TEST REPORT

Report Number: R13359833-E4

Applicant	:	Oxford Nanopore Technologies Ltd Gosling Building, Edmund Halley Road Oxford Science Park Oxford, OX4 4DQ United Kingdom
Model	:	ONT-07-01191-00
FCC ID	:	2ARGS-P3310
IC	:	26200-P3310
EUT Description	:	BT/BLE/WLAN (2.4GHz and 5GHz) Radio Module
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E ISED RSS-247 ISSUE 2 ISED RSS-GEN ISSUE 5 +A1:2019

Date Of Issue:
2020-08-31

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NVLAP TESTING
ilac-MRA
NVLAP Lab code: 200246-0

REPORT REVISION HISTORY

Ver.	Issue Date	Revisions	Revised By
1	2020-08-31	Initial Issue	Brian T. Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Oxford Nanopore Technologies Ltd
Gosling Building, Edmund Halley Road
Oxford Science Park
Oxford, OX4 4DQ
United Kingdom

EUT DESCRIPTION: BT/BLE/WLAN (2.4GHz and 5GHz) Radio Module

MODEL: ONT-07-01191-00

SERIAL NUMBER: 0325117192382

DATE TESTED: 2020-07-21 to 2020-08-27

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5 +A1:2019	Complies

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

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2. TEST RESULT SUMMARY

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	Per ANSI C63.10, Section 12.2.
Reporting purposes only	RSS-GEN 6.7	26dB BW/99% OBW	See Comment	Refer to Section 6
15.407 (e)	RSS-247 6.2.4.1	6 dB BW		
15.407 (a) (1-4), (h) (1)	RSS-247 6.2	Output Power	Compliant	None
15.407 (a) (1-3, 5)	RSS-247 6.2	PSD	See Comment	Refer to Section 6
15.209, 15.205, 15.407 (b)	RSS-GEN 8.9, 8.10, RSS-247 6.2	Radiated Emissions	Compliant	None
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions		

3. 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, KDB 414788 D01 Radiated Test Site v01r01, FCC KDB 662911 D01 v02r01, FCC KDB 789033 D02 v02r01, RSS-GEN Issue 5, and RSS-247 Issue 2.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Drive, Research Triangle Park, NC 27709, USA and 2800 Perimeter Park Dr., Suite B, Morrisville, NC 27560, USA. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

12 Laboratory Dr.	2800 Perimeter Park Dr.
Site Code: 2180C	
☐ Chamber A RTP	☒ North Chamber
☐ Chamber C RTP	☒ South Chamber

The above test sites and facilities are covered under FCC Test Firm Registration # 703469. Chambers above are covered under Industry Canada company address and respective code.

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U_{Lab}
Worst Case Conducted Disturbance, 0.15 to 30 MHz	±3.07 dB
Worst Case Radiated Disturbance, 9kHz to 26GHz	±4.88 dB

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS
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

MAINS CONDUCTED EMISSIONS
Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. DESCRIPTION OF C2PC

The purpose of this class 2 permission change report is to demonstrate that the radio module maintains compliancy when used with an antenna different from the original submission. Therefore full radiated, power, and AC mains testing performed. All other testing is covered by the radio module reports. It is the manufacturer's responsibility to provide these reports upon request.

7. EQUIPMENT UNDER TEST

7.1. EUT DESCRIPTION

The EUT is a BT/BLE/WLAN (2.4GHz and 5GHz) Radio Module. This report covers 5GHz WLAN.

7.2. MAXIMUM AVERAGE OUTPUT POWER

5.2GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5180 - 5240	802.11a	16.06	40.36
	802.11n HT20	14.95	31.26
5190 - 5230	802.11n HT40	14.97	31.41
5210	802.11ac VHT80	14.41	27.61

5.3GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5260 - 5320	802.11a	17.49	56.10
	802.11n HT20	19.24	83.95
5270 - 5310	802.11n HT40	18.42	69.50
5290	802.11ac VHT80	16.38	43.45

5.6GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5500 - 5700	802.11a	17.63	57.94
	802.11n HT20	19.47	88.51
5510 - 5670	802.11n HT40	17.54	56.75
5530-5610	802.11ac VHT80	14.81	30.27

5.8GHz Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5745 - 5825	802.11a	17.59	57.41
	802.11n HT20	19.30	85.11
5755 - 5795	802.11n HT40	18.45	69.98
5775	802.11ac VHT80	15.41	34.75

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7.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes 2 identical PCB patch antennas, with a maximum gains of 3.73dBi in 2.4GHz band and 5.18dBi in 5GHz band.

7.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was fw_bcmdhd_mfg_7.35.221.18.bin.
The test utility software used during testing was wl for WiFi, hcitool for Bluetooth & Bluetooth Low-Energy.

7.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle and high channels.

Modes supported and tested are as follows:

802.11b: SISO, 802.11n HT20: MIMO, 802.11n HT40: MIMO, and 802.11ac VHT80: MIMO.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0

The fundamental of the EUT was investigated with chain 0 and chain 1 antennas in three orthogonal orientations X,Y,Z, it was determined fo SISO testing that Y orientation was worst-case orientation for chain 0 and Z orientation was worst-case orientation for chain 1. Therefore, all final SISO radiated testing was performed with the chain 0 antenna in Z orientation and chain 1 antenna in Y orientation. For MIMO testing, both antennas in Y orientation was worst-case.

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7.6. DESCRIPTION OF TEST SETUP

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Dell	E6330	59R7PX1	NA
AC Adapter	FSP	FSP065-10AABA	H9221000252	NA

I/O CABLES

I/O Cable List						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Mains	1	Barrel	Mains	<3m	Connected to DC power supply
2	ENET	1	RJ456	I/O	<3m	Connected to laptop outside chamber

SETUP DIAGRAMS

Please refer to R13359833-EP4 for setup diagram

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8. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10 Section 11.6

Unwanted emissions in restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5.

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

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9. TEST AND MEASUREMENT EQUIPMENT

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

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
1-18 GHz					
AT0072	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2020-04-27	2021-04-27
Gain-Loss Chains					
N-SAC03	Gain-loss string: 1-18GHz	Various	Various	2020-07-28	2021-07-28
Receiver & Software					
SA0025 (Out N-SAC @ 0800 on 07/27/2020)	Spectrum Analyzer	Agilent	N9030A	2020-03-17	2021-03-17
197954 (In N-SAC @ 0800 on 07/27/2020)	Spectrum Analyzer	Rohde & Schwarz	ESW44	2020-03-27	2021-03-27
SOFTEMI	EMI Software	UL	Version 9.5 (2019-06-12)		
Additional Equipment used					
s/n 200037610	Environmental Meter	Fisher Scientific	06-662-4	2020-01-22	2022-01-22

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
0.009-30MHz (Loop Ant.)					
AT0059	Active Loop Antenna	EMCO	6502	2020-08-06	2021-08-06
30-1000 MHz					
AT0081	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2019-11-20	2020-11-20
1-18 GHz					
AT0067	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2020-04-28	2021-04-28
18-40 GHz					
AT0076	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2019-11-07	2020-11-07
AT0077	Horn Antenna, 26-40GHz	ARA	MWH-2640/B	2019-11-07	2020-11-07
Gain-Loss Chains					
S-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2020-07-10	2021-07-10
S-SAC02	Gain-loss string: 25-1000MHz	Various	Various	2020-07-10	2021-07-10
S-SAC03	Gain-loss string: 1-18GHz	Various	Various	2020-07-06	2020-07-06
S-SAC04	Gain-loss string: 18-40GHz	Various	Various	2020-07-07	2021-07-07
Receiver & Software					
SA0025	Spectrum Analyzer	Agilent	N9030A	2020-03-17	2021-03-17
SOFTEMI	EMI Software	UL	Version 9.5 (2019-06-12)		
Additional Equipment used					
s/n 200037635	Environmental Meter	Fisher Scientific	06-662-4	2020-01-22	2022-01-22

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2020-03-26	2021-03-26
HI0091	Environmental Meter	Fisher Scientific	14-650-118	2020-06-26	2021-06-26
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2019-08-19	2020-08-19
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2019-08-20	2020-08-20
ATA222	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2020-03-26	2021-03-26
PS214	AC Power Source	Elgar	CW2501M (s/n 1523A02396)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (2015-08-20)		
HPF017	100kHz High-pass Filter	Solar Electronics Co.	7801-100	2020-02-19	2021-02-19
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2020-08-08	2020-08-08
LISN008	LISN, 50-ohm/50-uH, 2-conductor, 25A (For support gear only.)	Solar Electronics	8012-50-R-24-BNC	2020-08-08	2020-08-08

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
72822	Spectrum Analyzer	Agilent Technologies	E4446A	2020-01-02	2021-01-02
PWM003 (PRE0137345)	RF Power Meter	Keysight Technologies	N1911A	2019-08-22	2020-08-22
PWS002 (PRE0137348)	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2019-08-23	2020-08-23
PWM001 (PRE0136343)	RF Power Meter	Keysight Technologies	N1912A	2020-07-17	2021-07-17
PWS001 (PRE0137347)	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2020-05-27	2021-05-27
HI0090	Environmental Meter	Fisher Scientific	15-077-963	2020-06-26	2021-06-26
SOFTEMI	EMC Software	UL	Version 2020.5.18	NA	NA

Note: All equipment within calibration at time of use.

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10. OUTPUT POWER

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.

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.

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.

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IC RSS-247 (6.2.1) (1)

The maximum EIRP 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.

IC RSS-247 (6.2.2) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever 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 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. 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.

IC RSS-247 (6.2.3) (1)

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever 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 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. 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.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 13.21 dB (including 10.54 dB pad and 2.67 dB cable) for 5.2 band, 13.22dB (including 10.54 dB pad and 2.68 dB cable) for 5.3 band, 13.29 dB (including 10.59 dB pad and 2.70 dB cable) for 5.6 band, and 13.72 dB (including 10.58 dB pad and 3.14 dB cable) for 5.8 band was entered as an offset in the power meter to allow for a gated average reading of power.

DIRECTIONAL ANTENNA GAIN

SISO:
There is only one transmitter output therefore the directional gain is equal to the antenna gain; 5.18dBi.

MIMO:
For power, the TX chains are uncorrelated and the antenna gain is equal among the chains. The directional gain is:

Ant 1 Gain (dBi)	Ant 2 Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
5.18	5.18	5.18

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10.1. 5.2 BAND

802.11a

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5180	22.00	16.70	5.18
Mid	5200	21.92	16.73	5.18
High	5240	21.92	16.79	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)
Low	5180	24.00	22.23	17.05	17.05
Mid	5200	24.00	22.24	17.06	17.06
High	5240	24.00	22.25	17.07	17.07

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Power Limit (dBm)	Worst-Case Margin (dB)
Low	5180	15.77	16.06	17.05	-0.99
Mid	5200	14.35	14.40	17.06	-2.66
High	5240	14.09	14.21	17.07	-2.86

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.
Note 3: This is SISO mode.

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802.11n HT20

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5180	21.800	17.8402	5.18
Mid	5200	21.880	17.8317	5.18
High	5240	21.760	17.8416	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)
Low	5180	24.00	22.51	17.33	17.33
Mid	5200	24.00	22.51	17.33	17.33
High	5240	24.00	22.51	17.33	17.33

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5180	11.81	11.95	14.89	17.33	-2.44
Mid	5200	11.71	12.02	14.88	17.33	-2.45
High	5240	11.70	12.17	14.95	17.33	-2.38

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11n HT40

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5190	40.960	36.014	5.18
High	5230	40.400	35.976	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)
Low	5190	24.00	23.00	17.82	17.82
High	5230	24.00	23.00	17.82	17.82

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5190	11.60	12.30	14.97	17.82	-2.85
High	5230	12.19	11.24	14.75	17.82	-3.07

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11ac VHT80

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5210	83.200	75.653	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC EIRP Limit (dBm)	Max IC Power (dBm)	Power Limit (dBm)
Low	5210	24.00	23.00	17.82	17.82

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5210	11.01	11.75	14.41	17.82	-3.41

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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10.2. 5.3 BAND

802.11a

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5260	32.36	16.71	5.18
Mid	5300	22.28	16.75	5.18
High	5320	22.28	16.71	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5260	24.00	23.23	29.23	23.23
Mid	5300	24.00	23.24	29.24	23.24
High	5320	24.00	23.23	29.23	23.23

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas power (dBm)	Ant 2 Meas power (dBm)	Power Limit (dBm)	Worst-Case Power Margin
Low	5260	17.16	17.45	23.23	-5.78
Mid	5300	17.19	17.49	23.24	-5.75
High	5320	17.10	17.45	23.23	-5.78

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11n HT20

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5260	28.04	17.856	5.18
Mid	5300	28.24	17.859	5.18
High	5320	29.40	17.860	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5260	24.00	23.52	29.52	23.52
Mid	5300	24.00	23.52	29.52	23.52
High	5320	24.00	23.52	29.52	23.52

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5260	16.07	16.38	19.24	23.52	-4.28
Mid	5300	15.79	15.99	18.90	23.52	-4.62
High	5320	15.91	15.92	18.93	23.52	-4.59

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11n HT40

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5270	48.64	36.342	5.18
High	5310	40.32	36.116	5.18

Limits

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

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5270	15.14	15.54	18.35	24.00	-5.65
High	5310	15.29	15.52	18.42	24.00	-5.58

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11ac VHT80

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5290	84.16	75.279	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5290	24.00	24.00	30.00	24.00

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5290	13.11	13.62	16.38	24.00	-7.62

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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10.3. 5.6 BAND

802.11a

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	32.24	16.769	5.18
Mid	5580	36.76	16.867	5.18
High	5700	33.80	16.843	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5500	24.00	23.24	29.24	23.24
Mid	5580	24.00	23.27	29.27	23.27
High	5700	24.00	23.26	29.26	23.26

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Power Limit (dBm)	Worst-Case Margin (dB)
Low	5500	17.20	17.63	23.24	-5.61
Mid	5580	17.08	17.48	23.27	-5.79
High	5700	15.01	15.79	23.26	-7.47

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11n HT20

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5500	30.92	17.799	5.18
Mid	5580	33.36	17.867	5.18
High	5680	27.40	17.893	5.18
High	5700	27.40	17.893	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5500	24.00	23.50	29.50	23.50
Mid	5580	24.00	23.52	29.52	23.52
High	5680	24.00	23.53	29.53	23.53
High	5700	24.00	23.53	29.53	23.53

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	15.75	16.64	19.23	23.50	-4.28
Mid	5580	16.14	16.65	19.41	23.52	-4.11
High	5680	16.22	16.68	19.47	23.53	-4.06
High	5700	12.05	12.10	15.09	23.53	-8.44

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11n HT40

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5510	40.48	36.394	5.18
Low	5550	40.48	36.394	5.18
Mid	5590	58.16	36.111	5.18
High	5670	76.24	36.127	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5510	24.00	24.00	30.00	24.00
Low	5550	24.00	24.00	30.00	24.00
Mid	5590	24.00	24.00	30.00	24.00
High	5670	24.00	24.00	30.00	24.00

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	14.21	14.39	17.31	24.00	-6.69
Low	5550	13.89	14.03	16.97	24.00	-7.03
Mid	5590	13.81	14.66	17.27	24.00	-6.73
High	5670	14.37	14.68	17.54	24.00	-6.46

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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802.11ac VHT80

ID:	40882	Date:	2020-07-14

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain for Power (dBi)
Low	5530	84.320	75.962	5.18
High	5610	84.320	75.962	5.18

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)
Low	5530	24.00	24.00	30.00	24.00
High	5610	24.00	24.00	30.00	24.00

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5530	11.24	12.17	14.74	24.00	-9.26
High	5610	11.32	12.24	14.81	24.00	-9.19

Note 1: Average measurements taken gated.
Note 2: OBW measurements taken from radio module report. Manufacturer is responsible for providing this report upon request.

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10.4. 5.8 BAND

802.11a

ID:	40882	Date:	2020-07-14

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain For Power (dBi)	Power Limit (dBm)
Low	5745	5.18	30.00
Mid	5785	5.18	30.00
High	5825	5.18	30.00

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Power Limit (dBm)	Worst-Case Margin (dB)
Low	5745	16.98	17.20	30.00	-12.80
Mid	5785	17.21	17.59	30.00	-12.41
High	5825	17.25	17.32	30.00	-12.68

Note: Average measurements taken gated.

802.11n HT20

ID:	40882	Date:	2020-07-14

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Low	5745	5.18	30.00
Mid	5785	5.18	30.00
High	5825	5.18	30.00

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5745	15.86	16.50	19.20	30.00	-10.80
Mid	5785	15.34	16.68	19.07	30.00	-10.93
High	5825	16.14	16.44	19.30	30.00	-10.70

Note: Average measurements taken gated.

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802.11n HT40

ID:	40882	Date:	2020-07-14

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain For Power (dBi)	Power Limit (dBm)
Low	5755	5.18	30.00
High	5795	5.18	30.00

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5755	14.53	14.99	17.78	30.00	-12.22
High	5795	15.37	15.50	18.45	30.00	-11.55

Note: Average measurements taken gated.

802.11ac VHT80

ID:	40882	Date:	2020-07-14

Antenna Gain and Limit

Channel	Frequency (MHz)	Directional Gain for Power (dBi)	Power Limit (dBm)
Mid	5775	5.18	30.00

Output Power Results

Channel	Frequency (MHz)	Ant 1 Meas Power (dBm)	Ant 2 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Mid	5775	11.84	12.90	15.41	30.00	-14.59

Note: Average measurements taken gated.

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11. ON TIME AND DUTY CYCLE

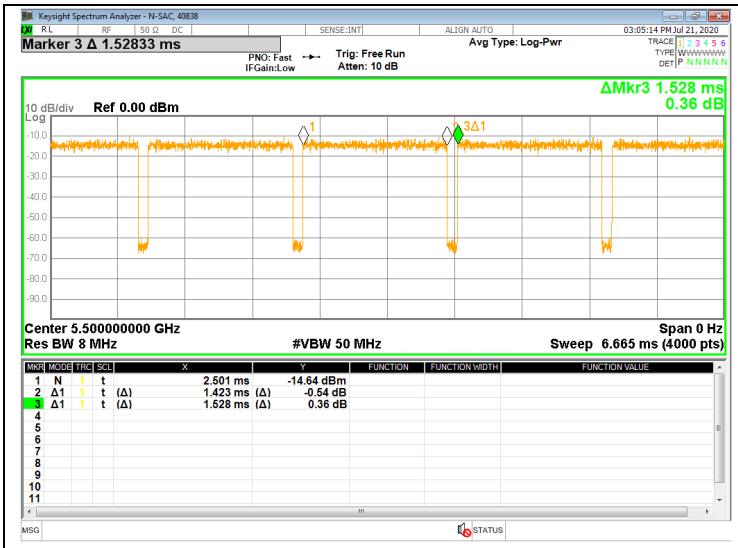
LIMITS

None; for reporting purposes only.

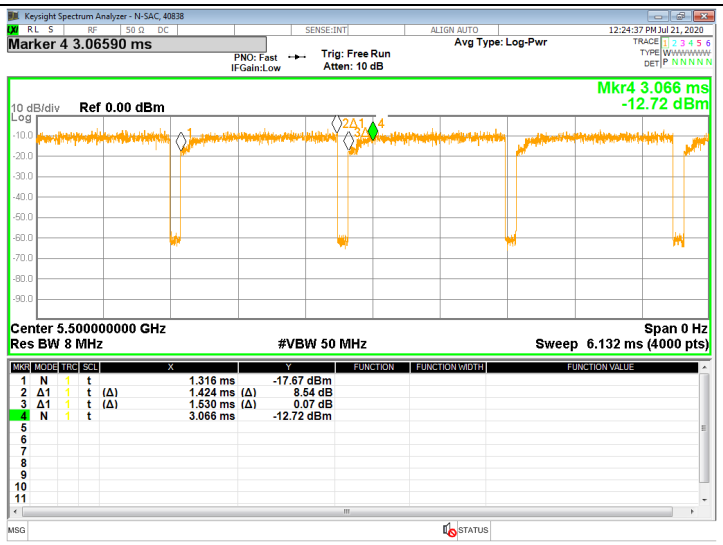
PROCEDURE

ANSI C63.10 Zero-Span Spectrum Analyzer Method.

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
2.4GHz Band					
802.11a chain 0	1.423	1.528	0.931	93.13%	0.62
802.11a chain 1	1.424	1.530	0.931	93.07%	0.62
802.11n HT20 MIMO	1.330	1.445	0.920	92.04%	0.72
802.11n HT40 MIMO	0.657	0.765	0.859	85.88%	1.32
802.11ac VHT80 MIMO	0.191	0.293	0.652	65.21%	3.71



DUTY CYCLE – 802.11a CHAIN 0



DUTY CYCLE – 802.11a CHAIN 1

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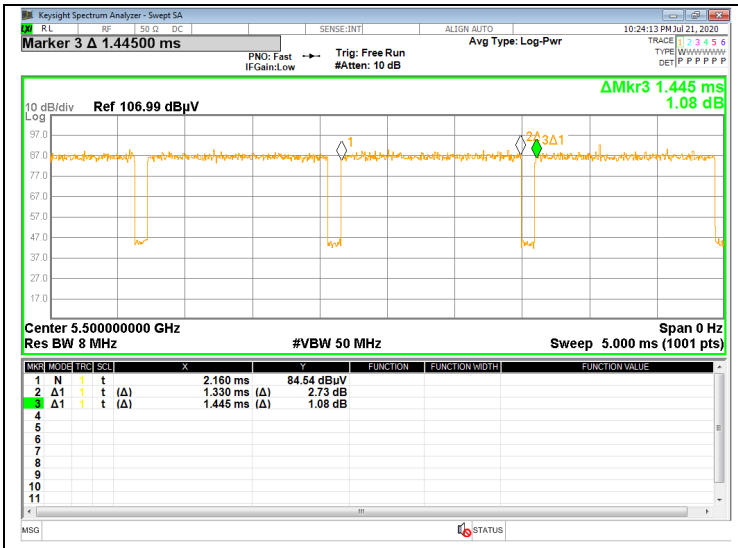
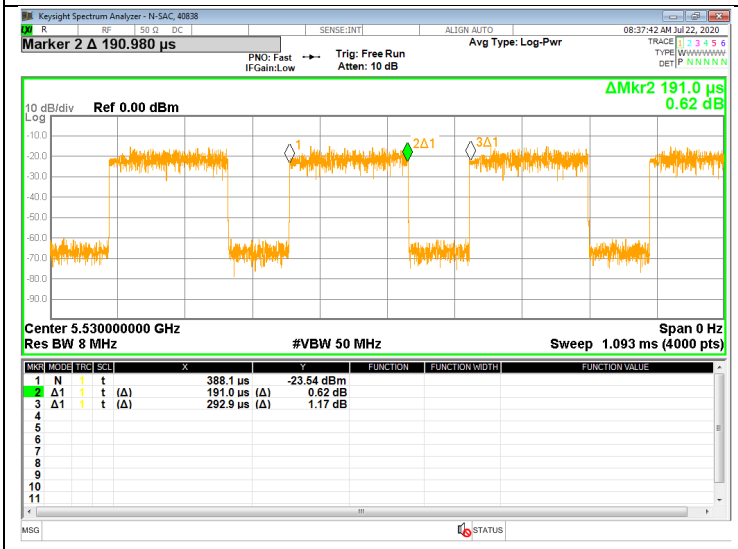


DUTY CYCLE – 802.11nHT20 MIMO

DUTY CYCLE – 802.11n HT40 MIMO



DUTY CYCLE – 802.11ac VHT80 MIMO

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12. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209 - Restricted bands
FCC §15.407(b)(1-3) - Unrestricted bands

After January 01, 2019 for Outside of the Restricted Bands Emissions

RSS 247 Issue 2 Sections
6.2.1.2 (for 5150-5250 MHz band)
6.2.2.2 (for 5250-5350 MHz band)
6.2.3.2 (for 5470-5600 MHz and 5650-5725 MHz bands)
6.2.4.2 (for 5725-5850 MHz band)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
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 measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak.

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for voltage average measurements.

The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

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.

3D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

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KDB 414788 Open Field Site(OFS) and Chamber Correlation Justification

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

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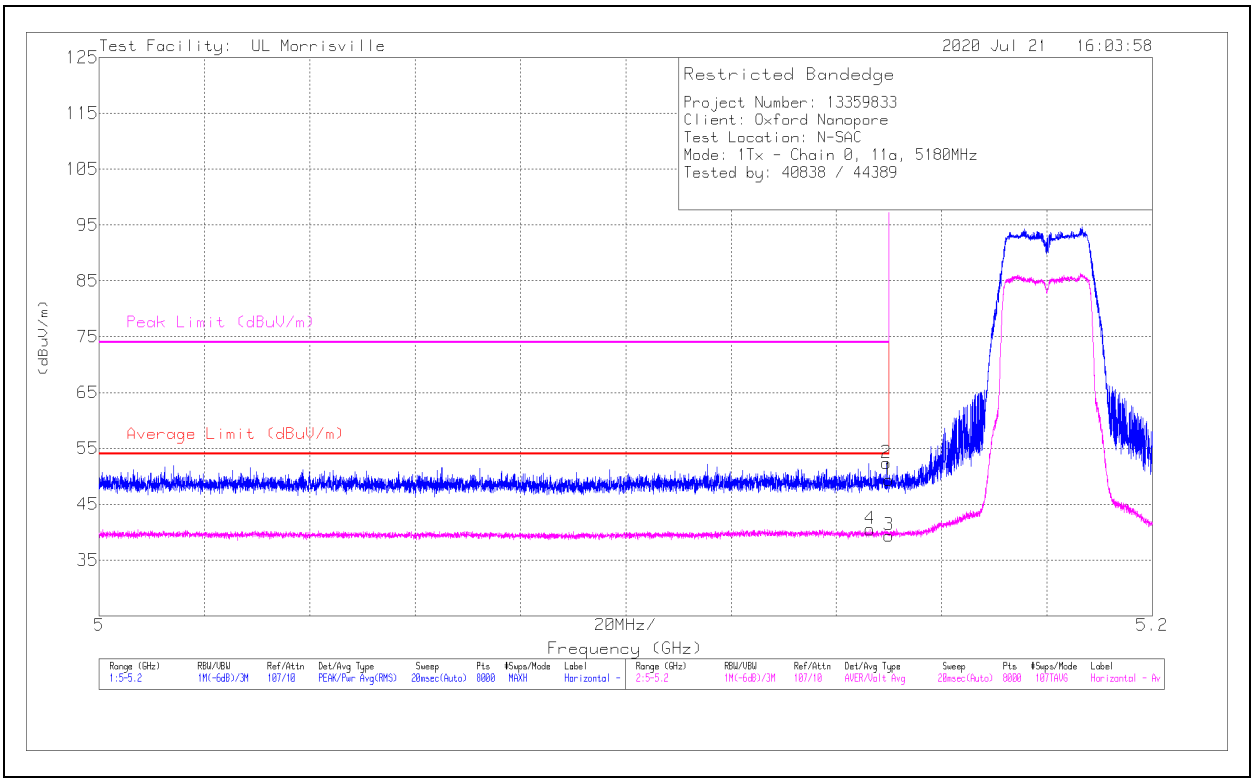
12.1. TRANSMITTER ABOVE 1 GHz

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

1TX ANTENNA 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	36.82	Pk	34.2	-21.7	0	49.32	-	-	74	-24.68	357	325	H
2	* ** 5.14944	39.86	Pk	34.2	-21.7	0	52.36	-	-	74	-21.64	357	325	H
3	* ** 5.14999	26.3	ADV	34.2	-21.7	.62	39.42	54	-14.58	-	-	357	325	H
4	* ** 5.14639	27.4	ADV	34.2	-21.7	.62	40.52	54	-13.48	-	-	357	325	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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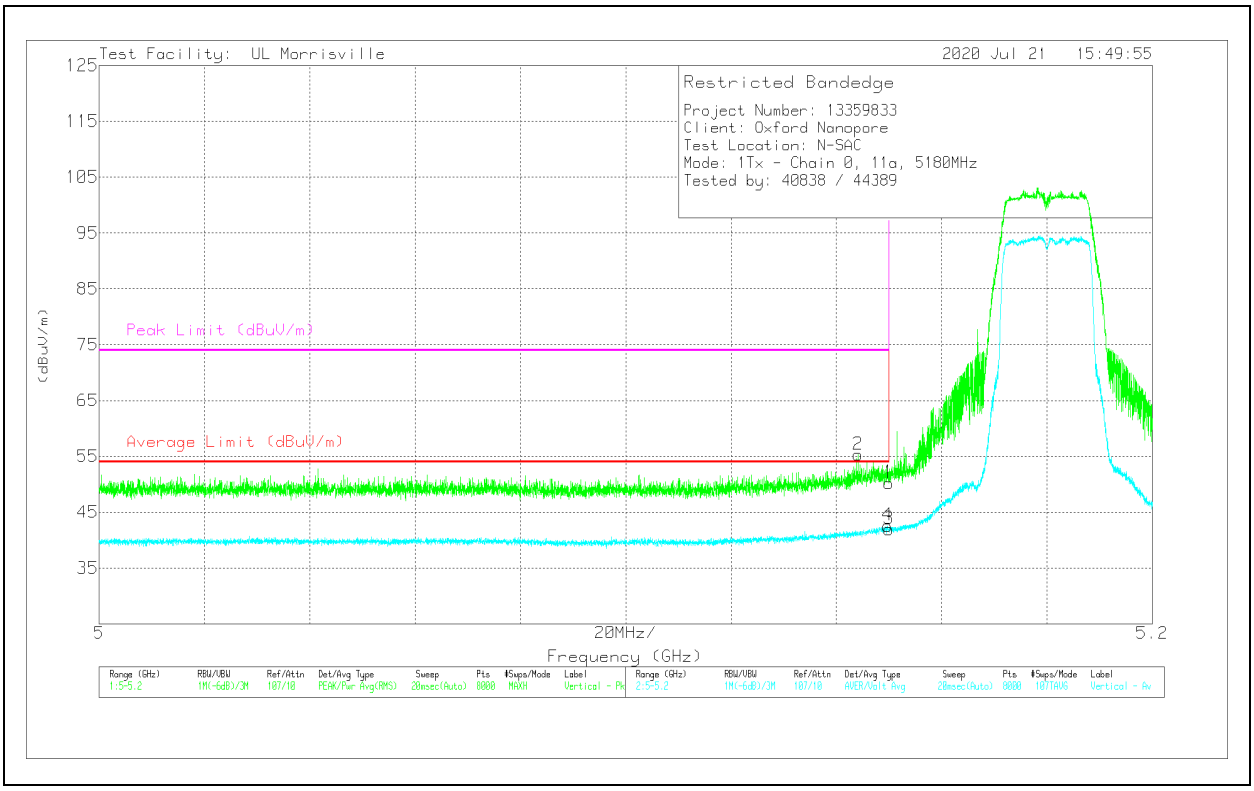
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	37.74	Pk	34.2	-21.7	0	50.24	-	-	74	-23.76	70	349	V
2	* ** 5.14414	42.79	Pk	34.2	-21.7	0	55.29	-	-	74	-18.71	70	349	V
3	* ** 5.14999	28.87	ADV	34.2	-21.7	.62	41.99	54	-12.01	-	-	70	349	V
4	* ** 5.14974	29.47	ADV	34.2	-21.7	.62	42.59	54	-11.41	-	-	70	349	V

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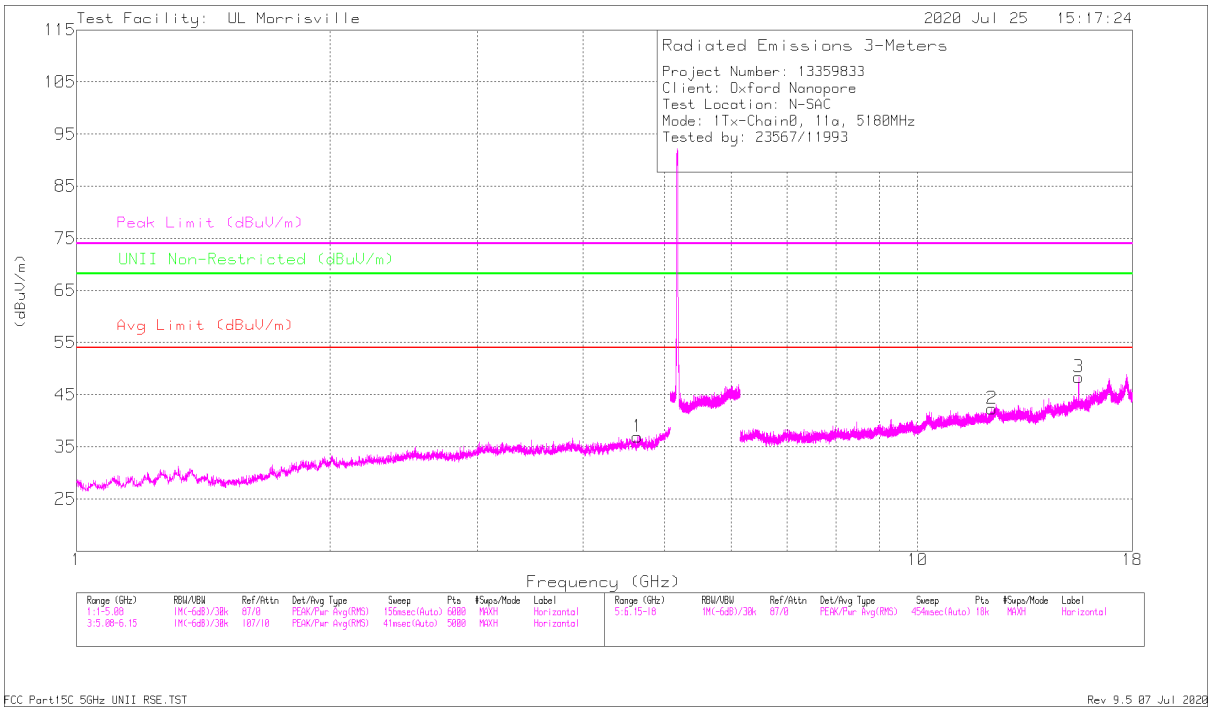
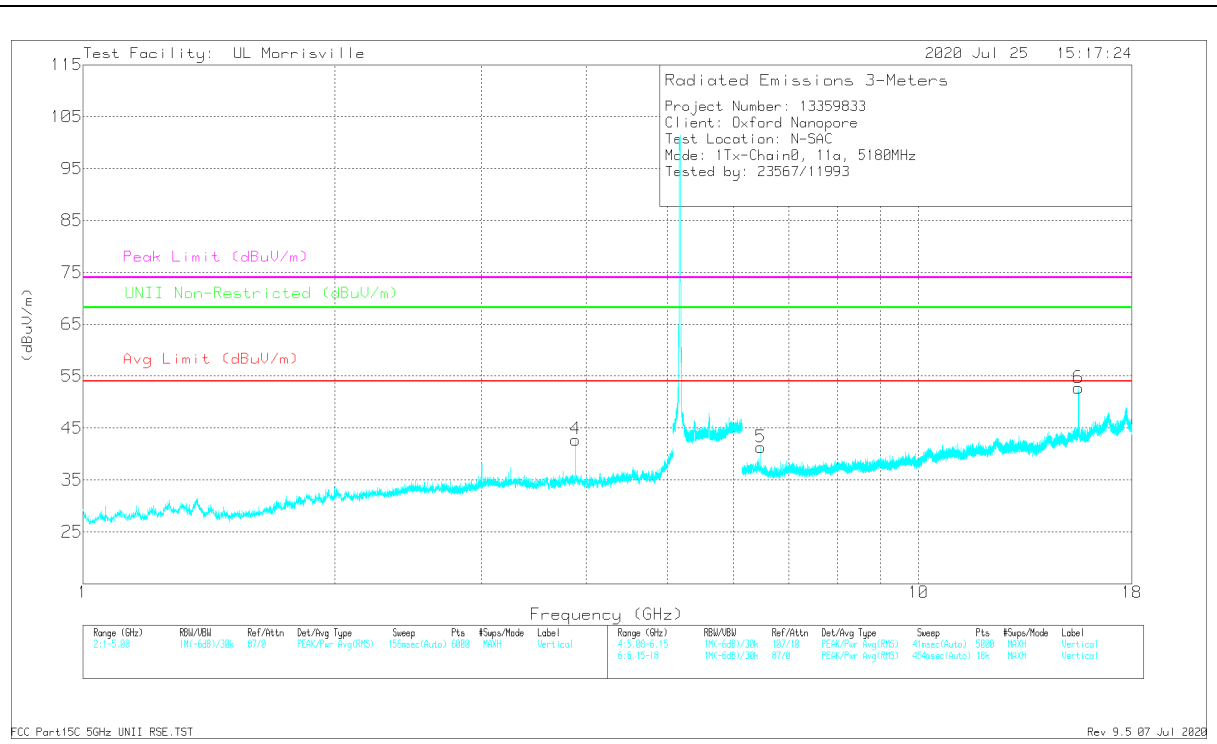
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 4.64213	39.39	PK-U	34.2	-30.8	0	42.79	-	-	74	-31.21	-	-	3	298	H
	* ** 4.64237	26.51	ADV	34.2	-30.8	.62	30.53	54	-23.47	-	-	-	-	3	298	H
4	* ** 3.88483	46.93	PK-U	33.6	-32.1	0	48.43	-	-	74	-25.57	-	-	282	105	V
	* ** 3.88497	40.58	ADV	33.6	-32.1	.62	42.7	54	-11.3	-	-	-	-	282	105	V
2	* ** 12.25753	35.77	PK-U	38.9	-25.8	0	48.87	-	-	74	-25.13	-	-	119	273	H
	* ** 12.25844	22.73	ADV	38.9	-25.8	.62	36.45	54	-17.55	-	-	-	-	119	273	H
3	* ** 15.54116	43.12	PK-U	40.1	-24.4	0	58.82	-	-	74	-15.18	-	-	309	108	H
	* ** 15.54253	28.12	ADV	40.1	-24.4	.62	44.44	54	-9.56	-	-	-	-	309	108	H
6	* ** 15.5387	43.91	PK-U	40.1	-24.3	0	59.71	-	-	74	-14.29	-	-	347	101	V
	* ** 15.53966	29.68	ADV	40.1	-24.3	.62	46.1	54	-7.9	-	-	-	-	347	101	V
5	6.47498	40.66	PK-U	35.5	-29.3	0	46.86	-	-	-	-	68.2	-21.34	279	103	V

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ADV - Linear Voltage Average
Pk - Peak detector

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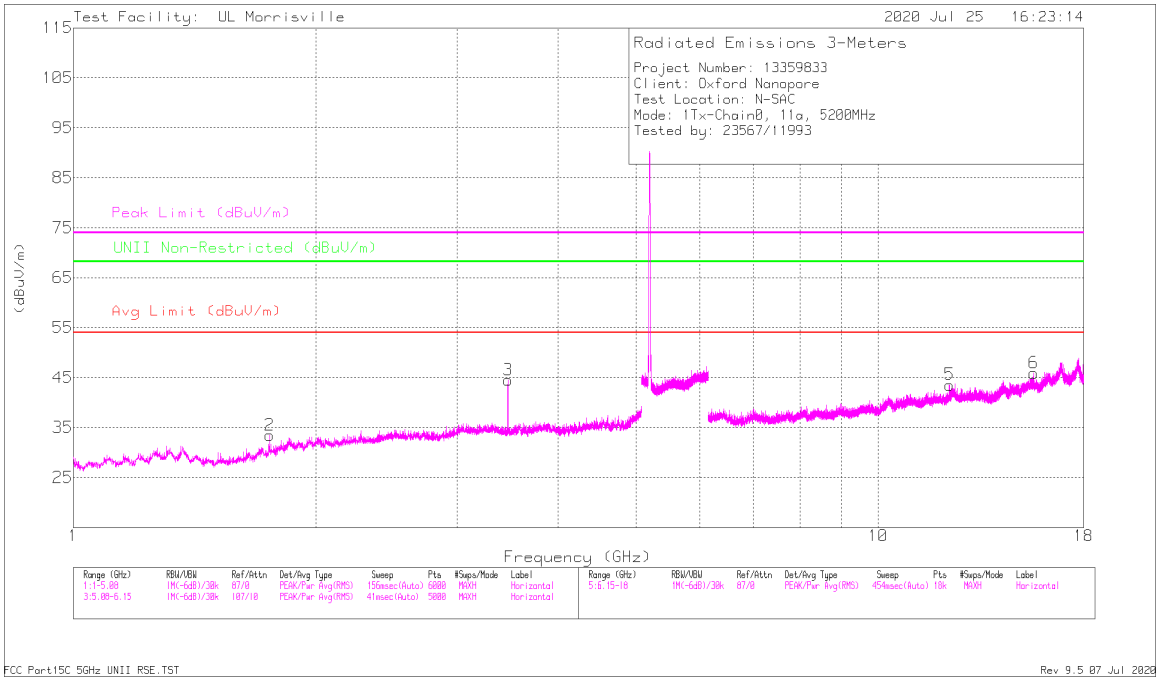
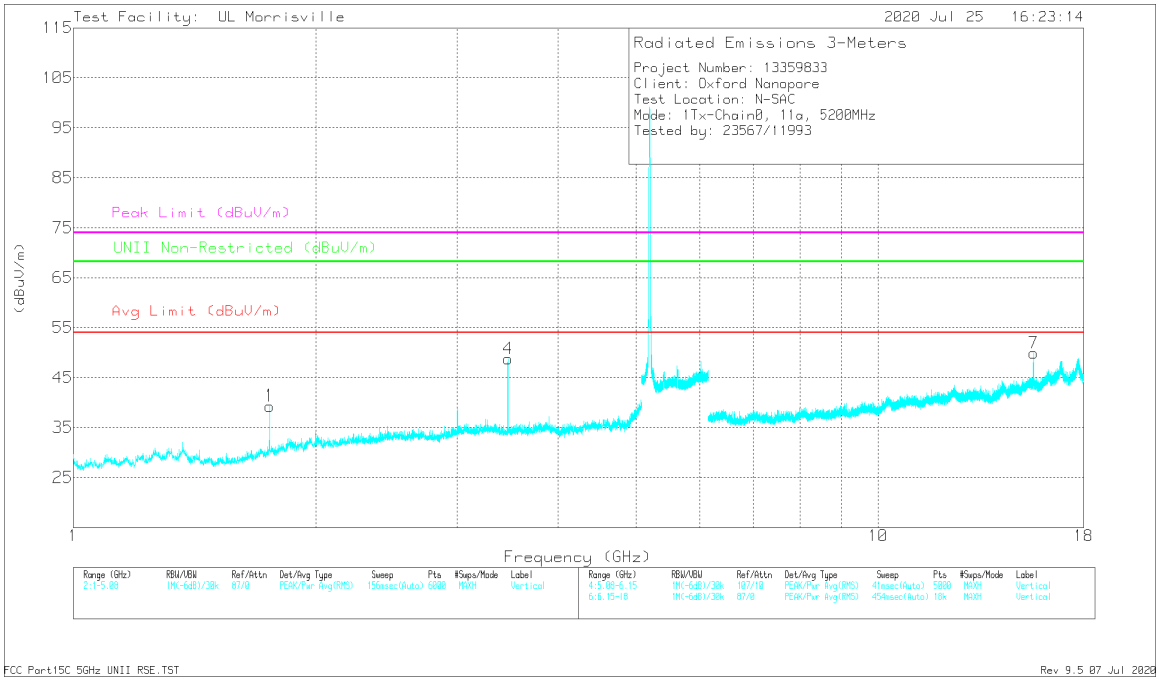
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	** 1.75341	43.09	PK-U	29.6	-35	0	37.69	-	-	74	-36.31	68.2	-30.51	168	361	H
	** 1.75209	30.36	ADV	29.7	-35	.62	25.68	54	-28.32	-	-	-	-	168	361	H
1	** 1.75339	45.29	PK-U	29.6	-35	0	39.89	-	-	74	-34.11	68.2	-28.31	75	227	V
	** 1.74989	30.46	ADV	29.6	-35	.62	25.68	54	-28.32	-	-	-	-	75	227	V
5	* ** 12.2719	36.74	PK-U	38.9	-25.9	0	49.74	-	-	74	-24.26	-	-	22	393	H
	* ** 12.27185	22.86	ADV	38.9	-25.9	.62	36.48	54	-17.52	-	-	-	-	22	393	H
6	* ** 15.60489	40.04	PK-U	40.2	-26.1	0	54.14	-	-	74	-19.86	-	-	294	104	H
	* ** 15.60502	26.45	ADV	40.2	-26.1	.62	41.17	54	-12.83	-	-	-	-	294	104	H
7	* ** 15.60309	45.9	PK-U	40.2	-26.1	0	60	-	-	74	-14	-	-	350	103	V
	* ** 15.60308	29.95	ADV	40.2	-26.1	.62	44.67	54	-9.33	-	-	-	-	350	103	V
3	3.46664	48.67	PK-U	32.9	-32.8	0	48.77	-	-	-	-	68.2	-19.43	324	121	H
4	3.46669	51.55	PK-U	32.9	-32.8	0	51.65	-	-	-	-	68.2	-16.55	354	105	V

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** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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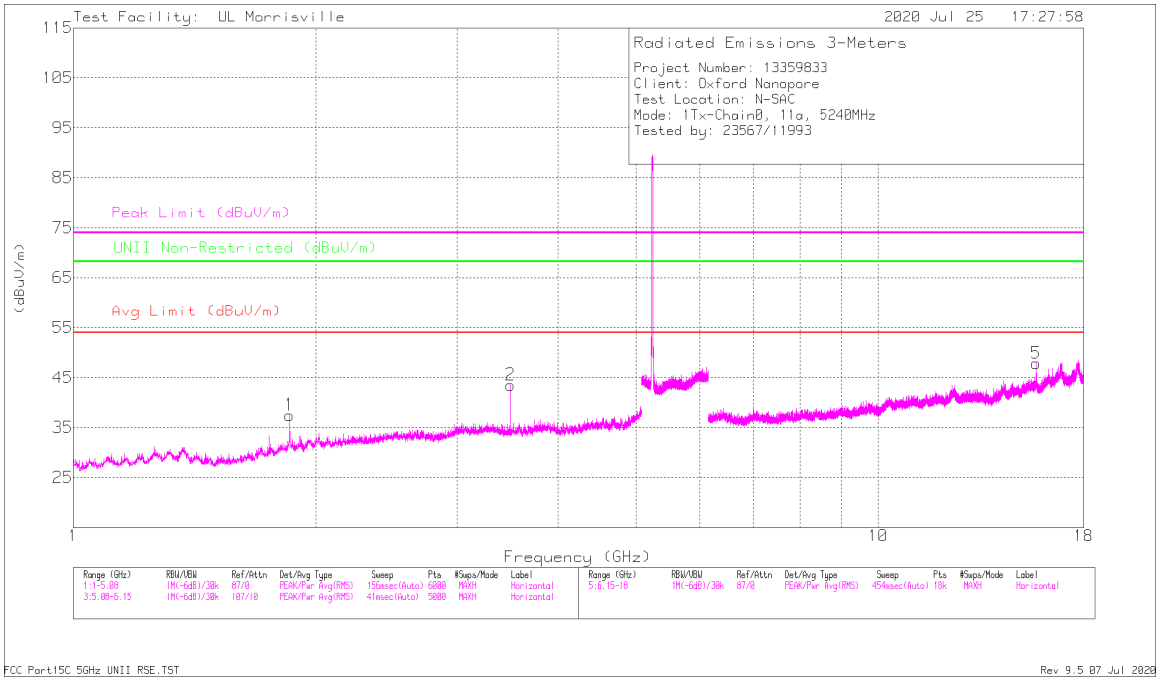
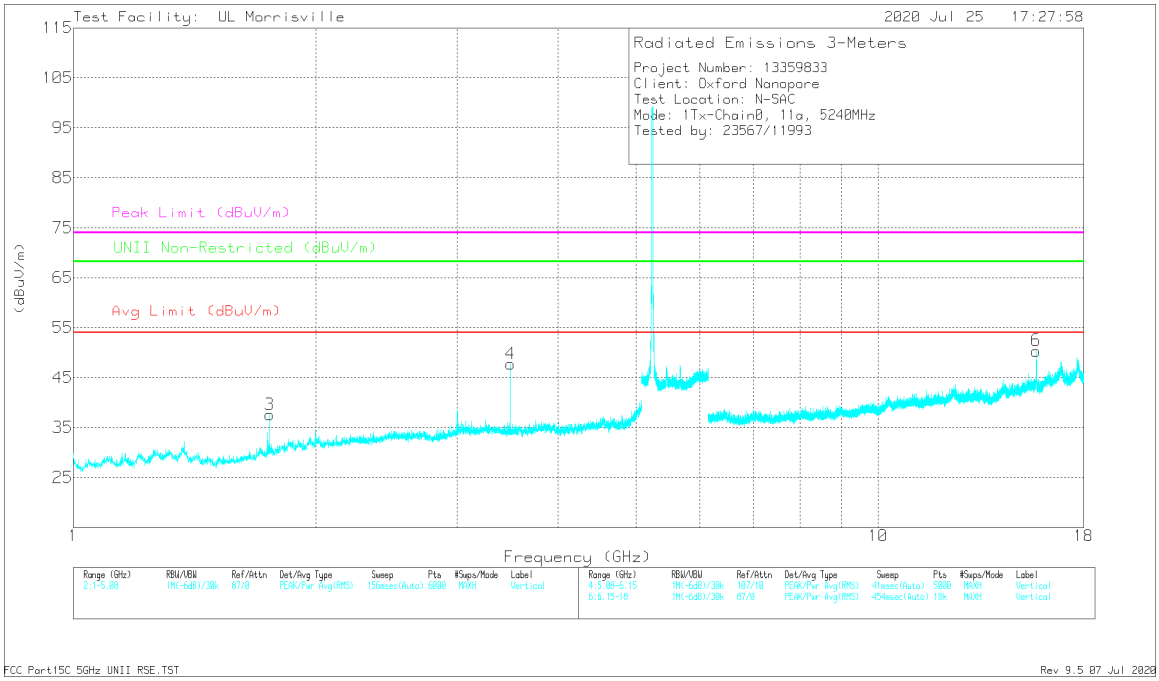
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	** 1.85645	50.39	PK-U	31	-35	0	46.39	-	-	74	-27.61	68.2	-21.81	283	394	H
	** 1.85579	30.95	ADV	31	-35	.62	27.57	54	-26.43	-	-	-	-	283	394	H
3	** 1.75329	43.14	PK-U	29.6	-35	0	37.74	-	-	74	-36.26	68.2	-30.46	17	303	V
	** 1.753	30.28	ADV	29.6	-35	.62	25.5	54	-28.5	-	-	-	-	17	303	V
5	* ** 15.72299	43.08	PK-U	40.1	-24.8	0	58.38	-	-	74	-15.62	-	-	321	252	H
	* ** 15.7221	27.21	ADV	40.1	-24.8	.62	43.13	54	-10.87	-	-	-	-	321	252	H
6	* ** 15.71386	42.42	PK-U	40.1	-24.9	0	57.62	-	-	74	-16.38	-	-	297	103	V
	* ** 15.71408	27.56	ADV	40.1	-24.9	.62	43.38	54	-10.62	-	-	-	-	297	103	V
4	3.4933	50.52	PK-U	32.9	-32.8	0	50.62	-	-	-	-	68.2	-17.58	353	233	V
2	3.49331	47.51	PK-U	32.9	-32.8	0	47.61	-	-	-	-	68.2	-20.59	325	118	H

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** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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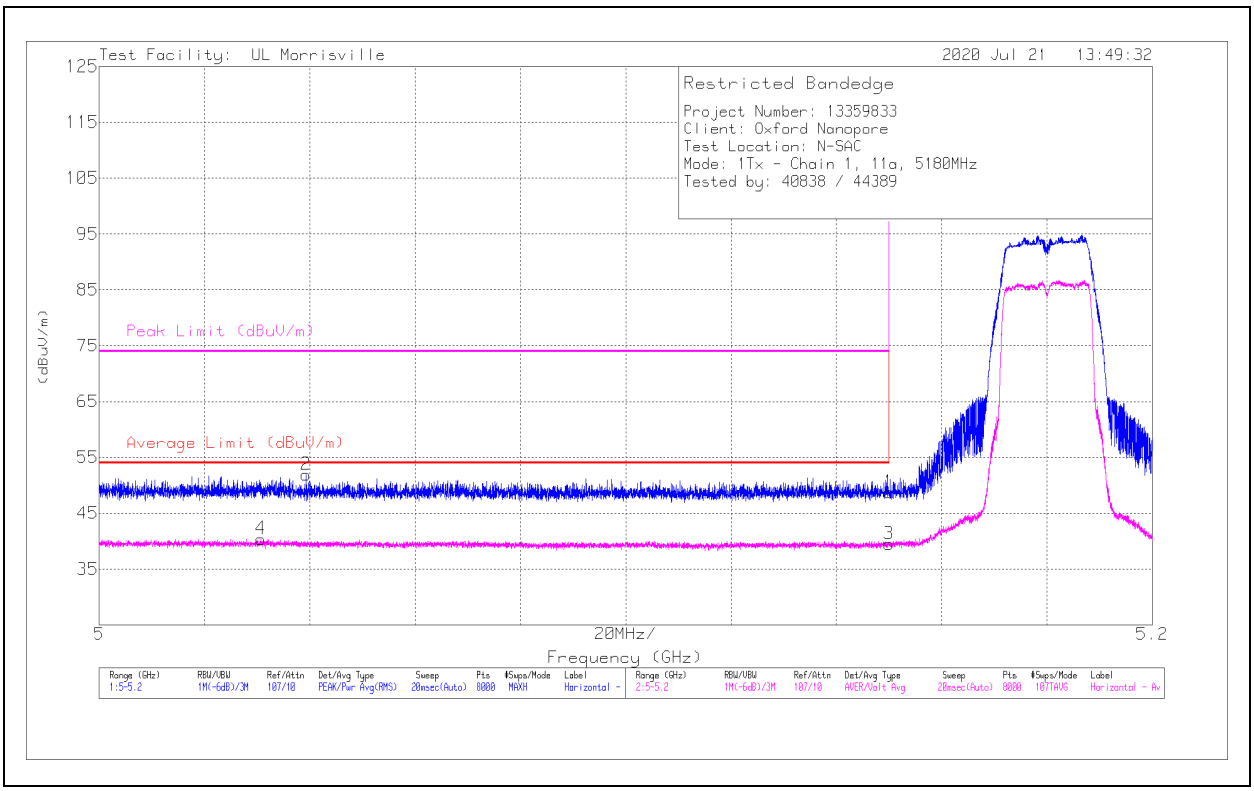
1TX ANTENNA 2 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	36.23	Pk	34.2	-21.7	0	48.73	-	-	74	-25.27	237	118	H
2	* ** 5.03933	39.18	Pk	34.1	-21.4	0	51.88	-	-	74	-22.12	237	118	H
3	* ** 5.14999	26.35	ADV	34.2	-21.7	.62	39.47	54	-14.53	-	-	237	118	H
4	* ** 5.03068	26.92	ADV	34.1	-21.3	.62	40.34	54	-13.66	-	-	237	118	H

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ADV - Linear Voltage Average

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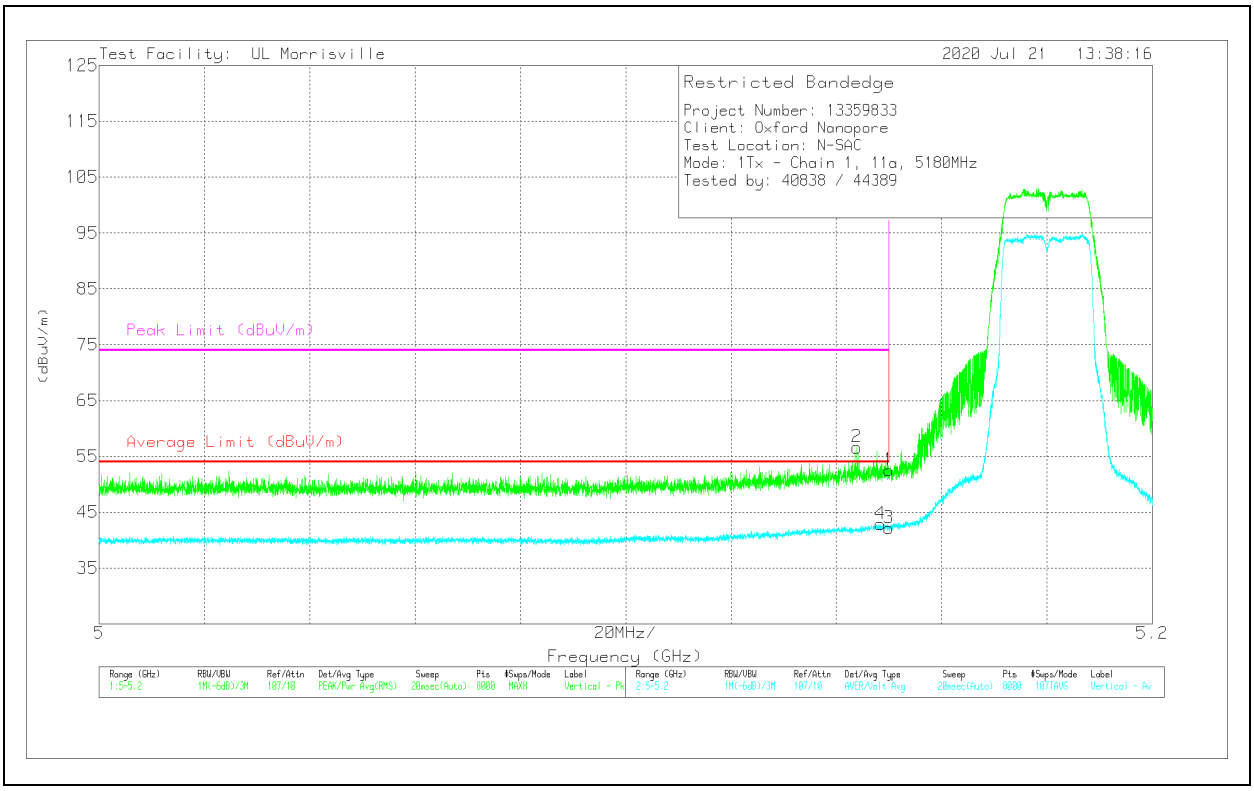
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	40	Pk	34.2	-21.7	0	52.5	-	-	74	-21.5	23	149	V
2	* ** 5.14392	44.11	Pk	34.2	-21.7	0	56.61	-	-	74	-17.39	23	149	V
3	* ** 5.14999	29.02	ADV	34.2	-21.7	.62	42.14	54	-11.86	-	-	23	149	V
4	* ** 5.14834	29.75	ADV	34.2	-21.7	.62	42.87	54	-11.13	-	-	23	149	V

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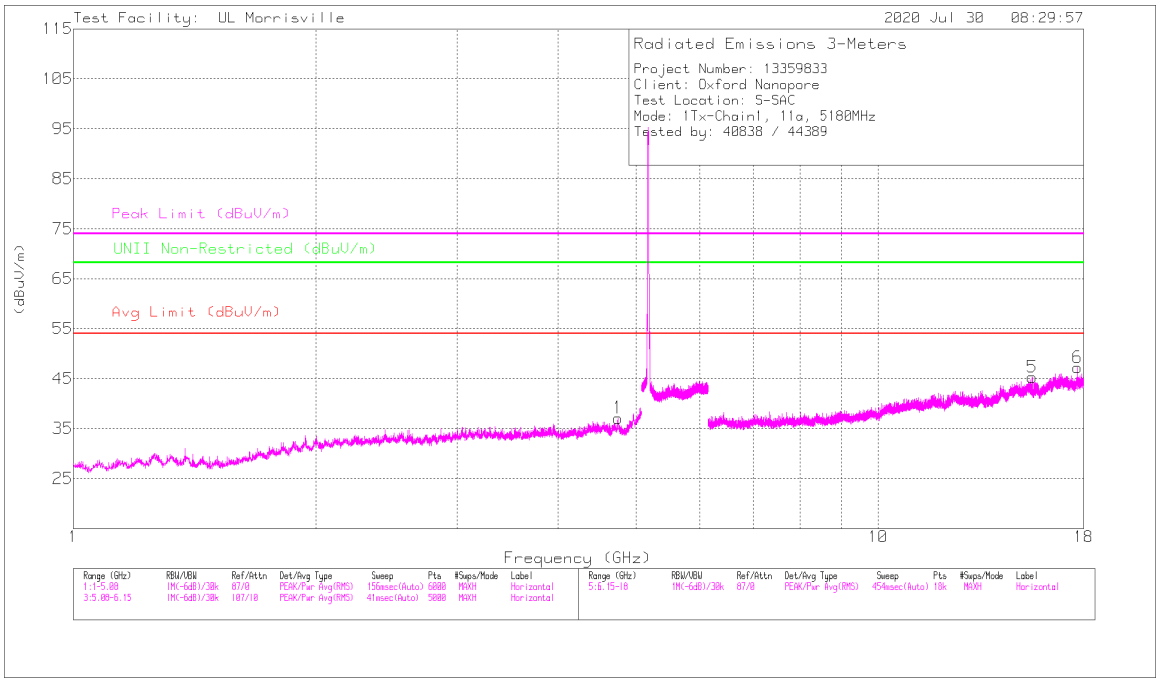
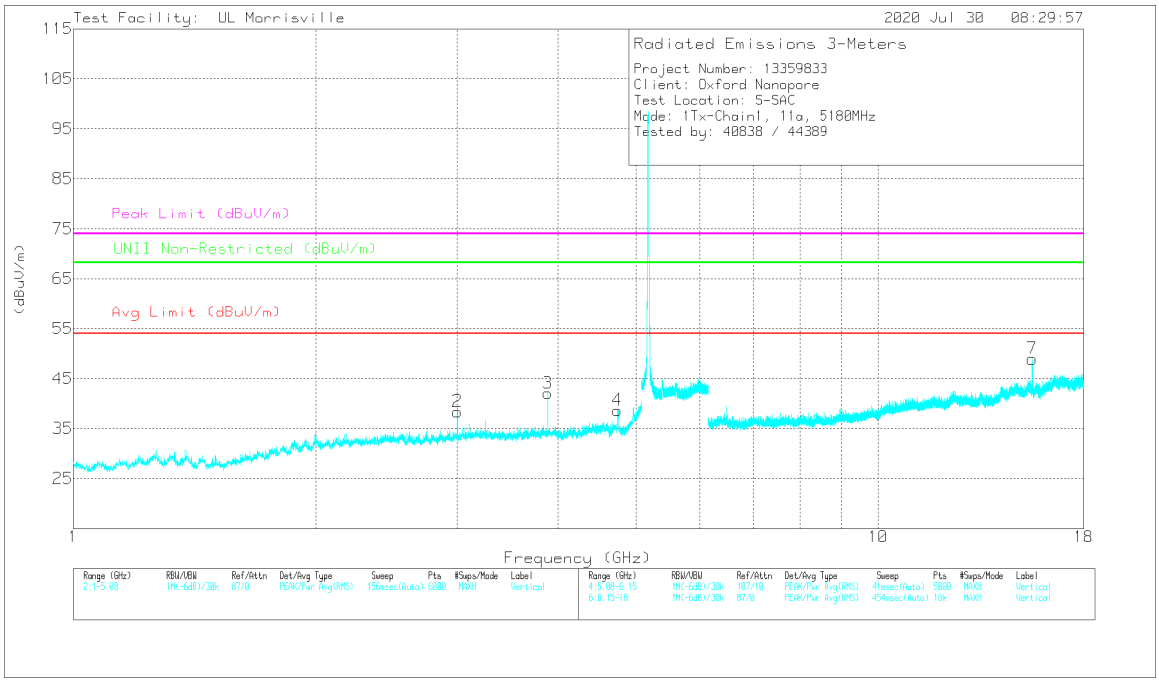
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (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	* ** 4.75017	42.18	PK-U	34.1	-31.3	0	44.98	-	-	74	-29.02	-	-	343	330	H
	* ** 4.7503	28.8	ADV	34.1	-31.3	.62	32.22	54	-21.78	-	-	-	-	343	330	H
3	* ** 3.88502	44.85	PK-U	33.4	-32.5	0	45.75	-	-	74	-28.25	-	-	80	256	V
	* ** 3.88494	29.84	ADV	33.4	-32.5	.62	31.36	54	-22.64	-	-	-	-	80	256	V
4	* ** 4.74661	44.04	PK-U	34.1	-31.3	0	46.84	-	-	74	-27.16	-	-	282	268	V
	* ** 4.74594	31.76	ADV	34.1	-31.3	.62	35.18	54	-18.82	-	-	-	-	282	268	V
5	* ** 15.54035	38.79	PK-U	40.3	-25.1	0	53.99	-	-	74	-20.01	-	-	36	233	H
	* ** 15.54033	25.31	ADV	40.3	-25.1	.62	41.13	54	-12.87	-	-	-	-	36	233	H
7	* ** 15.54292	43.05	PK-U	40.3	-25.1	0	58.25	-	-	74	-15.75	-	-	10	186	V
	* ** 15.54336	27.37	ADV	40.3	-25.1	.62	43.19	54	-10.81	-	-	-	-	10	186	V
2	2.99993	45.2	PK-U	32.9	-33.6	0	44.5	-	-	-	-	68.2	-23.7	335	249	V
6	17.69992	33.54	PK-U	41.1	-22.7	0	51.94	-	-	-	-	68.2	-16.26	88	339	H

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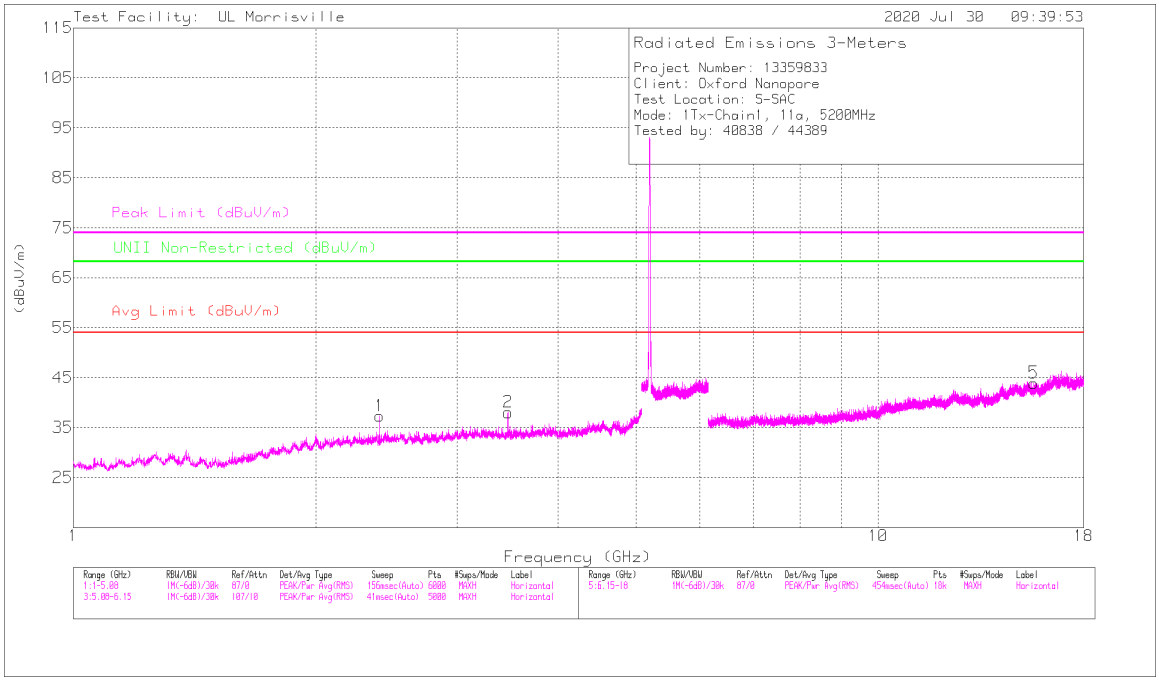
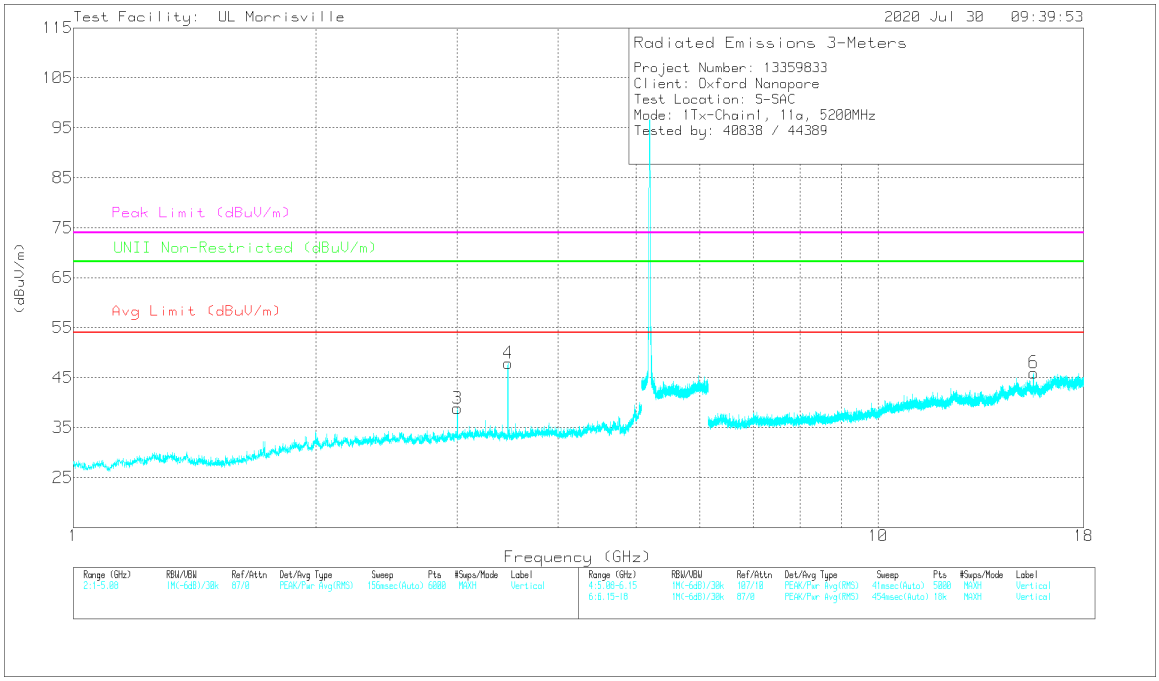
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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5	* ** 15.60197	38.05	PK-U	40.2	-25	0	53.25	-	-	74	-20.75	-	-	107	352	H
	* ** 15.60213	23.53	ADV	40.2	-25	.62	39.35	54	-14.65	-	-	-	-	107	352	H
6	* ** 15.6028	38.2	PK-U	40.2	-25	0	53.4	-	-	74	-20.6	-	-	256	234	V
	* ** 15.60324	23.45	ADV	40.2	-25	.62	39.27	54	-14.73	-	-	-	-	256	234	V
1	2.40216	43.48	PK-U	32.1	-34.2	0	41.38	-	-	-	-	68.2	-26.82	273	392	H
3	2.99999	45.86	PK-U	32.9	-33.6	0	45.16	-	-	-	-	68.2	-23.04	333	338	V
4	3.46656	51.52	PK-U	32.8	-33	0	51.32	-	-	-	-	68.2	-16.88	13	298	V
2	3.46666	48.87	PK-U	32.8	-33	0	48.67	-	-	-	-	68.2	-19.53	297	387	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
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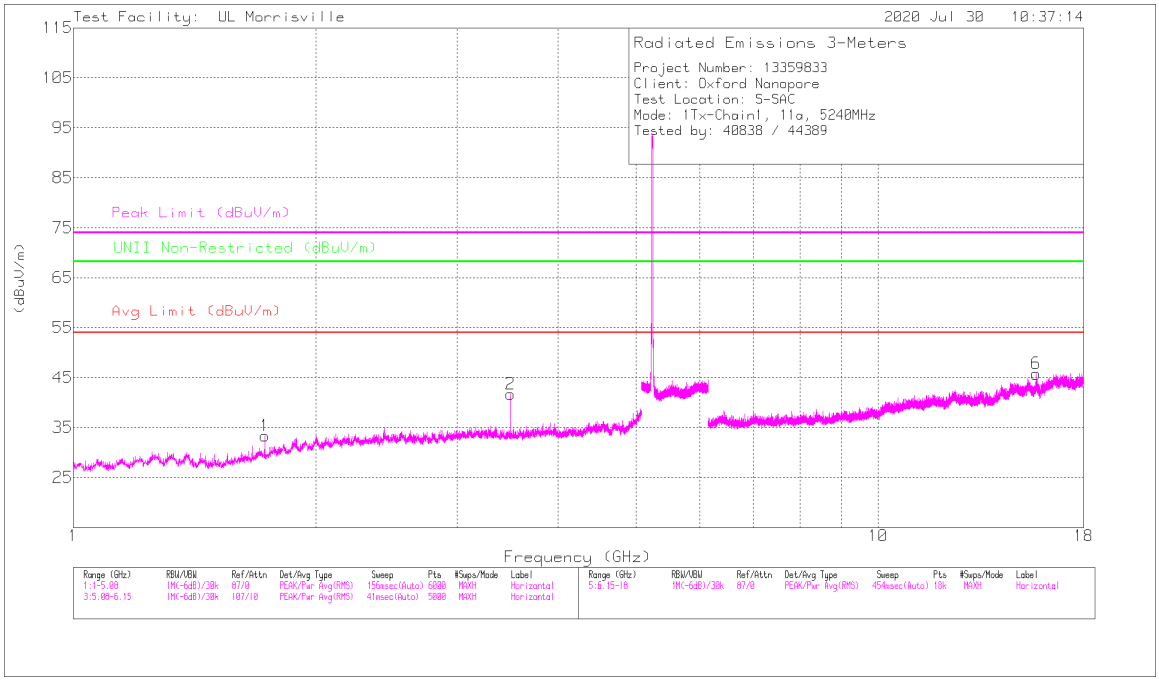
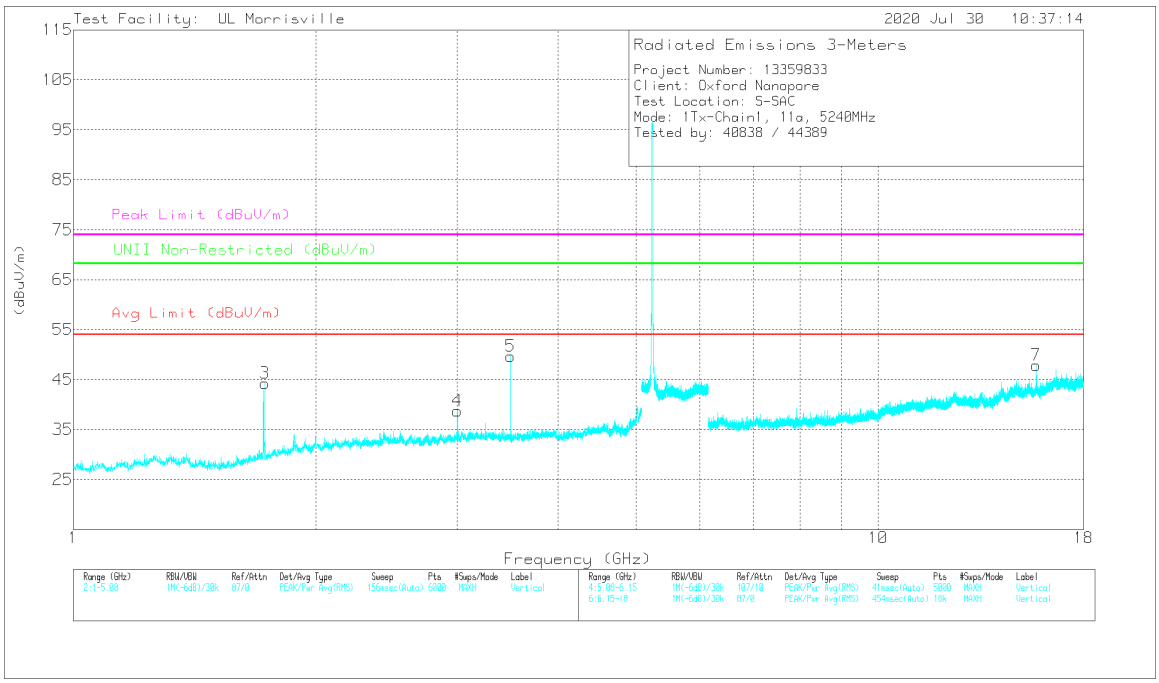
HIGH CHANNEL RESULTS



HORIZONTAL



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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (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	** 1.72966	42.1	PK-U	29.7	-34.5	0	37.3	-	-	74	-36.7	68.2	-30.9	334	132	H
	** 1.72891	28.68	ADV	29.7	-34.5	.62	24.5	54	-29.5	-	-	-	-	334	132	H
3	** 1.72951	42.41	PK-U	29.7	-34.5	0	37.61	-	-	74	-36.39	68.2	-30.59	63	165	V
	** 1.72915	28.81	ADV	29.7	-34.5	.62	24.63	54	-29.37	-	-	-	-	63	165	V
6	* ** 15.72055	37.22	PK-U	40.2	-23.9	0	53.52	-	-	74	-20.48	-	-	49	187	H
	* ** 15.72087	24.01	ADV	40.2	-23.9	.62	40.93	54	-13.07	-	-	-	-	49	187	H
7	* ** 15.7229	39.09	PK-U	40.2	-23.9	0	55.39	-	-	74	-18.61	-	-	16	187	V
	* ** 15.72233	23.79	ADV	40.2	-23.9	.62	40.71	54	-13.29	-	-	-	-	16	187	V
4	3.00009	46.21	PK-U	32.9	-33.6	0	45.51	-	-	-	-	68.2	-22.69	334	253	V
5	3.49328	52.13	PK-U	32.8	-33.2	0	51.73	-	-	-	-	68.2	-16.47	33	249	V
2	3.49336	48.22	PK-U	32.8	-33.2	0	47.82	-	-	-	-	68.2	-20.38	35	340	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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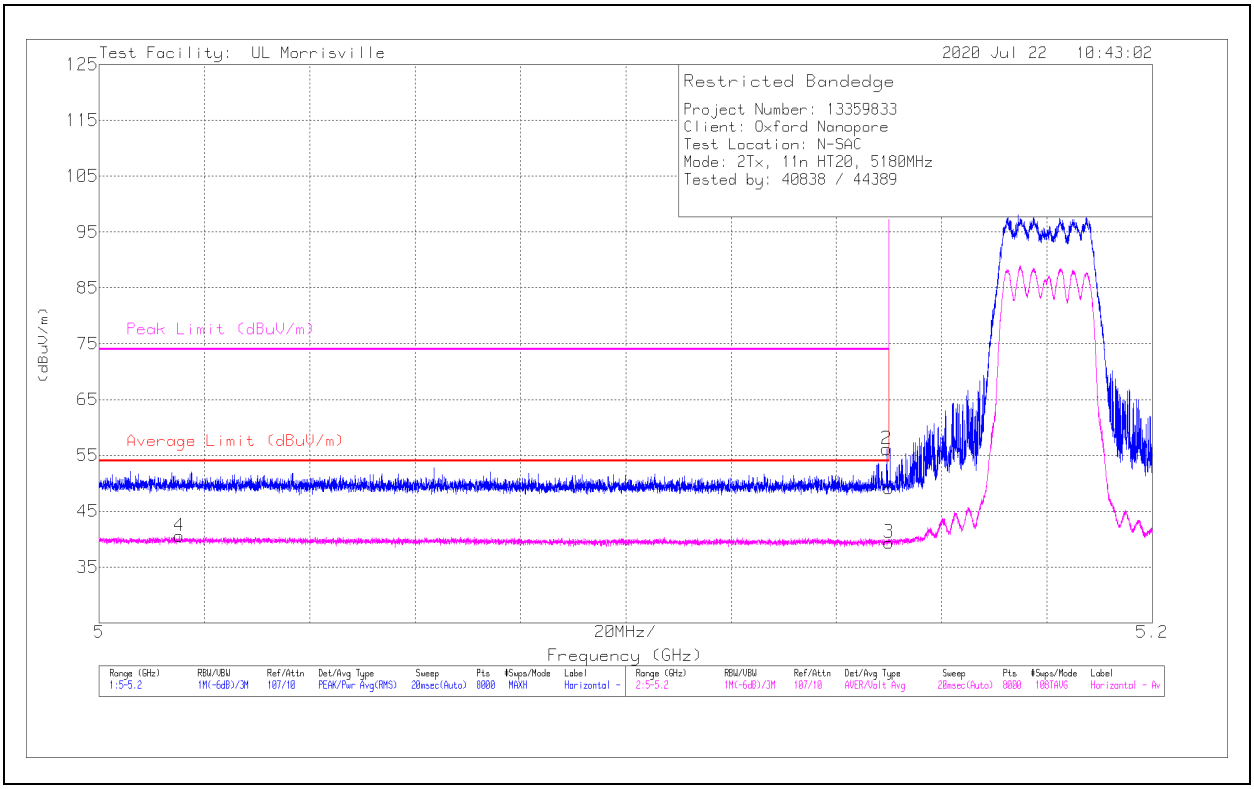
12.1.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

2TX ANTENNA 1 + ANTENNA 2 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	36.58	Pk	34.2	-21.7	0	49.08	-	-	74	-24.92	24	252	H
2	* ** 5.14954	43.66	Pk	34.2	-21.7	0	56.16	-	-	74	-17.84	24	252	H
3	* ** 5.14999	26.18	ADV	34.2	-21.7	.72	39.4	54	-14.6	-	-	24	252	H
4	* ** 5.01523	26.93	ADV	34.2	-21.3	.72	40.55	54	-13.45	-	-	24	252	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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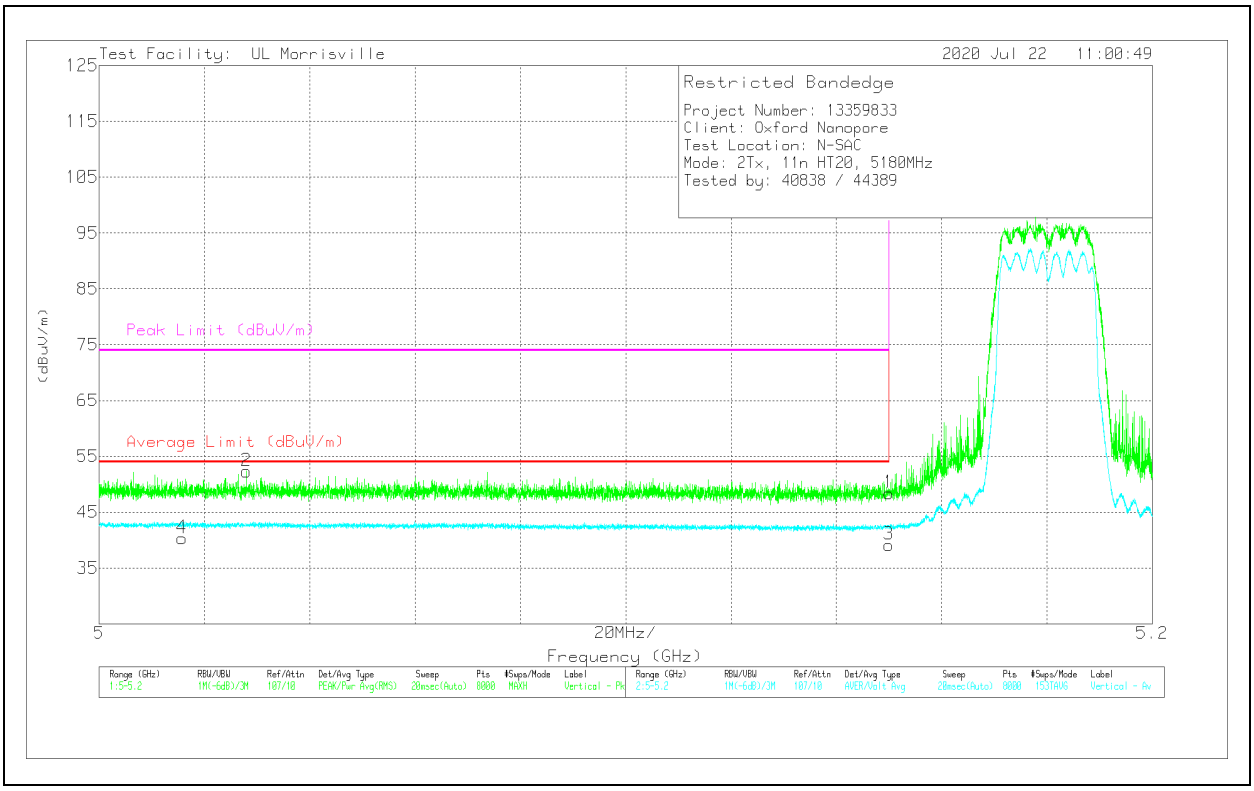
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	35.93	Pk	34.2	-21.7	0	48.43	-	-	74	-25.57	12	385	V
2	* ** 5.02798	39.54	Pk	34.1	-21.3	0	52.34	-	-	74	-21.66	12	385	V
3	* ** 5.14999	25.95	ADV	34.2	-21.7	.72	39.17	54	-14.83	-	-	12	385	V
4	* ** 5.01575	26.72	ADV	34.2	-21.3	.72	40.34	54	-13.66	-	-	12	385	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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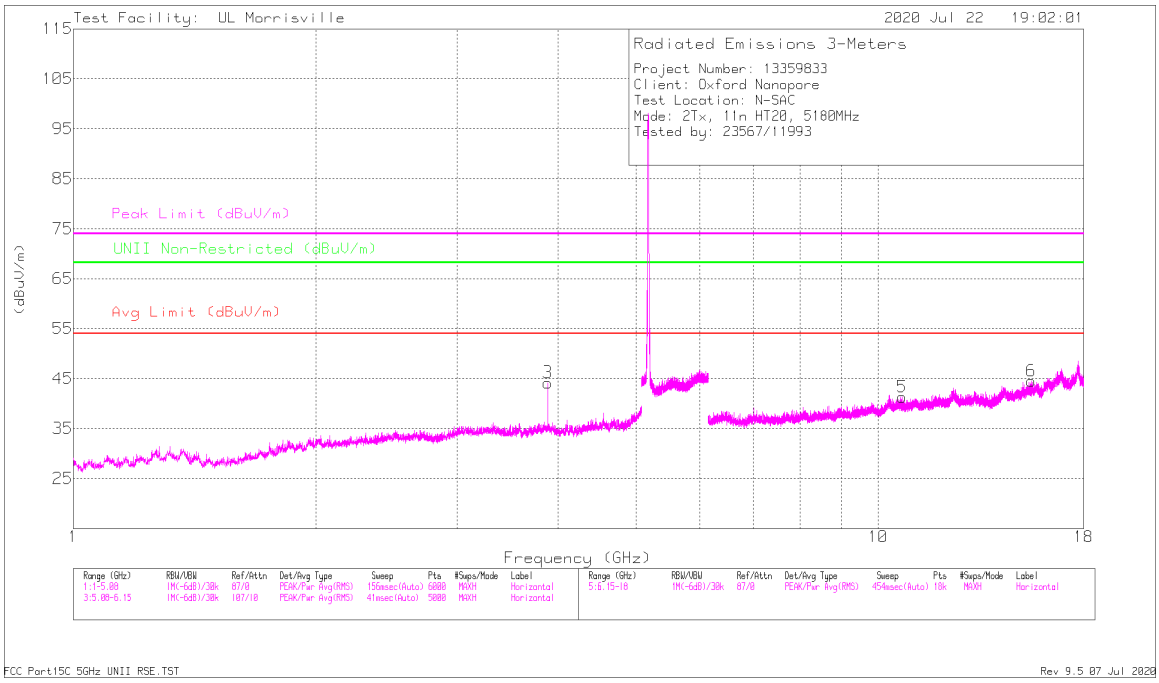
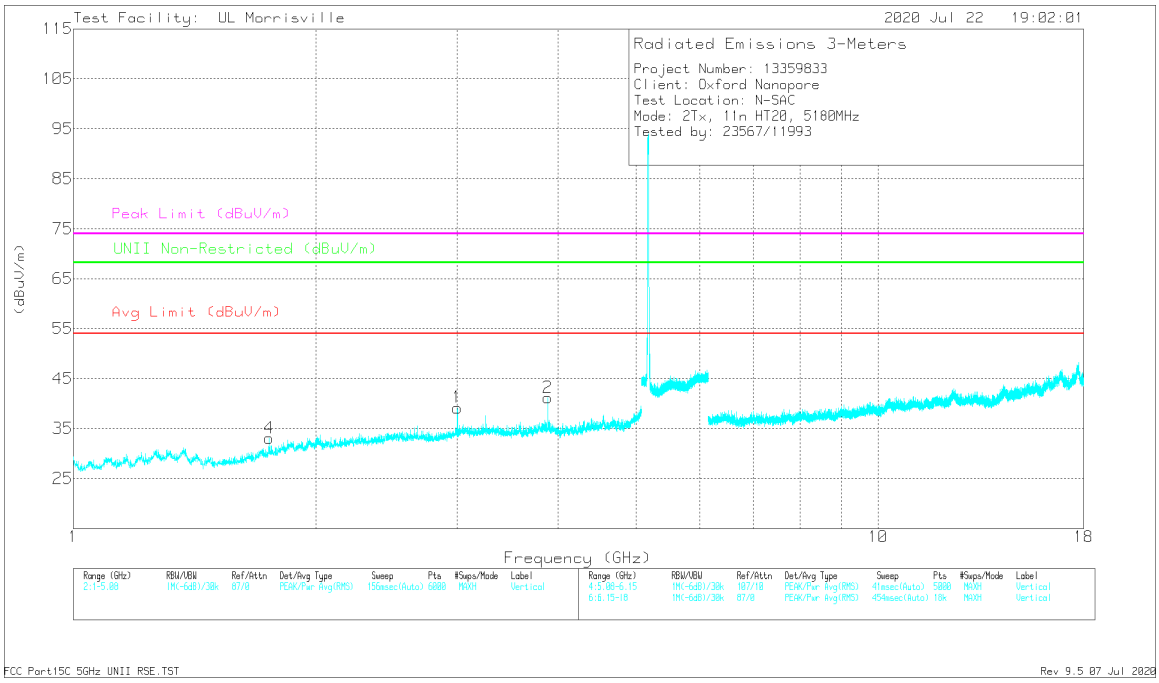
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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
3	* ** 3.88504	47.4	PK-U	33.6	-32.1	0	48.9	-	-	74	-25.1	-	-	326	114	H
	* ** 3.88499	42.24	ADV	33.6	-32.1	.72	44.46	54	-9.54	-	-	-	-	326	114	H
2	* ** 3.88507	44.53	PK-U	33.6	-32.1	0	46.03	-	-	74	-27.97	-	-	20	202	V
	* ** 3.88493	36.8	ADV	33.6	-32.1	.72	39.02	54	-14.98	-	-	-	-	20	202	V
4	** 1.74856	44.43	PK-U	29.6	-35	0	39.03	-	-	74	-34.97	68.2	-29.17	332	257	V
	** 1.74994	32.03	ADV	29.6	-35	.72	27.35	54	-26.65	-	-	-	-	332	257	V
5	* ** 10.71592	34.87	PK-U	37.8	-25.4	0	47.27	-	-	74	-26.73	-	-	0	240	H
	* ** 10.71647	22.03	ADV	37.8	-25.4	.72	35.15	54	-18.85	-	-	-	-	0	240	H
6	* ** 15.50195	35.29	PK-U	40.2	-24.1	0	51.39	-	-	74	-22.61	-	-	143	321	H
	* ** 15.50115	21.95	ADV	40.2	-24.1	.72	38.77	54	-15.23	-	-	-	-	143	321	H
1	3.00002	45.01	PK-U	33	-32.6	0	45.41	-	-	-	-	68.2	-22.79	277	337	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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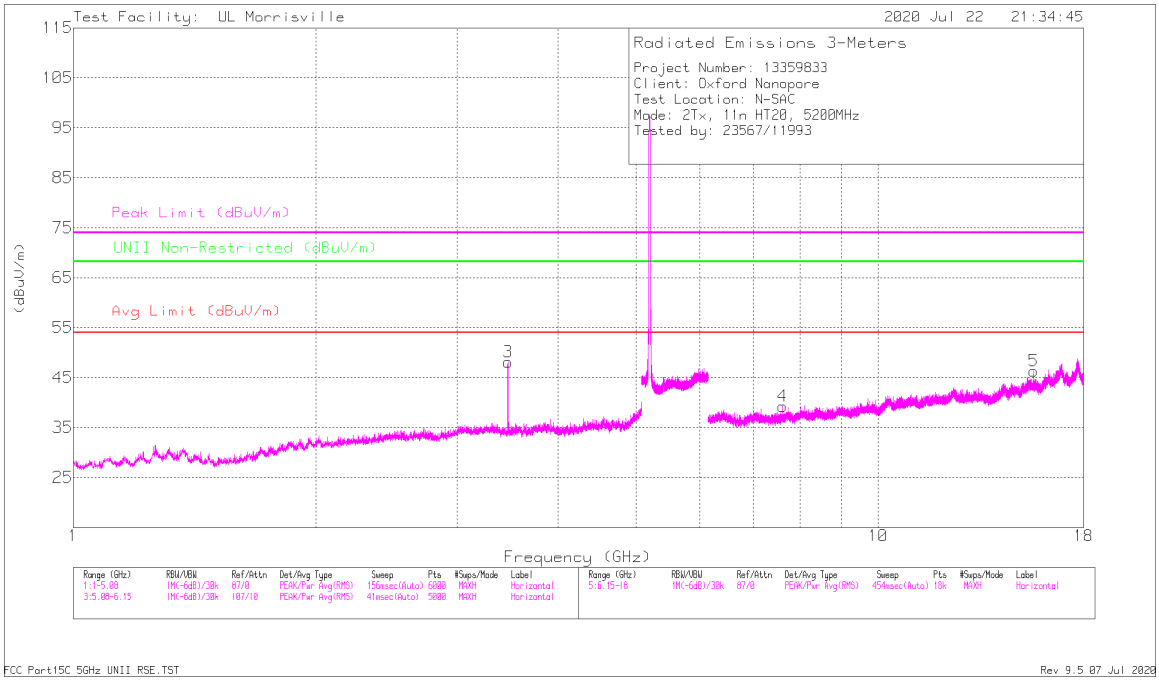
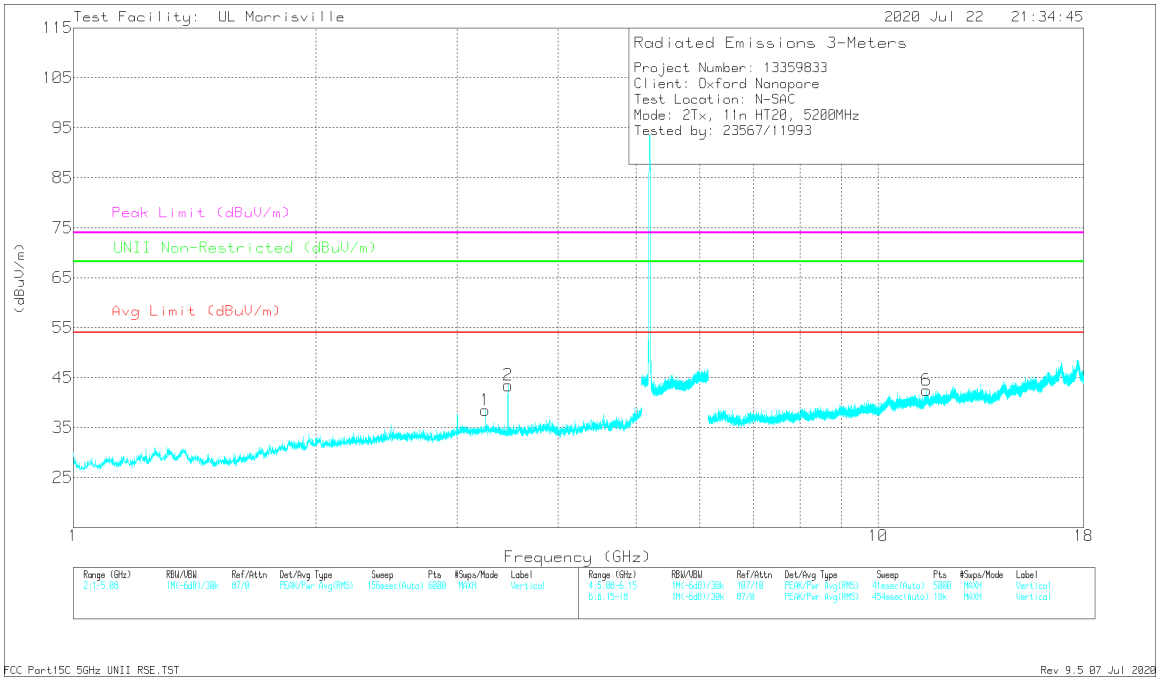
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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
4	* ** 7.60937	37.36	PK-U	35.7	-28.6	0	44.46	-	-	74	-29.54	-	-	152	277	H
	* ** 7.60779	24.36	ADV	35.7	-28.6	.72	32.18	54	-21.82	-	-	-	-	152	277	H
5	* ** 15.59545	41.46	PK-U	40.2	-26	0	55.66	-	-	74	-18.34	-	-	352	251	H
	* ** 15.5956	26.79	ADV	40.2	-26	.72	41.71	54	-12.29	-	-	-	-	352	251	H
6	* ** 11.4823	35.39	PK-U	38.2	-24.6	0	48.99	-	-	74	-25.01	-	-	219	224	V
	* ** 11.4821	21.77	ADV	38.2	-24.6	.72	36.09	54	-17.91	-	-	-	-	219	224	V
1	3.24945	42.64	PK-U	33.3	-32.5	0	43.44	-	-	-	-	68.2	-24.76	262	296	V
2	3.46658	48.57	PK-U	32.9	-32.8	0	48.67	-	-	-	-	68.2	-19.53	138	109	V
3	3.46661	52.59	PK-U	32.9	-32.8	0	52.69	-	-	-	-	68.2	-15.51	349	288	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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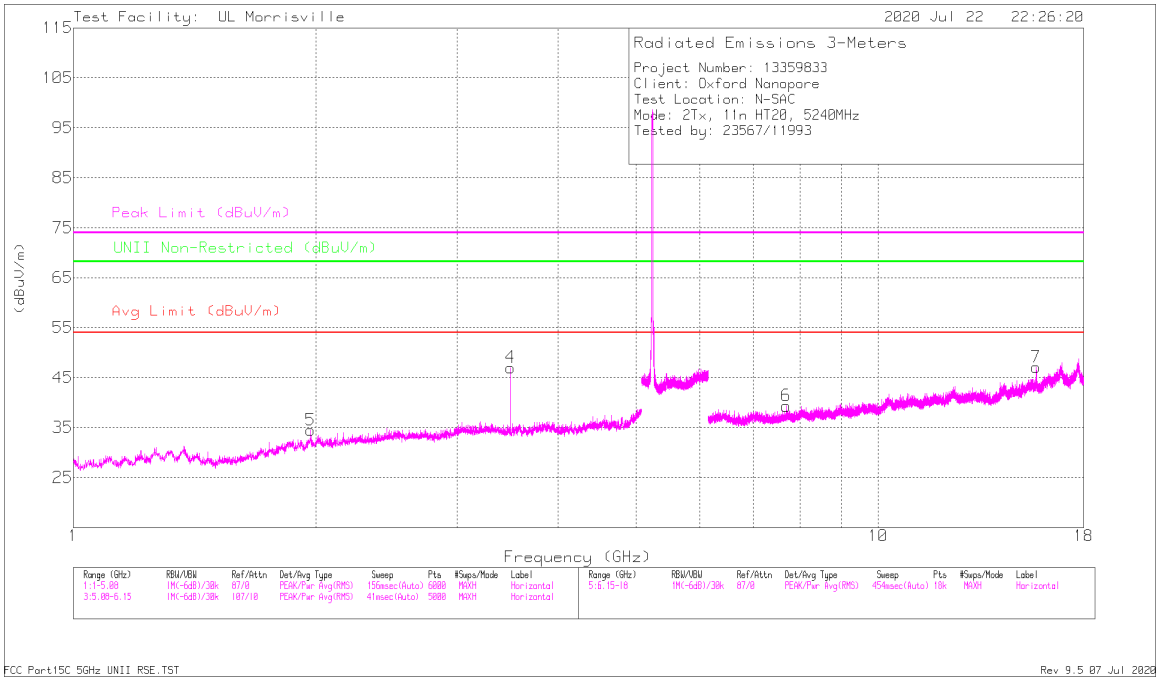
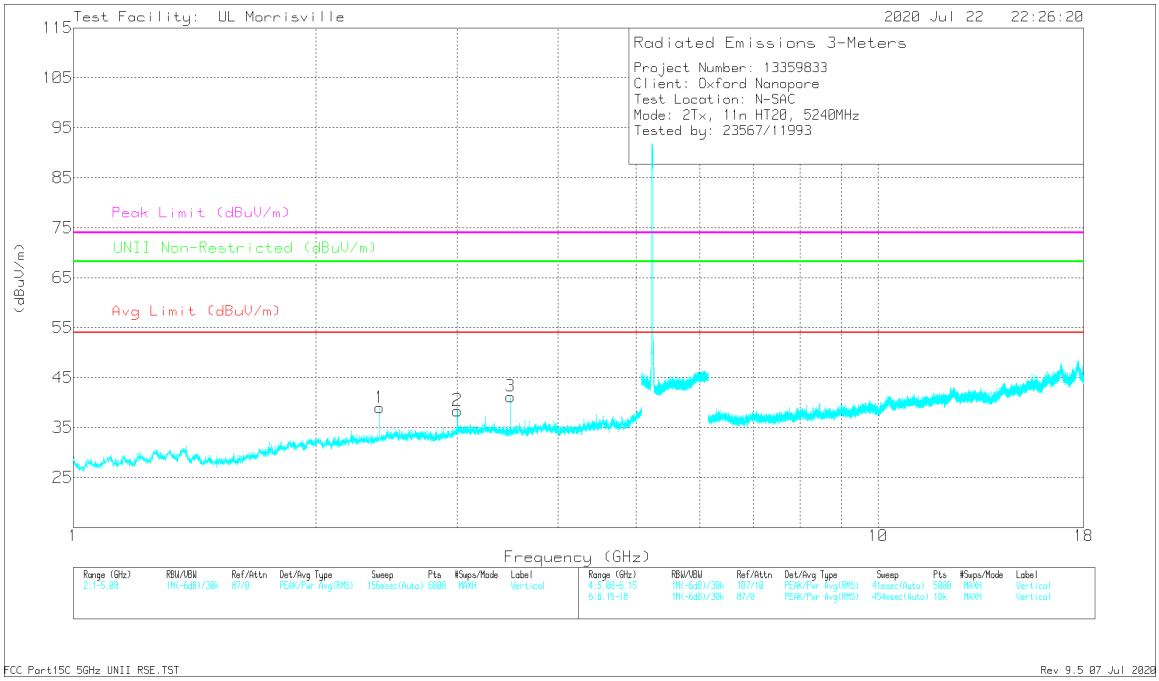
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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
5	** 1.97205	42.51	PK-U	31.2	-34.2	0	39.51	-	-	74	-34.49	68.2	-28.69	279	268	H
	** 1.97038	29.6	ADV	31.1	-34.2	.72	27.22	54	-26.78	-	-	-	-	279	268	H
6	* ** 7.68945	37.49	PK-U	35.8	-28.5	0	44.79	-	-	74	-29.21	-	-	7	345	H
	* ** 7.6897	24.47	ADV	35.8	-28.5	.72	32.49	54	-21.51	-	-	-	-	7	345	H
7	* ** 15.71747	42.22	PK-U	40	-24.9	0	57.32	-	-	74	-16.68	-	-	347	248	H
	* ** 15.71761	27.39	ADV	40	-24.9	.72	43.21	54	-10.79	-	-	-	-	347	248	H
1	2.40178	44.51	PK-U	31.9	-33.6	0	42.81	-	-	-	-	68.2	-25.39	245	219	V
2	2.9998	44.6	PK-U	33	-32.6	0	45	-	-	-	-	68.2	-23.2	275	332	V
3	3.49327	47.61	PK-U	32.9	-32.8	0	47.71	-	-	-	-	68.2	-20.49	140	137	V
4	3.49333	50.5	PK-U	32.9	-32.8	0	50.6	-	-	-	-	68.2	-17.6	350	260	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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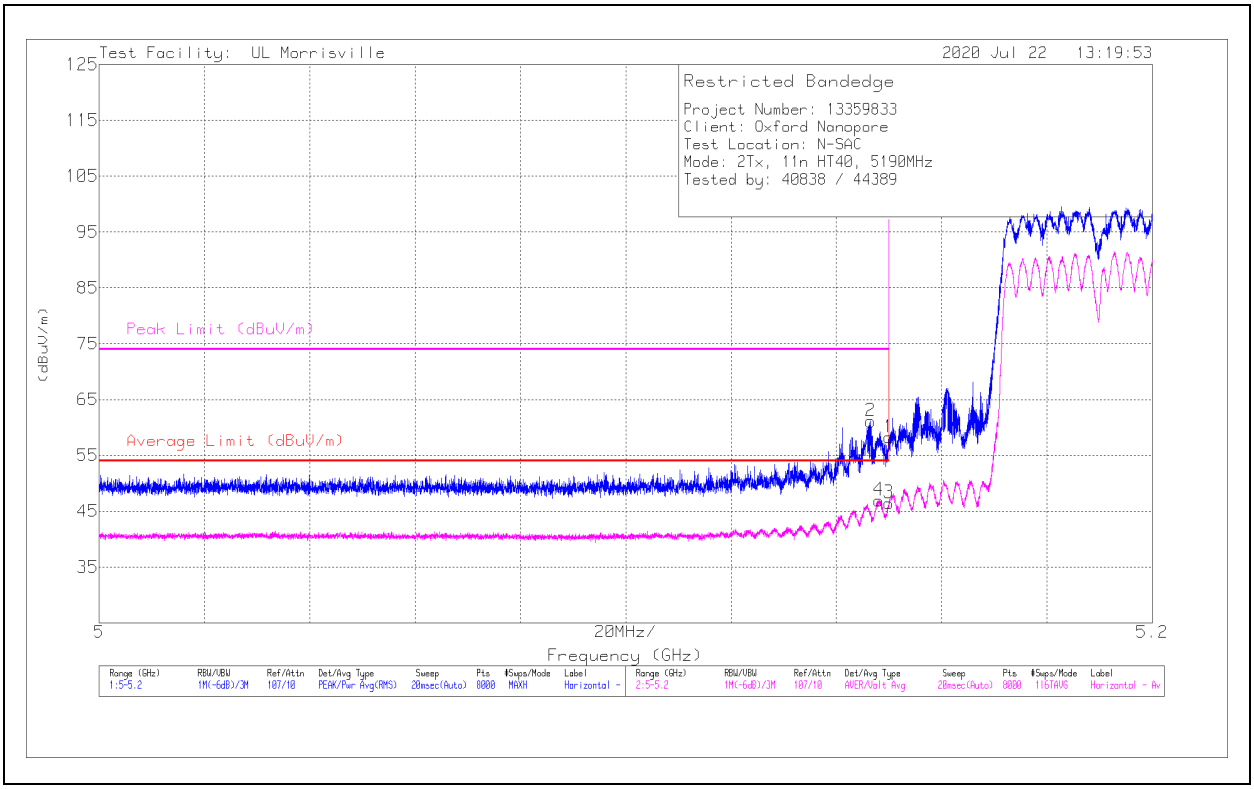
12.1.3. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

2TX ANTENNA 1 + ANTENNA 2 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	45.72	Pk	34.2	-21.7	0	58.22	-	-	74	-15.78	327	349	H
2	* ** 5.14647	48.61	Pk	34.2	-21.7	0	61.11	-	-	74	-12.89	327	349	H
3	* ** 5.14999	32.65	ADV	34.2	-21.7	1.32	46.47	54	-7.53	-	-	327	349	H
4	* ** 5.14807	33.13	ADV	34.2	-21.7	1.32	46.95	54	-7.05	-	-	327	349	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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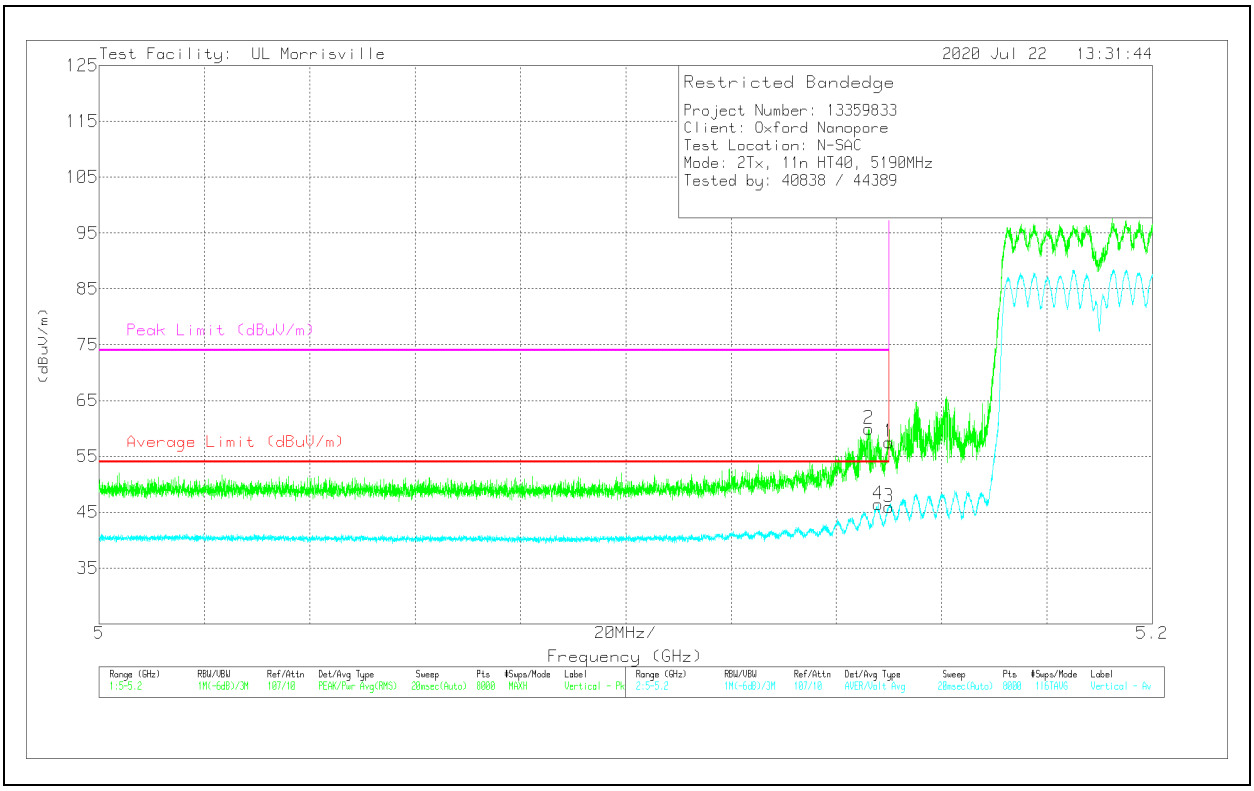
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14999	45.07	Pk	34.2	-21.7	0	57.57	-	-	74	-16.43	85	287	V
2	* ** 5.14617	47.46	Pk	34.2	-21.7	0	59.96	-	-	74	-14.04	85	287	V
3	* ** 5.14999	32.12	ADV	34.2	-21.7	1.32	45.94	54	-8.06	-	-	85	287	V
4	* ** 5.14792	32.62	ADV	34.2	-21.7	1.32	46.44	54	-7.56	-	-	85	287	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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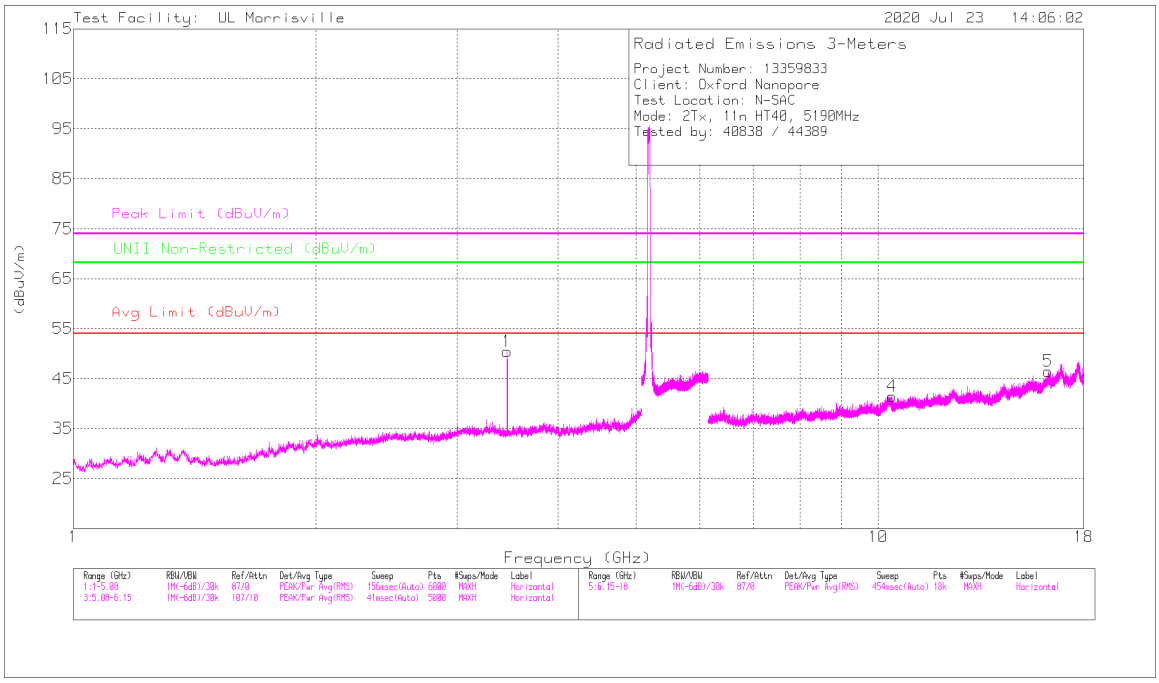
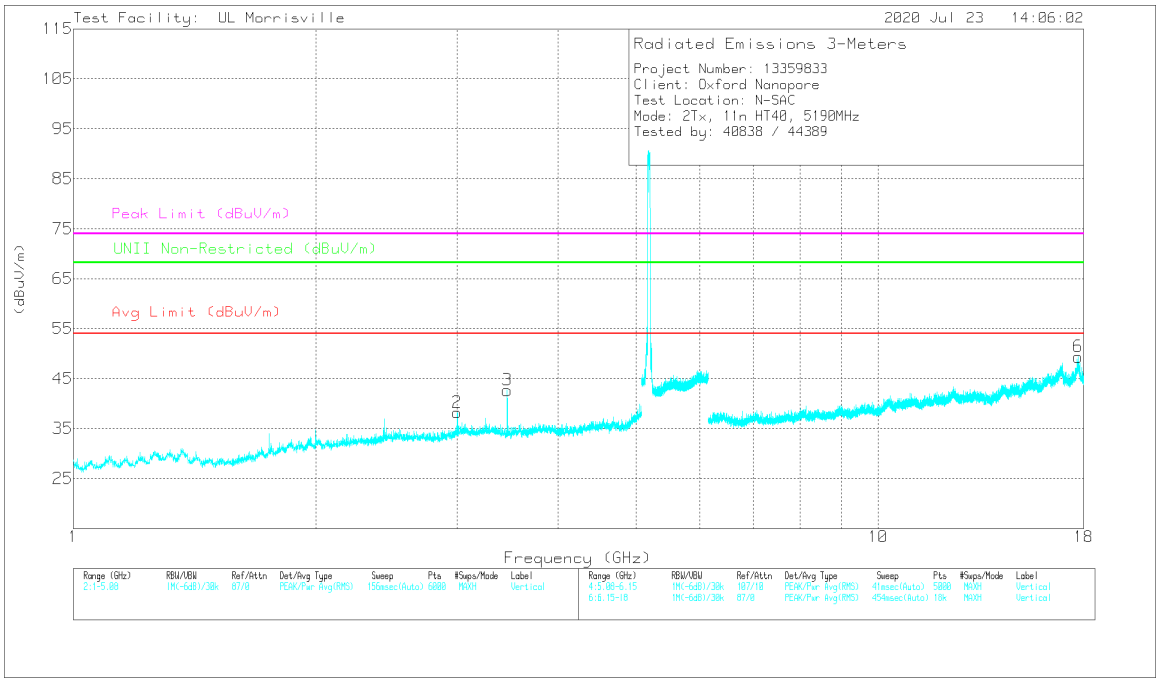
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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
6	* ** 17.73053	33.21	PK-U	41.6	-19.7	0	55.11	-	-	74	-18.89	-	-	298	254	V
	* ** 17.73138	20.24	ADV	41.6	-19.7	1.32	43.46	54	-10.54	-	-	-	-	298	254	V
2	3.00003	44.75	PK-U	33	-32.6	0	45.15	-	-	-	-	68.2	-23.05	260	253	V
1	3.45994	52.56	PK-U	32.9	-32.8	0	52.66	-	-	-	-	68.2	-15.54	351	293	H
3	3.46008	48.38	PK-U	32.9	-32.8	0	48.48	-	-	-	-	68.2	-19.72	357	244	V
4	10.40795	35.47	PK-U	37.5	-25.7	0	47.27	-	-	-	-	68.2	-20.93	9	246	H
5	16.25588	34.85	PK-U	40.8	-23.8	0	51.85	-	-	-	-	68.2	-16.35	219	321	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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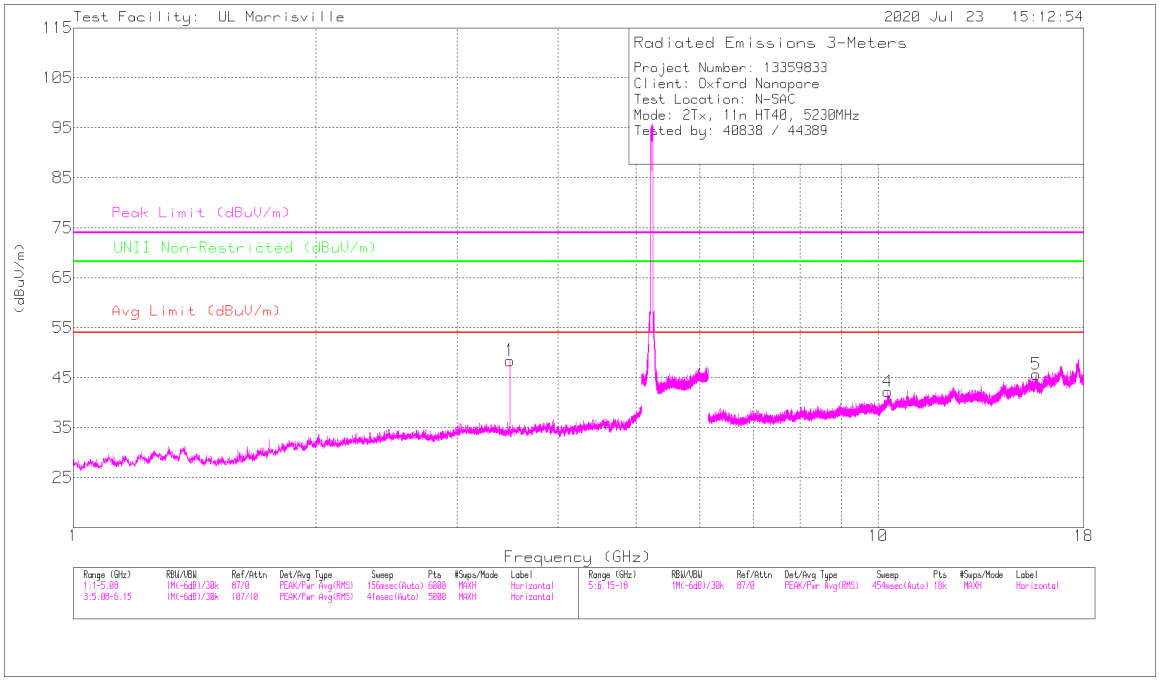
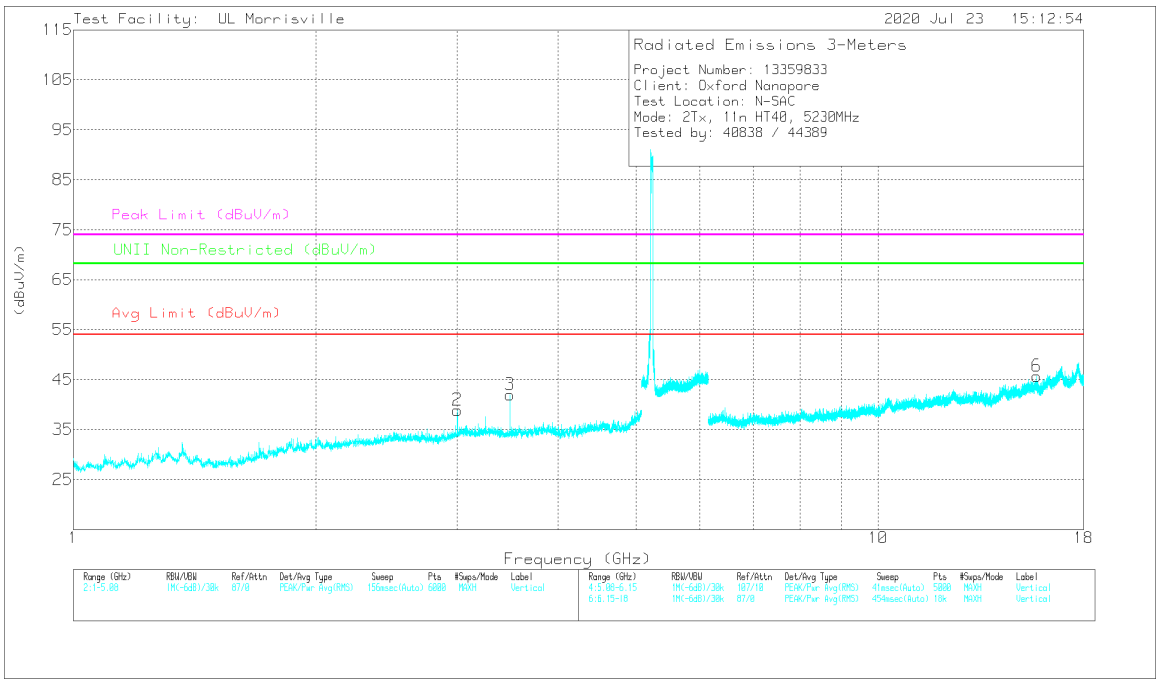
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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
5	* ** 15.70679	38.74	PK-U	40.1	-25	0	53.84	-	-	74	-20.16	-	-	337	100	H
	* ** 15.70667	25.19	ADV	40.1	-25	1.32	41.61	54	-12.39	-	-	-	-	337	100	H
6	* ** 15.73507	35.95	PK-U	40.1	-24.8	0	51.25	-	-	74	-22.75	-	-	28	212	V
	* ** 15.73458	22.59	ADV	40.1	-24.8	1.32	39.21	54	-14.79	-	-	-	-	28	212	V
2	3.00015	45.37	PK-U	33	-32.6	0	45.77	-	-	-	-	68.2	-22.43	271	373	V
1	3.48661	51.38	PK-U	33	-32.8	0	51.58	-	-	-	-	68.2	-16.62	349	126	H
3	3.48661	48.74	PK-U	33	-32.8	0	48.94	-	-	-	-	68.2	-19.26	15	369	V
4	10.28393	35.85	PK-U	37.4	-24.8	0	48.45	-	-	-	-	68.2	-19.75	350	341	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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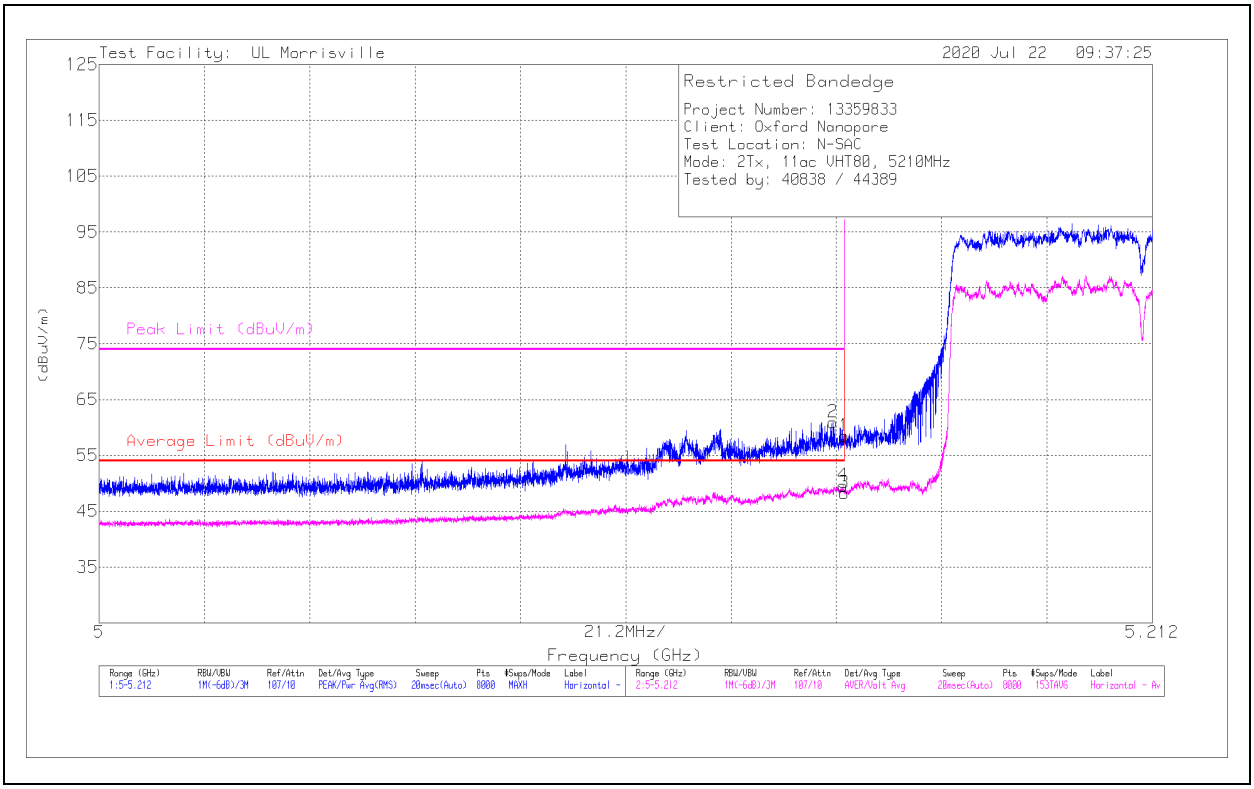
12.1.4. TX ABOVE 1 GHz 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

2TX ANTENNA 1 + ANTENNA 2 MODE

BANDEDGE (MID CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14998	45.95	Pk	34.2	-21.7	0	58.45	-	-	74	-15.55	1	104	H
2	* ** 5.14775	48.39	Pk	34.2	-21.7	0	60.89	-	-	74	-13.11	1	104	H
3	* ** 5.14998	32.02	ADV	34.2	-21.7	3.71	48.23	54	-5.77	-	-	1	104	H
4	* ** 5.14972	33.38	ADV	34.2	-21.7	3.71	49.59	54	-4.41	-	-	1	104	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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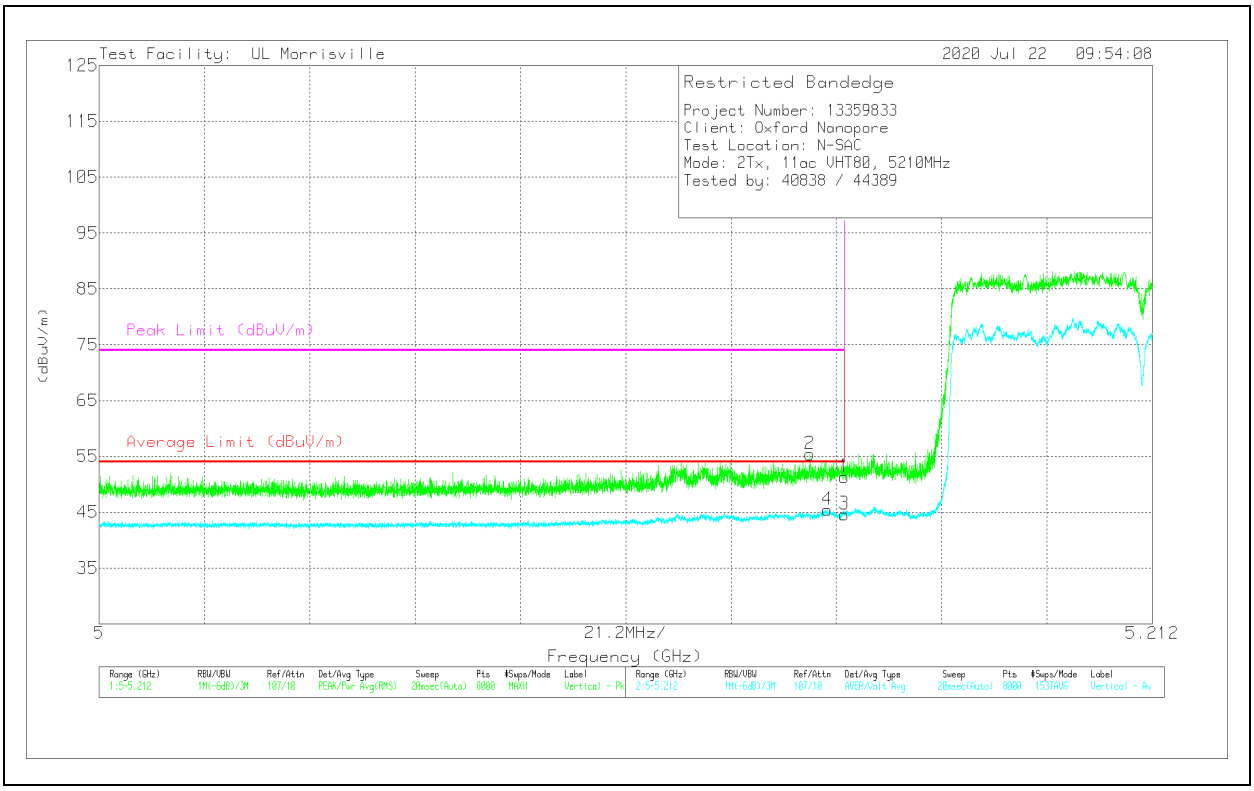
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.14998	38.83	Pk	34.2	-21.7	0	51.33	-	-	74	-22.67	289	125	V
2	* ** 5.14306	43	Pk	34.2	-21.8	0	55.4	-	-	74	-18.6	289	125	V
3	* ** 5.14998	28.43	ADV	34.2	-21.7	3.71	44.64	54	-9.36	-	-	289	125	V
4	* ** 5.14654	29.21	ADV	34.2	-21.7	3.71	45.42	54	-8.58	-	-	289	125	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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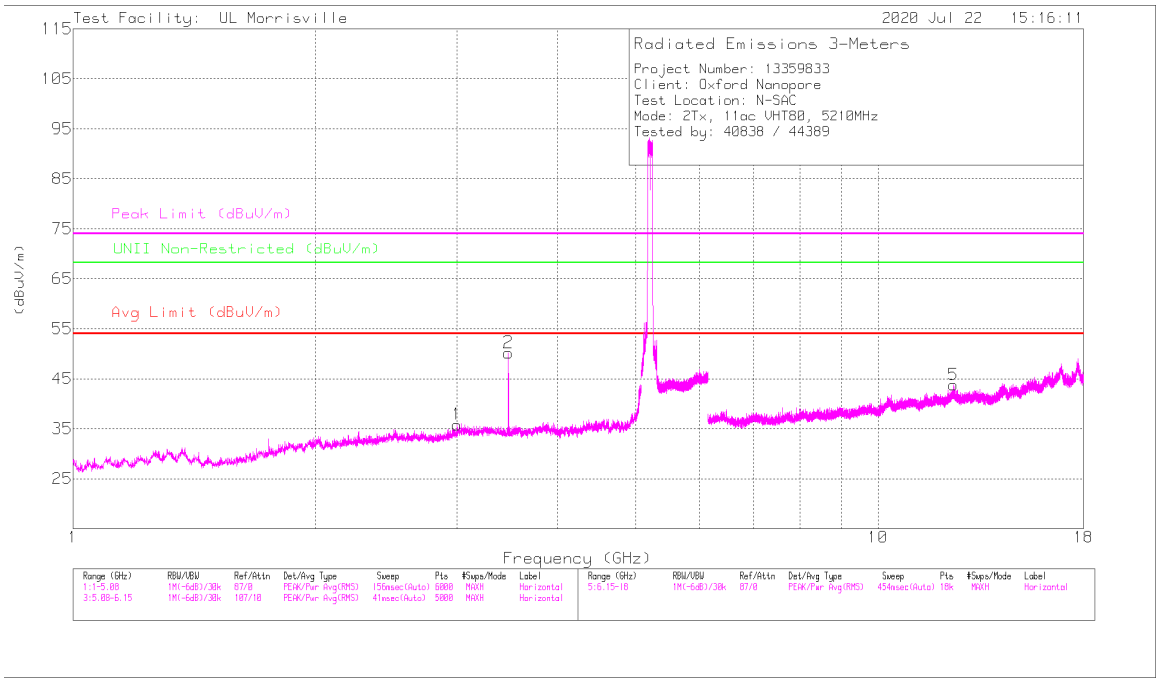
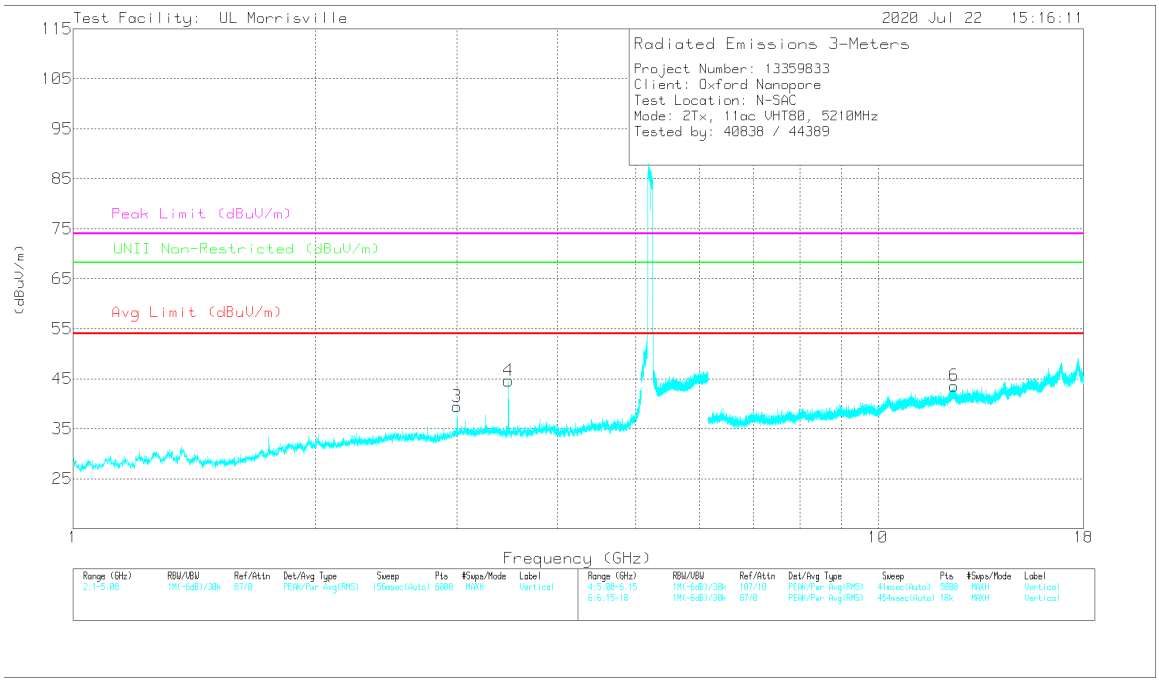
HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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
5	* ** 12.40433	35.35	PK-U	39	-24.3	0	50.05	-	-	74	-23.95	-	-	179	168	H
	* ** 12.40382	21.88	ADV	39	-24.3	3.71	40.29	54	-13.71	-	-	-	-	179	168	H
6	* ** 12.43583	34.99	PK-U	38.9	-24.4	0	49.49	-	-	74	-24.51	-	-	358	305	V
	* ** 12.43586	21.79	ADV	38.9	-24.4	3.71	40	54	-14	-	-	-	-	358	305	V
1	2.99994	42.9	PK-U	33	-32.6	0	43.3	-	-	-	-	68.2	-24.9	22	217	H
3	3.0001	45.55	PK-U	33	-32.6	0	45.95	-	-	-	-	68.2	-22.25	268	335	V
4	3.47327	50.12	PK-U	32.9	-32.8	0	50.22	-	-	-	-	68.2	-17.98	18	363	V
2	3.47336	52.27	PK-U	32.9	-32.8	0	52.37	-	-	-	-	68.2	-15.83	347	288	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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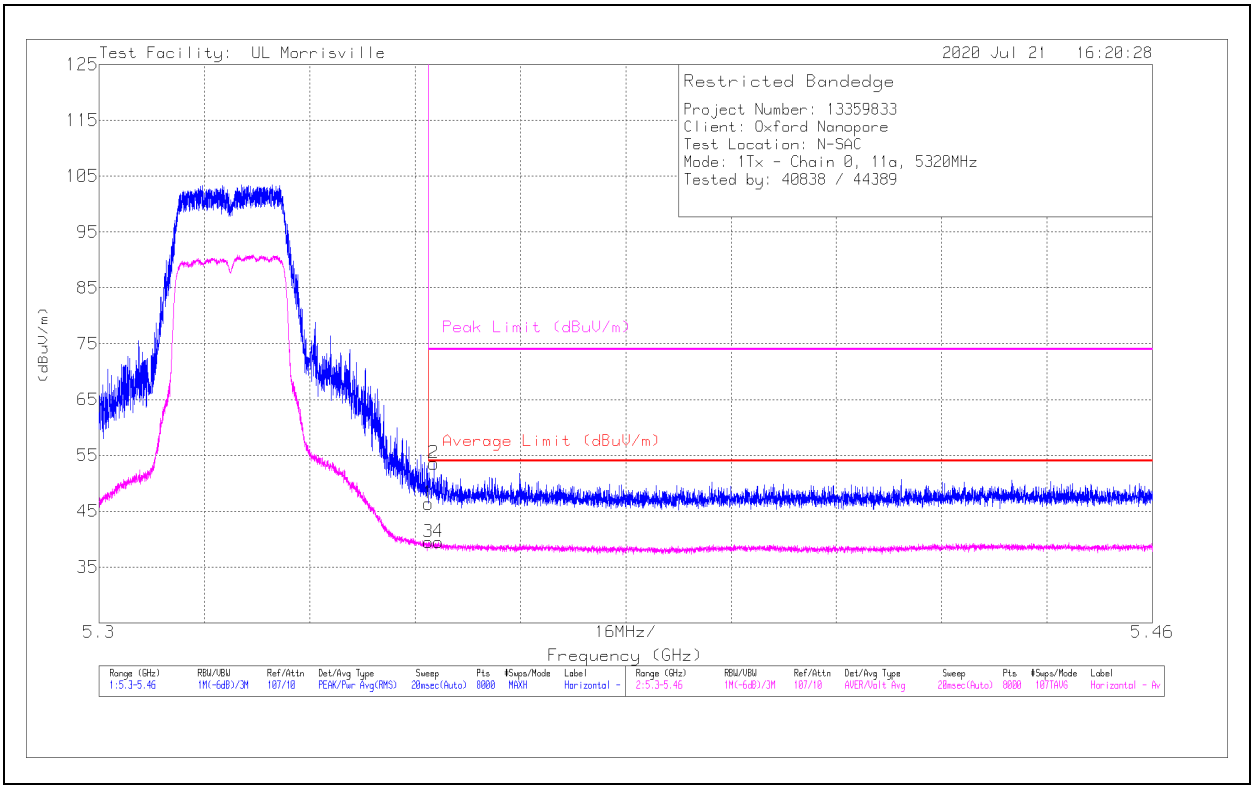
12.1.5. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND

1TX ANTENNA 1 MODE

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	34.08	Pk	34.4	-22.1	0	46.38	-	-	74	-27.62	75	391	H
2	* ** 5.35083	41.26	Pk	34.4	-22.1	0	53.56	-	-	74	-20.44	75	391	H
3	* ** 5.35001	26.54	ADV	34.4	-22.1	.62	39.46	54	-14.54	-	-	75	391	H
4	* ** 5.35157	26.58	ADV	34.4	-22.1	.62	39.5	54	-14.5	-	-	75	391	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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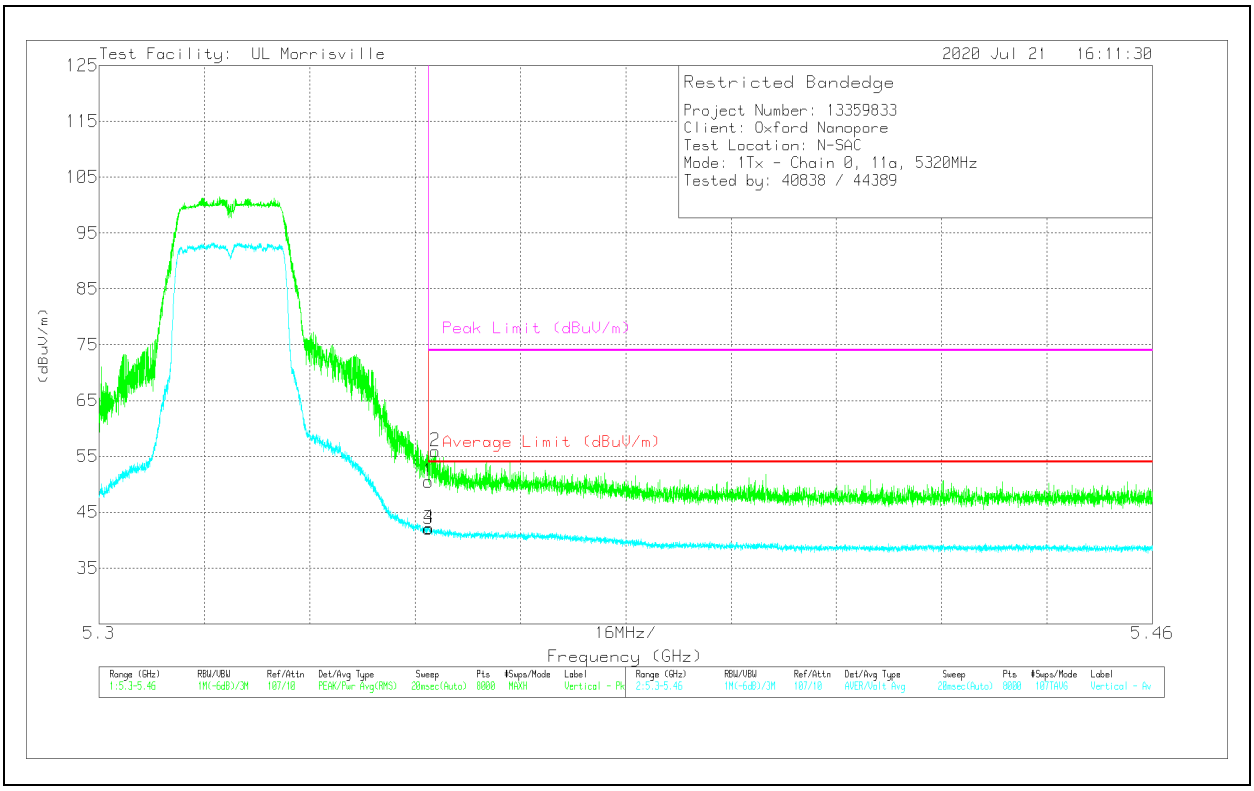
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	38.21	Pk	34.4	-22.1	0	50.51	-	-	74	-23.49	74	342	V
2	* ** 5.35107	43.64	Pk	34.4	-22.1	0	55.94	-	-	74	-18.06	74	342	V
3	* ** 5.35001	29.13	ADV	34.4	-22.1	.62	42.05	54	-11.95	-	-	74	342	V
4	* ** 5.35011	29.26	ADV	34.4	-22.1	.62	42.18	54	-11.82	-	-	74	342	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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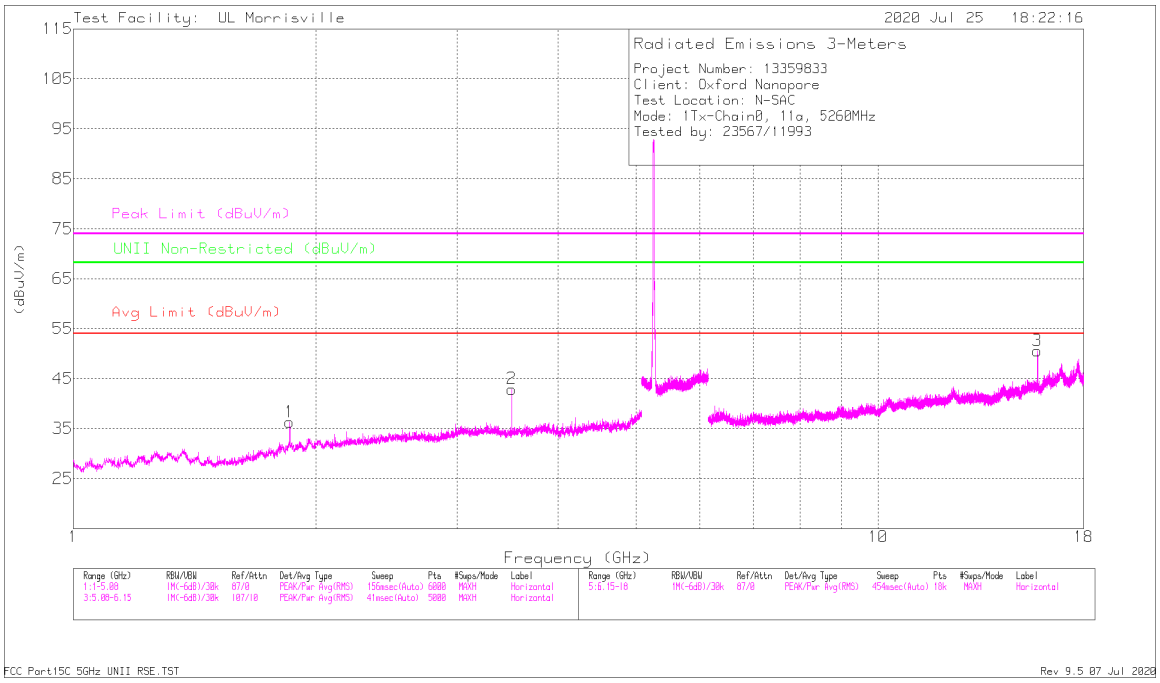
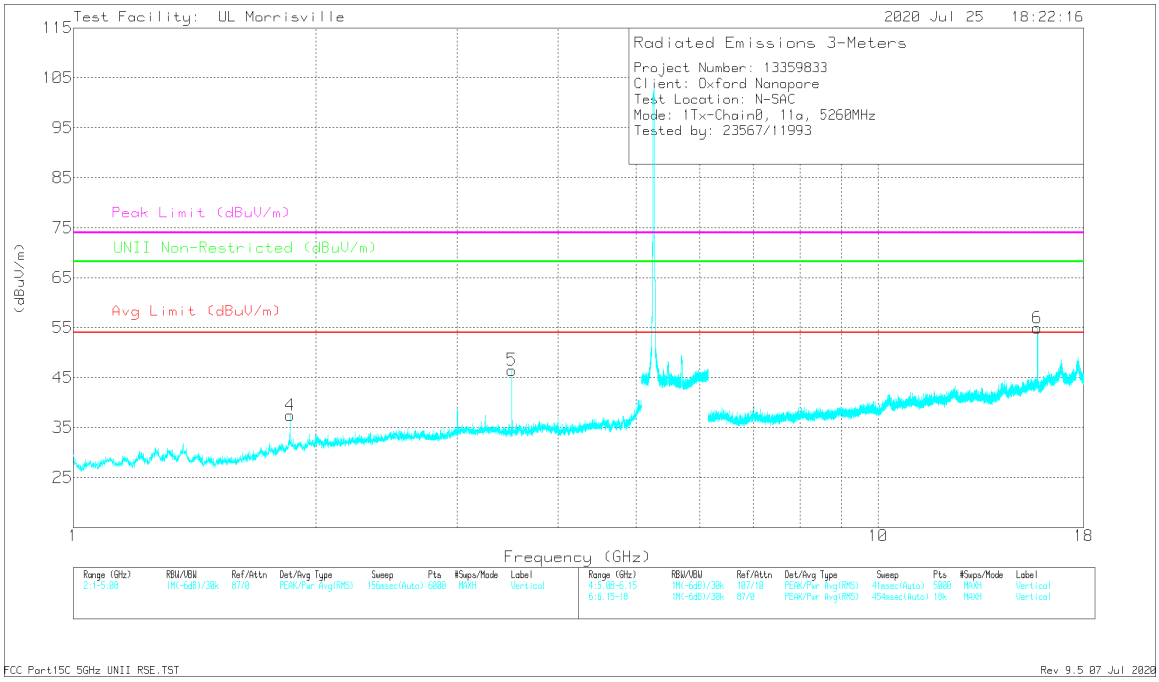
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	** 1.85703	43.9	PK-U	31	-35	0	39.9	-	-	74	-34.1	68.2	-28.3	117	241	H
	** 1.85764	30.17	ADV	30.9	-35	.62	26.69	54	-27.39	-	-	-	-	117	241	H
2	* ** 3.50664	47.18	PK-U	33	-32.7	0	47.48	-	-	74	-26.52	-	-	326	101	H
	* ** 3.50664	34.74	ADV	33	-32.7	.62	35.66	54	-18.34	-	-	-	-	326	101	H
4	** 1.85769	43.3	PK-U	30.9	-35	0	39.2	-	-	74	-34.8	68.2	-29	278	321	V
	** 1.85655	30.12	ADV	31	-35	.62	26.74	54	-27.26	-	-	-	-	278	321	V
5	* ** 3.50671	49.86	PK-U	33	-32.7	0	50.16	-	-	74	-23.84	-	-	355	234	V
	* ** 3.50668	33.61	ADV	33	-32.7	.62	34.53	54	-19.47	-	-	-	-	355	234	V
3	* ** 15.77696	40.92	PK-U	40.1	-25.2	0	55.82	-	-	74	-18.18	-	-	0	260	H
	* ** 15.77696	27.31	ADV	40.1	-25.2	.62	42.83	54	-11.17	-	-	-	-	0	260	H
6	* ** 15.77733	47.32	PK-U	40.1	-25.2	0	62.22	-	-	74	-11.78	-	-	305	112	V
	* ** 15.77711	33.46	ADV	40.1	-25.2	.62	48.98	54	-5.02	-	-	-	-	305	112	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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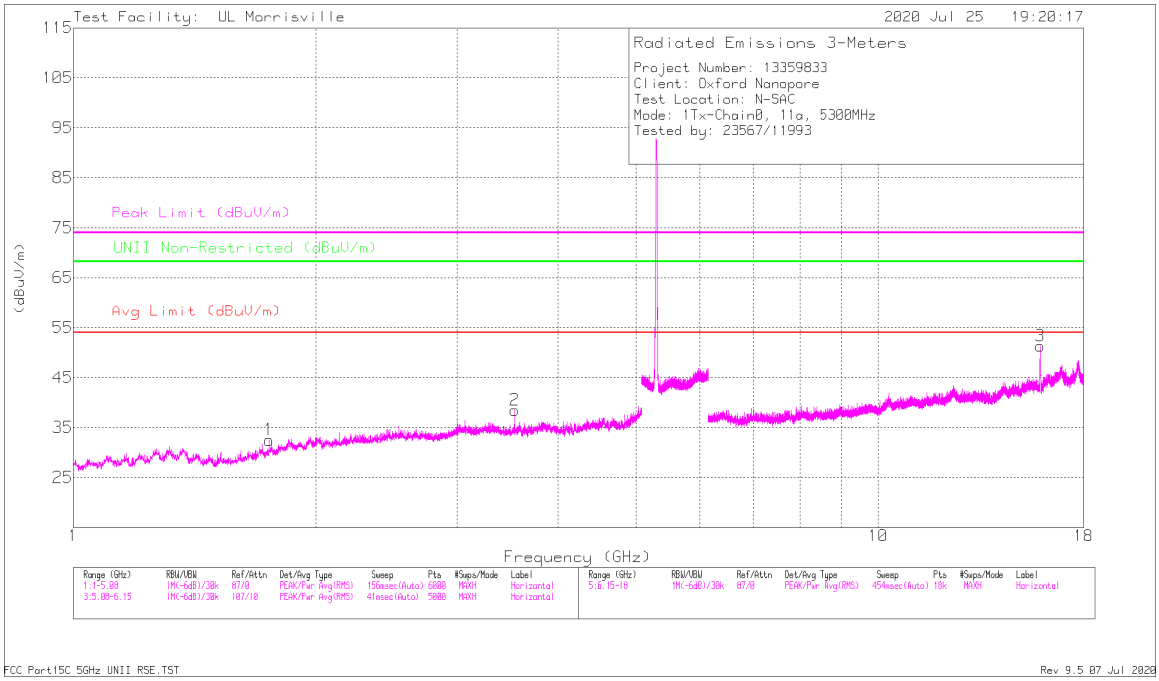
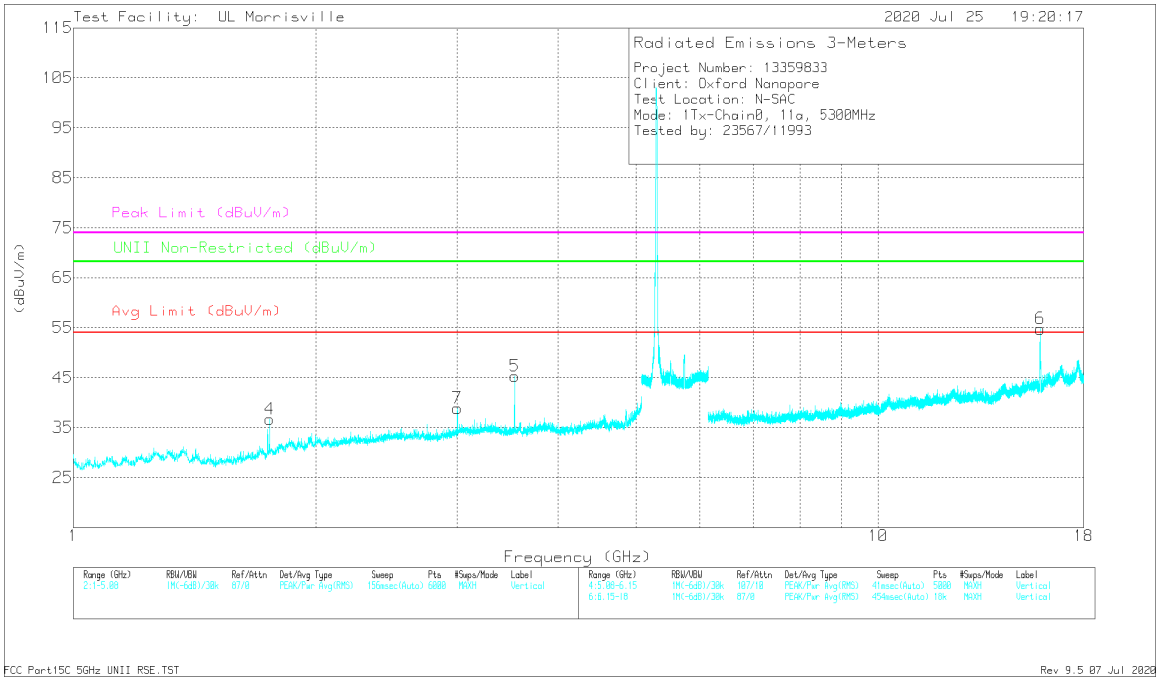
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	** 1.75254	43.28	PK-U	29.6	-35	0	37.88	-	-	74	-36.12	68.2	-30.32	221	381	H
	** 1.75289	30.34	ADV	29.6	-35	.62	25.56	54	-28.44	-	-	-	-	221	381	H
2	* ** 3.53335	45.33	PK-U	33	-32.4	0	45.93	-	-	74	-28.07	-	-	325	240	H
	* ** 3.53329	32.8	ADV	33	-32.4	.62	34.02	54	-19.98	-	-	-	-	325	240	H
4	** 1.75347	51.34	PK-U	29.6	-35	0	45.94	-	-	74	-28.06	68.2	-22.26	348	388	V
	** 1.75157	31.13	ADV	29.7	-35	.62	26.45	54	-27.55	-	-	-	-	348	388	V
5	* ** 3.53326	48.87	PK-U	33	-32.4	0	49.47	-	-	74	-24.53	-	-	357	233	V
	* ** 3.53322	33.61	ADV	33	-32.4	.62	34.83	54	-19.17	-	-	-	-	357	233	V
3	* ** 15.9029	47	PK-U	40.2	-25.4	0	61.8	-	-	74	-12.2	-	-	360	112	H
	* ** 15.90328	31.3	ADV	40.2	-25.4	.62	46.72	54	-7.28	-	-	-	-	360	112	H
6	* ** 15.8971	46.55	PK-U	40.1	-25.4	0	61.25	-	-	74	-12.75	-	-	296	107	V
	* ** 15.89709	33.16	ADV	40.1	-25.4	.62	48.48	54	-5.52	-	-	-	-	296	107	V
7	2.99978	44.52	PK-U	33	-32.6	0	44.92	-	-	-	-	68.2	-23.28	268	361	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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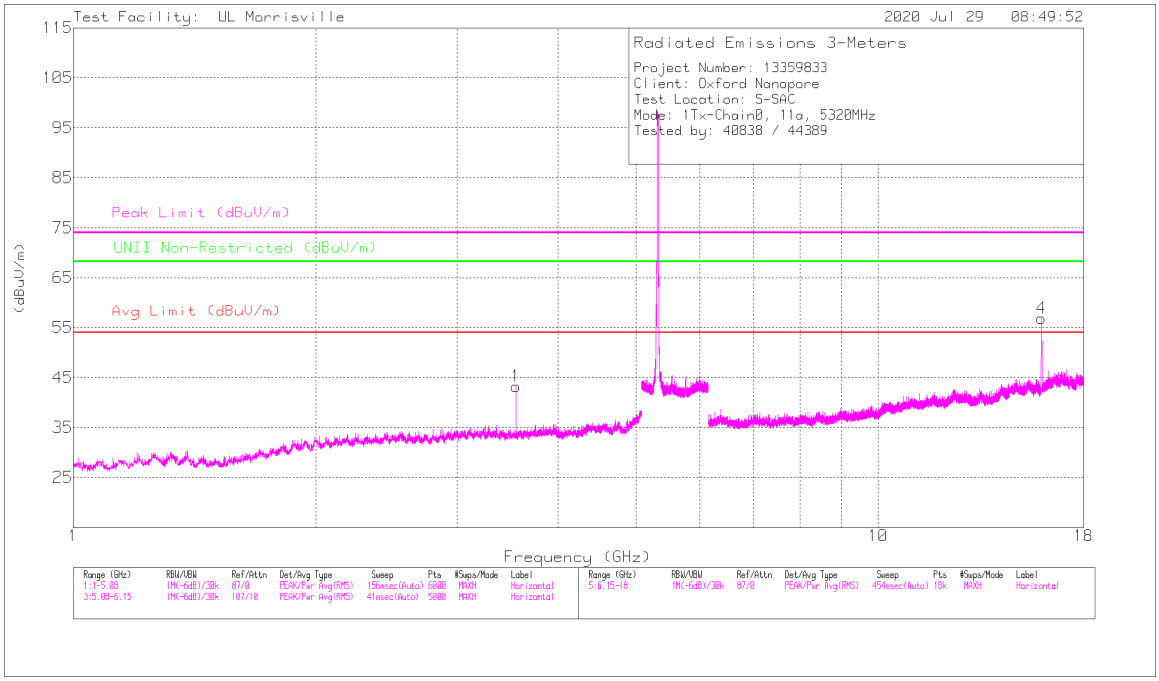
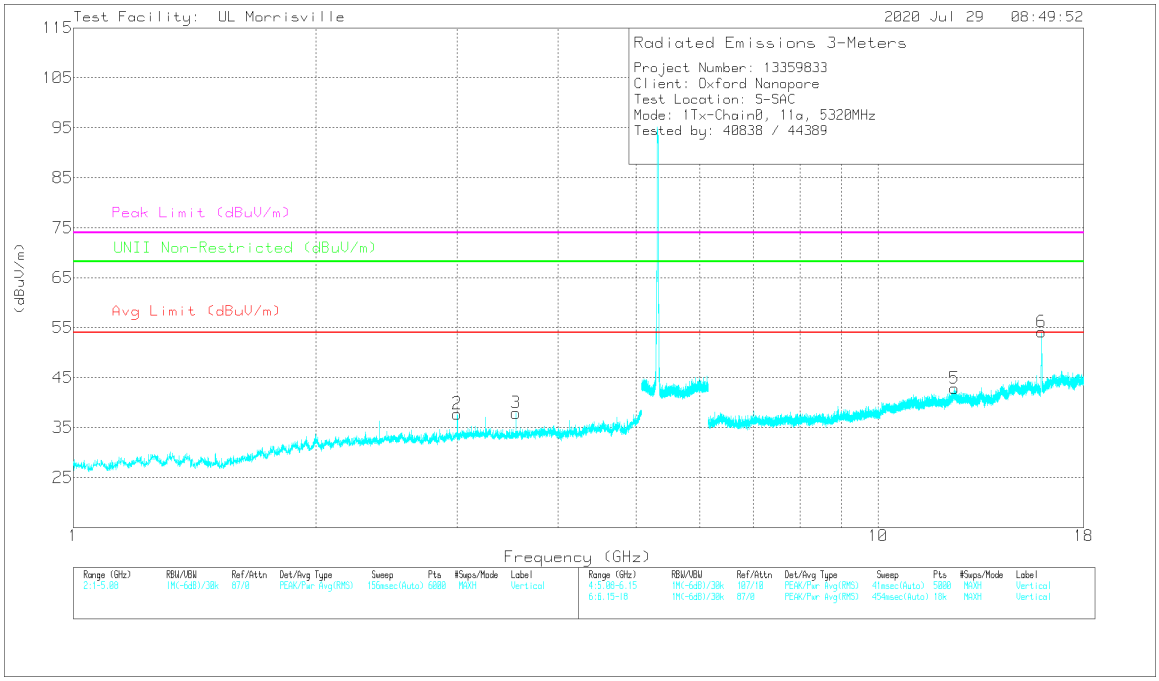
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (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	* ** 3.54653	47.56	PK-U	32.9	-33.2	0	47.26	-	-	74	-26.74	-	-	2	110	H
	* ** 3.54668	32.7	ADV	32.9	-33.2	.62	33.02	54	-20.98	-	-	-	-	2	110	H
3	* ** 3.54674	47.34	PK-U	32.9	-33.2	0	47.04	-	-	74	-26.96	-	-	95	301	V
	* ** 3.54662	32.21	ADV	32.9	-33.2	.62	32.53	54	-21.47	-	-	-	-	95	301	V
4	* ** 15.96296	50.29	PK-U	40.4	-24.8	0	65.89	-	-	74	-8.11	-	-	49	300	H
	* ** 15.96341	34.81	ADV	40.4	-24.8	.62	51.03	54	-2.97	-	-	-	-	49	300	H
5	* ** 12.44321	34.18	PK-U	39	-24	0	49.18	-	-	74	-24.82	-	-	343	104	V
	* ** 12.4431	20.82	ADV	39	-24	.62	36.44	54	-17.56	-	-	-	-	343	104	V
6	* ** 15.96292	45.2	PK-U	40.4	-24.8	0	60.8	-	-	74	-13.2	-	-	28	101	V
	* ** 15.96069	30.2	ADV	40.4	-24.7	.62	46.52	54	-7.48	-	-	-	-	28	101	V
2	3.00002	45.22	PK-U	32.9	-33.6	0	44.52	-	-	-	-	68.2	-23.68	334	300	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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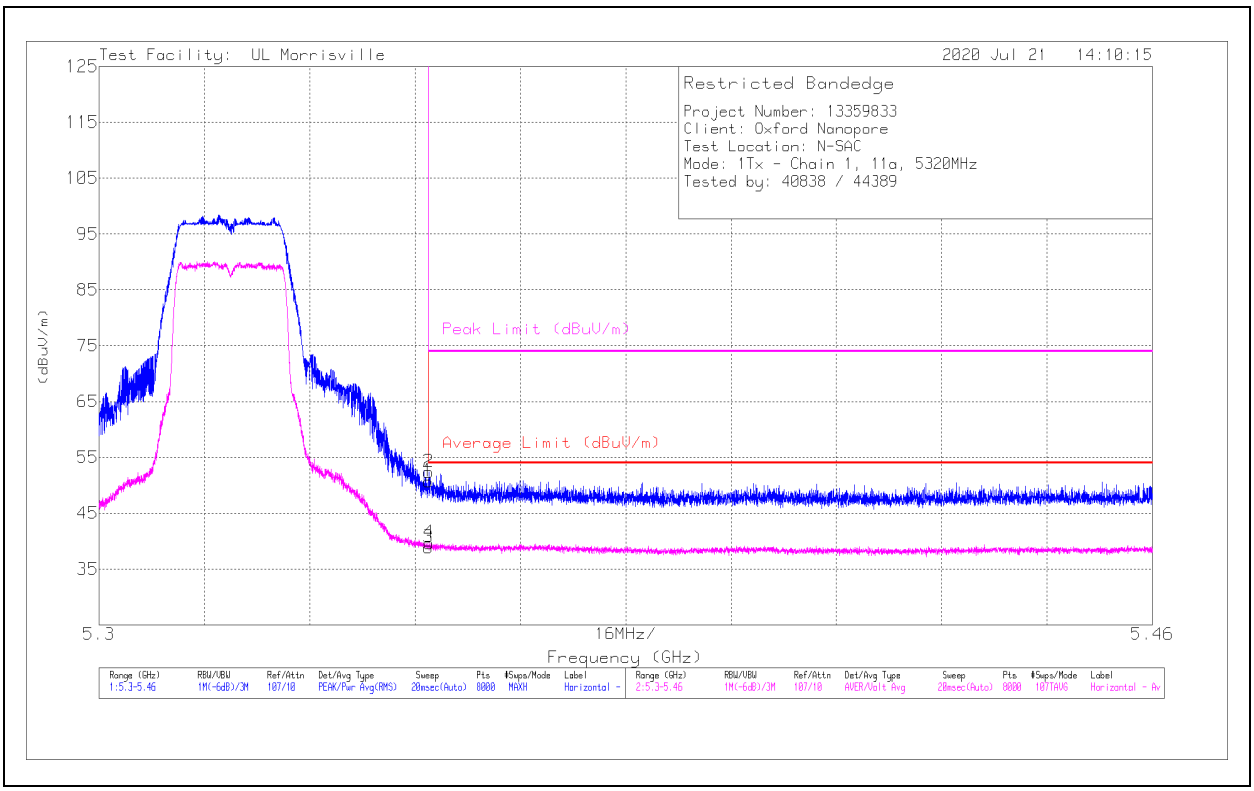
1TX ANTENNA 2 MODE

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	38.41	Pk	34.4	-22.1	0	50.71	-	-	74	-23.29	2	108	H
2	* ** 5.35007	40.06	Pk	34.4	-22.1	0	52.36	-	-	74	-21.64	2	108	H
3	* ** 5.35001	25.93	ADV	34.4	-22.1	.62	38.85	54	-15.15	-	-	2	108	H
4	* ** 5.35011	26.75	ADV	34.4	-22.1	.62	39.67	54	-14.33	-	-	2	108	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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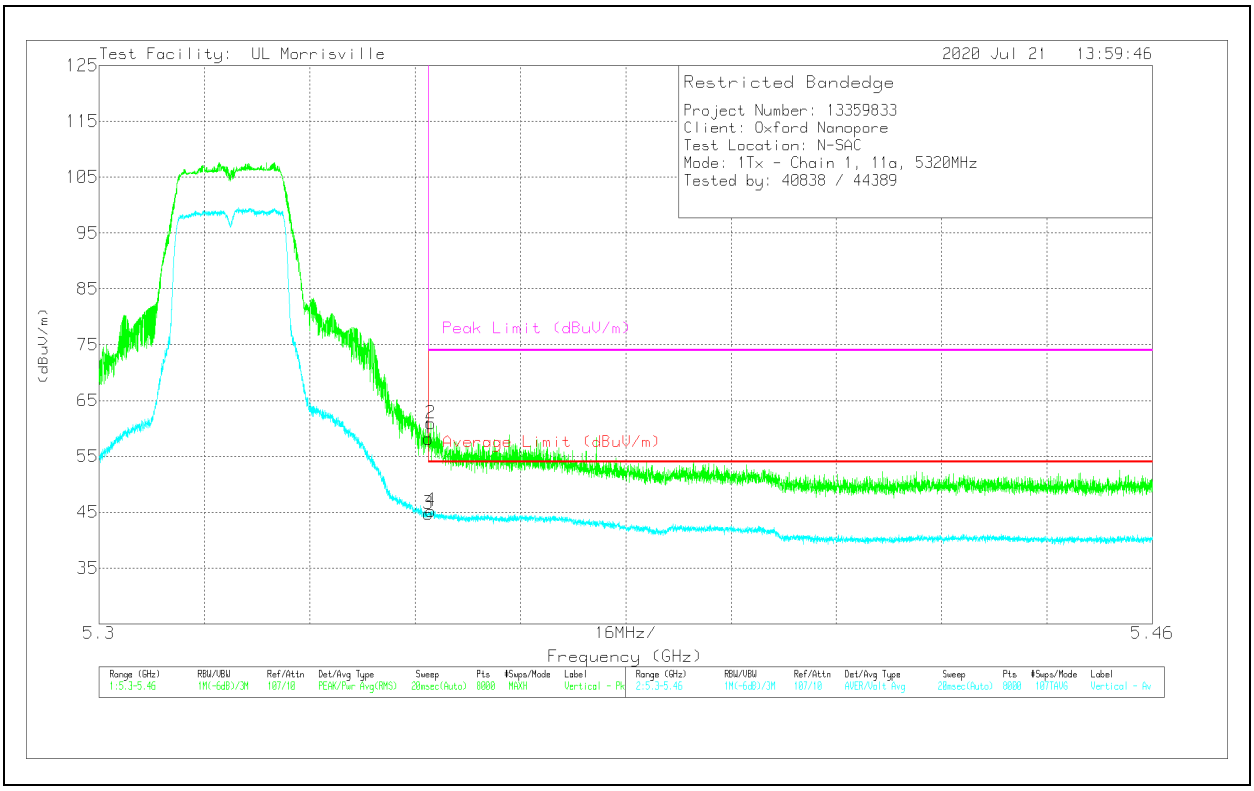
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	45.9	Pk	34.4	-22.1	0	58.2	-	-	74	-15.8	256	106	V
2	* ** 5.35039	48.61	Pk	34.4	-22.1	0	60.91	-	-	74	-13.09	256	106	V
3	* ** 5.35001	31.82	ADV	34.4	-22.1	.62	44.74	54	-9.26	-	-	256	106	V
4	* ** 5.35043	32.3	ADV	34.4	-22.1	.62	45.22	54	-8.78	-	-	256	106	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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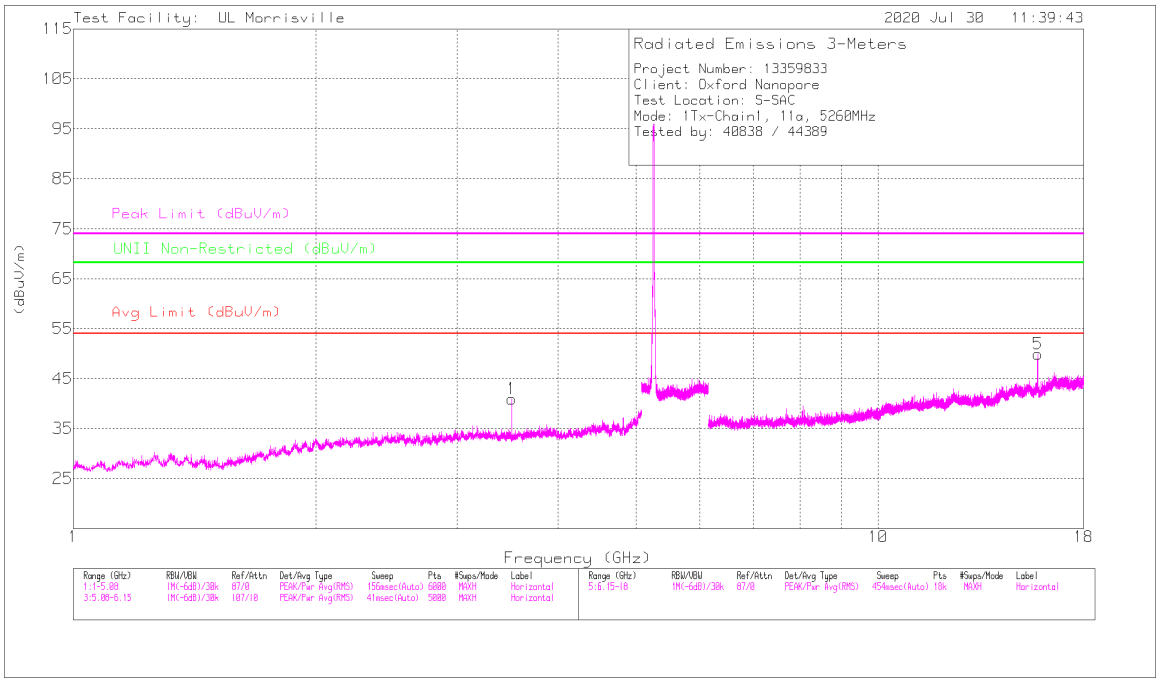
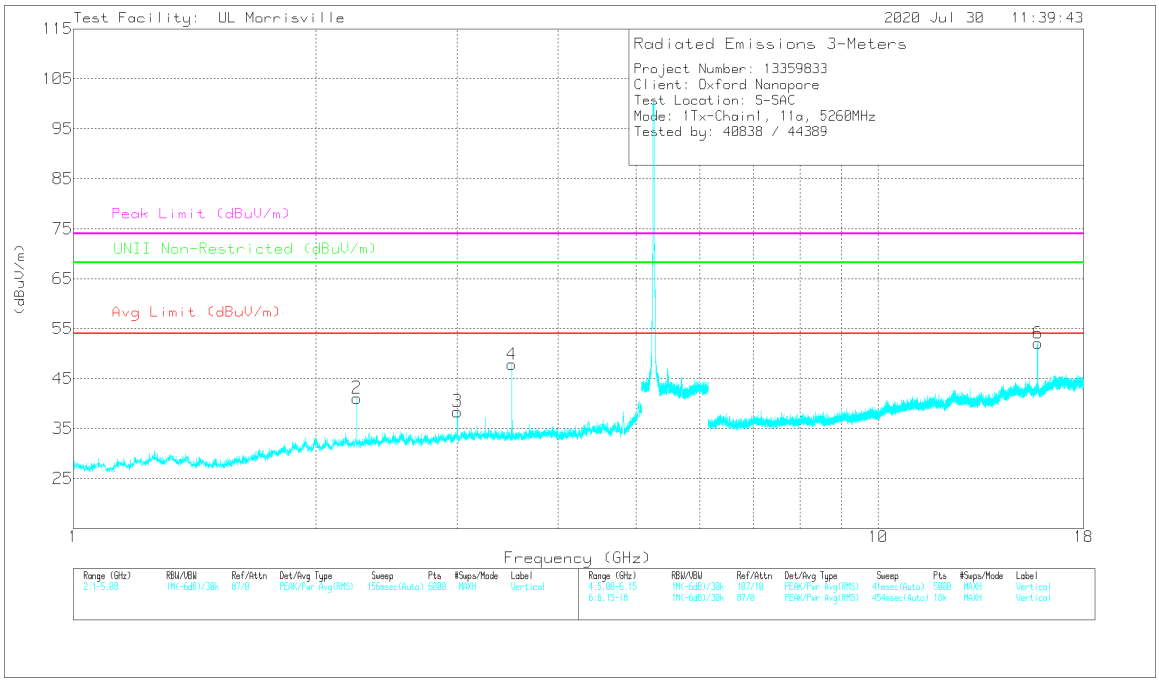
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (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	* ** 3.50665	48.48	PK-U	32.8	-33.2	0	48.08	-	-	74	-25.92	-	-	40	368	H
	* ** 3.50671	32.8	ADV	32.8	-33.2	.62	33.02	54	-20.98	-	-	-	-	40	368	H
2	* ** 2.24974	42.7	PK-U	32.1	-34	0	40.8	-	-	74	-33.2	-	-	151	195	V
	* ** 2.25	30.15	ADV	32.1	-34	.62	28.87	54	-25.13	-	-	-	-	151	195	V
4	* ** 3.50662	51.35	PK-U	32.8	-33.2	0	50.95	-	-	74	-23.05	-	-	35	229	V
	* ** 3.50664	36.72	ADV	32.8	-33.2	.62	36.94	54	-17.06	-	-	-	-	35	229	V
5	* ** 15.78634	41.22	PK-U	40.3	-23.9	0	57.62	-	-	74	-16.38	-	-	48	198	H
	* ** 15.78656	27.22	ADV	40.3	-23.9	.62	44.24	54	-9.76	-	-	-	-	48	198	H
6	* ** 15.78615	42.85	PK-U	40.3	-23.9	0	59.25	-	-	74	-14.75	-	-	13	194	V
	* ** 15.78655	27.58	ADV	40.3	-23.9	.62	44.6	54	-9.4	-	-	-	-	13	194	V
3	2.99997	45.58	PK-U	32.9	-33.6	0	44.88	-	-	-	-	68.2	-23.32	334	254	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV – U Linear Voltage Average

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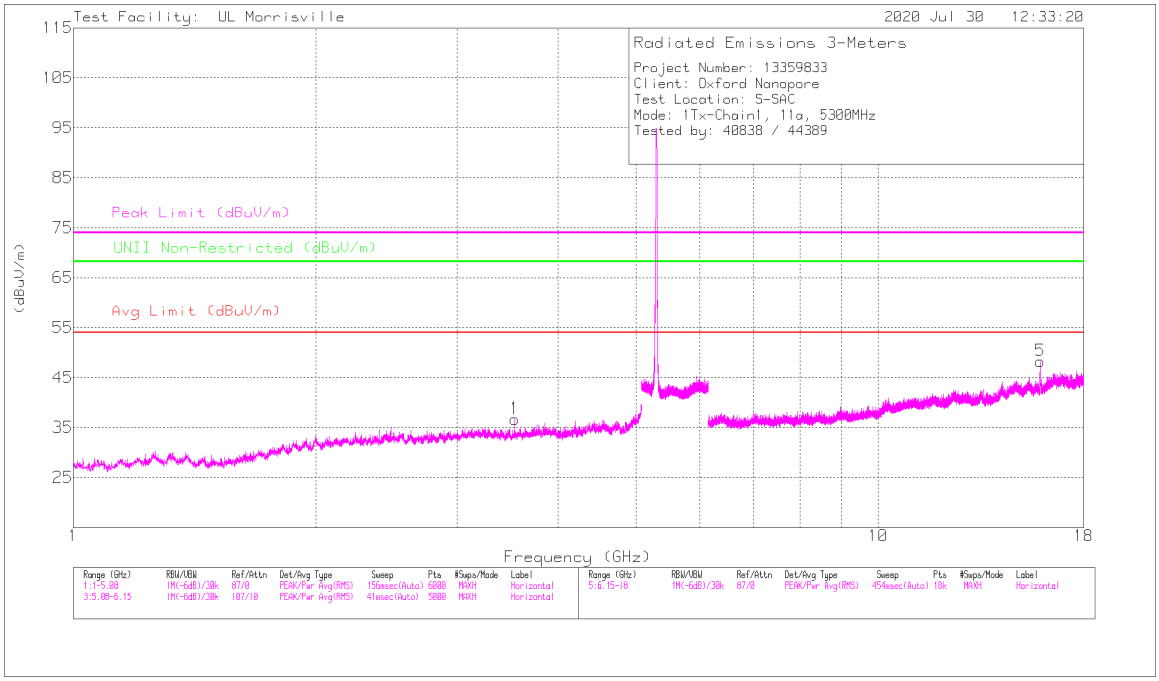
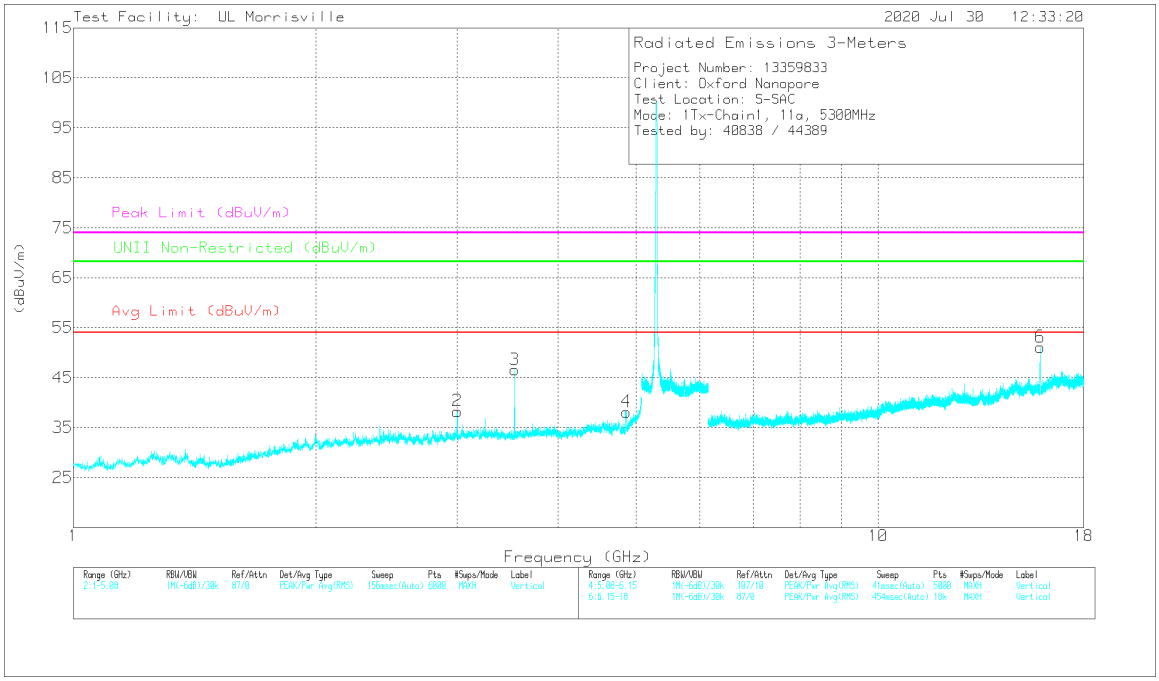
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (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	* ** 3.53339	47.03	PK-U	32.8	-33.3	0	46.53	-	-	74	-27.47	-	-	34	361	H
	* ** 3.53334	31.54	ADV	32.8	-33.3	.62	31.66	54	-22.34	-	-	-	-	34	361	H
3	* ** 3.53335	50.85	PK-U	32.8	-33.3	0	50.35	-	-	74	-23.65	-	-	64	243	V
	* ** 3.53336	34.9	ADV	32.8	-33.3	.62	35.02	54	-18.98	-	-	-	-	64	243	V
4	* ** 4.86361	43.16	PK-U	34	-30.6	0	46.56	-	-	74	-27.44	-	-	273	261	V
	* ** 4.86338	31.3	ADV	34	-30.6	.62	35.32	54	-18.68	-	-	-	-	273	261	V
5	* ** 15.89394	42.81	PK-U	40.3	-25.2	0	57.91	-	-	74	-16.09	-	-	39	187	H
	* ** 15.89418	27.76	ADV	40.3	-25.2	.62	43.48	54	-10.52	-	-	-	-	39	187	H
6	* ** 15.89714	43.14	PK-U	40.3	-25.3	0	58.14	-	-	74	-15.86	-	-	8	101	V
	* ** 15.89714	29.77	ADV	40.3	-25.3	.62	45.39	54	-8.61	-	-	-	-	8	101	V
2	2.99985	45.22	PK-U	32.9	-33.6	0	44.52	-	-	-	-	68.2	-23.68	330	210	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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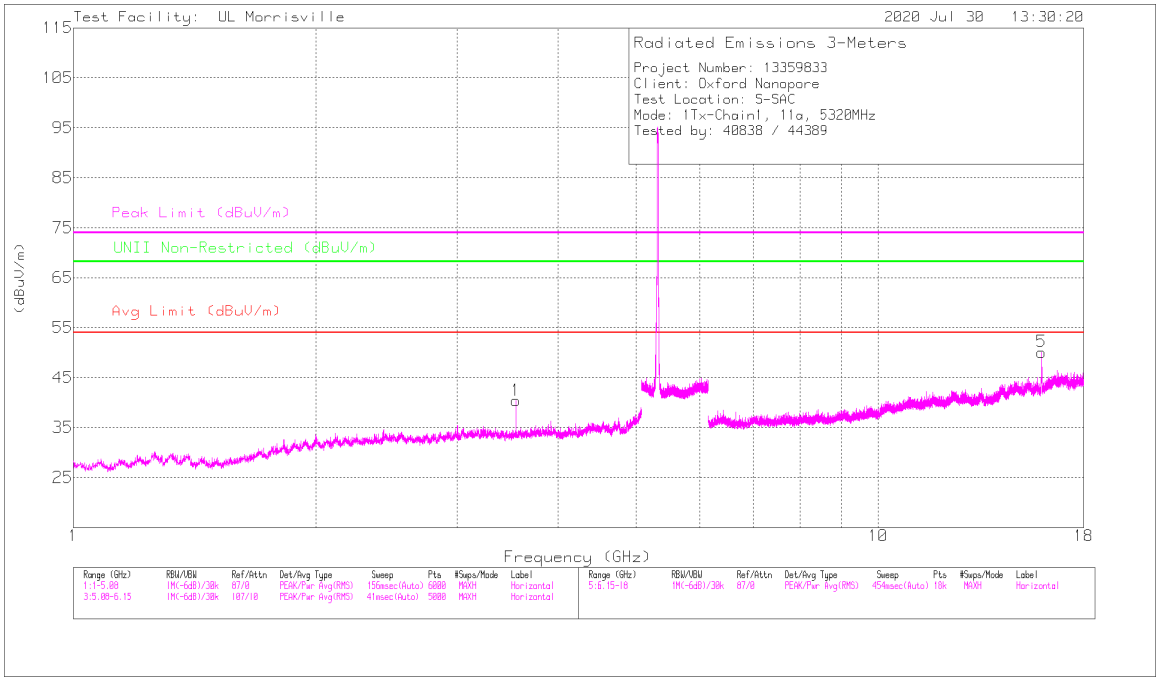
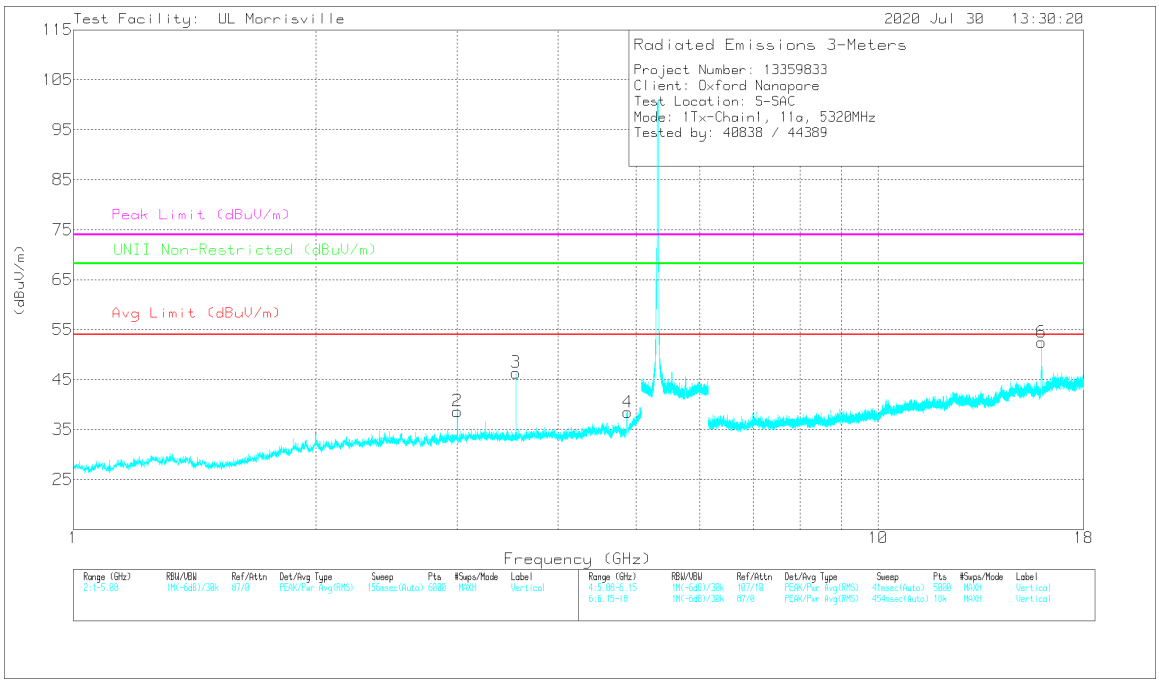
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (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	* ** 3.54666	46.46	PK-U	32.9	-33.2	0	46.16	-	-	74	-27.84	-	-	42	299	H
	* ** 3.54662	31.25	ADV	32.9	-33.2	.62	31.57	54	-22.43	-	-	-	-	42	299	H
3	* ** 3.5467	49.79	PK-U	32.9	-33.2	0	49.49	-	-	74	-24.51	-	-	60	107	V
	* ** 3.54662	34.85	ADV	32.9	-33.2	.62	35.17	54	-18.83	-	-	-	-	60	107	V
4	* ** 4.88243	41.99	PK-U	34	-30.4	0	45.59	-	-	74	-28.41	-	-	347	116	V
	* ** 4.88238	29.73	ADV	34	-30.4	.62	33.95	54	-20.05	-	-	-	-	347	116	V
5	* ** 15.95393	41.84	PK-U	40.4	-24.8	0	57.44	-	-	74	-16.56	-	-	75	101	H
	* ** 15.95428	26.75	ADV	40.4	-24.8	.62	42.97	54	-11.03	-	-	-	-	75	101	H
6	* ** 15.95384	44.43	PK-U	40.4	-24.8	0	60.03	-	-	74	-13.97	-	-	351	101	V
	* ** 15.95423	29.35	ADV	40.4	-24.8	.62	45.57	54	-8.43	-	-	-	-	351	101	V
2	3.00018	46.12	PK-U	32.9	-33.6	0	45.42	-	-	-	-	68.2	-22.78	328	276	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
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ADV - Linear Voltage Average

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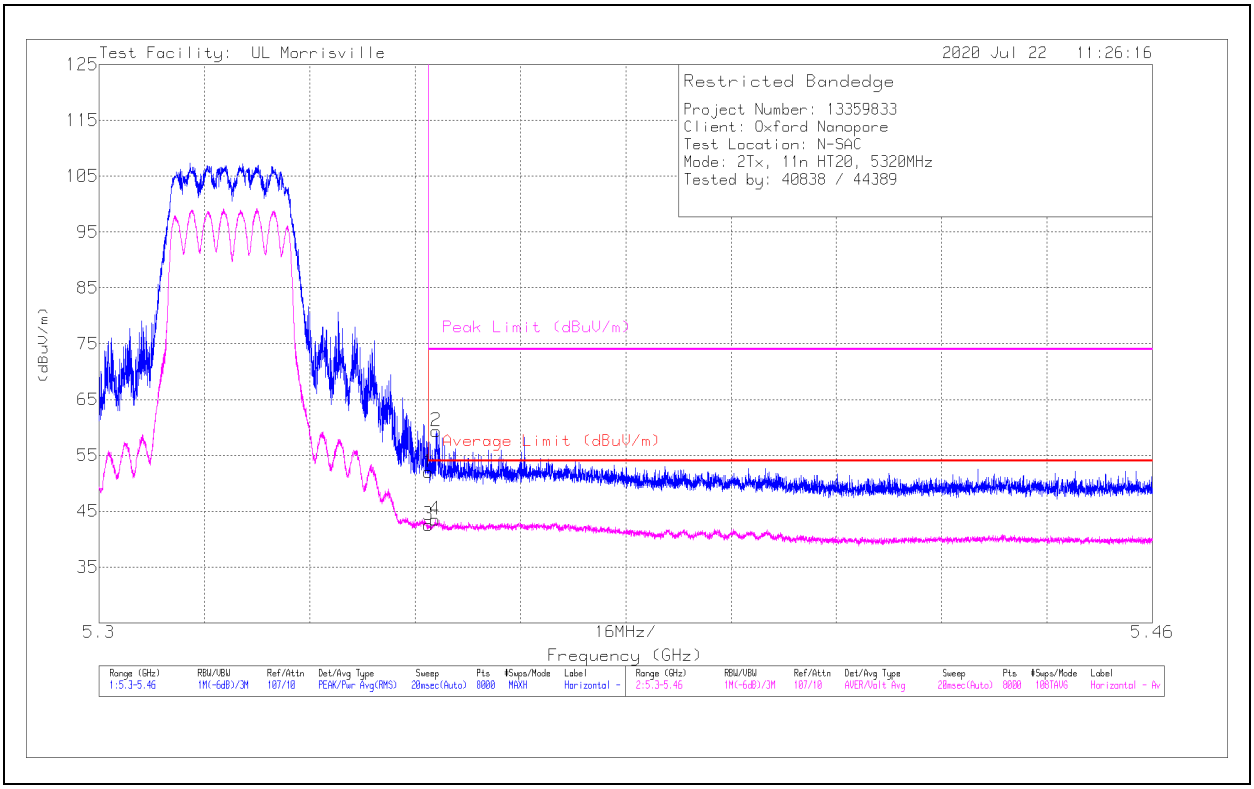
12.1.6. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

2TX ANTENNA 1 + ANTENNA 2 MODE

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	39.72	Pk	34.4	-22.1	0	52.02	-	-	74	-21.98	308	114	H
2	* ** 5.35121	47.08	Pk	34.4	-22.1	0	59.38	-	-	74	-14.62	308	114	H
3	* ** 5.35001	29.51	ADV	34.4	-22.1	.72	42.53	54	-11.47	-	-	308	114	H
4	* ** 5.35107	30.49	ADV	34.4	-22.1	.72	43.51	54	-10.49	-	-	308	114	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
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Pk - Peak detector
ADV - Linear Voltage Average

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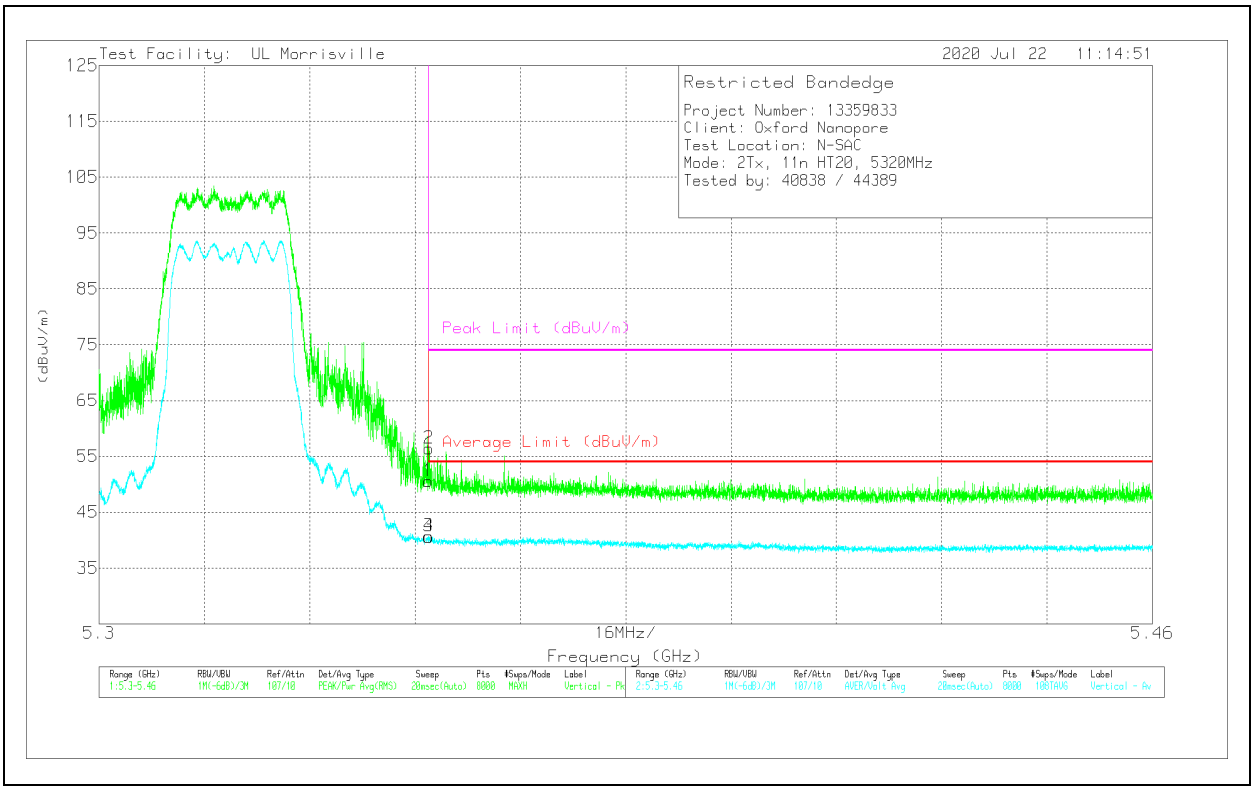
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	38.27	Pk	34.4	-22.1	0	50.57	-	-	74	-23.43	88	290	V
2	* ** 5.35011	44.08	Pk	34.4	-22.1	0	56.38	-	-	74	-17.62	88	290	V
3	* ** 5.35001	27.64	ADV	34.4	-22.1	.72	40.66	54	-13.34	-	-	88	289	V
4	* ** 5.35011	27.62	ADV	34.4	-22.1	.72	40.64	54	-13.36	-	-	88	289	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
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Pk - Peak detector
ADV - Linear Voltage Average

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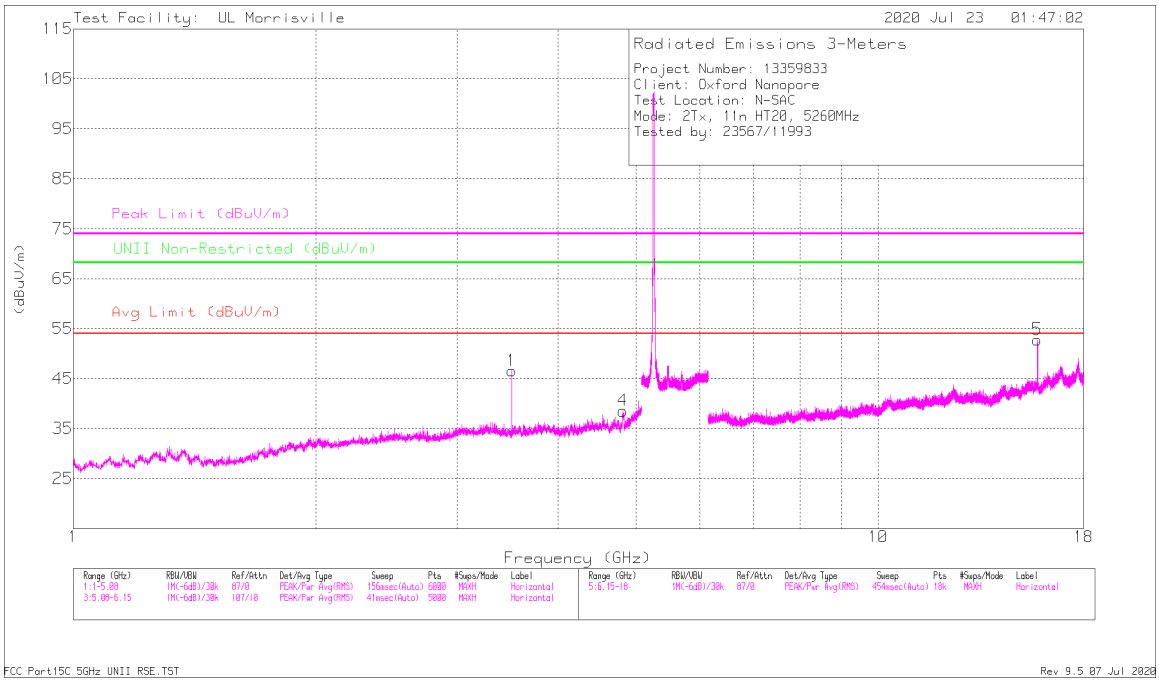
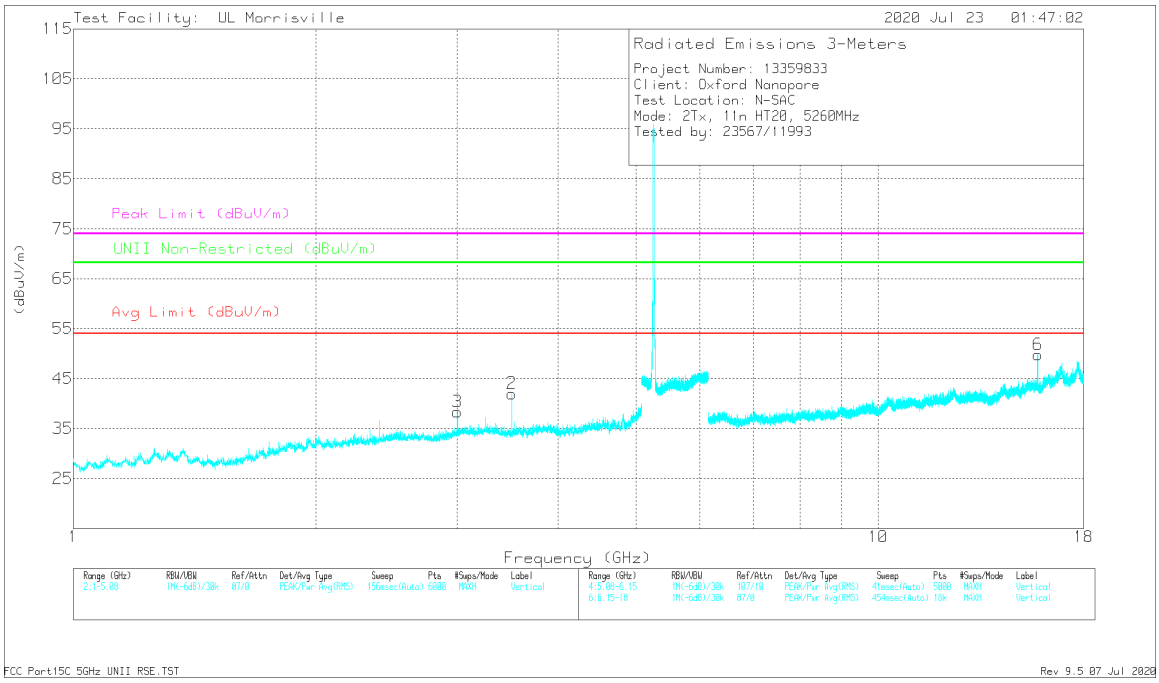
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 3.50655	48.56	PK-U	33	-32.7	0	48.86	-	-	74	-25.14	-	-	0	362	H
	* ** 3.50658	35.37	ADV	33	-32.7	.72	36.39	54	-17.61	-	-	-	-	0	362	H
4	* ** 4.81408	43.87	PK-U	34.1	-30.3	0	47.67	-	-	74	-26.33	-	-	339	337	H
	* ** 4.81453	31.49	ADV	34.1	-30.3	.72	36.01	54	-17.99	-	-	-	-	339	337	H
2	* ** 3.50667	46.94	PK-U	33	-32.7	0	47.24	-	-	74	-26.76	-	-	11	327	V
	* ** 3.50672	31.9	ADV	33	-32.7	.72	32.92	54	-21.08	-	-	-	-	11	327	V
5	* ** 15.77523	48.09	PK-U	40.1	-25.1	0	63.09	-	-	74	-10.91	-	-	354	240	H
	* ** 15.77494	33.17	ADV	40.1	-25.1	.72	48.89	54	-5.11	-	-	-	-	354	240	H
6	* ** 15.79004	44.39	PK-U	40.1	-25.1	0	59.39	-	-	74	-14.61	-	-	309	208	V
	* ** 15.79025	28.41	ADV	40.1	-25.1	.72	44.13	54	-9.87	-	-	-	-	309	208	V
3	3.00028	44.29	PK-U	33	-32.6	0	44.69	-	-	-	-	68.2	-23.51	280	327	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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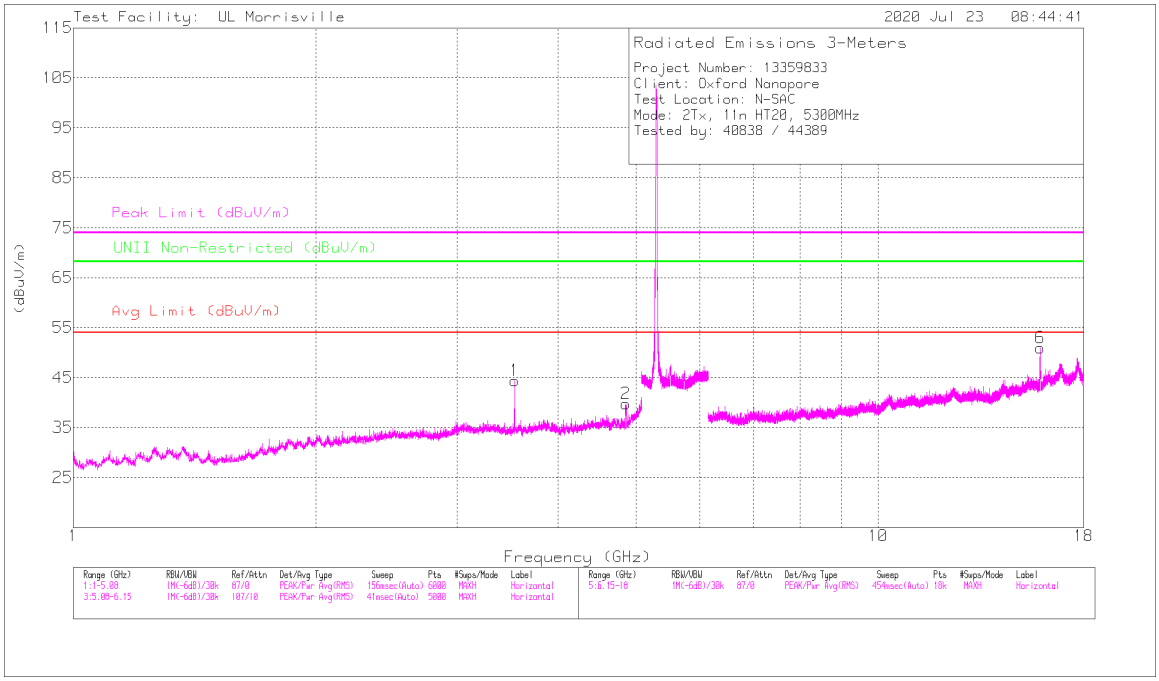
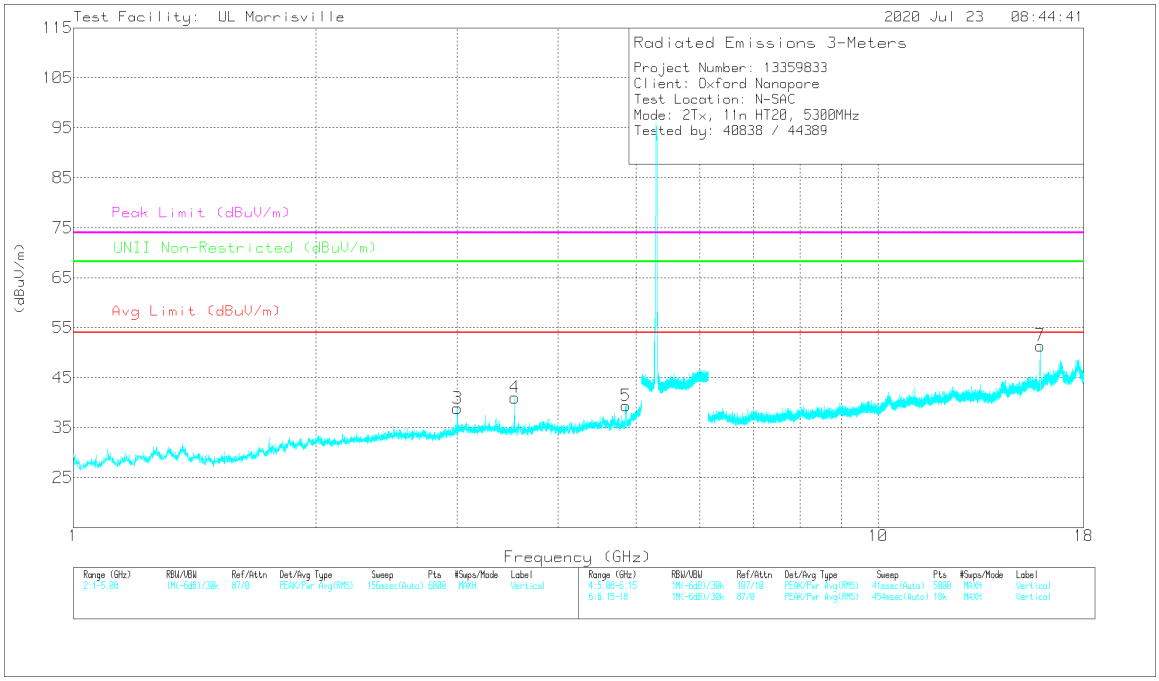
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 3.53333	48.92	PK-U	33	-32.4	0	49.52	-	-	74	-24.48	-	-	350	106	H
	* ** 3.53326	32.5	ADV	33	-32.4	.72	33.82	54	-20.18	-	-	-	-	350	106	H
2	* ** 4.85645	44.5	PK-U	34.1	-31	0	47.6	-	-	74	-26.4	-	-	343	382	H
	* ** 4.85614	32.53	ADV	34.1	-31	.72	36.35	54	-17.65	-	-	-	-	343	382	H
4	* ** 3.53324	46.77	PK-U	33	-32.4	0	47.37	-	-	74	-26.63	-	-	214	373	V
	* ** 3.53322	30.66	ADV	33	-32.4	.72	31.98	54	-22.02	-	-	-	-	214	373	V
5	* ** 4.86147	43.91	PK-U	34.2	-31.2	0	46.91	-	-	74	-27.09	-	-	94	381	V
	* ** 4.86179	31.57	ADV	34.2	-31.2	.72	35.29	54	-18.71	-	-	-	-	94	381	V
6	* ** 15.90579	47.76	PK-U	40.3	-25.4	0	62.66	-	-	74	-11.34	-	-	336	253	H
	* ** 15.90594	32.46	ADV	40.3	-25.4	.72	48.08	54	-5.92	-	-	-	-	336	253	H
7	* ** 15.8971	45.53	PK-U	40.1	-25.4	0	60.23	-	-	74	-13.77	-	-	297	178	V
	* ** 15.89744	30.74	ADV	40.2	-25.4	.72	46.26	54	-7.74	-	-	-	-	297	178	V
3	2.99989	44.81	PK-U	33	-32.6	0	45.21	-	-	-	-	68.2	-22.99	269	373	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
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PK-U - Maximum Peak
ADV - Linear Voltage Average

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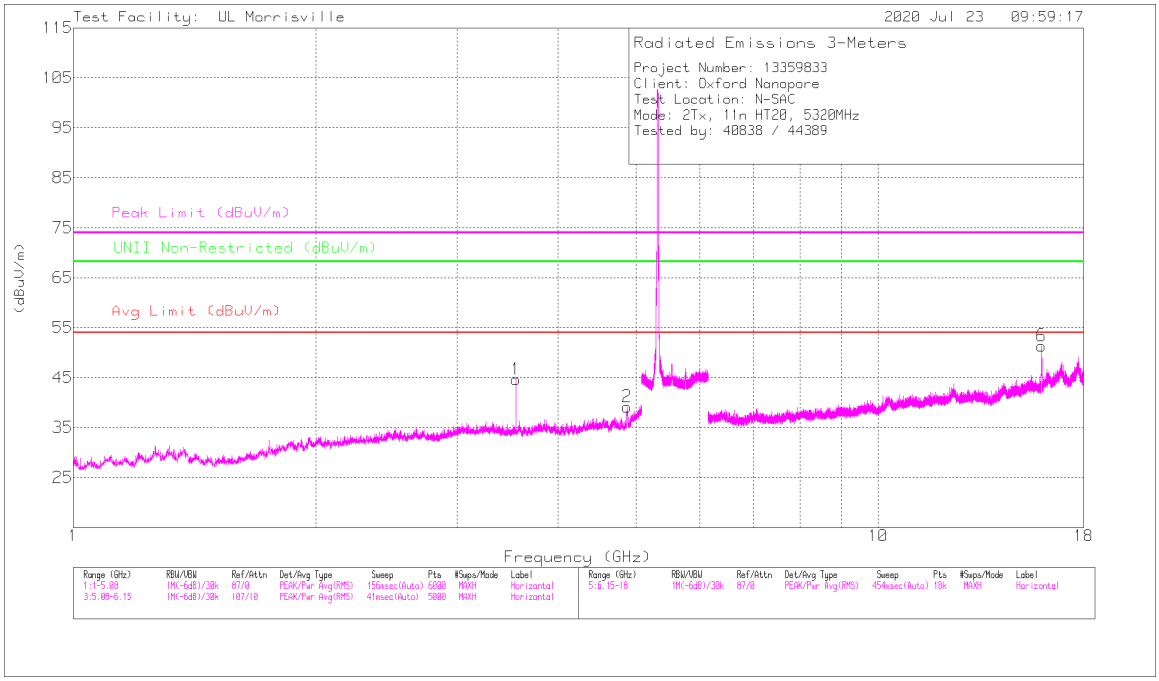
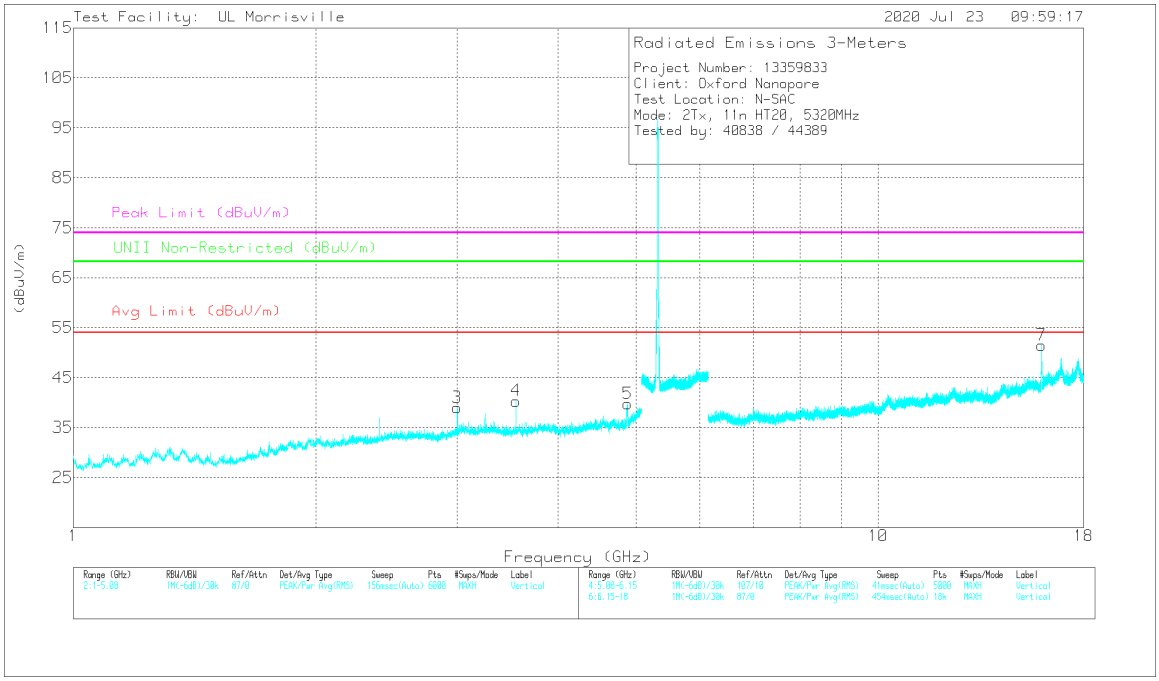
HIGH CHANNEL RESULTS



HORIZONTAL



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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 3.54661	47.59	PK-U	33	-32.2	0	48.39	-	-	74	-25.61	-	-	349	102	H
	* ** 3.54659	32.44	ADV	33	-32.2	.72	33.96	54	-20.04	-	-	-	-	349	102	H
2	* ** 4.87771	45.23	PK-U	34.1	-31.2	0	48.13	-	-	74	-25.87	-	-	339	297	H
	* ** 4.8775	33.29	ADV	34.1	-31.2	.72	36.91	54	-17.09	-	-	-	-	339	297	H
4	* ** 3.54662	45.04	PK-U	33	-32.2	0	45.84	-	-	74	-28.16	-	-	358	292	V
	* ** 3.54663	29.98	ADV	33	-32.2	.72	31.5	54	-22.5	-	-	-	-	358	292	V
5	* ** 4.88471	45.08	PK-U	34	-31.2	0	47.88	-	-	74	-26.12	-	-	235	335	V
	* ** 4.88478	32.86	ADV	34	-31.2	.72	36.38	54	-17.62	-	-	-	-	235	335	V
6	* ** 15.9585	49.29	PK-U	40.3	-26.4	0	63.19	-	-	74	-10.81	-	-	334	223	H
	* ** 15.95839	34.09	ADV	40.3	-26.4	.72	48.71	54	-5.29	-	-	-	-	334	223	H
7	* ** 15.95747	46.94	PK-U	40.3	-26.4	0	60.84	-	-	74	-13.16	-	-	298	203	V
	* ** 15.95752	32.48	ADV	40.3	-26.4	.72	47.1	54	-6.9	-	-	-	-	298	203	V
3	2.99993	45.5	PK-U	33	-32.6	0	45.9	-	-	-	-	68.2	-22.3	267	310	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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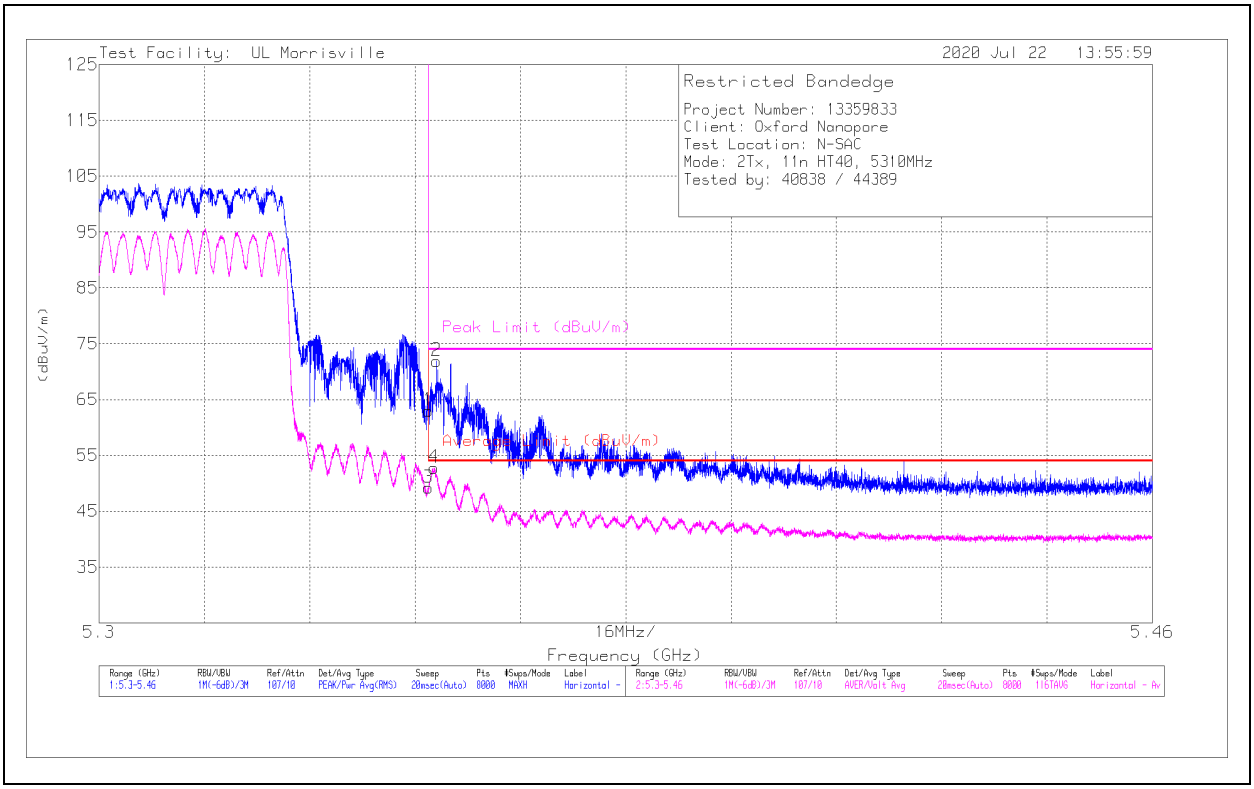
12.1.7. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND

2TX ANTENNA 1 + ANTENNA 2 MODE

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	50.74	Pk	34.4	-22.1	0	63.04	-	-	74	-10.96	297	110	H
2	* ** 5.35123	59.59	Pk	34.4	-22.1	0	71.89	-	-	74	-2.11	297	110	H
3	* ** 5.35001	35.58	ADV	34.4	-22.1	1.32	49.2	54	-4.8	-	-	297	109	H
4	* ** 5.35089	39.17	ADV	34.4	-22.1	1.32	52.79	54	-1.21	-	-	297	109	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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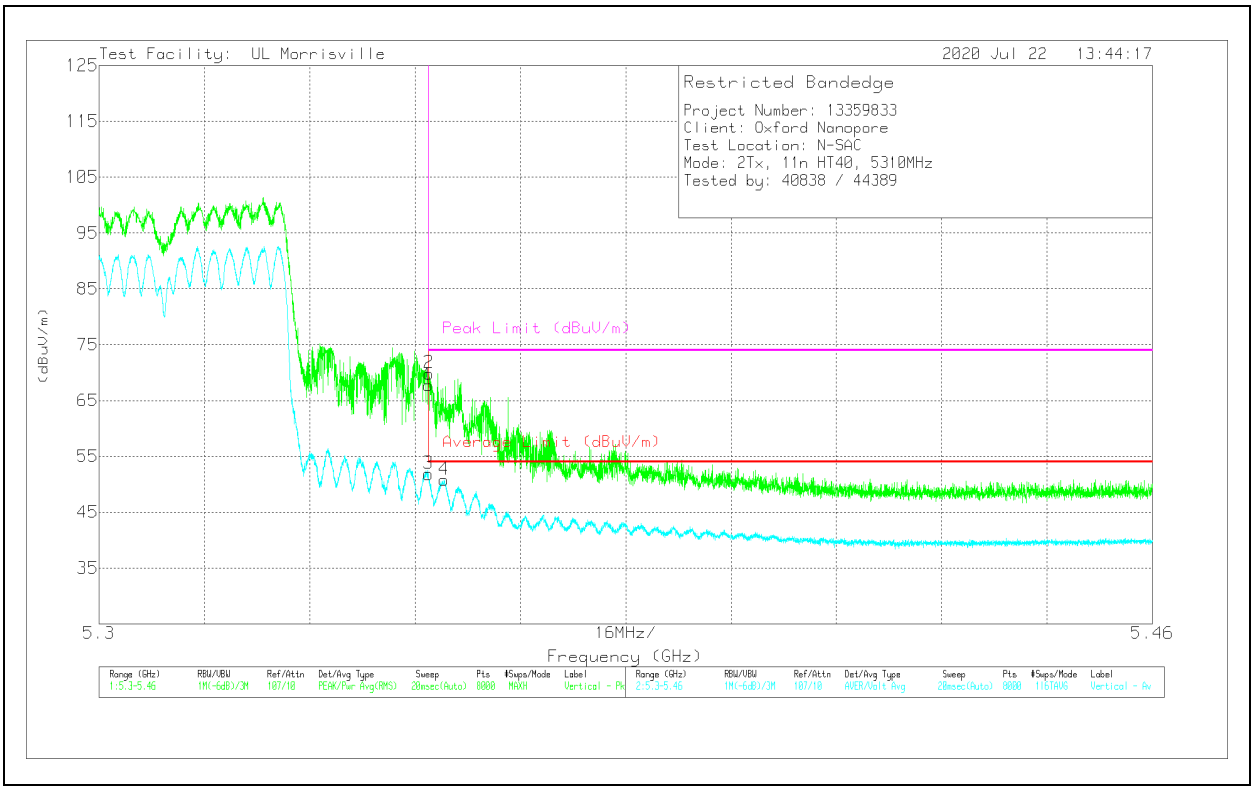
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	55.42	Pk	34.4	-22.1	0	67.72	-	-	74	-6.28	80	374	V
2	* ** 5.35013	57.57	Pk	34.4	-22.1	0	69.87	-	-	74	-4.13	80	374	V
3	* ** 5.35001	38.24	ADV	34.4	-22.1	1.32	51.86	54	-2.14	-	-	80	374	V
4	* ** 5.35239	37.18	ADV	34.4	-22.1	1.32	50.8	54	-3.2	-	-	80	374	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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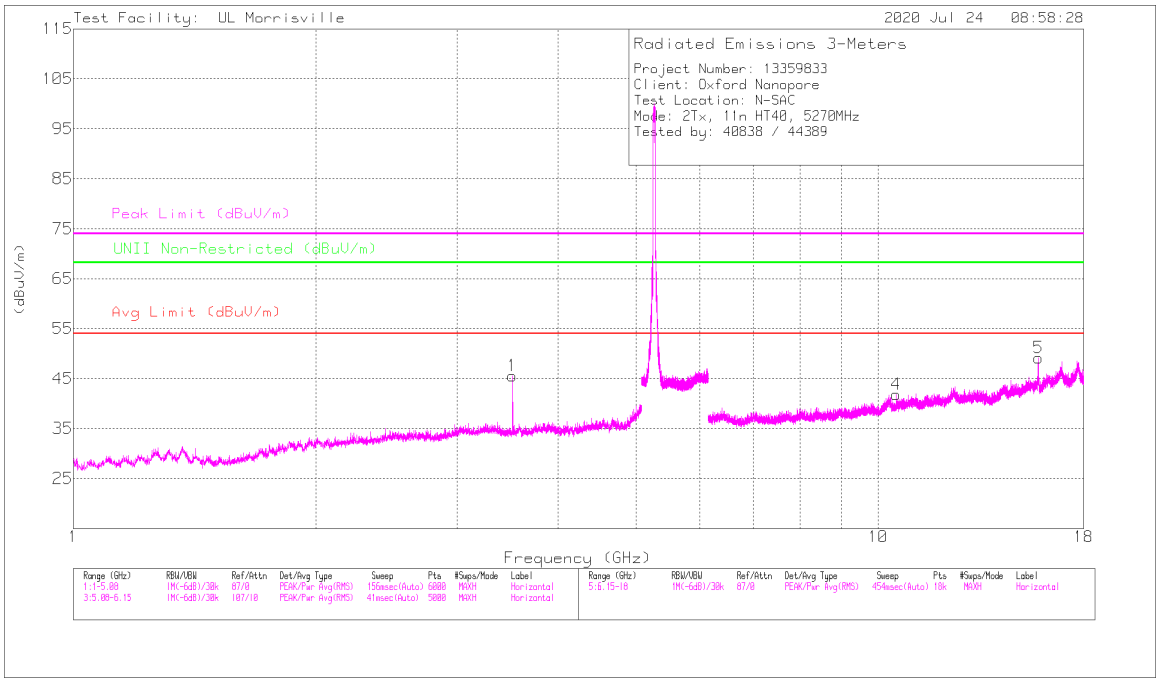
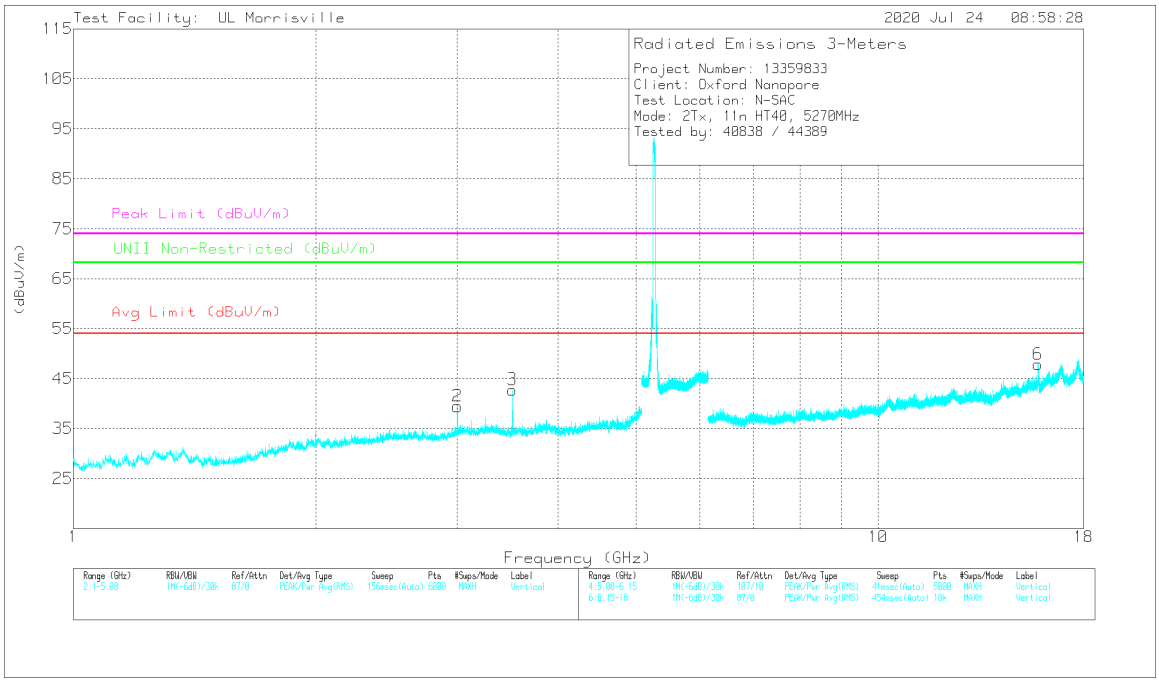
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 3.5133	51.24	PK-U	33	-32.7	0	51.54	-	-	74	-22.46	-	-	348	266	H
	* ** 3.51328	36.16	ADV	33	-32.7	1.32	37.78	54	-16.22	-	-	-	-	348	266	H
3	* ** 3.51337	47.8	PK-U	33	-32.7	0	48.1	-	-	74	-25.9	-	-	18	366	V
	* ** 3.51327	34.3	ADV	33	-32.7	1.32	35.92	54	-18.08	-	-	-	-	18	366	V
5	* ** 15.82006	41.59	PK-U	40.2	-24.9	0	56.89	-	-	74	-17.11	-	-	347	239	H
	* ** 15.81993	27.65	ADV	40.2	-24.9	1.32	44.27	54	-9.73	-	-	-	-	347	239	H
6	* ** 15.80233	44.4	PK-U	40.1	-24.8	0	59.7	-	-	74	-14.3	-	-	302	203	V
	* ** 15.80293	26.97	ADV	40.1	-24.8	1.32	43.59	54	-10.41	-	-	-	-	302	203	V
2	2.99999	44.89	PK-U	33	-32.6	0	45.29	-	-	-	-	68.2	-22.91	267	339	V
4	10.52252	35.62	PK-U	37.6	-26	0	47.22	-	-	-	-	68.2	-20.98	151	215	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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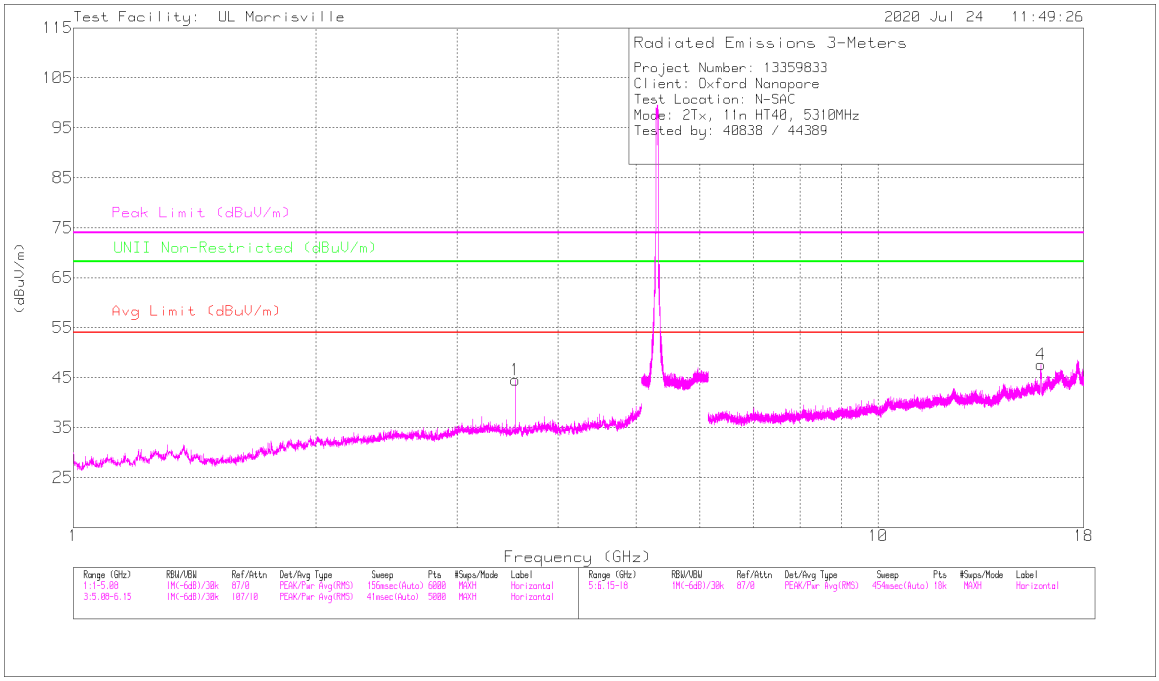
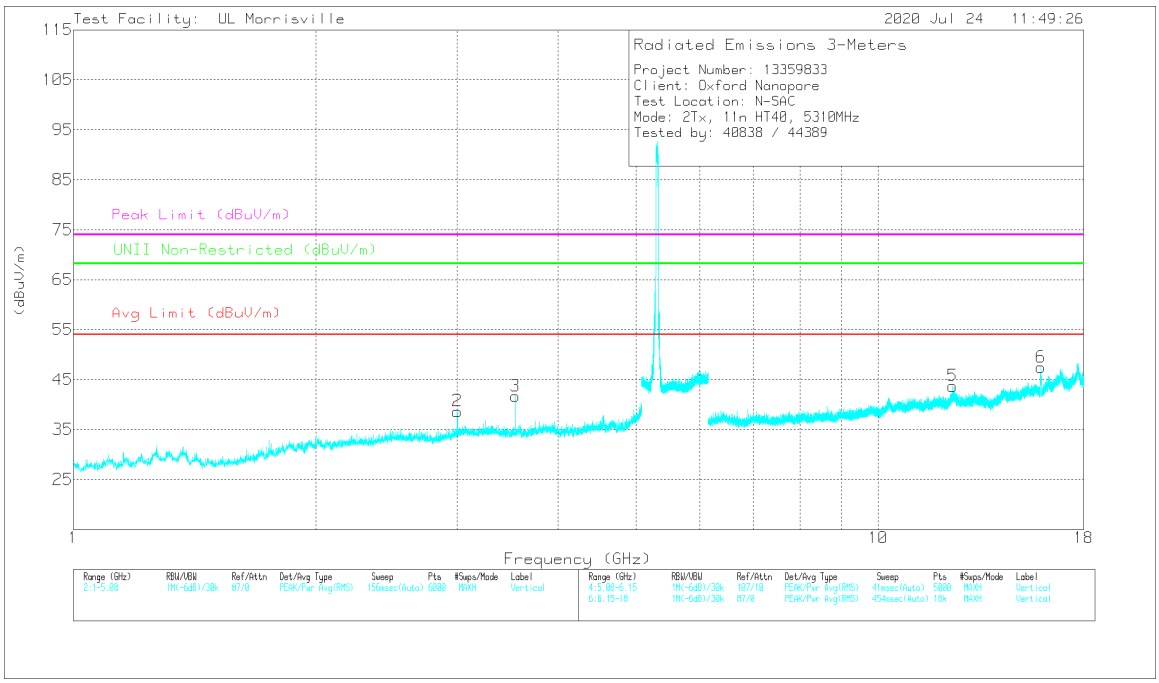
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 3.53999	49.15	PK-U	33.1	-32.3	0	49.95	-	-	74	-24.05	-	-	350	101	H
	* ** 3.53989	35.53	ADV	33.1	-32.3	1.32	37.65	54	-16.35	-	-	-	-	350	101	H
3	* ** 3.54001	45.98	PK-U	33.1	-32.3	0	46.78	-	-	74	-27.22	-	-	225	367	V
	* ** 3.54001	32.36	ADV	33.1	-32.3	1.32	34.48	54	-19.52	-	-	-	-	225	367	V
4	* ** 15.9333	45.63	PK-U	40.2	-26.1	0	59.73	-	-	74	-14.27	-	-	121	316	H
	* ** 15.9331	30.97	ADV	40.2	-26.1	1.32	46.39	54	-7.61	-	-	-	-	121	316	H
5	* ** 12.38303	35.65	PK-U	38.9	-24.7	0	49.85	-	-	74	-24.15	-	-	154	164	V
	* ** 12.38284	22.3	ADV	38.9	-24.7	1.32	37.82	54	-16.18	-	-	-	-	154	164	V
6	* ** 15.92222	45.64	PK-U	40.3	-25.9	0	60.04	-	-	74	-13.96	-	-	302	109	V
	* ** 15.92292	28.35	ADV	40.3	-25.9	1.32	44.07	54	-9.93	-	-	-	-	302	109	V
2	3.0001	45.06	PK-U	33	-32.6	0	45.46	-	-	-	-	68.2	-22.74	268	349	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average

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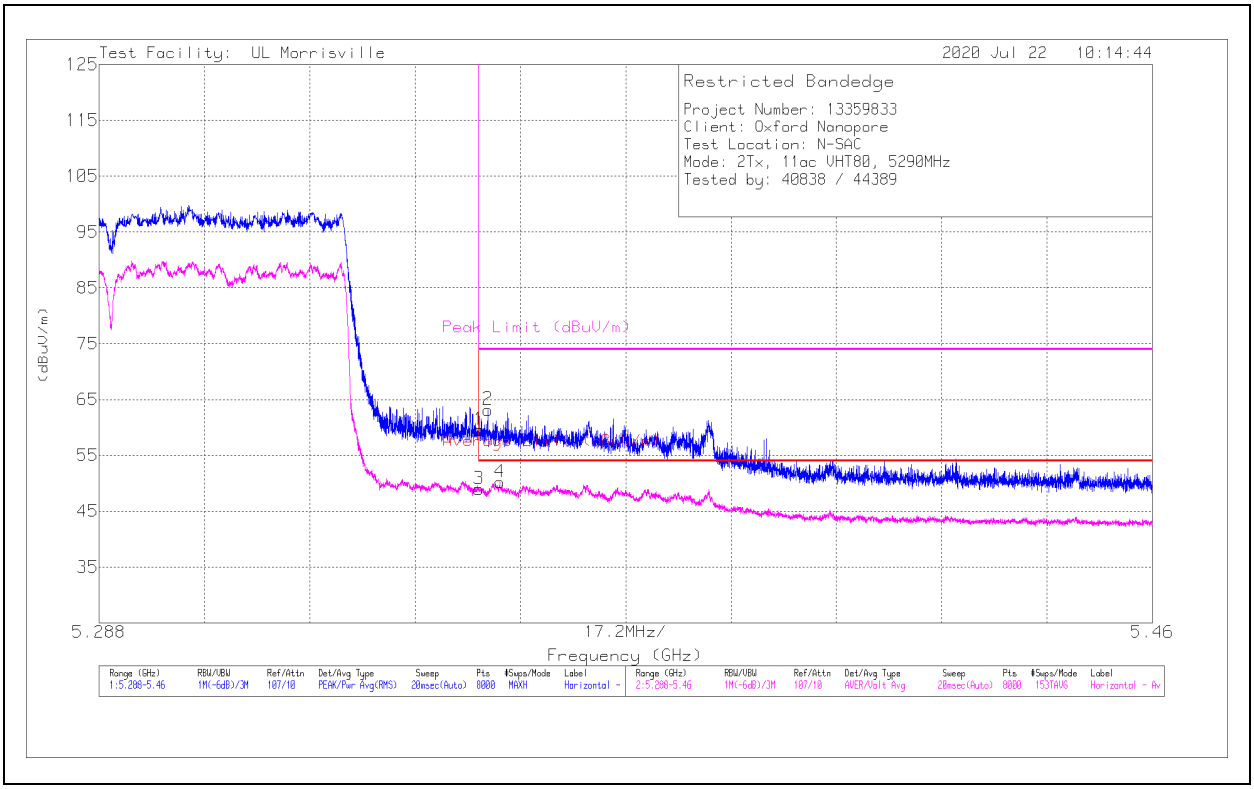
12.1.8. TX ABOVE 1 GHz 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

2TX ANTENNA 1 + ANTENNA 2 MODE

BANDEDGE (MID CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	47.25	Pk	34.4	-22.1	0	59.55	-	-	74	-14.45	309	103	H
2	* ** 5.35148	50.85	Pk	34.4	-22.1	0	63.15	-	-	74	-10.85	309	103	H
3	* ** 5.35001	32.96	ADV	34.4	-22.1	3.71	48.97	54	-5.03	-	-	309	103	H
4	* ** 5.35341	34.16	ADV	34.4	-22.1	3.71	50.17	54	-3.83	-	-	309	103	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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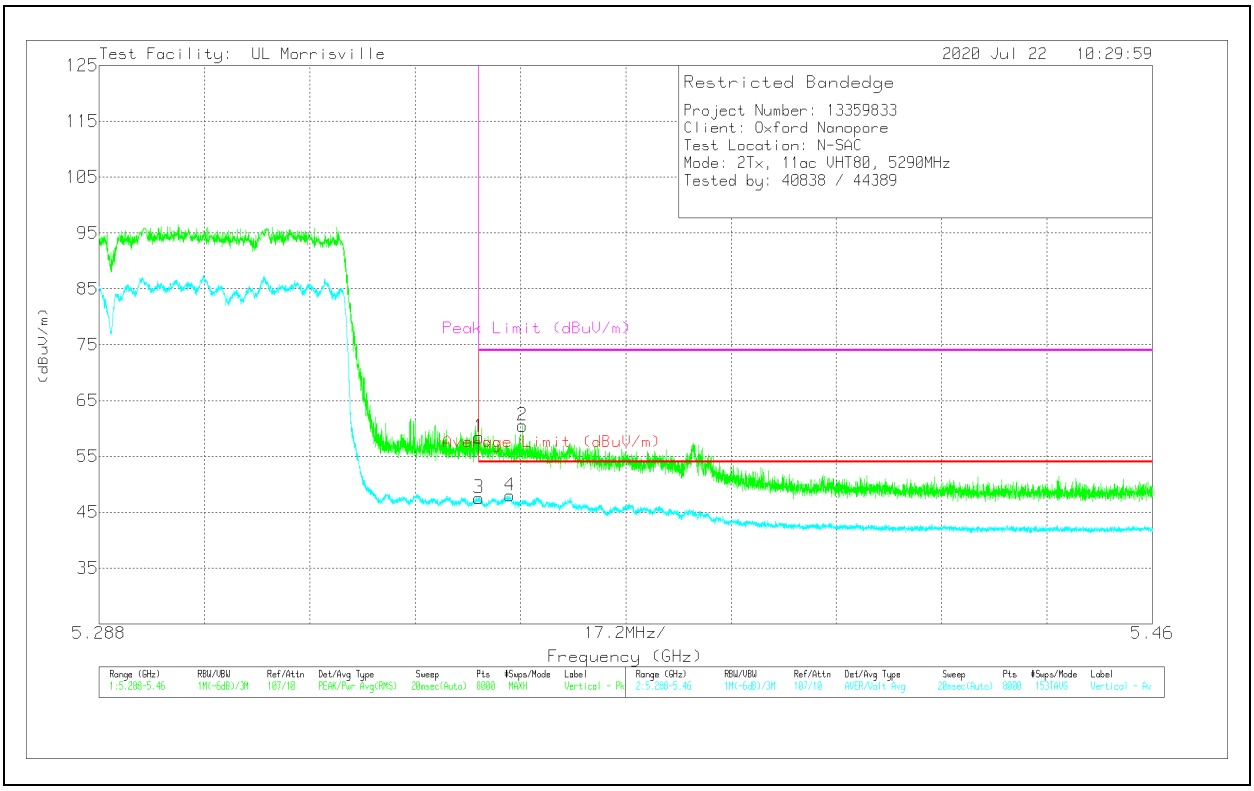
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.35001	46.13	Pk	34.4	-22.1	0	58.43	-	-	74	-15.57	76	316	V
2	* ** 5.35715	48.2	Pk	34.4	-22.1	0	60.5	-	-	74	-13.5	76	316	V
3	* ** 5.35001	31.53	ADV	34.4	-22.1	3.71	47.54	54	-6.46	-	-	76	316	V
4	* ** 5.35509	31.99	ADV	34.4	-22.1	3.71	48	54	-6	-	-	76	316	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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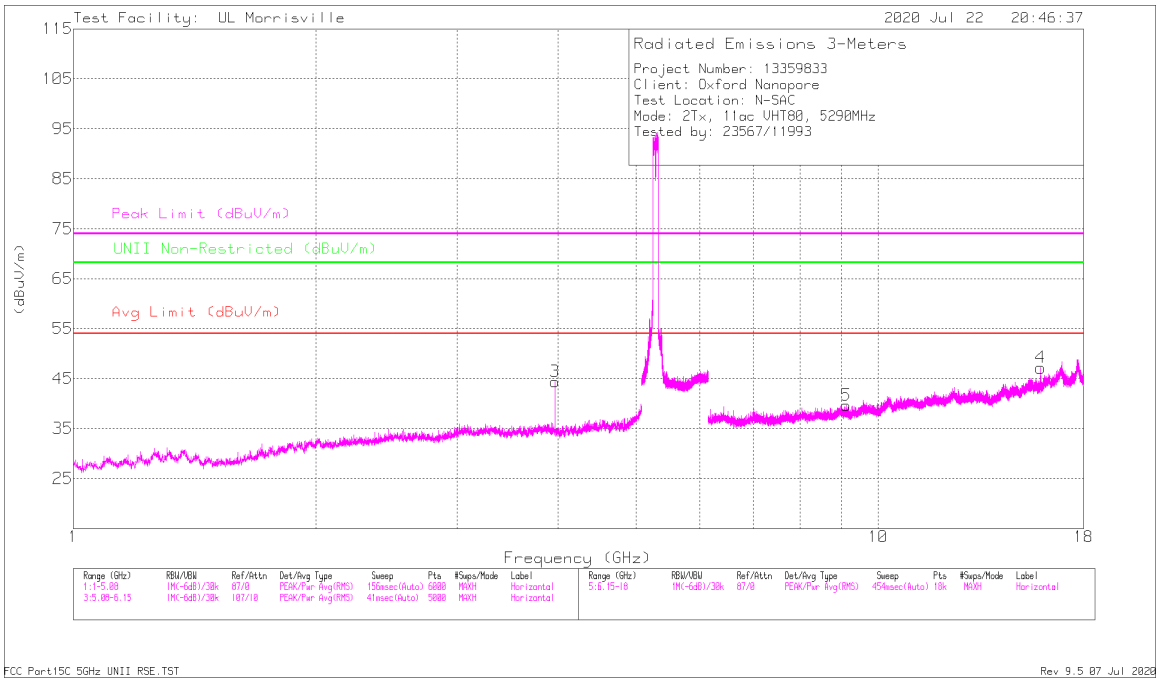
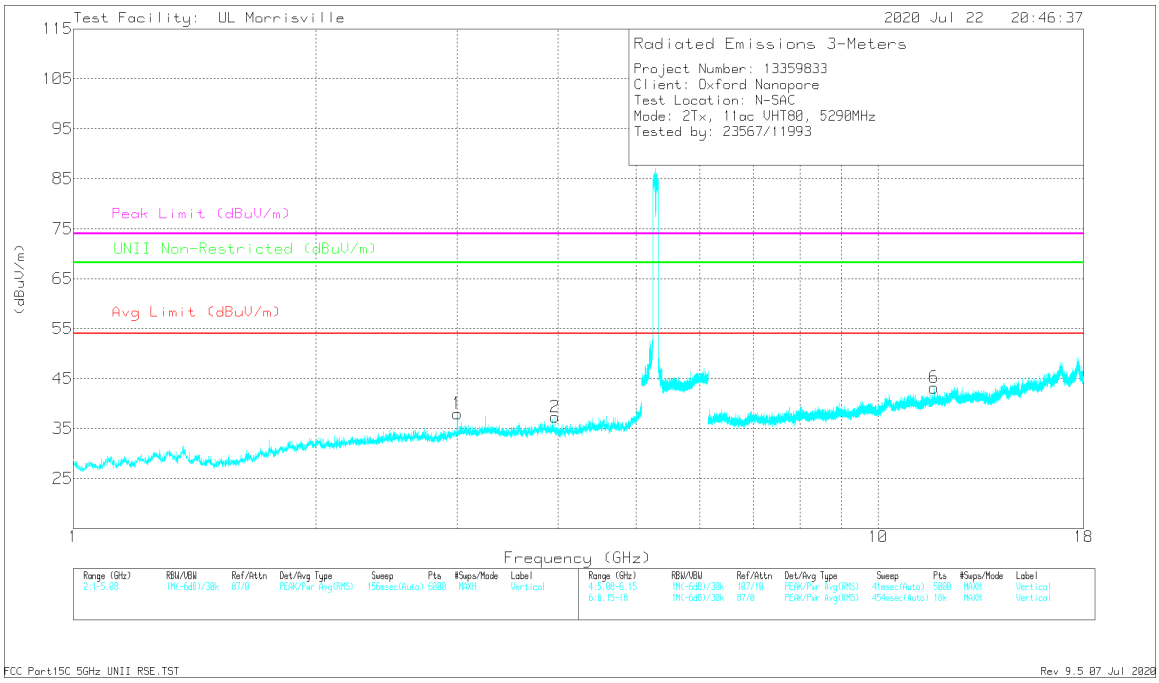
HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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
3	* ** 3.96738	46.53	PK-U	33.6	-31.9	0	48.23	-	-	74	-25.77	-	-	325	101	H
	* ** 3.96743	40.16	ADV	33.6	-31.9	3.71	45.57	54	-8.43	-	-	-	-	325	101	H
2	* ** 3.96732	42.41	PK-U	33.6	-31.9	0	44.11	-	-	74	-29.89	-	-	292	386	V
	* ** 3.96746	31.2	ADV	33.6	-31.9	3.71	36.61	54	-17.39	-	-	-	-	292	386	V
4	* ** 15.91739	39.01	PK-U	40.3	-25.8	0	53.51	-	-	74	-20.49	-	-	349	271	H
	* ** 15.91732	24.54	ADV	40.3	-25.8	3.71	42.75	54	-11.25	-	-	-	-	349	271	H
5	* ** 9.13458	37.34	PK-U	36.5	-27.9	0	45.94	-	-	74	-28.06	-	-	222	274	H
	* ** 9.13325	23.92	ADV	36.5	-28	3.71	36.13	54	-17.87	-	-	-	-	222	274	H
6	* ** 11.73913	34.78	PK-U	38.4	-25.1	0	48.08	-	-	74	-25.92	-	-	219	101	V
	* ** 11.73864	22.07	ADV	38.4	-25.1	3.71	39.08	54	-14.92	-	-	-	-	219	101	V
1	2.99987	44.61	PK-U	33	-32.6	0	45.01	-	-	-	-	68.2	-23.19	278	337	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
PK-U - Maximum Peak
ADV - Linear Voltage Average
Pk - Peak detector

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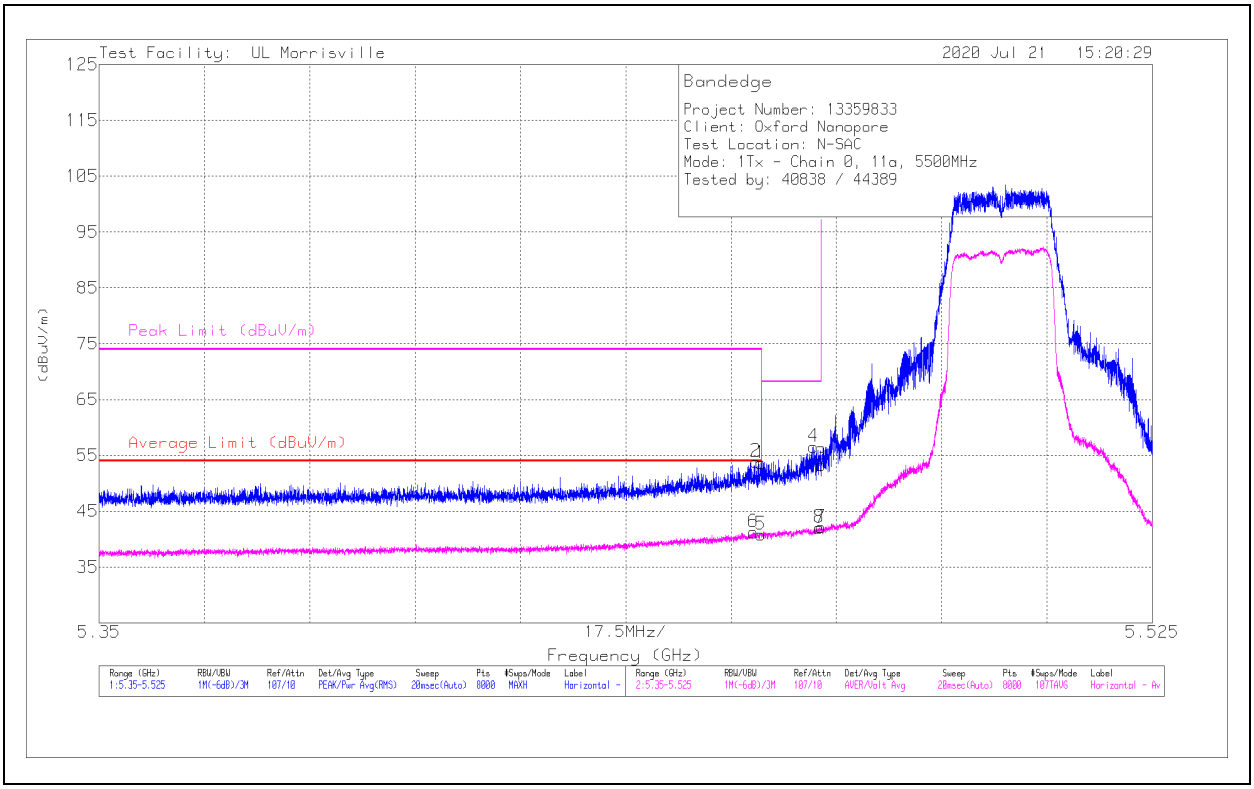
12.1.9. TX ABOVE 1 GHz 802.11a MODE IN THE 5.6 GHz BAND

1TX ANTENNA 1 MODE

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.45998	41.19	Pk	34.4	-22	0	53.59	-	-	74	-20.41	81	361	H
2	* ** 5.45915	41.48	Pk	34.4	-22	0	53.88	-	-	74	-20.12	81	361	H
5	* ** 5.45998	27.81	ADV	34.4	-22	.62	40.83	54	-13.17	-	-	81	361	H
6	* ** 5.45869	28.23	ADV	34.4	-22	.62	41.25	54	-12.75	-	-	81	361	H
4	5.46871	44.15	Pk	34.4	-22	0	56.55	-	-	68.2	-11.65	81	361	H
8	5.46965	29.04	ADV	34.4	-22	.62	42.06	-	-	-	-	81	361	H
3	5.46998	40.81	Pk	34.4	-21.9	0	53.31	-	-	68.2	-14.89	81	361	H
7	5.46998	29.03	ADV	34.4	-21.9	.62	42.15	-	-	-	-	81	361	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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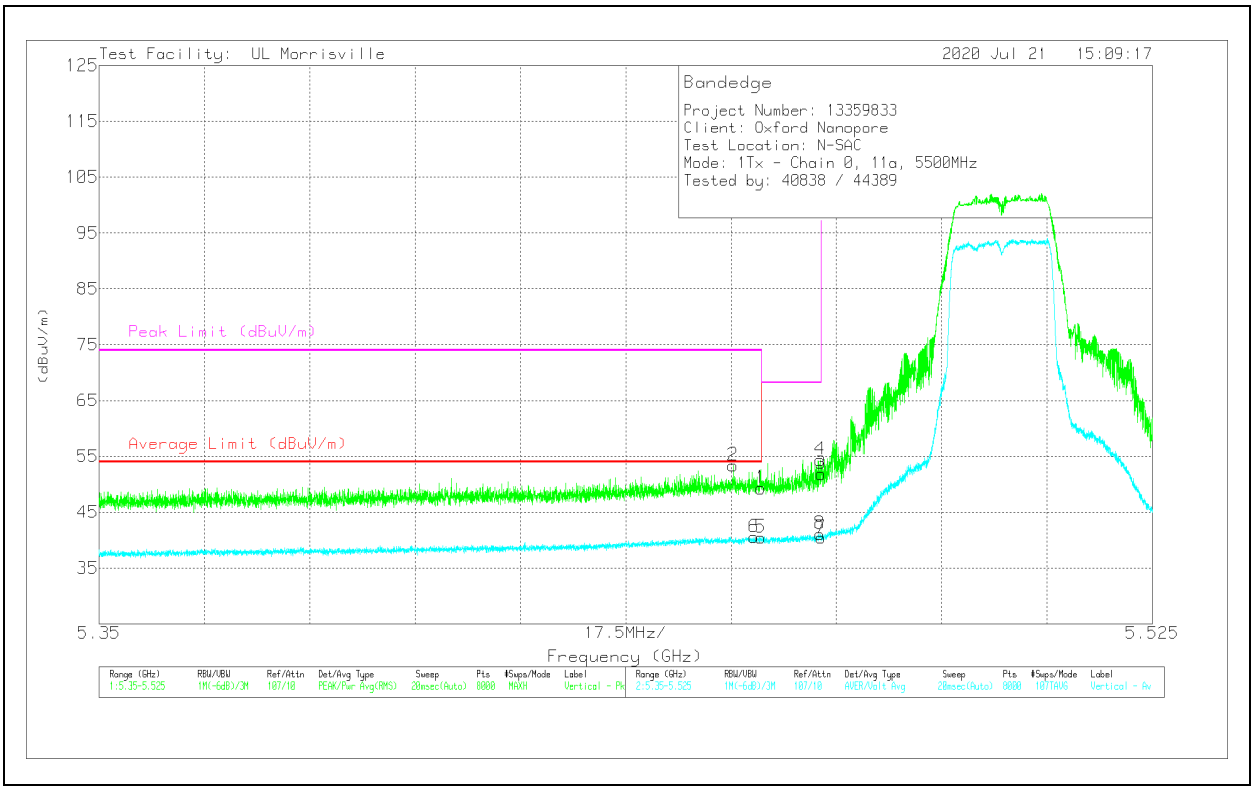
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 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	* ** 5.45998	36.91	Pk	34.4	-22	0	49.31	-	-	74	-24.69	13	324	V
2	* ** 5.45532	40.97	Pk	34.4	-22	0	53.37	-	-	74	-20.63	13	324	V
5	* ** 5.45998	27.44	ADV	34.4	-22	.62	40.46	54	-13.54	-	-	13	324	V
6	* ** 5.45878	27.55	ADV	34.4	-22	.62	40.57	54	-13.43	-	-	13	324	V
8	5.46978	28.08	ADV	34.4	-22	.62	41.1	-	-	-	-	13	324	V
4	5.4698	42	Pk	34.4	-22	0	54.4	-	-	68.2	-13.8	13	324	V
3	5.46998	39.37	Pk	34.4	-21.9	0	51.87	-	-	68.2	-16.33	13	324	V
7	5.46998	27.32	ADV	34.4	-21.9	.62	40.44	-	-	-	-	13	324	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
** - indicates frequency in Taiwan NCC LP0002 Restricted Band
Pk - Peak detector
ADV - Linear Voltage Average

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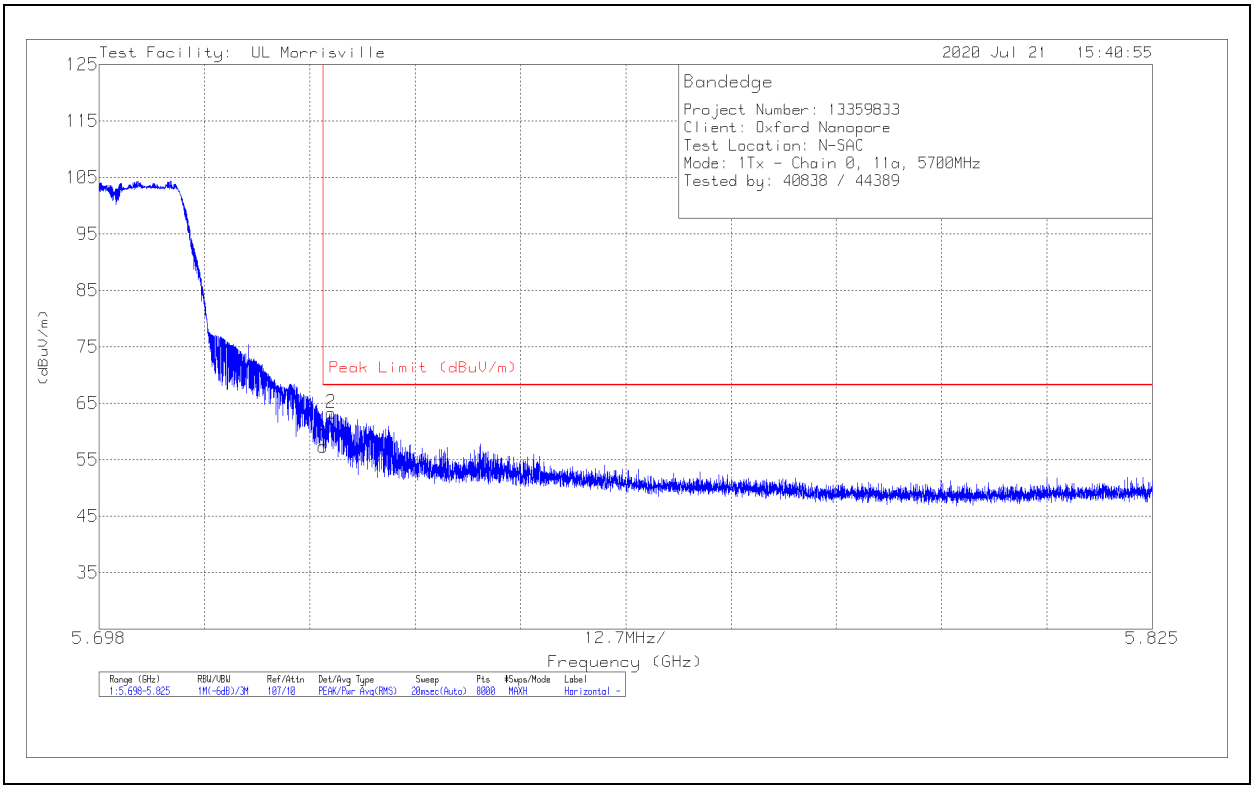
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.72501	44.54	Pk	34.6	-21.8	57.34	68.2	-10.86	124	352	H
2	5.72599	50.5	Pk	34.6	-21.8	63.3	68.2	-4.9	124	352	H

Pk - Peak detector

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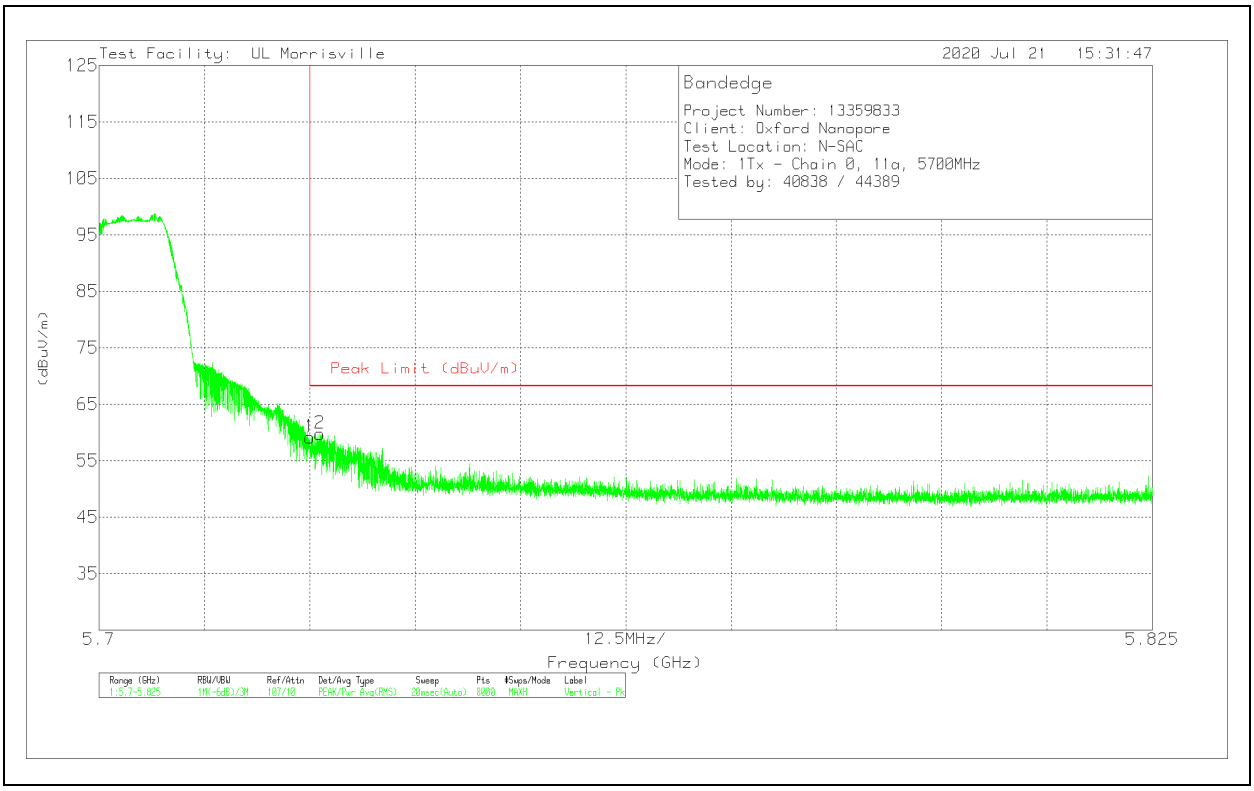
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 dB(/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	46.35	Pk	34.6	-21.8	59.15	68.2	-9.05	181	356	V
2	5.72622	46.96	Pk	34.6	-21.8	59.76	68.2	-8.44	181	356	V

Pk - Peak detector

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