TEST REPORT

Certificate #4312.01

Product Name:	Smart Door Station
Trade Mark:	GRANDSTREAM
Model No.:	GDS3727
Report Number:	25040917185RFC-3
Test Standards:	FCC 47 CFR Part 15 Subpart E
FCC ID:	YZZGDS3727
Test Result:	PASS
Date of Issue:	July 23, 2025

Prepared for:

Grandstream Networks, Inc.
126 Brookline Ave., 3rd Floor, Boston, MA 02215, USA

Prepared by:

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Version

Version No.	Date	Description
V1.0	July 23, 2025	Original

CONTENTS

1. GENERAL INFORMATION 4
   1.1 CLIENT INFORMATION 4
   1.2 EUT INFORMATION 4
      1.2.1 GENERAL DESCRIPTION OF EUT 4
      1.2.2 DESCRIPTION OF ACCESSORIES 4
   1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD 4
   1.4 OTHER INFORMATION 5
   1.5 DESCRIPTION OF SUPPORT UNITS 6
   1.6 TEST LOCATION 6
   1.7 TEST FACILITY 6
   1.8 DEVIATION FROM STANDARDS 7
   1.9 ABNORMALITIES FROM STANDARD CONDITIONS 7
   1.10 OTHER INFORMATION REQUESTED BY THE CUSTOMER 7
   1.11 MEASUREMENT UNCERTAINTY 7
2. TEST SUMMARY 8
3. EQUIPMENT LIST 9
4. TEST CONFIGURATION 10
   4.1 ENVIRONMENTAL CONDITIONS FOR TESTING 10
      4.1.1 NORMAL OR EXTREME TEST CONDITIONS 10
      4.1.2 RECORD OF NORMAL ENVIRONMENT AND TEST SAMPLE 10
   4.2 TEST CHANNELS 11
   4.3 EUT TEST STATUS 11
   4.4 PRE-SCAN 12
   4.5 TEST SETUP 13
      4.5.1 FOR RADIATED EMISSIONS TEST SETUP 13
      4.5.2 FOR CONDUCTED EMISSIONS TEST SETUP 14
      4.5.3 FOR CONDUCTED RF TEST SETUP 15
   4.6 SYSTEM TEST CONFIGURATION 16
   4.7 DUTY CYCLE 17
5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION 21
   5.1 REFERENCE DOCUMENTS FOR TESTING 21
   5.2 ANTENNA REQUIREMENT 21
   5.3 26 DB BANDWIDTH 22
   5.4 6 DB BANDWIDTH 23
   5.5 MAXIMUM CONDUCTED OUTPUT POWER 24
   5.6 PEAK POWER SPECTRAL DENSITY 28
   5.7 RADIATED EMISSIONS AND BAND EDGE MEASUREMENT 30
   5.8 DYNAMIC FREQUENCY SELECTION 67
   5.9 AC POWER LINE CONDUCTED EMISSION 71

APPENDIX A RF TEST DATA 74
   A1. 99% BANDWIDTH 74
   A2. 26DB BANDWIDTH 117
   A3. PEAK POWER SPECTRAL DENSITY 160
   A4. 6DB BANDWIDTH 207
   A5. DYNAMIC FREQUENCY SELECTION 217

APPENDIX 1 PHOTOS OF TEST SETUP 224
APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS 224

1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Grandstream Networks, Inc.
Address of Applicant:	126 Brookline Ave., 3rd Floor, Boston, MA 02215, USA
Manufacturer:	Grandstream Networks, Inc.
Address of Manufacturer:	126 Brookline Ave., 3rd Floor, Boston, MA 02215, USA

1.2 EUT INFORMATION

1.2.1 General Description of EUT

Product Name:	Smart Door Station		
Model No.:	GDS3727		
Trade Mark:	GRANDSTREAM		
DUT Stage:	Identical Prototype		
EUT Supports Function: (Provided by the customer)	2.4 GHz ISM Band:	IEEE 802.11b/g/n/ax	
		Bluetooth V5.0	
	5 GHz U-NII Bands:	5 150 MHz to 5 250 MHz	IEEE 802.11a/n/ac/ax
		5 250 MHz to 5 350 MHz	IEEE 802.11a/n/ac/ax
		5 470 MHz to 5 725 MHz	IEEE 802.11a/n/ac/ax
		5 725 MHz to 5 850 MHz	IEEE 802.11a/n/ac/ax
	NFC:	13.553 MHz to 13.567 MHz	
	RF ID:	13.553 MHz to 13.567 MHz	
		125 kHz	
Sample Received Date:	April 9, 2025		
Sample Tested Date:	April 14, 2025 to July 4, 2025		

Remark: The above EUT's information was provided by customer. Please refer to the specifications or user's manual for more detailed description.

1.2.2 Description of Accessories

Others
Wall Bracket, 13.56MHz RFID Cards

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

Frequency Bands:	5150 MHz to 5250 MHz (U-NII-1)
	5250 MHz to 5350 MHz (U-NII-2A)
	5470 MHz to 5725 MHz (U-NII-2C)
	5725 MHz to 5850 MHz (U-NII-3)
Frequency Ranges:	5180 MHz to 5240 MHz
	5260 MHz to 5320 MHz
	5500 MHz to 5720 MHz
	5745 MHz to 5825 MHz
Support Standards:	IEEE 802.11a/n/ac/ax
TPC Function:	Not Support
DFS Operational mode:	Slave without radar Interference detection function
Type of Modulation:	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK)
	IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK)

	IEEE 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK)
	IEEE 802.11ax: OFDM /OFDMA Note1 (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	IEEE 802.11a/n-HT20/ac-VHT20/ax-HE20: 20 MHz
	IEEE 802.11n-HT40/ac-VHT40/ax-HE40: 40 MHz
Data Rate:	IEEE 802.11a: Up to 54 Mbps
	IEEE 802.11n-HT20: Up to MCS7
	IEEE 802.11n-HT40: Up to MCS7
	IEEE 802.11ac-VHT20: Up to MCS8
	IEEE 802.11ac-VHT40: Up to MCS9
	IEEE 802.11ax-HE20/HE40: Up to MCS11
Number of Channels:	5150 MHz to 5250 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20/ax-HE20 2 for IEEE 802.11n-HT40)/ac-VHT40/ax-HE40
	5250 MHz to 5350 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20/ax-HE20 2 for IEEE 802.11n-HT40)/ac-VHT40/ax-HE40
	5470 MHz to 5725 MHz: 12 for IEEE 802.11a/n-HT20/ac-VHT20/ax-HE20 6 for IEEE 802.11n-HT40/ac-VHT40/ax-HE40
	5725 MHz to 5850 MHz: 5 for IEEE 802.11a/n-HT20/ac-VHT20/ax-HE20 2 for IEEE 802.11n-HT40/ac-VHT40/ax-HE40
Antenna Type:	PIFA Antenna
Antenna Gain: (Provided by the customer)	5150 MHz to 5250 MHz: 4.55 dBi
	5250 MHz to 5350 MHz: 4.55 dBi
	5470 MHz to 5725 MHz: 4.55 dBi
	5725 MHz to 5850 MHz: 4.55 dBi

Maximum conducted output power (dBm):

	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
IEEE 802.11a:	19.03	19.08	16.35	17.93
IEEE 802.11n-HT20:	18.94	14.28	18.81	17.46
IEEE 802.11n-HT40:	18.44	18.29	16.34	17.32
IEEE 802.11ac-VHT20	18.31	14.76	19.35	17.69
IEEE 802.11ac-VHT40	18.45	18.21	16.02	17.23
IEEE 802.11ax-HE20	18.35	18.09	18.95	17.53
IEEE 802.11ax-HE40	18.69	18.50	19.64	17.32

Normal Test Voltage:	12Vdc

Note:
1. For 802.11ax modes, the device not support partial RU mode

1.4 OTHER INFORMATION

Operation Frequency Each of Channel				
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
IEEE 802.11a, IEEE 802.11n-HT20, IEEE 802.11ac-VHT20 IEEE 802.11ax-HE20	f = 5000 + 5k, k = 32 + 4n			f = 5000 + 5k, k = 145 + 4n
	n = 1,…, 4	n = 5,…, 8	n = 17,…, 27	n = 1,…, 5
IEEE 802.11n-HT40, IEEE 802.11ac-VHT40	f = 5000 + 5k, k = 30 + 8n			f = 5000 + 5k, k = 143 + 8n

IEEE 802.11ax-HE40	n = 1, 2	n = 1,…, 5	n = 9,…, 13	n = 1, 2
Note: **f** is the operating frequency (MHz); **k** is the operating channel.				

1.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	FCC ID	Supplied by
Notebook	DELL	Latitude 3400	16238087894	N/A	Notebook
Mouse	DELL	MS111	CN-011D3V-738	N/A	UnionTrust
Power over Ethernet Injector	Cisco	MA-INJ-4	QS-6593-01N A02	N/A	UnionTrust
Switching Power Adapter	FSP	FSP025-1AD207A	0213A03K	N/A	UnionTrust
Wireless Home Router	SAGEMCOM	FAST5280	253703944	VW3FAST5280	UnionTrust
Key-Press Attenuator	Huaxin	KT2.5-90/1S-2S	UTTL-EN023	N/A	UnionTrust
4 Way Divider	WOKEN	0120A040560002D	UTTL-EN028	N/A	UnionTrust

2) Support Cable

Cable No.	Description	Connector	Length	Supplied by
1	Antenna Cable	SMA	0.1Meter	Applicant

1.6 TEST LOCATION

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6th, Baoneng Science and Technology Park, Longhua Street, Longhua District, Shenzhen, China
Telephone: +86 (0) 755 2823 0888
Fax: +86 (0) 755 2823 0886

1.7 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L9069
The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

A2LA-Lab Certificate No.: 4312.01
Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for

the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED Wireless Device Testing Laboratories
CAB identifier: CN0032

FCC Accredited Lab.
Designation Number: CN1194
Test Firm Registration Number: 259480

1.8 DEVIATION FROM STANDARDS

None.

1.9 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.10 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

1.11 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Measurement Uncertainty
1	Conducted emission 9kHz-150kHz	±3.2 dB
2	Conducted emission 150kHz-30MHz	±2.7 dB
3	Radiated emission 9kHz-30MHz	± 4.7 dB
4	Radiated emission 30MHz-1GHz	± 4.9 dB
5	Radiated emission 1GHz-18GHz	± 4.8 dB
6	Radiated emission 18GHz-26GHz	± 5.1 dB
7	Radiated emission 26GHz-40GHz	± 5.1 dB
8	Conducted spurious emissions	± 2.7 dB
9	RF Power, Conducted	± 0.68 dB
10	Occupied Bandwidth	± 1.86 %
11	Radio Frequency	5.6 GHz: ± 6.4 x 10^{-8}
12	Transmission Time	± 0.19 %

2. TEST SUMMARY

FCC 47 CFR Part 15 Subpart E Test Cases			
Test Item	**Test Requirement**	**Test Method**	**Result**
Antenna Requirement	FCC 47 CFR Part 15 Subpart C Section 15.203 FCC 47 CFR Part 15 Subpart E Section 15.407(a)(1) (2)	N/A	PASS
26 dB emission bandwidth	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(2)(5)	KDB 789033 D02 v02r01 Section C.1	PASS
6 dB bandwidth	FCC 47 CFR Part 15 Subpart E Section 15.407 (e)	KDB 789033 D02 v02r01 Section C.2	PASS
Maximum conducted output power	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)	KDB 789033 D02 v02r01 Section E.3.a (Method PM)	PASS
Peak Power Spectral Density	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)	KDB 789033 D02 v02r01 Section F	PASS
Radiated Emissions and Band Edge Measurement	FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(1)(2)(3)(4)(6) FCC 47 CFR Part 15 Subpart C Section 15.209/205	KDB 789033 D02 v02r01 Section G.3, G.4, G.5, and G.6	PASS
Dynamic Frequency Selection	FCC 47 CFR Part 15 Subpart E Section 15.407 (h)	KDB 905462 D03 Client Without DFS New Rules v01r02	PASS
AC Power Line Conducted Emission	FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(6) FCC 47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013, Section 6.2.	PASS
Note: 1) N/A: In this whole report not applicable.			
Disclaimer and Explanations: The declared of product specification and data (e.g. antenna gain, RF specification, etc) for EUT presented in the report are provided by the customer, and the customer takes all the responsibilities for the accuracy of product specification.			

For Dynamic Frequency Selection

Test Case	Result
Channel Availability Check Time	N/A[1]
U-NII Detection Bandwidth	N/A[1]
Channel Closing Transmission Time	PASS
Channel Move Time	PASS
DFS Detection Threshold	N/A[1]
Non- Occupancy Period	N/A[1]
Note: 1) The EUT is slave, NA In this whole report not applicable.	

3. EQUIPMENT LIST

Radiated Emission Test Equipment List						
Used	**Equipment**	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date**	**Cal. Due date**
☒	3m SAC	ETS-LINDGREN	3m	Euroshiedpn-CT001270-1317	11-Nov-2023	10-Nov-2026
☒	Receiver	R&S	ESIB26	100114	25-Oct-2024	24-Oct-2025
☒	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	28-Mar-2025	27-Mar-2026
☒	Loop Antenna	ETS-LINDGREN	6502	00202525	28-Oct-2024	27-Oct-2025
☒	Broadband Antenna	ETS-LINDGREN	3142E	00201566	29-Oct-2024	28-Oct-2025
☒	6dB Attenuator	Talent	RA6A5-N-18	18103001	29-Oct-2024	28-Oct-2025
☒	Preamplifier	HP	8447F	2805A02960	25-Oct-2024	24-Oct-2025
☒	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201541	29-Mar-2025	28-Mar-2026
☒	Pre-amplifier	ETS-Lindgren	00118385	00201874	29-Mar-2025	28-Mar-2026
☒	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3116C-PA	00202652	28-Oct-2024	27-Oct-2025
☒	Pre-amplifier	ETS-Lindgren	00118384	00202652	28-Oct-2024	27-Oct-2025
☒	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A	N/A
☒	Band Rejection Filter (5150MHz~5880MHz)	Micro-Tronics	BRM50716	G186	25-Oct-2024	24-Oct-2025
☒	Test Software	Audix	e3	Software Version: 9.160323		

Conducted Emission Test Equipment List						
Used	**Equipment**	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date**	**Cal. Due date**
☒	Receiver	R&S	ESCI3	1166.5950.03	25-Oct-2024	24-Oct-2025
☒	Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	25-Oct-2024	24-Oct-2025
☒	LISN	R&S	EVN216	3560.6550.12	26-Sep-2024	25-Sep-2025
☐	LISN	ETS-Lindgren	3816/2SH	00201088	25-Oct-2024	24-Oct-2025
☒	Test Software	EZ-EMC	EZ-CON	Software Version: EMC-CON 3A1.1		

Conducted RF test Equipment List						
Used	**Equipment**	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date**	**Cal. Due date**
☒	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	28-Mar-2025	27-Mar-2026
☒	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430035	25-Oct-2024	24-Oct-2025
☒	MXG X-Series RF Vector Signal Generator	KEYSIGHT	N5182B	MY51350267	25-Oct-2024	24-Oct-2025

4. TEST CONFIGURATION

4.1 ENVIRONMENTAL CONDITIONS FOR TESTING

4.1.1 Normal or Extreme Test Conditions

Environment Parameter	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage (V)	Relative Humidity (%)
NT/NV	+15 to +35	12	20 to 75
Remark: 1) NV: Normal Voltage; NT: Normal Temperature			

4.1.2 Record of Normal Environment and Test Sample

Test Item	Temperature (°C)	Relative Humidity (%)	Pressure (kPa)	Sample No.	Tested by
26 dB emission bandwidth	25.2	43.4	99.7	S202504095710-ZJA01/4	David Du
6 dB bandwidth					
Maximum conducted output power					
Peak Power Spectral Density					
Dynamic Frequency Selection					
Radiated Emissions and Band Edge Measurement	26.4	55.8	100.0	S202504095710-ZJA02/4	Leo Li
AC Power Line Conducted Emission	23.8	46.4	100.1	S202504095710-ZJA03/4	Linson Xie

4.2 TEST CHANNELS

Mode	Tx/Rx Frequency	Test RF Channel Lists			
		Lowest(L)	Middle(M)	Highest(H)	Straddle band
IEEE 802.11a IEEE 802.11n-HT20 IEEE 802.11ac-VHT20 IEEE 802.11ax-HE20	5150 MHz to 5250 MHz	Channel 36	Channel 44	Channel 48	--
		5180 MHz	5220 MHz	5240 MHz	--
	5250 MHz to 5350 MHz	Channel 52	Channel 60	Channel 64	--
		5260 MHz	5300 MHz	5320 MHz	--
	5470 MHz to 5725 MHz	Channel 100	Channel 116	Channel 140	Channel 144
		5500 MHz	5580 MHz	5700 MHz	5720 MHz
	5725 MHz to 5850 MHz	Channel 149	Channel 157	Channel 165	--
		5745 MHz	5785 MHz	5825 MHz	--
IEEE 802.11n-HT40 IEEE 802.11ac-VHT40 IEEE 802.11ax-HE40	5150 MHz to 5250 MHz	Channel 38	--	Channel 46	--
		5190 MHz	--	5230 MHz	--
	5250 MHz to 5350 MHz	Channel 54	--	Channel 62	--
		5270 MHz	--	5310 MHz	--
	5470 MHz to 5725 MHz	Channel 102	Channel 110	Channel 134	Channel 142
		5510 MHz	5550 MHz	5670 MHz	5710 MHz
	5725 MHz to 5850 MHz	Channel 151	--	Channel 159	--
		5755 MHz	--	5795 MHz	--

4.3 EUT TEST STATUS

Mode	Tx/Rx Function	Description
IEEE 802.11a/n/ac/ax	1Tx/1Rx	1. Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

Power Setting				
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
IEEE 802.11a	Default	Default	16	Default
IEEE 802.11n-HT20	Default	16	Default	Default
IEEE 802.11n-HT40	Default	Default	16	Default
IEEE 802.11ac-VHT20	Default	16	Default	Default
IEEE 802.11ac-VHT40	Default	Default	16	Default
IEEE 802.11ax-HE20	Default	Default	Default	Default
IEEE 802.11ax-HE40	Default	Default	Default	Default

Test Software
Test software name: Command

4.4 PRE-SCAN

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. Following data rate was (were) selected for the final test as listed below

Mode	Worst-case data rates
IEEE 802.11a	6 Mbps
IEEE 802.11n-HT20	MCS0
IEEE 802.11n-HT40	MCS0
IEEE 802.11ac-VHT20	MCS0
IEEE 802.11ac-VHT40	MCS0
IEEE 802.11ax-HE20	MCS0
IEEE 802.11ax-HE40	MCS0

4.5 TEST SETUP

4.5.1 For Radiated Emissions test setup

Figure 1. Below 30MHz

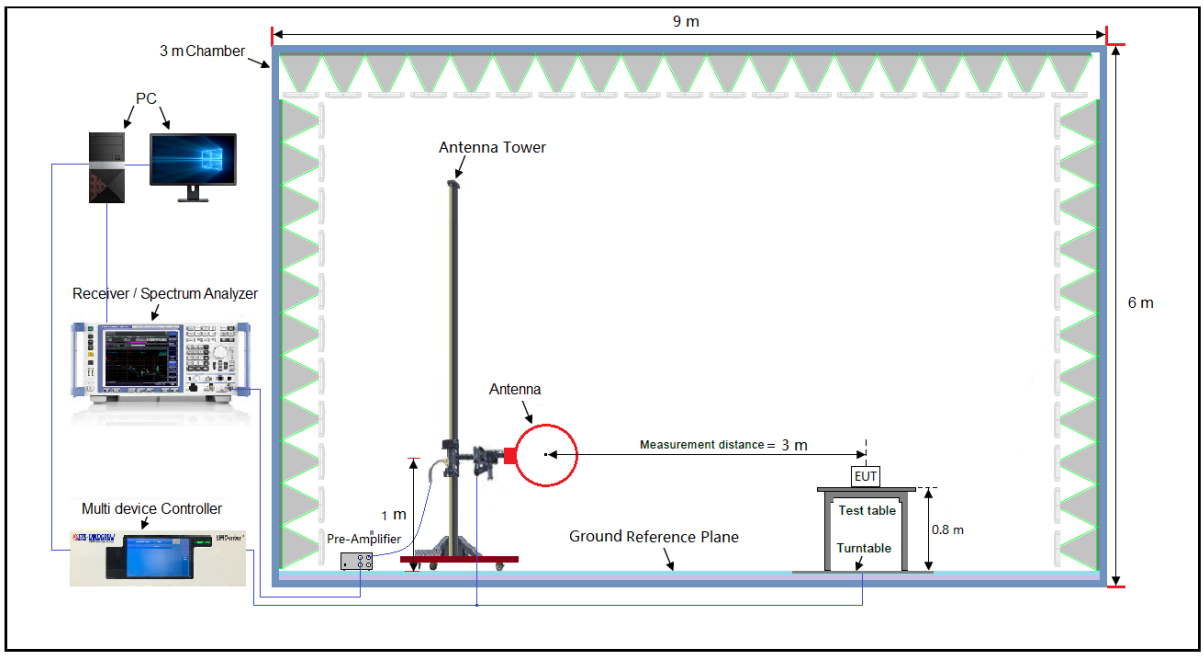


Figure 2. 30MHz to 1GHz

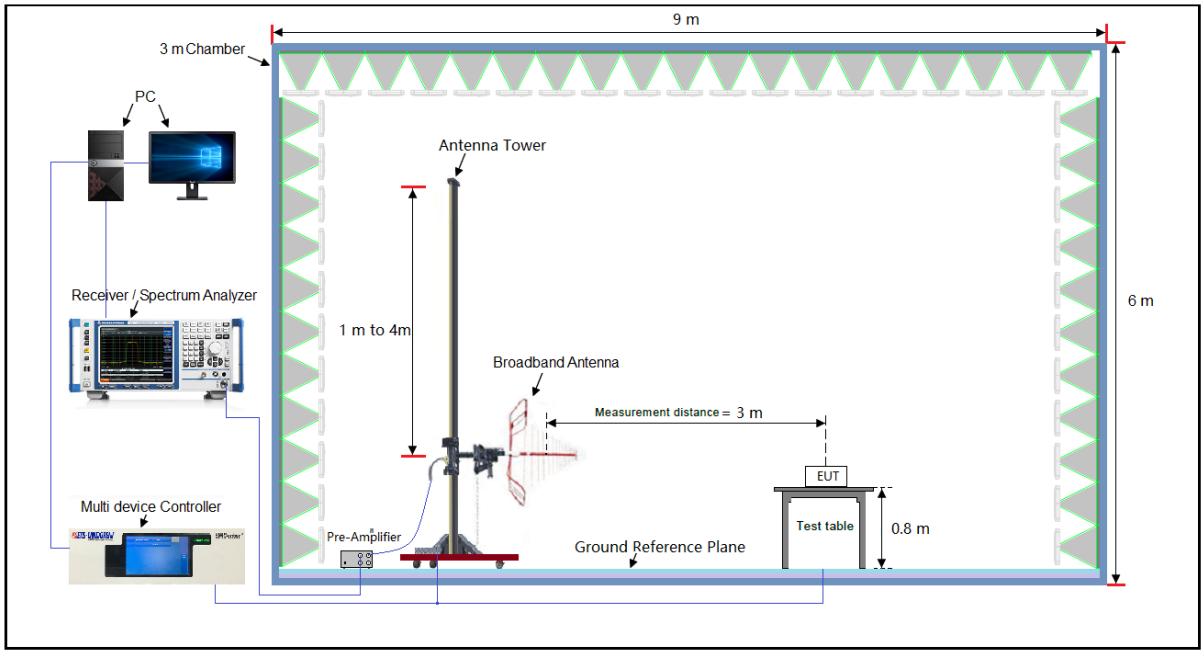
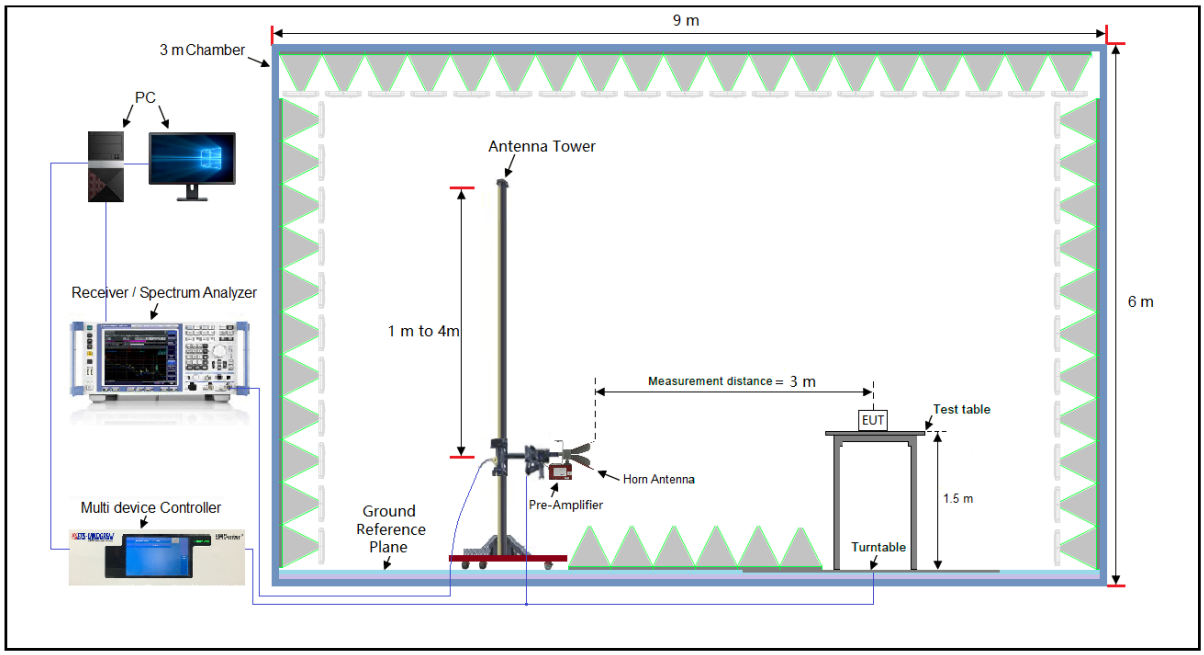
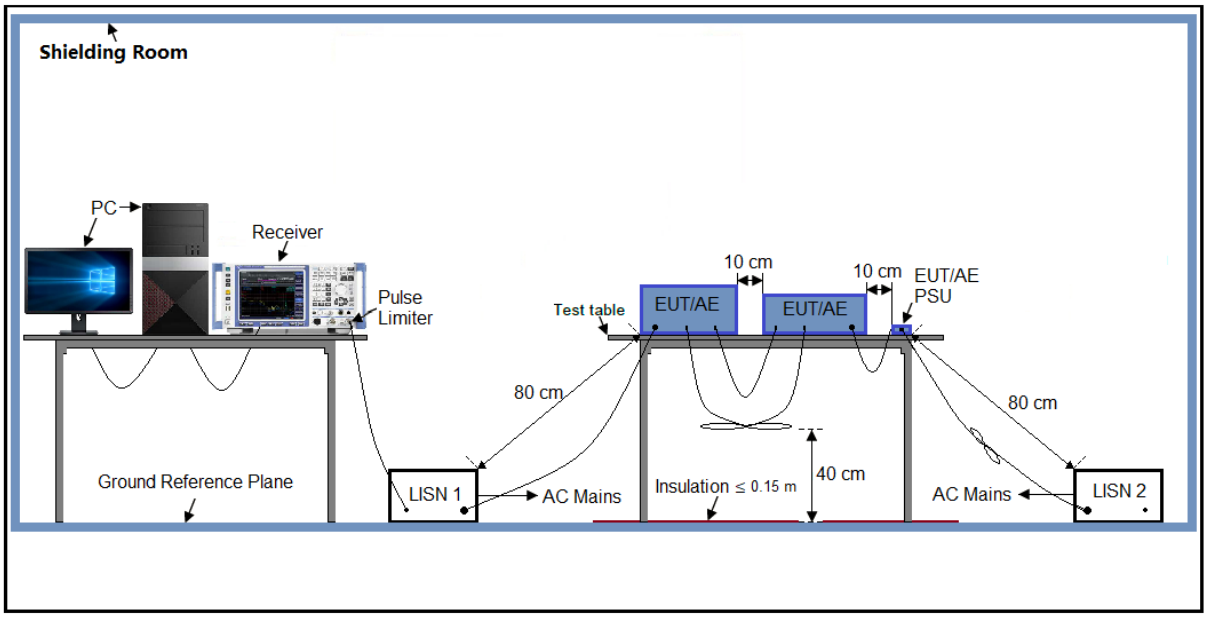


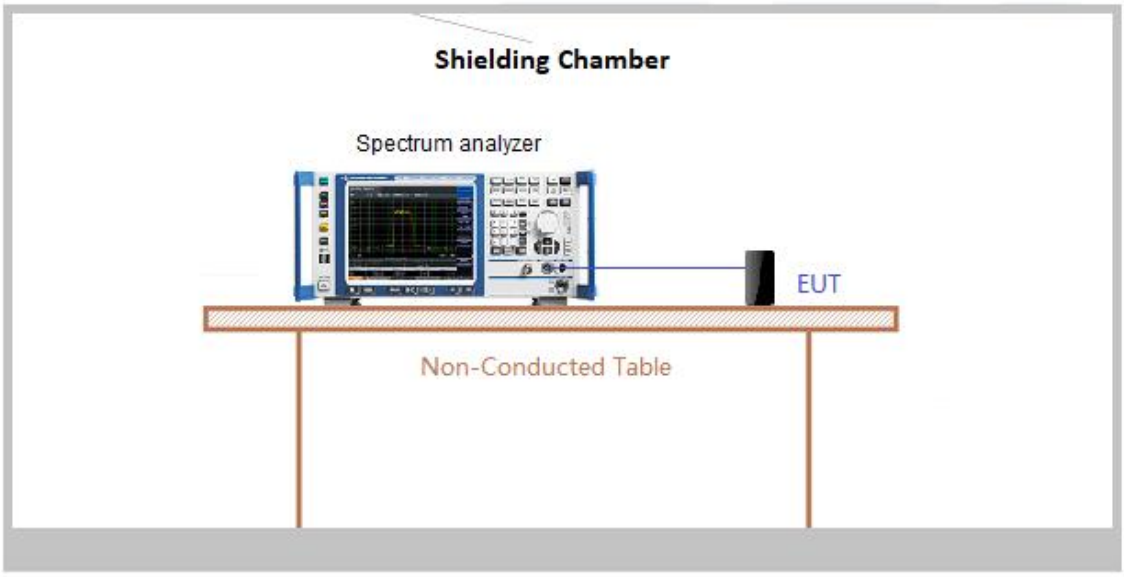
Figure 3. Above 1GHz



4.5.2 For Conducted Emissions test setup



4.5.3 For Conducted RF test setup



Normal Environment

4.6 SYSTEM TEST CONFIGURATION

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.Only the worst case data were recorded in this test report.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. Therefore, all final radiated testing was performed with the EUT in (see table below) orientation.

Frequency	Mode	Antenna Port	Worst-case axis positioning
Above 1GHz	1TX	Chain 0	Y axis

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

4.7 DUTY CYCLE

Test Procedure: ANSI C63.10-2013 Clause 12.2.

Test Results

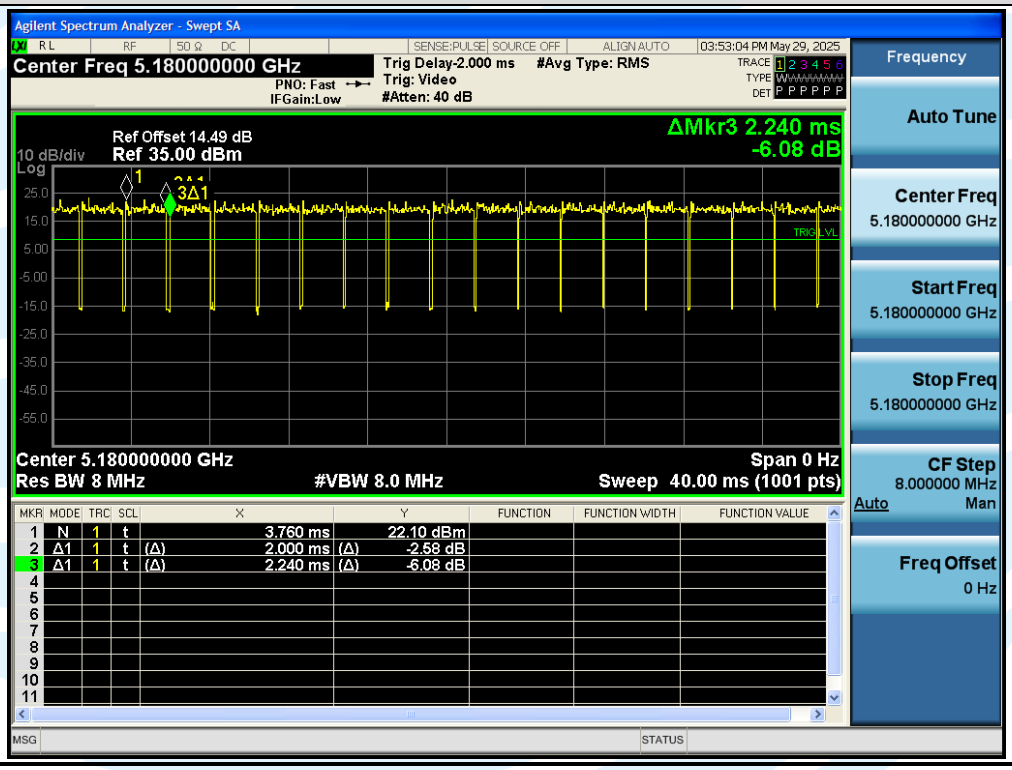
Mode	Data Rates	On Time (msec)	Period (msec)	Duty Cycle (linear)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/T Minimum VBW (kHz)
IEEE 802.11a	6 Mbps	2.000	2.240	0.89	89.29	0.49	0.50
IEEE 802.11n-HT20	MCS 0	5.080	5.240	0.97	96.95	0.13	0.20
IEEE 802.11n-HT40	MCS 0	4.880	5.120	0.95	95.31	0.21	0.20
IEEE 802.11ac-VHT20	MCS 0	5.080	5.280	0.96	96.21	0.17	0.20
IEEE 802.11ac-VHT40	MCS 0	4.880	5.000	0.98	97.60	0.11	0.20
IEEE 802.11ax-HE20	MCS 0	3.880	4.040	0.96	96.04	0.18	0.26
IEEE 802.11ax-HE40	MCS 0	3.880	4.120	0.94	94.17	0.26	0.26

Remark:

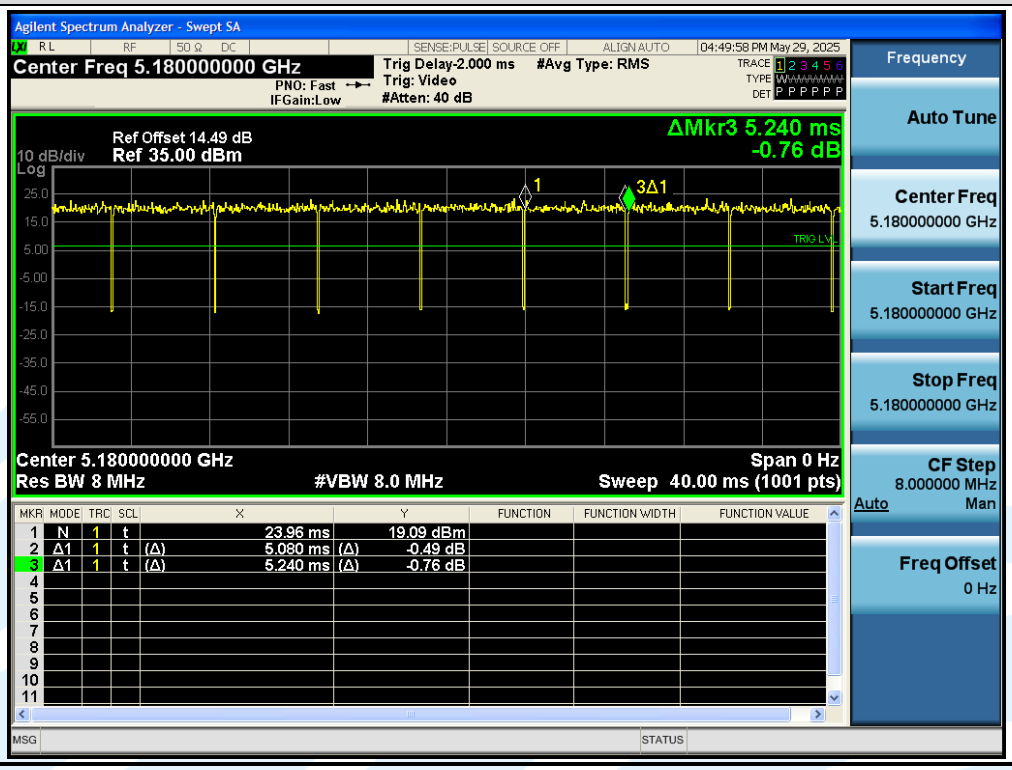
1) Duty cycle= On Time/ Period;
2) Duty Cycle factor = 10 * log(1/ Duty cycle);
3) Average factor = 20 $\log_{10}$ Duty Cycle.

The test plots as follows

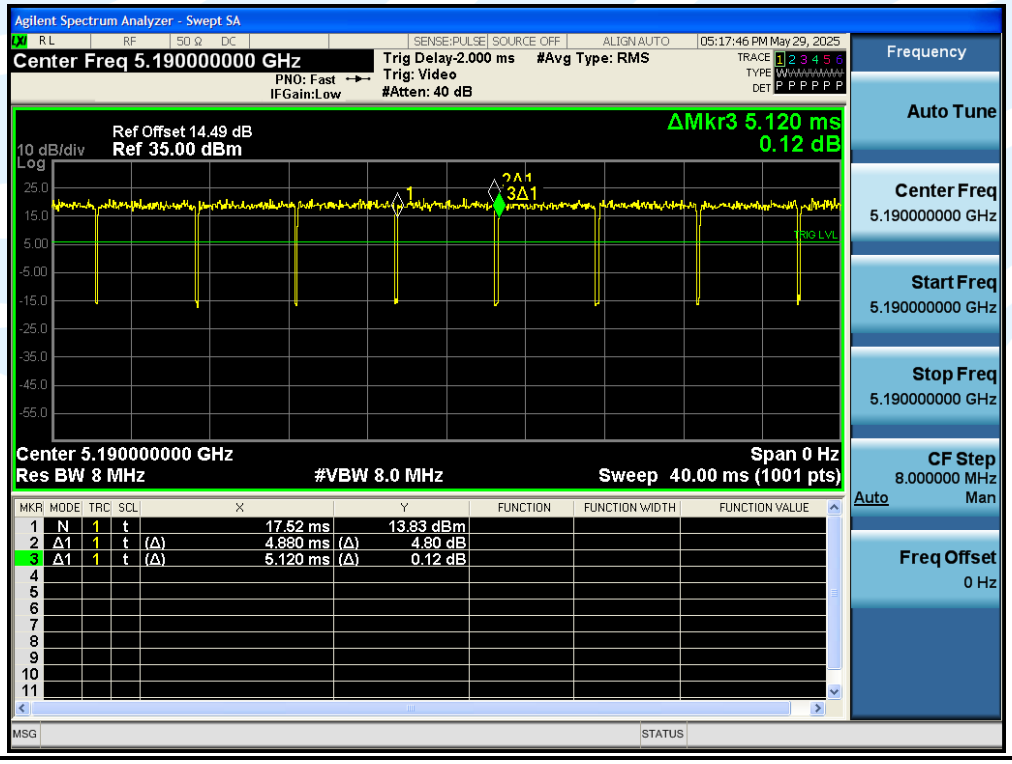
IEEE 802.11a



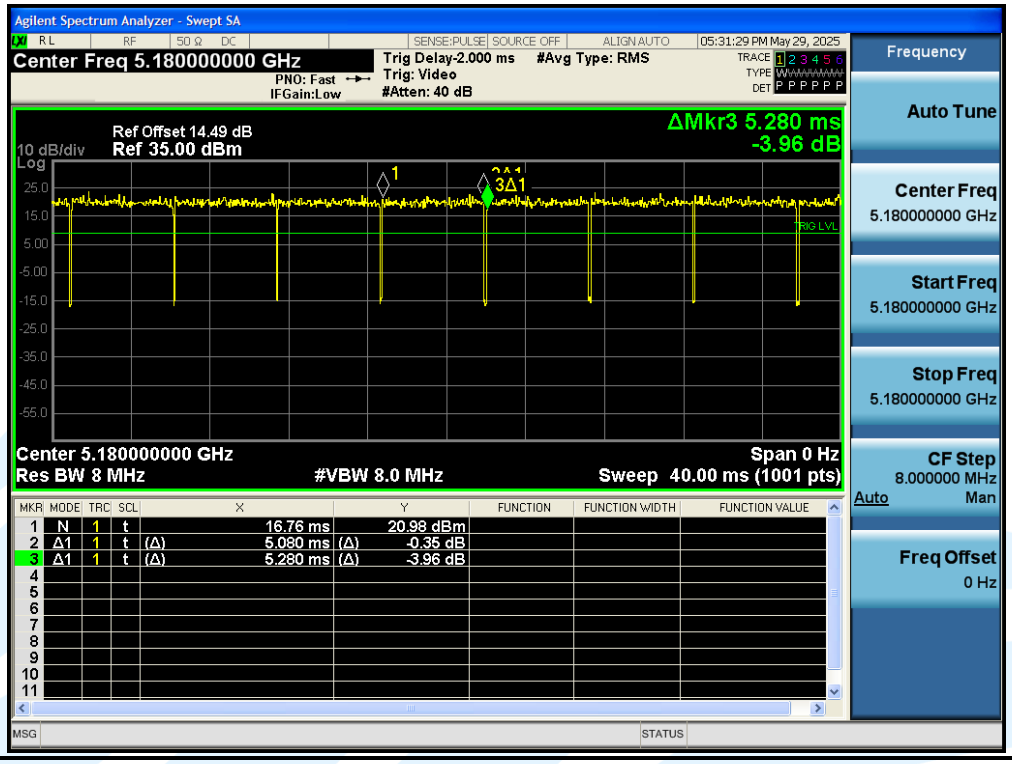
IEEE 802.11n-HT20



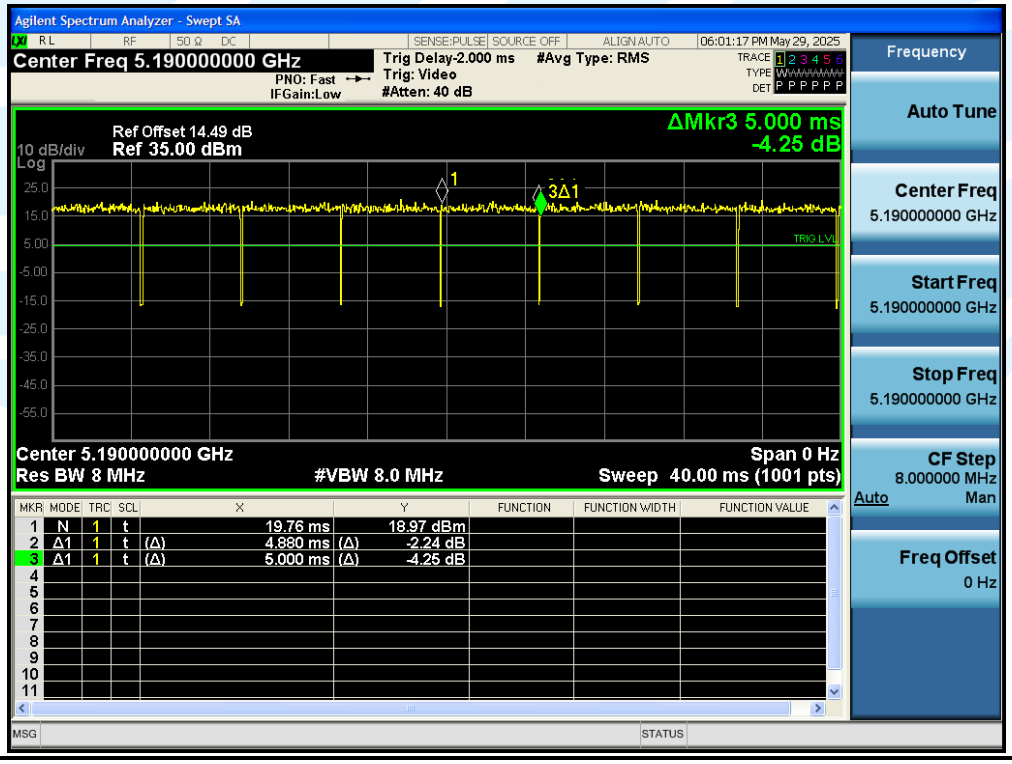
IEEE 802.11n-HT40



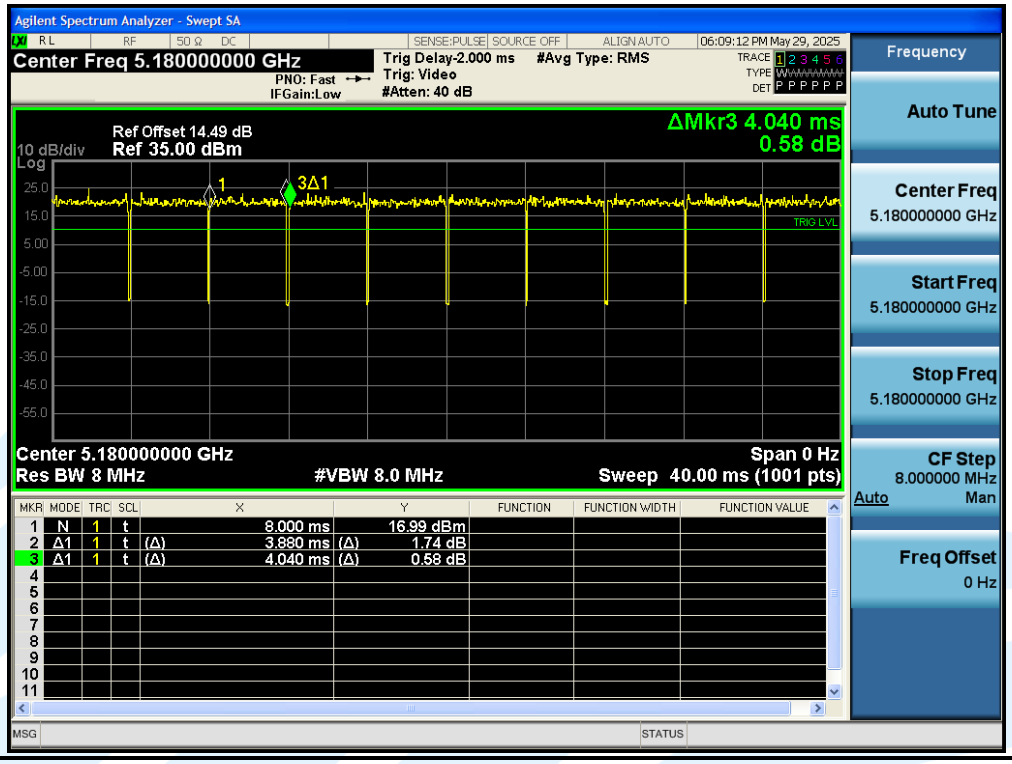
IEEE 802.11ac-VHT20



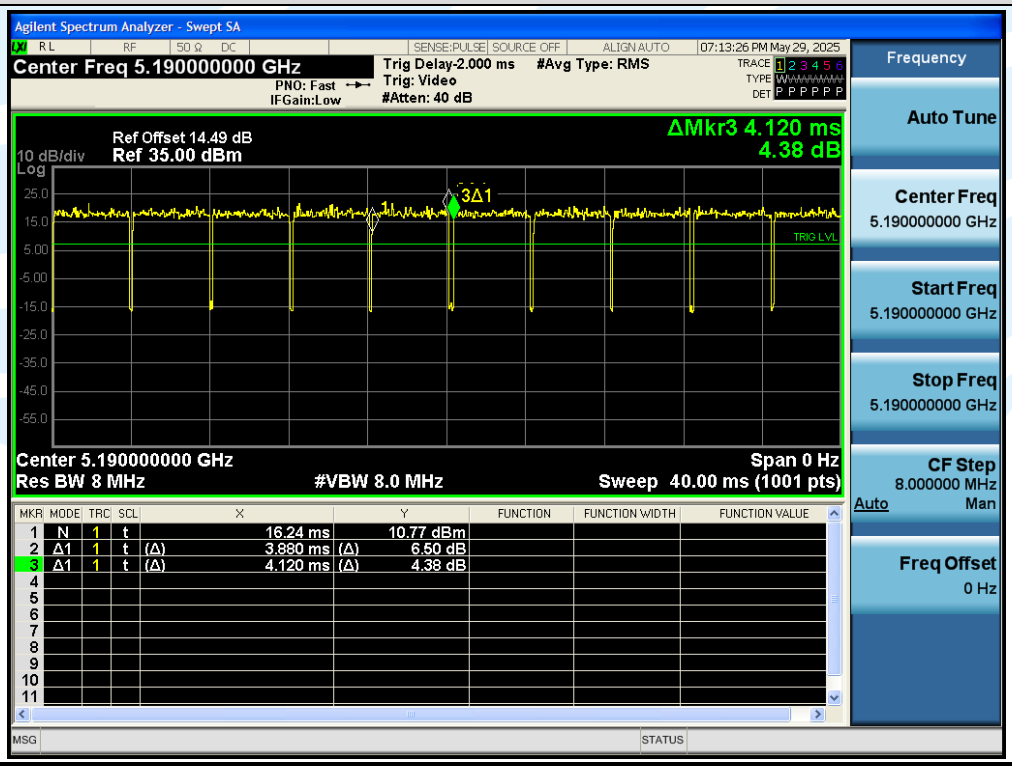
IEEE 802.11ac-VHT40



IEEE 802.11ax-HE20_SU



IEEE 802.11ax-HE40_SU



5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION

5.1 REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices
4	KDB 789033 D02 General UNII Test Procedures New Rules v02r01	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15, subpart E
5	KDB 905462 D06 802.11 Channel Plans New Rules v02	Operation in U-NII bands -802.11 channel PLAN(§15.407)
6	KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02	Compliance measurement procedures for Unlicensed –National Information Infrastructure devices operates in the frequency bands 5250 MHz to 5350 MHz and 5470 MHz to 5725 MHz bands incorporating dynamic frequency selection
7	KDB 905462 D03 Client Without DFS New Rules v01r02	U-NII client devices without radar detection capability

5.2 ANTENNA REQUIREMENT

Standard Requirement
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. **15.407(a)(1) (2) requirement:** The conducted output power limit specified in paragraph (a) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (a) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power and the peak power spectral density shall be reduced by the by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
EUT Antenna:
Antenna in the interior of the equipment and no consideration of replacement. The gain of the antenna is 4.55 dBi.

5.3 26 DB BANDWIDTH

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(2)(5)

Test Method: KDB 789033 D02 v02r01 Section C.1

Limit: None; for reporting purposes only.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum analyzer.

Spectrum analyzer according to the following Settings:
a) Set RBW = approximately 1 % of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: **Please refer to Appendix A**

5.46 DB BANDWIDTH

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (e)

Test Method: KDB 789033 D02 v02r01 Section C.2

Limit: Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer.

Spectrum analyzer according to the following Settings:

6dB Bandwidth

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 * RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: **Please refer to Appendix A**

5.5 MAXIMUM CONDUCTED OUTPUT POWER

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)
Test Method: KDB 789033 D02 v02r01 Section E.3.a (Method PM)
Limits: FCC 47 CFR Part 15 Subpart E

1. For the band 5.15-5.25 GHz.
   (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

   (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

   (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

   (iv) For 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.

2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. 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.

3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure:

1. Connected the EUT's antenna port to measure device by 10dB attenuator.
2. Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of Tx on burst.
3. The final test results includes the DC factor.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

Test Data:

Gain and the maximum output power limit.
FCC 47 CFR Part 15 Subpart E

Frequency Band	Antenna Gain (dBi)	Power Limits (dBm)
U-NII-1	4.55	24.0
U-NII-2A	4.55	24.0
U-NII-2C	4.55	24.0
U-NII-3	4.55	30.0

Frequency band 5250-5350 MHz
FCC 47 CFR Part 15 Subpart E:
For IEEE 802.11 a/n/ac/ax, the minimum 26 dB emission bandwidth is 23.36 MHz
11 dBm + $10\log_{10}$ (23.36) = 24.68 dBm > 24 dBm
So the 24 dBm limit applicable

Frequency bands 5470-5725 MHz
FCC 47 CFR Part 15 Subpart E:
For IEEE 802.11 a/n/ac/ax, the minimum 26 dB emission bandwidth is 24.31 MHz
11 dBm + $10\log_{10}$ (24.31) = 24.86 dBm > 24 dBm
So the 24 dBm limit applicable

Test Mode	Antenna	Freq(MHz)	Result [dBm]	FCC Limit [dBm]	Verdict
11A	Ant1	5180	19.03	24	PASS
11A	Ant1	5220	18.99	24	PASS
11A	Ant1	5240	18.98	24	PASS
11A	Ant1	5260	18.53	24	PASS
11A	Ant1	5300	18.84	24	PASS
11A	Ant1	5320	19.08	24	PASS
11A	Ant1	5500	16.35	24	PASS
11A	Ant1	5580	13.74	24	PASS
11A	Ant1	5700	14.19	24	PASS
11A	Ant1	5720	14.21	24	PASS
11A	Ant1	5745	17.49	30	PASS
11A	Ant1	5785	17.69	30	PASS
11A	Ant1	5825	17.93	30	PASS
11N20SISO	Ant1	5180	18.79	24	PASS
11N20SISO	Ant1	5220	18.94	24	PASS
11N20SISO	Ant1	5240	18.83	24	PASS
11N20SISO	Ant1	5260	14.12	24	PASS
11N20SISO	Ant1	5300	14.14	24	PASS
11N20SISO	Ant1	5320	14.28	24	PASS
11N20SISO	Ant1	5500	18.81	24	PASS
11N20SISO	Ant1	5580	17.07	24	PASS
11N20SISO	Ant1	5700	17.25	24	PASS
11N20SISO	Ant1	5720	17.28	24	PASS
11N20SISO	Ant1	5745	16.73	30	PASS
11N20SISO	Ant1	5785	17.46	30	PASS
11N20SISO	Ant1	5825	17.25	30	PASS
11N40SISO	Ant1	5190	17.77	24	PASS
11N40SISO	Ant1	5230	18.44	24	PASS
11N40SISO	Ant1	5270	18.29	24	PASS
11N40SISO	Ant1	5310	18.24	24	PASS
11N40SISO	Ant1	5510	16.34	24	PASS
11N40SISO	Ant1	5550	16.12	24	PASS
11N40SISO	Ant1	5670	14.00	24	PASS
11N40SISO	Ant1	5710	14.01	24	PASS
11N40SISO	Ant1	5755	17.14	30	PASS
11N40SISO	Ant1	5795	17.32	30	PASS
11AC20SISO	Ant1	5180	18.08	24	PASS
11AC20SISO	Ant1	5220	18.22	24	PASS
11AC20SISO	Ant1	5240	18.31	24	PASS
11AC20SISO	Ant1	5260	14.76	24	PASS
11AC20SISO	Ant1	5300	14.72	24	PASS
11AC20SISO	Ant1	5320	14.34	24	PASS
11AC20SISO	Ant1	5500	19.35	24	PASS
11AC20SISO	Ant1	5580	17.47	24	PASS
11AC20SISO	Ant1	5700	17.70	24	PASS
11AC20SISO	Ant1	5720	17.30	24	PASS
11AC20SISO	Ant1	5745	16.82	30	PASS
11AC20SISO	Ant1	5785	16.99	30	PASS

11AC20SISO	Ant1	5825	17.69	30	PASS
11AC40SISO	Ant1	5190	18.34	24	PASS
11AC40SISO	Ant1	5230	18.45	24	PASS
11AC40SISO	Ant1	5270	18.21	24	PASS
11AC40SISO	Ant1	5310	18.11	24	PASS
11AC40SISO	Ant1	5510	16.02	24	PASS
11AC40SISO	Ant1	5550	15.83	24	PASS
11AC40SISO	Ant1	5670	13.73	24	PASS
11AC40SISO	Ant1	5710	13.80	24	PASS
11AC40SISO	Ant1	5755	16.99	30	PASS
11AC40SISO	Ant1	5795	17.23	30	PASS
11AX20SISO	Ant1	5180	17.88	24	PASS
11AX20SISO	Ant1	5220	18.22	24	PASS
11AX20SISO	Ant1	5240	18.35	24	PASS
11AX20SISO	Ant1	5260	18.07	24	PASS
11AX20SISO	Ant1	5300	18.01	24	PASS
11AX20SISO	Ant1	5320	18.09	24	PASS
11AX20SISO	Ant1	5500	18.95	24	PASS
11AX20SISO	Ant1	5580	17.13	24	PASS
11AX20SISO	Ant1	5700	17.26	24	PASS
11AX20SISO	Ant1	5720	17.32	24	PASS
11AX20SISO	Ant1	5745	16.96	30	PASS
11AX20SISO	Ant1	5785	17.53	30	PASS
11AX20SISO	Ant1	5825	17.46	30	PASS
11AX40SISO	Ant1	5190	18.57	24	PASS
11AX40SISO	Ant1	5230	18.69	24	PASS
11AX40SISO	Ant1	5270	18.14	24	PASS
11AX40SISO	Ant1	5310	18.50	24	PASS
11AX40SISO	Ant1	5510	19.48	24	PASS
11AX40SISO	Ant1	5550	19.64	24	PASS
11AX40SISO	Ant1	5670	17.83	24	PASS
11AX40SISO	Ant1	5710	17.42	24	PASS
11AX40SISO	Ant1	5755	17.32	30	PASS
11AX40SISO	Ant1	5795	17.25	30	PASS

5.6 PEAK POWER SPECTRAL DENSITY

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)
Test Method: KDB 789033 D02 v02r01 Section F
Limits: FCC 47 CFR Part 15 Subpart E

1. For the band 5.15-5.25 GHz.
   (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

   (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

   (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

   (iv) For 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.

2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. 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.

3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. 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. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer.

Spectrum analyzer according to the following Settings:

1. For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

a) Set span to encompass the entire emission bandwidth (EBW) of the signal.
b) Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS
c) Sweep time = auto, trigger set to “free run”.
d) Trace average at least 100 traces in power averaging mode.
e) Record the max value and add 10 log (1/duty cycle)

2. For U-NII-3 band:

a) Set span to encompass the entire emission bandwidth (EBW) of the signal.
b) Set RBW = 500 kHz, Set VBW ≥ 3 RBW, Detector = RMS
c) Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
d) Sweep time = auto, trigger set to “free run”.
e) Trace average at least 100 traces in power averaging mode.
f) Record the max value and add 10 log (1/duty cycle)

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: **Please refer to Appendix A**

Test Data:

Gain and the maximum output power limit.
FCC 47 CFR Part 15 Subpart E:

Frequency Band	Antenna Gain (dBi)	PSD Limits (dBm/MHz or dBm/500kHz)
U-NII-1	4.55	11.0
U-NII-2A	4.55	11.0
U-NII-2C	4.55	11.0
U-NII-3	4.55	30.0

5.7 RADIATED EMISSIONS AND BAND EDGE MEASUREMENT

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(1)(2)(3)(4)(6)
FCC 47 CFR Part 15 Subpart C Section 15.209/205

Test Method: KDB 789033 D02 v02r01 Section G.3, G.4, G.5, and G.6

Receiver Setup:

Frequency	RBW
0.009 MHz-0.150 MHz	200/300 kHz
0.150 MHz -30 MHz	9/10 kHz
30 MHz-1 GHz	100/120 kHz
Above 1 GHz	1 MHz

Limits:

1. Limits of Radiated Emission and Band edge Measurement

Radiated emissions that fall in the restricted bands must comply with the general emissions limits in 15.209(a) as below table. Other emissions shall be at least 20 dB below the highest level of the desired power.

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009 MHz-0.490 MHz	2400/F(kHz)	--	--	300
0.490 MHz-1.705 MHz	24000/F(kHz)	--	--	30
1.705 MHz-30 MHz	30	--	--	30
30 MHz-88 MHz	100	40.0	Quasi-peak	3
88 MHz-216 MHz	150	43.5	Quasi-peak	3
216 MHz-960 MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1 GHz	500	54.0	Average	3

Remark:

a. The lower limit shall apply at the transition frequencies.
b. Emission level (dBuV/m) = 20 log Emission level (uV/m).
c. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Test Setup: Refer to section 4.5.1 for details.

Test Procedures:

1. The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
6. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Remark:

a) The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
b) The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.

c) The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
d) The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle ≥ 98 %) or ≥ 1/T(duty cycle is < 98%) for Average detection (AV) at frequency above 1 GHz.
e) All modes of operation were investigated and the worst-case emissions are reported.

Equipment Used: Refer to section 3 for details.

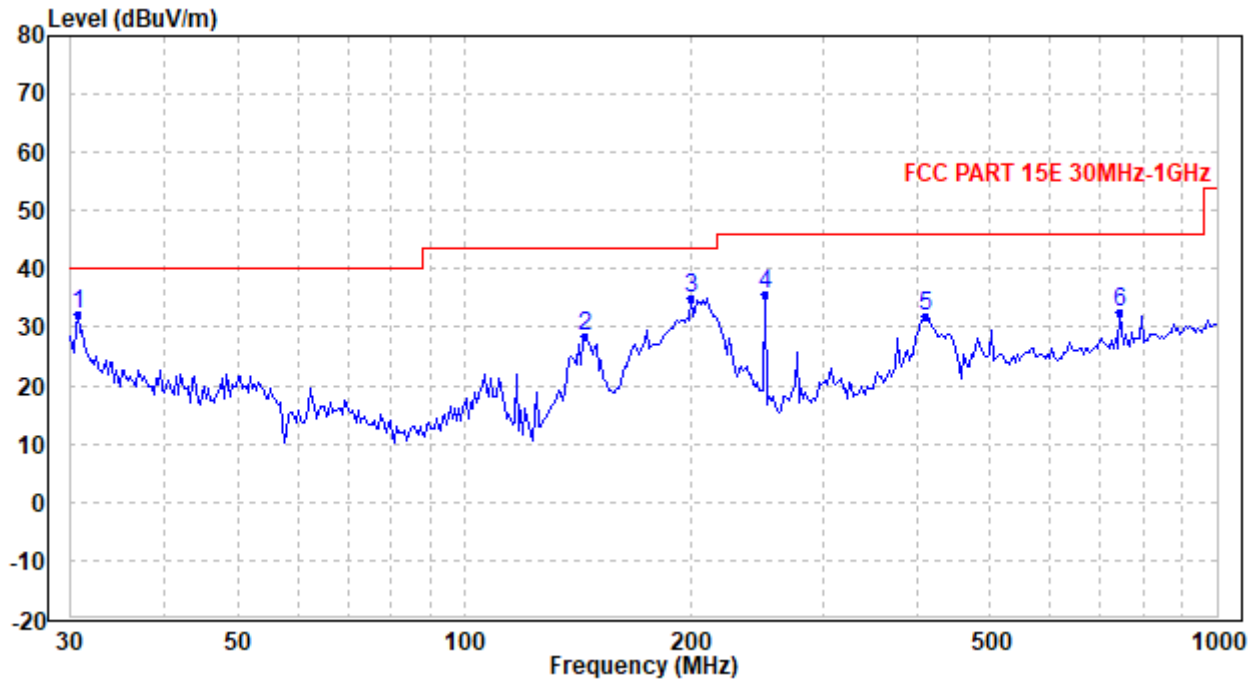
Test Result: Pass

The measurement data as follows:

Radiated Emission Test Data (9 KHz ~ 30 MHz):
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

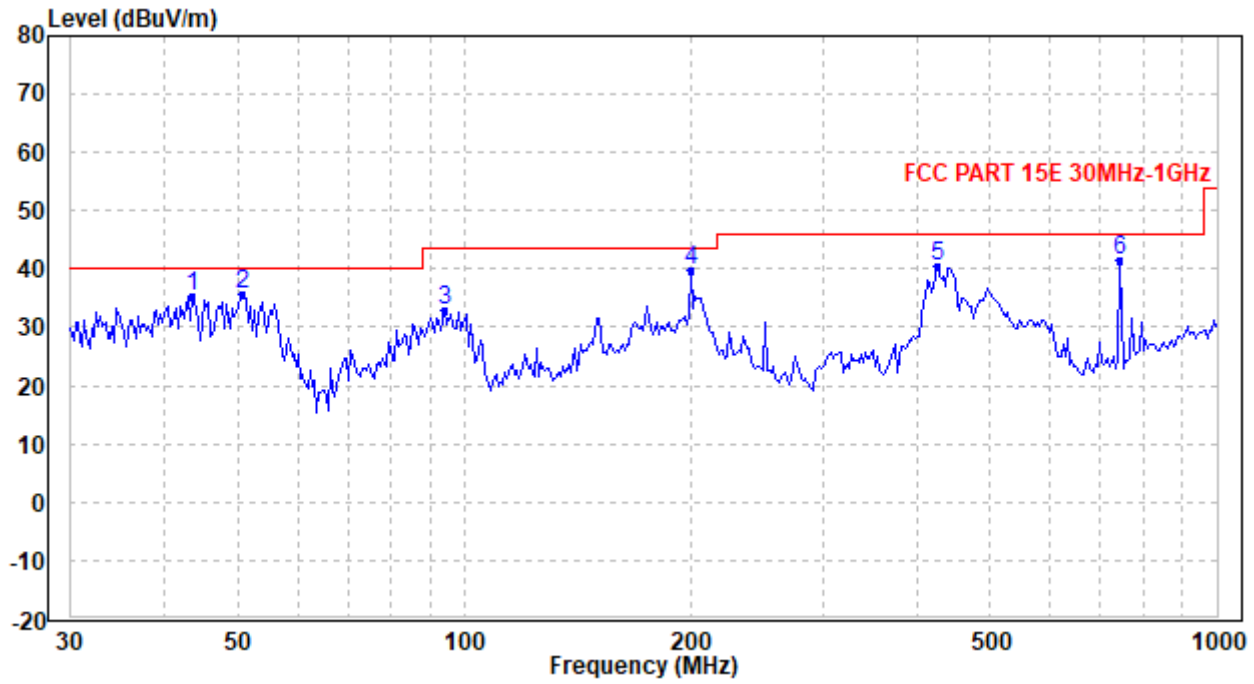
Radiated Emission Test Data (30 MHz ~ 1 GHz):
Worst-Case Configuration(IEEE 802.11ax-HE40 Channel 110)

Horizontal



No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.639	37.40	-5.27	32.13	40.00	-7.87	QP
2	144.790	43.23	-14.92	28.31	43.50	-15.19	QP
3	200.043	45.97	-10.97	35.00	43.50	-8.50	QP
4	250.486	46.19	-10.61	35.58	46.00	-10.42	QP
5	409.651	36.34	-4.49	31.85	46.00	-14.15	QP
6	744.427	30.49	1.98	32.47	46.00	-13.53	QP

Vertical



No.	Frequency (MHz)	Reading (dBμV/m)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	43.538	46.68	-11.48	35.20	40.00	-4.80	QP
2	50.817	49.37	-13.86	35.51	40.00	-4.49	QP
3	94.314	48.91	-16.05	32.86	43.50	-10.64	QP
4	200.043	50.61	-10.97	39.64	43.50	-3.86	QP
5	424.300	44.68	-4.30	40.38	46.00	-5.62	QP
6	744.427	39.37	1.98	41.35	46.00	-4.65	QP

Radiated Emission Test Data (Above 1GHz):								
No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
5G_A_5180 MHz		10360 MHz		15540 MHz				
1	10382.28	47.80	3.38	51.18	54.00	-2.82	Average	Horizontal
2	10382.28	59.95	3.38	63.33	74.00	-10.67	Peak	Horizontal
3	15438.67	47.56	7.65	55.21	74.00	-18.79	Peak	Horizontal
4	15438.67	40.56	7.65	48.21	54.00	-5.79	Average	Horizontal
5	10382.28	48.07	3.38	51.45	54.00	-2.55	Average	Vertical
6	10382.28	58.07	3.38	61.45	74.00	-12.55	Peak	Vertical
7	15438.67	51.68	7.65	59.33	74.00	-14.67	Peak	Vertical
8	15438.67	41.68	7.65	49.33	54.00	-4.67	Average	Vertical
5G_A_5220 MHz		10440 MHz		15660 MHz				
1	10412.39	48.69	3.38	52.07	54.00	-1.93	Average	Horizontal
2	10412.39	57.69	3.38	61.07	74.00	-12.93	Peak	Horizontal
3	15528.35	43.27	7.58	50.85	54.00	-3.15	Average	Horizontal
4	15528.35	49.27	7.58	56.85	74.00	-17.15	Peak	Horizontal
5	10412.39	48.04	3.38	51.42	74.00	-22.58	Peak	Vertical
6	10412.39	59.04	3.38	62.42	74.00	-11.58	Peak	Vertical
7	15528.35	44.40	7.58	51.98	54.00	-2.02	Average	Vertical
8	15528.35	49.40	7.58	56.98	74.00	-17.02	Peak	Vertical
5G_A_5240 MHz		10480 MHz		15720 MHz				
1	10472.88	48.33	3.39	51.72	54.00	-2.28	Average	Horizontal
2	10472.88	58.33	3.39	61.72	74.00	-12.28	Peak	Horizontal
3	15663.86	47.44	7.44	54.88	74.00	-19.12	Peak	Horizontal
4	15663.86	43.44	7.44	50.88	54.00	-3.12	Average	Horizontal
5	10472.88	47.85	3.39	51.24	54.00	-2.76	Average	Vertical
6	10472.88	54.85	3.39	58.24	74.00	-15.76	Peak	Vertical
7	15663.86	45.28	7.44	52.72	74.00	-21.28	Peak	Vertical
8	15663.86	41.28	7.44	48.72	54.00	-5.28	Average	Vertical
5G_A_5260 MHz		10520 MHz		15780 MHz				
1	10472.88	48.67	3.39	52.06	54.00	-1.94	Average	Horizontal
2	10472.88	58.67	3.39	62.06	74.00	-11.94	Peak	Horizontal
3	15780	40.92	7.35	48.27	54.00	-5.73	Average	Horizontal
4	15780	43.92	7.35	51.27	74.00	-22.73	Peak	Horizontal
5	10472.88	48.56	3.39	51.95	54.00	-2.05	Average	Vertical
6	10472.88	60.56	3.39	63.95	74.00	-10.05	Peak	Vertical
7	15663.86	46.95	7.44	54.39	74.00	-19.61	Peak	Vertical
8	15663.86	41.95	7.44	49.39	54.00	-4.61	Average	Vertical
5G_A_5300 MHz		10600 MHz		15900 MHz				
1	10625.64	48.48	3.13	51.61	54.00	-2.39	Average	Horizontal
2	10625.64	58.48	3.13	61.61	74.00	-12.39	Peak	Horizontal

3	15800.54	43.88	7.33	51.21	54.00	-2.79	Average	Horizontal
4	15800.54	49.88	7.33	57.21	74.00	-16.79	Peak	Horizontal
5	10625.64	48.11	3.13	51.24	54.00	-2.76	Average	Vertical
6	10625.64	60.11	3.13	63.24	74.00	-10.76	Peak	Vertical
7	15800.54	43.50	7.33	50.83	54.00	-3.17	Average	Vertical
8	15800.54	50.50	7.33	57.83	74.00	-16.17	Peak	Vertical
5G_A_5320 MHz	**10640 MHz**	**15960 MHz**						
1	10625.64	49.09	3.13	52.22	54.00	-1.78	Average	Horizontal
2	10625.64	60.09	3.13	63.22	74.00	-10.78	Peak	Horizontal
3	15800.54	44.33	7.33	51.66	54.00	-2.34	Average	Horizontal
4	15800.54	51.33	7.33	58.66	74.00	-15.34	Peak	Horizontal
5	10625.64	48.90	3.13	52.03	54.00	-1.97	Average	Vertical
6	10625.64	60.90	3.13	64.03	74.00	-9.97	Peak	Vertical
7	15800.54	44.65	7.33	51.98	54.00	-2.02	Average	Vertical
8	15800.54	49.65	7.33	56.98	74.00	-17.02	Peak	Vertical
5G_A_5500 MHz	**11000 MHz**	**16500 MHz**						
1	10969.6	57.57	2.42	59.99	74.00	-14.01	Peak	Horizontal
2	10969.6	49.57	2.42	51.99	54.00	-2.01	Average	Horizontal
3	16406.78	53.93	7.84	61.77	74.00	-12.23	Peak	Horizontal
4	16406.78	43.93	7.84	51.77	54.00	-2.23	Average	Horizontal
5	10969.6	60.66	2.42	63.08	74.00	-10.92	Peak	Vertical
6	10969.6	48.66	2.42	51.08	54.00	-2.92	Average	Vertical
7	16406.78	55.48	7.84	63.32	74.00	-10.68	Peak	Vertical
8	16406.78	45.48	7.84	53.32	54.00	-0.68	Average	Vertical
5G_A_5580 MHz	**11160 MHz**	**16740 MHz**						
1	11194.26	53.97	2.24	56.21	74.00	-17.79	Peak	Horizontal
2	11194.26	48.97	2.24	51.21	54.00	-2.79	Average	Horizontal
3	16740	40.28	8.31	48.59	54.00	-5.41	Average	Horizontal
4	16740	44.28	8.31	52.59	74.00	-21.41	Peak	Horizontal
5	11194.26	56.22	2.24	58.46	74.00	-15.54	Peak	Vertical
6	11194.26	48.22	2.24	50.46	54.00	-3.54	Average	Vertical
7	16740	39.58	8.31	47.89	54.00	-6.11	Average	Vertical
8	16740	44.58	8.31	52.89	74.00	-21.11	Peak	Vertical
5G_A_5700 MHz	**11400 MHz**	**17100 MHz**						
1	11390.48	48.83	2.12	50.95	74.00	-23.05	Peak	Horizontal
2	11390.48	47.83	2.12	49.95	54.00	-4.05	Average	Horizontal
3	17100	38.69	8.79	47.48	54.00	-6.52	Average	Horizontal
4	17100	43.69	8.79	52.48	74.00	-21.52	Peak	Horizontal
5	11390.48	54.25	2.12	56.37	74.00	-17.63	Peak	Vertical
6	11390.48	47.25	2.12	49.37	54.00	-4.63	Average	Vertical
7	17100	39.81	8.79	48.60	54.00	-5.40	Average	Vertical
8	17100	43.81	8.79	52.60	74.00	-21.40	Peak	Vertical
5G_A_5720 MHz	**11440 MHz**	**17160 MHz**						

1	11423.52	50.19	2.10	52.29	74.00	-21.71	Peak	Horizontal
2	11423.52	45.19	2.10	47.29	54.00	-6.71	Average	Horizontal
3	17036.27	40.85	8.70	49.55	54.00	-4.45	Average	Horizontal
4	17036.27	47.85	8.70	56.55	74.00	-17.45	Peak	Horizontal
5	11423.52	54.60	2.10	56.70	74.00	-17.30	Peak	Vertical
6	11423.52	45.60	2.10	47.70	54.00	-6.30	Average	Vertical
7	17036.27	39.85	8.70	48.55	54.00	-5.45	Average	Vertical
8	17036.27	45.85	8.70	54.55	74.00	-19.45	Peak	Vertical
5G_A_5745 MHz	**11490 MHz**	**17235 MHz**						
1	11434.55	50.15	2.09	52.24	74.00	-21.76	Peak	Horizontal
2	11434.55	45.15	2.09	47.24	54.00	-6.76	Average	Horizontal
3	17235	37.77	8.99	46.76	54.00	-7.24	Average	Horizontal
4	17235	43.77	8.99	52.76	74.00	-21.24	Peak	Horizontal
5	11423.52	52.29	2.10	54.39	74.00	-19.61	Peak	Vertical
6	11423.52	47.29	2.10	49.39	54.00	-4.61	Average	Vertical
7	17235	38.10	8.99	47.09	54.00	-6.91	Average	Vertical
8	17235	43.10	8.99	52.09	74.00	-21.91	Peak	Vertical
5G_A_5785 MHz	**11570 MHz**	**17355 MHz**						
1	11570	43.08	2.05	45.13	54.00	-8.87	Average	Horizontal
2	11570	46.26	2.05	48.31	74.00	-25.69	Peak	Horizontal
3	17355	39.60	9.16	48.76	54.00	-5.24	Average	Horizontal
4	17355	42.60	9.16	51.76	74.00	-22.24	Peak	Horizontal
5	11590.14	47.83	2.07	49.90	54.00	-4.10	Average	Vertical
6	11590.14	51.83	2.07	53.90	74.00	-20.10	Peak	Vertical
7	17355	38.64	9.16	47.80	54.00	-6.20	Average	Vertical
8	17355	42.64	9.16	51.80	74.00	-22.20	Peak	Vertical
5G_A_5825 MHz	**11650 MHz**	**17475 MHz**						
1	11657.47	44.13	2.08	46.21	54.00	-7.79	Average	Horizontal
2	11657.47	49.13	2.08	51.21	74.00	-22.79	Peak	Horizontal
3	17475	38.18	9.33	47.51	54.00	-6.49	Average	Horizontal
4	17475	42.18	9.33	51.51	74.00	-22.49	Peak	Horizontal
5	11657.47	45.89	2.08	47.97	54.00	-6.03	Average	Vertical
6	11657.47	51.89	2.08	53.97	74.00	-20.03	Peak	Vertical
7	17475	37.28	9.33	46.61	54.00	-7.39	Average	Vertical
8	17475	42.28	9.33	51.61	74.00	-22.39	Peak	Vertical
5G_N20_5180 MHz	**10360 MHz**	**15540 MHz**						
1	10382.28	47.77	3.38	51.15	54.00	-2.85	Average	Horizontal
2	10382.28	57.77	3.38	61.15	74.00	-12.85	Peak	Horizontal
3	15438.67	47.04	7.65	54.69	74.00	-19.31	Peak	Horizontal
4	15438.67	43.04	7.65	50.69	54.00	-3.31	Average	Horizontal
5	10382.28	48.11	3.38	51.49	54.00	-2.51	Average	Vertical
6	10382.28	61.11	3.38	64.49	74.00	-9.51	Peak	Vertical
7	15540	39.04	7.56	46.60	54.00	-7.40	Average	Vertical

8	15540	43.04	7.56	50.60	74.00	-23.40	Peak	Vertical
5G_N20_5220 MHz	**10440 MHz**	**15660 MHz**						
1	10412.39	48.09	3.38	51.47	54.00	-2.53	Average	Horizontal
2	10412.39	59.09	3.38	62.47	74.00	-11.53	Peak	Horizontal
3	15660	40.05	7.46	47.51	54.00	-6.49	Average	Horizontal
4	15660	44.05	7.46	51.51	74.00	-22.49	Peak	Horizontal
5	10412.39	48.18	3.38	51.56	54.00	-2.44	Average	Vertical
6	10412.39	57.18	3.38	60.56	74.00	-13.44	Peak	Vertical
7	15660	40.33	7.46	47.79	54.00	-6.21	Average	Vertical
8	15660	45.33	7.46	52.79	74.00	-21.21	Peak	Vertical
5G_N20_5240 MHz	**10480 MHz**	**15720 MHz**						
1	10472.88	48.46	3.39	51.85	54.00	-2.15	Average	Horizontal
2	10472.88	59.46	3.39	62.85	74.00	-11.15	Peak	Horizontal
3	15663.86	45.25	7.44	52.69	74.00	-21.31	Peak	Horizontal
4	15663.86	40.25	7.44	47.69	54.00	-6.31	Average	Horizontal
5	10412.39	47.97	3.38	51.35	54.00	-2.65	Average	Vertical
6	10412.39	58.97	3.38	62.35	74.00	-11.65	Peak	Vertical
7	15720	40.61	7.40	48.01	54.00	-5.99	Average	Vertical
8	15720	44.61	7.40	52.01	74.00	-21.99	Peak	Vertical
5G_N20_5260 MHz	**10520 MHz**	**15780 MHz**						
1	10472.88	48.38	3.39	51.77	54.00	-2.23	Average	Horizontal
2	10472.88	54.38	3.39	57.77	74.00	-16.23	Peak	Horizontal
3	15780	39.86	7.35	47.21	54.00	-6.79	Average	Horizontal
4	15780	43.86	7.35	51.21	74.00	-22.79	Peak	Horizontal
5	10472.88	48.20	3.39	51.59	54.00	-2.41	Average	Vertical
6	10472.88	57.20	3.39	60.59	74.00	-13.41	Peak	Vertical
7	15663.86	47.33	7.44	54.77	74.00	-19.23	Peak	Vertical
8	15663.86	42.33	7.44	49.77	54.00	-4.23	Average	Vertical
5G_N20_5300 MHz	**10600 MHz**	**15900 MHz**						
1	10600	47.81	3.19	51.00	54.00	-3.00	Average	Horizontal
2	10600	52.76	3.19	55.95	74.00	-18.05	Peak	Horizontal
3	15900	40.42	7.24	47.66	54.00	-6.34	Average	Horizontal
4	15900	43.62	7.24	50.86	74.00	-23.14	Peak	Horizontal
5	10600	46.94	3.19	50.13	54.00	-3.87	Average	Vertical
6	10600	54.77	3.19	57.96	74.00	-16.04	Peak	Vertical
7	15900	39.20	7.24	46.44	54.00	-7.56	Average	Vertical
8	15900	43.17	7.24	50.41	74.00	-23.59	Peak	Vertical
5G_N20_5320 MHz	**10640 MHz**	**15960 MHz**						
1	10640	45.68	3.10	48.78	54.00	-5.22	Average	Horizontal
2	10640	54.04	3.10	57.14	74.00	-16.86	Peak	Horizontal
3	15960	39.60	7.19	46.79	54.00	-7.21	Average	Horizontal
4	15960	45.13	7.19	52.32	74.00	-21.68	Peak	Horizontal
5	10640	45.74	3.10	48.84	54.00	-5.16	Average	Vertical

6	10640	54.69	3.10	57.79	74.00	-16.21	Peak	Vertical
7	15960	38.47	7.19	45.66	54.00	-8.34	Average	Vertical
8	15960	43.36	7.19	50.55	74.00	-23.45	Peak	Vertical
5G_N20_5500 MHz		**11000 MHz**		**16500 MHz**				
1	10969.6	58.28	2.42	60.70	74.00	-13.30	Peak	Horizontal
2	10969.6	49.28	2.42	51.70	54.00	-2.30	Average	Horizontal
3	16500	40.36	8.00	48.36	54.00	-5.64	Average	Horizontal
4	16500	44.11	8.00	52.11	74.00	-21.89	Peak	Horizontal
5	11000	46.91	2.36	49.27	54.00	-4.73	Average	Vertical
6	11000	60.51	2.36	62.87	74.00	-11.13	Peak	Vertical
7	16500	38.33	8.00	46.33	54.00	-7.67	Average	Vertical
8	16500	44.94	8.00	52.94	74.00	-21.06	Peak	Vertical
5G_N20_5580 MHz		**11160 MHz**		**16740 MHz**				
1	11160	44.31	2.25	46.56	54.00	-7.44	Average	Horizontal
2	11160	51.85	2.25	54.10	74.00	-19.90	Peak	Horizontal
3	16740	36.22	8.31	44.53	54.00	-9.47	Average	Horizontal
4	16740	43.19	8.31	51.50	74.00	-22.50	Peak	Horizontal
5	11194.26	56.49	2.24	58.73	74.00	-15.27	Peak	Vertical
6	11194.26	48.49	2.24	50.73	54.00	-3.27	Average	Vertical
7	16646.09	40.10	8.19	48.29	54.00	-5.71	Average	Vertical
8	16646.09	45.10	8.19	53.29	74.00	-20.71	Peak	Vertical
5G_N20_5700 MHz		**11400 MHz**		**17100 MHz**				
1	11400	43.39	2.11	45.50	54.00	-8.50	Average	Horizontal
2	11400	49.39	2.11	51.50	74.00	-22.50	Peak	Horizontal
3	17100	38.37	8.79	47.16	54.00	-6.84	Average	Horizontal
4	17100	44.37	8.79	53.16	74.00	-20.84	Peak	Horizontal
5	11390.48	54.46	2.12	56.58	74.00	-17.42	Peak	Vertical
6	11390.48	45.46	2.12	47.58	54.00	-6.42	Average	Vertical
7	17100	35.40	8.79	44.19	54.00	-9.81	Average	Vertical
8	17100	43.40	8.79	52.19	74.00	-21.81	Peak	Vertical
5G_N20_5720 MHz		**11440 MHz**		**17160 MHz**				
1	11456.65	48.50	2.08	50.58	74.00	-23.42	Peak	Horizontal
2	11456.65	42.50	2.08	44.58	54.00	-9.42	Average	Horizontal
3	17160	37.65	8.88	46.53	54.00	-7.47	Average	Horizontal
4	17160	43.65	8.88	52.53	74.00	-21.47	Peak	Horizontal
5	11456.65	53.60	2.08	55.68	74.00	-18.32	Peak	Vertical
6	11456.65	43.60	2.08	45.68	54.00	-8.32	Average	Vertical
7	17160	36.47	8.88	45.35	54.00	-8.65	Average	Vertical
8	17160	43.47	8.88	52.35	74.00	-21.65	Peak	Vertical
5G_N20_5745 MHz		**11490 MHz**		**17235 MHz**				
1	11456.65	48.27	2.08	50.35	74.00	-23.65	Peak	Horizontal
2	11456.65	42.27	2.08	44.35	54.00	-9.65	Average	Horizontal
3	17235	37.71	8.99	46.70	54.00	-7.30	Average	Horizontal

4	17235	42.71	8.99	51.70	74.00	-22.30	Peak	Horizontal
5	11523.2	44.59	2.06	46.65	54.00	-7.35	Average	Vertical
6	11523.2	53.59	2.06	55.65	74.00	-18.35	Peak	Vertical
7	17235	37.69	8.99	46.68	54.00	-7.32	Average	Vertical
8	17235	42.69	8.99	51.68	74.00	-22.32	Peak	Vertical
5G_N20_5785 MHz		**11570 MHz**		**17355 MHz**				
1	11590.14	40.99	2.07	43.06	54.00	-10.94	Average	Horizontal
2	11590.14	46.99	2.07	49.06	74.00	-24.94	Peak	Horizontal
3	17355	34.96	9.16	44.12	54.00	-9.88	Average	Horizontal
4	17355	42.96	9.16	52.12	74.00	-21.88	Peak	Horizontal
5	11590.14	41.90	2.07	43.97	54.00	-10.03	Average	Vertical
6	11590.14	50.90	2.07	52.97	74.00	-21.03	Peak	Vertical
7	17355	37.37	9.16	46.53	54.00	-7.47	Average	Vertical
8	17355	43.37	9.16	52.53	74.00	-21.47	Peak	Vertical
5G_N20_5825 MHz		**11650 MHz**		**17475 MHz**				
1	11657.47	43.34	2.08	45.42	54.00	-8.58	Average	Horizontal
2	11657.47	47.34	2.08	49.42	74.00	-24.58	Peak	Horizontal
3	17486.17	43.27	9.35	52.62	74.00	-21.38	Peak	Horizontal
4	17486.17	39.27	9.35	48.62	54.00	-5.38	Average	Horizontal
5	11657.47	42.78	2.08	44.86	54.00	-9.14	Average	Vertical
6	11657.47	48.78	2.08	50.86	74.00	-23.14	Peak	Vertical
7	17486.17	41.59	9.35	50.94	74.00	-23.06	Peak	Vertical
8	17486.17	37.59	9.35	46.94	54.00	-7.06	Average	Vertical
5G_N40_5190 MHz		**10380 MHz**		**15570 MHz**				
1	10380	37.16	3.38	40.54	54.00	-13.46	Average	Horizontal
2	10380	54.37	3.38	57.75	74.00	-16.25	Peak	Horizontal
3	15570	30.96	7.54	38.50	54.00	-15.50	Average	Horizontal
4	15570	44.43	7.54	51.97	74.00	-22.03	Peak	Horizontal
5	10380	35.24	3.38	38.62	54.00	-15.38	Average	Vertical
6	10380	54.26	3.38	57.64	74.00	-16.36	Peak	Vertical
7	15570	31.08	7.54	38.62	54.00	-15.38	Average	Vertical
8	15570	43.59	7.54	51.13	74.00	-22.87	Peak	Vertical
5G_N40_5230 MHz		**10460 MHz**		**15690 MHz**				
1	4304.524	53.74	-2.46	51.28	54.00	-2.72	Average	Horizontal
2	4304.524	65.79	-2.46	63.33	74.00	-10.67	Peak	Horizontal
3	10460	37.39	3.40	40.79	54.00	-13.21	Average	Horizontal
4	10460	53.98	3.40	57.38	74.00	-16.62	Peak	Horizontal
5	15690	32.39	7.42	39.81	54.00	-14.19	Average	Horizontal
6	15690	45.97	7.42	53.39	74.00	-20.61	Peak	Horizontal
7	10460	37.90	3.40	41.30	54.00	-12.70	Average	Vertical
8	10460	55.32	3.40	58.72	74.00	-15.28	Peak	Vertical
9	15690	31.81	7.42	39.23	54.00	-14.77	Average	Vertical
10	15690	46.73	7.42	54.15	74.00	-19.85	Peak	Vertical

5G_N40_5270 MHz	**10540 MHz**		**15810 MHz**					
1	10540	35.25	3.30	38.55	54.00	-15.45	Average	Horizontal
2	10540	56.47	3.30	59.77	74.00	-14.23	Peak	Horizontal
3	15810	30.84	7.33	38.17	54.00	-15.83	Average	Horizontal
4	15810	43.56	7.33	50.89	74.00	-23.11	Peak	Horizontal
5	10472.88	44.42	3.39	47.81	54.00	-6.19	Average	Vertical
6	10472.88	52.42	3.39	55.81	74.00	-18.19	Peak	Vertical
7	15810	30.80	7.33	38.13	54.00	-15.87	Average	Vertical
8	15810	43.80	7.33	51.13	74.00	-22.87	Peak	Vertical
5G_N40_5310 MHz	**10620 MHz**		**15930 MHz**					
1	10620	42.93	3.14	46.07	54.00	-7.93	Average	Horizontal
2	10620	53.59	3.14	56.73	74.00	-17.27	Peak	Horizontal
3	15930	38.01	7.21	45.22	54.00	-8.78	Average	Horizontal
4	15930	42.93	7.21	50.14	74.00	-23.86	Peak	Horizontal
5	10620	31.63	3.14	34.77	54.00	-19.23	Average	Vertical
6	10620	55.45	3.14	58.59	74.00	-15.41	Peak	Vertical
7	15930	29.96	7.21	37.17	54.00	-16.83	Average	Vertical
8	15930	43.76	7.21	50.97	74.00	-23.03	Peak	Vertical
5G_N40_5510 MHz	**11020 MHz**		**16530 MHz**					
1	5490.089	53.82	-0.92	52.90	54.00	-1.10	Average	Horizontal
2	5490.089	65.93	-0.92	65.01	74.00	-8.99	Peak	Horizontal
3	11020	42.81	2.35	45.16	54.00	-8.84	Average	Horizontal
4	11020	53.90	2.35	56.25	74.00	-17.75	Peak	Horizontal
5	16530	40.04	8.04	48.08	54.00	-5.92	Average	Horizontal
6	16530	51.73	8.04	59.77	74.00	-14.23	Peak	Horizontal
7	11020	45.21	2.35	47.56	54.00	-6.44	Average	Vertical
8	11020	51.77	2.35	54.12	74.00	-19.88	Peak	Vertical
9	16502.09	52.95	8.00	60.95	74.00	-13.05	Peak	Vertical
10	16502.09	42.95	8.00	50.95	54.00	-3.05	Average	Vertical
5G_N40_5550 MHz	**11100 MHz**		**16650 MHz**					
1	11100	48.98	2.30	51.28	54.00	-2.72	Average	Horizontal
2	11100	53.63	2.30	55.93	74.00	-18.07	Peak	Horizontal
3	16549.95	41.10	8.06	49.16	54.00	-4.84	Average	Horizontal
4	16549.95	50.10	8.06	58.16	74.00	-15.84	Peak	Horizontal
5	11100	45.39	2.30	47.69	54.00	-6.31	Average	Vertical
6	11100	55.50	2.30	57.80	74.00	-16.20	Peak	Vertical
7	16549.95	41.53	8.06	49.59	54.00	-4.41	Average	Vertical
8	16549.95	52.53	8.06	60.59	74.00	-13.41	Peak	Vertical
5G_N40_5670 MHz	**11340 MHz**		**17010 MHz**					
1	11340	32.00	2.16	34.16	54.00	-19.84	Average	Horizontal
2	11340	50.35	2.16	52.51	74.00	-21.49	Peak	Horizontal
3	16840.05	33.42	8.44	41.86	54.00	-12.14	Average	Horizontal
4	16840.05	49.42	8.44	57.86	74.00	-16.14	Peak	Horizontal

5	11340	37.69	2.16	39.85	54.00	-14.15	Average	Vertical
6	11340	52.42	2.16	54.58	74.00	-19.42	Peak	Vertical
7	17010	31.01	8.67	39.68	54.00	-14.32	Average	Vertical
8	17010	48.93	8.67	57.60	74.00	-16.40	Peak	Vertical
5G_N40_5710 MHz	**11420 MHz**	**17130 MHz**						
1	11423.52	49.45	2.10	51.55	74.00	-22.45	Peak	Horizontal
2	11423.52	44.45	2.10	46.55	54.00	-7.45	Average	Horizontal
3	17130	31.10	8.84	39.94	54.00	-14.06	Average	Horizontal
4	17130	46.48	8.84	55.32	74.00	-18.68	Peak	Horizontal
5	11423.52	53.13	2.10	55.23	74.00	-18.77	Peak	Vertical
6	11423.52	43.13	2.10	45.23	54.00	-8.77	Average	Vertical
7	17130	38.06	8.84	46.90	54.00	-7.10	Average	Vertical
8	17130	48.78	8.84	57.62	74.00	-16.38	Peak	Vertical
5G_N40_5755 MHz	**11510 MHz**	**17265 MHz**						
1	11510	31.60	2.05	33.65	54.00	-20.35	Average	Horizontal
2	11510	47.84	2.05	49.89	74.00	-24.11	Peak	Horizontal
3	17265	30.13	9.03	39.16	54.00	-14.84	Average	Horizontal
4	17265	42.99	9.03	52.02	74.00	-21.98	Peak	Horizontal
5	11510	35.44	2.05	37.49	54.00	-16.51	Average	Vertical
6	11510	49.28	2.05	51.33	74.00	-22.67	Peak	Vertical
7	17265	30.18	9.03	39.21	54.00	-14.79	Average	Vertical
8	17265	43.44	9.03	52.47	74.00	-21.53	Peak	Vertical
5G_N40_5795 MHz	**11590 MHz**	**17385 MHz**						
1	11590	31.24	2.07	33.31	54.00	-20.69	Average	Horizontal
2	11590	47.88	2.07	49.95	74.00	-24.05	Peak	Horizontal
3	17385	30.14	9.21	39.35	54.00	-14.65	Average	Horizontal
4	17385	43.23	9.21	52.44	74.00	-21.56	Peak	Horizontal
5	11590	35.61	2.07	37.68	54.00	-16.32	Average	Vertical
6	11590	50.26	2.07	52.33	74.00	-21.67	Peak	Vertical
7	17385	30.10	9.21	39.31	54.00	-14.69	Average	Vertical
8	17385	43.14	9.21	52.35	74.00	-21.65	Peak	Vertical
5G_AX20_5180 MHz	**10360 MHz**	**15540 MHz**						
1	10360	46.43	3.38	49.81	54.00	-4.19	Average	Horizontal
2	10360	57.34	3.38	60.72	74.00	-13.28	Peak	Horizontal
3	15540	40.57	7.56	48.13	54.00	-5.87	Average	Horizontal
4	15540	44.37	7.56	51.93	74.00	-22.07	Peak	Horizontal
5	10360	45.36	3.38	48.74	54.00	-5.26	Average	Vertical
6	10360	55.41	3.38	58.79	74.00	-15.21	Peak	Vertical
7	15540	41.68	7.56	49.24	54.00	-4.76	Average	Vertical
8	15540	44.37	7.56	51.93	74.00	-22.07	Peak	Vertical
5G_AX20_5240 MHz	**10480 MHz**	**15720 MHz**						
1	10412.39	47.84	3.38	51.22	54.00	-2.78	Average	Horizontal
2	10412.39	59.84	3.38	63.22	74.00	-10.78	Peak	Horizontal

3	15528.35	42.19	7.58	49.77	54.00	-4.23	Average	Horizontal
4	15528.35	49.19	7.58	56.77	74.00	-17.23	Peak	Horizontal
5	10412.39	47.79	3.38	51.17	54.00	-2.83	Average	Vertical
6	10412.39	56.79	3.38	60.17	74.00	-13.83	Peak	Vertical
7	15528.35	42.20	7.58	49.78	54.00	-4.22	Average	Vertical
8	15528.35	48.20	7.58	55.78	74.00	-18.22	Peak	Vertical
5G_AX20_5260 MHz		**10520 MHz**		**15780 MHz**				
1	10520	45.69	3.35	49.04	54.00	-4.96	Average	Horizontal
2	10520	55.74	3.35	59.09	74.00	-14.91	Peak	Horizontal
3	15780	40.88	7.35	48.23	54.00	-5.77	Average	Horizontal
4	15780	46.30	7.35	53.65	74.00	-20.35	Peak	Horizontal
5	10520	47.50	3.35	50.85	54.00	-3.15	Average	Vertical
6	10520	57.90	3.35	61.25	74.00	-12.75	Peak	Vertical
7	15780	41.91	7.35	49.26	54.00	-4.74	Average	Vertical
8	15780	47.66	7.35	55.01	74.00	-18.99	Peak	Vertical
5G_AX20_5300 MHz		**10600 MHz**		**15900 MHz**				
1	10600	45.69	3.19	48.88	54.00	-5.12	Average	Horizontal
2	10600	59.71	3.19	62.90	74.00	-11.10	Peak	Horizontal
3	15900	41.51	7.24	48.75	54.00	-5.25	Average	Horizontal
4	15900	43.40	7.24	50.64	74.00	-23.36	Peak	Horizontal
5	10600	47.95	3.19	51.14	54.00	-2.86	Average	Vertical
6	10600	58.37	3.19	61.56	74.00	-12.44	Peak	Vertical
7	15900	40.64	7.24	47.88	54.00	-6.12	Average	Vertical
8	15900	43.95	7.24	51.19	74.00	-22.81	Peak	Vertical
5G_AX20_5320 MHz		**10640 MHz**		**15960 MHz**				
1	10640	44.82	3.10	47.92	54.00	-6.08	Average	Horizontal
2	10640	58.83	3.10	61.93	74.00	-12.07	Peak	Horizontal
3	15960	38.42	7.19	45.61	54.00	-8.39	Average	Horizontal
4	15960	47.60	7.19	54.79	74.00	-19.21	Peak	Horizontal
5	10640	46.15	3.10	49.25	54.00	-4.75	Average	Vertical
6	10640	62.62	3.10	65.72	74.00	-8.28	Peak	Vertical
7	15800.54	43.55	7.33	50.88	54.00	-3.12	Average	Vertical
8	15800.54	48.55	7.33	55.88	74.00	-18.12	Peak	Vertical
5G_AX20_5500 MHz		**11000 MHz**		**16500 MHz**				
1	11000	47.66	2.36	50.02	54.00	-3.98	Average	Horizontal
2	11000	56.95	2.36	59.31	74.00	-14.69	Peak	Horizontal
3	16500	42.48	8.00	50.48	54.00	-3.52	Average	Horizontal
4	16500	44.12	8.00	52.12	74.00	-21.88	Peak	Horizontal
5	11000	48.20	2.36	50.56	54.00	-3.44	Average	Vertical
6	11000	62.04	2.36	64.40	74.00	-9.60	Peak	Vertical
7	16500	41.60	8.00	49.60	54.00	-4.40	Average	Vertical
8	16500	45.12	8.00	53.12	74.00	-20.88	Peak	Vertical

5G_AX20_5580 MHz		11160 MHz		16740 MHz				
1	11160	48.35	2.25	50.60	54.00	-3.40	Average	Horizontal
2	11160	58.23	2.25	60.48	74.00	-13.52	Peak	Horizontal
3	16740	42.23	8.31	50.54	54.00	-3.46	Average	Horizontal
4	16740	56.36	8.31	64.67	74.00	-9.33	Peak	Horizontal
5	11160	45.99	2.25	48.24	54.00	-5.76	Average	Vertical
6	11160	55.43	2.25	57.68	74.00	-16.32	Peak	Vertical
7	16646.09	41.48	8.19	49.67	54.00	-4.33	Average	Vertical
8	16646.09	52.48	8.19	60.67	74.00	-13.33	Peak	Vertical
5G_AX20_5700 MHz		11400 MHz		17100 MHz				
1	11390.48	53.19	2.12	55.31	74.00	-18.69	Peak	Horizontal
2	11390.48	49.19	2.12	51.31	54.00	-2.69	Average	Horizontal
3	16987	43.04	8.63	51.67	54.00	-2.33	Average	Horizontal
4	16987	51.04	8.63	59.67	74.00	-14.33	Peak	Horizontal
5	11390.48	55.92	2.12	58.04	74.00	-15.96	Peak	Vertical
6	11390.48	48.92	2.12	51.04	54.00	-2.96	Average	Vertical
7	16987	43.07	8.63	51.70	54.00	-2.30	Average	Vertical
8	16987	52.07	8.63	60.70	74.00	-13.30	Peak	Vertical
5G_AX20_5720 MHz		11440 MHz		17160 MHz				
1	11456.65	52.91	2.08	54.99	74.00	-19.01	Peak	Horizontal
2	11456.65	48.91	2.08	50.99	54.00	-3.01	Average	Horizontal
3	17085.68	42.66	8.78	51.44	54.00	-2.56	Average	Horizontal
4	17085.68	52.66	8.78	61.44	74.00	-12.56	Peak	Horizontal
5	11456.65	56.10	2.08	58.18	74.00	-15.82	Peak	Vertical
6	11456.65	49.10	2.08	51.18	54.00	-2.82	Average	Vertical
7	17085.68	42.85	8.78	51.63	54.00	-2.37	Average	Vertical
8	17085.68	53.85	8.78	62.63	74.00	-11.37	Peak	Vertical
5G_AX20_5745 MHz		11490 MHz		17235 MHz				
1	11456.65	52.15	2.08	54.23	74.00	-19.77	Peak	Horizontal
2	11456.65	48.15	2.08	50.23	54.00	-3.77	Average	Horizontal
3	17085.68	42.89	8.78	51.67	54.00	-2.33	Average	Horizontal
4	17085.68	47.89	8.78	56.67	74.00	-17.33	Peak	Horizontal
5	11523.2	49.75	2.06	51.81	54.00	-2.19	Average	Vertical
6	11523.2	54.75	2.06	56.81	74.00	-17.19	Peak	Vertical
7	17184.94	49.19	8.92	58.11	74.00	-15.89	Peak	Vertical
8	17184.94	42.19	8.92	51.11	54.00	-2.89	Average	Vertical
5G_AX20_5785 MHz		11570 MHz		17355 MHz				
1	11590.14	48.22	2.07	50.29	54.00	-3.71	Average	Horizontal
2	11590.14	51.22	2.07	53.29	74.00	-20.71	Peak	Horizontal
3	17284.77	47.28	9.06	56.34	74.00	-17.66	Peak	Horizontal
4	17284.77	41.28	9.06	50.34	54.00	-3.66	Average	Horizontal
5	11590.14	49.57	2.07	51.64	54.00	-2.36	Average	Vertical
6	11590.14	54.57	2.07	56.64	74.00	-17.36	Peak	Vertical

7	17284.77	46.39	9.06	55.45	74.00	-18.55	Peak	Vertical
8	17284.77	41.39	9.06	50.45	54.00	-3.55	Average	Vertical
5G_AX20_5825 MHz	**11650 MHz**	**17475 MHz**						
1	11657.47	46.60	2.08	48.68	54.00	-5.32	Average	Horizontal
2	11657.47	50.60	2.08	52.68	74.00	-21.32	Peak	Horizontal
3	17385.17	40.47	9.21	49.68	54.00	-4.32	Average	Horizontal
4	17385.17	47.47	9.21	56.68	74.00	-17.32	Peak	Horizontal
5	11657.47	49.12	2.08	51.20	54.00	-2.80	Average	Vertical
6	11657.47	54.12	2.08	56.20	74.00	-17.80	Peak	Vertical
7	17385.17	41.53	9.21	50.74	54.00	-3.26	Average	Vertical
8	17385.17	45.53	9.21	54.74	74.00	-19.26	Peak	Vertical
5G_AX40_5190 MHz	**10380 MHz**	**15570 MHz**						
1	10380	45.13	3.38	48.51	54.00	-5.49	Average	Horizontal
2	10380	56.39	3.38	59.77	74.00	-14.23	Peak	Horizontal
3	15570	35.43	7.54	42.97	54.00	-11.03	Average	Horizontal
4	15570	44.44	7.54	51.98	74.00	-22.02	Peak	Horizontal
5	10380	44.41	3.38	47.79	54.00	-6.21	Average	Vertical
6	10380	53.14	3.38	56.52	74.00	-17.48	Peak	Vertical
7	15570	38.51	7.54	46.05	54.00	-7.95	Average	Vertical
8	15570	44.96	7.54	52.50	74.00	-21.50	Peak	Vertical
5G_AX40_5230 MHz	**10460 MHz**	**15690 MHz**						
1	10460	45.97	3.40	49.37	54.00	-4.63	Average	Horizontal
2	10460	57.09	3.40	60.49	74.00	-13.51	Peak	Horizontal
3	15690	39.63	7.42	47.05	54.00	-6.95	Average	Horizontal
4	15690	45.93	7.42	53.35	74.00	-20.65	Peak	Horizontal
5	10460	44.24	3.40	47.64	54.00	-6.36	Average	Vertical
6	10460	56.58	3.40	59.98	74.00	-14.02	Peak	Vertical
7	15690	39.19	7.42	46.61	54.00	-7.39	Average	Vertical
8	15690	48.22	7.42	55.64	74.00	-18.36	Peak	Vertical
5G_AX40_5270 MHz	**10540 MHz**	**15810 MHz**						
1	10540	44.89	3.30	48.19	54.00	-5.81	Average	Horizontal
2	10540	54.71	3.30	58.01	74.00	-15.99	Peak	Horizontal
3	15810	37.36	7.33	44.69	54.00	-9.31	Average	Horizontal
4	15810	43.55	7.33	50.88	74.00	-23.12	Peak	Horizontal
5	10540	40.19	3.30	43.49	54.00	-10.51	Average	Vertical
6	10540	54.82	3.30	58.12	74.00	-15.88	Peak	Vertical
7	15810	31.36	7.33	38.69	54.00	-15.31	Average	Vertical
8	15810	43.74	7.33	51.07	74.00	-22.93	Peak	Vertical
5G_AX40_5310 MHz	**10620 MHz**	**15930 MHz**						
1	10620	40.75	3.14	43.89	54.00	-10.11	Average	Horizontal
2	10620	55.23	3.14	58.37	74.00	-15.63	Peak	Horizontal
3	15930	30.67	7.21	37.88	54.00	-16.12	Average	Horizontal
4	15930	43.34	7.21	50.55	74.00	-23.45	Peak	Horizontal

5	10620	44.09	3.14	47.23	54.00	-6.77	Average	Vertical
6	10620	57.83	3.14	60.97	74.00	-13.03	Peak	Vertical
7	15930	39.75	7.21	46.96	54.00	-7.04	Average	Vertical
8	15930	43.68	7.21	50.89	74.00	-23.11	Peak	Vertical
5G_AX40_5510 MHz	**11020 MHz**		**16530 MHz**					
1	11020	39.61	2.35	41.96	54.00	-12.04	Average	Horizontal
2	11020	53.21	2.35	55.56	74.00	-18.44	Peak	Horizontal
3	16530	36.13	8.04	44.17	54.00	-9.83	Average	Horizontal
4	16530	53.62	8.04	61.66	74.00	-12.34	Peak	Horizontal
5	11020	42.13	2.35	44.48	54.00	-9.52	Average	Vertical
6	11020	56.34	2.35	58.69	74.00	-15.31	Peak	Vertical
7	16530	35.13	8.04	43.17	54.00	-10.83	Average	Vertical
8	16530	53.31	8.04	61.35	74.00	-12.65	Peak	Vertical
5G_AX40_5550 MHz	**11100 MHz**		**16650 MHz**					
1	11020	42.13	2.35	44.48	54.00	-9.52	Average	Vertical
2	11100	49.90	2.30	52.20	74.00	-21.80	Peak	Horizontal
3	16530	35.13	8.04	43.17	54.00	-10.83	Average	Vertical
4	16650	42.91	8.20	51.11	74.00	-22.89	Peak	Horizontal
5	11100	46.52	2.30	48.82	54.00	-5.18	Average	Vertical
6	11100	55.34	2.30	57.64	74.00	-16.36	Peak	Vertical
7	16650	41.64	8.20	49.84	54.00	-4.16	Average	Vertical
8	16650	43.83	8.20	52.03	74.00	-21.97	Peak	Vertical
5G_AX40_5670 MHz	**11340 MHz**		**17010 MHz**					
1	11340	46.98	2.16	49.14	54.00	-4.86	Average	Horizontal
2	11340	52.27	2.16	54.43	74.00	-19.57	Peak	Horizontal
3	16840.05	41.36	8.44	49.80	54.00	-4.20	Average	Horizontal
4	16840.05	51.36	8.44	59.80	74.00	-14.20	Peak	Horizontal
5	11340	34.56	2.16	36.72	54.00	-17.28	Average	Vertical
6	11340	48.48	2.16	50.64	74.00	-23.36	Peak	Vertical
7	17010	31.17	8.67	39.84	54.00	-14.16	Average	Vertical
8	17010	44.10	8.67	52.77	74.00	-21.23	Peak	Vertical
5G_AX40_5710 MHz	**11420 MHz**		**17130 MHz**					
1	11423.52	52.30	2.10	54.40	74.00	-19.60	Peak	Horizontal
2	11423.52	48.30	2.10	50.40	54.00	-3.60	Average	Horizontal
3	16937.88	50.42	8.57	58.99	74.00	-15.01	Peak	Horizontal
4	16937.88	42.42	8.57	50.99	54.00	-3.01	Average	Horizontal
5	11423.52	54.59	2.10	56.69	74.00	-17.31	Peak	Vertical
6	11423.52	48.59	2.10	50.69	54.00	-3.31	Average	Vertical
7	16937.88	49.75	8.57	58.32	74.00	-15.68	Peak	Vertical
8	16937.88	41.75	8.57	50.32	54.00	-3.68	Average	Vertical
5G_AX40_5755 MHz	**11510 MHz**		**17265 MHz**					
1	11510	40.19	2.05	42.24	54.00	-11.76	Average	Horizontal
2	11510	54.37	2.05	56.42	74.00	-17.58	Peak	Horizontal

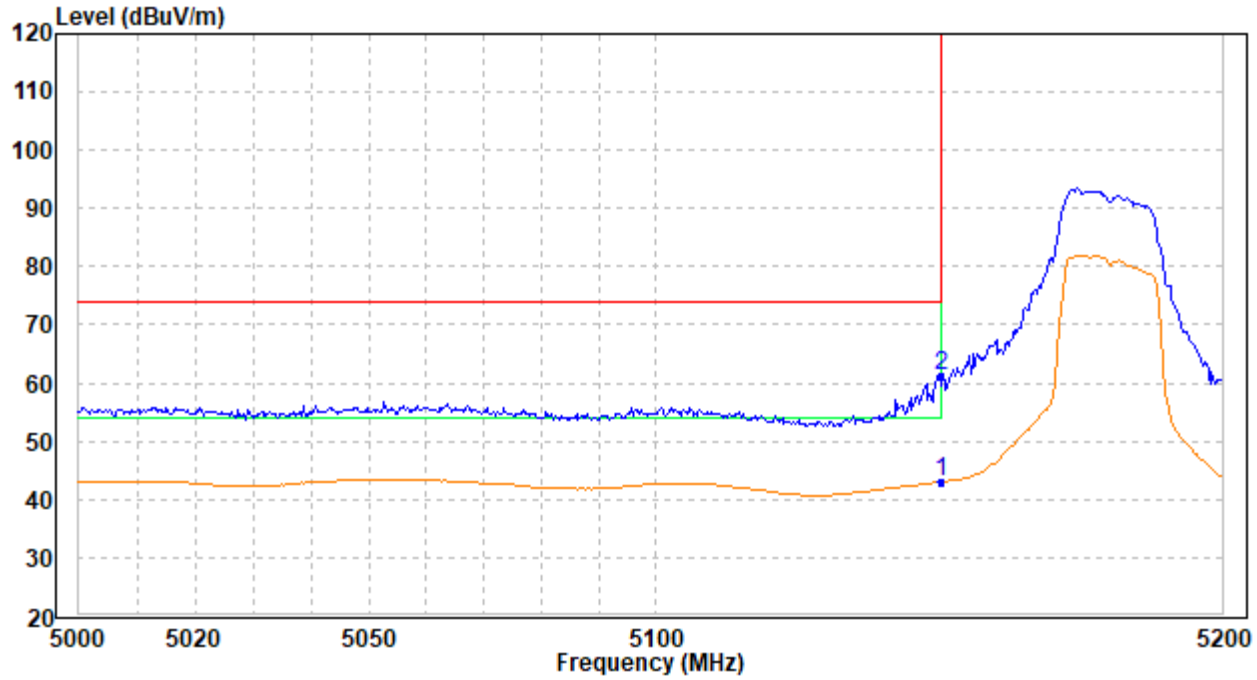
3	17265	38.78	9.03	47.81	54.00	-6.19	Average	Horizontal
4	17265	53.30	9.03	62.33	74.00	-11.67	Peak	Horizontal
5	11510	38.15	2.05	40.20	54.00	-13.80	Average	Vertical
6	11510	53.08	2.05	55.13	74.00	-18.87	Peak	Vertical
7	17265	35.78	9.03	44.81	54.00	-9.19	Average	Vertical
8	17265	51.96	9.03	60.99	74.00	-13.01	Peak	Vertical
5G_AX40_5795 MHz	**11590 MHz**		**17385 MHz**					
1	11590	38.70	2.07	40.77	54.00	-13.23	Average	Horizontal
2	11590	53.65	2.07	55.72	74.00	-18.28	Peak	Horizontal
3	17385	35.83	9.21	45.04	54.00	-8.96	Average	Horizontal
4	17385	49.96	9.21	59.17	74.00	-14.83	Peak	Horizontal
5	11590	38.59	2.07	40.66	54.00	-13.34	Average	Vertical
6	11590	51.23	2.07	53.30	74.00	-20.70	Peak	Vertical
7	17385	30.83	9.21	40.04	54.00	-13.96	Average	Vertical
8	17385	43.55	9.21	52.76	74.00	-21.24	Peak	Vertical

Remark:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

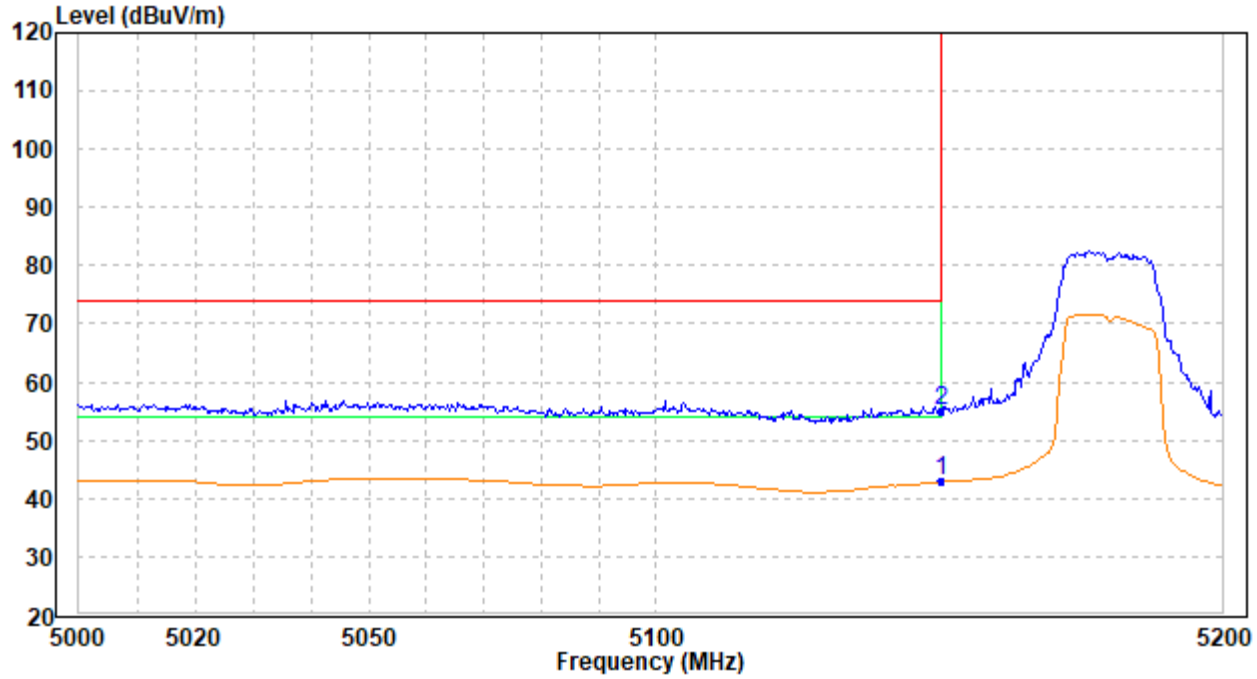
Band Edge Measurements (Radiated)

Test Channel:	5G_A_5180	Ant Polar:	Horizontal



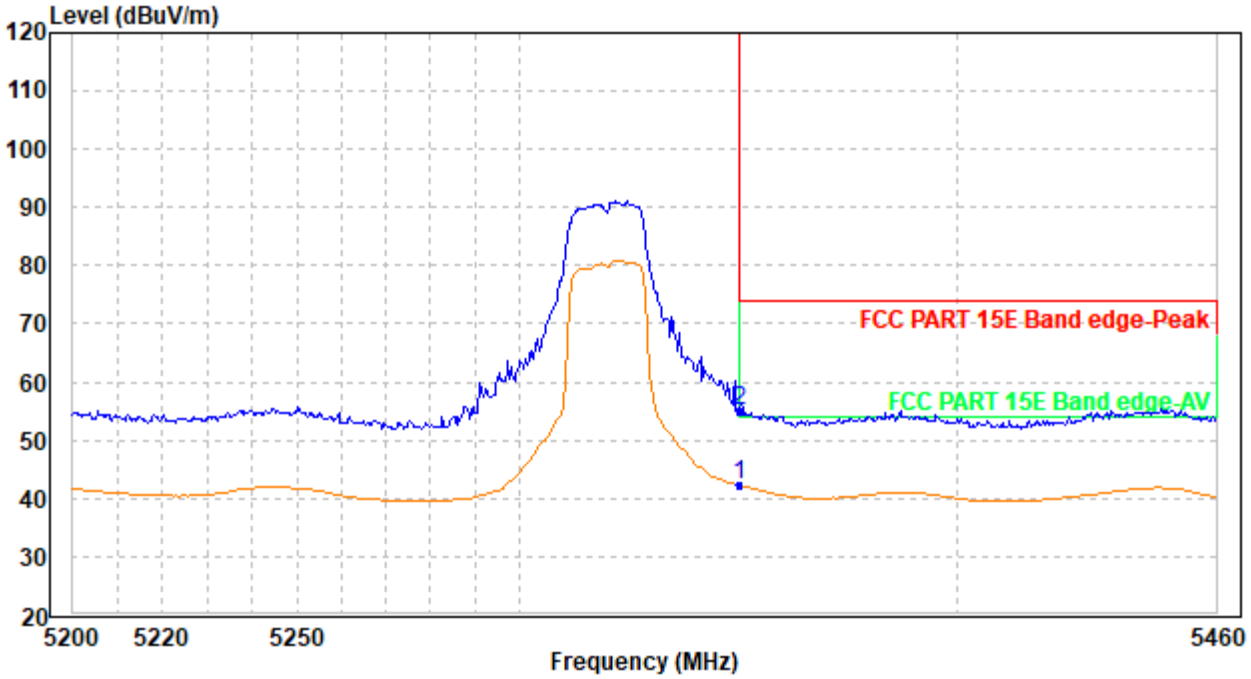
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5150.000	61.25	74.00	43.02	54.00	PASS

Test Channel:	5G_A_5180	Ant Polar:	Vertical



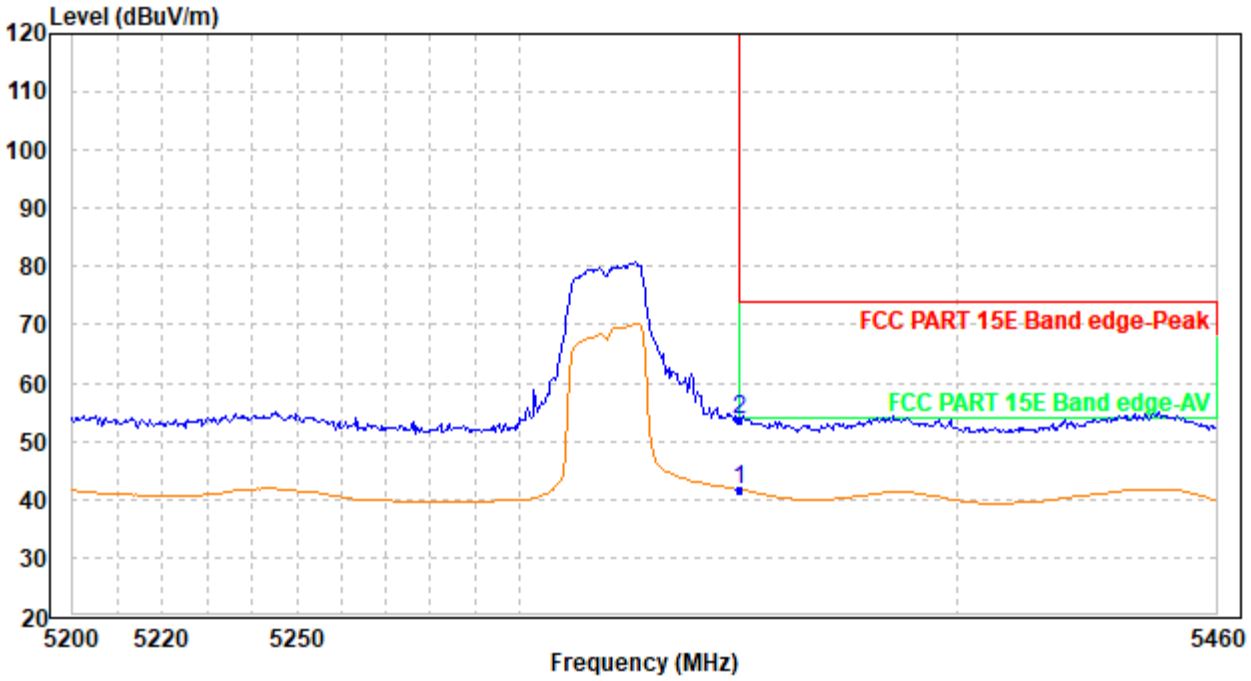
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5150.000	55.00	74.00	42.85	54.00	PASS

Test Channel:	5G_A_5320	Ant Polar:	Horizontal



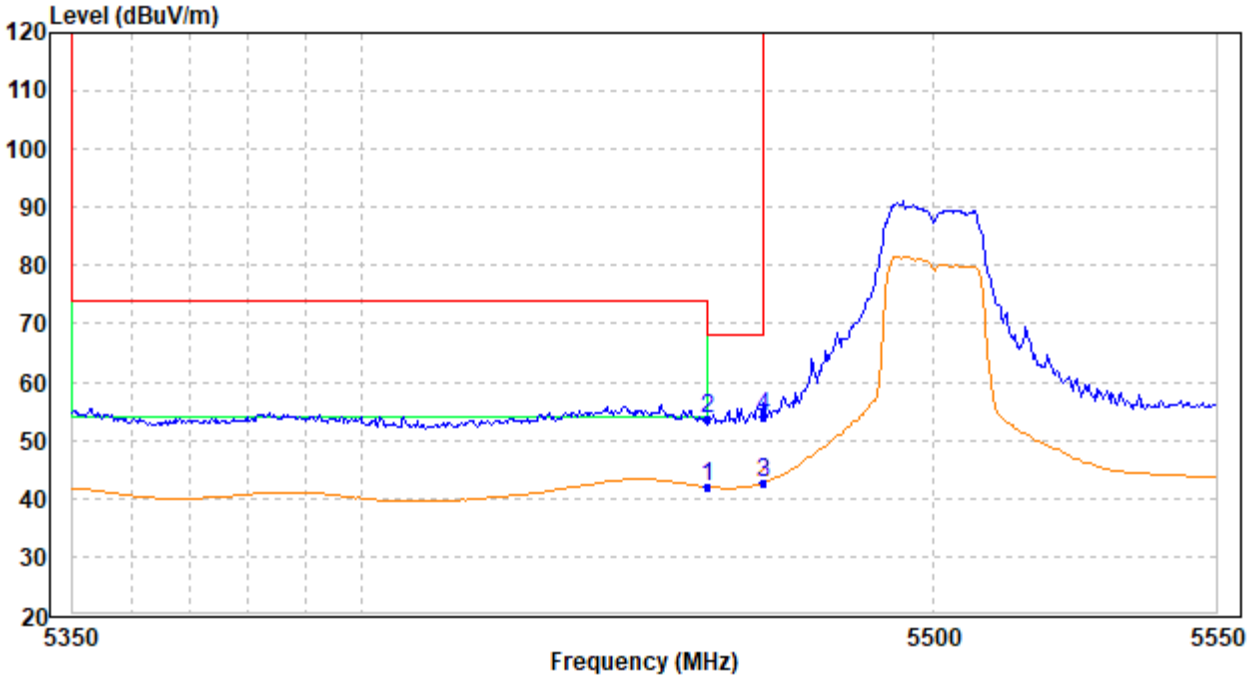
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	55.06	74.00	42.20	54.00	PASS

Test Channel:	5G_A_5320	Ant Polar:	Vertical



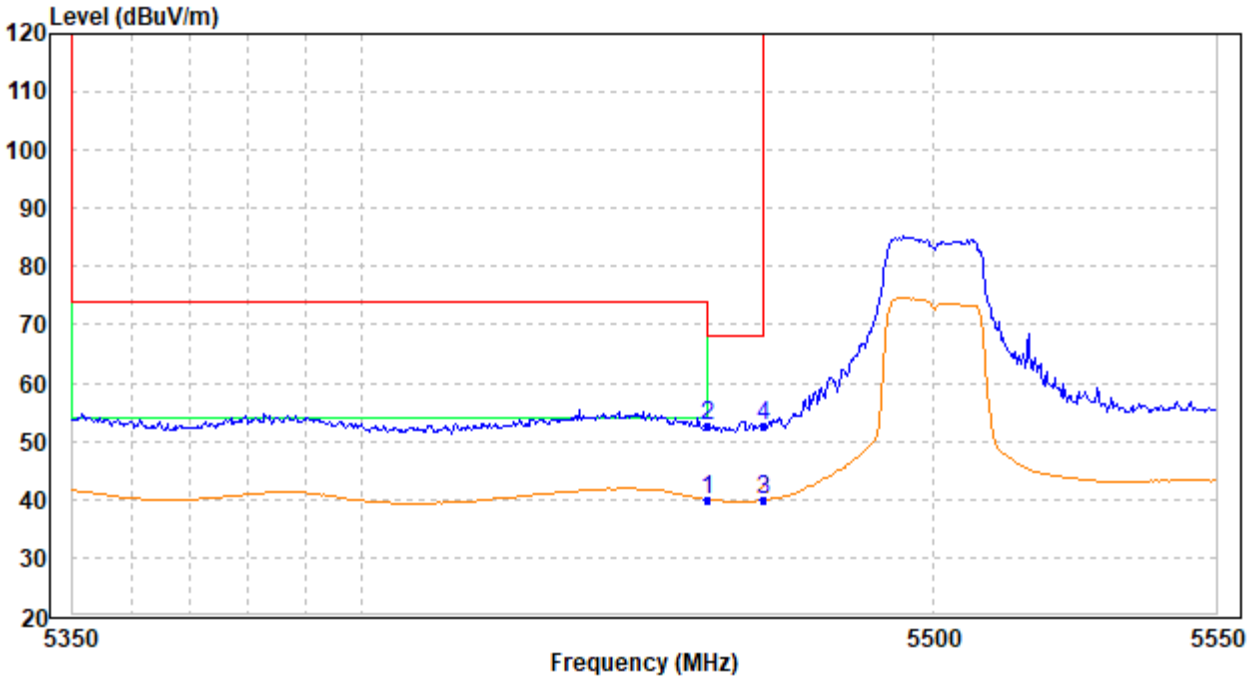
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	53.65	74.00	41.69	54.00	PASS

Test Channel:	5G_A_5500	Ant Polar:	Horizontal



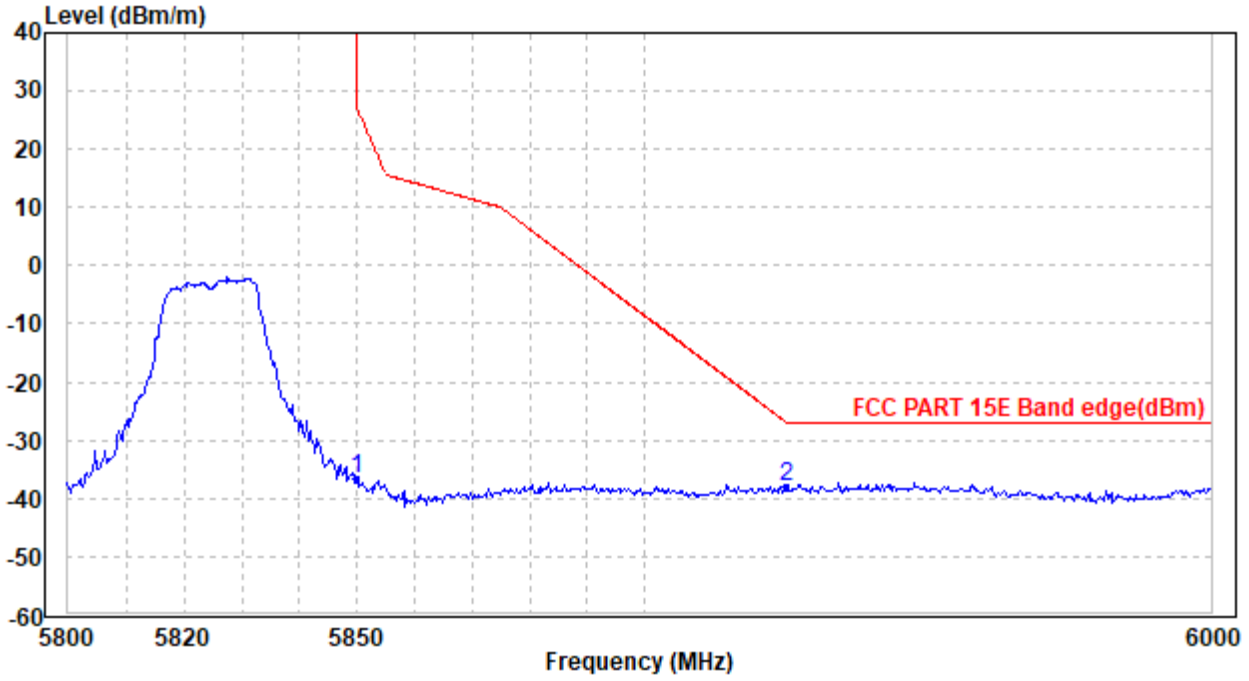
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	53.79	68.20	42.04	54.00	PASS
5470.000	53.87	68.20	42.56	68.20	PASS

Test Channel:	5G_A_5500	Ant Polar:	Vertical



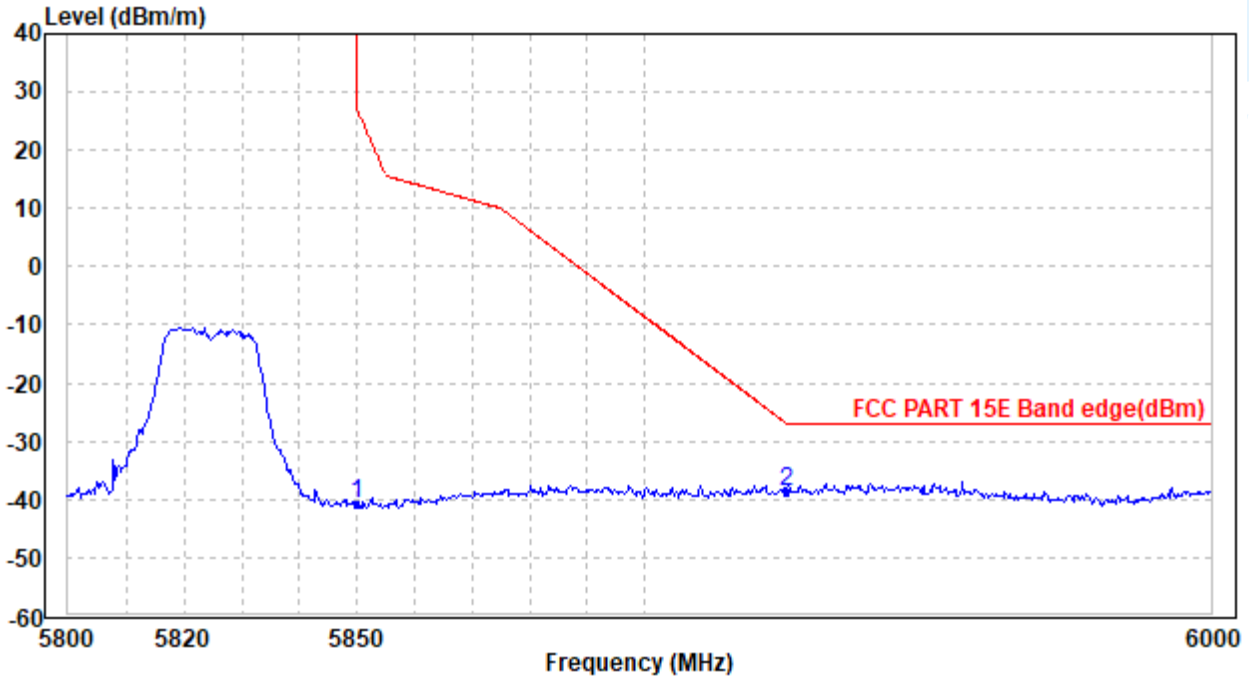
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	52.60	68.20	40.10	54.00	PASS
5470.000	52.69	68.20	39.86	68.20	PASS

Test Channel:	5G_A_5825	Ant Polar:	Horizontal



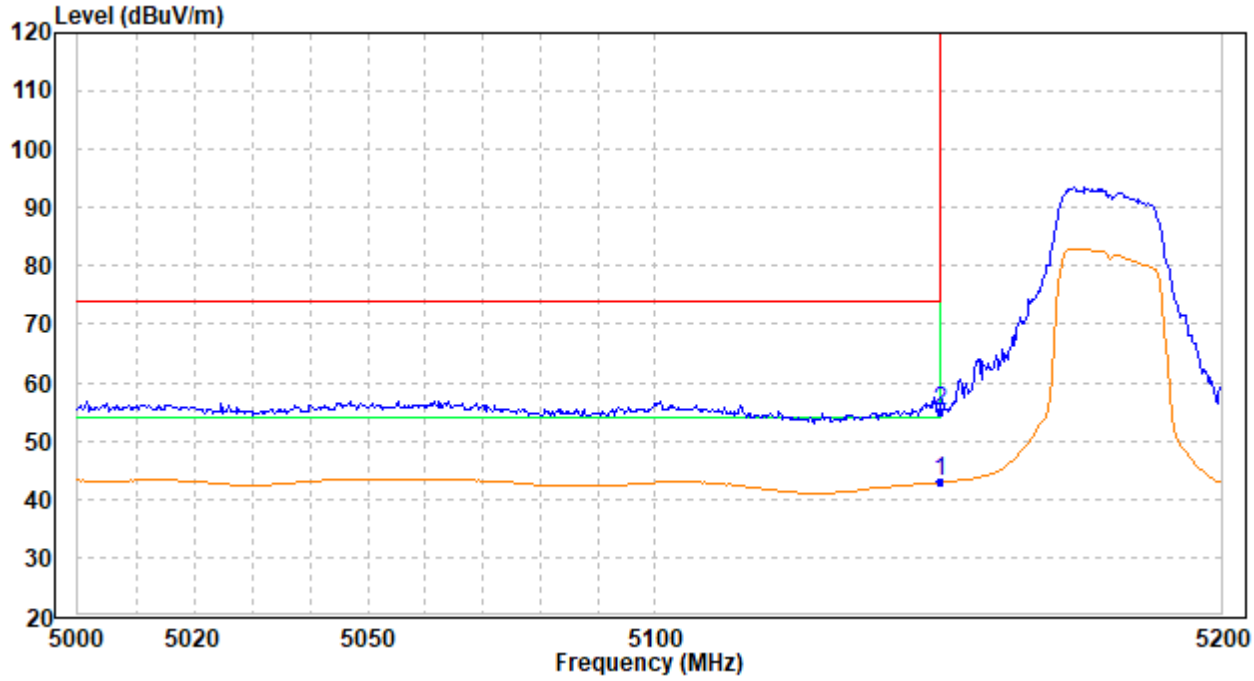
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-36.77	27.00	PASS
5925.000	-37.94	-27.00	PASS

Test Channel:	5G_A_5825	Ant Polar:	Vertical



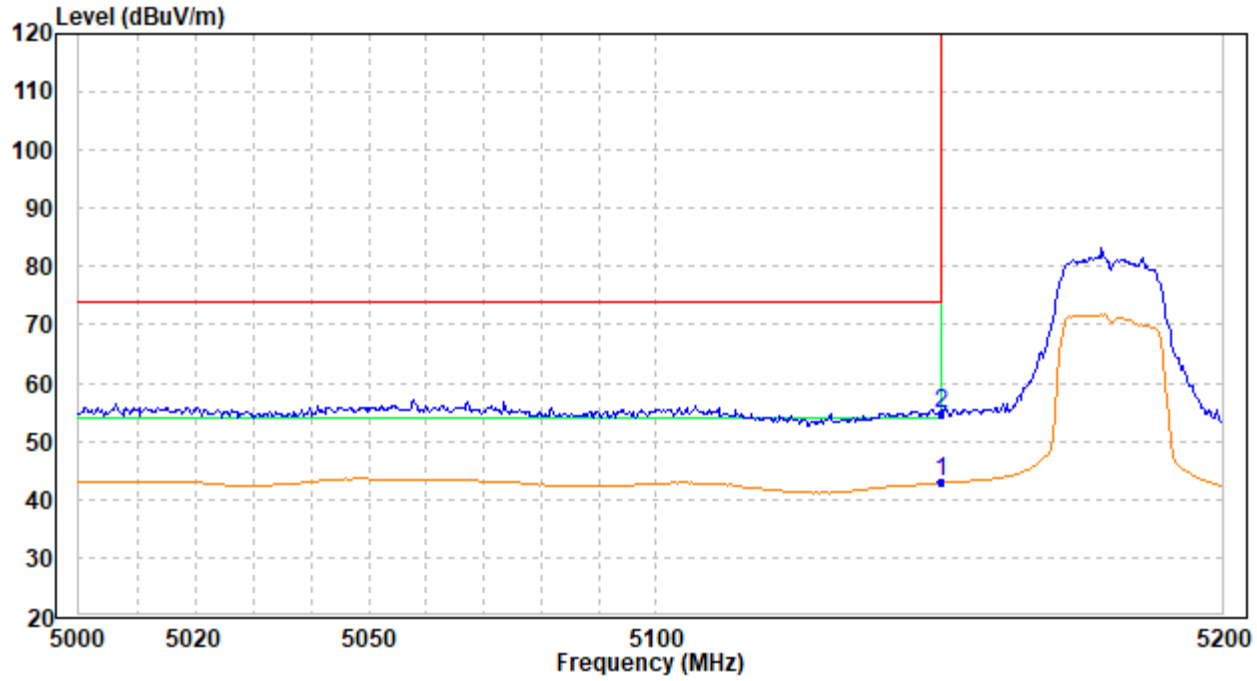
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-40.75	27.00	PASS
5925.000	-38.71	-27.00	PASS

Test Channel:	5G_n20_5180	Ant Polar:	Horizontal



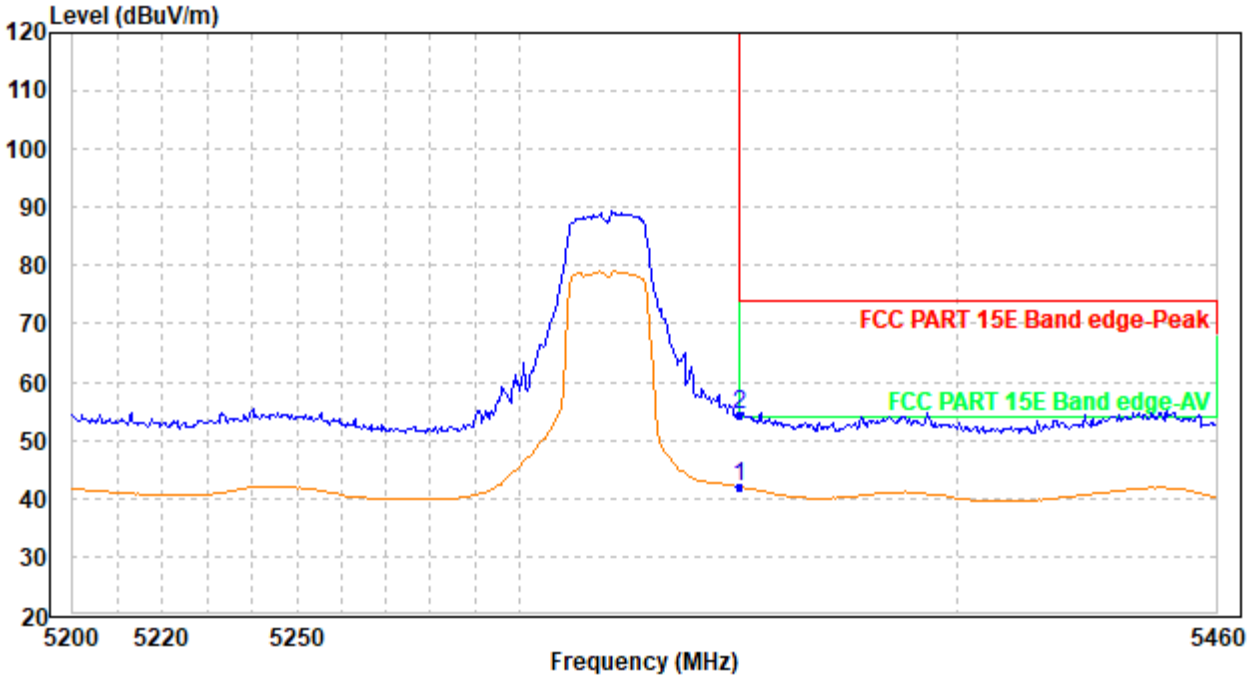
Frequency (MHz)	Peak level (dBµv/m)	Peak Limit (dBµv/m)	AV level (dBµv/m)	AV Limit (dBµv/m)	Conclusion
5150.000	55.20	74.00	42.94	54.00	PASS

Test Channel:	5G_n20_5180	Ant Polar:	Vertical



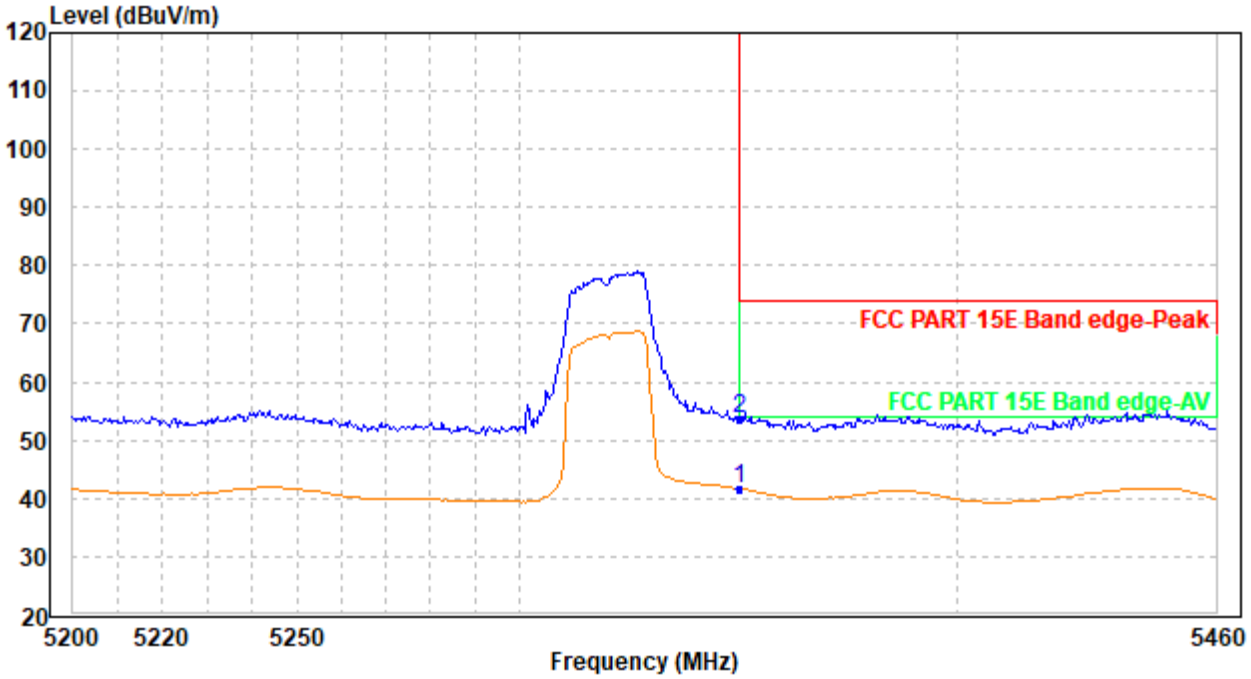
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	54.78	74.00	42.94	54.00	PASS

Test Channel:	5G_n20_5320	Ant Polar:	Horizontal



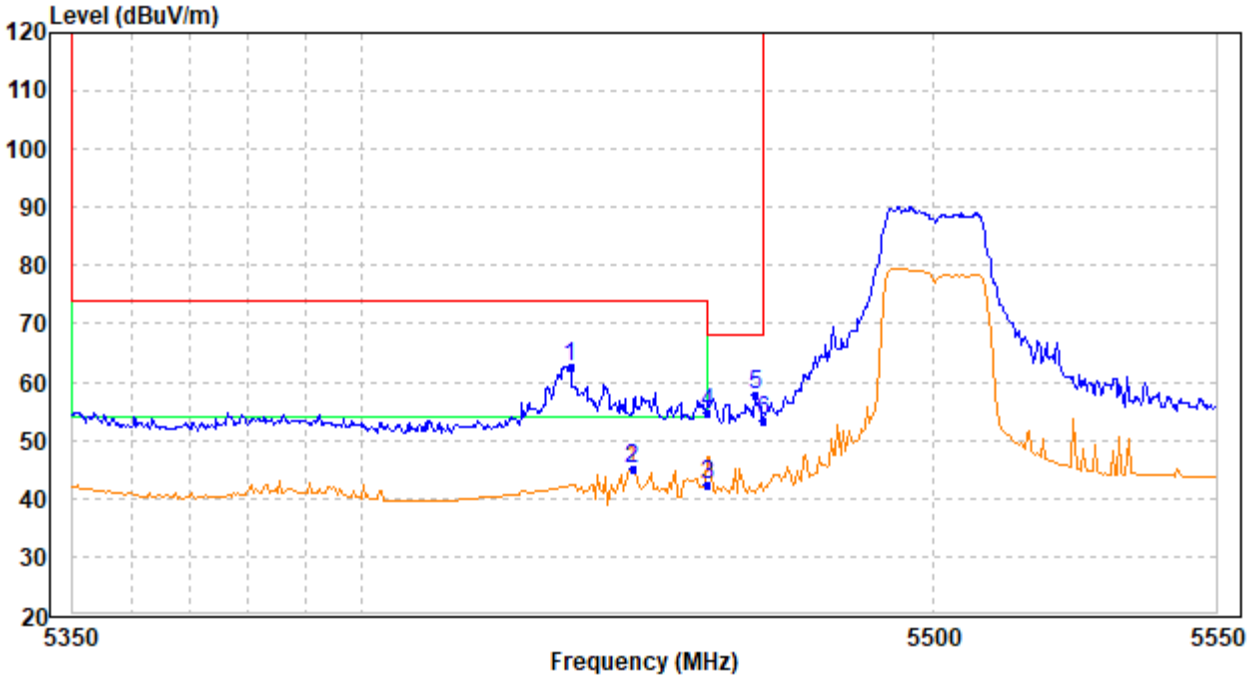
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5350.000	54.30	74.00	42.10	54.00	PASS

Test Channel:	5G_n20_5320	Ant Polar:	Vertical



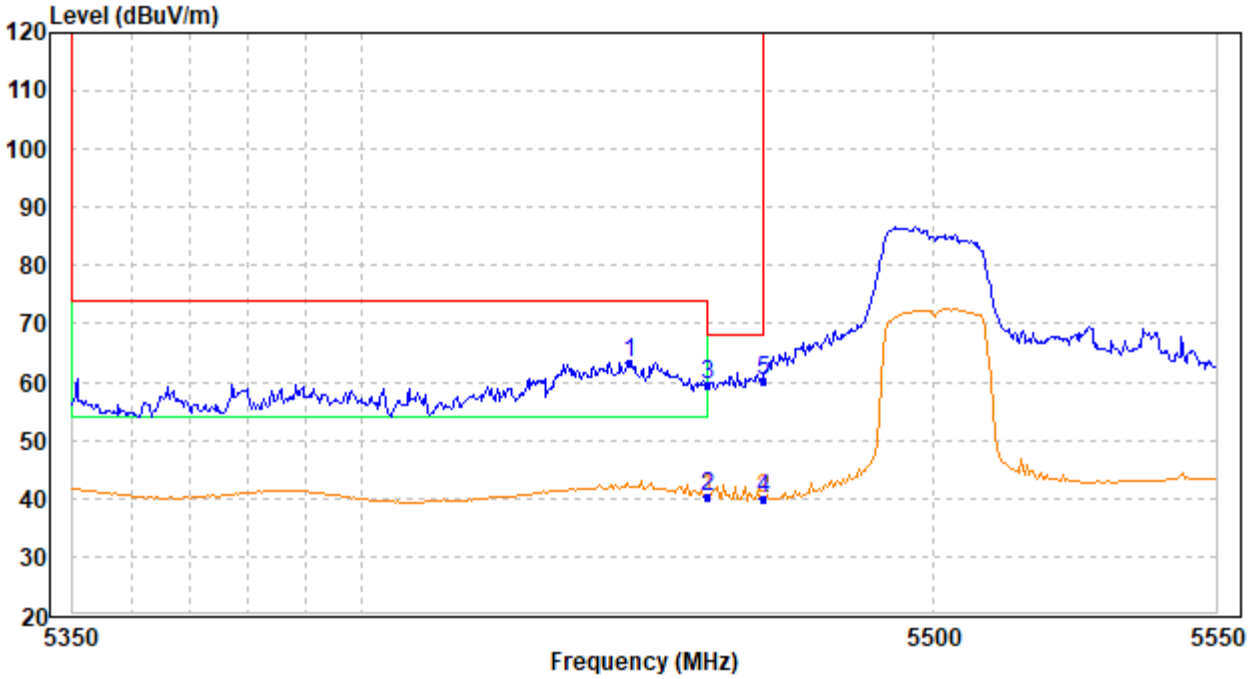
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5350.000	53.65	74.00	41.69	54.00	PASS

Test Channel:	5G_n20_5500	Ant Polar:	Horizontal



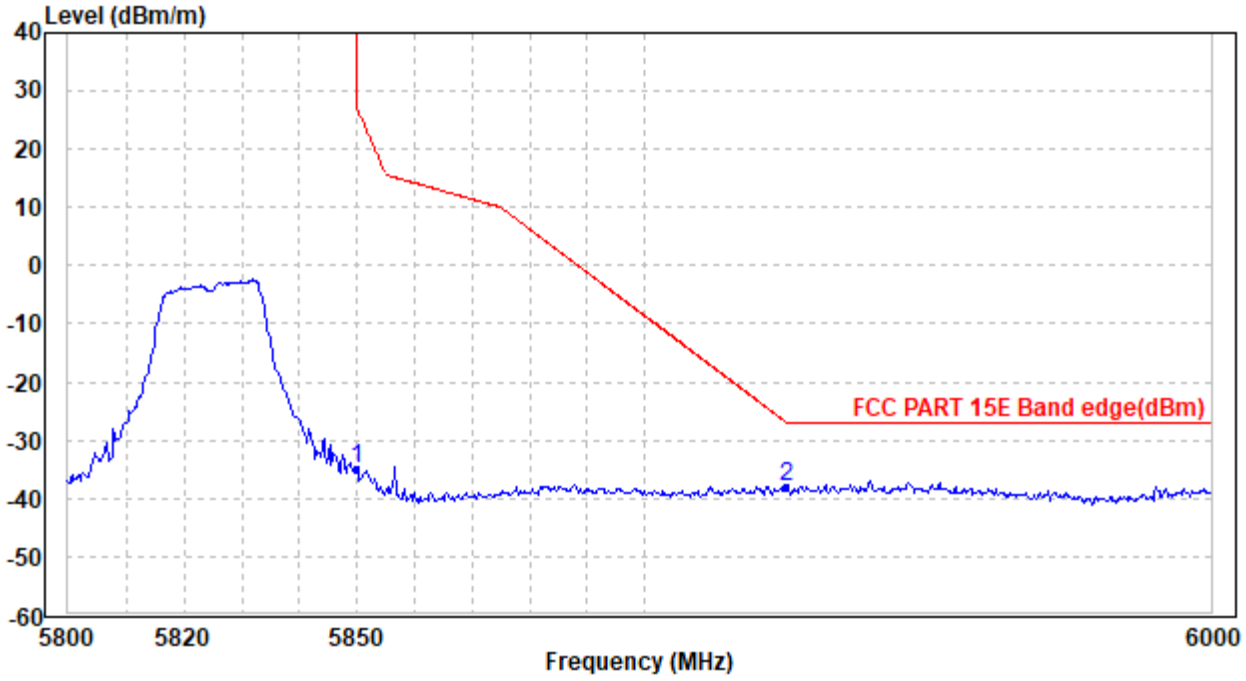
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5436.172	62.74	74.00	--	--	PASS
5446.994	--	--	45.19	54.00	PASS
5460.000	54.74	68.20	42.44	54.00	PASS
5468.437	57.69	68.20	--	--	PASS
5470.000	53.26	68.20	--	--	PASS

Test Channel:	5G_n20_5500	Ant Polar:	Vertical



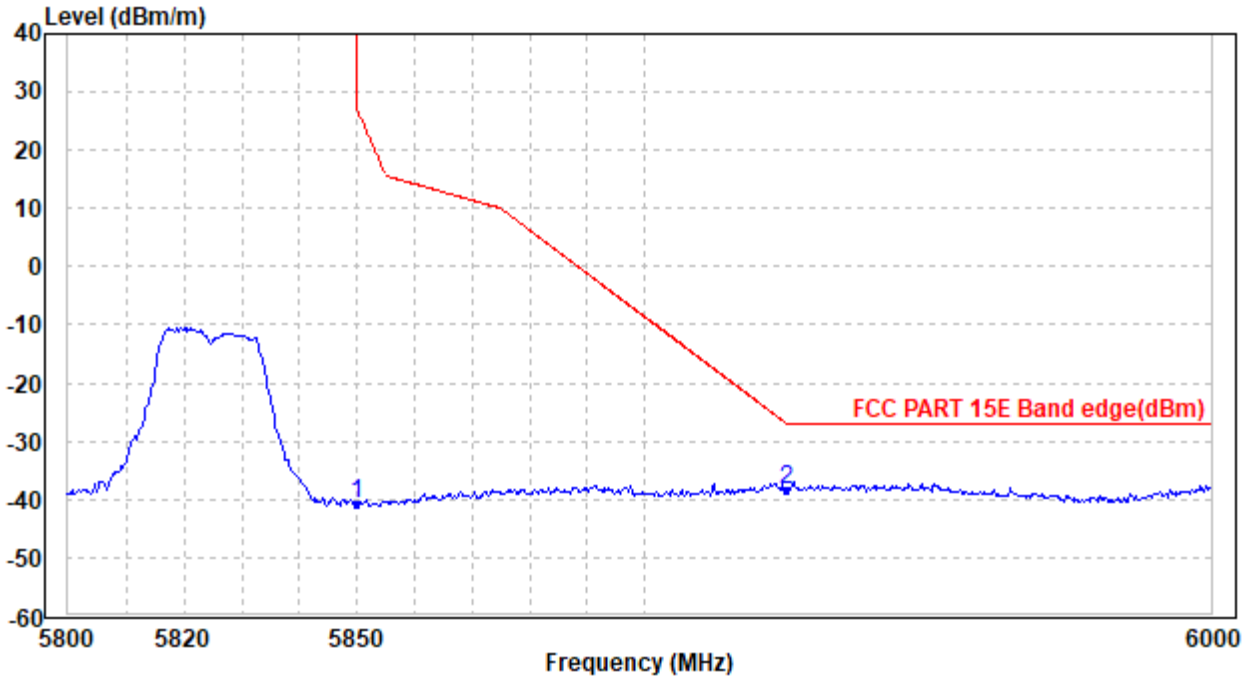
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5446.393	63.34	74.00	--	--	PASS
5460.000	59.38	68.20	40.23	54.00	PASS
5470.000	60.27	68.20	39.86	68.20	PASS

Test Channel:	5G_n20_5825	Ant Polar:	Horizontal



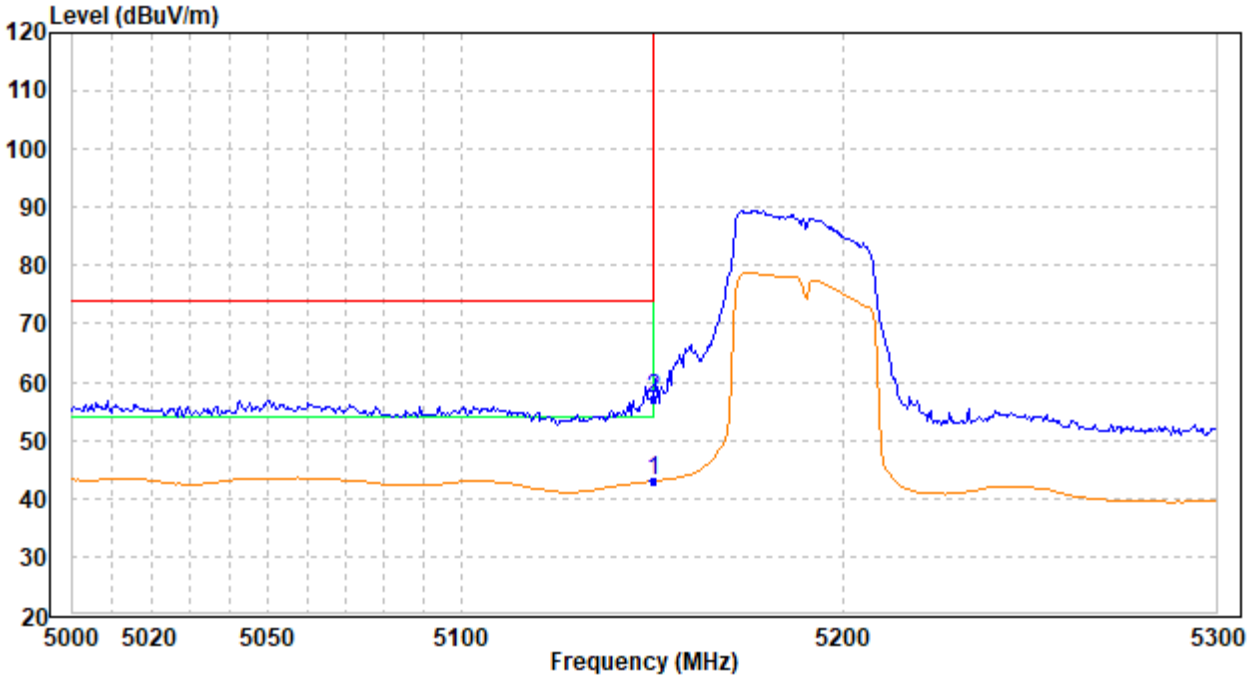
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-34.97	27.00	PASS
5925.000	-37.85	-27.00	PASS

Test Channel:	5G_n20_5825	Ant Polar:	Vertical



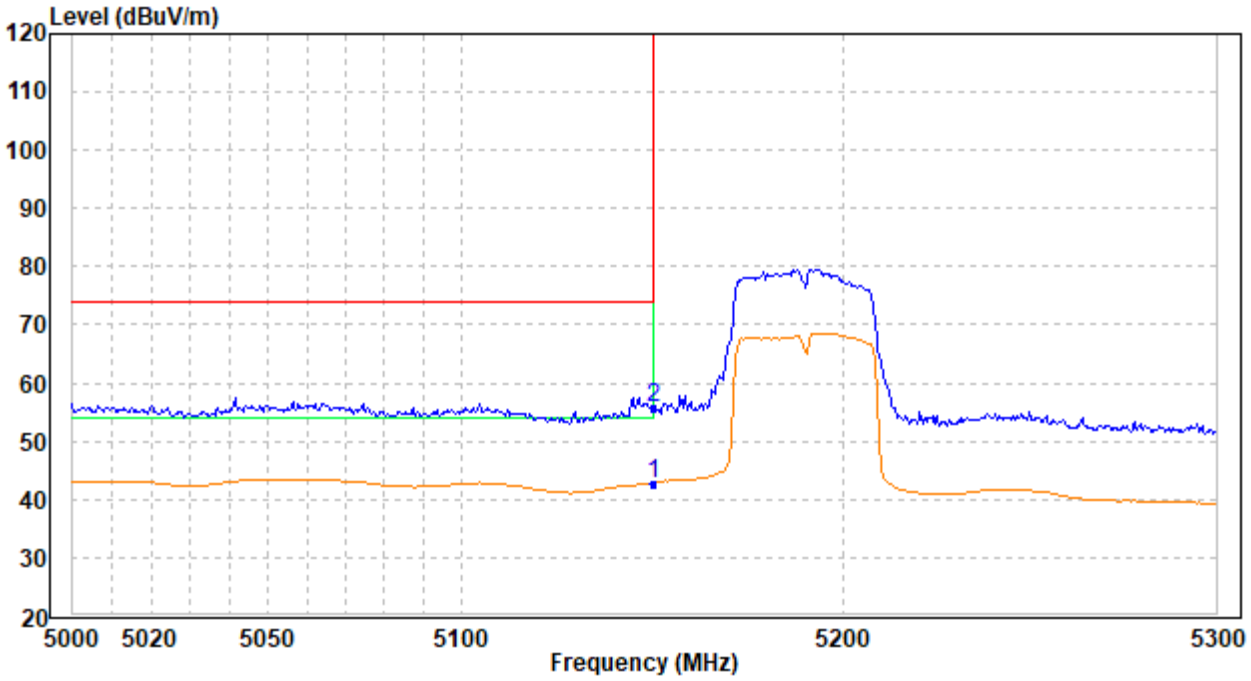
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-40.65	27.00	PASS
5925.000	-38.24	-27.00	PASS

Test Channel:	5G_n40_5190	Ant Polar:	Horizontal



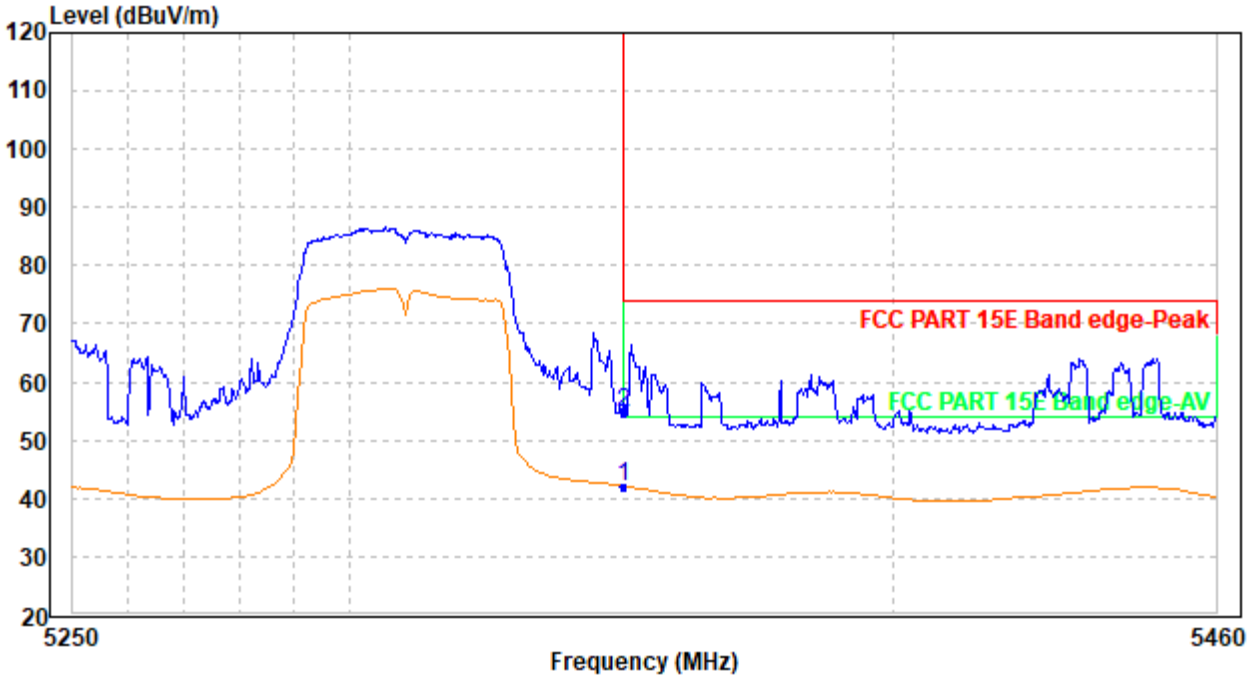
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	57.05	74.00	43.02	54.00	PASS

Test Channel:	5G_n40_5190	Ant Polar:	Vertical



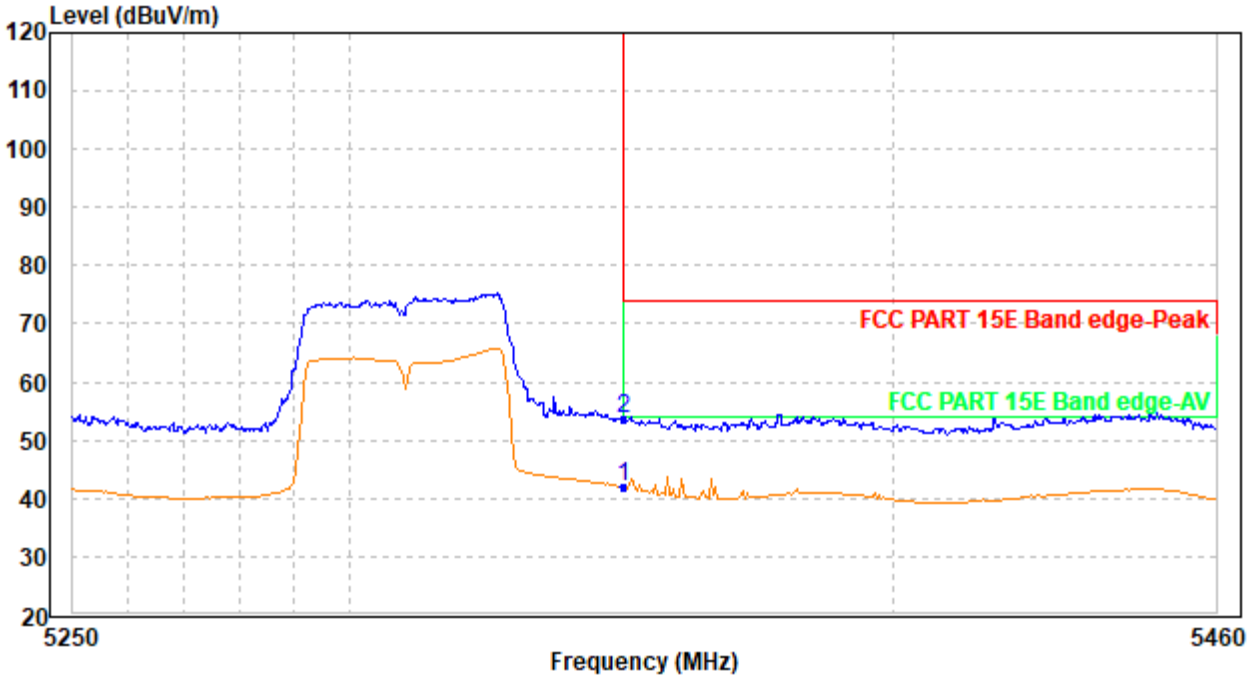
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	55.58	74.00	42.85	54.00	PASS

Test Channel:	5G_n40_5310	Ant Polar:	Horizontal



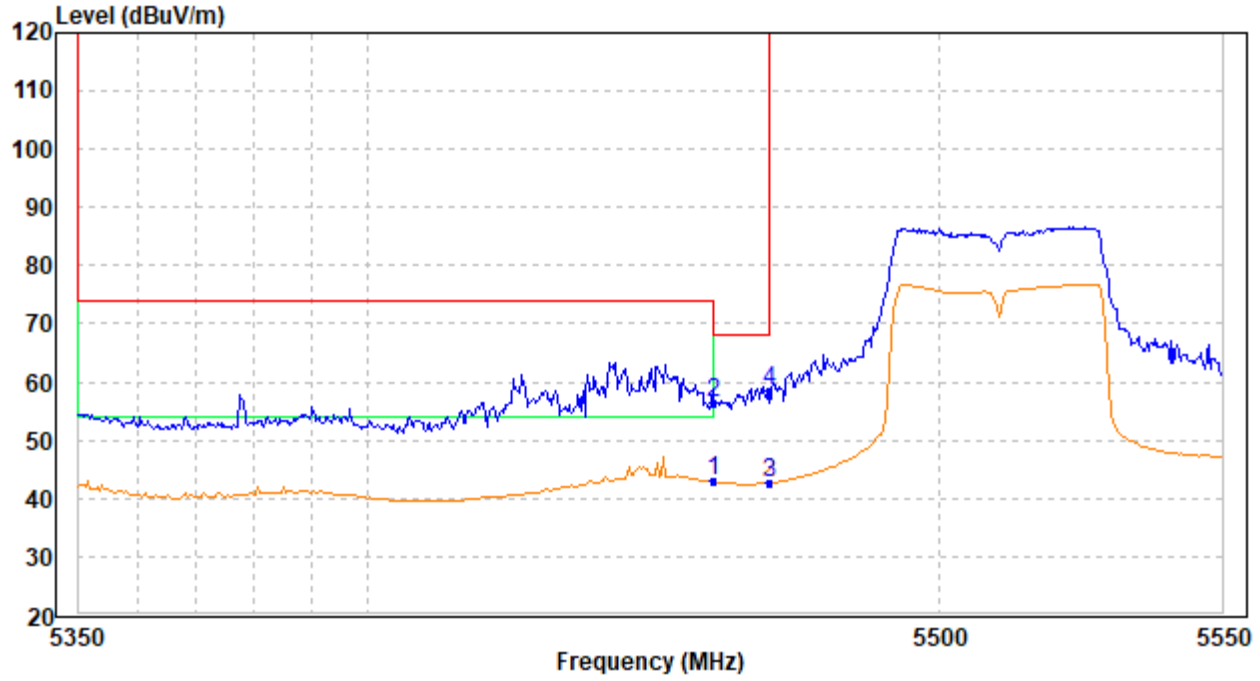
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	54.80	74.00	42.10	54.00	PASS

Test Channel:	5G_n40_5310	Ant Polar:	Vertical



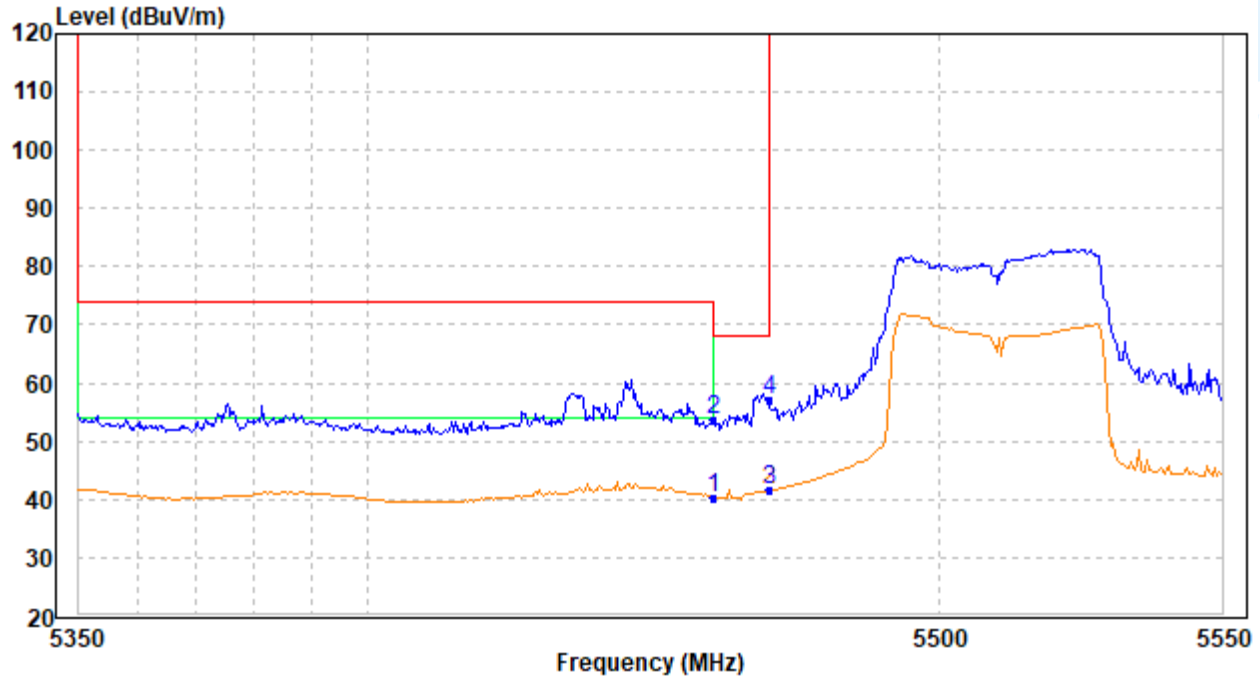
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5350.000	53.69	74.00	41.90	54.00	PASS

Test Channel:	5G_n40_5510	Ant Polar:	Horizontal



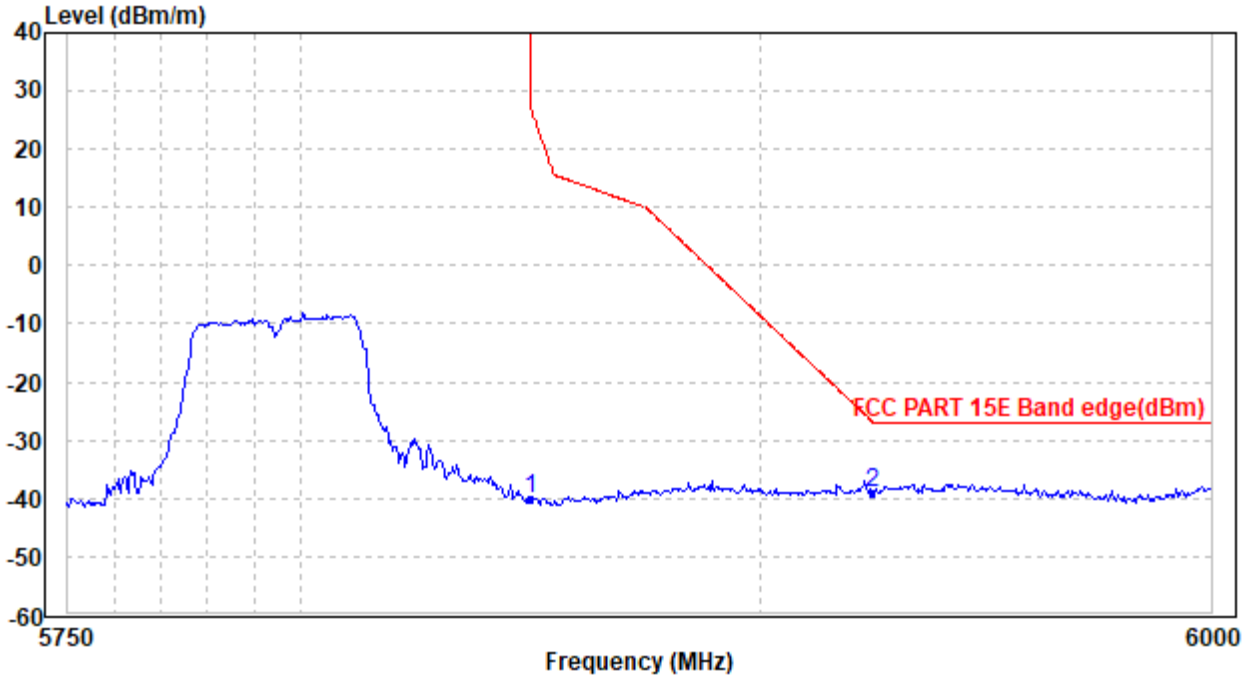
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	56.58	68.20	42.91	54.00	PASS
5470.000	58.60	68.20	42.65	68.20	PASS

Test Channel:	5G_n40_5510	Ant Polar:	Vertical



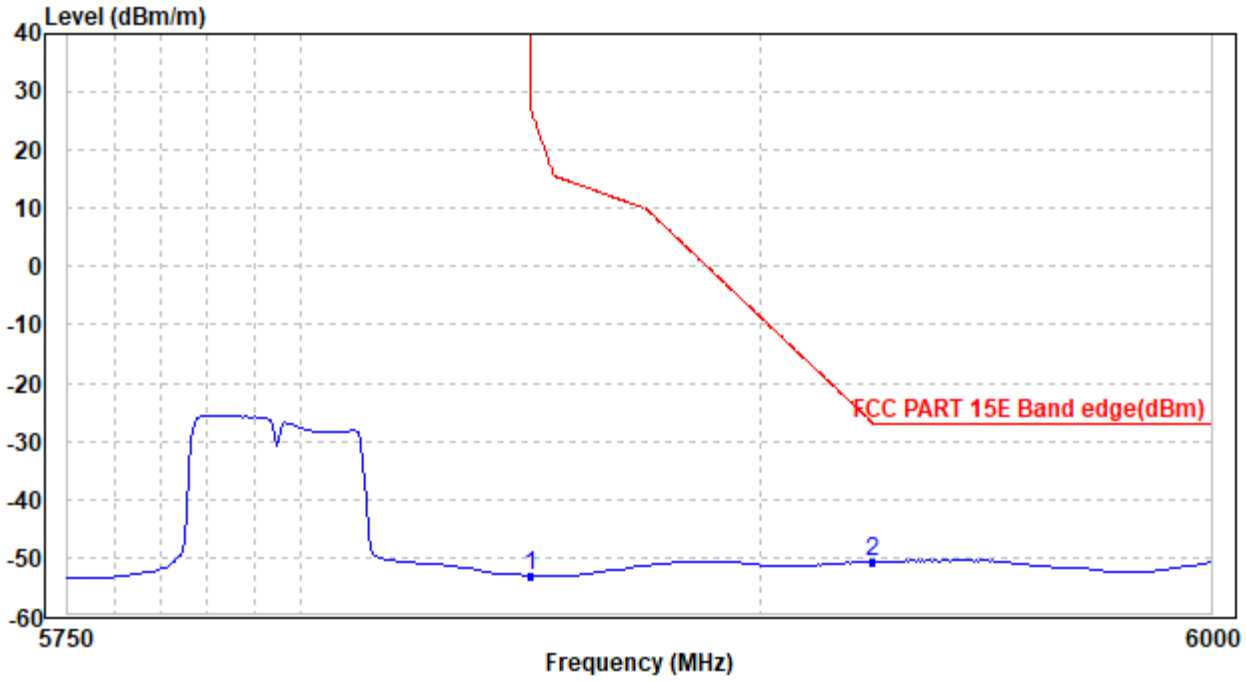
Frequency (MHz)	Peak level (dBμV/m)	Peak Limit (dBμV/m)	AV level (dBμV/m)	AV Limit (dBμV/m)	Conclusion
5460.000	53.71	68.20	40.35	54.00	PASS
5470.000	57.19	68.20	41.53	68.20	PASS

Test Channel:	5G_n40_5795	Ant Polar:	Horizontal



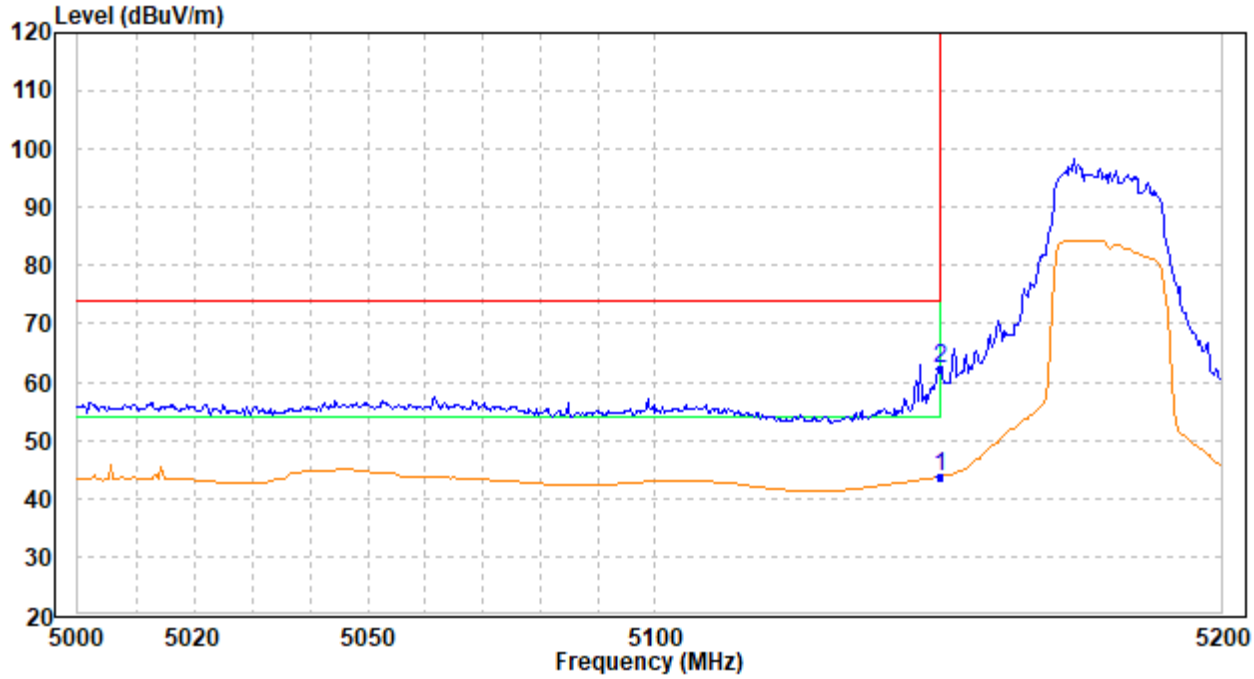
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-40.01	27.00	PASS
5925.000	-39.00	-27.00	PASS

Test Channel:	5G_n40_5795	Ant Polar:	Vertical



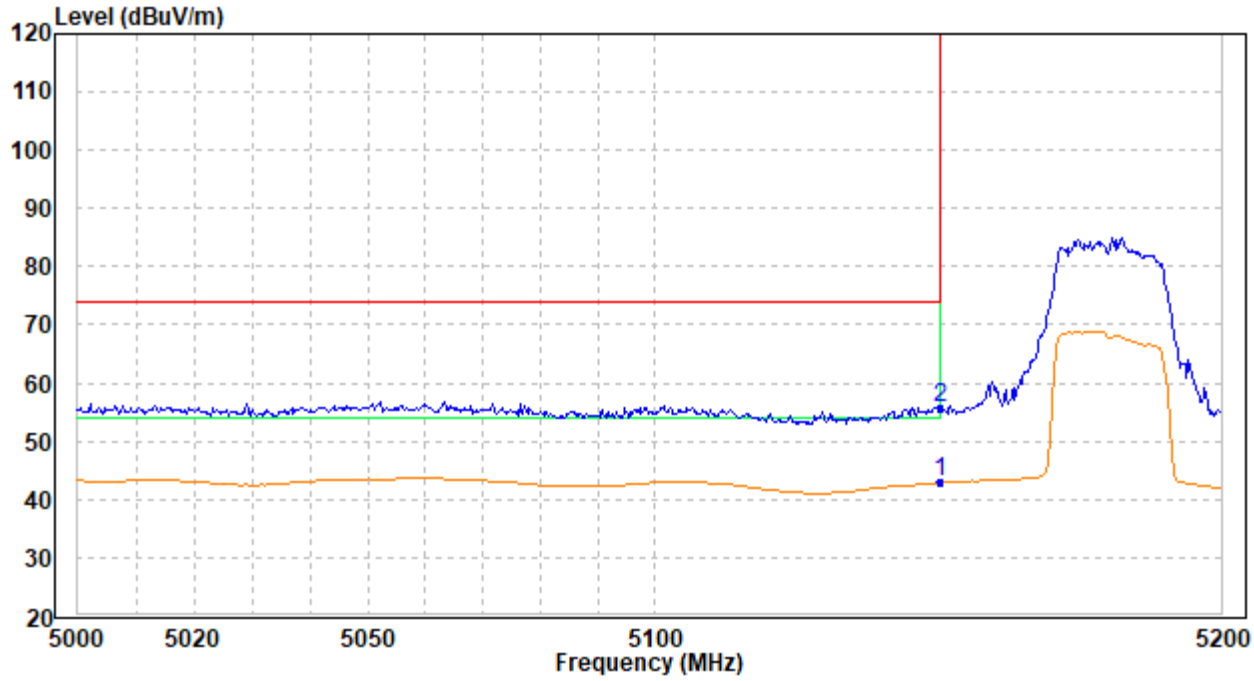
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-40.42	27.00	PASS
5925.000	-38.80	-27.00	PASS

Test Channel:	5G_AX20_5180	Ant Polar:	Horizontal



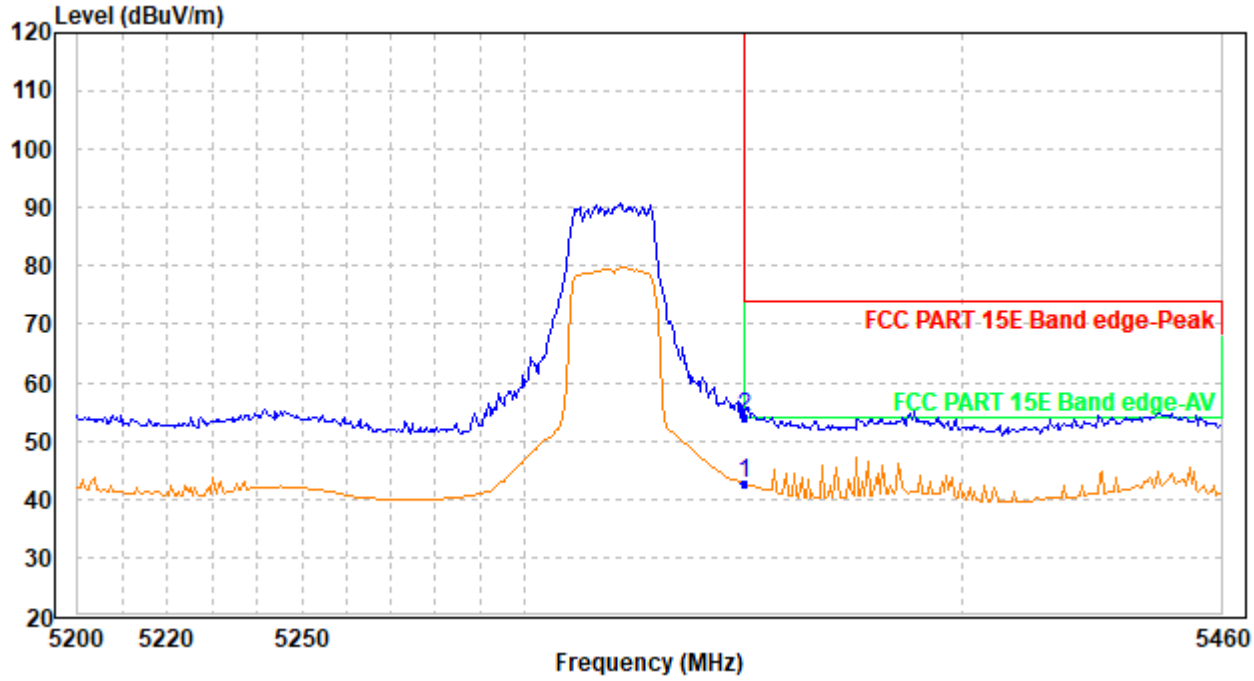
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	62.26	74.00	43.75	54.00	PASS

Test Channel:	5G_AX20_5180	Ant Polar:	Vertical



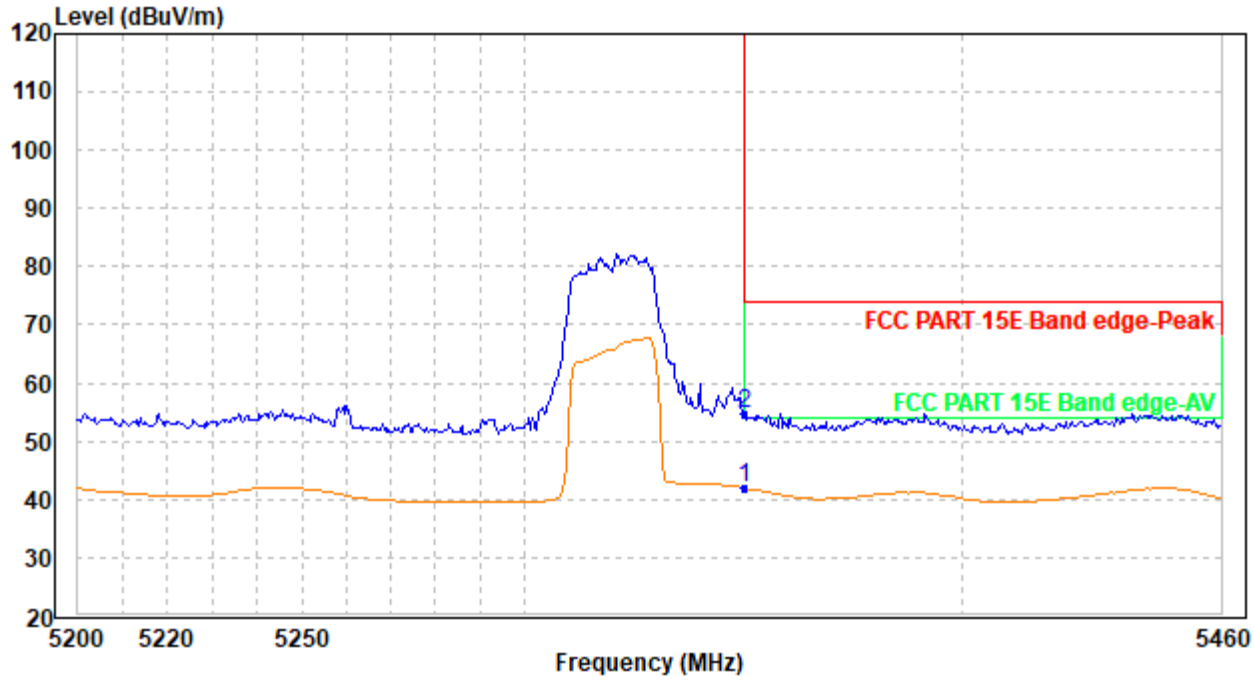
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	55.72	74.00	42.85	54.00	PASS

Test Channel:	5G_AX20_5320	Ant Polar:	Horizontal



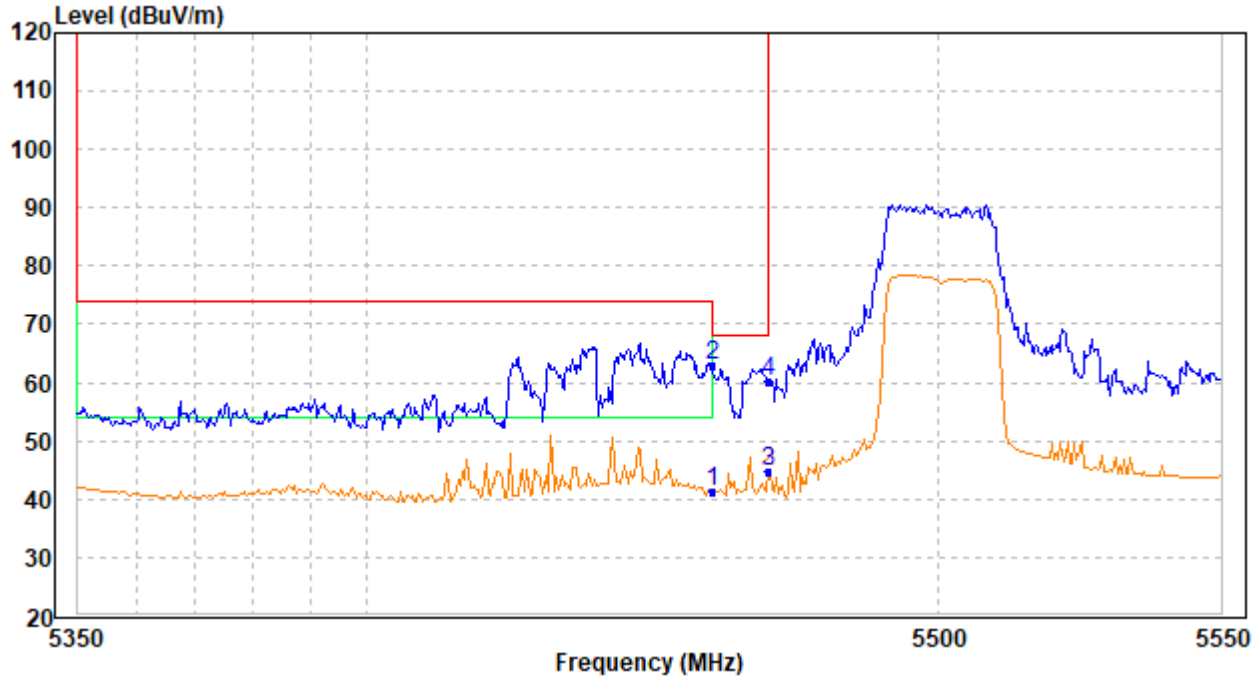
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5350.000	54.16	74.00	42.67	54.00	PASS

Test Channel:	5G_AX20_5320	Ant Polar:	Vertical



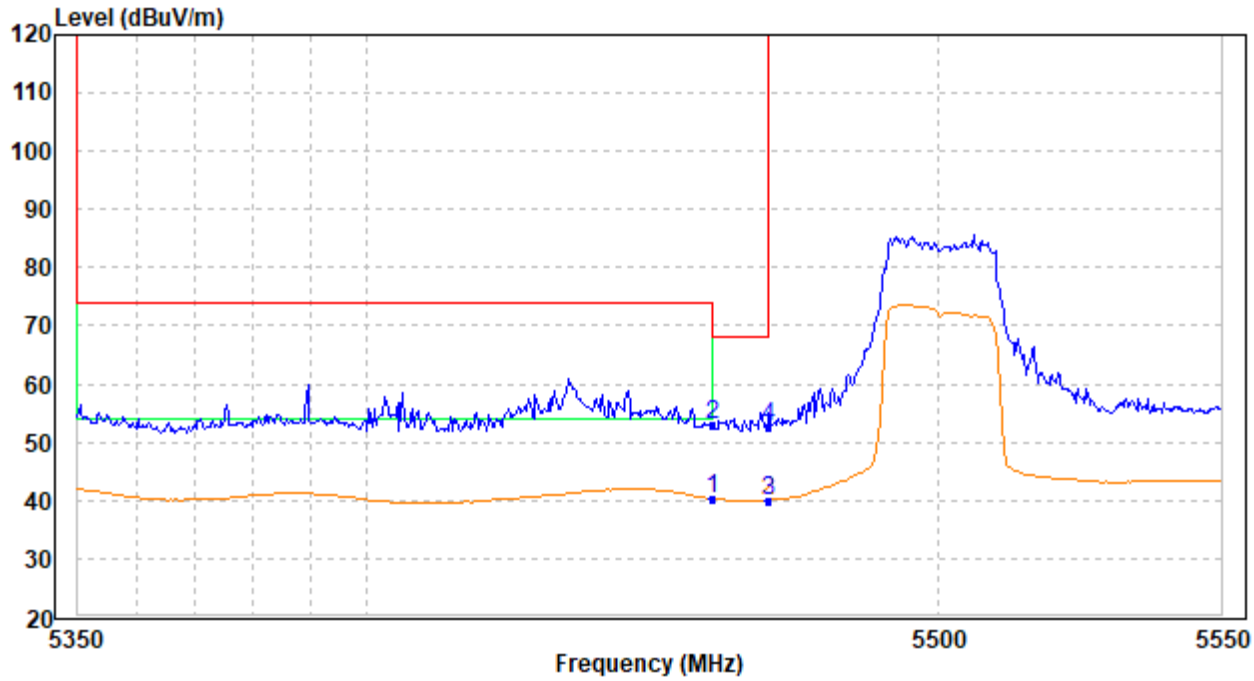
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5350.000	54.72	74.00	42.00	54.00	PASS

Test Channel:	5G_AX20_5500	Ant Polar:	Horizontal



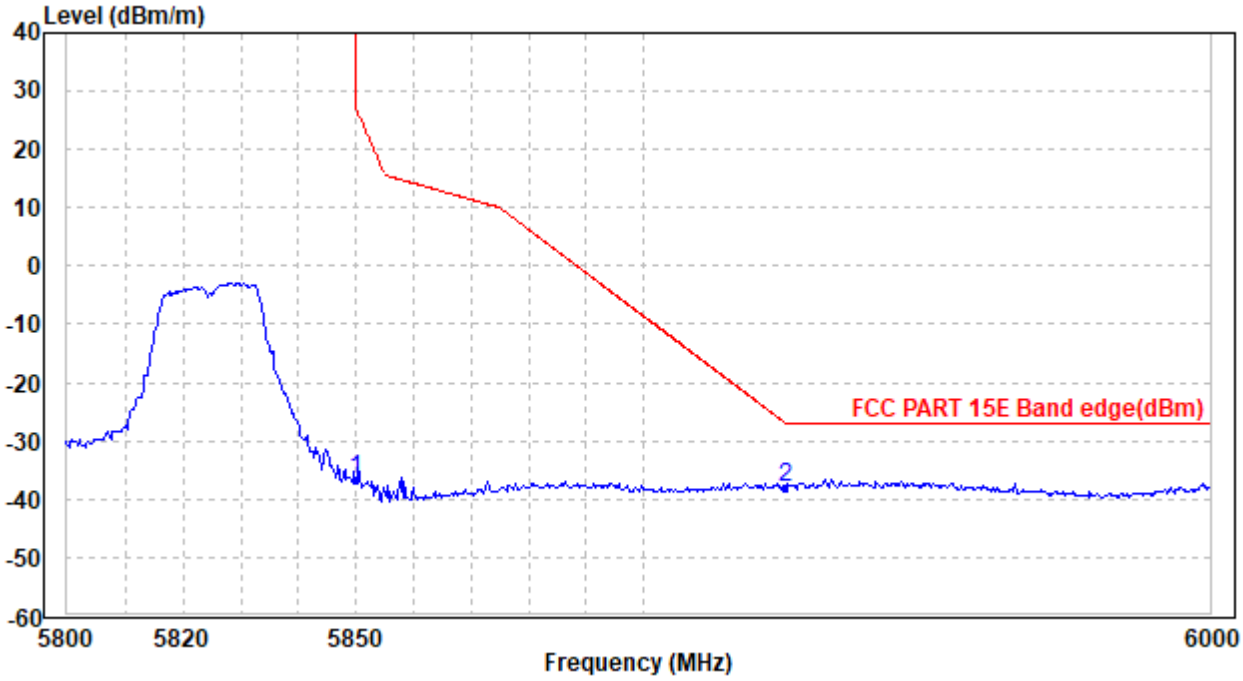
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5460.000	62.96	68.20	41.29	54.00	PASS
5470.000	60.14	68.20	44.76	68.20	PASS

Test Channel:	5G_AX20_5500	Ant Polar:	Vertical



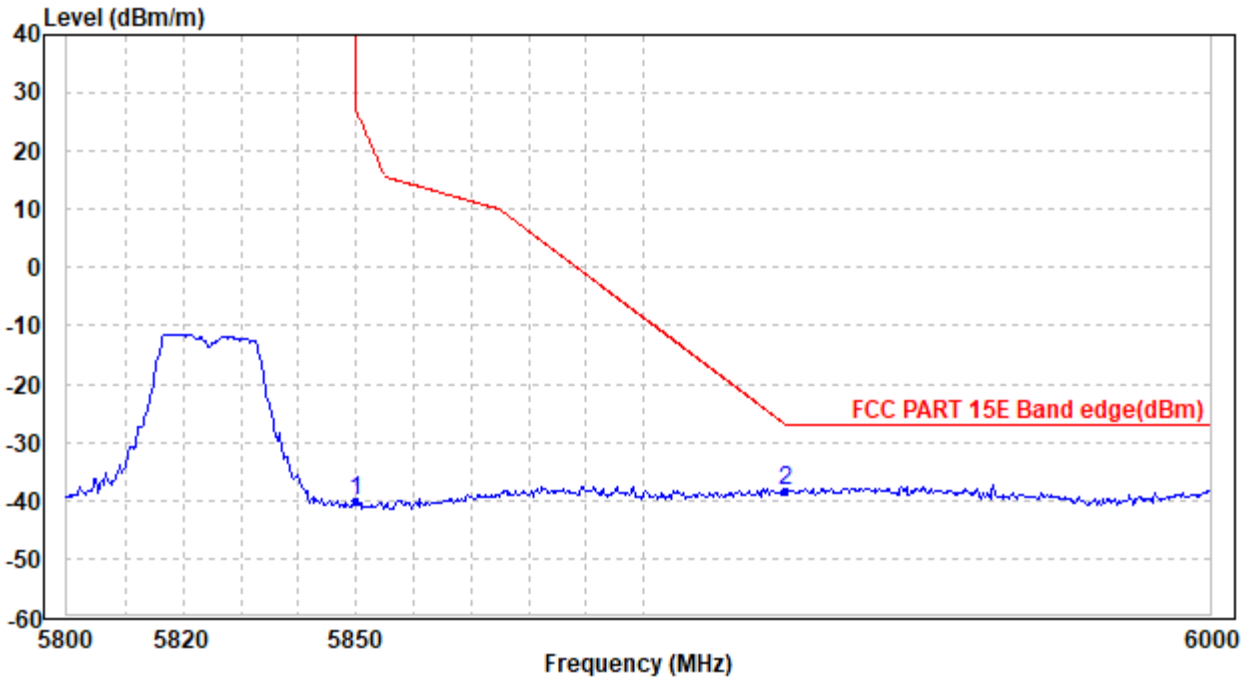
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5460.000	52.96	68.20	40.35	54.00	PASS
5470.000	52.66	68.20	39.99	68.20	PASS

Test Channel:	5G_AX20_5825	Ant Polar:	Horizontal



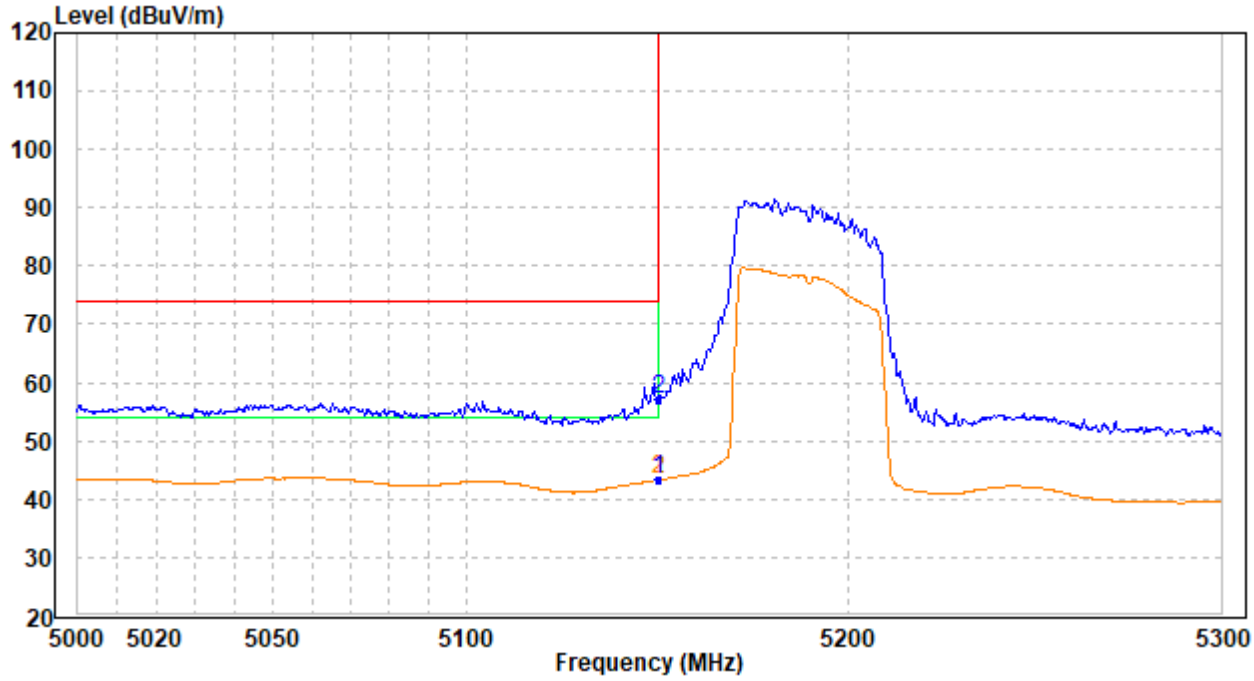
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-36.61	27.00	PASS
5925.000	-37.99	-27.00	PASS

Test Channel:	5G_AX20_5825	Ant Polar:	Vertical



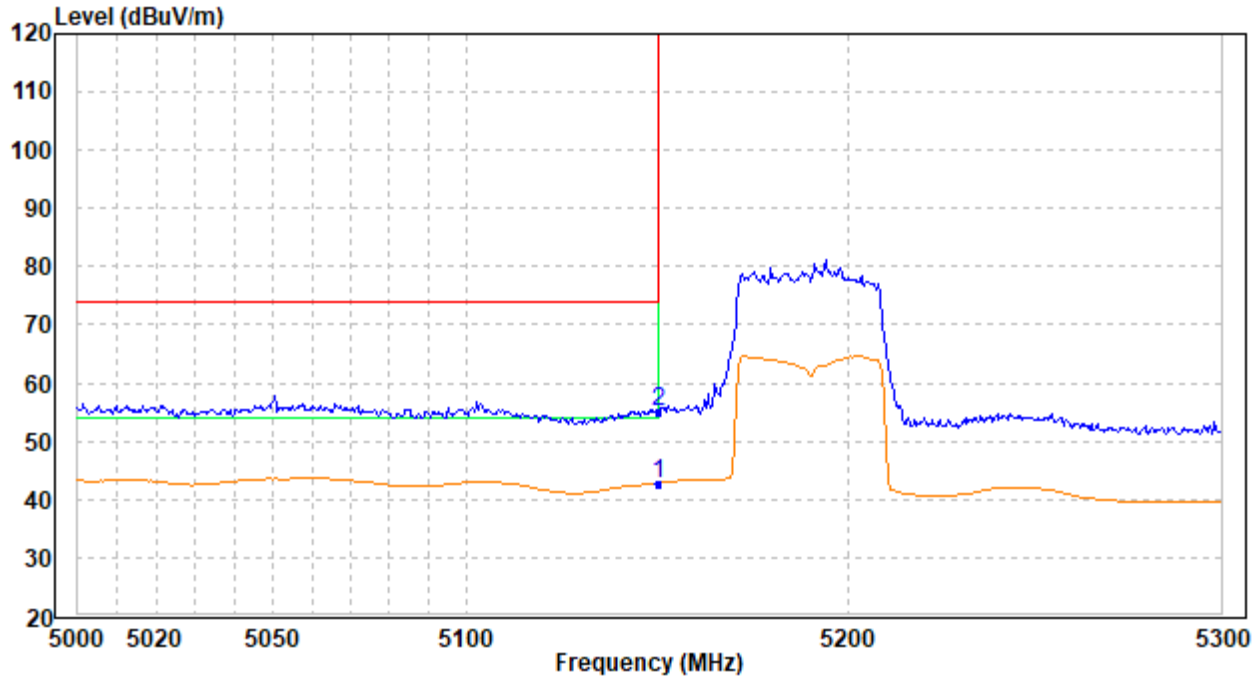
Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-40.04	27.00	PASS
5925.000	-38.33	-27.00	PASS

Test Channel:	5G_AX40_5190	Ant Polar:	Horizontal



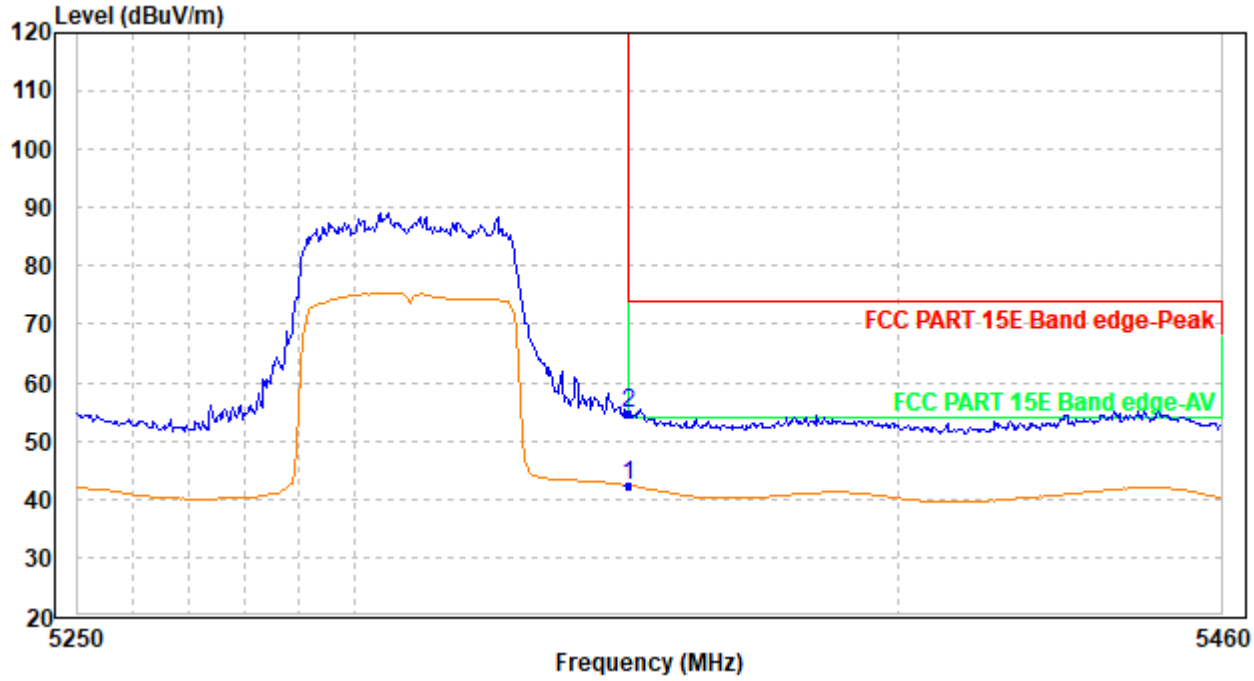
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	57.27	74.00	43.27	54.00	PASS

Test Channel:	5G_AX40_5190	Ant Polar:	Vertical



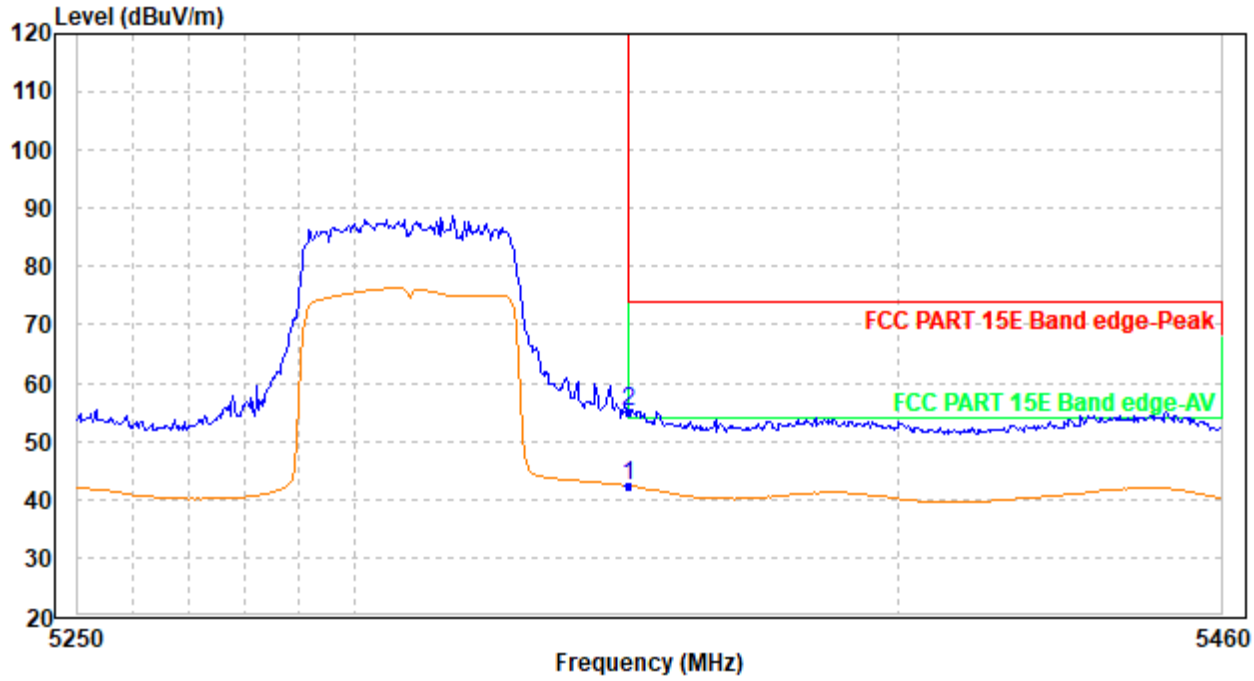
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5150.000	55.06	74.00	42.85	54.00	PASS

Test Channel:	5G_AX40_5310	Ant Polar:	Horizontal



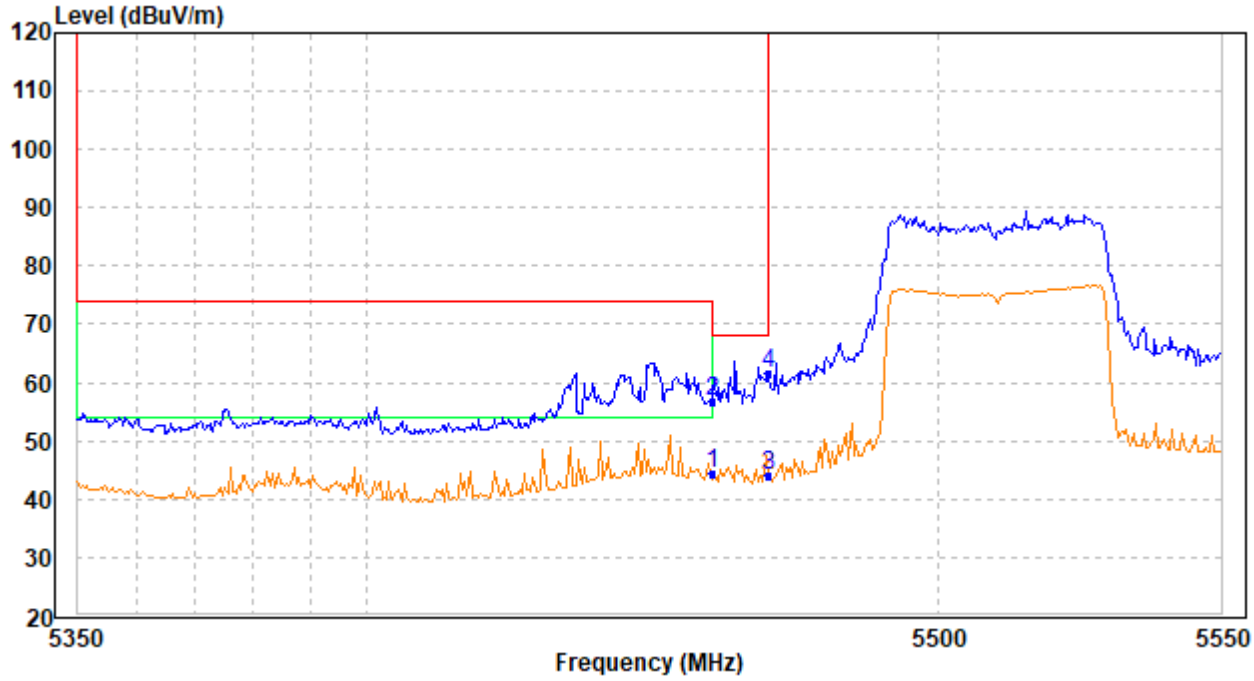
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5350.000	54.78	74.00	42.39	54.00	PASS

Test Channel:	5G_AX40_5310	Ant Polar:	Vertical



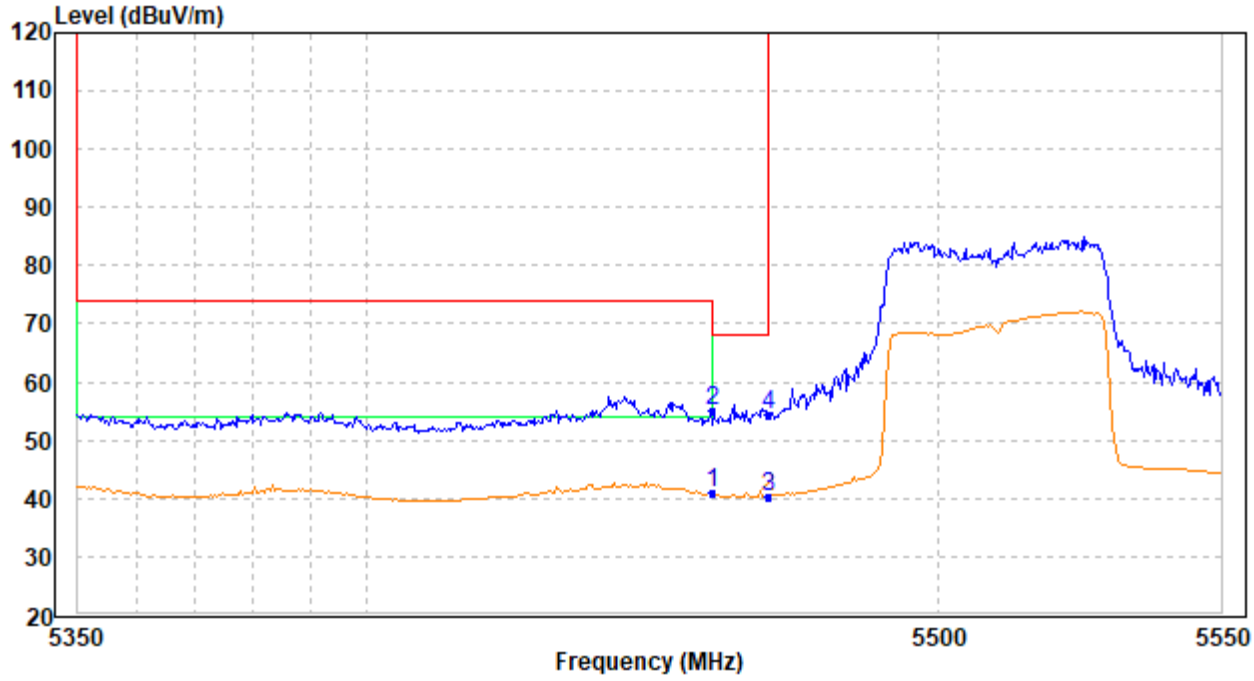
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5350.000	55.14	74.00	42.29	54.00	PASS

Test Channel:	5G_AX40_5510	Ant Polar:	Horizontal



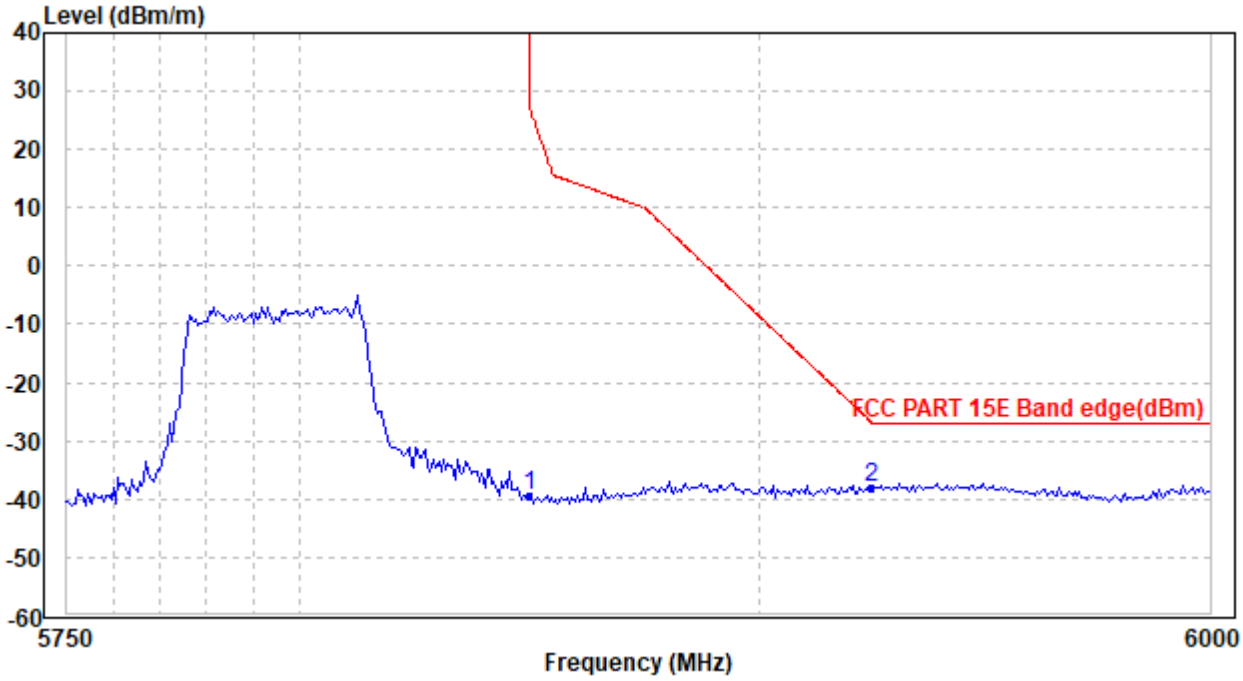
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5460.000	56.73	68.20	44.51	54.00	PASS
5470.000	61.66	68.20	43.90	68.20	PASS

Test Channel:	5G_AX40_5510	Ant Polar:	Vertical



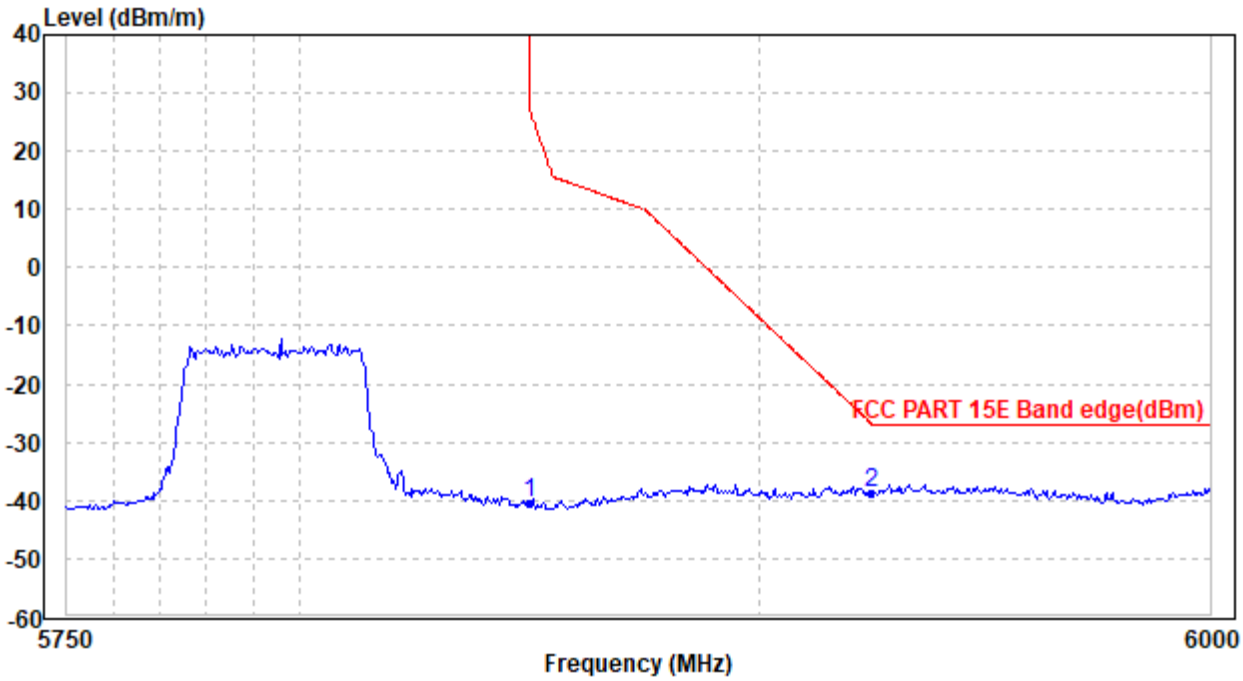
Frequency (MHz)	Peak level (dBµV/m)	Peak Limit (dBµV/m)	AV level (dBµV/m)	AV Limit (dBµV/m)	Conclusion
5460.000	55.22	68.20	40.95	54.00	PASS
5470.000	54.21	68.20	40.37	68.20	PASS

Test Channel:	5G_AX40_5795	Ant Polar:	Horizontal



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-39.46	27.00	PASS
5925.000	-37.97	-27.00	PASS

Test Channel:	5G_AX40_5795	Ant Polar:	Vertical



Frequency (MHz)	Peak level (dBm)	Peak Limit (dBm)	Conclusion
5850.000	-40.57	27.00	PASS
5925.000	-38.67	-27.00	PASS

5.8 DYNAMIC FREQUENCY SELECTION

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (h)

Test Method: KDB 905462 D03 Client Without DFS New Rules v01r02

EUT Operating Mode:

DFS Operational mode	Operating Frequency Range	
	5250 MHz to 5350 MHz	5470 MHz to 5725 MHz
Slave without radar Interference detection function	✓	✓

Applicability:

The following table from KDB905462 and the lists of the applicable requirements for the DFS testing.

Applicability of DFS Requirements Prior to Use of a Channel:

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	✓	Not required	Yes
DFS Detection Threshold	✓	Not required	Yes
Channel Availability Check Time	✓	Not required	Not required
U-NII Detection Bandwidth	✓	Not required	Yes

Applicability of DFS requirements during normal operation:

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required
Additional requirements for devices with multiple bandwidth modes	**Master Device or Client with Radar Detection**	**Client Without Radar Detection**
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection:

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.
Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.
Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.

DFS Radar Signal Parameter Values:

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1.)
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. (See Notes 1 and 2.)
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. (See Note 3.)

Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

DFS Radar Signal Parameter:

Radar Type 0 was used in the evaluation of the Client device for the purpose of measuring the Channel Move Time and the Channel Closing Transmission Time

Table 1-Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1.	See Note 1.
1	1	Test A Test B	$\text{Roundup}\left\{\begin{matrix}\left(\frac{1}{360}\right)\\ \left(\frac{19\cdot 10^6}{\text{PRI}_{\mu sec}}\right)\end{matrix}\right\}$	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.

Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a
Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A
A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms.
If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.
The aggregate is the average of the percentage of successful detections of short pulse radar types

1-4

Table 2-Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 3-Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

In-Service Monitoring: Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

Limit of In-Service Monitoring:

Reference to DFS Radar Signal Parameter Values.

Test Procedures:

a) One frequency will be chosen from the Operating Channels of the EUT within the 5250-5350 MHz or 5470-5725 MHz bands. For 802.11 devices, the test frequency must contain control signals. This can be verified by disabling channel loading and monitoring the spectrum analyzer. If no control signals are detected, another frequency must be selected within the emission bandwidth where control signals are detected.

b) In case the EUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will associate with the EUT (Master). For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.

c) The TCP protocol unicast data stream was generated by the iperf software command line with at least 17% activity ratio over any 100ms period.

d) Timing plots are reported with calculations demonstrating a minimum channel loading of approximately 17% or greater. For example, channel loading can be estimated by setting the spectrum analyzer for zero span and approximate the Time On/ (Time On + Off Time).

e) At time T0 the Radar Waveform generator sends a Burst of pulses for one of the Short Pulse Radar Types 1-4 at DFS Detection Threshold levels on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.

f) Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the EUT during the observation time (Channel Move Time). Measure and record the Channel Move Time and Channel Closing Transmission Time if radar detection occurs.

g) When operating as a Master Device, monitor the EUT for more than 30 minutes following instant T2 to verify that the EUT does not resume any transmissions on this Channel. Perform this test once and record the measurement result.

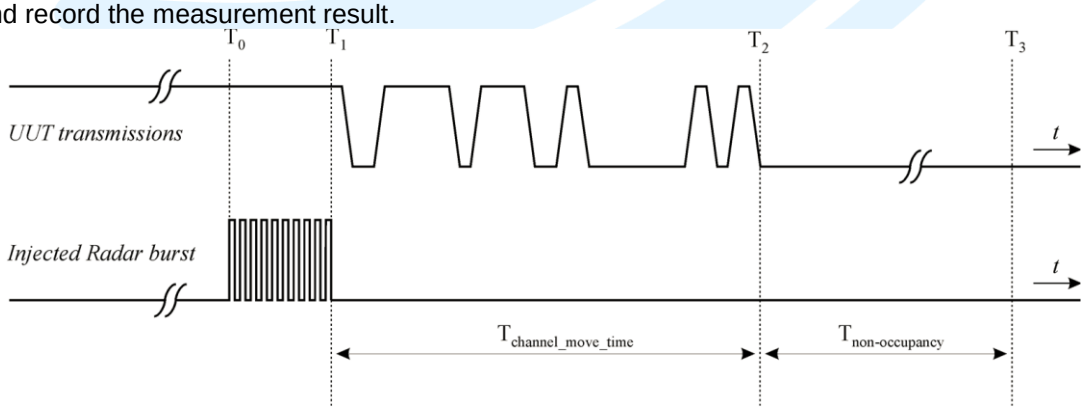
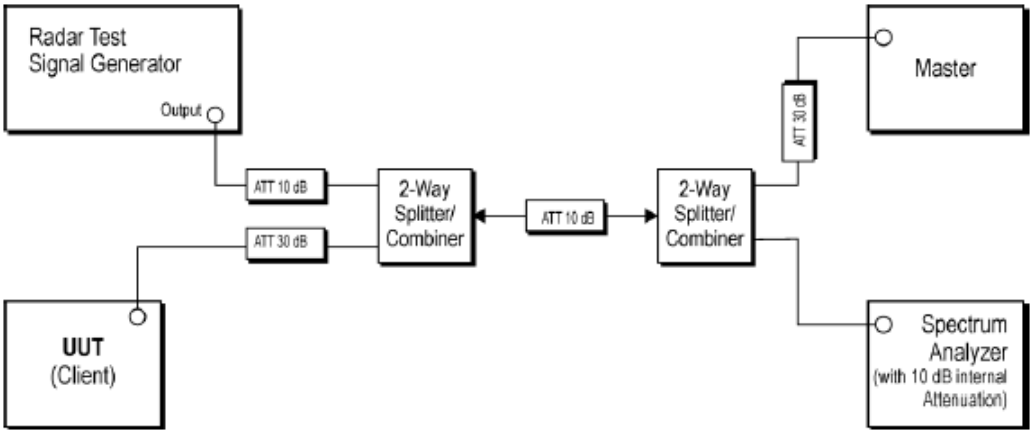


Figure 17: Channel Closing Transmission Time, Channel Move Time and Non-Occupancy Period

Conducted test setup



Setup for Client with injection at the Master

Equipment Used: Refer to section 3 for details.

Test Result: Please refer to Appendix A

The measurement data as follows:

5.9 AC POWER LINE CONDUCTED EMISSION

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(6)
FCC 47 CFR Part 15 Subpart C Section 15.207

Test Method: ANSI C63.10-2013, Section 6.2.

Limits:

Frequency range (MHz)	Limits (dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

Remark:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

Test Setup: Refer to section 4.5.2 for details.

Test Procedures:

Test frequency range :150KHz-30MHz

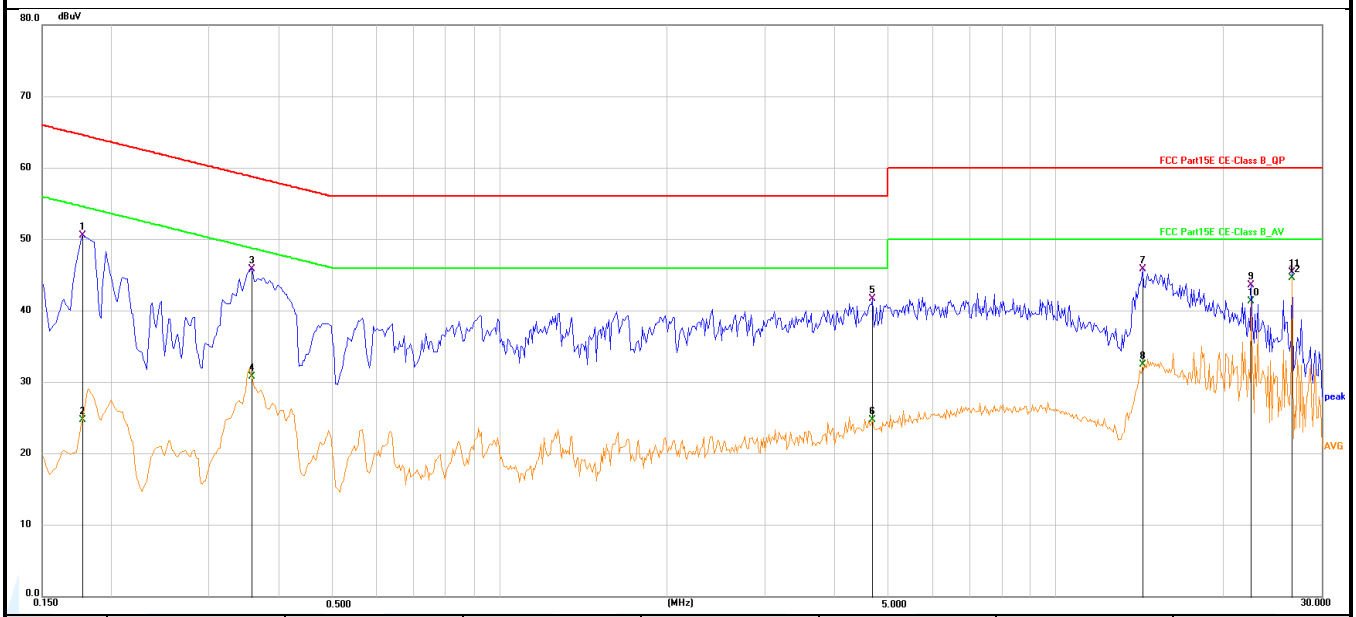
1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Equipment Used: Refer to section 3 for details.

Test Result: Pass

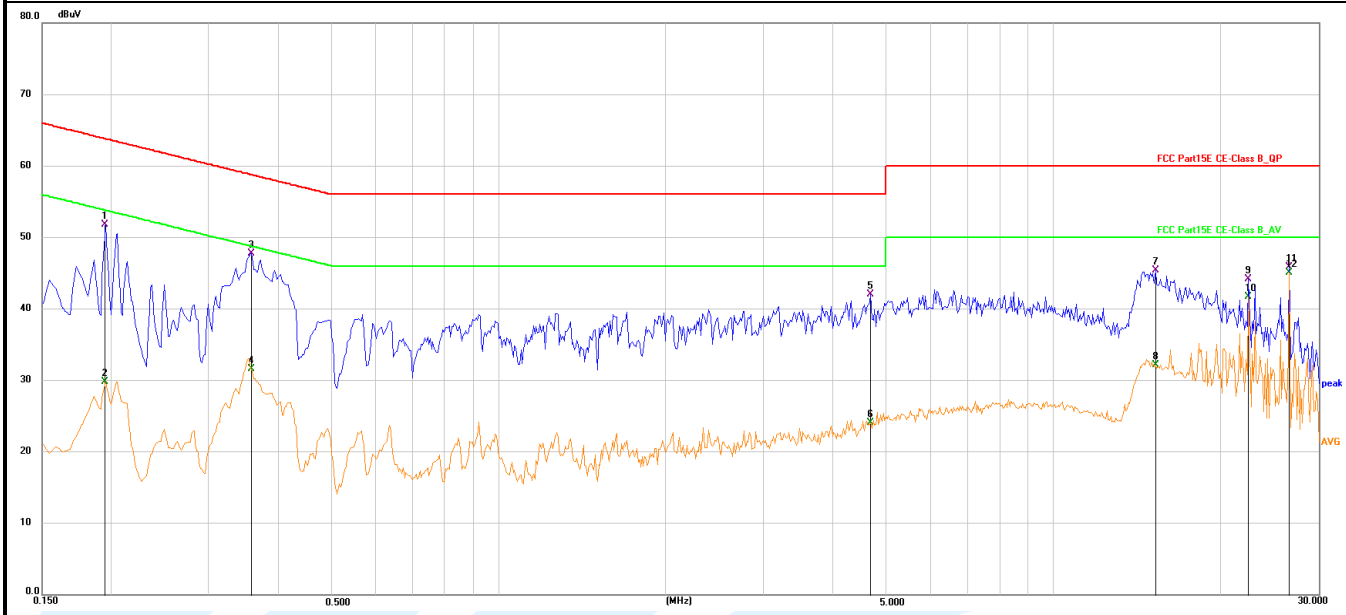
The worst measurement data as follows:
Quasi Peak and Average:
Mode: WIFI Link

Live Line



No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.1770	40.78	9.78	50.56	64.63	-14.07	QP
2	0.1770	14.94	9.78	24.72	54.63	-29.91	AVG
3	0.3570	36.03	9.77	45.80	58.80	-13.00	QP
4	0.3570	21.08	9.77	30.85	48.80	-17.95	AVG
5	4.6860	31.97	9.75	41.72	56.00	-14.28	QP
6	4.6860	14.99	9.75	24.74	46.00	-21.26	AVG
7	14.3340	36.06	9.79	45.85	60.00	-14.15	QP
8	14.3340	22.74	9.79	32.53	50.00	-17.47	AVG
9	22.5285	33.72	9.91	43.63	60.00	-16.37	QP
10	22.5285	31.42	9.91	41.33	50.00	-8.67	AVG
11	26.6234	35.48	9.89	45.37	60.00	-14.63	QP
12	26.6234	34.69	9.89	44.58	50.00	-5.42	AVG

Neutral Line



No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.1949	41.96	9.77	51.73	63.83	-12.10	QP
2	0.1949	20.00	9.77	29.77	53.83	-24.06	AVG
3	0.3570	38.03	9.76	47.79	58.80	-11.01	QP
4	0.3570	21.83	9.76	31.59	48.80	-17.21	AVG
5	4.6770	32.26	9.76	42.02	56.00	-13.98	QP
6	4.6770	14.36	9.76	24.12	46.00	-21.88	AVG
7	15.2520	35.62	9.77	45.39	60.00	-14.61	QP
8	15.2520	22.38	9.77	32.15	50.00	-17.85	AVG
9	22.5285	34.22	9.88	44.10	60.00	-15.90	QP
10	22.5285	31.84	9.88	41.72	50.00	-8.28	AVG
11	26.6235	35.90	9.90	45.80	60.00	-14.20	QP
12	26.6235	35.10	9.90	45.00	50.00	-5.00	AVG

Remark:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

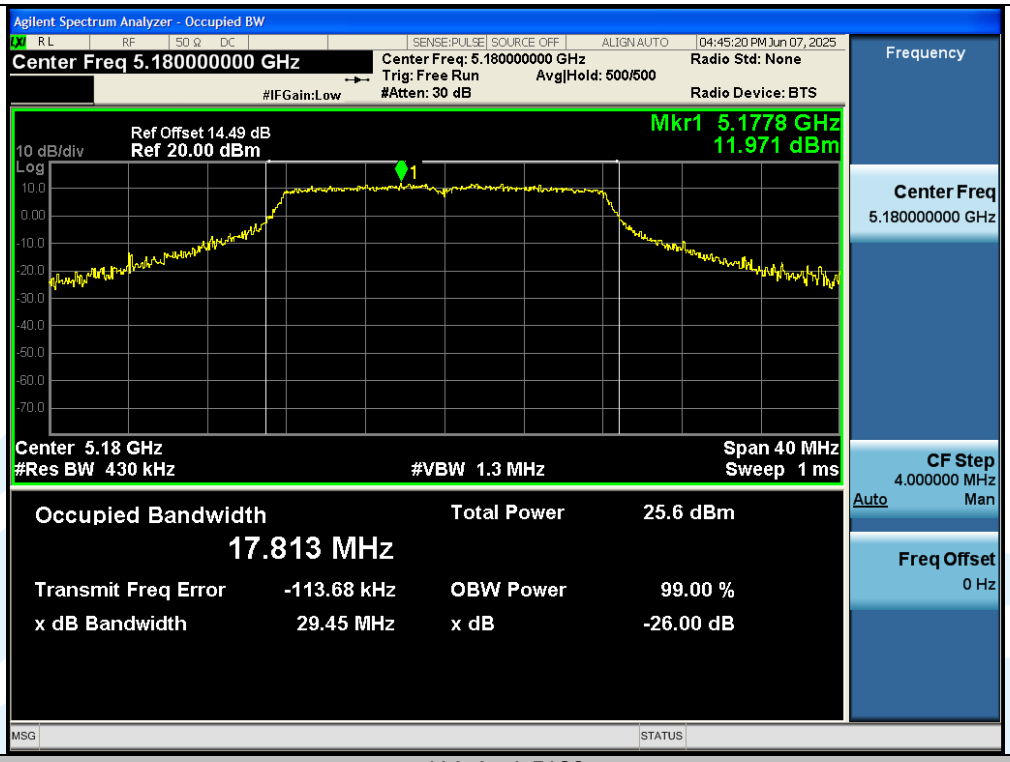
APPENDIX A RF TEST DATA

A1. 99% BANDWIDTH

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL [MHz]	FH [MHz]
11A	Ant1	5180	17.813	5170.9798	5188.7928
11A	Ant1	5220	17.748	5211.0376	5228.7856
11A	Ant1	5240	17.817	5230.9824	5248.7994
11A	Ant1	5260	18.024	5250.8471	5268.8711
11A	Ant1	5300	17.791	5290.9537	5308.7447
11A	Ant1	5320	17.749	5311.0150	5328.7640
11A	Ant1	5500	17.958	5490.9255	5508.8835
11A	Ant1	5580	17.972	5571.0088	5588.9808
11A	Ant1	5700	17.920	5690.9734	5708.8934
11A	Ant1	5720	17.882	5710.9753	5728.8573
11A	Ant1	5720_UNII-2C	14.025	5710.9753	5725
11A	Ant1	5720_UNII-3	3.857	5725	5728.8573
11A	Ant1	5745	17.964	5735.9476	5753.9116
11A	Ant1	5785	18.047	5775.8852	5793.9322
11A	Ant1	5825	17.937	5815.9189	5833.8559
11N20SISO	Ant1	5180	20.254	5169.9203	5190.1743
11N20SISO	Ant1	5220	18.745	5210.5896	5229.3346
11N20SISO	Ant1	5240	18.757	5230.5922	5249.3492
11N20SISO	Ant1	5260	19.035	5250.4588	5269.4938
11N20SISO	Ant1	5300	18.829	5290.5467	5309.3757
11N20SISO	Ant1	5320	18.744	5310.6082	5329.3522
11N20SISO	Ant1	5500	19.148	5490.3643	5509.5123
11N20SISO	Ant1	5580	19.135	5570.3698	5589.5048
11N20SISO	Ant1	5700	19.092	5690.4552	5709.5472
11N20SISO	Ant1	5720	19.111	5710.4280	5729.5390
11N20SISO	Ant1	5720_UNII-2C	14.572	5710.4280	5725
11N20SISO	Ant1	5720_UNII-3	4.539	5725	5729.5390
11N20SISO	Ant1	5745	18.805	5735.5941	5754.3991
11N20SISO	Ant1	5785	19.106	5775.4204	5794.5264
11N20SISO	Ant1	5825	19.100	5815.3969	5834.4969
11N40SISO	Ant1	5190	37.425	5171.2349	5208.6599
11N40SISO	Ant1	5230	37.431	5211.2477	5248.6787
11N40SISO	Ant1	5270	37.281	5251.3135	5288.5945
11N40SISO	Ant1	5310	37.300	5291.3208	5328.6208
11N40SISO	Ant1	5510	37.677	5491.0989	5528.7759
11N40SISO	Ant1	5550	37.621	5531.2161	5568.8371
11N40SISO	Ant1	5670	37.585	5651.1805	5688.7655
11N40SISO	Ant1	5710	37.607	5691.2271	5728.8341
11N40SISO	Ant1	5710_UNII-2C	33.773	5691.2271	5725
11N40SISO	Ant1	5710_UNII-3	3.834	5725	5728.8341
11N40SISO	Ant1	5755	37.707	5736.1538	5773.8608
11N40SISO	Ant1	5795	37.881	5776.0041	5813.8851
11AC20SISO	Ant1	5180	18.902	5170.5547	5189.4567
11AC20SISO	Ant1	5220	18.762	5210.6315	5229.3935
11AC20SISO	Ant1	5240	18.677	5230.6365	5249.3135
11AC20SISO	Ant1	5260	19.018	5250.4769	5269.4949
11AC20SISO	Ant1	5300	18.750	5290.5915	5309.3415
11AC20SISO	Ant1	5320	18.716	5310.6158	5329.3318
11AC20SISO	Ant1	5500	19.053	5490.4190	5509.4720
11AC20SISO	Ant1	5580	19.021	5570.4598	5589.4808
11AC20SISO	Ant1	5700	19.069	5690.4297	5709.4987
11AC20SISO	Ant1	5720	19.093	5710.4344	5729.5274
11AC20SISO	Ant1	5720_UNII-2C	14.566	5710.4344	5725
11AC20SISO	Ant1	5720_UNII-3	4.527	5725	5729.5274
11AC20SISO	Ant1	5745	19.041	5735.4364	5754.4774
11AC20SISO	Ant1	5785	19.157	5775.3330	5794.4900
11AC20SISO	Ant1	5825	19.061	5815.3895	5834.4505
11AC40SISO	Ant1	5190	37.316	5171.3464	5208.6624
11AC40SISO	Ant1	5230	37.364	5211.2747	5248.6387

11AC40SISO	Ant1	5270	37.231	5251.3661	5288.5971
11AC40SISO	Ant1	5310	37.270	5291.3310	5328.6010
11AC40SISO	Ant1	5510	37.649	5491.1974	5528.8464
11AC40SISO	Ant1	5550	37.630	5531.2129	5568.8429
11AC40SISO	Ant1	5670	37.589	5651.2239	5688.8129
11AC40SISO	Ant1	5710	37.555	5691.2335	5728.7885
11AC40SISO	Ant1	5710_UNII-2C	33.766	5691.2335	5725
11AC40SISO	Ant1	5710_UNII-3	3.788	5725	5728.7885
11AC40SISO	Ant1	5755	37.741	5736.1249	5773.8659
11AC40SISO	Ant1	5795	37.771	5776.1445	5813.9155
11AX20SISO	Ant1	5180	19.409	5170.2664	5189.6754
11AX20SISO	Ant1	5220	19.382	5210.3071	5229.6891
11AX20SISO	Ant1	5240	19.471	5230.2341	5249.7051
11AX20SISO	Ant1	5260	19.431	5250.2779	5269.7089
11AX20SISO	Ant1	5300	19.412	5290.2750	5309.6870
11AX20SISO	Ant1	5320	19.322	5310.3137	5329.6357
11AX20SISO	Ant1	5500	19.632	5490.1707	5509.8027
11AX20SISO	Ant1	5580	19.609	5570.1330	5589.7420
11AX20SISO	Ant1	5700	19.619	5690.1676	5709.7866
11AX20SISO	Ant1	5720	19.605	5710.1947	5729.7997
11AX20SISO	Ant1	5720_UNII-2C	14.805	5710.1947	5725
11AX20SISO	Ant1	5720_UNII-3	4.8	5725	5729.7997
11AX20SISO	Ant1	5745	19.580	5735.2199	5754.7999
11AX20SISO	Ant1	5785	19.655	5775.1653	5794.8203
11AX20SISO	Ant1	5825	19.594	5815.1925	5834.7865
11AX40SISO	Ant1	5190	38.270	5170.9070	5209.1770
11AX40SISO	Ant1	5230	38.281	5210.8541	5249.1351
11AX40SISO	Ant1	5270	38.287	5250.8562	5289.1432
11AX40SISO	Ant1	5310	38.328	5290.7847	5329.1127
11AX40SISO	Ant1	5510	38.709	5490.5526	5529.2616
11AX40SISO	Ant1	5550	38.594	5530.6682	5569.2622
11AX40SISO	Ant1	5670	38.454	5650.7676	5689.2216
11AX40SISO	Ant1	5710	38.543	5690.7122	5729.2552
11AX40SISO	Ant1	5710_UNII-2C	34.288	5690.7122	5725
11AX40SISO	Ant1	5710_UNII-3	4.255	5725	5729.2552
11AX40SISO	Ant1	5755	38.463	5735.7261	5774.1891
11AX40SISO	Ant1	5795	38.562	5775.7246	5814.2866

Test Graphs



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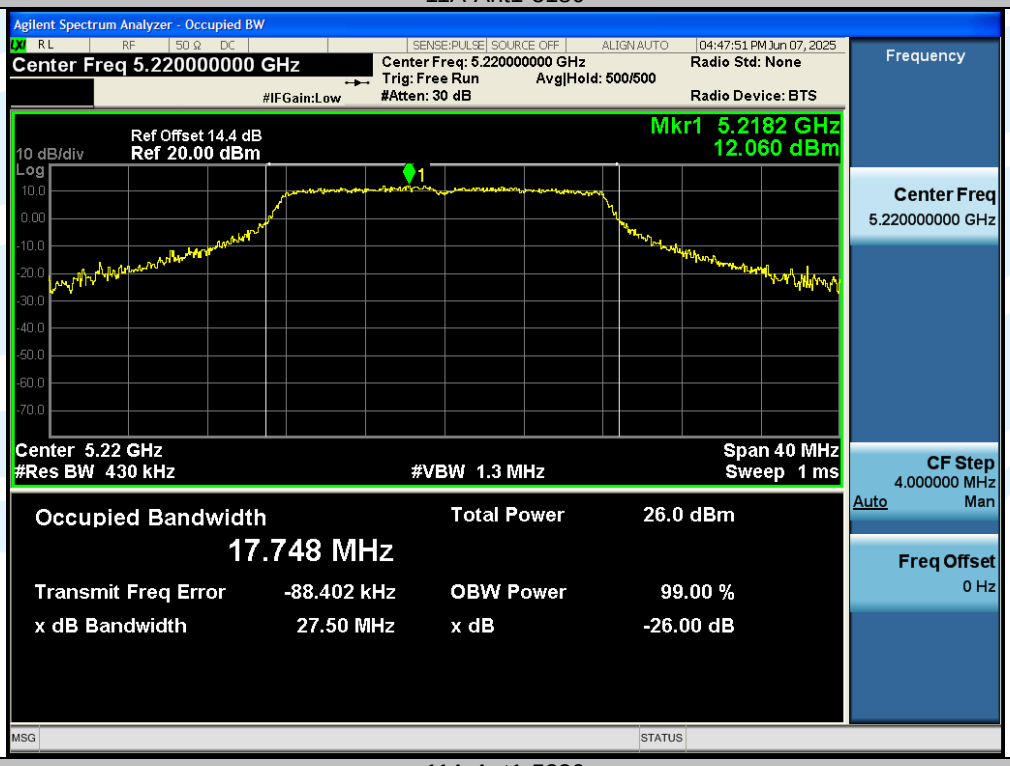

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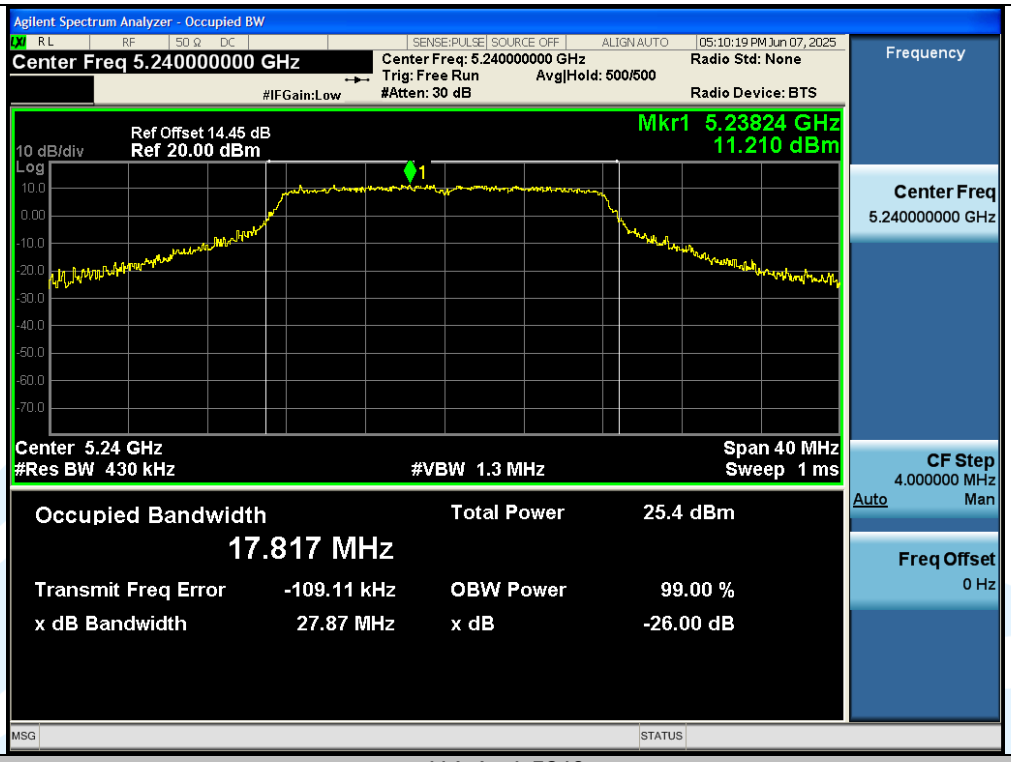

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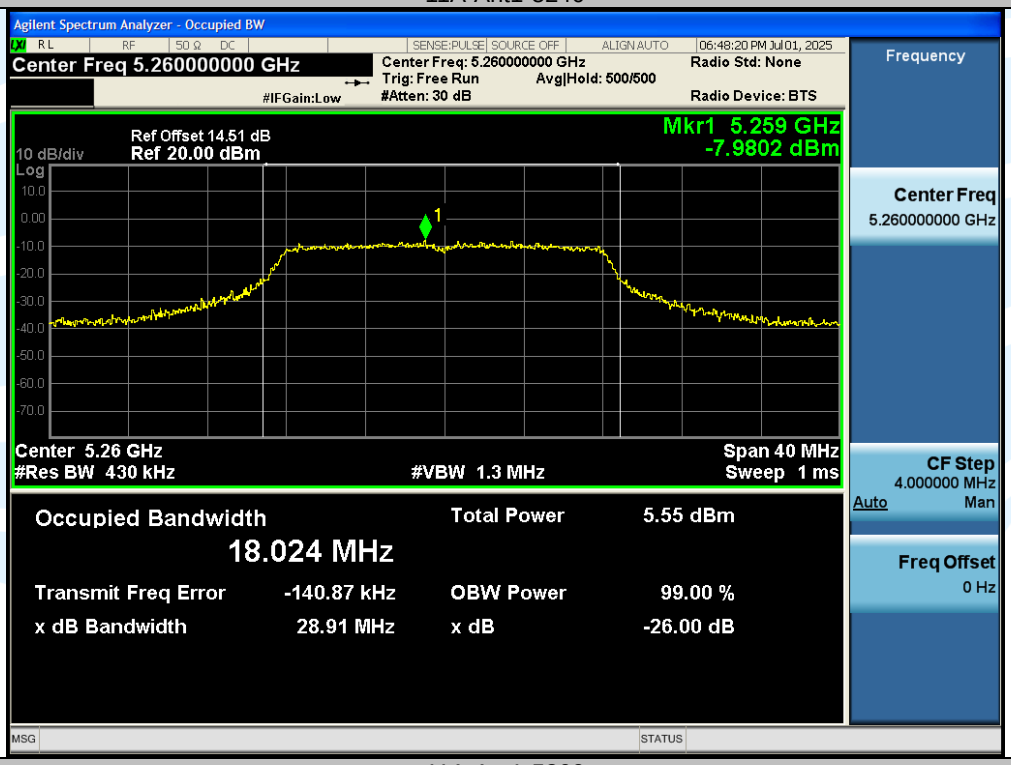

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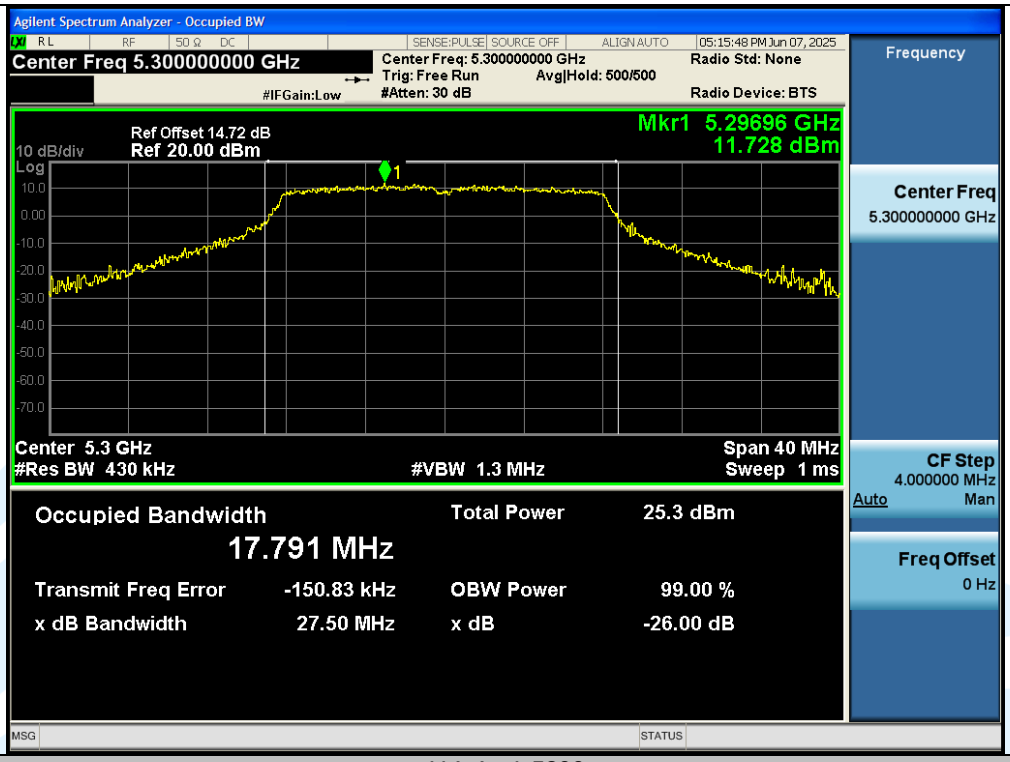

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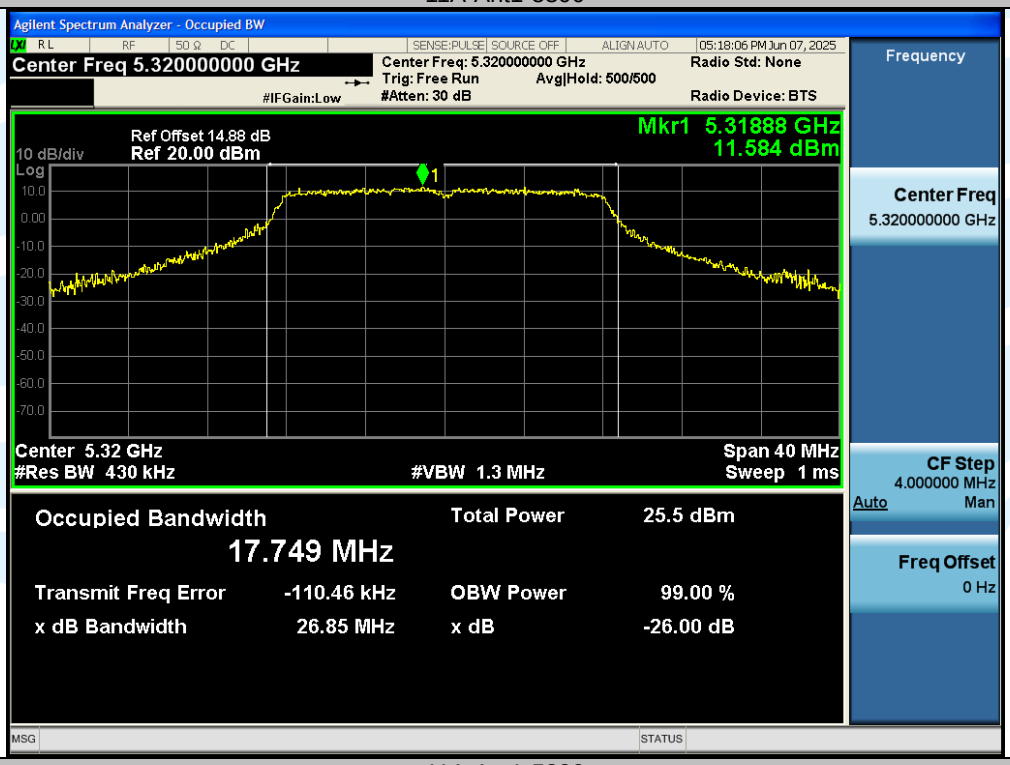

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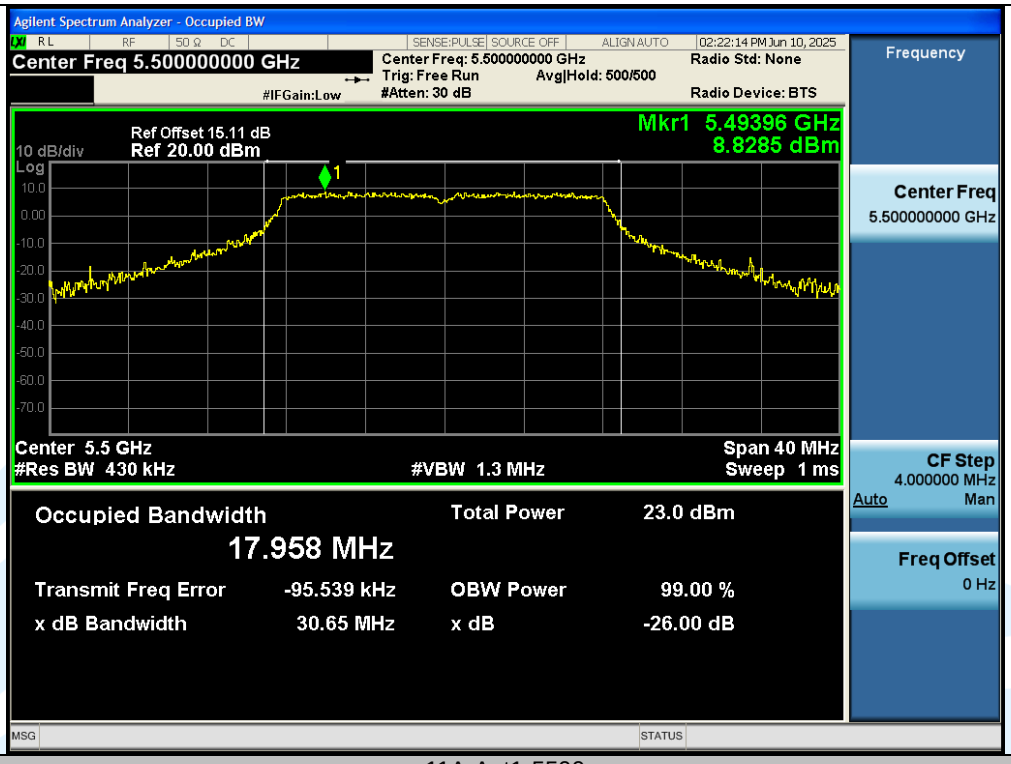

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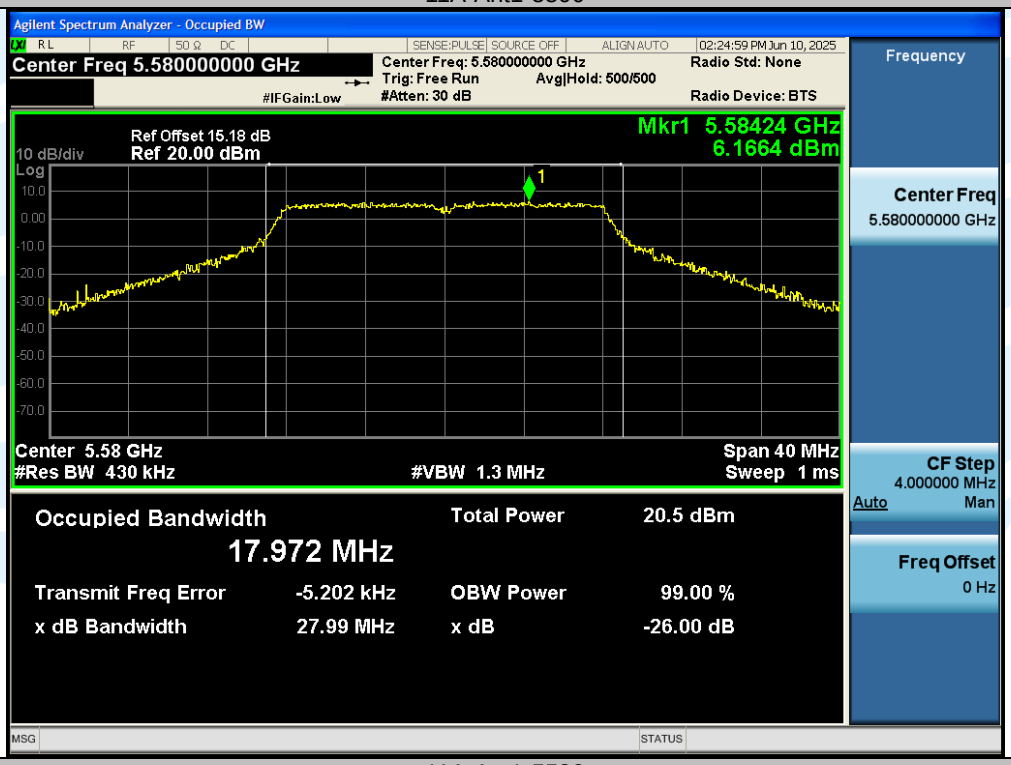

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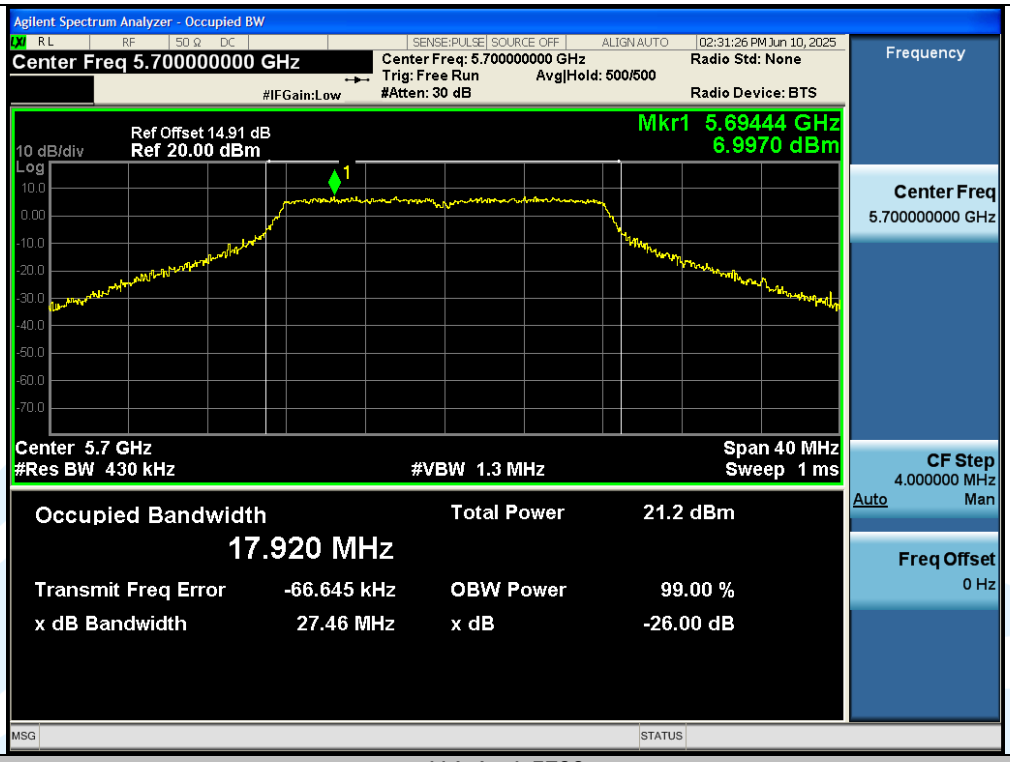

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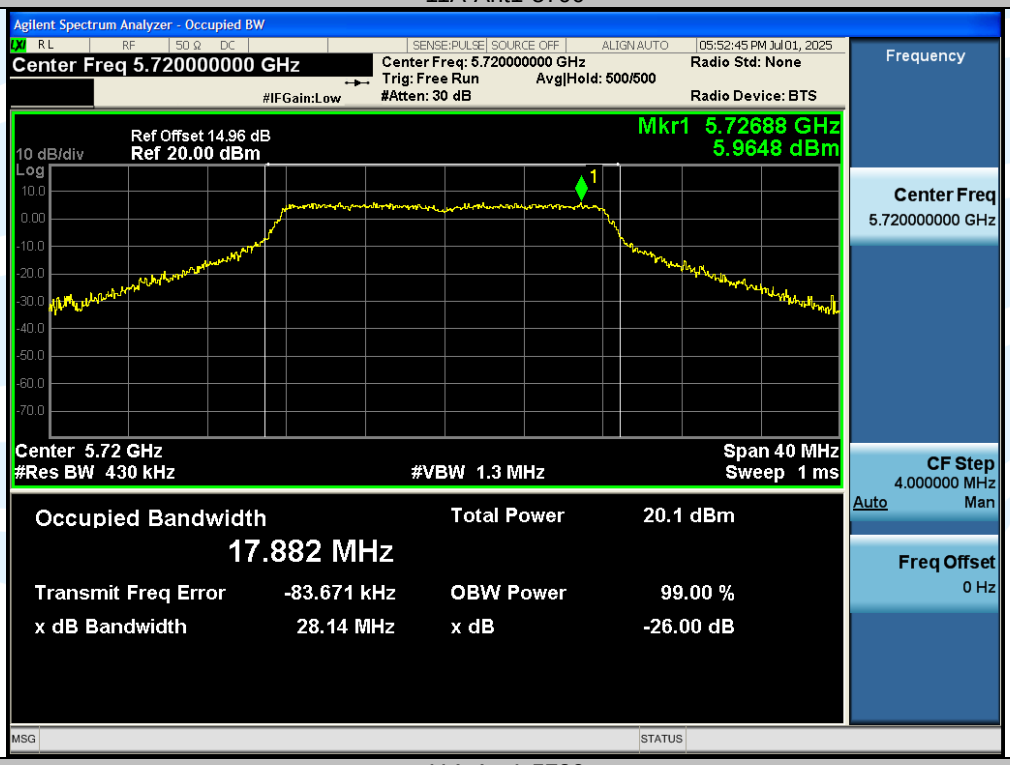

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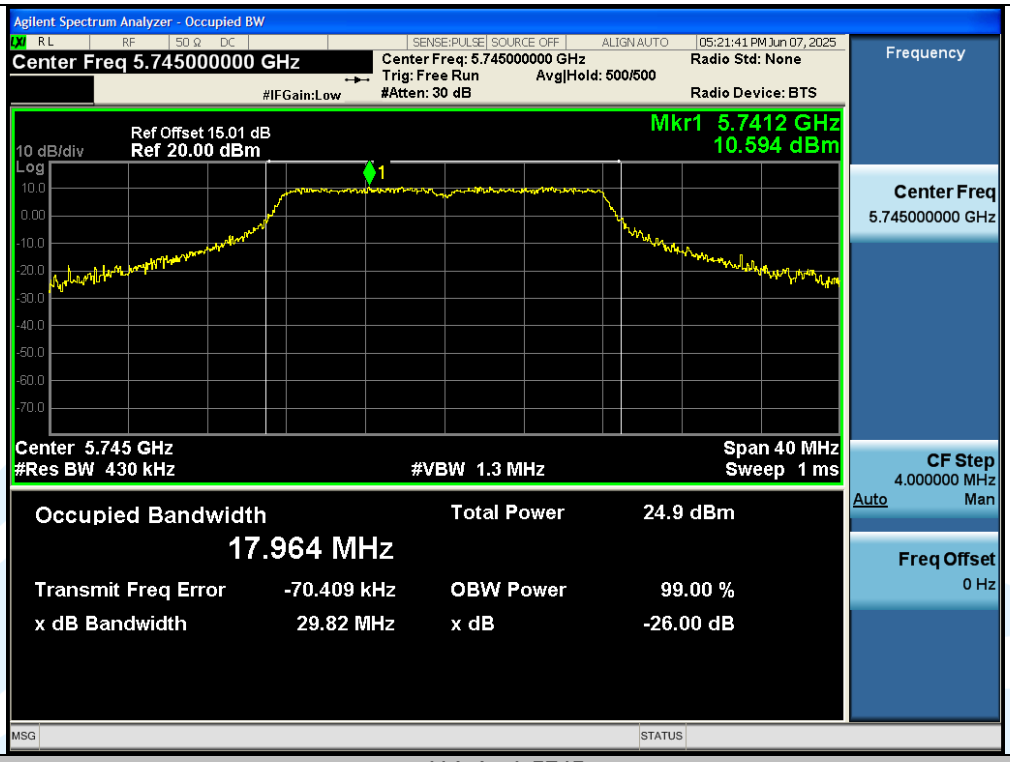

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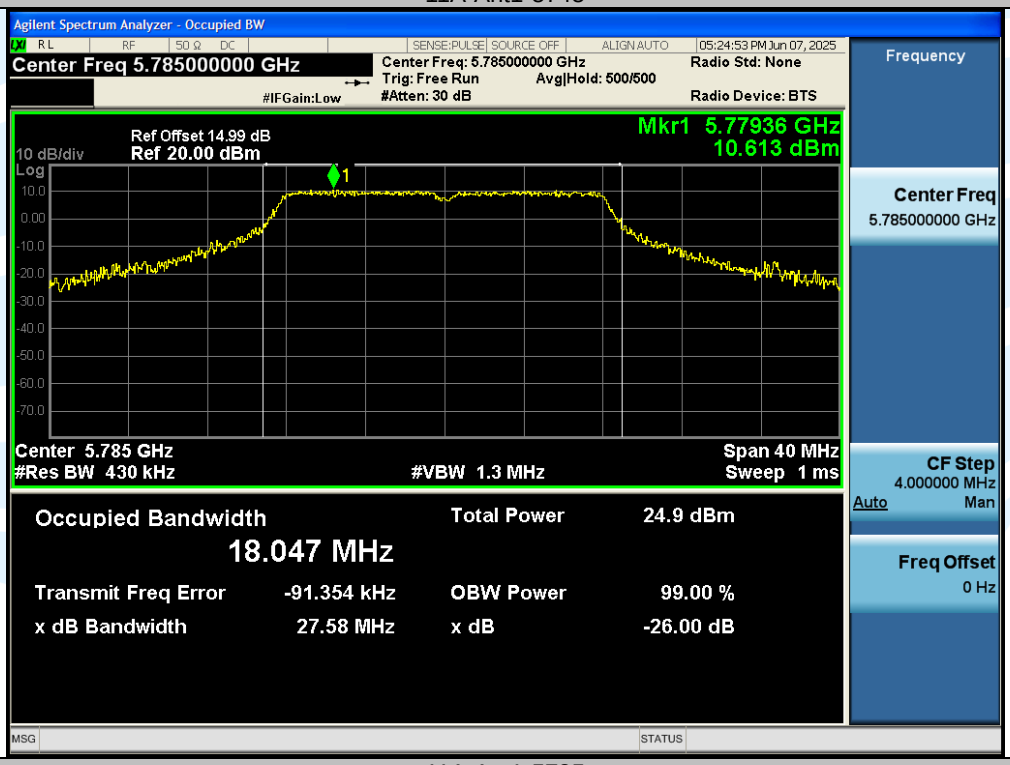

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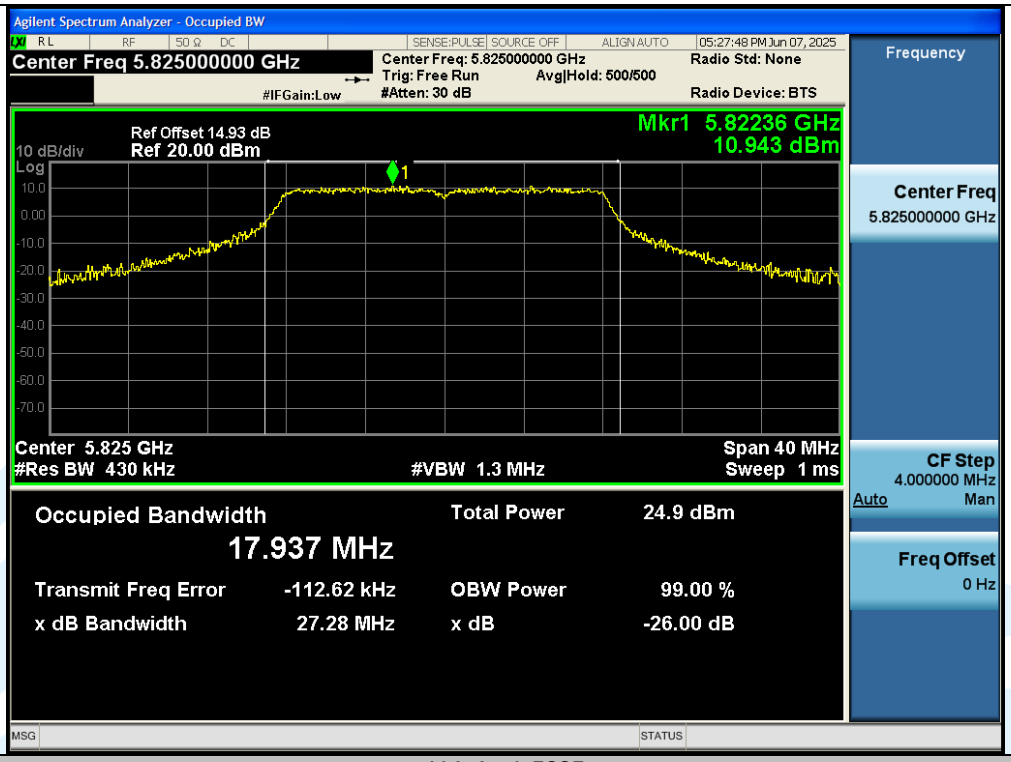

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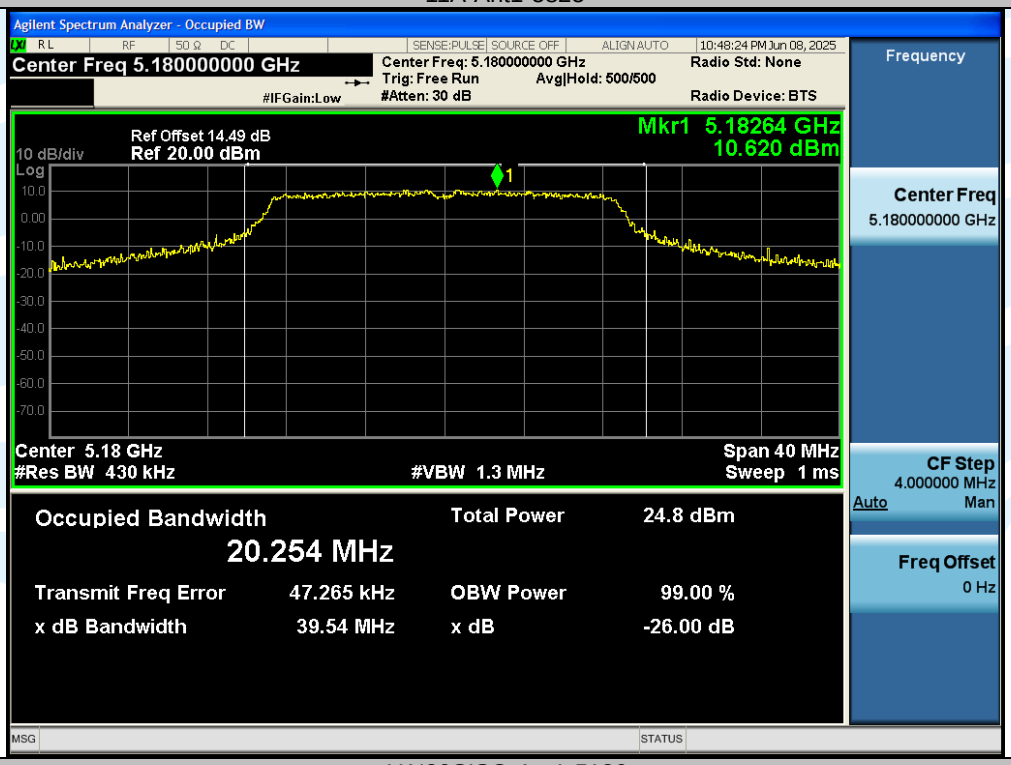

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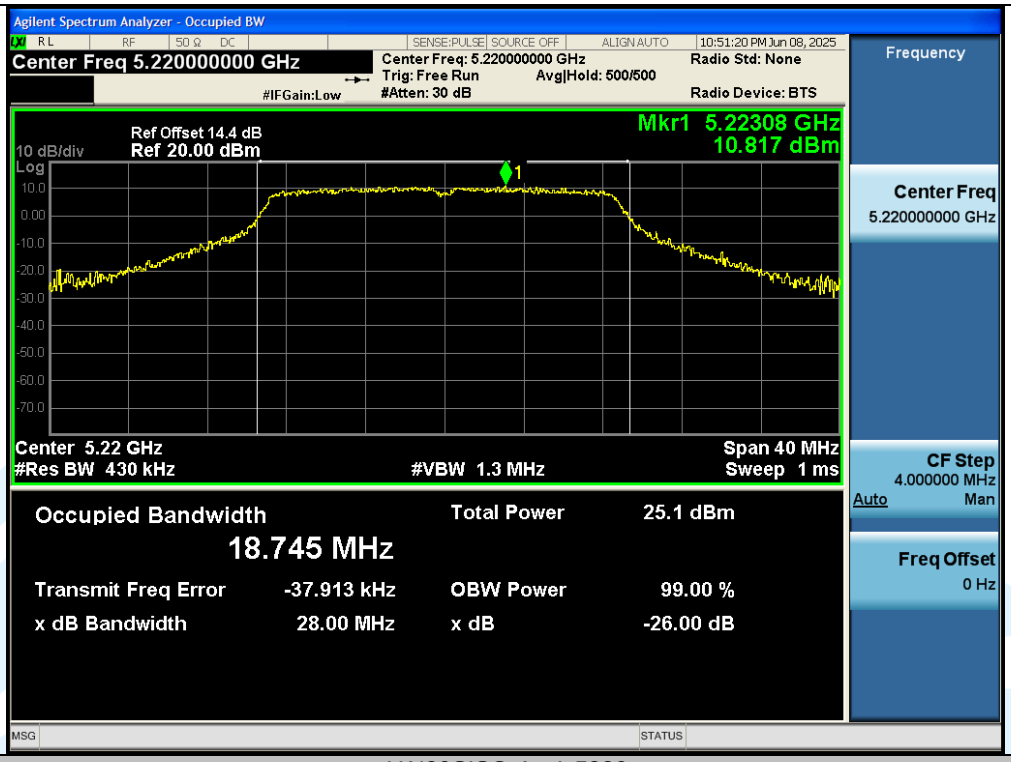

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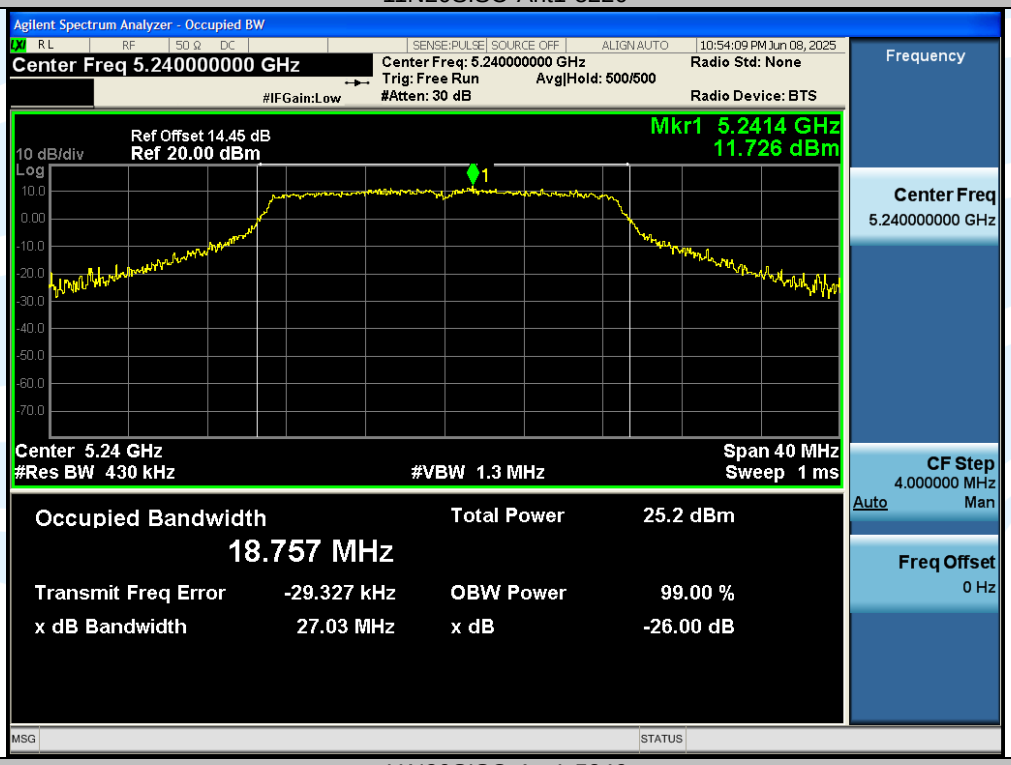

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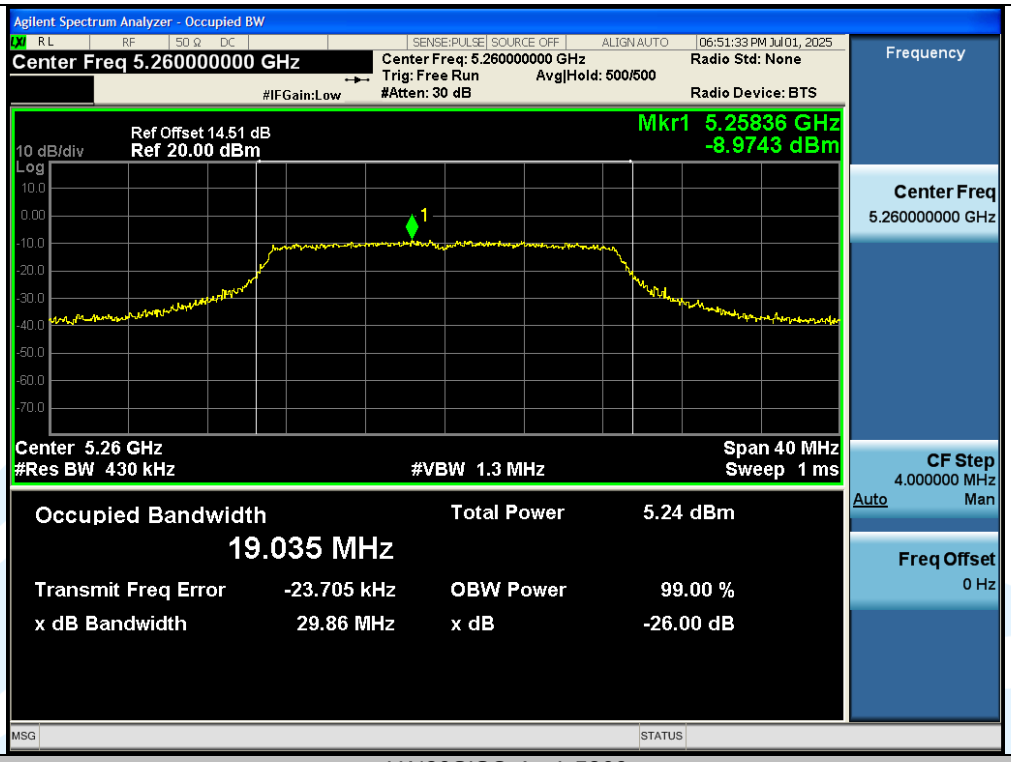

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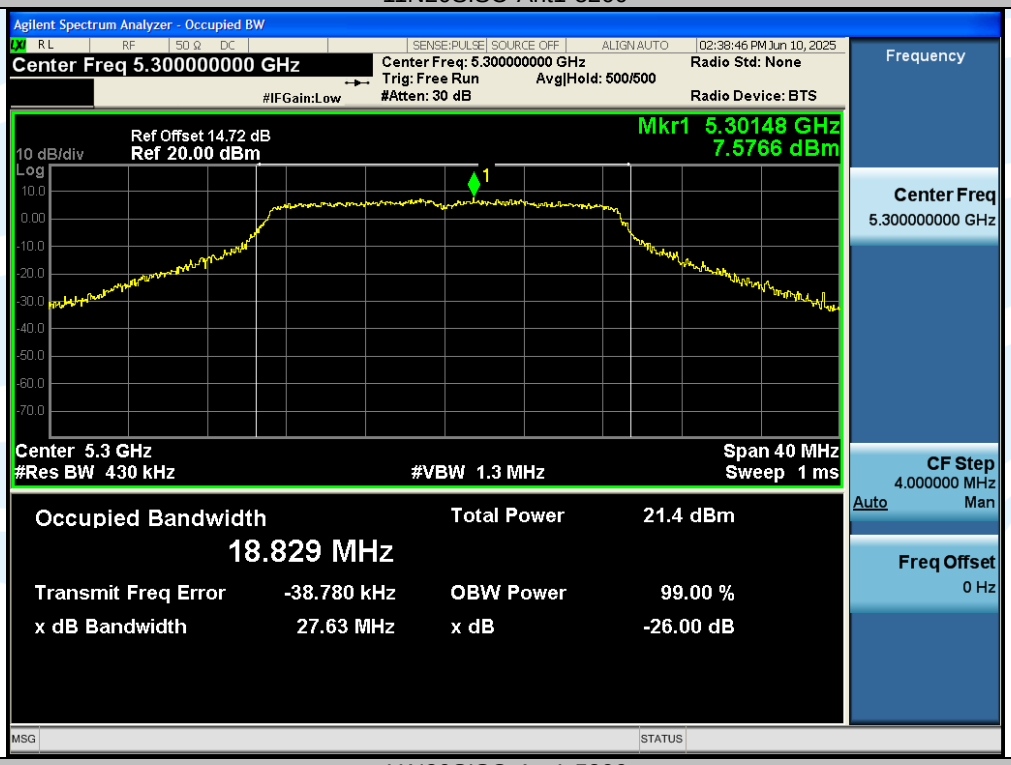

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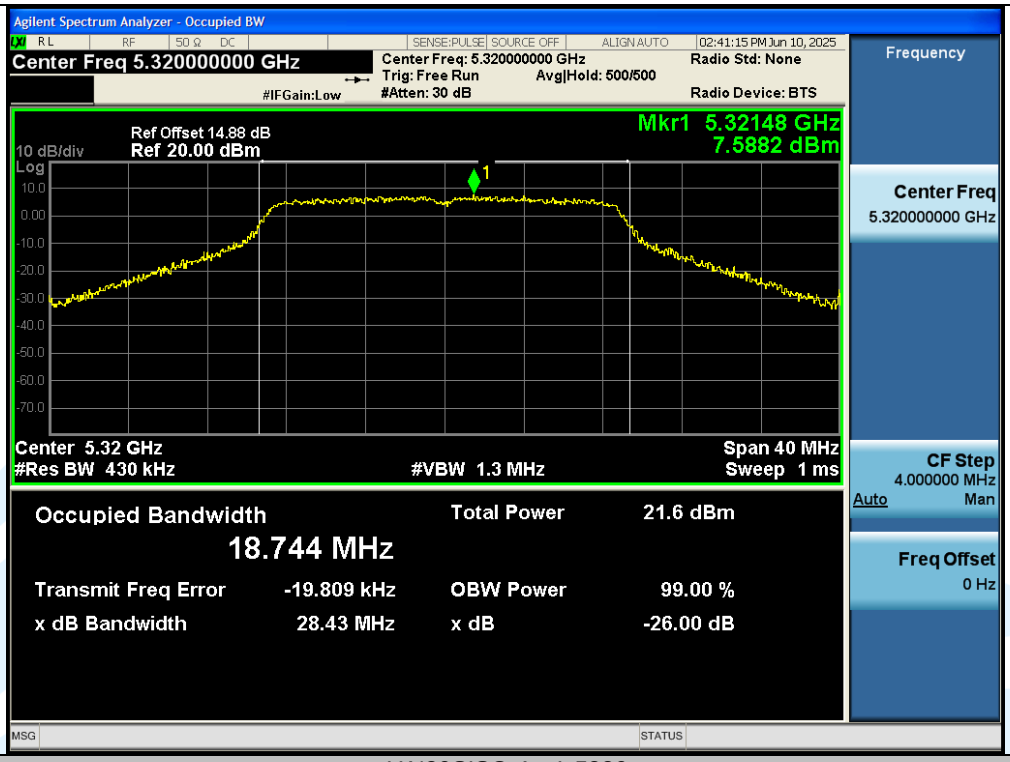

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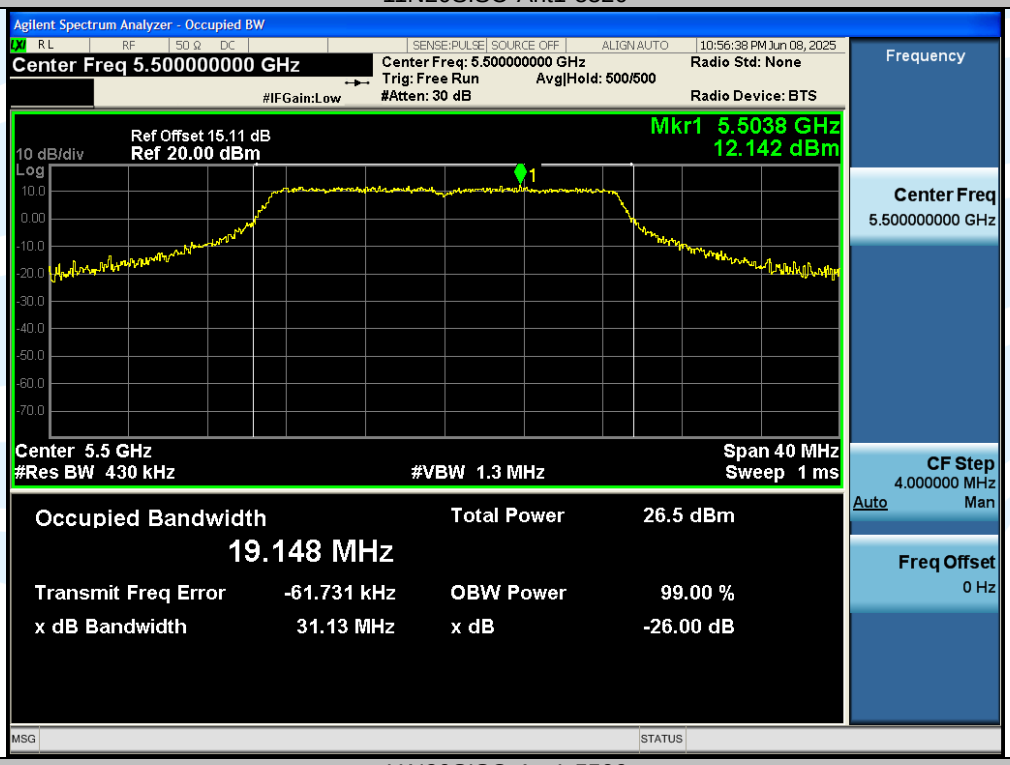

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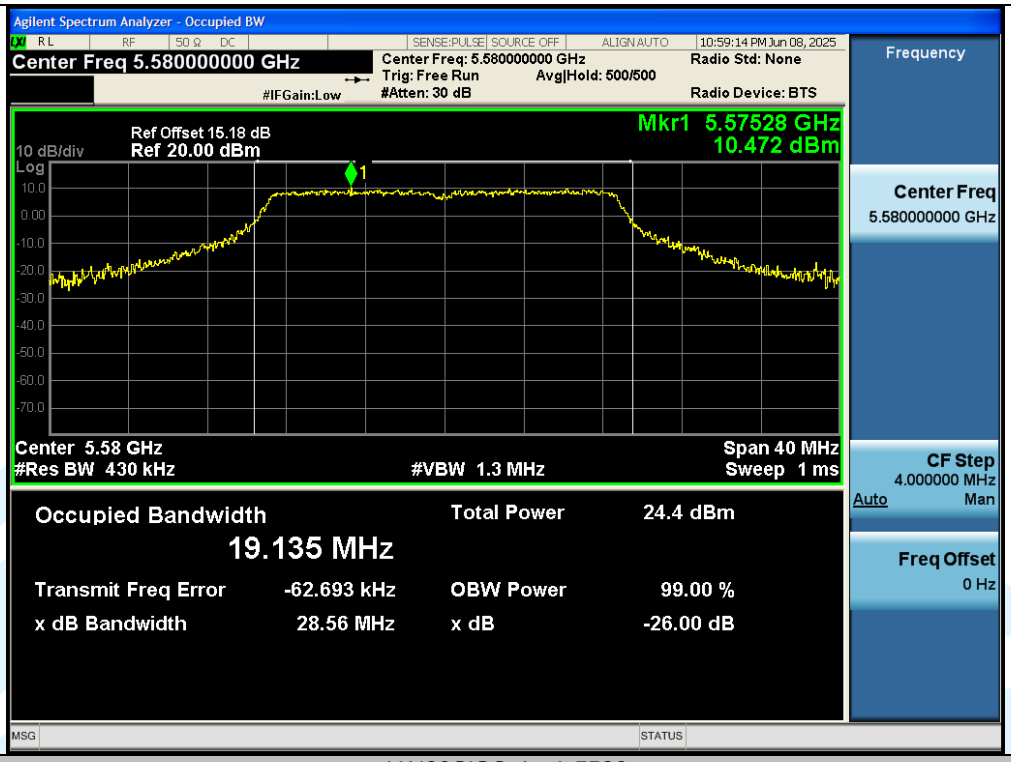

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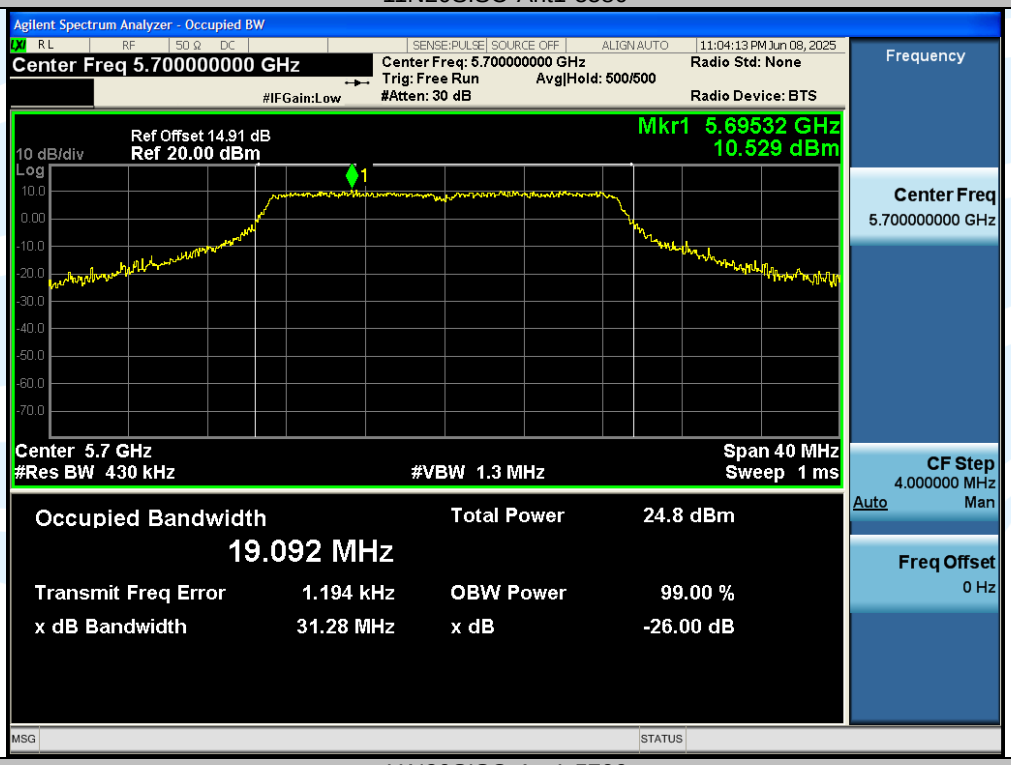

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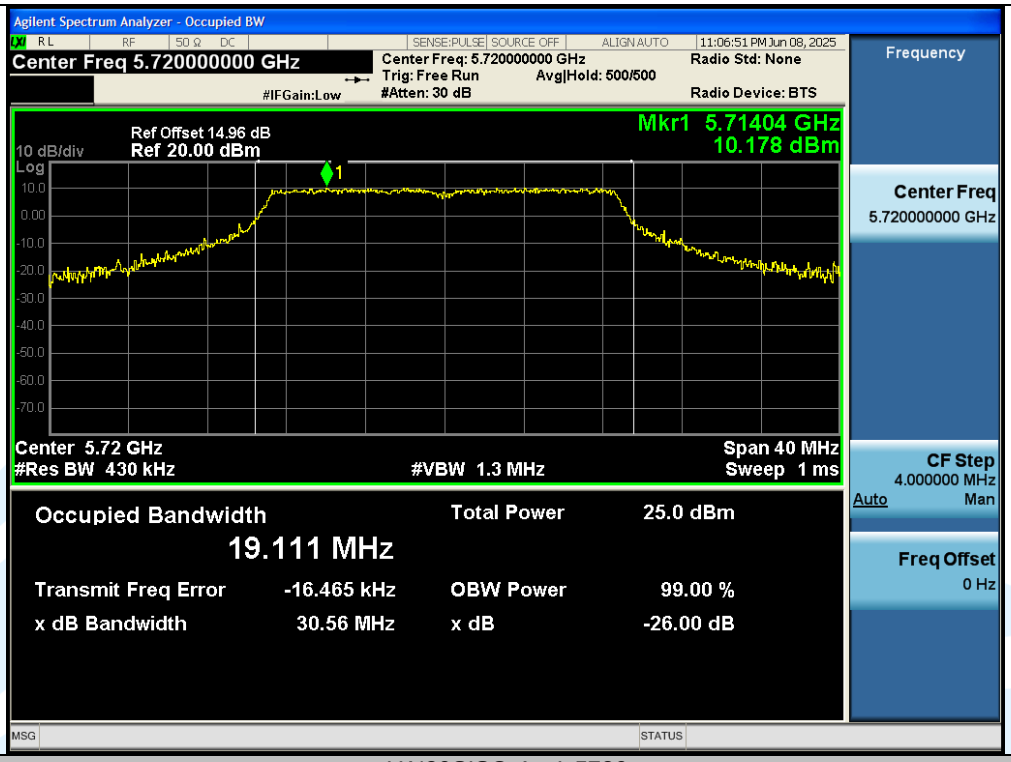

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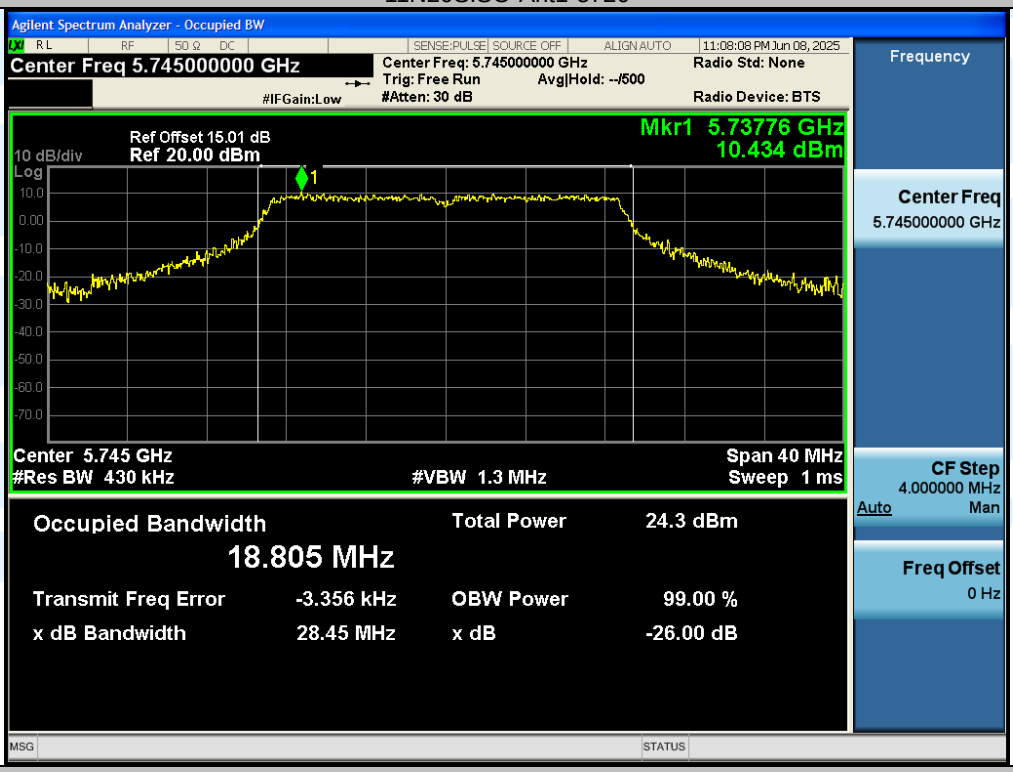

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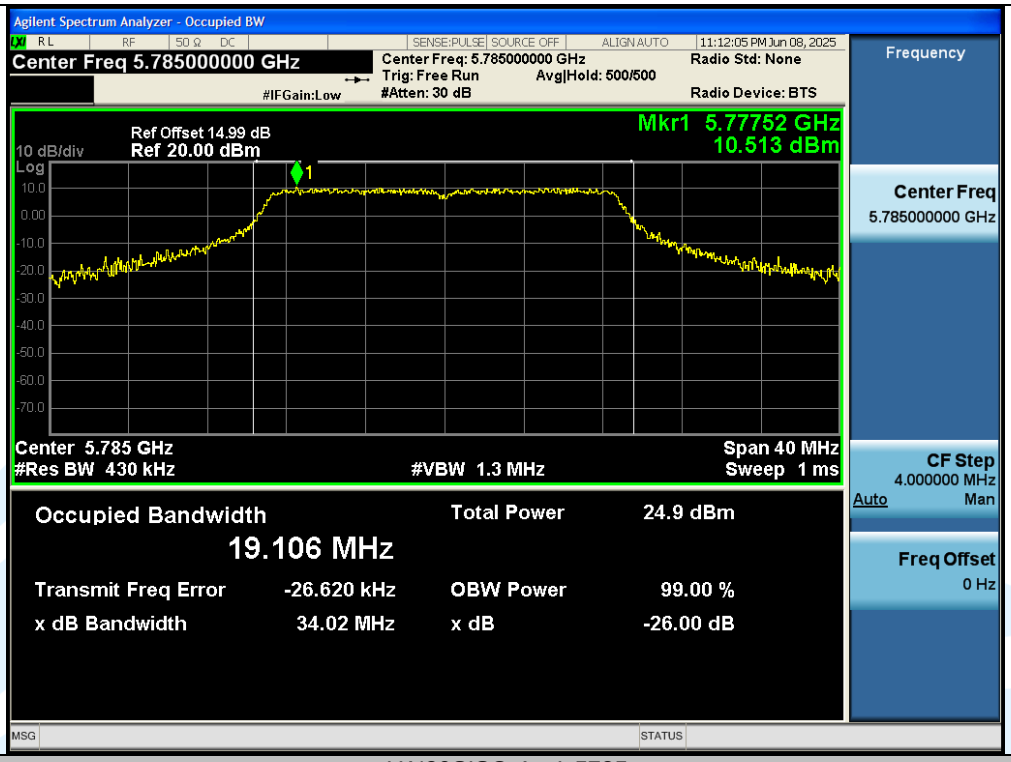

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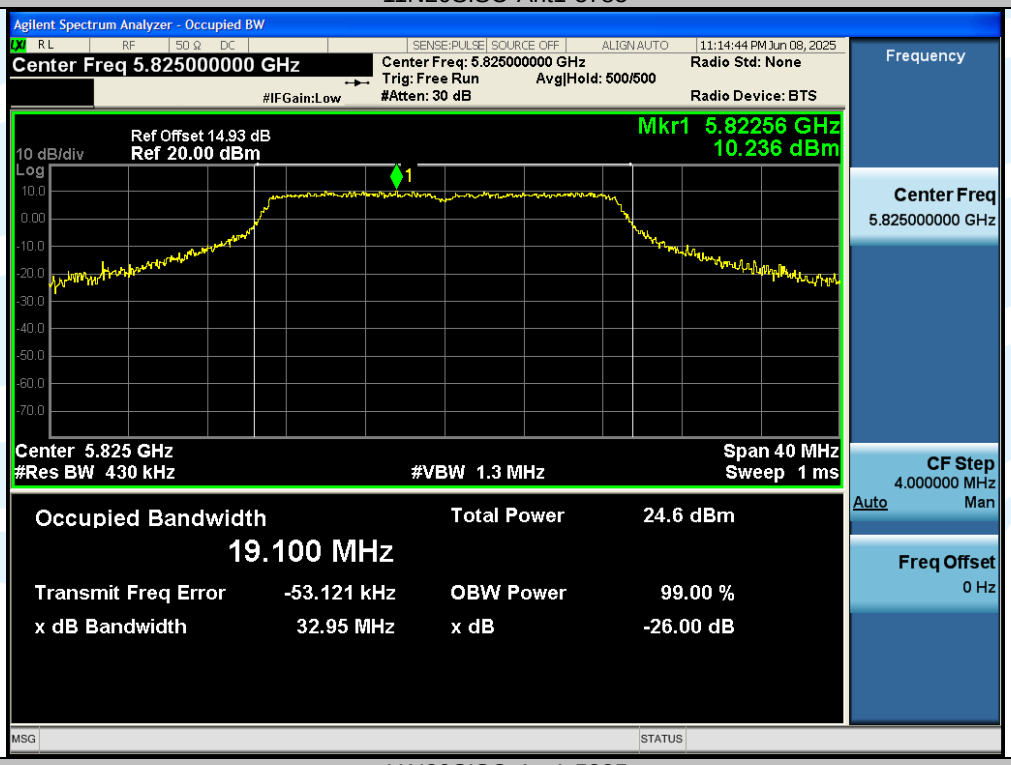

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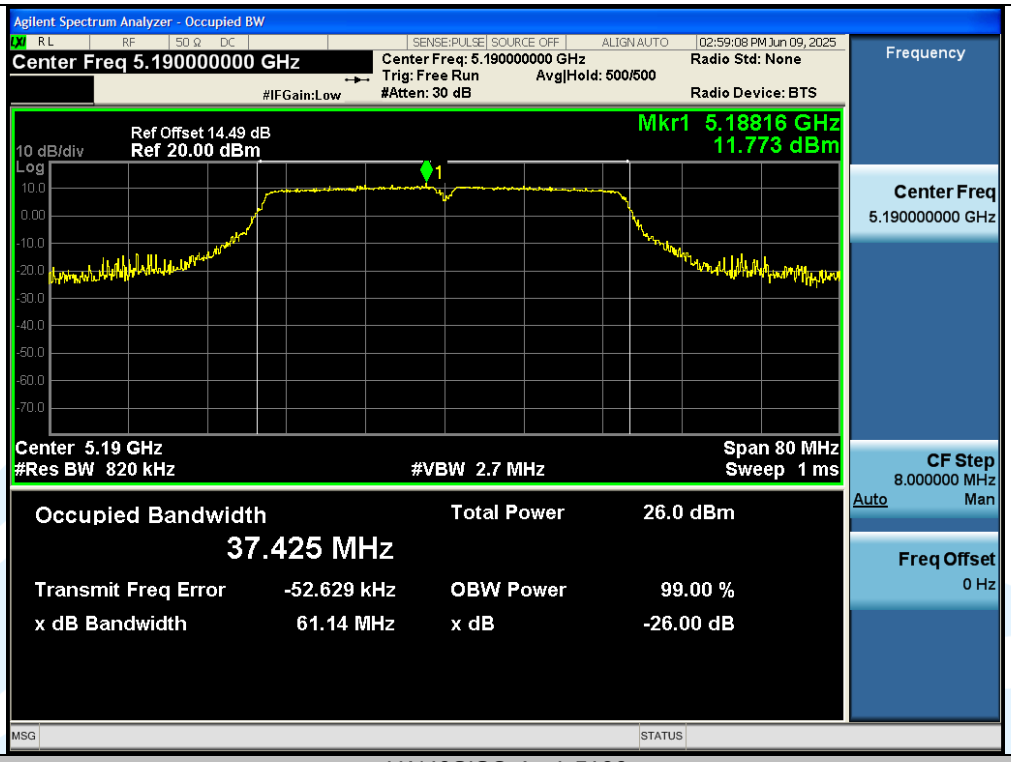

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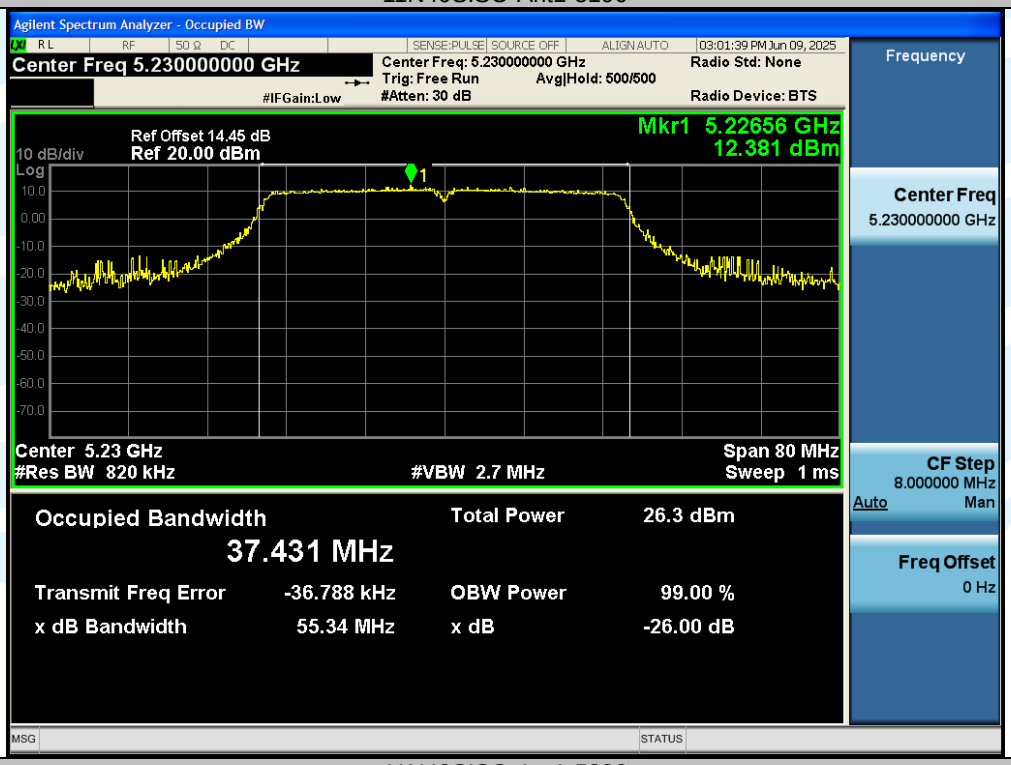

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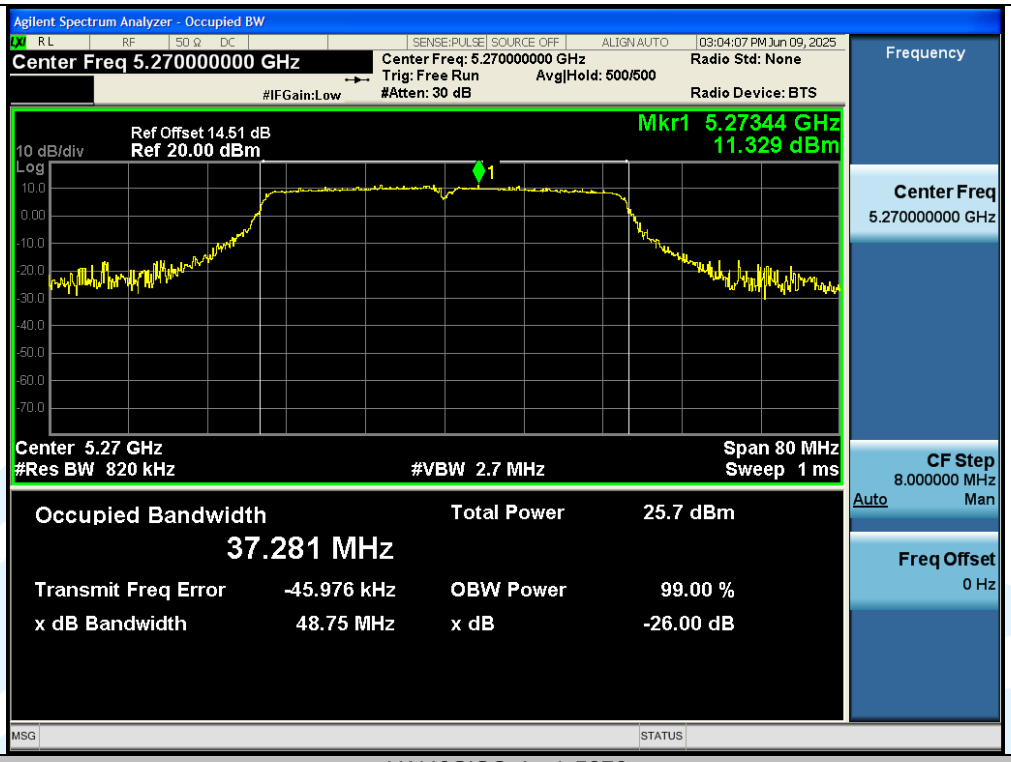

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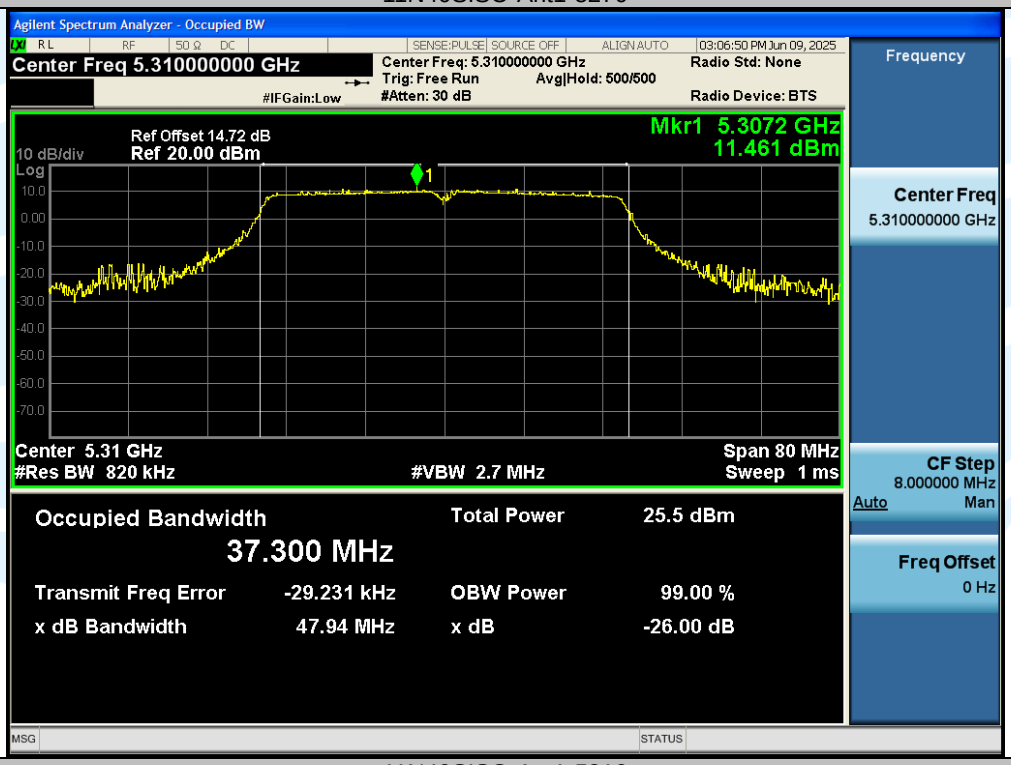

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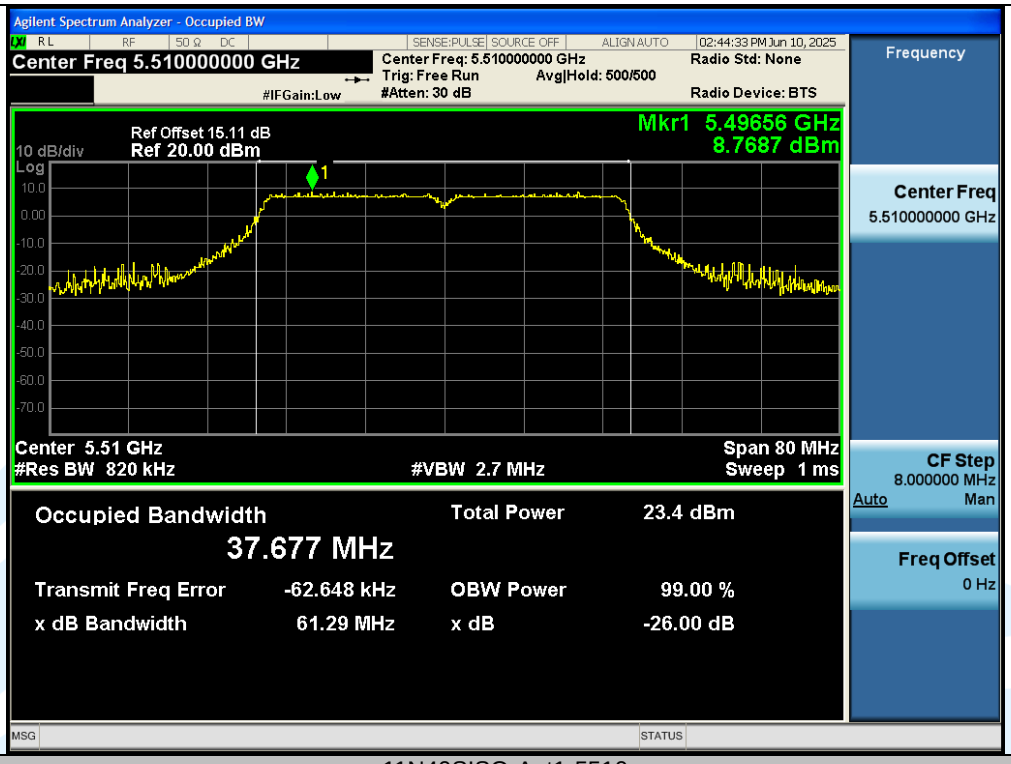

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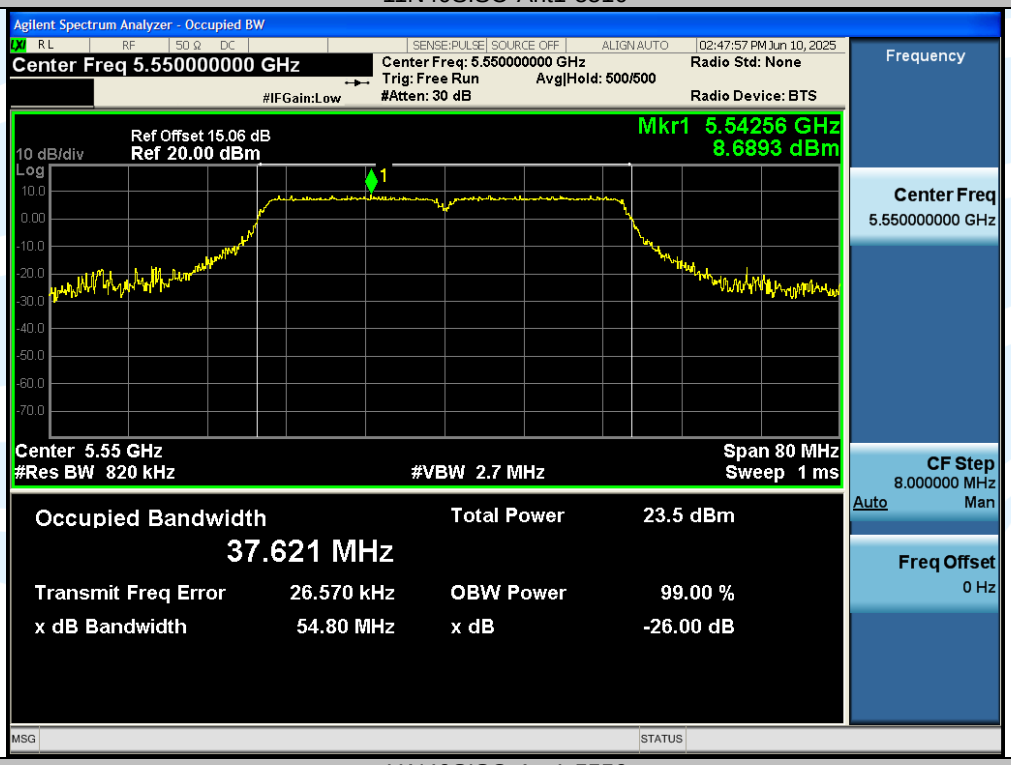

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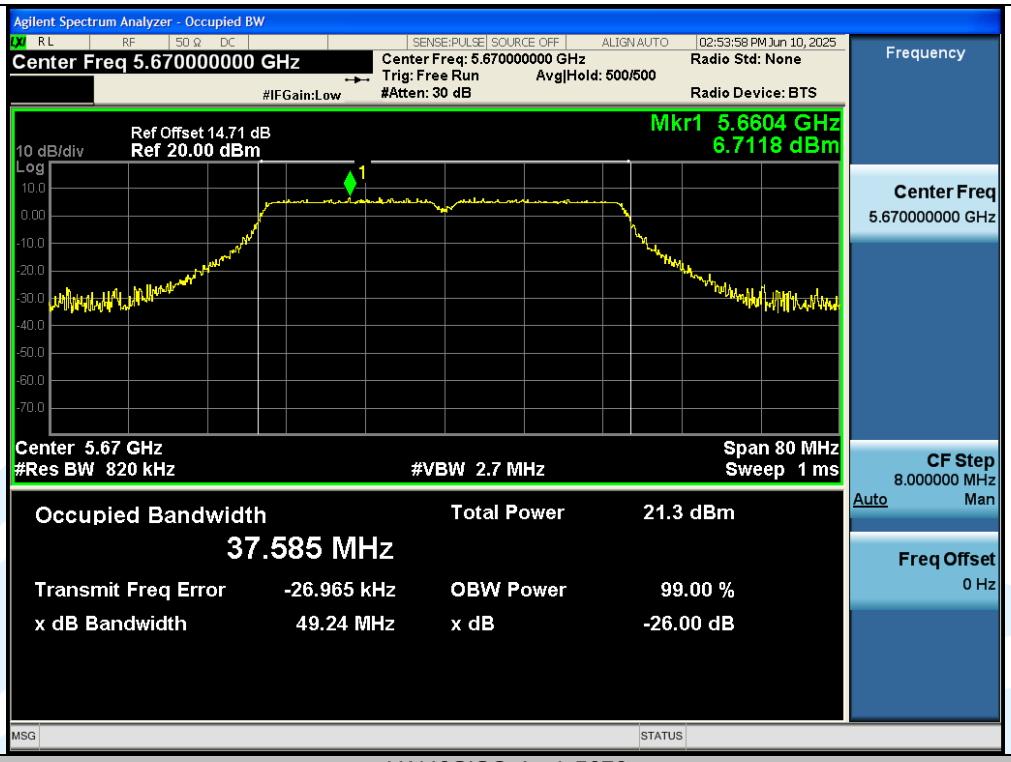

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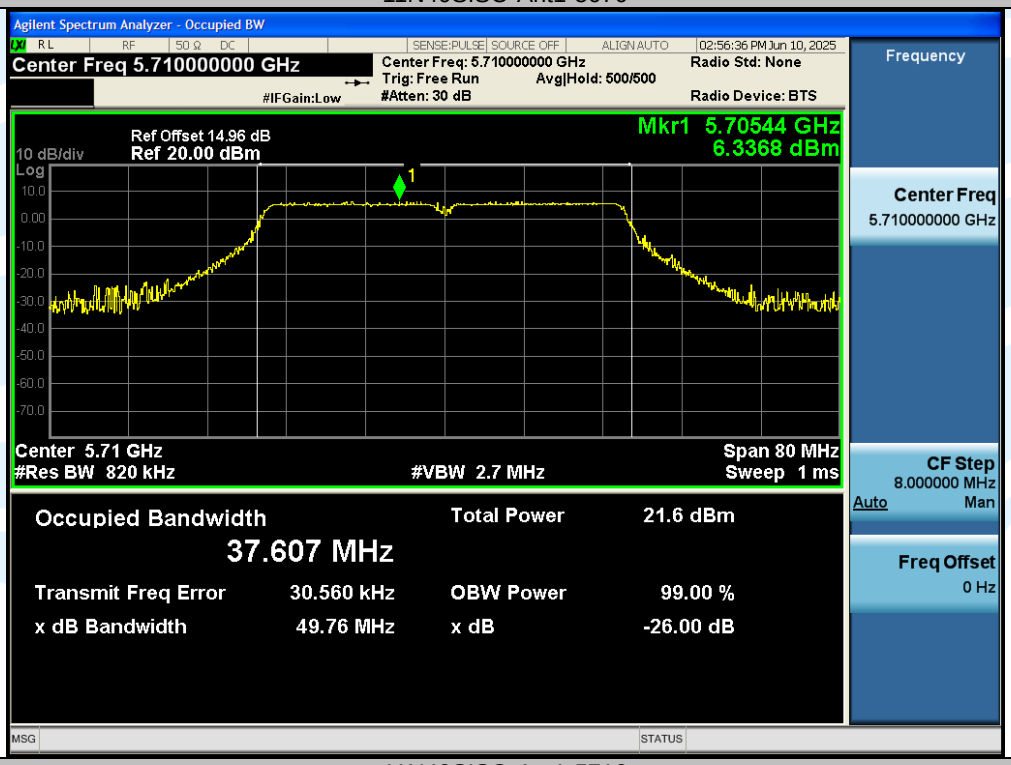

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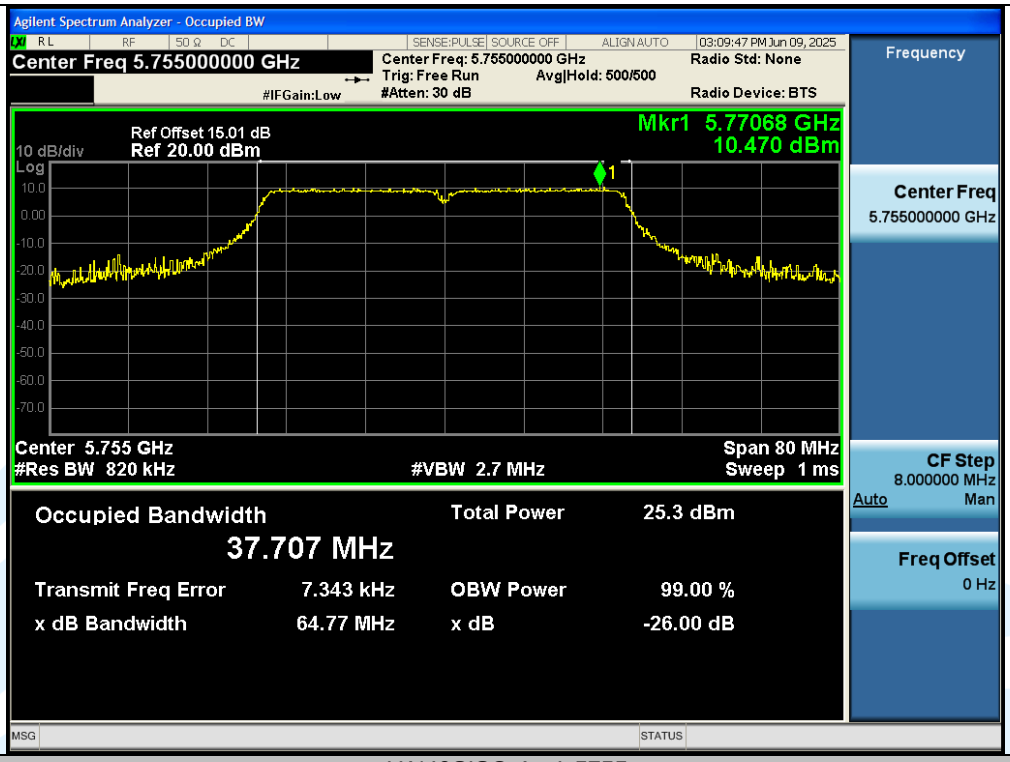

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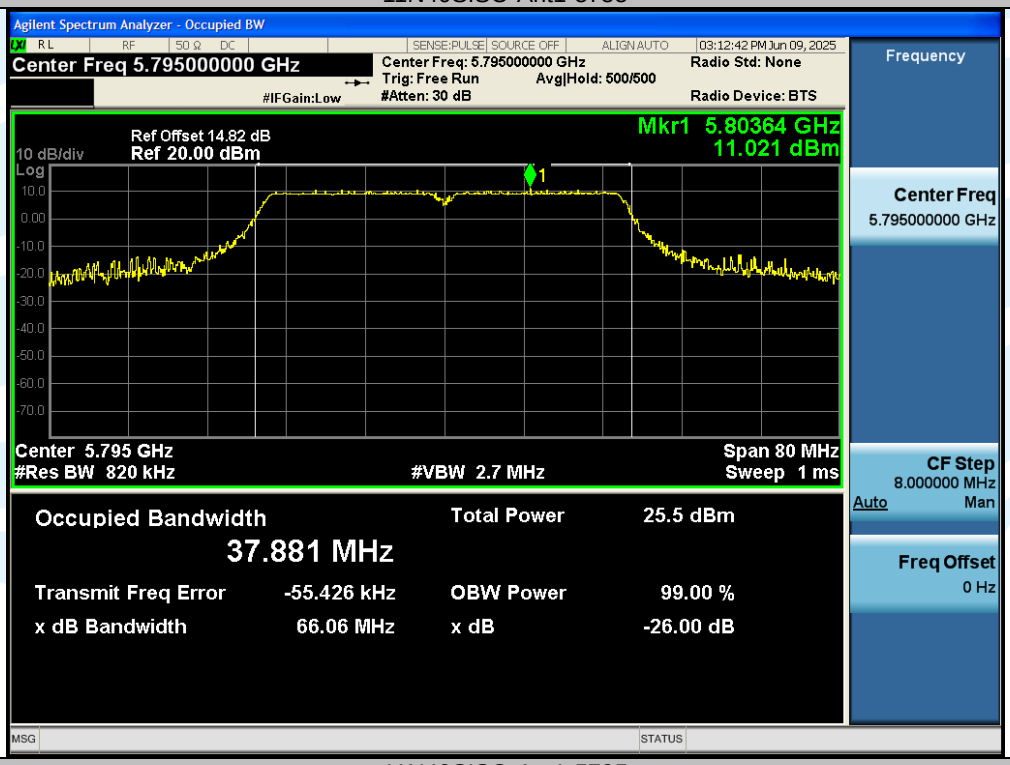

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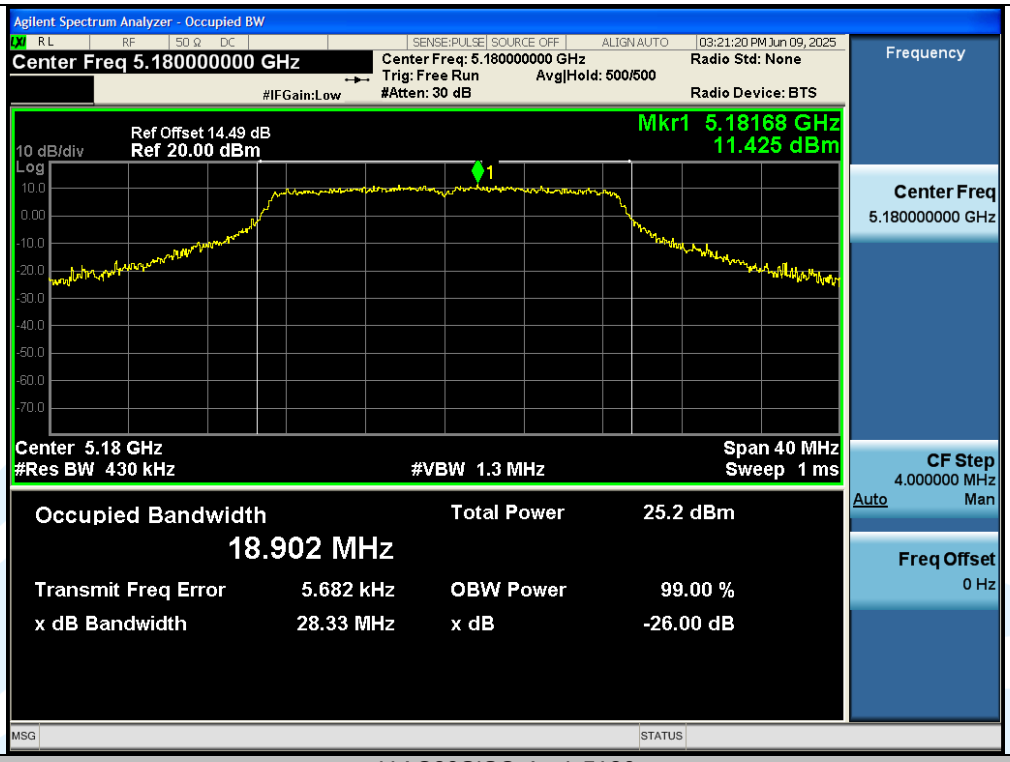

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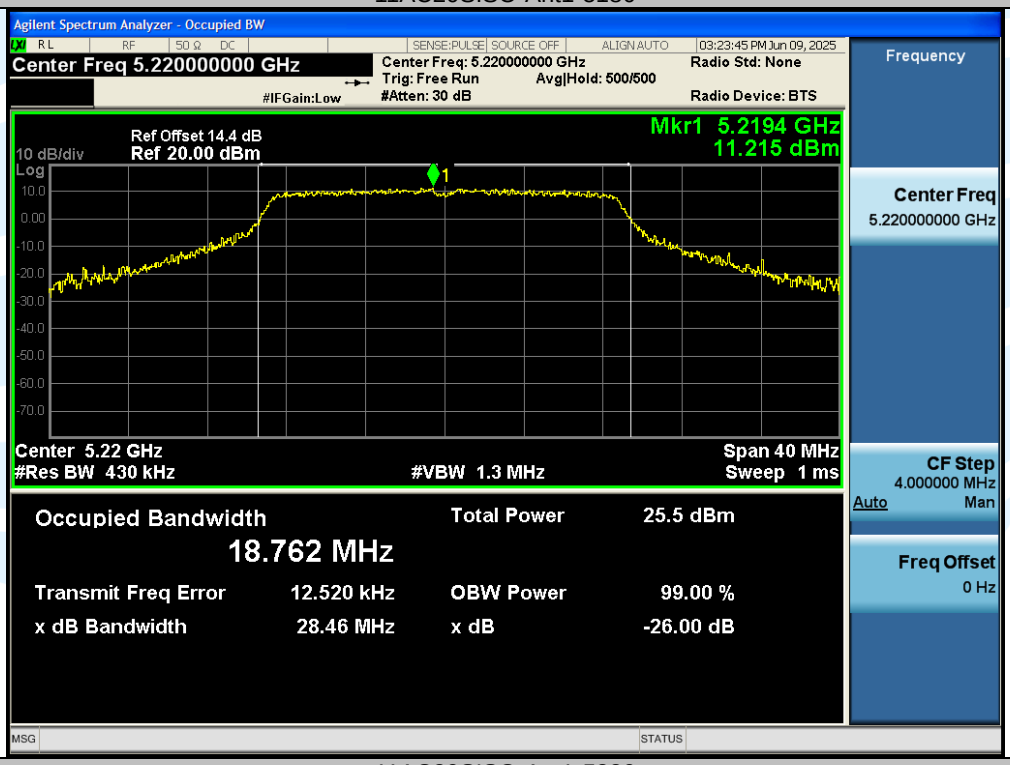

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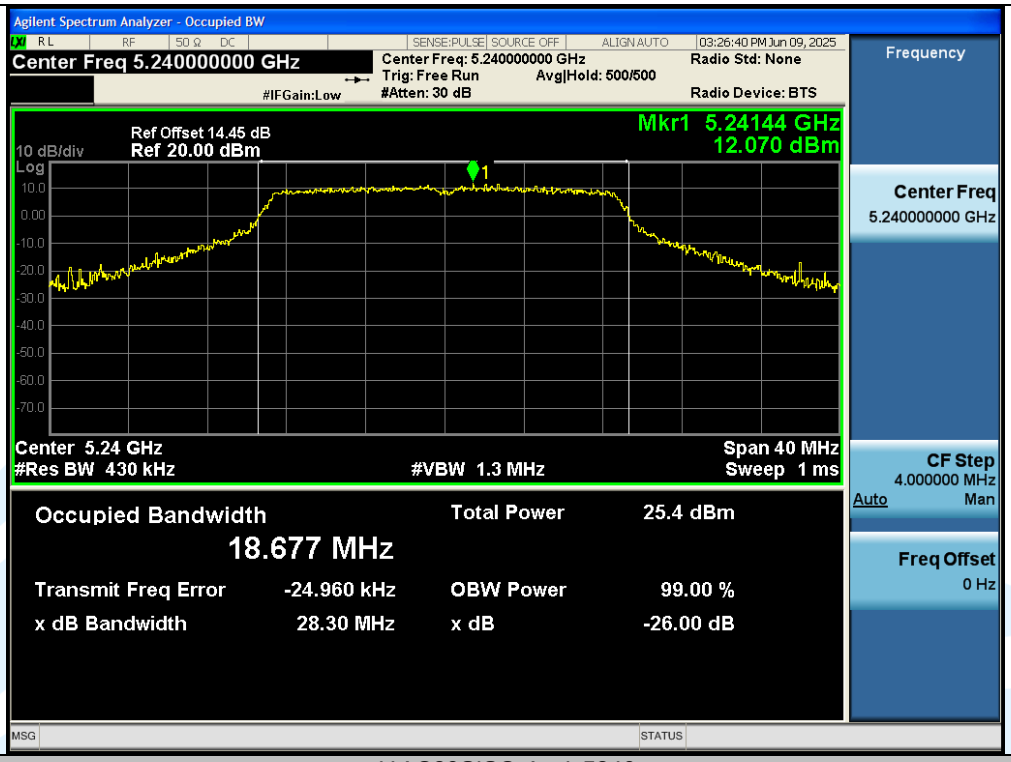

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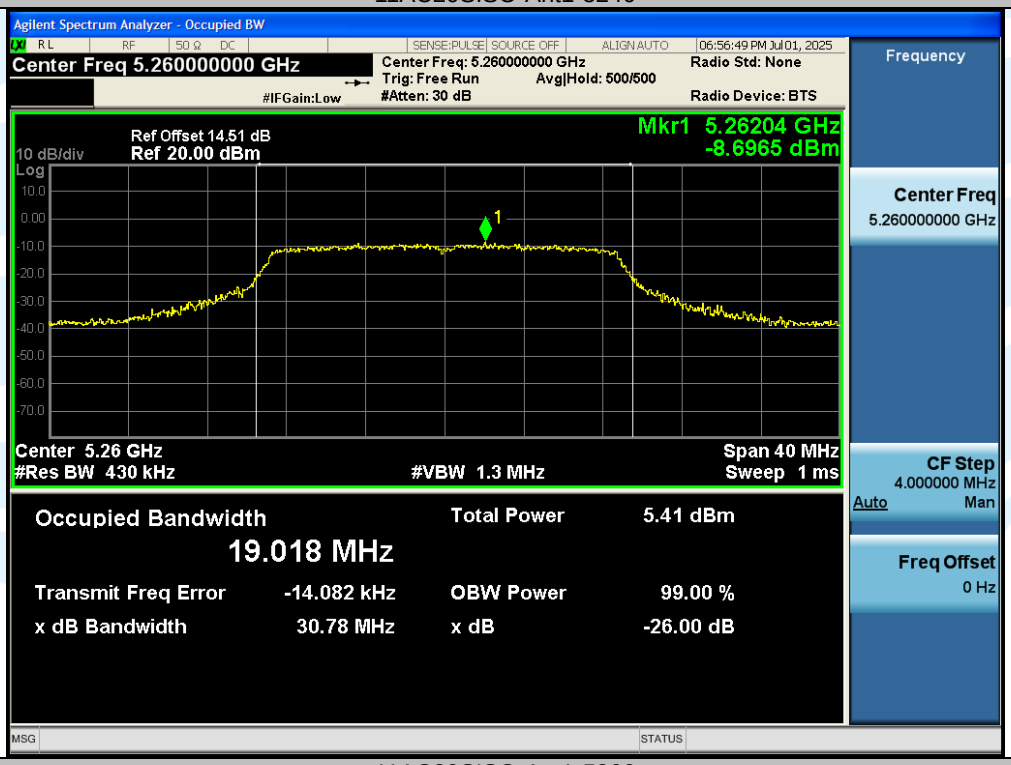

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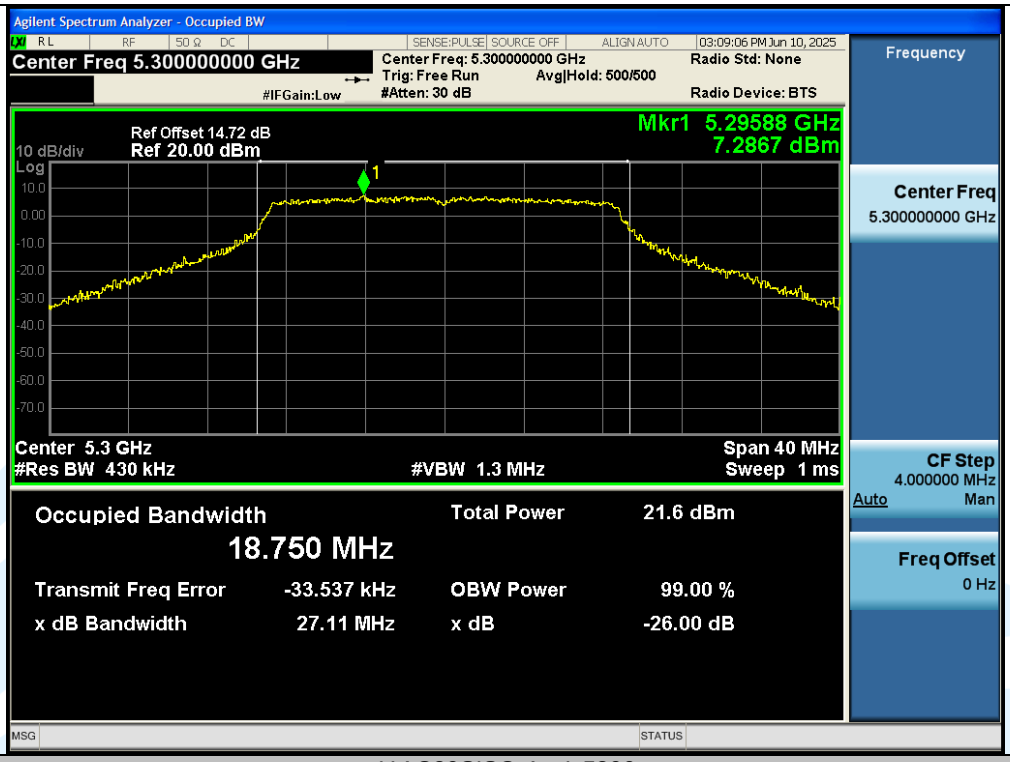

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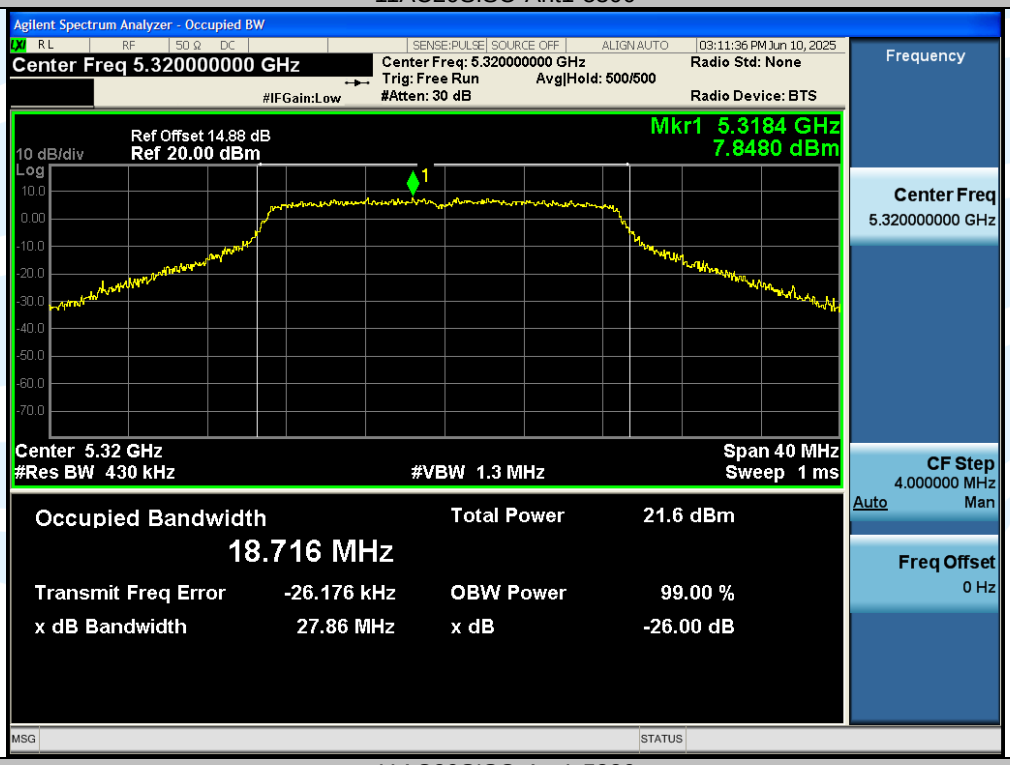

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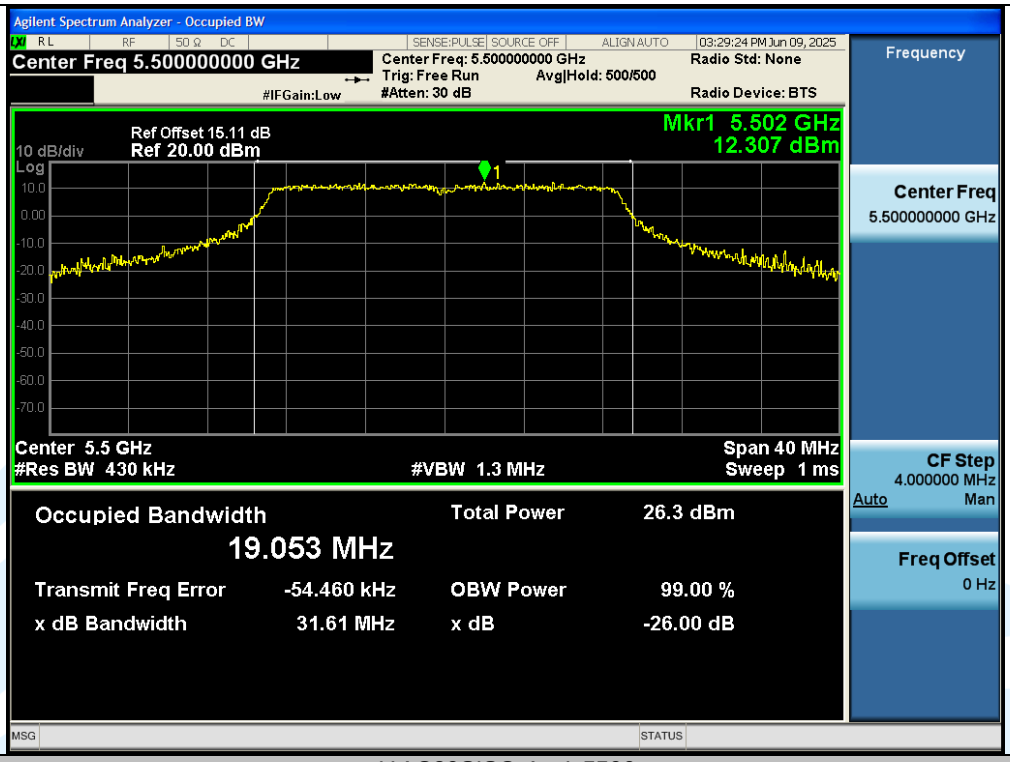

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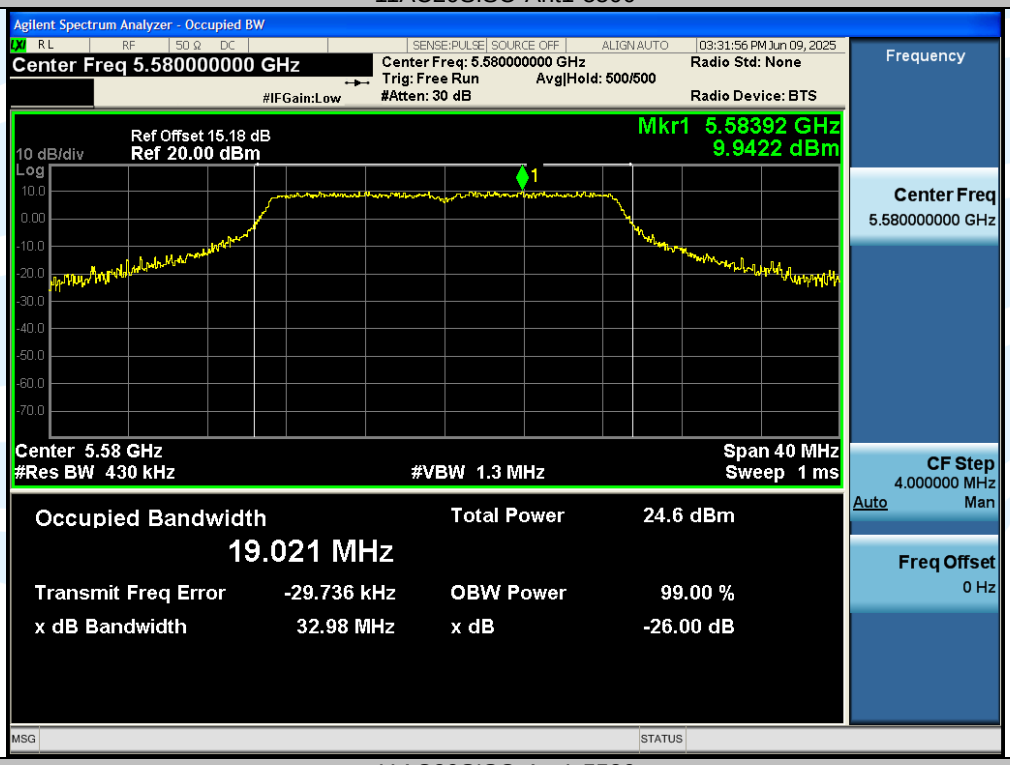

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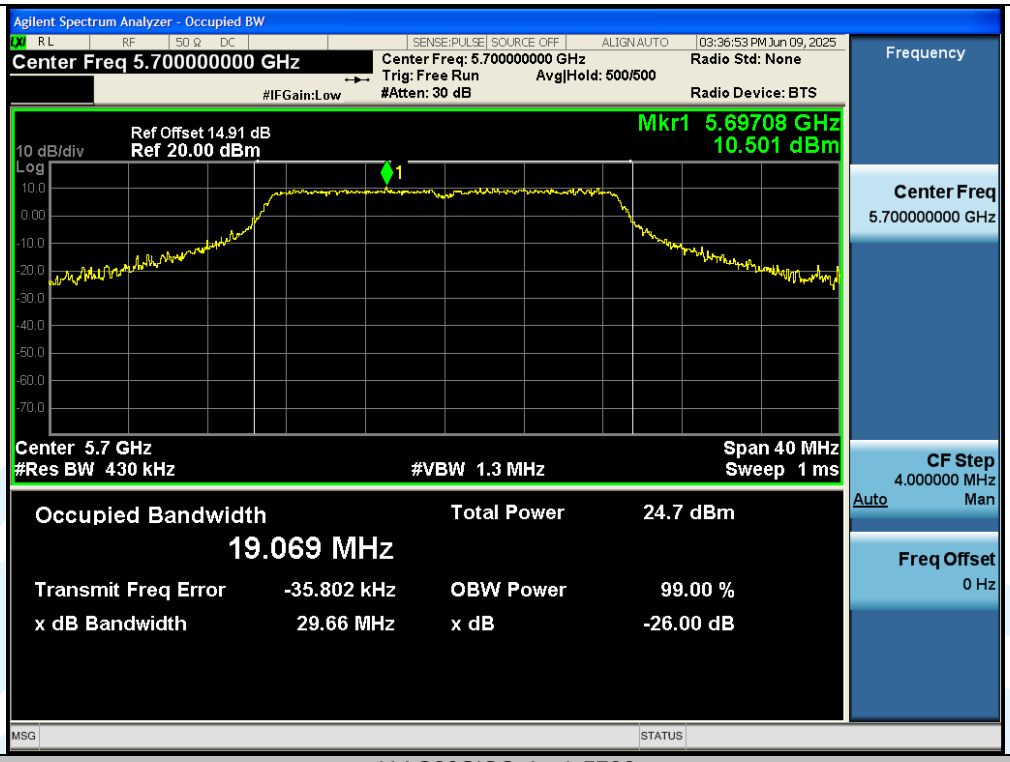

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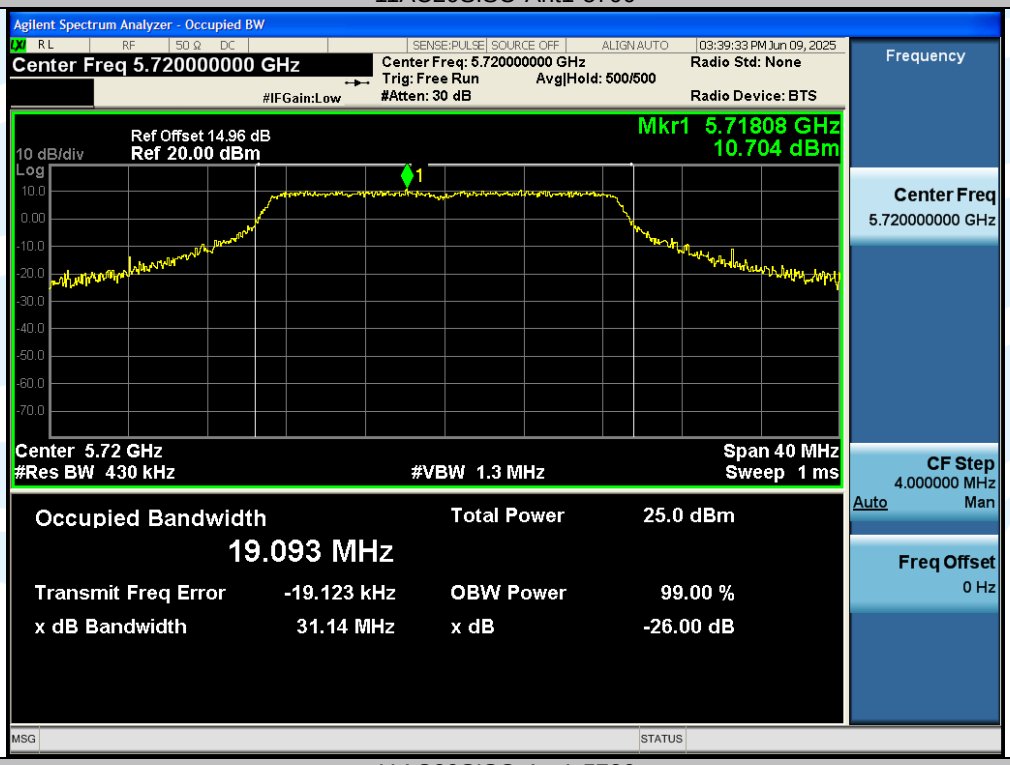

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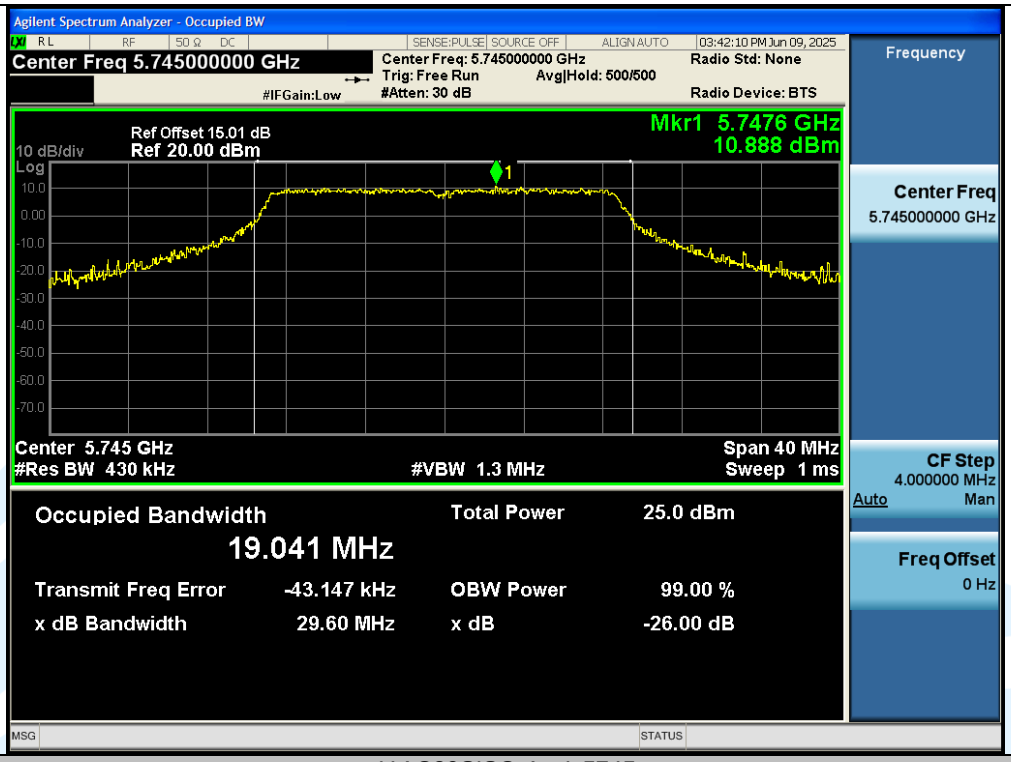

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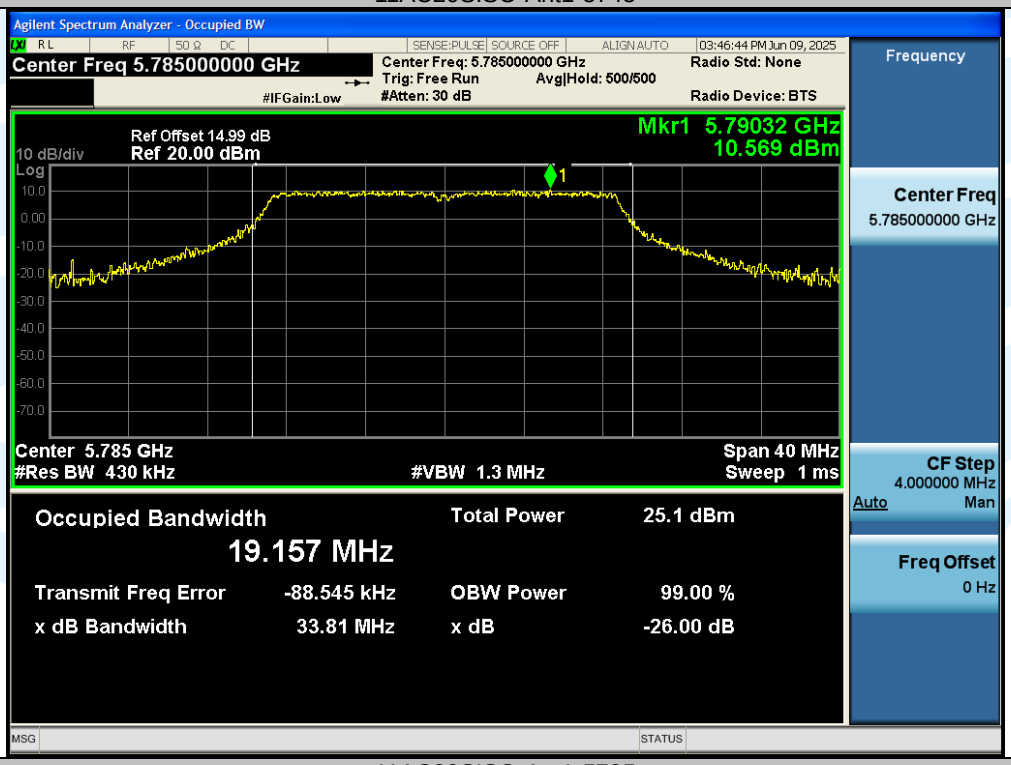

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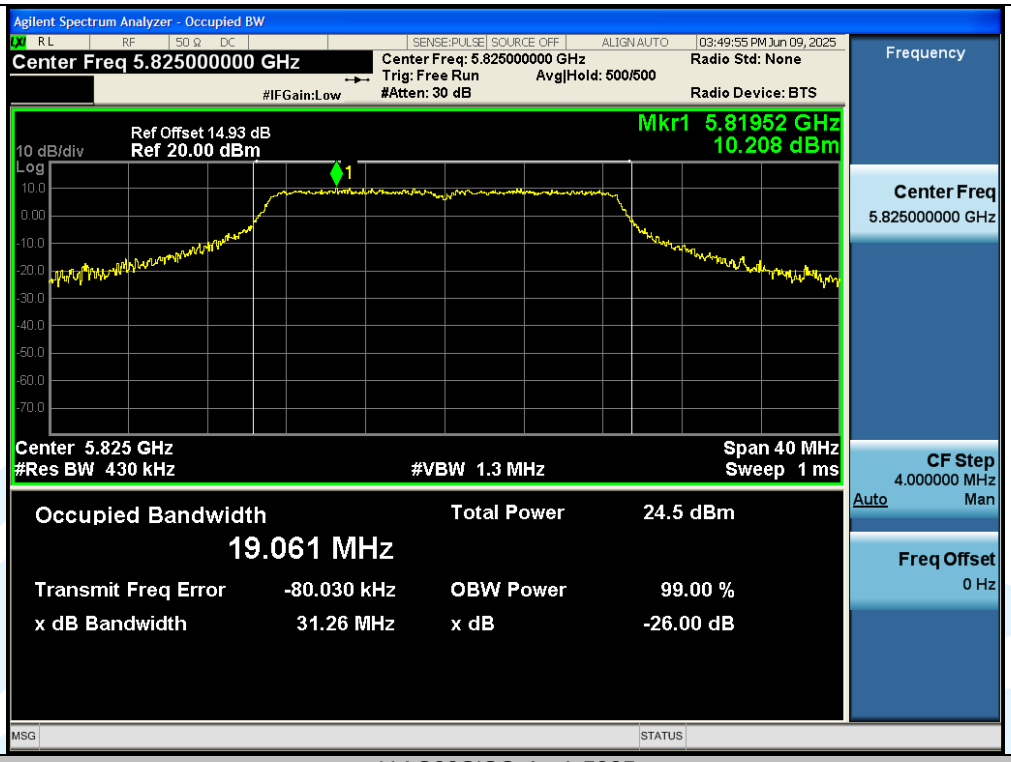

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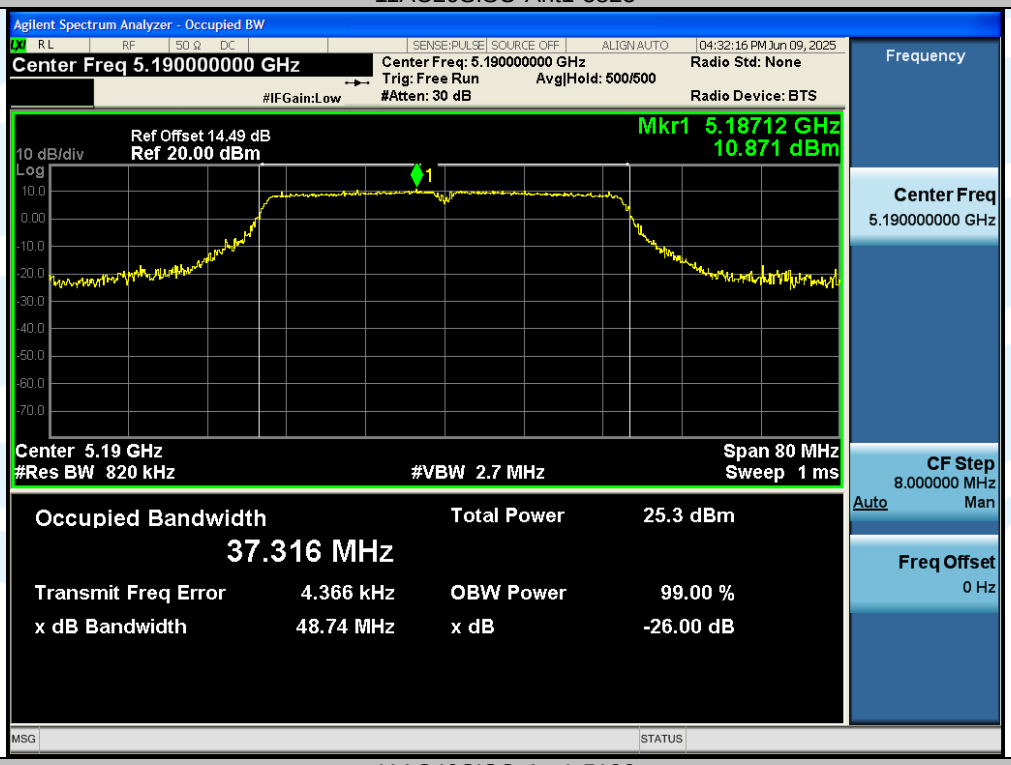

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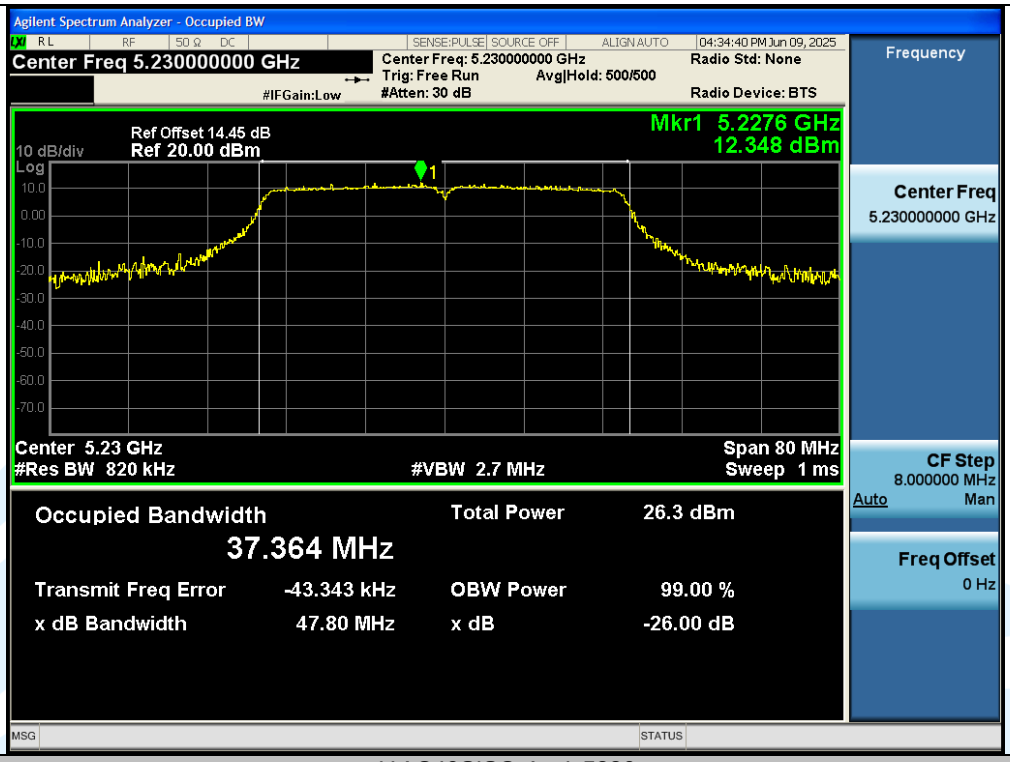

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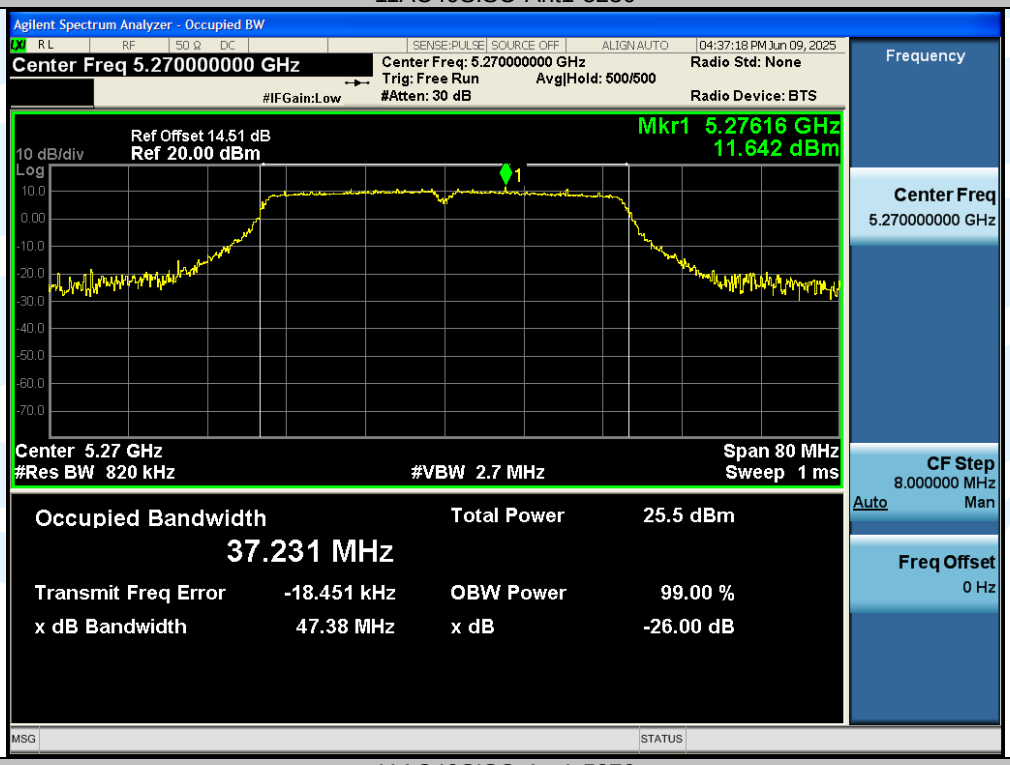

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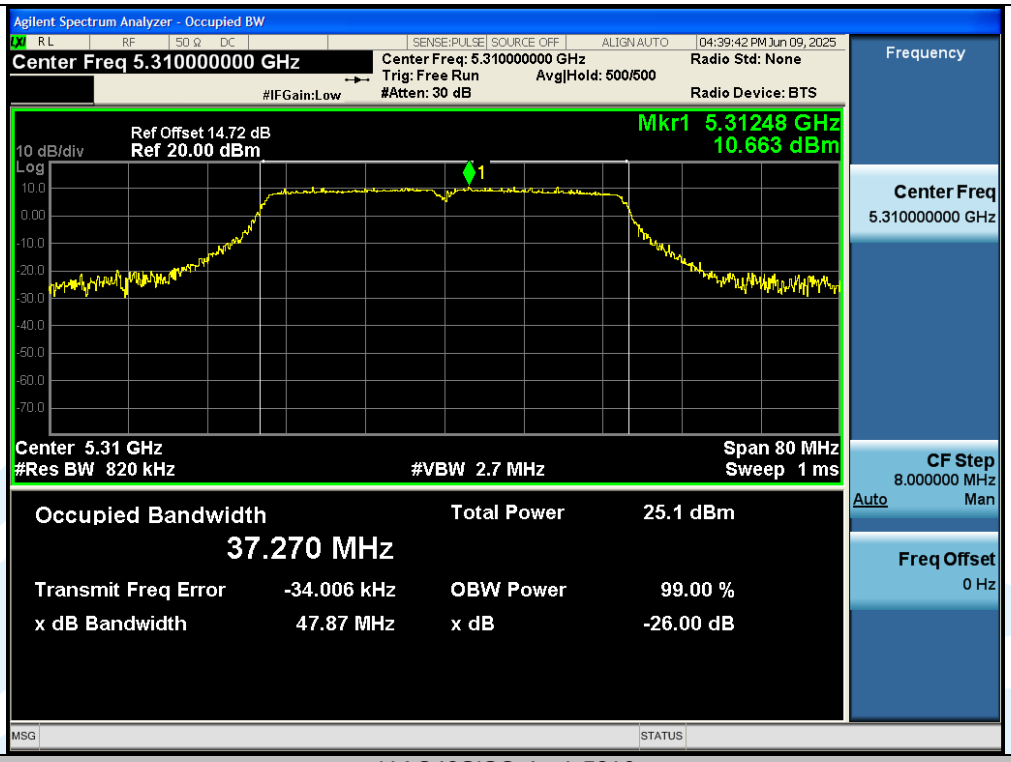

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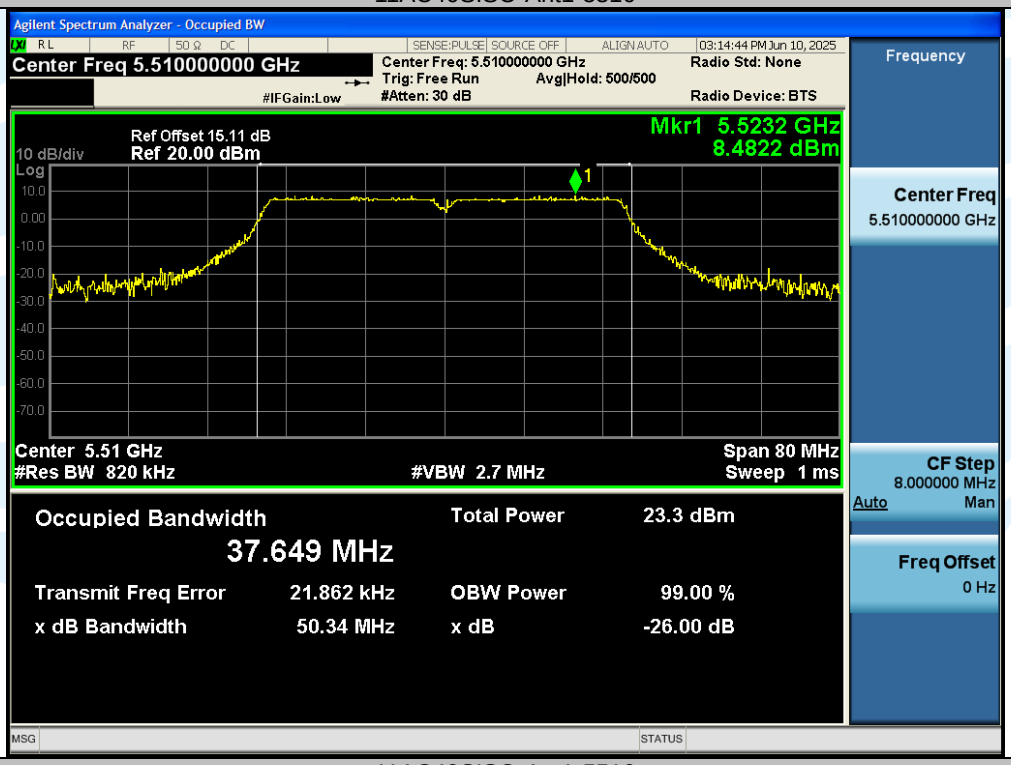

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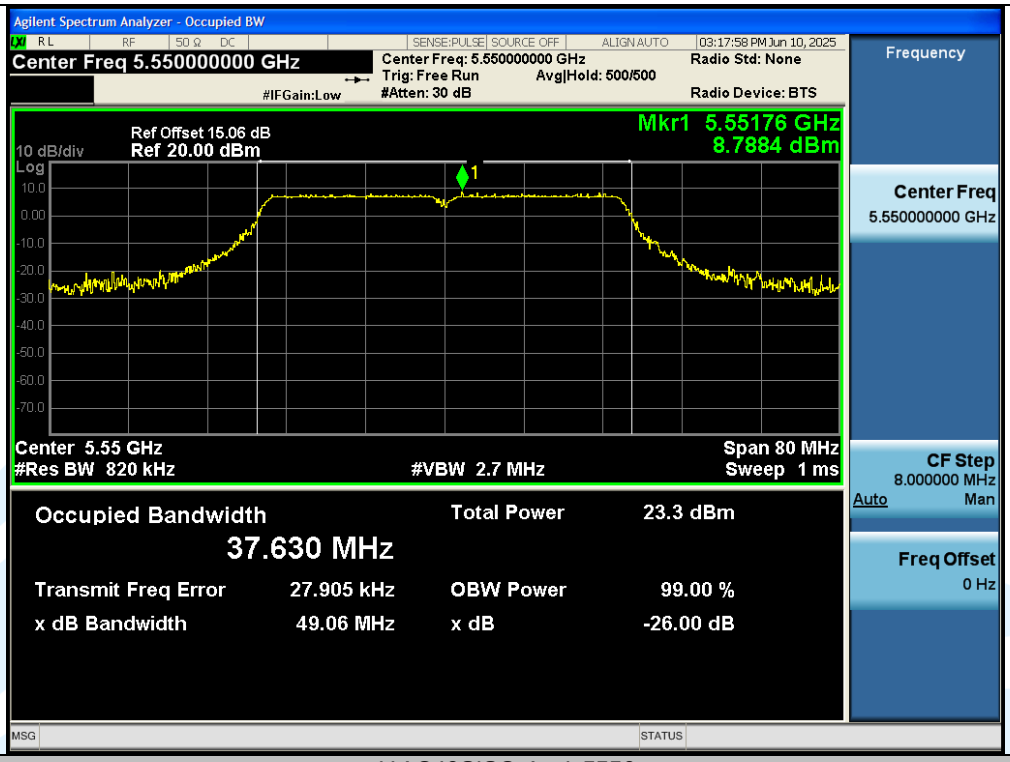

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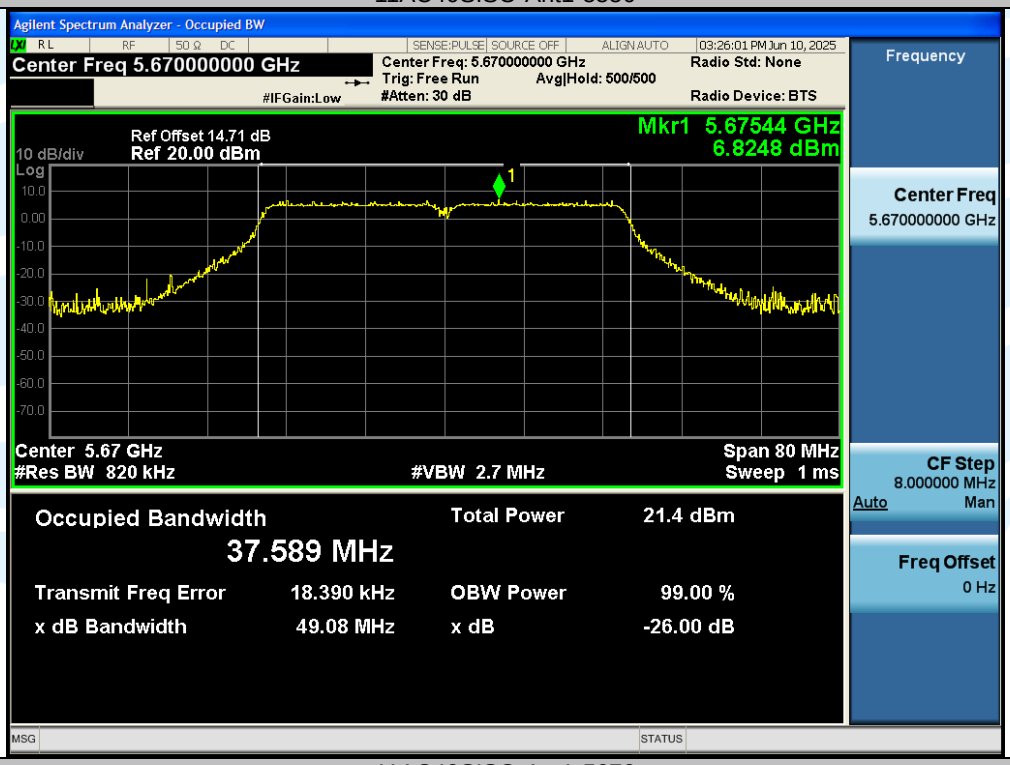

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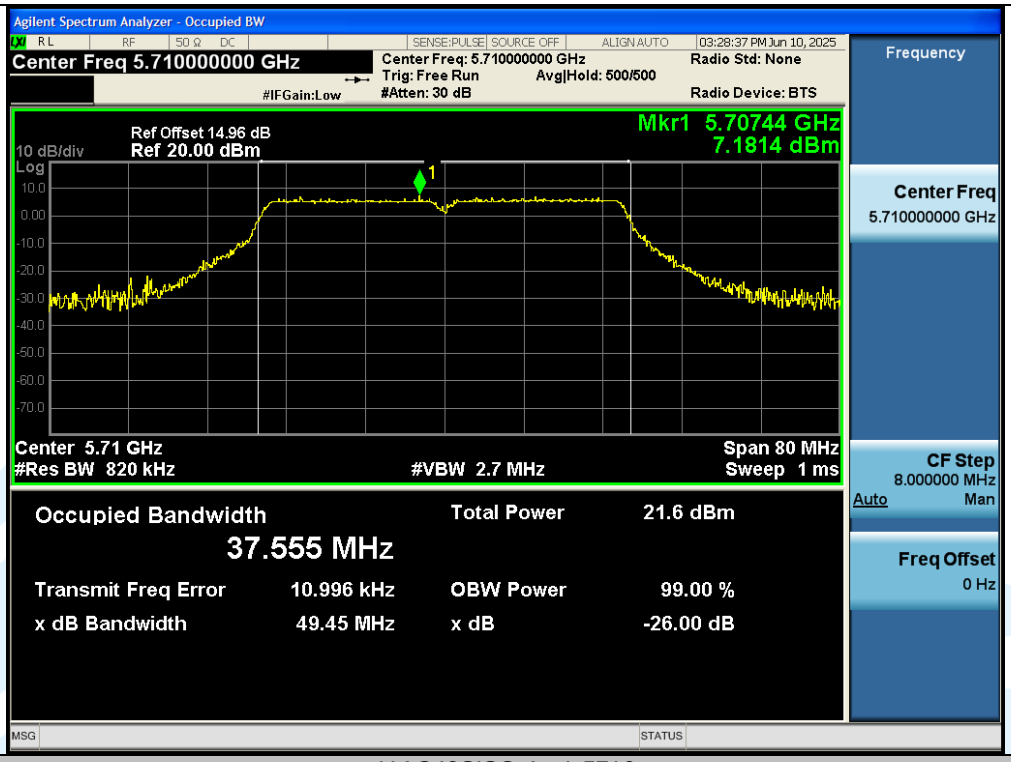

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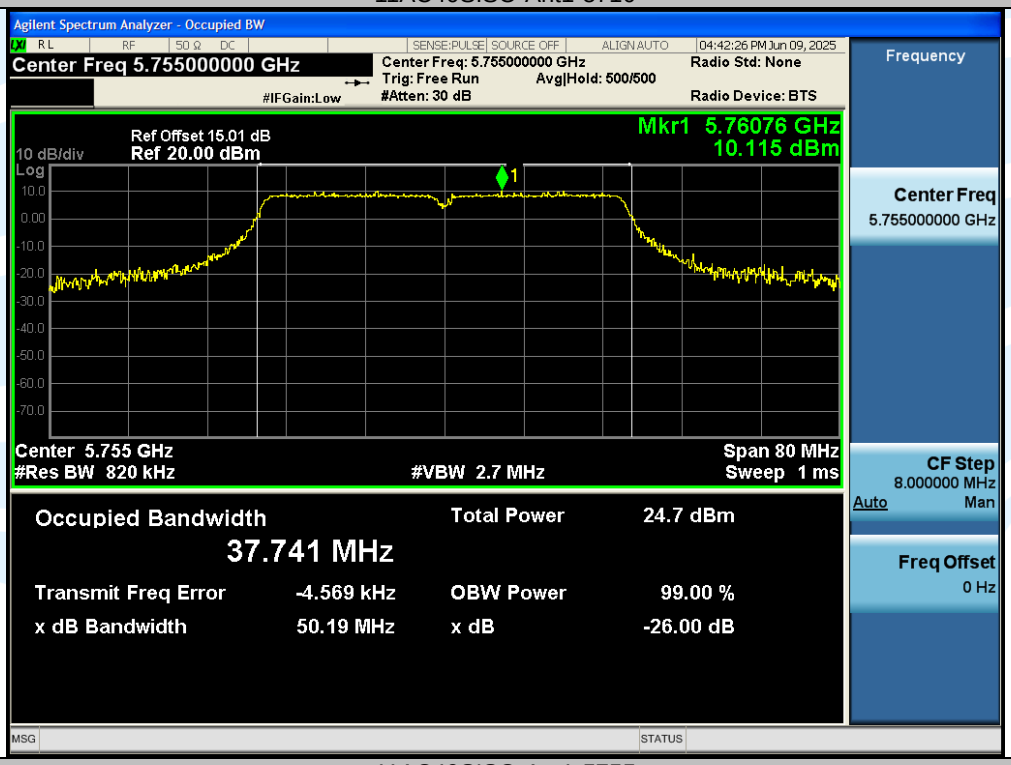

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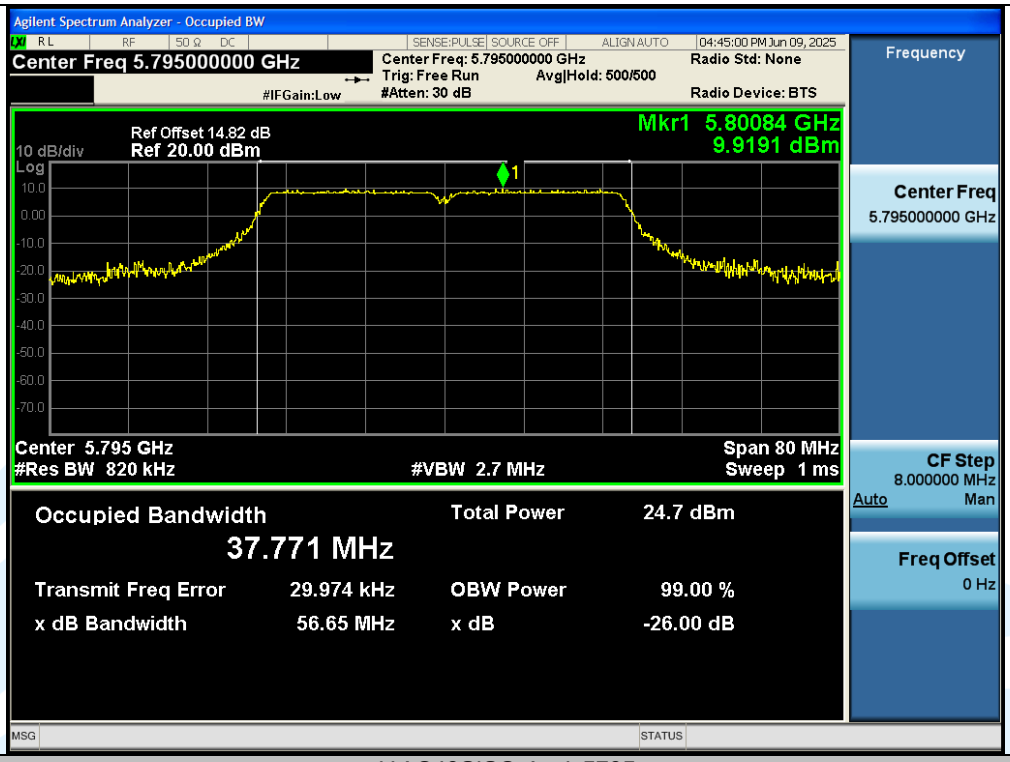

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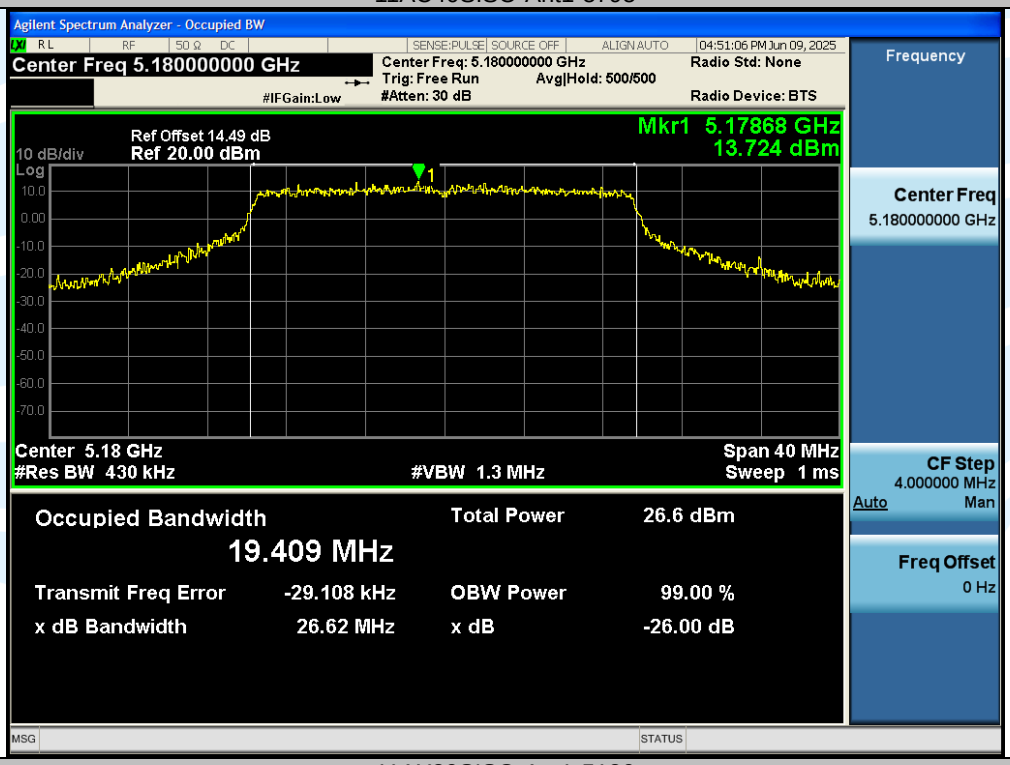

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