



CERTIFICATION TEST REPORT

Report Number. : R12922855-E3

Applicant : Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399
USA

Model : 1867

FCC ID : C3K1867

IC : 3048A-1867

EUT Description : Portable Computing Device

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 2
ISED RSS-GEN ISSUE 5

Date Of Issue:
2019-09-12

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	--	Initial Issue	
2	2019-09-12	Added AC power adaptor to support equipment. Revised test date range on p.4. Added model similarity explanation to Section 4.	Brian T. Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6399
USA

EUT DESCRIPTION: Portable Computing Device

MODEL: 1867

SERIAL NUMBER: See section 6.4

DATE TESTED: 2019-07-18 to 2019-07-30

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5	Complies

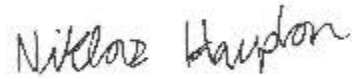
UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. government.

Approved & Released For
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Prepared By:



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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02, RSS-GEN Issue 5, and RSS-247 Issue 2.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Drive, Research Triangle Park, North Carolina, USA and 2800 Perimeter Park Dr. Suite B, Morrisville, North Carolina, 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. Suite B
ISED Site Code: 2180C	
☐ Chamber A	☒ Chamber North
☐ Chamber C	☒ Chamber South

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.

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0

4. SCOPE OF REPORT

This test report covers the radiated emissions and AC power line conducted emissions data for model 1867 for 2.4 802.11b, 802.11g, 802.11 n HT20, and 802.11n HT40. Antenna port conducted emissions data for 1867 is leveraged from model 1868 (FCC ID: C3K1868, IC: 3048A-1868) in UL report number R12935938-E3. For model 1867, radiated emissions and AC power line conducted emissions can be found in this report (UL report number R12922855-E3). Radiated spurious emissions 1-18 GHz for 802.11n HT20 and 802.11 nHT40 is covered by using the 802.11ax HE20 and 802.11ax HE40 radiated spurious emissions 1-18 GHz from model 1867, UL report number R12922855-E4 .

Models 1867 and 1868 are electrically and RF equivalent as they use the same motherboard, radio module and on-board RF components. Both models share a common WiFi and BT power table. The radio-related firmware and driver versions are the same for the two models. The peak antenna gains are in the antenna gain section of the report. Antenna port conducted emissions measurements are done on model 1868 (FCC ID: C3K1868, IC: 3048A-1868) and the data is leveraged for model 1867 (FCC ID: C3K1867, IC: 3048A-1867). Highest antenna gain across the two models in each band has been considered while doing the conducted emissions measurements. Separate radiated & SAR measurements are done on each model.

5. CALIBRATION AND UNCERTAINTY

5.1. MEASURING INSTRUMENT CALIBRATION

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

5.2. 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)
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

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.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Unwanted Emissions, conducted	2.50 dB
All emissions, radiated	4.88 dB
Temperature	2.26°C
Humidity	6.79%
DC Supply voltages	1.70%
Time	3.39%

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

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Portable Computing Device that contains 802.11 a/ac/ax/b/g/n 20/40/80/160MHz 2x2 dual band and BT/BLE radios.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted peak output power as follows:

2.4GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2Tx			
2412 - 2472	802.11b CDD	24.33	271.02
2412 - 2472	802.11g CDD	25.93	391.74
2412 - 2472	802.11n HT20 SDM	25.59	362.24
2422 - 2462	802.11n HT40 SDM	25.51	355.63

SISO and MIMO per chain power are set to the same level.

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Range (GHz)	Antenna Type	Peak Gain (dBi) Antenna 1 (Right)	Peak Gain (dBi) Antenna 2 (Left)
Model 1867			
2.4 to 2.48	PIFA	0.7	2.6
5.15 to 5.25		4.9	4.4
5.25 to 5.35		6.1	5.0
5.47 to 5.72		7.2	5.5
5.725 to 5.85		9.4	5.6
Model 1868			
2.4 to 2.48	PIFA	0.4	1.0
5.15 to 5.25		3.6	2.2
5.25 to 5.35		5.2	3.5
5.47 to 5.72		6.4	4.7
5.725 to 5.85		7.8	4.5

The 2.4 WLAN radio utilizes antennas 1 and 2.

6.4. SOFTWARE AND FIRMWARE

EUT	Serial Number	Radio Test Tool Version	OS Version	BT Driver Version	WiFi Driver Version	EUT's Power Supply (s/n)
R-557-1867-FCC-RADIATED-08	006438792757	11.1916.0-09531	MTEOS 1.652.0	21.0.19157.20088	99.0.43.8	0D130P028D596
R-557-1867-FCC-RADIATED-09	006439692757	11.1916.0-09531	MTEOS 1.652.0	21.0.19157.20088	99.0.43.8	0D130P01H1596

6.5. 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.

The EUT has one intended orientations, X; therefore, all final radiated testing was performed with the EUT in X orientation.

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0 NSS2
802.11n HT40mode: MCS0 NSS2

All radios that can transmit simultaneously have been evaluated for radiated for all possible combinations of transmission and found to be in compliance.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
USB Hub	J5 Create	JCA374	AY2A1904000477 / AY6A1903004261	N/A
Earbuds	Sony	MDR-EX14AP	Non-serialized	N/A
USB Flash Drive	Kingston	DataTraveler G4	Non-serialized	N/A
AC Power Adaptor	Microsoft	1706	0D130P01H1596	N/A

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Mains	1	12-pin	Mains	<3	None
2	USB-A	1	USB-A	USB	<3	None
3	USB-C	1	USB-C	USB	<3	None
4	Aux	1	Aux	Aux	<3	None

TEST SETUP

The test utility software was located on the EUT during the tests and was used to exercised the radios.

SETUP DIAGRAMS

Please refer to R12922855-EP1 for setup diagrams

7. MEASUREMENT METHOD

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

Radiated emissions restricted frequency bands: ANSI C63.10 Subclause -11.12.1, 6.10.5

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

Radiated Emissions Requirements: ANSI C63.10-2013 Section 6.3-6.6

8. TEST AND MEASUREMENT EQUIPMENT

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

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

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
AT0072	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2019-04-22	2020-04-22
	18-40 GHz				
AT0076	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2018-11-08	2019-11-08
	Gain-Loss Chains				
S-SAC03	Gain-loss string: 1-18GHz	Various	Various	2019-03-13	2020-03-13
S-SAC04	Gain-loss string: 18-40GHz	Various	Various	2018-09-30	2019-09-30
	Receiver & Software				
SA0025	Spectrum Analyzer	Agilent	N9030A	2019-02-28	2020-02-28
SA0027 (18-40GHz RSE)	Spectrum Analyzer	Agilent	N9030A	2019-05-15	2020-05-15
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Additional Equipment used				
s/n 181474409	Environmental Meter	Fisher Scientific	15-077-963	2018-07-27	2020-07-27

NOTES:

1. For equipment listed above that was calibrated during the testing period, please note the equipment was used for testing after calibration.
2. For equipment listed above that has a calibration due date during the testing period, the testing was completed before the equipment expiration date.

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

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	0.009-30MHz	(Loop Ant.)			
AT0059	Active Loop Antenna	ETS-Lindgren	6502	2018-07-20	2019-07-31
	30-1000 MHz				
AT0073	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2018-08-06	2019-08-31
	1-18 GHz				
AT0067	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2019-03-22	2020-03-22
	Gain-Loss Chains				
N-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2019-05-02	2020-05-02
N-SAC02	Gain-loss string: 25-1000MHz	Various	Various	2019-05-02	2020-05-02
N-SAC03	Gain-loss string: 1-18GHz	Various	Various	2019-03-15	2020-03-15
	Receiver & Software				
SA0026	Spectrum Analyzer	Agilent	N9030A	2019-03-19	2020-03-19
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Additional Equipment used				
s/n 181474341	Environmental Meter	Fisher Scientific	15-077-963	2018-07-27	2020-07-27

NOTES:

1. For equipment listed above that was calibrated during the testing period, please note the equipment was used for testing after calibration.
2. For equipment listed above that has a calibration due date during the testing period, the testing was completed before the equipment expiration date.

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	2019-05-29	2020-05-29
s/n 161016511	Environmental Meter	Fisher Scientific	14-650-118	2018-09-04	2020-09-04
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2018-08-21	2019-08-21
75141 (PRE0101521)	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2018-08-22	2019-08-22
TL001	Transient Limiter, 0.009-30MHz	Com-Power	LIT-930A	2019-05-29	2020-05-29
PS215	AC Power Source	Elgar	CW2501M (s/n 1523A02397)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA

NOTES:

1. For equipment listed above that was calibrated during the testing period, please note the equipment was used for testing after calibration.
2. For equipment listed above that has a calibration due date during the testing period, the testing was completed before the equipment expiration date.

9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for 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 120 kHz for peak and/or 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. For average measurements above 1GHz, the resolution bandwidth and video bandwidth are set as described in ANSI C63.10:2013 for the applicable measurement. The particular averaging method used for this test program was RMS.

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).

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

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.

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

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

Note - This data is from model 1868 and is included to assist the Radiated Emissions data.

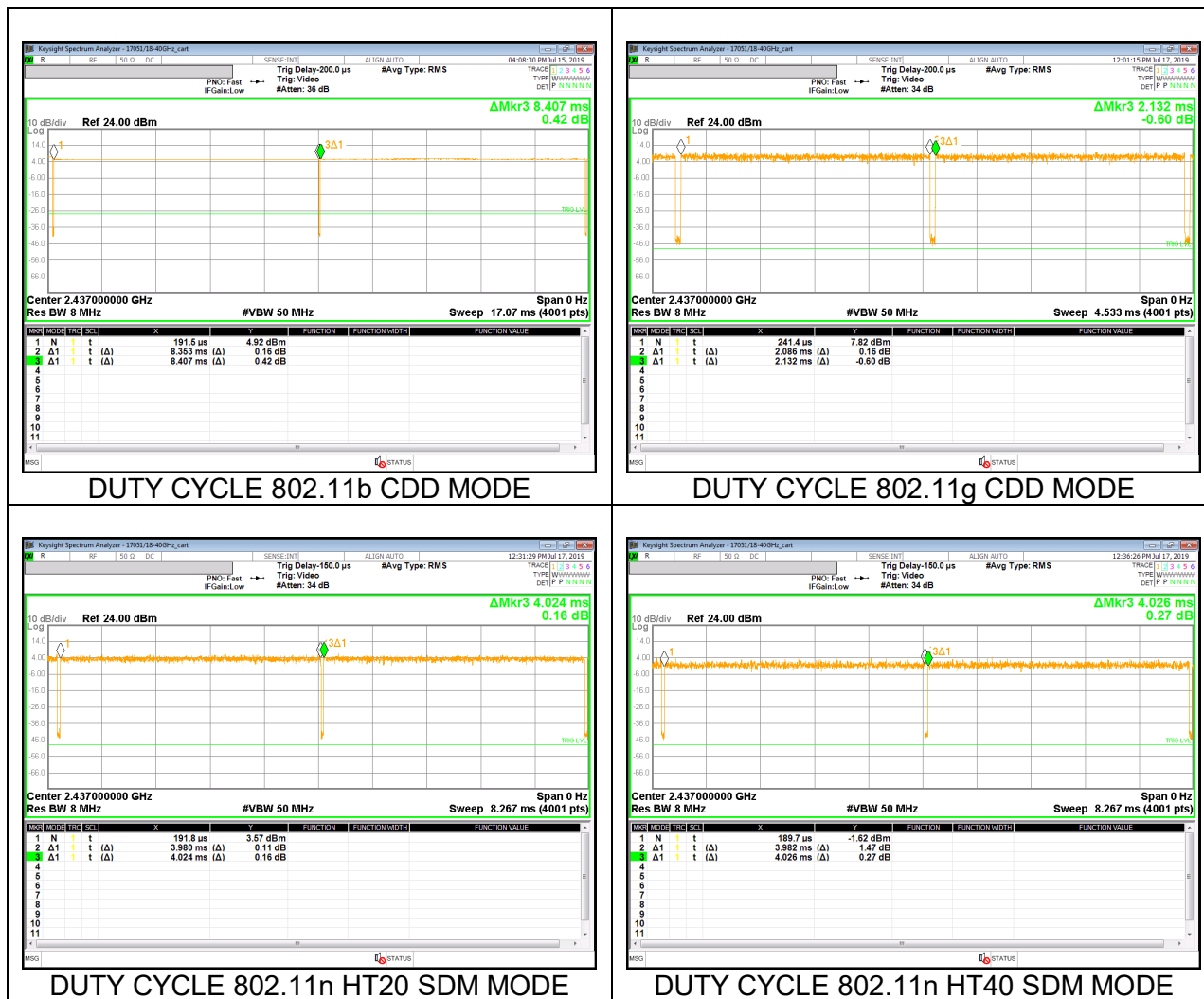
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.11b CDD	8.353	8.407	0.994	99.36%	0.00	0.010
802.11g CDD	2.086	2.132	0.978	97.84%	0.09	0.479
802.11n HT20 SDM	3.980	4.024	0.989	98.91%	0.00	0.010
802.11n HT40 SDM	3.982	4.026	0.989	98.91%	0.00	0.010

DUTY CYCLE PLOTS



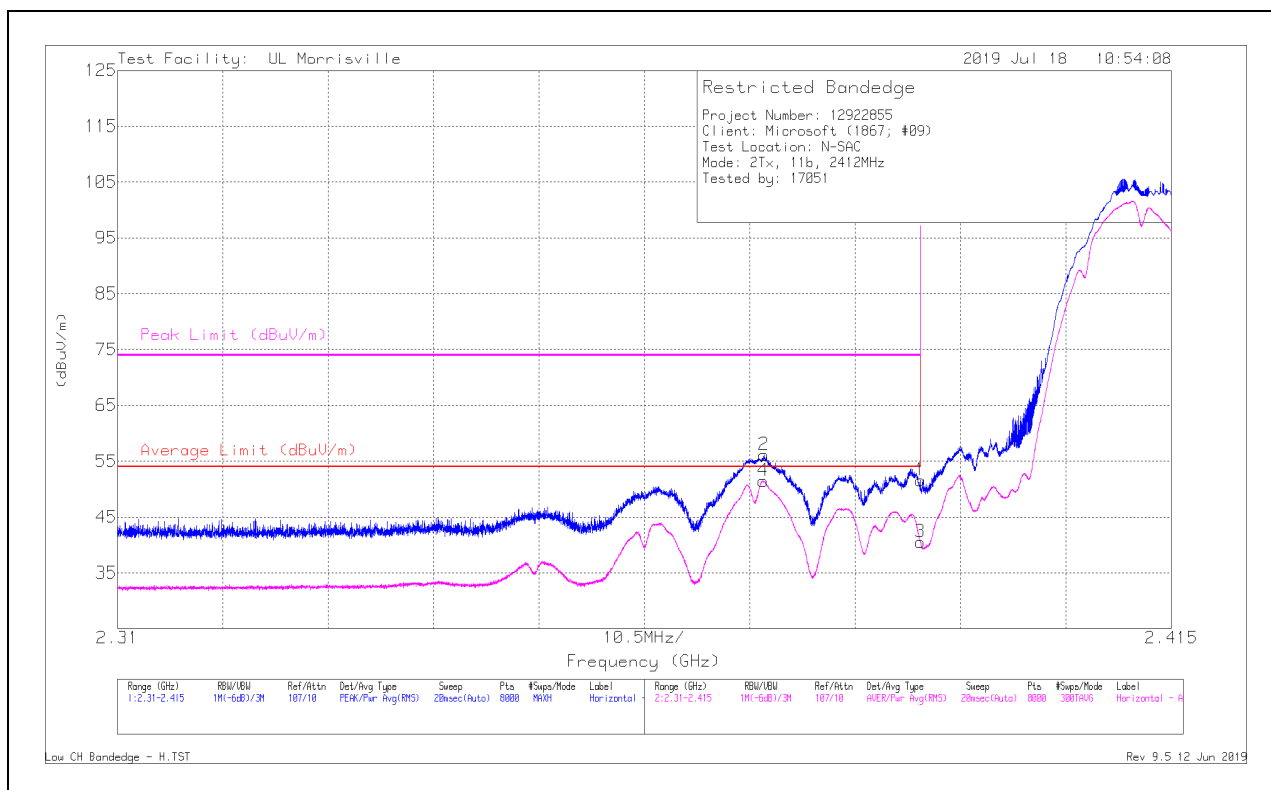
9.2. TRANSMITTER ABOVE 1 GHz

9.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

2TX Antenna 1 + Antenna 2 CDD MODE

BANDEDGE (LOW CHANNEL, CH 1)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.39	43.94	Pk	32	-24.4	51.54	-	-	74	-22.46	277	355	H
2	* ** 2.3744	48.64	Pk	31.9	-24.4	56.14	-	-	74	-17.86	277	355	H
3	* ** 2.39	32.88	RMS	32	-24.4	40.48	54	-13.52	-	-	277	355	H
4	* ** 2.37434	43.97	RMS	31.9	-24.4	51.47	54	-2.53	-	-	277	355	H

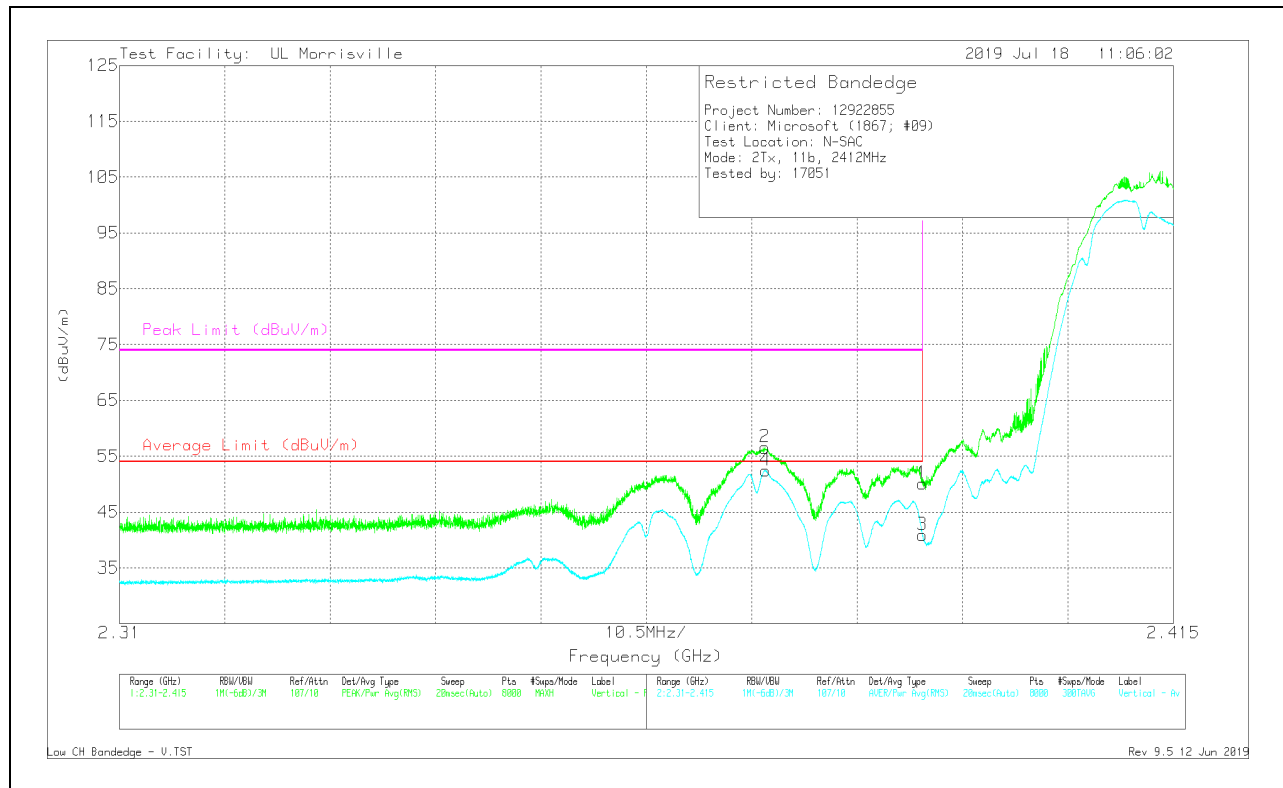
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.39	42.5	Pk	32	-24.4	50.1	-	-	74	-23.9	183	143	V
2	* ** 2.3743	49.06	Pk	31.9	-24.4	56.56	-	-	74	-17.44	183	143	V
3	* ** 2.39	33.25	RMS	32	-24.4	40.85	54	-13.15	-	-	183	143	V
4	* ** 2.37438	44.97	RMS	31.9	-24.4	52.47	54	-1.53	-	-	183	143	V

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

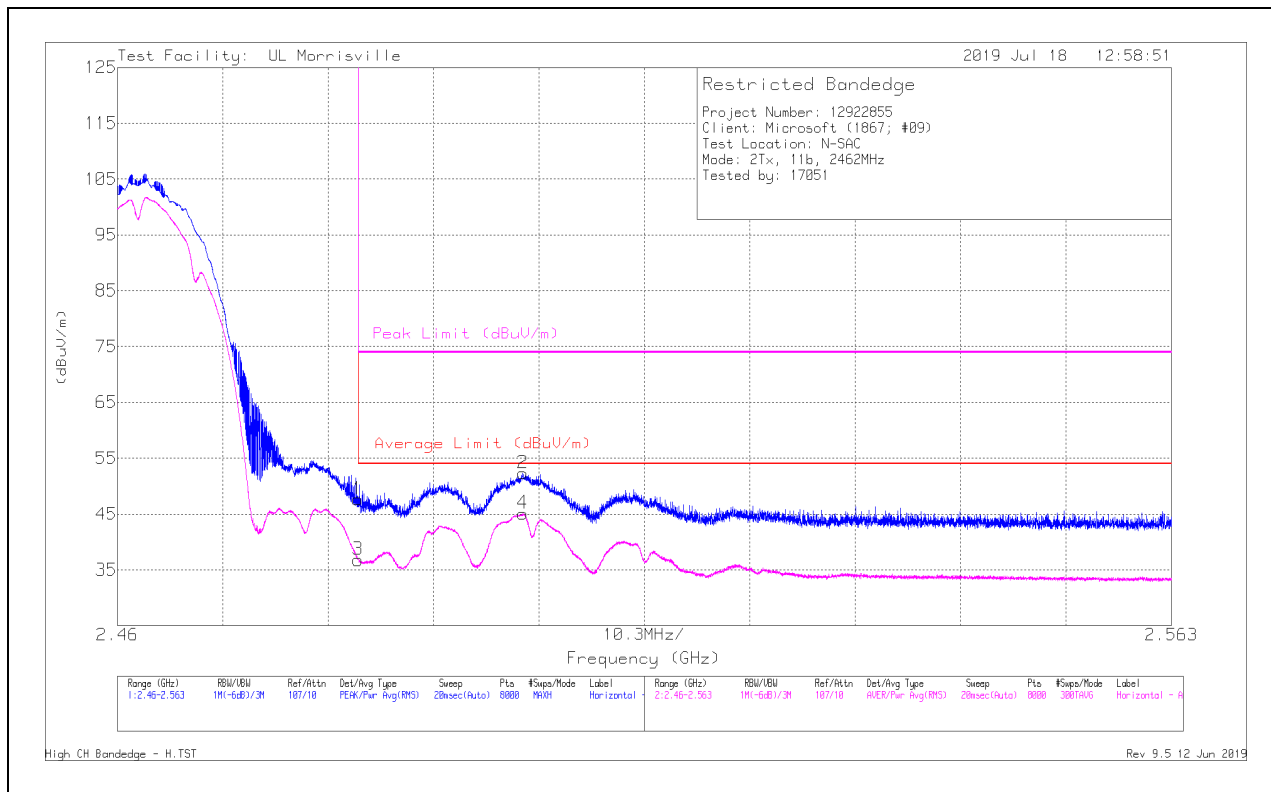
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	39.55	Pk	32.4	-24.3	47.65	-	-	74	-26.35	103	353	H
2	* ** 2.49962	44.09	Pk	32.5	-24.3	52.29	-	-	74	-21.71	103	353	H
3	* ** 2.4835	28.68	RMS	32.4	-24.3	36.78	54	-17.22	-	-	103	353	H
4	* ** 2.49962	36.9	RMS	32.5	-24.3	45.1	54	-8.9	-	-	103	353	H

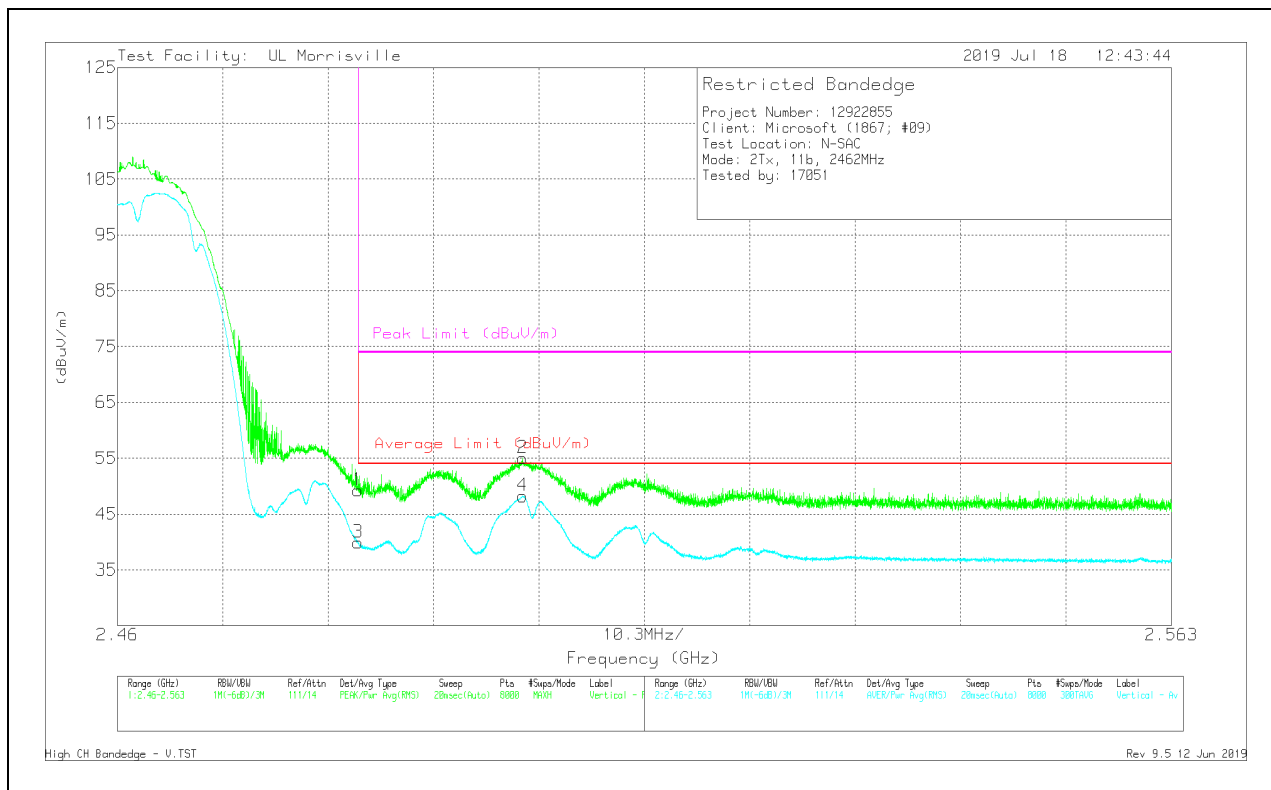
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	41.14	Pk	32.4	-24.3	49.24	-	-	74	-24.76	118	152	V
2	* ** 2.49961	46.82	Pk	32.5	-24.3	55.02	-	-	74	-18.98	118	152	V
3	* ** 2.4835	31.76	RMS	32.4	-24.3	39.86	54	-14.14	-	-	118	152	V
4	* ** 2.49957	40.01	RMS	32.5	-24.3	48.21	54	-5.79	-	-	118	152	V

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

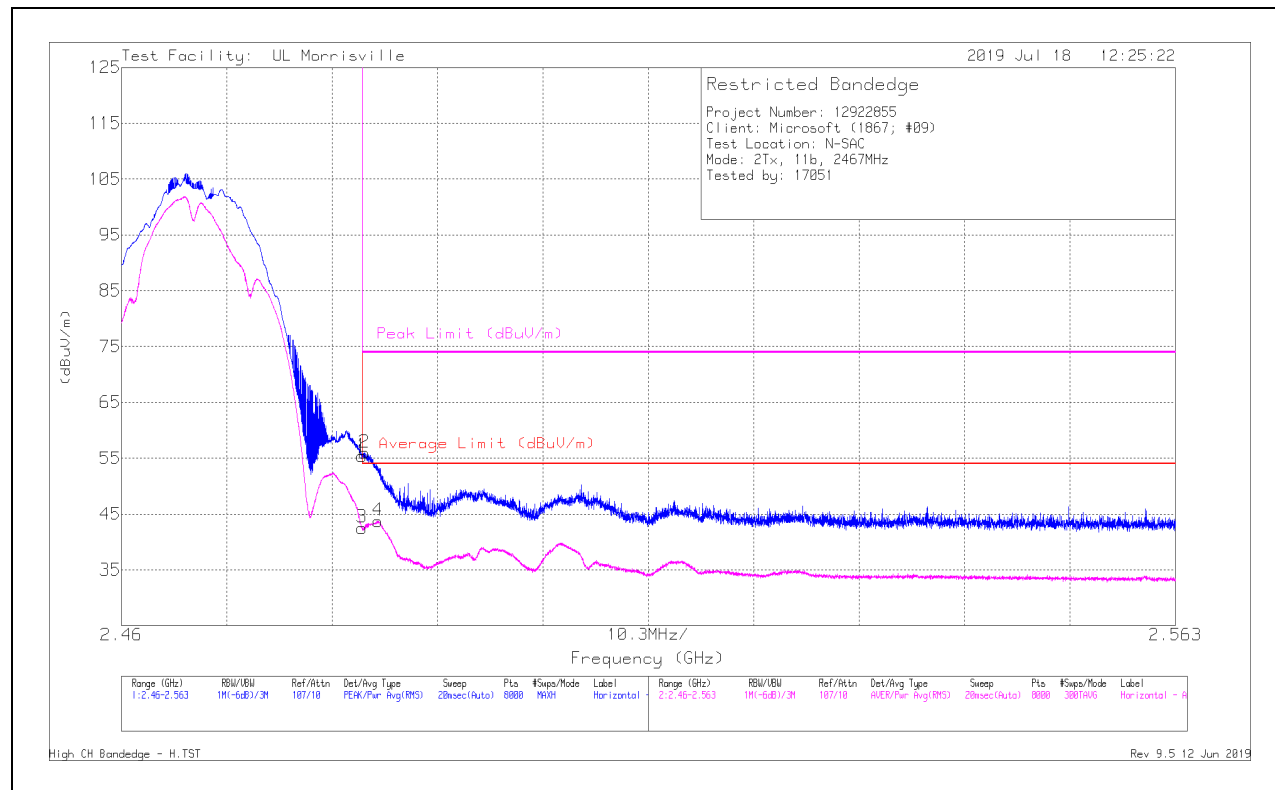
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 12)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	47.28	Pk	32.4	-24.3	55.38	-	-	74	-18.62	191	352	H
2	* ** 2.48375	47.88	Pk	32.4	-24.3	55.98	-	-	74	-18.02	191	352	H
3	* ** 2.4835	34.44	RMS	32.4	-24.3	42.54	54	-11.46	-	-	191	352	H
4	* ** 2.48507	35.67	RMS	32.4	-24.3	43.77	54	-10.23	-	-	191	352	H

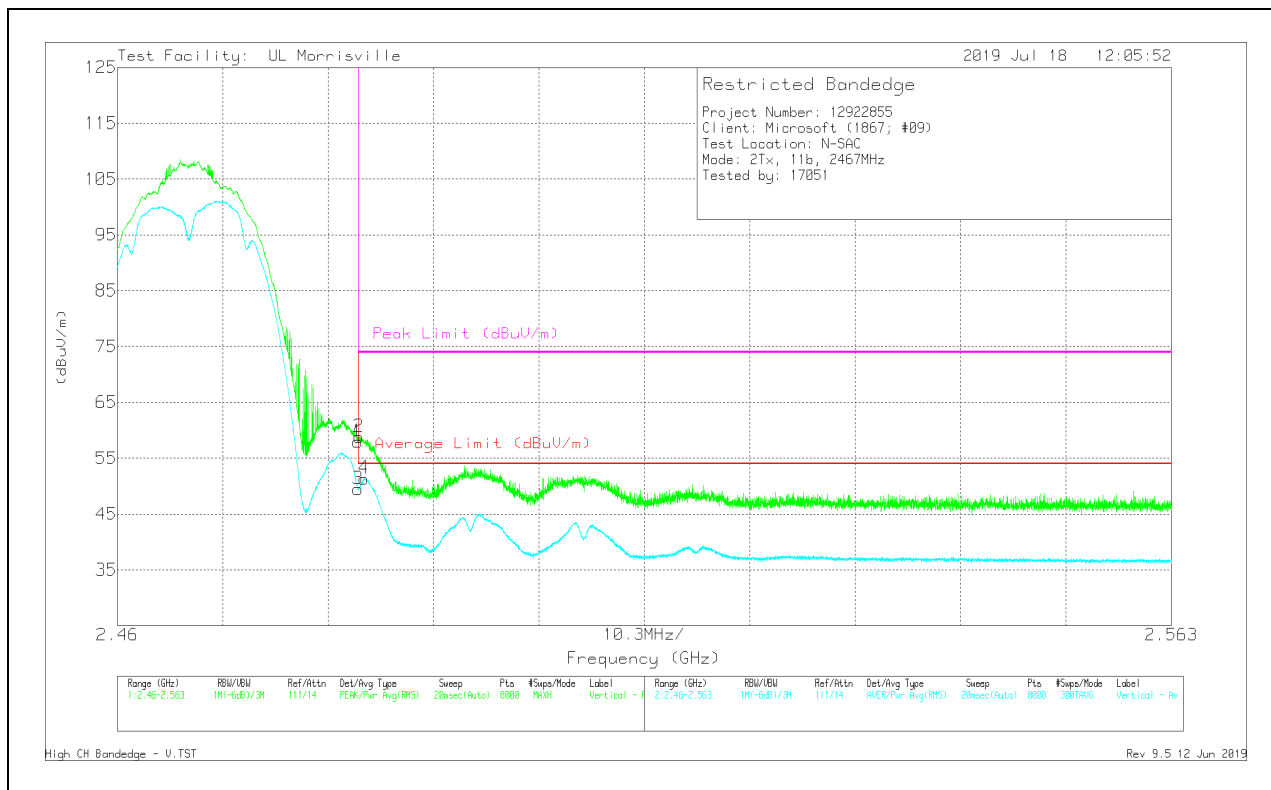
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	49.84	Pk	32.4	-24.3	57.94	-	-	74	-16.06	172	196	V
3	* ** 2.4835	41.41	RMS	32.4	-24.3	49.51	54	-4.49	-	-	172	196	V
2	* ** 2.48359	50.72	Pk	32.4	-24.3	58.82	-	-	74	-15.18	172	196	V
4	* ** 2.48411	43.27	RMS	32.4	-24.3	51.37	54	-2.63	-	-	172	196	V

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

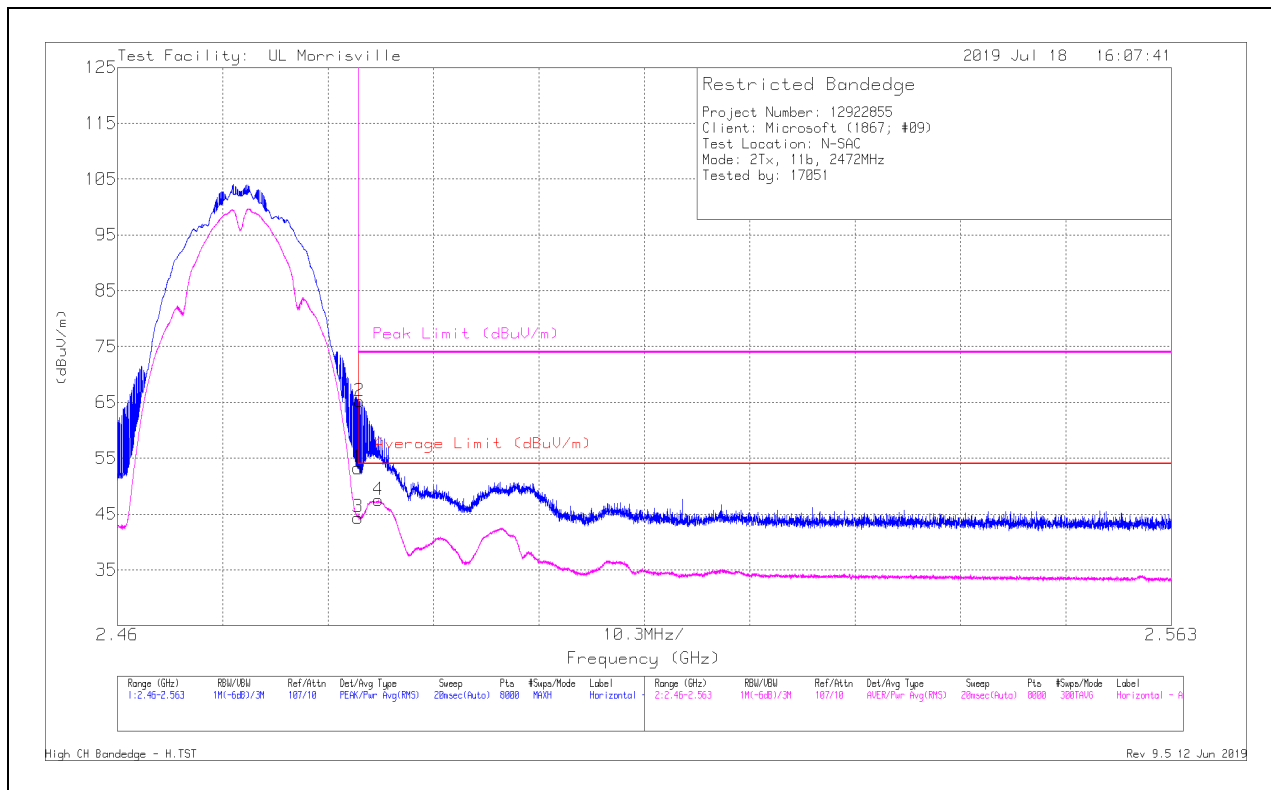
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 13)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	45.15	Pk	32.4	-24.3	53.25	-	-	74	-20.75	195	353	H
2	* ** 2.48363	57.12	Pk	32.4	-24.3	65.22	-	-	74	-8.78	195	353	H
3	* ** 2.4835	36.28	RMS	32.4	-24.3	44.38	54	-9.62	-	-	195	353	H
4	* ** 2.48551	39.38	RMS	32.4	-24.3	47.48	54	-6.52	-	-	195	353	H

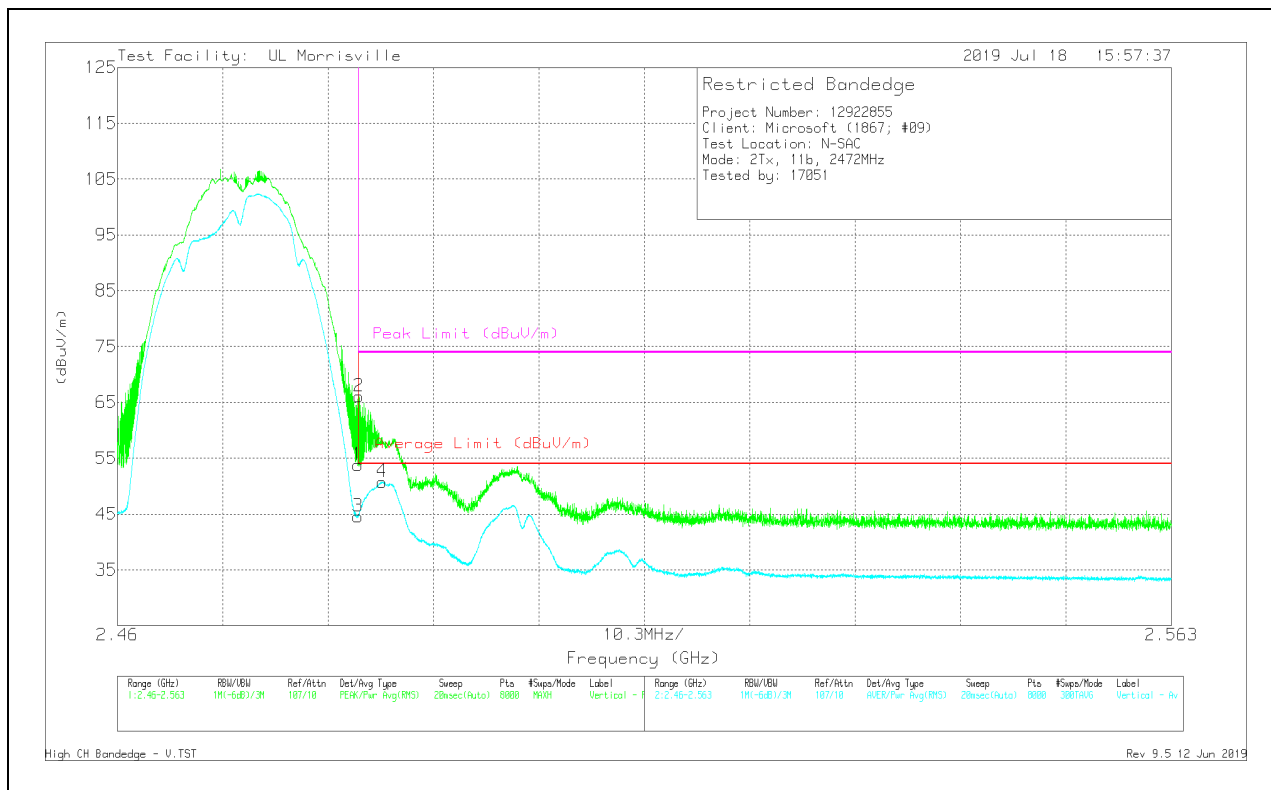
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	45.67	Pk	32.4	-24.3	53.77	-	-	74	-20.23	162	198	V
2	* ** 2.48358	57.98	Pk	32.4	-24.3	66.08	-	-	74	-7.92	162	198	V
3	* ** 2.4835	36.45	RMS	32.4	-24.3	44.55	54	-9.45	-	-	162	198	V
4	* ** 2.48586	42.66	RMS	32.4	-24.3	50.76	54	-3.24	-	-	162	198	V

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

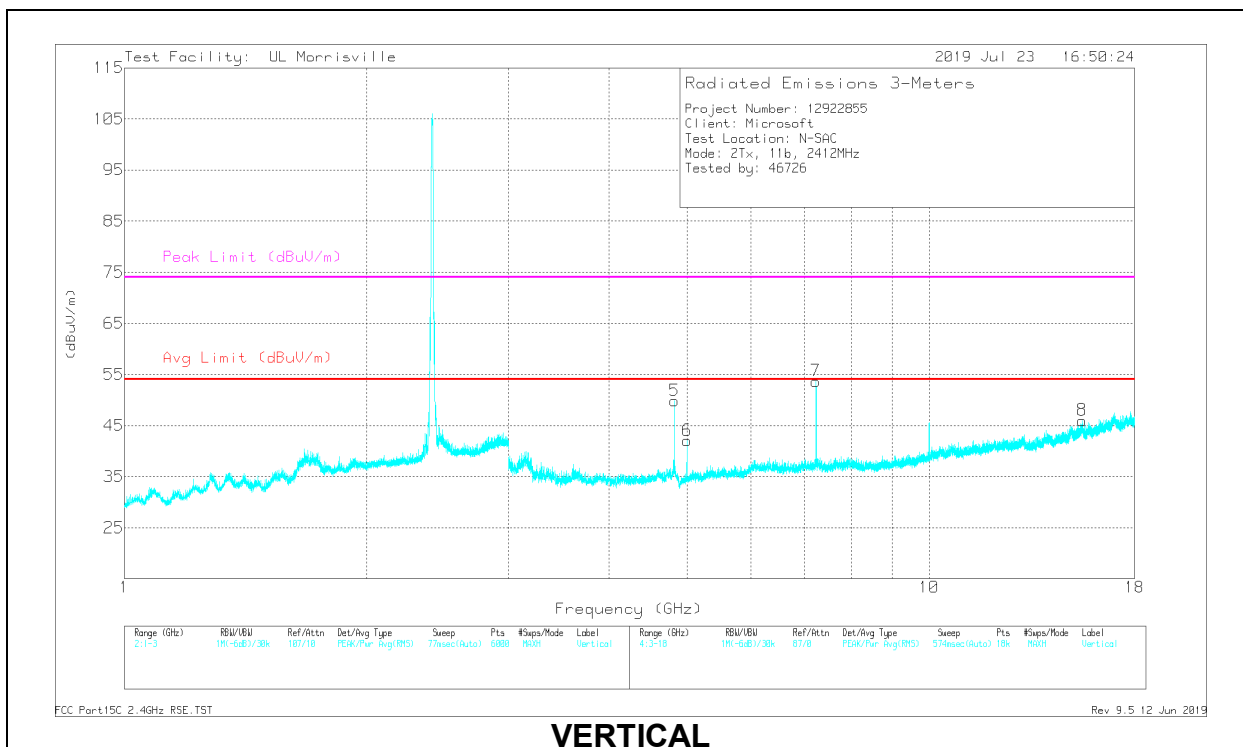
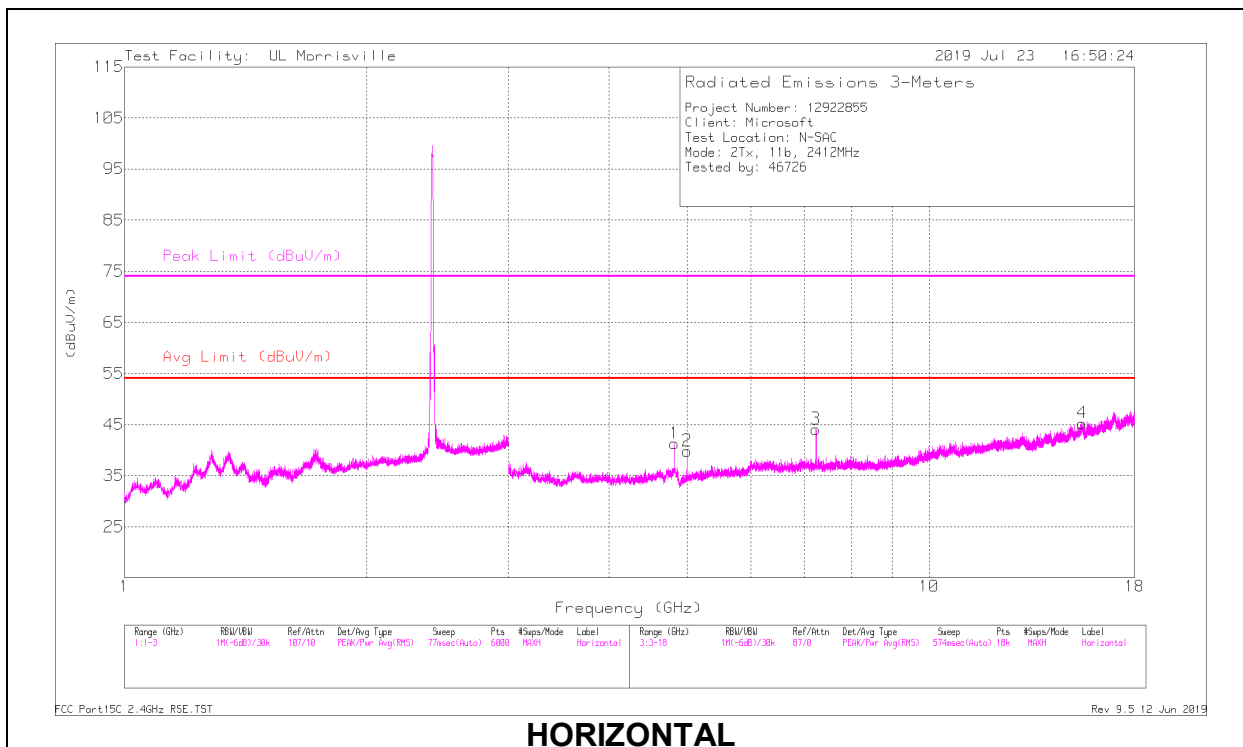
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 4.82402	45.36	PK2	34.1	-31.4	48.06	-	-	74	-25.94	233	105	H
	* ** 4.82403	38.16	MAv1	34.1	-31.4	40.86	54	-13.14	-	-	233	105	H
2	* ** 5.00031	44.24	PK2	34	-32.6	45.64	-	-	74	-28.36	266	102	H
	* ** 5.00023	34.7	MAv1	34	-32.6	36.1	54	-17.9	-	-	266	102	H
4	* ** 15.44819	35.58	PK2	40.1	-24.2	51.48	-	-	74	-22.52	199	231	H
	* ** 15.44758	23.43	MAv1	40.1	-24.2	39.33	54	-14.67	-	-	199	231	H
5	* ** 4.82403	49.39	PK2	34.1	-31.4	52.09	-	-	74	-21.91	287	219	V
	* ** 4.824	44.08	MAv1	34.1	-31.4	46.78	54	-7.22	-	-	287	219	V
6	* ** 5.00006	43.48	PK2	34	-32.6	44.88	-	-	74	-29.12	26	241	V
	* ** 5.00008	34.9	MAv1	34	-32.6	36.3	54	-17.7	-	-	26	241	V
8	* ** 15.48498	34.38	PK2	40.1	-23.6	50.88	-	-	74	-23.12	26	201	V
	* ** 15.486	24.08	MAv1	40.1	-23.6	40.58	54	-13.42	-	-	26	201	V
3	7.2344	38.12	Pk	35.6	-29.6	44.12	-	-	-	-	0-360	199	H
7	7.2344	47.69	Pk	35.6	-29.6	53.69	-	-	-	-	0-360	199	V

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

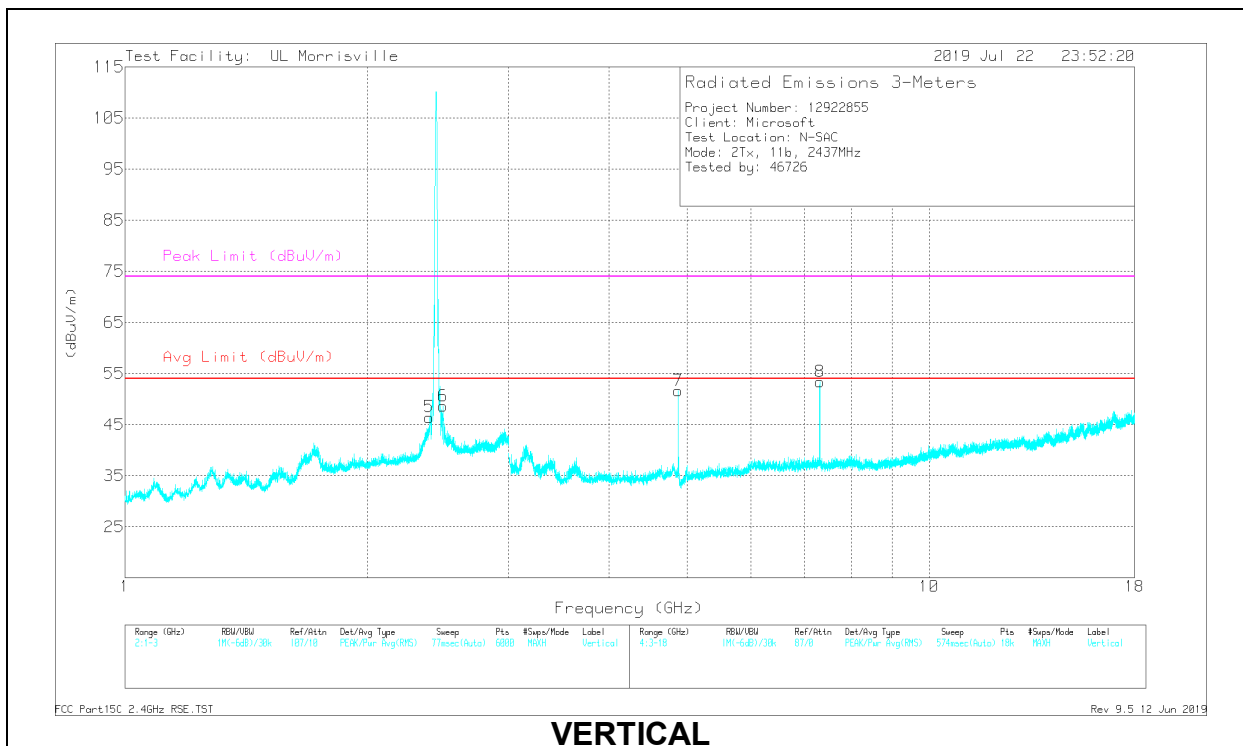
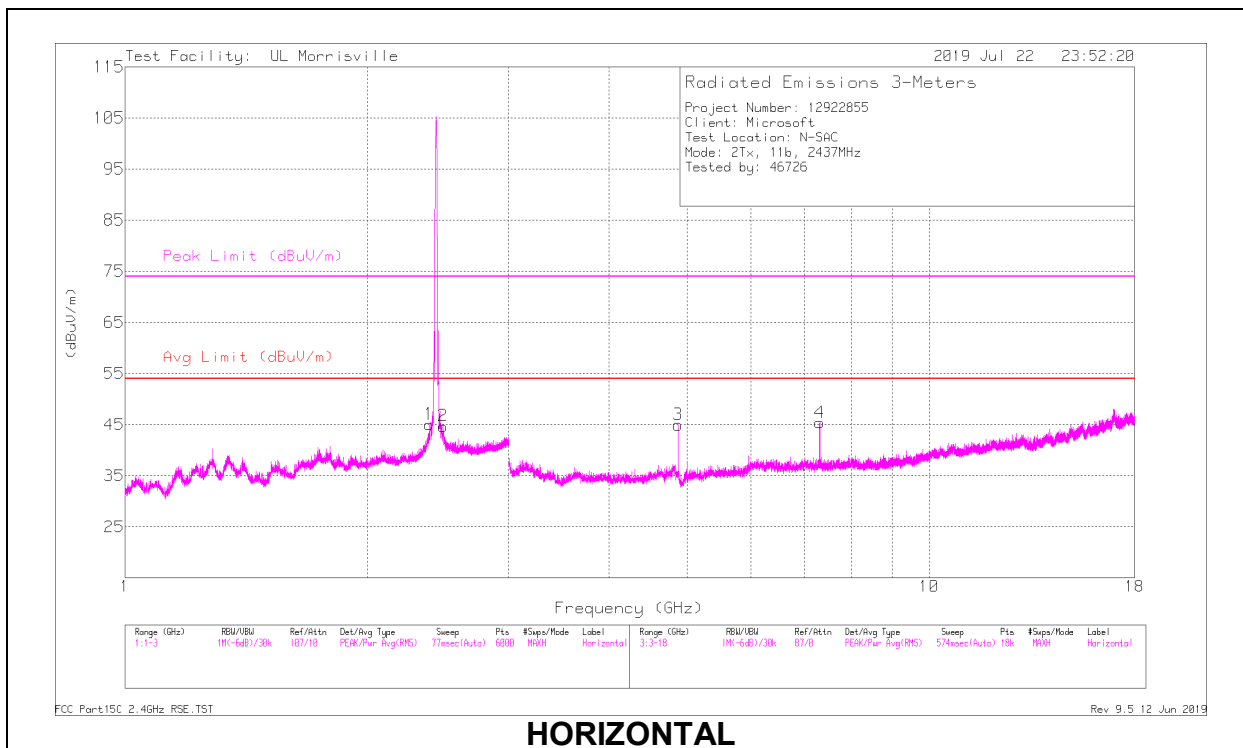
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK2 - Maximum Peak

MAv1 - Maximum RMS Average

Pk - Peak detector

MID CHANNEL, CH 6 RESULTS



RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38795	44.3	PK2	32	-24.4	51.9	-	-	74	-22.1	79	202	H
	* ** 2.38809	32.38	MAv1	32	-24.4	39.98	54	-14.02	-	-	79	202	H
2	* ** 2.4853	45.22	PK2	32.4	-24.3	53.32	-	-	74	-20.68	257	209	H
	* ** 2.48538	34.66	MAv1	32.4	-24.3	42.76	54	-11.24	-	-	257	209	H
5	* ** 2.3884	44.22	PK2	32	-24.4	51.82	-	-	74	-22.18	7	105	V
	* ** 2.38842	35.92	MAv1	32	-24.4	43.52	54	-10.48	-	-	7	105	V
6	* ** 2.4851	44.74	PK2	32.4	-24.3	52.84	-	-	74	-21.16	349	103	V
	* ** 2.48509	36.14	MAv1	32.4	-24.3	44.24	54	-9.76	-	-	349	103	V
3	* ** 4.87405	47.73	PK2	34	-31.3	50.43	-	-	74	-23.57	260	261	H
	* ** 4.87404	43.55	MAv1	34	-31.3	46.25	54	-7.75	-	-	260	261	H
4	* ** 7.31041	49.38	PK2	35.6	-29.1	55.88	-	-	74	-18.12	38	325	H
	* ** 7.31041	43.1	MAv1	35.6	-29.1	49.6	54	-4.4	-	-	38	325	H
7	* ** 4.87408	51.42	PK2	34	-31.3	54.12	-	-	74	-19.88	348	274	V
	* ** 4.874	48.32	MAv1	34	-31.3	51.02	54	-2.98	-	-	348	274	V
8	* ** 7.31051	49.96	PK2	35.6	-29.1	56.46	-	-	74	-17.54	278	217	V
	* ** 7.31049	43.54	MAv1	35.6	-29.1	50.04	54	-3.96	-	-	278	217	V

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

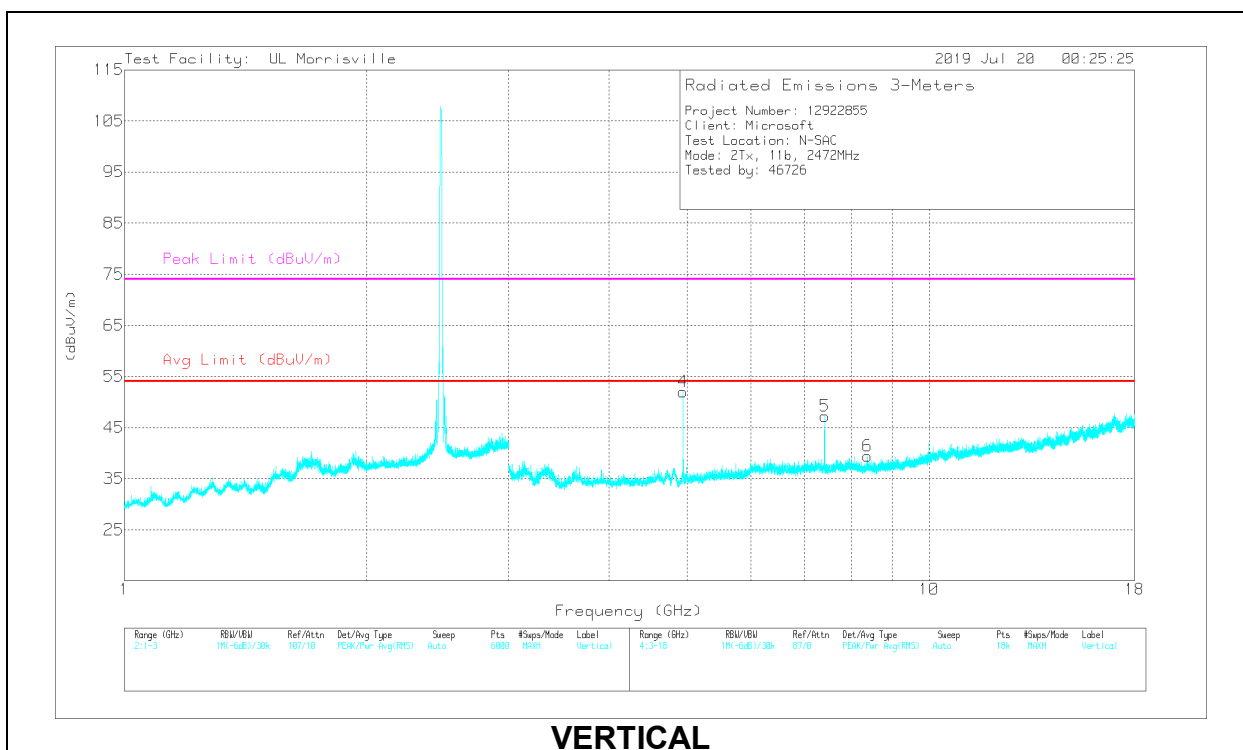
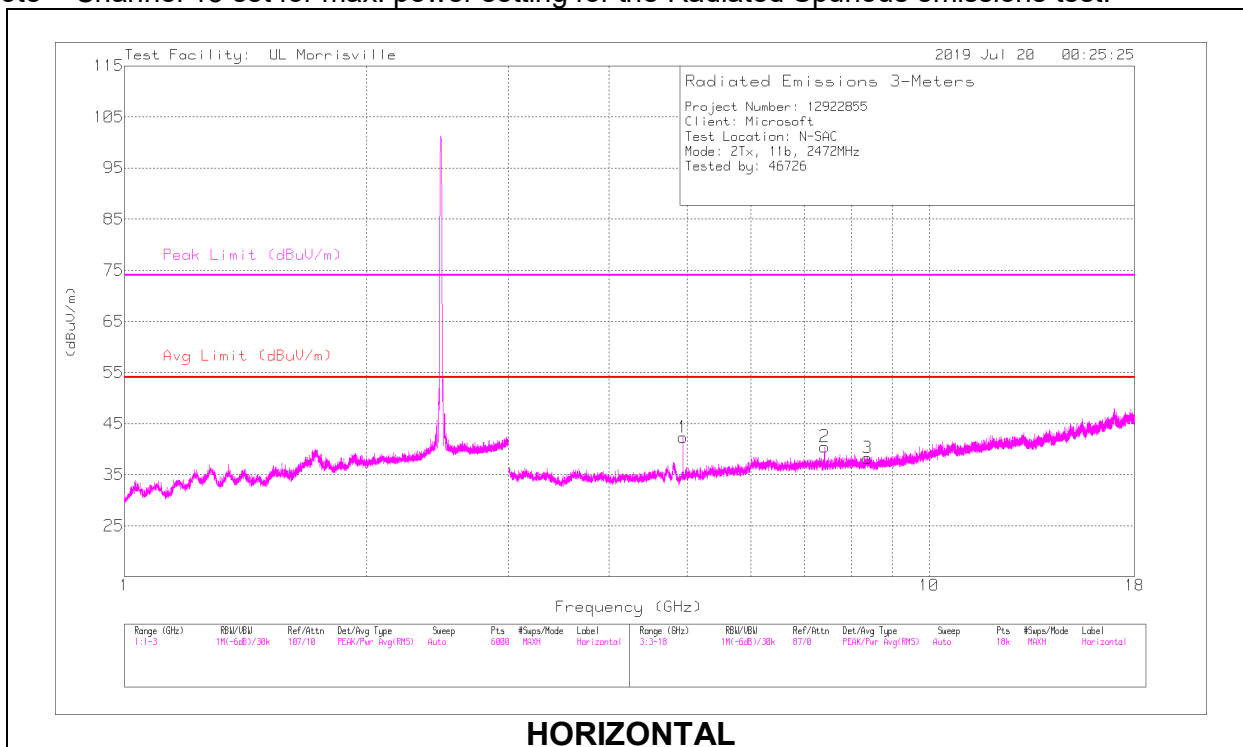
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK2 - Maximum Peak

MAv1 - Maximum RMS Average

HIGH CHANNEL, CH 13 RESULTS

Note – Channel 13 set for max. power setting for the Radiated Spurious emissions test.



RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 4.94405	47.77	PK2	33.9	-32.1	49.57	-	-	74	-24.43	326	397	H
	* ** 4.94401	44.12	MAv1	33.9	-32.1	45.92	54	-8.08	-	-	326	397	H
2	* ** 7.41493	41.15	PK2	35.6	-29.2	47.55	-	-	74	-26.45	298	304	H
	* ** 7.41508	32.07	MAv1	35.6	-29.2	38.47	54	-15.53	-	-	298	304	H
3	* ** 8.38498	36.89	PK2	35.7	-28.4	44.19	-	-	74	-29.81	194	233	H
	* ** 8.38493	25.22	MAv1	35.7	-28.4	32.52	54	-21.48	-	-	194	233	H
4	* ** 4.94401	51.46	PK2	33.9	-32.1	53.26	-	-	74	-20.74	340	257	V
	* ** 4.944	49.02	MAv1	33.9	-32.1	50.82	54	-3.18	-	-	340	257	V
5	* ** 7.41708	44.7	PK2	35.6	-29.2	51.1	-	-	74	-22.9	298	216	V
	* ** 7.41703	36.19	MAv1	35.6	-29.2	42.59	54	-11.41	-	-	298	216	V
6	* ** 8.38228	37.34	PK2	35.7	-28.4	44.64	-	-	74	-29.36	179	144	V
	* ** 8.38223	25.17	MAv1	35.7	-28.4	32.47	54	-21.53	-	-	179	144	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK2 - Maximum Peak

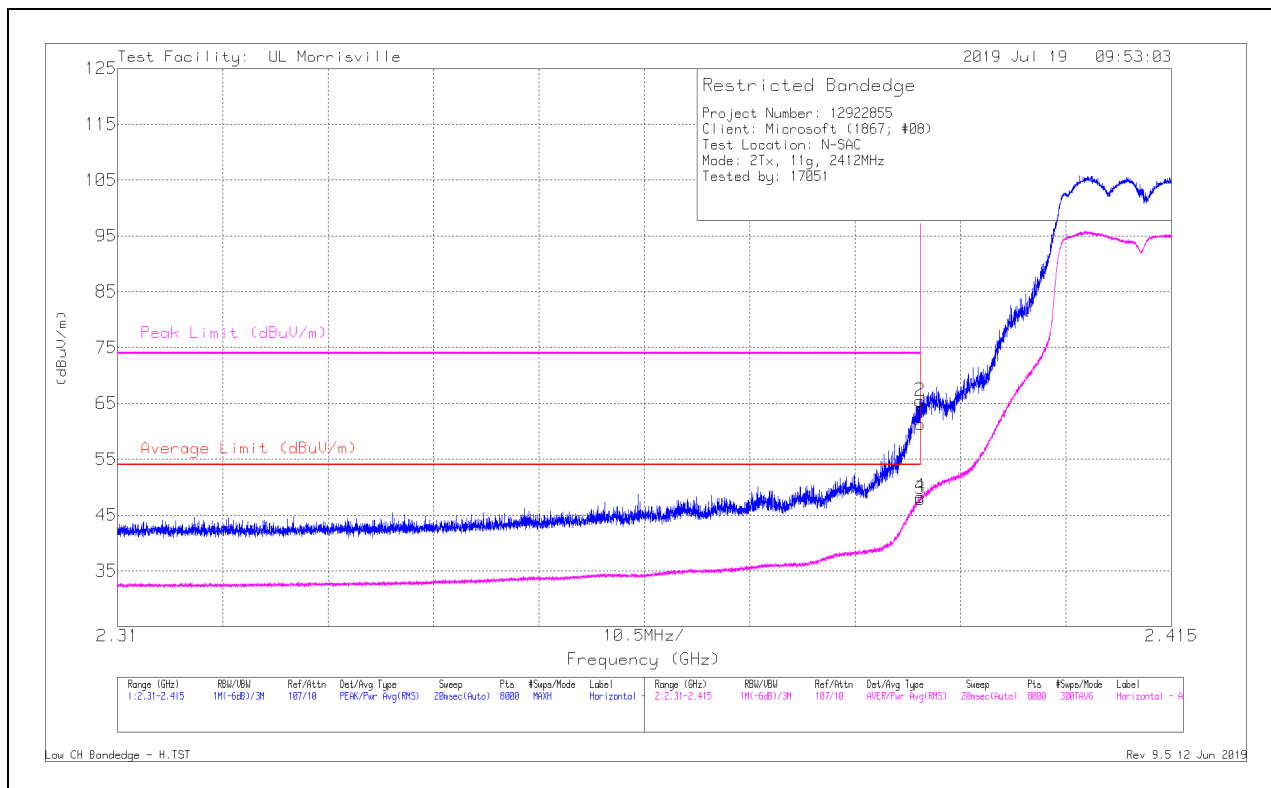
MAv1 - Maximum RMS Average

9.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

2TX Antenna 1 + Antenna 2 CDD MODE

BANDEGE (LOW CHANNEL, CH 1)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/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	* ** 2.39	53.68	Pk	32	-24.4	0	61.28	-	-	74	-12.72	192	382	H
2	* ** 2.38996	57.82	Pk	32	-24.4	0	65.42	-	-	74	-8.58	192	382	H
3	* ** 2.39	40.19	RMS	32	-24.4	.09	47.88	54	-6.12	-	-	192	382	H
4	* ** 2.38998	40.61	RMS	32	-24.4	.09	48.3	54	-5.7	-	-	192	382	H

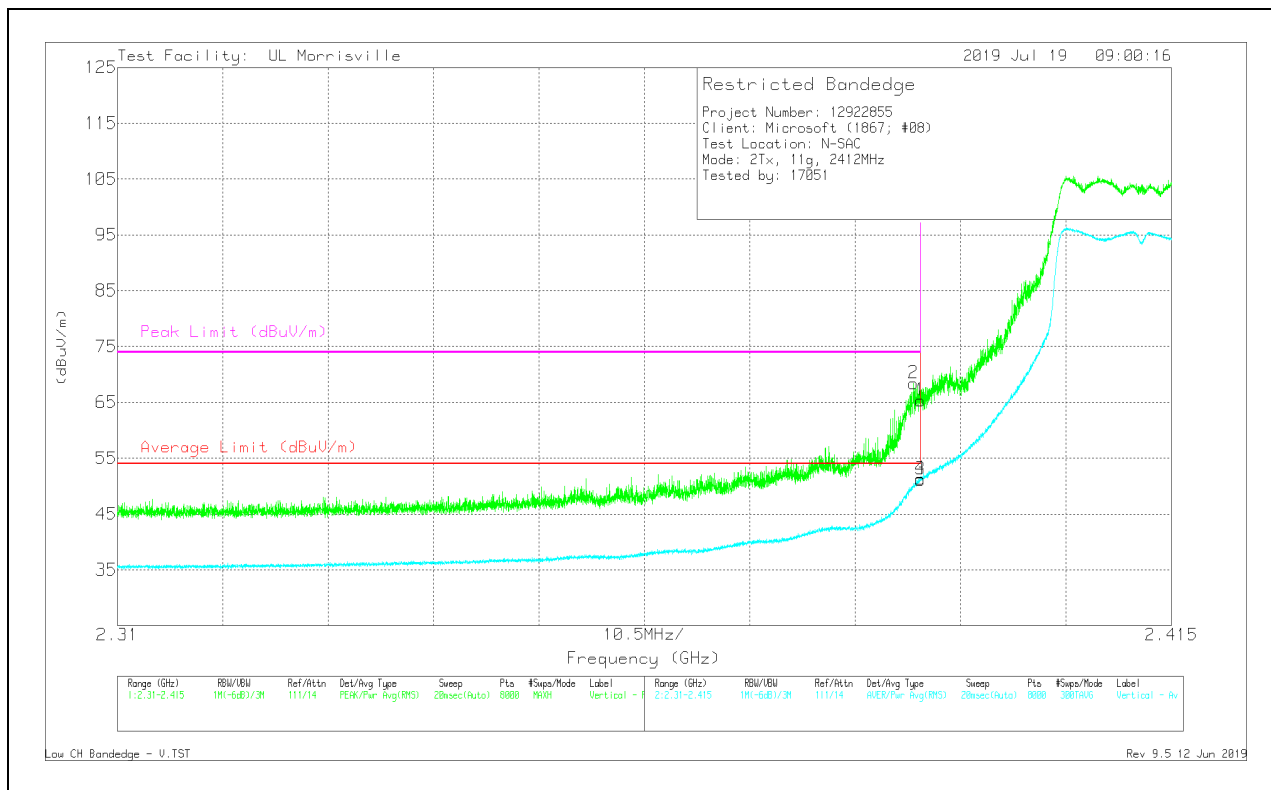
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/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	*** 2.39	57.75	Pk	32	-24.4	0	65.35	-	-	74	-8.65	111	347	V
2	*** 2.38931	60.77	Pk	32	-24.4	0	68.37	-	-	74	-5.63	111	347	V
3	*** 2.39	43.46	RMS	32	-24.4	.09	51.15	54	-2.85	-	-	111	347	V
4	*** 2.38998	43.61	RMS	32	-24.4	.09	51.3	54	-2.7	-	-	111	347	V

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

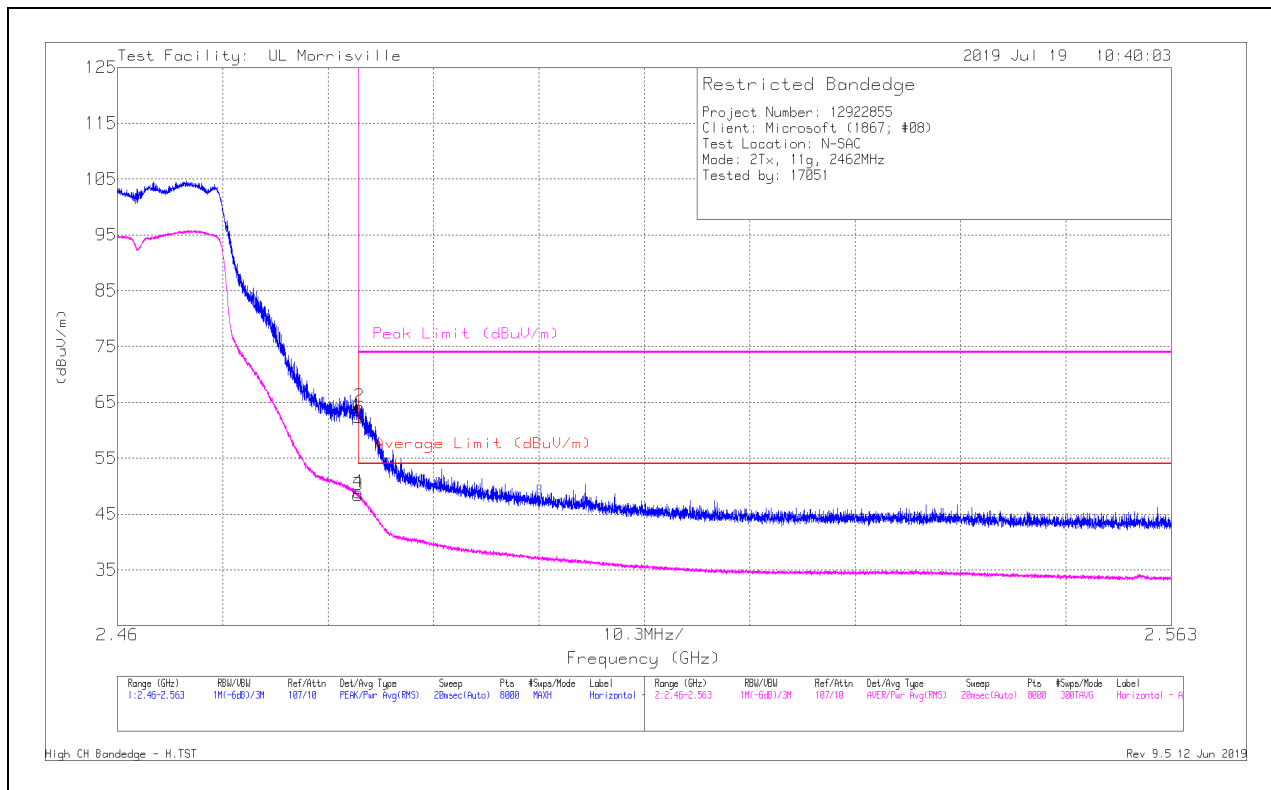
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/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	*** 2.4835	54.35	Pk	32.4	-24.3	0	62.45	-	-	74	-11.55	17	380	H
2	*** 2.48366	56.13	Pk	32.4	-24.3	0	64.23	-	-	74	-9.77	17	380	H
3	*** 2.4835	40.19	RMS	32.4	-24.3	.09	48.38	54	-5.62	-	-	17	380	H
4	*** 2.48354	40.7	RMS	32.4	-24.3	.09	48.89	54	-5.11	-	-	17	380	H

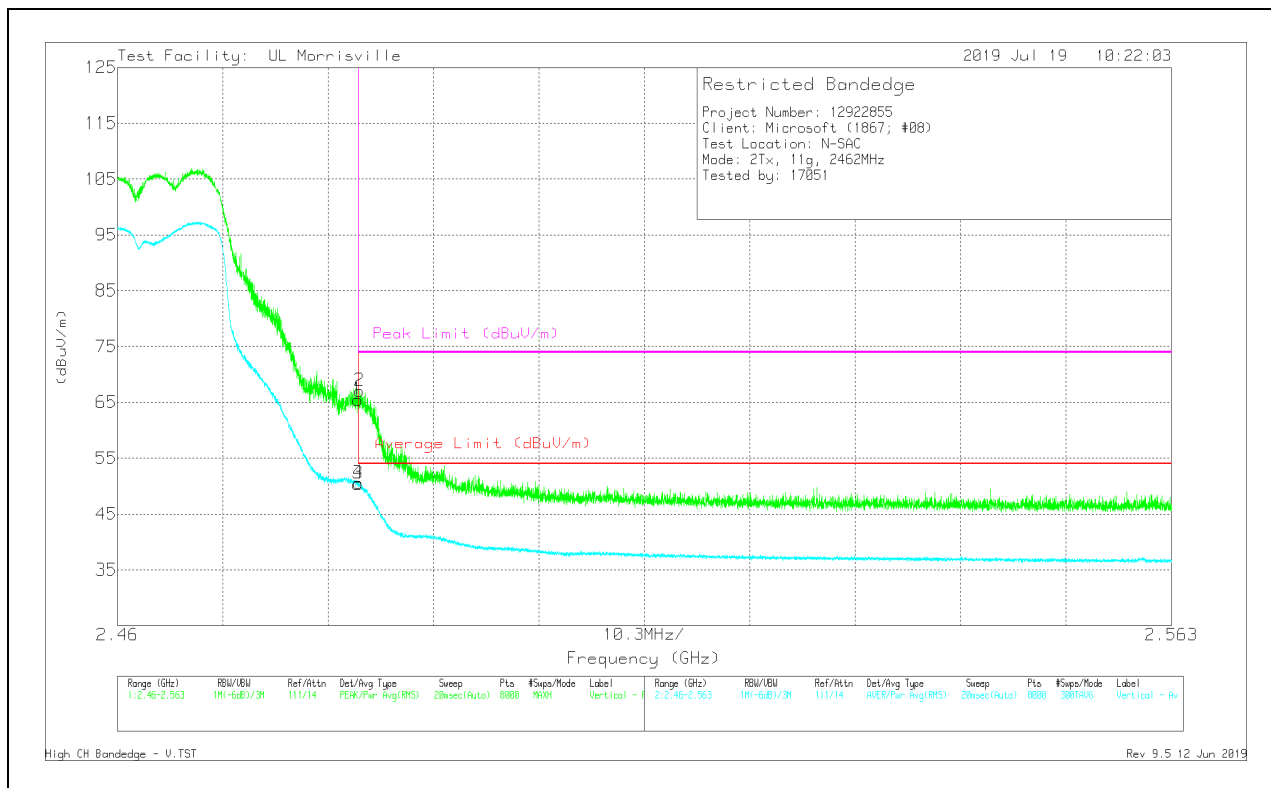
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/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	* ** 2.4835	57.37	Pk	32.4	-24.3	0	65.47	-	-	74	-8.53	154	274	V
2	* ** 2.48366	58.98	Pk	32.4	-24.3	0	67.08	-	-	74	-6.92	154	274	V
3	* ** 2.4835	42.22	RMS	32.4	-24.3	.09	50.41	54	-3.59	-	-	154	274	V
4	* ** 2.48355	42.38	RMS	32.4	-24.3	.09	50.57	54	-3.43	-	-	154	274	V

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

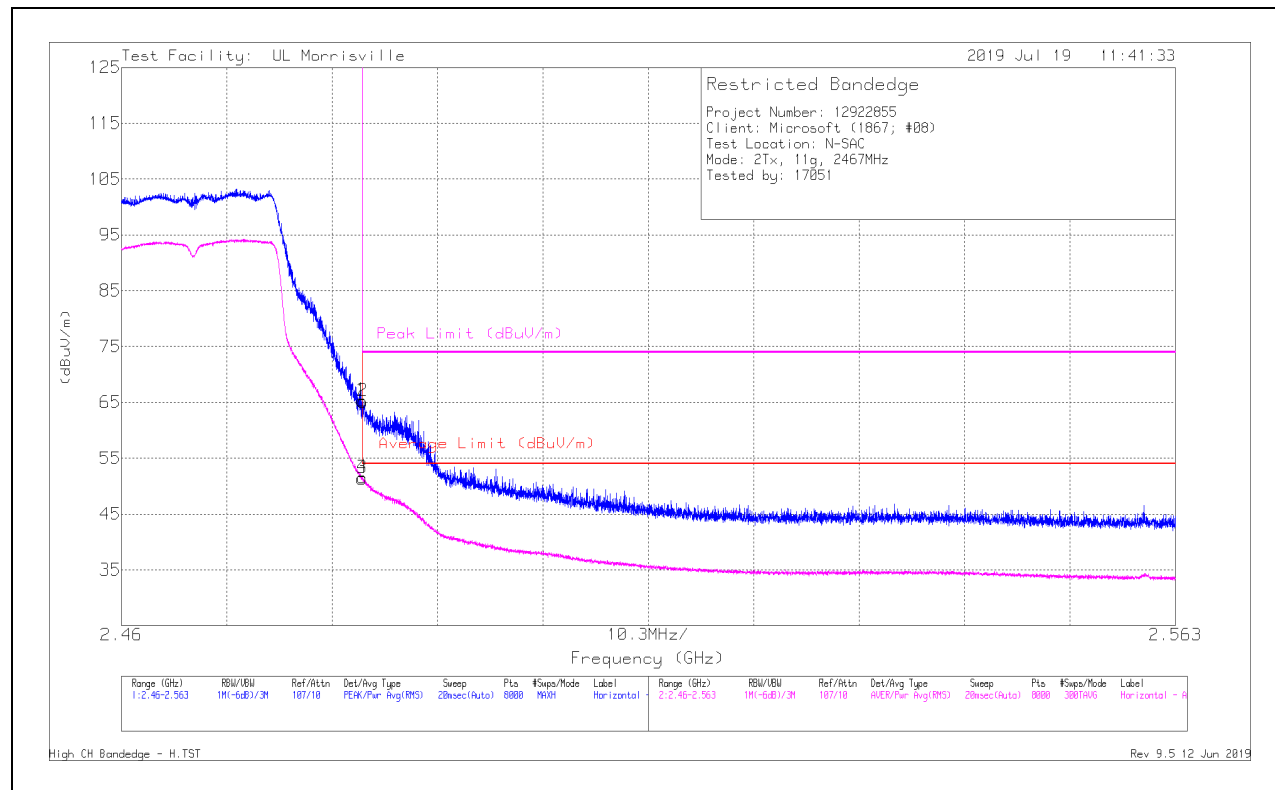
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 12)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/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	* ** 2.4835	57.21	Pk	32.4	-24.3	0	65.31	-	-	74	-8.69	21	381	H
2	* ** 2.48359	57.06	Pk	32.4	-24.3	0	65.16	-	-	74	-8.84	21	381	H
3	* ** 2.4835	43.21	RMS	32.4	-24.3	.09	51.4	54	-2.6	-	-	21	381	H
4	* ** 2.48355	43.36	RMS	32.4	-24.3	.09	51.55	54	-2.45	-	-	21	381	H

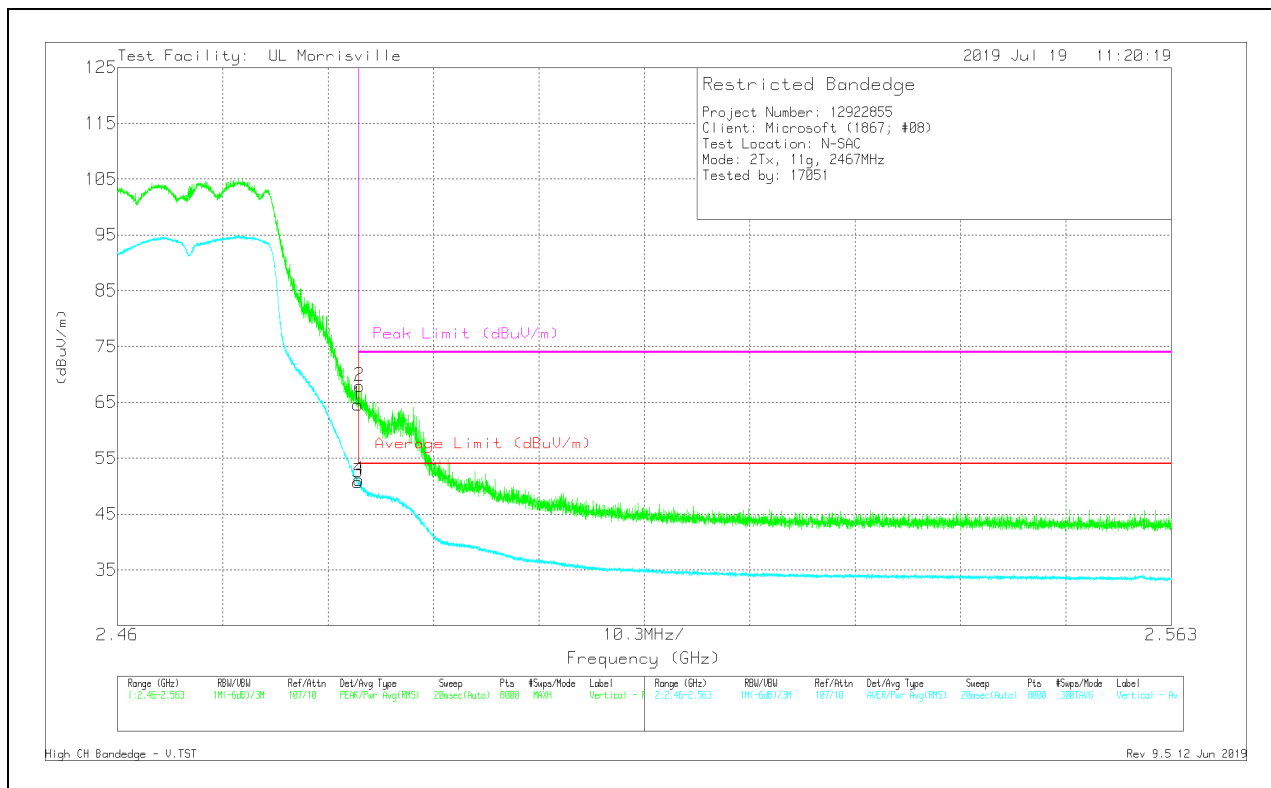
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/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	* ** 2.4835	56.55	Pk	32.4	-24.3	0	64.65	-	-	74	-9.35	149	274	V
2	* ** 2.48366	59.87	Pk	32.4	-24.3	0	67.97	-	-	74	-6.03	149	274	V
3	* ** 2.4835	42.57	RMS	32.4	-24.3	.09	50.76	54	-3.24	-	-	149	274	V
4	* ** 2.4836	42.96	RMS	32.4	-24.3	.09	51.15	54	-2.85	-	-	149	274	V

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

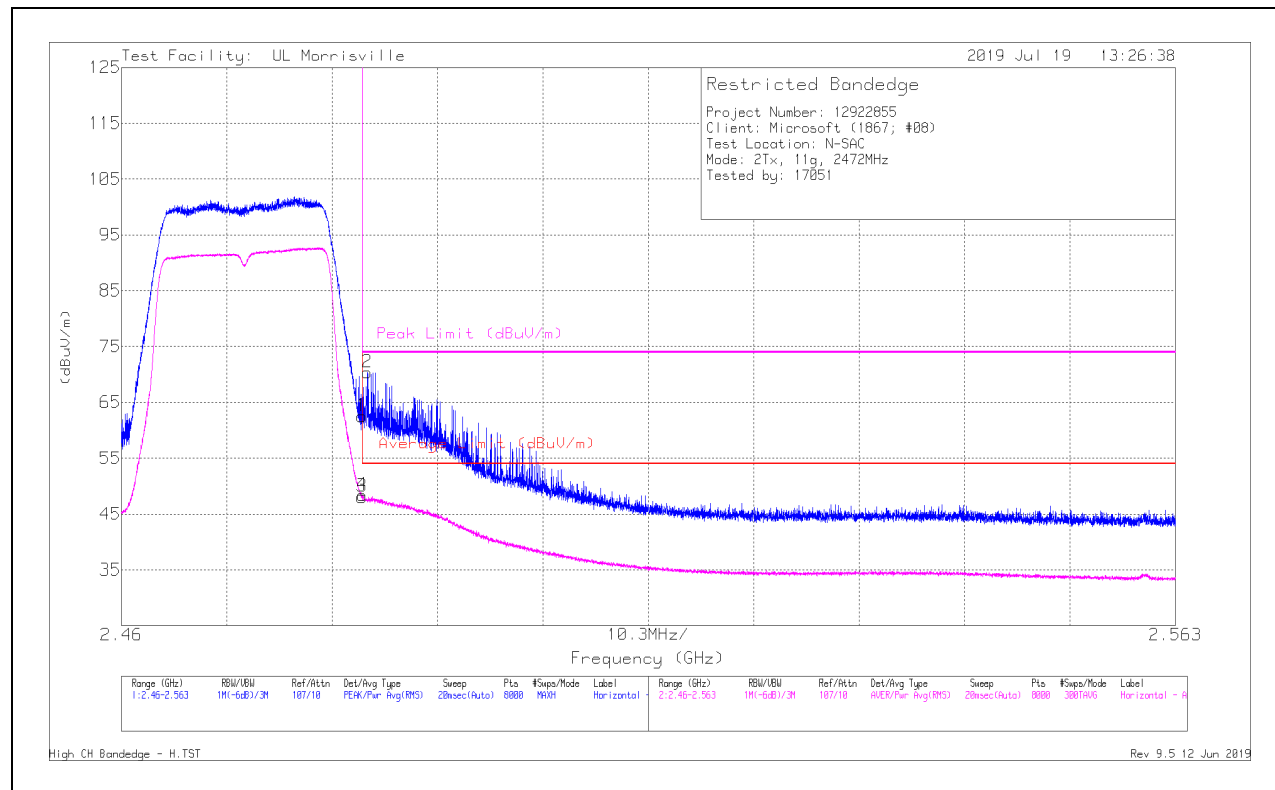
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 13)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Fitr/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	*** 2.4835	54.37	Pk	32.4	-24.3	0	62.47	-	-	74	-11.53	20	380	H
2	*** 2.48404	62.28	Pk	32.4	-24.3	0	70.38	-	-	74	-3.62	20	380	H
3	* ** 2.4835	39.98	RMS	32.4	-24.3	.09	48.17	54	-5.83	-	-	20	380	H
4	* ** 2.48353	40.29	RMS	32.4	-24.3	.09	48.48	54	-5.52	-	-	20	380	H

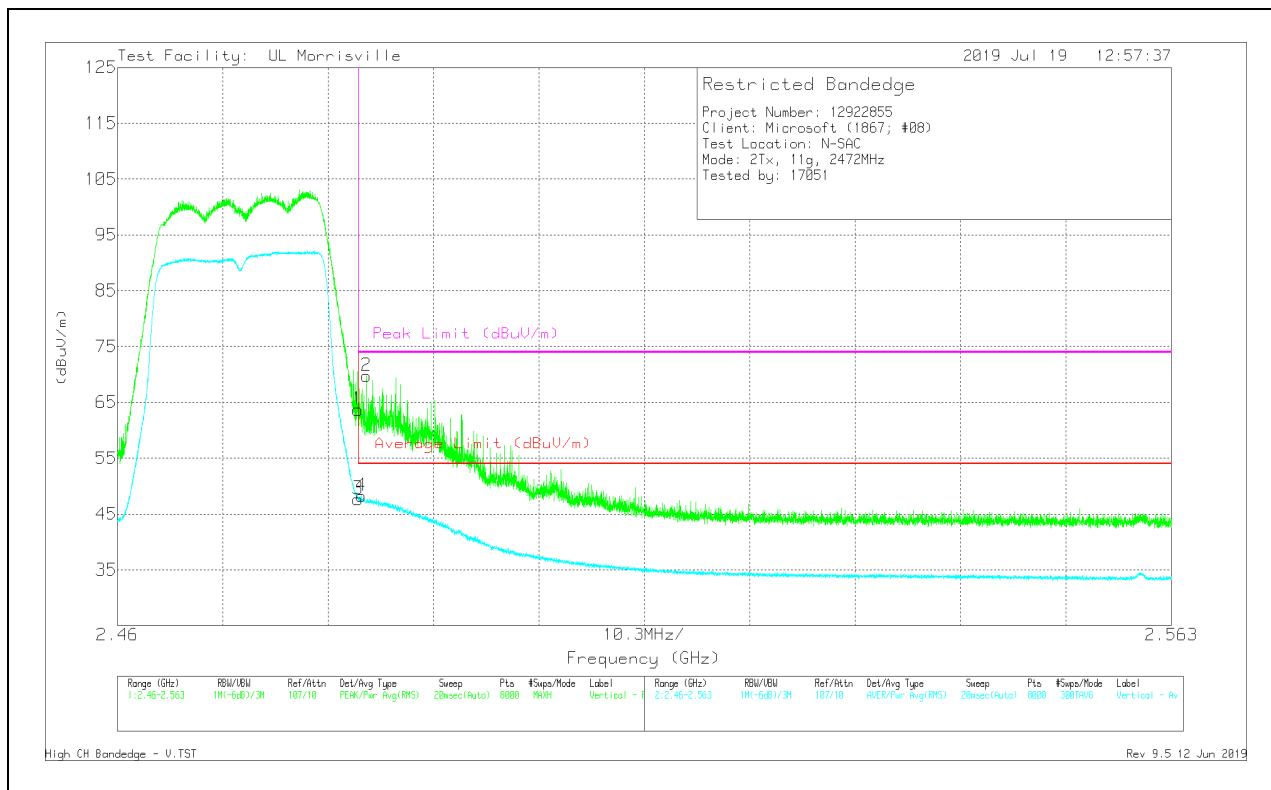
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/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	* ** 2.4835	55.59	Pk	32.4	-24.3	0	63.69	-	-	74	-10.31	158	272	V
2	* ** 2.48434	61.69	Pk	32.4	-24.3	0	69.79	-	-	74	-4.21	158	272	V
3	* ** 2.4835	39.49	RMS	32.4	-24.3	.09	47.68	54	-6.32	-	-	158	272	V
4	* ** 2.48385	40.08	RMS	32.4	-24.3	.09	48.27	54	-5.73	-	-	158	272	V

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

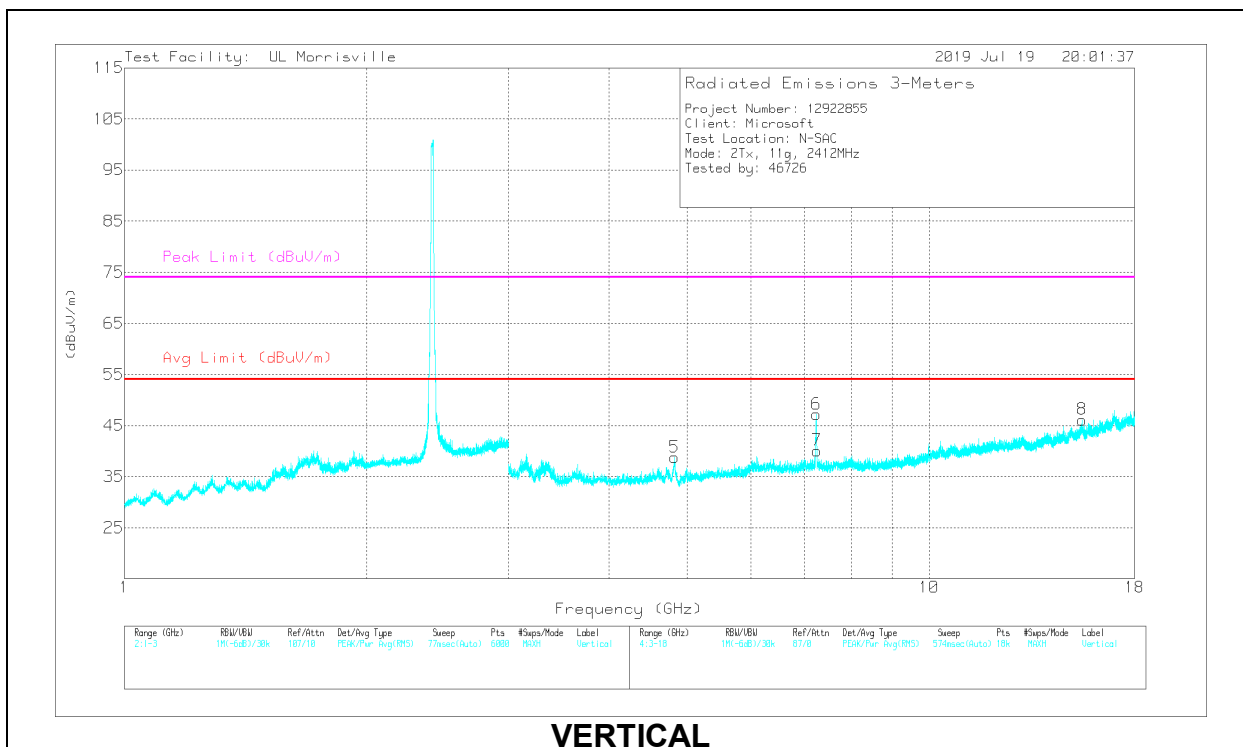
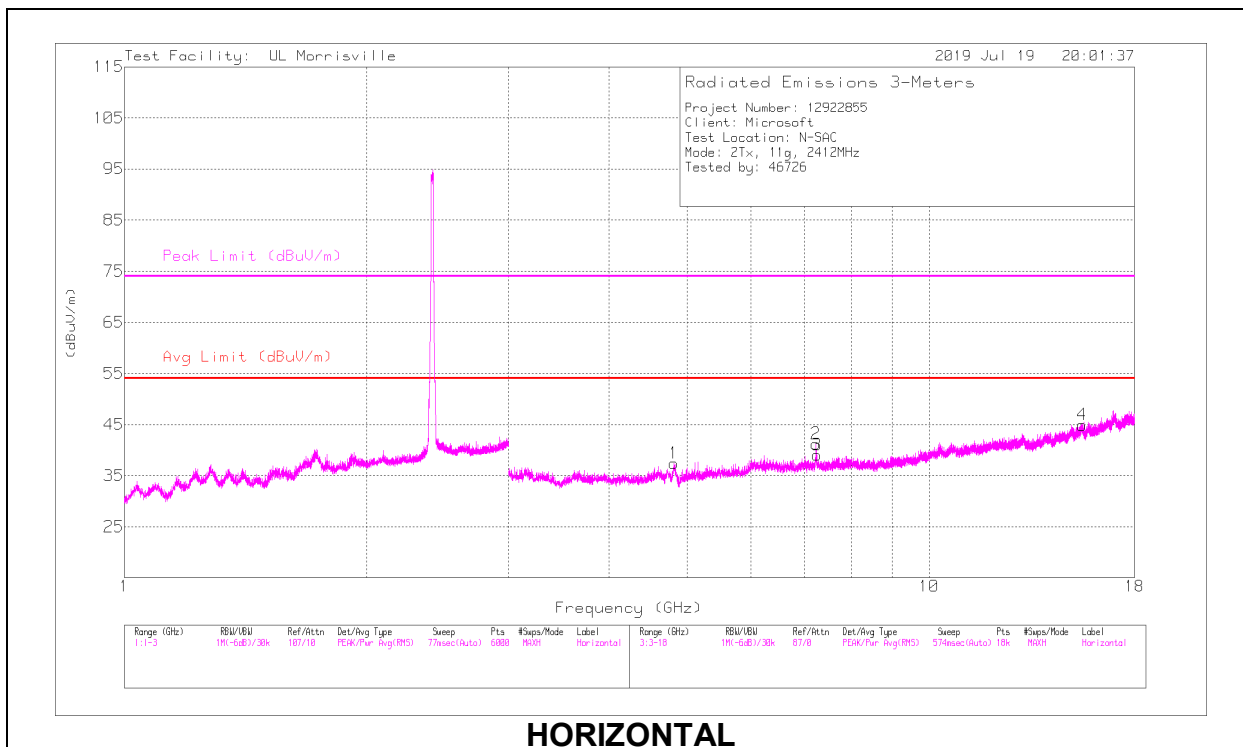
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 4.8148	42.05	PK2	34.1	-31.6	0	44.55	-	-	74	-29.45	215	105	H
	** 4.81476	29.98	MAv1	34.1	-31.6	.09	32.57	54	-21.43	-	-	215	105	H
3	*** 7.25057	43.47	PK2	35.6	-29.5	0	49.57	-	-	74	-24.43	35	391	H
	*** 7.25055	28.87	MAv1	35.6	-29.5	.09	35.06	54	-18.94	-	-	35	391	H
4	*** 15.48125	35.91	PK2	40.1	-23.7	0	52.31	-	-	74	-21.69	45	172	H
	** 15.48113	23.24	MAv1	40.1	-23.7	.09	39.73	54	-14.27	-	-	45	172	H
5	*** 4.82526	46.22	PK2	34.1	-31.4	0	48.92	-	-	74	-25.08	286	258	V
	*** 4.82528	33.21	MAv1	34.1	-31.4	.09	36	54	-18	-	-	286	258	V
7	*** 7.25071	46.98	PK2	35.6	-29.5	0	53.08	-	-	74	-20.92	275	224	V
	*** 7.25063	31.7	MAv1	35.6	-29.5	.09	37.89	54	-16.11	-	-	275	224	V
8	*** 15.47478	34.96	PK2	40.1	-23.7	0	51.36	-	-	74	-22.64	105	114	V
	*** 15.47486	23.27	MAv1	40.1	-23.7	.09	39.76	54	-14.24	-	-	105	114	V
2	7.23107	35.22	Pk	35.6	-29.6	0	41.22	-	-	-	-	0-360	199	H
6	7.24107	41.18	Pk	35.6	-29.6	0	47.18	-	-	-	-	0-360	199	V

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

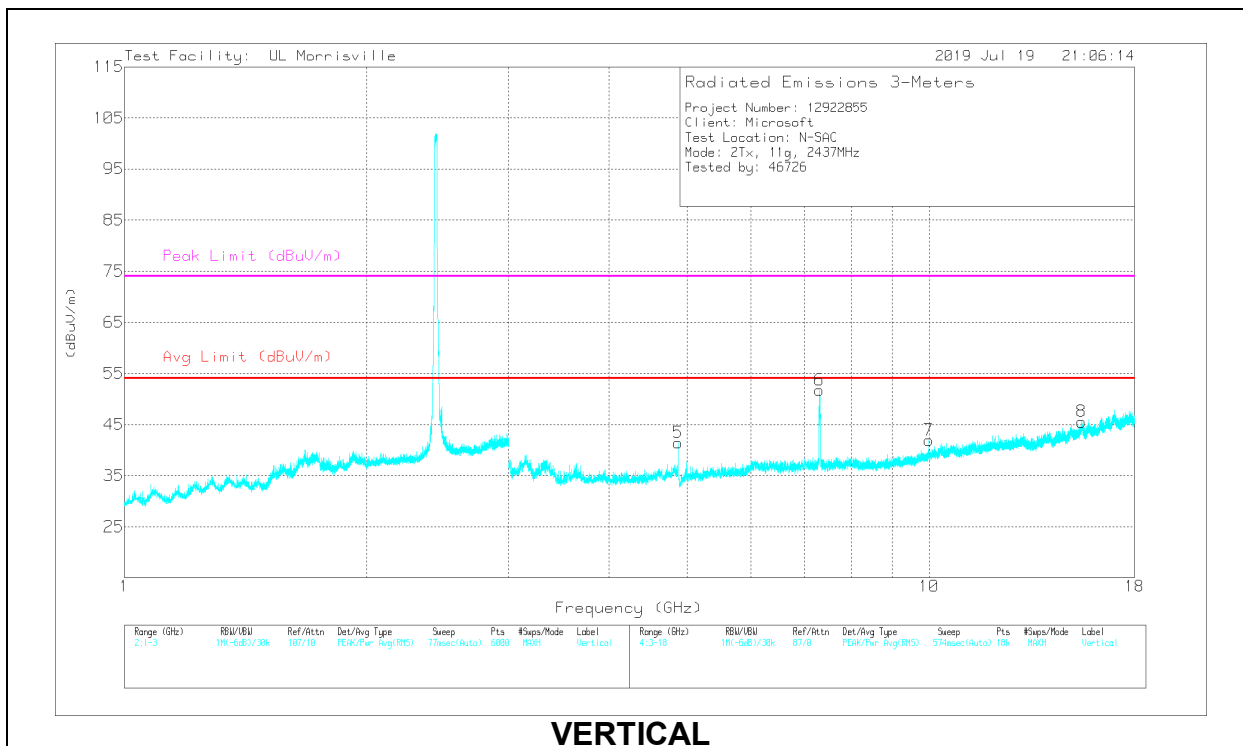
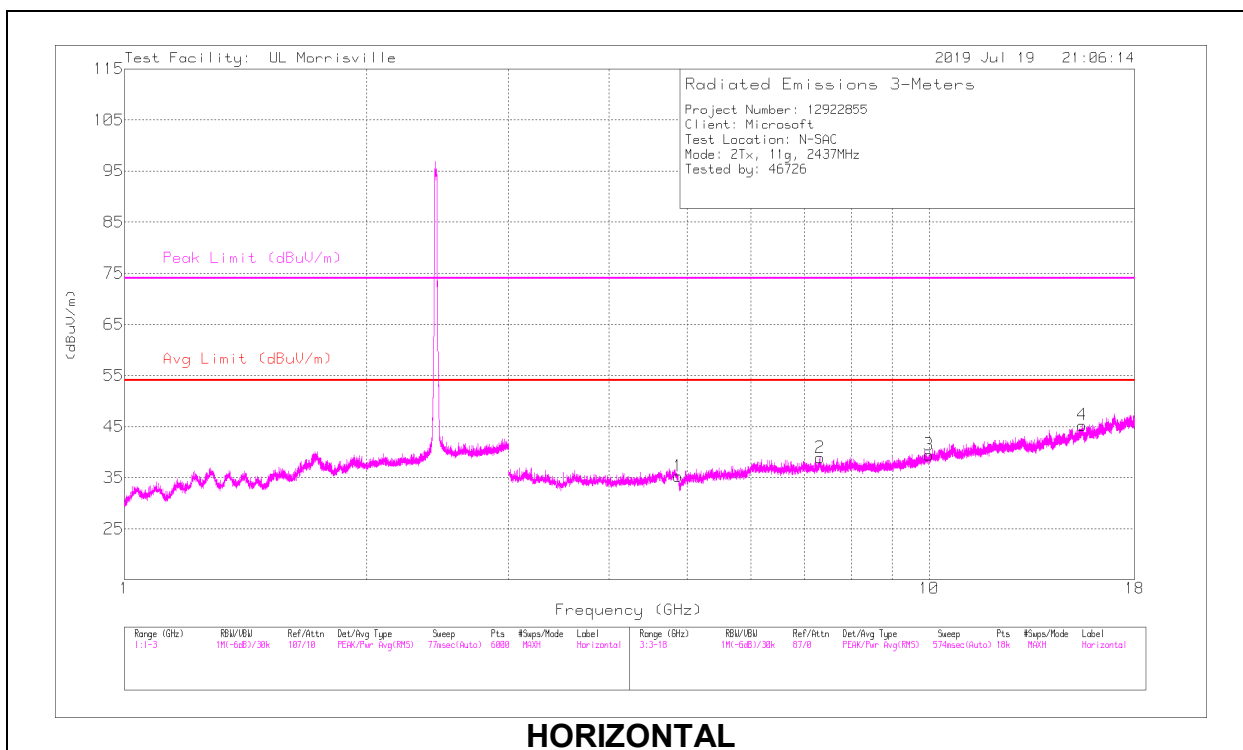
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK2 - Maximum Peak

MAv1 - Maximum RMS Average

Pk - Peak detector

MID CHANNEL, CH 6 RESULTS



RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 4.87297	41.97	PK2	34	-31.3	0	44.67	-	-	74	-29.33	271	307	H
	* ** 4.87303	29.08	MAv1	34	-31.3	.09	31.87	54	-22.13	-	-	271	307	H
2	* ** 7.31224	47.56	PK2	35.6	-29.1	0	54.06	-	-	74	-19.94	32	343	H
	* ** 7.31227	34.1	MAv1	35.6	-29.1	.09	40.69	54	-13.31	-	-	32	343	H
4	* ** 15.49021	35.27	PK2	40.2	-23.6	0	51.87	-	-	74	-22.13	110	272	H
	* ** 15.48982	23.39	MAv1	40.2	-23.6	.09	40.08	54	-13.92	-	-	110	272	H
5	* ** 4.8728	46.62	PK2	34	-31.3	0	49.32	-	-	74	-24.68	346	275	V
	* ** 4.87292	33.49	MAv1	34	-31.3	.09	36.28	54	-17.72	-	-	346	275	V
6	* ** 7.31087	45.4	PK2	35.6	-29.1	0	51.9	-	-	74	-22.1	6	205	V
	* ** 7.31131	31.35	MAv1	35.6	-29.1	.09	37.94	54	-16.06	-	-	6	205	V
8	* ** 15.45851	35.79	PK2	40.1	-23.9	0	51.99	-	-	74	-22.01	135	152	V
	* ** 15.45834	23.6	MAv1	40.1	-23.9	.09	39.89	54	-14.11	-	-	135	152	V
3	9.99623	29.66	Pk	37.1	-27.3	0	39.46	-	-	-	-	0-360	102	H
7	9.99789	32.12	Pk	37.1	-27.3	0	41.92	-	-	-	-	0-360	102	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

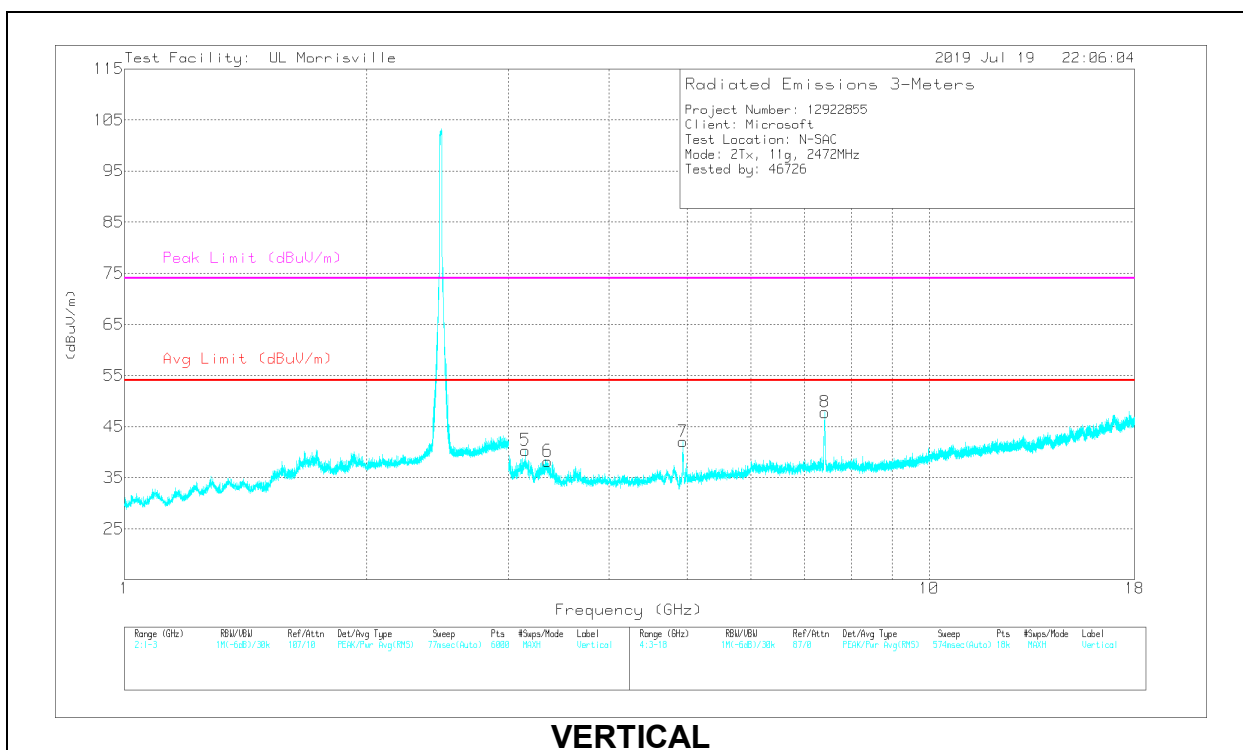
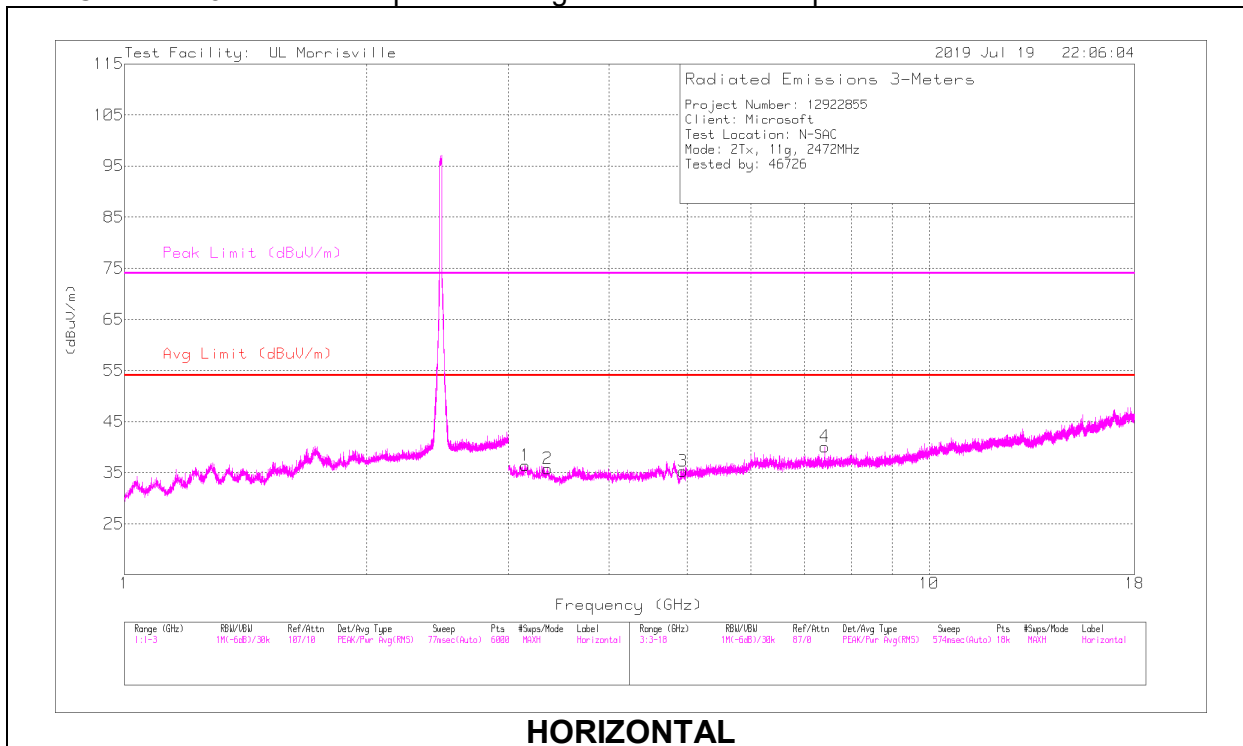
PK2 - Maximum Peak

MAv1 - Maximum RMS Average

Pk - Peak detector

HIGH CHANNEL, CH 13 RESULTS

Note – Channel 13 set for max. power setting for the Radiated Spurious emissions test.



RADIATED EMISSIONS

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	*** 3.35726	43.31	PK2	32.8	-32.5	0	43.61	-	-	74	-30.39	101	162	H
	*** 3.35731	31.11	MAv1	32.8	-32.5	.09	31.5	54	-22.5	-	-	101	162	H
3	*** 4.94351	41.54	PK2	33.9	-32.1	0	43.34	-	-	74	-30.66	272	298	H
	*** 4.94349	29.59	MAv1	33.9	-32.1	.09	31.48	54	-22.52	-	-	272	298	H
4	*** 7.4147	39.51	PK2	35.6	-29.2	0	45.91	-	-	74	-28.09	201	334	H
	*** 7.41465	26.15	MAv1	35.6	-29.2	.09	32.64	54	-21.36	-	-	201	334	H
6	*** 3.34956	45.97	PK2	32.9	-32.5	0	46.37	-	-	74	-27.63	40	215	V
	*** 3.34915	33.86	MAv1	32.9	-32.5	.09	34.35	54	-19.65	-	-	40	215	V
7	*** 4.94427	48.12	PK2	33.9	-32.1	0	49.92	-	-	74	-24.08	341	244	V
	*** 4.94395	34.97	MAv1	33.9	-32.1	.09	36.86	54	-17.14	-	-	341	244	V
8	*** 7.4129	47.07	PK2	35.6	-29.2	0	53.47	-	-	74	-20.53	268	224	V
	*** 7.41284	31.82	MAv1	35.6	-29.2	.09	38.31	54	-15.69	-	-	268	224	V
1	3.15001	36.43	Pk	32.9	-32.9	0	36.43	-	-	-	-	0-360	102	H
5	3.15084	40.36	Pk	32.9	-32.9	0	40.36	-	-	-	-	0-360	199	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

PK2 - Maximum Peak

MAv1 - Maximum RMS Average

Pk - Peak detector

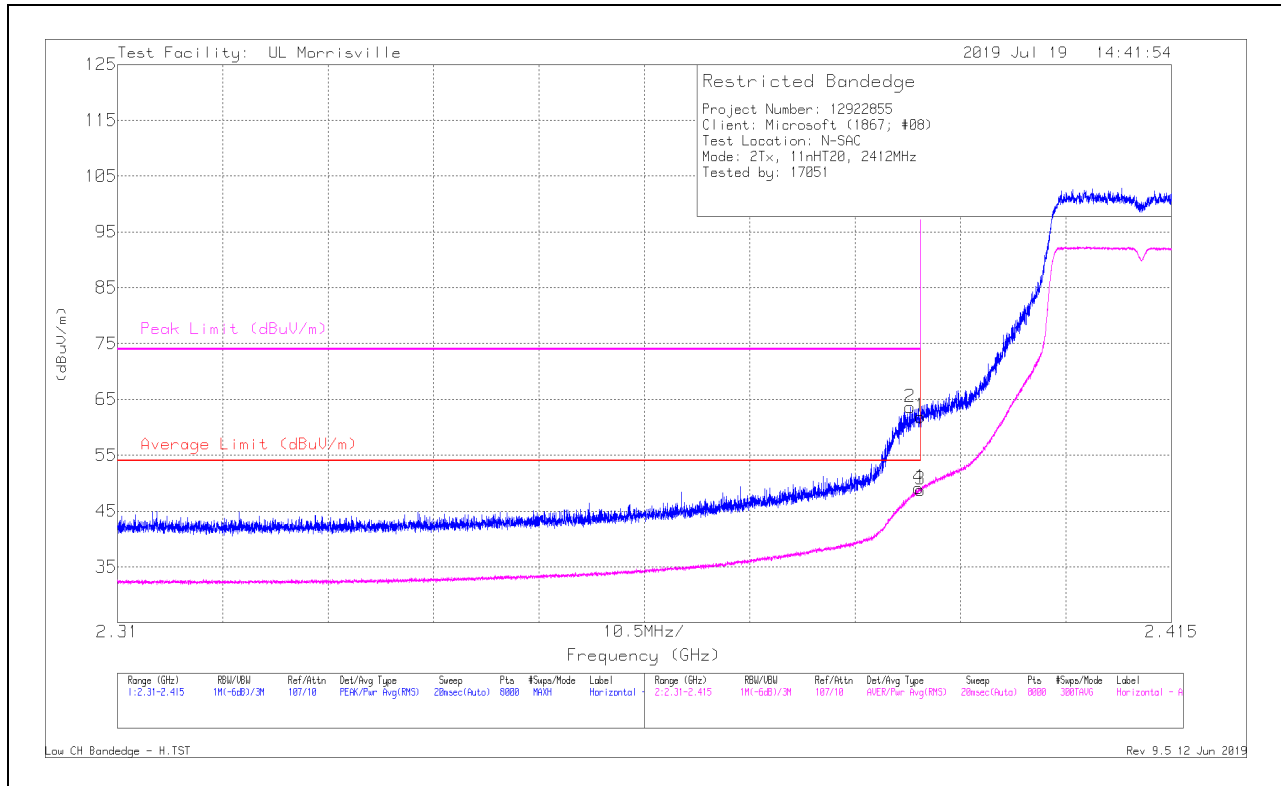
9.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

2TX Antenna 1 + Antenna 2 SDM MODE

Note - Radiated spurious emissions 1-18 GHz for 802.11n HT20 and 802.11 nHT40 is covered by using the 802.11ax HE20 and 802.11ax HE40 radiated spurious emissions 1-18 GHz from UL report number R12922855-E4.

BANDEDGE (LOW CHANNEL, CH 1)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.39	54.34	Pk	32	-24.4	61.94	-	-	74	-12.06	93	391	H
2	** * 2.38896	56.03	Pk	32	-24.4	63.63	-	-	74	-10.37	93	391	H
3	* ** 2.39	41.21	RMS	32	-24.4	48.81	54	-5.19	-	-	93	391	H
4	** * 2.38983	41.56	RMS	32	-24.4	49.16	54	-4.84	-	-	93	391	H

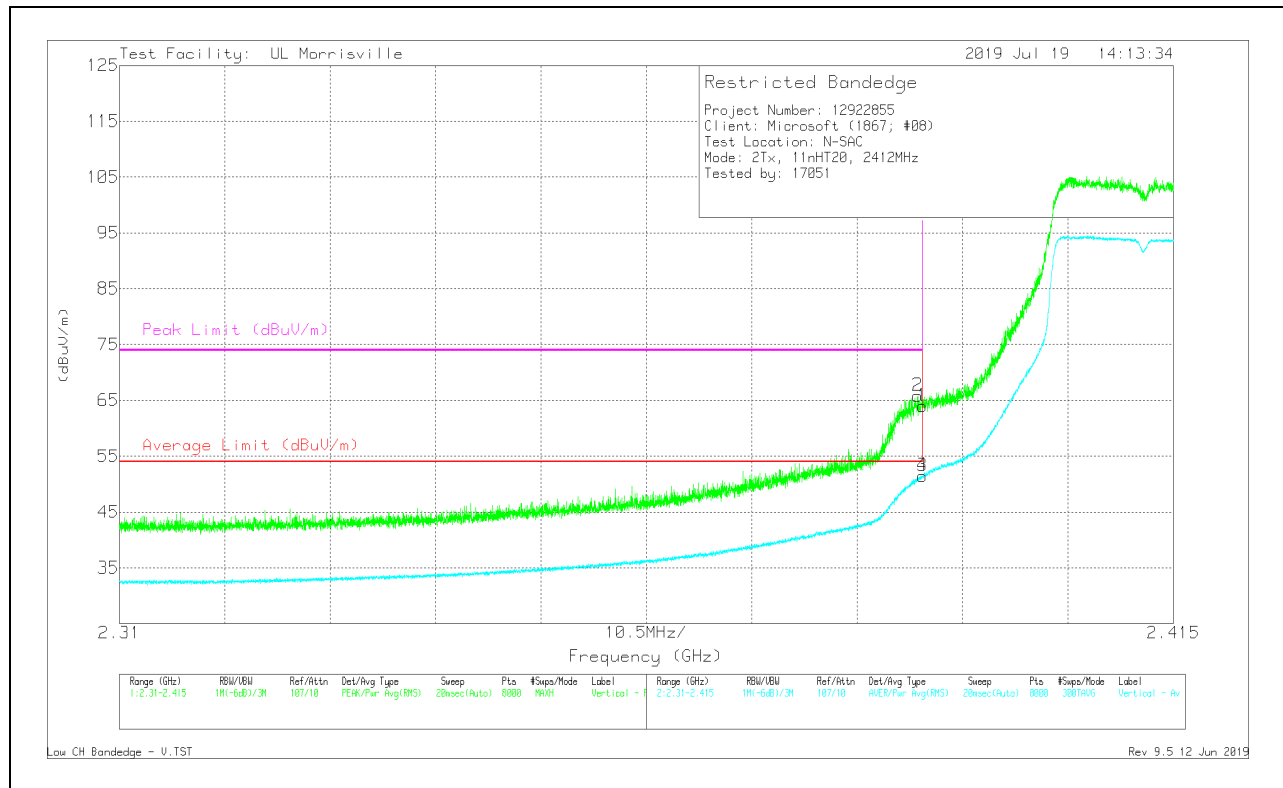
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* ** 2.38952	58.21	Pk	32	-24.4	65.81	-	-	74	-8.19	113	348	V
4	* ** 2.38997	43.89	RMS	32	-24.4	51.49	54	-2.51	-	-	113	349	V
1	* ** 2.39	56.35	Pk	32	-24.4	63.95	-	-	74	-10.05	113	348	V
3	* ** 2.39	43.84	RMS	32	-24.4	51.44	54	-2.56	-	-	113	349	V

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

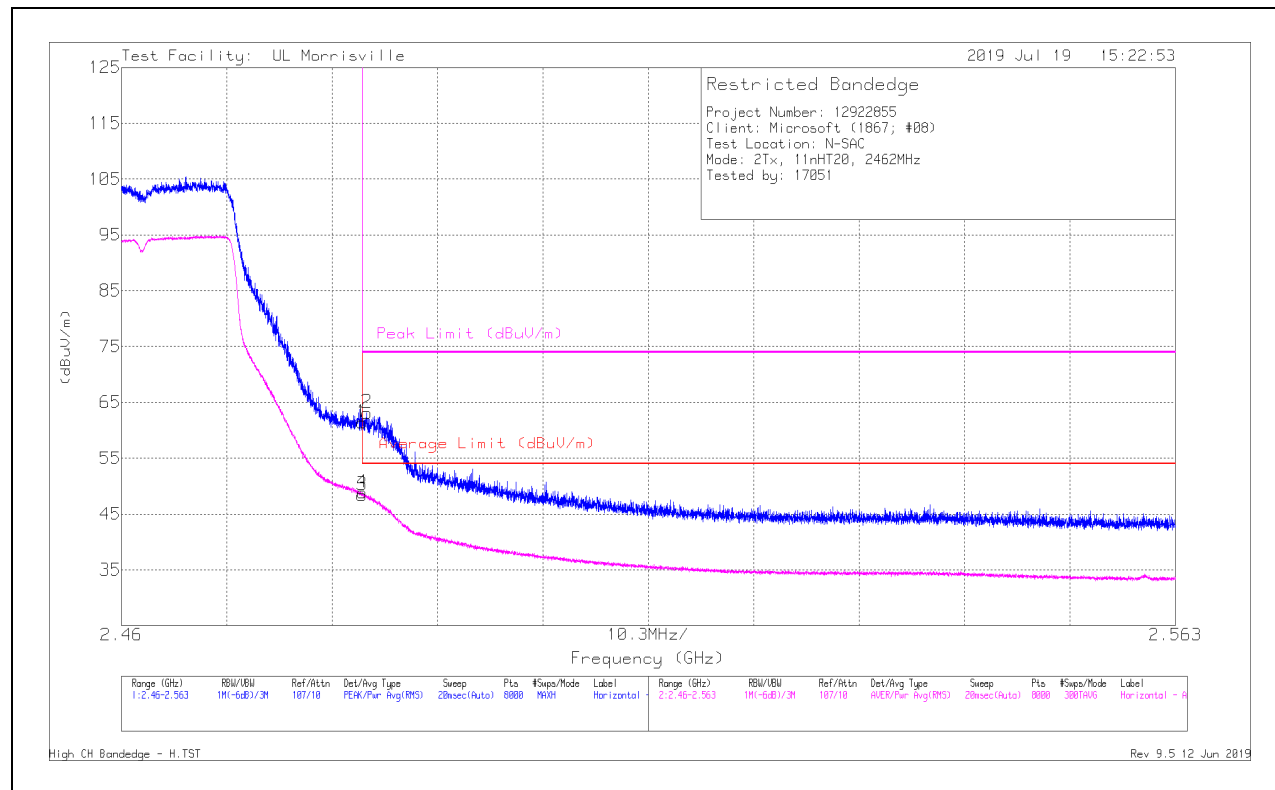
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 11)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	53.31	Pk	32.4	-24.3	61.41	-	-	74	-12.59	20	379	H
2	* ** 2.48399	55.07	Pk	32.4	-24.3	63.17	-	-	74	-10.83	20	379	H
3	* ** 2.4835	40.32	RMS	32.4	-24.3	48.42	54	-5.58	-	-	20	379	H
4	* ** 2.48353	40.78	RMS	32.4	-24.3	48.88	54	-5.12	-	-	20	379	H

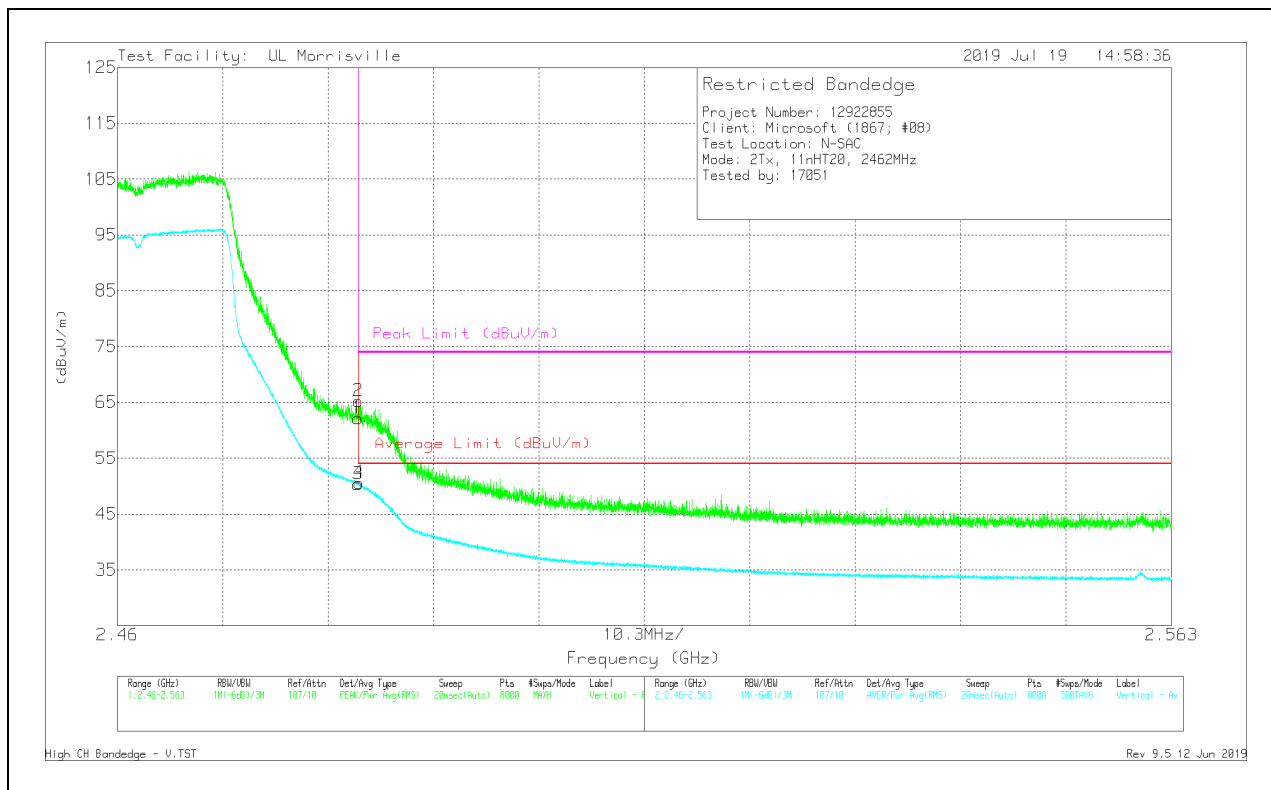
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	54.03	Pk	32.4	-24.3	62.13	-	-	74	-11.87	153	274	V
2	* ** 2.48353	57.13	Pk	32.4	-24.3	65.23	-	-	74	-8.77	153	274	V
3	* ** 2.4835	42.26	RMS	32.4	-24.3	50.36	54	-3.64	-	-	153	274	V
4	* ** 2.48358	42.46	RMS	32.4	-24.3	50.56	54	-3.44	-	-	153	274	V

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

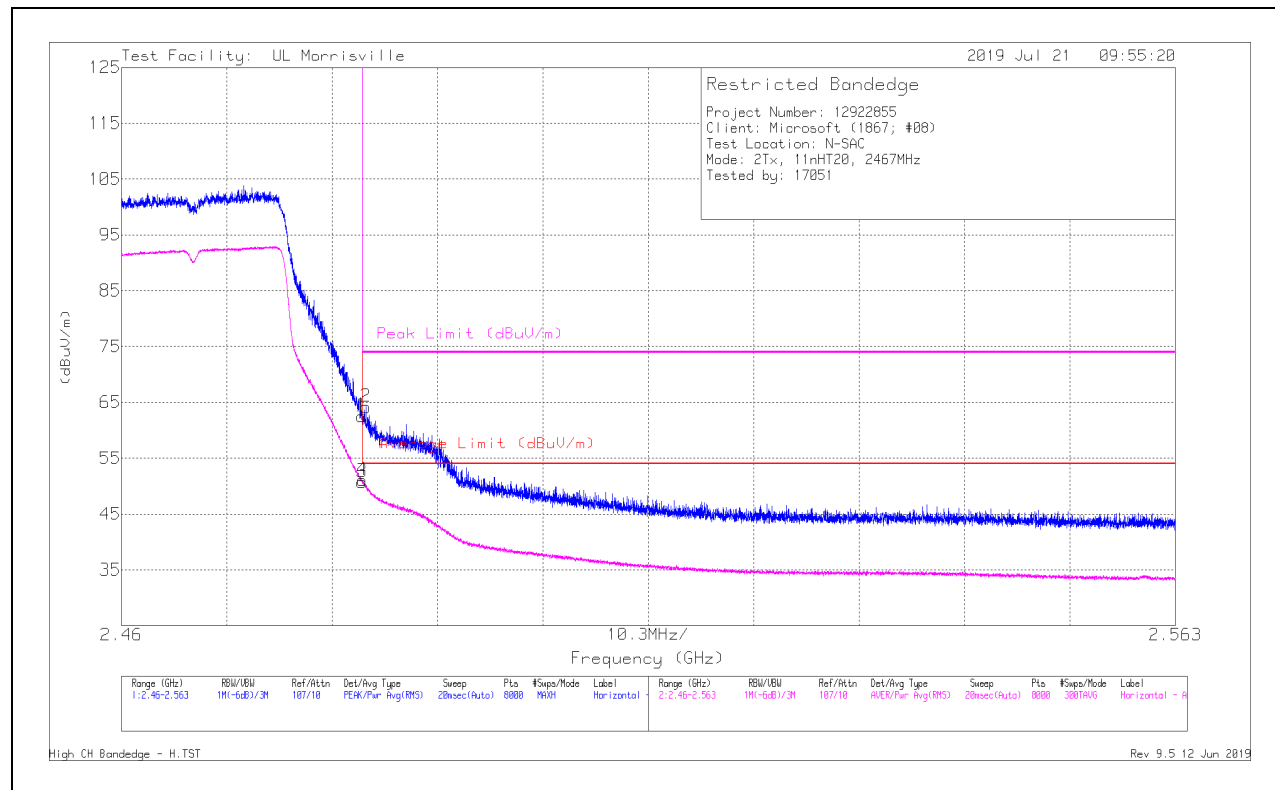
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 12)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	54.46	Pk	32.4	-24.3	62.56	-	-	74	-11.44	21	379	H
2	* ** 2.4839	56.08	Pk	32.4	-24.3	64.18	-	-	74	-9.82	21	379	H
3	* ** 2.4835	42.65	RMS	32.4	-24.3	50.75	54	-3.25	-	-	21	379	H
4	* ** 2.48353	42.97	RMS	32.4	-24.3	51.07	54	-2.93	-	-	21	379	H

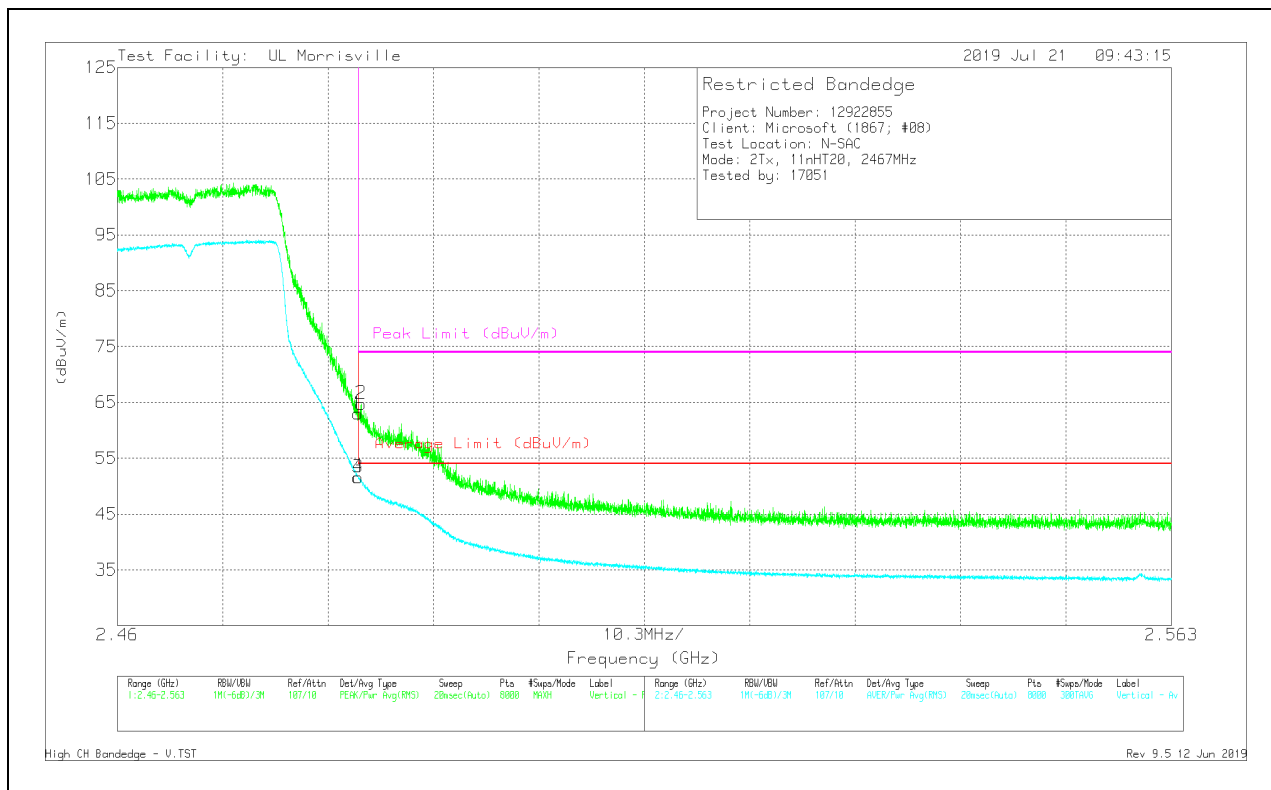
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	54.88	Pk	32.4	-24.3	62.98	-	-	74	-11.02	154	274	V
3	* ** 2.4835	43.49	RMS	32.4	-24.3	51.59	54	-2.41	-	-	154	274	V
4	* ** 2.48354	43.51	RMS	32.4	-24.3	51.61	54	-2.39	-	-	154	274	V
2	* ** 2.48381	56.66	Pk	32.4	-24.3	64.76	-	-	74	-9.24	154	274	V

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

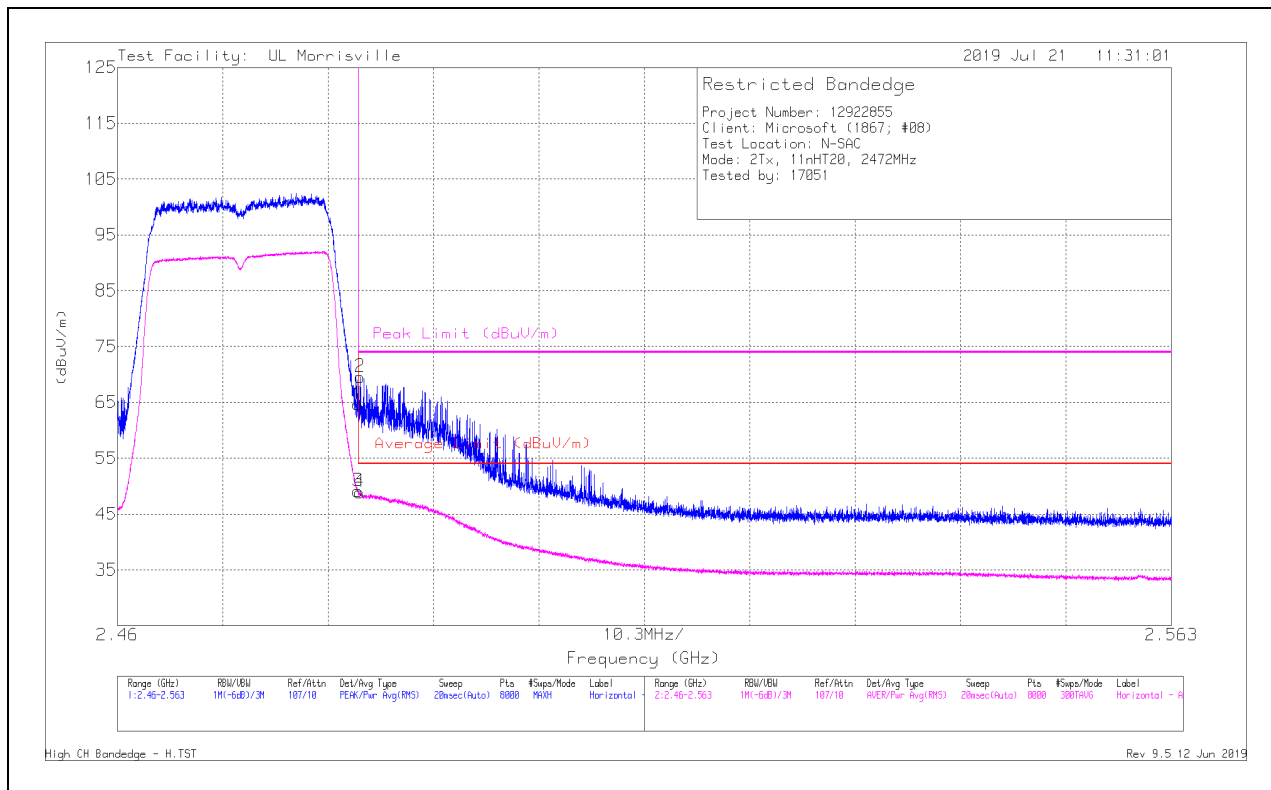
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 13)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	56.63	Pk	32.4	-24.3	64.73	-	-	74	-9.27	19	379	H
2	* ** 2.48373	61.45	Pk	32.4	-24.3	69.55	-	-	74	-4.45	19	379	H
3	* ** 2.4835	41.04	RMS	32.4	-24.3	49.14	54	-4.86	-	-	19	379	H
4	* ** 2.48363	40.83	RMS	32.4	-24.3	48.93	54	-5.07	-	-	19	379	H

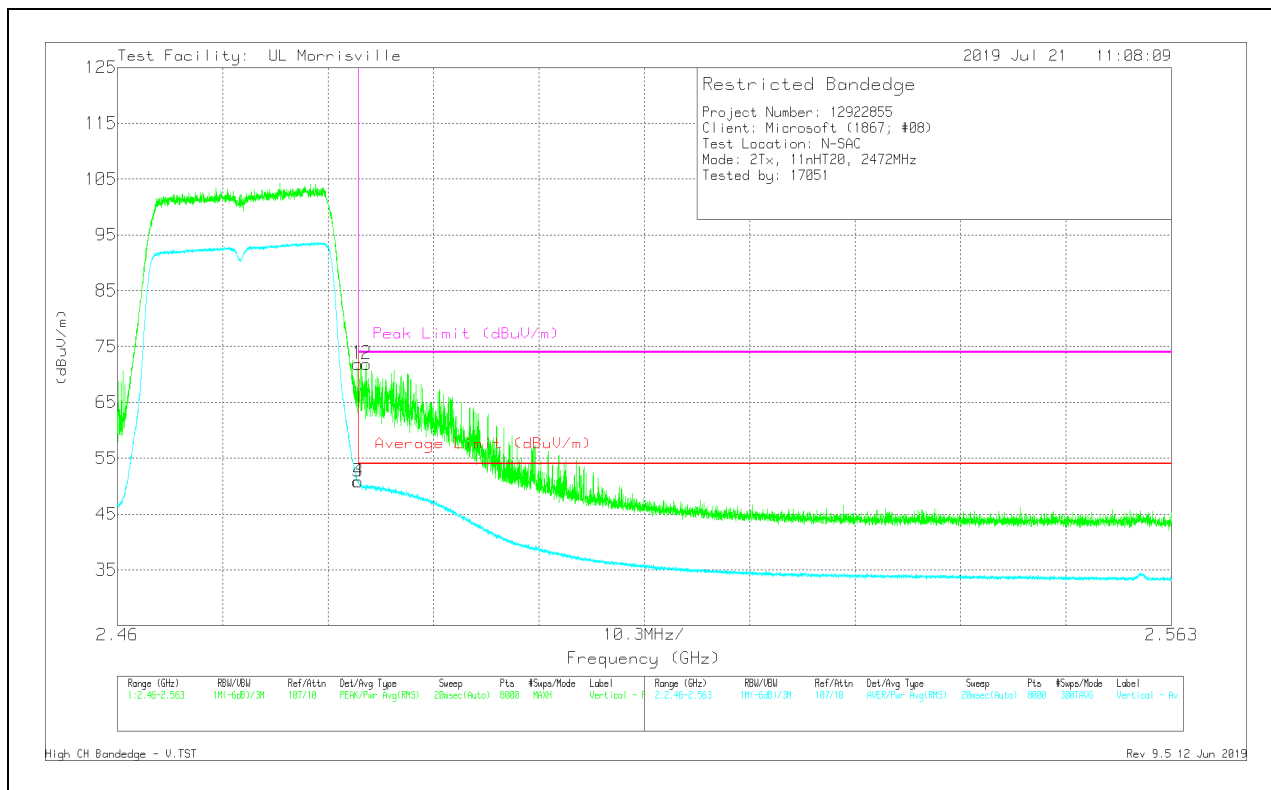
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	63.79	Pk	32.4	-24.3	71.89	-	-	74	-2.11	153	274	V
2	* ** 2.48433	63.79	Pk	32.4	-24.3	71.89	-	-	74	-2.11	153	274	V
3	* ** 2.4835	42.74	RMS	32.4	-24.3	50.84	54	-3.16	-	-	153	274	V
4	* ** 2.48353	42.72	RMS	32.4	-24.3	50.82	54	-3.18	-	-	153	274	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

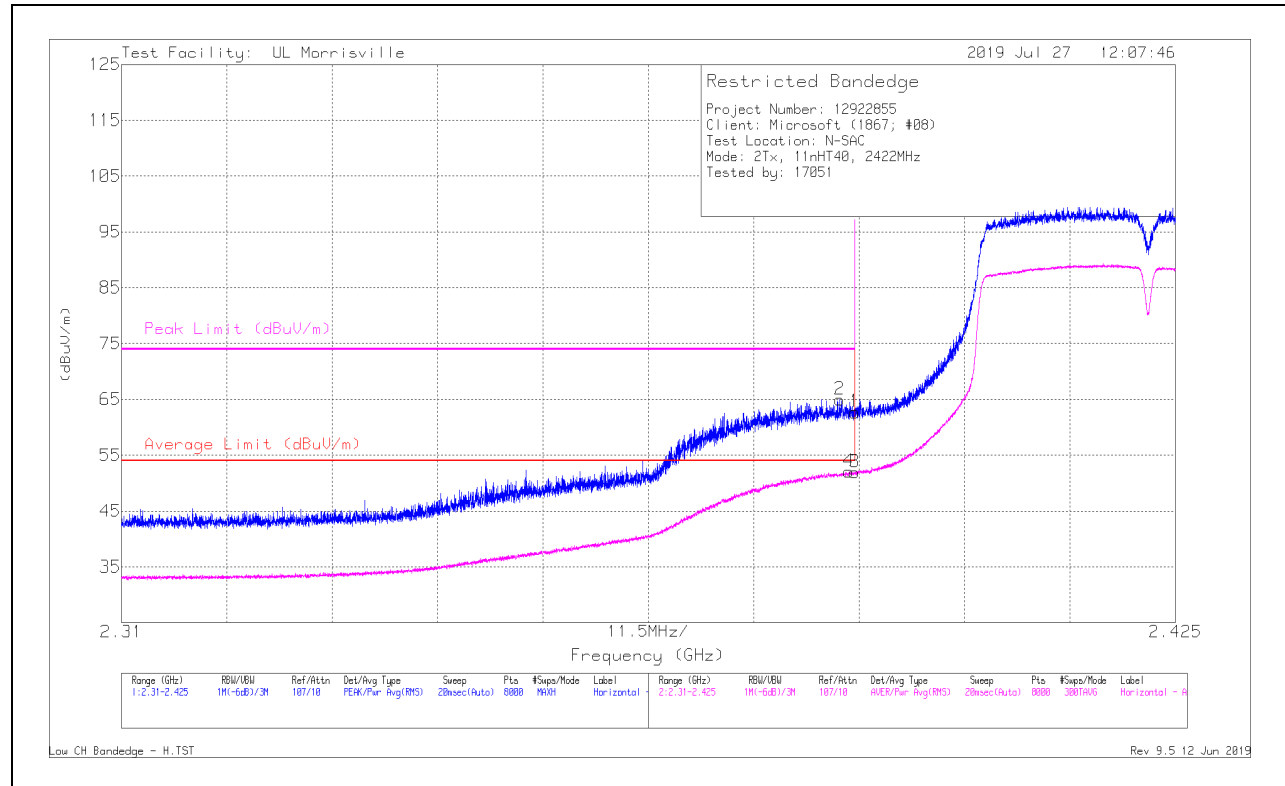
9.2.4. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 2.4 GHz BAND

2TX Antenna 1 + Antenna 2 SDM MODE

Note - Radiated spurious emissions 1-18 GHz for 802.11n HT20 and 802.11 nHT40 is covered by using the 802.11ax HE20 and 802.11ax HE40 radiated spurious emissions 1-18 GHz from UL report number R12922855-E4.

BANDEDGE (LOW CHANNEL, CH 3)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38999	55.11	Pk	32	-24.4	62.71	-	-	74	-11.29	19	365	H
2	* ** 2.38834	57.35	Pk	32	-24.4	64.95	-	-	74	-9.05	19	365	H
3	* ** 2.38999	44.32	RMS	32	-24.4	51.92	54	-2.08	-	-	19	365	H
4	* ** 2.38936	44.44	RMS	32	-24.4	52.04	54	-1.96	-	-	19	365	H

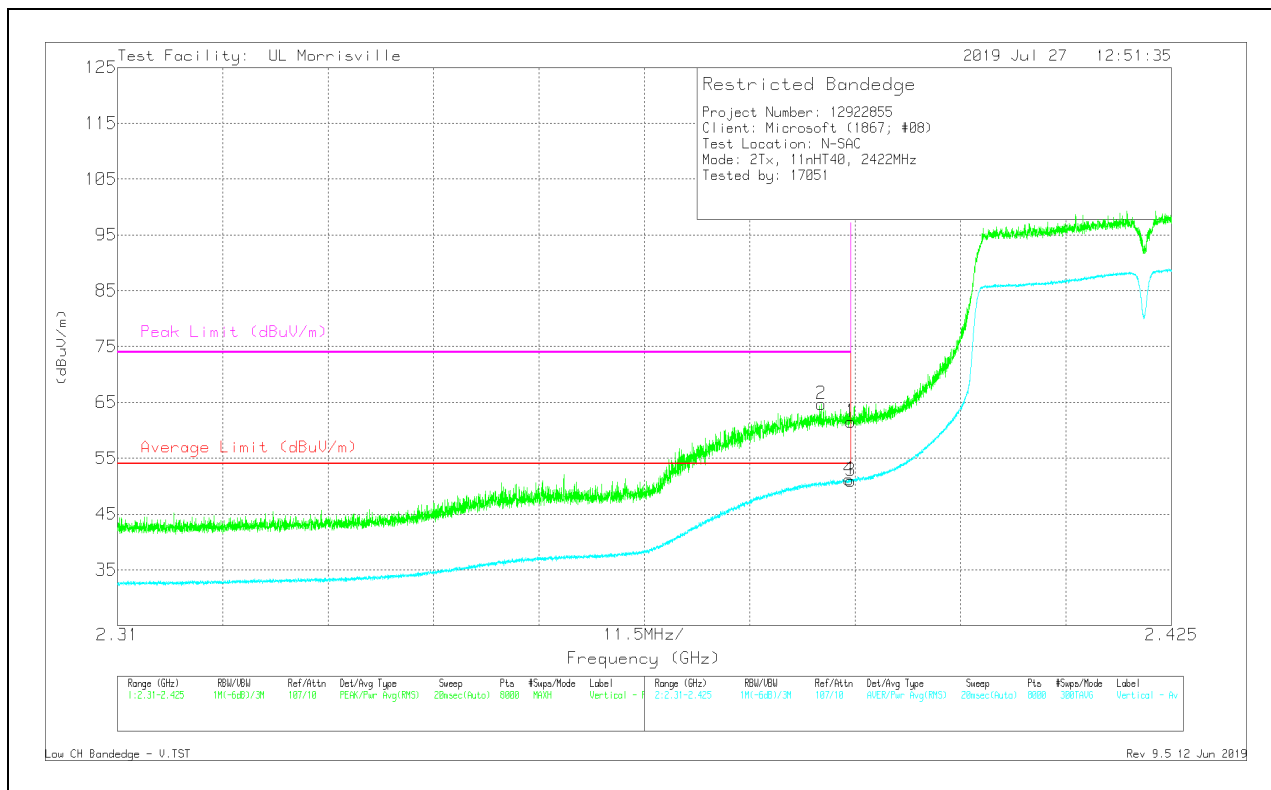
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38999	53.9	Pk	32	-24.4	61.5	-	-	74	-12.5	109	346	V
2	* ** 2.3868	57.11	Pk	32	-24.4	64.71	-	-	74	-9.29	109	346	V
3	* ** 2.38999	43.32	RMS	32	-24.4	50.92	54	-3.08	-	-	109	346	V
4	* ** 2.38982	43.63	RMS	32	-24.4	51.23	54	-2.77	-	-	109	346	V

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

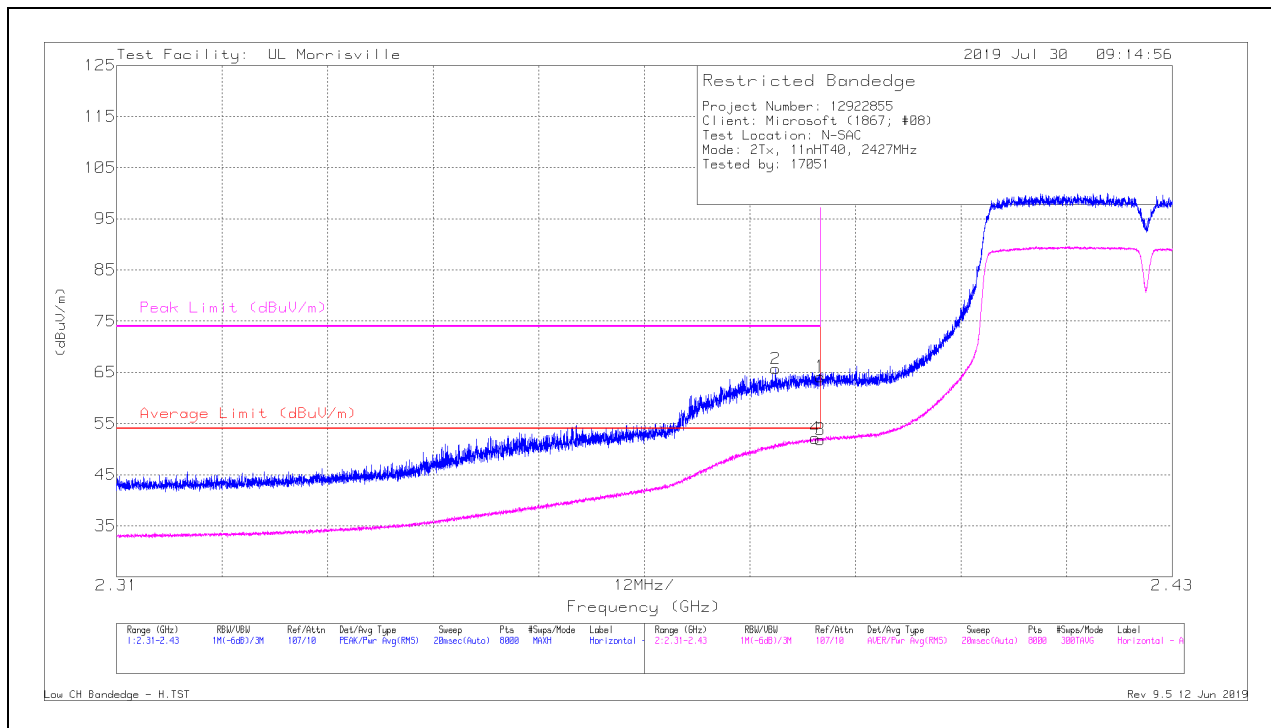
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (LOW CHANNEL, CH 4)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38999	56.55	Pk	32	-24.4	64.15	-	-	74	-9.85	18	364	H
2	* ** 2.38492	58.07	Pk	32	-24.4	65.67	-	-	74	-8.33	18	364	H
3	* ** 2.38999	44.26	RMS	32	-24.4	51.86	54	-2.14	-	-	18	364	H
4	* ** 2.38939	44.54	RMS	32	-24.4	52.14	54	-1.86	-	-	18	364	H

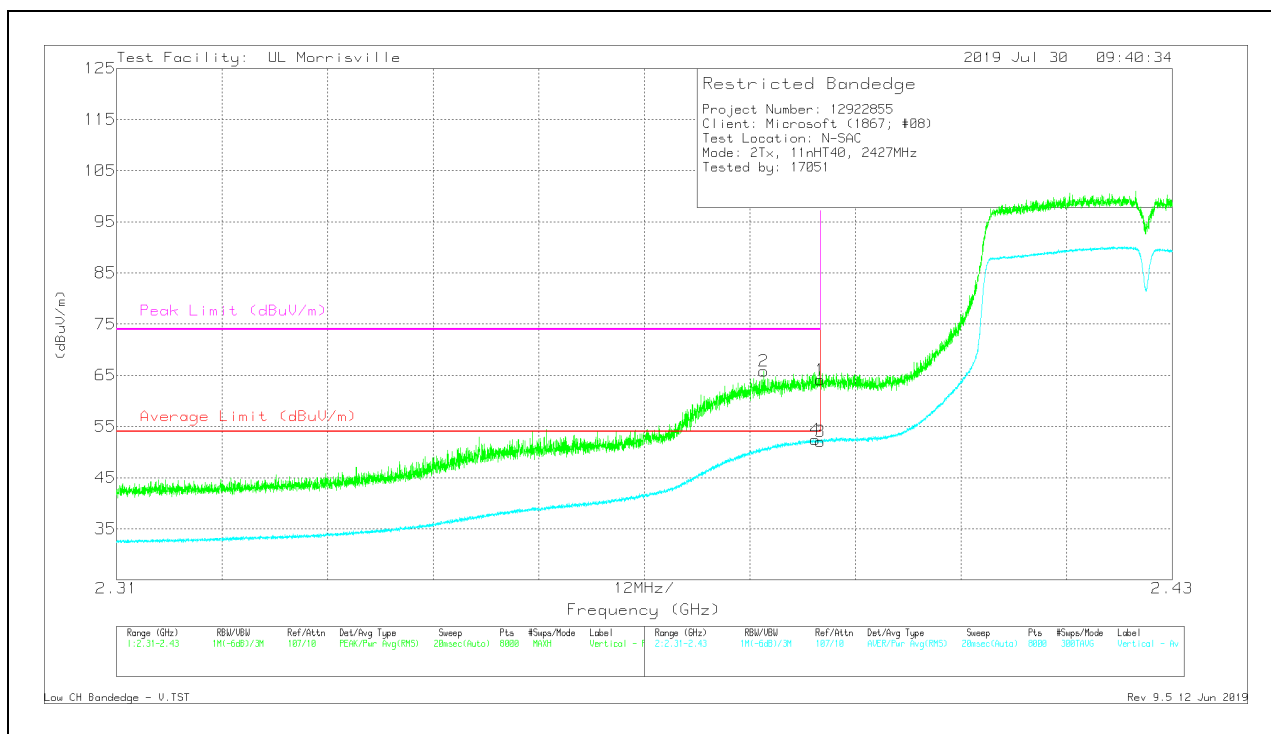
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38999	56.52	Pk	32	-24.4	64.12	-	-	74	-9.88	111	347	V
2	* ** 2.38359	58.23	Pk	32	-24.4	65.83	-	-	74	-8.17	111	347	V
3	* ** 2.38999	44.47	RMS	32	-24.4	52.07	54	-1.93	-	-	111	347	V
4	* ** 2.38944	44.82	RMS	32	-24.4	52.42	54	-1.58	-	-	111	347	V

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

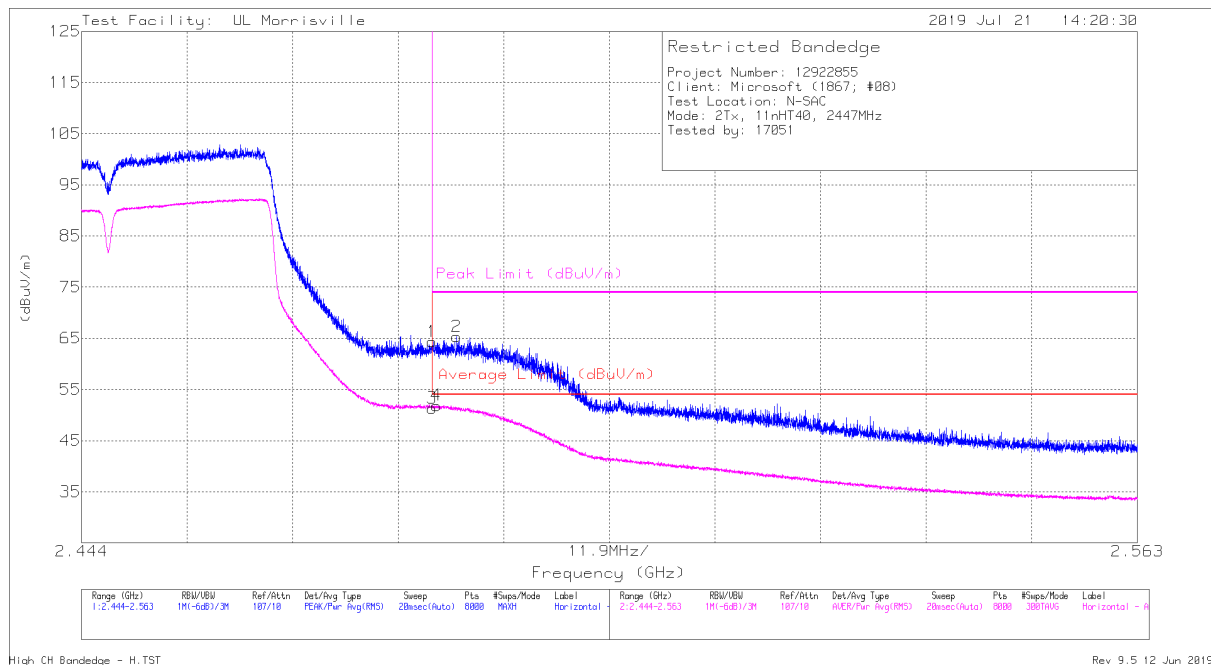
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANDEDGE (HIGH CHANNEL, CH 8)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48351	56.26	Pk	32.4	-24.3	64.36	-	-	74	-9.64	19	378	H
2	* ** 2.4863	57.25	Pk	32.4	-24.3	65.35	-	-	74	-8.65	19	378	H
3	* ** 2.48351	43.28	RMS	32.4	-24.3	51.38	54	-2.62	-	-	19	378	H
4	* ** 2.484	43.78	RMS	32.4	-24.3	51.88	54	-2.12	-	-	19	378	H

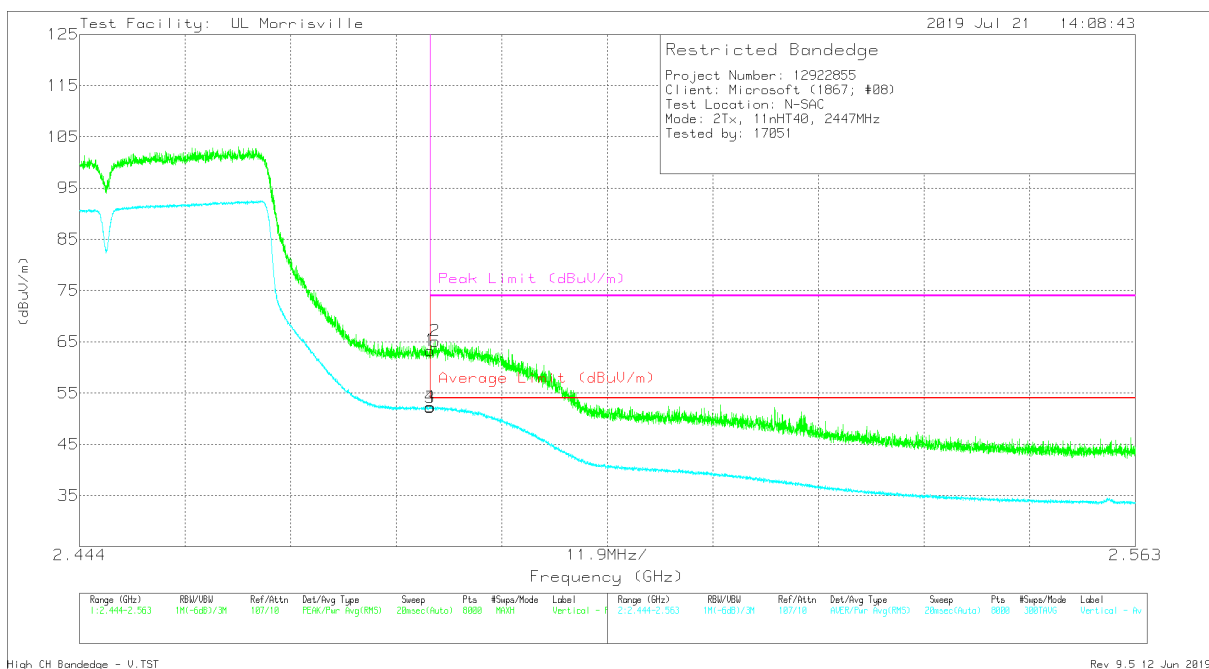
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48351	55.2	Pk	32.4	-24.3	63.3	-	-	74	-10.7	153	274	V
2	*** 2.48406	57.05	Pk	32.4	-24.3	65.15	-	-	74	-8.85	153	274	V
3	*** 2.48351	44.08	RMS	32.4	-24.3	52.18	54	-1.82	-	-	153	274	V
4	*** 2.48354	44.24	RMS	32.4	-24.3	52.34	54	-1.66	-	-	153	274	V

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

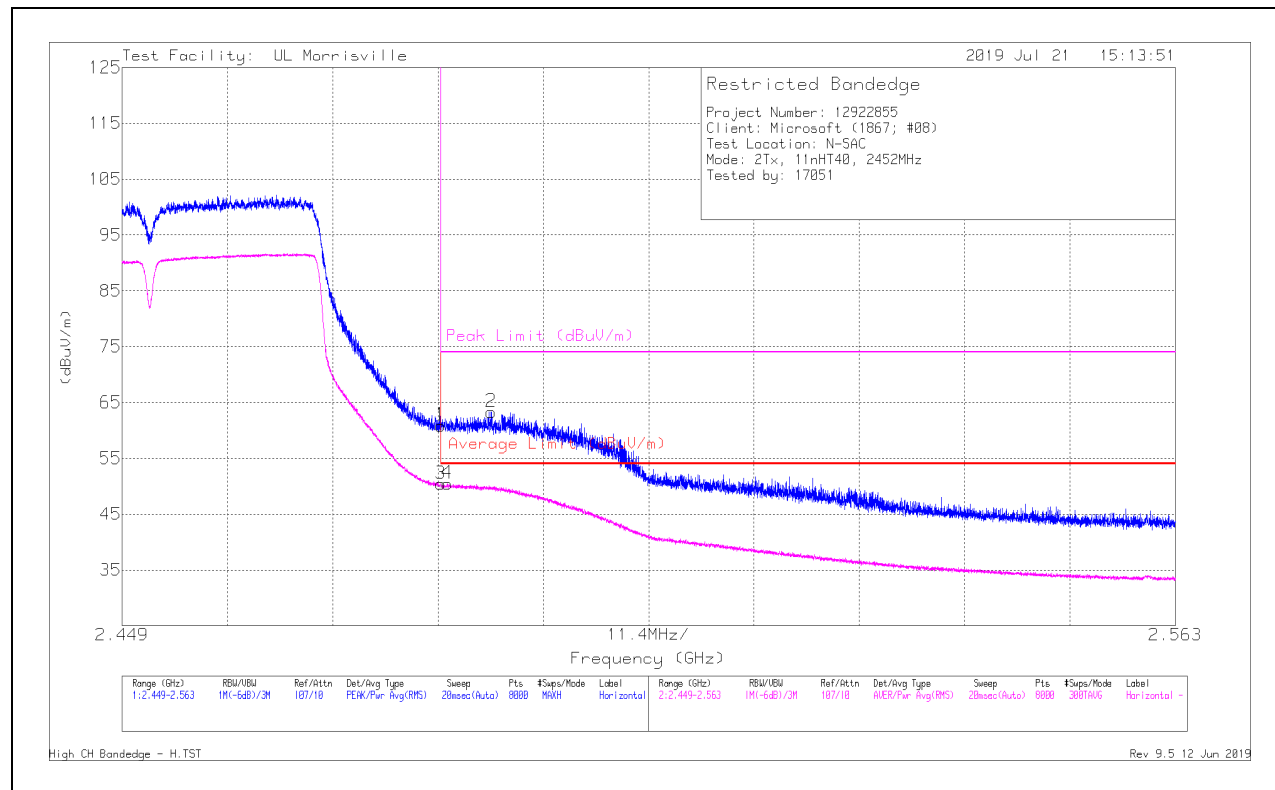
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANEDGE (HIGH CHANNEL, CH 9)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	52.77	Pk	32.4	-24.3	60.87	-	-	74	-13.13	18	380	H
2	* ** 2.48896	55.2	Pk	32.4	-24.3	63.3	-	-	74	-10.7	18	380	H
3	* ** 2.4835	42.32	RMS	32.4	-24.3	50.42	54	-3.58	-	-	18	380	H
4	* ** 2.48422	42.39	RMS	32.4	-24.3	50.49	54	-3.51	-	-	18	380	H

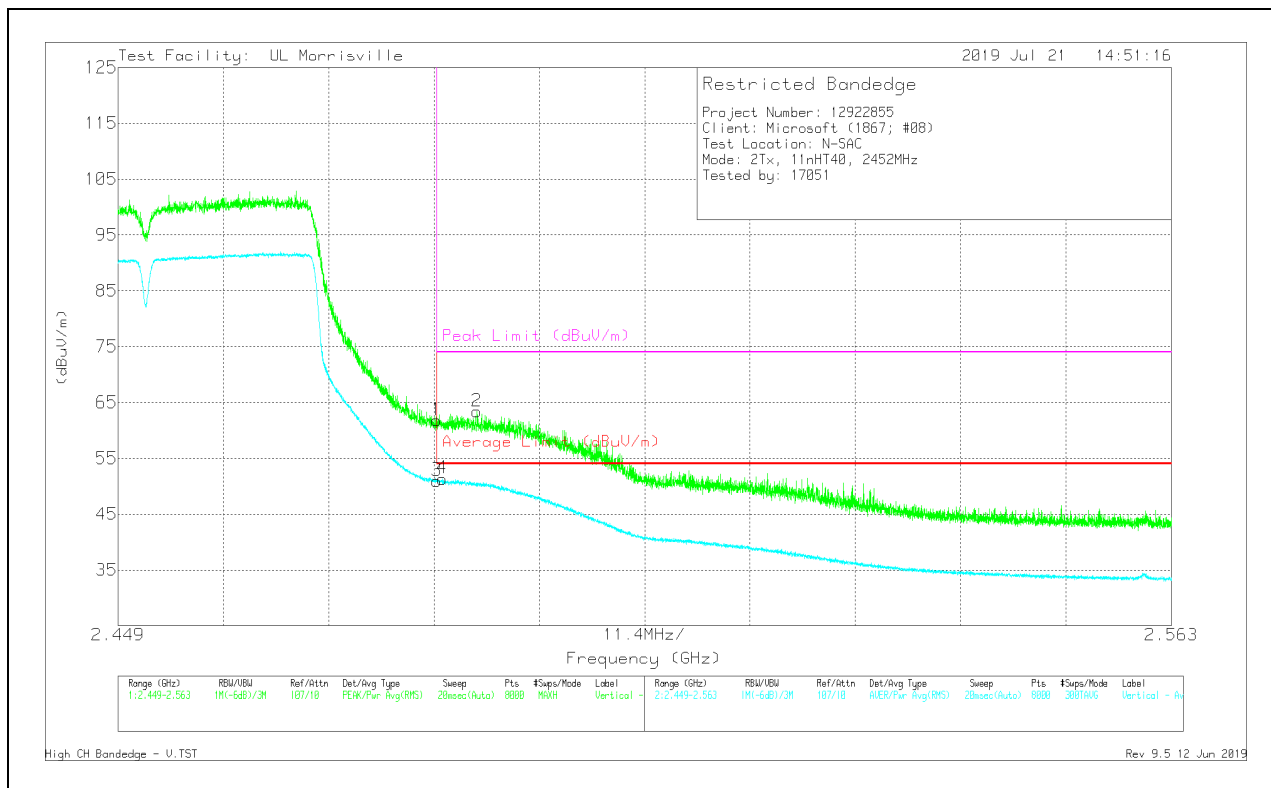
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	53.72	Pk	32.4	-24.3	61.82	-	-	74	-12.18	154	274	V
2	* ** 2.48787	55.3	Pk	32.4	-24.3	63.4	-	-	74	-10.6	154	274	V
3	* ** 2.4835	42.86	RMS	32.4	-24.3	50.96	54	-3.04	-	-	154	274	V
4	* ** 2.48409	43.26	RMS	32.4	-24.3	51.36	54	-2.64	-	-	154	274	V

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

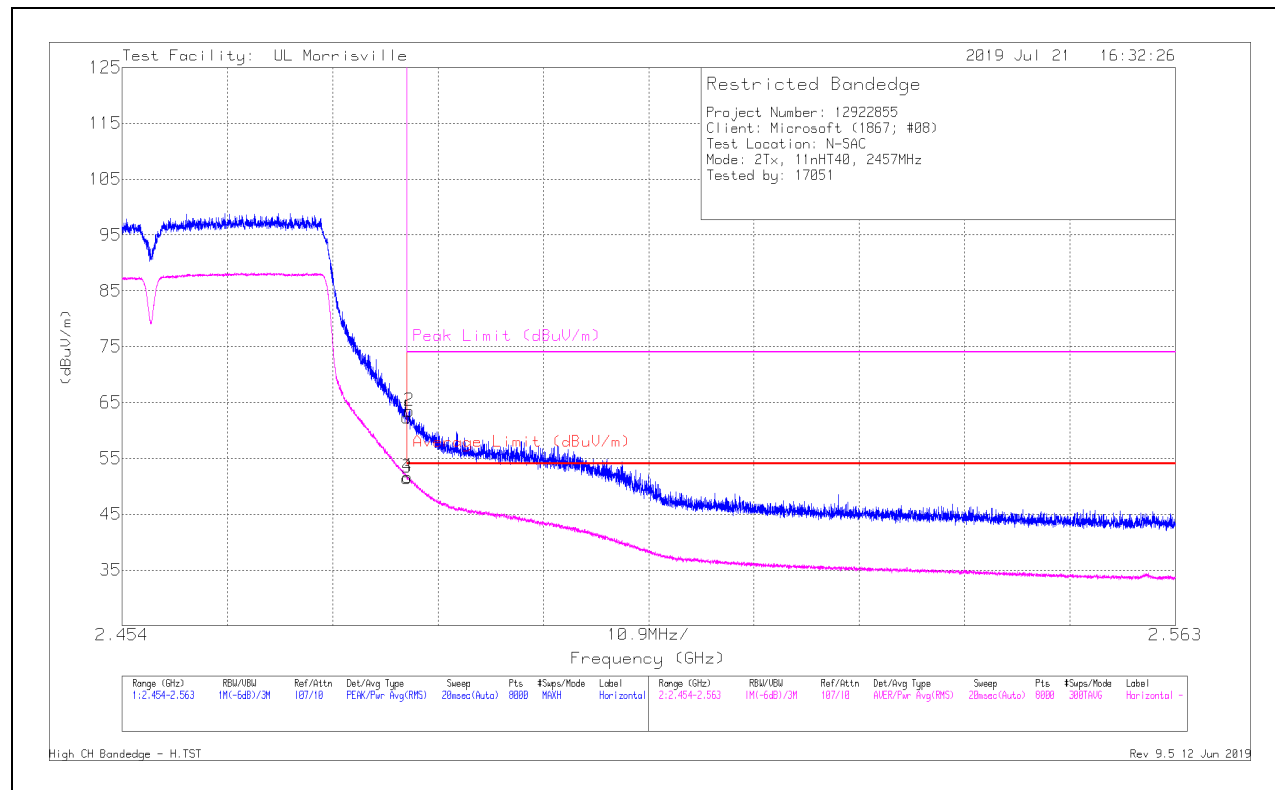
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANEDGE (HIGH CHANNEL, CH 10)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	54.18	Pk	32.4	-24.3	62.28	-	-	74	-11.72	19	379	H
2	* ** 2.48375	55.42	Pk	32.4	-24.3	63.52	-	-	74	-10.48	19	379	H
3	* ** 2.4835	43.39	RMS	32.4	-24.3	51.49	54	-2.51	-	-	19	379	H
4	* ** 2.48354	43.57	RMS	32.4	-24.3	51.67	54	-2.33	-	-	19	379	H

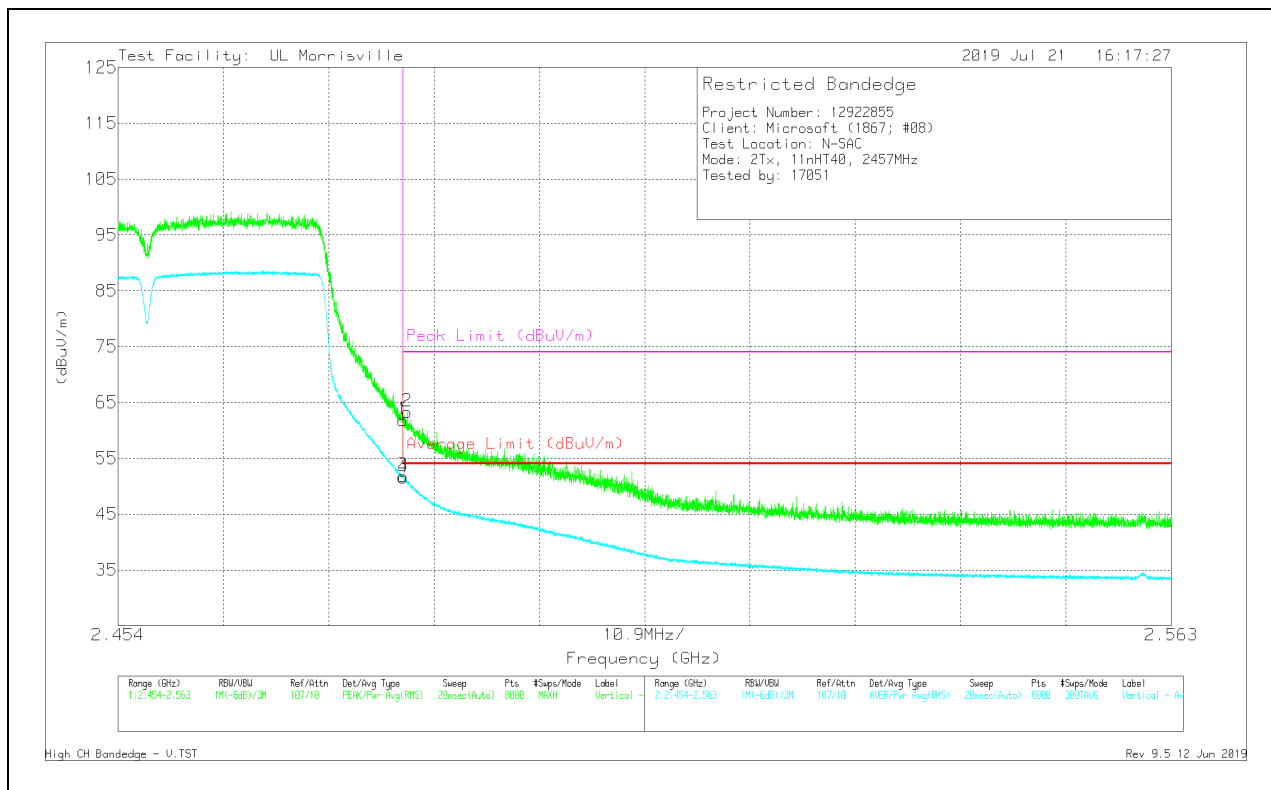
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	53.77	Pk	32.4	-24.3	61.87	-	-	74	-12.13	153	274	V
2	* ** 2.48391	55.23	Pk	32.4	-24.3	63.33	-	-	74	-10.67	153	274	V
3	* ** 2.4835	43.74	RMS	32.4	-24.3	51.84	54	-2.16	-	-	153	274	V
4	* ** 2.48354	43.48	RMS	32.4	-24.3	51.58	54	-2.42	-	-	153	274	V

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

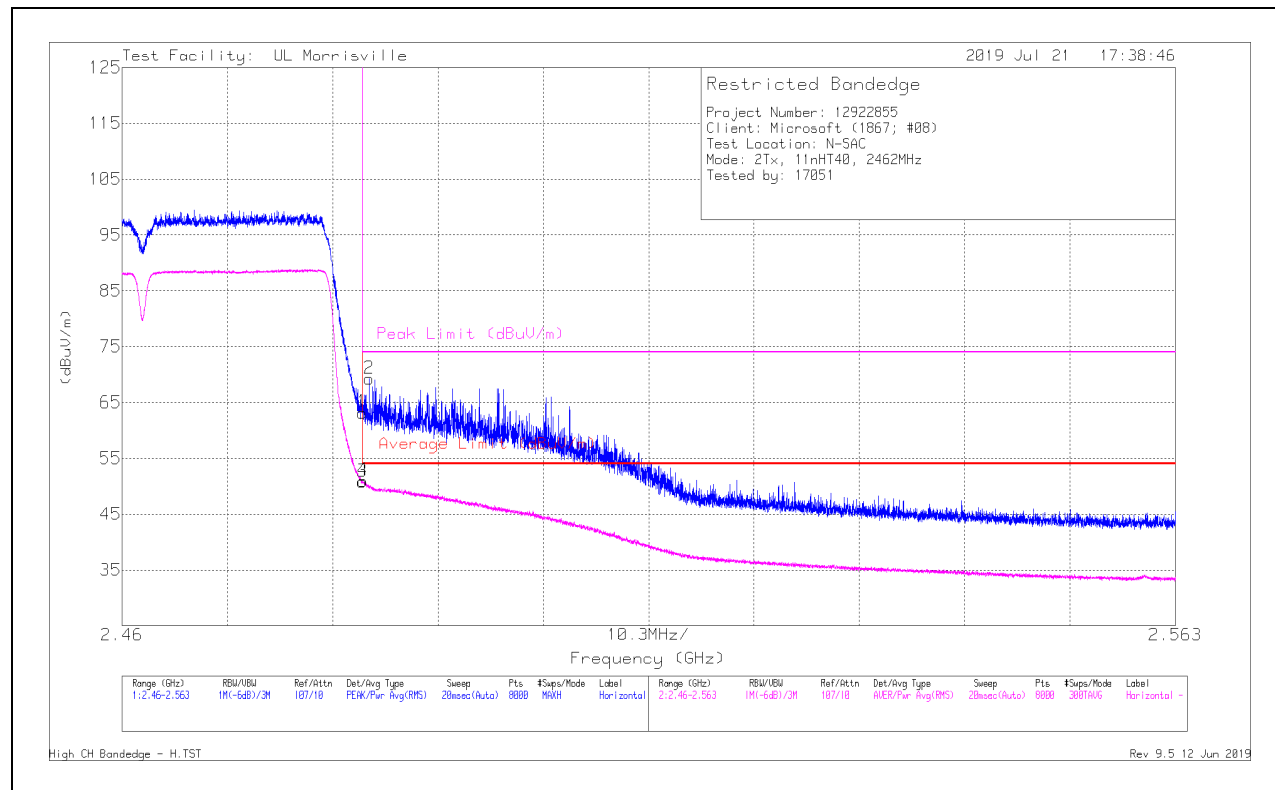
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

BANEDGE (HIGH CHANNEL, CH 11)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	55.12	Pk	32.4	-24.3	63.22	-	-	74	-10.78	19	379	H
2	* ** 2.48417	61.17	Pk	32.4	-24.3	69.27	-	-	74	-4.73	19	379	H
3	* ** 2.4835	42.71	RMS	32.4	-24.3	50.81	54	-3.19	-	-	19	379	H
4	* ** 2.48357	42.86	RMS	32.4	-24.3	50.96	54	-3.04	-	-	19	379	H

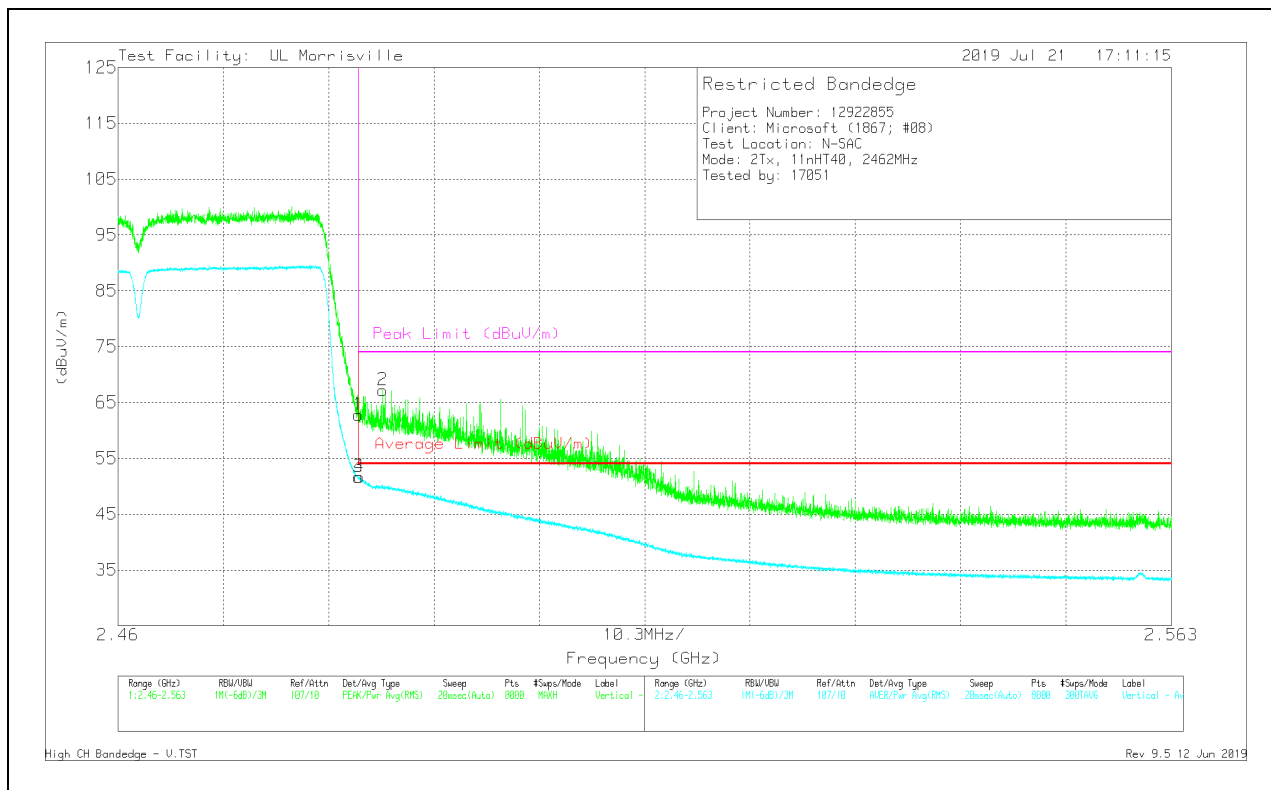
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 AF (dBuV/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.4835	54.67	Pk	32.4	-24.3	62.77	-	-	74	-11.23	154	273	V
2	* ** 2.48591	59.06	Pk	32.4	-24.3	67.16	-	-	74	-6.84	154	273	V
3	* ** 2.4835	43.56	RMS	32.4	-24.3	51.66	54	-2.34	-	-	154	273	V
4	* ** 2.48362	43.56	RMS	32.4	-24.3	51.66	54	-2.34	-	-	154	273	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

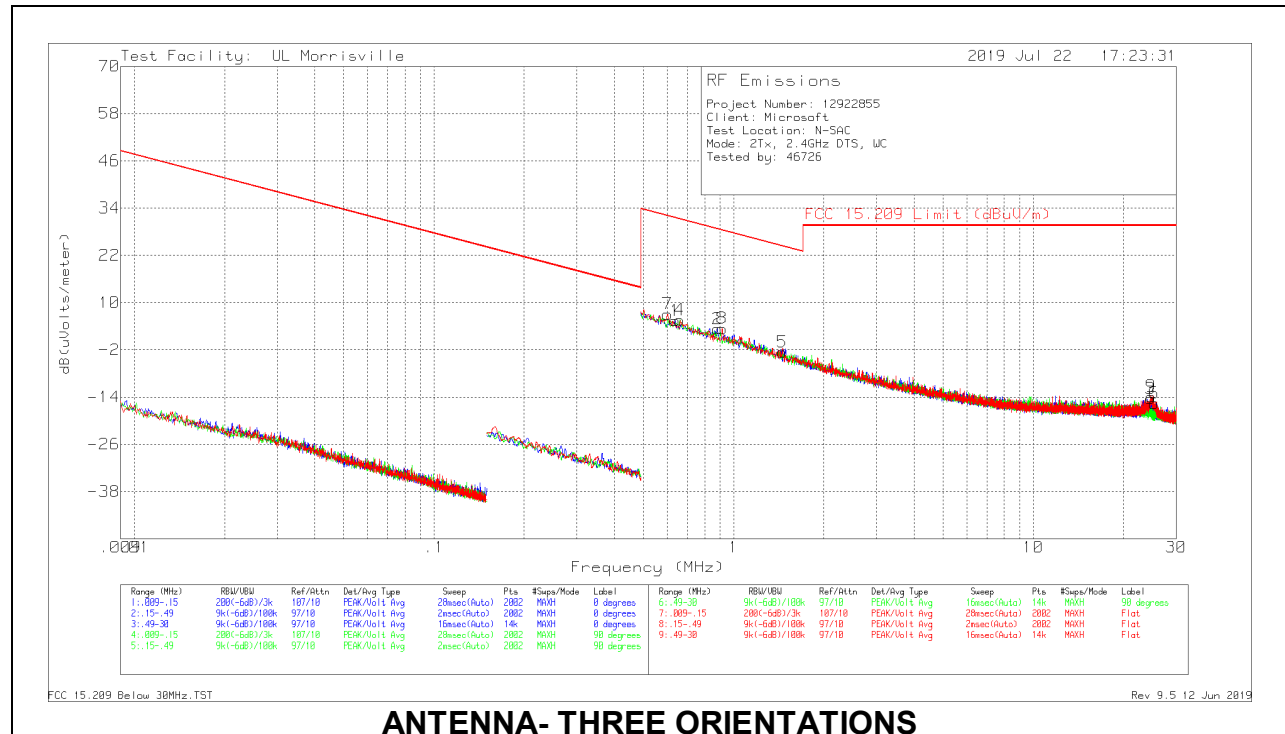
Pk - Peak detector

RMS - RMS detection

9.3. WORST CASE BELOW 30MHZ

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)

Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).



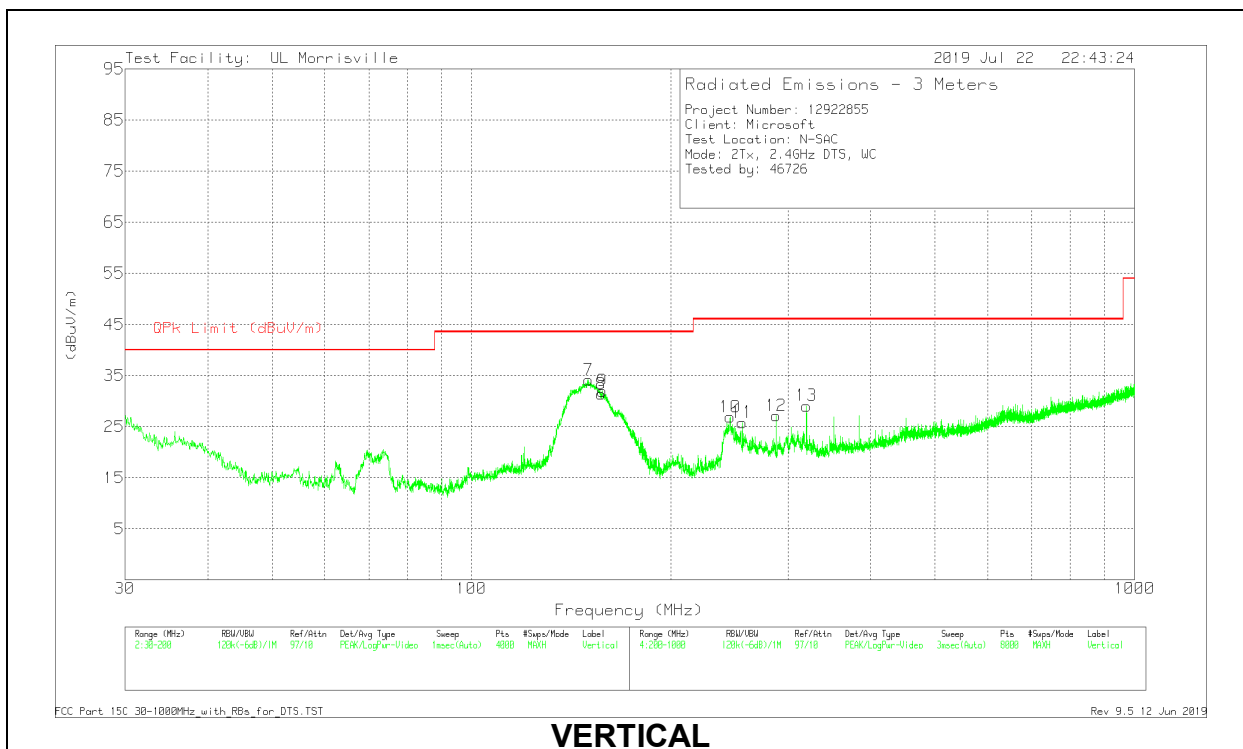
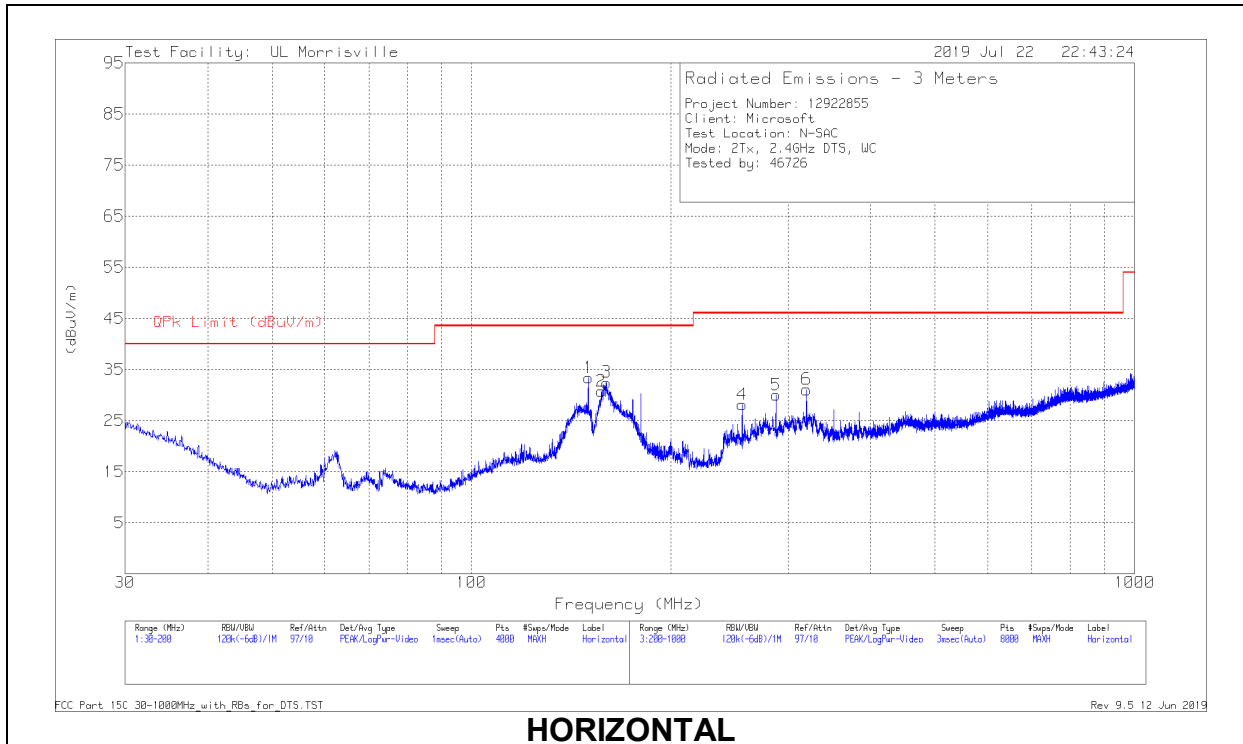
ANTENNA- THREE ORIENTATIONS

Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0059 (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	FCC 15.209 Avg/QP Limit (dBuV/m)	FCC 15.209 Pk Limit (dBuV/m)	Worst-Case Margin (dB)	Azimuth (Degs)
7	.60172	36.58	Pk	10.4	.1	-40	7.08	32.02	-	-24.94	0-360
1	.63756	34.91	Pk	10.4	.1	-40	5.41	31.51	-	-26.1	0-360
4	.6618	35.12	Pk	10.4	.1	-40	5.62	31.19	-	-25.57	0-360
2	.88209	32.71	Pk	10.4	.2	-40	3.31	28.69	-	-25.38	0-360
8	.91582	32.81	Pk	10.4	.2	-40	3.41	28.37	-	-24.96	0-360
5	1.45336	26.65	Pk	10.6	.2	-40	-2.55	24.36	-	-26.91	0-360
3	24.58655	15.44	Pk	9.4	.8	-40	-14.36	29.54	-	-43.9	0-360
9	24.75308	15.95	Pk	9.4	.8	-40	-13.85	29.54	-	-43.39	0-360
6	25.29484	14.31	Pk	9.2	.9	-40	-15.59	29.54	-	-45.13	0-360

Pk - Peak detector

9.4. WORST CASE BELOW 1 GHZ

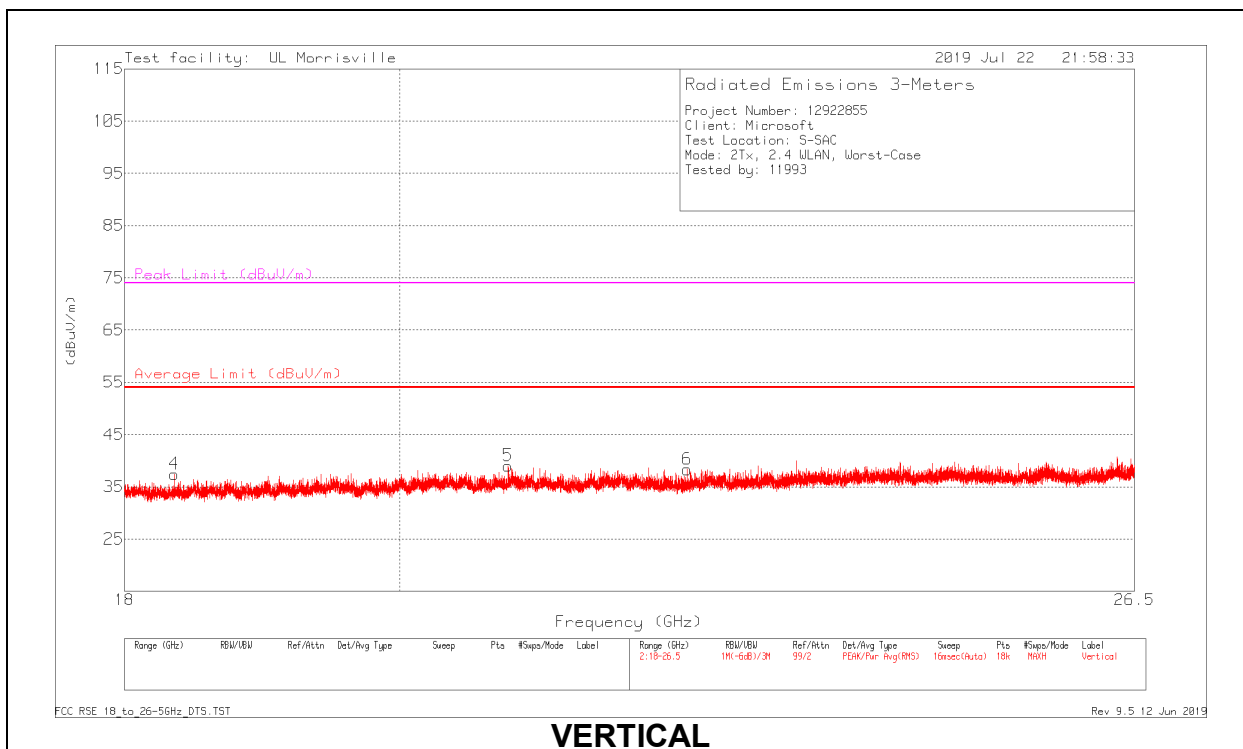
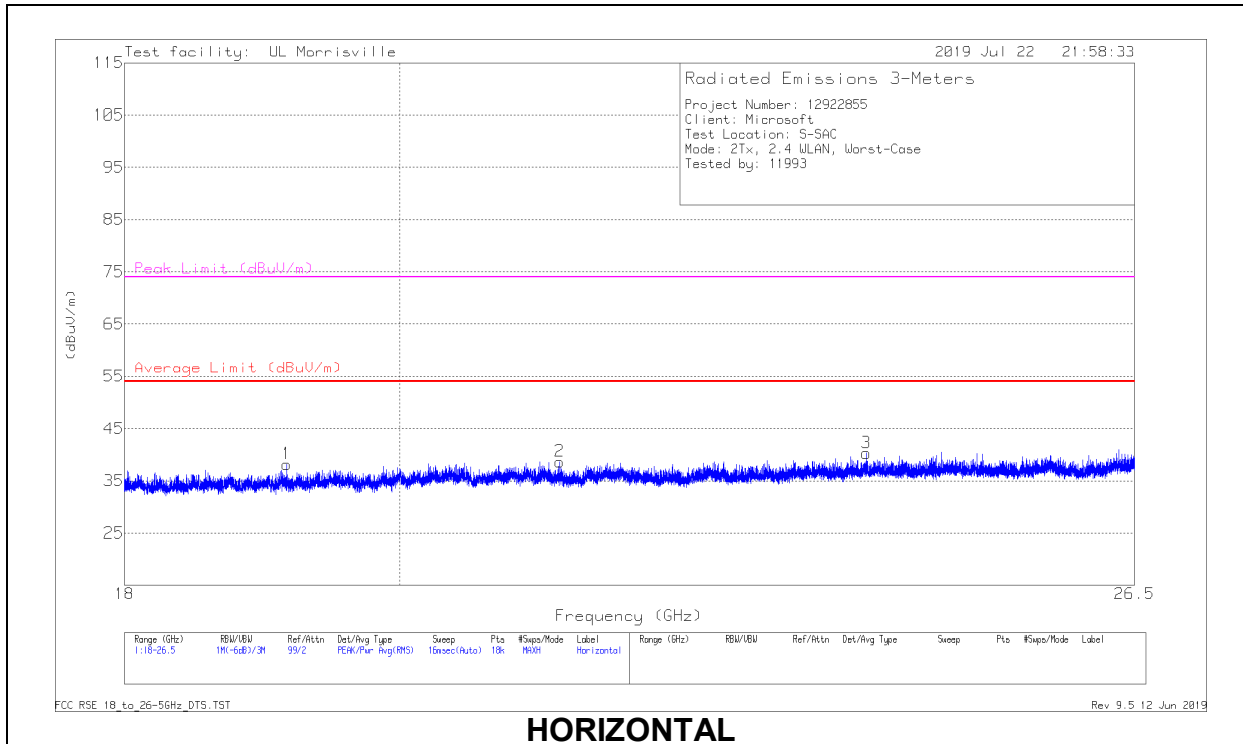


Below 1GHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0073 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 150.0086	44.9	Pk	19	-30.5	33.4	43.52	-10.12	0-360	299	H
2	* ** 156.8741	42.38	Pk	18.8	-30.4	30.78	43.52	-12.74	0-360	199	H
7	* ** 150.0086	45.61	Pk	19	-30.5	34.11	43.52	-9.41	0-360	101	V
8	* ** 156.8528	42.97	Pk	18.8	-30.4	31.37	43.52	-12.15	0-360	101	V
4	* ** 256.0073	39.46	Pk	18.4	-29.7	28.16	46.02	-17.86	0-360	101	H
10	* ** 245.5059	38.51	Pk	18.2	-29.8	26.91	46.02	-19.11	0-360	102	V
11	* ** 256.0073	37.11	Pk	18.4	-29.7	25.81	46.02	-20.21	0-360	199	V
9	157.533	43.68	Pk	18.8	-30.5	31.98	43.52	-11.54	0-360	101	V
3	159.8286	44.15	Pk	18.7	-30.4	32.45	43.52	-11.07	0-360	199	H
5	288.0114	39.72	Pk	19.8	-29.5	30.02	46.02	-16	0-360	101	H
12	288.0114	36.86	Pk	19.8	-29.5	27.16	46.02	-18.86	0-360	199	V
6	320.0156	39.89	Pk	20.6	-29.4	31.09	46.02	-14.93	0-360	101	H
13	320.0156	37.88	Pk	20.6	-29.4	29.08	46.02	-16.94	0-360	199	V

Pk - Peak detector

9.5. WORST CASE 18-26 GHZ



18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0076 AF (dB/m)	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 19.15465	44.39	Pk	32.7	-38.9	38.19	54	-15.81	74	-35.81	0-360	249	H
2	*** 21.26418	43.78	Pk	33.1	-38.2	38.68	54	-15.32	74	-35.32	0-360	249	H
3	*** 23.91349	43.59	Pk	34	-37.3	40.29	54	-13.71	74	-33.71	0-360	249	H
4	*** 18.3471	44.25	Pk	32.3	-39.1	37.45	54	-16.55	74	-36.55	0-360	251	V
5	*** 20.84907	44.24	Pk	33.1	-38.3	39.04	54	-14.96	74	-34.96	0-360	299	V
6	*** 22.32721	42.83	Pk	33.5	-38	38.33	54	-15.67	74	-35.67	0-360	101	V

Pk - Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 [*]	56 to 46 [*]
0.5-5	56	46
5-30	60	50

^{*} Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

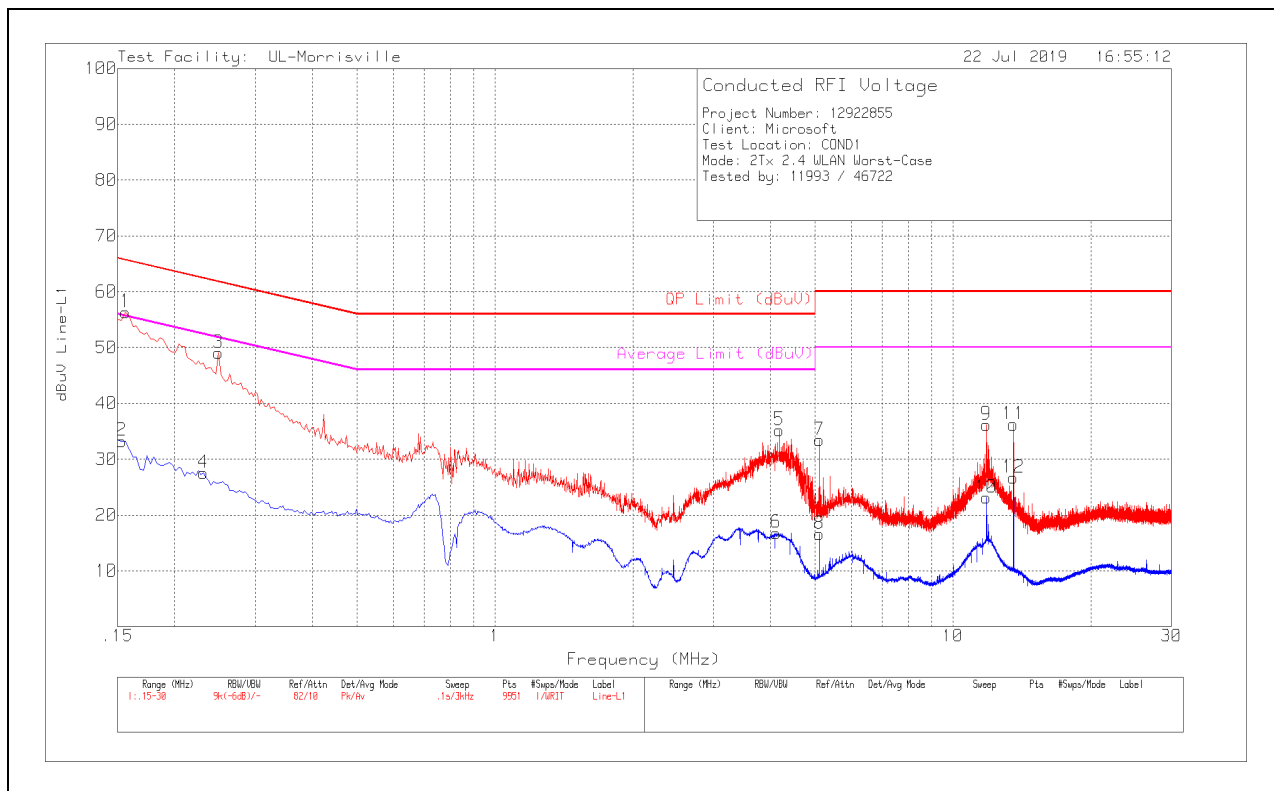
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

10.1.1. AC Power Line Host

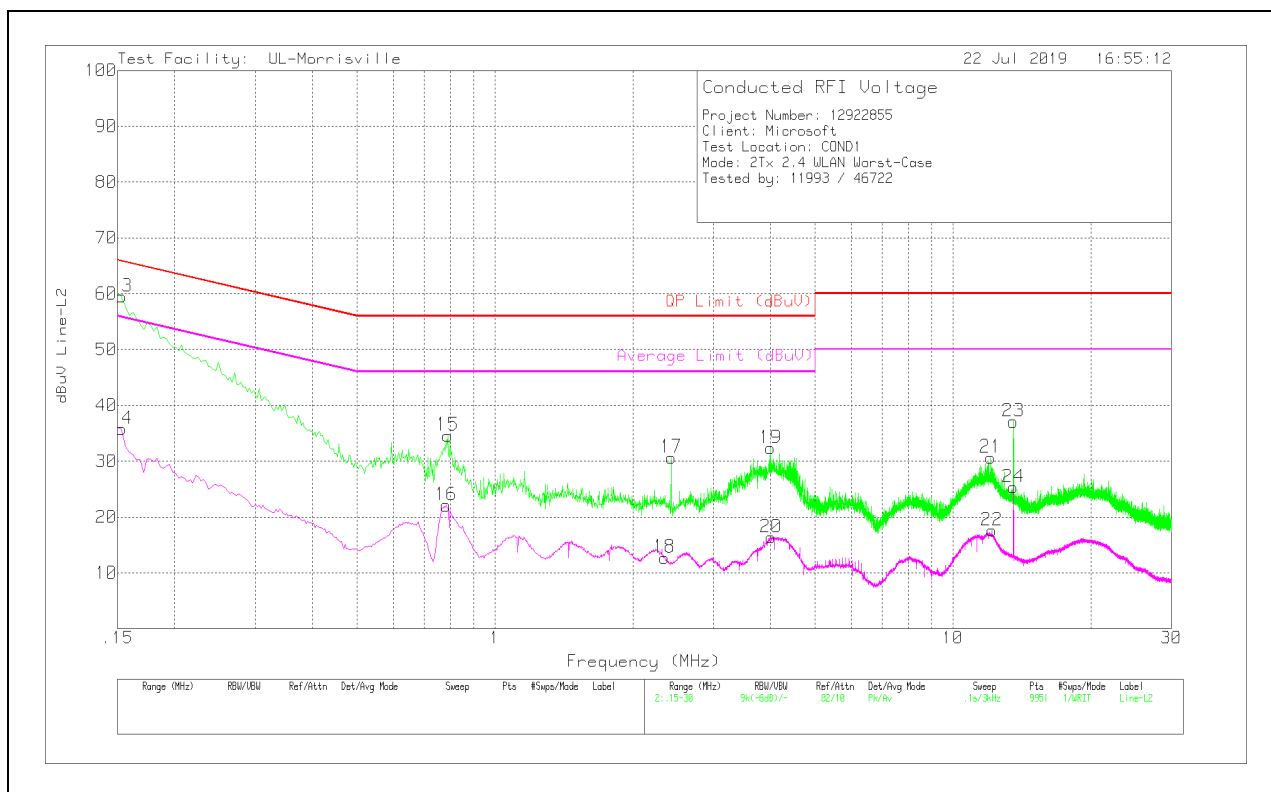
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.156	46.17	Pk	.2	10	56.37	65.67	-9.3	-	-
2	.153	23.07	Av	.2	10	33.27	-	-	55.84	-22.57
3	.249	38.95	Pk	.1	10	49.05	61.79	-12.74	-	-
4	.231	17.44	Av	.1	10	27.54	-	-	52.41	-24.87
5	4.176	25.01	Pk	0	10.2	35.21	56	-20.79	-	-
6	4.11	6.7	Av	0	10.1	16.8	-	-	46	-29.2
7	5.112	23.27	Pk	0	10.2	33.47	60	-26.53	-	-
8	5.109	6.39	Av	0	10.2	16.59	-	-	50	-33.41
9	11.832	25.7	Pk	.1	10.4	36.2	60	-23.8	-	-
10	11.838	12.64	Av	.1	10.4	23.14	-	-	50	-26.86
11	13.563	25.73	Pk	.1	10.4	36.23	60	-23.77	-	-
12	13.56	16.21	Av	.1	10.4	26.71	-	-	50	-23.29

Pk - Peak detector
Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
13	.153	49.27	Pk	.2	10	59.47	65.84	-6.37	-	-
14	.153	25.57	Av	.2	10	35.77	-	-	55.84	-20.07
15	.789	24.61	Pk	0	10	34.61	56	-21.39	-	-
16	.783	12.1	Av	0	10	22.1	-	-	46	-23.9
17	2.427	20.56	Pk	0	10.1	30.66	56	-25.34	-	-
18	2.343	2.63	Av	0	10.1	12.73	-	-	46	-33.27
19	4.002	22.23	Pk	0	10.1	32.33	56	-23.67	-	-
20	4.008	6.24	Av	0	10.1	16.34	-	-	46	-29.66
21	12.099	20.16	Pk	.1	10.4	30.66	60	-29.34	-	-
22	12.168	7.1	Av	.1	10.4	17.6	-	-	50	-32.4
23	13.56	26.6	Pk	.1	10.4	37.1	60	-22.9	-	-
24	13.56	14.87	Av	.1	10.4	25.37	-	-	50	-24.63

Pk - Peak detector
Av - Average detection

11. SETUP PHOTOS

Please refer to R12922855-EP1 for setup photos

END OF TEST REPORT