

TEST REPORT

Report Number. : R14565032-E2

Applicant : Braun GMBH
T-QTA Frankfurter Strasse 145
Kronberg, TS, 61476, DE

Model : 3786

Brand : Braun

FCC ID : USQ3786

IC : 6856A-3786

EUT Description : Power Toothbrush Charger

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C:2022
ISED RSS-247 ISSUE 2:2017
ISED RSS-GEN ISSUE 5 + A1 + A2:2021

Date Of Issue:
2023-02-16

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2023-01-27	Initial Issue	Noah Bennett
V2	2023-02-07	TCB Feedback	Noah Bennett
V3	2023-02-16	Revised cable loss statement in sections 9.4 and 9.5 Added power settings to section 6.5	Brian Kiewra

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
TABLE OF CONTENTS	3
1. ATTESTATION OF TEST RESULTS	5
2. TEST RESULTS SUMMARY	6
3. TEST METHODOLOGY	6
4. FACILITIES AND ACCREDITATION	6
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	7
5.1. METROLOGICAL TRACEABILITY	7
5.2. DECISION RULES.....	7
5.3. MEASUREMENT UNCERTAINTY.....	7
5.4. SAMPLE CALCULATION	7
6. EQUIPMENT UNDER TEST	8
6.1. EUT DESCRIPTION	8
6.2. MAXIMUM OUTPUT POWER.....	8
6.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
6.4. SOFTWARE AND FIRMWARE.....	8
6.5. WORST-CASE CONFIGURATION AND MODE.....	8
6.6. DESCRIPTION OF TEST SETUP.....	9
7. MEASUREMENT METHOD.....	10
8. TEST AND MEASUREMENT EQUIPMENT	11
9. ANTENNA PORT TEST RESULTS	14
9.1. ON TIME AND DUTY CYCLE.....	14
9.2. 99% BANDWIDTH.....	15
9.2.1. 802.11b MODE	15
9.2.2. 802.11g MODE	16
9.2.3. 802.11n HT20 MODE	17
9.2.4. 802.11n HT40 MODE	18
9.3. 6 dB BANDWIDTH.....	19
9.3.1. 802.11b MODE	19
9.3.2. 802.11g MODE	20
9.3.3. 802.11n HT20 MODE	21
9.3.4. 802.11n HT40 MODE	22
9.4. OUTPUT POWER.....	23
9.4.1. 802.11b MODE	24

9.4.2.	802.11g MODE	25
9.4.3.	802.11n HT20 MODE	26
9.4.4.	802.11n HT40 MODE	27
9.5.	AVERAGE POWER	28
9.5.1.	802.11b MODE	28
9.5.2.	802.11g MODE	28
9.5.3.	802.11n HT20 MODE	29
9.5.4.	802.11n HT40 MODE	29
9.6.	POWER SPECTRAL DENSITY	30
9.6.1.	802.11b MODE	30
9.6.2.	802.11g MODE	32
9.6.3.	802.11n HT20 MODE	33
9.6.4.	802.11n HT40 MODE	34
9.7.	CONDUCTED SPURIOUS EMISSIONS	35
9.7.1.	802.11b MODE	36
9.7.2.	802.11g MODE	37
9.7.3.	802.11n HT20 MODE	38
9.7.4.	802.11n HT40 MODE	39
10.	RADIATED TEST RESULTS	40
10.1.	TRANSMITTER ABOVE 1 GHz	42
10.1.1.	TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND	42
10.1.2.	TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND	52
10.1.3.	TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND	62
10.1.4.	TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 2.4 GHz BAND	72
10.2.	WORST CASE BELOW 30MHZ	82
10.3.	WORST CASE BELOW 1 GHZ	84
10.4.	WORST CASE 18-26 GHZ	86
11.	AC POWER LINE CONDUCTED EMISSIONS	88
11.1.1.	AC Power Line Host	89
12.	SETUP PHOTOS	91
END OF TEST REPORT		91

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Braun GMBH
T-QTA Frankfurter Strasse 145
Kronberg, TS, 61476, DE

EUT DESCRIPTION: Power Toothbrush Charger

MODEL: 3786

BRAND: Braun

SERIAL NUMBER: Non-Serialized

SAMPLE RECEIPT DATE: 2022-09-12

DATE TESTED: 2022-09-13 to 2022-12-01

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Refer to Section 2
ISED RSS-247 Issue 2	Refer to Section 2
ISED RSS-GEN Issue 5 + A1 + A2	Refer to Section 2

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.

Approved & Released For

UL LLC. By:

Prepared By:



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UL LLC

2. TEST RESULTS SUMMARY

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 5.2 (a)	6dB BW	Complies	None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power	Complies	None.
See Comment		Average power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	RSS-247 5.2 (b)	PSD	Complies	None
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Complies	None
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Complies	None
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Complies	None

This Report contains data provided by the applicant which can impact the validity of the results. UL LLC is only responsible for the validity of results after the integrations of the data provided by the customer. The following information was provided by the client:

1. Antenna Gain and Type (see section 6.3)
2. Supported data rates (see section 6.5)
3. Cable Loss (see section 9)

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 558074 D01 15.247 Meas Guidance v05, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 2.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Certificate Number #0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☒	Building 2800 Suite Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A	US0067	27265	825374

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}
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Occupied Channel Bandwidth	1.22%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
Power Spectral Density, conducted	2.47 dB
Unwanted Emissions, conducted	1.94 dB
All emissions, radiated	6.01 dB
Conducted Emissions (0.150-30MHz) - LISN	3.40 dB
Temperature	0.57°C
Humidity	3.39%

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

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

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a portable toothbrush charger that contains BLE and 2.4 WLAN radios. This Report covers the full testing of the WLAN radio.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
1Tx			
2412 - 2462	802.11b	22.51	178.24
2412 - 2462	802.11g	23.16	207.01
2412 - 2462	802.11n HT20	23.36	216.77
2422 - 2452	802.11n HT40	23.22	209.89

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:

Frequency Range (MHz)	Type	Gain (dBi)
2412-2462	PCB trace	3.42

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was v0.2.9

The test utility software used during testing was ESP_RF_TestTool_v2.8.

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 is only meant to operate in one orientation, X. Therefore, all testing was performed in this X orientation.

Worst-case data rates as observed from conducted output power were:

802.11b mode: 5.5 Mbps

802.11g mode: 18 Mbps

802.11n HT20mode: MCS0

802.11n HT40mode: MCS0

All testing run at max power setting (attenuation setting of 0 in configuration software).

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Power Supply	Braun	492-5218	NA	NA
Laptop(programming)	Asus	X515J	M8N0CX14J687338	PD99461NG
Laptop Power Supply	Asus	W19-045n3a	NA	NA

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Power	1	Barrel	Power	<3m	Used to connect EUT to power.

TEST SETUP

The EUT is connected to a test laptop before the tests. Test software programmed the radio to transmit as applicable for the entire duration of testing.

SETUP DIAGRAMS

Please refer to R14565032-EP1 for setup diagrams

7. MEASUREMENT METHOD

Duty Cycle: ANSI C63.10 Section 11.6.

6 dB BW: ANSI C63.10 Subclause -11.8.1

Occupied BW (99%): ANSI C63.10-2013 Section 6.9.3

Output Power: ANSI C63.10 Subclause -11.9.1.3 Method PKPM1 Peak-reading power meter
Output Power: ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

PSD: ANSI C63.10 Subclause -11.10.2 Method PKPSD (peak PSD)

Emissions in non-restricted frequency bands: ANSI C63.10 Subclause -11.11 and 6.10.4

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

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

General Radiated Spurious Emissions: ANSI C63.10-2013 Section 6.3 to 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 - 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	2022-04-05	2023-04-05
HI0091	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
LISN003	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2022-08-01	2023-08-01
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2022-08-03	2023-08-03
ATA222	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2022-04-05	2023-04-05
PS215	AC Power Source	Elgar	CW2501M (s/n 1523A02397)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2022-09-12	2023-09-12

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
SA0025	Spectrum Analyzer	Keysight Technologies	N9030A	2022-05-02	2023-05-02
PWM002	RF Power Meter	Keysight Technologies	N1911A	2022-07-07	2023-07-07
PWS007	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-03-22	2023-03-22
226559	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2022-05-03	2023-05-03
HI0091	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
SOFTEMI	Antenna Port Software	UL	Version 2022.8.16		
HI0090	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	0.009-30MHz				
AT0059	Active Loop Antenna	ETS-Lindgren	6502	2021-09-24	2022-09-24
	30-1000 MHz				
AT0066	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB1	2022-03-01	2023-03-01
	1-18 GHz				
AT0072	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-05-11	2023-05-11
	18-40 GHz				
AT0063	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2021-11-04	2022-11-04
	Gain-Loss Chains				
C1-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2022-05-05	2023-05-05
C1-SAC02	Gain-loss string: 25-1000MHz	Various	Various	2022-05-05	2023-05-05
C1-SAC03	Gain-loss string: 1-18GHz	Various	Various	2022-05-05	2023-05-05
C1-SAC04	Gain-loss string: 18-40GHz	Various	Various	2022-05-05	2023-05-05
	Receiver & Software				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2022-04-14	2023-04-14
SA0026	Spectrum Analyzer	Agilent	N9030A	2022-08-02	2023-08-02
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
200539	Environmental Meter	Fisher Scientific	15-077-963 (s/n 181474341)	2021-09-27	2022-09-27

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 2)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	30-1000 MHz				
AT0074	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2022-09-07	2023-09-07
	Gain-Loss Chains				
C2-SAC02	Gain-loss string: 25-1000MHz	Various	Various	2022-05-10	2023-05-10
	Receiver & Software				
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2022-03-08	2023-03-08
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
200540	Environmental Meter	Fisher Scientific	15-077-963 (s/n 181474409)	2021-09-27	2022-09-27

9. ANTENNA PORT TEST RESULTS

Note: For all Antenna port testing, a client declared cable loss of 0.5dB was used.

9.1. ON TIME AND DUTY CYCLE

LIMITS

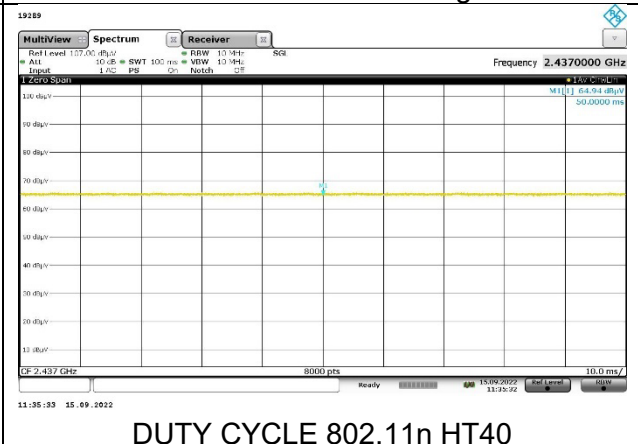
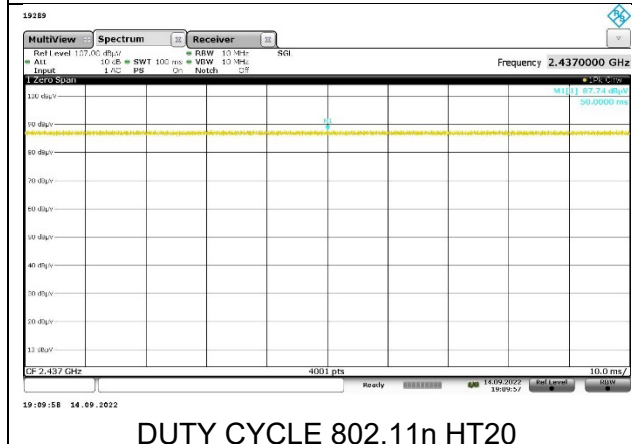
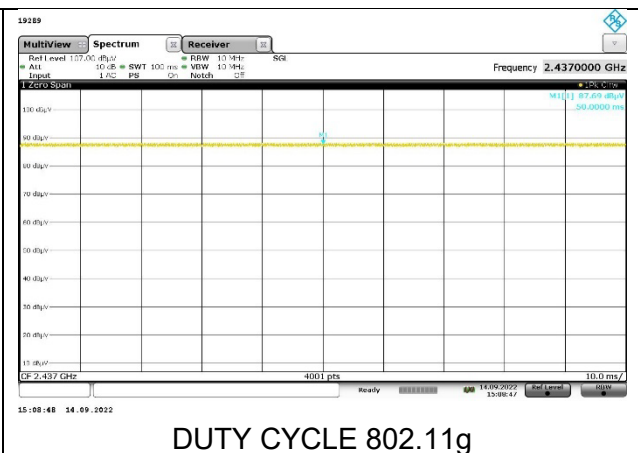
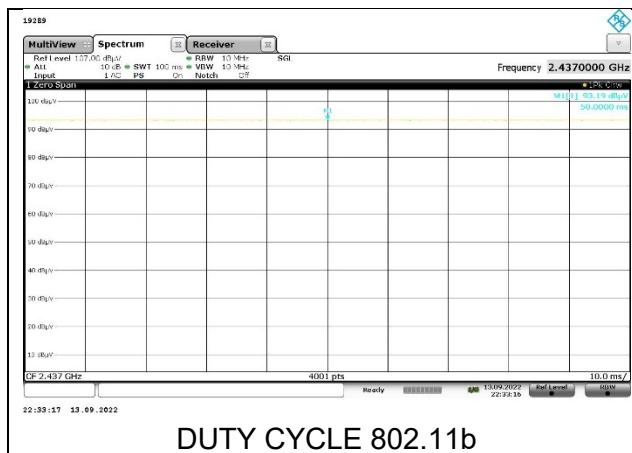
None; for reporting purposes only.

PROCEDURE

ANSI C63.10 Section 11.6
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 1TX	100.000	100.000	1.000	100.00	0.00	0.010
802.11g 1TX	100.000	100.000	1.000	100.00	0.00	0.010
802.11n HT20 1TX	100.000	100.000	1.000	100.00	0.00	0.010
802.11n HT40 1TX	100.000	100.000	1.000	100.00	0.00	0.010



9.2. 99% BANDWIDTH

LIMITS

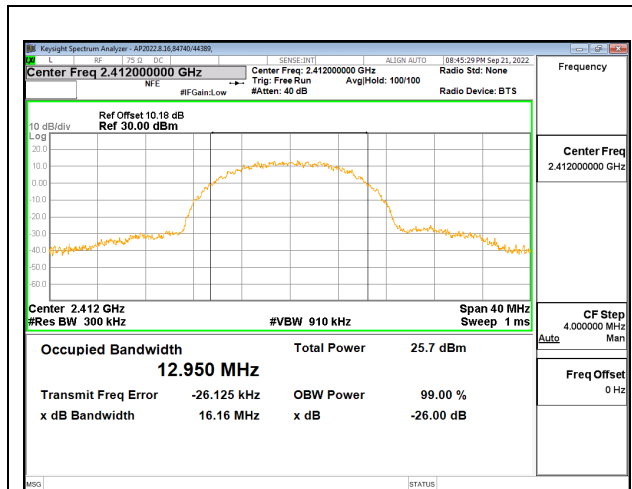
None; for reporting purposes only.

RESULTS

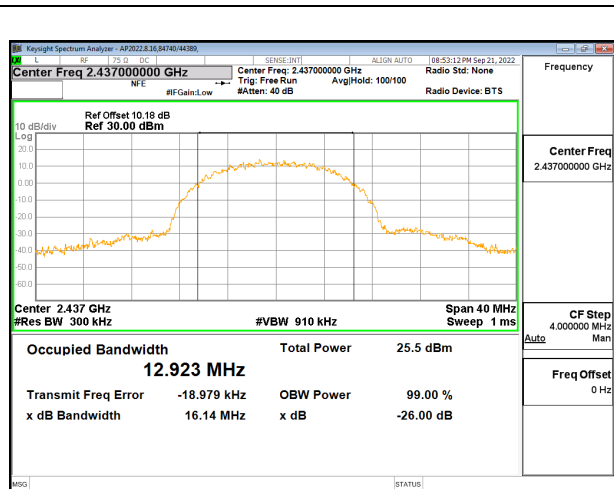
9.2.1. 802.11b MODE

1TX Antenna 1 MODE

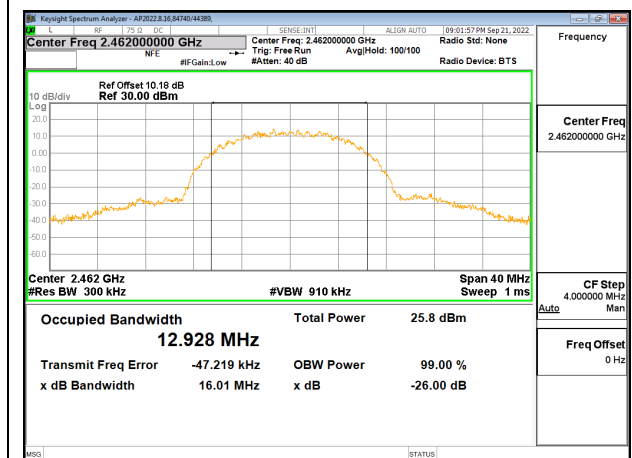
Channel	Frequency	99% Bandwidth
	(MHz)	(MHz)
Low 1	2412	12.950
Mid 6	2437	12.923
High 11	2462	12.928



LOW CHANNEL 1



MID CHANNEL 6



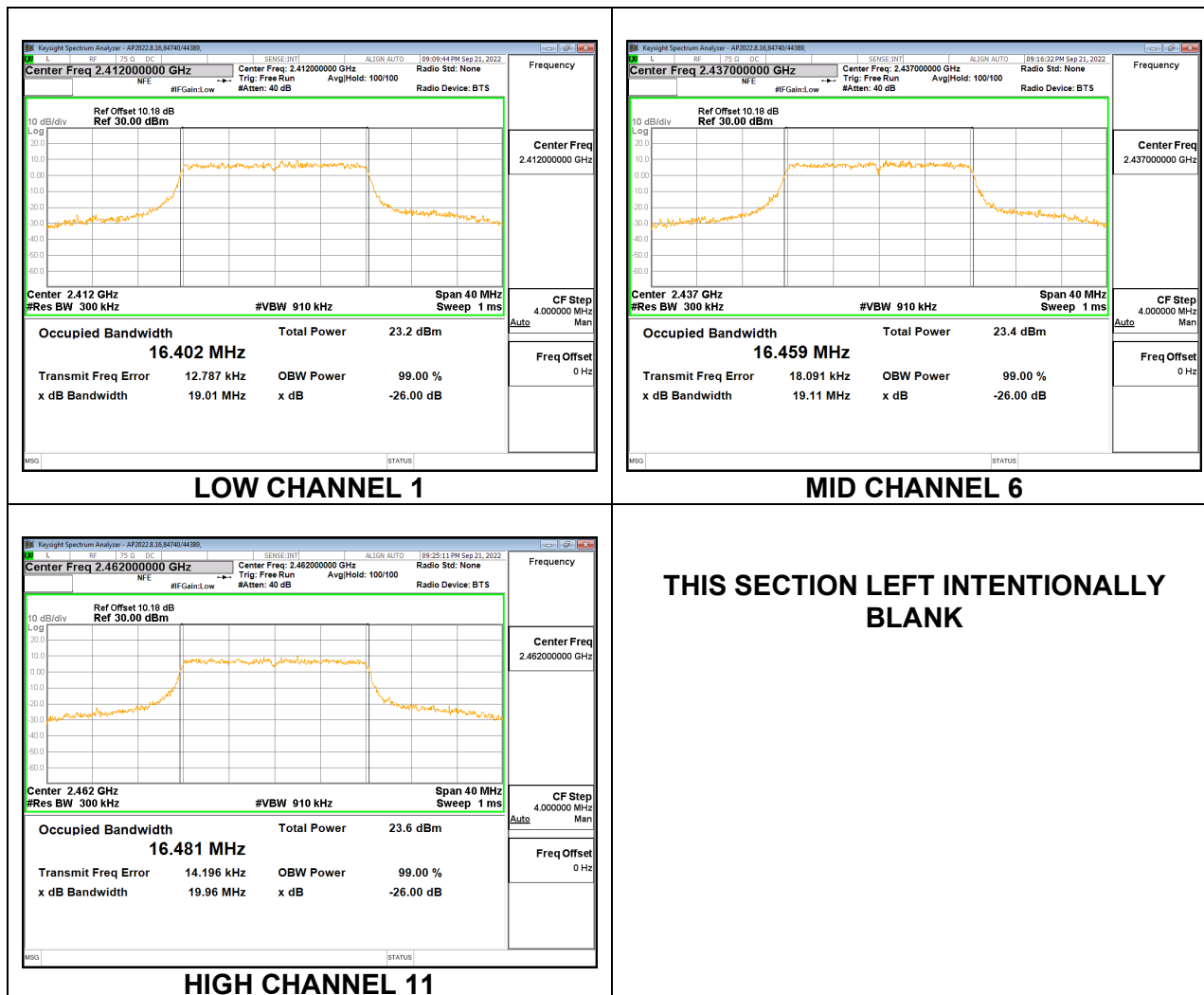
HIGH CHANNEL 11

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9.2.2. 802.11g MODE

1TX Antenna 1 MODE

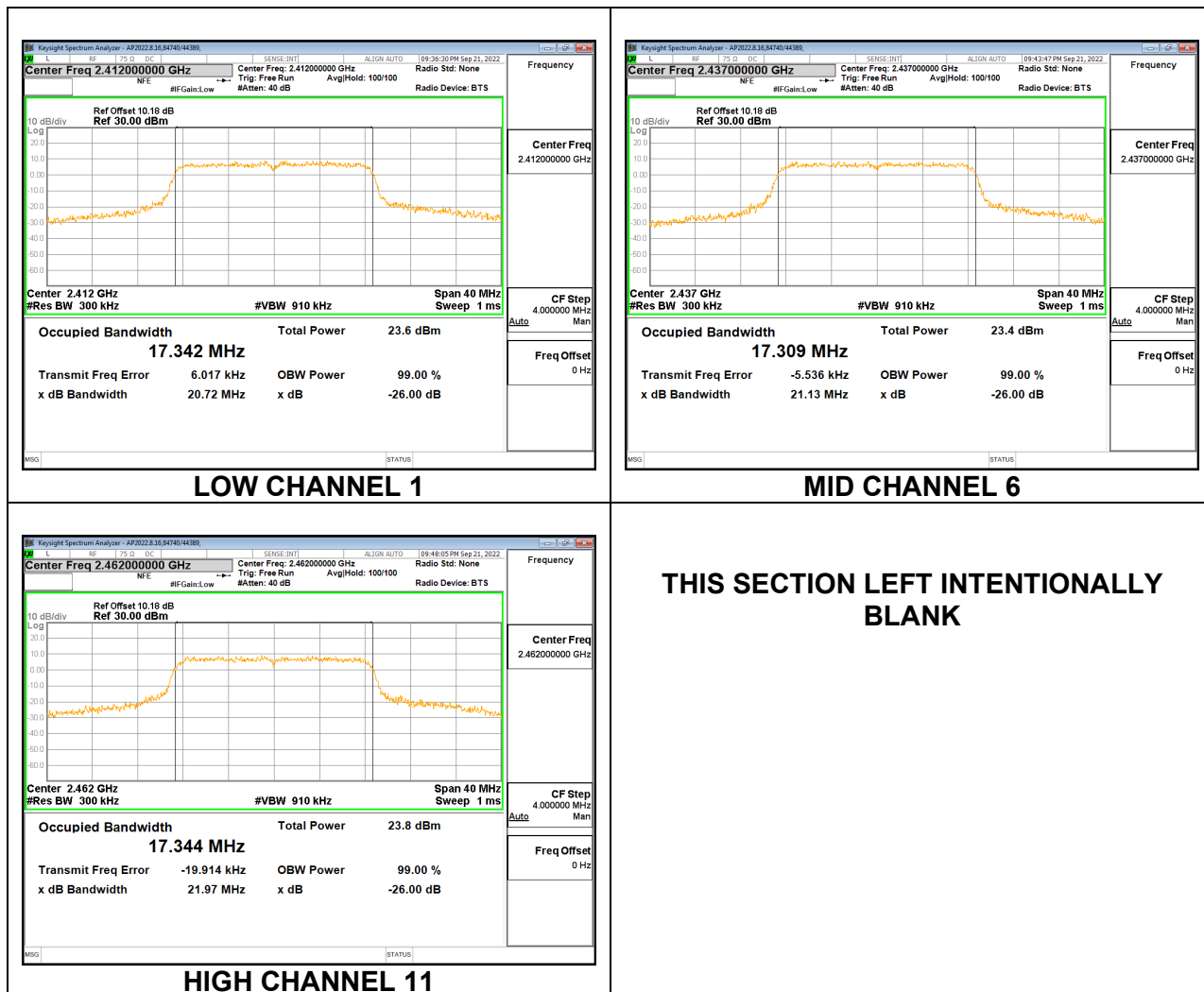
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	16.402
Mid 6	2437	16.459
High 11	2462	16.481



9.2.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

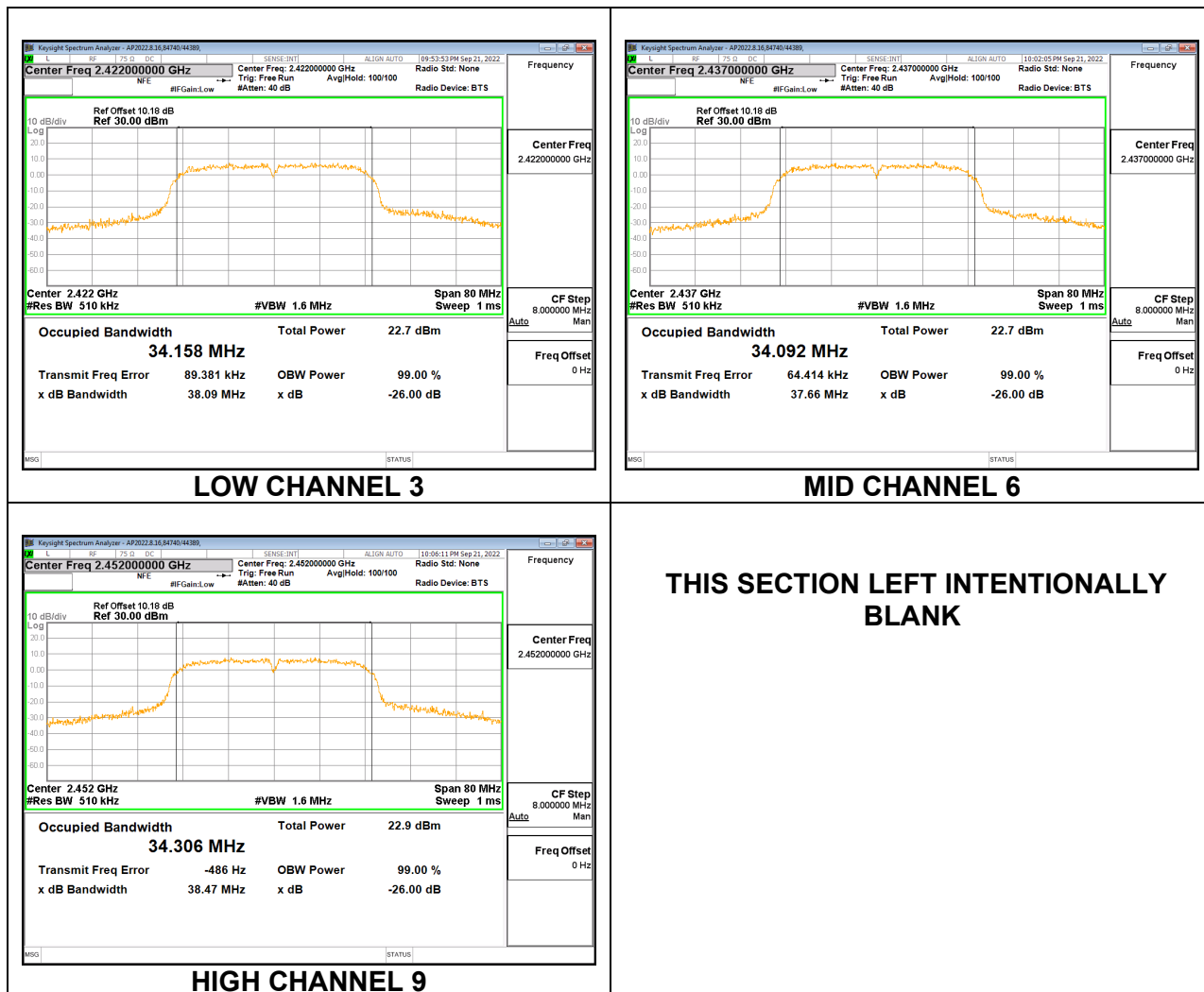
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	17.342
Mid 6	2437	17.309
High 11	2462	17.344



9.2.4. 802.11n HT40 MODE

1TX Antenna 1 MODE

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 3	2422	34.158
Mid 6	2437	34.092
High 9	2452	34.306



9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)
RSS-247 5.2 (a)

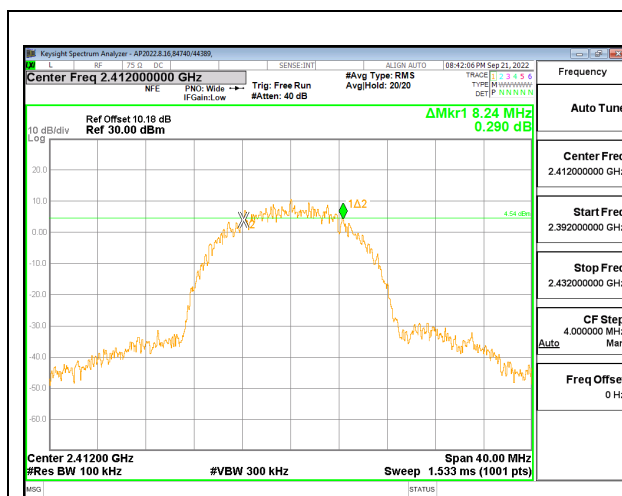
The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

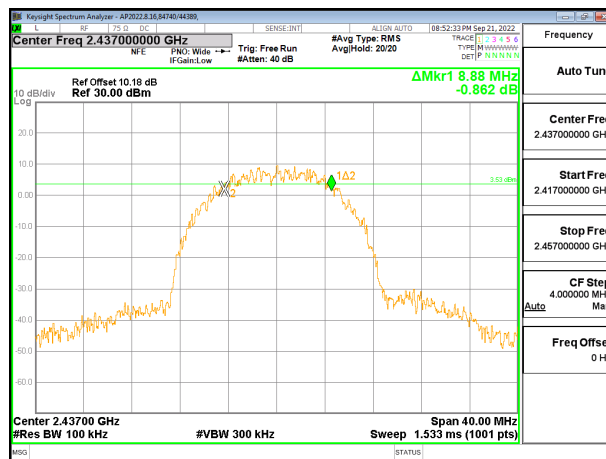
9.3.1. 802.11b MODE

1TX Antenna 1 MODE

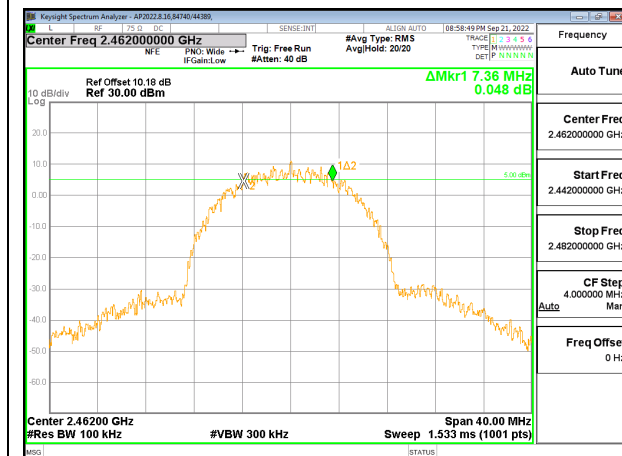
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	8.24	0.5
Mid 6	2437	8.88	0.5
High 11	2462	7.36	0.5



LOW CHANNEL 1



MID CHANNEL 6



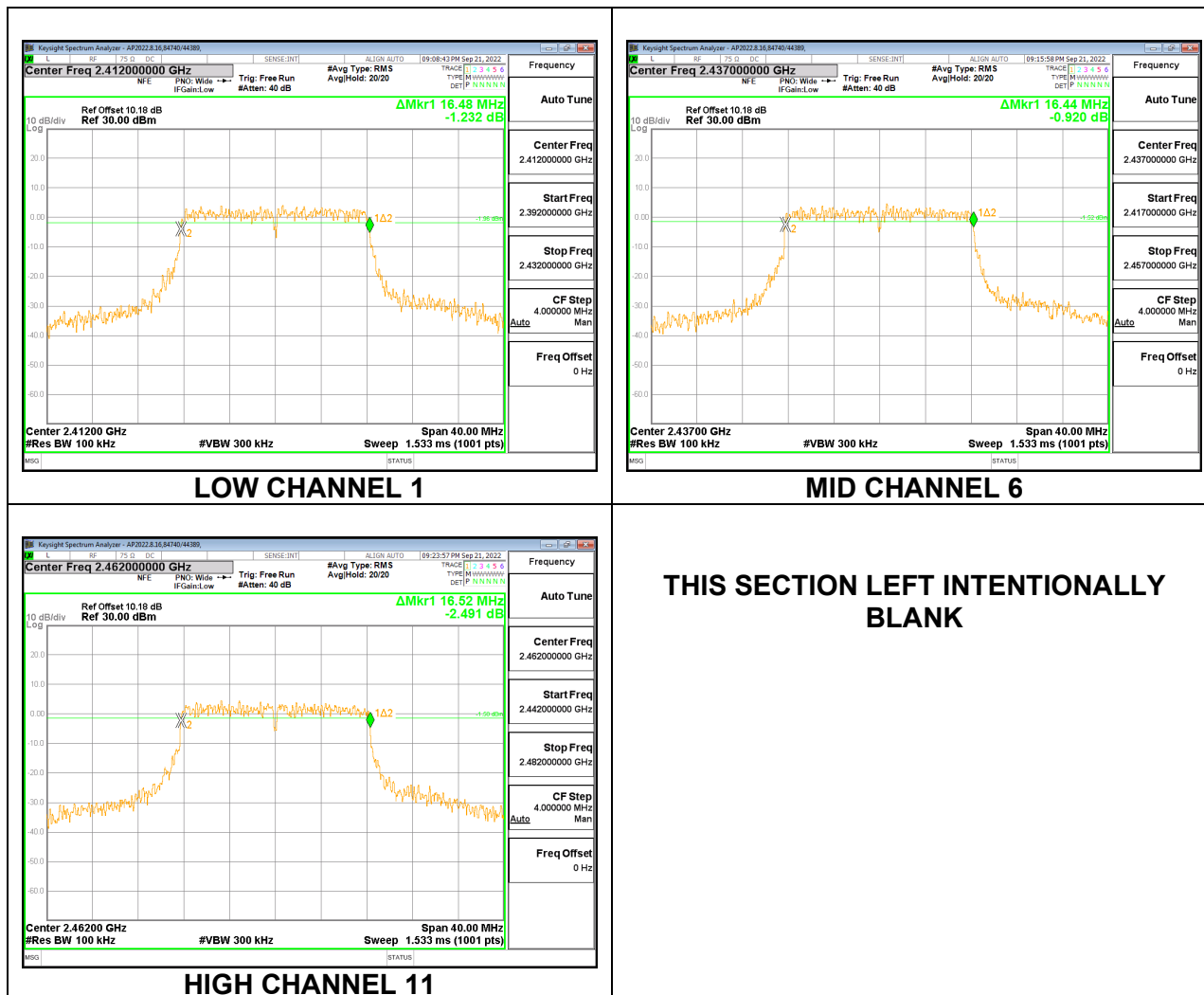
HIGH CHANNEL 11

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9.3.2. 802.11g MODE

1TX Antenna 1 MODE

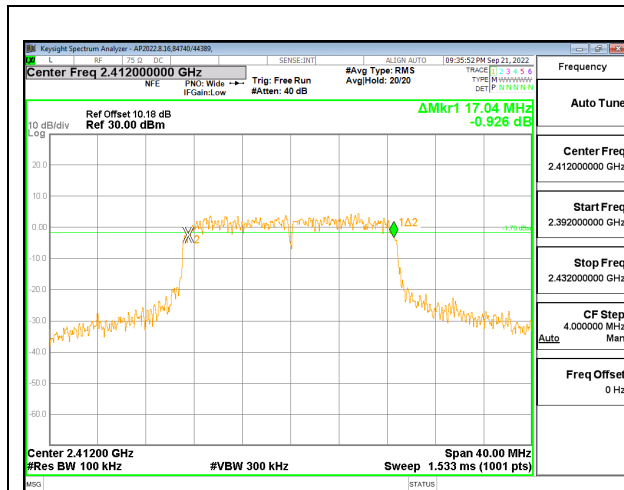
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	16.48	0.5
Mid 6	2437	16.44	0.5
High 11	2462	16.52	0.5



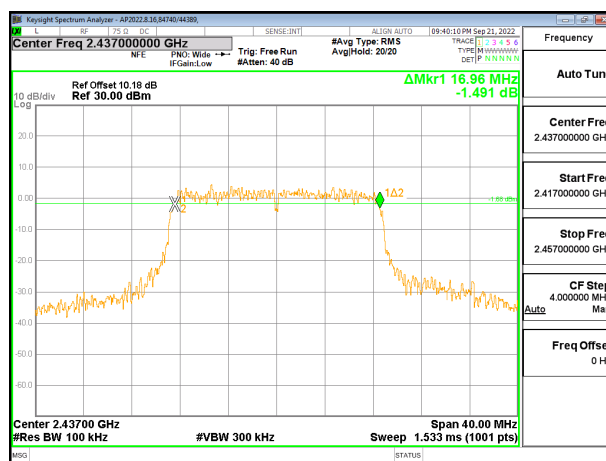
9.3.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

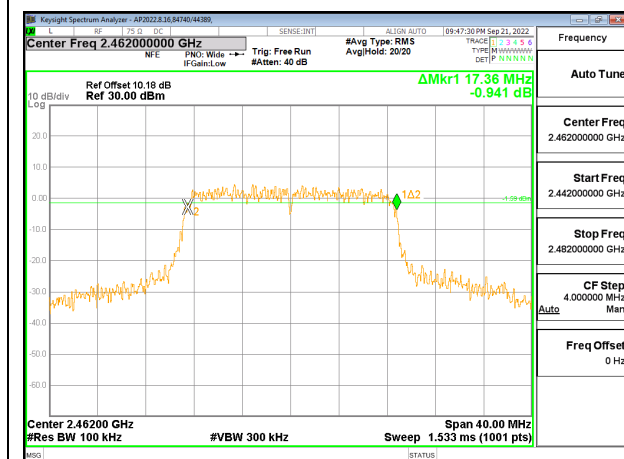
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	17.04	0.5
Mid 6	2437	16.96	0.5
High 11	2462	17.36	0.5



LOW CHANNEL 1



MID CHANNEL 6



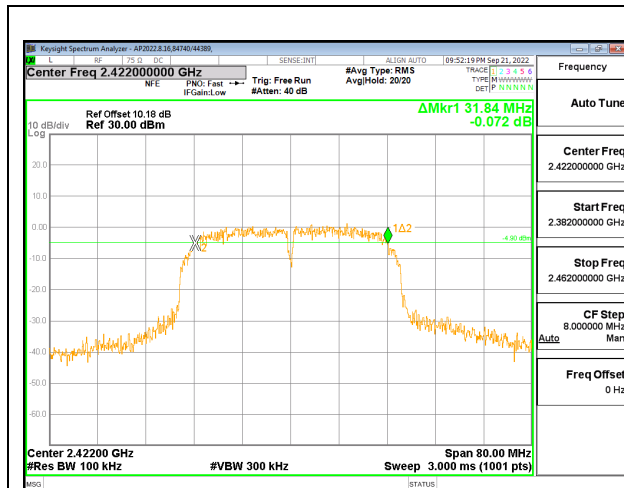
HIGH CHANNEL 11

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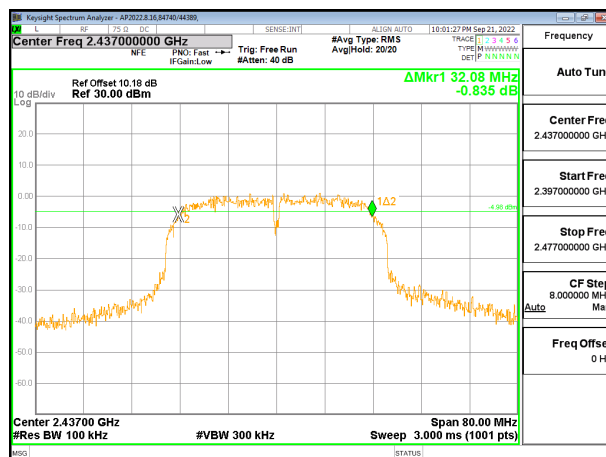
9.3.4. 802.11n HT40 MODE

1TX Antenna 1 MODE

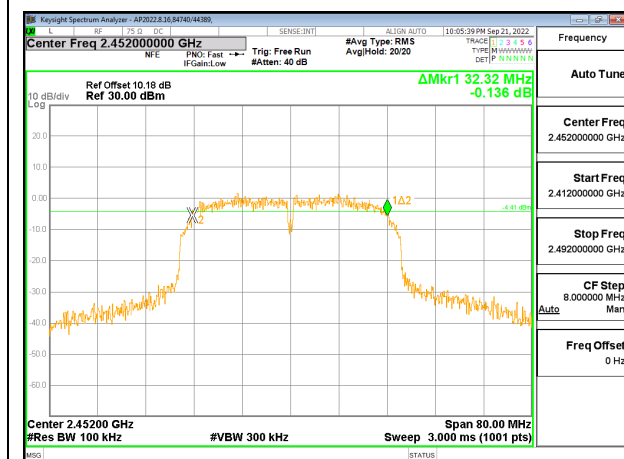
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 3	2422	31.84	0.5
Mid 6	2437	32.08	0.5
High 9	2452	32.32	0.5



LOW CHANNEL 3



MID CHANNEL 6



HIGH CHANNEL 9

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9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)
RSS-247 5.4 (d)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 20.49 dB (including 19.99 dB pad and 0.5 dB cable) was entered as an offset in the power meter. Note: Actual cable loss was unavailable at the time of testing, therefore a loss of 0.5dB was assumed as worst case. This was later verified to be true by laboratory.

DIRECTIONAL ANTENNA GAIN

For 1 TX:

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

RESULTS

9.4.1. 802.11b MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	3.42	30.00	30	36	30.00
Mid 6	2437	3.42	30.00	30	36	30.00
High 11	2462	3.42	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	21.96	21.96	30.00	-8.04
Mid 6	2437	22.25	22.25	30.00	-7.75
High 11	2462	22.51	22.51	30.00	-7.49

9.4.2. 802.11g MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	3.42	30.00	30	36	30.00
Mid 6	2437	3.42	30.00	30	36	30.00
High 11	2462	3.42	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	23.16	23.16	30.00	-6.84
Mid 6	2437	23.11	23.11	30.00	-6.89
High 11	2462	23.15	23.15	30.00	-6.85

9.4.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	3.42	30.00	30	36	30.00
Mid 6	2437	3.42	30.00	30	36	30.00
High 11	2462	3.42	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	23.11	23.11	30.00	-6.89
Mid 6	2437	23.28	23.28	30.00	-6.72
High 11	2462	23.36	23.36	30.00	-6.64

9.4.4. 802.11n HT40 MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	ISED Power Limit (dBm)	ISED EIRP Limit (dBm)	Max Power (dBm)
Low 3	2422	3.42	30.00	30	36	30.00
Mid 6	2437	3.42	30.00	30	36	30.00
High 9	2452	3.42	30.00	30	36	30.00

Results

Channel	Frequency (MHz)	Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 3	2422	23.14	23.14	30.00	-6.86
Mid 6	2437	23.14	23.14	30.00	-6.86
High 9	2452	23.22	23.22	30.00	-6.78

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only

TEST PROCEDURE

The transmitter output is connected to a gated average power meter.

The cable assembly insertion loss of 20.49 dB (including 19.99 dB pad and 0.5 dB cable) was entered as an offset in the power meter. Note: Actual cable loss was unavailable at the time of testing, therefore a loss of 0.5dB was assumed as worst case. This was later verified to be true by laboratory.

RESULTS

9.5.1. 802.11b MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Channel	Frequency (MHz)	Chain 0 Power (dBm)
Low 1	2412	19.79
Mid 6	2437	20.22
High 11	2462	20.61

9.5.2. 802.11g MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Channel	Frequency (MHz)	Chain 0 Power (dBm)
Low 1	2412	18.27
Mid 6	2437	18.50
High 11	2462	18.68

9.5.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Channel	Frequency (MHz)	Chain 0 Power (dBm)
Low 1	2412	18.08
Mid 6	2437	18.62
High 11	2462	18.72

9.5.4. 802.11n HT40 MODE

1TX Antenna 1 MODE

Test Engineer:	85502/44389
Test Date:	2022-09-15

Channel	Frequency (MHz)	Chain 0 Power (dBm)
Low 3	2422	17.93
Mid 6	2437	18.12
High 9	2452	18.42

9.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)
RSS-247 (5.2) (b)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

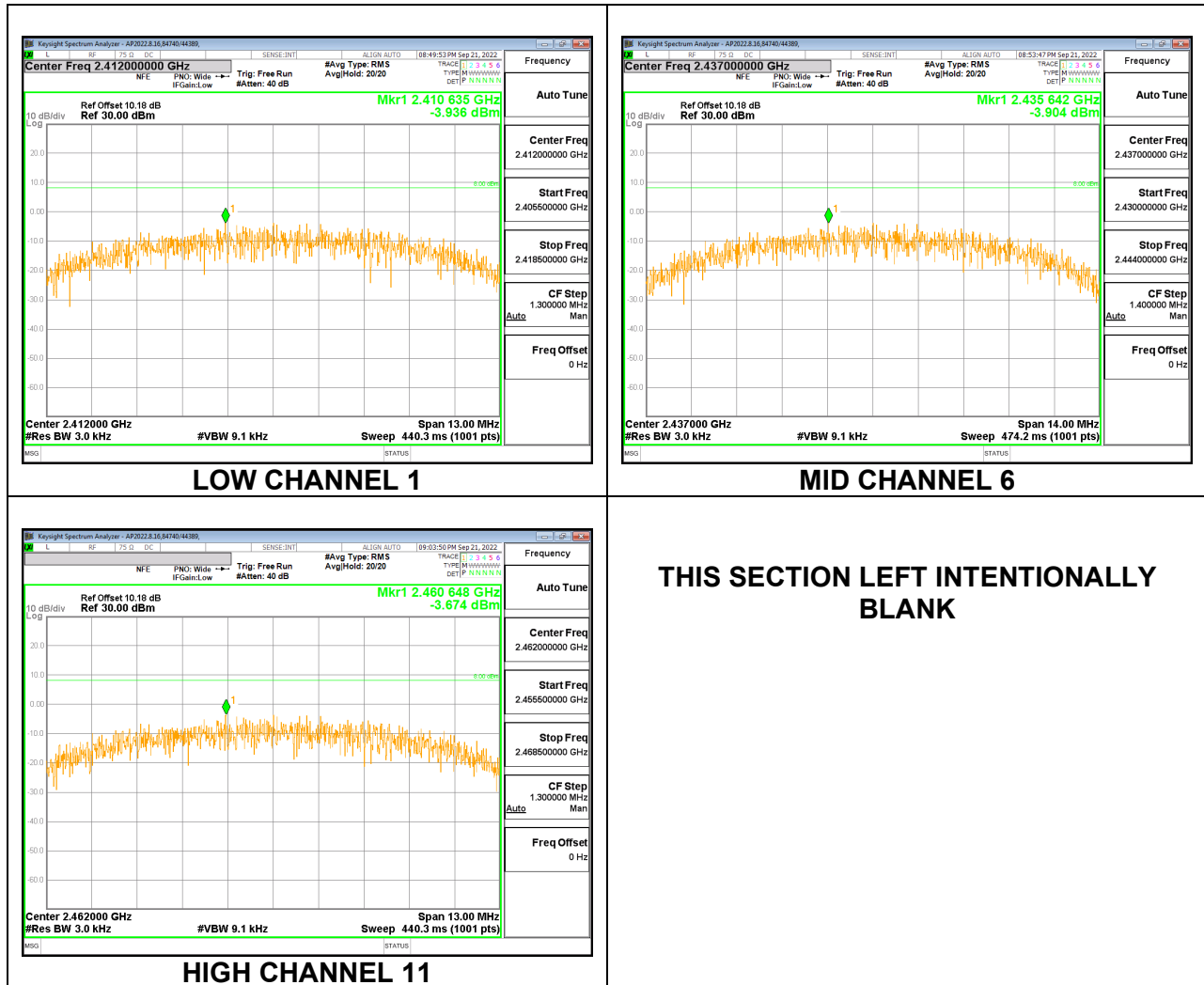
RESULTS

9.6.1. 802.11b MODE

1TX Antenna 1 MODE

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-3.936	-3.936	8.0	-11.9
Mid 6	2437	-3.904	-3.904	8.0	-11.9
High 11	2462	-3.674	-3.674	8.0	-11.7

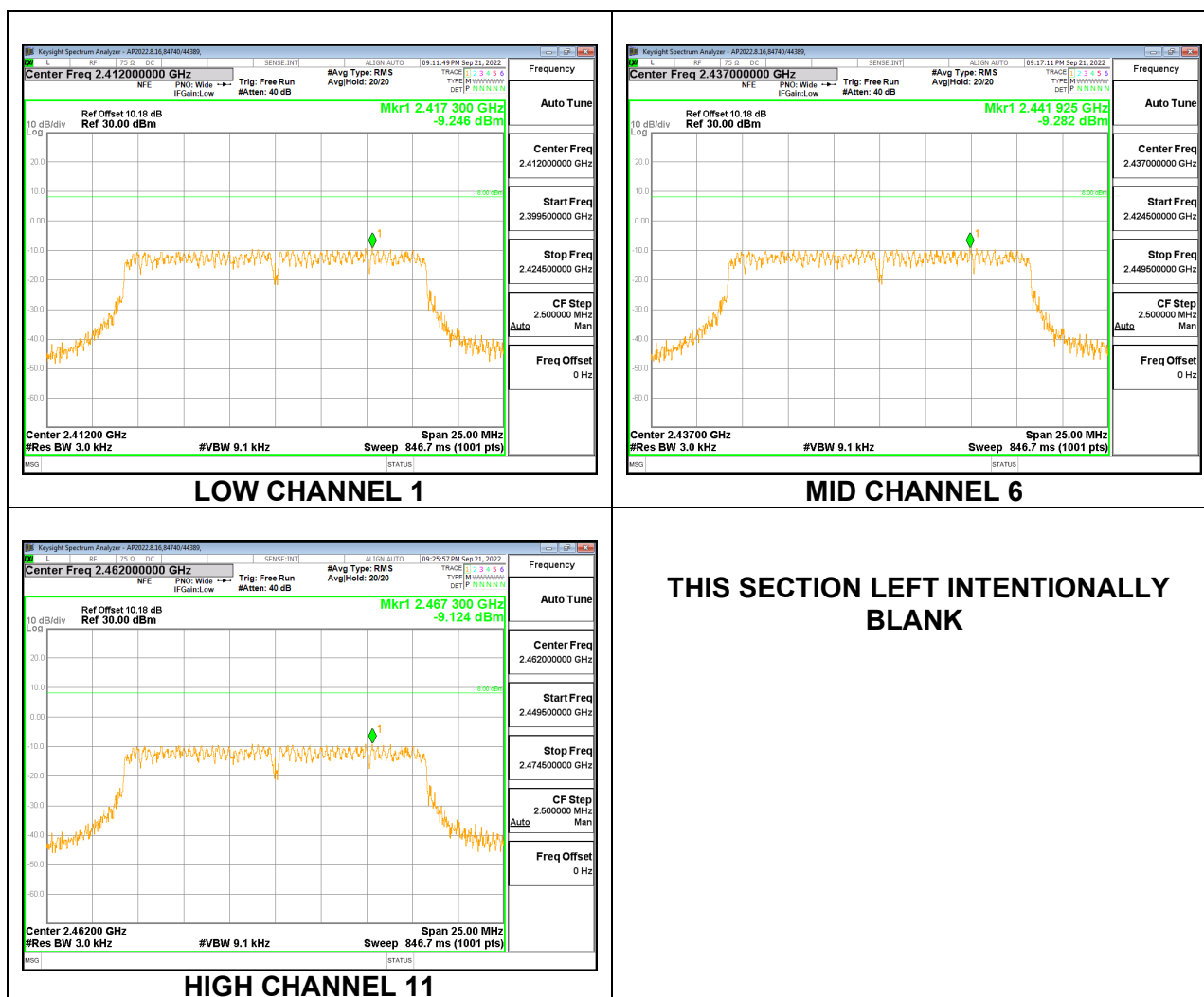


9.6.2. 802.11g MODE

1TX Antenna 1 MODE

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-9.246	-9.246	8.0	-17.2
Mid 6	2437	-9.282	-9.282	8.0	-17.3
High 11	2462	-9.124	-9.124	8.0	-17.1

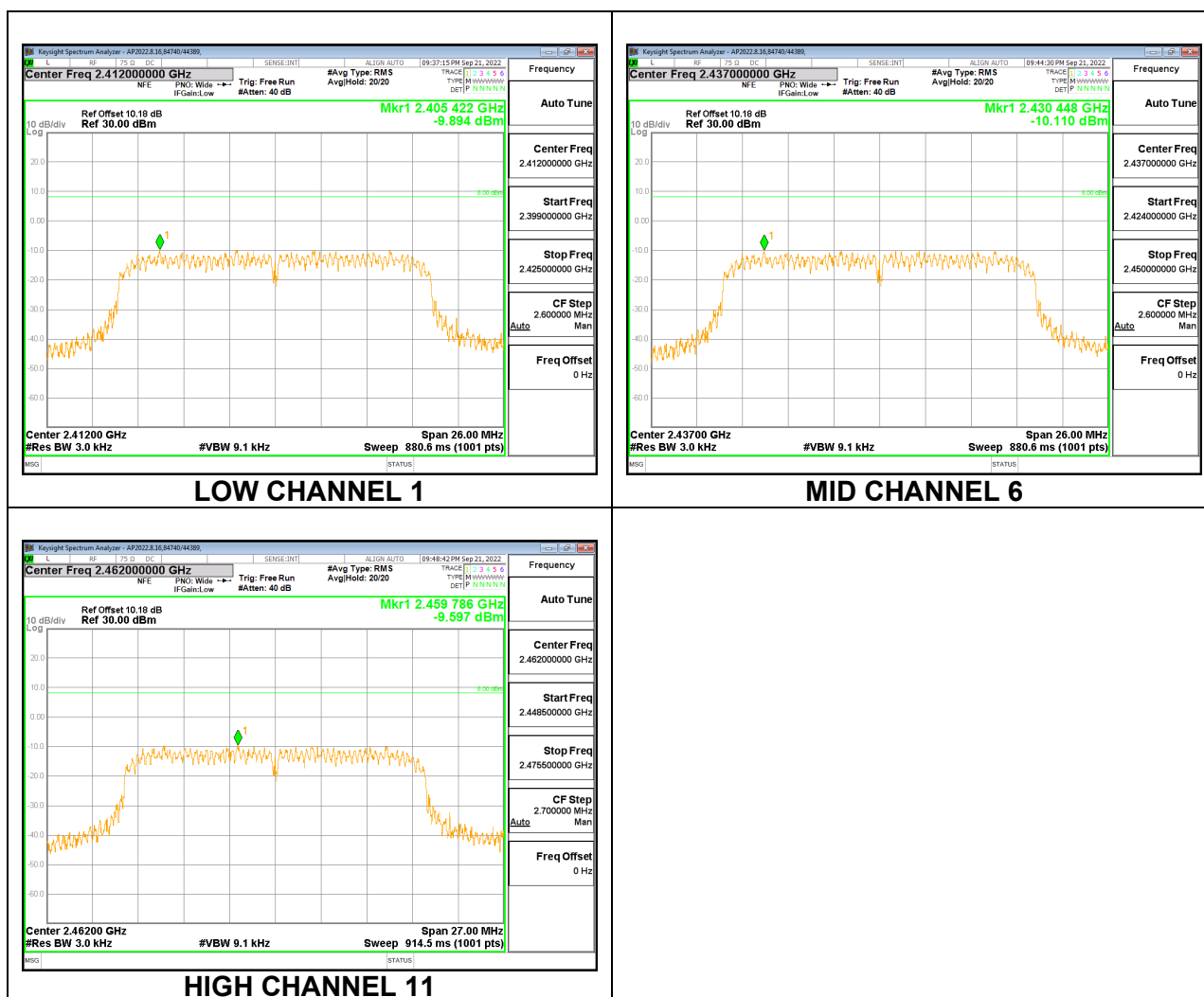


9.6.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-9.894	-9.894	8.0	-17.9
Mid 6	2437	-10.110	-10.110	8.0	-18.1
High 11	2462	-9.597	-9.597	8.0	-17.6

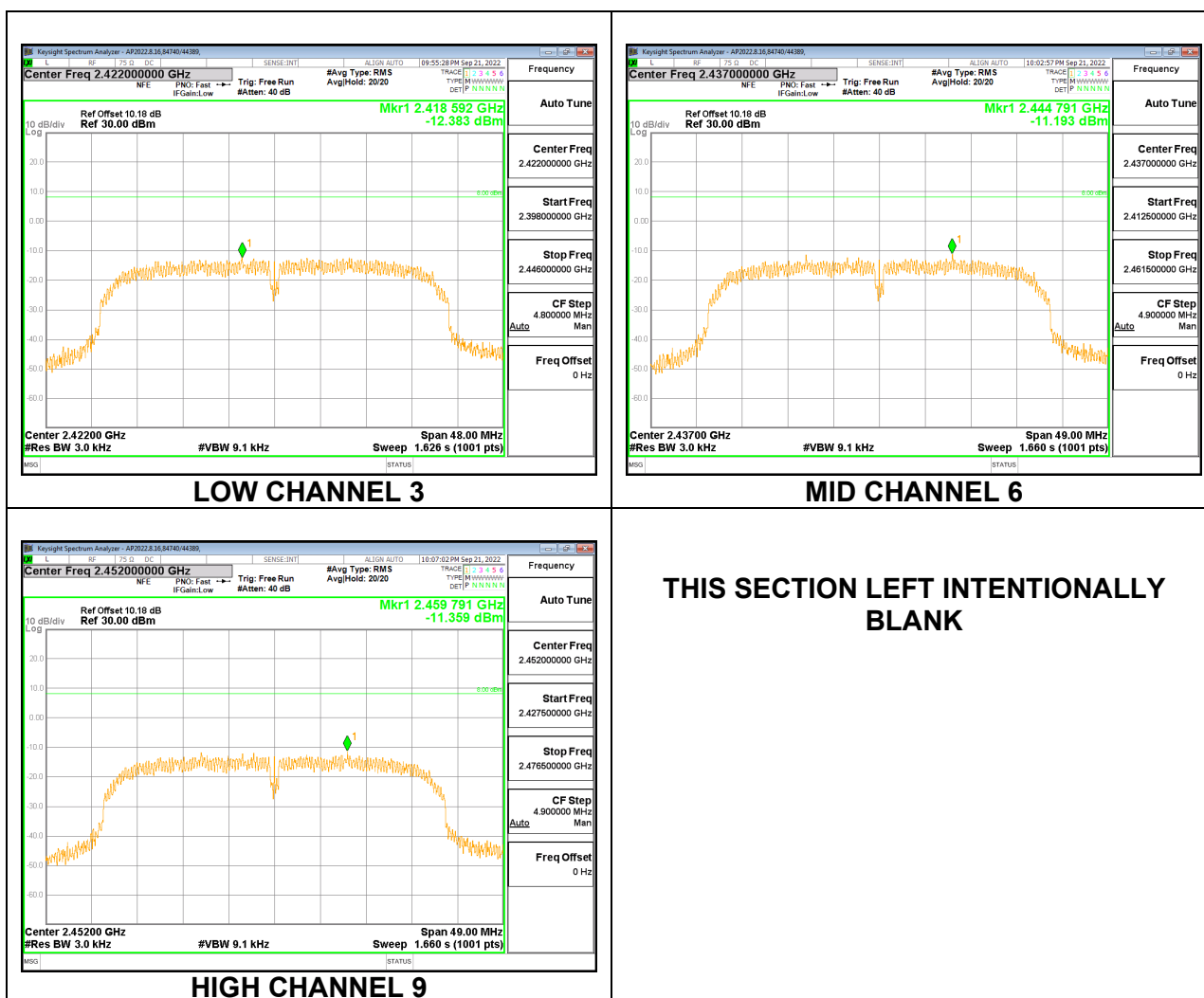


9.6.4. 802.11n HT40 MODE

1TX Antenna 1 MODE

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 3	2422	-12.383	-12.383	8.0	-20.4
Mid 6	2437	-11.193	-11.193	8.0	-19.2
High 9	2452	-11.359	-11.359	8.0	-19.4



9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

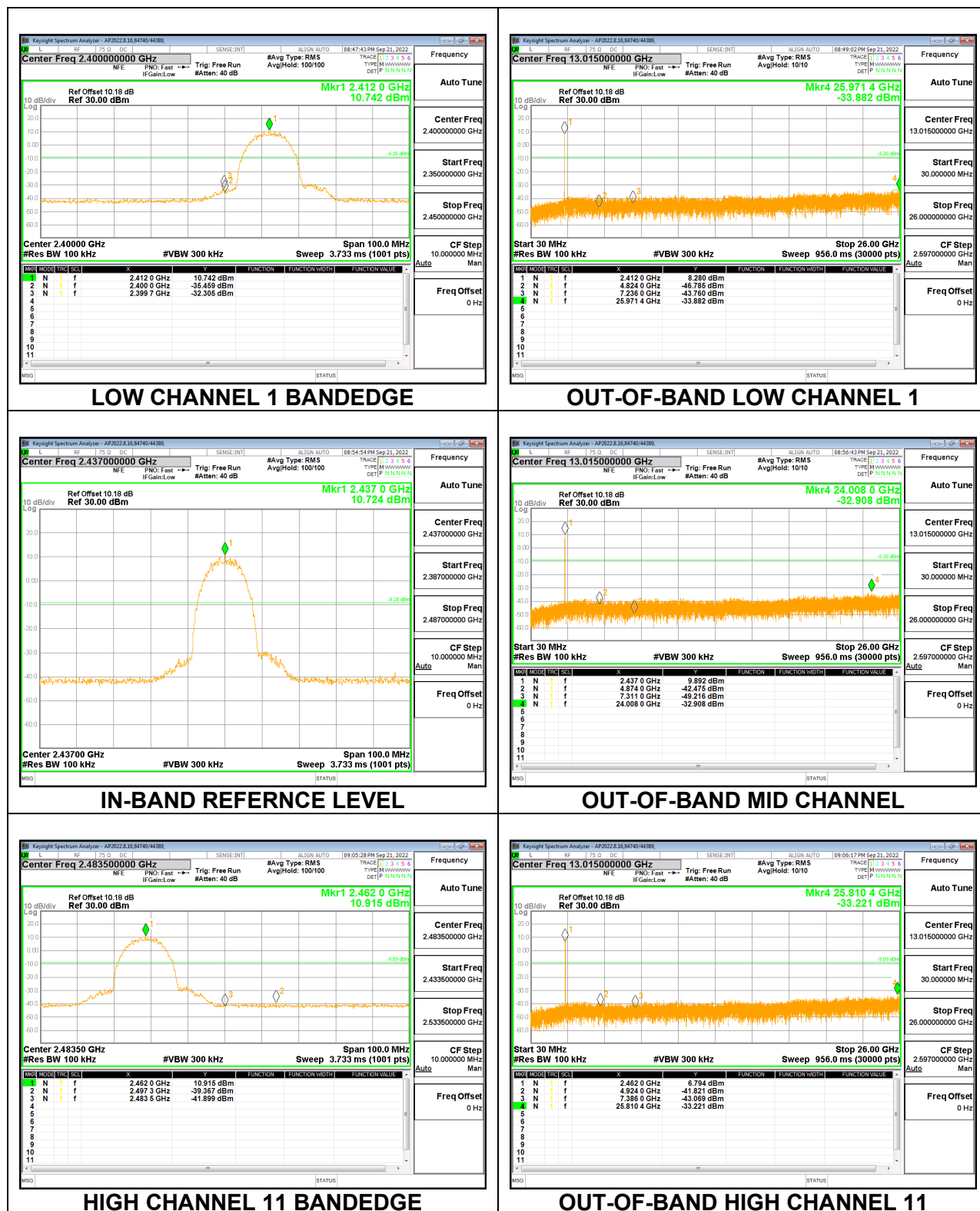
FCC §15.247 (d)
RSS-247 5.5

Output power was measured based on the use of peak measurement, therefore the required attenuation is -20 dBc.

RESULTS

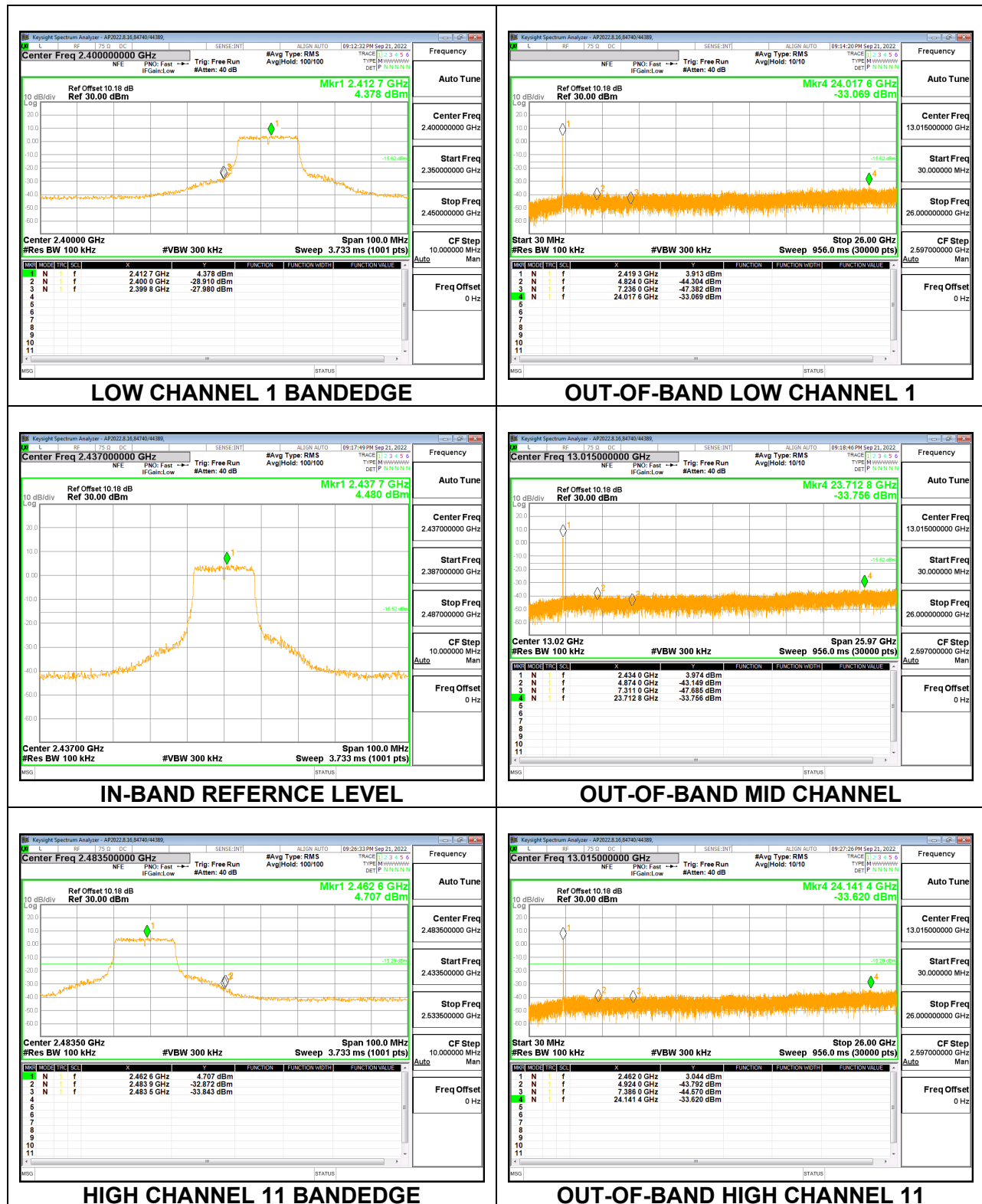
9.7.1. 802.11b MODE

1TX Antenna 1 MODE



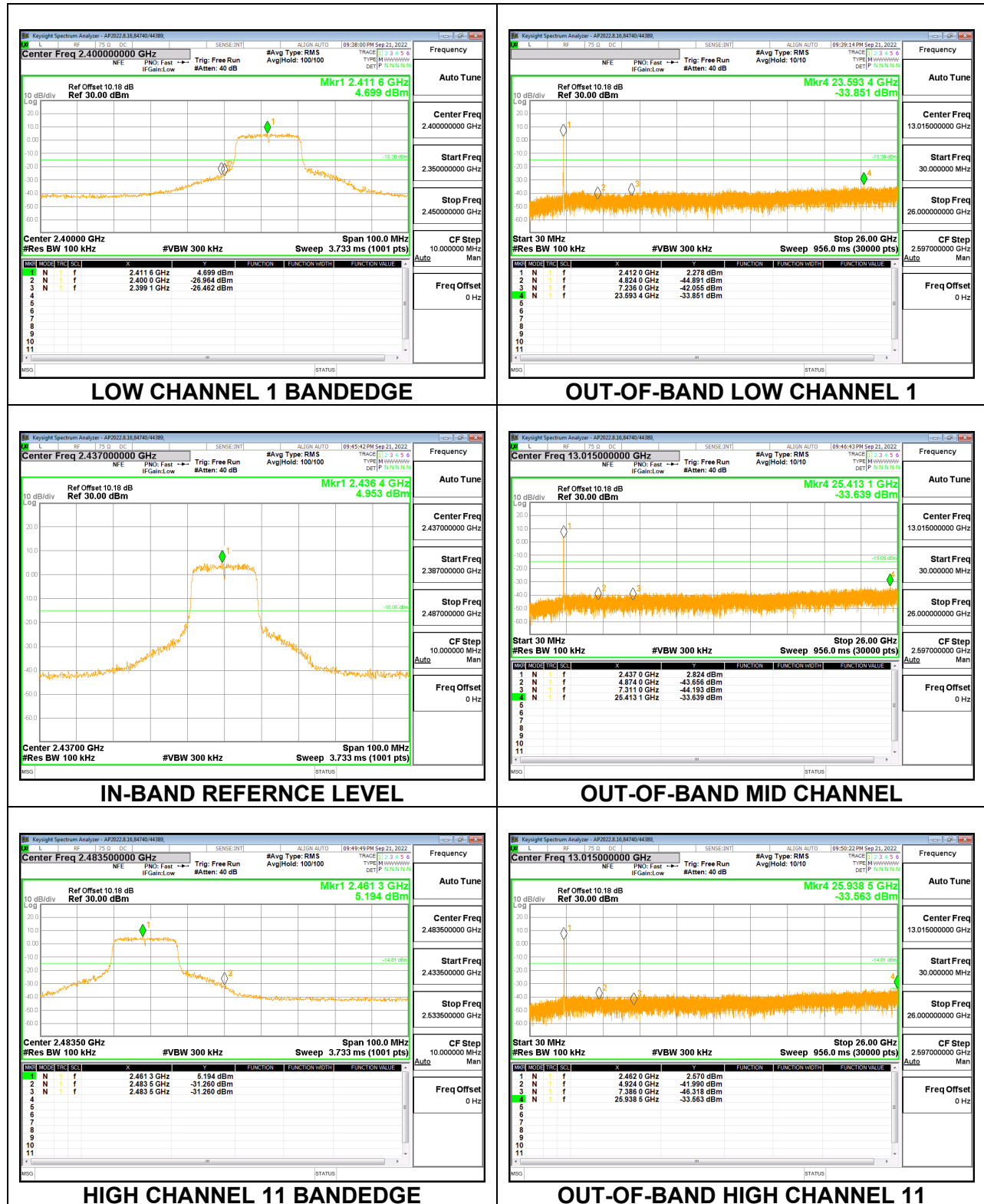
9.7.2. 802.11g MODE

1TX Antenna 1 MODE



9.7.3. 802.11n HT20 MODE

1TX Antenna 1 MODE



9.7.4. 802.11n HT40 MODE

1TX Antenna 1 MODE



10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

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

RSS-GEN, Section 8.9 and 8.10

Frequency Range (MHz)	Field Strength Limit (uA/m) at 3 m	Field Strength Limit (dBuA/m) at 3 m
0.009-0.490	6.37/F(kHz) @ 300 m	-
0.490-1.705	63.7/F(kHz) @ 30 m	-
1.705 - 30	.08 @ 30m	-
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3m	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 or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz 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 average measurements. Linear Voltage Averaging was used.

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.

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.

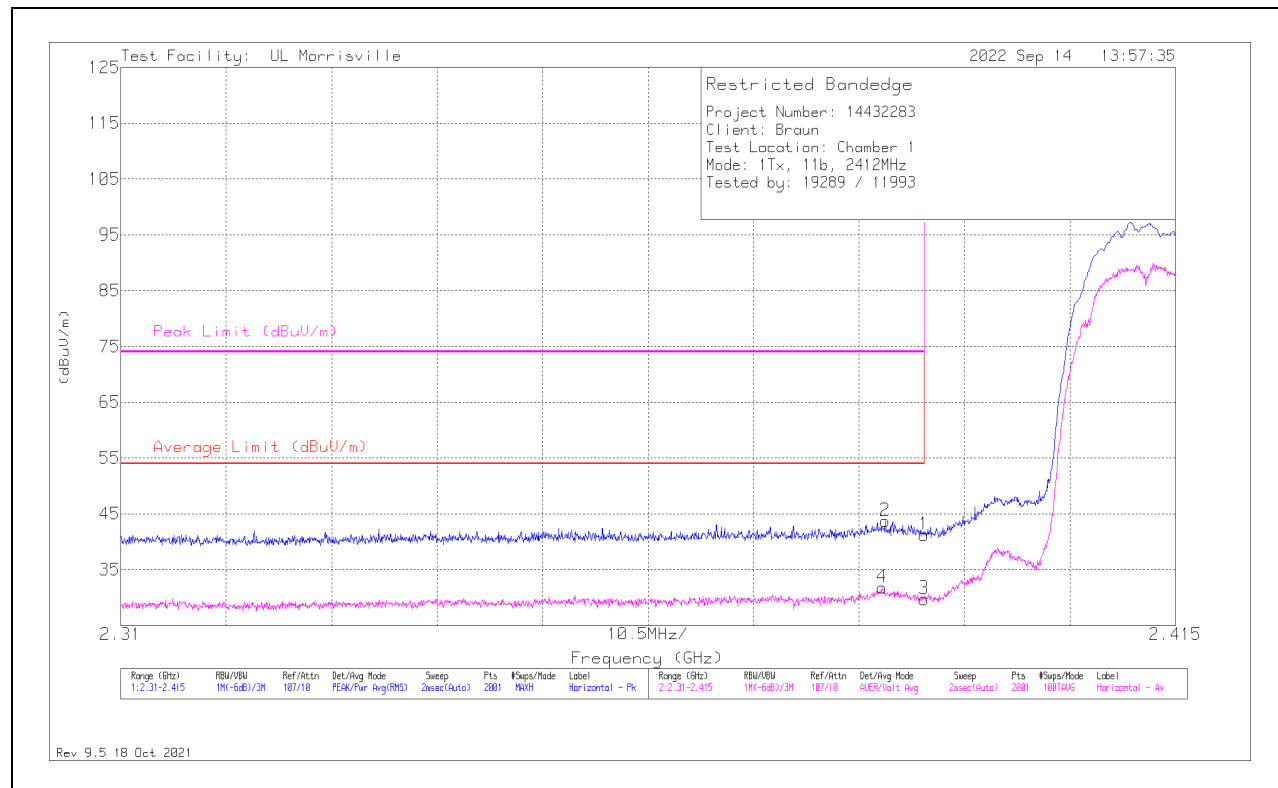
10.1. TRANSMITTER ABOVE 1 GHz

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

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL, CH 1)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarit y
1	* ** 2.38996	34.08	Pk	32	-24.8	41.28	-	-	74	-32.72	126	278	H
2	* ** 2.38613	36.27	Pk	32	-24.6	43.67	-	-	74	-30.33	126	278	H
3	* ** 2.38996	22.54	ADV	32	-24.8	29.74	54	-24.26	-	-	126	278	H
4	* ** 2.38581	24.46	ADV	32	-24.7	31.76	54	-22.24	-	-	126	278	H

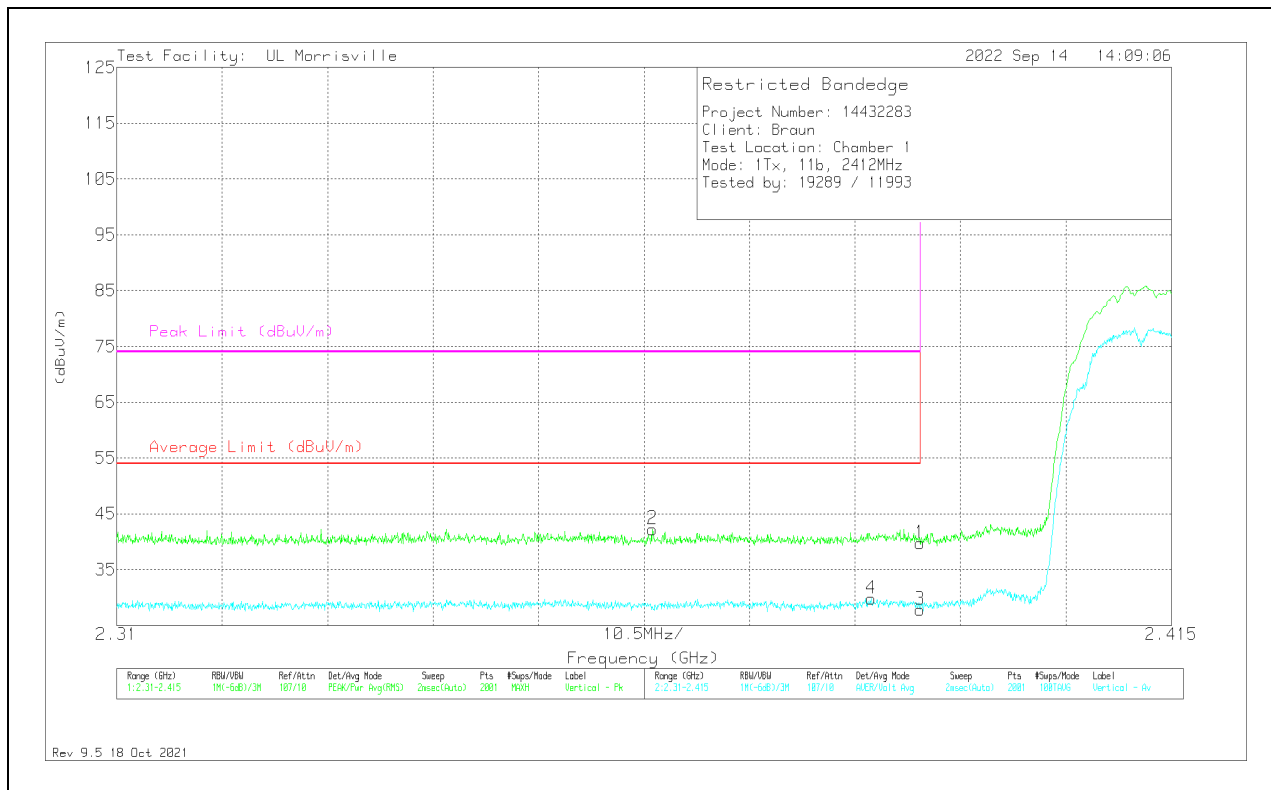
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38996	32.52	Pk	32	-24.8	39.72	-	-	74	-34.28	114	232	V
2	* ** 2.36334	35.18	Pk	32	-24.9	42.28	-	-	74	-31.72	114	232	V
3	* ** 2.38996	20.58	ADV	32	-24.8	27.78	54	-26.22	-	-	114	232	V
4	* ** 2.38513	22.51	ADV	32	-24.7	29.81	54	-24.19	-	-	114	232	V

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

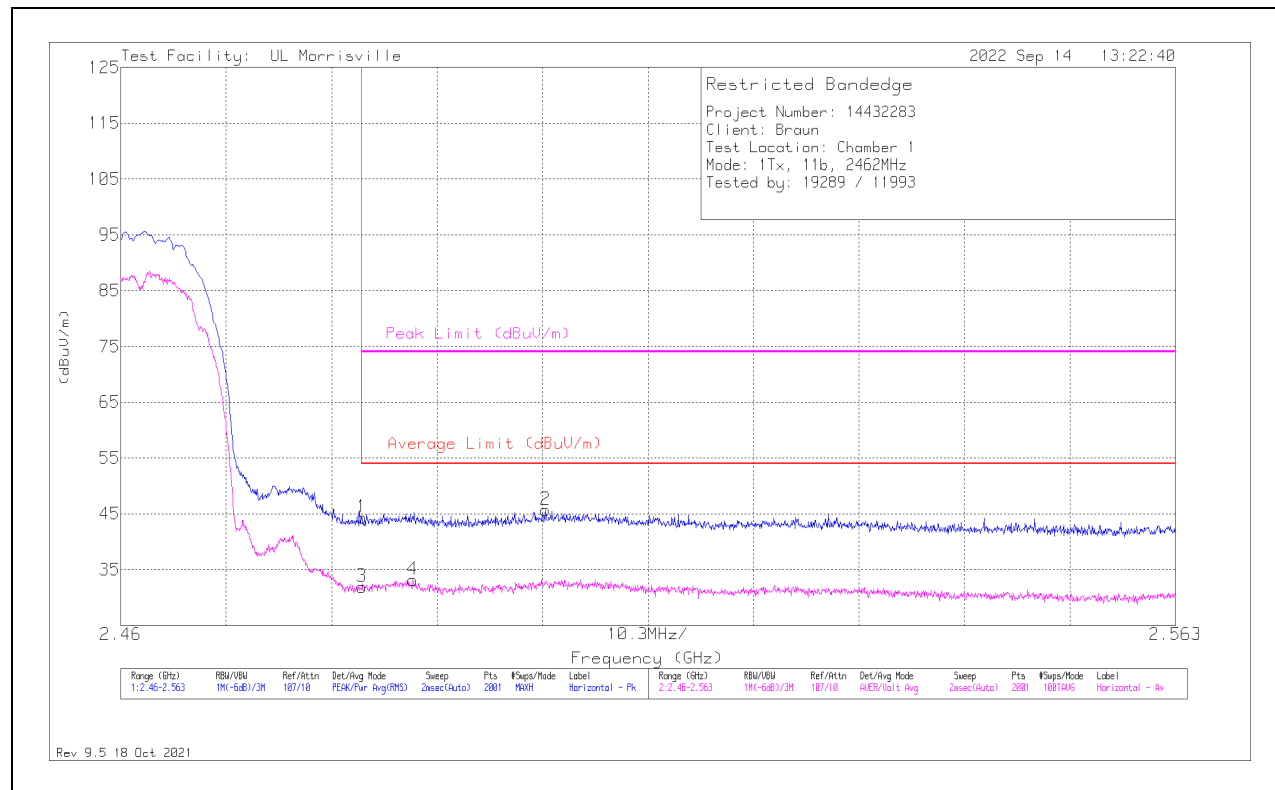
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 11)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	36.18	Pk	32.5	-24.4	44.28	-	-	74	-29.72	169	263	H
2	** 2.50151	37.57	Pk	32.5	-24.4	45.67	-	-	74	-28.33	169	263	H
3	* ** 2.48354	23.78	ADV	32.5	-24.4	31.88	54	-22.12	-	-	169	263	H
4	* ** 2.48853	25.37	ADV	32.4	-24.6	33.17	54	-20.83	-	-	169	263	H

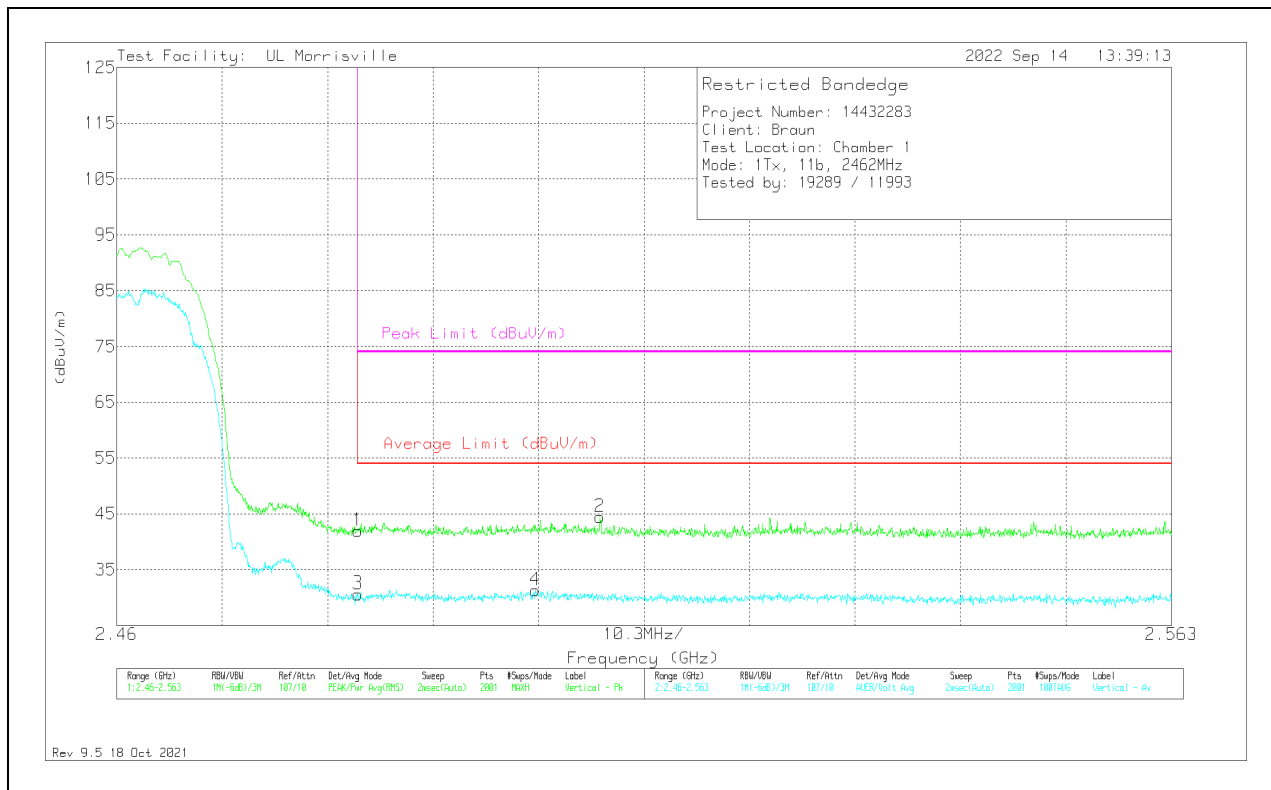
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	33.85	Pk	32.5	-24.4	41.95	-	-	74	-32.05	192	150	V
2	** 2.50717	36.33	Pk	32.5	-24.4	44.43	-	-	74	-29.57	192	150	V
3	* ** 2.48354	22.51	ADV	32.5	-24.4	30.61	54	-23.39	-	-	192	150	V
4	** 2.50089	23.18	ADV	32.5	-24.4	31.28	54	-22.72	-	-	192	150	V

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

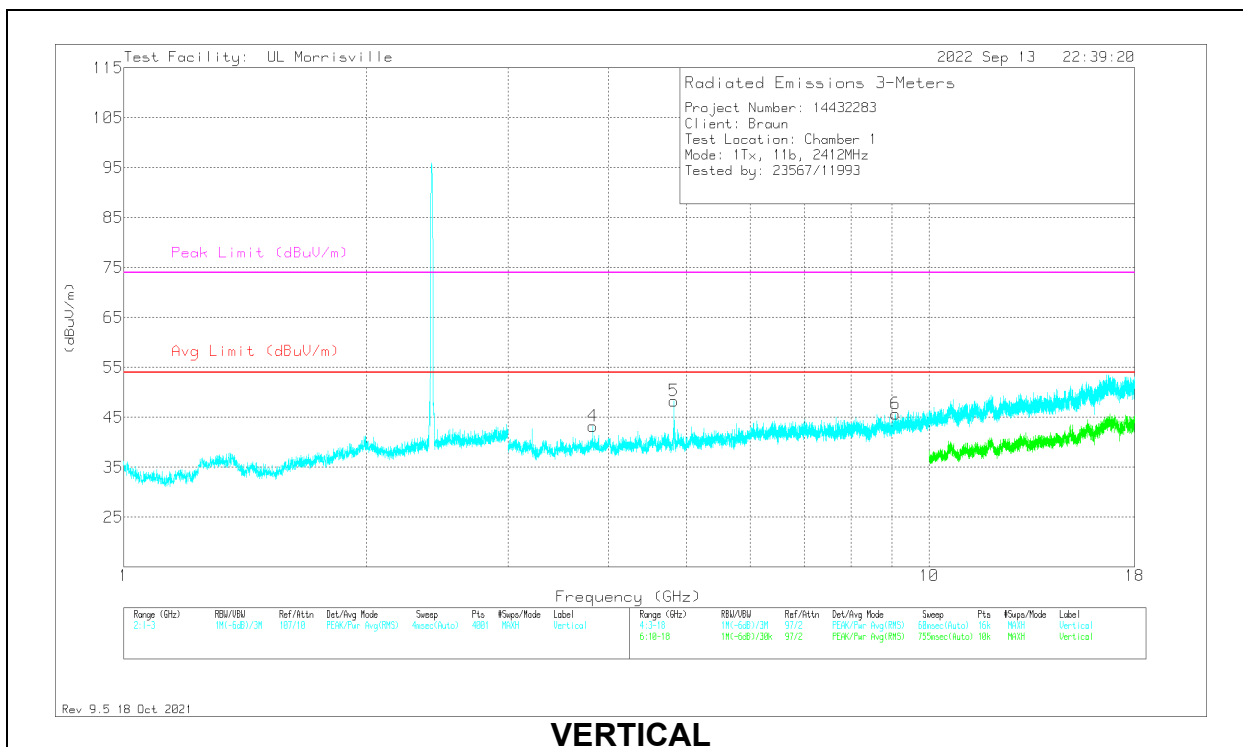
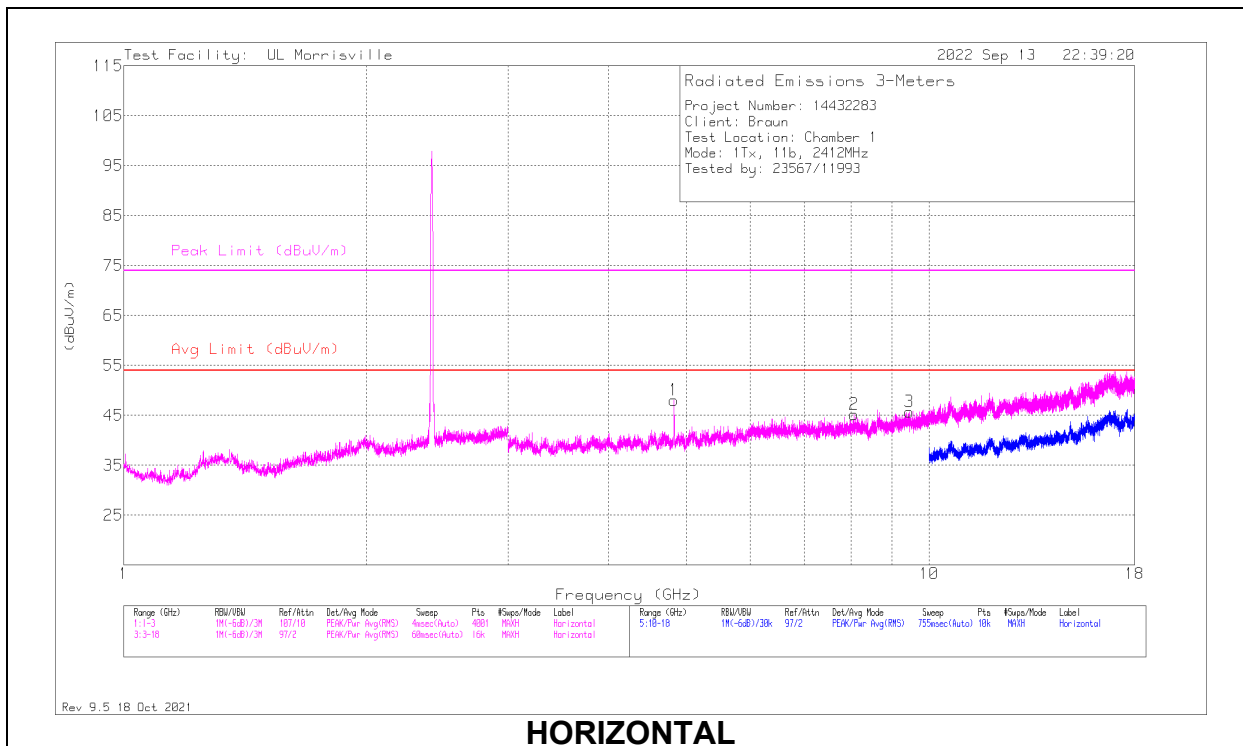
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 4.82397	47.91	PK2	34.1	-31.5	50.51	-	-	74	-23.49	1	103	H
	* ** 4.82392	41.55	ADV	34.1	-31.5	44.15	54	-9.85	-	-	1	103	H
2	* ** 8.07469	37.92	Pk	35.9	-28.6	45.22	54	-8.78	74	-28.78	0-360	200	H
3	* ** 9.44719	37.45	Pk	36.6	-28.3	45.75	54	-8.25	74	-28.25	0-360	200	H
4	* ** 3.825	42.39	Pk	33.4	-32.6	43.19	54	-10.81	74	-30.81	0-360	101	V
5	* ** 4.8241	49.43	PK2	34.1	-31.5	52.03	-	-	74	-21.97	97	250	V
	* ** 4.82396	43.52	ADV	34.1	-31.5	46.12	54	-7.88	-	-	97	250	V
6	* ** 9.08344	37.26	Pk	36.3	-27.8	45.76	54	-8.24	74	-28.24	0-360	200	V

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

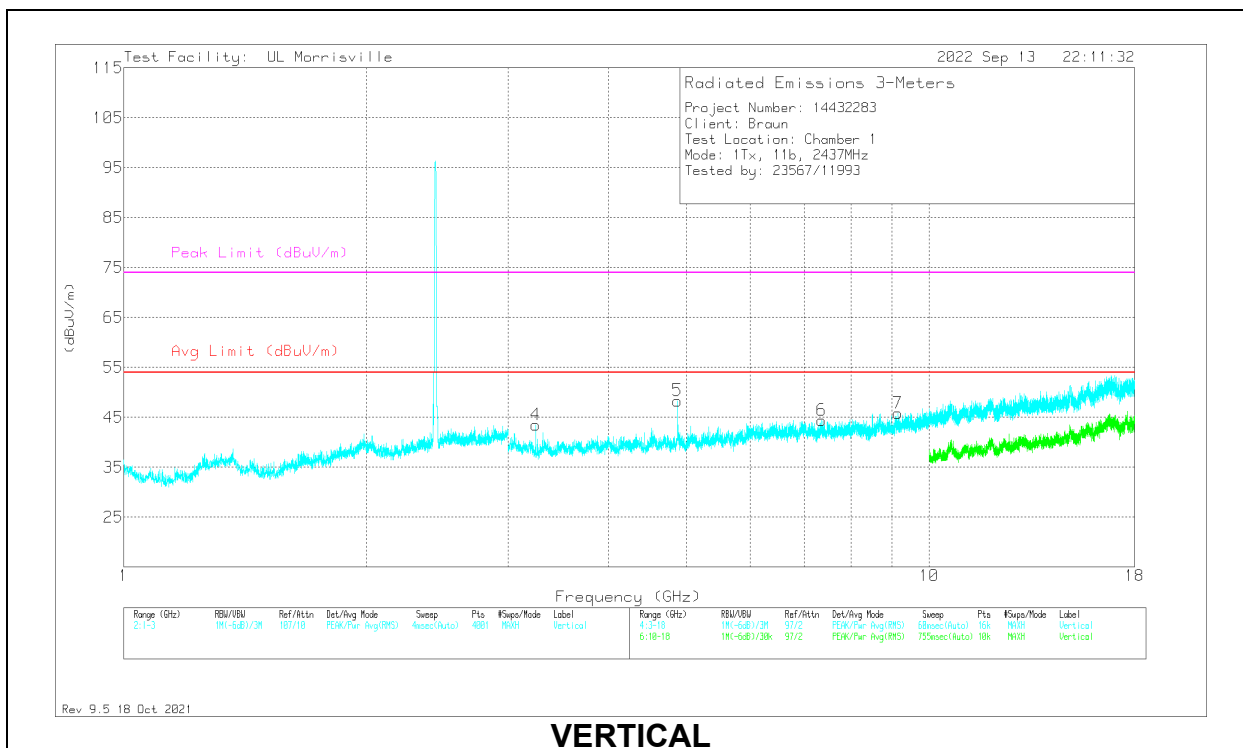
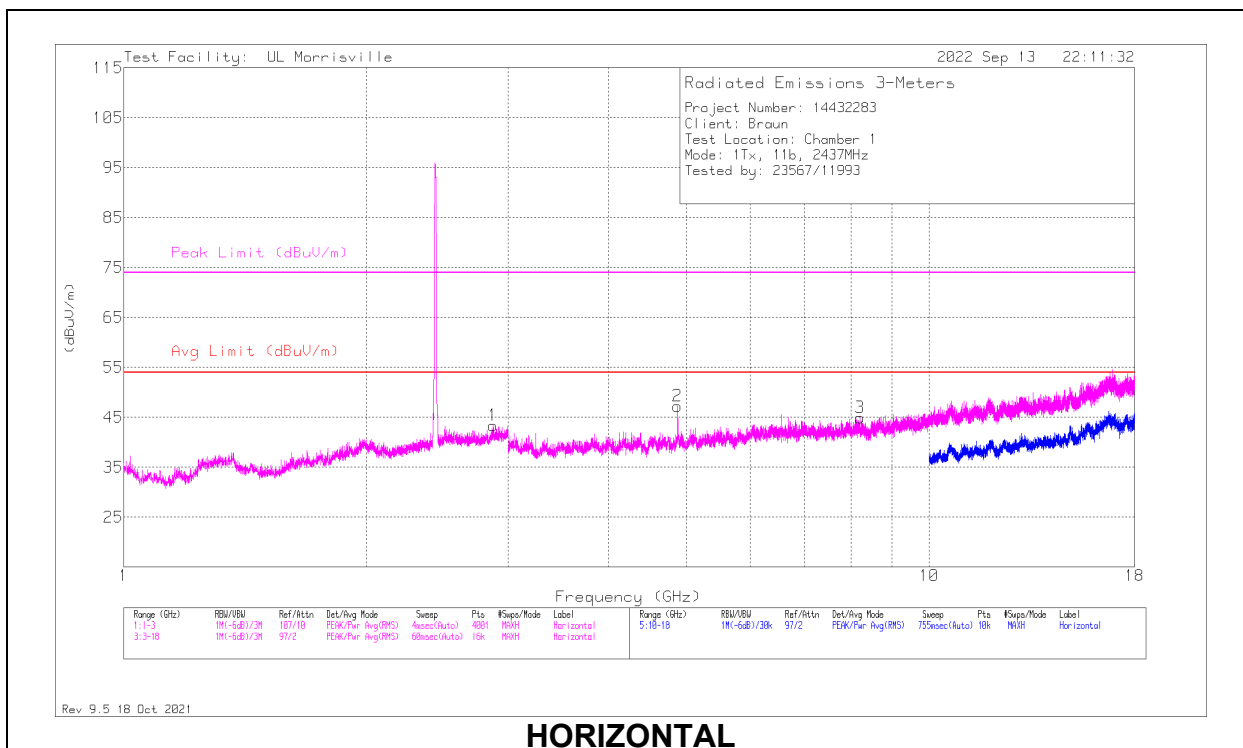
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL, CH 6 RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.877	34.9	Pk	32.7	-24.2	43.4	54	-10.6	74	-30.6	0-360	101	H
2	*** 4.87406	44.93	Pk	34	-31.7	47.23	54	-6.77	74	-26.77	0-360	101	H
3	*** 8.20688	37.96	Pk	35.8	-28.8	44.96	54	-9.04	74	-29.04	0-360	199	H
5	*** 4.87399	49.11	PK2	34	-31.7	51.41	-	-	74	-22.59	187	282	V
	*** 4.874	42.69	ADV	34	-31.7	44.99	54	-9.01	-	-	187	282	V
6	*** 7.35094	38.06	Pk	35.6	-29.2	44.46	54	-9.54	74	-29.54	0-360	200	V
7	*** 9.15375	37.58	Pk	36.3	-28.1	45.78	54	-8.22	74	-28.22	0-360	200	V
4	3.24938	43.55	Pk	33	-33	43.55	-	-	-	-	0-360	101	V

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

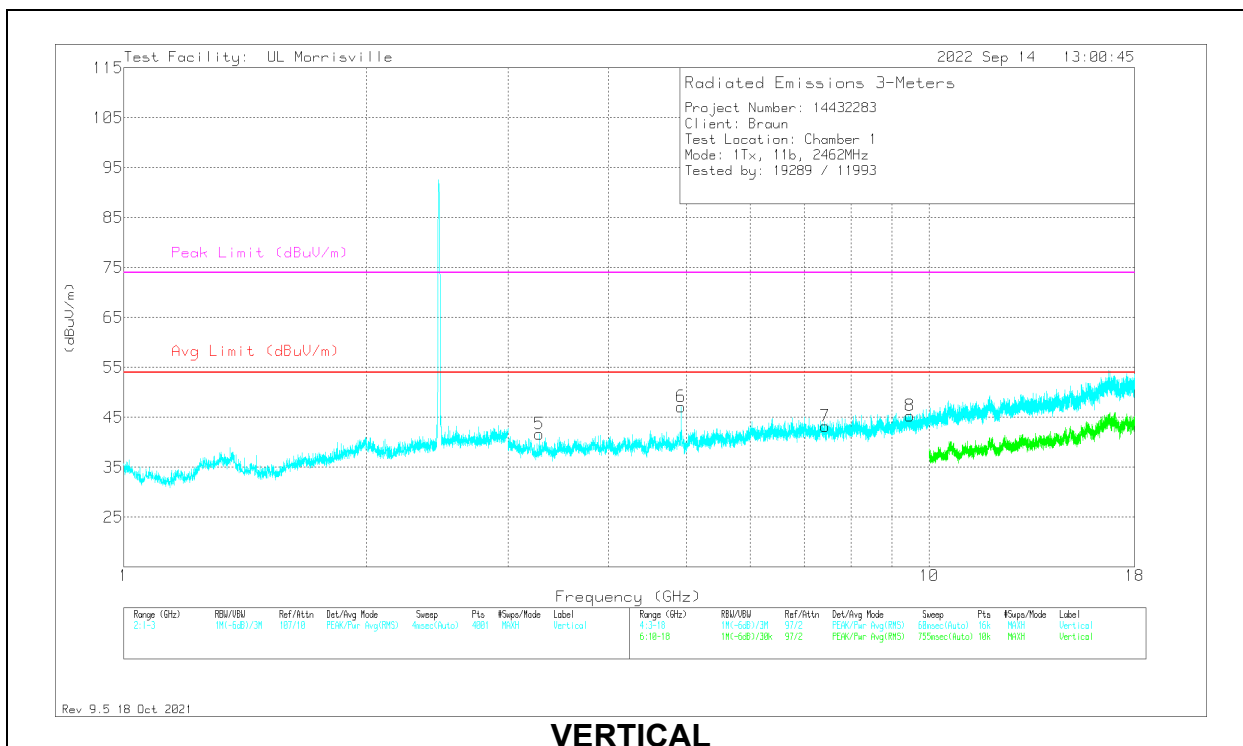
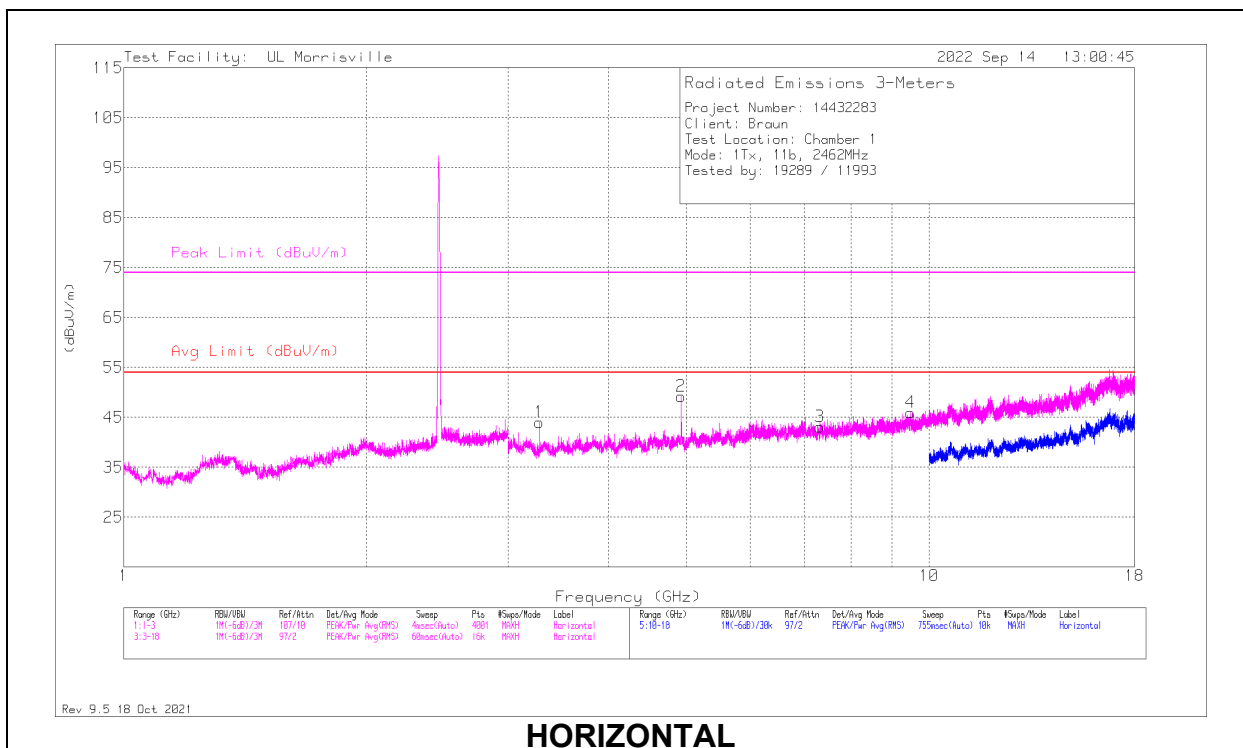
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL, CH 11 RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* ** 4.92399	49.93	PK2	34	-32	51.93	-	-	74	-22.07	351	101	H
	* ** 4.92397	43.5	ADV	34	-32	45.5	54	-8.5	-	-	351	101	H
3	* ** 7.31531	37.09	Pk	35.6	-29.6	43.09	54	-10.91	74	-30.91	0-360	200	H
4	* ** 9.48844	37.39	Pk	36.7	-28.1	45.99	54	-8.01	74	-28.01	0-360	200	H
6	* ** 4.92375	45.13	Pk	34	-32	47.13	54	-6.87	74	-26.87	0-360	101	V
7	* ** 7.42875	36.69	Pk	35.6	-29.1	43.19	54	-10.81	74	-30.81	0-360	101	V
8	* ** 9.46406	37.06	Pk	36.7	-28.5	45.26	54	-8.74	74	-28.74	0-360	200	V
1	3.28219	44.06	Pk	33	-33.1	43.96	-	-	-	-	0-360	200	H
5	3.28219	41.83	Pk	33	-33.1	41.73	-	-	-	-	0-360	101	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

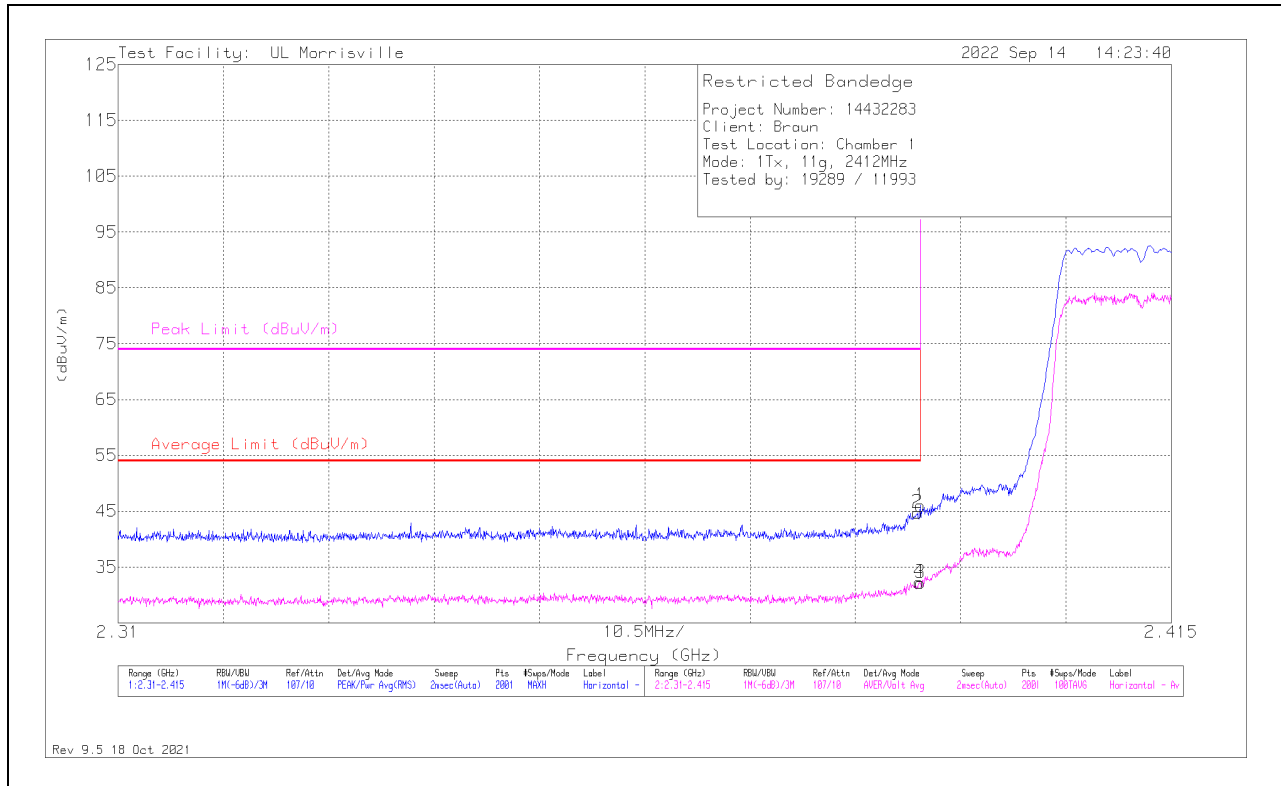
ADV - Linear Voltage Average

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

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL, CH 1)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	38.82	Pk	32	-24.8	46.02	-	-	74	-27.98	136	152	H
2	*** 2.3897	37.56	Pk	32	-24.8	44.76	-	-	74	-29.24	136	152	H
3	*** 2.38996	24.99	ADV	32	-24.8	32.19	54	-21.81	-	-	136	152	H
4	*** 2.38985	25.04	ADV	32	-24.8	32.24	54	-21.76	-	-	136	152	H

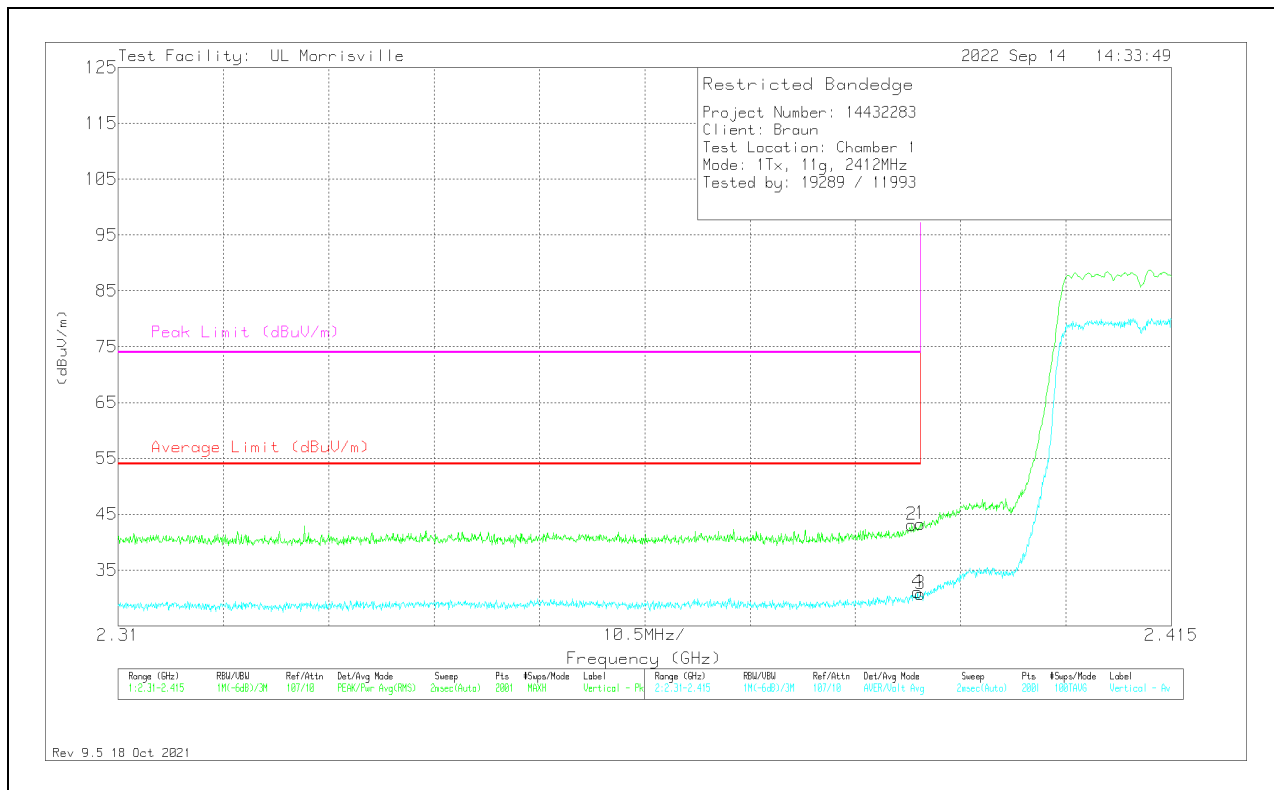
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	36.08	Pk	32	-24.8	43.28	-	-	74	-30.72	191	133	V
2	*** 2.38912	35.8	Pk	32	-24.7	43.1	-	-	74	-30.9	191	133	V
3	*** 2.38996	23.52	ADV	32	-24.8	30.72	54	-23.28	-	-	191	133	V
4	*** 2.3897	23.87	ADV	32	-24.8	31.07	54	-22.93	-	-	191	133	V

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

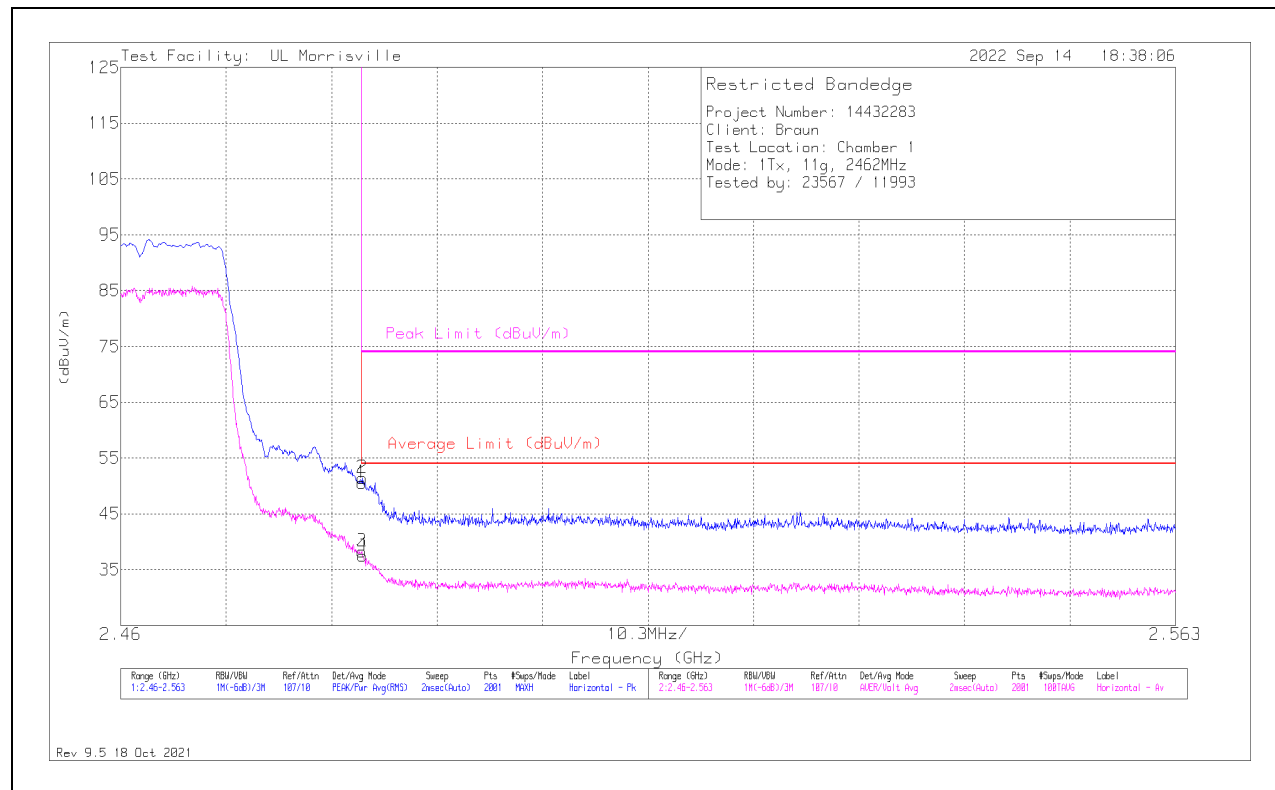
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANEDGE (HIGH CHANNEL, CH 11)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	42.47	Pk	32.5	-24.4	50.57	-	-	74	-23.43	230	157	H
2	*** 2.48359	43.27	Pk	32.5	-24.4	51.37	-	-	74	-22.63	230	157	H
3	*** 2.48354	30.15	ADV	32.5	-24.4	38.25	54	-15.75	-	-	230	157	H
4	*** 2.48364	29.37	ADV	32.5	-24.4	37.47	54	-16.53	-	-	230	157	H

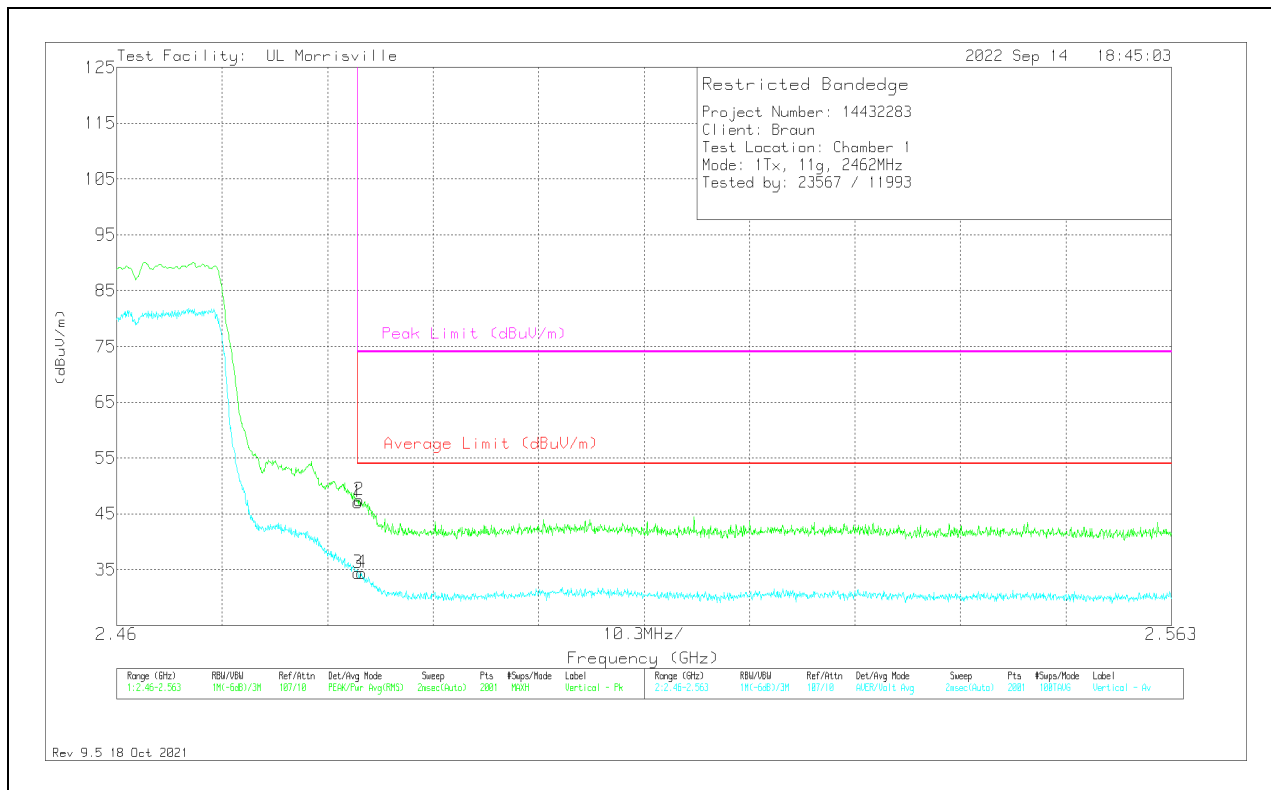
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	38.93	Pk	32.5	-24.4	47.03	-	-	74	-26.97	134	127	V
2	*** 2.48369	39.39	Pk	32.5	-24.4	47.49	-	-	74	-26.51	134	127	V
3	*** 2.48354	26.33	ADV	32.5	-24.4	34.43	54	-19.57	-	-	134	127	V
4	*** 2.48395	26.31	ADV	32.5	-24.4	34.41	54	-19.59	-	-	134	127	V

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

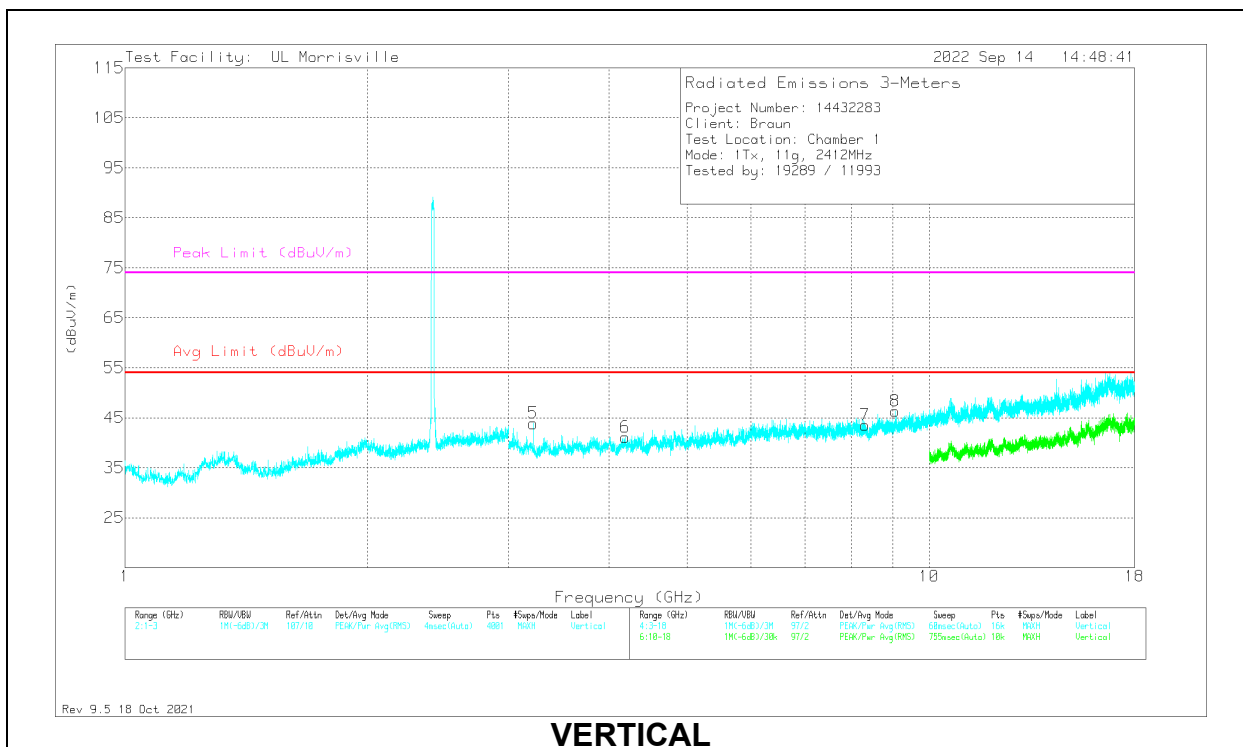
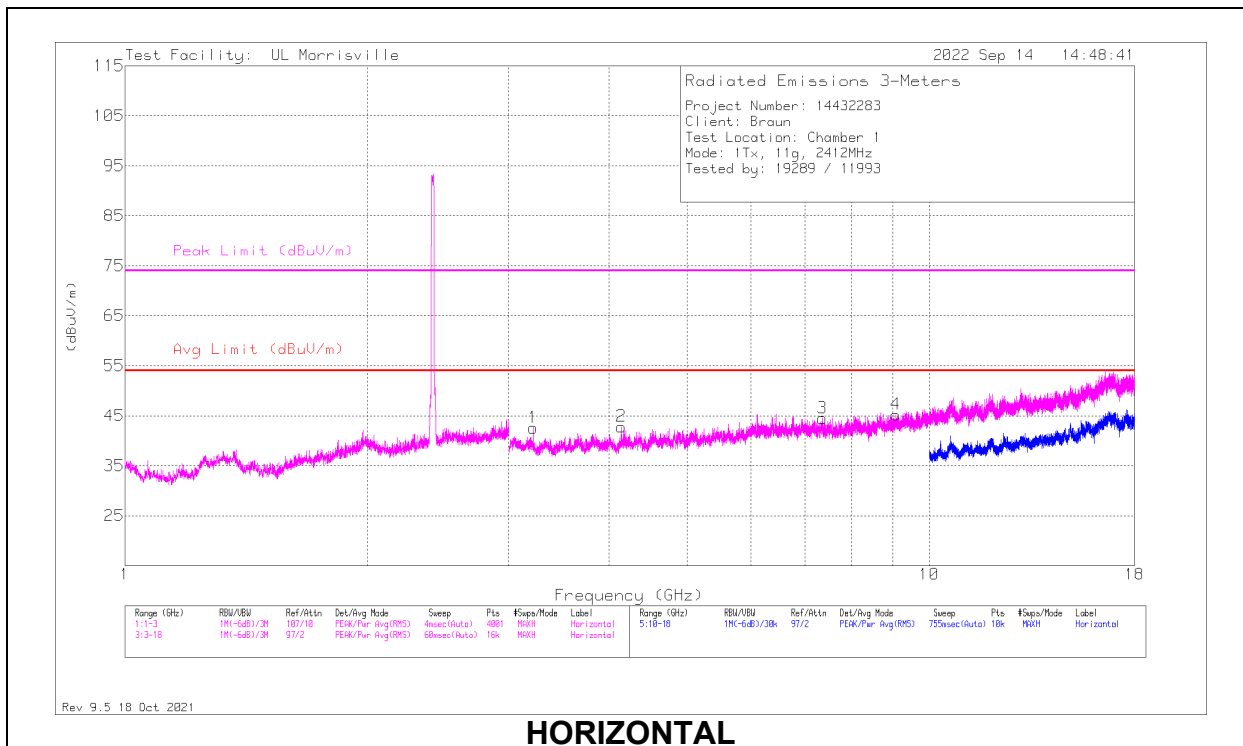
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



RADIATED EMISSIONS

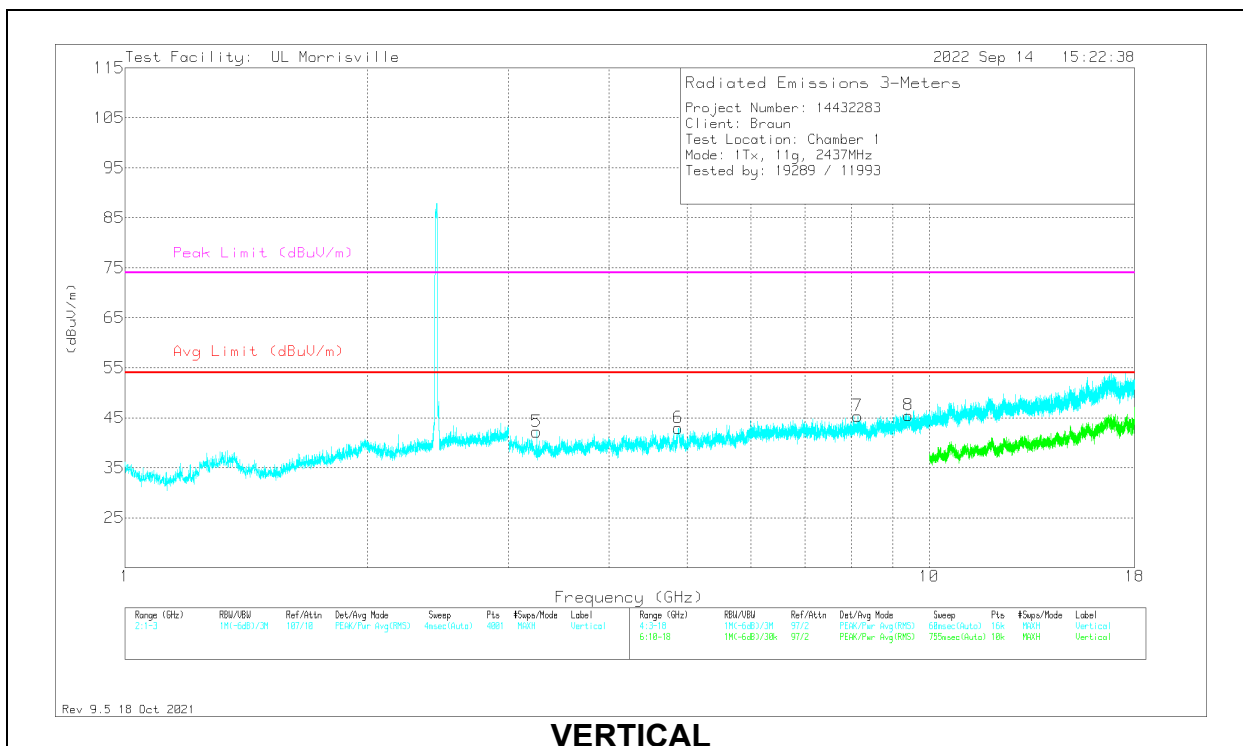
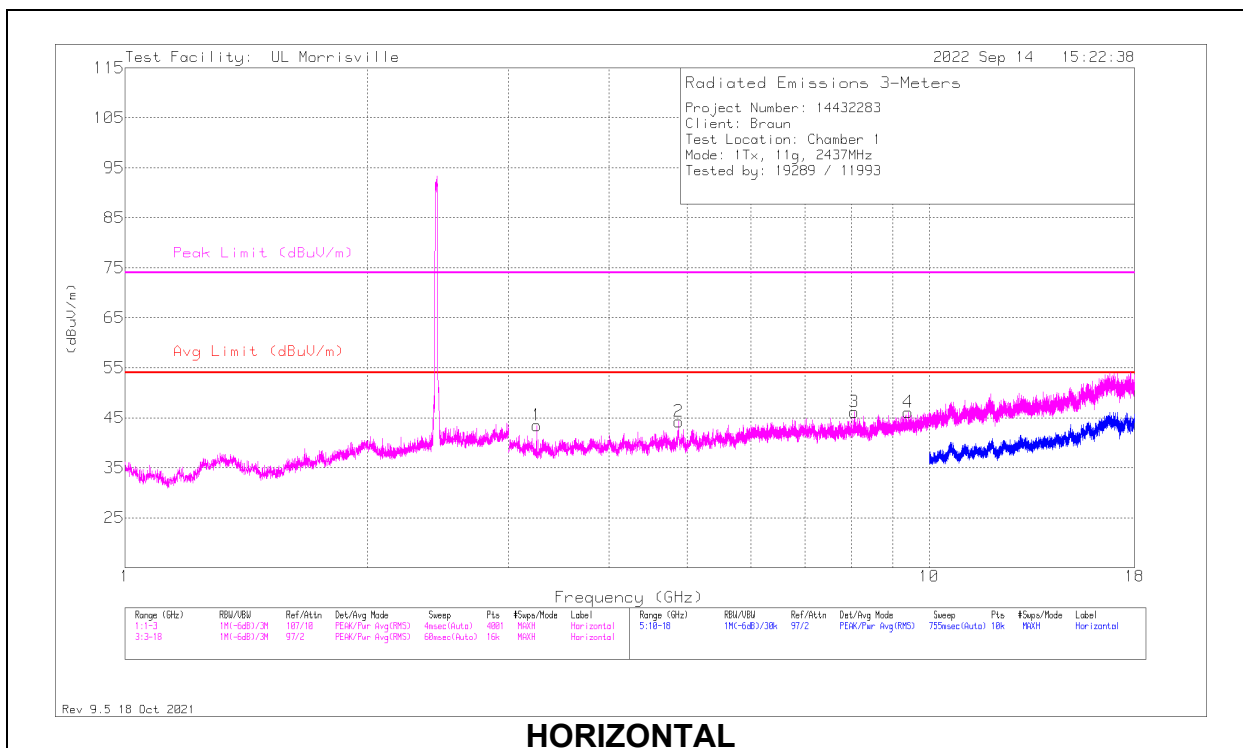
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* ** 4.14094	41.83	Pk	33.4	-32.4	42.83	54	-11.17	74	-31.17	0-360	101	H
3	* ** 7.36031	38	Pk	35.6	-29.1	44.5	54	-9.5	74	-29.5	0-360	200	H
4	* ** 9.0825	36.75	Pk	36.3	-27.8	45.25	54	-8.75	74	-28.75	0-360	200	H
6	* ** 4.18688	39.48	Pk	33.4	-31.8	41.08	54	-12.92	74	-32.92	0-360	101	V
7	* ** 8.32406	36.43	Pk	35.8	-28.7	43.53	54	-10.47	74	-30.47	0-360	200	V
8	* ** 9.07031	38.6	Pk	36.2	-28.5	46.3	54	-7.7	74	-27.7	0-360	101	V
1	3.21563	42.6	Pk	33	-33	42.6	-	-	-	-	0-360	101	H
5	3.21563	43.87	Pk	33	-33	43.87	-	-	-	-	0-360	101	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL, CH 6 RESULTS



RADIATED EMISSIONS

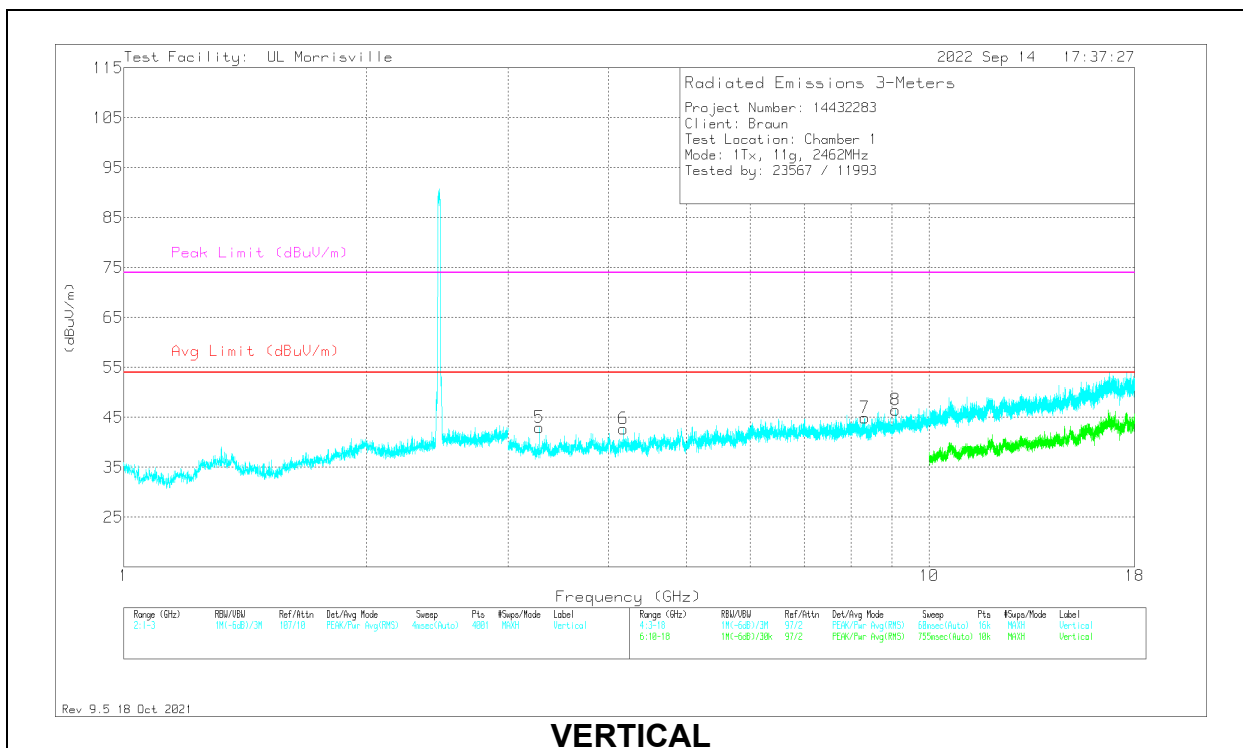
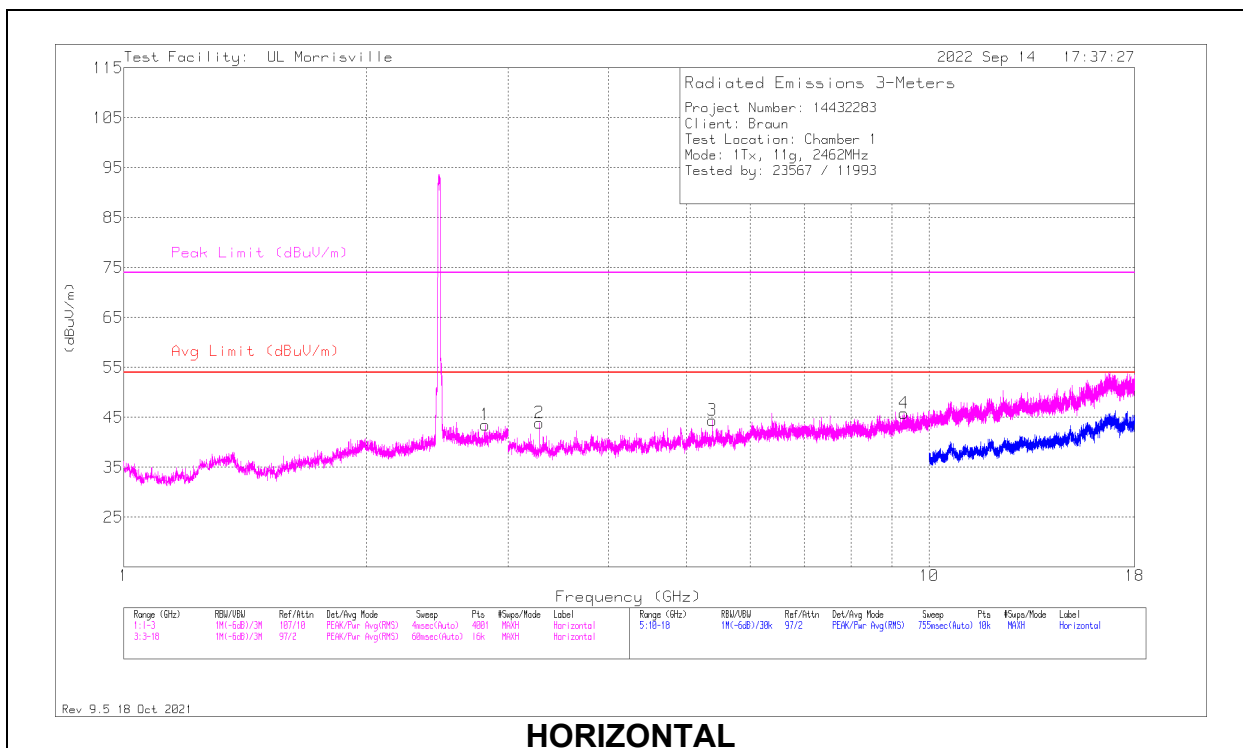
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* ** 4.88344	41.94	Pk	34	-31.7	44.24	54	-9.76	74	-29.76	0-360	101	H
3	* ** 8.07281	38.96	Pk	35.9	-28.7	46.16	54	-7.84	74	-27.84	0-360	200	H
4	* ** 9.41344	37.79	Pk	36.6	-28.3	46.09	54	-7.91	74	-27.91	0-360	200	H
6	* ** 4.87406	40.66	Pk	34	-31.7	42.96	54	-11.04	74	-31.04	0-360	200	V
7	* ** 8.14594	38.47	Pk	35.8	-28.9	45.37	54	-8.63	74	-28.63	0-360	200	V
8	* ** 9.42188	37.19	Pk	36.6	-28.3	45.49	54	-8.51	74	-28.51	0-360	200	V
5	3.24844	42.32	Pk	33	-33.1	42.22	-	-	-	-	0-360	101	V
1	3.24938	43.47	Pk	33	-33	43.47	-	-	-	-	0-360	200	H

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

HIGH CHANNEL, CH 11 RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.8095	34.65	Pk	32.6	-23.8	43.45	54	-10.55	74	-30.55	0-360	101	H
3	* ** 5.38219	40.84	Pk	34.4	-30.8	44.44	54	-9.56	74	-29.56	0-360	199	H
4	* ** 9.315	37.93	Pk	36.5	-28.6	45.83	54	-8.17	74	-28.17	0-360	101	H
6	* ** 4.17563	40.98	Pk	33.4	-31.7	42.68	54	-11.32	74	-31.32	0-360	200	V
7	* ** 8.32313	37.81	Pk	35.8	-28.7	44.91	54	-9.09	74	-29.09	0-360	101	V
8	* ** 9.08531	38.15	Pk	36.3	-28	46.45	54	-7.55	74	-27.55	0-360	200	V
2	3.28219	44.01	Pk	33	-33.1	43.91	-	-	-	-	0-360	199	H
5	3.28219	43.12	Pk	33	-33.1	43.02	-	-	-	-	0-360	101	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

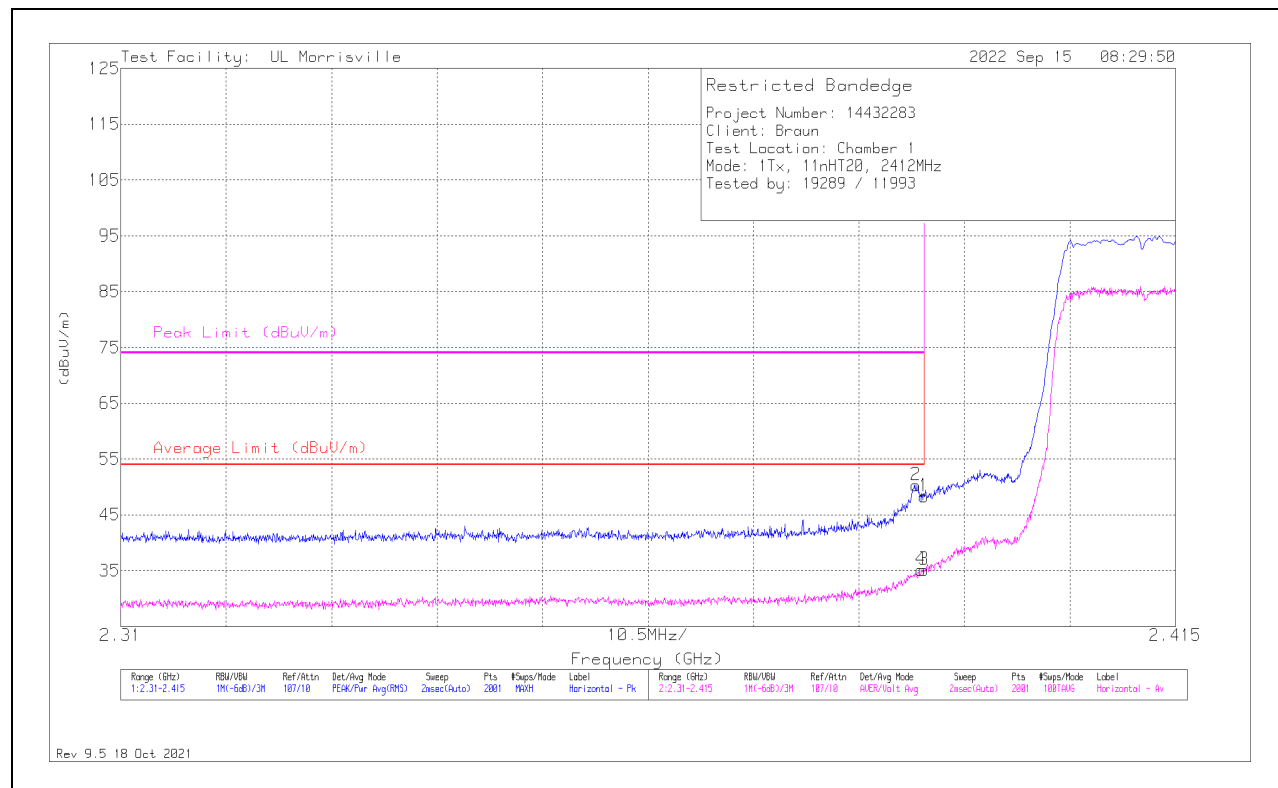
Pk - Peak detector

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

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL, CH 1)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38996	41.08	Pk	32	-24.8	48.28	-	-	74	-25.72	144	127	H
2	* ** 2.38917	43	Pk	32	-24.7	50.3	-	-	74	-23.7	144	127	H
3	* ** 2.38996	27.98	ADV	32	-24.8	35.18	54	-18.82	-	-	144	127	H
4	* ** 2.3897	27.89	ADV	32	-24.8	35.09	54	-18.91	-	-	144	127	H

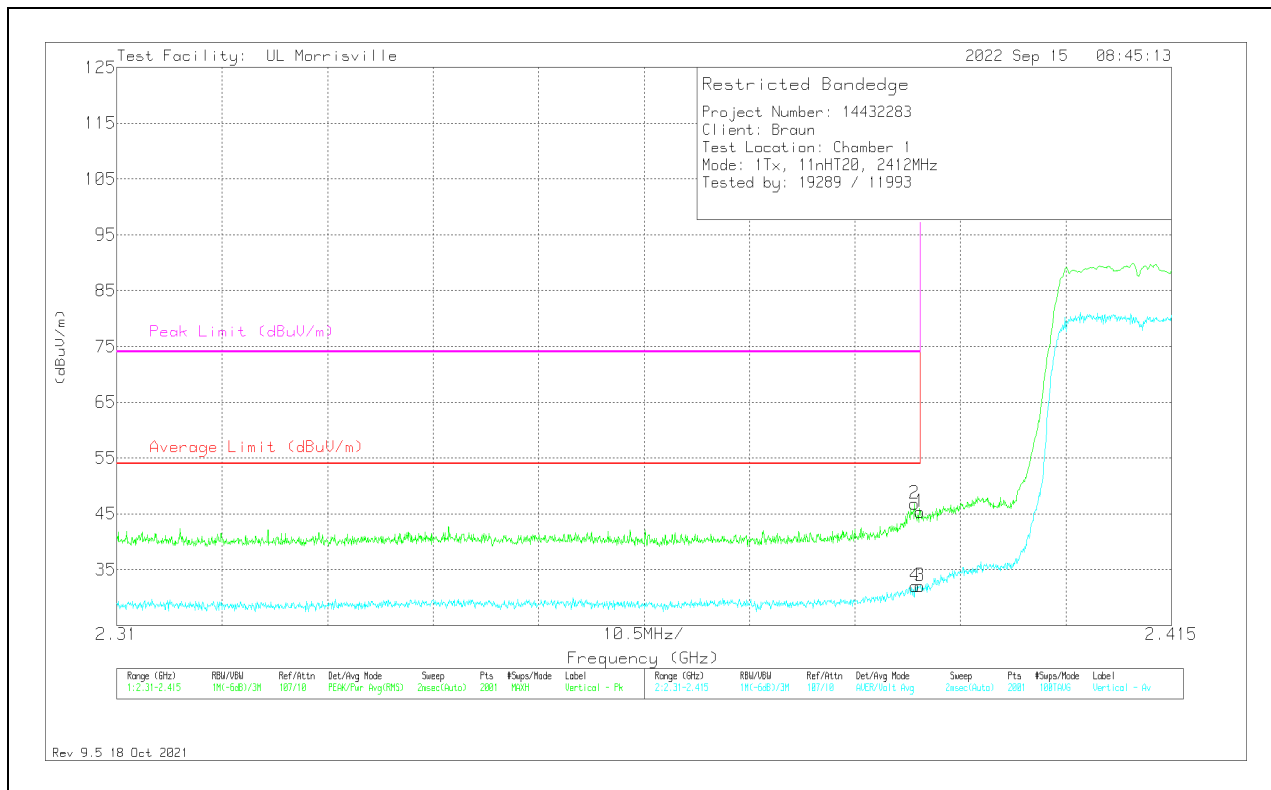
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38996	38.18	Pk	32	-24.8	45.38	-	-	74	-28.62	224	131	V
2	* ** 2.38943	39.52	Pk	32	-24.7	46.82	-	-	74	-27.18	224	131	V
3	* ** 2.38996	24.83	ADV	32	-24.8	32.03	54	-21.97	-	-	224	131	V
4	* ** 2.38949	24.81	ADV	32	-24.8	32.01	54	-21.99	-	-	224	131	V

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

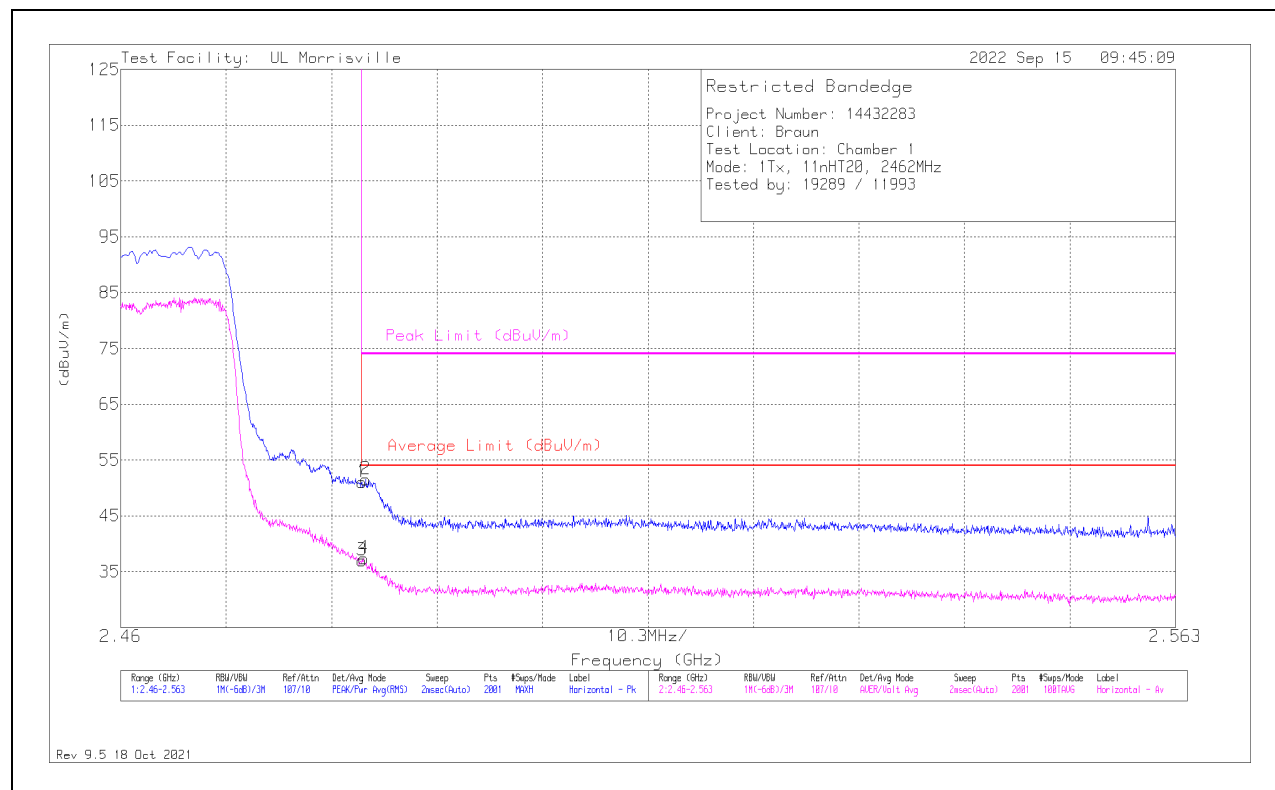
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 11)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	42.96	Pk	32.5	-24.4	51.06	-	-	74	-22.94	137	295	H
2	*** 2.48395	43.45	Pk	32.5	-24.4	51.55	-	-	74	-22.45	137	295	H
3	*** 2.48354	28.95	ADV	32.5	-24.4	37.05	54	-16.95	-	-	137	295	H
4	*** 2.48374	29.24	ADV	32.5	-24.4	37.34	54	-16.66	-	-	137	295	H

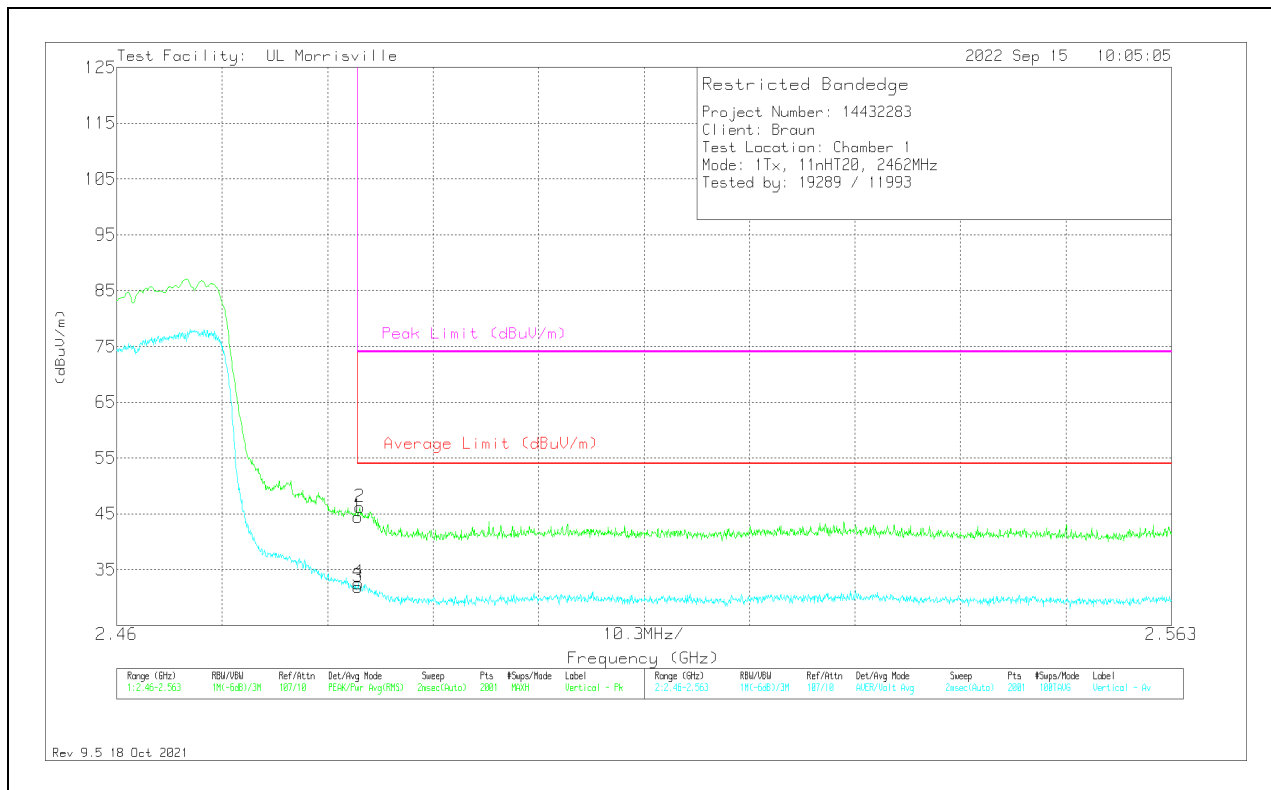
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	36.31	Pk	32.5	-24.4	44.41	-	-	74	-29.59	97	181	V
2	* ** 2.48374	38.14	Pk	32.5	-24.4	46.24	-	-	74	-27.76	97	181	V
3	* ** 2.48354	23.77	ADV	32.5	-24.4	31.87	54	-22.13	-	-	97	181	V
4	* ** 2.48359	24.5	ADV	32.5	-24.4	32.6	54	-21.4	-	-	97	181	V

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

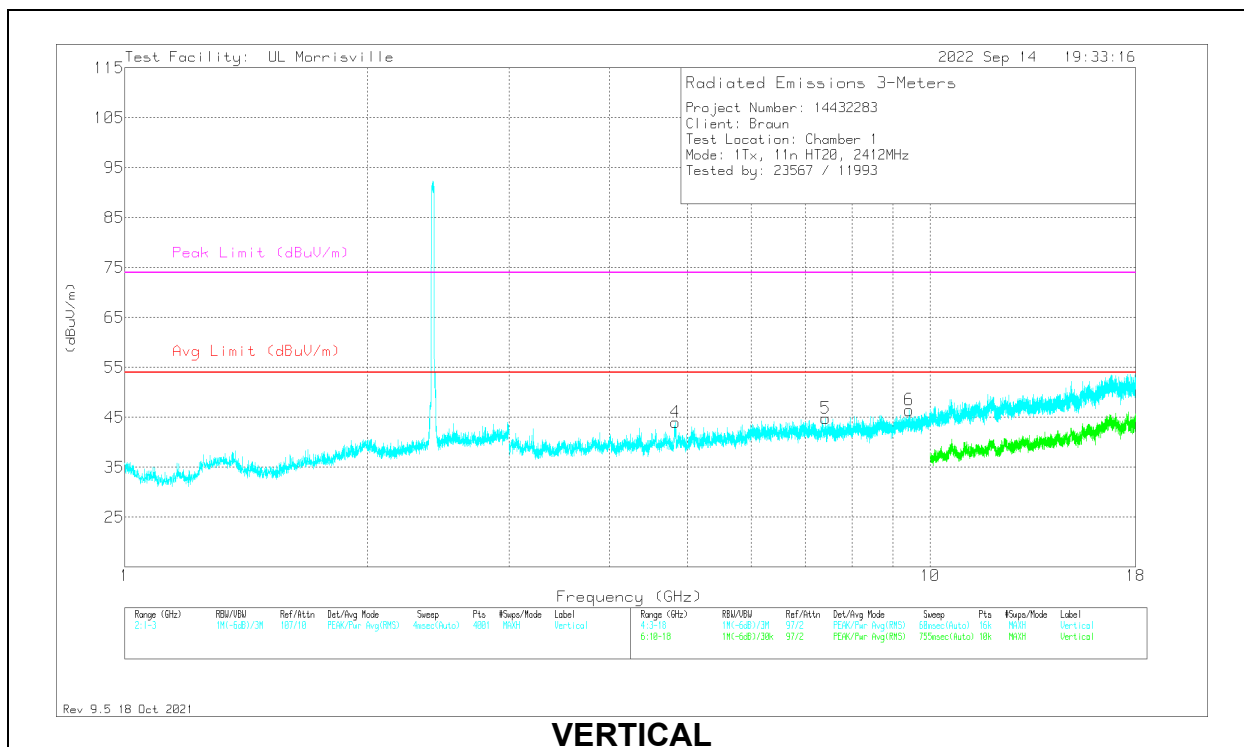
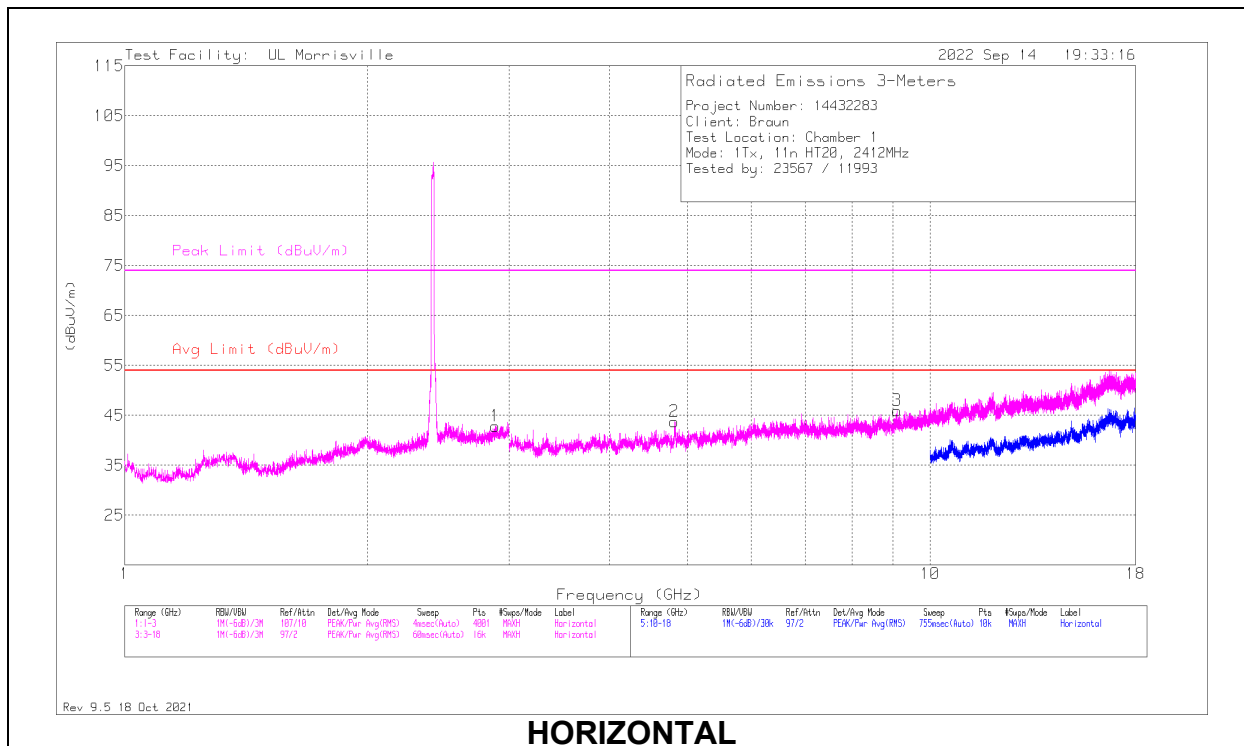
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 1 RESULTS



RADIATED EMISSIONS

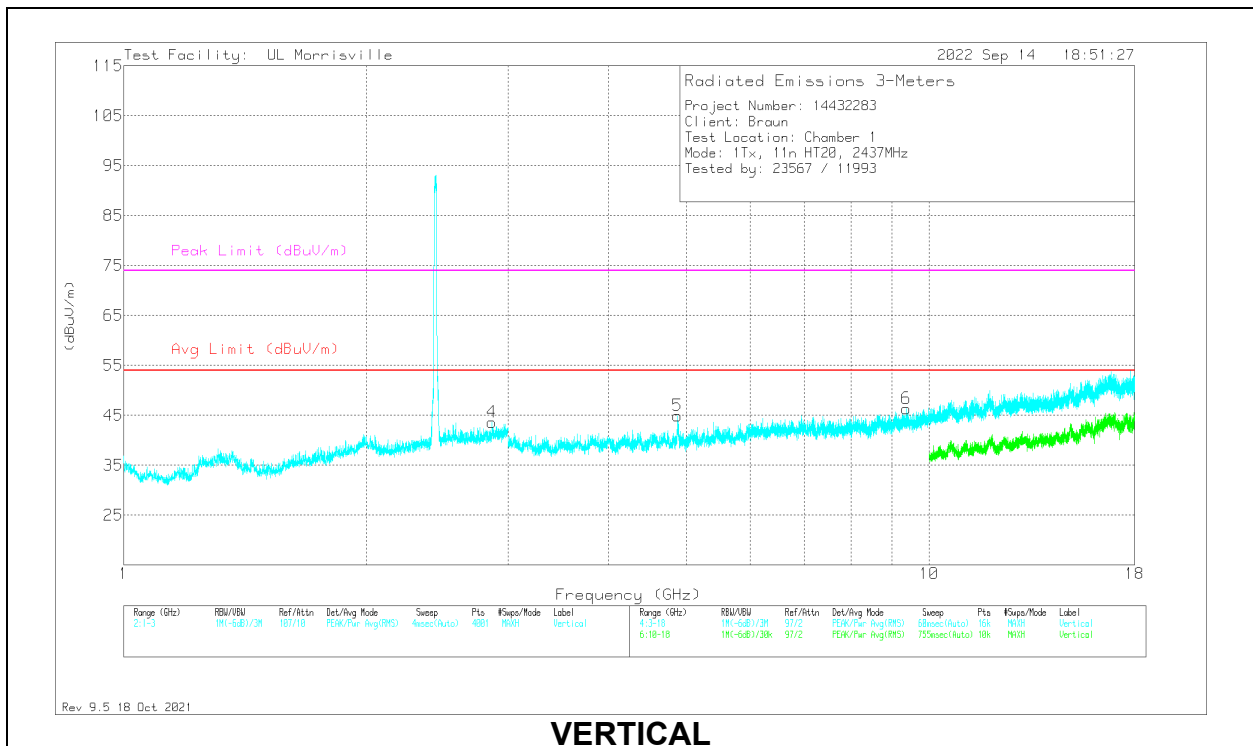
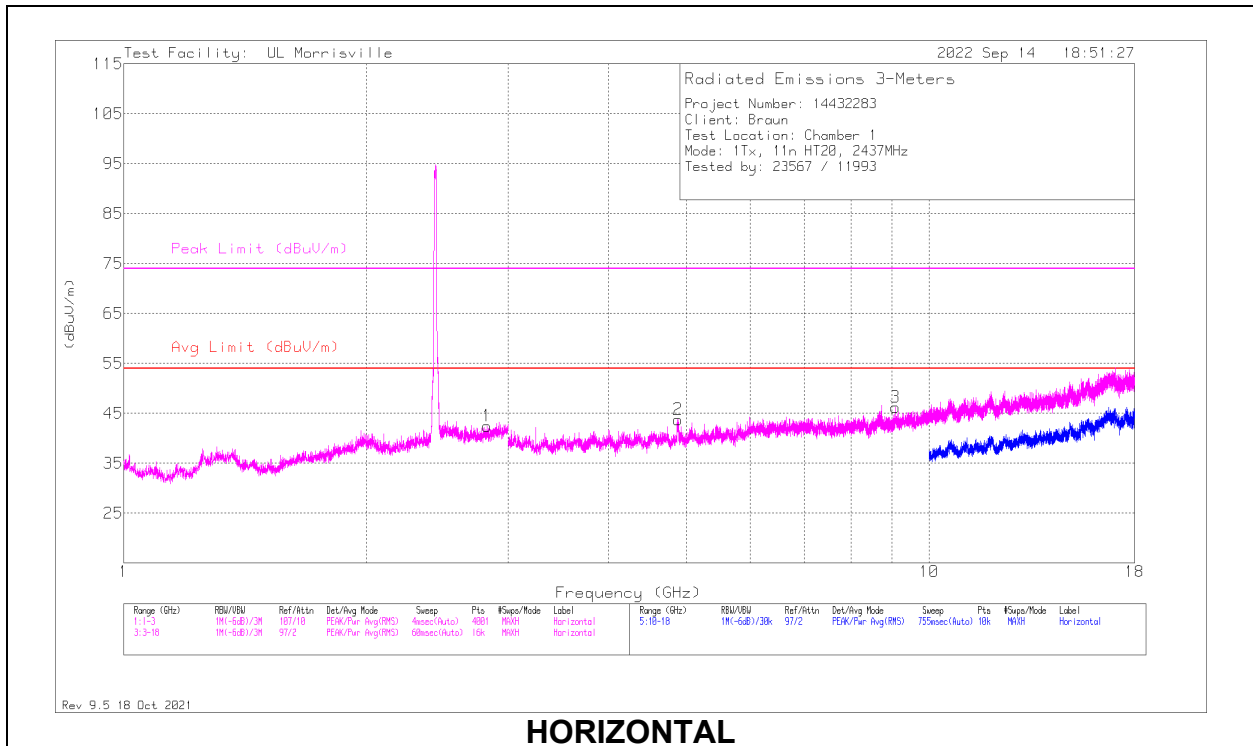
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.886	34	Pk	32.7	-23.9	42.8	54	-11.2	74	-31.2	0-360	199	H
2	* ** 4.81594	40.91	Pk	34.1	-31.3	43.71	54	-10.29	74	-30.29	0-360	101	H
3	* ** 9.10031	37.53	Pk	36.3	-27.9	45.93	54	-8.07	74	-28.07	0-360	101	H
4	* ** 4.82625	41.55	Pk	34.1	-31.6	44.05	54	-9.95	74	-29.95	0-360	200	V
5	* ** 7.41375	38.24	Pk	35.6	-29.1	44.74	54	-9.26	74	-29.26	0-360	101	V
6	* ** 9.41531	37.92	Pk	36.6	-28.1	46.42	54	-7.58	74	-27.58	0-360	101	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL, CH 6 RESULTS



RADIATED EMISSIONS

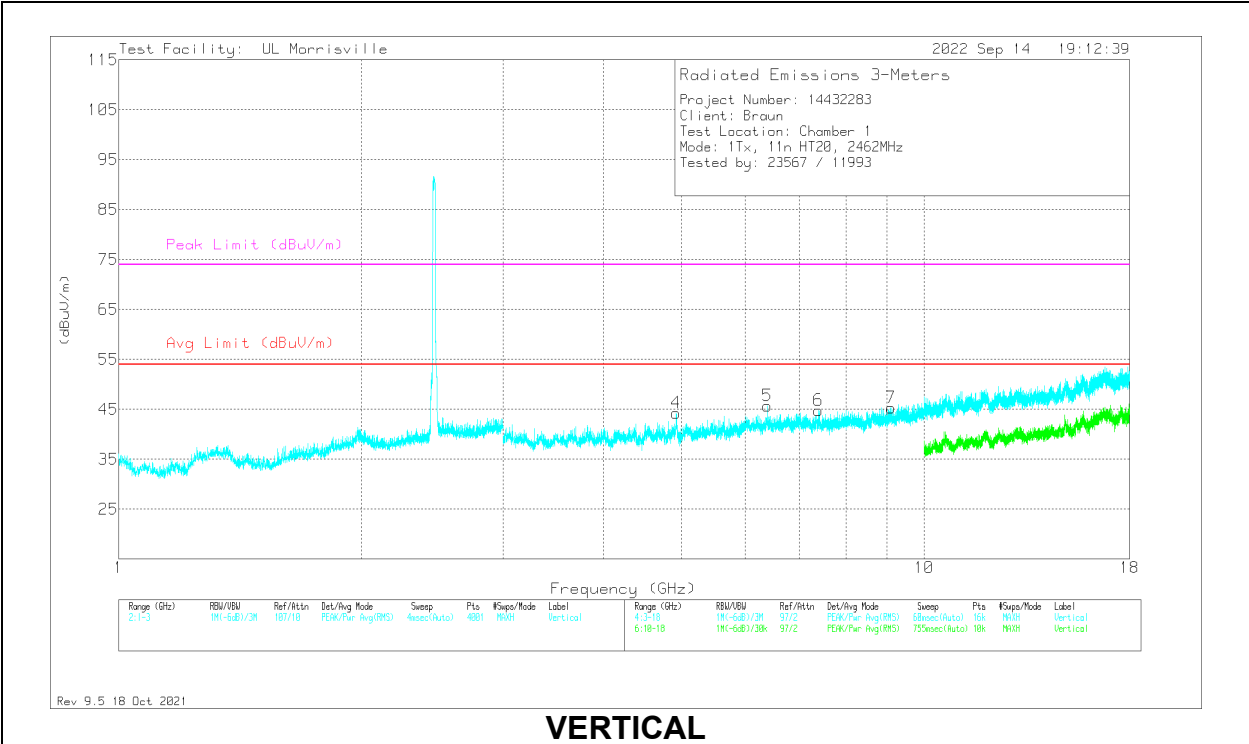
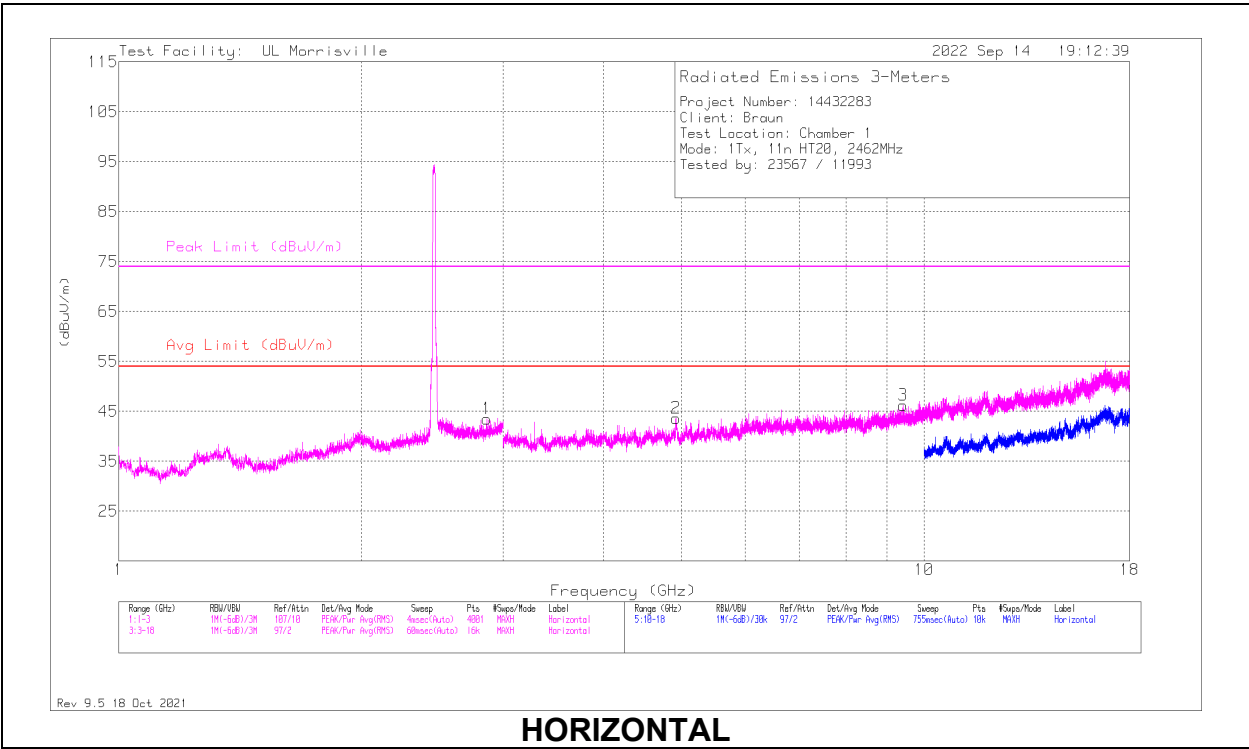
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.8265	33.57	Pk	32.6	-23.7	42.47	54	-11.53	74	-31.53	0-360	101	H
4	* ** 2.8665	34.85	Pk	32.6	-23.8	43.65	54	-10.35	74	-30.35	0-360	200	V
2	* ** 4.87781	41.17	Pk	34	-31.4	43.77	54	-10.23	74	-30.23	0-360	101	H
3	* ** 9.08344	37.7	Pk	36.3	-27.8	46.2	54	-7.8	74	-27.8	0-360	200	H
5	* ** 4.87219	42.67	Pk	34	-31.7	44.97	54	-9.03	74	-29.03	0-360	200	V
6	* ** 9.37219	37.98	Pk	36.6	-28.2	46.38	54	-7.62	74	-27.62	0-360	200	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

HIGH CHANNEL, CH 11 RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.867	34.63	Pk	32.6	-23.7	43.53	54	-10.47	74	-30.47	0-360	101	H
2	* ** 4.92	41.61	Pk	34	-32	43.61	54	-10.39	74	-30.39	0-360	101	H
3	* ** 9.42094	37.9	Pk	36.6	-28.3	46.2	54	-7.8	74	-27.8	0-360	199	H
4	* ** 4.91906	42.29	Pk	34	-32	44.29	54	-9.71	74	-29.71	0-360	101	V
6	* ** 7.39781	39.04	Pk	35.6	-29.8	44.84	54	-9.16	74	-29.16	0-360	101	V
7	* ** 9.10125	36.86	Pk	36.3	-27.9	45.26	54	-8.74	74	-28.74	0-360	200	V
5	6.38531	40.13	Pk	35.5	-29.9	45.73	-	-	-	-	0-360	101	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

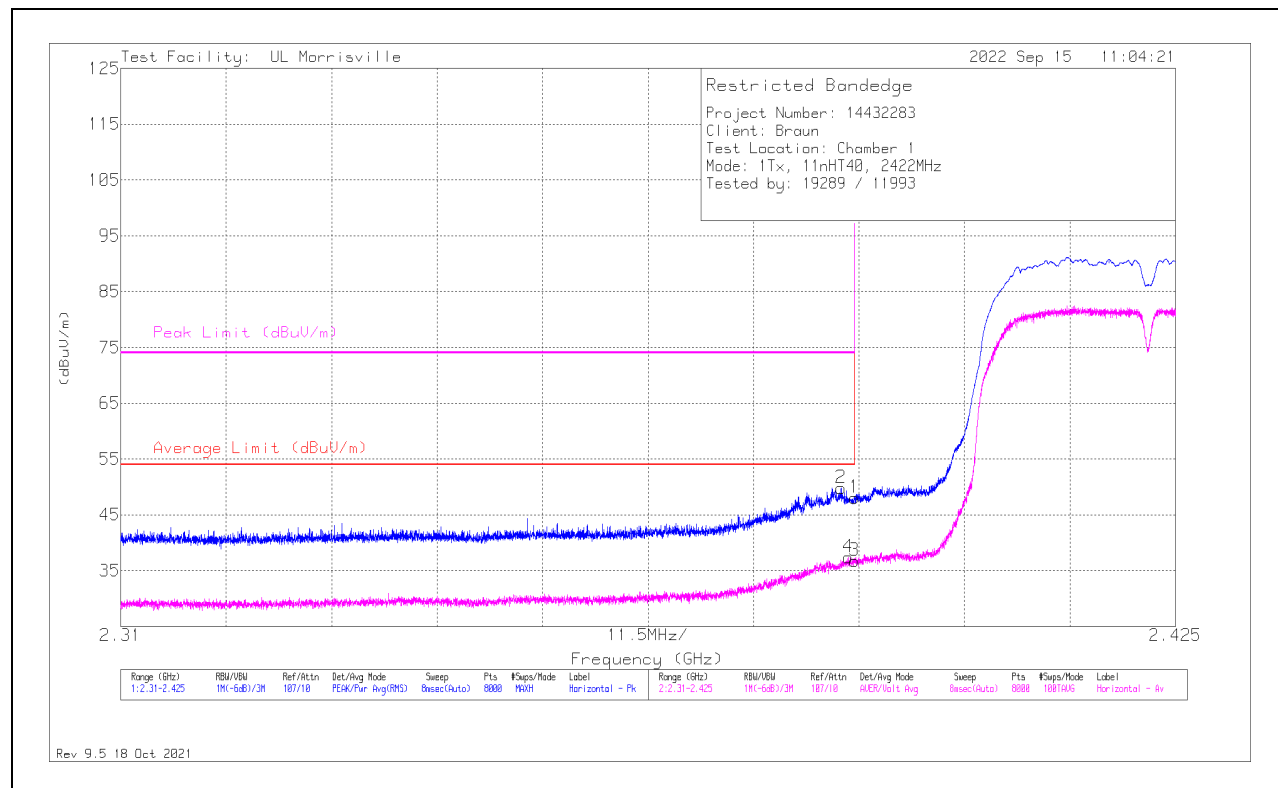
Pk - Peak detector

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

1TX Antenna 1 MODE

BANDEDGE (LOW CHANNEL, CH 3)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (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	40.84	Pk	32	-24.8	48.04	-	-	74	-25.96	144	104	H
2	*** 2.38854	42.47	Pk	32	-24.7	49.77	-	-	74	-24.23	144	104	H
3	*** 2.38999	29.56	ADV	32	-24.8	36.76	54	-17.24	-	-	144	104	H
4	*** 2.3893	30.08	ADV	32	-24.7	37.38	54	-16.62	-	-	144	104	H

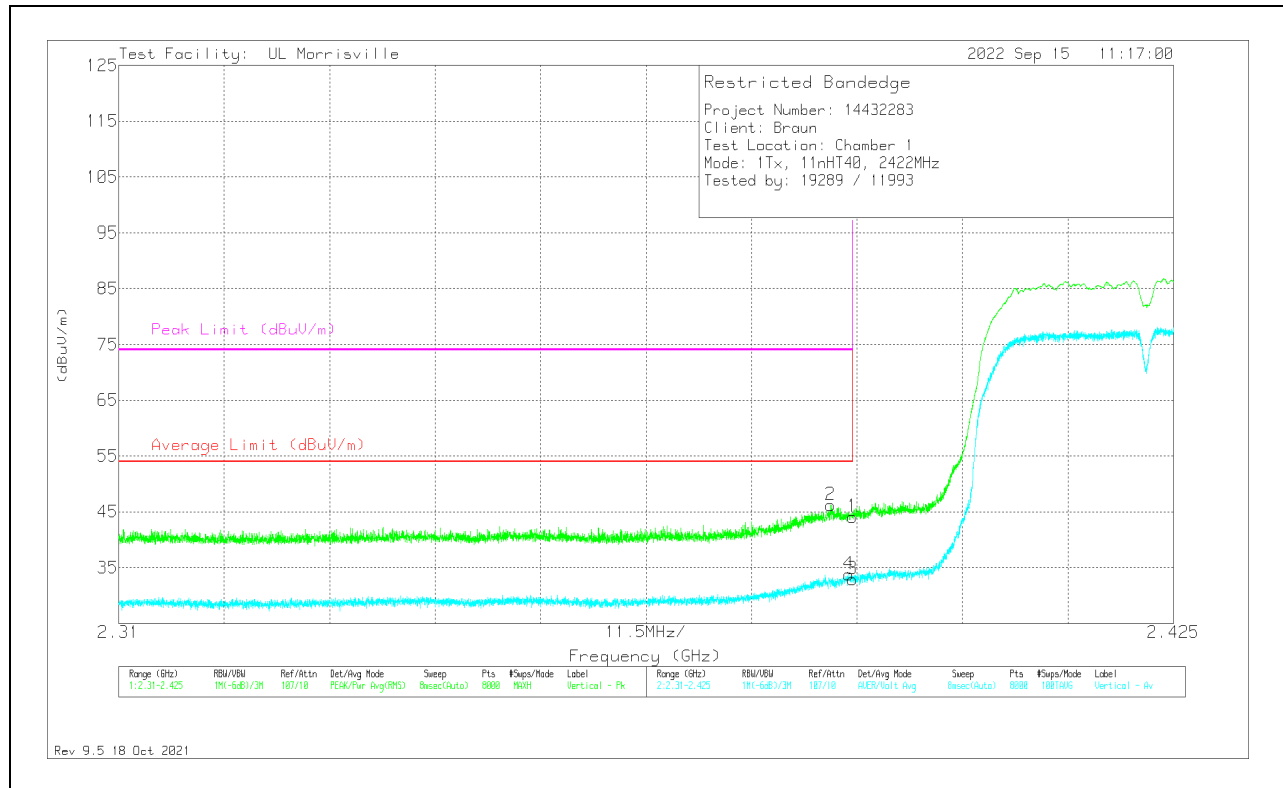
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (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	36.83	Pk	32	-24.8	44.03	-	-	74	-29.97	234	129	V
2	* ** 2.38765	38.76	Pk	32	-24.6	46.16	-	-	74	-27.84	234	129	V
3	* ** 2.38999	25.69	ADV	32	-24.8	32.89	54	-21.11	-	-	234	129	V
4	* ** 2.38959	26.6	ADV	32	-24.8	33.8	54	-20.2	-	-	234	129	V

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

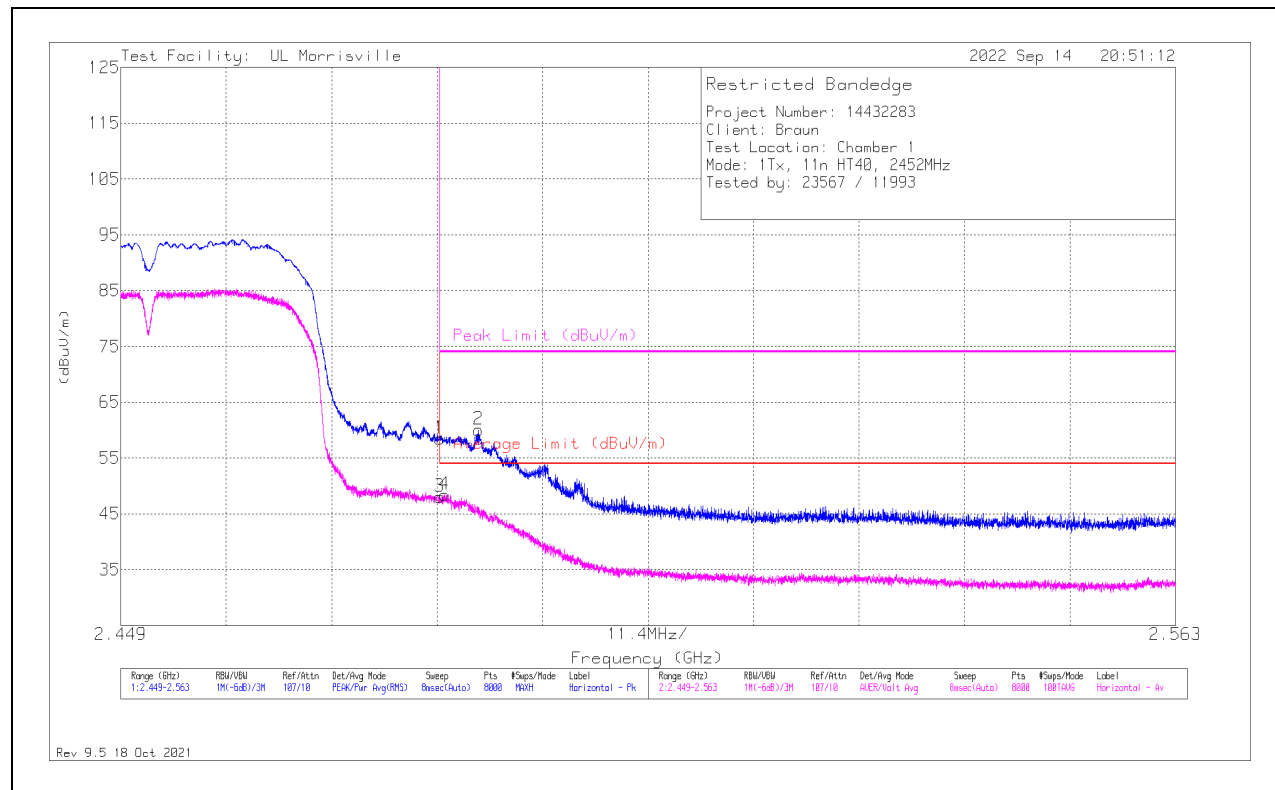
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL, CH 9)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (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	50.4	Pk	32.5	-24.4	58.5	-	-	74	-15.5	231	152	H
2	*** 2.48767	52.14	Pk	32.4	-24.5	60.04	-	-	74	-13.96	231	152	H
3	*** 2.4835	39.98	ADV	32.5	-24.4	48.08	54	-5.92	-	-	231	152	H
4	*** 2.48405	40.28	ADV	32.5	-24.3	48.48	54	-5.52	-	-	231	152	H

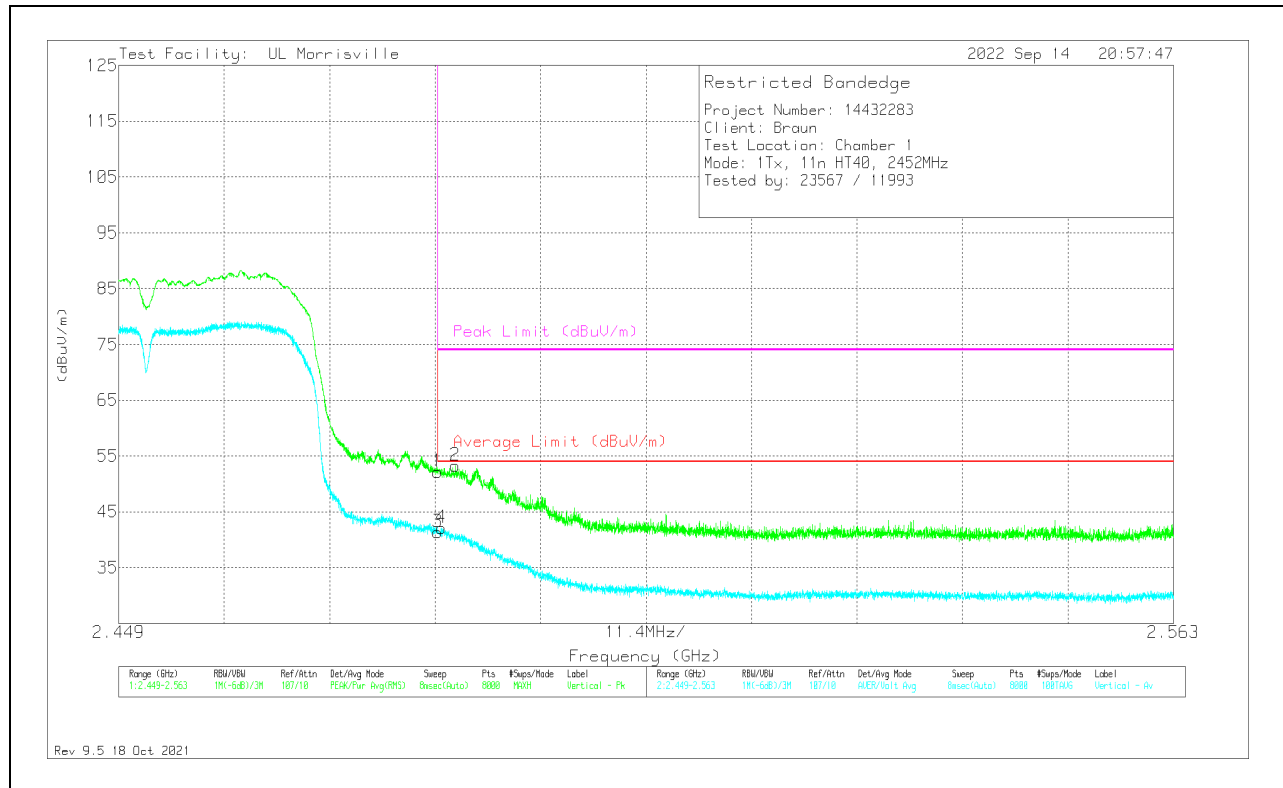
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (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	44.03	Pk	32.5	-24.4	52.13	-	-	74	-21.87	128	153	V
2	*** 2.48539	45.19	Pk	32.4	-24.3	53.29	-	-	74	-20.71	128	153	V
3	*** 2.4835	33.22	ADV	32.5	-24.4	41.32	54	-12.68	-	-	128	153	V
4	*** 2.4839	33.96	ADV	32.5	-24.4	42.06	54	-11.94	-	-	128	153	V

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

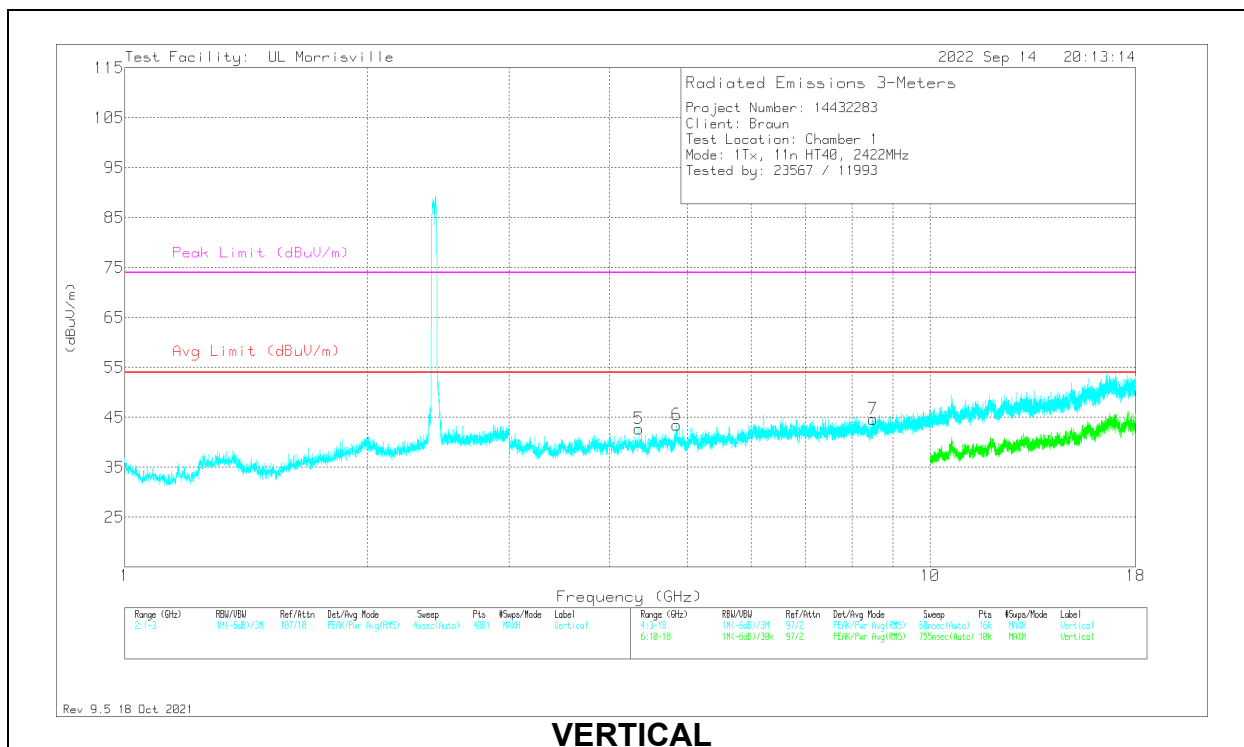
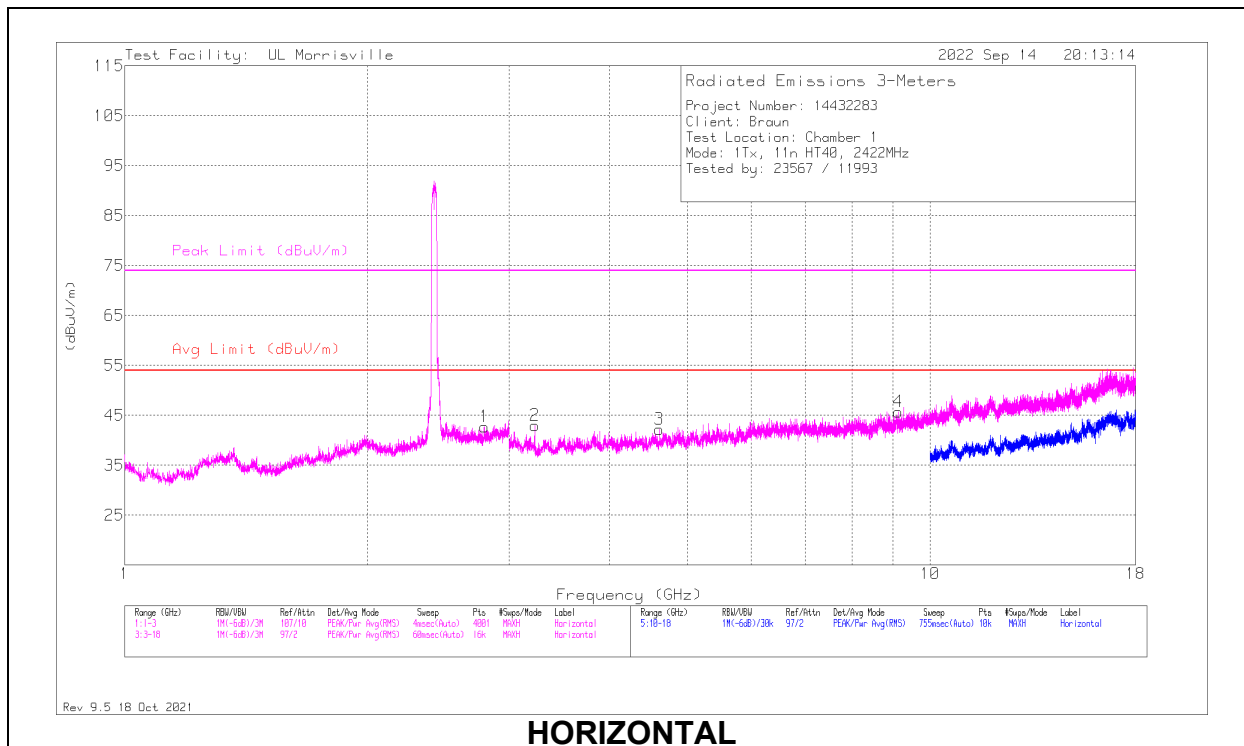
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL, CH 3 RESULTS



RADIATED EMISSIONS

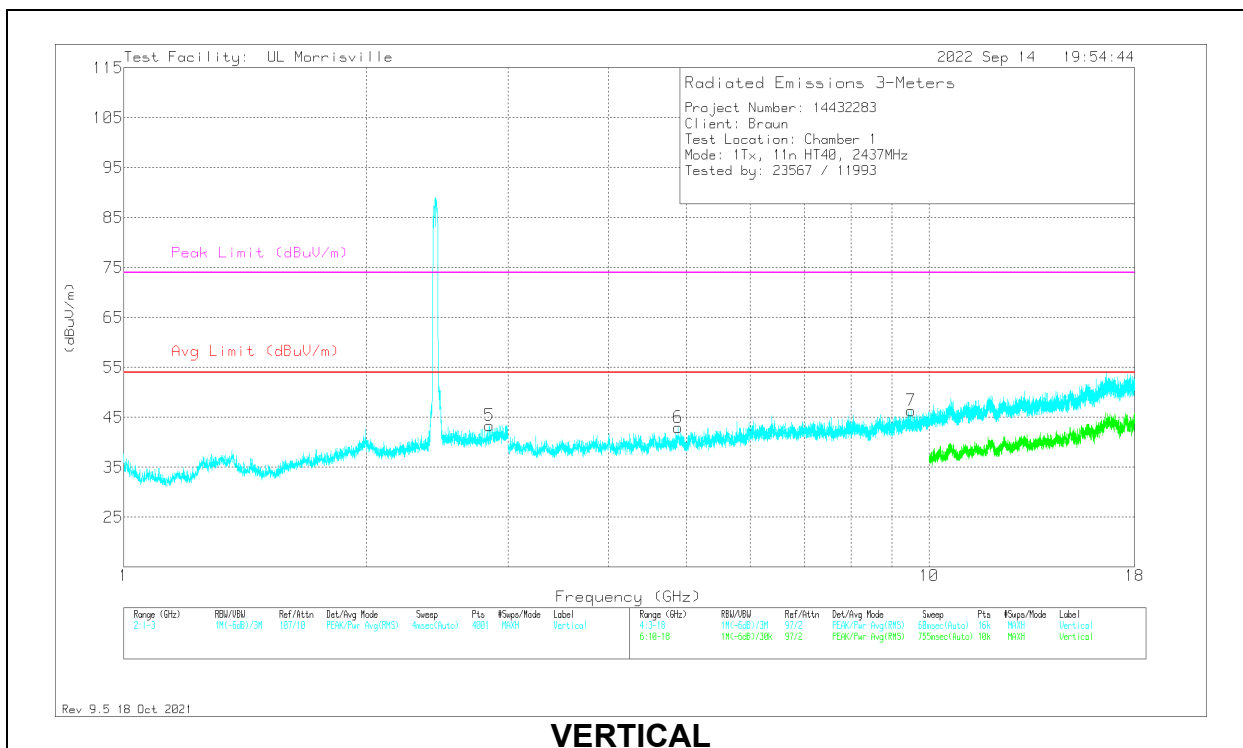
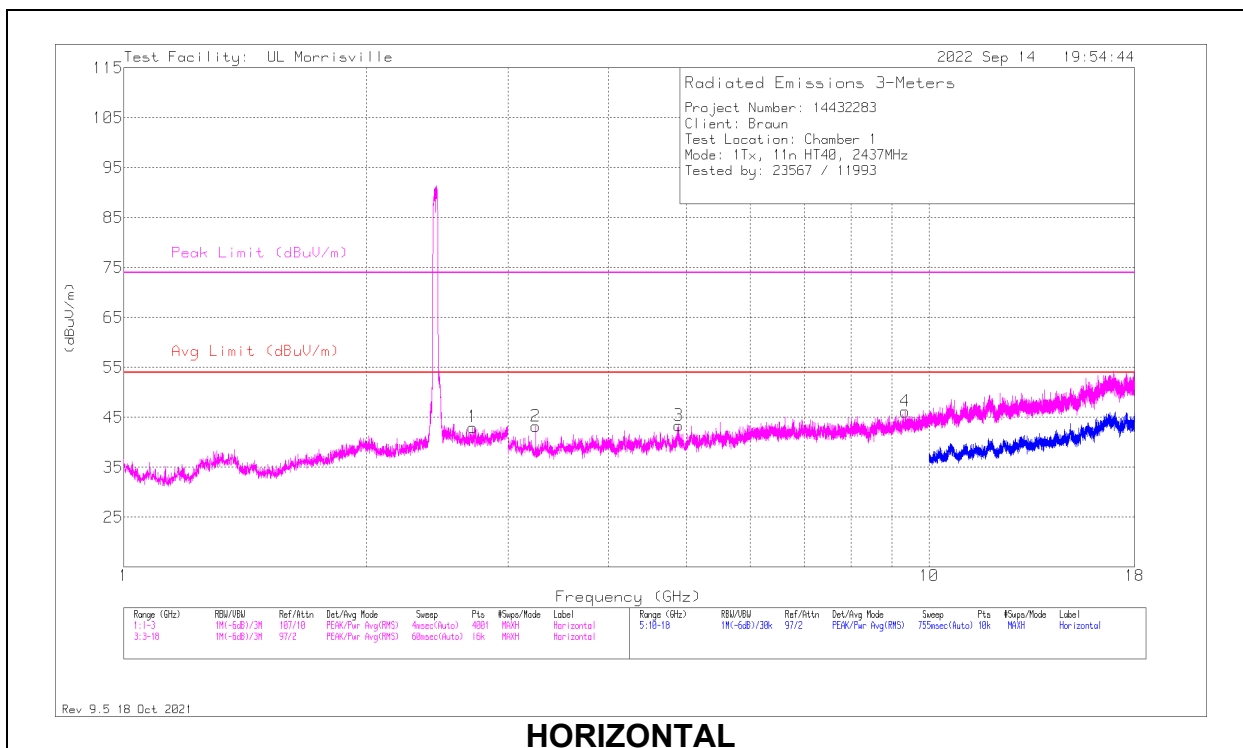
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.795	34.19	Pk	32.6	-24.1	42.69	54	-11.31	74	-31.31	0-360	101	H
3	* ** 4.60875	40.61	Pk	34.1	-32.5	42.21	54	-11.79	74	-31.79	0-360	199	H
4	* ** 9.12844	37.41	Pk	36.3	-28	45.71	54	-8.29	74	-28.29	0-360	101	H
5	* ** 4.34625	41.5	Pk	33.7	-32.5	42.7	54	-11.3	74	-31.3	0-360	101	V
6	* ** 4.84406	41.04	Pk	34.1	-31.6	43.54	54	-10.46	74	-30.46	0-360	200	V
7	* ** 8.49188	37.52	Pk	35.8	-28.6	44.72	54	-9.28	74	-29.28	0-360	200	V
2	3.22875	42.98	Pk	33	-33	42.98	-	-	-	-	0-360	101	H

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL, CH 6 RESULTS



RADIATED EMISSIONS

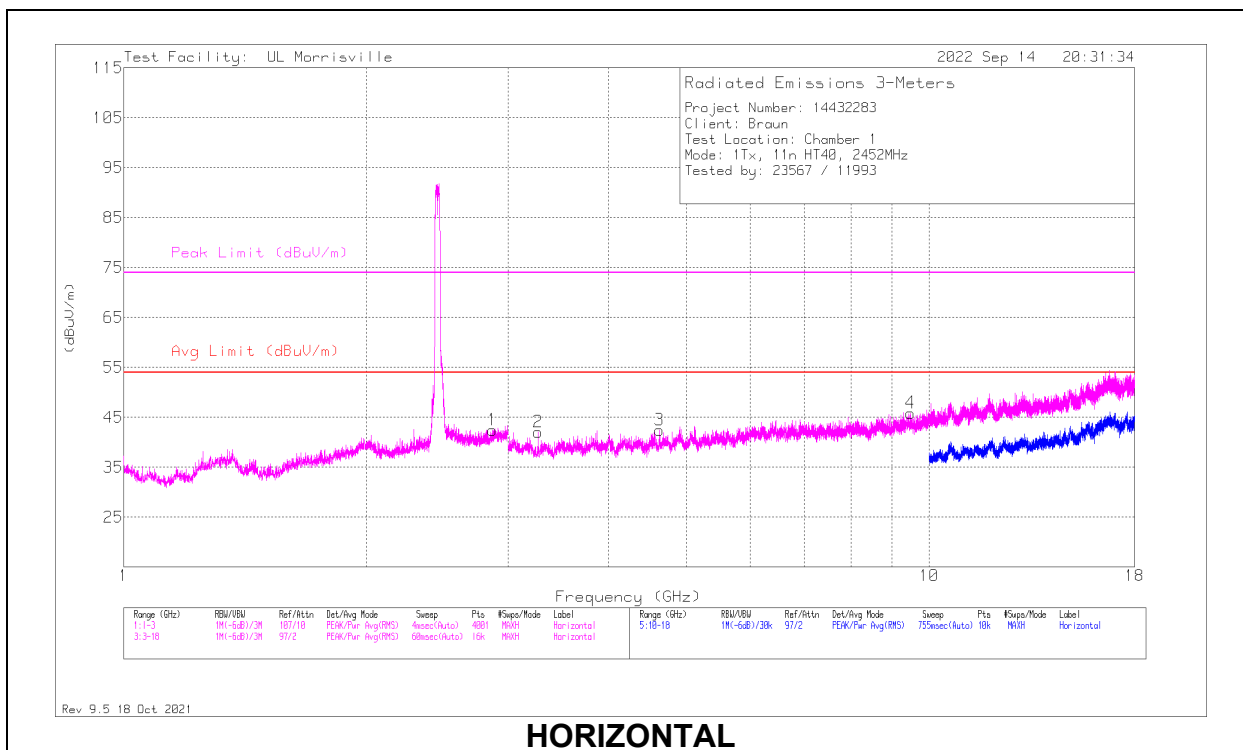
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.7125	34.74	Pk	32.5	-24.2	43.04	54	-10.96	74	-30.96	0-360	199	H
5	* ** 2.8435	34.8	Pk	32.5	-23.9	43.4	54	-10.6	74	-30.6	0-360	101	V
3	* ** 4.89188	41.08	Pk	34	-31.7	43.38	54	-10.62	74	-30.62	0-360	199	H
4	* ** 9.33844	38.66	Pk	36.5	-29	46.16	54	-7.84	74	-27.84	0-360	101	H
6	* ** 4.88063	40.35	Pk	34	-31.4	42.95	54	-11.05	74	-31.05	0-360	200	V
7	* ** 9.49969	38.01	Pk	36.8	-28.5	46.31	54	-7.69	74	-27.69	0-360	101	V
2	3.24938	43.2	Pk	33	-33	43.2	-	-	-	-	0-360	101	H

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

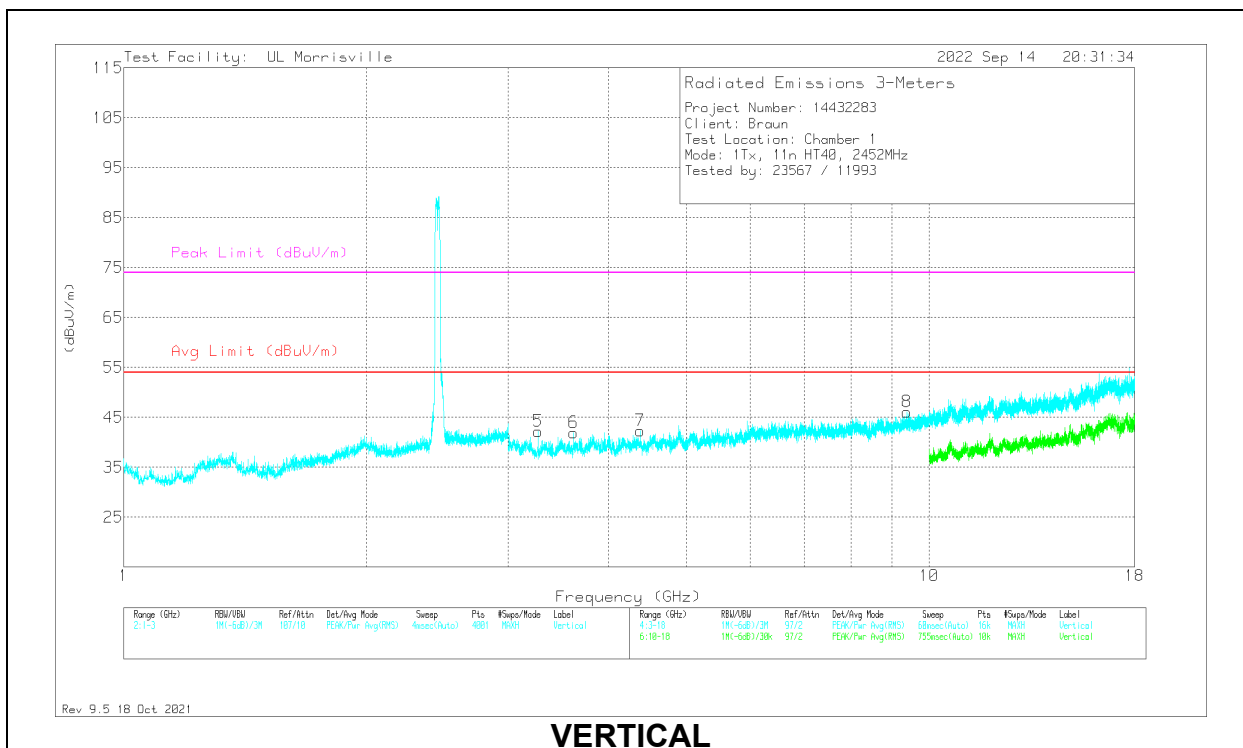
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

HIGH CHANNEL, CH 9 RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.8685	33.38	Pk	32.7	-23.6	42.48	54	-11.52	74	-31.52	0-360	199	H
3	* ** 4.62469	41.01	Pk	34.1	-32.6	42.51	54	-11.49	74	-31.49	0-360	199	H
4	* ** 9.47813	37.39	Pk	36.7	-28.2	45.89	54	-8.11	74	-28.11	0-360	101	H
6	* ** 3.61688	40.35	Pk	33	-31.4	41.95	54	-12.05	74	-32.05	0-360	200	V
7	* ** 4.37813	41.01	Pk	33.7	-32.4	42.31	54	-11.69	74	-31.69	0-360	200	V
8	* ** 9.38156	38.49	Pk	36.6	-29	46.09	54	-7.91	74	-27.91	0-360	200	V
2	3.26906	42.32	Pk	33	-33.2	42.12	-	-	-	-	0-360	199	H
5	3.26906	42.43	Pk	33	-33.2	42.23	-	-	-	-	0-360	101	V

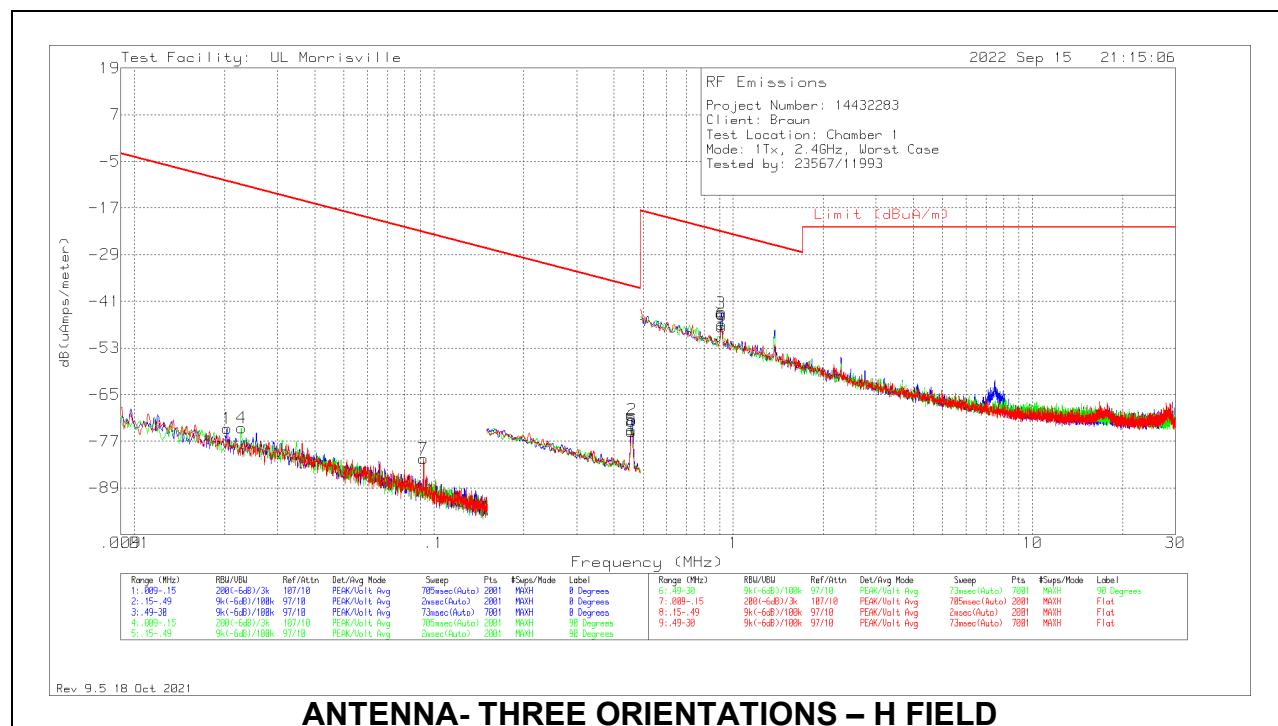
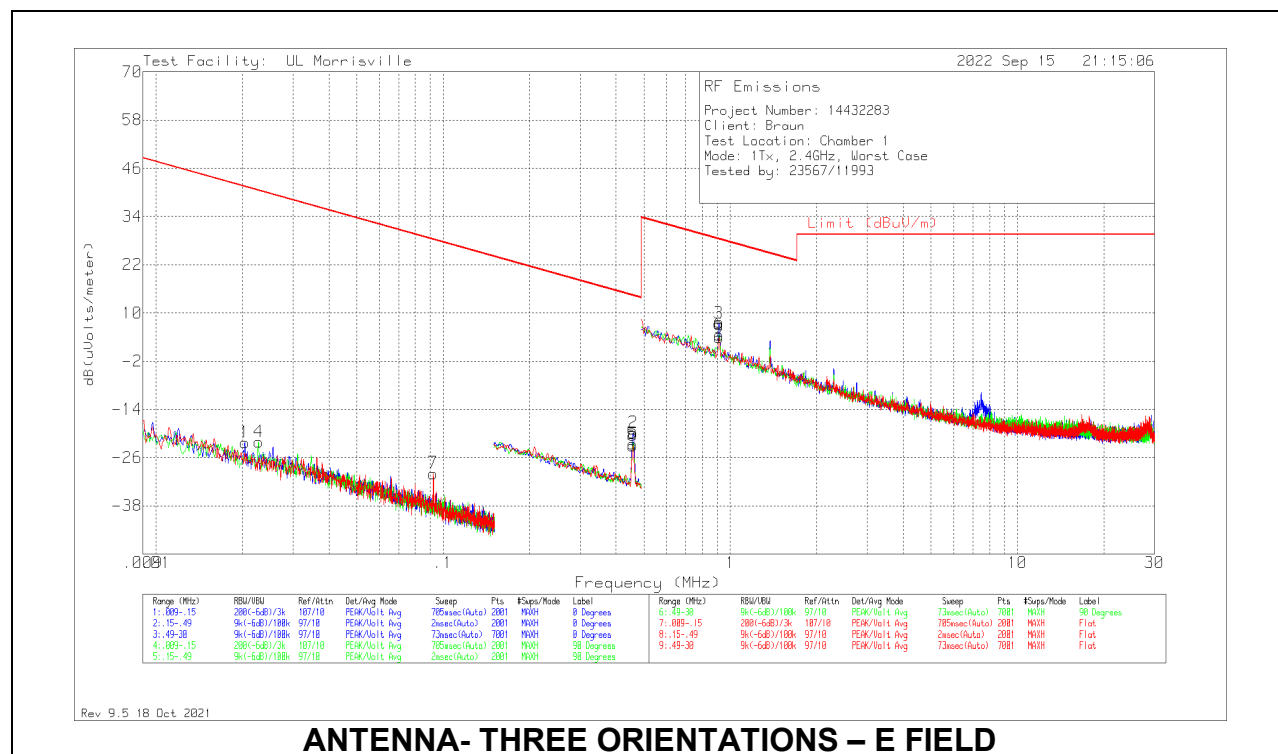
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

10.2. WORST CASE BELOW 30MHZ

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



Below 30MHz Data – E FIELD

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0059 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/ AV Limit (dBuV/m)	QP/ AV Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.02043	43.61	Pk	14.1	.1	-80	-22.19	41.4	61.4	-63.59	0-360	0 degs
4	.02277	43.93	Pk	13.9	.1	-80	-22.07	40.46	60.46	-62.53	0-360	90 degs
7	.09235	39.39	Pk	10.6	.1	-80	-29.91	28.3	-	-58.21	0-360	Flat
5	.45762	47.16	Pk	10.1	.2	-80	-22.54	14.39	34.39	-36.93	0-360	90 degs
8	.45796	46.7	Pk	10.1	.2	-80	-23	14.39	34.39	-37.39	0-360	Flat
2	.45915	49.8	Pk	10.1	.2	-80	-19.9	14.36	34.36	-34.26	0-360	0 degs
3	.9116	37.05	Pk	10.2	.2	-40	7.45	28.41	-	-20.96	0-360	0 degs
6	.91582	34.14	Pk	10.2	.2	-40	4.54	28.37	-	-23.83	0-360	90 degs
9	.91582	33.47	Pk	10.2	.2	-40	3.87	28.37	-	-24.5	0-360	Flat

Pk – Peak Detector

Below 30MHz Data – H FIELD

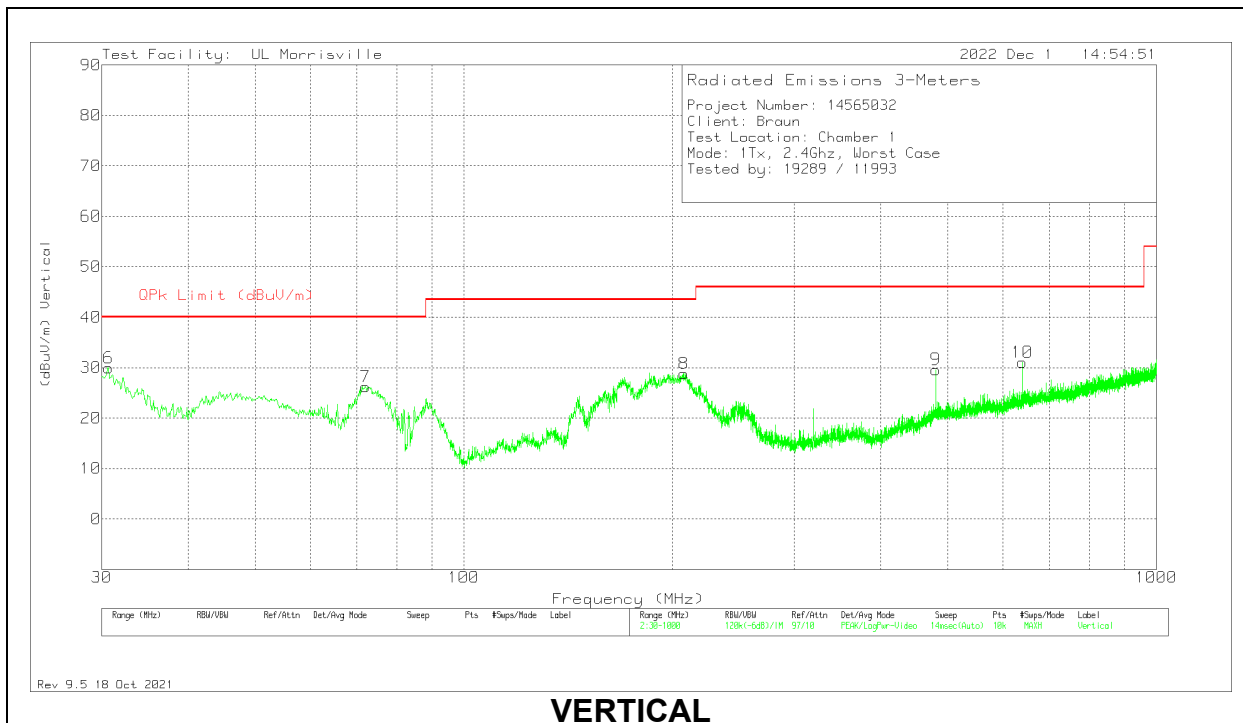
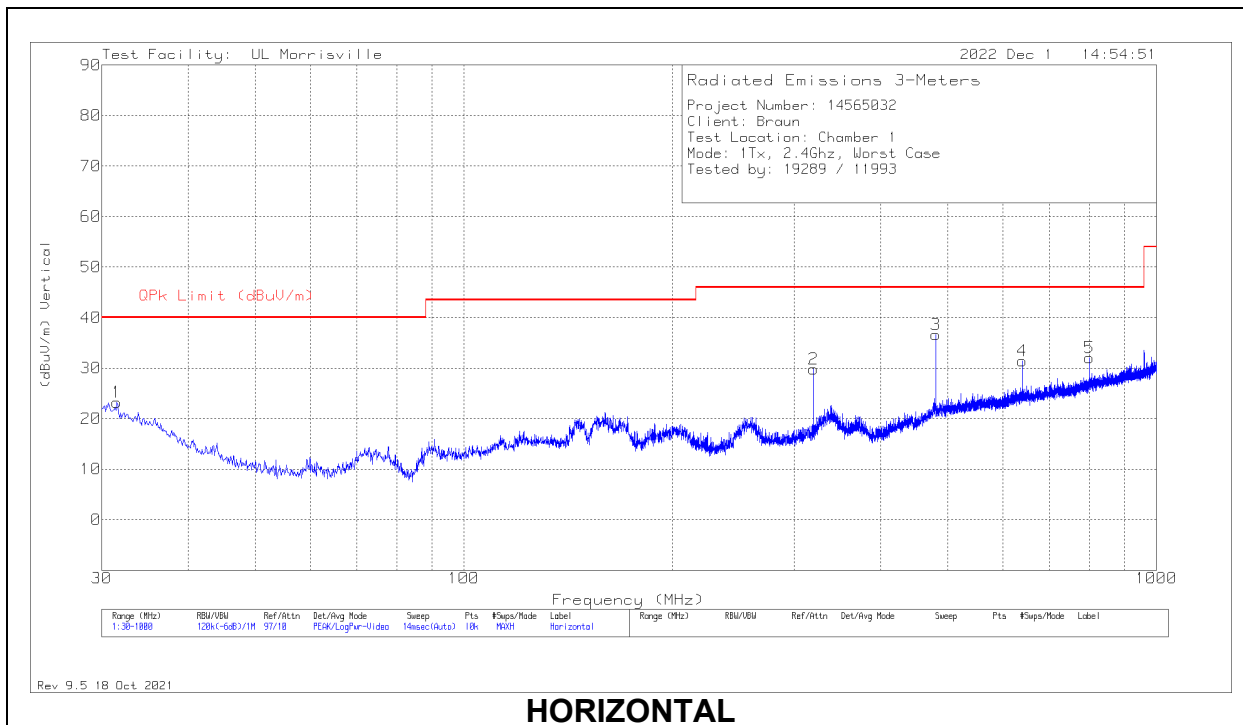
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0059 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AV Limit (dBuA/m)	Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.02043	43.61	Pk	-37.4	.1	-80	-73.69	-10.1	9.9	-63.59	0-360	0 degs
4	.02277	43.93	Pk	-37.6	.1	-80	-73.57	-11.04	8.96	-62.53	0-360	90 degs
7	.09235	39.39	Pk	-40.9	.1	-80	-81.41	-23.2	-	-58.21	0-360	Flat
5	.45762	47.16	Pk	-41.4	.2	-80	-74.04	-37.11	-17.11	-36.93	0-360	90 degs
8	.45796	46.7	Pk	-41.4	.2	-80	-74.5	-37.11	-17.11	-37.39	0-360	Flat
2	.45915	49.8	Pk	-41.4	.2	-80	-71.4	-37.14	-17.14	-34.26	0-360	0 degs
3	.9116	37.05	Pk	-41.3	.2	-40	-44.05	-23.09	-	-20.96	0-360	0 degs
6	.91582	34.14	Pk	-41.3	.2	-40	-46.96	-23.13	-	-23.83	0-360	90 degs
9	.91582	33.47	Pk	-41.3	.2	-40	-47.63	-23.13	-	-24.5	0-360	Flat

Pk - Peak detector

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 $40 \cdot \log(\text{test distance} / \text{specification distance})$.

10.3. WORST CASE BELOW 1 GHZ

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



Below 1GHz Data

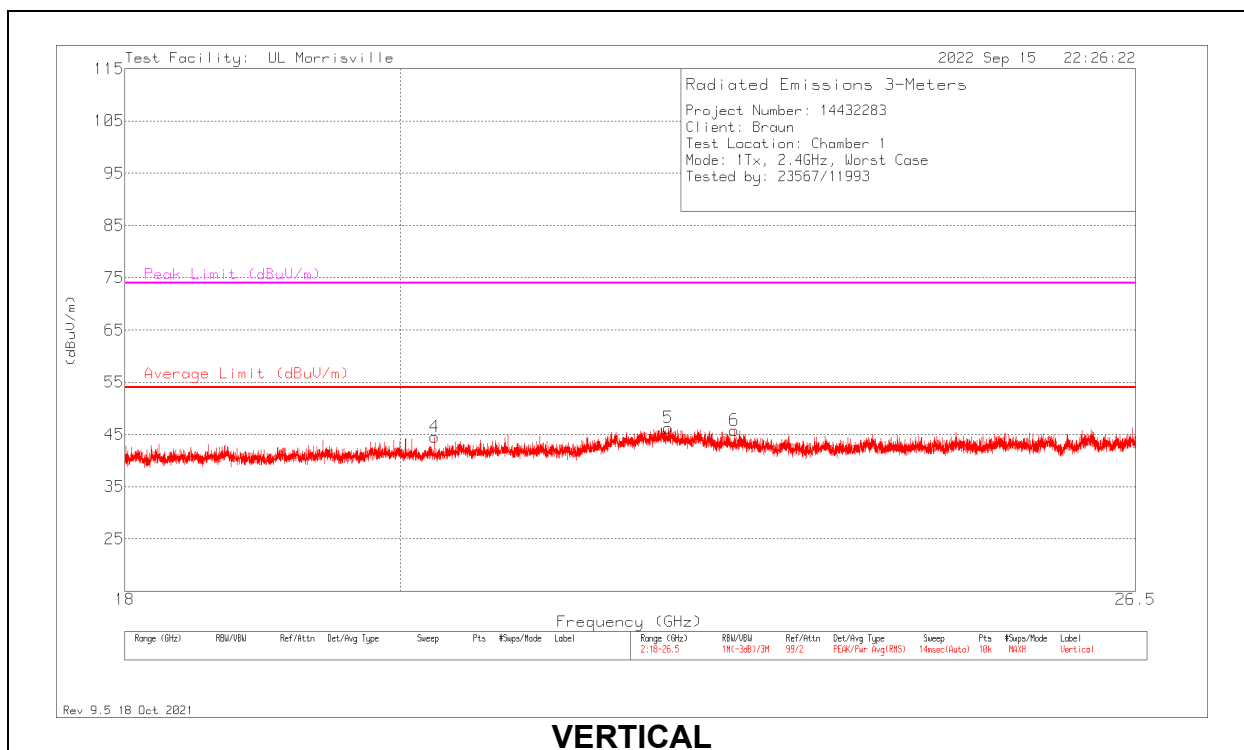
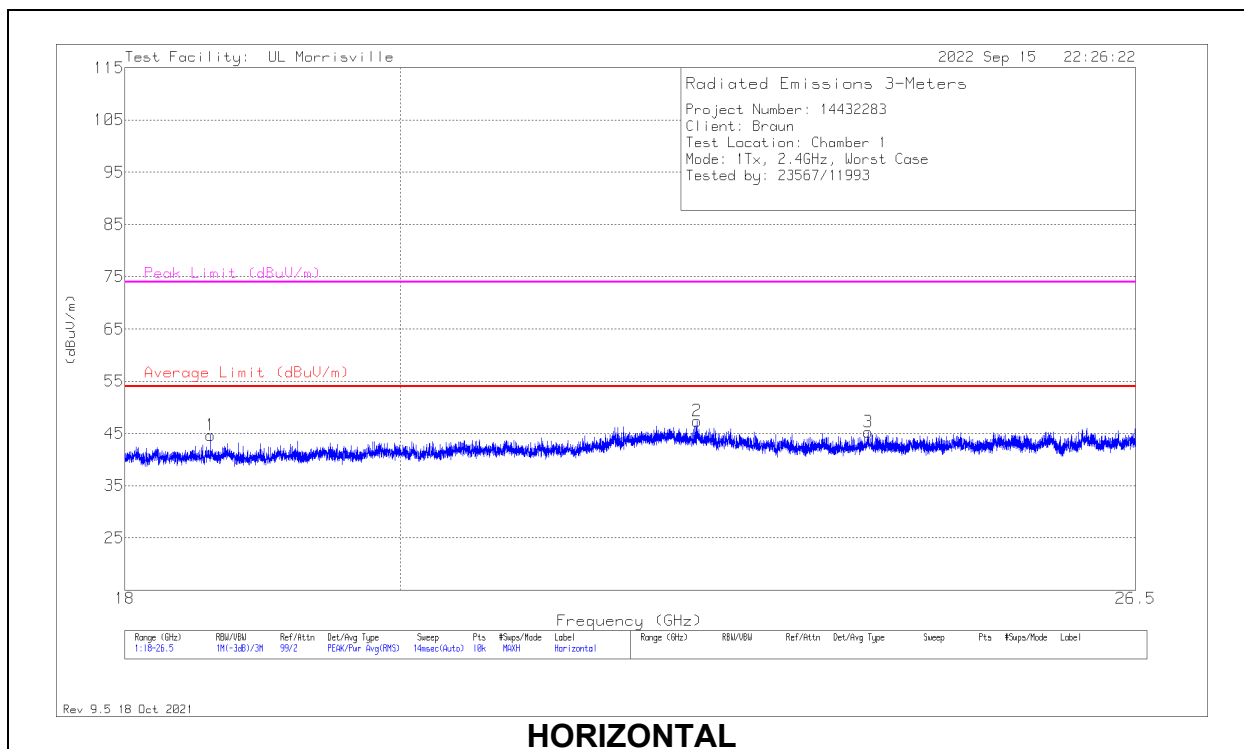
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	30.679	34.56	Pk	26.6	-31.2	29.96	40	-10.04	0-360	100	V
1	31.552	28.34	Pk	26.1	-31.2	23.24	40	-16.76	0-360	199	H
7	72.098	42.71	Pk	14.3	-30.8	26.21	40	-13.79	0-360	100	V
8	207.607	41.78	Pk	16.2	-29.2	28.78	43.52	-14.74	0-360	100	V
2	320.03	38.77	Pk	19.7	-28.6	29.87	46.02	-16.15	0-360	100	H
3	479.983	40.87	Pk	23.4	-27.6	36.67	46.02	-9.35	0-360	100	H
9	479.983	33.83	Pk	23.4	-27.6	29.63	46.02	-16.39	0-360	100	V
4	640.033	32.86	Pk	25.4	-26.8	31.46	46.02	-14.56	0-360	299	H
10	640.033	32.45	Pk	25.4	-26.8	31.05	46.02	-14.97	0-360	100	V
5	800.083	30.54	Pk	27.2	-25.7	32.04	46.02	-13.98	0-360	199	H

Pk – Peak Detector

Qp – Quasi-Peak Detector

10.4. WORST CASE 18-26 GHZ

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	ANT (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 18.60101	50.18	Pk	33.3	-38.9	44.58	54	-9.42	74	-29.42	0-360	300	H
2	* ** 22.40769	50.12	Pk	36.5	-39.2	47.42	54	-6.58	74	-26.58	0-360	250	H
3	* ** 23.92169	48.81	Pk	34.9	-38.5	45.21	54	-8.79	74	-28.79	0-360	199	H
4	* ** 20.26548	49.94	Pk	33.7	-39.1	44.54	54	-9.46	74	-29.46	0-360	300	V
5	* ** 22.16287	49.1	Pk	36.9	-39.7	46.3	54	-7.7	74	-27.7	0-360	201	V
6	* ** 22.72732	49.05	Pk	36	-39.3	45.75	54	-8.25	74	-28.25	0-360	250	V

Pk – Peak Detector

11. 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.

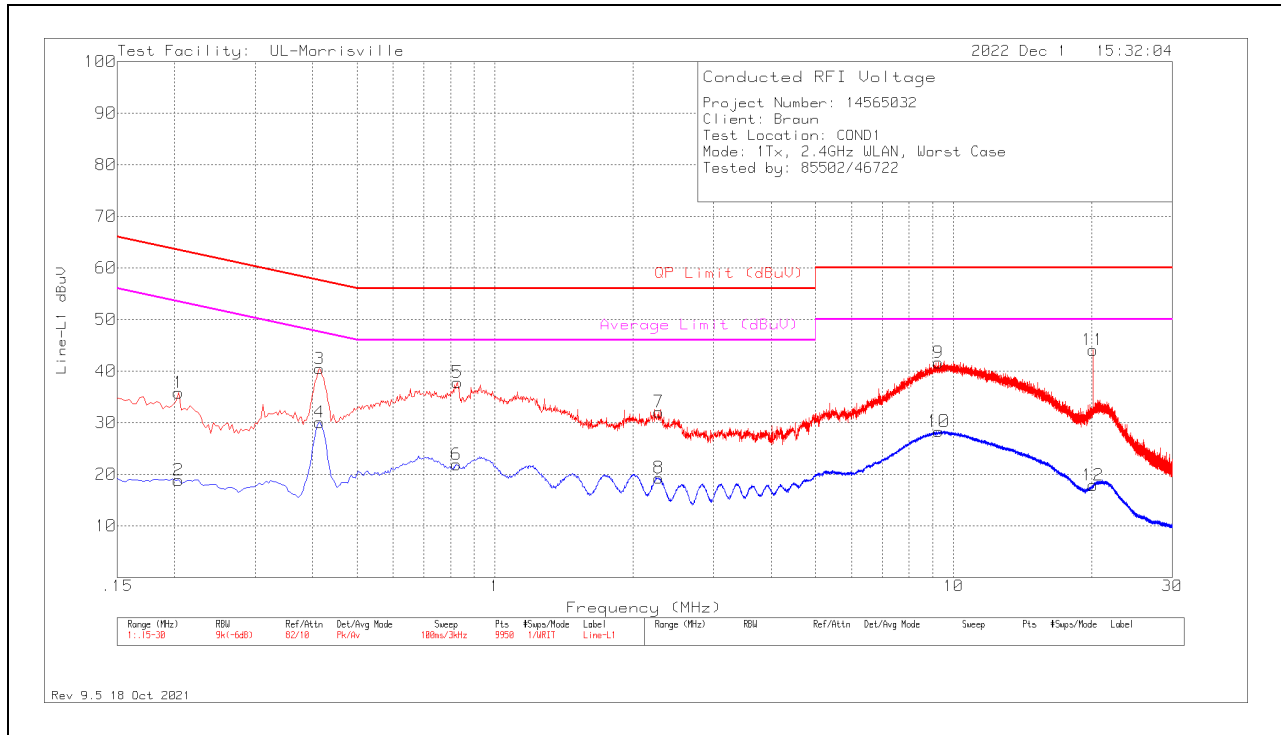
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

11.1.1. AC Power Line Host

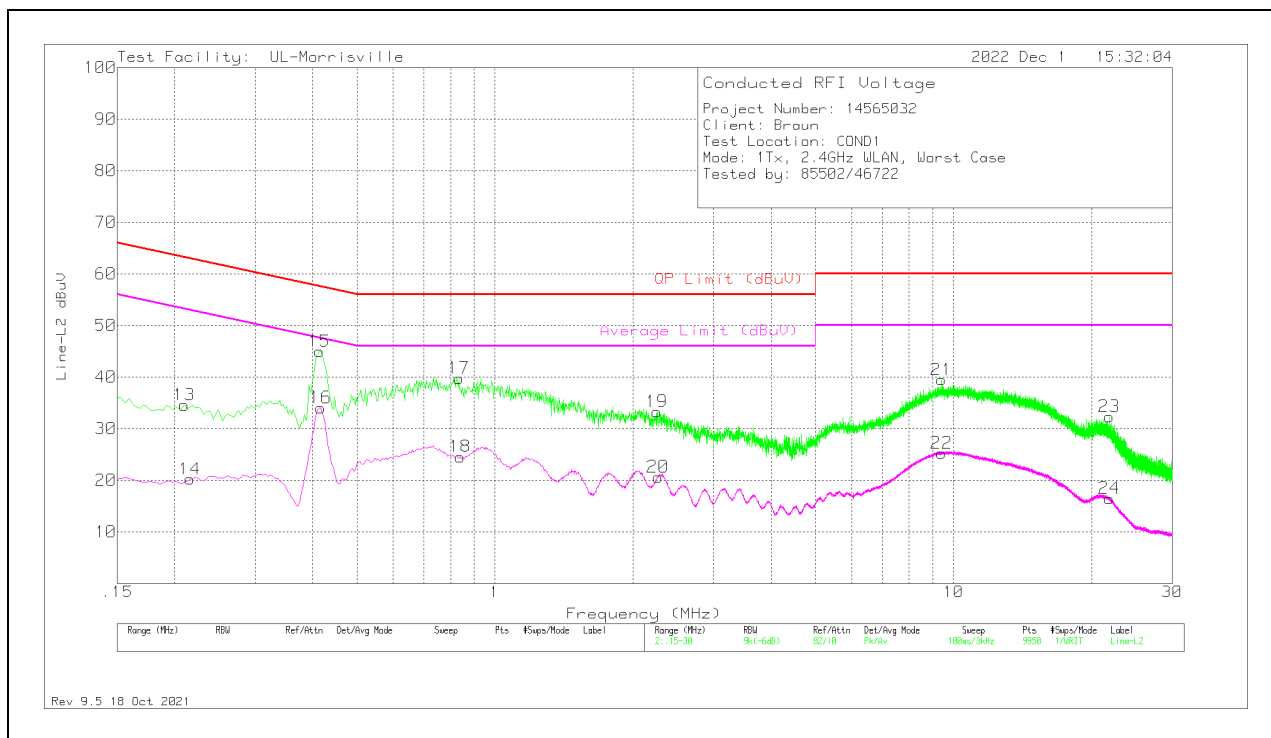
LINE 1 RESULTS



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	.204	25.92	Pk	.1	9.8	35.82	63.45	-27.63	-	-
2	.204	8.97	Av	.1	9.8	18.87	-	-	53.45	-34.58
3	.414	30.68	Pk	0	9.8	40.48	57.57	-17.09	-	-
4	.414	20.28	Av	0	9.8	30.08	-	-	47.57	-17.49
5	.828	28.01	Pk	0	9.8	37.81	56	-18.19	-	-
6	.825	12.12	Av	0	9.8	21.92	-	-	46	-24.08
7	2.274	22.3	Pk	0	9.8	32.1	56	-23.9	-	-
8	2.274	9.51	Av	0	9.8	19.31	-	-	46	-26.69
9	9.279	31.57	Pk	.1	10	41.67	60	-18.33	-	-
10	9.282	18.2	Av	.1	10	28.3	-	-	50	-21.7
11	20.133	33.8	Pk	.2	10.1	44.1	60	-15.9	-	-
12	20.142	7.58	Av	.2	10.1	17.88	-	-	50	-32.12

Pk – Peak Detector
Av – Average Detector

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	.21	24.69	Pk	.1	9.8	34.59	63.21	-28.62	-	-
14	.216	10.35	Av	.1	9.8	20.25	-	-	52.97	-32.72
15	.414	35.2	Pk	0	9.8	45	57.57	-12.57	-	-
16	.417	24.26	Av	0	9.8	34.06	-	-	47.51	-13.45
17	.834	29.98	Pk	0	9.8	39.78	56	-16.22	-	-
18	.84	14.78	Av	0	9.8	24.58	-	-	46	-21.42
19	2.256	23.5	Pk	0	9.8	33.3	56	-22.7	-	-
20	2.268	10.86	Av	0	9.8	20.66	-	-	46	-25.34
21	9.417	29.39	Pk	.1	10	39.49	60	-20.51	-	-
22	9.42	15.17	Av	.1	10	25.27	-	-	50	-24.73
23	21.873	21.94	Pk	.2	10.2	32.34	60	-27.66	-	-
24	21.87	6.11	Av	.2	10.2	16.51	-	-	50	-33.49

Pk – Peak Detector
Av – Average Detector

12. SETUP PHOTOS

Please refer to R14565032-EP1 for setup photos

END OF TEST REPORT