
2	* 3.704	40.36	PK-U	33.2	-32.6	0	40.96	-	-	74	-33.04	-	-	119	397	H
	* 3.705	28.88	ADR	33.2	-32.6	4.09	33.57	54	-20.43	-	-	-	-	119	397	H
3	* 11.46	34.35	PK-U	38.2	-25	0	47.55	-	-	74	-26.45	-	-	306	358	H
	* 11.462	22.82	ADR	38.2	-25	4.09	40.11	54	-13.89	-	-	-	-	306	358	H
4	* 1.384	43	PK-U	28.9	-34.8	0	37.1	-	-	74	-36.9	-	-	226	237	V
	* 1.385	30.48	ADR	28.9	-34.8	4.09	28.67	54	-25.33	-	-	-	-	226	237	V
5	* 3.904	40.51	PK-U	33.3	-32.5	0	41.31	-	-	74	-32.69	-	-	308	343	V
	* 3.904	28.45	ADR	33.3	-32.5	4.09	33.34	54	-20.66	-	-	-	-	308	343	V
6	* 12.082	34.28	PK-U	38.8	-25.3	0	47.78	-	-	74	-26.22	-	-	195	263	V
	* 12.085	22.6	ADR	38.8	-25.3	4.09	40.19	54	-13.81	-	-	-	-	195	263	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

9.5. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL INTERNAL CHAIN 0)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.97	Pk	34.1	-22.7	0	52.37	-	-	74	-21.63	56	322	H
2	* 5.146	43.67	Pk	34.1	-22.7	0	55.07	-	-	74	-18.93	56	322	H
3	* 5.15	29.59	RMS	34.1	-22.7	4.09	45.08	54	-8.92	-	-	56	322	H
4	* 5.15	30.21	RMS	34.1	-22.7	4.09	45.7	54	-8.3	-	-	56	322	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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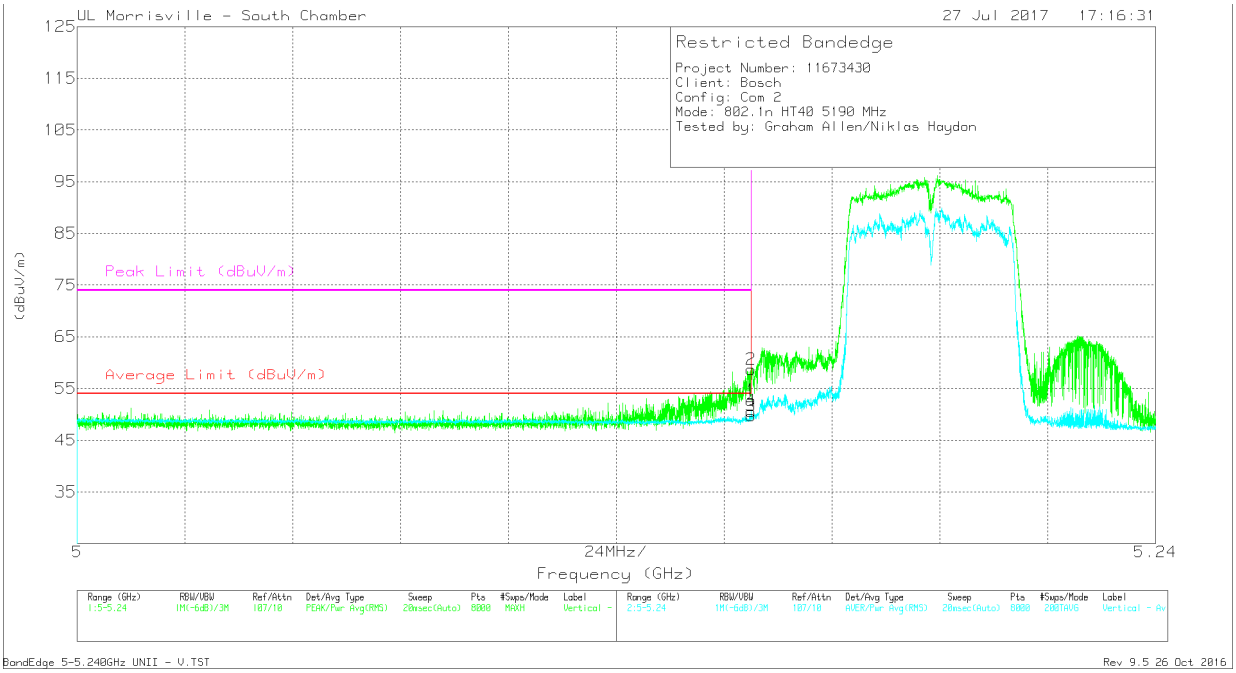
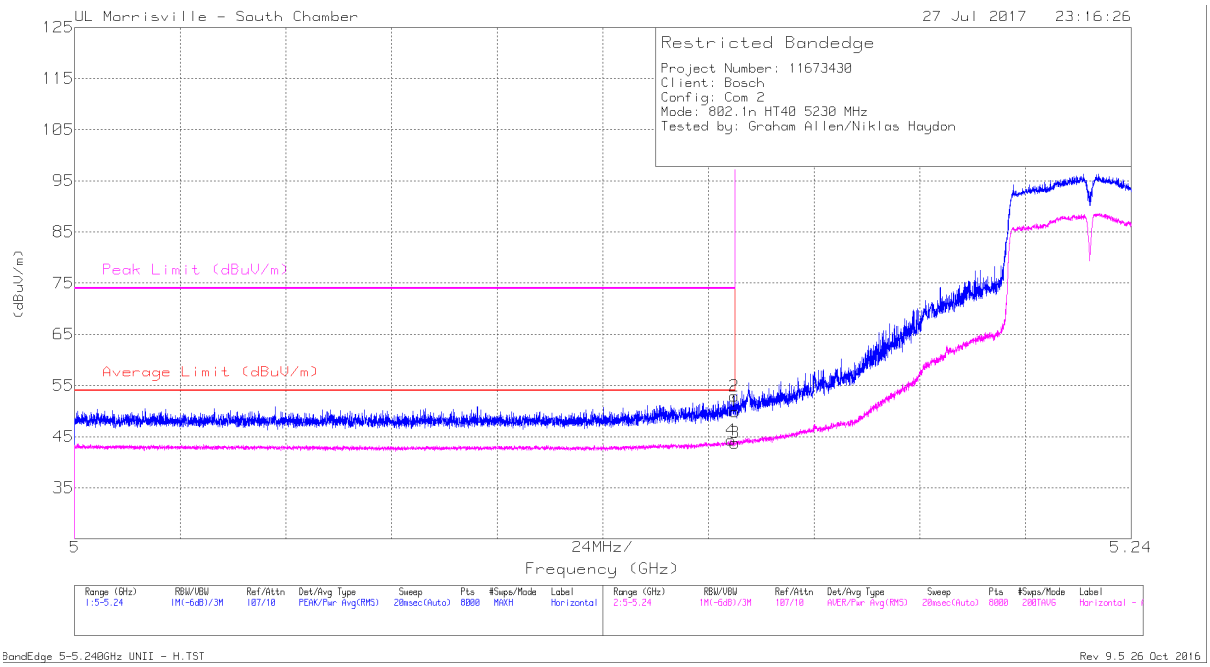


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	41.31	Pk	34.1	-22.7	0	52.71	-	-	74	-21.29	102	232	V
2	* 5.15	47.3	Pk	34.1	-22.7	0	58.7	-	-	74	-15.3	102	232	V
3	* 5.15	28.43	RMS	34.1	-22.7	10.07	49.90	54	-4.1	-	-	102	232	V
4	* 5.15	29.3	RMS	34.1	-22.7	10.07	50.77	54	-3.23	-	-	102	232	V

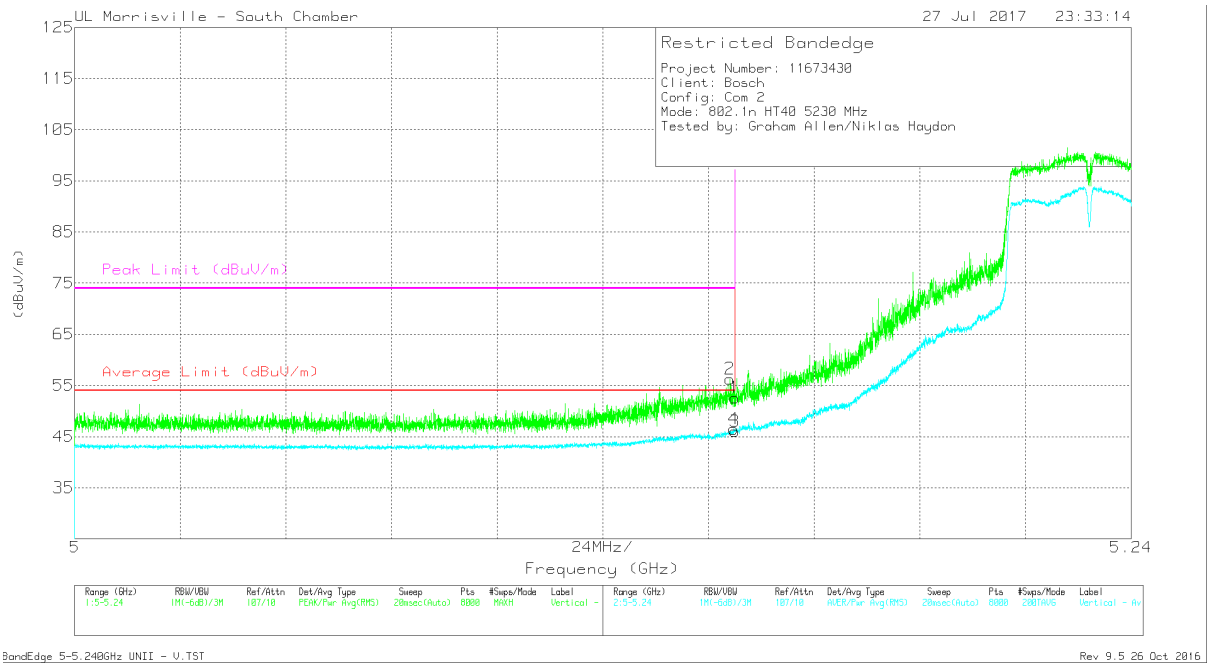
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

10% DC



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 5.149	28.79	RMS	34.1	-22.7	4.09	44.28	54	-9.72	-	-	236	104	H
1	* 5.15	38.44	Pk	34.1	-22.7	0	49.84	-	-	74	-24.16	236	104	H
2	* 5.15	41.49	Pk	34.1	-22.7	0	52.89	-	-	74	-21.11	236	104	H
3	* 5.15	28.29	RMS	34.1	-22.7	4.09	43.78	54	-10.22	-	-	236	104	H

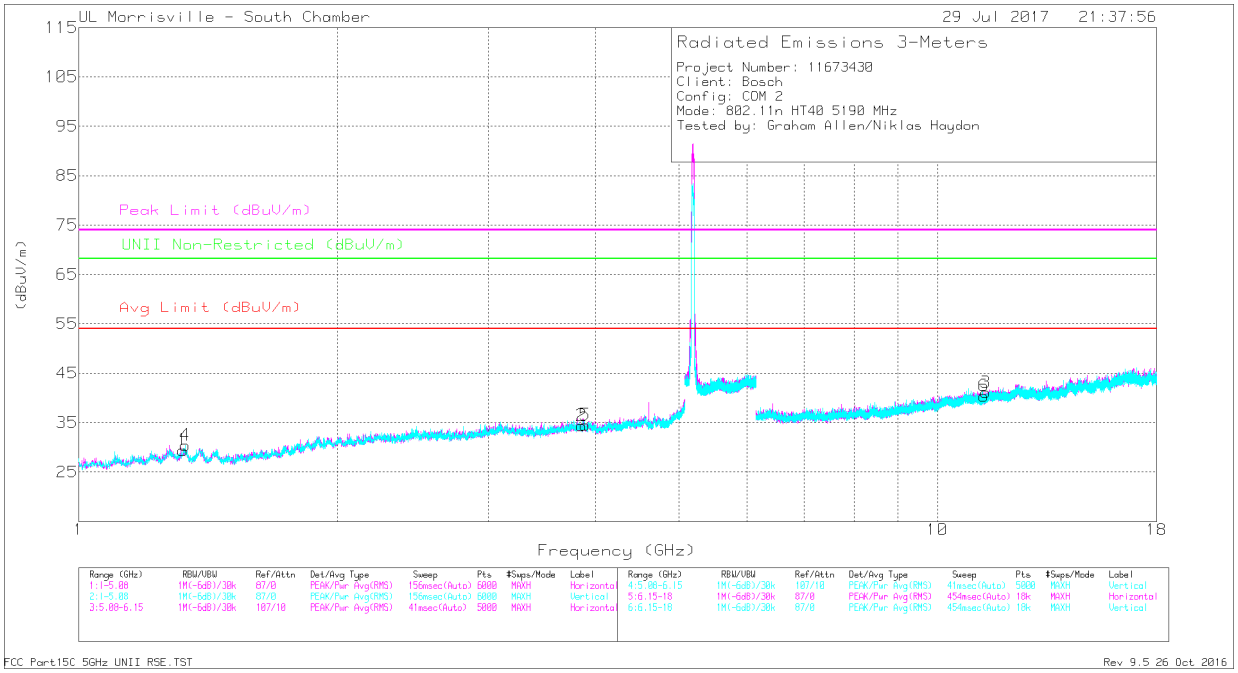
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.149	44.89	Pk	34.1	-22.7	0	56.29	-	-	74	-17.71	192	274	V
1	* 5.15	41.22	Pk	34.1	-22.7	0	52.62	-	-	74	-21.38	192	274	V
3	* 5.15	30.56	RMS	34.1	-22.7	4.09	46.05	54	-7.95	-	-	192	274	V
4	* 5.15	31	RMS	34.1	-22.7	4.09	46.49	54	-7.51	-	-	192	274	V

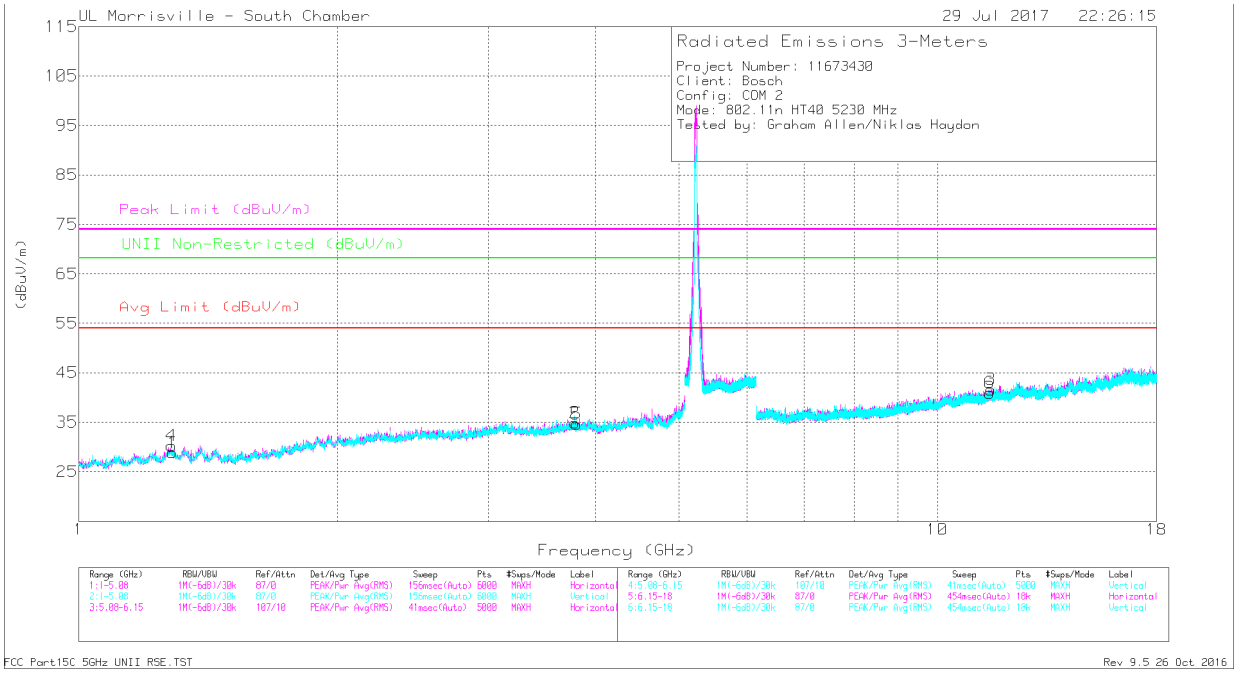
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS – INTERNAL CHAIN 0



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.323	42.5	PK-U	28.9	-34.9	0	36.5	-	-	74	-37.5	-	-	120	186	H
	* 1.322	30.16	ADR	28.9	-34.9	4.09	28.25	54	-25.75	-	-	-	-	120	186	H
2	* 3.852	41.08	PK-U	33.3	-32.8	0	41.58	-	-	74	-32.42	-	-	249	209	H
	* 3.851	28.58	ADR	33.3	-32.8	4.09	33.17	54	-20.83	-	-	-	-	249	209	H
3	* 11.389	34.36	PK-U	38.1	-25	0	47.46	-	-	74	-26.54	-	-	220	234	H
	* 11.389	22.4	ADR	38.1	-25	4.09	39.59	54	-14.41	-	-	-	-	220	234	H
4	* 1.33	43.11	PK-U	28.8	-34.8	0	37.11	-	-	74	-36.89	-	-	308	165	V
	* 1.331	30.4	ADR	28.7	-34.8	4.09	28.39	54	-25.61	-	-	-	-	308	165	V
5	* 3.892	40.58	PK-U	33.3	-32.6	0	41.28	-	-	74	-32.72	-	-	330	218	V
	* 3.891	28.52	ADR	33.3	-32.6	4.09	33.31	54	-20.69	-	-	-	-	330	218	V
6	* 11.324	34.33	PK-U	38.1	-24.8	0	47.63	-	-	74	-26.37	-	-	44	110	V
	* 11.324	22	ADR	38.1	-24.8	4.09	39.39	54	-14.61	-	-	-	-	44	110	V

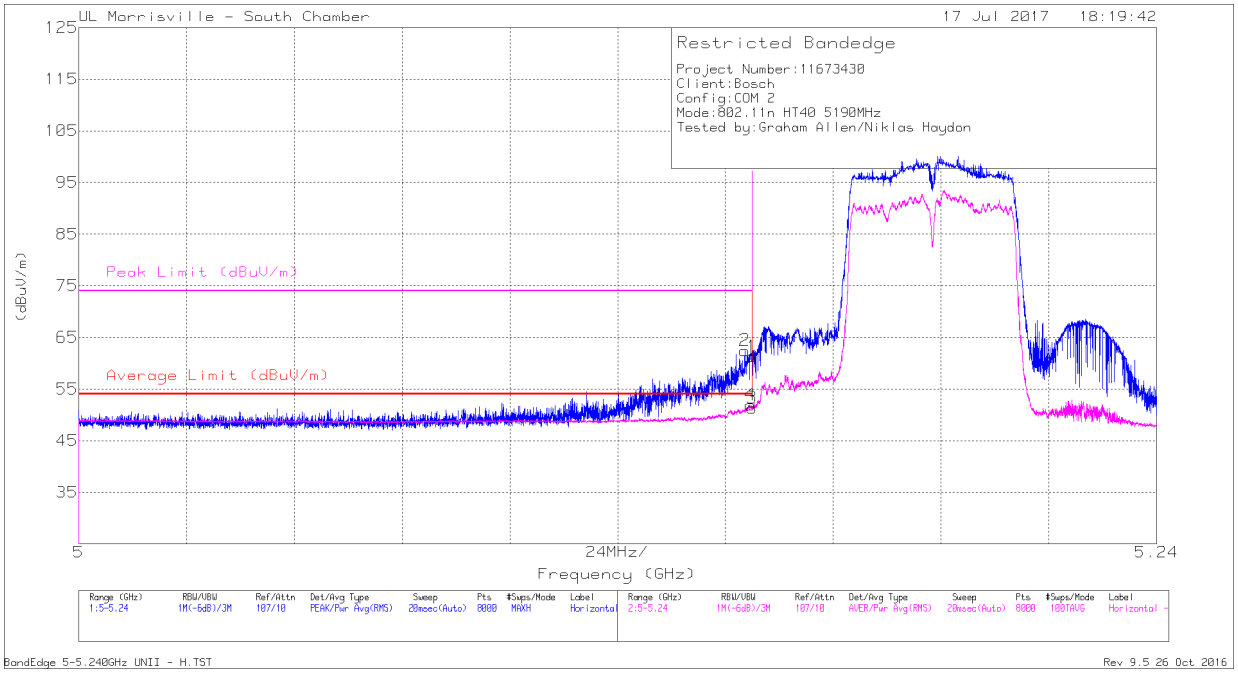
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.287	42.33	PK-U	29.1	-35.1	0	36.33	-	-	74	-37.67	-	-	55	172	H
	* 1.287	29.81	ADR	29.1	-35.1	4.09	27.9	54	-26.1	-	-	-	-	55	172	H
2	* 3.785	40.98	PK-U	33.4	-33.1	0	41.28	-	-	74	-32.72	-	-	202	210	H
	* 3.785	28.97	ADR	33.4	-33.1	4.09	33.36	54	-20.64	-	-	-	-	202	210	H
3	* 11.544	34.71	PK-U	38.3	-24.9	0	48.11	-	-	74	-25.89	-	-	7	223	H
	* 11.545	22.53	ADR	38.3	-24.9	4.09	40.02	54	-13.98	-	-	-	-	7	223	H
4	* 1.284	42.14	PK-U	29.1	-35.1	0	36.14	-	-	74	-37.86	-	-	61	378	V
	* 1.285	29.92	ADR	29.1	-35.1	4.09	28.01	54	-25.99	-	-	-	-	61	378	V
5	* 3.801	41.53	PK-U	33.4	-33.1	0	41.83	-	-	74	-32.17	-	-	338	351	V
	* 3.801	28.99	ADR	33.4	-33.1	4.09	33.38	54	-20.62	-	-	-	-	338	351	V
6	* 11.502	34.9	PK-U	38.3	-24.9	0	48.3	-	-	74	-25.7	-	-	324	200	V
	* 11.502	22.55	ADR	38.3	-24.9	4.09	40.04	54	-13.96	-	-	-	-	324	200	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

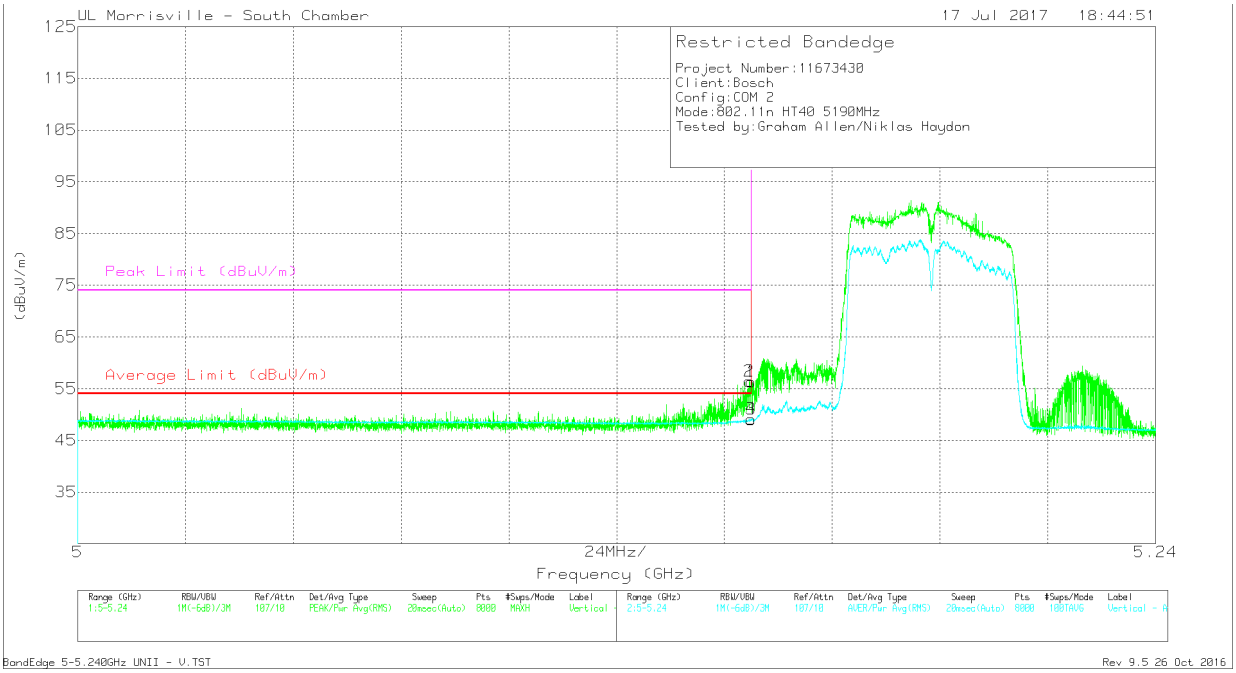
RESTRICTED BANDEDGE (LOW CHANNEL INTERNAL CHAIN 1)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	49.89	Pk	34.1	-22.7	0	61.29	-	-	74	-12.71	360	101	H
2	* 5.148	51.05	Pk	34.1	-22.7	0	62.45	-	-	74	-11.55	360	101	H
3	* 5.15	30	RMS	34.1	-22.7	10.07	51.47	54	-2.66	-	-	360	101	H
4	* 5.15	30.62	RMS	34.1	-22.7	10.07	52.09	54	-2.04	-	-	360	101	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

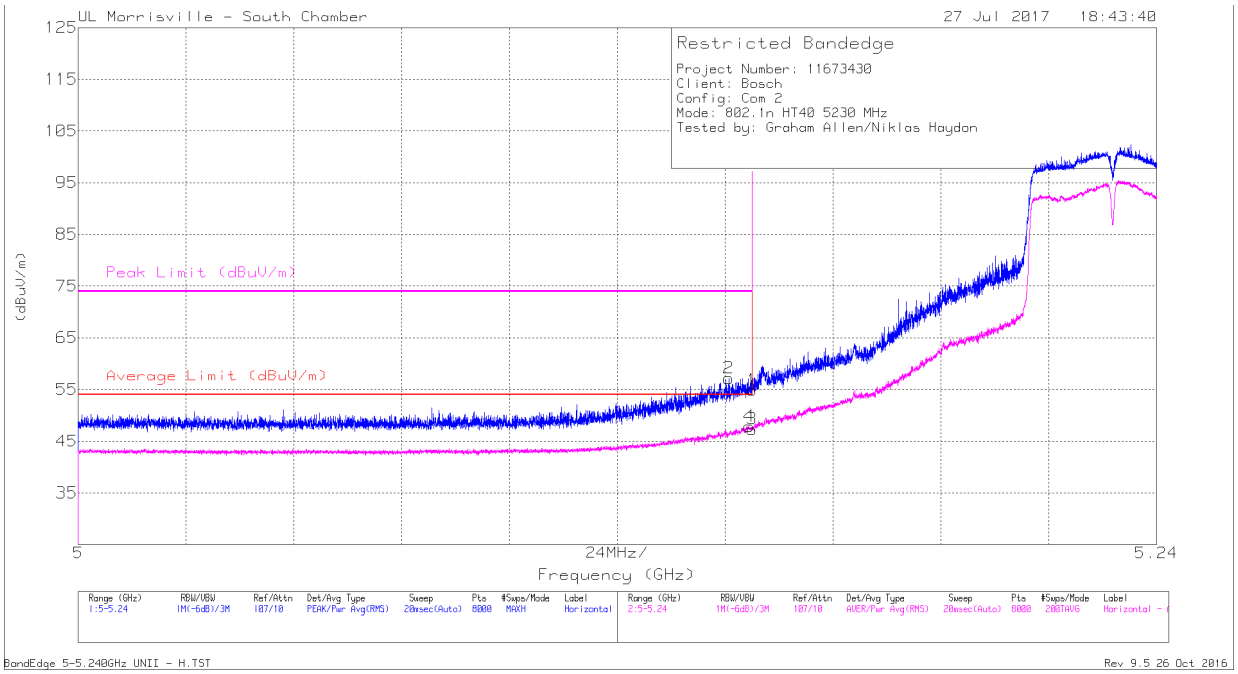
10% DC



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	44.88	Pk	34.1	-22.7	0	56.28	-	-	74	-17.72	334	360	V
2	* 5.15	45.04	Pk	34.1	-22.7	0	56.44	-	-	74	-17.56	334	360	V
3	* 5.15	27.72	RMS	34.1	-22.7	10.07	49.19	54	-4.81	-	-	334	360	V
4	* 5.15	27.81	RMS	34.1	-22.7	10.07	49.28	54	-4.72	-	-	334	360	V

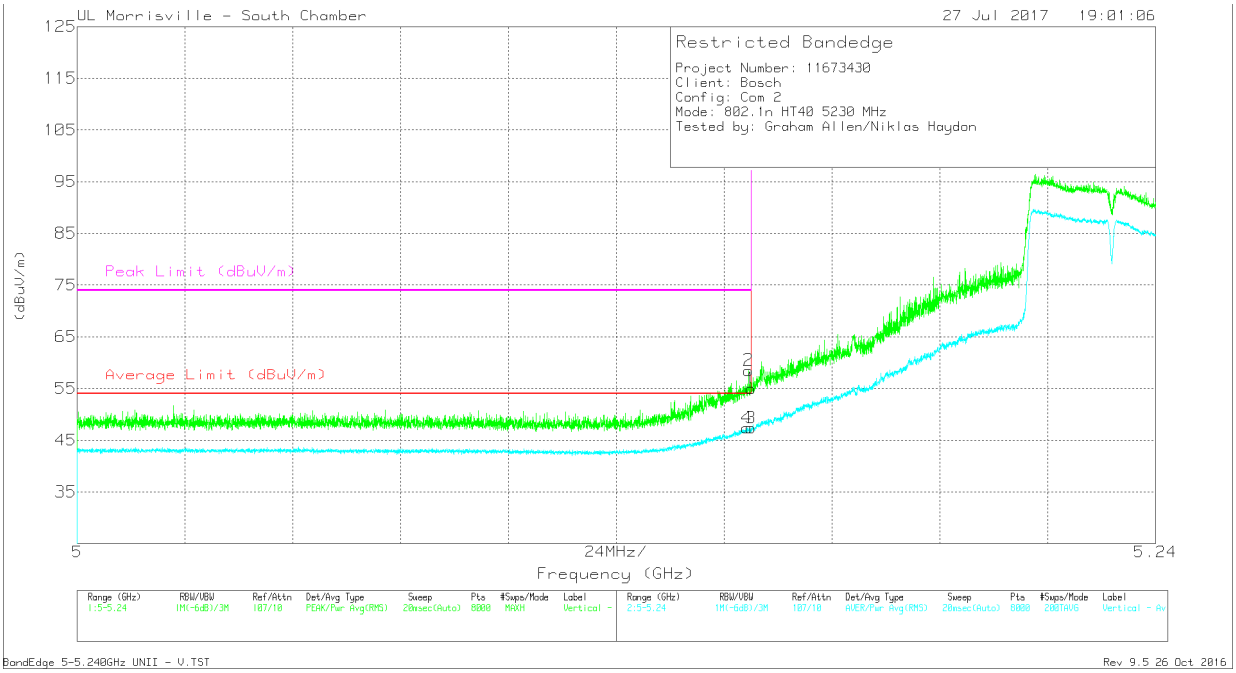
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

10% DC



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	43.46	Pk	34.1	-22.7	0	54.86	-	-	74	-19.14	111	113	H
2	* 5.145	45.77	Pk	34.1	-22.7	0	57.17	-	-	74	-16.83	111	113	H
3	* 5.15	31.84	RMS	34.1	-22.7	4.09	47.33	54	-6.67	-	-	111	113	H
4	* 5.149	32.38	RMS	34.1	-22.7	4.09	47.87	54	-6.13	-	-	111	113	H

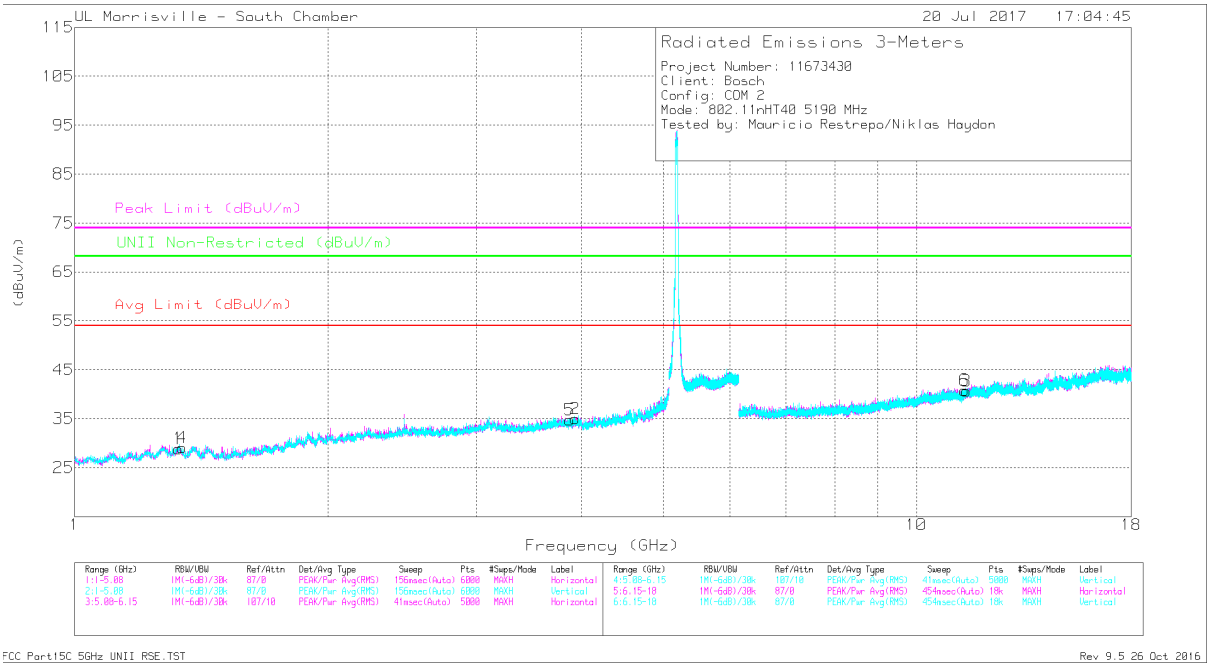
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	43.58	Pk	34.1	-22.7	0	54.98	-	-	74	-19.02	25	387	V
2	* 5.149	47.1	Pk	34.1	-22.7	0	58.5	-	-	74	-15.5	25	387	V
3	* 5.15	31.89	RMS	34.1	-22.7	4.09	47.38	54	-6.62	-	-	25	387	V
4	* 5.149	31.89	RMS	34.1	-22.7	4.09	47.38	54	-6.62	-	-	25	387	V

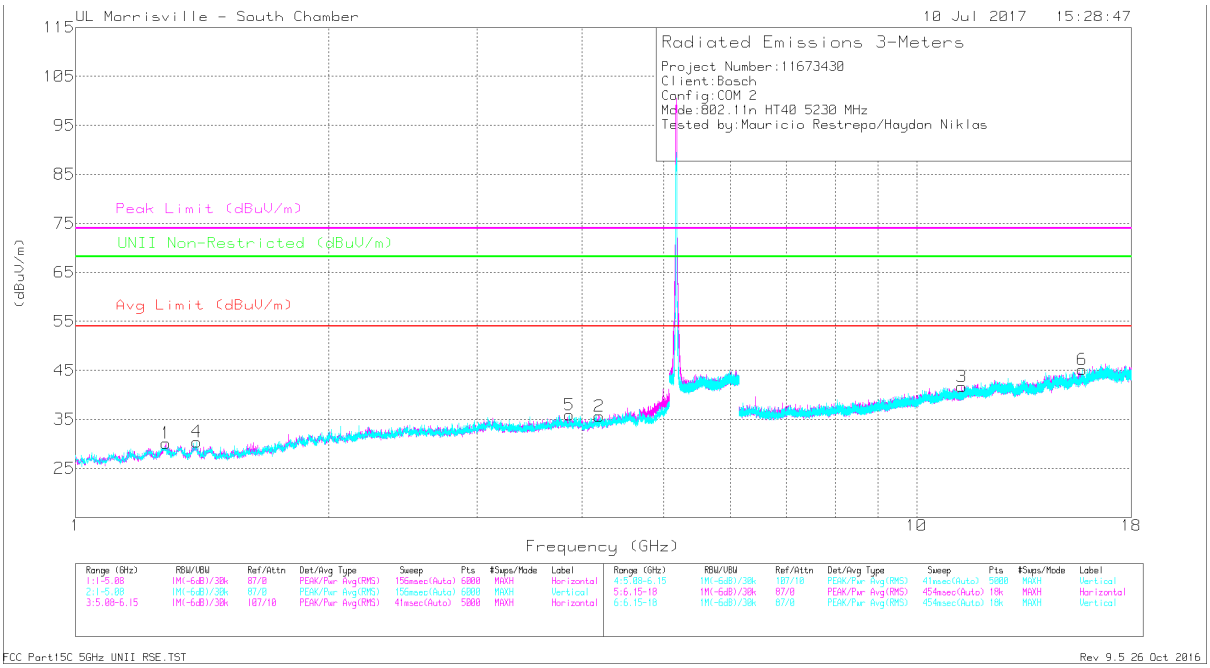
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS – INTERNAL CHAIN 1



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.329	43.11	PK-U	28.8	-34.9	0	37.01	-	-	74	-36.99	-	-	153	132	H
	* 1.329	30.42	ADR	28.8	-34.8	4.09	28.51	54	-25.49	-	-	-	-	153	132	H
2	* 3.936	40.9	PK-U	33.3	-32.2	0	42	-	-	74	-32	-	-	31	391	H
	* 3.935	28.55	ADR	33.3	-32.2	4.09	33.74	54	-20.26	-	-	-	-	31	391	H
3	* 11.468	35.46	PK-U	38.2	-25	0	48.66	-	-	74	-25.34	-	-	192	397	H
	* 11.469	22.55	ADR	38.2	-25	4.09	39.84	54	-14.16	-	-	-	-	192	397	H
4	* 1.34	42.03	PK-U	28.6	-34.8	0	35.83	-	-	74	-38.17	-	-	292	299	V
	* 1.34	29.8	ADR	28.6	-34.8	4.09	27.69	54	-26.31	-	-	-	-	292	299	V
5	* 3.875	41.62	PK-U	33.3	-32.8	0	42.12	-	-	74	-31.88	-	-	34	390	V
	* 3.875	28.92	ADR	33.3	-32.8	4.09	33.51	54	-20.49	-	-	-	-	34	390	V
6	* 11.404	34.83	PK-U	38.1	-25.1	0	47.83	-	-	74	-26.17	-	-	203	232	V
	* 11.404	22.5	ADR	38.1	-25.1	4.09	39.59	54	-14.41	-	-	-	-	203	232	V

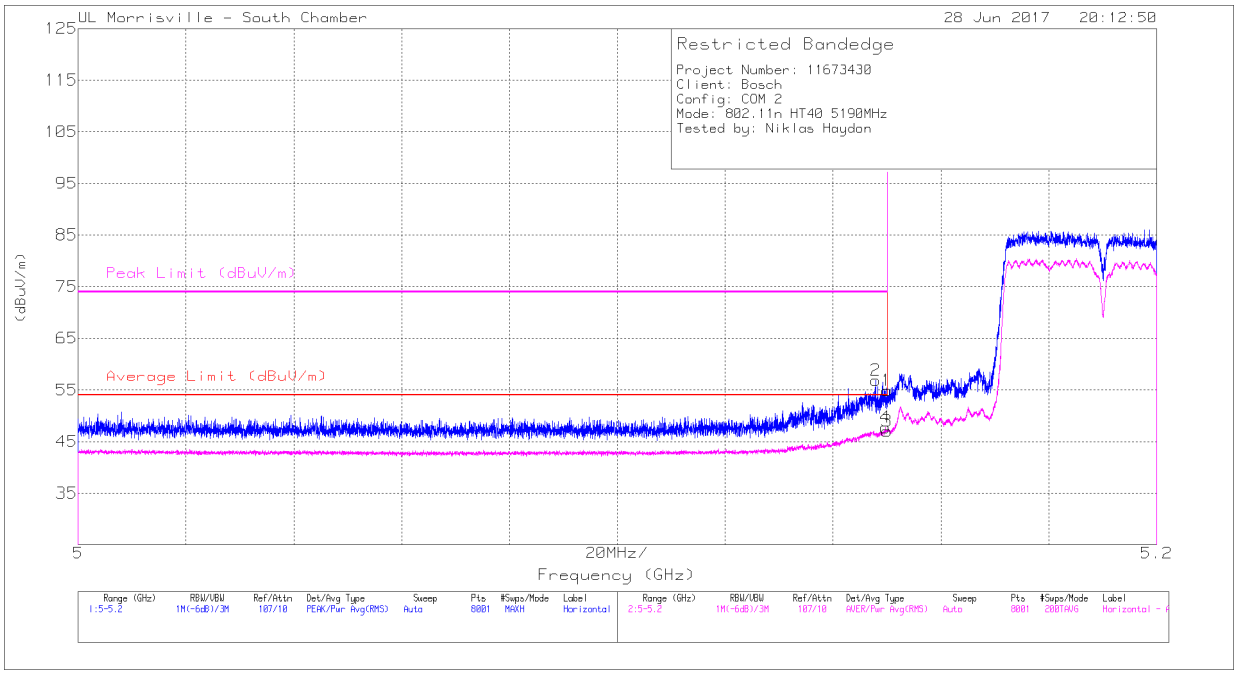
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.279	42.4	PK-U	29	-35.1	0	36.3	-	-	74	-37.7	-	-	240	200	H
	* 1.28	30.91	ADR	29	-35.1	4.09	28.9	54	-25.1	-	-	-	-	240	200	H
2	* 4.193	40.32	PK-U	33.3	-31.8	0	41.82	-	-	74	-32.18	-	-	148	287	H
	* 4.194	28.05	ADR	33.3	-31.8	4.09	33.64	54	-20.36	-	-	-	-	148	287	H
3	* 1.396	42.34	PK-U	28.7	-34.9	0	36.14	-	-	74	-37.86	-	-	335	370	V
	* 1.395	30.04	ADR	28.7	-34.9	4.09	27.93	54	-26.07	-	-	-	-	335	370	V
4	* 3.863	41.12	PK-U	33.3	-32.8	0	41.62	-	-	74	-32.38	-	-	149	288	V
	* 3.863	28.94	ADR	33.3	-32.8	4.09	33.53	54	-20.47	-	-	-	-	149	288	V
5	* 11.318	33.8	PK-U	38.1	-24.8	0	47.1	-	-	74	-26.9	-	-	39	130	H
	* 11.319	22.05	ADR	38.1	-24.8	4.09	39.44	54	-14.56	-	-	-	-	39	130	H
6	* 15.729	34.64	PK-U	40.3	-23.9	0	51.04	-	-	74	-22.96	-	-	133	362	V
	* 15.729	22.54	ADR	40.3	-23.9	4.09	43.03	54	-10.97	-	-	-	-	133	362	V

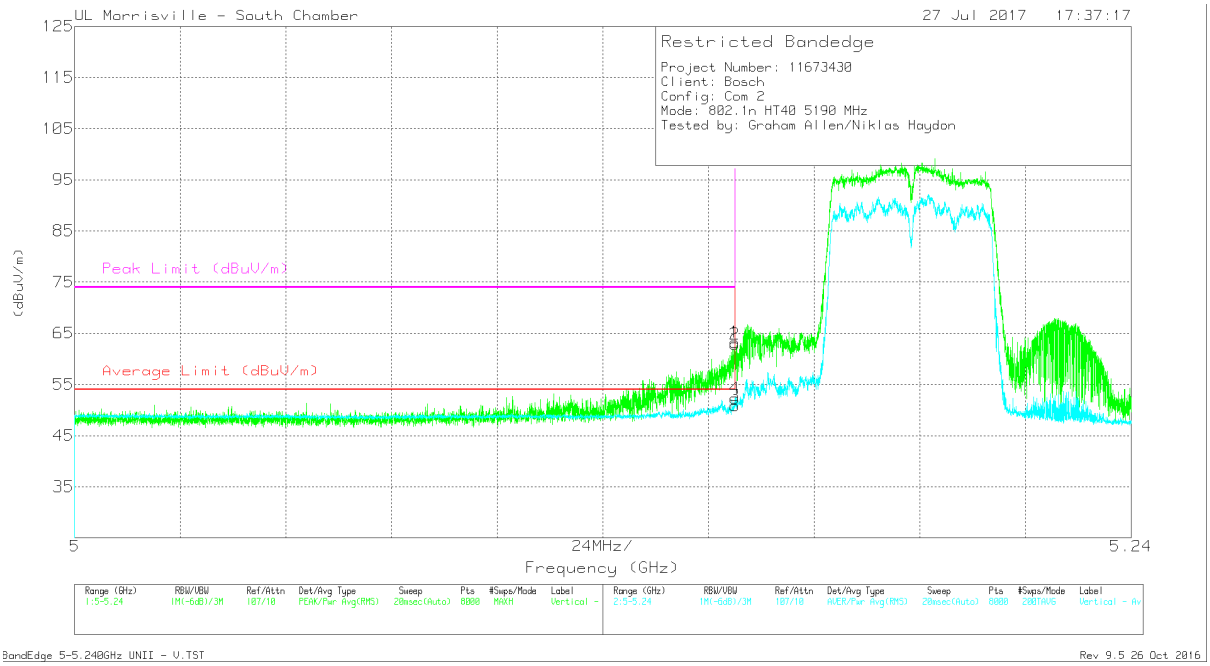
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

RESTRICTED BANDEDGE (LOW CHANNEL EXTERNAL CHAIN 0)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	43.48	Pk	34.1	-22.7	0	54.88	-	-	74	-19.12	77	107	H
2	* 5.148	45.43	Pk	34.1	-22.7	0	56.83	-	-	74	-17.17	77	107	H
3	* 5.15	31.51	RMS	34.1	-22.7	4.09	47	54	-7	-	-	77	107	H
4	* 5.15	32.22	RMS	34.1	-22.7	4.09	47.71	54	-6.29	-	-	77	107	H

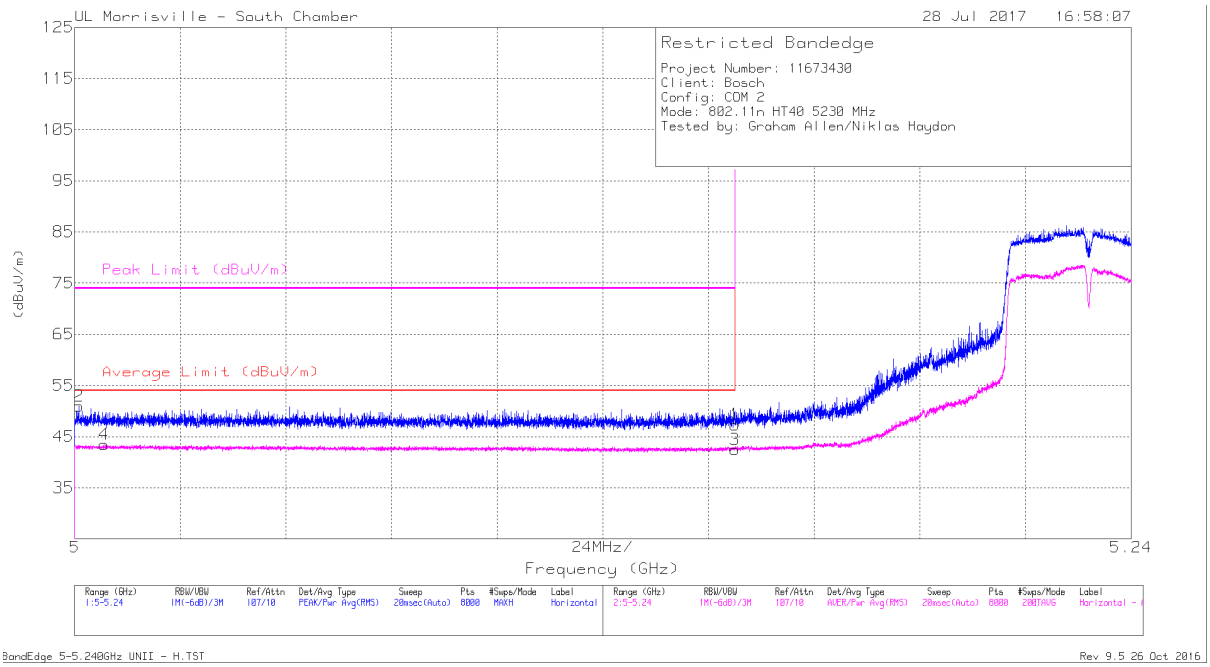
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	51.81	Pk	34.1	-22.7	0	63.21	-	-	74	-10.79	139	107	V
2	* 5.15	51.44	Pk	34.1	-22.7	0	62.84	-	-	74	-11.16	139	107	V
3	* 5.15	29.46	RMS	34.1	-22.7	10.07	50.93	54	-3.07	-	-	139	107	V
4	* 5.15	30.95	RMS	34.1	-22.7	10.07	52.42	54	-1.58	-	-	139	107	V

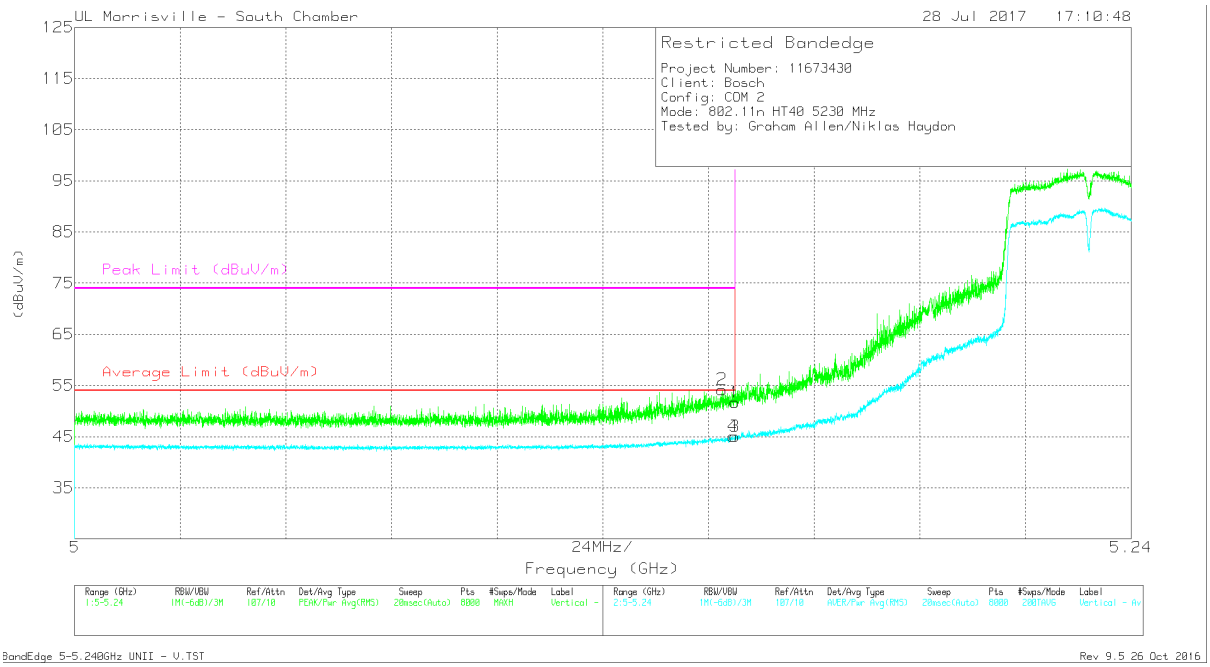
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

10% DC



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	35.91	Pk	34.1	-22.7	0	47.31	-	-	74	-26.69	79	338	H
2	* 5.001	39.22	Pk	34	-22.3	0	50.92	-	-	74	-23.08	79	338	H
3	* 5.15	26.99	RMS	34.1	-22.7	4.09	42.48	54	-11.52	-	-	79	338	H
4	* 5.007	27.77	RMS	34	-22.4	4.09	43.46	54	-10.54	-	-	79	338	H

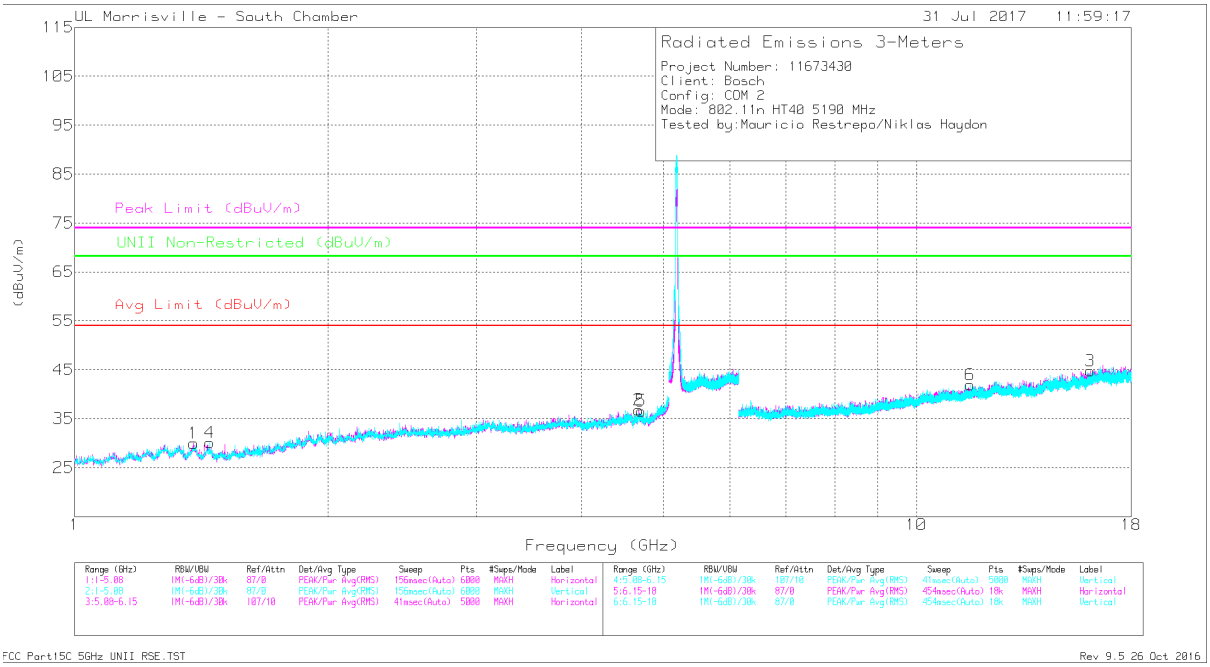
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	40.27	Pk	34.1	-22.7	0	51.67	-	-	74	-22.33	28	115	V
2	* 5.147	42.79	Pk	34.1	-22.7	0	54.19	-	-	74	-19.81	28	115	V
3	* 5.15	29.54	RMS	34.1	-22.7	4.09	45.03	54	-8.97	-	-	28	115	V
4	* 5.15	29.53	RMS	34.1	-22.7	4.09	45.02	54	-8.98	-	-	28	115	V

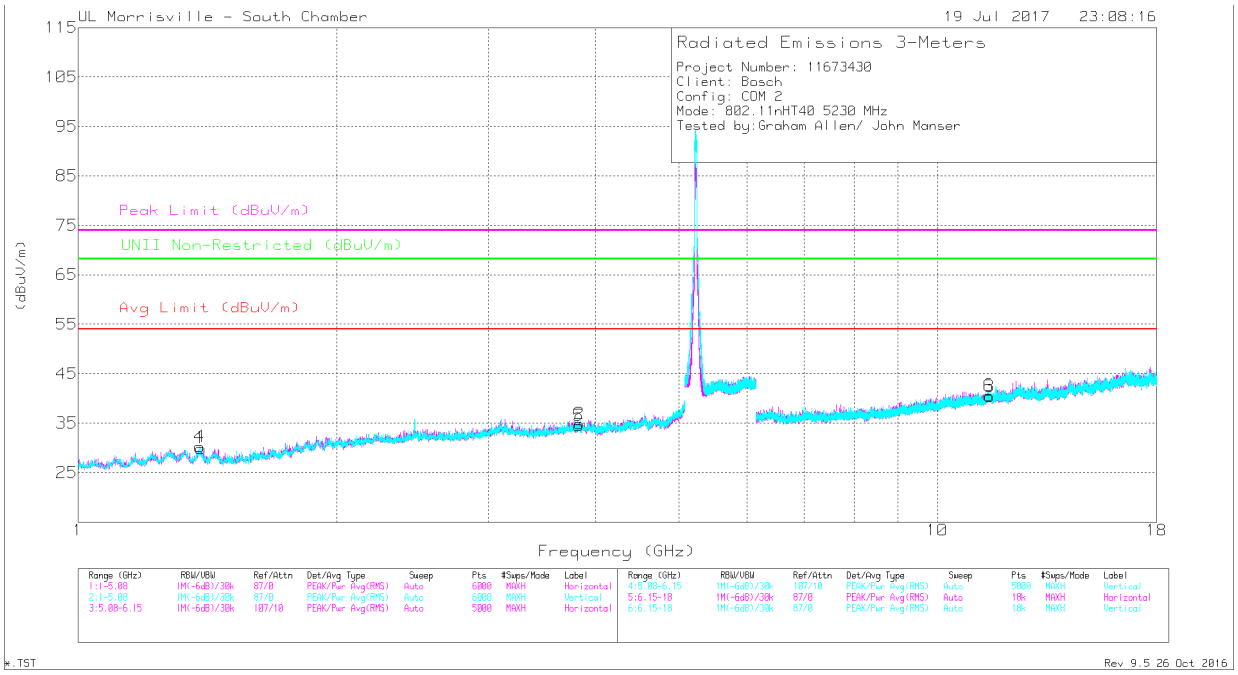
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS – EXTERNAL CHAIN 0



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.384	42.24	PK-U	28.9	-34.8	0	36.34	-	-	74	-37.66	-	-	22	301	H
	* 1.384	30.28	ADR	28.9	-34.8	4.09	28.47	54	-25.53	-	-	-	-	22	301	H
2	* 4.675	38.44	PK-U	34	-31	0	41.44	-	-	74	-32.56	-	-	129	150	H
	* 4.677	27.19	ADR	34	-31	4.09	34.28	54	-19.72	-	-	-	-	129	150	H
4	* 1.447	42.43	PK-U	28.7	-35	0	36.13	-	-	74	-37.87	-	-	76	188	V
	* 1.445	30.23	ADR	28.7	-35	4.09	28.02	54	-25.98	-	-	-	-	76	188	V
5	* 4.712	39.32	PK-U	34	-31.3	0	42.02	-	-	74	-31.98	-	-	149	359	V
	* 4.712	27.38	ADR	34	-31.3	4.09	34.17	54	-19.83	-	-	-	-	149	359	V
3	* 16.099	35.47	PK-U	40.7	-25.6	0	50.57	-	-	74	-23.43	-	-	2	120	H
	* 16.098	23.9	ADR	40.7	-25.6	4.09	43.09	54	-10.91	-	-	-	-	2	120	H
6	* 11.588	34.58	PK-U	38.3	-25.2	0	47.68	-	-	74	-26.32	-	-	339	153	V
	* 11.588	22.28	ADR	38.3	-25.2	4.09	39.47	54	-14.53	-	-	-	-	339	153	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

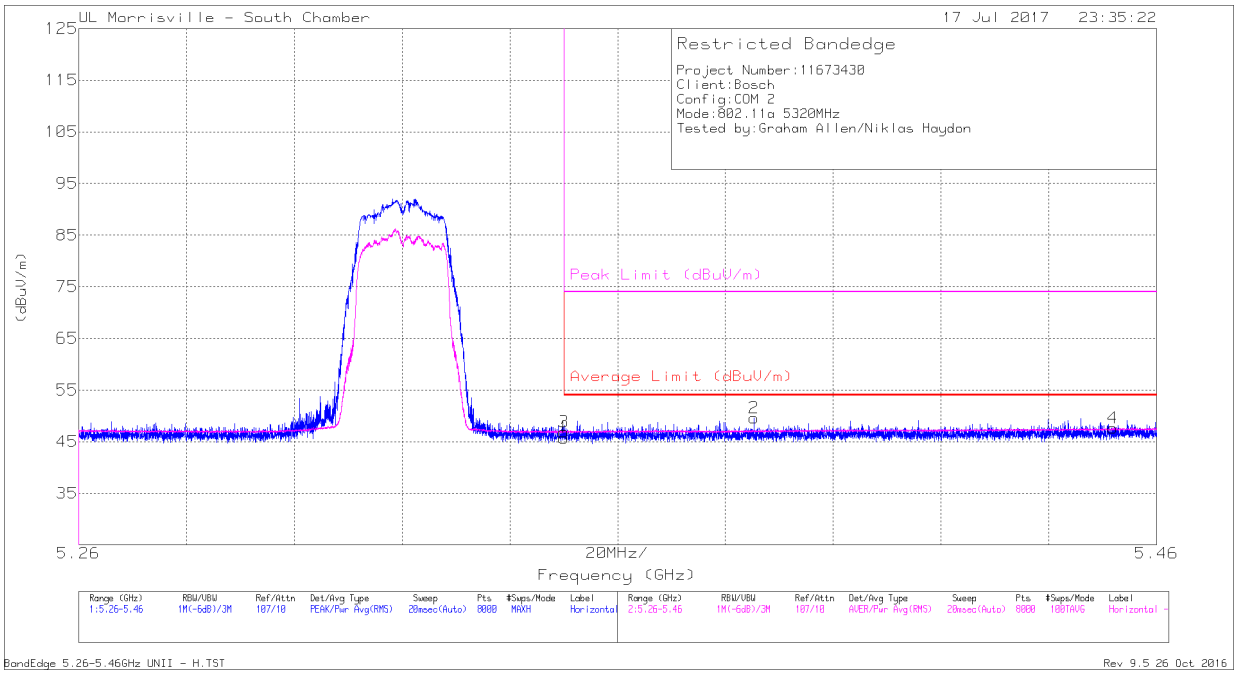


Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.39	42.77	PK-U	28.8	-34.8	0	36.77	-	-	74	-37.23	-	-	360	198	H
	* 1.389	30.66	ADR	28.8	-34.8	4.09	28.75	54	-25.25	-	-	-	-	360	198	H
2	* 3.833	41.83	PK-U	33.4	-33	0	42.23	-	-	74	-31.77	-	-	74	238	H
	* 3.833	29.08	ADR	33.4	-33	4.09	33.57	54	-20.43	-	-	-	-	74	238	H
4	* 1.386	65.14	PK-U	28.9	-34.8	0	59.24	-	-	74	-14.76	-	-	227	175	V
	* 1.386	30.39	ADR	28.9	-34.8	4.09	28.58	54	-25.42	-	-	-	-	227	175	V
5	* 3.827	41.29	PK-U	33.4	-33	0	41.69	-	-	74	-32.31	-	-	23	349	V
	* 3.827	29.06	ADR	33.4	-33	4.09	33.55	54	-20.45	-	-	-	-	23	349	V
3	* 11.503	34.4	PK-U	38.3	-24.9	0	47.8	-	-	74	-26.2	-	-	216	156	H
	* 11.504	22.38	ADR	38.3	-24.9	4.09	39.87	54	-14.13	-	-	-	-	216	156	H
6	* 11.484	34.92	PK-U	38.3	-24.9	0	48.32	-	-	74	-25.68	-	-	8	288	V
	* 11.484	22.48	ADR	38.3	-24.9	4.09	39.97	54	-14.03	-	-	-	-	8	288	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

9.6. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND

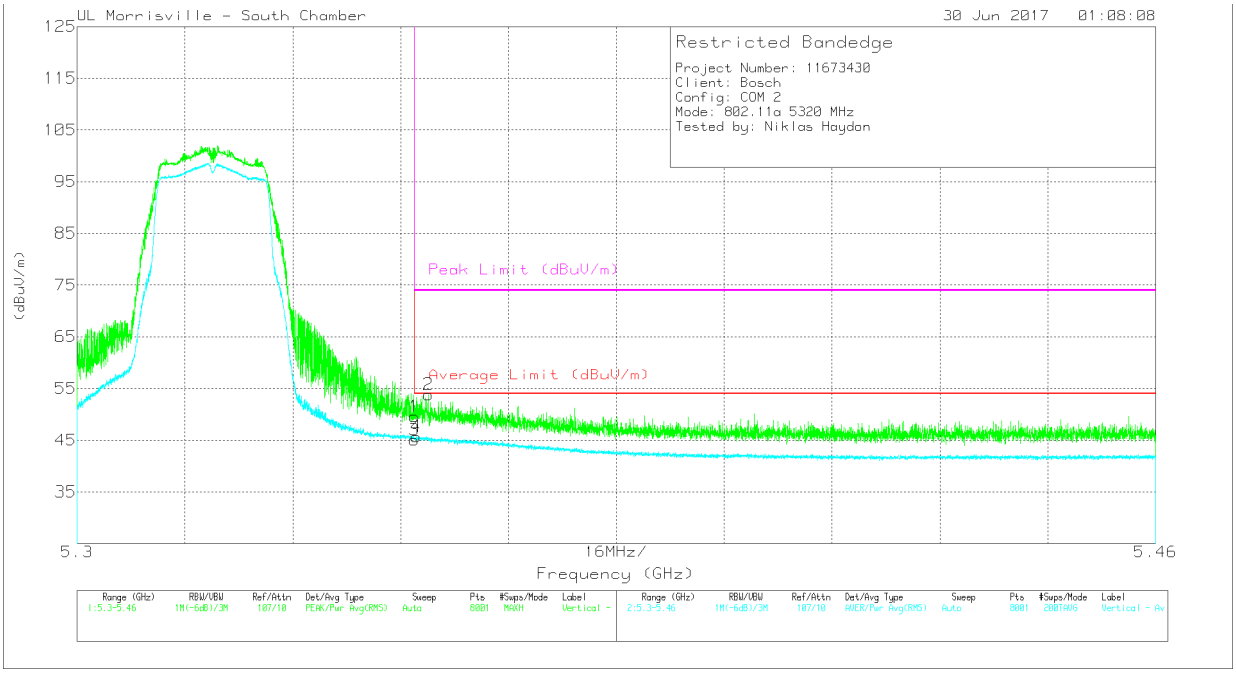
AUTHORIZED BANDEDGE (HIGH CHANNEL INTERNAL CHAIN 0)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	34.54	Pk	34.4	-23.2	0	45.74	-	-	74	-28.26	51	230	H
3	* 5.35	25.61	RMS	34.4	-23.2	10.07	46.88	54	-7.12	-	-	51	230	H
2	* 5.385	38.49	Pk	34.4	-23.3	0	49.59	-	-	74	-24.41	51	230	H
4	* 5.452	26.65	RMS	34.5	-23.6	10.07	47.62	54	-6.38	-	-	51	230	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

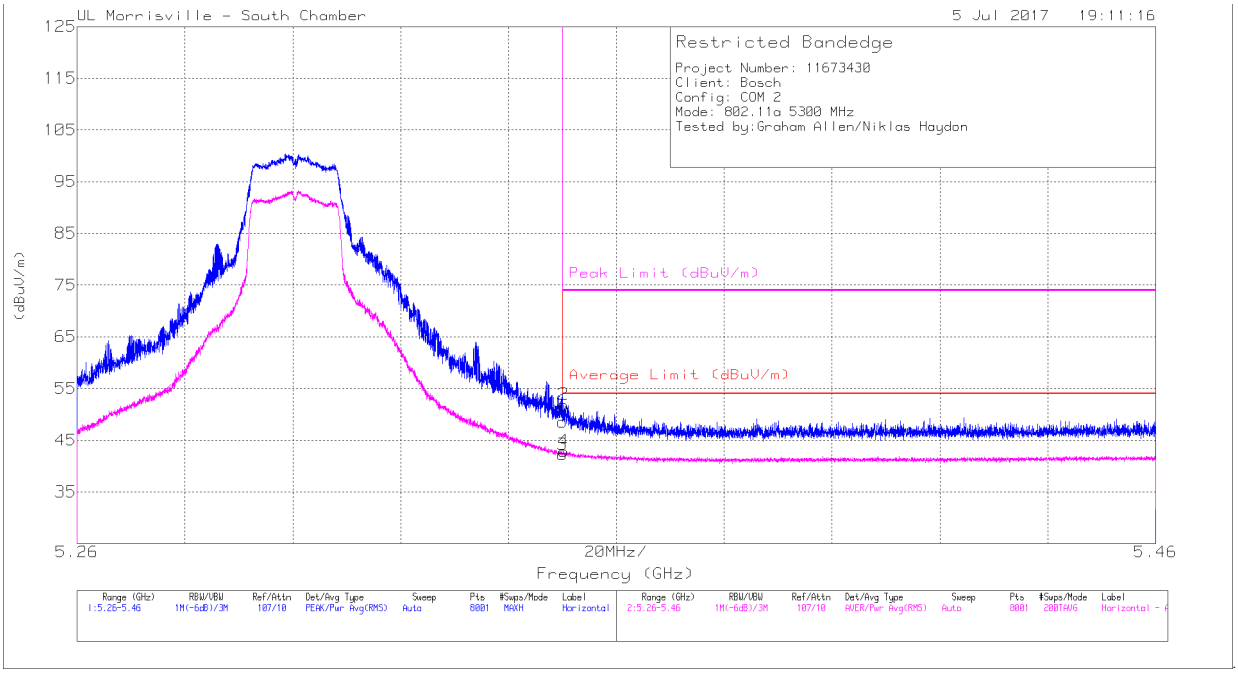
10% DC



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	38.37	Pk	34.4	-23.2	0	49.57	-	-	74	-24.43	229	105	V
2	* 5.352	42.62	Pk	34.4	-23.2	0	53.82	-	-	74	-20.18	229	105	V
3	* 5.35	29.79	RMS	34.4	-23.2	4.09	45.08	54	-8.92	-	-	229	105	V
4	* 5.35	30.4	RMS	34.4	-23.2	4.09	45.69	54	-8.31	-	-	229	105	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

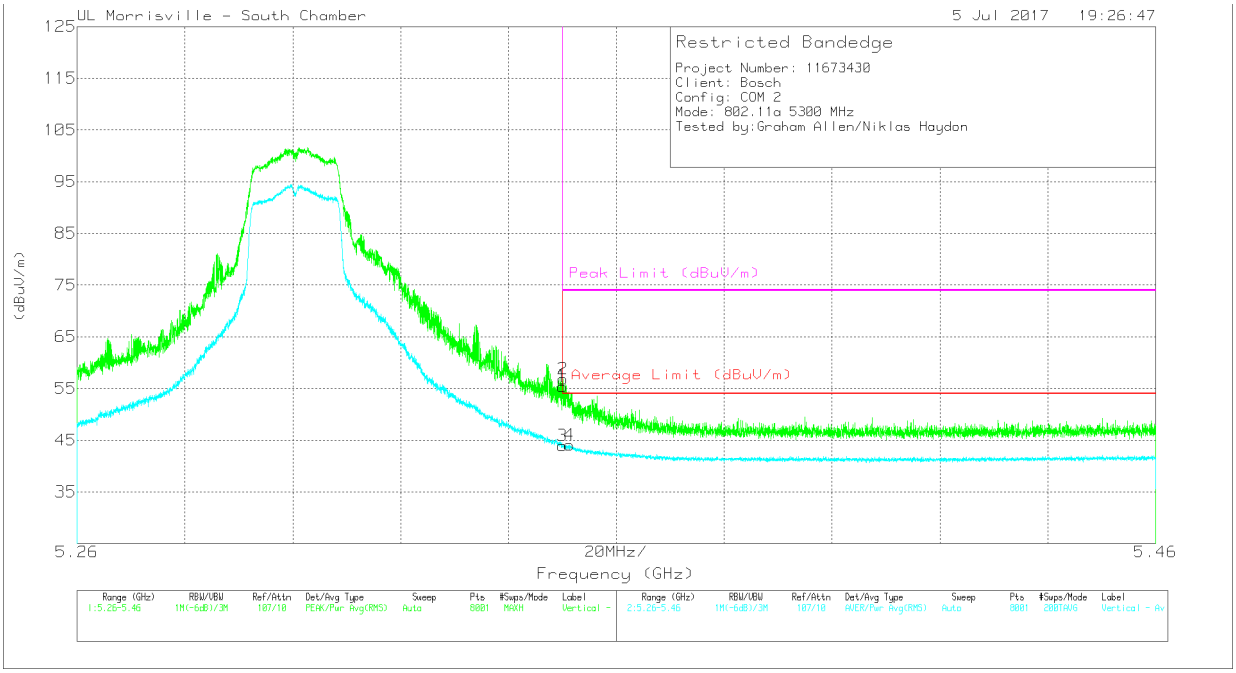
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.37	Pk	34.4	-23.2	0	48.57	-	-	74	-25.43	343	123	H
2	* 5.35	40.68	Pk	34.4	-23.2	0	51.88	-	-	74	-22.12	343	123	H
3	* 5.35	26.96	RMS	34.4	-23.2	4.09	42.25	54	-11.75	-	-	343	123	H
4	* 5.35	27.59	RMS	34.4	-23.2	4.09	42.88	54	-11.12	-	-	343	123	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

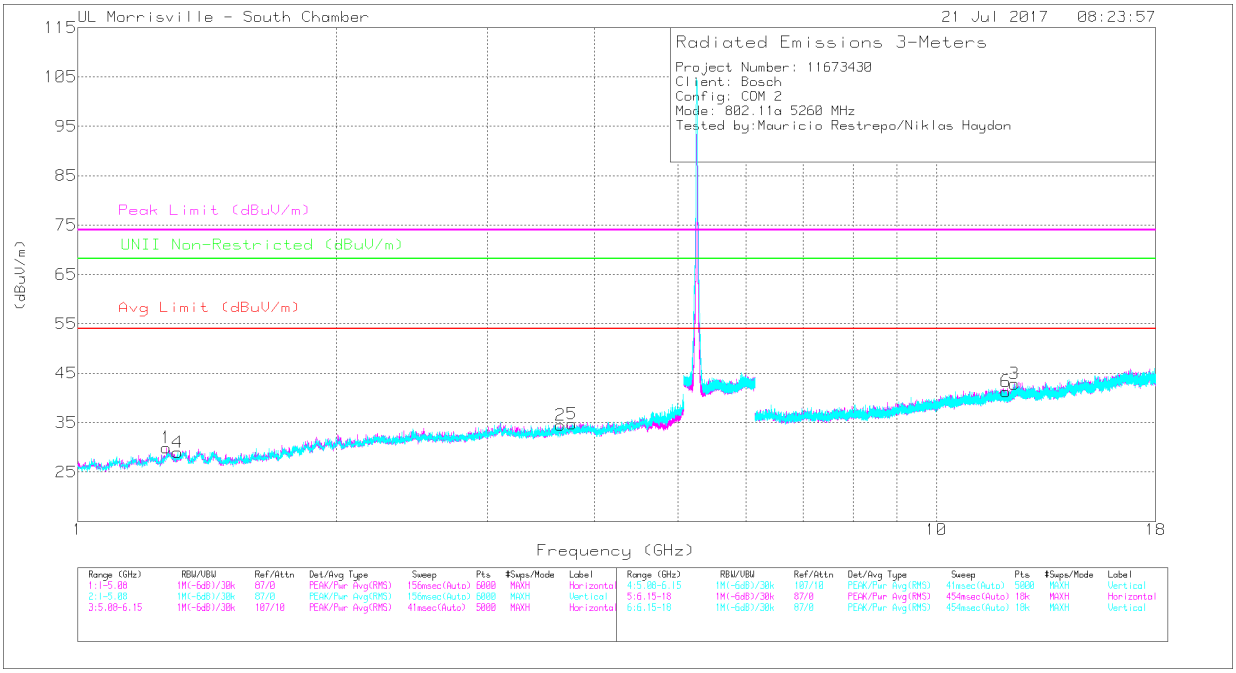


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	44.23	Pk	34.4	-23.2	0	55.43	-	-	74	-18.57	25	356	V
2	* 5.35	45.66	Pk	34.4	-23.2	0	56.86	-	-	74	-17.14	25	356	V
3	* 5.35	28.62	RMS	34.4	-23.2	4.09	43.91	54	-10.09	-	-	25	356	V
4	* 5.351	28.81	RMS	34.4	-23.2	4.09	44.1	54	-9.9	-	-	25	356	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

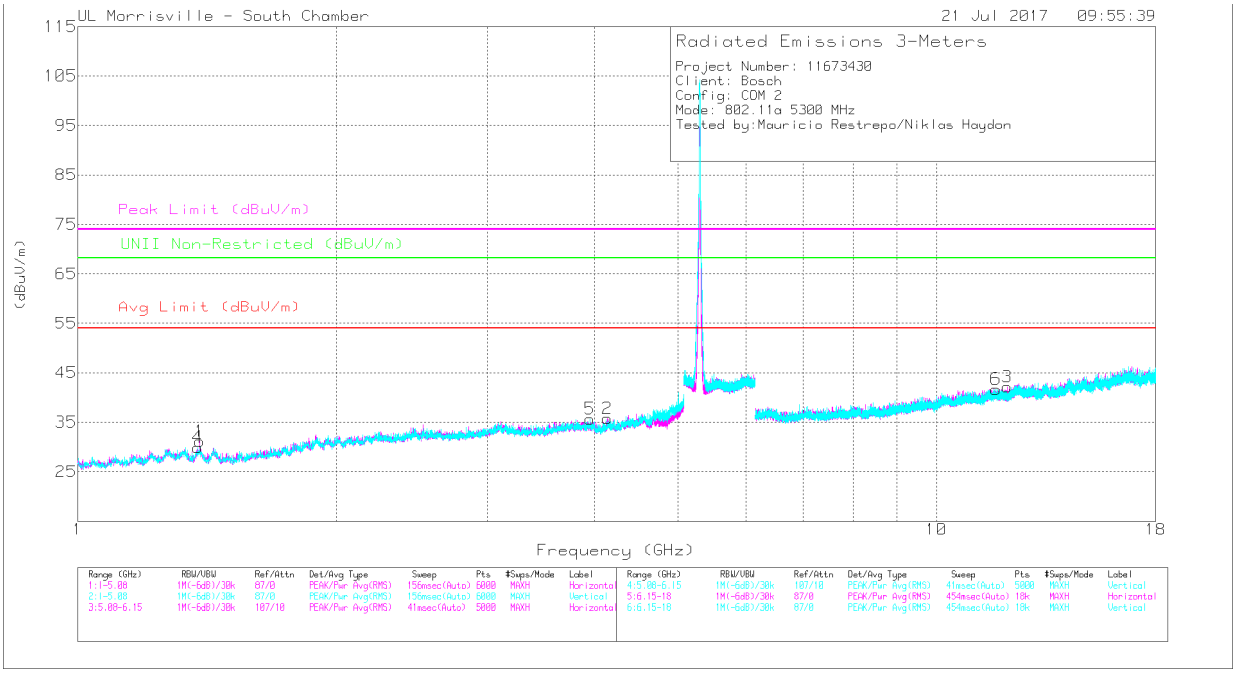
HARMONICS AND SPURIOUS EMISSIONS – INTERNAL CHAIN 0



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.268	42.74	PK-U	29	-35.2	0	36.54	-	-	74	-37.46	-	-	303	299	H
	* 1.268	30.3	ADR	29	-35.2	4.09	28.19	54	-25.81	-	-	-	-	303	299	H
2	* 3.648	41.14	PK-U	33	-32.6	0	41.54	-	-	74	-32.46	-	-	140	307	H
	* 3.648	28.65	ADR	33	-32.6	4.09	33.14	54	-20.86	-	-	-	-	140	307	H
3	* 12.323	35.3	PK-U	38.9	-24.9	0	49.3	-	-	74	-24.7	-	-	212	224	H
	* 12.324	22.77	ADR	38.9	-24.9	4.09	40.86	54	-13.14	-	-	-	-	212	224	H
4	* 1.306	41.29	PK-U	29.1	-35	0	35.39	-	-	74	-38.61	-	-	97	100	V
	* 1.307	29.26	ADR	29.1	-35	4.09	27.45	54	-26.55	-	-	-	-	97	100	V
5	* 3.762	40.9	PK-U	33.4	-33	0	41.3	-	-	74	-32.7	-	-	272	323	V
	* 3.764	29.11	ADR	33.4	-33	4.09	33.6	54	-20.4	-	-	-	-	272	323	V
6	* 12.057	33.62	PK-U	38.7	-25.3	0	47.02	-	-	74	-26.98	-	-	33	320	V
	* 12.056	22.28	ADR	38.7	-25.3	4.09	39.77	54	-14.23	-	-	-	-	33	320	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

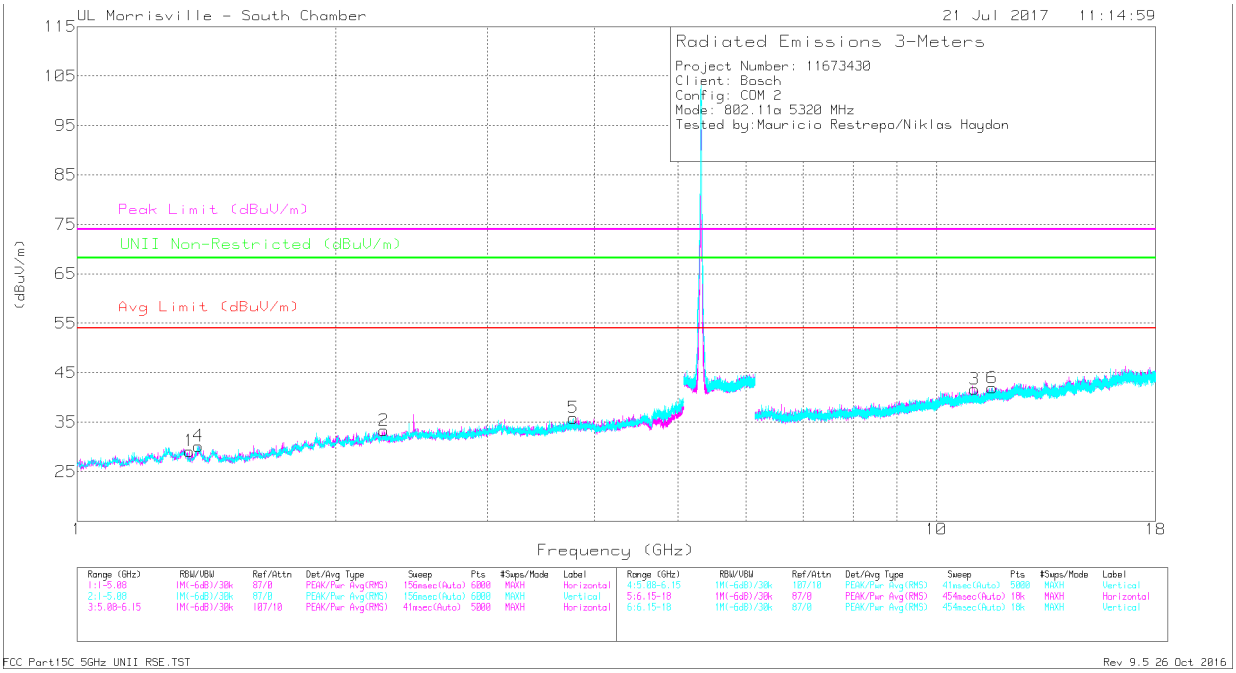
Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.138	40.05	PK-U	33.3	-31.7	0	41.65	-	-	74	-32.35	-	-	194	217	H
	* 4.14	27.91	ADR	33.3	-31.7	4.09	33.6	54	-20.4	-	-	-	-	194	217	H
1	* 1.386	43.09	PK-U	28.9	-34.8	0	37.19	-	-	74	-36.81	-	-	238	306	H
	* 1.386	30.39	ADR	28.9	-34.8	4.09	28.58	54	-25.42	-	-	-	-	238	306	H
3	* 12.086	34.47	PK-U	38.8	-25.3	0	47.97	-	-	74	-26.03	-	-	146	111	H
	* 12.086	22.72	ADR	38.8	-25.3	4.09	40.31	54	-13.69	-	-	-	-	146	111	H
4	* 1.382	42.38	PK-U	28.9	-34.8	0	36.48	-	-	74	-37.52	-	-	17	111	V
	* 1.382	30.31	ADR	28.9	-34.8	4.09	28.5	54	-25.5	-	-	-	-	17	111	V
5	* 3.948	40.27	PK-U	33.4	-32	0	41.67	-	-	74	-32.33	-	-	98	344	V
	* 3.947	28.15	ADR	33.4	-32	4.09	33.64	54	-20.36	-	-	-	-	98	344	V
6	* 11.731	33.86	PK-U	38.5	-24.7	0	47.66	-	-	74	-26.34	-	-	5	337	V
	* 11.734	22.28	ADR	38.5	-24.7	4.09	40.17	54	-13.83	-	-	-	-	5	337	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

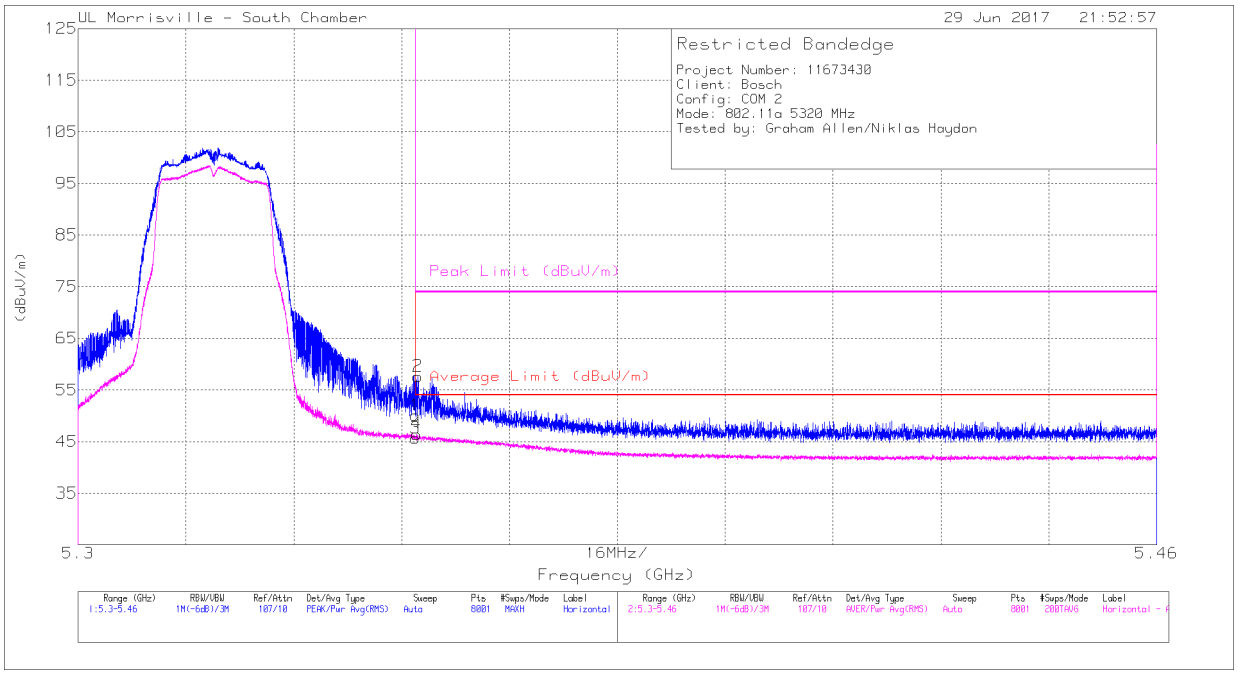


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.349	41.77	PK-U	28.7	-34.8	0	35.67	-	-	74	-38.33	-	-	59	199	H
	* 1.349	29.57	ADR	28.7	-34.8	4.09	27.56	54	-26.44	-	-	-	-	59	199	H
2	* 2.275	41.78	PK-U	31.8	-34.1	0	39.48	-	-	74	-34.52	-	-	337	254	H
	* 2.272	29.6	ADR	31.8	-34.1	4.09	31.39	54	-22.61	-	-	-	-	337	254	H
4	* 1.383	42.48	PK-U	28.9	-34.8	0	36.58	-	-	74	-37.42	-	-	335	244	V
	* 1.385	30.48	ADR	28.9	-34.8	4.09	28.67	54	-25.33	-	-	-	-	335	244	V
5	* 3.777	40.58	PK-U	33.4	-33	0	40.98	-	-	74	-33.02	-	-	182	125	V
	* 3.778	29.18	ADR	33.4	-33	4.09	33.67	54	-20.33	-	-	-	-	182	125	V
3	* 11.084	34.3	PK-U	37.9	-25.1	0	47.1	-	-	74	-26.9	-	-	157	383	H
	* 11.084	22.59	ADR	37.9	-25.1	4.09	39.48	54	-14.52	-	-	-	-	157	383	H
6	* 11.617	34.42	PK-U	38.4	-25.2	0	47.62	-	-	74	-26.38	-	-	336	102	V
	* 11.616	22.81	ADR	38.4	-25.2	4.09	40.1	54	-13.9	-	-	-	-	336	102	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.

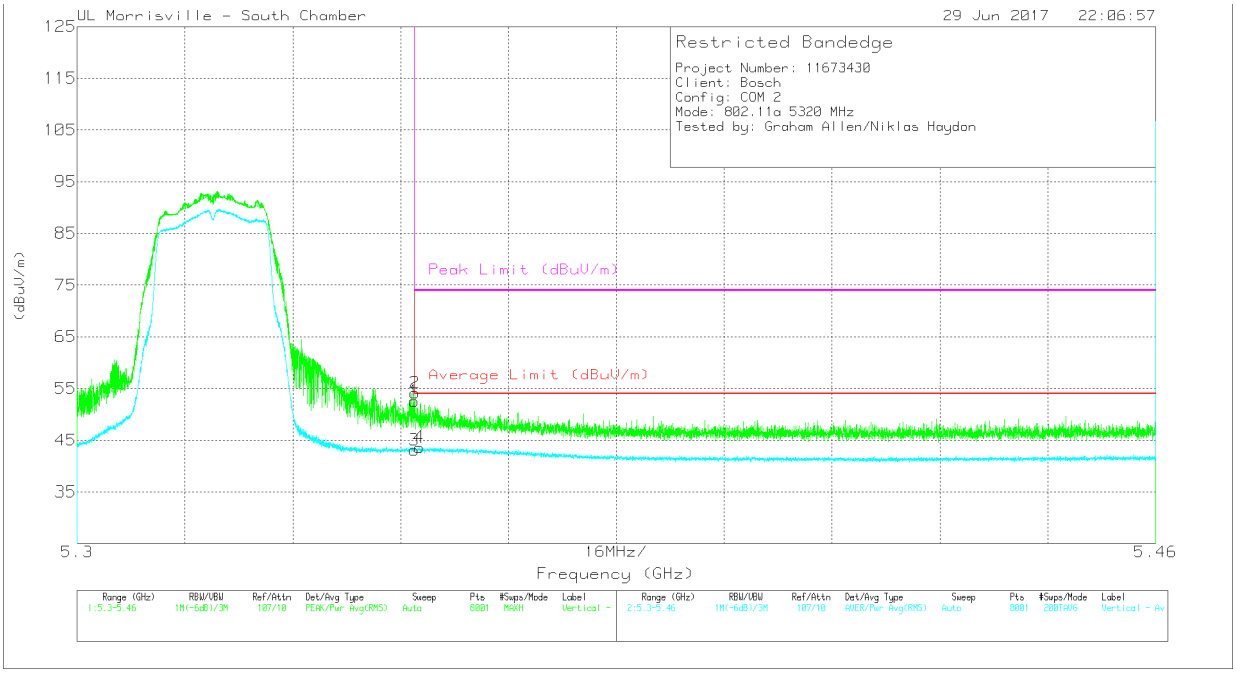
AUTHORIZED BANDEDGE (HIGH CHANNEL INTERNAL CHAIN 1)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	38.87	Pk	34.4	-23.2	0	50.07	-	-	74	-23.93	351	100	H
2	* 5.35	46.45	Pk	34.4	-23.2	0	57.65	-	-	74	-16.35	351	100	H
3	* 5.35	30.39	RMS	34.4	-23.2	4.09	45.68	54	-8.32	-	-	351	100	H
4	* 5.35	31.17	RMS	34.4	-23.2	4.09	46.46	54	-7.54	-	-	351	100	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

Note regarding the measurements performed where the EUT had 40% duty cycle - The HT40 Duty cycle correction (39% or 4.09 dB) was used for all 40% Duty Cycle measurements (11a/nHT20 found to be a duty cycle of 38.4% or 4.16 dB). All measurements had sufficient margin to overcome the 0.07 dB difference between the 40 MHz and 20 MHz 40% Duty Cycle Corrections.



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	41.34	Pk	34.4	-23.2	0	52.54	-	-	74	-21.46	278	352	V
2	* 5.35	42.98	Pk	34.4	-23.2	0	54.18	-	-	74	-19.82	278	352	V
3	* 5.35	27.8	RMS	34.4	-23.2	4.09	43.09	54	-10.91	-	-	278	352	V
4	* 5.351	28.33	RMS	34.4	-23.2	4.09	43.62	54	-10.38	-	-	278	352	V

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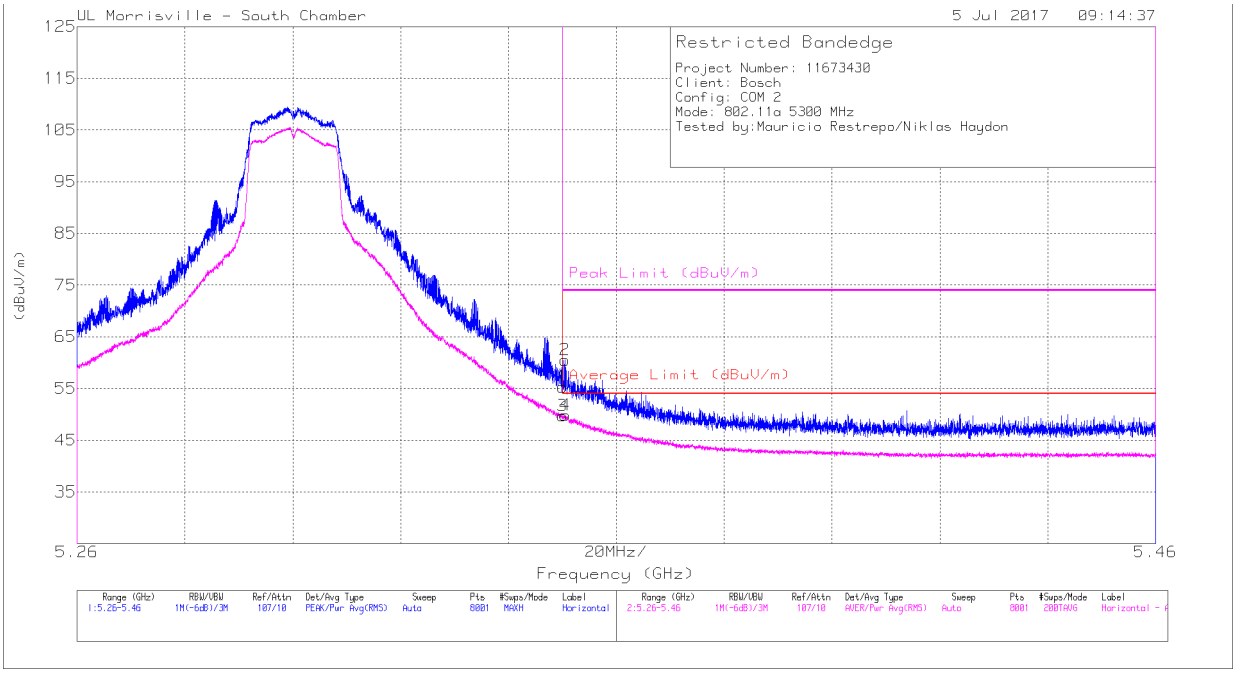

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	44.14	Pk	34.4	-23.2	0	55.34	-	-	74	-18.66	341	114	H
2	* 5.35	49.3	Pk	34.4	-23.2	0	60.5	-	-	74	-13.5	341	114	H
3	* 5.35	34.45	RMS	34.4	-23.2	4.09	49.74	54	-4.26	-	-	341	114	H
4	* 5.351	34.56	RMS	34.4	-23.2	4.09	49.85	54	-4.15	-	-	341	114	H

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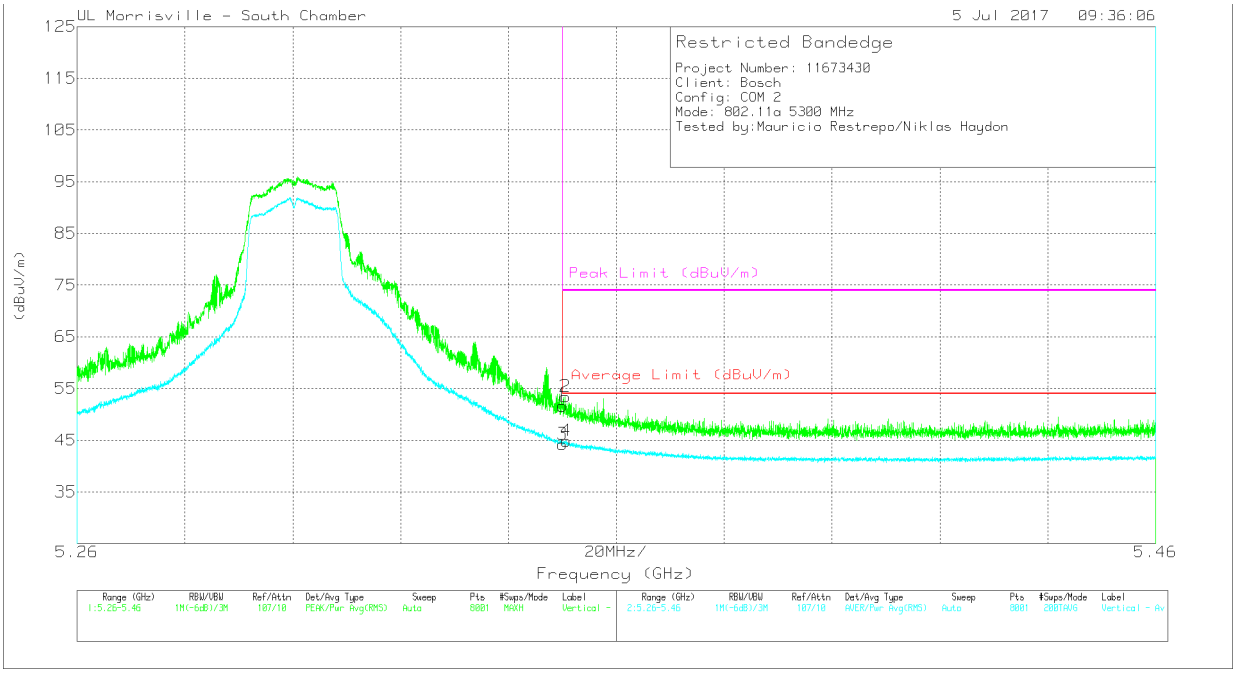

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0069 AF (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	40.45	Pk	34.4	-23.2	0	51.65	-	-	74	-22.35	292	355	V
2	* 5.351	42.25	Pk	34.4	-23.2	0	53.45	-	-	74	-20.55	292	355	V
3	* 5.35	28.96	RMS	34.4	-23.2	4.09	44.25	54	-9.75	-	-	292	355	V
4	* 5.351	29.6	RMS	34.4	-23.2	4.09	44.89	54	-9.11	-	-	292	355	V

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