TEST REPORT

Report Number: 14982490-E7V3

Applicant	:	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A3289 (Parent Model) A3290, A3291 (Variant Models)
Brand	:	APPLE
FCC ID	:	BCG-E8693A (Parent Model) BCG-E8694A, BCG-E8695A (Variant Models)
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
2024/08/21

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
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CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2024/08/14	Initial Review	Chris Xiong
V2	2024/08/19	Address TCB questions	Chris Xiong
V3	2024/08/21	Address TCB Questions Sec 10.1	Benjamin Dobbins

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TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS 5

2. TEST RESULT SUMMARY 6

3. TEST METHODOLOGY 7

4. FACILITIES AND ACCREDITATION 7

5. DECISION RULES AND MEASUREMENT UNCERTAINTY 8

5.1. METROLOGICAL TRACEABILITY 8

5.2. DECISION RULES 8

5.3. MEASUREMENT UNCERTAINTY 8

5.4. SAMPLE CALCULATION 9

6. EQUIPMENT UNDER TEST 10

6.1. EUT DESCRIPTION 10

6.2. DESCRIPTION OF AVAILABLE ANTENNAS 10

6.3. SOFTWARE AND FIRMWARE 10

6.4. MAXIMUM OUTPUT POWER 11

6.5. WORST-CASE CONFIGURATION AND MODE 12

6.6. DESCRIPTION OF TEST SETUP 13

7. TEST AND MEASUREMENT EQUIPMENT 16

8. MEASUREMENT METHODS 18

9. ANTENNA PORT TEST RESULTS 19

9.1. ON TIME AND DUTY CYCLE 19

9.2. 26 dB AND 99% BANDWIDTH 20

9.2.1. HIGH POWER SISO MODE 21

9.2.2. HIGH POWER TXBF MODE 23

9.3. 6 dB BANDWIDTH 25

9.3.1. HIGH POWER BDR SISO MODE IN THE UNII-3 BAND 26

9.3.2. HIGH POWER BDR TXBF MODE IN THE UNII-3 BAND 27

9.4. OUTPUT POWER AND PSD 28

9.4.1. UNII-1 BAND SISO MODE 30

9.4.2. UNII-1 BAND MIMO TXBF MODE 32

9.4.3. UNII-3 BAND SISO MODE 34

9.4.4. UNII-3 BAND MIMO TXBF MODE 36

10. RADIATED TEST RESULTS 38

10.1. TRANSMITTER ABOVE 1 GHz 40

10.1.1. BDR, HIGH POWER UNII-1 BANDEDGE 40

10.1.2. BDR, HIGH POWER, UNII-1 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 46

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10.1.3. BDR LOW POWER, UNII-1 BAND, BANDEDGE 52
10.1.4. BDR LOW POWER, UNII-1 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 58
10.1.5. HDR4 HIGH POWER, UNII-1 BAND, BANDEDGE 64
10.1.6. HDR4 HIGH POWER, UNII-1 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 70
10.1.7. HDR4 LOW POWER, UNII-1 BAND, BANDEDGE 76
10.1.8. HDR4 LOW POWER, UNII-1 BAND, MIMO TXBF MODE HARMONIC AND SPURIOUS 82
10.1.9. HDR8 HIGH POWER, UNII-1 BAND, BANDEDGE 88
10.1.10. HDR8 HIGH POWER, UNII-1 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 94
10.1.11. HDR8 LOW POWER, UNII-1 BAND, BANDEDGE 100
10.1.12. HDR8 LOW POWER, UNII-1 BAND, MIMO TXBF MODE HARMONIC AND SPURIOUS 106
10.1.13. BDR, HIGH POWER UNII-3 BANDEDGE 112
10.1.14. BDR, HIGH POWER, UNII-3 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 124
10.1.15. BDR LOW POWER, UNII-3 BAND, BANDEDGE 130
10.1.16. BDR LOW POWER, UNII-3 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 142
10.1.17. HDR4 HIGH POWER, UNII-3 BAND, BANDEDGE 148
10.1.18. HDR4 HIGH POWER, UNII-3 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 160
10.1.19. HDR4 LOW POWER, UNII-3 BAND, BANDEDGE 166
10.1.20. HDR4 LOW POWER, UNII-3 BAND, MIMO TXBF MODE HARMONIC AND SPURIOUS 178
10.1.21. HDR8 HIGH POWER, UNII-3 BAND, BANDEDGE 184
10.1.22. HDR8 HIGH POWER, UNII-3 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS 196
10.1.23. HDR8 LOW POWER, UNII-3 BAND, BANDEDGE 202
10.1.24. HDR8 LOW POWER, UNII-3 BAND, MIMO TXBF MODE HARMONIC AND SPURIOUS 214

10.2. WORST CASE BELOW 1 GHz 220

10.3. WORST CASE 18-26 GHz 222

10.4. WORST CASE 26-40 GHz 224

11. AC POWERLINE CONDUCTED EMISSIONS 226

11.1. AC POWER LINE WITH LAPTOP 227

11.2. AC POWER LINE WITH AC/DC ADAPTER 229

12. SETUP PHOTOS 231

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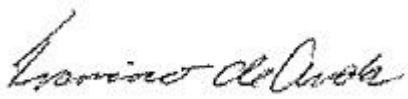
1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	A3289 (Parent Model) A3290, A3291 (Variant Models)
Brand	APPLE
FCC ID	BCG-E8693A (Parent Model) BCG-E8694A, BCG-E8695A (Variant Model)
EUT Description	SMARTPHONE
Serial Number	C7HH230000G0000HC0, C7HH500000X0000HBX, FJWNV71QMD L6FYCFJ49T
Sample Receipt Date	2024/03/11 2024/06/24
Date Tested	2024/04/03 to 2024/08/08
Applicable Standards	CFR 47 Part 15 Subpart E
Test Results	COMPLIES

UL Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released By:	Prepared & Reviewed By:
	
Francisco de Anda Staff Engineer UL Verification Services, Inc.	Chris Xiong Senior Test Engineer UL Verification Services, Inc.

2. TEST RESULT SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data provided by the customer:

1. Antenna gain and type (see section 6.2)
2. Cable loss (see section 6.2)

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Reporting purposes only	Per ANSI C63.10, Section 12.2.
See Comment	26dB BW/99% OBW	Reporting purposes only	Per ANSI C63.10 Sections 6.9.2 and 6.9.3
15.407 (e)	6 dB BW	Complies	None.
15.407 (a) (1 & 3)	Output Power	Complies	None.
15.407 (a) (1 & 3)	PSD	Complies	None.
15.209, 15.205, 15.407 (b)	Radiated Emissions	Complies	None.
15.207	AC Mains Conducted Emissions	Complies	None.

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3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:
- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- FCC KDB 662911 D01 v02r01
- FCC KDB 789033 D02 v02r01
- FCC KDB 644545 D03 v01
- ANSI C63.10-2013
- KDB 414788 D01 Radiated Test Site v01r01

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, 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 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

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

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U_{LAB}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using Power Meter	0.45 (Ave.) 1.30 (PK)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.20%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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

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5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

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

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, WCDMA, LTE, 5GNR1, IEEE 802.11a/b/g/n/ac/ax/be, Bluetooth (BT), Ultra-Wideband (UWB), Global Positioning System (GPS), Near-Field Communication (NFC), Narrow-Band (NB) UNII, 802.15.4, 802.15.4ab-Narrow Band (NB), Wireless Power Transfer (WPT) and Mobile Satellite Service (MSS) technologies. The rechargeable battery is not user accessible. This device is not user-serviceable and requires special tools to disassemble.

6.2. DESCRIPTION OF AVAILABLE ANTENNAS

The antennas' gains, as provided by the manufacturer, are as follows:

Antenna Type is IFA.

Frequency Range (MHz)	Antenna 6 (dBi)	Antenna 5 (dBi)	Uncorrelated Chains (dBi)	Correlated Chains (dBi)
5150 - 5250 UNII - 1	-1.10	-4.70	-2.54	0.30
5725 - 5825 UNII 3	-0.40	-3.30	-1.61	1.28

Frequency Range (MHz)	Cable Loss	
	Antenna 6 (dBi)	Antenna 5 (dBi)
5150 - 5250 UNII - 1	2.70	3.10
5725 - 5825 UNII 3	2.90	3.40

The cables(SMA) were used for RF antenna port tests that had been offset to the test equipment during testing.

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 22.1.76.241.

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6.4. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

5.2 GHz BAND

Frequency Range (MHz)	Mode	Antenna	Configuration	Output Power (dBm)	Output Power (mW)
5162 - 5245 (UNII-1)	BDR	ANT 6	High Power	9.74	9.42
			Low Power	6.31	4.28
		ANT 5	High Power	9.83	9.62
			Low Power	4.86	3.06
		ANT 6 + ANT 5 TXBF	High Power	9.78	9.51
			Low Power	8.62	7.28
	HDR 4	ANT 6	High Power	11.32	13.55
			Low Power	-0.19	0.96
		ANT 5	High Power	11.30	13.49
			Low Power	-1.75	0.67
		ANT 6 + ANT 5 TXBF	High Power	11.31	13.52
			Low Power	2.14	1.64
	HDR 8	ANT 6	High Power	13.79	23.93
			Low Power	-0.19	0.96
		ANT 5	High Power	13.77	23.82
			Low Power	-1.73	0.67
		ANT 6 + ANT 5 TXBF	High Power	13.8	23.99
			Low Power	2.15	1.64

5.8 GHz BAND

Frequency Range (MHz)	Mode	Antenna	Configuration	Output Power (dBm)	Output Power (mW)
5733 - 5844 (UNII-3)	BDR	ANT 6	High Power	14.31	26.98
			Low Power	6.81	4.80
		ANT 5	High Power	14.34	27.16
			Low Power	5.47	3.52
		ANT 6 + ANT 5 TXBF	High Power	17.33	54.08
			Low Power	9.14	8.20
	HDR 4	ANT 6	High Power	14.31	26.98
			Low Power	0.29	1.07
		ANT 5	High Power	14.33	27.10
			Low Power	-1.21	0.76
		ANT 6 + ANT 5 TXBF	High Power	17.27	53.33
			Low Power	2.63	1.83
	HDR 8	ANT 6	High Power	14.29	26.85
			Low Power	0.28	1.07
		ANT 5	High Power	14.25	26.61
			Low Power	-1.17	0.76
		ANT 6 + ANT 5 TXBF	High Power	17.28	53.46
			Low Power	2.59	1.82

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6.5. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in three orthogonal orientations X (Flatbed), Y (Landscape) and Z (Portrait) on ANT 6, ANT 5 and 2TX. It was determined that Y (Landscape) was the worst-case orientation for both ANT 6, ANT 5 and 2TX beamforming.

2TX Beamforming modes was used to perform on radiated harmonic spurious final test to cover all SISO modes. Max power was tuned to maximum based on among all the modes. For testing purposes, radiated harmonics spurious below 1GHz, 1-18GHz L/M/H channels, 18-40GHz, and power line conducted emissions were performed with the EUT set at the 2TX Beamforming mode with power setting to the maximum level among FCC/ISED SISO modes as worst-case scenario.

Below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, tests were investigated with AC power adapter and with laptop. There were no emissions found below 30MHz within 20dB of the limit.

For simultaneous transmission of multiple channels in the Wi-Fi 2.4GHz and NB UNII 5GHz bands, no noticeable emission was found.

According to manufacturer inquiry approved by FCC, the models: A3289 (FCC ID: BCG-E8693A), A3290 (FCC ID: BCG-E8694A) and A3291 (FCC ID: BCG-E8695A) reused the data from the reference model, A3082 (FCC ID: BCG-E8692A) except for the following tests. They were tested because of the antenna gain increase on ANT 6.

1. Radiated Tests:
   - 2TX Beamforming radiated harmonic spurious for Below 1 GHz, 1-18GHz and 18-40GHz
   - ANT 6 and 2TX Beamforming band-edge

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Apple	MacBook Pro	C02CWHQ4ML7H	BCGA2251
Laptop AC/DC adapter	Apple	A1718	C4H021107C2PM0WAW	DoC
EUT AC/DC adapter	Apple	A2305	HHY23570SL11PW9A1	DoC

I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
2	Antenna	2	SMA	Shielded	0.2	To spectrum Analyzer
3	USB-C	1	USB-C	Shielded	1.0	N/A
4	DC	1	DC	Shielded	2	N/A

I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC	1	DC	Shielded	2	From DC/AC adapter
2	USB	1	USB-C	Shielded	1	N/A

TEST SETUP

The EUT setup is shown as below. Test software exercised the radio card.

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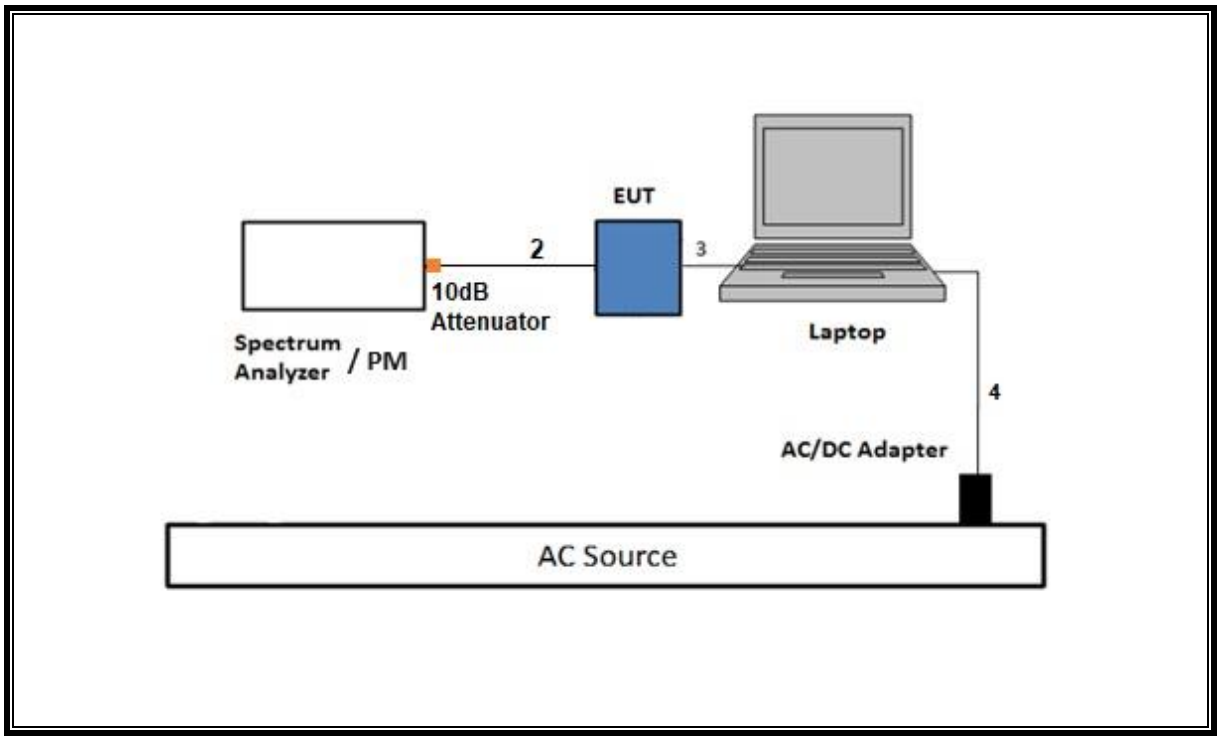
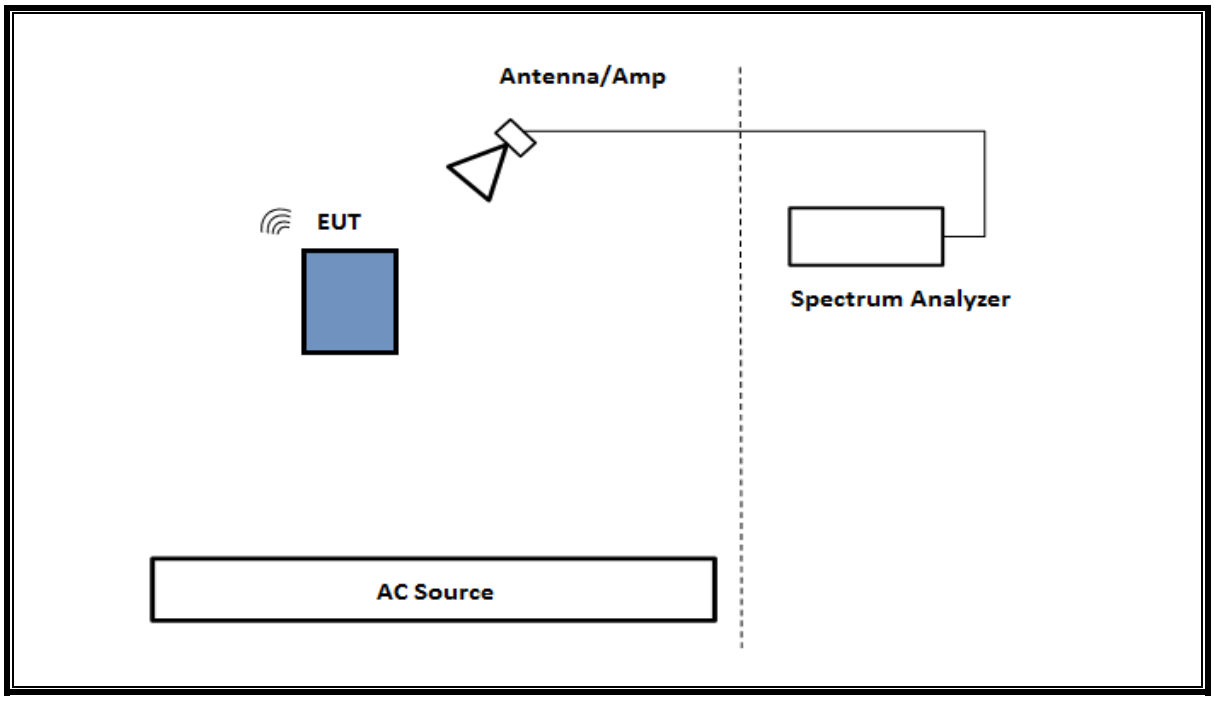
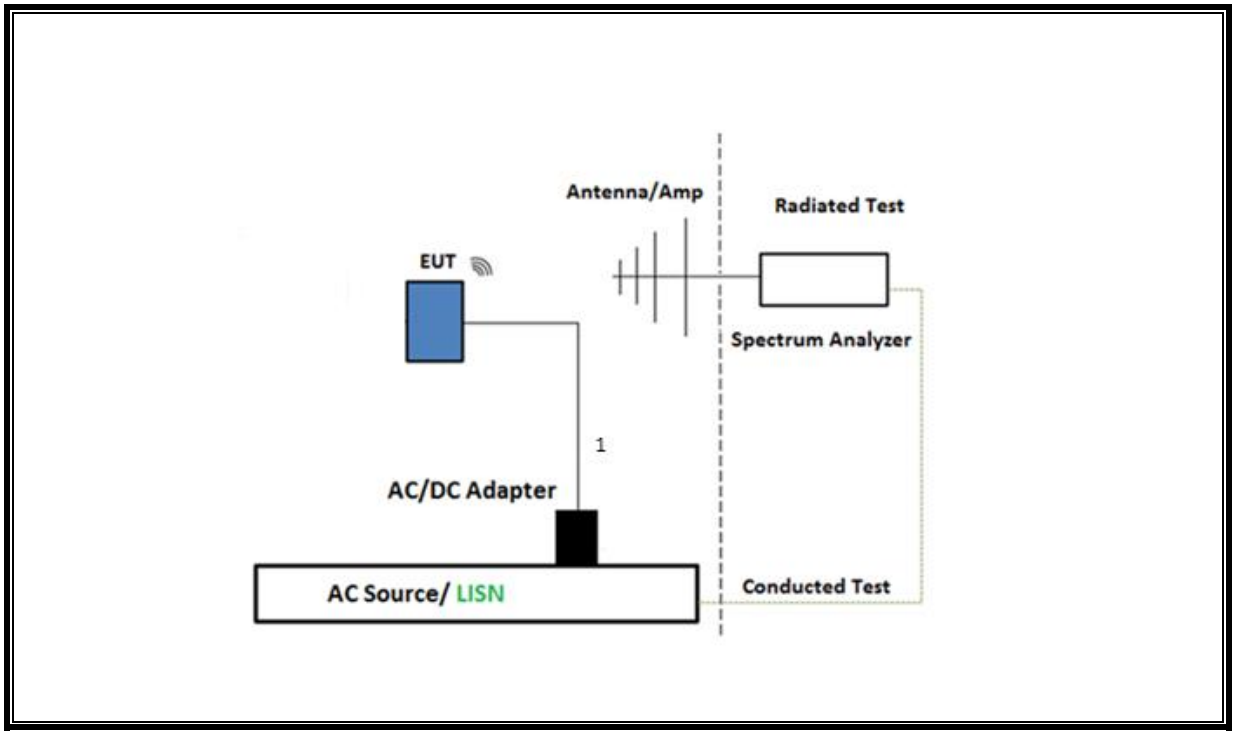
SETUP DIAGRAM FOR CONDUCTED TESTS



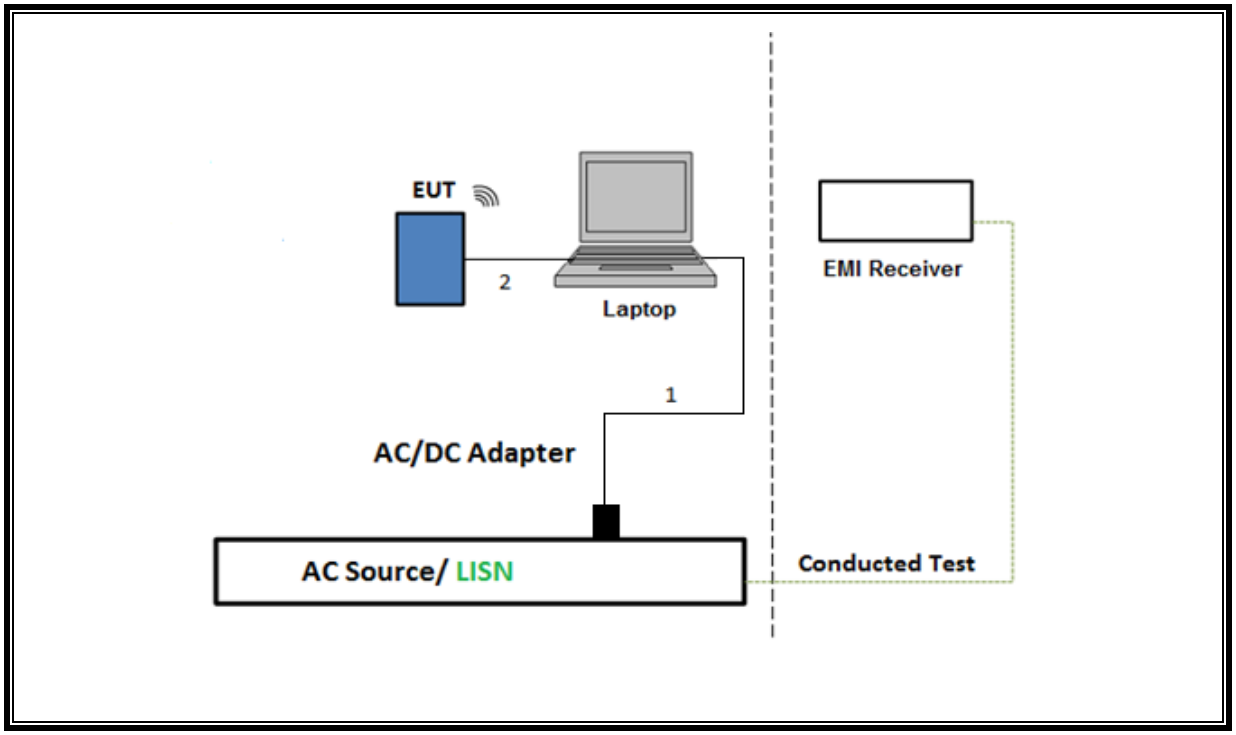
SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz (1 to 40GHz)



SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



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7. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS Lindgren	3117	84797	2024-09-30
Antenna, Broadband Hybrid, 30 MHz – 2 GHz	Sunol Sciences Corp.	JB3	80714	2024-10-31
Amplifier, 9kHz to 1GHz, 32dB	Sonoma Instrument	310	170648	2025-03-31
RF Filter Box, 1-18GHz	UL-FR1	N/A	171389	2025-03-31
EMI Receiver	Rohde & Schwarz	ESW44	201497	2025-02-28
*Antenna, Horn 1-18GHz	ETS Lindgren	3117	80402	2024-07-31
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	216812	2025-01-30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	230548	2025-02-28
Antenna, Horn 1-18GHz	ETS Lindgren	3117	200897	2025-04-30
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	217255	2024-10-31
EMI Receiver	Rohde & Schwarz	ESW44	169936	2025-02-28
Antenna, Horn 1-18GHz	ETS Lindgren	3117	41112	2024-10-31
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	224478	2025-01-31
EMI Receiver	Rohde & Schwarz	ESW44	201499	2025-02-28
EMI Test Receiver	Rohde & Schwarz	ESW44	170063	2024-11-30
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	172354	2024-10-31
RF Amplifier 18-26.5GHz	Amplical	AMP18G26.5-60	221832	2025-03-31
Antenna, Horn 26.5 to 40GHz	ARA	MWH-2640/B	172369	2024-10-31
RF Amplifier 26.5-40GHz	Amplical	AMP26G40-65	221834	2025-03-31
Antenna, Passive Loop 30Hz – 1MHz	Electro-Metrics	EM-6871	219909	2025-06-30
Antenna, Passive Loop 100kHz – 30MHz	Electro-Metrics	EM-6872	219911	2024-12-31
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	80430	2024-08-31
RF Filter Box, 1-18GHz	UL-FR1	SAC 8 port rf box 1	171875	2025-03-31
EMI Test Receiver	Rohde & Schwarz	ESW44	201500	2025-02-28
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90719	2025/01/31
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	2025/01/31

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TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**ID Number**	**Cal Due**
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	125178	2025/01/31
Spectrum Analyzer, PXA, 3Hz to 50GHz w/Ext. Mixer	Keysight Technologies Inc	N9030A	80400	2025/02/28
PXA Signal Analyzer	Keysight Technologies Inc	N9030B	222071	2024/11/30
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236353	2024/08/31
10dB Fixed Attenuator, Up to 26GHz	Pasternack Enterprises	PE7087-10	236285	2024/08/31
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90719	2025/01/31
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	2025/01/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169937	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	200896	2025/04/24
RF Filter Box, 1-18GHz, 12 Ports	UL-FR1	Frankenstein	231874	2024/08/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179372	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	226673	2025/02/28
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231874	2024/08/30
*Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	2024/07/31
*Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170013	2024/07/31
Amplifier 9 KHz - 1 GHz	SONOMA INSTRUMENT	310N	230311	2025/05/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	235670	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	230300	2025/01/31
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231875	2024/08/31
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	204045	2025/04/30
Amplifier 9 KHz - 1 GHz	SONOMA INSTRUMENT	310N	230307	2025/05/31
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	172354	2024/11/03
Link File, RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	AMPLICAL	AMP18G26.5-60	220194	2024/08/31
Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	172369	2025/11/30
Link File, RF Amplifier Assembly, 26-40GHz, 65dB Gain	AMPLICAL	AMP26G40-65	221834	2025/03/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	235670	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	223084	2024/10/31
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225079	2025/04/30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	230548	2025/02/28
*Antenna, Horn 1-18GHz	ETS-Lindgren	3117	80402	2024/07/31
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	216812	2025/01/30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201499	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	41112	2024/10/31
RF Filter Box, 1-18GHz, F2A, 12 Ports	UL-FR1	F2A	224478	2025/01/31

AC Line Conducted				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	171646	2025-02-28
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175765	2025-01-31
Transient Limiter	TE	TBFL1	207996	2024-08-31
UL AUTOMATION SOFTWARE				
Radiated Software	UL	UL EMC	Ver 9.5, May 1 , 2023	
Conducted Software	UL	UL EMC	2020.8.16	
AC Line Conducted Software	UL	UL EMC	Ver 9.5, Mar 3, 2023	

*Testing was completed before equipment calibration date

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8. MEASUREMENT METHODS

TEST ITEM	TEST METHOD
On Time and Duty Cycle	KDB 789033 D02 v02r01, Section B
6 dB Emission BW	KDB 789033 D02 v02r01, Section C.2
26 dB Emission BW	KDB 789033 D02 v02r01, Section C.1
99% Occupied BW	KDB 789033 D02 v02r01, Section D
Conducted Output Power	KDB 789033 D02 v02r01
Power Spectral Density	KDB 789033 D02 v02r01, Section F
Unwanted Emissions in Restricted Bands	KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6
Unwanted Emissions in Non-Restricted Bands	KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5
AC Power Line Conducted Emissions	ANSI C63.10-2013, Section 6.2
Radiated Spurious Emissions Below 30MHz	ANSI C63.10-2013 Section 6.4

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

ANSI C63.10, Section 12.2: 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/T Minimum VBW (kHz)
BDR	2.010	2.010	1.000	100.0%	0.00	0.010
HDR4	1.930	1.930	1.000	100.0%	0.00	0.010
HDR8	2.125	2.125	1.000	100.0%	0.00	0.010

Note: DCCF is the same for both SISO MODE and TXBF MODE

DUTY CYCLE PLOT

DUTY CYCLE, BDR

9.2. 26 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to ≥ 1% of the 20 dB bandwidth. The VBW is set to ≥ 3xRBW. The sweep time is coupled.

RESULTS

Only High-Power modes result is reported, it covers all Low Power modes. Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

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9.2.1. HIGH POWER SISO MODE

(SISO)	Frequency (MHz)	Channel	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			ANT 6	ANT 5	ANT 6	ANT 5
BDR (UNII-1)	5162	Low	1.281	1.287	1.0092	0.9988
	5203	Mid	1.294	1.276	1.0040	1.0033
	5245	High	1.275	1.285	0.9983	1.0010
HDR 4 (UNII-1)	5162	Low	2.734	2.751	2.3126	2.3204
	5203	Mid	2.733	2.743	2.3141	2.3207
	5245	High	2.733	2.748	2.3181	2.3182
HDR 8 (UNII-1)	5162	Low	5.749	5.750	4.8081	4.8083
	5203	Mid	5.751	5.762	4.8065	4.8238
	5245	High	5.750	5.752	4.8091	4.8117
BDR (UNII-3)	5733	Low	1.279	1.283	0.9964	0.9960
	5788	Mid	1.285	1.282	1.0065	0.9998
	5844	High	1.289	1.285	1.0022	0.9980
HDR 4 (UNII-3)	5733	Low	2.752	2.747	2.3272	2.3288
	5788	Mid	2.765	2.760	2.3274	2.3272
	5844	High	2.764	2.769	2.3239	2.3261
HDR 8 (UNII-3)	5733	Low	5.772	5.766	4.8249	4.8178
	5788	Mid	5.775	5.776	4.8256	4.8345
	5844	High	5.773	5.768	4.8381	4.8392

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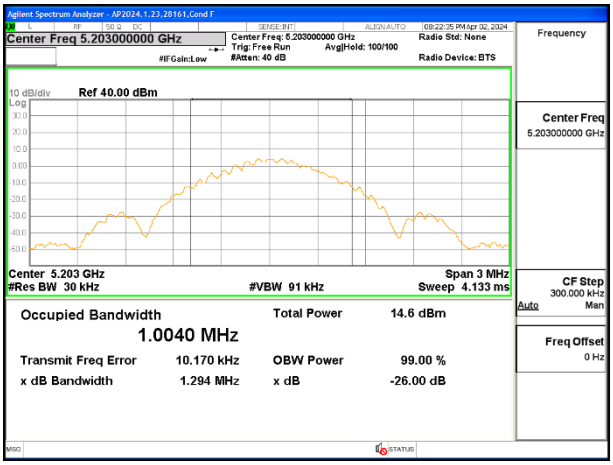
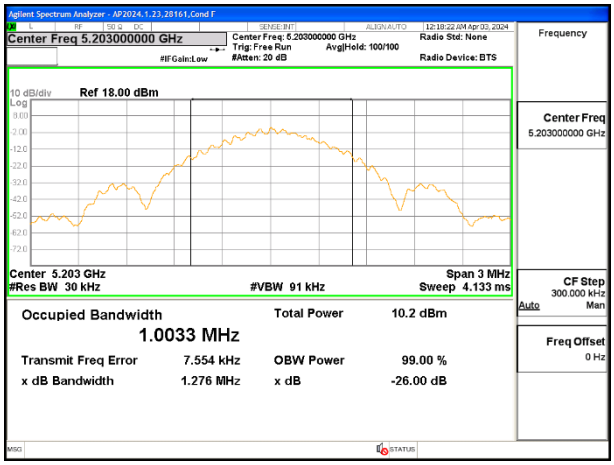
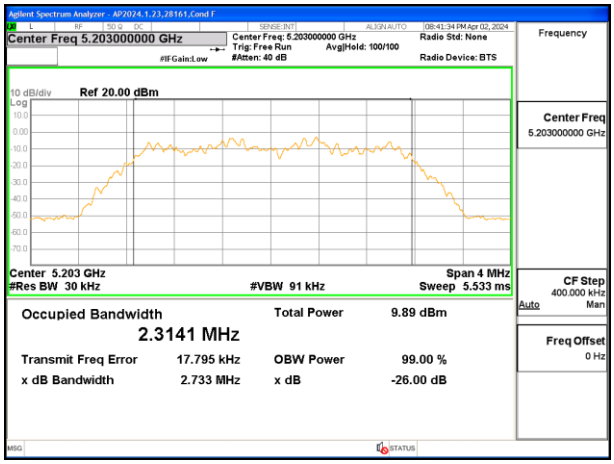


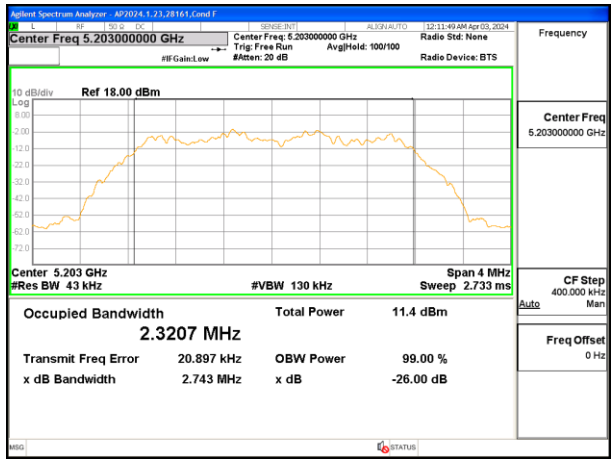
MID CHANNEL (UNII-1 BDR) – ANT 6



MID CHANNEL (UNII-1 BDR) – ANT 5



MID CHANNEL (UNII-1 HDR 4) – ANT 6



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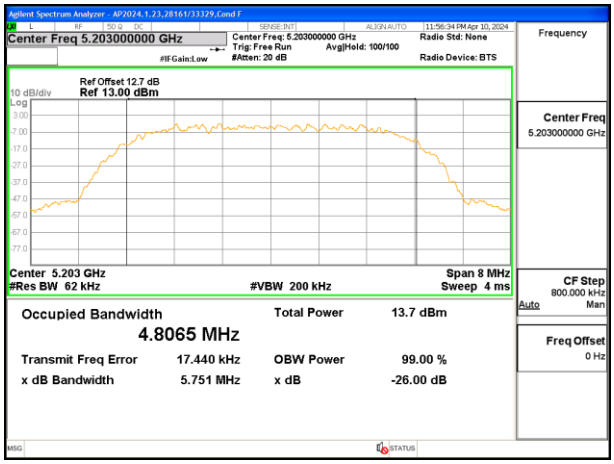

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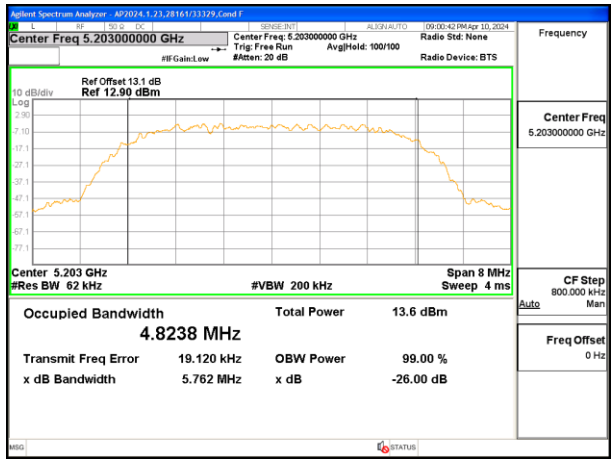

MID CHANNEL (UNII-1 HDR 8) – ANT 5

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9.2.2. HIGH POWER TXBF MODE

(MIMO BF)	Frequency (MHz)	Channel	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)		
			ANT 6	ANT 5	ANT 6	ANT 5	Min BW
BDR (UNII-1)	5162	Low	1.280	1.284	0.9994	1.0005	0.9994
	5203	Mid	1.281	1.285	0.9950	0.9980	0.9950
	5245	High	1.288	1.272	0.9995	0.9983	0.9983
HDR 4 (UNII-1)	5162	Low	2.743	2.743	2.3219	2.3200	2.3200
	5203	Mid	2.746	2.747	2.3182	2.3225	2.3182
	5245	High	2.748	2.739	2.3220	2.3179	2.3179
HDR 8 (UNII-1)	5162	Low	5.751	5.737	4.8036	4.7949	4.7949
	5203	Mid	5.756	5.741	4.8135	4.8066	4.8066
	5245	High	5.759	5.759	4.8163	4.8113	4.8113
BDR (UNII-3)	5733	Low	1.282	1.280	0.9990	1.0032	--
	5788	Mid	1.287	1.277	0.9996	0.9967	--
	5844	High	1.271	1.282	0.9952	1.0015	--
HDR 4 (UNII-3)	5733	Low	2.767	2.775	2.3267	2.3238	--
	5788	Mid	2.752	2.764	2.3281	2.3278	--
	5844	High	2.765	2.775	2.3278	2.3307	--
HDR 8 (UNII-3)	5733	Low	5.771	5.761	4.8324	4.8219	--
	5788	Mid	5.755	5.769	4.8200	4.8310	--
	5844	High	5.769	5.780	4.8139	4.8277	--

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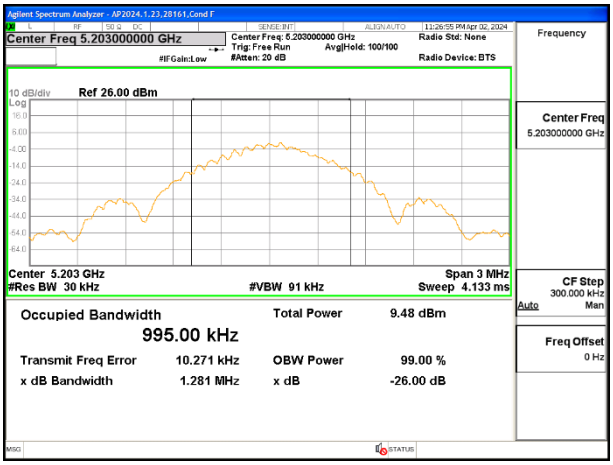
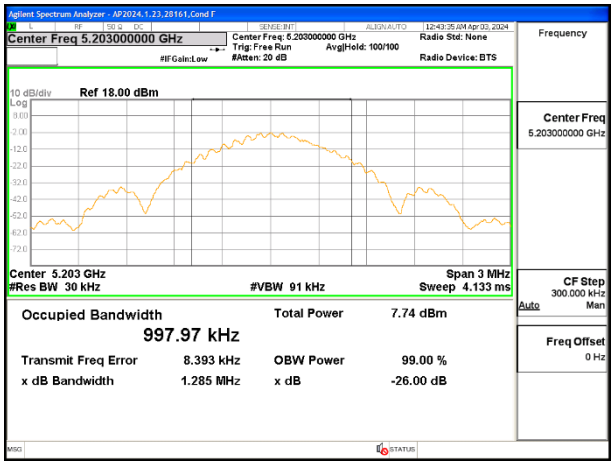
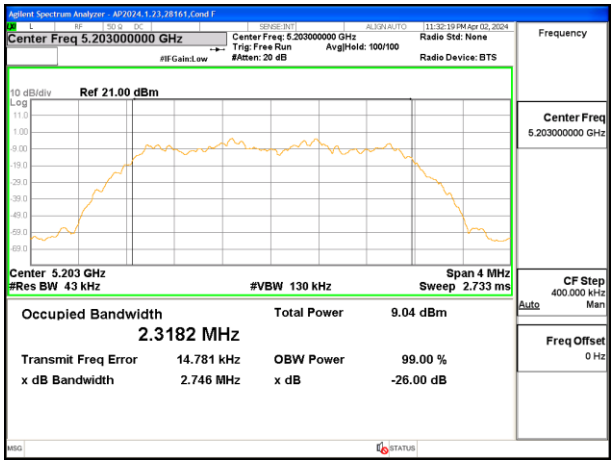


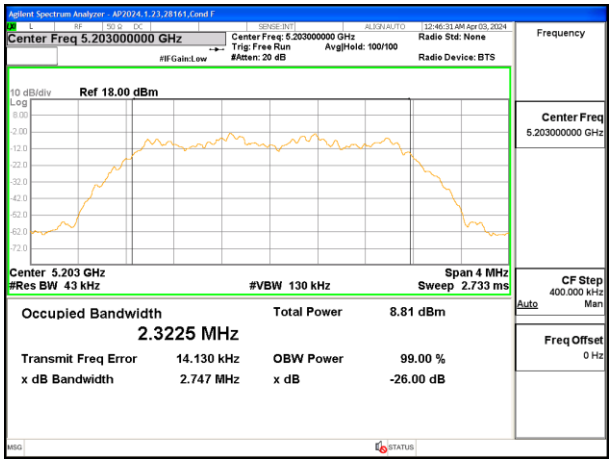
MID CHANNEL (UNII-1 BDR) – ANT 6



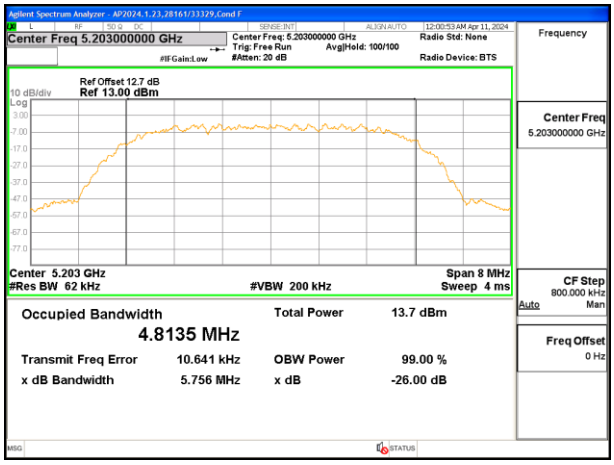
MID CHANNEL (UNII-1 BDR) – ANT 5



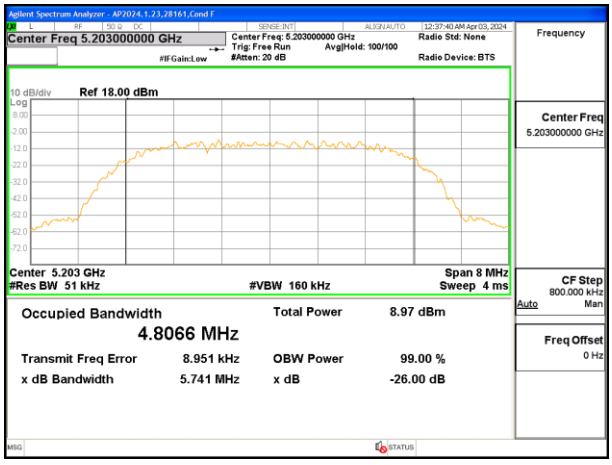
MID CHANNEL (UNII-1 HDR 4) – ANT 6



Mi MID CHANNEL (UNII-1 HDR 4) – ANT 5



MID CHANNEL (UNII-1 HDR 8) – ANT 6



MID CHANNEL (UNII-1 HDR 8) – ANT 5

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9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

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

RESULTS

Only High Power BDR mode result is reported. It covers all Low Power modes. Only Mid Channel plot is reported to show setting parameter compliance with testing method/procedure.

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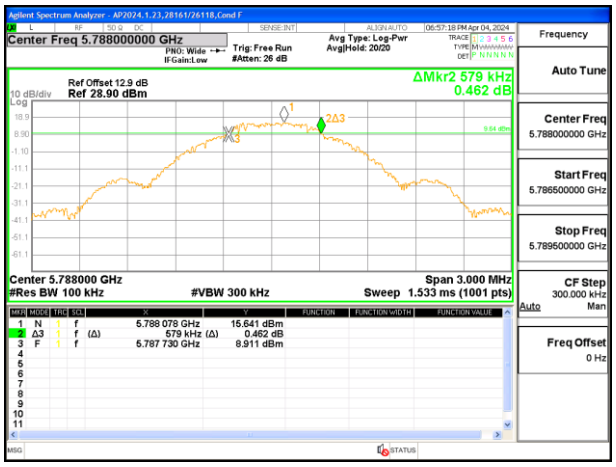
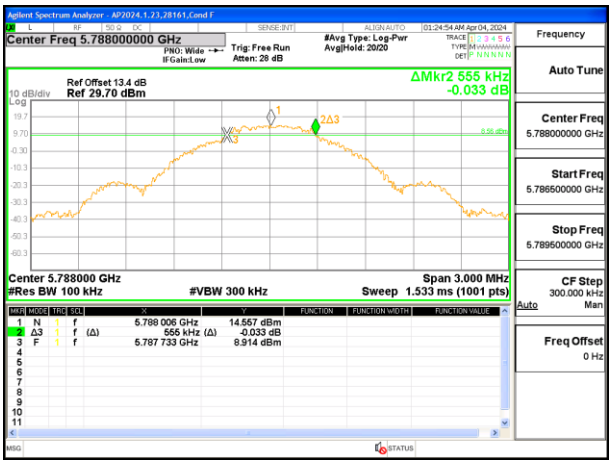
9.3.1. HIGH POWER BDR SISO MODE IN THE UNII-3 BAND

(SISO)	Frequency (MHz)	Channel	6 dB Bandwidth (MHz)	
			ANT 6	ANT 5
BDR (UNII-3)	5733	Low	.573	.561
	5788	Mid	.579	.555
	5844	High	.594	.714



MID CHANNEL – ANT 6



MID CHANNEL – ANT 5

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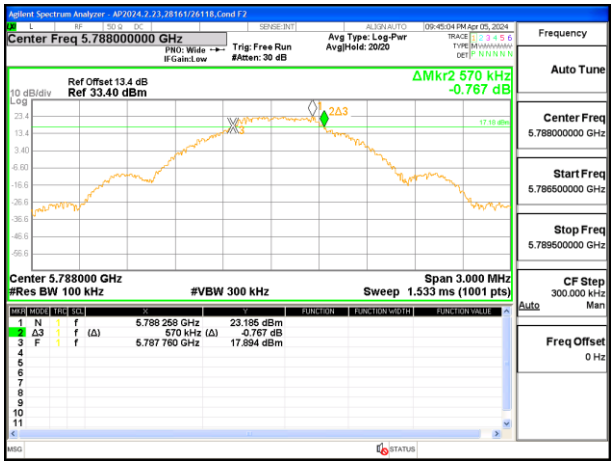
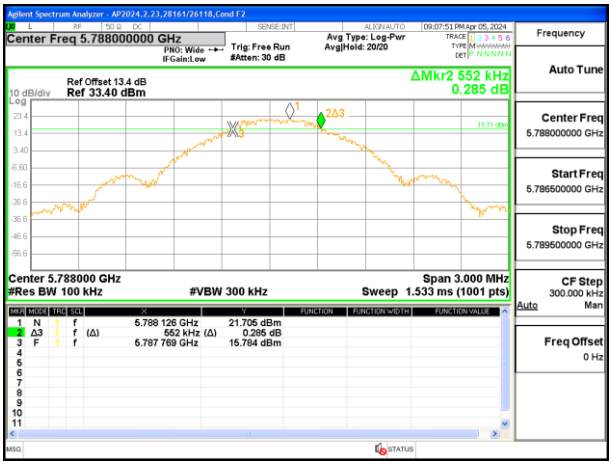
9.3.2. HIGH POWER BDR TXBF MODE IN THE UNII-3 BAND

(MIMO BF)	Frequency (MHz)	Channel	6 dB Bandwidth (MHz)	
			ANT 6	ANT 5
BDR (UNII-3)	5733	Low	.561	.630
	5788	Mid	.570	.552
	5844	High	.576	.576



MID CHANNEL – ANT 6



MID CHANNEL – ANT 5

9.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz

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

Band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G).

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F.

DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output therefore the directional gain is equal to the antenna gain.

For 2 TX:
Tx chains are correlated for power and correlated for PSD due to the device supporting TXBF in all MIMO modes. The directional gains are as follows:

Band (GHz)	ANT 6 Gain (dBi)	ANT 5 Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
UNII-1, 5.2 GHz	-1.10	-4.70	-2.54	0.30
UNII-3, 5.8 GHz	-0.40	-3.30	-1.61	1.28

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DIRECTIONAL GAIN CALCULATION:

ANSI C63.10-2013 section 14.4.3

Uncorrelated Directional Gain $= 10 * \mathrm{LOG}\left[\frac{10^{\frac{\mathrm{ANT6}}{10}} + 10^{\frac{\mathrm{ANT5}}{10}}}{2}\right]$

Correlated Directional Gain $= 10 * \mathrm{LOG}\left[\frac{\left(10^{\frac{\mathrm{ANT6}}{20}} + 10^{\frac{\mathrm{ANT5}}{20}}\right)^2}{2}\right]$

Sample Calculation:

ANT 6 = -1.10 dB
ANT 5 = -4.70 dB

Uncorrelated Directional Gain $= 10 * \mathrm{LOG}\left[\frac{10^{\frac{-1.10}{10}} + 10^{\frac{-4.70}{10}}}{2}\right] = -2.54\ \mathrm{dBi}$

Correlated Directional Gain $= 10 * \mathrm{LOG}\left[\frac{\left(10^{\frac{-1.10}{20}} + 10^{\frac{-4.70}{20}}\right)^2}{2}\right] = 0.30\ \mathrm{dBi}$

RESULTS:

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9.4.1. UNII-1 BAND SISO MODE

UNII-1 (SISO) (5162 - 5245MHz)	
DCCF (dB)	0.00
ANT 6 (dBi)	-1.10
ANT 5 (dBi)	-4.70

UNII-1 (SISO)	Power Config.	Freq (MHz)	Ch.	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/MHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/MHz)	
				ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5
BDR (FCC)	High	5162	Low	--		24	24	9.71	9.81	9.71	9.81	11	11	9.318	9.745	9.318	9.745
		5203	Mid					9.72	9.83	9.72	9.83			9.448	9.752	9.448	9.752
		5245	High					9.74	9.73	9.74	9.73			9.235	9.595	9.235	9.595
BDR (FCC)	Low	5162	Low					6.31	4.76	6.31	4.76			5.982	4.609	5.982	4.609
		5203	Mid					6.28	4.82	6.28	4.82			5.836	4.723	5.836	4.723
		5245	High					6.30	4.86	6.30	4.86			5.835	4.592	5.835	4.592
HDR 4 (FCC)	High	5162	Low					11.24	11.26	11.24	11.26			8.349	8.376	8.349	8.376
		5203	Mid					11.32	11.30	11.32	11.30			8.519	8.256	8.519	8.256
		5245	High					11.27	11.29	11.27	11.29			8.499	8.538	8.499	8.538
HDR 4 (FCC)	Low	5162	Low					-0.24	-1.79	-0.24	-1.79			-2.800	-4.970	-2.800	-4.970
		5203	Mid					-0.19	-1.75	-0.19	-1.75			-2.916	-4.806	-2.916	-4.806
		5245	High					-0.21	-1.75	-0.21	-1.75			-2.775	-4.457	-2.775	-4.457
HDR 8 (FCC)	High	5162	Low					13.79	13.76	13.79	13.76			8.484	8.352	8.484	8.352
		5203	Mid					13.71	13.69	13.71	13.69			8.446	8.073	8.446	8.073
		5245	High					13.78	13.77	13.78	13.77			8.247	8.425	8.247	8.425
HDR 8 (FCC)	Low	5162	Low					-0.21	-1.74	-0.21	-1.74			-5.492	-6.701	-5.492	-6.701
		5203	Mid					-0.19	-1.75	-0.19	-1.75			-5.428	-6.314	-5.428	-6.314
		5245	High					-0.20	-1.73	-0.20	-1.73			-5.370	-7.007	-5.370	-7.007

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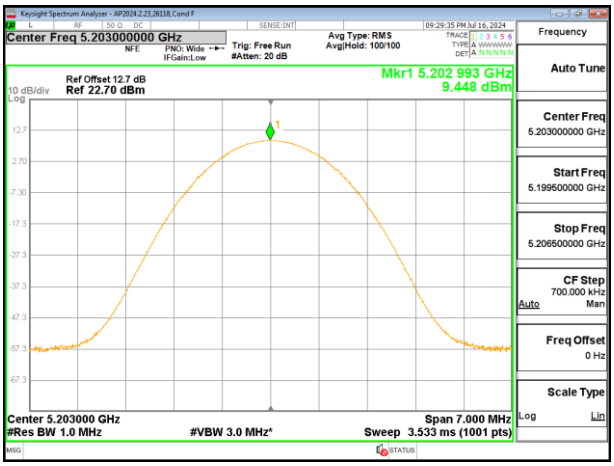
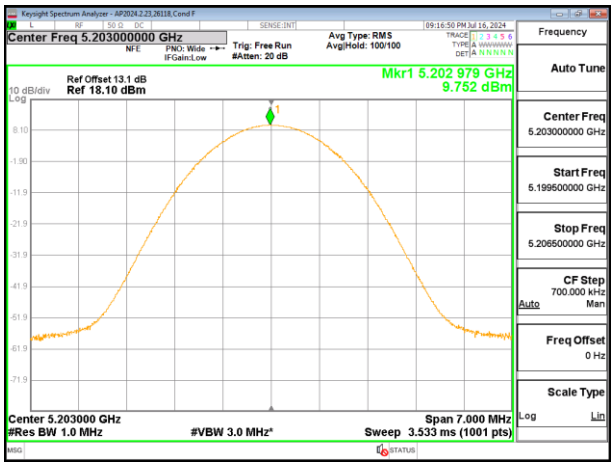
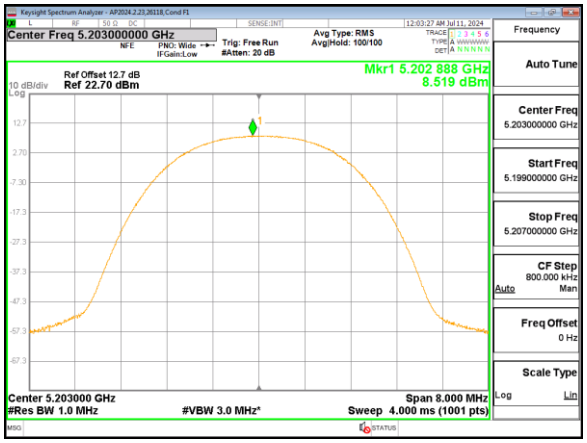
FCC



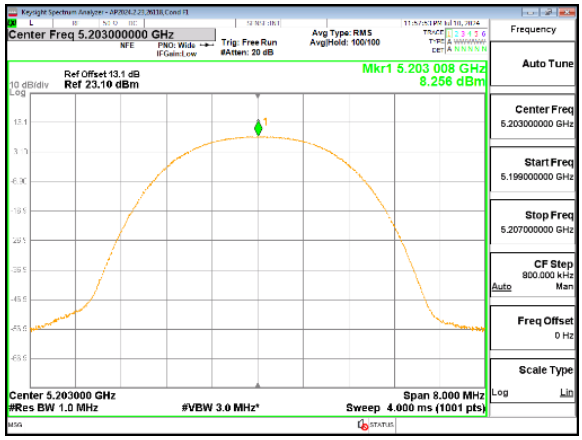
HIGH POWER MID CHANNEL (UNII-1 BDR) – ANT 6



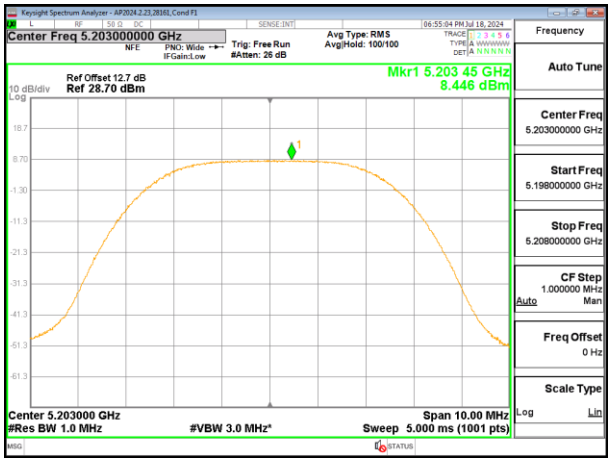
HIGH POWER MID CHANNEL (UNII-1 BDR) – ANT 5



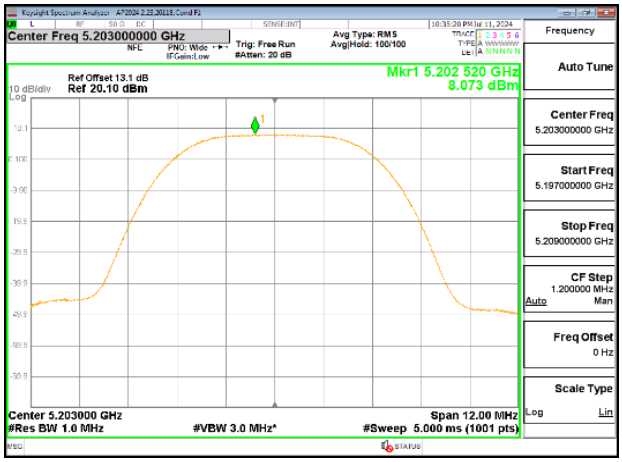
HIGH POWER MID CHANNEL (UNII-1 HDR 4) – ANT 6



HIGH POWER MID CHANNEL (UNII-1 HDR 4) – ANT 5



HIGH POWER MID CHANNEL (UNII-1 HDR 8) – ANT 6



HIGH POWER MID CHANNEL (UNII-1 HDR 8) – ANT 5

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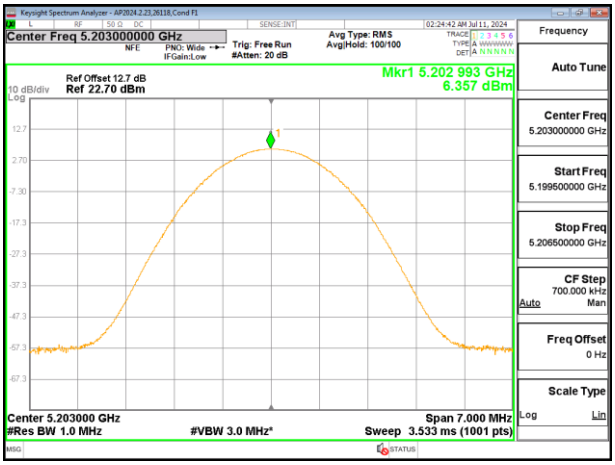
9.4.2. UNII-1 BAND MIMO TXBF MODE

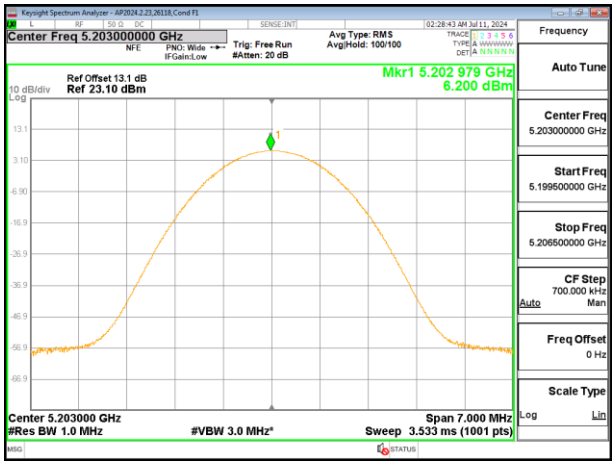
UNII-1 (MIMO BF) (5162 - 5245MHz)	
DCCF (dB)	0.00
Un-Correlated Gain (dBi)	-2.54
Correlated Gain (dBi)	0.30

UNII-1 (MIMO BF)	Power Config.	Freq (MHz)	Ch.	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/MHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/MHz)
						ANT 6	ANT 5			ANT 6	ANT 5	
BDR (FCC)	High	5162	Low	--	24	6.82	6.71	9.78	11	6.478	6.131	9.318
		5203	Mid			6.76	6.73	9.76		6.357	6.200	9.290
		5245	High			6.74	6.75	9.76		6.348	6.323	9.346
BDR (FCC)	Low	5162	Low			6.26	4.76	8.58		5.648	3.919	7.879
		5203	Mid			6.24	4.87	8.62		5.543	4.198	7.933
		5245	High			6.31	4.77	8.62		5.959	3.939	8.076
HDR 4 (FCC)	High	5162	Low			8.29	8.31	11.31		5.606	5.632	8.629
		5203	Mid			8.31	8.27	11.30		5.554	5.224	8.402
		5245	High			8.27	8.28	11.29		5.246	5.561	8.417
HDR 4 (FCC)	Low	5162	Low			-0.16	-1.73	2.14		-2.515	-2.494	0.506
		5203	Mid			-0.17	-1.75	2.12		-2.663	-2.297	0.534
		5245	High			-0.22	-1.79	2.08		-2.466	-1.996	0.786
HDR 8 (FCC)	High	5162	Low			10.78	10.79	13.80		5.585	5.607	8.606
		5203	Mid			10.80	10.77	13.80		5.804	5.634	8.730
		5245	High			10.72	10.63	13.69		6.396	5.580	9.017
HDR 8 (FCC)	Low	5162	Low			-0.17	-1.68	2.15		-5.118	-5.838	-2.453
		5203	Mid			-0.20	-1.75	2.10		-5.173	-5.663	-2.401
		5245	High			-0.24	-1.70	2.10		-5.326	-5.586	-2.444

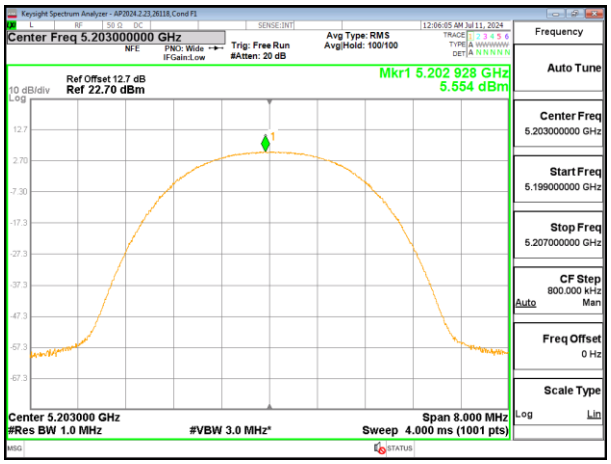
FCC



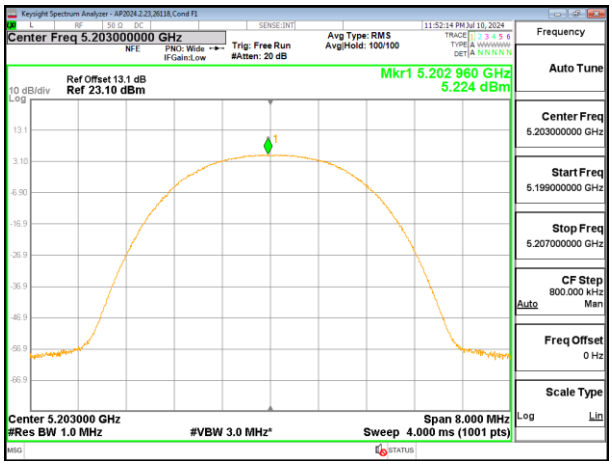
HIGH POWER MID CHANNEL (UNII-1 BDR) – ANT 6



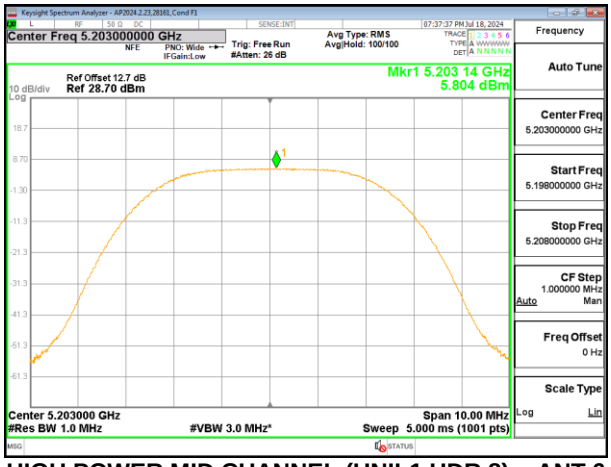
HIGH POWER MID CHANNEL (UNII-1 BDR) – ANT 5



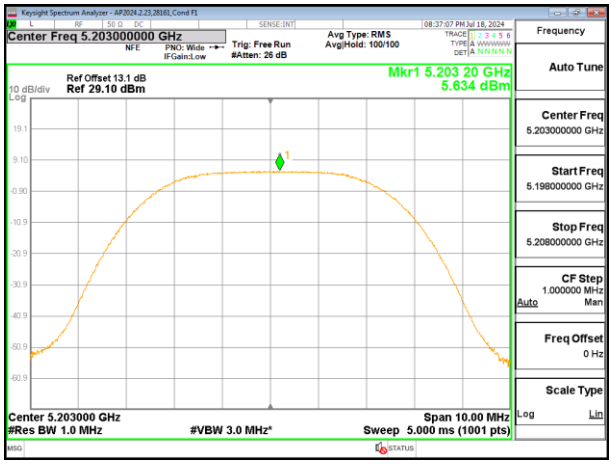
HIGH POWER MID CHANNEL (UNII-1 HDR 4) – ANT 6



HIGH POWER MID CHANNEL (UNII-1 HDR 4) – ANT 5



HIGH POWER MID CHANNEL (UNII-1 HDR 8) – ANT 6



HIGH POWER MID CHANNEL (UNII-1 HDR 8) – ANT 5

9.4.3. UNII-3 BAND SISO MODE

UNII-3 (SISO) (5733- 5844MHz)	
DCCF (dB)	0.00
ANT 6 (dBi)	-0.40
ANT 5 (dBi)	-3.30

UNII-3 (SISO)	Power Config.	Freq (MHz)	Ch.	Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/500kHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/500kHz)	
				ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5	ANT 6	ANT 5
BDR	High	5733	Low	30	30	14.31	14.19	14.31	14.19	30	30	12.860	12.579	12.860	12.579
		5788	Mid			14.30	14.34	14.30	14.34			13.115	13.419	13.115	13.419
		5844	High			14.24	14.31	14.24	14.31			12.888	13.356	12.888	13.356
	Low	5733	Low			6.75	5.40	6.75	5.40			5.957	3.952	5.957	3.952
		5788	Mid			6.81	5.45	6.81	5.45			6.327	4.141	6.327	4.141
		5844	High			6.80	5.47	6.80	5.47			6.109	4.117	6.109	4.117
HDR 4	High	5733	Low			14.25	14.27	14.25	14.27			8.925	8.955	8.925	8.955
		5788	Mid			14.31	14.31	14.31	14.31			8.817	9.527	8.817	9.527
		5844	High			14.23	14.33	14.23	14.33			8.907	9.434	8.907	9.434
	Low	5733	Low			0.29	-1.21	0.29	-1.21			-3.661	-4.460	-3.661	-4.460
		5788	Mid			0.24	-1.31	0.24	-1.31			-3.517	-4.853	-3.517	-4.853
		5844	High			0.28	-1.28	0.28	-1.28			-3.265	-4.966	-3.265	-4.966
HDR 8	High	5733	Low			14.23	14.22	14.23	14.22			5.528	5.639	5.528	5.639
		5788	Mid			14.29	14.17	14.29	14.17			5.736	5.406	5.736	5.406
		5844	High			14.25	14.25	14.25	14.25			5.387	5.570	5.387	5.570
	Low	5733	Low			0.21	-1.24	0.21	-1.24			-6.930	-8.377	-6.930	-8.377
		5788	Mid			0.28	-1.17	0.28	-1.17			-6.835	-8.287	-6.835	-8.287
		5844	High			0.25	-1.22	0.25	-1.22			-6.543	-8.363	-6.543	-8.363

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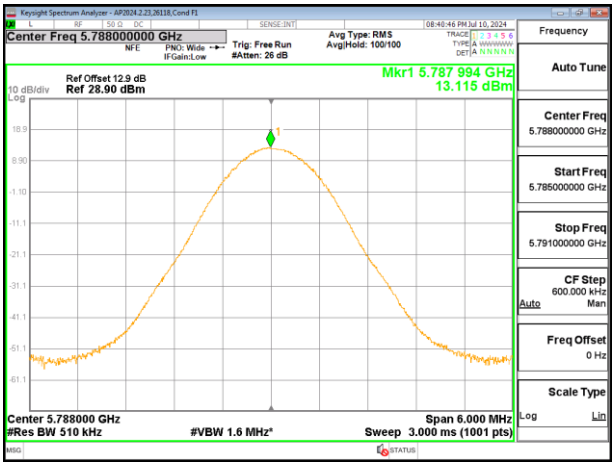
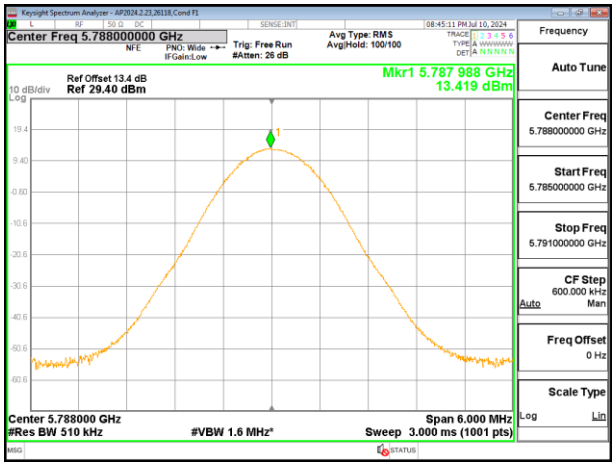
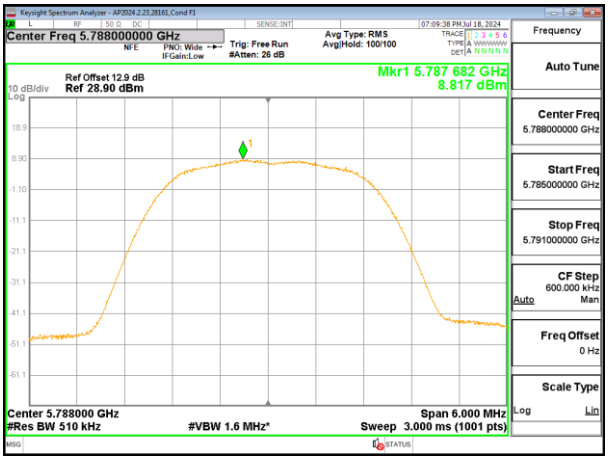


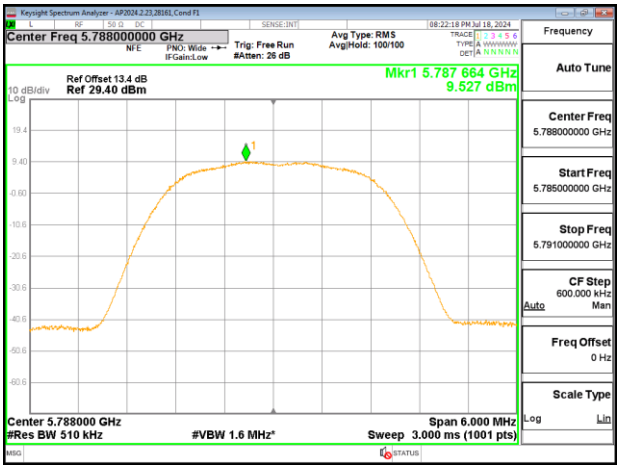
HIGH POWER MID CHANNEL (UNII-3 BDR) – ANT 6



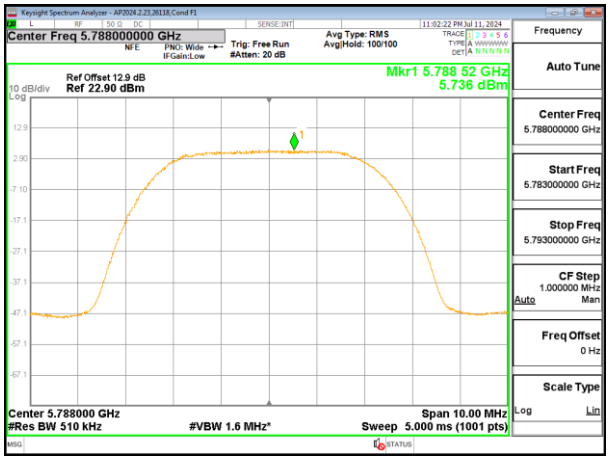
HIGH POWER MID CHANNEL (UNII-3 BDR) – ANT 5



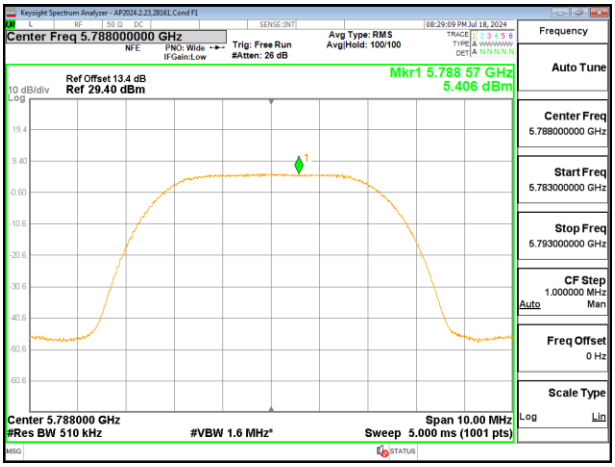
HIGH POWER MID CHANNEL (UNII-3 HDR 4) – ANT 6



HIGH POWER MID CHANNEL (UNII-3 HDR 4) – ANT 5



HIGH POWER MID CHANNEL (UNII-3 HDR 8) – ANT 6



HIGH POWER MID CHANNEL (UNII-3 HDR 8) – ANT 5

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9.4.4. UNII-3 BAND MIMO TXBF MODE

UNII-3 (MIMO BF) (5733- 5844MHz)	
DCCF (dB)	0.00
Un-Correlated Gain (dBi)	-1.61
Correlated Gain (dBi)	1.28

UNII-3 (MIMO BF)	Power Config.	Freq (MHz)	Ch. #	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/500kHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/500kHz)
					ANT 6	ANT 5			ANT 6	ANT 5	
BDR	High	5733	Low	30	14.29	14.35	17.33	30	12.724	13.317	16.041
		5788	Mid		14.32	14.29	17.32		13.012	13.303	16.170
		5844	High		14.19	14.26	17.24		12.501	13.162	15.854
	Low	5733	Low		6.74	5.25	9.07		5.875	4.700	8.337
		5788	Mid		6.77	5.30	9.11		5.907	4.781	8.391
		5844	High		6.82	5.32	9.14		6.089	4.988	8.584
HDR 4	High	5733	Low		14.27	14.24	17.27		9.235	9.328	12.292
		5788	Mid		14.22	14.28	17.26		8.951	9.313	12.146
		5844	High		14.20	14.25	17.24		8.890	9.103	12.008
	Low	5733	Low		0.26	-1.24	2.58		-3.627	-4.367	-0.971
		5788	Mid		0.23	-1.19	2.59		-3.314	-4.541	-0.874
		5844	High		0.29	-1.18	2.63		-3.456	-4.688	-1.018
HDR 8	High	5733	Low		14.25	14.28	17.28		5.442	5.535	8.499
		5788	Mid		14.22	14.24	17.24		5.461	5.469	8.475
		5844	High		14.27	14.26	17.28		5.453	5.705	8.591
	Low	5733	Low		0.25	-1.23	2.58		-5.566	-8.521	-3.787
		5788	Mid		0.29	-1.26	2.59		-5.659	-8.924	-3.981
		5844	High		0.27	-1.28	2.57		-5.605	-8.651	-3.856

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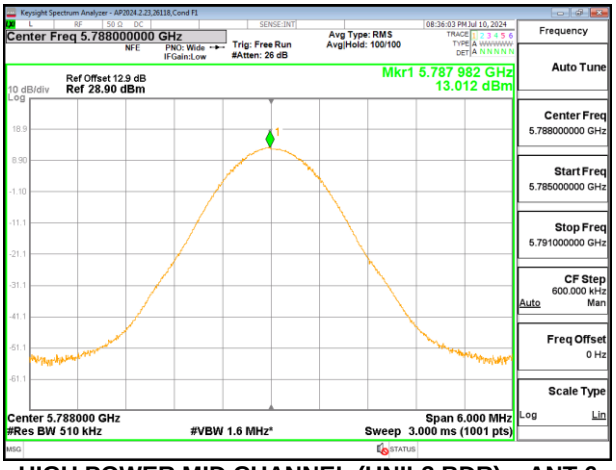
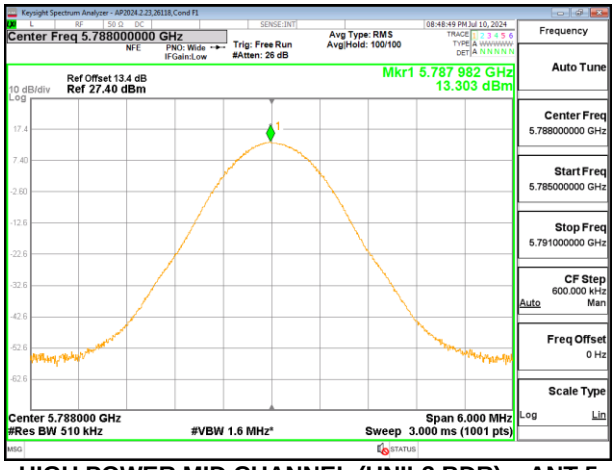
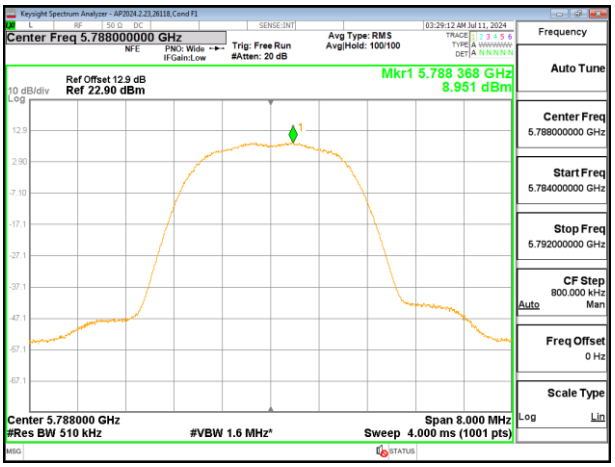


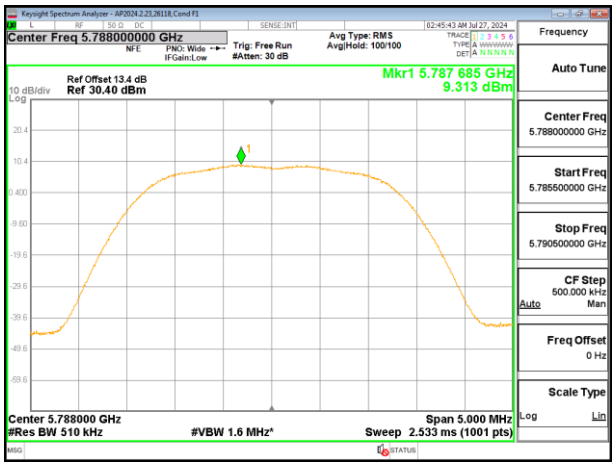
HIGH POWER MID CHANNEL (UNII-3 BDR) – ANT 6



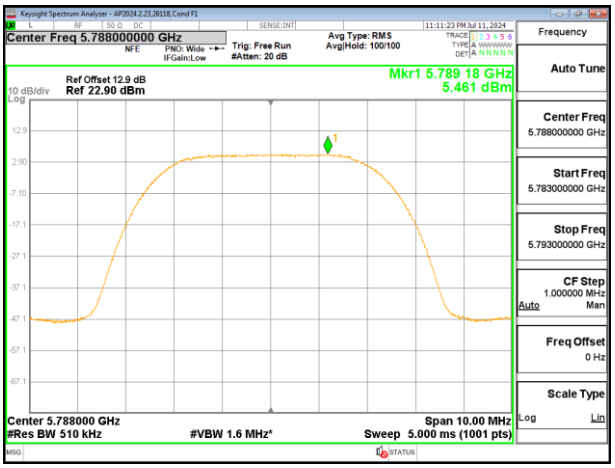
HIGH POWER MID CHANNEL (UNII-3 BDR) – ANT 5



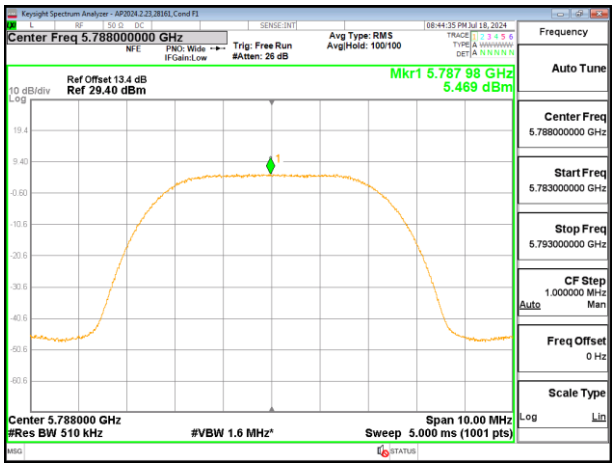
HIGH POWER MID CHANNEL (UNII-3 HDR 4) – ANT 6



HIGH POWER MID CHANNEL (UNII-3 HDR 4) – ANT 5



HIGH POWER MID CHANNEL (UNII-3 HDR 8) – ANT 6



HIGH POWER MID CHANNEL (UNII-3 HDR 8) – ANT 5

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10. RADIATED TEST RESULTS

LIMITS

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

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz and 1.5 meters 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 30 KHz for peak measurements.

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

The spectrum from 30 MHz to 1GHz and 18GHz to 40 GHz is investigated with the transmitter set to transmit at the channel with highest output power as worst-case scenario. 1GHz to 18GHz was set to the lowest, middle, and highest channels in the 5 GHz bands.

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.

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Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as report in the table) using free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

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.

RESULTS

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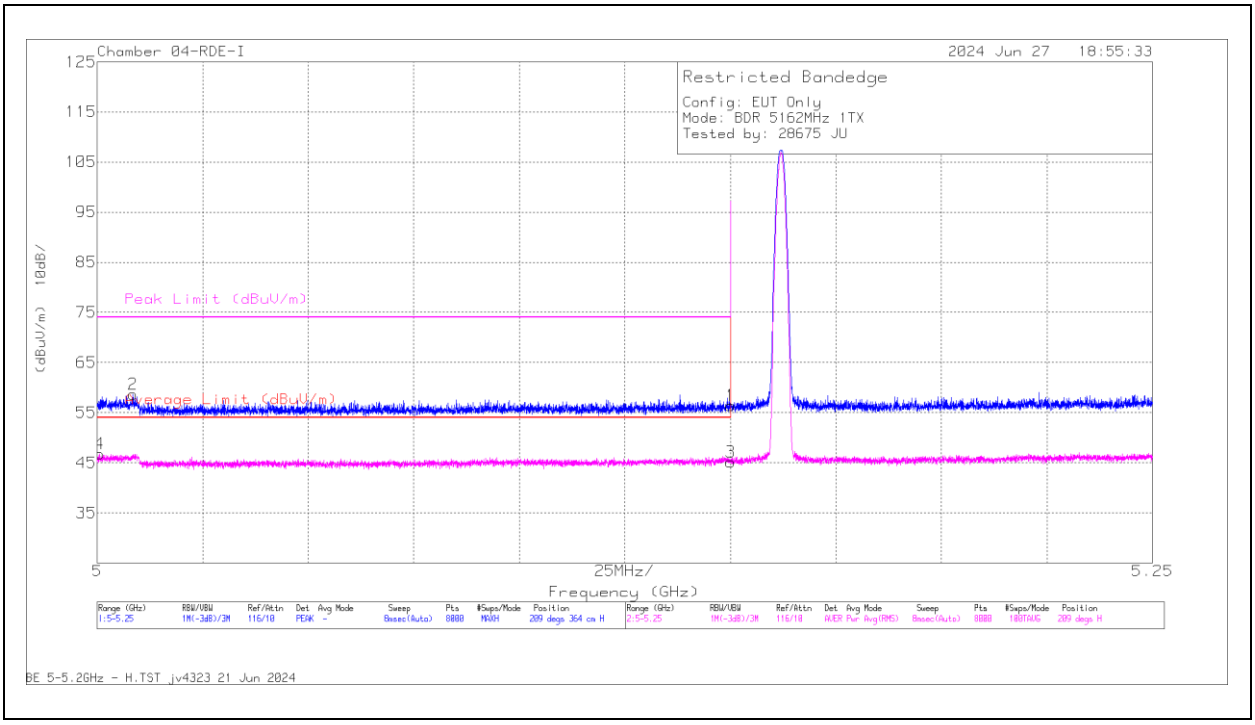
10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. BDR, HIGH POWER UNII-1 BANDEDGE

ANT 6, SISO MODE

LOW CHANNEL, 5162MHz

HORIZONTAL RESULT

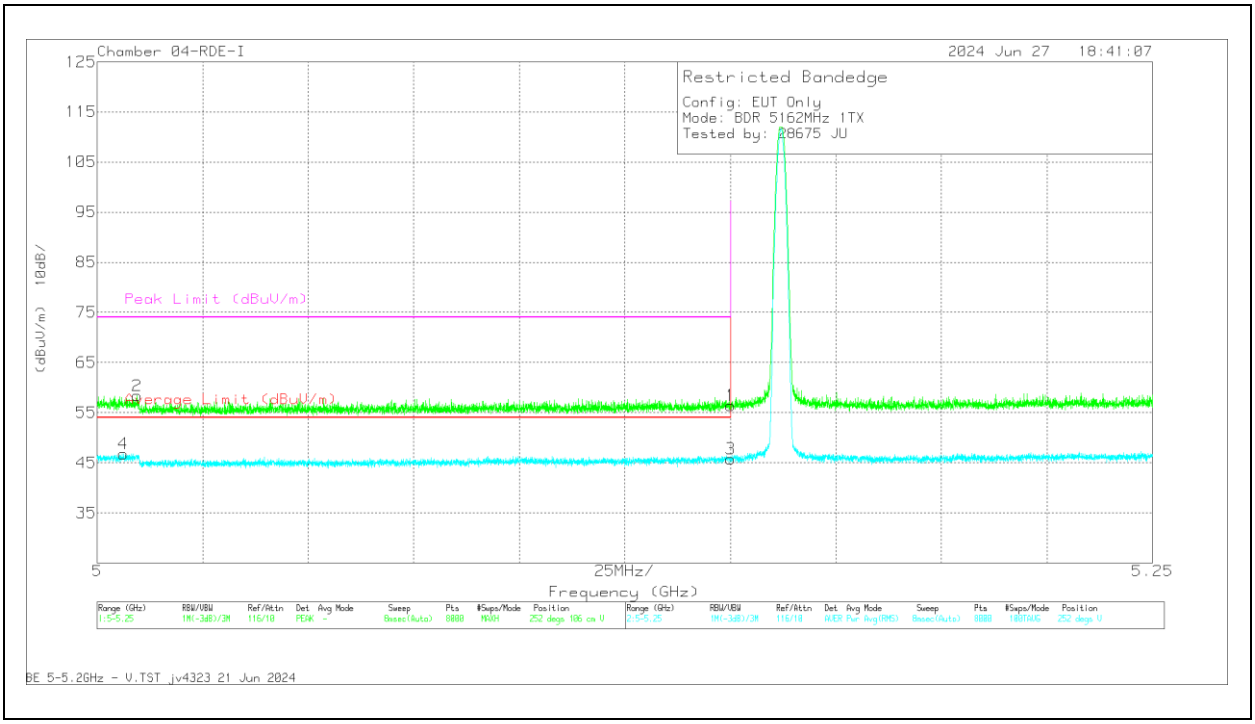


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	39.37	Pk	34.2	-17.2	56.37	-	-	74	-17.63	209	364	H
2	* 5.008501	41.19	Pk	34	-16.5	58.69	-	-	74	-15.31	209	364	H
3	* 5.15	28.14	RMS	34.2	-17.2	45.14	54	-8.86	-	-	209	364	H
4	* 5.0005	29.43	RMS	34	-16.7	46.73	54	-7.27	-	-	209	364	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	39.4	Pk	34.2	-17.2	56.4	-	-	74	-17.6	252	106	V
2	* 5.009439	40.86	Pk	34	-16.5	58.36	-	-	74	-15.64	252	106	V
3	* 5.15	28.82	RMS	34.2	-17.2	45.82	54	-8.18	-	-	252	106	V
4	* 5.006188	29.45	RMS	34	-16.7	46.75	54	-7.25	-	-	252	106	V

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

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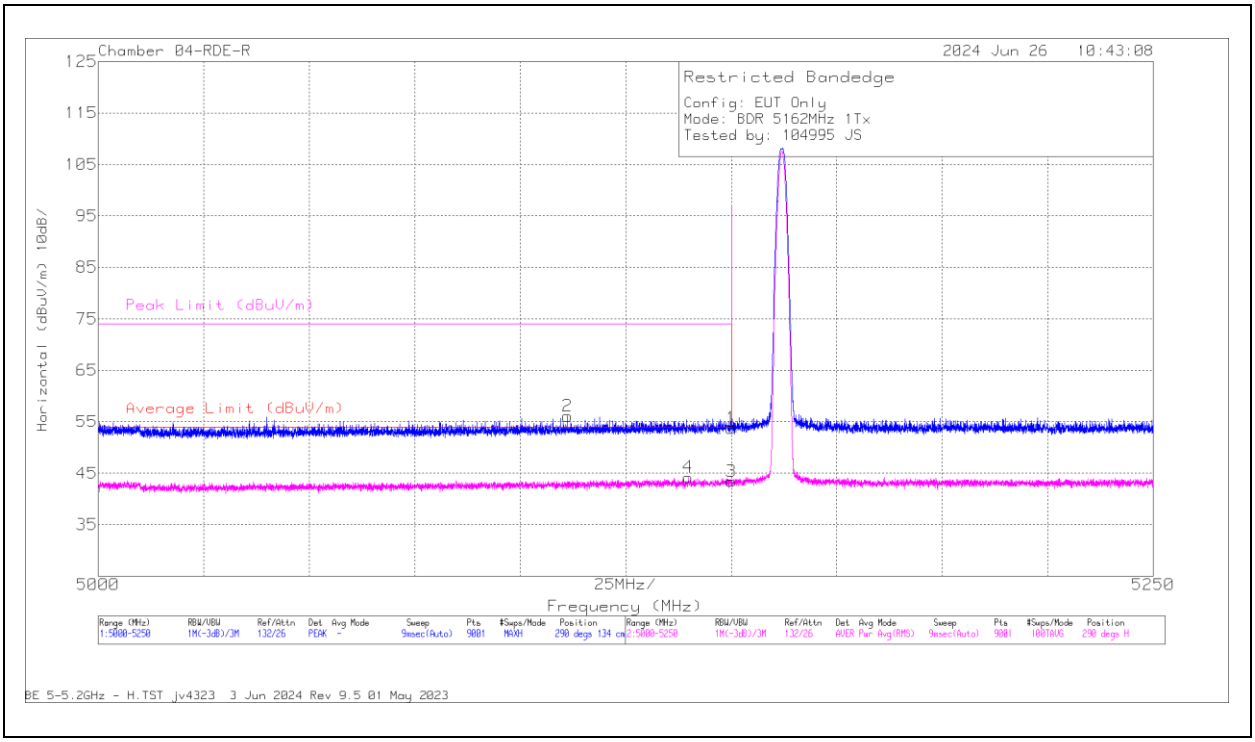
ANT 5, SISO MODE

LOW CHANNEL, 5162MHz

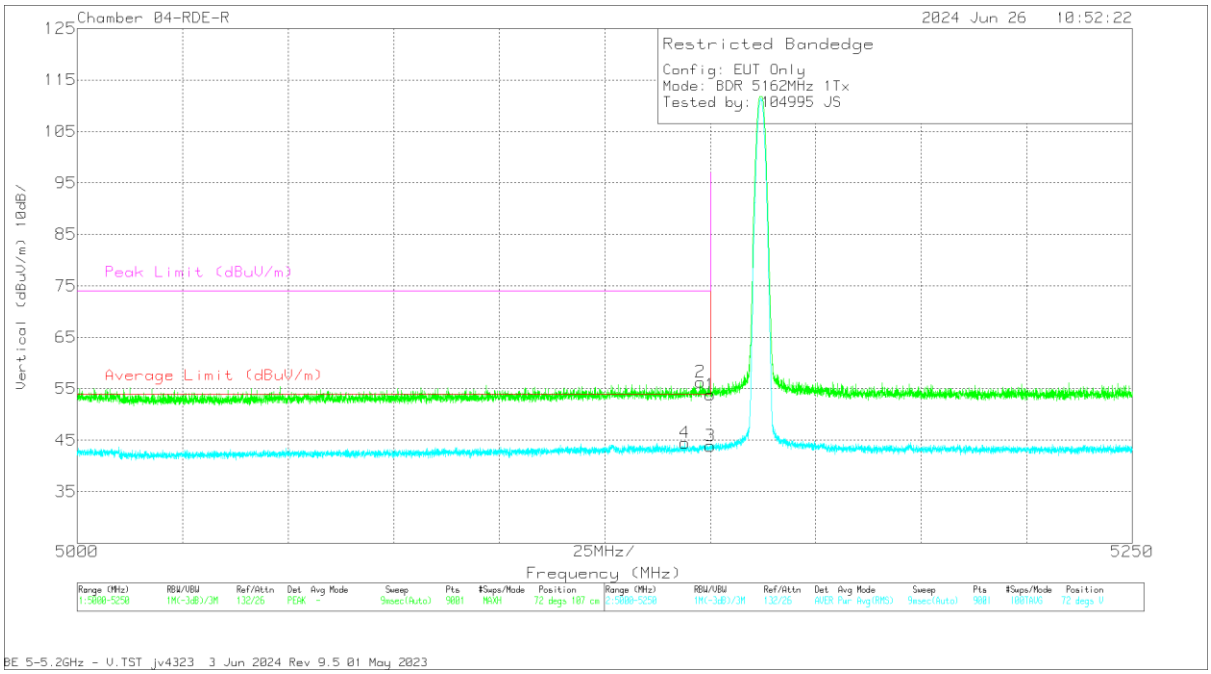
HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	41112 3m ACF (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
2	5111.195	59.53	Pk	34.2	-37.62	56.11	-	-	74	-17.89	290	134	H
4	5139.779	47.48	RMS	34.3	-37.57	44.21	54	-9.79	-	-	290	134	H
1	5150	57.08	Pk	34.3	-37.6	53.78	-	-	74	-20.22	290	134	H
3	5150	46.72	RMS	34.3	-37.6	43.42	54	-10.58	-	-	290	134	H

Pk - Peak detector
RMS - RMS detection

VERTICAL RESULT



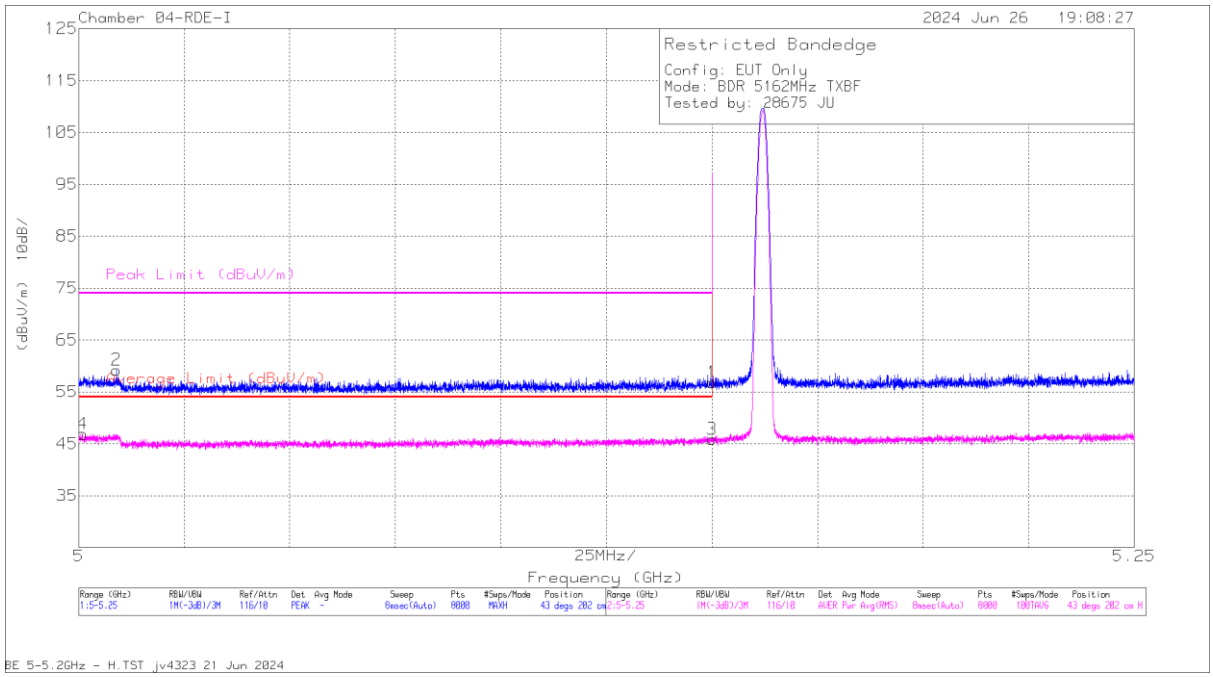
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	41112 3m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5144.001	47.76	RMS	34.3	-37.57	44.49	54	-9.51	-	-	72	107	V
2	5147.723	59.59	Pk	34.3	-37.57	56.32	-	-	74	-17.68	72	107	V
1	5150	57.13	Pk	34.3	-37.6	53.83	-	-	74	-20.17	72	107	V
3	5150	47.19	RMS	34.3	-37.6	43.89	54	-10.11	-	-	72	107	V

Pk - Peak detector
RMS - RMS detection

ANT 6 + ANT 5, MIMO TXBF MODE

LOW CHANNEL, 5162MHz

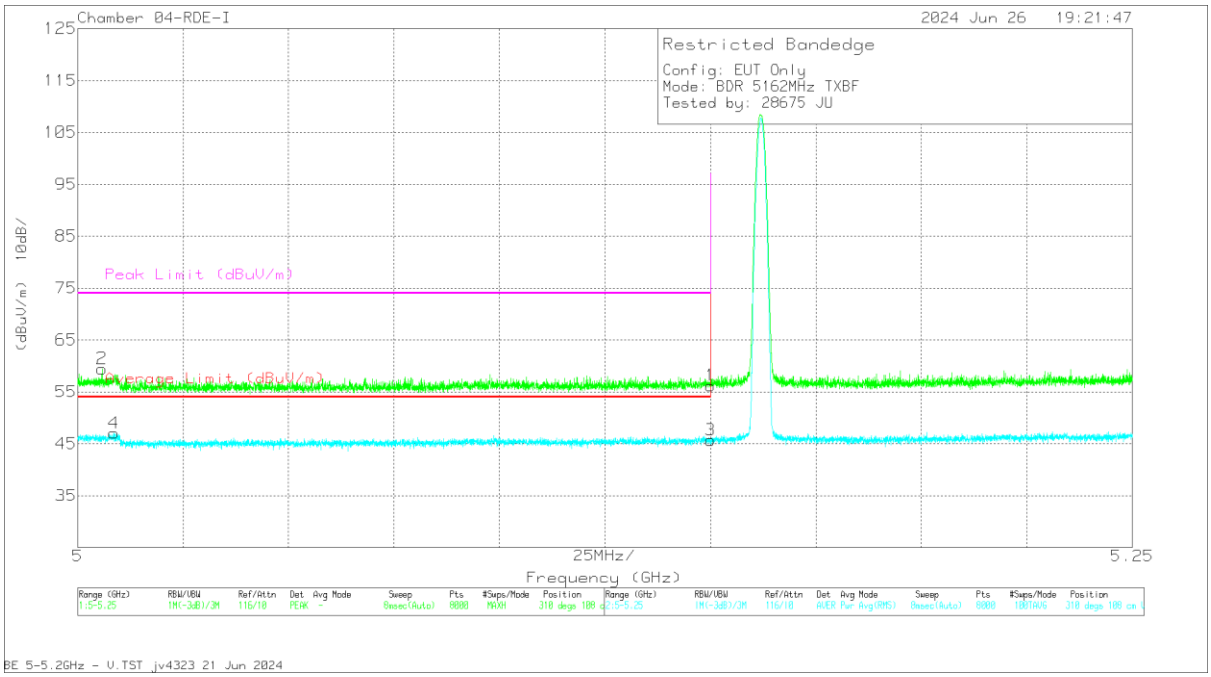
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	39.83	Pk	34.2	-17.2	56.83	-	-	74	-17.17	43	202	H
2	* 5.009001	41.71	Pk	34	-16.5	59.21	-	-	74	-14.79	43	202	H
3	* 5.15	28.86	RMS	34.2	-17.2	45.86	54	-8.14	-	-	43	202	H
4	* 5.000875	29.62	RMS	34	-16.7	46.92	54	-7.08	-	-	43	202	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	39.22	Pk	34.2	-17.2	56.22	-	-	74	-17.78	310	108	V
2	* 5.005782	42.17	Pk	34	-16.7	59.47	-	-	74	-14.53	310	108	V
3	* 5.15	28.71	RMS	34.2	-17.2	45.71	54	-8.29	-	-	310	108	V
4	* 5.008595	29.55	RMS	34	-16.5	47.05	54	-6.95	-	-	310	108	V

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

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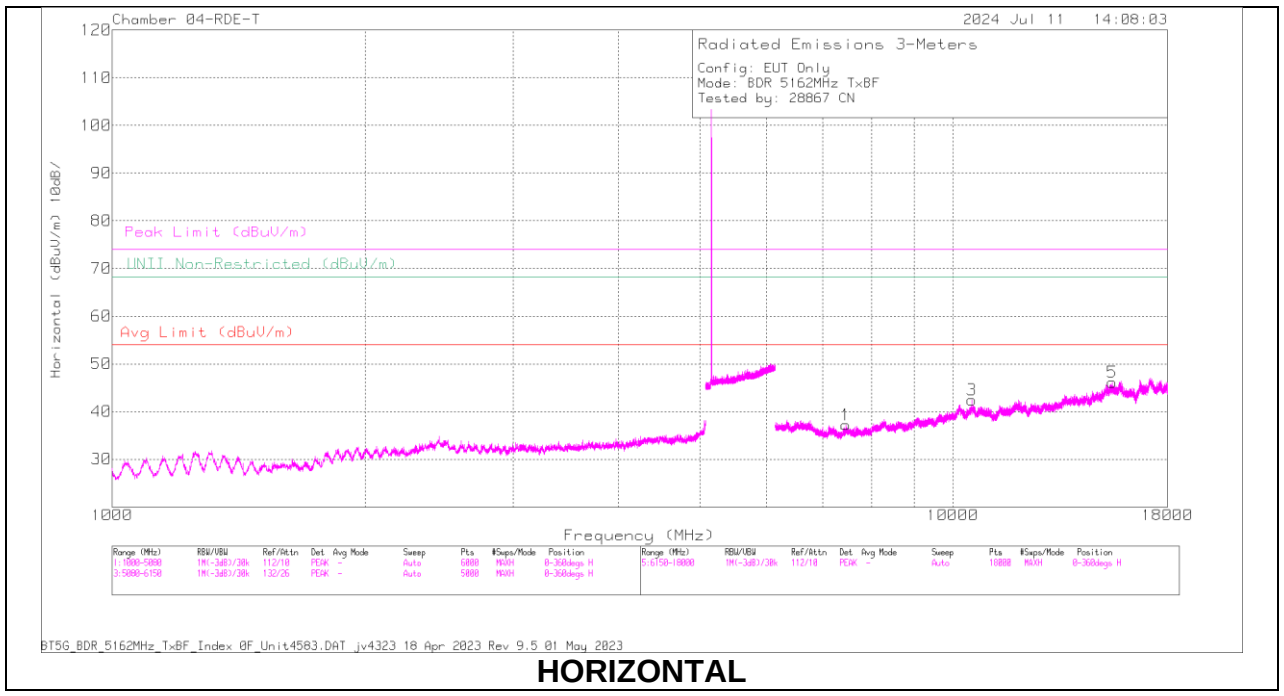
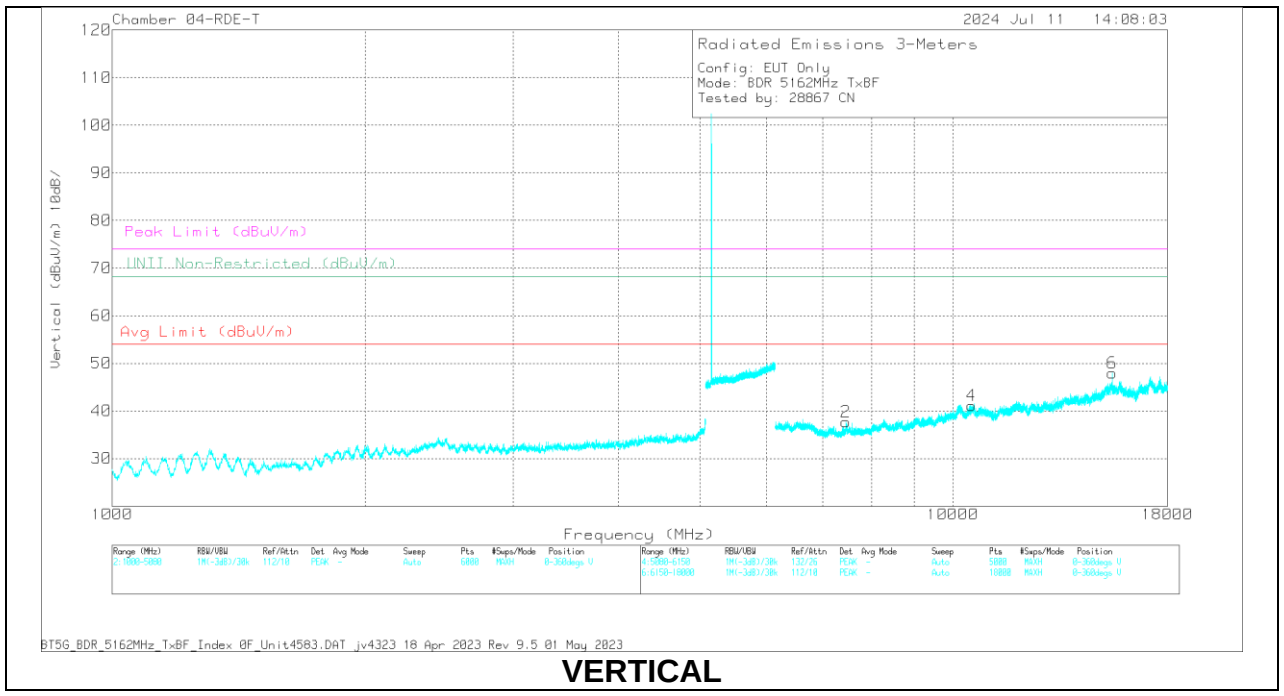
10.1.2. BDR, HIGH POWER, UNII-1 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS

LOW CHANNEL, 5162MHz



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 3m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 7470.878	55.31	PK-U	35.5	-43.86	46.95	-	-	74	-27.05	-	-	328	292	H
1	* 7470.841	43.61	ADR	35.5	-43.87	35.24	54	-18.76	-	-	-	-	328	292	H
5	* 15485.861	53.64	PK-U	41.5	-39.67	55.47	-	-	74	-18.53	-	-	113	179	H
5	* 15486.115	42.8	ADR	41.5	-39.66	44.64	54	-9.36	-	-	-	-	113	179	H
2	* 7464.532	55.77	PK-U	35.5	-43.89	47.38	-	-	74	-26.62	-	-	298	345	V
2	* 7464.995	43.7	ADR	35.5	-43.92	35.28	54	-18.72	-	-	-	-	298	345	V
6	* 15485.646	54.04	PK-U	41.5	-39.69	55.85	-	-	74	-18.15	-	-	137	199	V
6	* 15485.859	44.92	ADR	41.5	-39.67	46.75	54	-7.25	-	-	-	-	137	199	V
4	10530.205	54.57	PK-U	38	-41.62	50.95	-	-	-	-	68.2	-17.25	155	196	V
3	10541.399	54.02	PK-U	38	-41.66	50.36	-	-	-	-	68.2	-17.84	15	216	H

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

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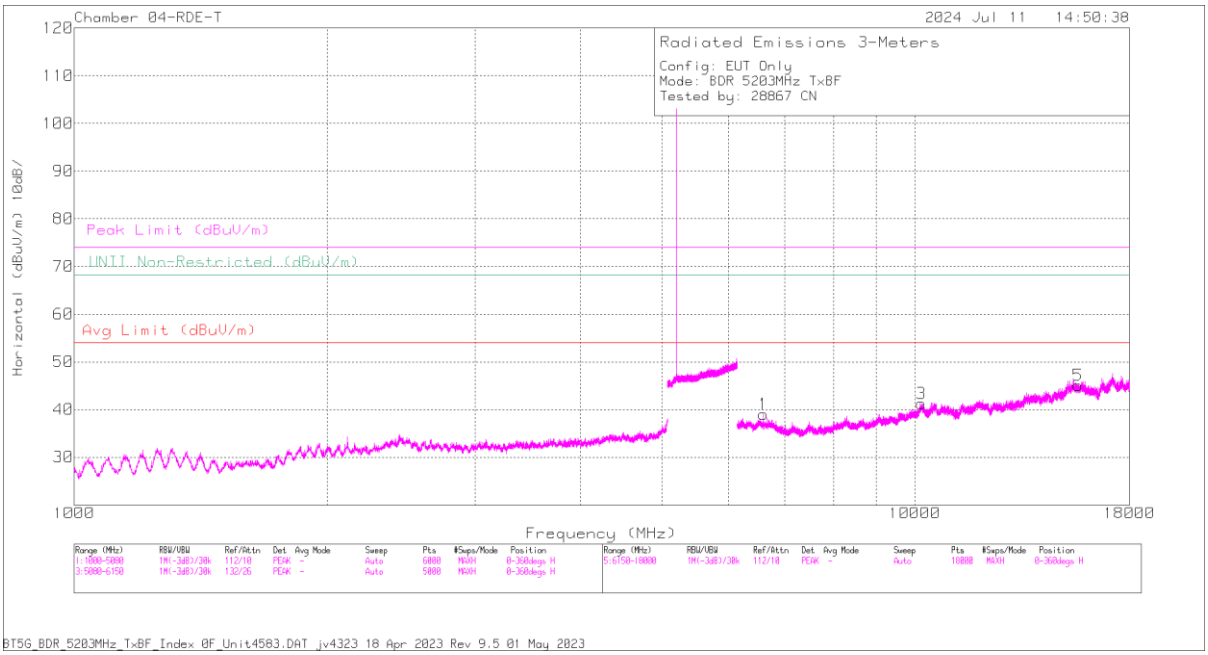
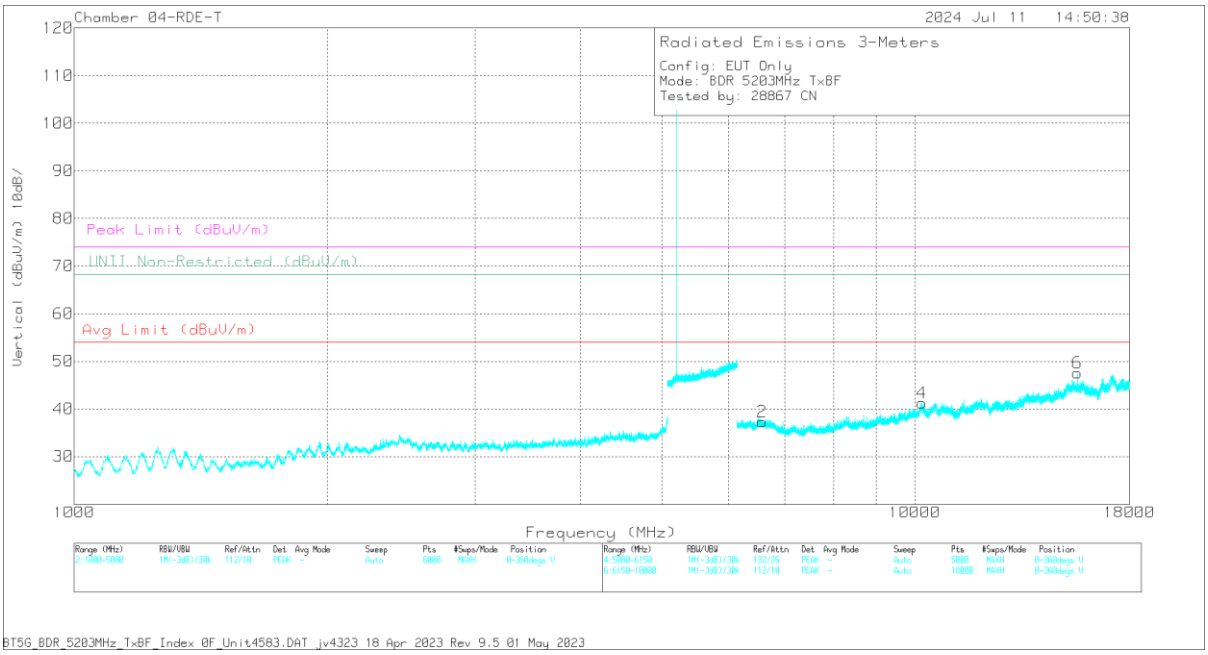
MID CHANNEL, 5203MHz



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
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RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 3m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 15620.822	53.07	PK-U	41.5	-40.32	54.25	-	-	74	-19.75	-	-	201	177	H
5	* 15622.346	41.59	ADR	41.5	-40.31	42.78	54	-11.22	-	-	-	-	201	177	H
6	* 15608.877	54.86	PK-U	41.5	-40.38	55.98	-	-	74	-18.02	-	-	133	104	V
6	* 15608.998	46	ADR	41.5	-40.38	47.12	54	-6.88	-	-	-	-	133	104	V
2	6591.385	55.09	PK-U	36.8	-44.38	47.51	-	-	-	-	68.2	-20.69	232	122	V
1	6602.884	55.28	PK-U	36.9	-44.34	47.84	-	-	-	-	68.2	-20.36	65	213	H
3	10186.799	54.42	PK-U	37.7	-41.52	50.6	-	-	-	-	68.2	-17.6	173	255	H
4	10193.987	55.19	PK-U	37.7	-41.63	51.26	-	-	-	-	68.2	-16.94	253	189	V

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

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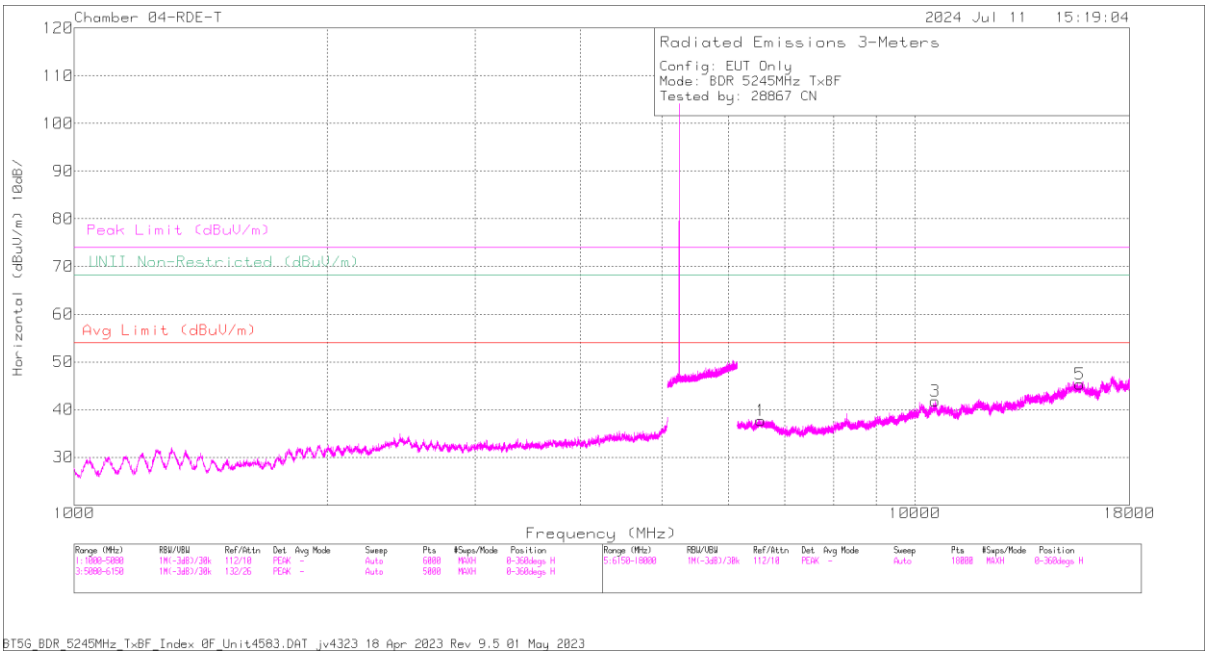
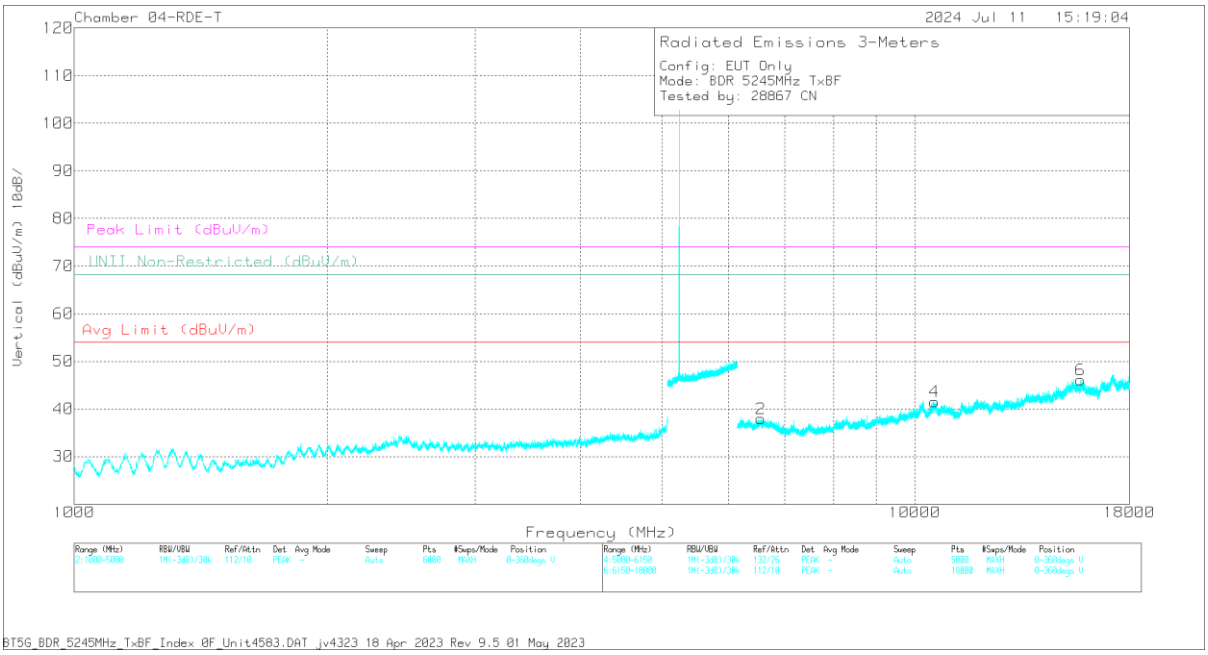
HIGH CHANNEL 5245MHz



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538; USA TEL:(510) 319-4000 FAX:(510) 661-0888

RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 3m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 15714.984	52.4	PK-U	41.4	-40.15	53.65	-	-	74	-20.35	-	-	92	290	H
5	* 15715.904	41.04	ADR	41.4	-40.15	42.29	54	-11.71	-	-	-	-	92	290	H
6	* 15734.903	53.6	PK-U	41.3	-40.49	54.41	-	-	74	-19.59	-	-	134	107	V
6	* 15734.759	44.76	ADR	41.3	-40.48	45.58	54	-8.42	-	-	-	-	134	107	V
1	6548.242	55.14	PK-U	36.7	-44.04	47.8	-	-	-	-	68.2	-20.4	288	251	H
2	6556.182	55.05	PK-U	36.7	-43.98	47.77	-	-	-	-	68.2	-20.43	135	118	V
4	10555.255	54.33	PK-U	38	-42.14	50.19	-	-	-	-	68.2	-18.01	57	197	V
3	10571.805	54.16	PK-U	38	-41.8	50.36	-	-	-	-	68.2	-17.84	144	121	H

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

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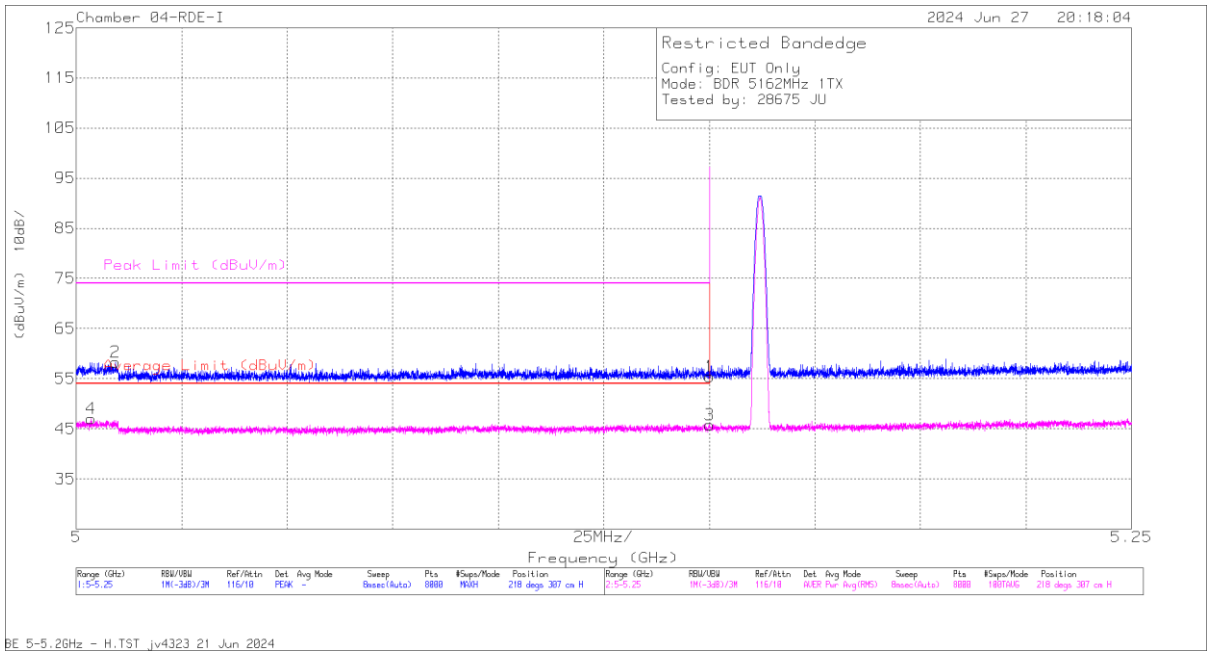
10.1.3. BDR LOW POWER, UNII-1 BAND, BANDEDGE

ANT 6, SISO MODE

LOW CHANNEL, 5162MHz

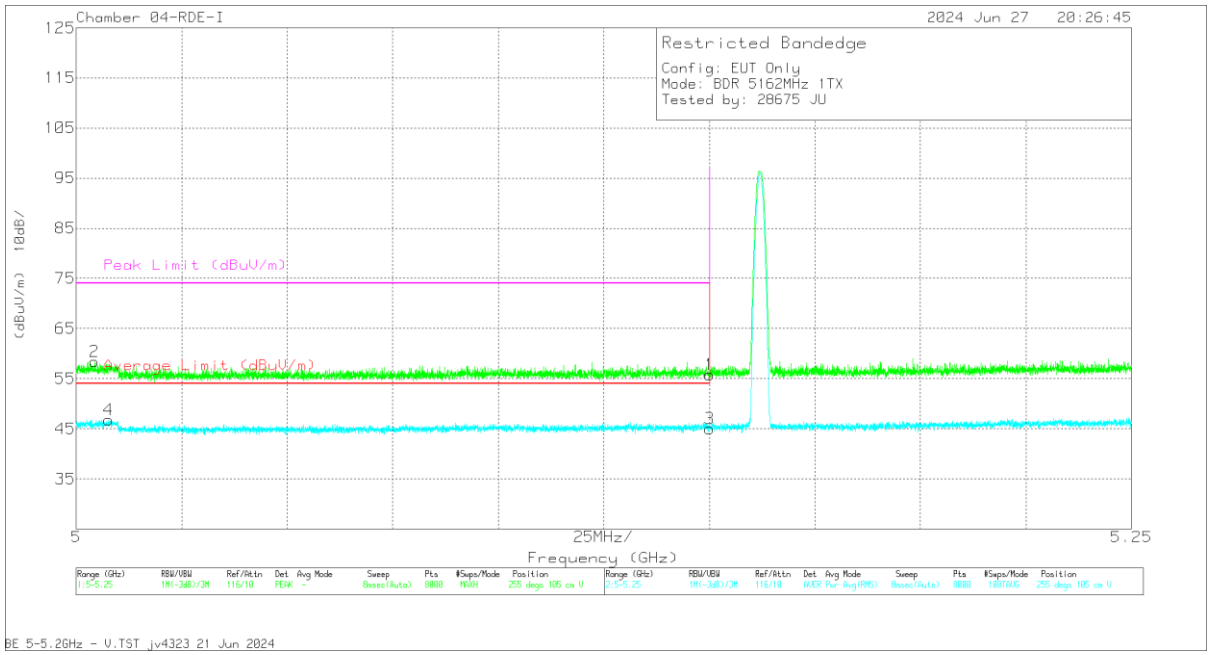
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	38.37	Pk	34.2	-17.2	55.37	-	-	74	-18.63	218	307	H
2	* 5.009376	40.79	Pk	34	-16.5	58.29	-	-	74	-15.71	218	307	H
3	* 5.15	28.77	RMS	34.2	-17.2	45.77	54	-8.23	-	-	218	307	H
4	* 5.003594	29.7	RMS	34	-16.7	47	54	-7	-	-	218	307	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	38.75	Pk	34.2	-17.2	55.75	-	-	74	-18.25	255	105	V
2	* 5.004344	41.13	Pk	34	-16.7	58.43	-	-	74	-15.57	255	105	V
3	* 5.15	28.02	RMS	34.2	-17.2	45.02	54	-8.98	-	-	255	105	V
4	* 5.007751	29.36	RMS	34	-16.6	46.76	54	-7.24	-	-	255	105	V

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

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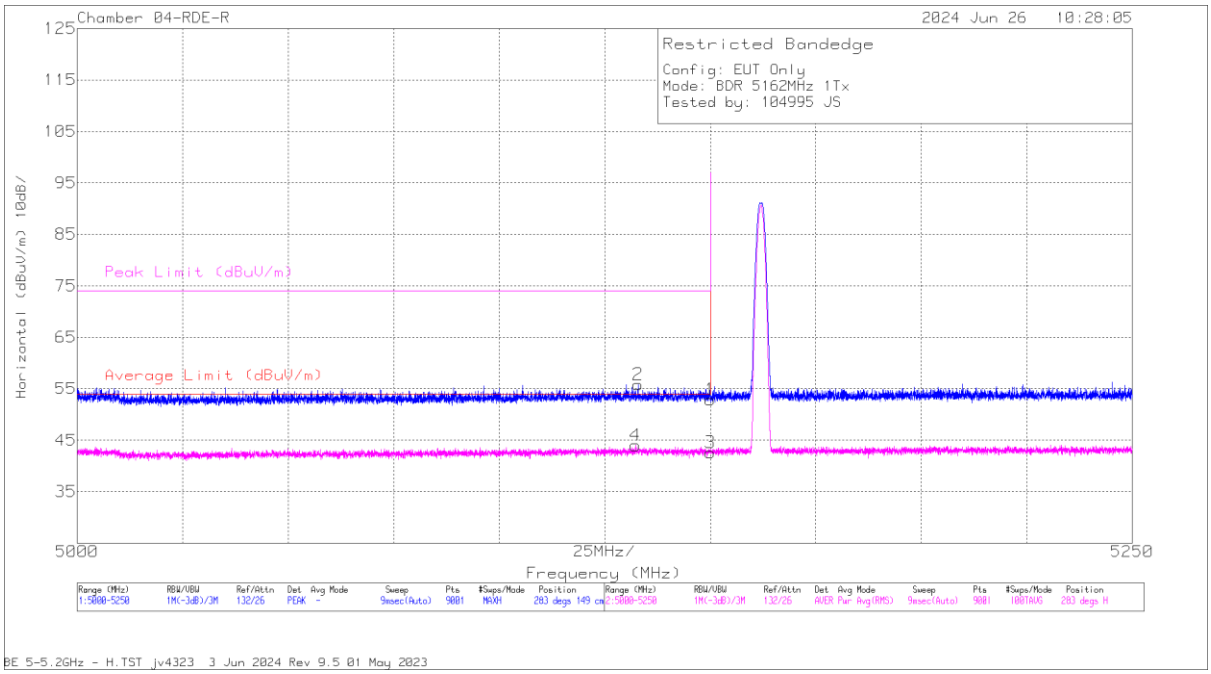
ANT 5, SISO MODE

LOW CHANNEL, 5162MHz

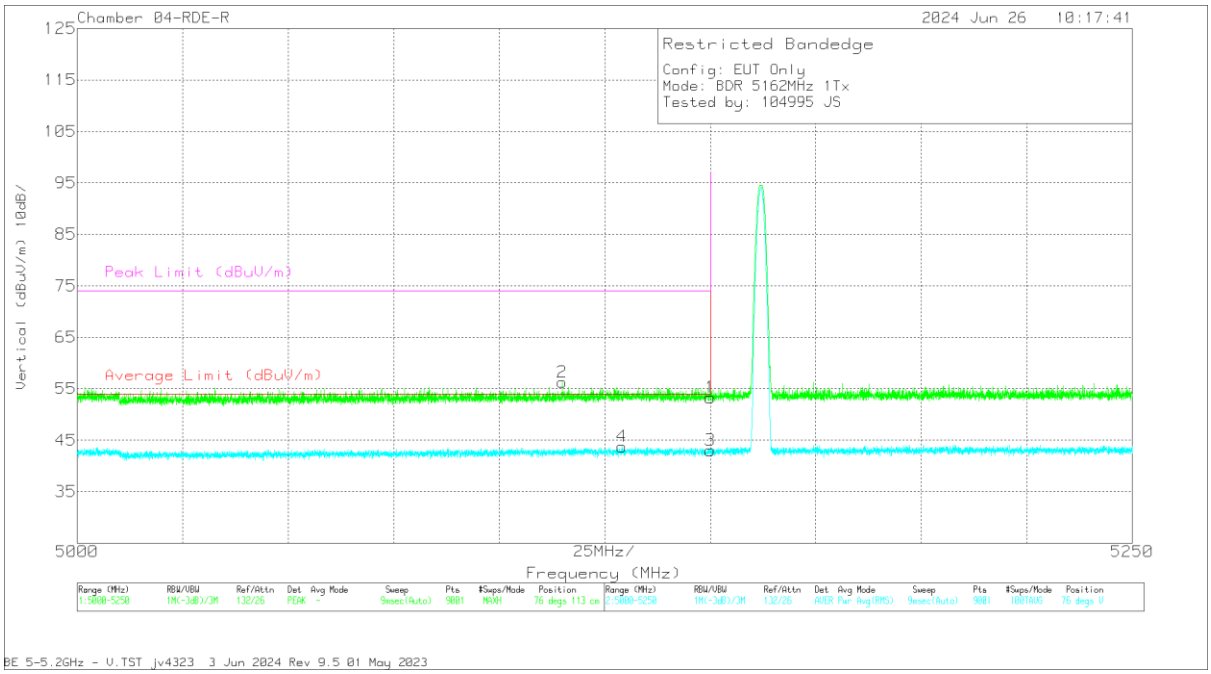
HORIZONTAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	41112 3m ACF (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
4	5132.279	47.14	RMS	34.3	-37.43	44.01	54	-9.99	-	-	283	149	H
2	5132.89	58.96	Pk	34.3	-37.44	55.82	-	-	74	-18.18	283	149	H
1	5150	56.2	Pk	34.3	-37.6	52.9	-	-	74	-21.1	283	149	H
3	5150	45.89	RMS	34.3	-37.6	42.59	54	-11.41	-	-	283	149	H

Pk - Peak detector
RMS - RMS detection

VERTICAL RESULT



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	41112 3m ACF (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
2	5114.973	59.57	Pk	34.2	-37.52	56.25	-	-	74	-17.75	76	113	V
4	5129.084	46.93	RMS	34.3	-37.47	43.76	54	-10.24	-	-	76	113	V
1	5150	56.6	Pk	34.3	-37.6	53.3	-	-	74	-20.7	76	113	V
3	5150	46.33	RMS	34.3	-37.6	43.03	54	-10.97	-	-	76	113	V

Pk - Peak detector
RMS - RMS detection

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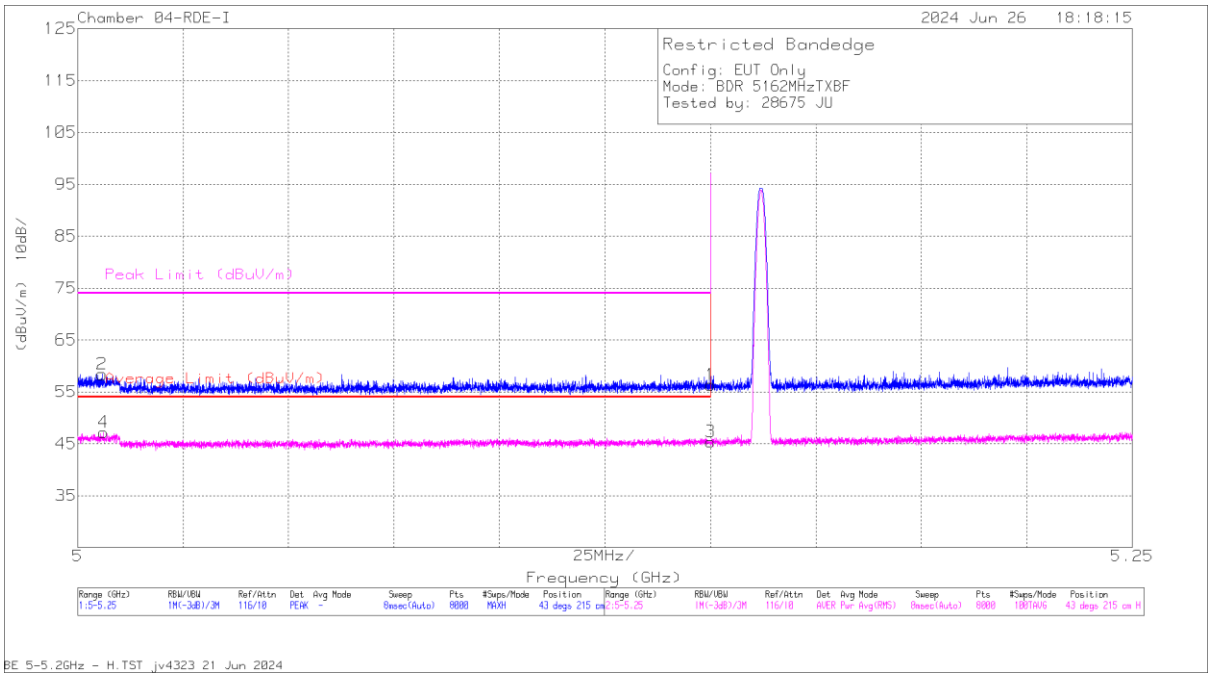
ANT 6 + ANT 5, MIMO TXBF MODE

LOW CHANNEL, 5162MHz

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	39.35	Pk	34.2	-17.2	56.35	-	-	74	-17.65	43	215	H
2	* 5.005782	41.13	Pk	34	-16.7	58.43	-	-	74	-15.57	43	215	H
3	* 5.15	28.4	RMS	34.2	-17.2	45.4	54	-8.6	-	-	43	215	H
4	* 5.006126	29.9	RMS	34	-16.7	47.2	54	-6.8	-	-	43	215	H

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

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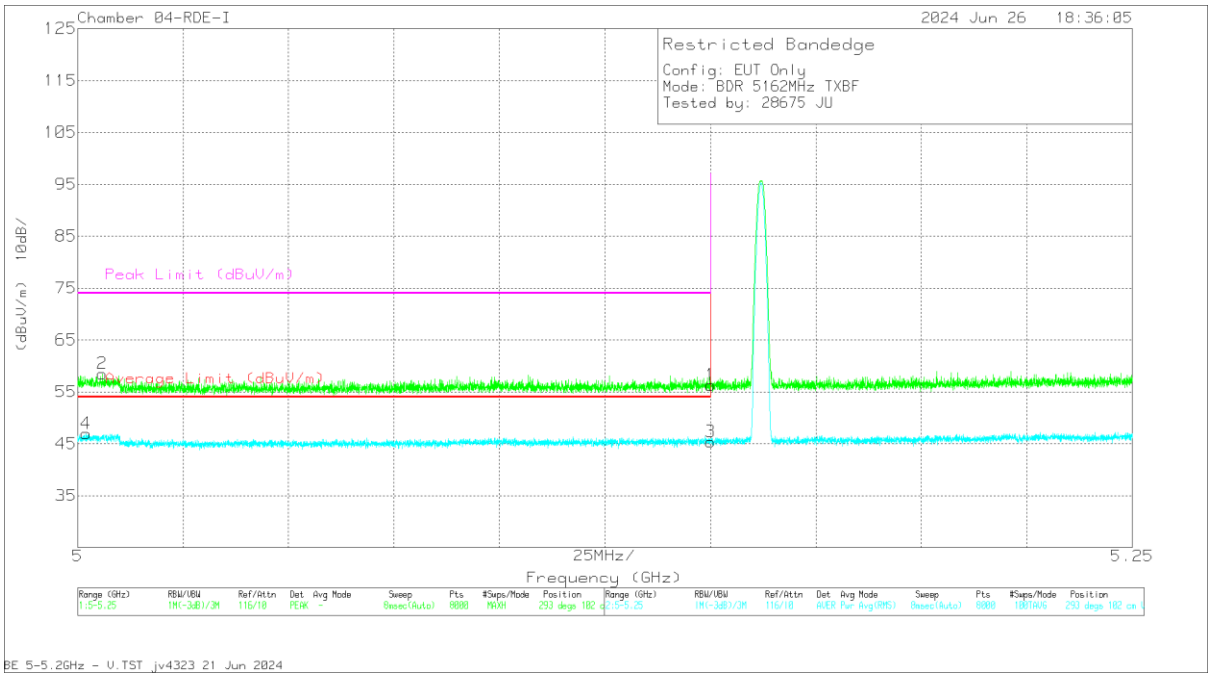
VERTICAL RESULT

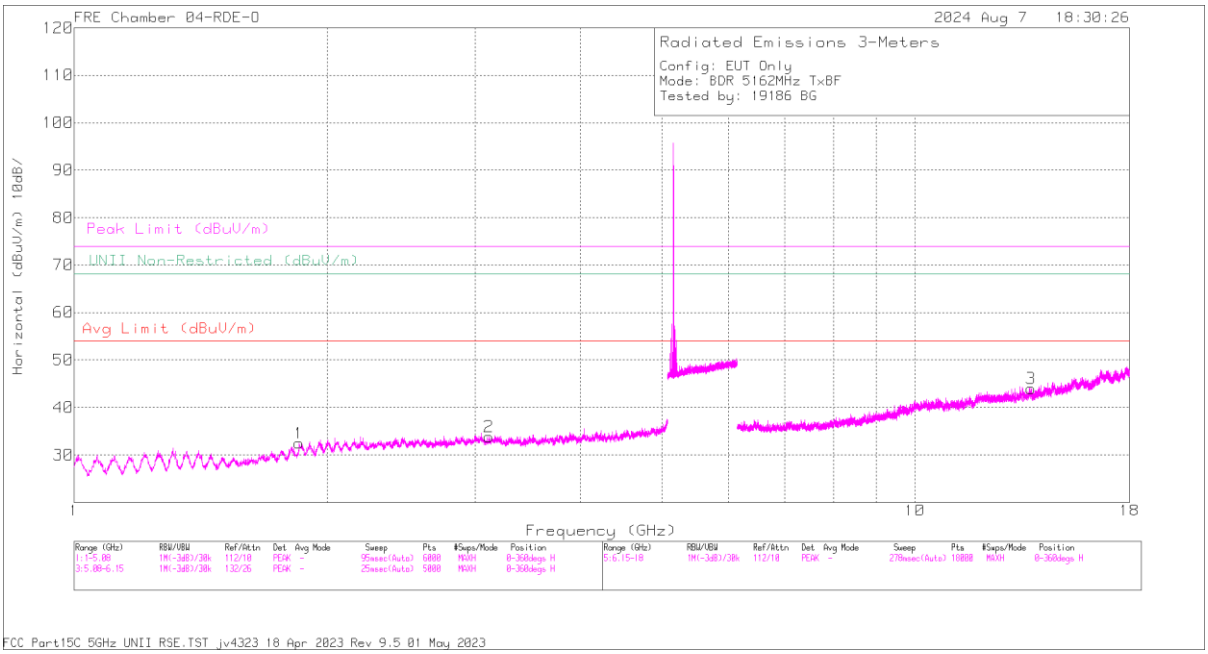


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP Pad(dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	39.3	Pk	34.2	-17.2	56.3	-	-	74	-17.7	293	102	V
2	* 5.005813	41.22	Pk	34	-16.7	58.52	-	-	74	-15.48	293	102	V
3	* 5.15	28.4	RMS	34.2	-17.2	45.4	54	-8.6	-	-	293	102	V
4	* 5.002032	29.66	RMS	34	-16.7	46.96	54	-7.04	-	-	293	102	V

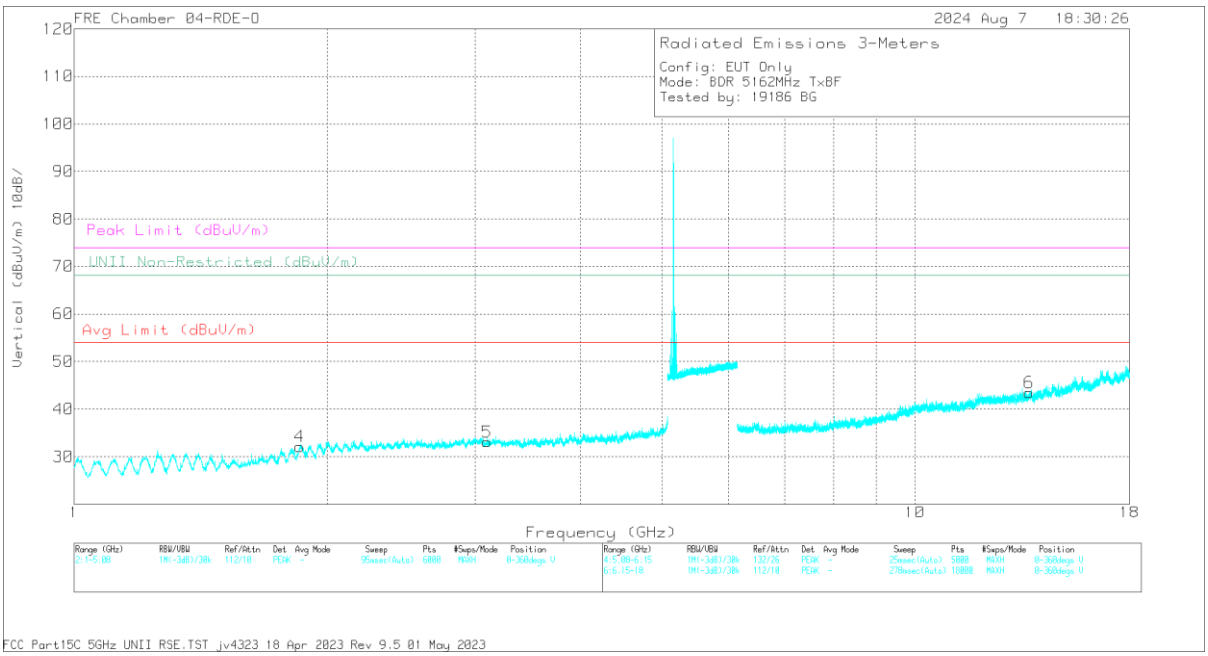
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

10.1.4. BDR LOW POWER, UNII-1 BAND, MIMO TXBF MODE, HARMONIC AND SPURIOUS

LOW CHANNEL, 5162MHz



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80402 1m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.852425	58.15	PK-U	30.9	-46.6	42.45	68.2	-25.75	89	100	H
4	1.856027	58.08	PK-U	30.9	-46.7	42.28	68.2	-25.92	251	199	V
5	3.094153	55.72	PK-U	33.3	-45.7	43.32	68.2	-24.88	309	316	V
2	3.110952	56.46	PK-U	33.3	-45.5	44.26	68.2	-23.94	286	197	H
6	13.68436	51.95	PK-U	39.2	-38.14	53.01	68.2	-15.19	304	397	V
3	13.747328	52	PK-U	39.2	-38.2	53	68.2	-15.2	178	356	H

PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

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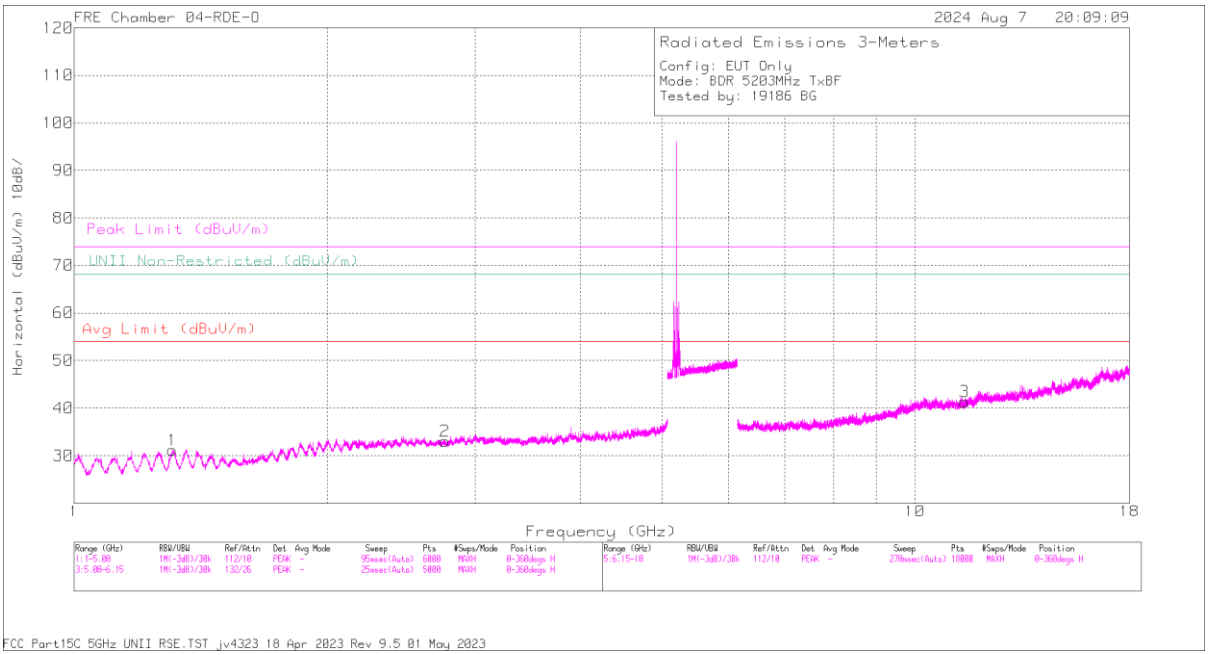
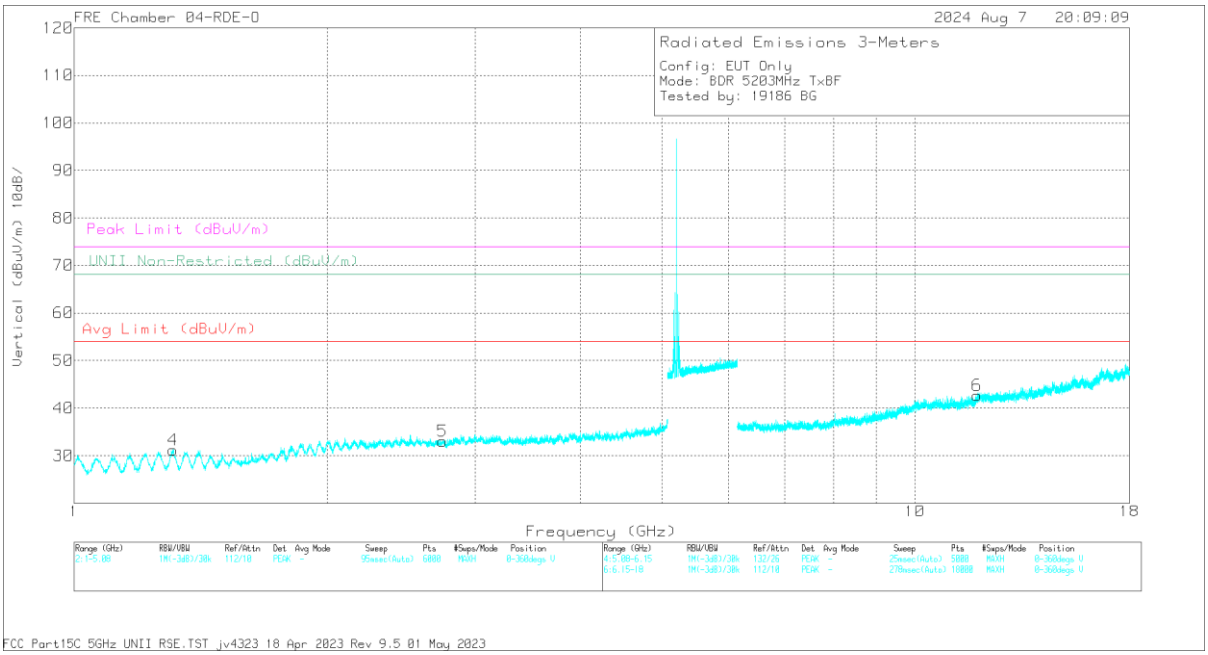
MID CHANNEL, 5203MHz



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80402 1m ACF (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	* 1.308874	58.01	PK-U	29.1	-46.4	40.71	-	-	74	-33.29	358	121	H
	* 1.30867	46.75	ADR	29.1	-46.4	29.45	54	-24.55	-	-	358	121	H
2	* 2.761801	56.58	PK-U	32.6	-46.38	42.8	-	-	74	-31.2	258	175	H
	* 2.761866	45.11	ADR	32.6	-46.39	31.32	54	-22.68	-	-	258	175	H
5	* 2.764995	57.3	PK-U	32.6	-46.3	43.6	-	-	74	-30.4	310	185	H
	* 2.763855	45.16	ADR	32.6	-46.31	31.45	54	-22.55	-	-	310	185	H
4	* 1.310672	58.61	PK-U	29.1	-46.33	41.38	-	-	74	-32.62	227	216	V
	* 1.308413	46.77	ADR	29.1	-46.4	29.47	54	-24.53	-	-	227	216	V
3	* 11.4658	52.75	PK-U	38.4	-39.78	51.37	-	-	74	-22.63	154	263	H
	* 11.466491	41.34	ADR	38.4	-39.75	39.99	54	-14.01	-	-	154	263	H
6	* 11.854327	53.33	PK-U	39	-39.77	52.56	-	-	74	-21.44	8	109	V
	* 11.853595	41.37	ADR	39	-39.8	40.57	54	-13.43	-	-	8	109	V

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

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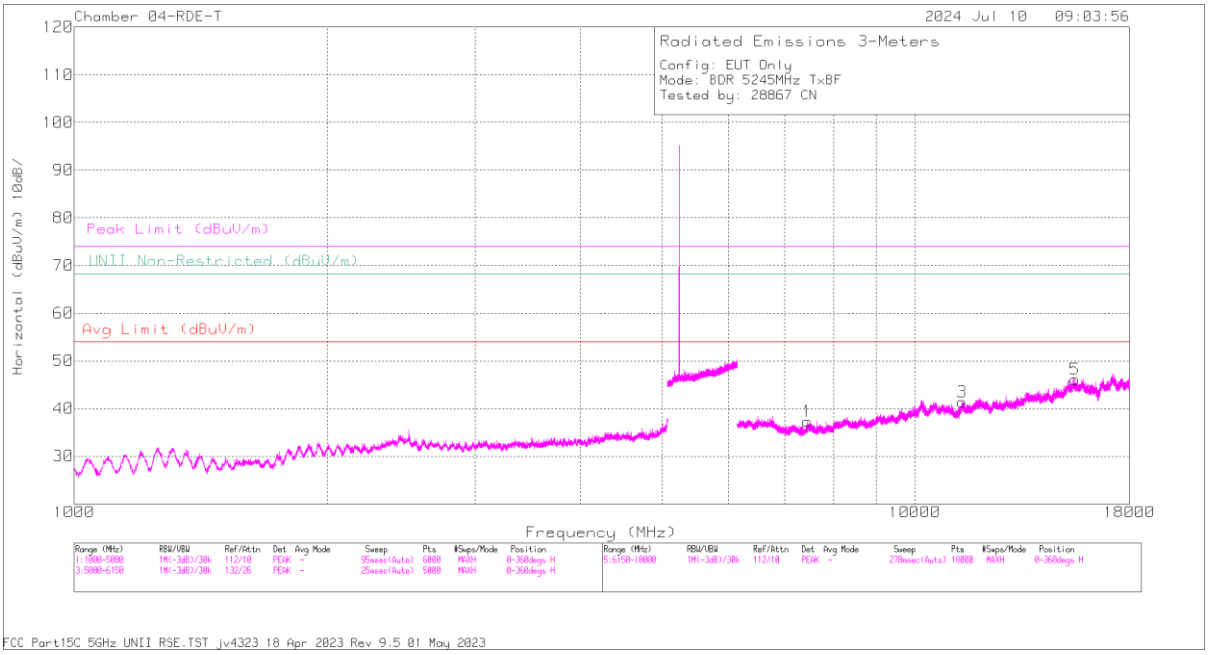
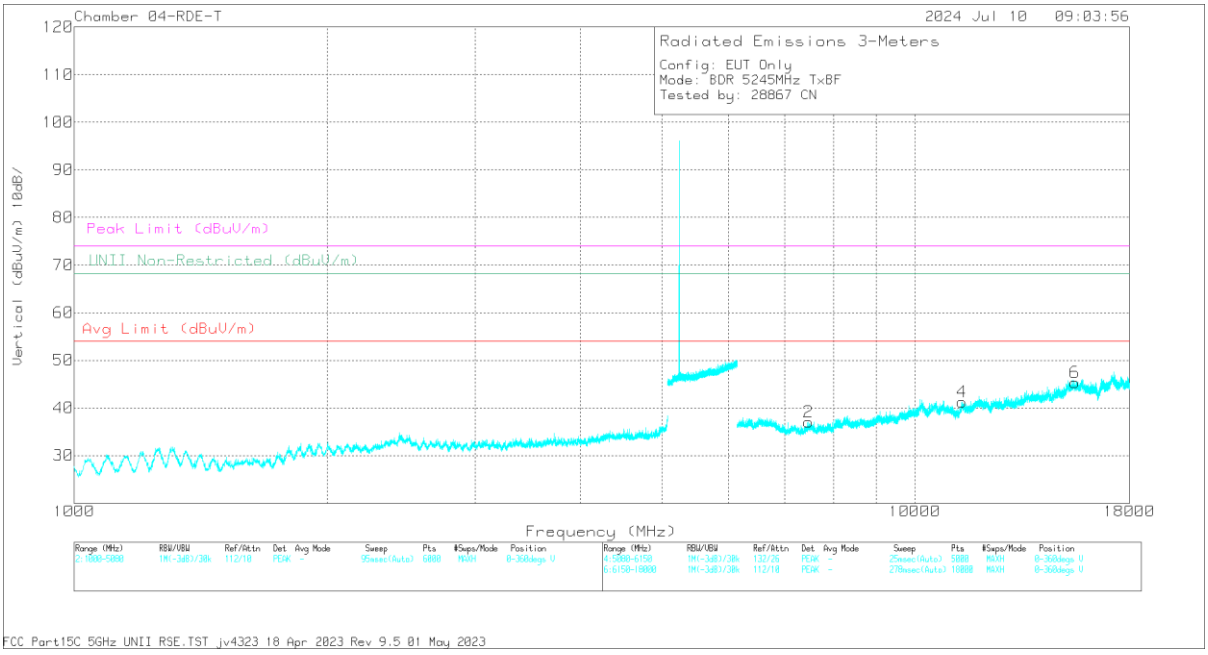
HIGH CHANNEL, 5245MHz



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80430 3m ACF (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	* 7441.18	55.31	PK-U	35.5	-44.23	46.58	-	-	74	-27.42	181	250	H
	* 7440.374	43.46	ADR	35.5	-44.22	34.74	54	-19.26	-	-	181	250	H
3	* 11387.348	53.25	PK-U	37.8	-40.82	50.23	-	-	74	-23.77	78	301	H
	* 11389.661	41.42	ADR	37.8	-40.96	38.26	54	-15.74	-	-	78	301	H
5	* 15497.911	52.39	PK-U	41.6	-39.47	54.52	-	-	74	-19.48	356	141	H
	* 15498.46	41	ADR	41.6	-39.49	43.11	54	-10.89	-	-	356	141	H
2	* 7480.709	55.2	PK-U	35.5	-43.99	46.71	-	-	74	-27.29	11	154	V
	* 7478.596	43.48	ADR	35.5	-43.84	35.14	54	-18.86	-	-	11	154	V
4	* 11384.853	52.65	PK-U	37.8	-40.86	49.59	-	-	74	-24.41	286	192	V
	* 11381.598	41.22	ADR	37.8	-40.67	38.35	54	-15.65	-	-	286	192	V
6	* 15490.546	53.52	PK-U	41.6	-39.61	55.51	-	-	74	-18.49	220	338	V
	* 15493.507	41.71	ADR	41.6	-39.59	43.72	54	-10.28	-	-	220	338	V

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

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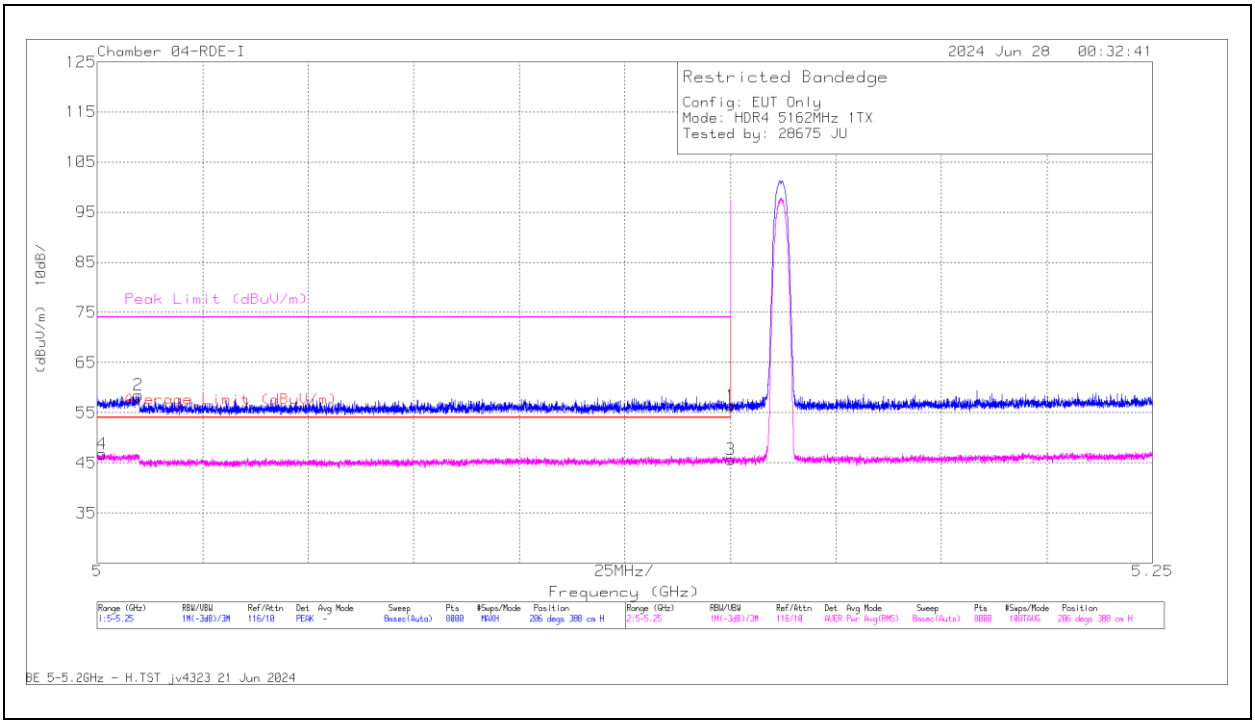
10.1.5. HDR4 HIGH POWER, UNII-1 BAND, BANDEDGE

ANT 6, SISO MODE

LOW CHANNEL, 5162MHz

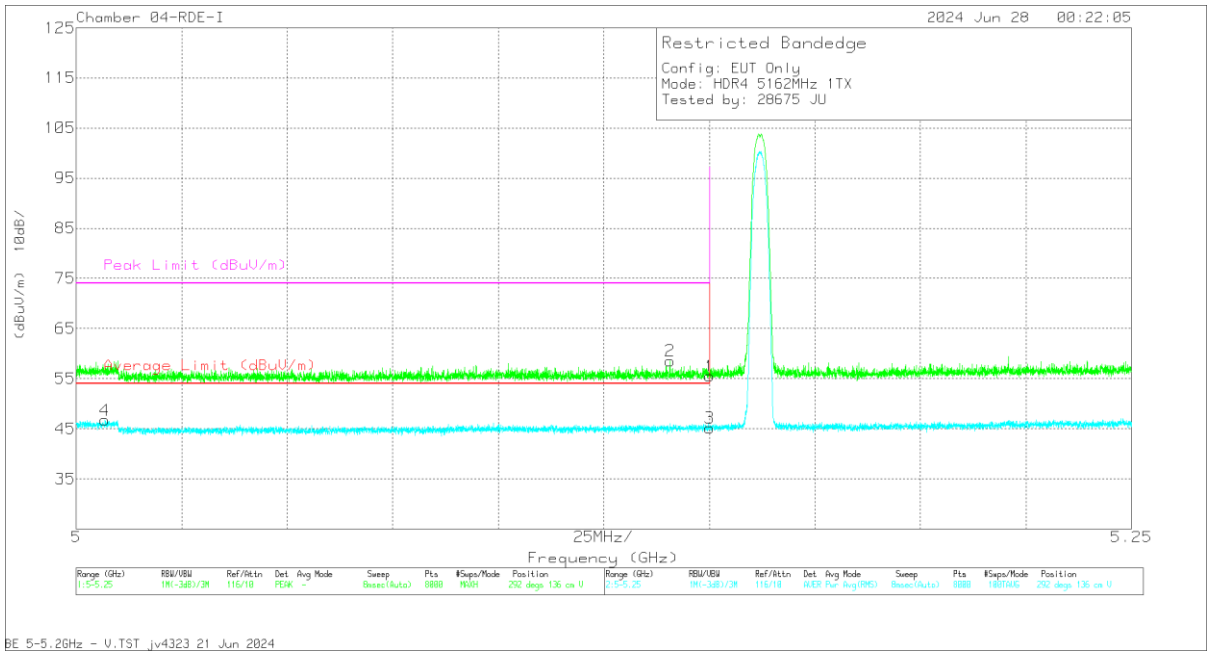
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	39.39	Pk	34.2	-17.2	56.39	-	-	74	-17.61	206	388	H
2	* 5.00972	41.12	Pk	34	-16.6	58.52	-	-	74	-15.48	206	388	H
3	* 5.15	28.6	RMS	34.2	-17.2	45.6	54	-8.4	-	-	206	388	H
4	* 5.001188	29.52	RMS	34	-16.7	46.82	54	-7.18	-	-	206	388	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	38.48	Pk	34.2	-17.2	55.48	-	-	74	-18.52	292	136	V
2	* 5.140674	41.56	Pk	34.2	-17.2	58.56	-	-	74	-15.44	292	136	V
3	* 5.15	28.19	RMS	34.2	-17.2	45.19	54	-8.81	-	-	292	136	V
4	* 5.006782	29.41	RMS	34	-16.7	46.71	54	-7.29	-	-	292	136	V

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

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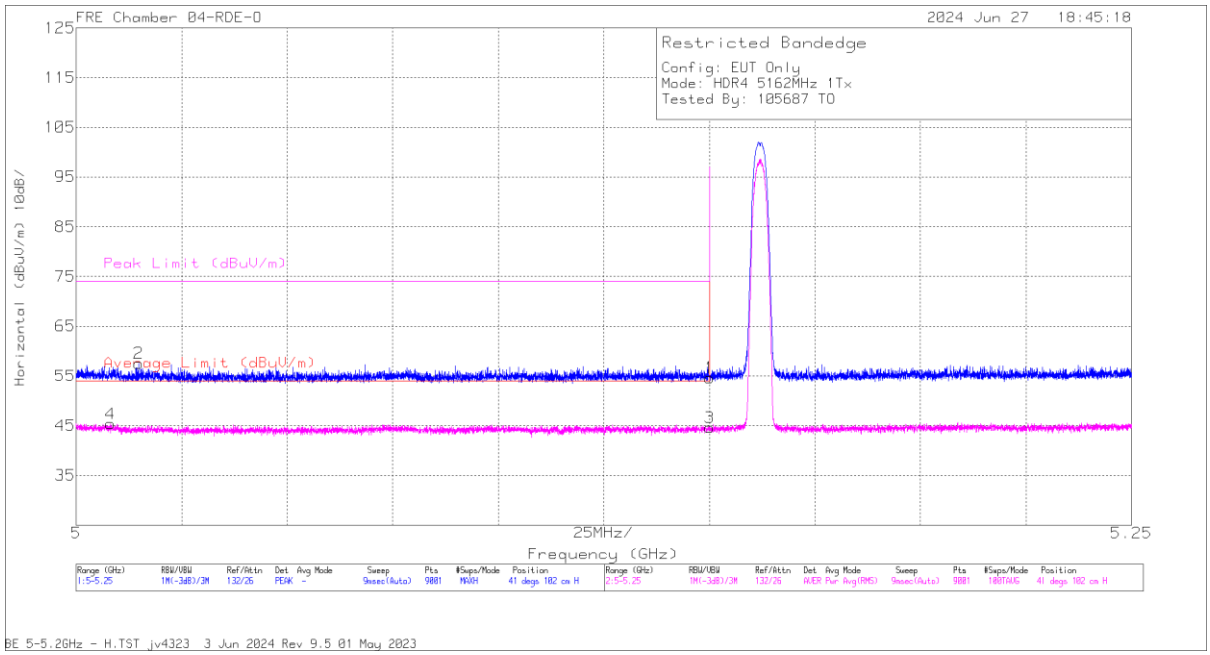
ANT 5, SISO MODE

LOW CHANNEL, 5162MHz

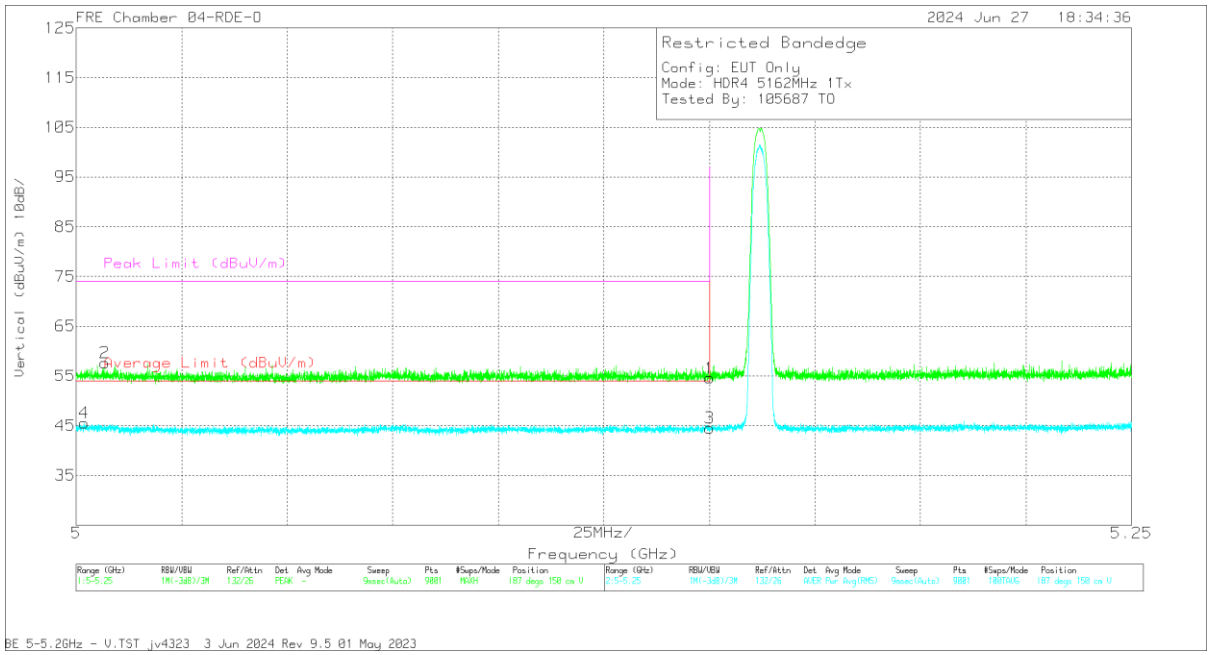
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80402 1m ACF (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
4	5.008139	46.55	RMS	34.6	-35.8	45.35	54	-8.65	-	-	41	102	H
2	5.01475	58.53	Pk	34.6	-35.62	57.51	-	-	74	-16.49	41	102	H
1	5.15	55.31	Pk	34.7	-35.4	54.61	-	-	74	-19.39	41	102	H
3	5.15	45.3	RMS	34.7	-35.4	44.6	54	-9.4	-	-	41	102	H

Pk - Peak detector
RMS - RMS detection

VERTICAL RESULT



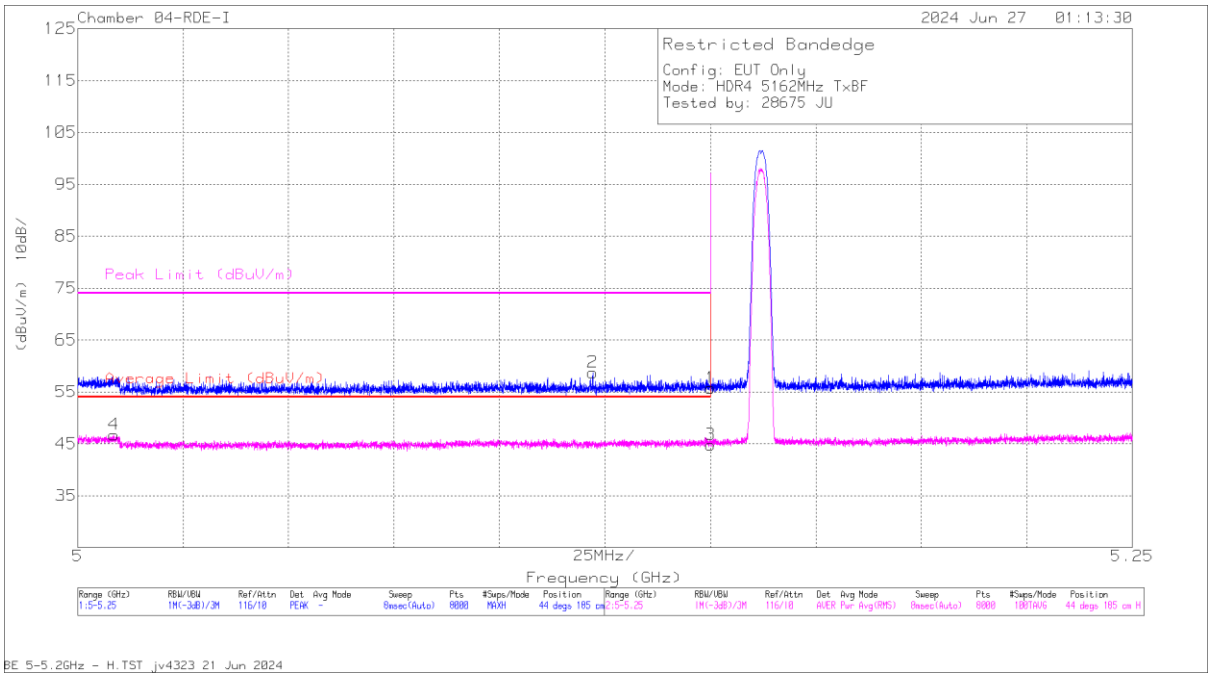
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80402 1m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	5.001833	46.69	RMS	34.6	-35.8	45.49	54	-8.51	-	-	187	150	V
2	5.006806	58.86	Pk	34.6	-35.8	57.66	-	-	74	-16.34	187	150	V
1	5.15	55.26	Pk	34.7	-35.4	54.56	-	-	74	-19.44	187	150	V
3	5.15	45.19	RMS	34.7	-35.4	44.49	54	-9.51	-	-	187	150	V

Pk - Peak detector
RMS - RMS detection

ANT 6 + ANT 5, MIMO TXBF MODE

LOW CHANNEL, 5162MHz

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	38.77	Pk	34.2	-17.2	55.77	-	-	74	-18.23	44	185	H
2	* 5.122109	41.76	Pk	34.1	-17.1	58.76	-	-	74	-15.24	44	185	H
3	* 5.15	27.82	RMS	34.2	-17.2	44.82	54	-9.18	-	-	44	185	H
4	* 5.008595	29.27	RMS	34	-16.5	46.77	54	-7.23	-	-	44	185	H

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

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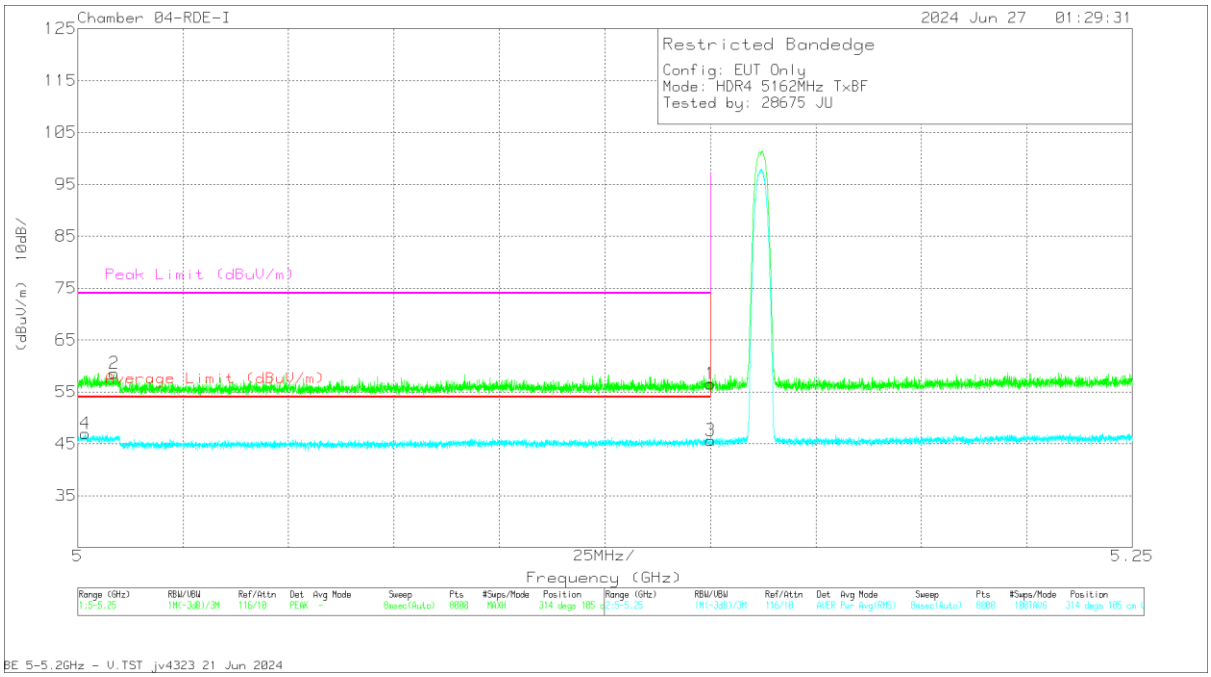
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP 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	* 5.15	39.56	Pk	34.2	-17.2	56.56	-	-	74	-17.44	314	105	V
2	* 5.008689	41.08	Pk	34	-16.5	58.58	-	-	74	-15.42	314	105	V
3	* 5.15	28.66	RMS	34.2	-17.2	45.66	54	-8.34	-	-	314	105	V
4	* 5.001875	29.69	RMS	34	-16.7	46.99	54	-7.01	-	-	314	105	V

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