TEST REPORT

of

FCC PART 15 SUBPART E

Product :	**XGS-PON 10G ONT Home Gateway**
Brand:	**FiberGateway XGS-PON**
Model:	**XSR150DX**
Model Difference:	**N/A**
FCC ID:	**2ACJF-FGW-XSR150DX**
FCC Rule Part:	**§15.407, Cat:NII**
Applicant:	**Altice Labs**
Address:	**Rua Eng Ferreira Pinto Basto - 3810-106 Aveiro - Portugal**

Test Performed by:

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No. 120, Lane 180, Hsin Ho Rd., Lung-Tan Dist., Tao Yuan City 325, Taiwan

Report No.: **ISL-22LR0095FE**
Issue Date : **2022/05/06**

Test results given in this report apply only to the specific sample(s) tested and are traceable to national or international standard through calibration of the equipment and evaluating measurement uncertainty herein.
The uncertainty of the measurement does not include in consideration of the test result unless the customer required the determination of uncertainty via the agreement, regulation or standard document specification.
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VERIFICATION OF COMPLIANCE

Applicant:	Altice Labs
Product Description:	XGS-PON 10G ONT Home Gateway
Brand Name:	FiberGateway XGS-PON
Model No.:	XSR150DX
Model Difference:	N/A
FCC ID:	2ACJF-FGW-XSR150DX
Date of test:	2022/04/18 ~ 2022/05/05
Date of EUT Received:	2022/04/18

We hereby certify that:

All the tests in this report have been performed and recorded in accordance with the standards described above and performed by an independent electromagnetic compatibility consultant, International Standards Laboratory Corp.

The test results contained in this report accurately represent the measurements of the characteristics and the energy generated by sample equipment under test at the time of the test. The sample equipment tested as described in this report is in compliance with the limits of above standards.

Test By:	Barry Lee	***Date:***	2022/05/06
	Barry Lee / Senior Engineer		
Prepared By:	Gigi Yeh	***Date:***	2022/05/06
	Gigi Yeh / Senior Engineer		
Approved By:	Jerry Liu	***Date:***	2022/05/06
	Jerry Liu / Assistant Manager		

Version

Version No.	Date	Description
00	2022/05/06	Initial creation of document

Uncertainty of Measurement

Parameter	Uncertainty (k=2)
Conducted Emission (AC power line)	±0.852 dB
Spurious emissions, radiated	±3.46 dB
RF power, conducted	±1.386 dB
Power Density	±1.432 dB
RF Frequency	±0.00298%
DC Voltage	±0.808%

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1. General Information

1.1. Product Description

General Information		
Product Name:	XGS-PON 10G ONT Home Gateway	
Brand Name:	FiberGateway XGS-PON	
Model Name:	XSR150DX	
Model Difference:	N/A	
Temperature Range	5°C to +40°C	
Power Supply:	100~240VAC	
	Battery:	NA
	Adaptor:	Model: WA36N12FU
WiFi Information		
WLAN Modular	BCM43684KRFBG	
Frequency Range:	WLAN 5GHz Band U-NII-1 5180MHz~5240MHz	
Max Output Power:	5150MHz ~ 5250MHz: 28.63dBm	
Channel number:	WLAN 5GHz Band 802.11a U-NII-1 : 4 802.11n(HT20) U-NII-1 : 4 802.11n(HT40) U-NII-1 : 2 802.11ac(VHT20) U-NII-1 : 4 802.11ac(VHT40) U-NII-1 : 2 802.11ac(VHT80) U-NII-1 : 1 802.11ax(HE80) U-NII-1 : 1	
Power Tolerance:	+/- 1 dB	
Product HW Version:	PCB 1497	
Product SW Version:	Rev 2.3	
Product FW Version:	NA	
Test SW Version:	Rev 2.3	
RF power setting:	Refer power table	

Antenna List

	Antenna Type	Brand	Model	Peak Gain(dBi)	Frequency Range(MHz)	Connector Type
1	PCB	Galtronics	02102140-06825-1	3.7	5150~5250MHz	U.FL
2	PCB	Galtronics	02102140-06825-2	3.5	5150~5250MHz	U.FL
3	PCB	Galtronics	02102140-06825-3	3.7	5150~5250MHz	U.FL
	PCB	Galtronics	02102140-06825-4	3.5	5150~5250MHz	U.FL

Channel List

Frequency Band	Modulation Mode	Channel No.	Frequency (MHz)
5150 - 5250 MHz	802.11a 802.11n HT20 802.11ac VHT20 802.11ax HE20	CH 36 CH 40 CH 44 CH 48	5180 5200 5220 5240
	802.11n HT40 802.11ac VHT40 802.11ax HE40	CH 38 CH 46	5190 5230
	802.11ac VHT80 802.11ax HE80	CH 42	5210

The EUT is compliance with IEEE 802.11 a/n/ac/ax Standard.

This report applies for Wifi frequency band 5150 MHz– 5250 MHz.

Remark: The above DUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2ACJF-FGW-XSR150DX** filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at an antenna to EUT distance 3 meters.

KDB Document: 789033 D02 General U-NII Test Procedures New Rules v02r01

FCC 14-30 Revision UNII

594280 D02 U-NII Device Security v01r03

1.4. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of International Standards Laboratory Corp. <LT Lab.> No. 120, Lane 180, Hsin Ho Rd., Lung-Tan Dist., Tao Yuan City 325, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.10: 2013. FCC Registration Number is: 487532; Designation Number is: TW0997.

1.5. Special Accessories

Not available for this EUT intended for grant.

1.6. Equipment Modifications

Not available for this EUT intended for grant.

2. System Test Configuration

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3. Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 6 of ANSI C63.10: 2013. Con-ducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR 16-1-1 Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on a turntable which is 0.8 m/1.5m (Frequency above 1GHz) above the ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. The EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. To find out the maximum emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 6, 11 and 12 of ANSI C63.10: 2013.

2.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

Radiated Emission

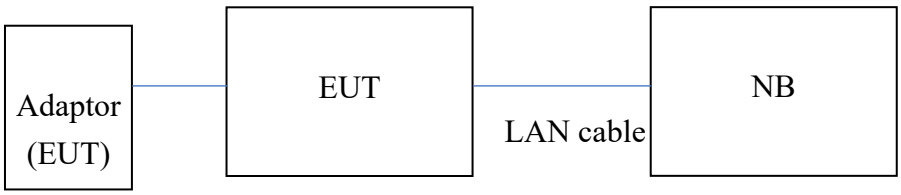


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1	Adaptor (EUT)	APD	WA-36N12FU	D1227NGV 028736	NA	180cm
2	NB	HP	440-G1	NA	NA	180cm
3	LAN cable	NA	NA	50.6G829.0 01	180cm	NA

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

2.5. Duty Cycle

If duty cycle of test signal is ≥ 98 %, duty factor is not required.

If duty cycle of test signal is < 98 %, duty factor shall be considered.

The output power = measured power + duty factor.

Mode	ON time (ms)	Total time (ms)	Duty Cycle	Duty Factor	1/Ton (kHz)	VBW for average detector (kHz)
a	2.057	2.087	98.563%	0.00	0.486	0.01
VHT20	1.925	1.955	98.465%	0.00	0.519	1
VHT40	0.954	0.972	98.148%	0.00	1.048	1.5
VHT80	0.444	0.481	92.308%	0.35	2.252	3
HE20	0.449	0.467	96.146%	0.17	2.227	3
HE40	0.268	0.283	94.700%	0.24	3.731	5
HE80	0.168	0.184	91.304%	0.40	5.952	6

3. Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.407(a)(2)	Output Power/ EIRP/ Spectral Density Measurement	Compliant
§15.407(a)	26dB Emission Bandwidth	Compliant
§15.407(e)	6dB Emission Bandwidth	Compliant
§15.407(b)	Undesirable Emission – Radiated Measurement	Compliant
§15.407(a)	Antenna Requirement	Compliant

4. Description of Test Modes

The EUT has been tested under operating condition.
Test program used to control the EUT for staying in continuous transmitting mode is programmed.

HT modulation is the same as VHT, VHT was considered the worst case.

Following channels were selected for the final test as listed below.

Frequency Band (MHz)	Modulation Mode	Test Channel	Data Rate (Mbps)
5150 - 5250	802.11a	36, 40, 48	6
	802.11 ac VHT20 802.11ax HE20	36, 40, 48	6.5
	802.11 ac VHT40 802.11ax HE40	38, 46	13.5
	802.11ac VHT80 802.11ax HE80	42	29.3

Directional gain = G_{ANT} + 10 log(N_{ANT}) dBi

5. Conduced Emission Test

5.1. Standard Applicable

According to §15.207, frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits dB(uV)	
	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
Note 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 MHz to 0.50 MHz.		

5.2. Measurement Equipment Used:

Location	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Conduction 04	EMI Receiver 18	ROHDE&SCHWARZ	ESCI	101392	06/08/2021	06/08/2022
Conduction 04	Conduction 04-03 Cable	WOKEN	CFD 300-NL	Conduction 04-03	10/13/2021	10/13/2022
Conduction 04	LISN 18	ROHDE & SCHWARZ	ENV216	101424	06/27/2021	06/27/2022
Conduction 04	LISN 03	R&S	ESH3-Z5	828874/010	11/11/2021	11/11/2022
Conduction 04	ISN T8 07	Teseq GmbH	ISN T800	30834	09/02/2021	09/02/2022
Conduction 04	ISN T4 06	Teseq GmbH	ISN T400A	28574	10/29/2021	10/29/2022
Conduction 04	ISN T8 CAT6A_01	SCHWARZBECK	NTFM 8158	8158 0123	01/25/2022	01/25/2023
Conduction 04	CDN ISN ST08A_1	Teseq GmbH	CDN ISN ST08A	43352	10/07/2021	10/07/2022
Conduction 04	Capacitive Voltage Probe 01	SCHAFFNER	CVP 2200A	18711	02/23/2022	02/23/2023
Conduction 04	Current Probe	SCHAFFNER	SMZ 11	18030	02/23/2022	02/23/2023

5.3. EUT Setup:

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10: 2013
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with ac power source.

5.4. Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.
4. Both 120V & 240V have been verified, and 120V/60Hz was defined as the worst-case and record in the report.

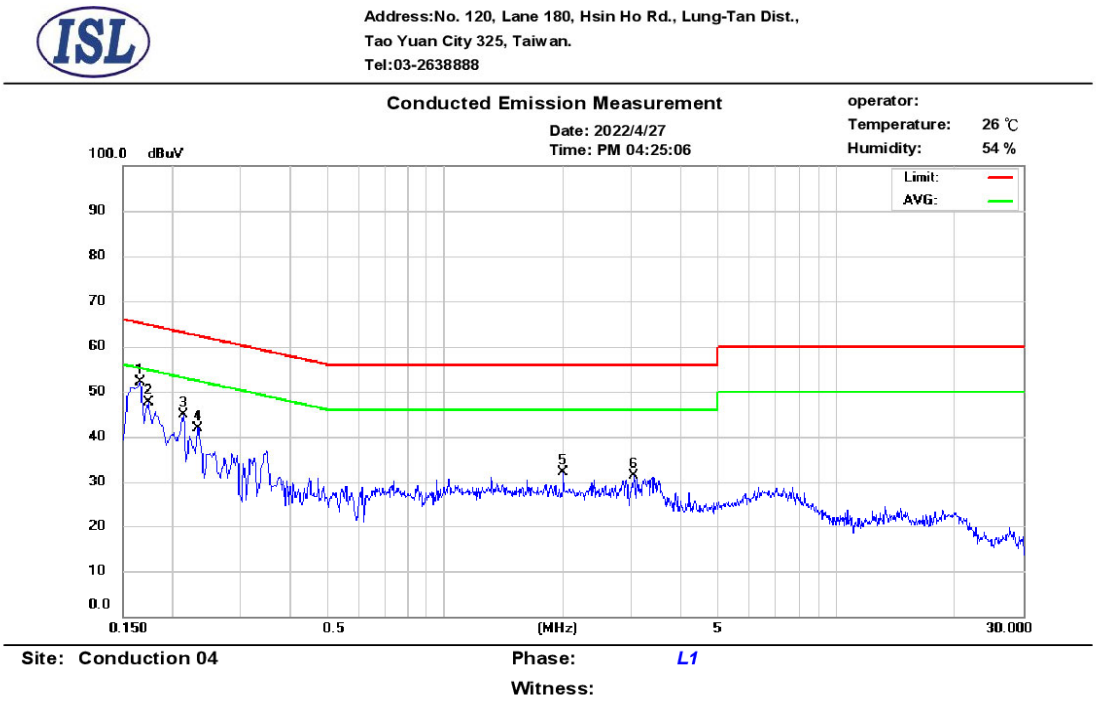
5.5. Measurement Result:

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Note: Refer to next page for measurement data and plots.

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Normal Operation

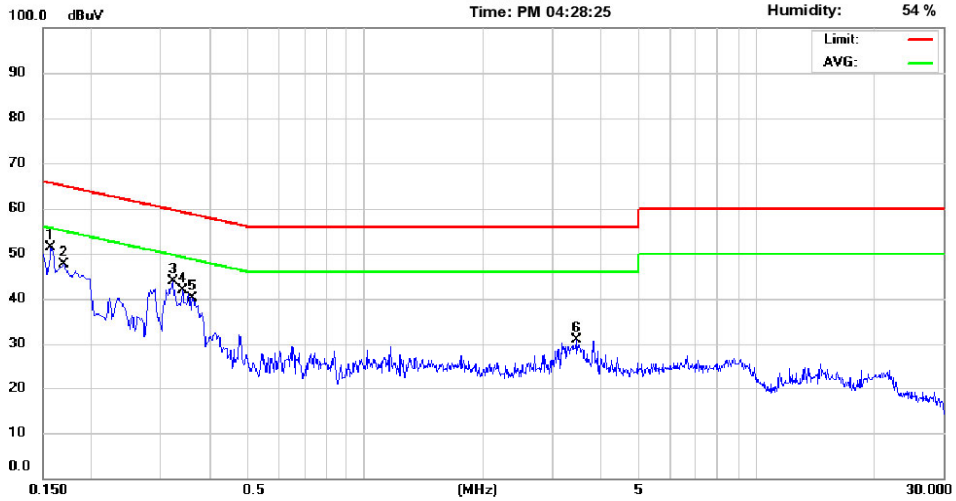


No.	Frequency (MHz)	QP_R (dBuV)	AVG_R (dBuV)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)
1	0.166	35.84	23.53	9.64	45.48	65.16	-19.68	33.17	55.16	-21.99
2	0.174	35.46	21.97	9.65	45.11	64.77	-19.66	31.62	54.77	-23.15
3	0.214	27.58	13.48	9.64	37.22	63.05	-25.83	23.12	53.05	-29.93
4	0.234	26.15	13.72	9.64	35.79	62.31	-26.52	23.36	52.31	-28.95
5	2.010	15.35	9.55	9.71	25.06	56.00	-30.94	19.26	46.00	-26.74
6	3.038	14.07	7.52	9.74	23.81	56.00	-32.19	17.26	46.00	-28.74

Address:No. 120, Lane 180, Hsin Ho Rd., Lung-Tan Dist.,
Tao Yuan City 325, Taiwan.
Tel:03-2638888

Conducted Emission Measurement

operator:
Date: 2022/4/27
Time: PM 04:28:25
Temperature: 26 ℃
Humidity: 54 %



Site: Conduction 04 Phase: N
Witness:

No.	Frequency (MHz)	QP_R (dBuV)	AVG_R (dBuV)	Correct Factor (dB)	QP Emission (dBuV)	QP Limit (dBuV)	QP Margin (dB)	AVG Emission (dBuV)	AVG Limit (dBuV)	AVG Margin (dB)
1	0.158	39.54	24.86	9.63	49.17	65.57	-16.40	34.49	55.57	-21.08
2	0.171	36.11	21.37	9.64	45.75	64.90	-19.15	31.01	54.90	-23.89
3	0.322	31.67	22.63	9.63	41.30	59.66	-18.36	32.26	49.66	-17.40
4	0.342	30.04	24.21	9.63	39.67	59.15	-19.48	33.84	49.15	-15.31
5	0.362	29.14	18.64	9.63	38.77	58.68	-19.91	28.27	48.68	-20.41
6	3.470	15.09	6.40	9.73	24.82	56.00	-31.18	16.13	46.00	-29.87

6. OUTPUT POWER / EIRP /SPECTRAL DENSITY MEASUREMENT

6.1. Standard Applicable

According to §15.407(a) Power limits:

(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. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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

6.2. Measurement Procedure

For Output Power

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
3. Record the max. reading.
4. Repeat above procedures until all frequency measured were complete.

For Power Spectral Density

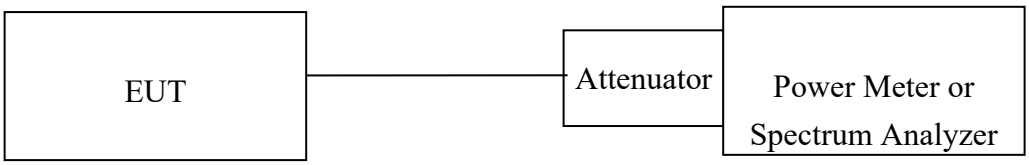
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
3. Set RBW=1MHz,VBW=3MHz, Span=50MHz (Base Mode), Sweep time = Auto, traces 100 sweeps of video averaging
4. Record the max. reading.
5. Repeat above procedures until all frequency measured were complete.

Refer to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

6.3. Measurement Equipment Used:

Location Conducted	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Conducted	Power Meter	Anritsu	ML2495A	1116010	09/30/2021	09/30/2022
Conducted	Power Sensor	Anritsu	MA2411B	34NKF50	09/30/2021	09/30/2022
Conducted	Power Sensor	DARE	RPR3006W	13I00030SNO33	01/07/2022	01/07/2023
Conducted	Power Sensor	DARE	RPR3006W	13I00030SNO34	01/07/2022	01/07/2023
Conducted	Power Sensor	DARE	RPR3006W	14I00889SNO35	06/23/2021	06/23/2022
Conducted	Power Sensor	DARE	RPR3006W	14I00889SNO36	06/23/2021	06/23/2022
Conducted	Temperature Chamber	KSON	THS-B4H100	2287	04/26/2022	04/26/2023
Conducted	DC Power supply	ABM	8185D	N/A	01/06/2022	01/06/2023
Conducted	AC Power supply	EXTECH	CFC105W	NA	N/A	N/A
Conducted	Spectrum analyzer	Keysight	N9010A	MY56070257	09/28/2021	09/28/2022
Conducted	Test Software	DARE	Radiation Ver:2013.1.23	NA	NA	NA
Conducted (TS8997)	Wideband Radio Communication Tester	R&S	CMW500	168811	09/09/2021	09/09/2022
Conducted (TS8997)	Signal Generator	R&S	SMB100B	101085	09/09/2021	09/09/2022
Conducted (TS8997)	Vector Signal Generator	R&S	SMBV100A	263246	09/09/2021	09/09/2022
Conducted (TS8997)	Signal analyzer 40GHz	R&S	FSV40	101884	09/07/2021	09/07/2022
Conducted (TS8997)	OSP150 extension unit CAM-BUS	R&S	OSP150	101107	09/10/2021	09/10/2022
Conducted (TS8997)	Test Software	R&S	EMC32 Ver:11.10.00	NA	NA	NA

6.4. Measurement Equipment Used:



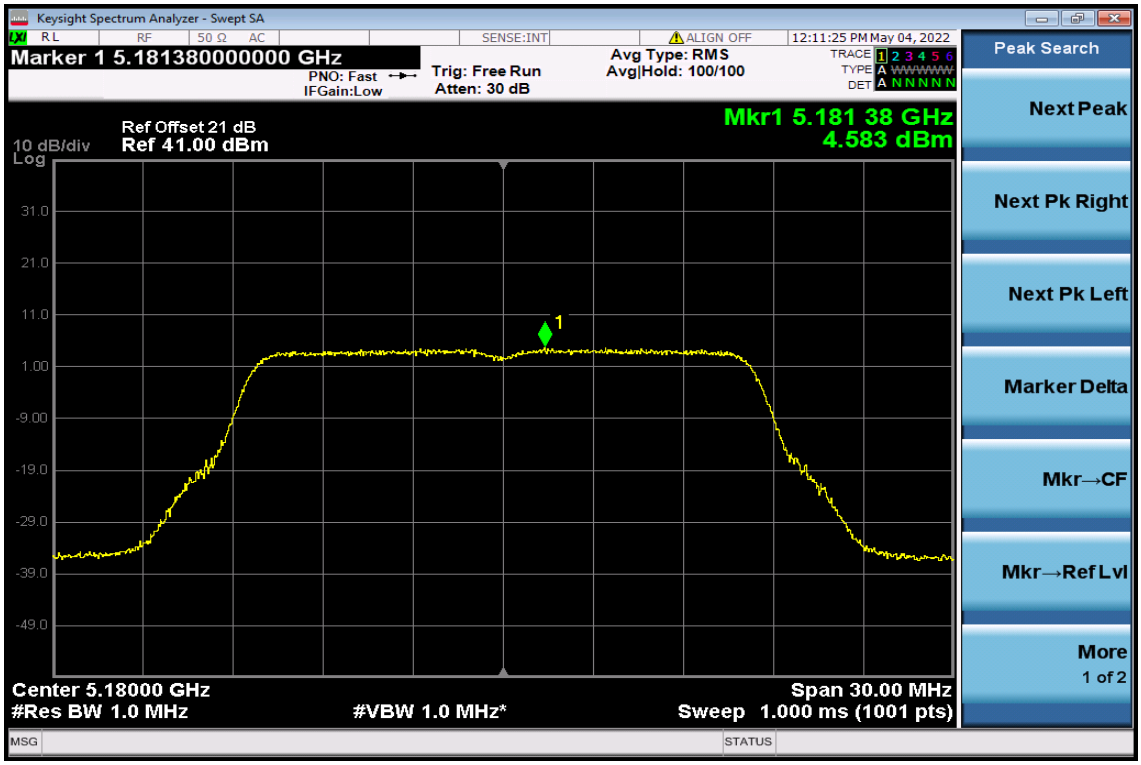
6.5. Measurement Result

Band	Mode	Freq. (MHz)	Output Power (dBm)				Duty Factor (dB)	Total Output Power (dBm)	Output Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
UNII-1	11a	5180	18.020	18.100	18.200	18.050	0.00	--	30.00
		5200	22.010	22.150	22.150	22.340	0.00	--	30.00
		5240	21.970	22.010	21.950	22.040	0.00	--	30.00
	VHT20	5180	17.460	17.510	17.340	17.150	0.00	23.39	30.00
		5200	22.090	22.120	22.020	22.030	0.00	28.09	30.00
		5240	22.010	22.041	21.980	21.980	0.00	28.02	30.00
	VHT40	5190	15.410	15.470	15.470	15.410	0.00	21.46	30.00
		5230	22.310	22.410	22.110	22.150	0.00	28.27	30.00
	VHT80	5210	13.760	13.820	13.830	13.730	0.35	20.15	30.00
	HE20	5180	17.240	17.340	17.230	17.350	0.17	23.48	30.00
		5200	22.410	22.460	22.420	22.470	0.17	28.63	30.00
		5240	22.240	22.310	22.240	22.310	0.17	28.47	30.00
	HE40	5190	15.570	15.620	15.720	15.670	0.24	21.91	30.00
		5230	21.980	21.980	22.040	22.040	0.24	28.27	30.00
	HE80	5210	13.350	13.560	13.320	13.450	0.40	19.84	30.00

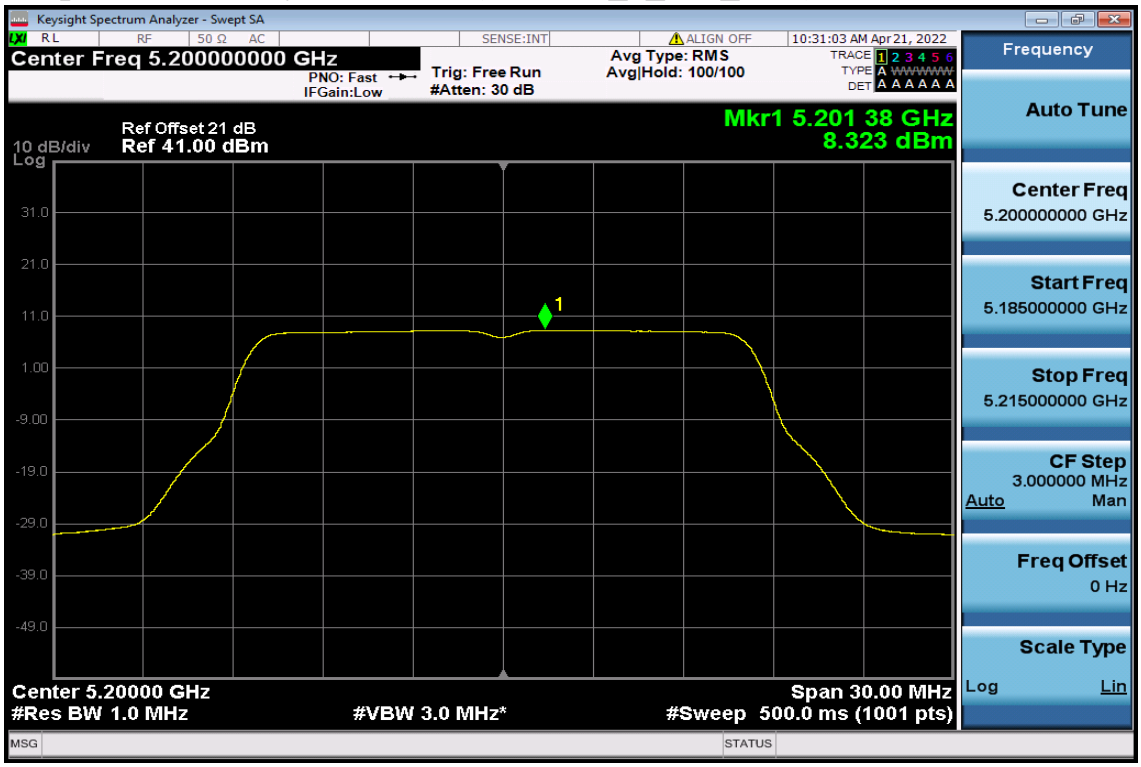
Power Spectral Density Measurement:

Band	Mode	Frequency (MHz)	PSD (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	PSD Limit (dBm/MHz)
			Chain 0	Chain 1	Chain 2	Chain 3			
UNII-1	11a	5180	4.583	4.559	3.615	4.313	0.00	--	17.00
		5200	8.323	7.267	6.646	8.654	0.00	--	17.00
		5240	8.458	7.578	7.107	8.768	0.00	--	17.00
	VHT20	5180	3.959	3.752	3.823	3.861	0.00	9.87	17.00
		5200	8.627	8.569	8.685	8.710	0.00	14.67	17.00
		5240	8.545	8.827	8.574	8.639	0.00	14.67	17.00
	VHT40	5190	-0.758	-0.955	-1.033	-0.851	0.00	5.12	17.00
		5230	5.795	5.776	5.908	5.922	0.00	11.87	17.00
	VHT80	5210	-5.779	-5.828	-5.655	-5.763	0.35	0.61	17.00
	HE20	5180	3.189	3.398	3.383	3.577	0.17	9.58	17.00
		5200	8.536	8.238	7.481	8.355	0.17	14.36	17.00
		5240	8.731	8.642	8.616	8.616	0.17	14.84	17.00
	HE40	5190	-0.801	-0.971	-0.874	-0.848	0.24	5.39	17.00
		5230	6.276	5.948	5.727	5.967	0.24	12.24	17.00
	HE80	5210	-5.899	-5.842	-5.918	-5.735	0.40	0.57	17.00

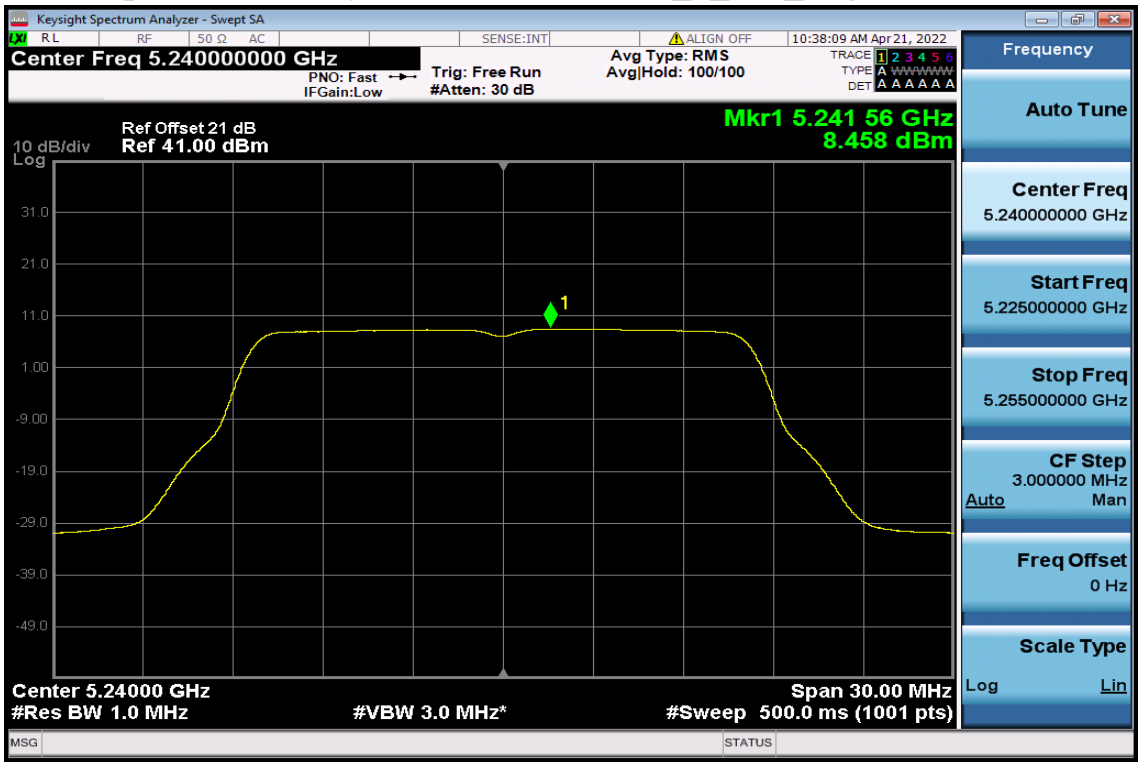
Power Spectral Density Data Plot (Chain 0_a_CH_Low)



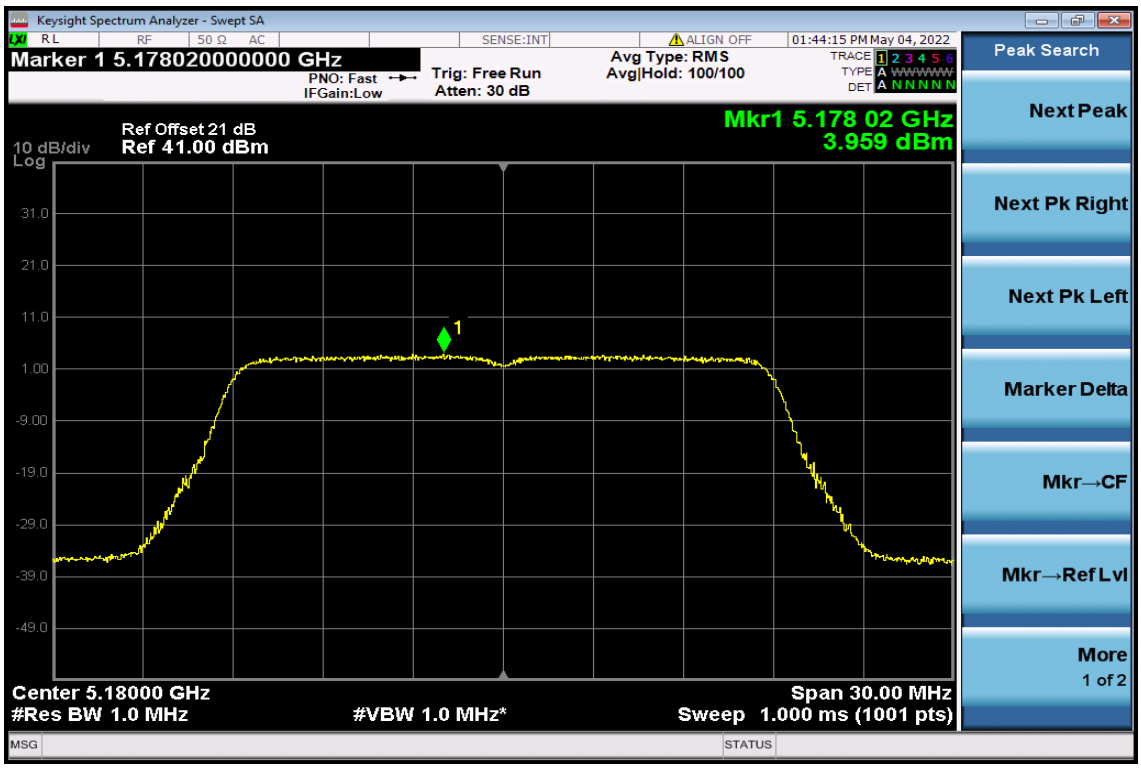
Power Spectral Density Data Plot (Chain 0_a_CH_Mid)



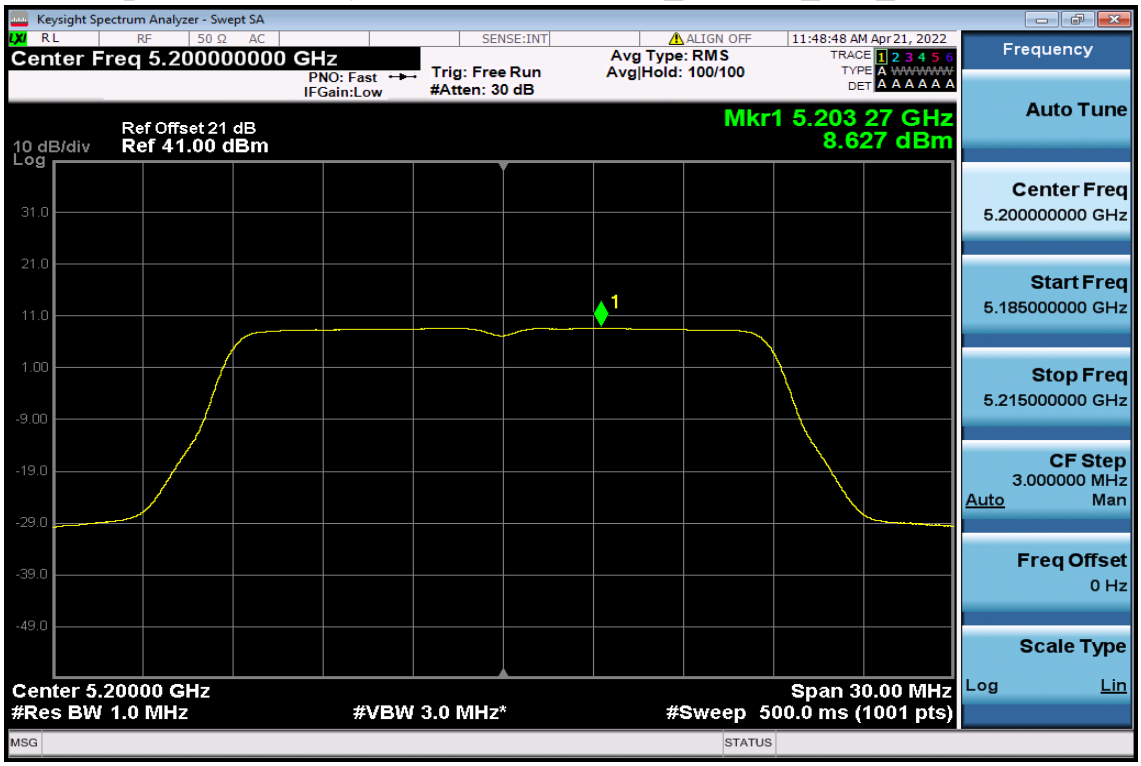
Power Spectral Density Data Plot (Chain 0_a_CH_High)



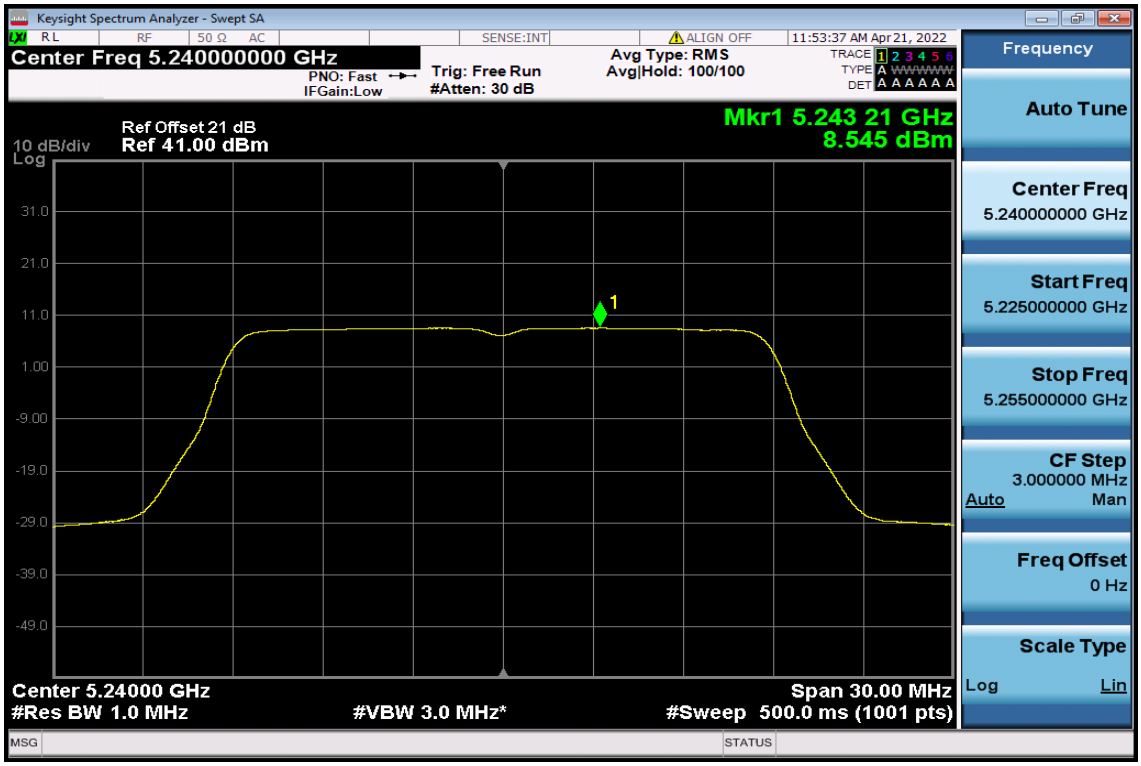
Power Spectral Density Test Plot (Chain 0_VHT20_CH_Low)



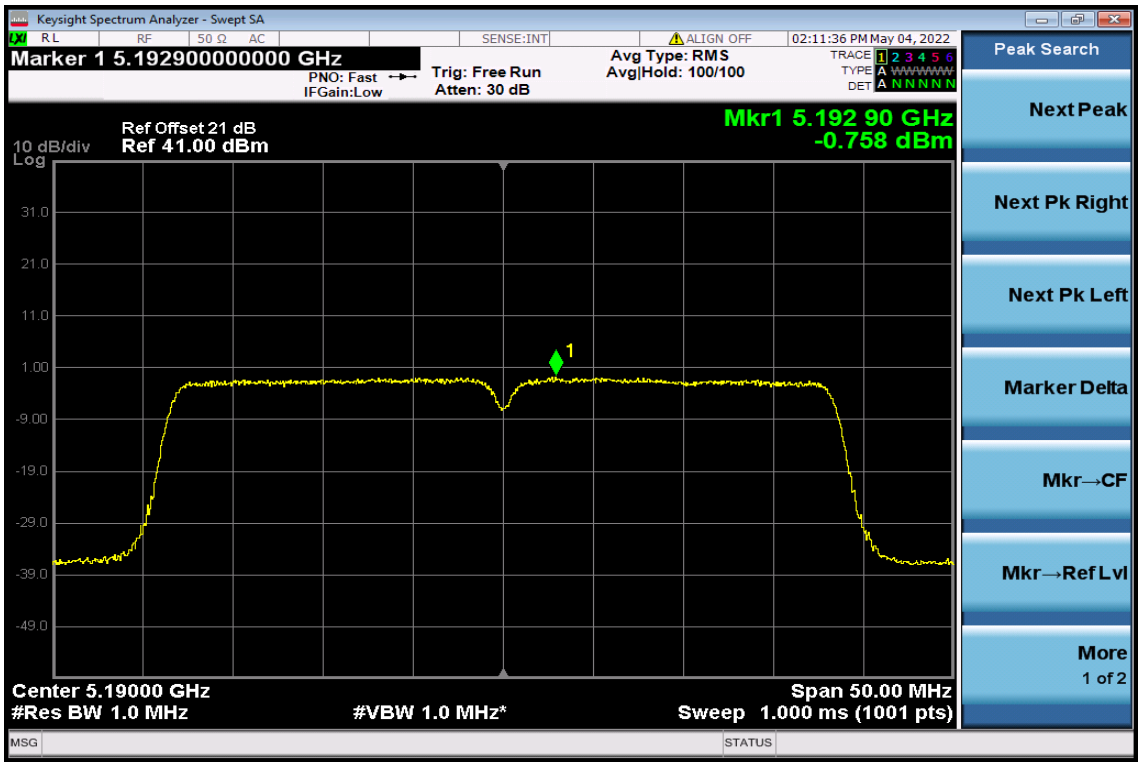
Power Spectral Density Test Plot (Chain 0_VHT20_CH_Mid)



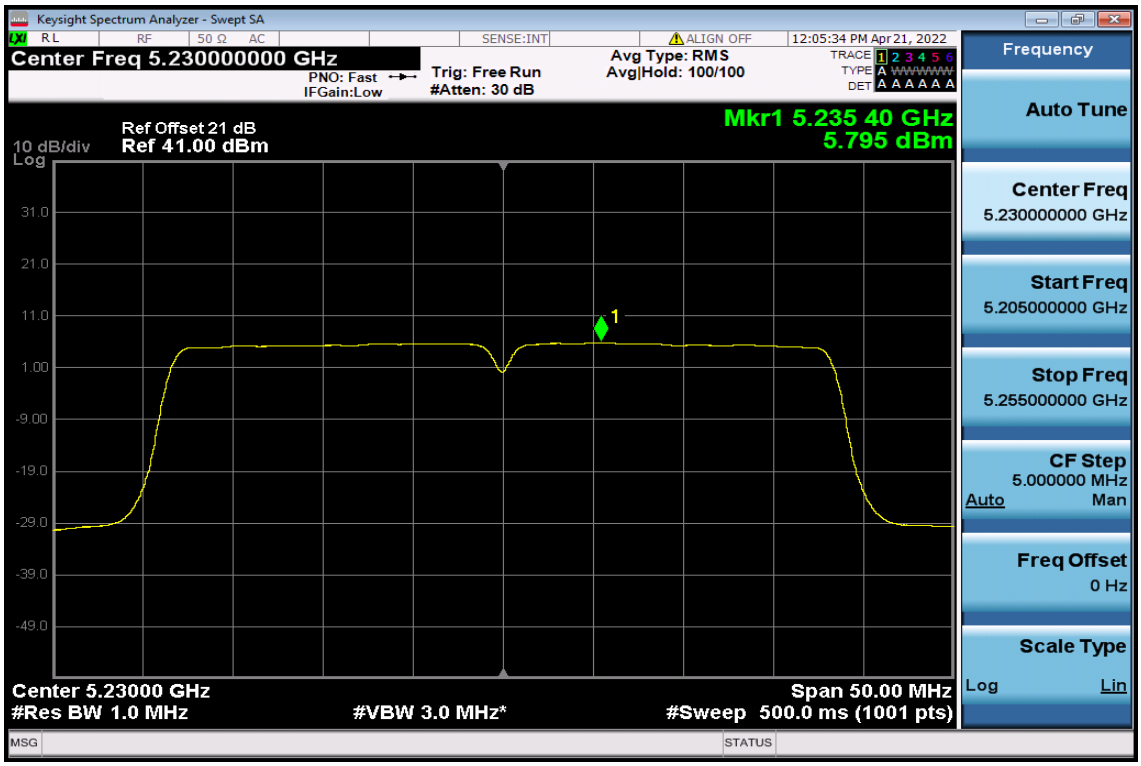
Power Spectral Density Test Plot (Chain 0_VHT20_CH_High)



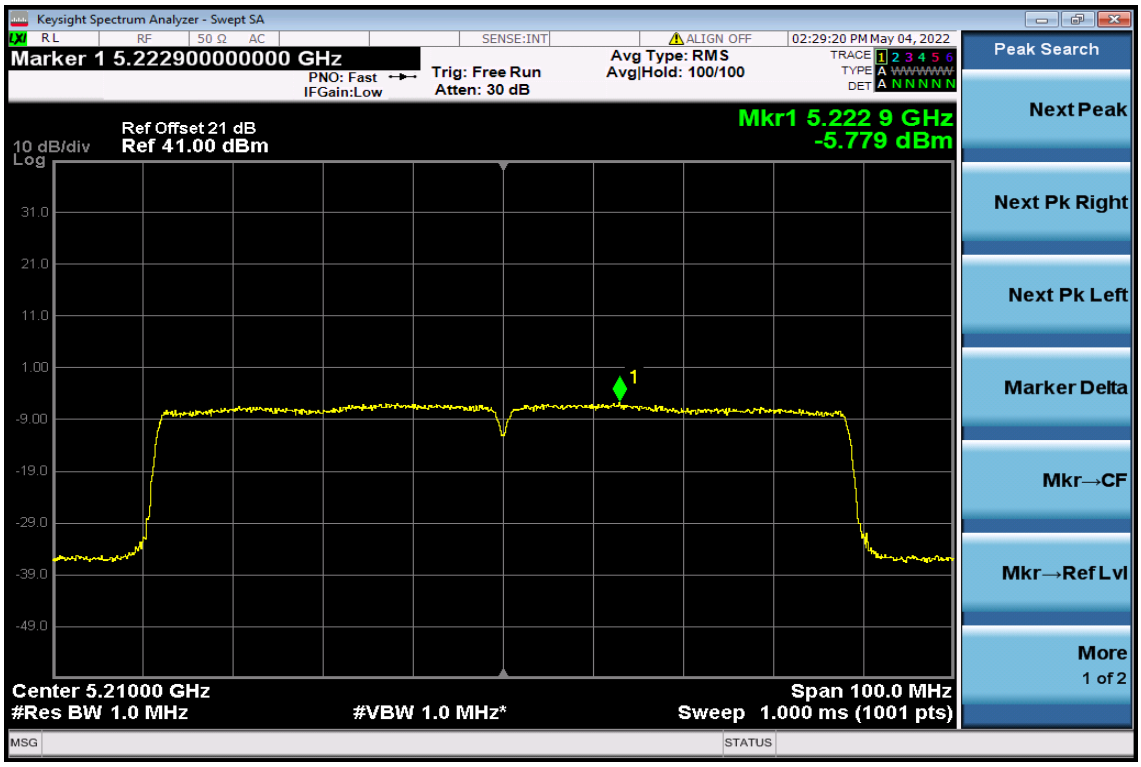
Power Spectral Density Test Plot (Chain 0_VHT40_CH_Low)



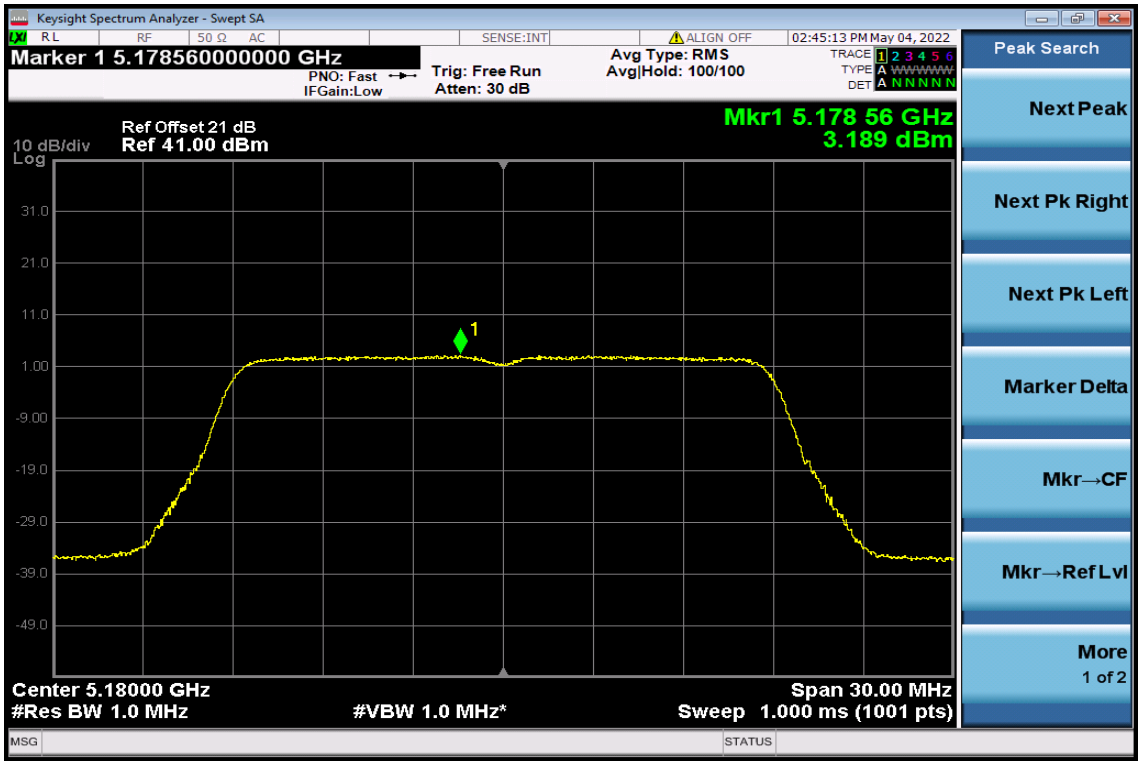
Power Spectral Density Test Plot (Chain 0_VHT40_CH_High)



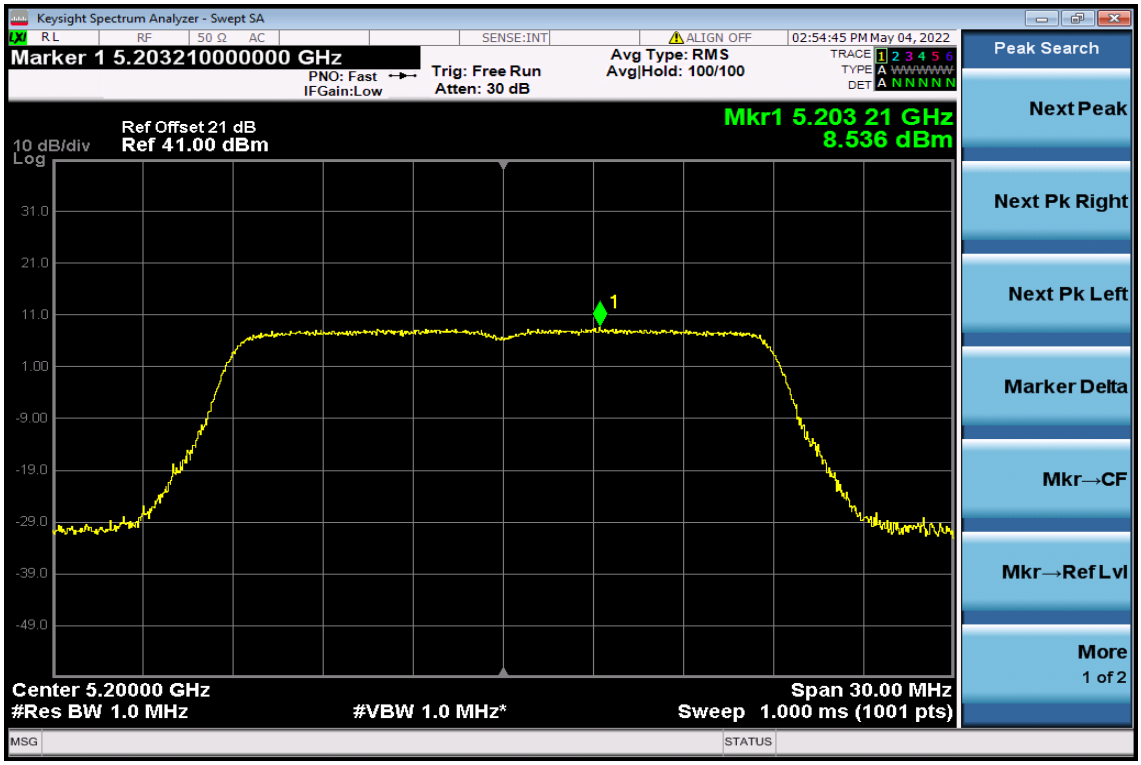
Power Spectral Density Test Plot (Chain 0_VHT80_CH_Low)



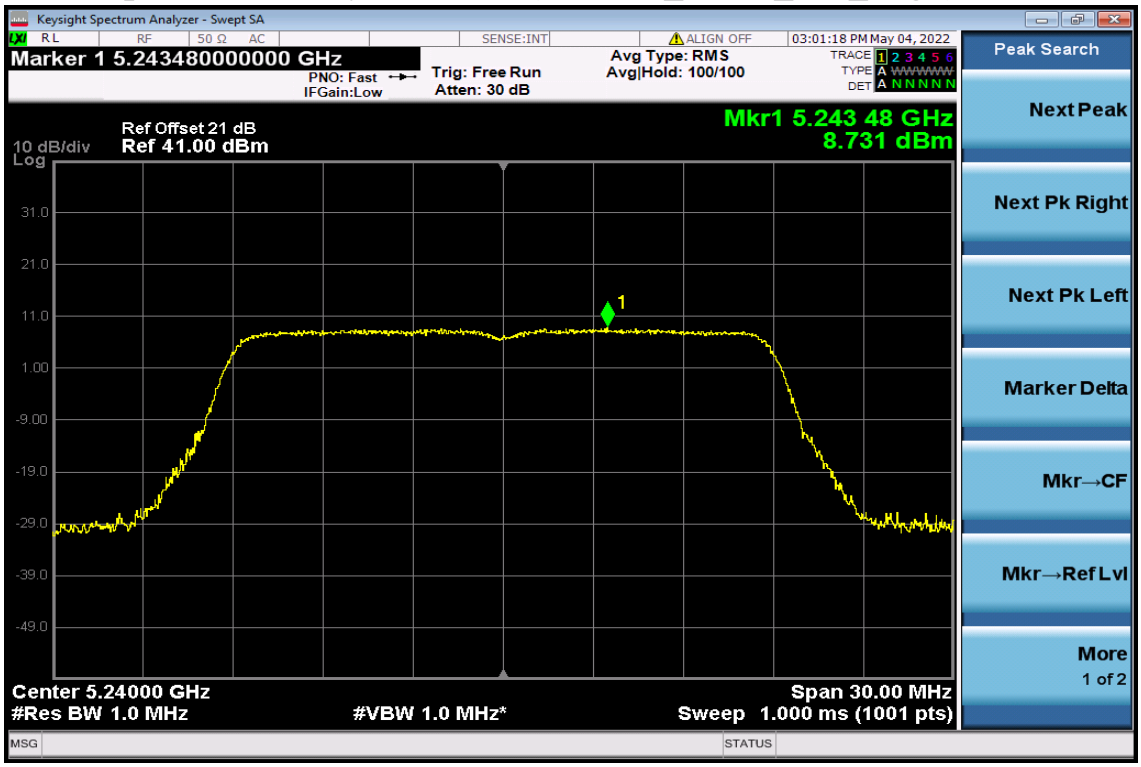
Power Spectral Density Test Plot (Chain 0_HE20_CH_Low)



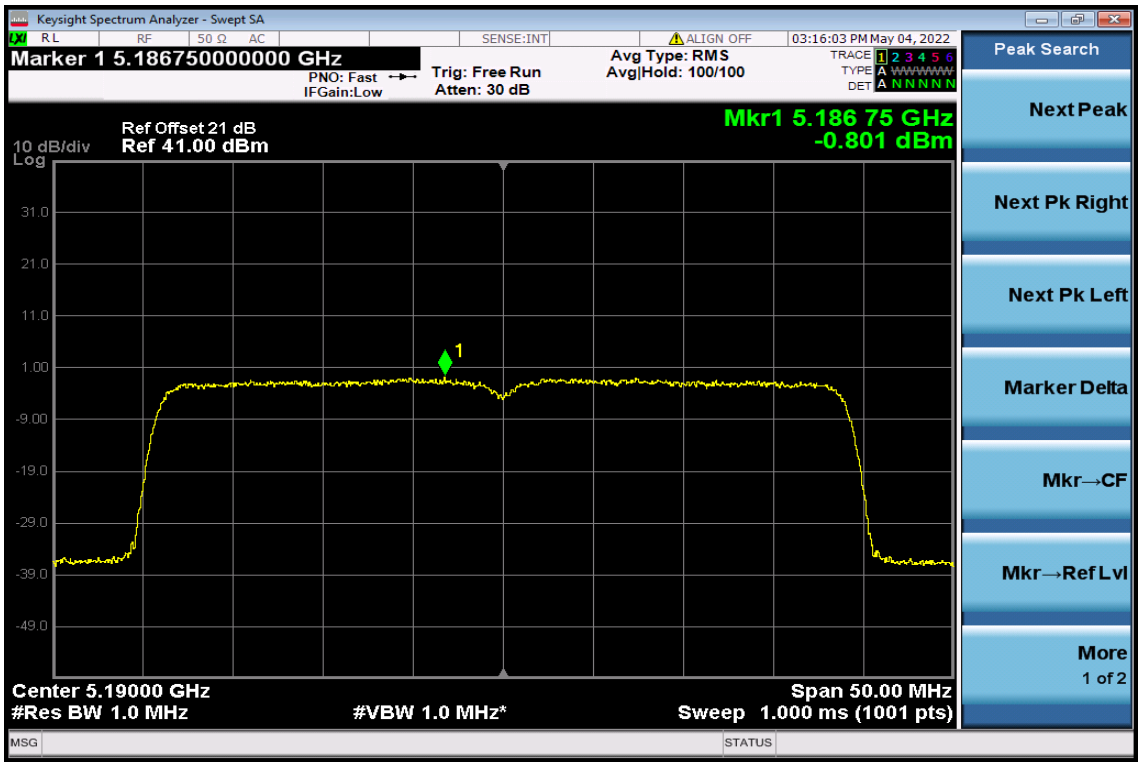
Power Spectral Density Test Plot (Chain 0_HE20_CH_Mid)



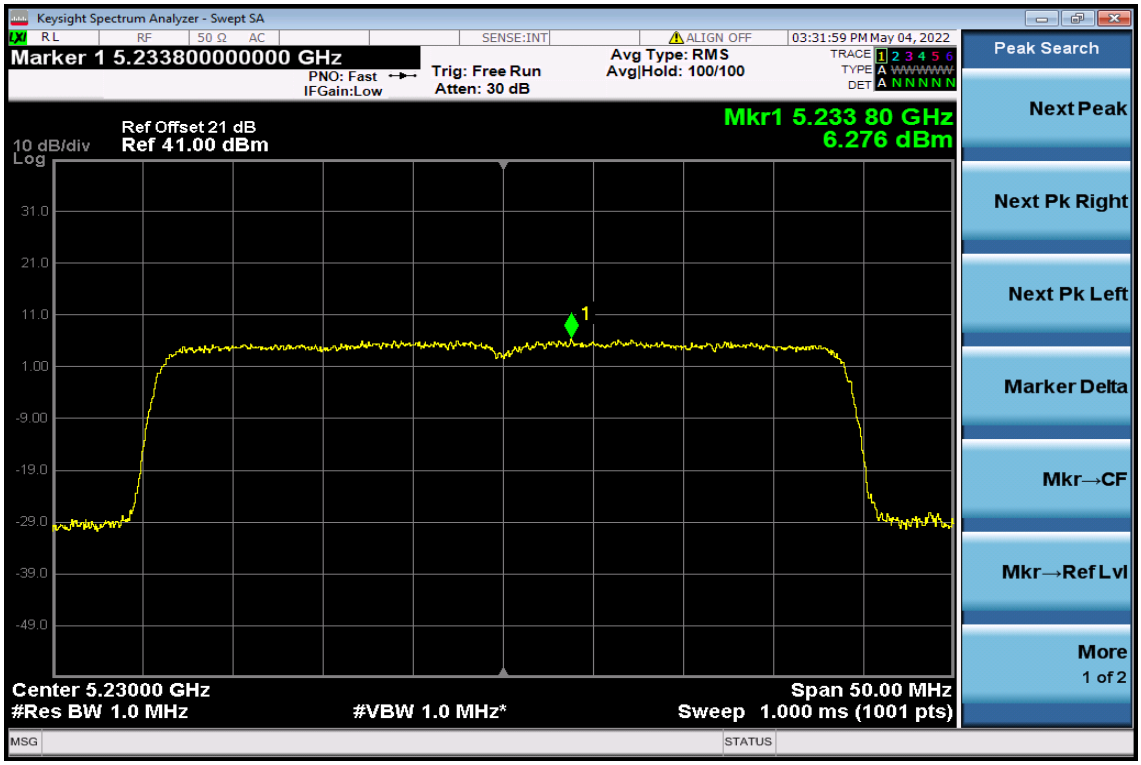
Power Spectral Density Test Plot (Chain 0_HE20_CH_High)



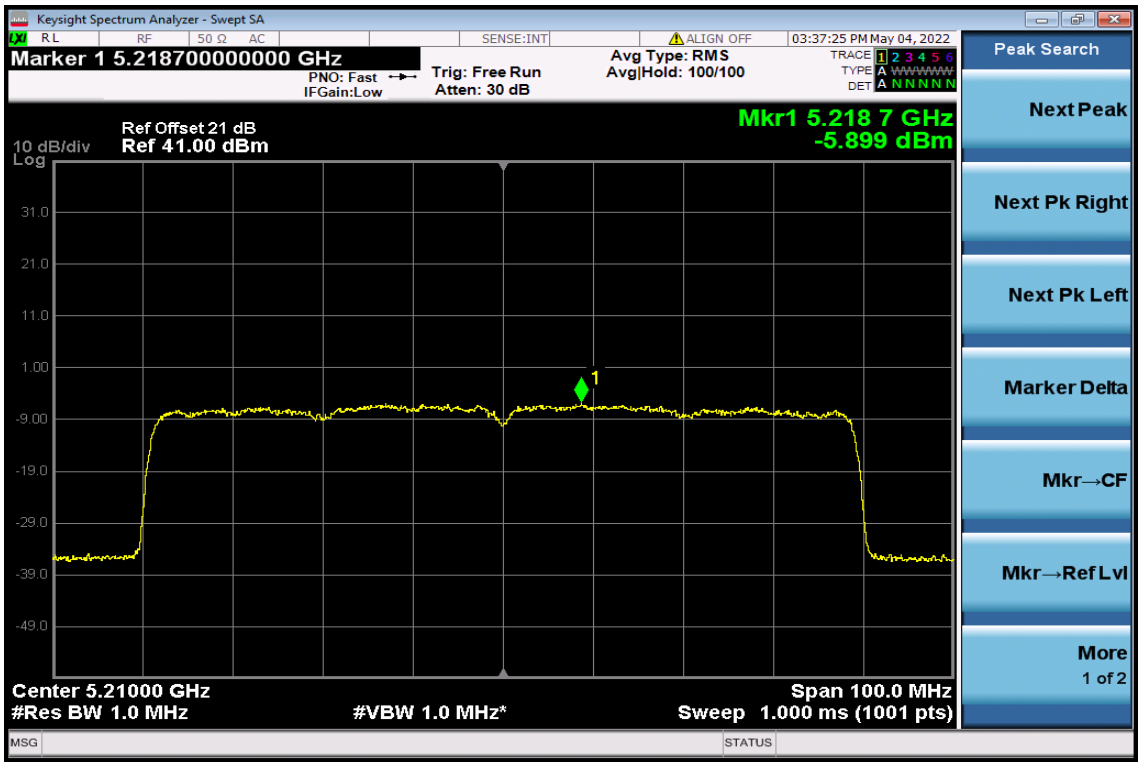
Power Spectral Density Test Plot (Chain 0_HE40_CH_Low)



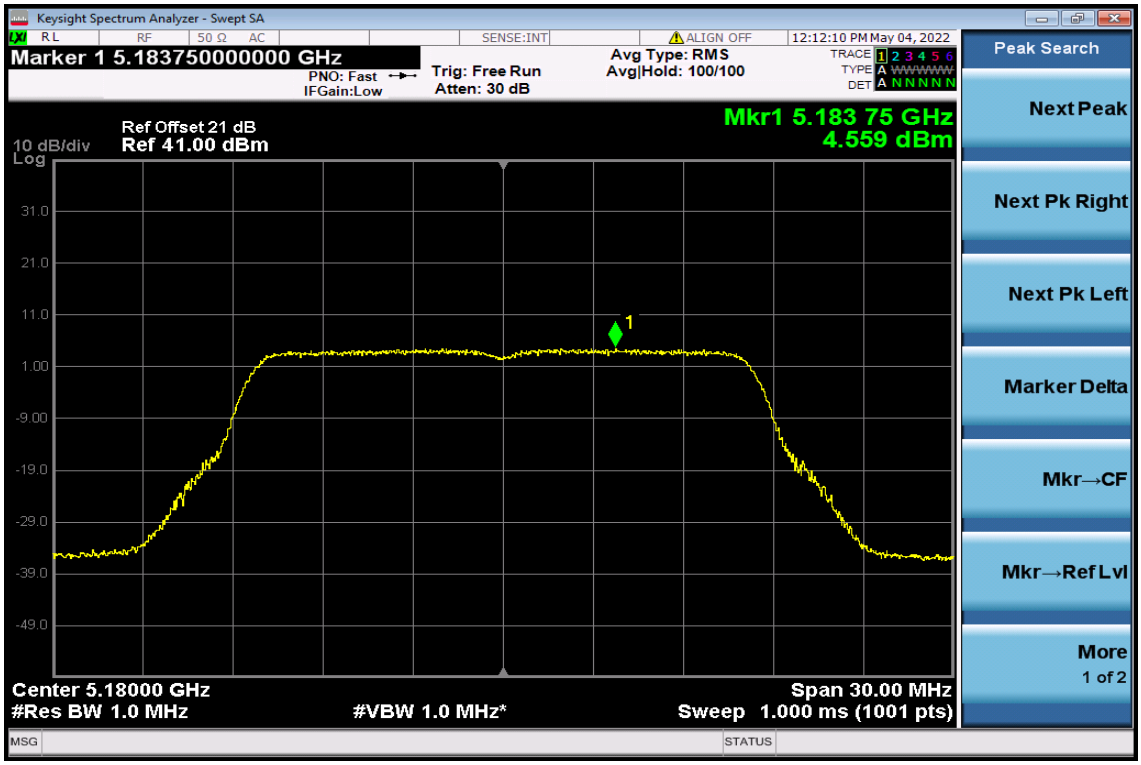
Power Spectral Density Test Plot (Chain 0_HE40_CH_High)



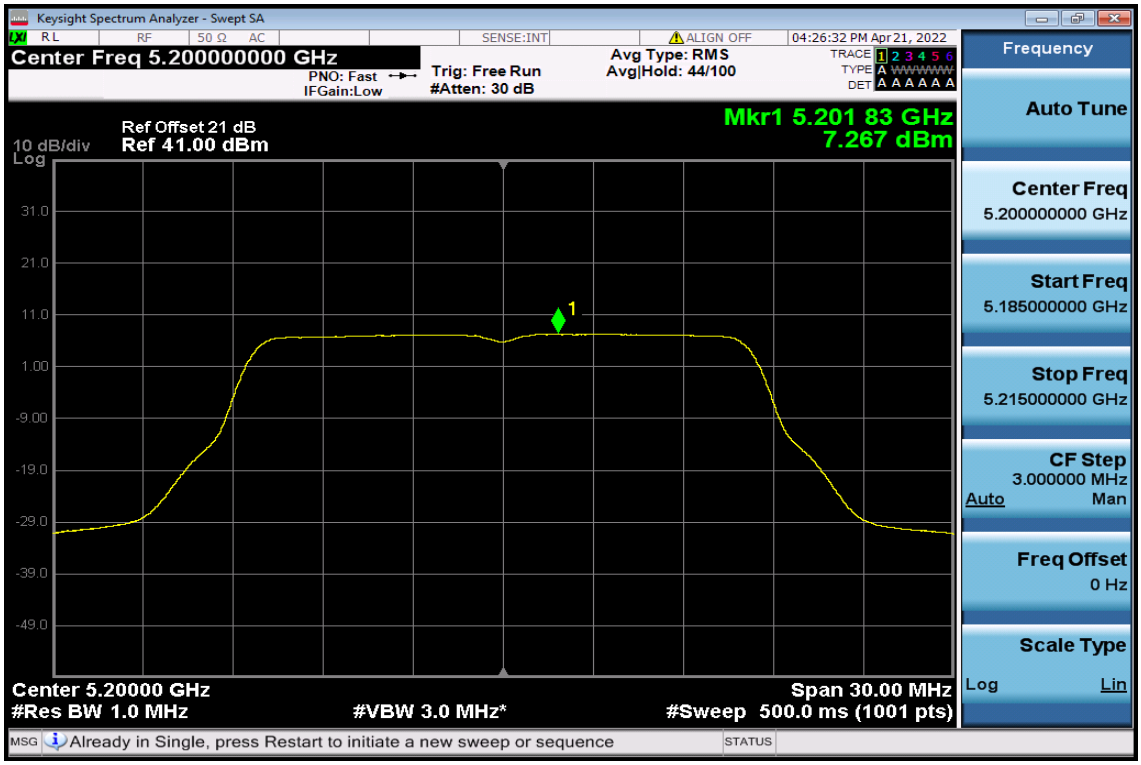
Power Spectral Density Test Plot (Chain 0_HE80_CH_Low)



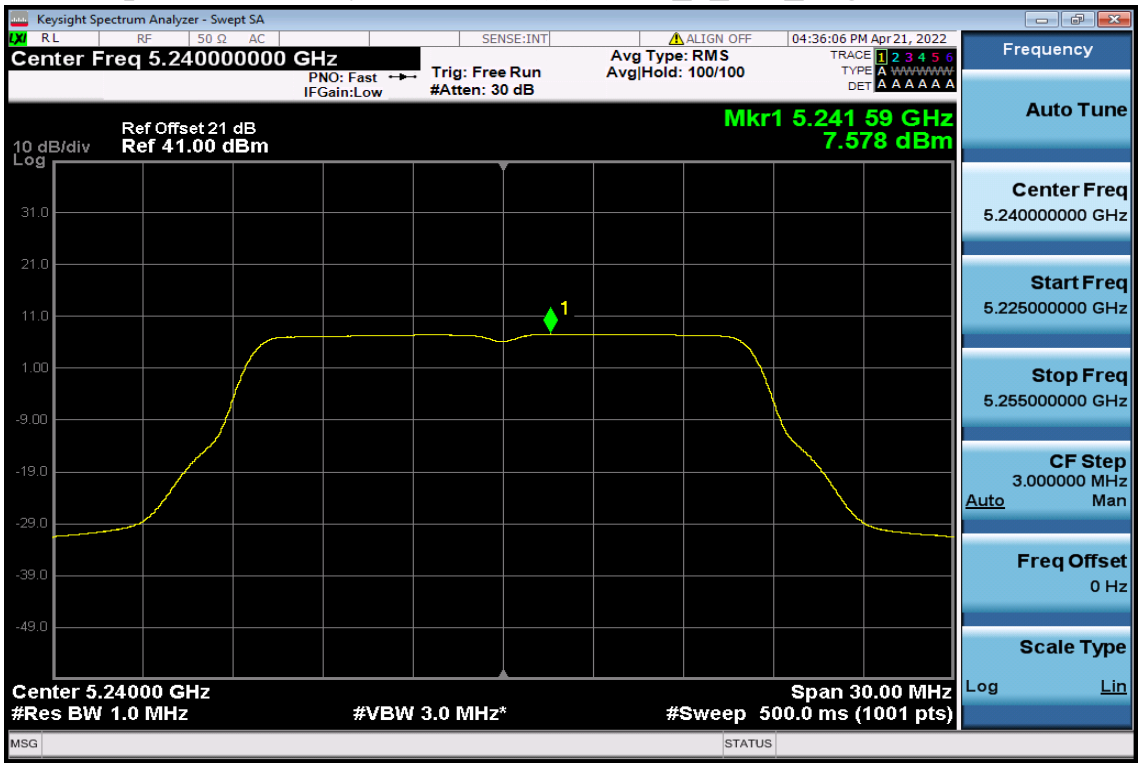
Power Spectral Density Data Plot (Chain 1_a_CH_Low)



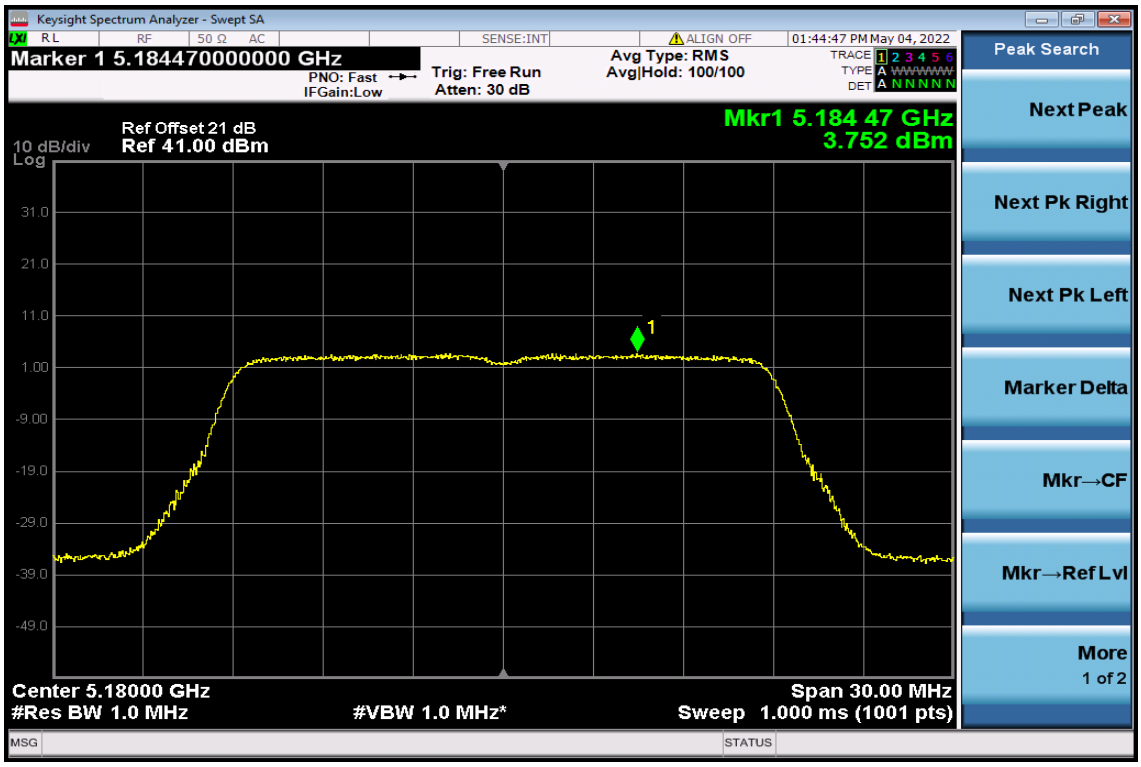
Power Spectral Density Data Plot (Chain 1_a_CH_Mid)



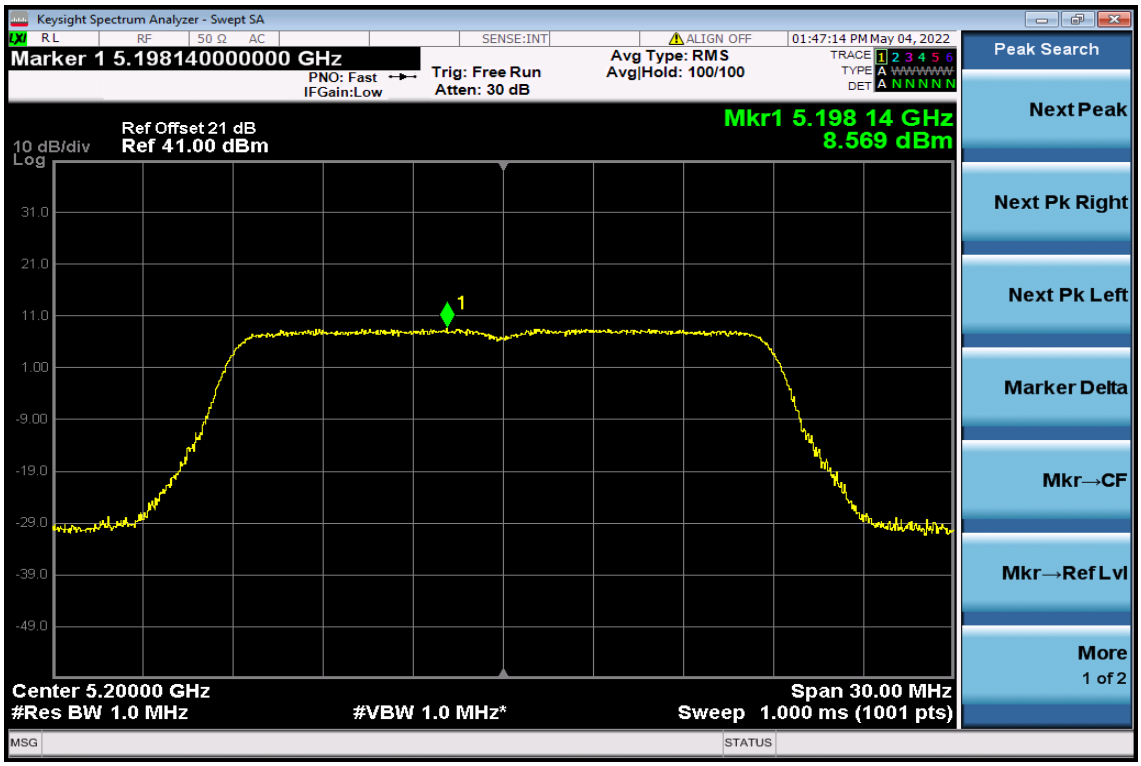
Power Spectral Density Data Plot (Chain 1_a_CH_High)



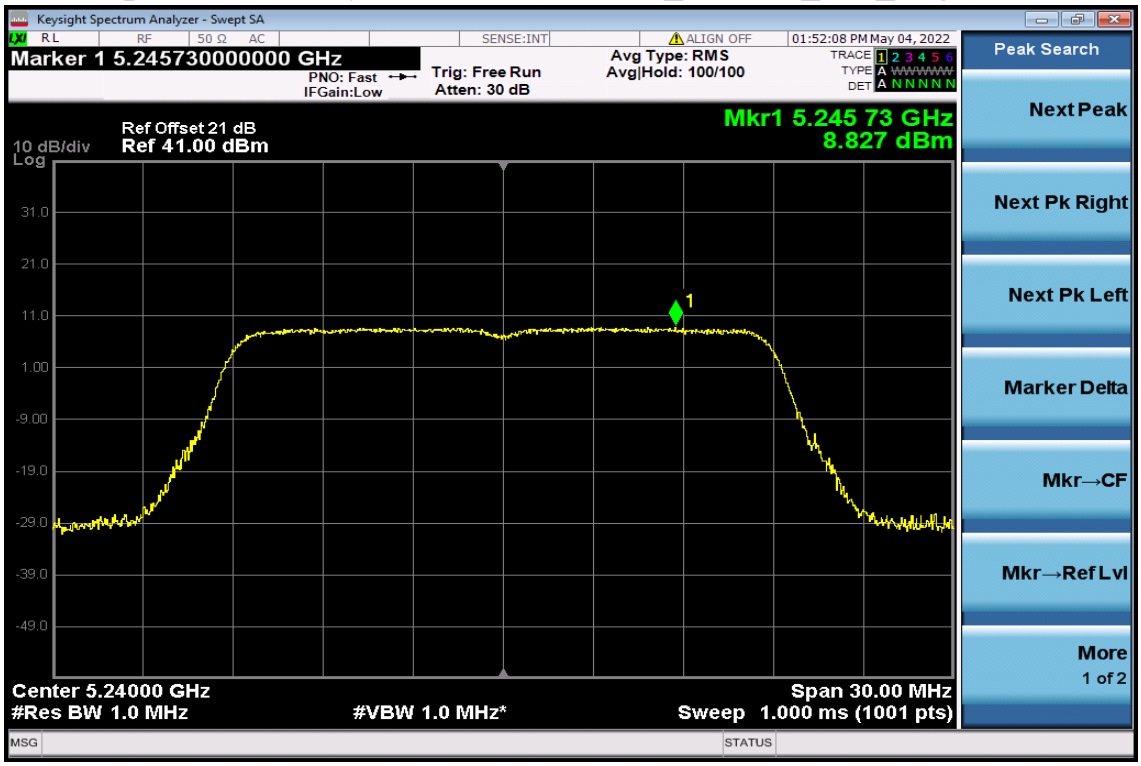
Power Spectral Density Test Plot (Chain 1_VHT20_CH_Low)



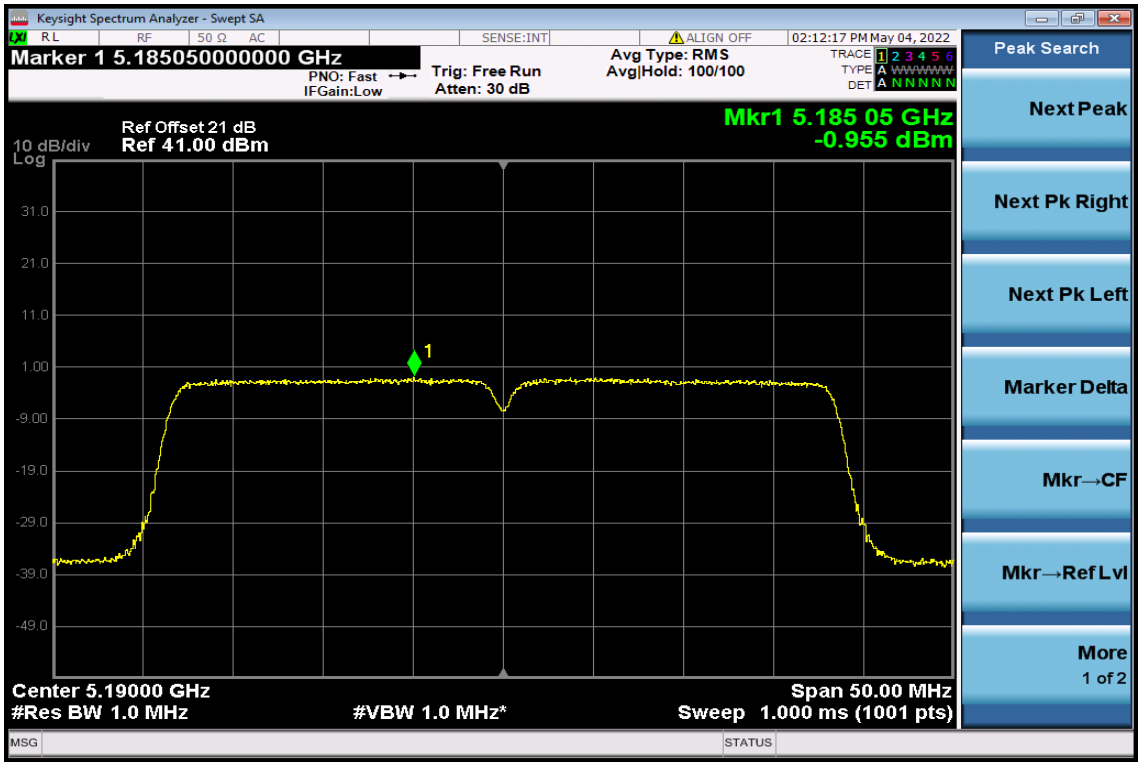
Power Spectral Density Test Plot (Chain 1_VHT20_CH_Mid)



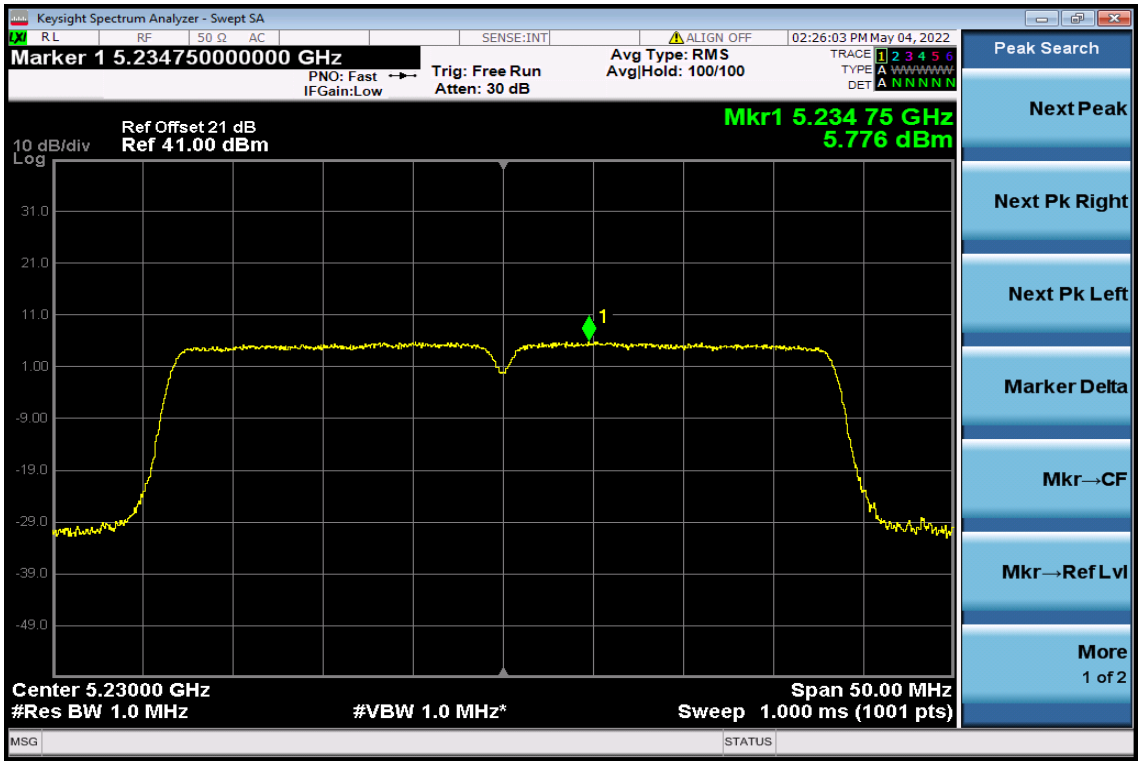
Power Spectral Density Test Plot (Chain 1_VHT20_CH_High)



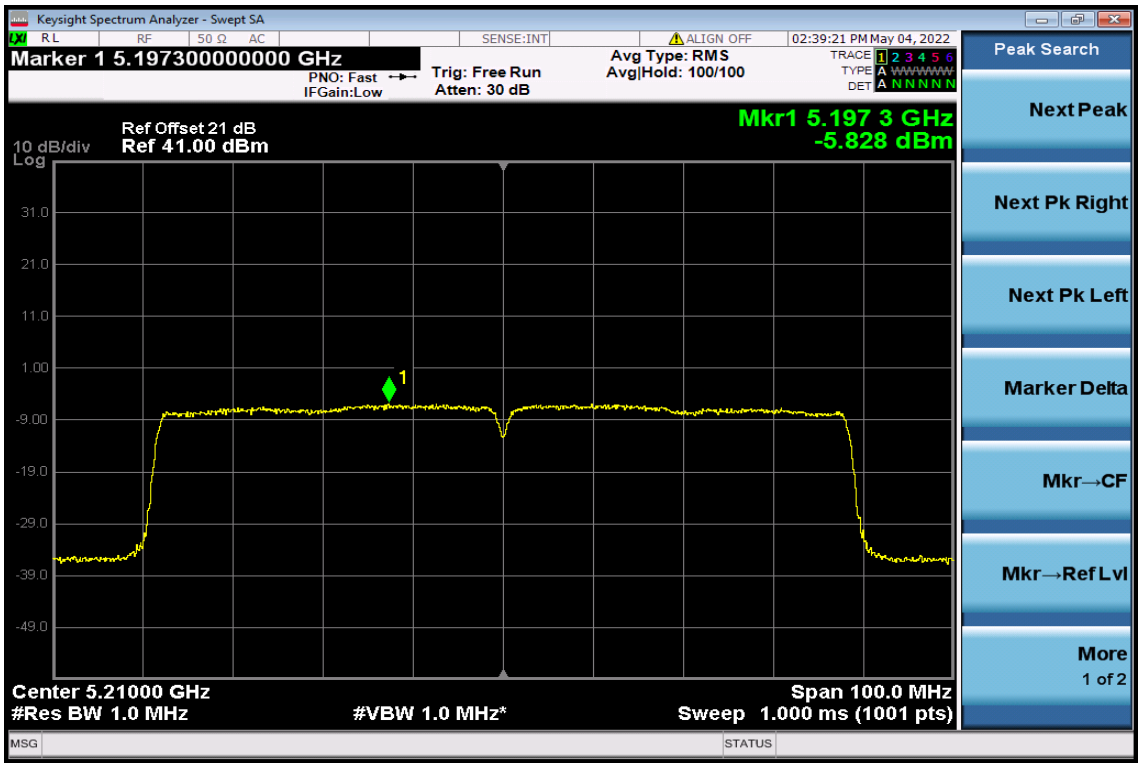
Power Spectral Density Test Plot (Chain 1_VHT40_CH_Low)



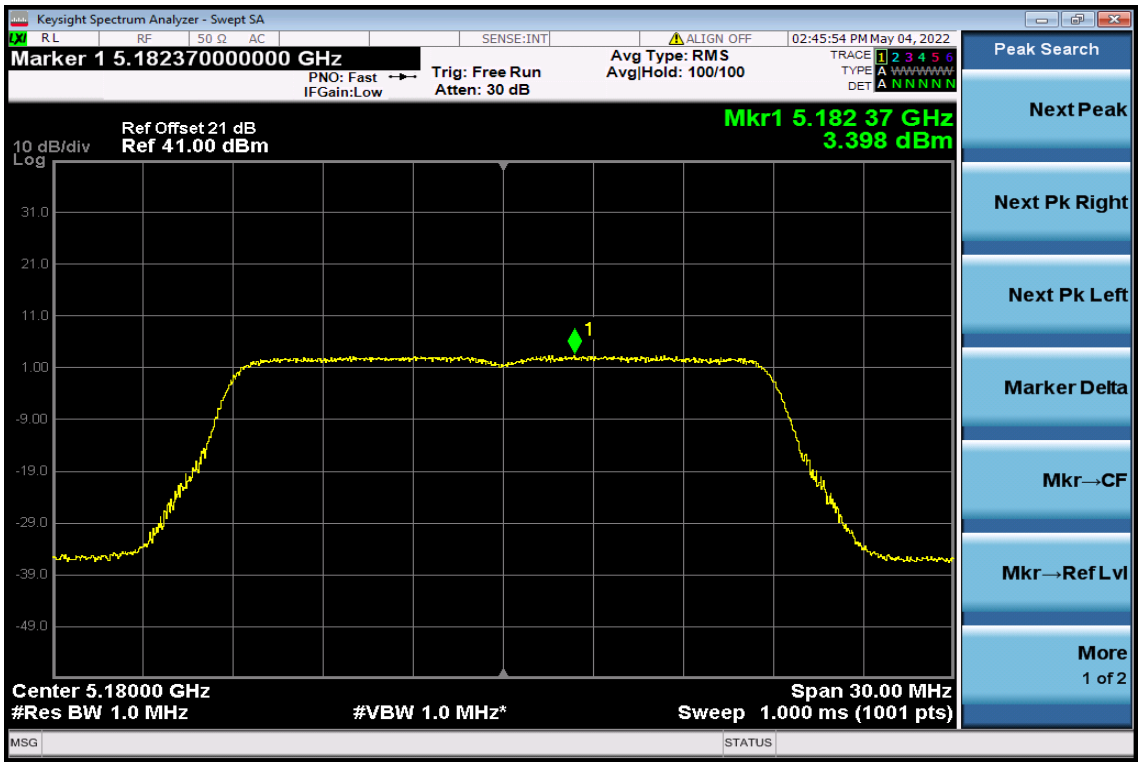
Power Spectral Density Test Plot (Chain 1_VHT40_CH_High)



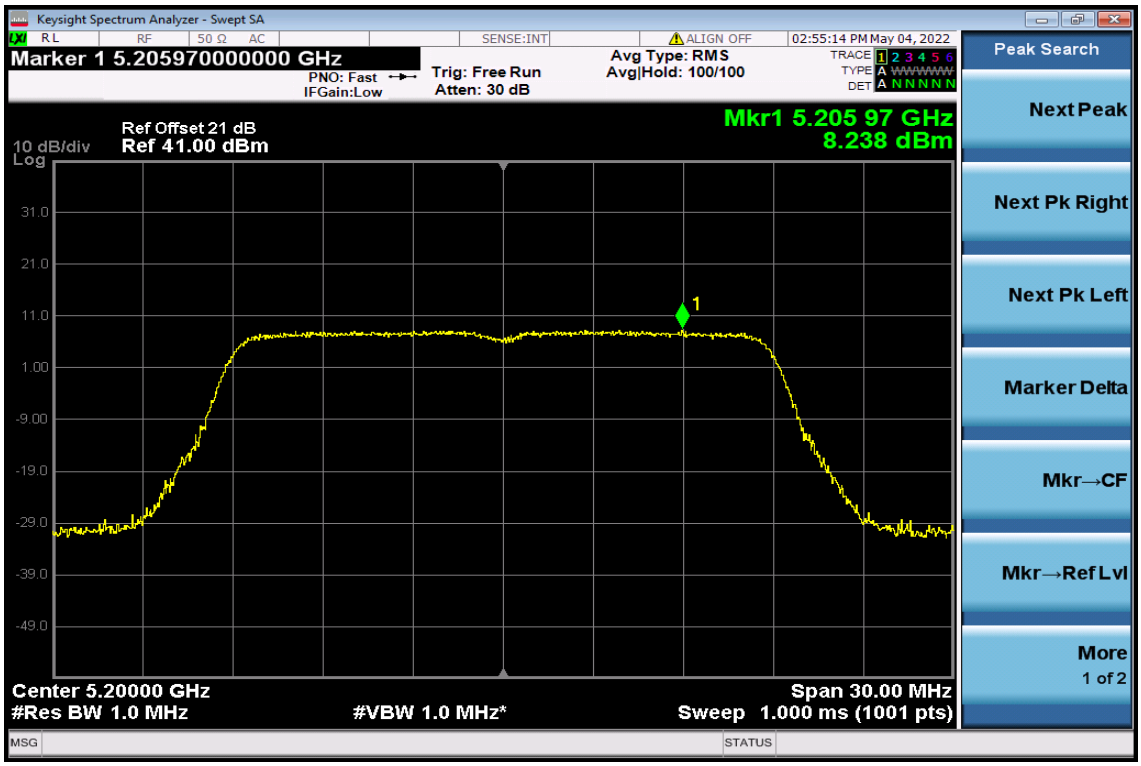
Power Spectral Density Test Plot (Chain 1_VHT80_CH_Low)



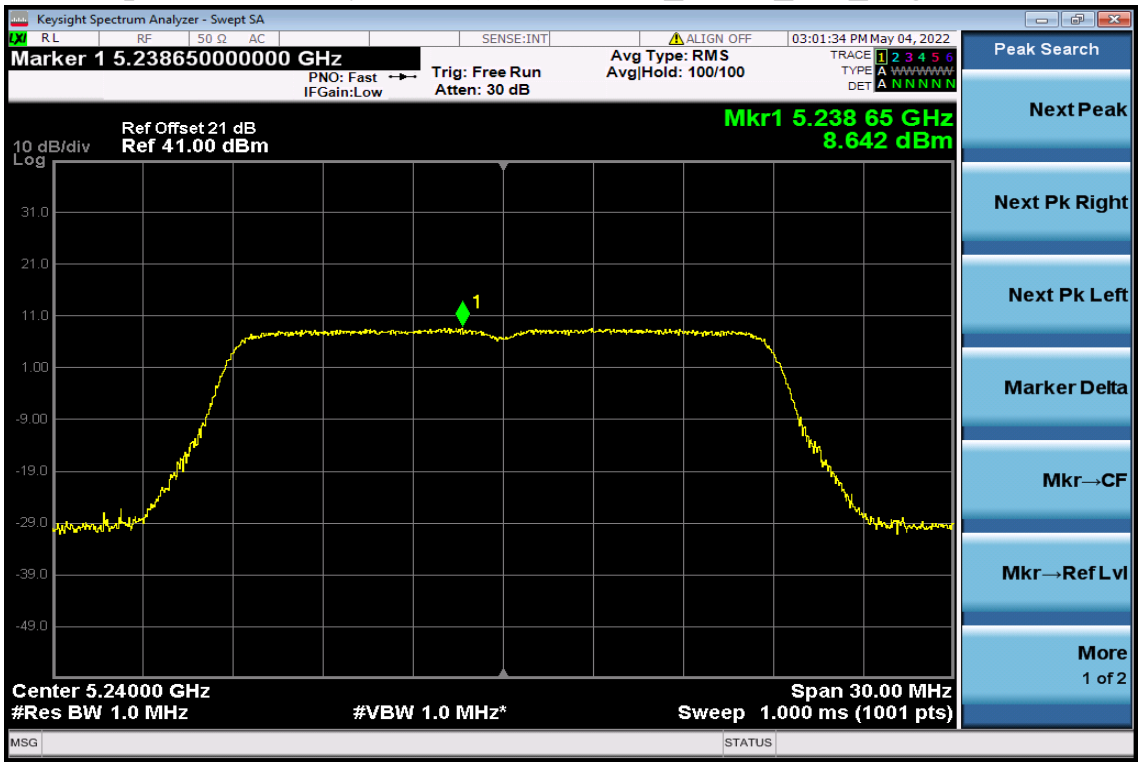
Power Spectral Density Test Plot (Chain 1_HE20_CH_Low)



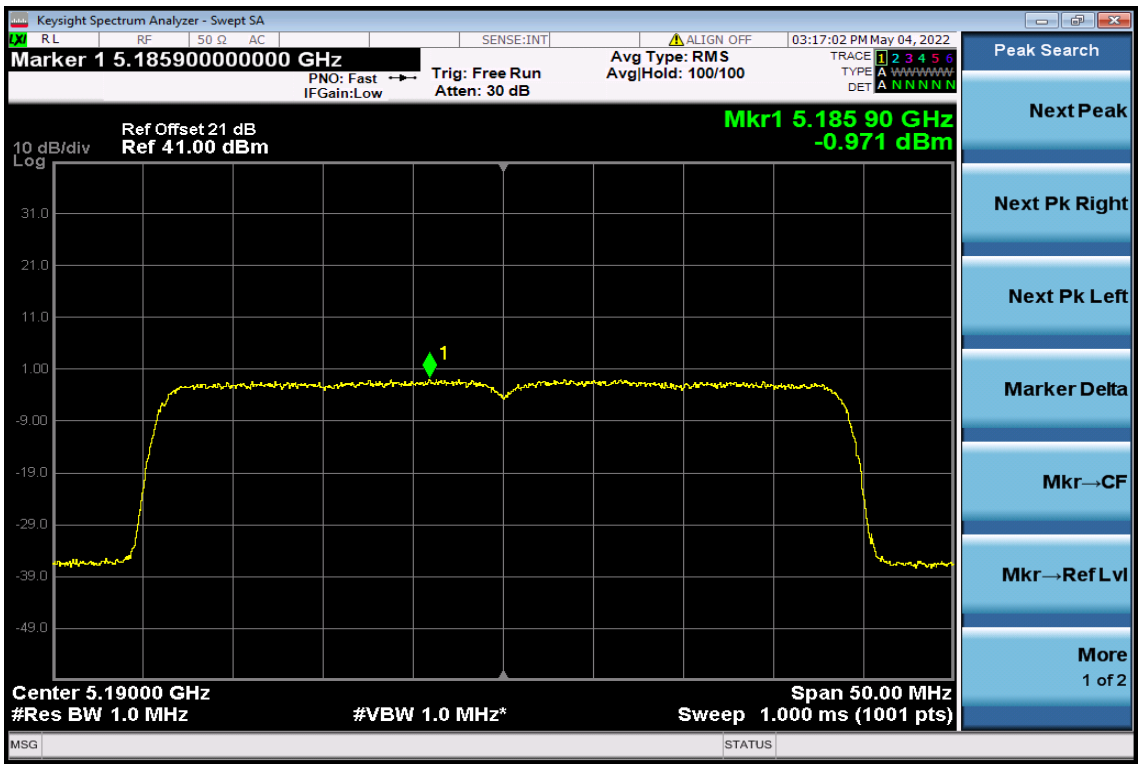
Power Spectral Density Test Plot (Chain 1_HE20_CH_Mid)



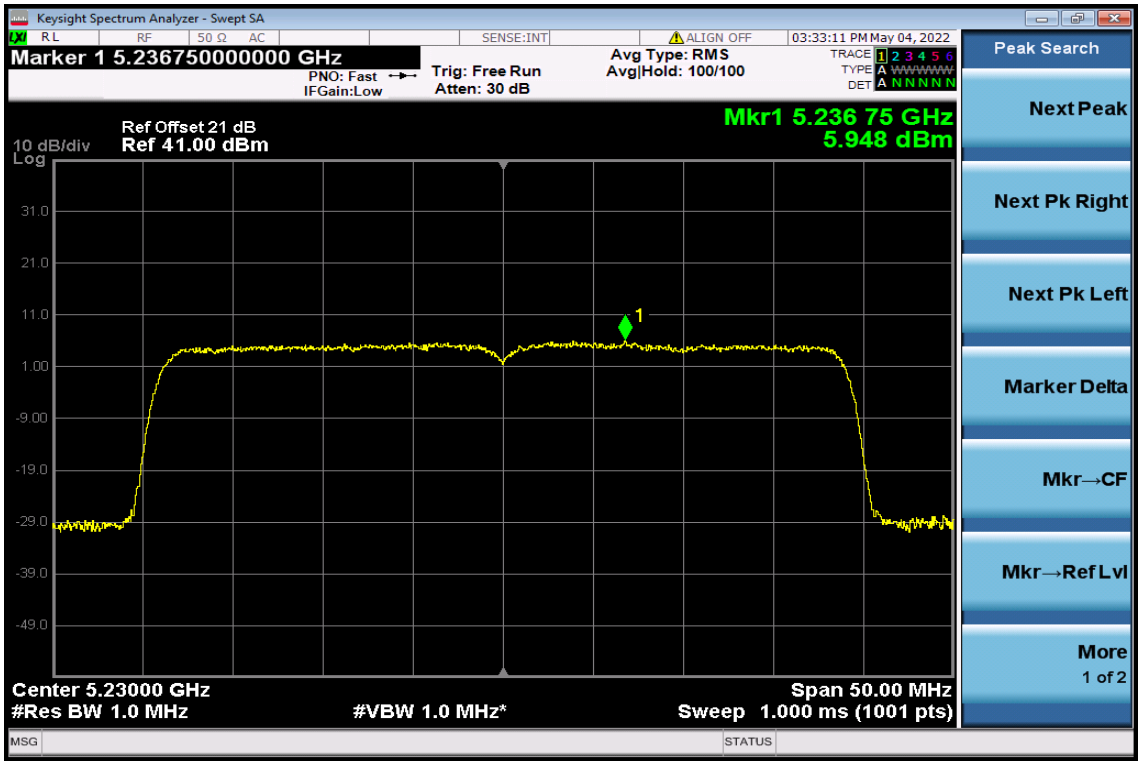
Power Spectral Density Test Plot (Chain 1_HE20_CH_High)



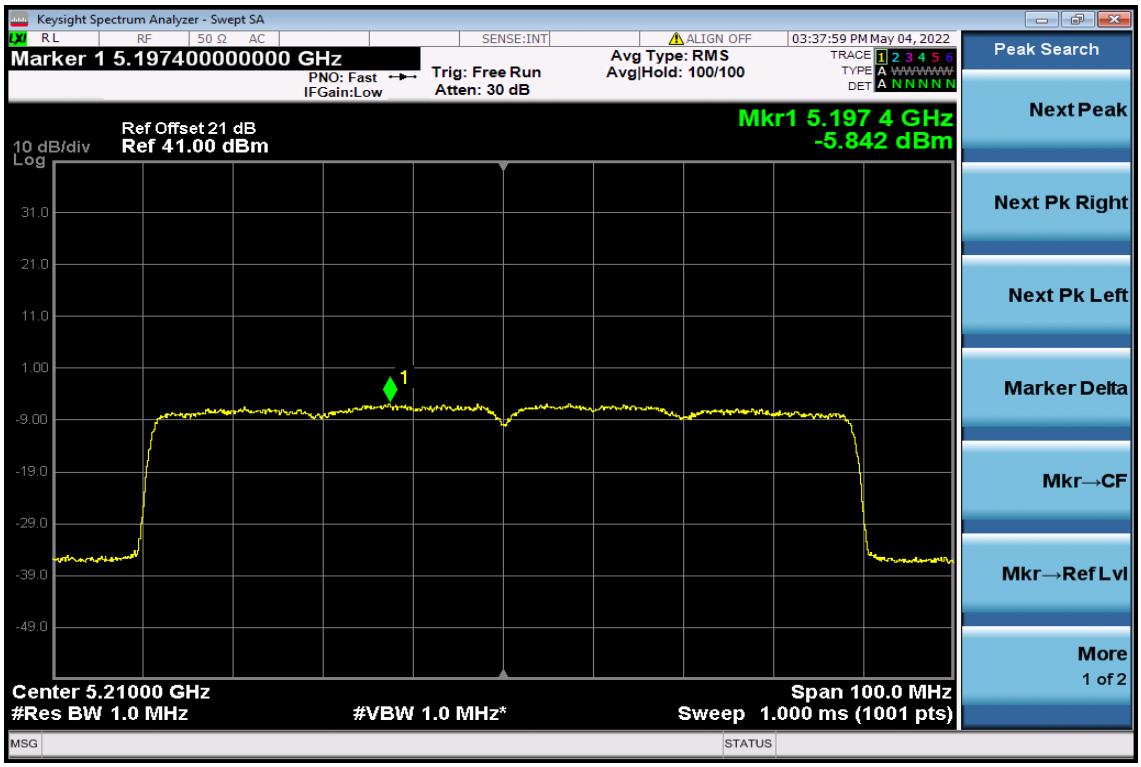
Power Spectral Density Test Plot (Chain 1_HE40_CH_Low)



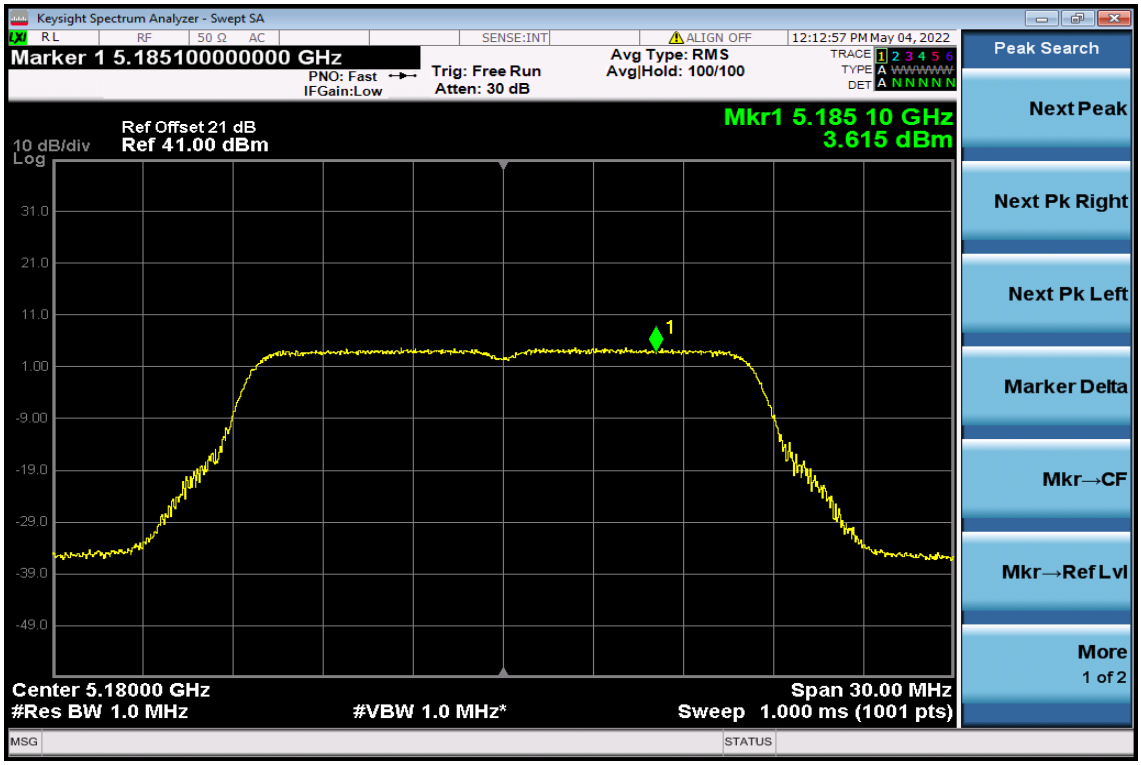
Power Spectral Density Test Plot (Chain 1_HE40_CH_High)



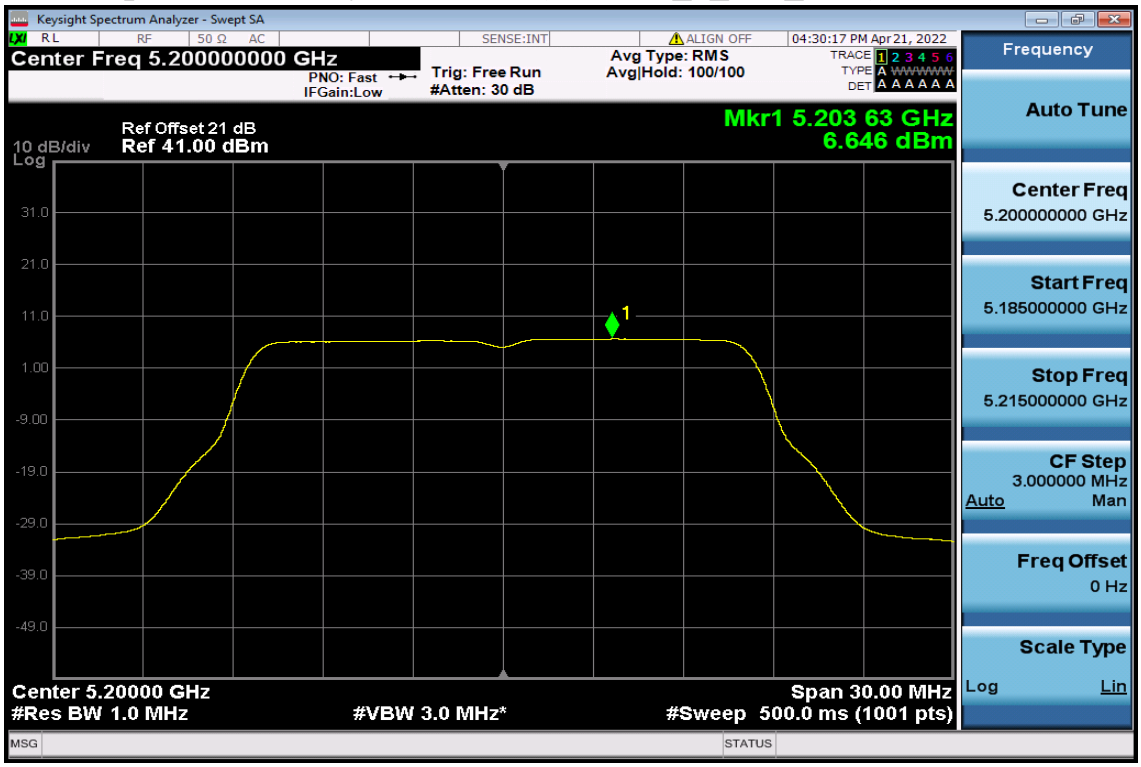
Power Spectral Density Test Plot (Chain 1_HE80_CH_Low)



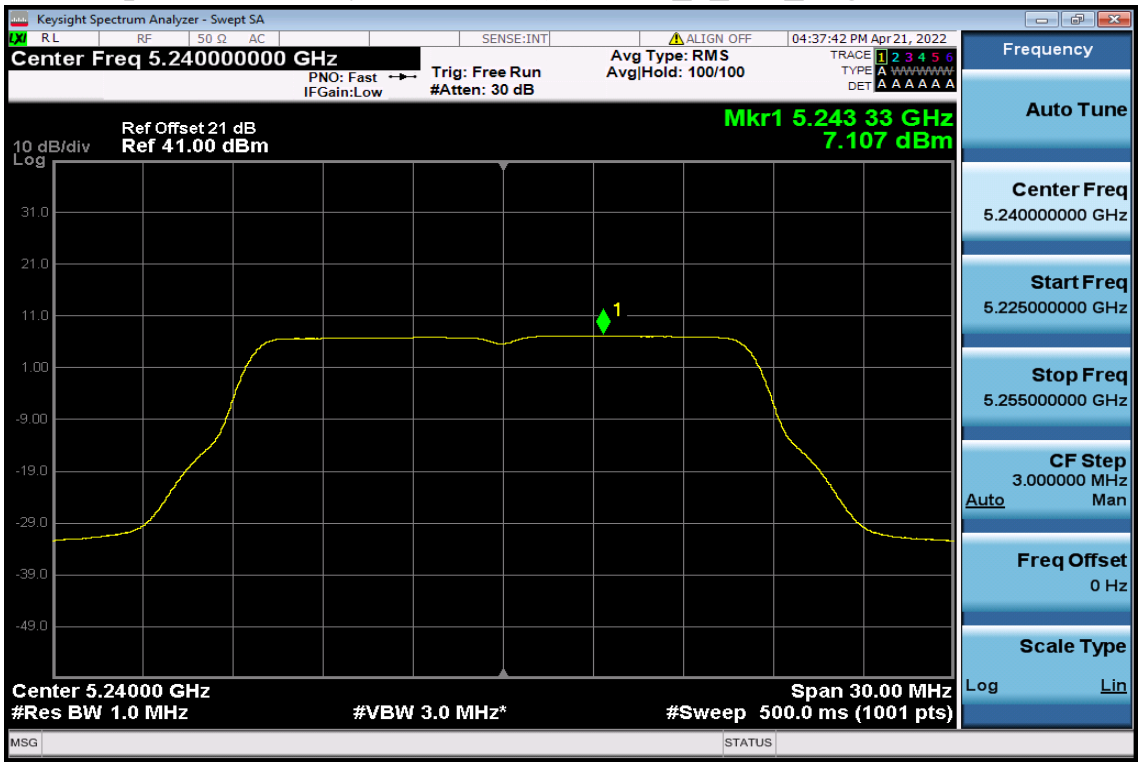
Power Spectral Density Data Plot (Chain 2_a_CH_Low)



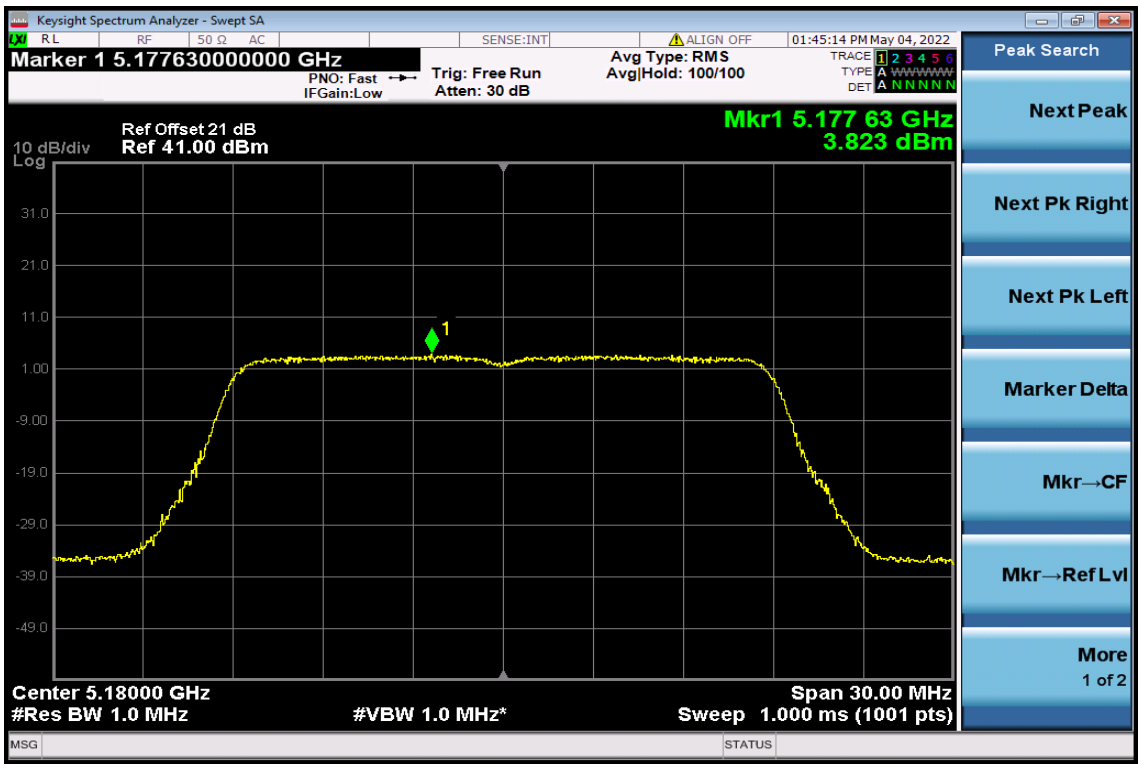
Power Spectral Density Data Plot (Chain 2_a_CH_Mid)



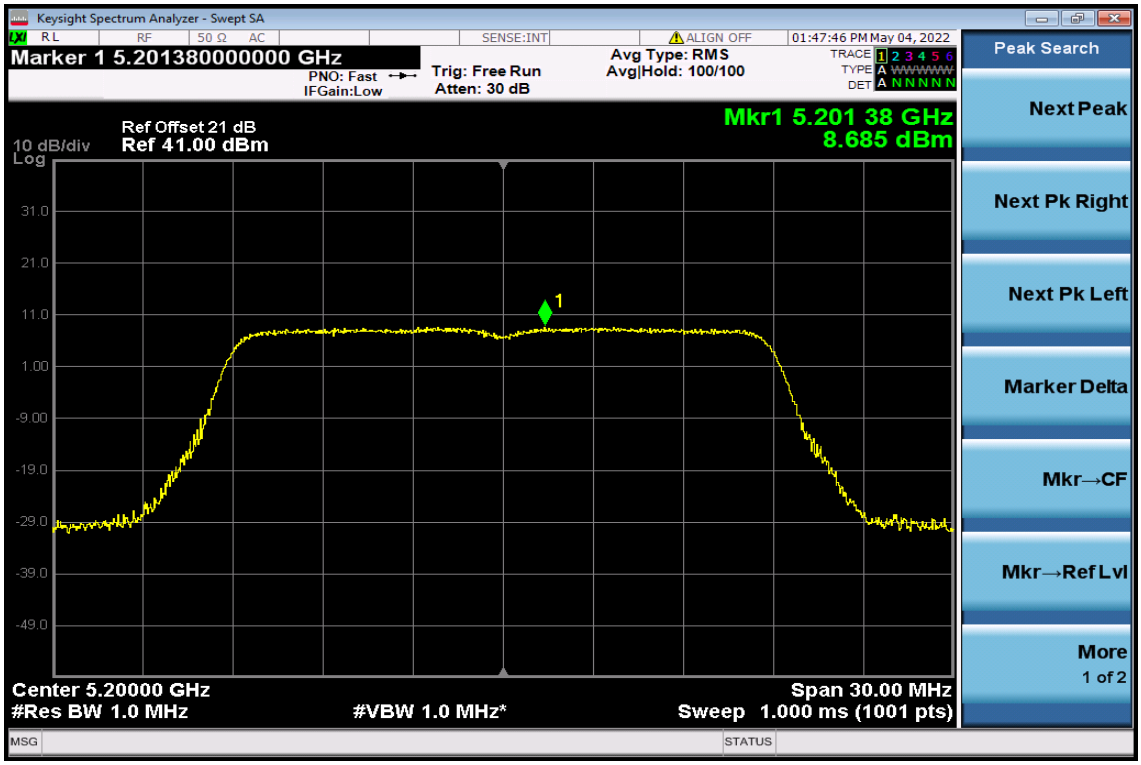
Power Spectral Density Data Plot (Chain 2_a_CH_High)



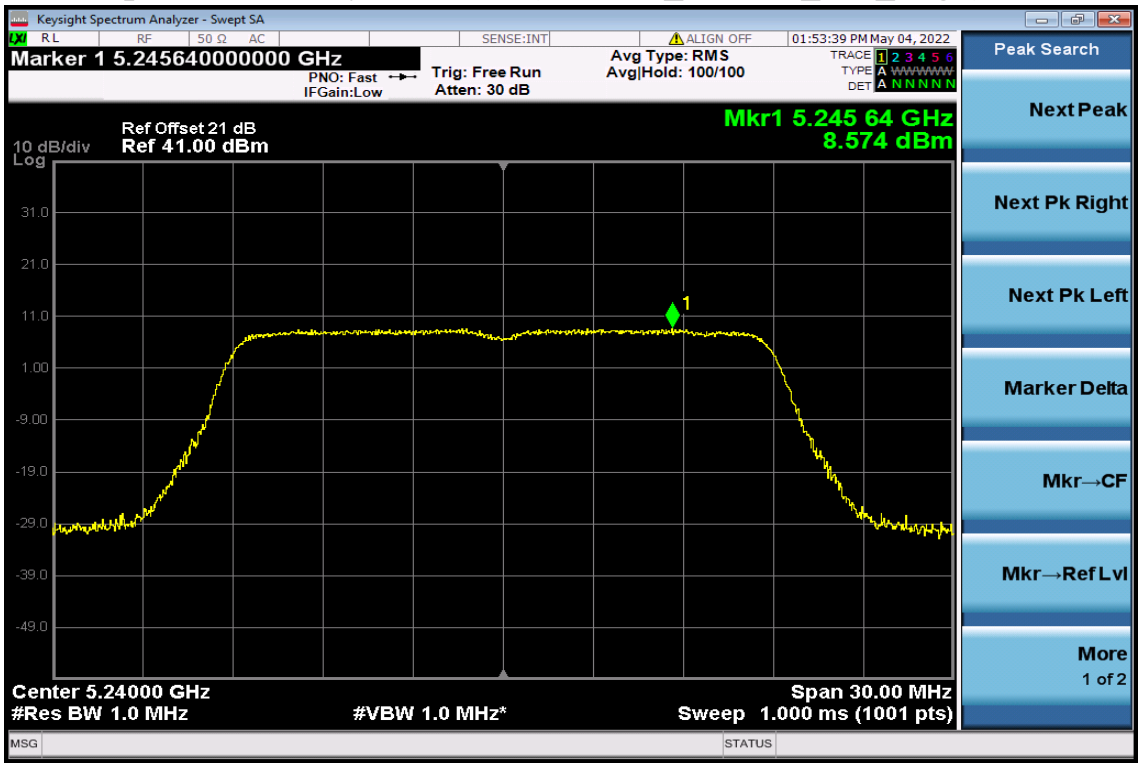
Power Spectral Density Test Plot (Chain 2_VHT20_CH_Low)



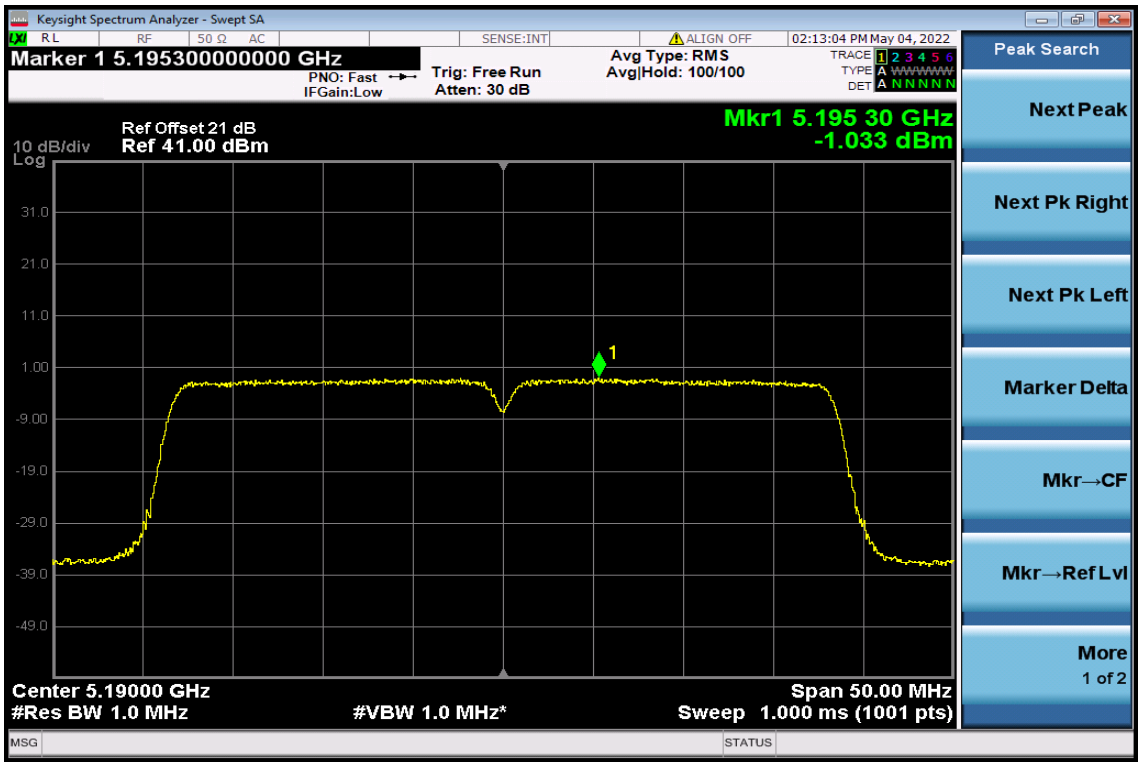
Power Spectral Density Test Plot (Chain 2_VHT20_CH_Mid)



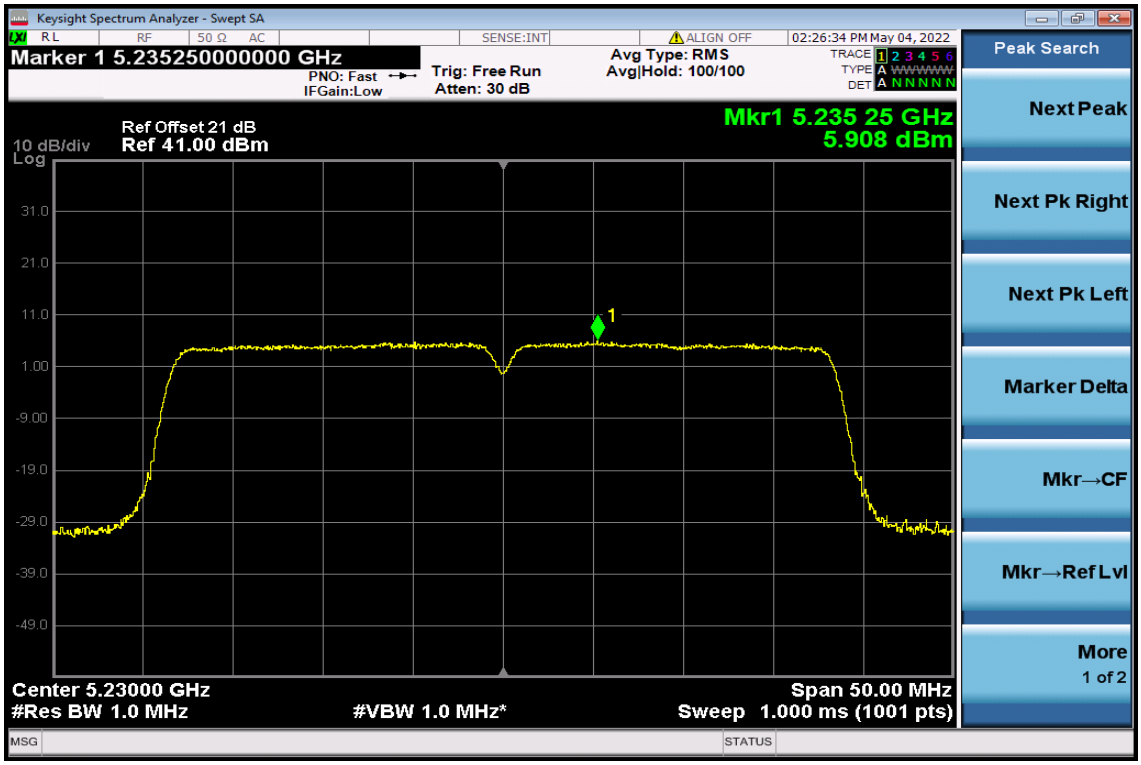
Power Spectral Density Test Plot (Chain 2_VHT20_CH_High)



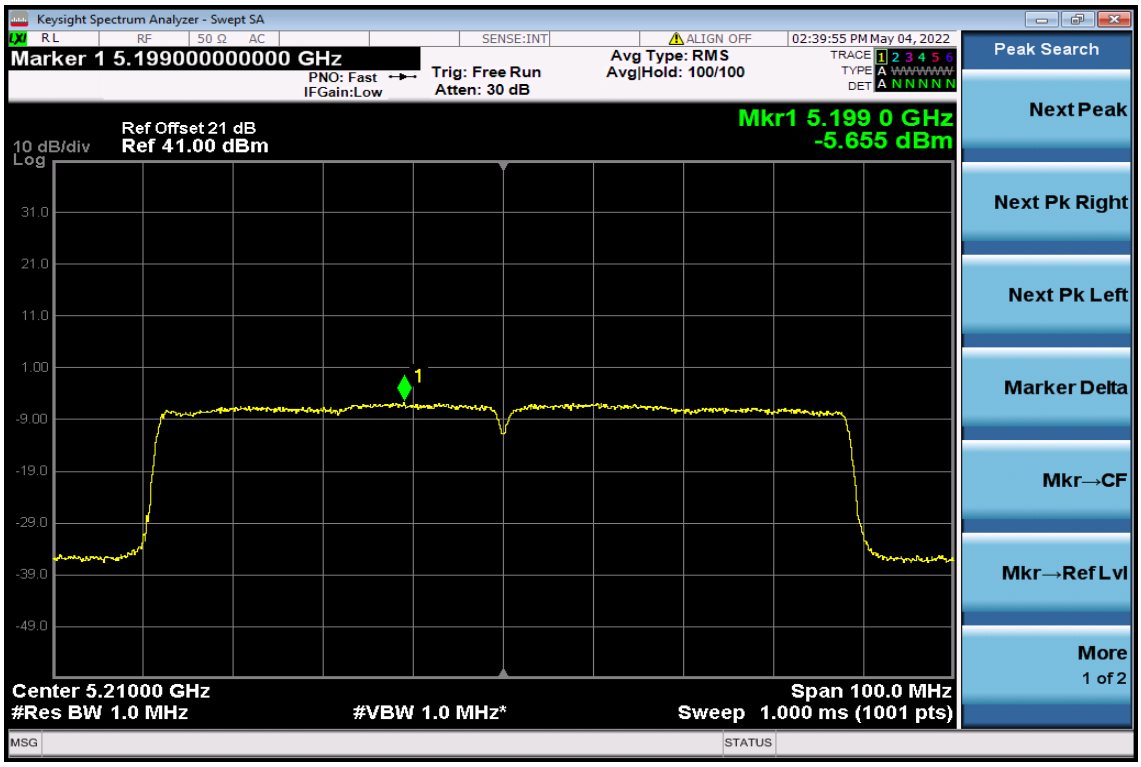
Power Spectral Density Test Plot (Chain 2_VHT40_CH_Low)



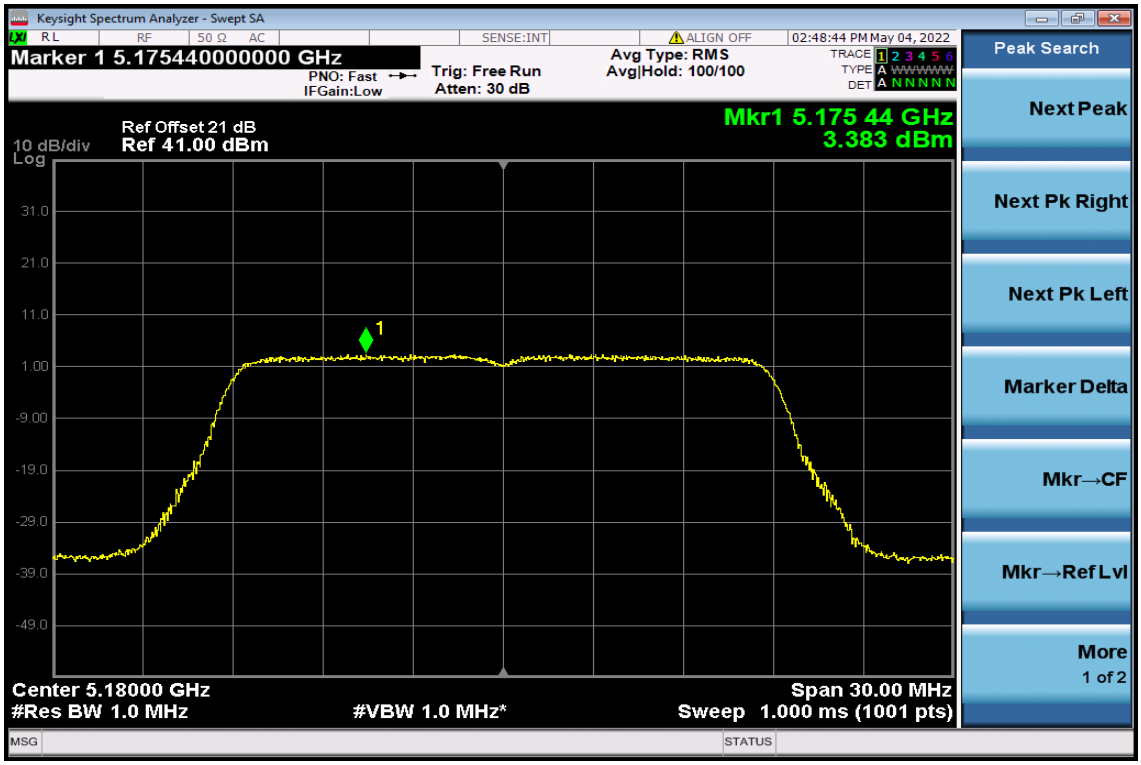
Power Spectral Density Test Plot (Chain 2_VHT40_CH_High)



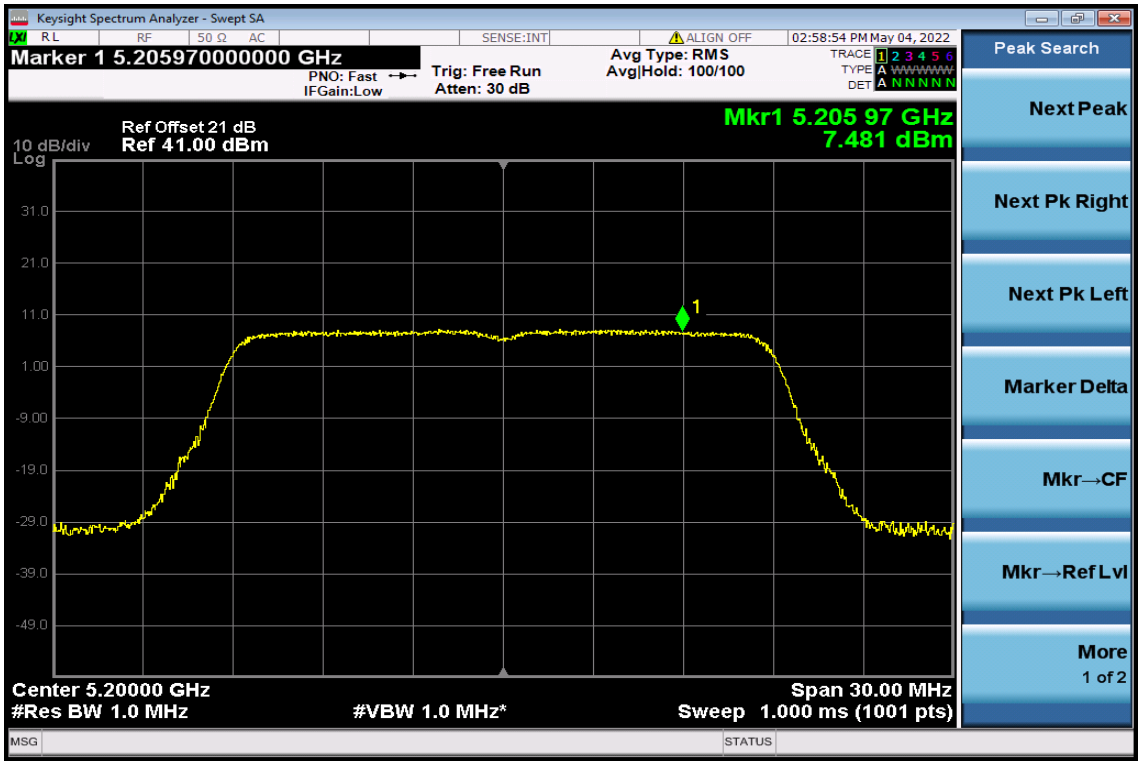
Power Spectral Density Test Plot (Chain 2_VHT80_CH_Low)



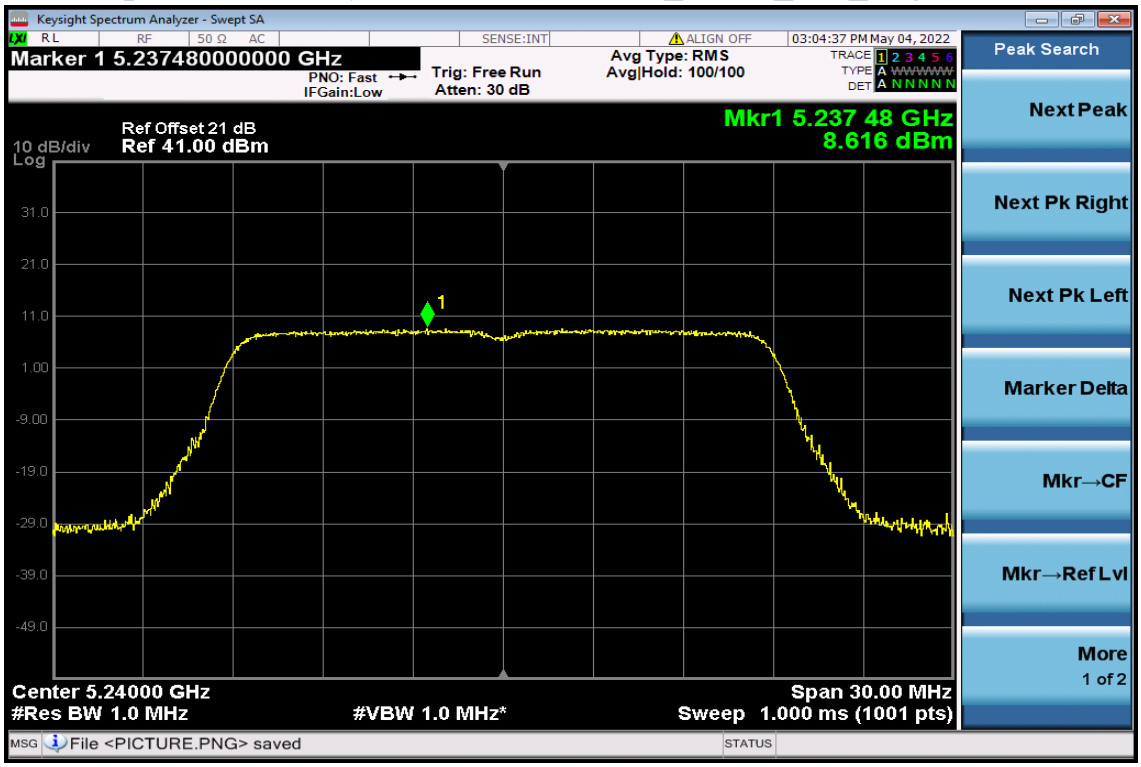
Power Spectral Density Test Plot (Chain 2_HE20_CH_Low)



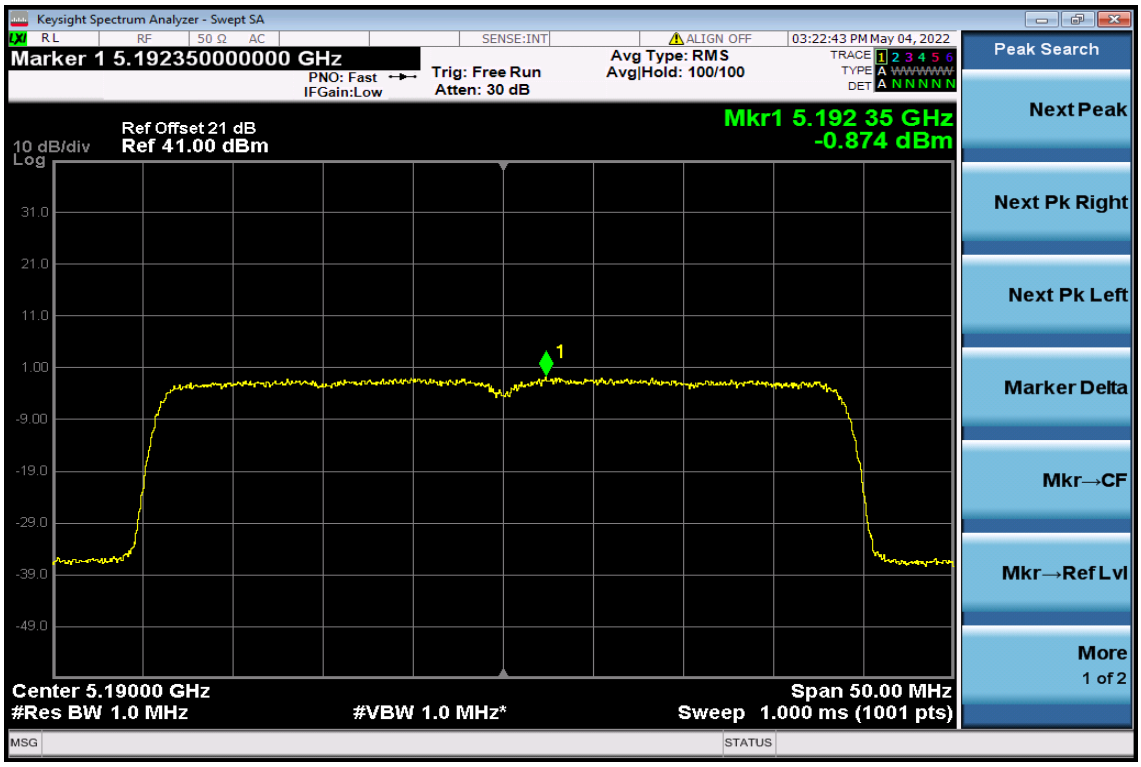
Power Spectral Density Test Plot (Chain 2_HE20_CH_Mid)



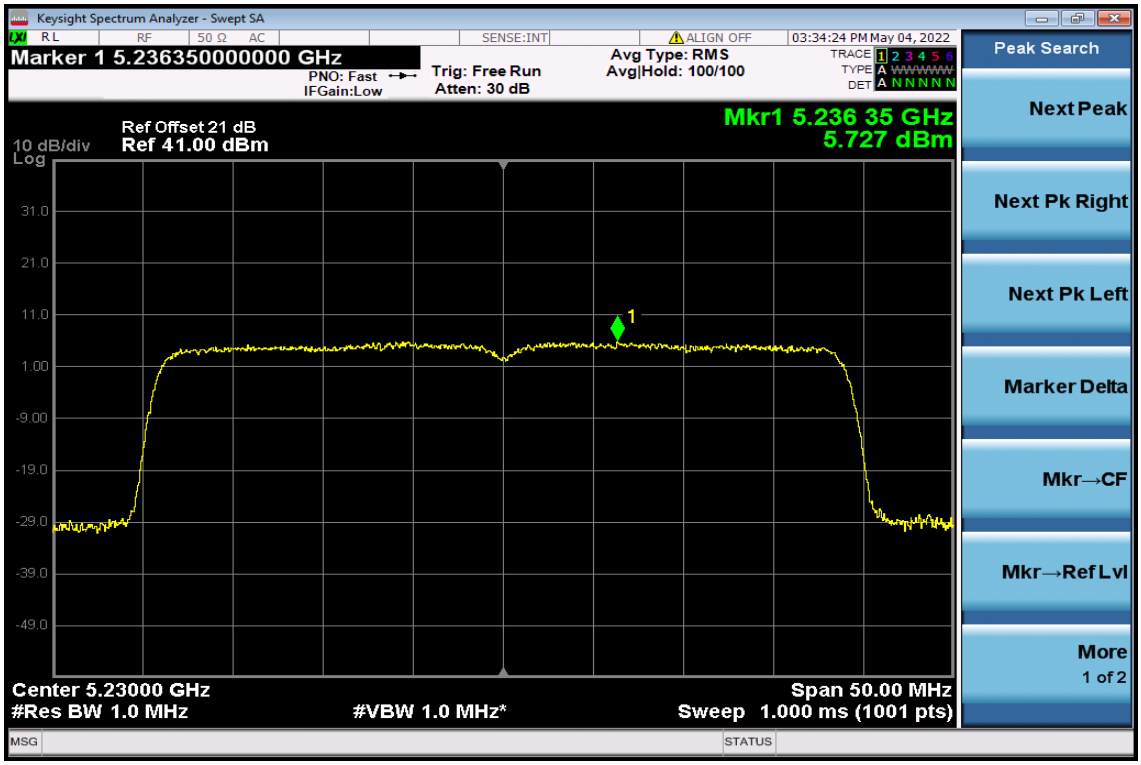
Power Spectral Density Test Plot (Chain 2_HE20_CH_High)



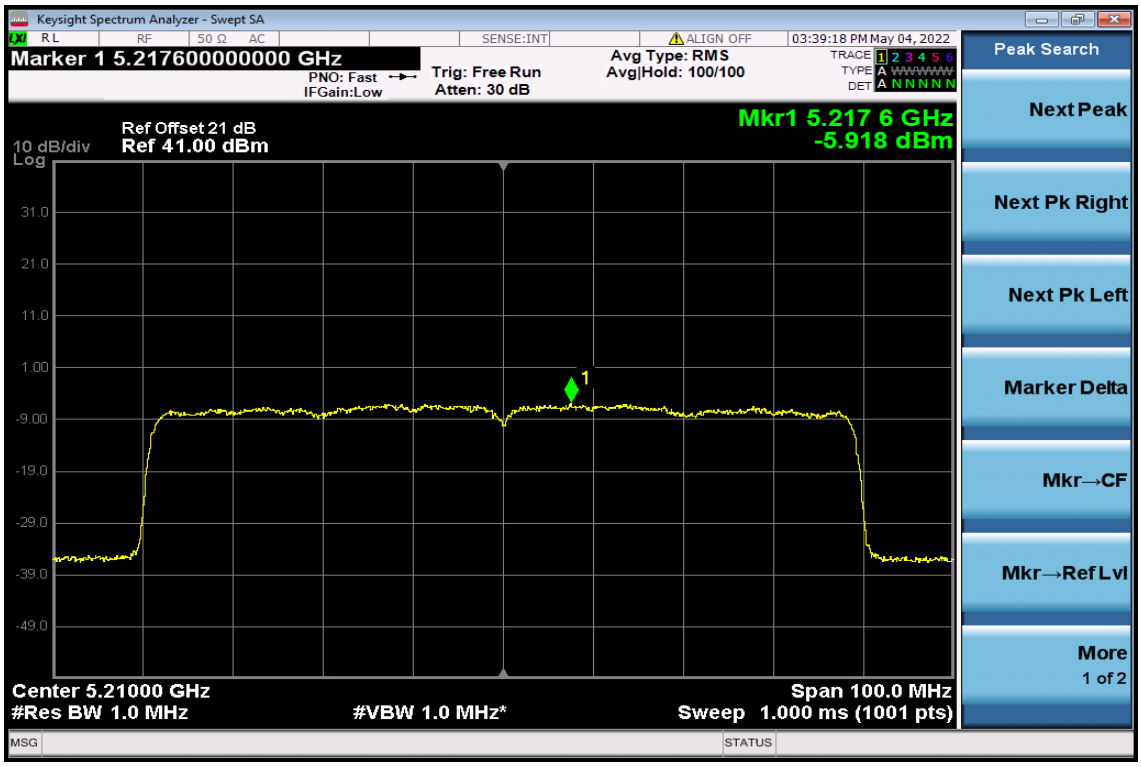
Power Spectral Density Test Plot (Chain 2_HE40_CH_Low)



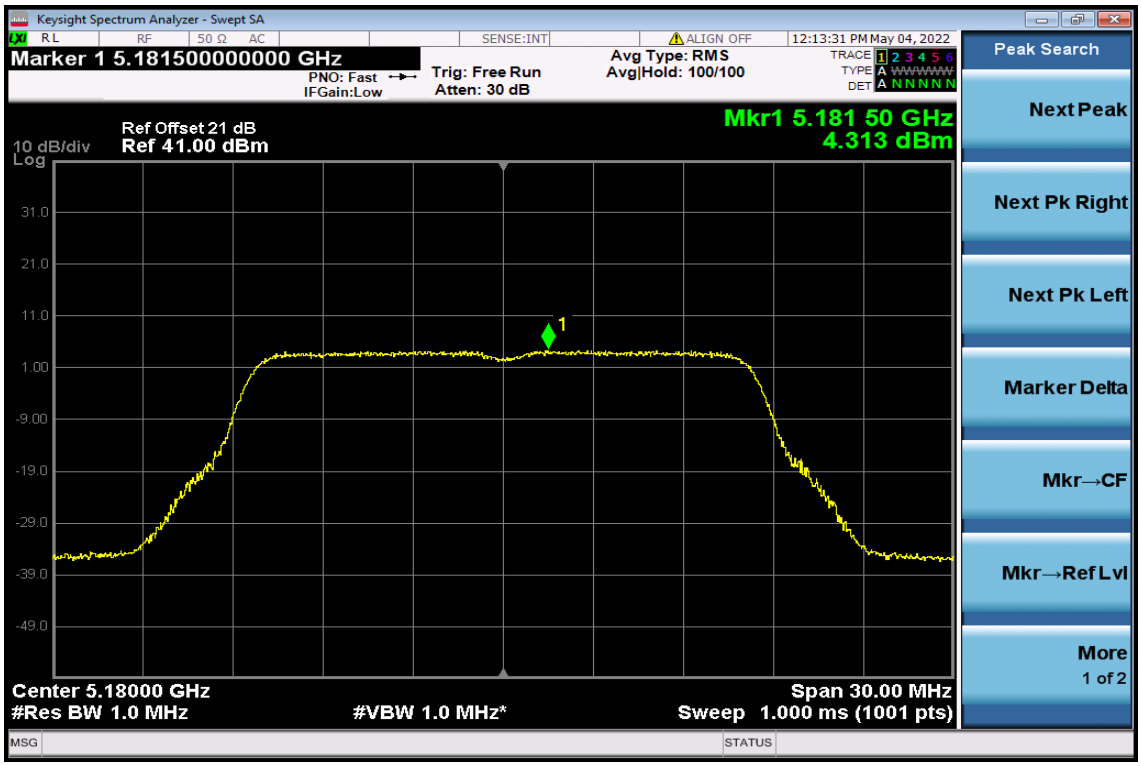
Power Spectral Density Test Plot (Chain 2_HE40_CH_High)



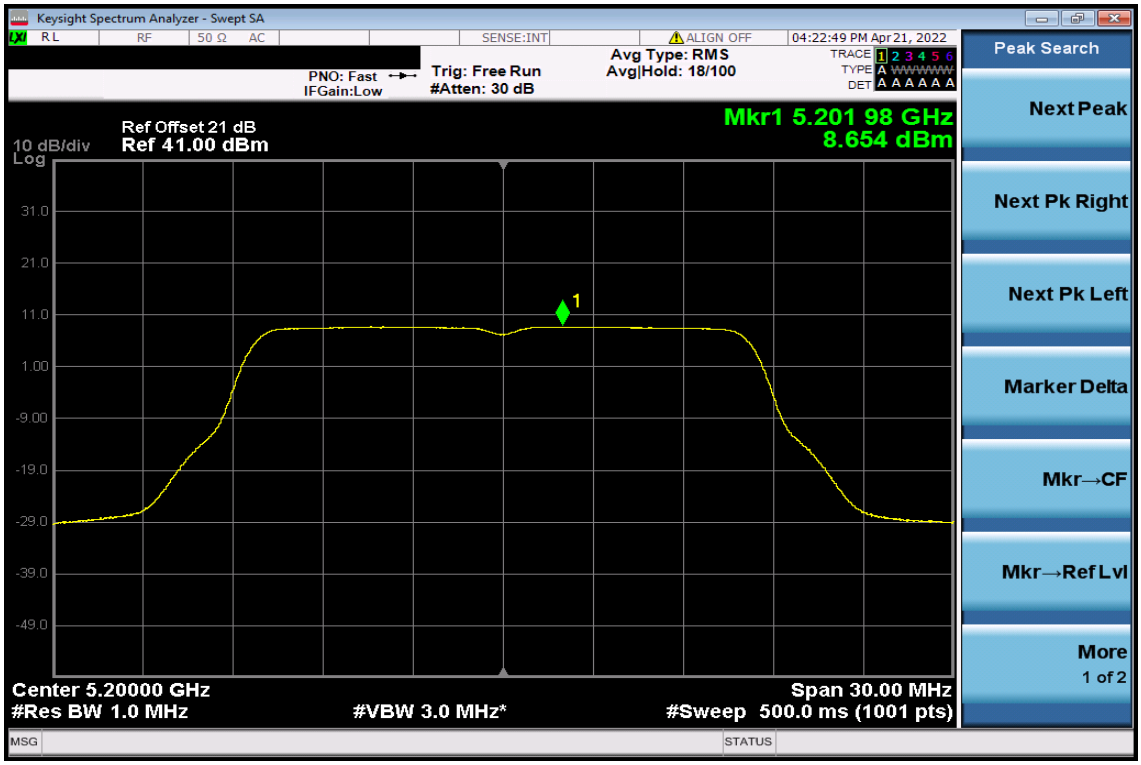
Power Spectral Density Test Plot (Chain 2_HE80_CH_Low)



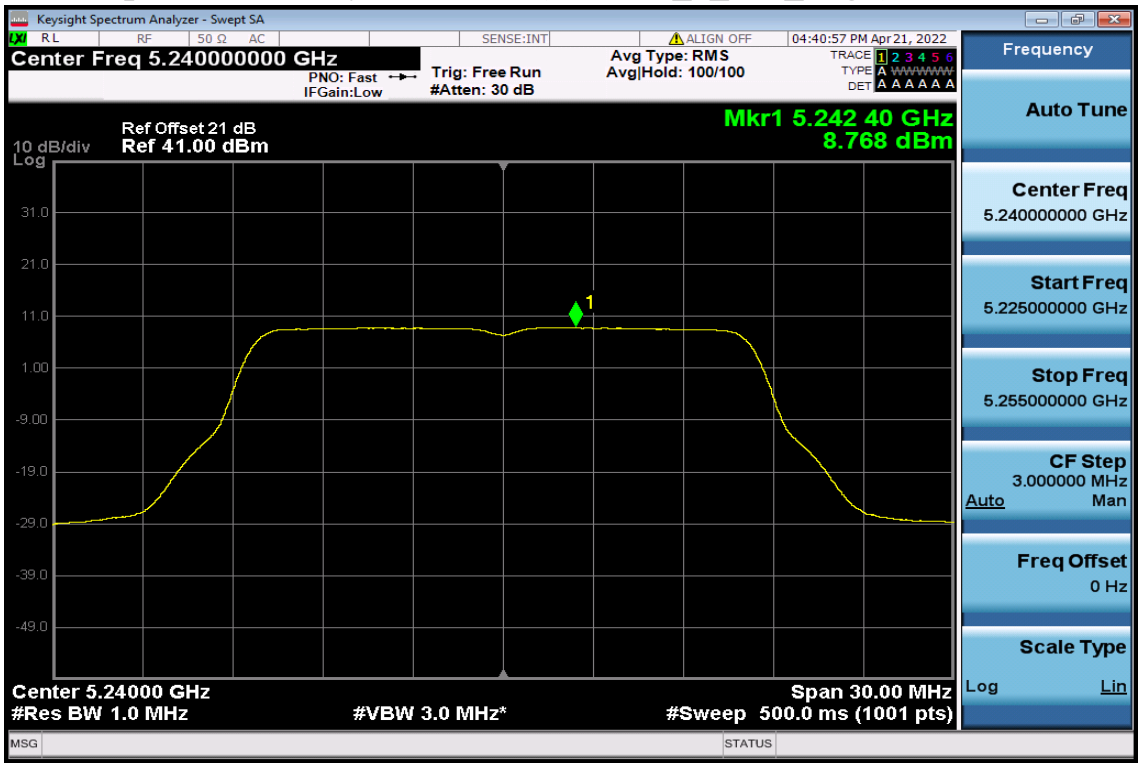
Power Spectral Density Data Plot (Chain 3_a_CH_Low)



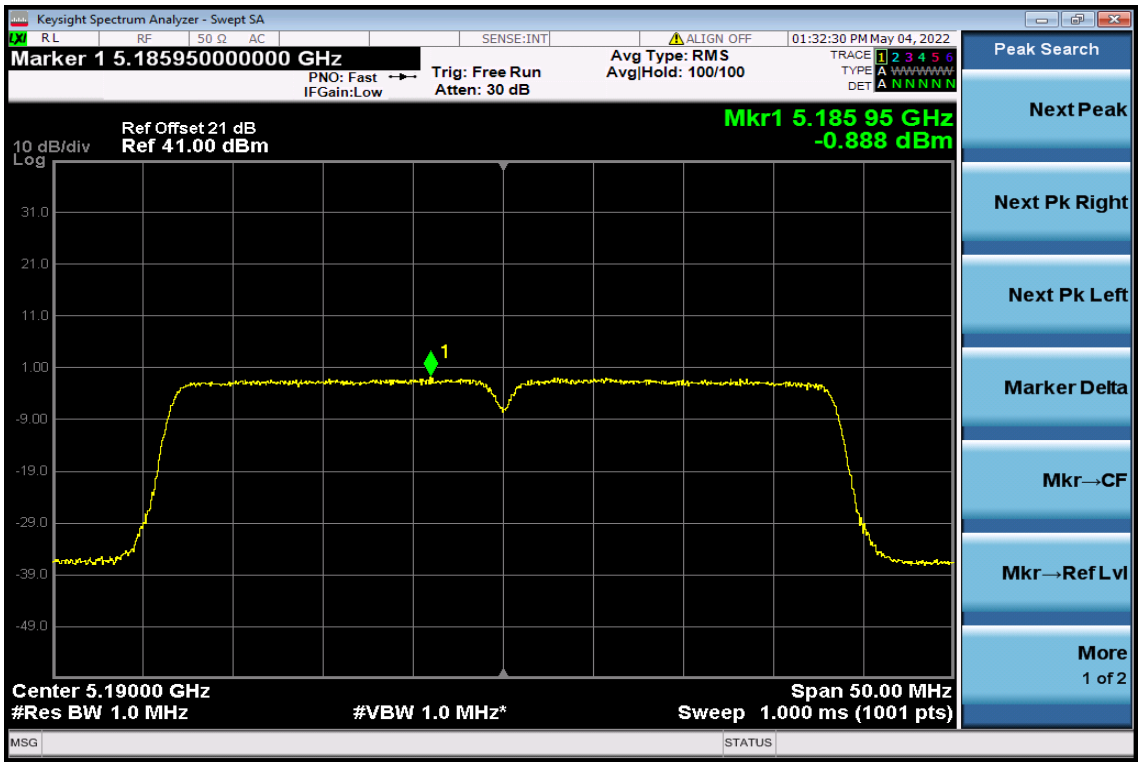
Power Spectral Density Data Plot (Chain 3_a_CH_Mid)



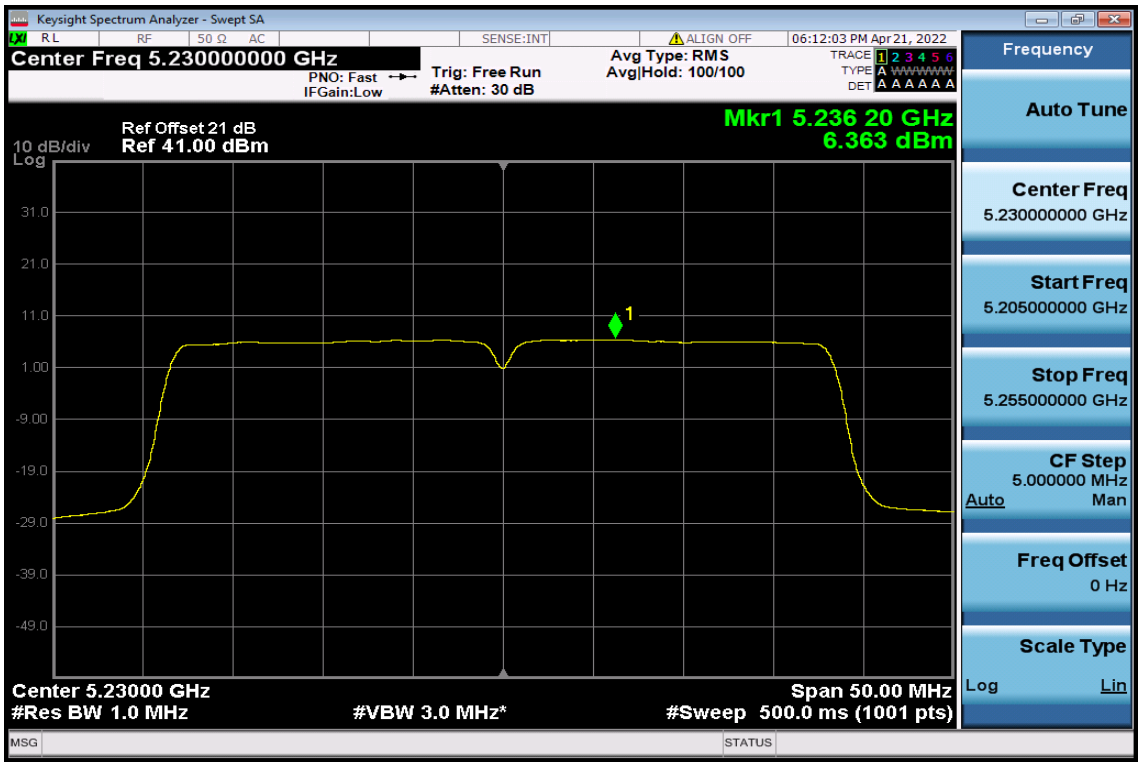
Power Spectral Density Data Plot (Chain 3_a_CH_High)



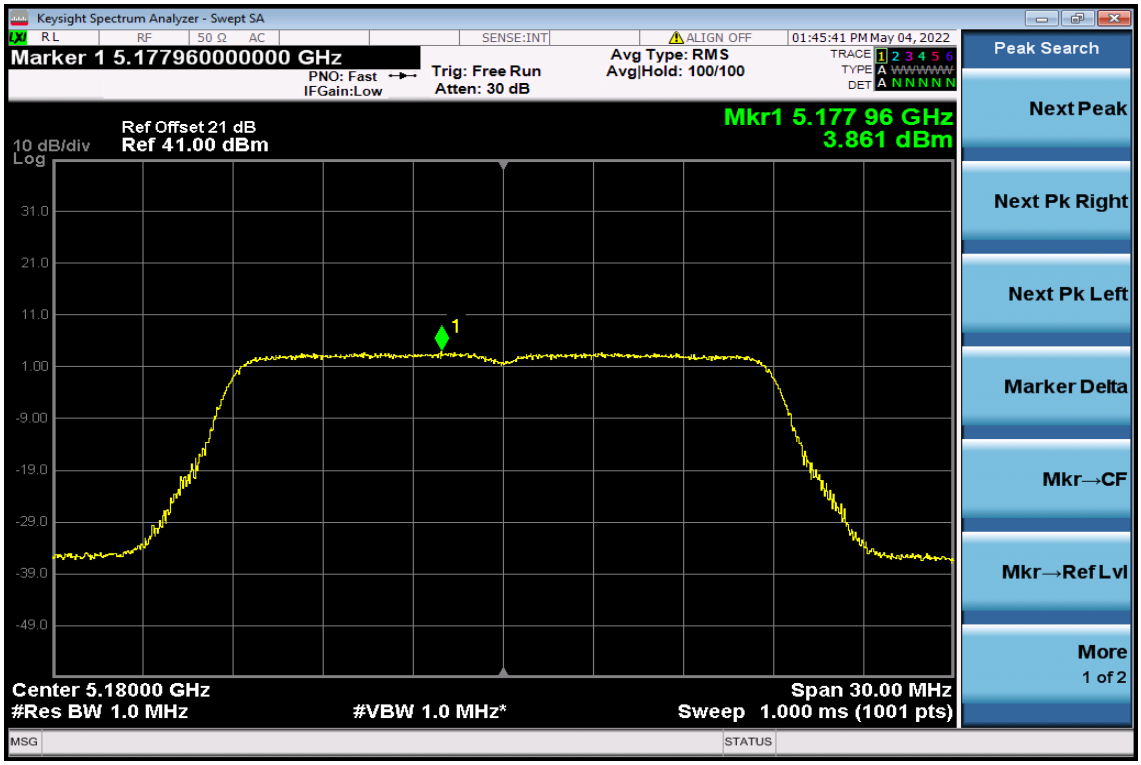
Power Spectral Density Test Plot (Chain 3_HT40_CH_Low)



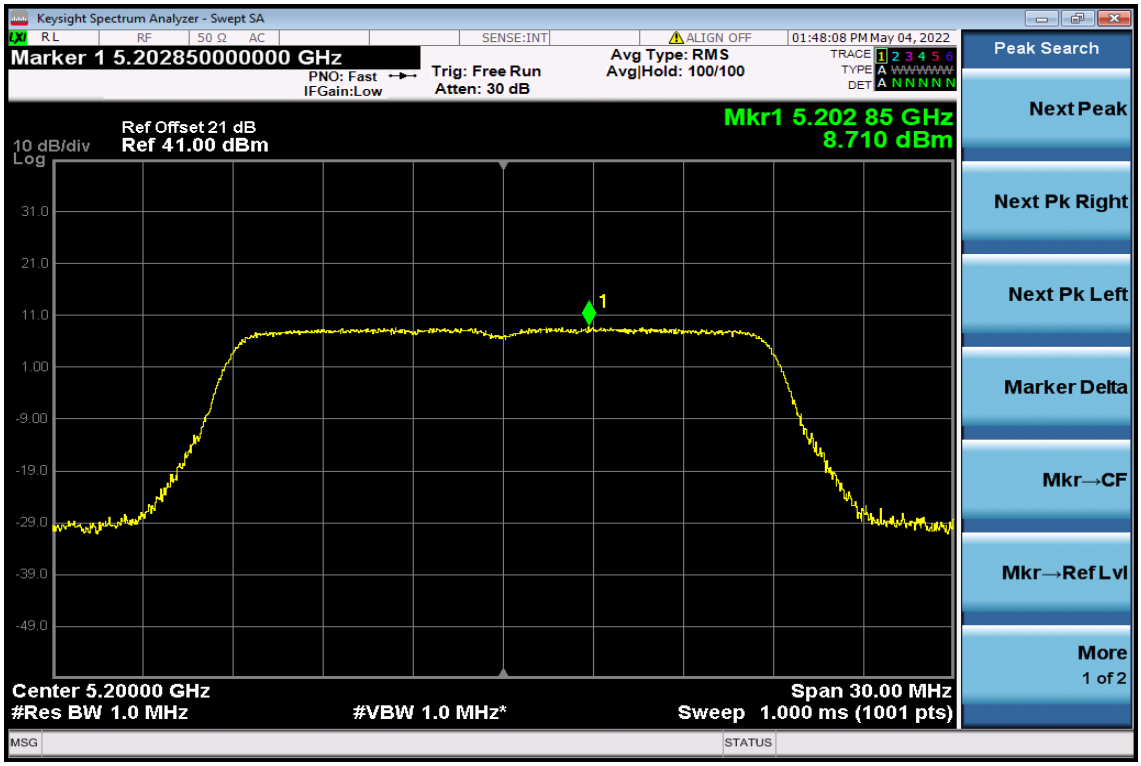
Power Spectral Density Test Plot (Chain 3_HT40_CH_High)



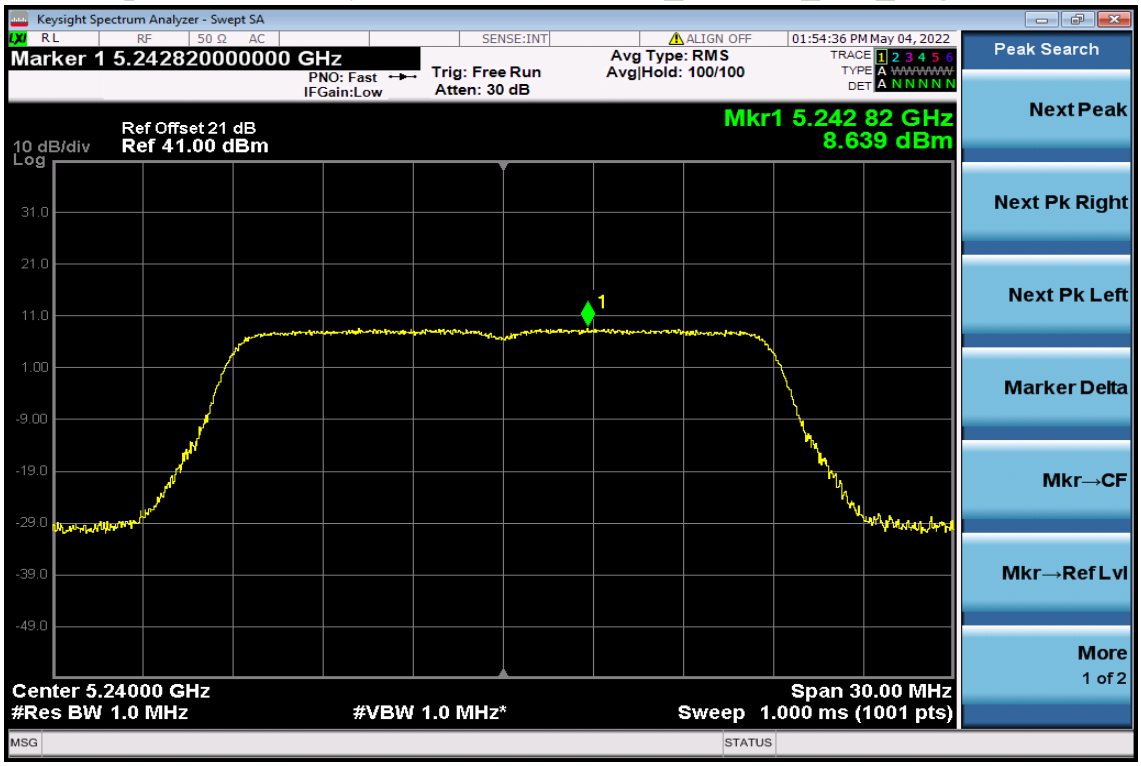
Power Spectral Density Test Plot (Chain 3_VHT20_CH_Low)



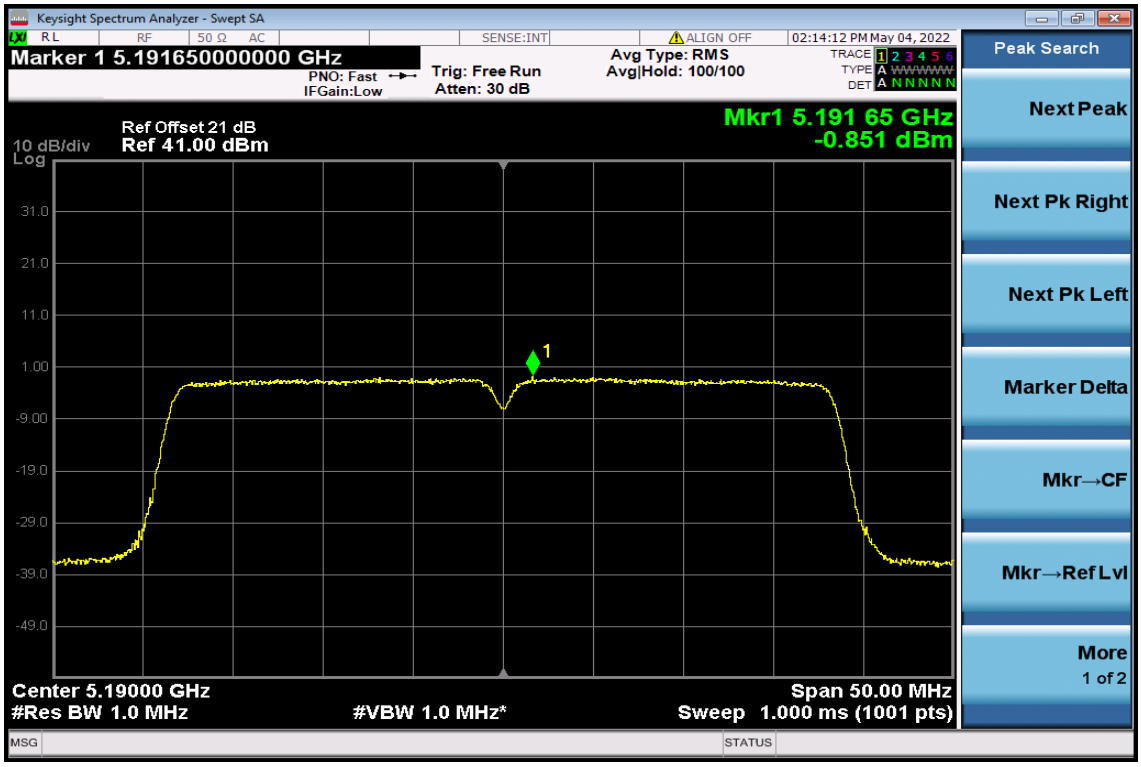
Power Spectral Density Test Plot (Chain 3_VHT20_CH_Mid)



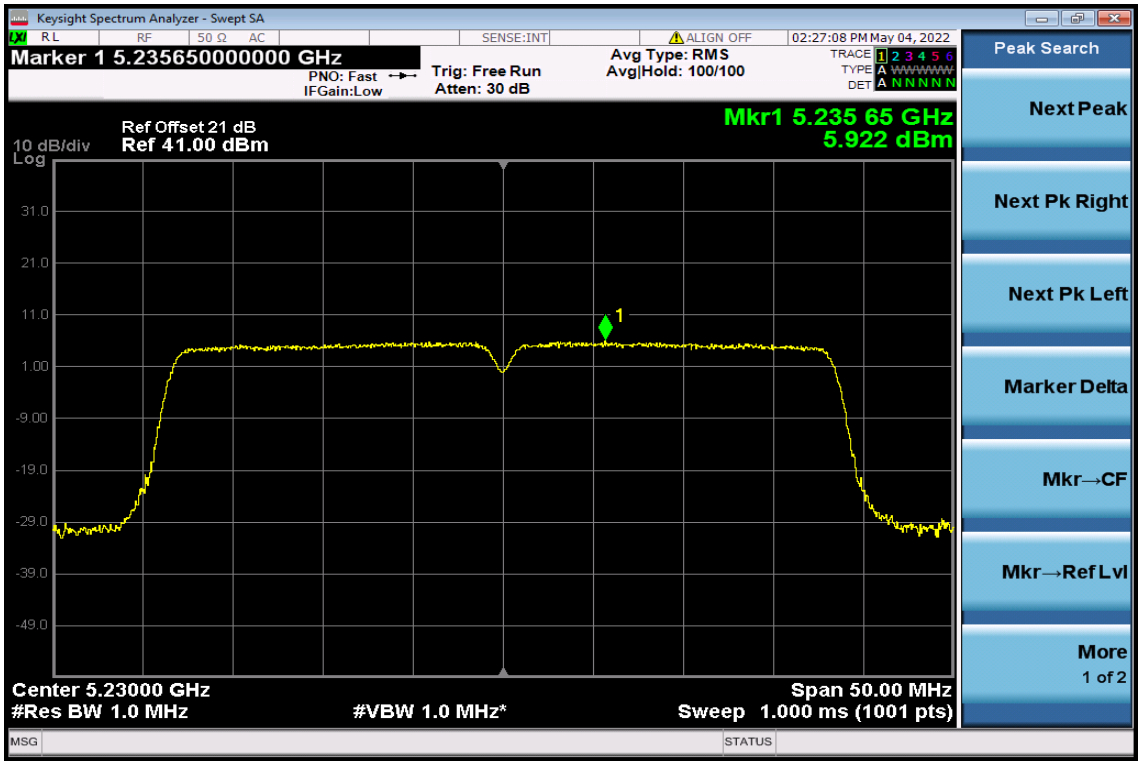
Power Spectral Density Test Plot (Chain 3_VHT20_CH_High)



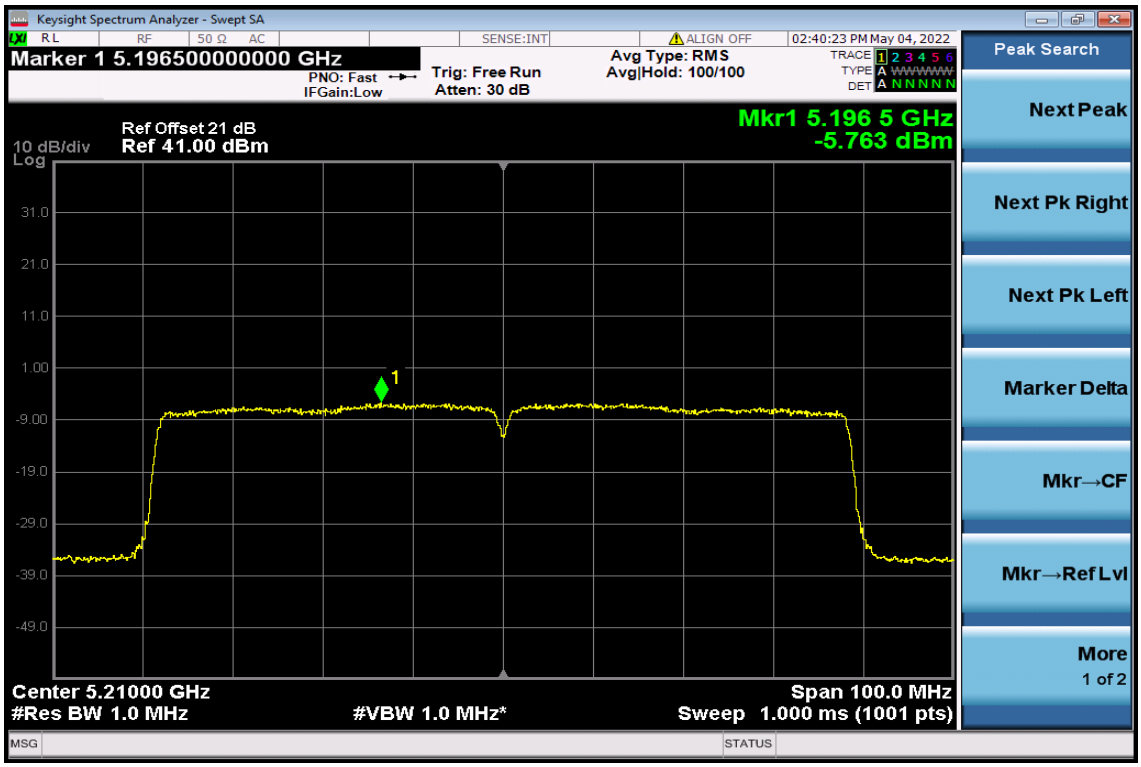
Power Spectral Density Test Plot (Chain 3_VHT40_CH_Low)



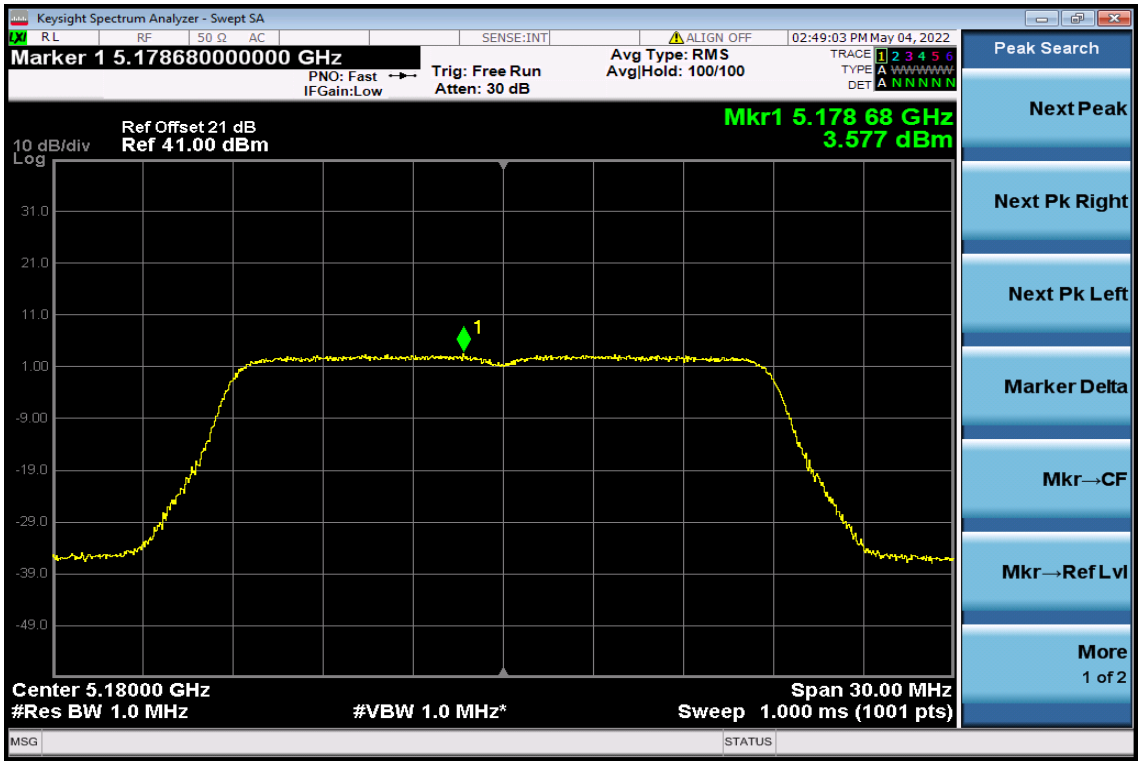
Power Spectral Density Test Plot (Chain 3_VHT40_CH_High)



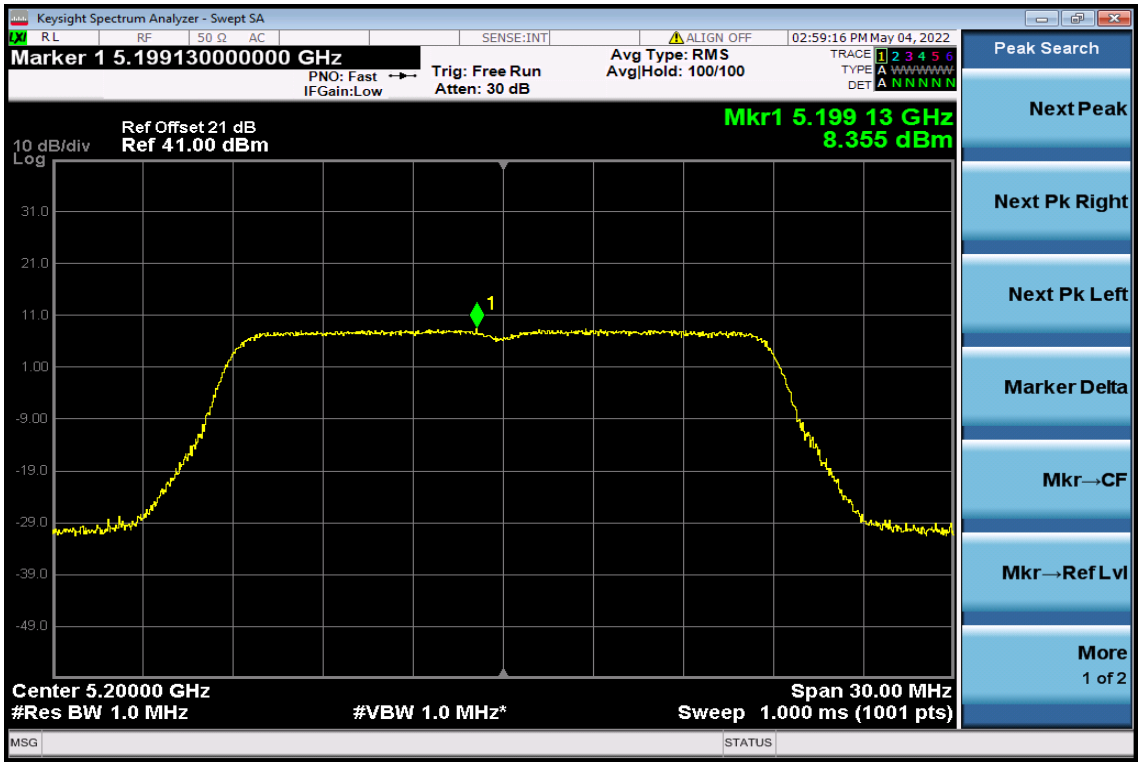
Power Spectral Density Test Plot (Chain 3_VHT80_CH_Low)



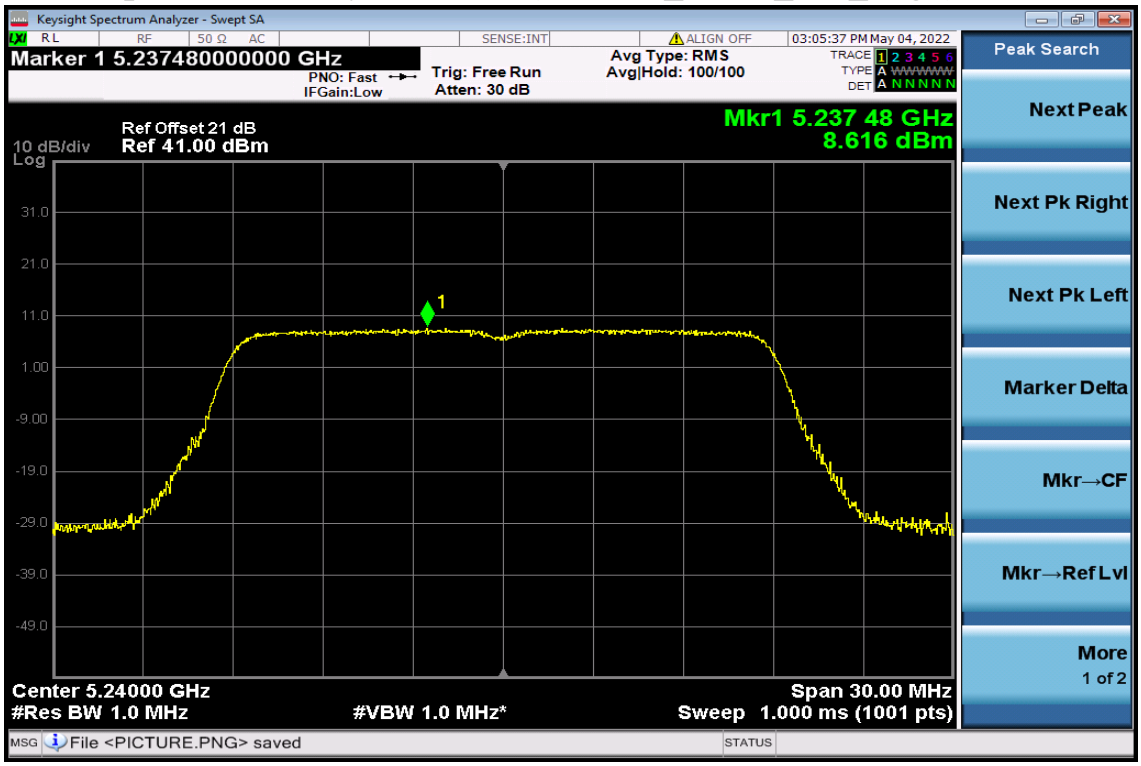
Power Spectral Density Test Plot (Chain 3_HE20_CH_Low)



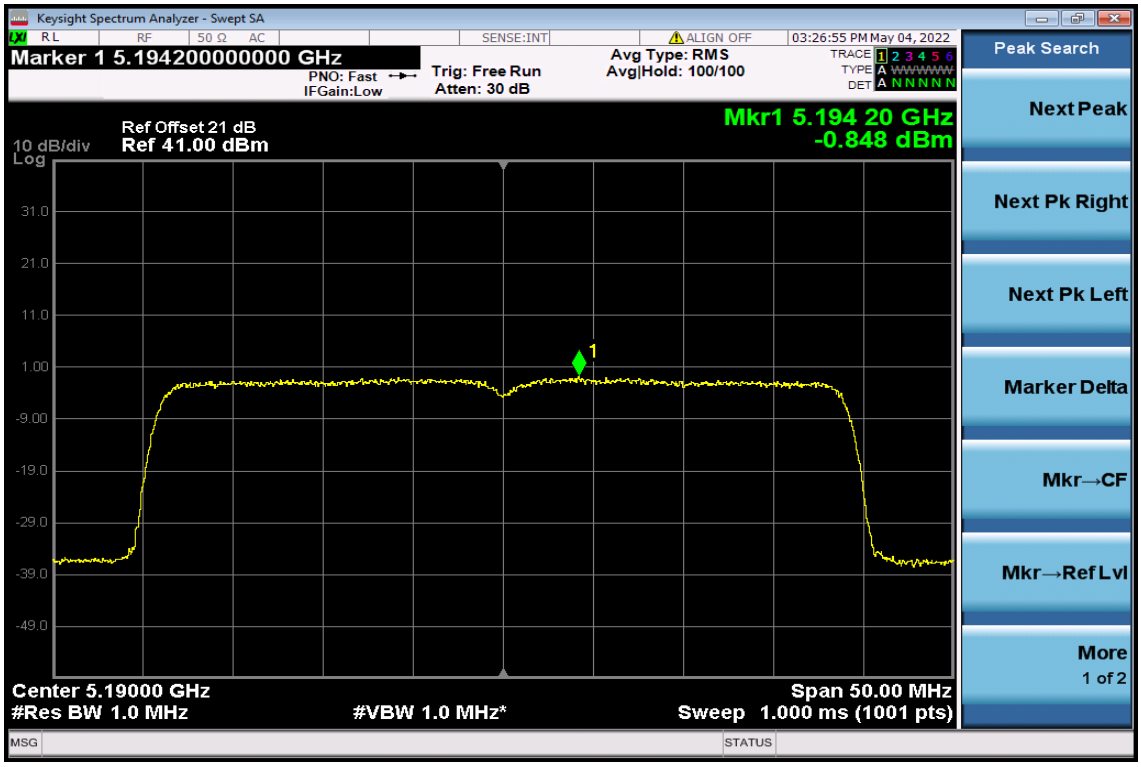
Power Spectral Density Test Plot (Chain 3_HE20_CH_Mid)



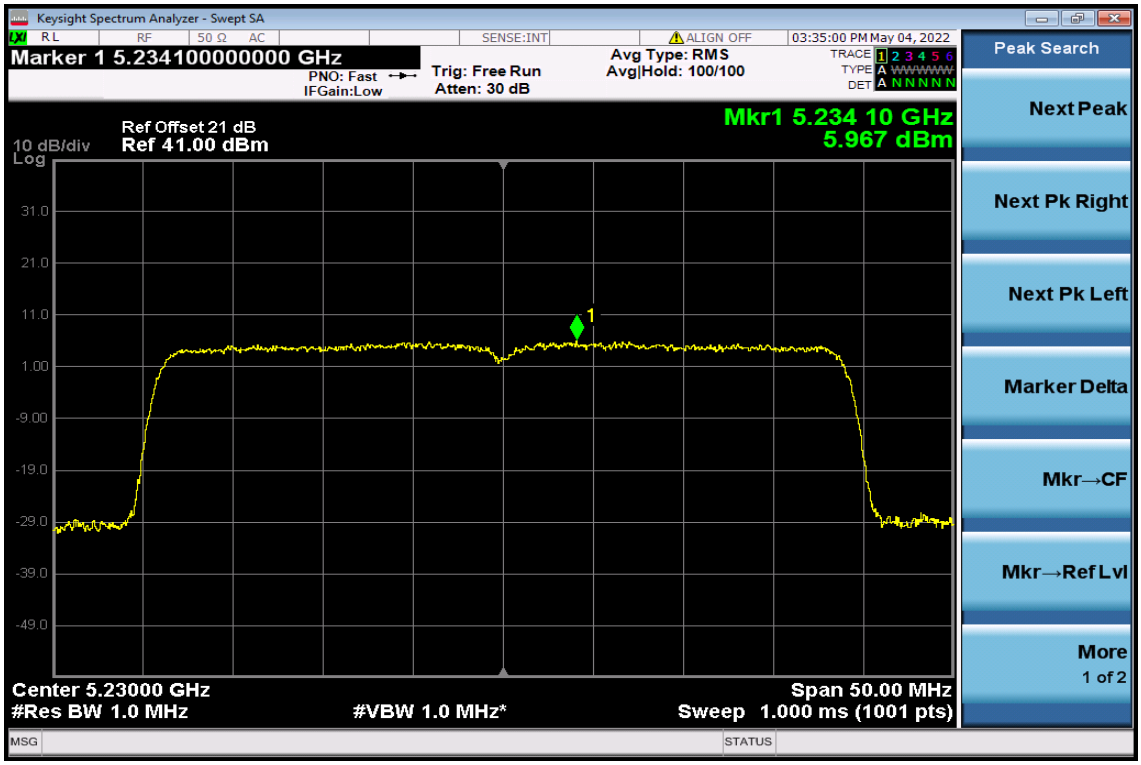
Power Spectral Density Test Plot (Chain 3_HE20_CH_High)



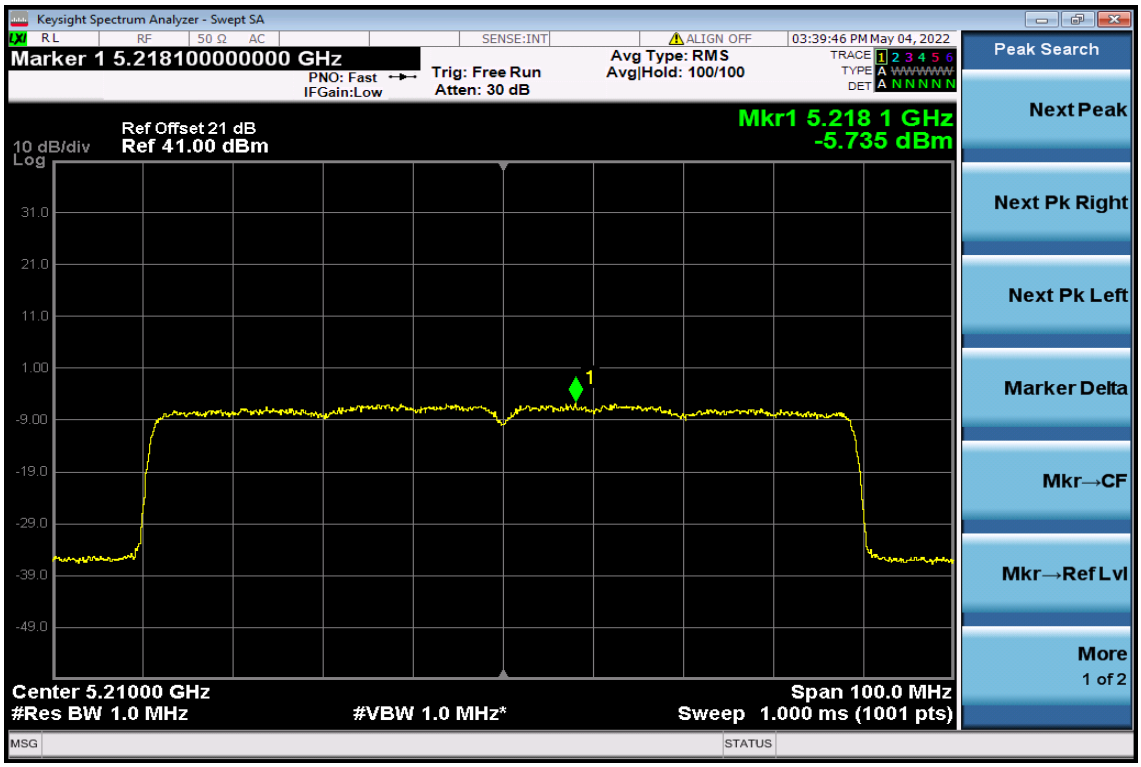
Power Spectral Density Test Plot (Chain 3_HE40_CH_Low)



Power Spectral Density Test Plot (Chain 3_HE40_CH_High)



Power Spectral Density Test Plot (Chain 3_HE80_CH_Low)



7. 26dB Emission Bandwidth Measurement

7.1. Standard Applicable

According to §15.407(a). No Limit required.

7.2. Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=1% to 5% of the OBW, VBW ≥ 3 × RBW, Detector = Peak , Sweep=auto , Trace Max. hold
4. Mark the peak frequency and –26dB (upper and lower) frequency.
5. Repeat above procedures until all frequency measured were complete.

Refer to section D of KDB Document: KDB 789033 D02 General UNII Test Procedures New Rules v01r03

7.3. Measurement Equipment Used:

Refer to section 6.3 for details.

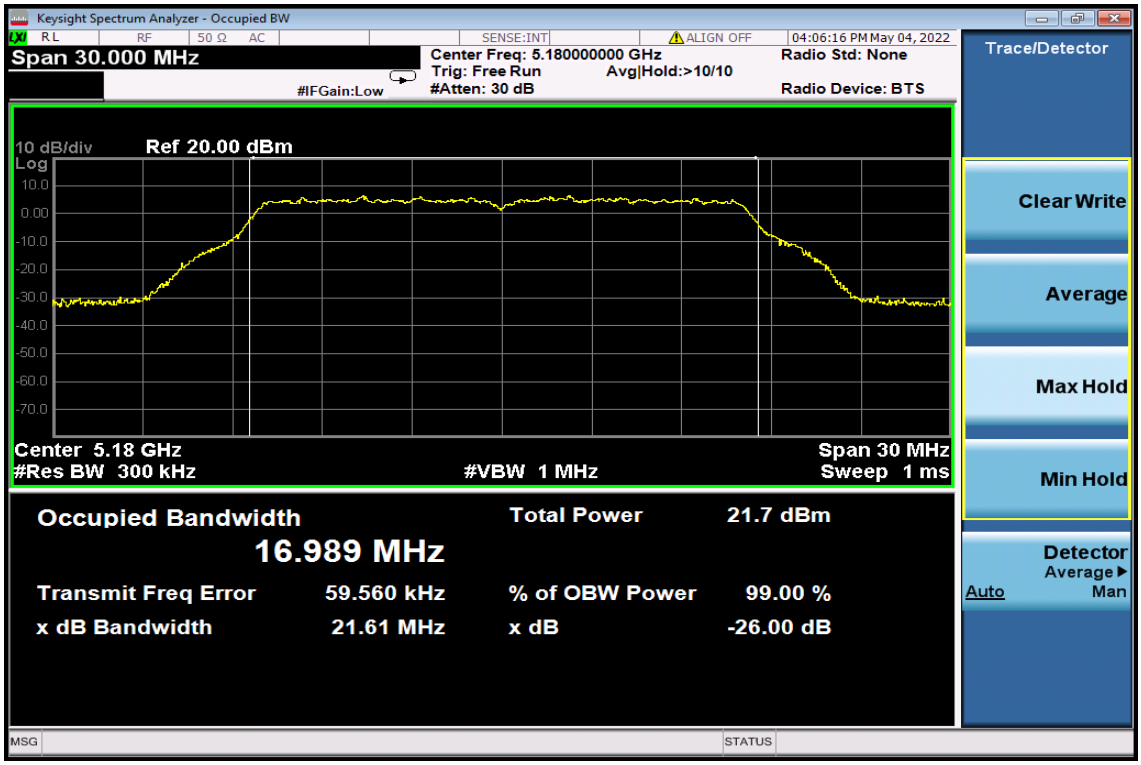
7.4. Test Set-up:

Refer to section 6.4 for details.

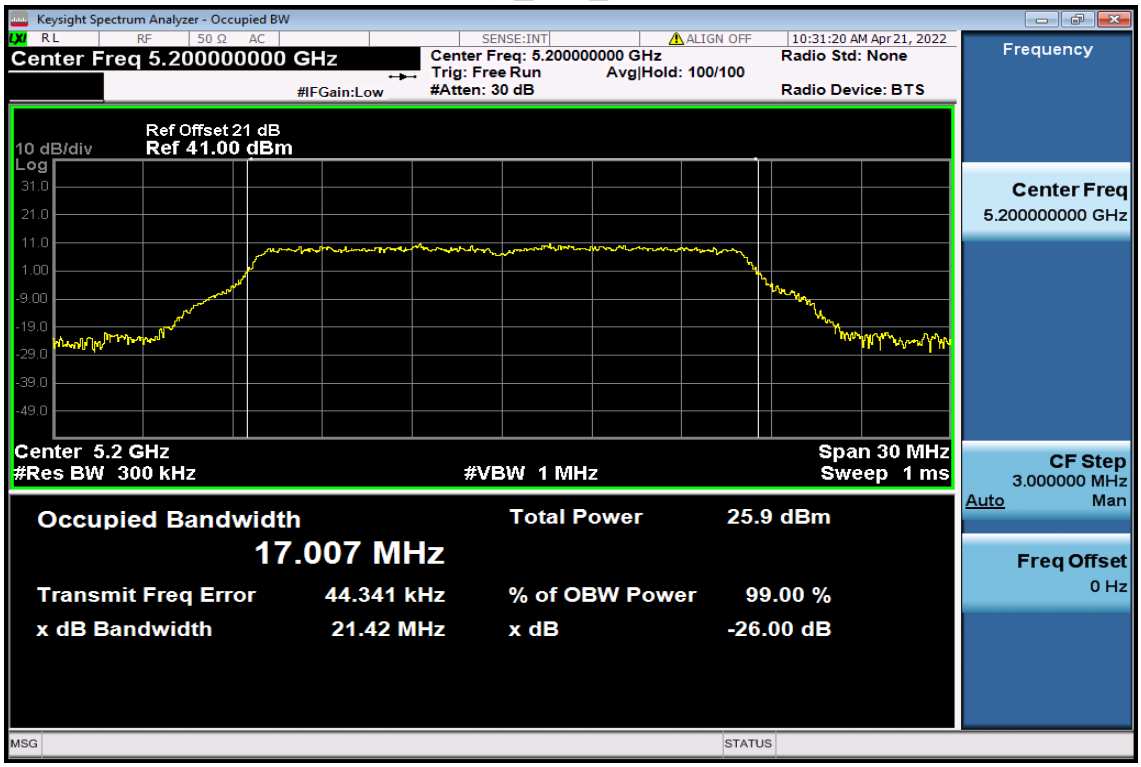
7.5. Measurement Result

Band	Mode	Frequency (MHz)	26dB Bandwidth (MHz)
UNII-1	11a	5180	21.61
		5200	21.42
		5240	21.50
	VHT20	5180	21.42
		5200	21.85
		5240	21.75
	VHT40	5190	39.81
		5230	40.01
	VHT80	5210	79.64
	HE20	5180	21.38
		5200	21.20
		5240	21.41
	HE40	5190	39.74
		5230	39.80
	HE80	5210	81.56

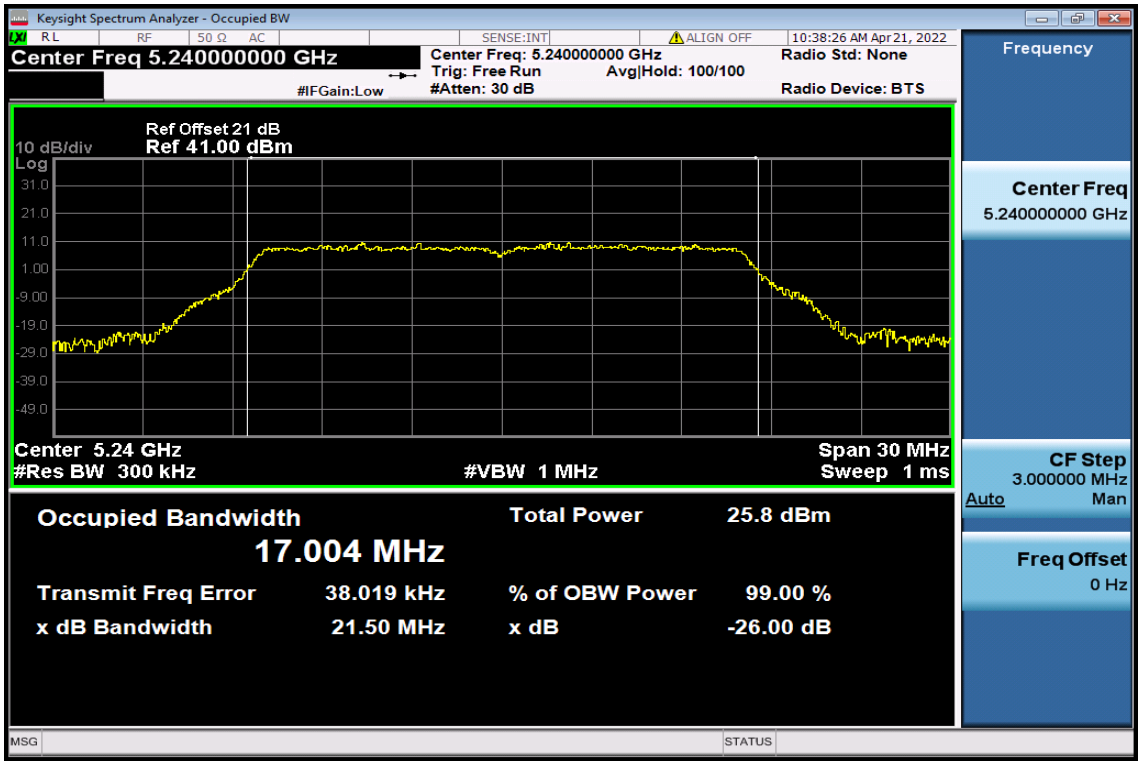
26dB Band Width Test Data (a_CH_Low)



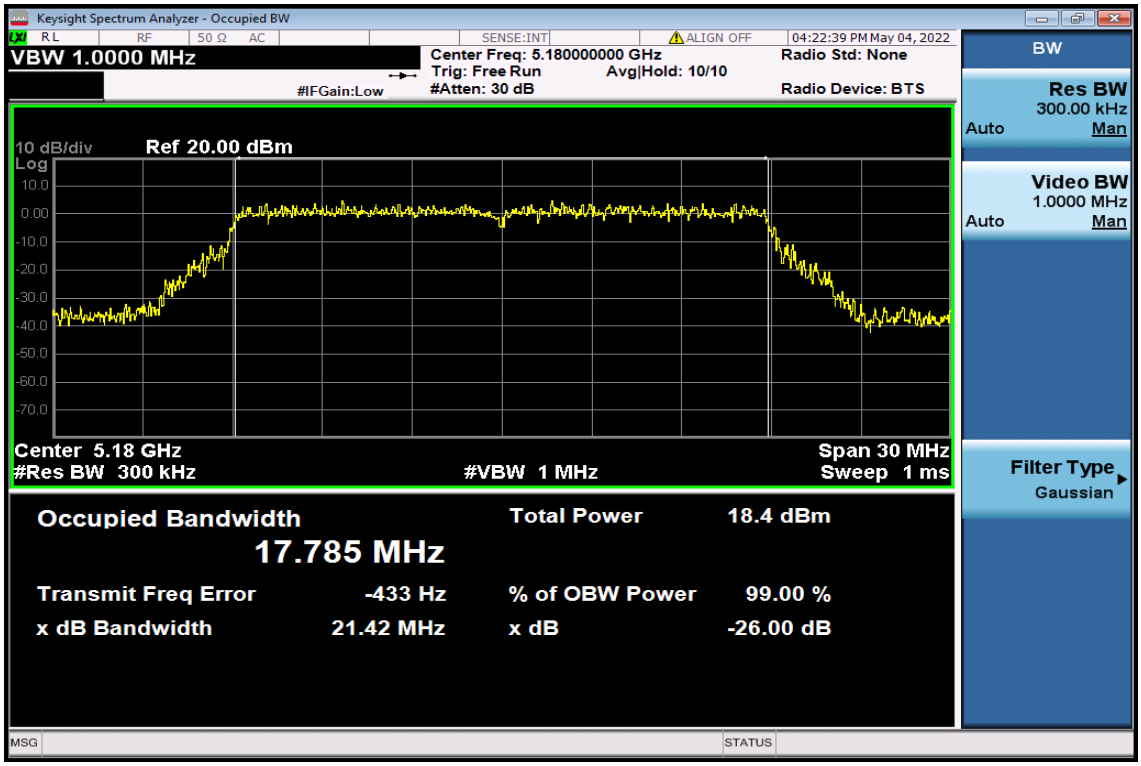
26dB Band Width Test Data (a_CH_Mid)



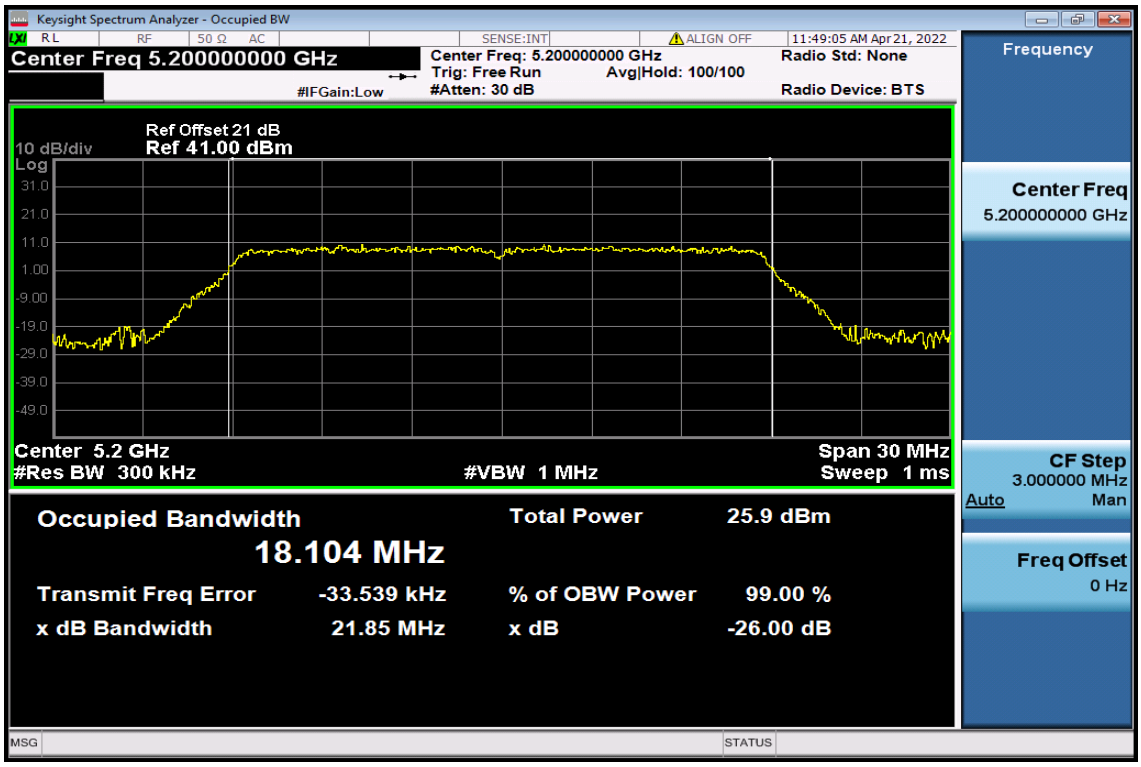
26dB Band Width Test Data (a_CH_High)



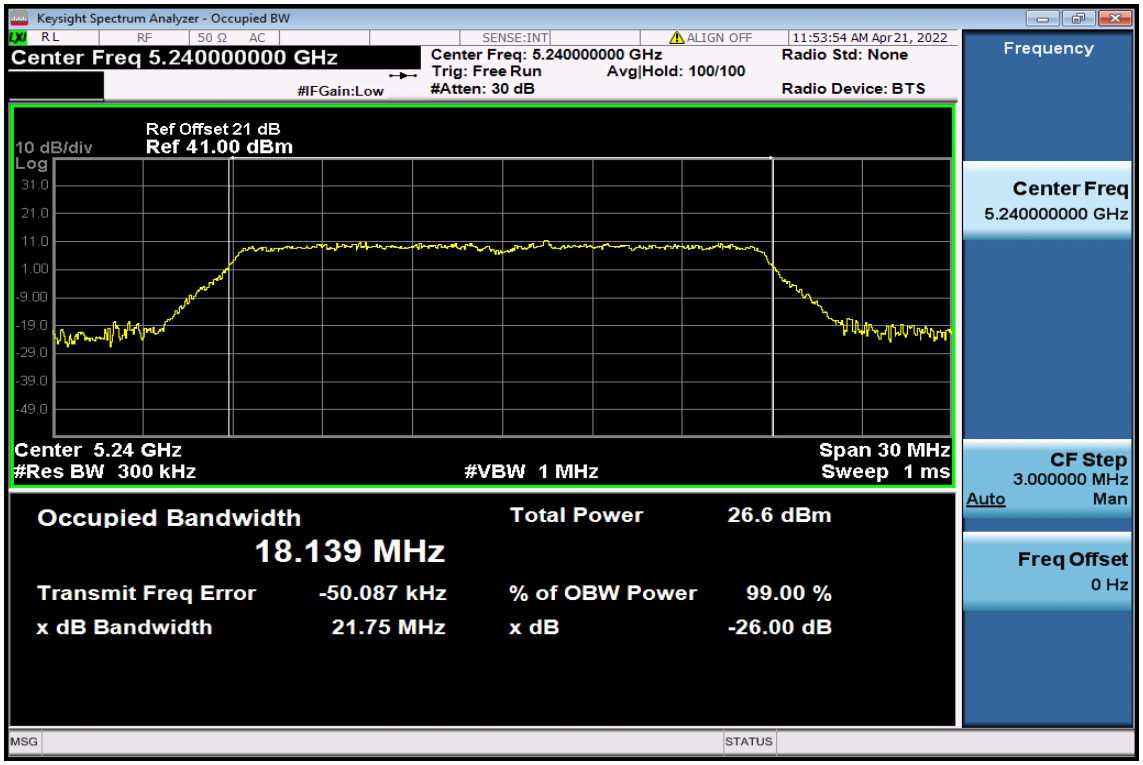
26dB Band Width Test Data (VHT20_CH_Low)



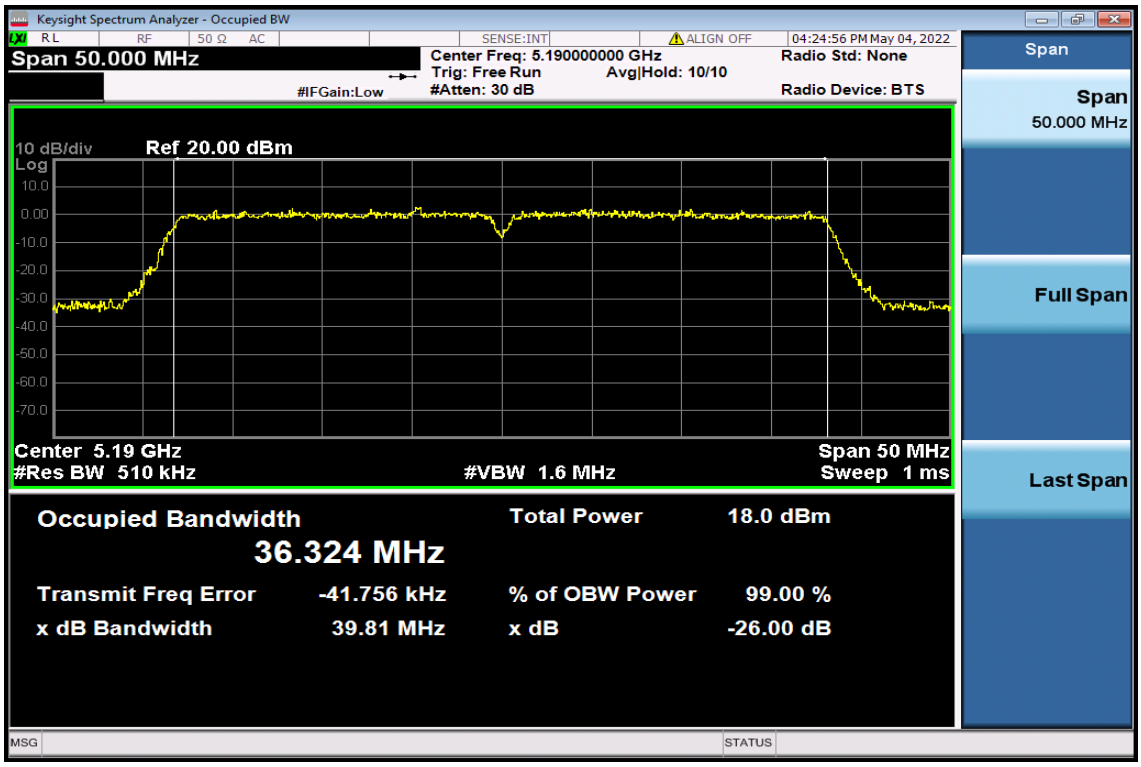
26dB Band Width Test Data (VHT20_CH_Mid)



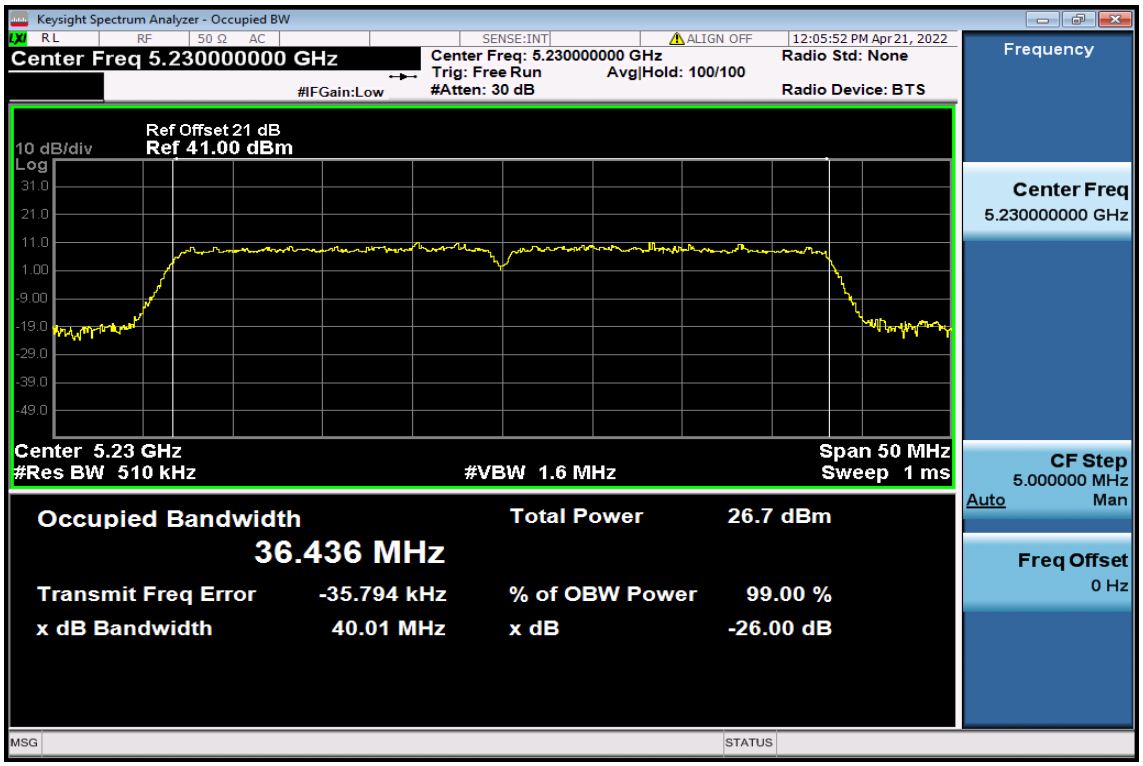
26dB Band Width Test Data (VHT20_CH_High)



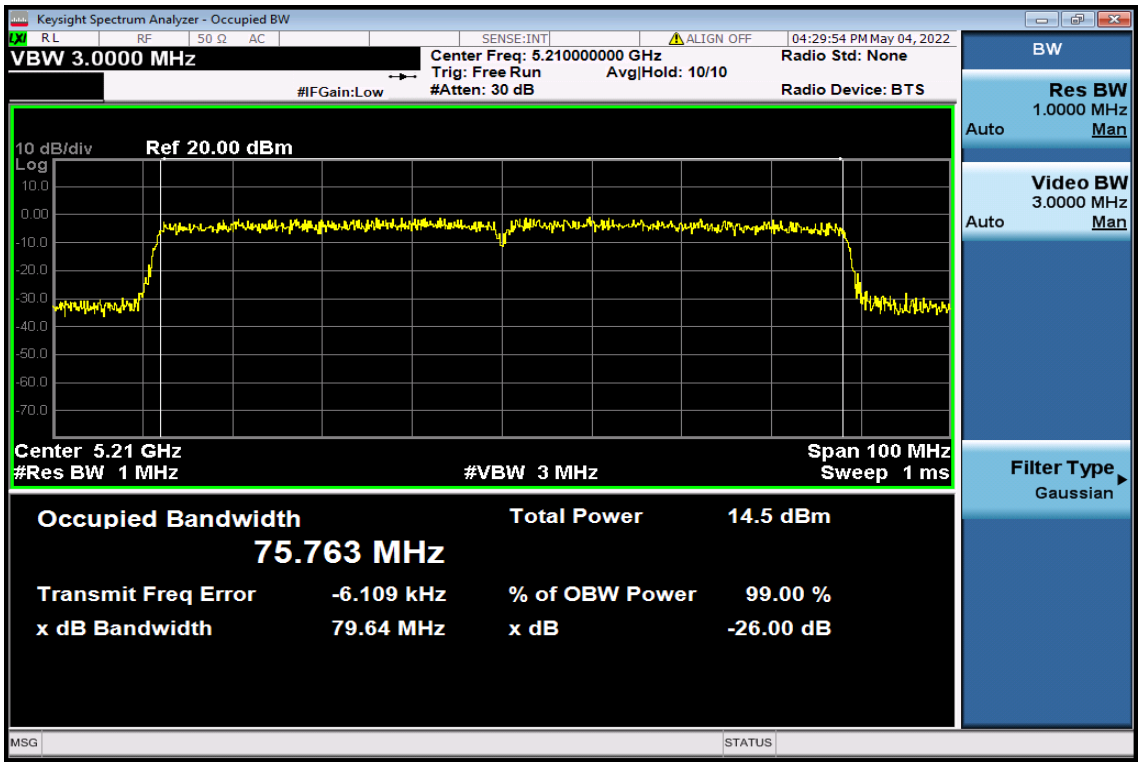
26dB Band Width Test Data (VHT40_CH_Low)



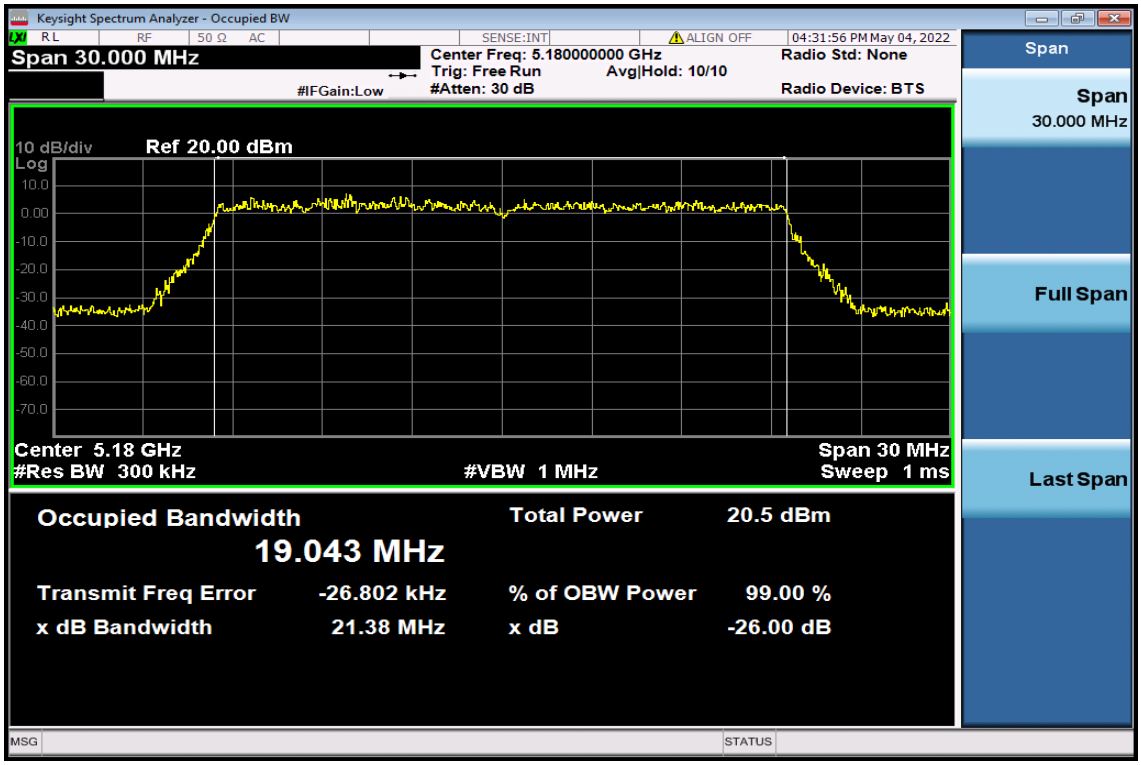
26dB Band Width Test Data (VHT40_CH_High)



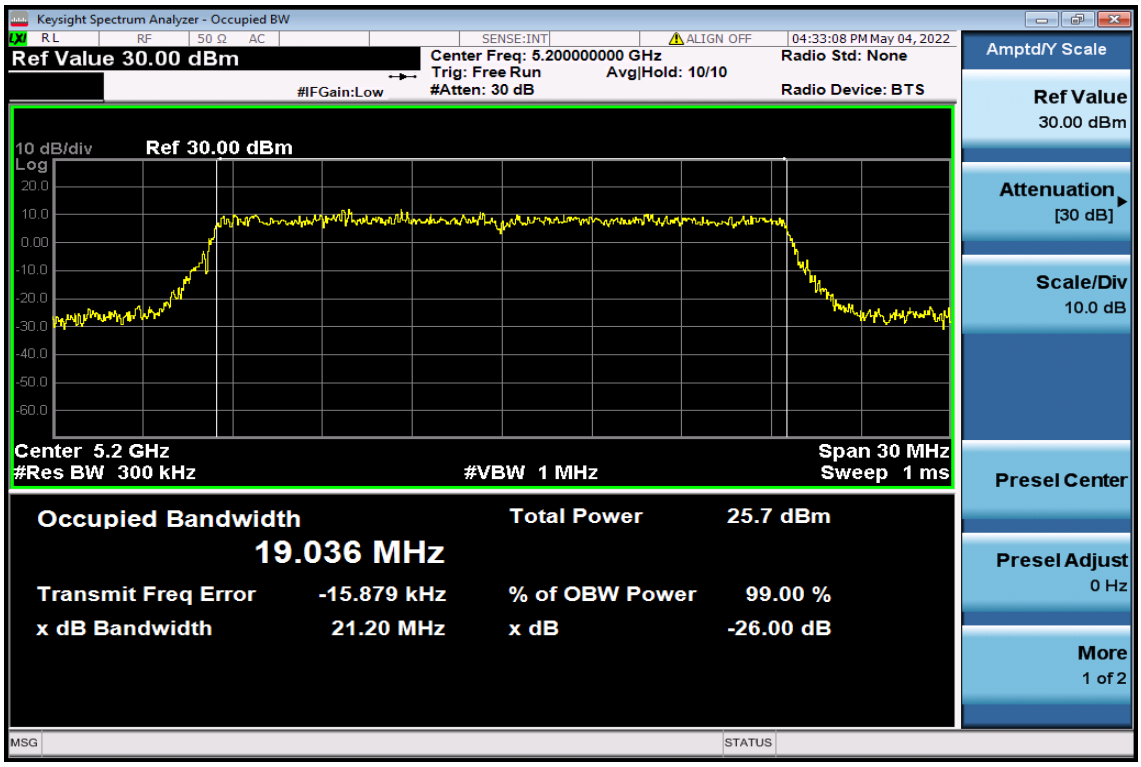
26dB Band Width Test Data (VHT80_CH_Low)



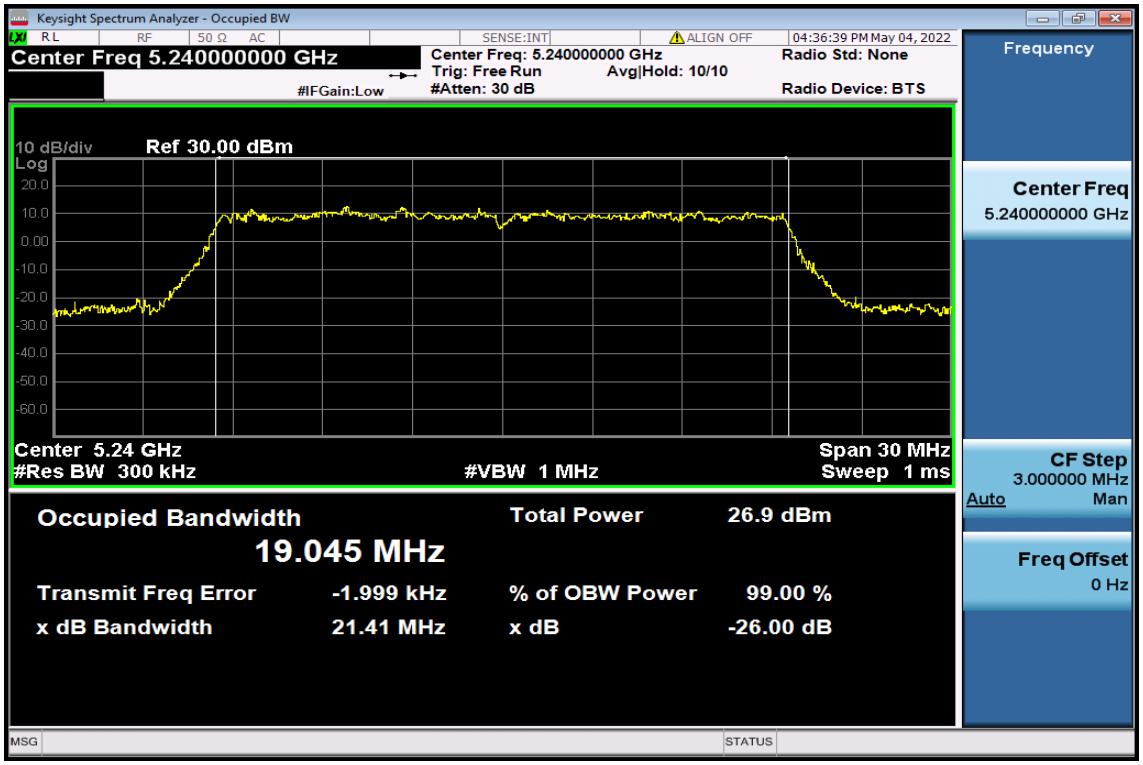
26dB Band Width Test Data (HE20_CH_Low)



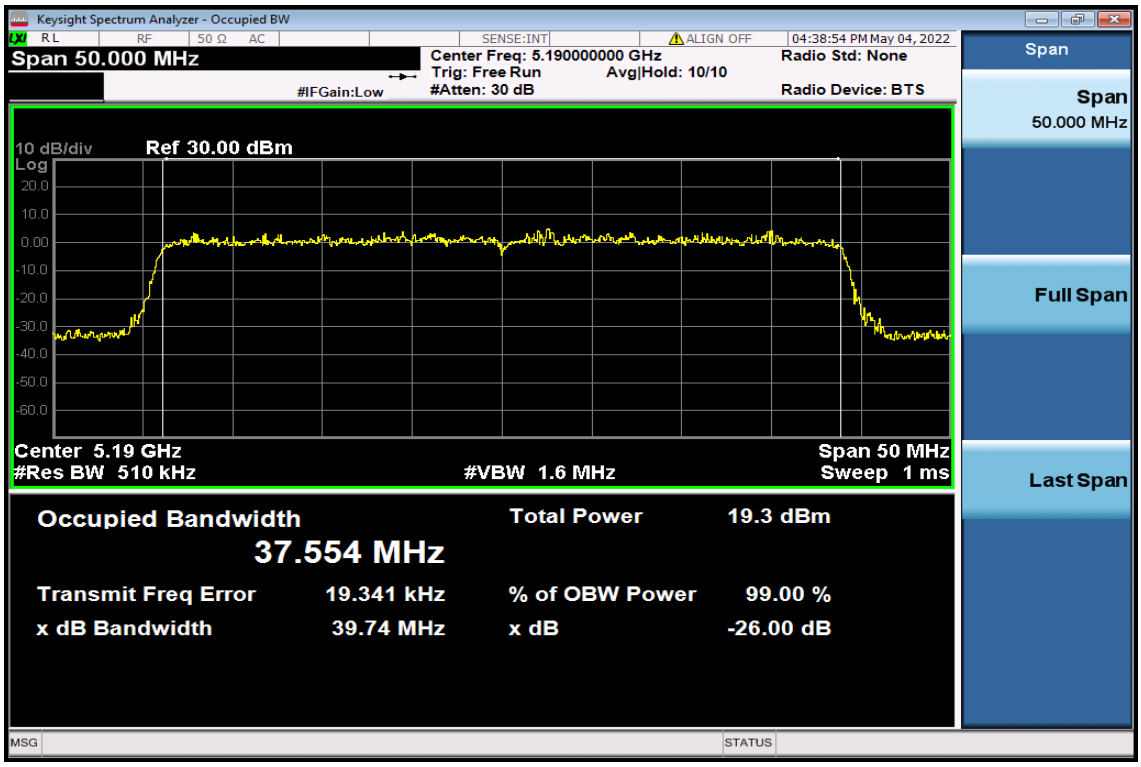
26dB Band Width Test Data (HE20_CH_Mid)



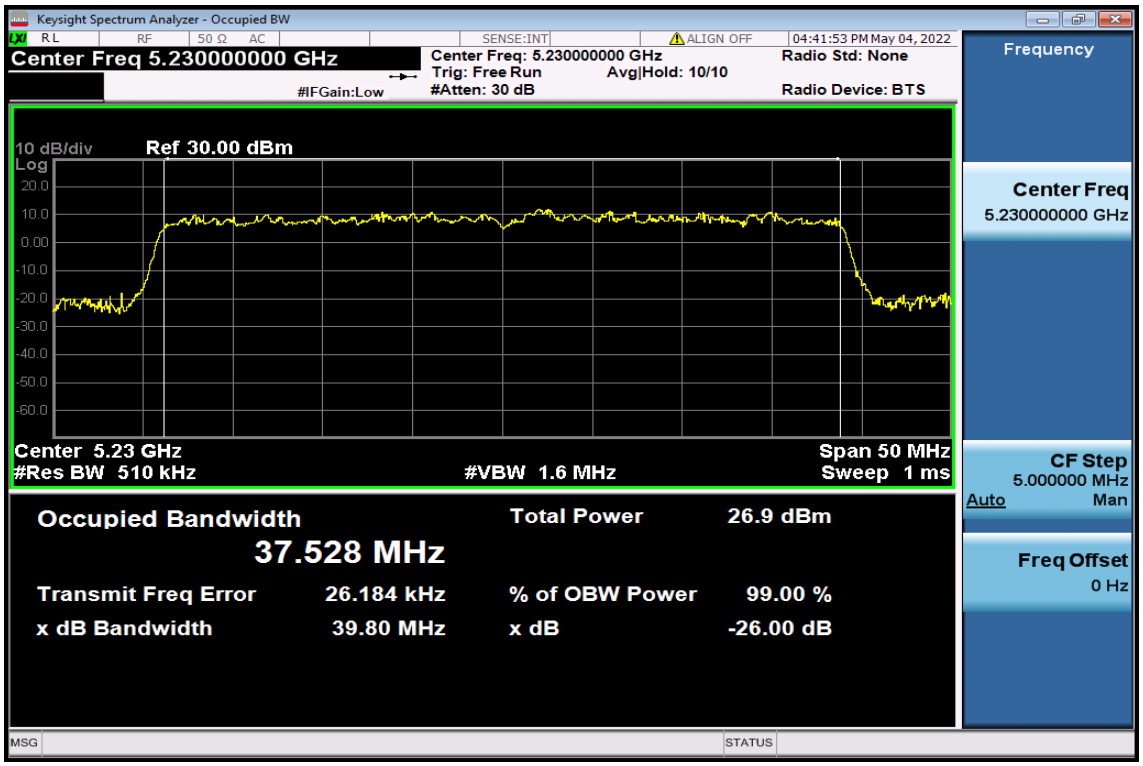
26dB Band Width Test Data (HE20_CH_High)



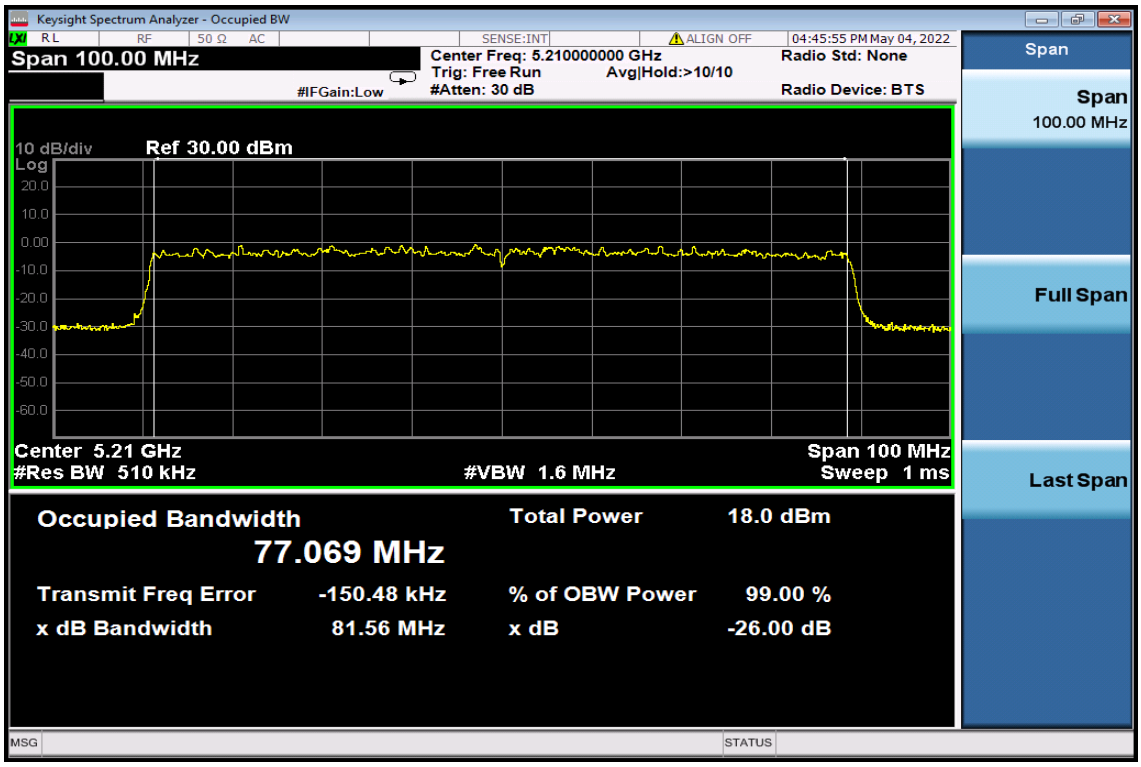
26dB Band Width Test Data (HE40_CH_Low)



26dB Band Width Test Data (HE40_CH_High)



26dB Band Width Test Data (HE80_CH_Low)



8. Undesirable emission – Radiated Measurement

8.1. Standard Applicable

According to §15.407(b), Undesirable Emission Limits: Except as shown in Paragraph (b)(7) of this section, the peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) The above emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(3) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.

(4) The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

(5) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

§15.205- RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	([2])
13.36 - 13.41	322 - 335.4		

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209- RADIATED EMISSION LIMITS: GENERAL REQUIREMENTS

FCC PART 15.209

MEASURING DISTANCE OF 3 METER		
FREQUENCY RANGE (MHz)	FIELD STRENGTH (Microvolts/m)	FIELD STRENGTH (dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

8.2. EUT Setup

1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.10: 2013
2. The EUT was put in the front of the test table. The host PC system was placed on the center of the back edge on the test table. The peripherals like modem, monitor printer, K/B, and mouse were placed on the side of the host PC system. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The keyboard was placed directly in the front of the monitor, flushed with the front tabletop. The mouse was placed next to the Keyboard, flushed with the back of keyboard.
4. The spacing between the peripherals was 10 centimeters.
5. External I/O cables were draped along the edge of the test table and bundle when necessary.
6. The host PC system was connected with 120Vac/60Hz power source.

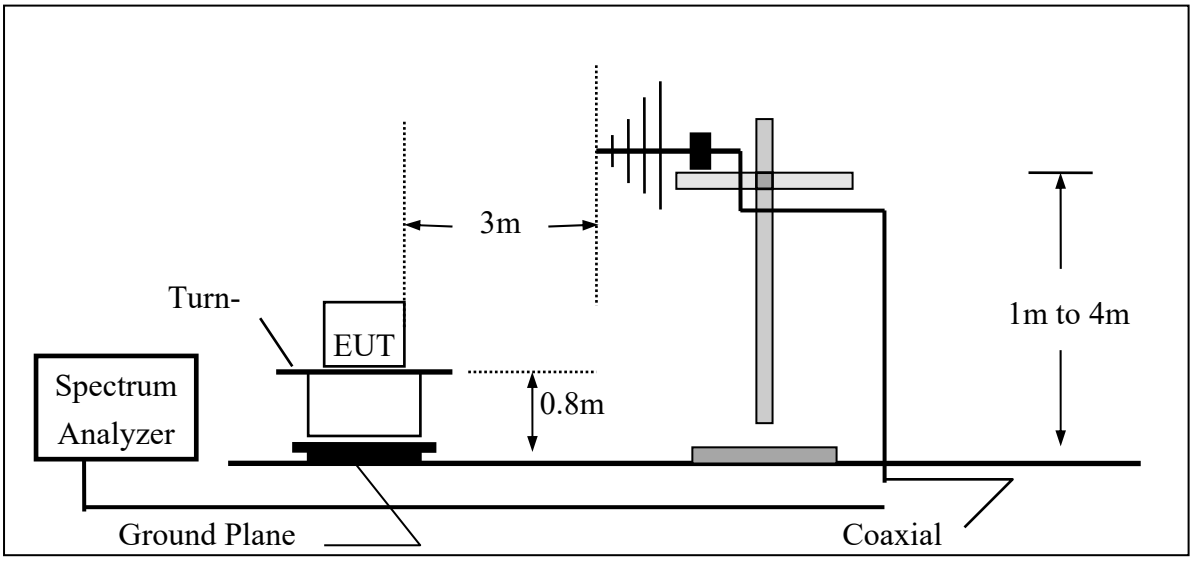
8.3. Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m/1.5m above ground plane.
2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until all frequency measured were complete.

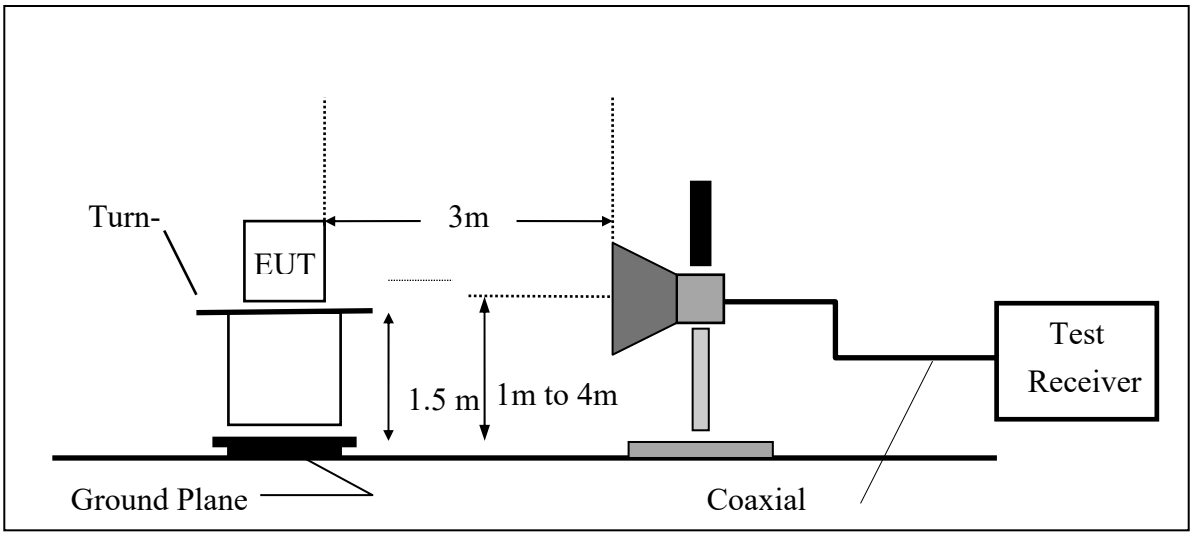
Refer to section F of KDB Document: KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

8.4. Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up Frequency Over 1 GHz



8.5. Measurement Equipment Used:

Location Conducted	Equipment Name	Brand	Model	S/N	Last Cal. Date	Next Cal. Date
Chamber 19	Signal analyzer	R&S	FSV40	101919	8/18/2021	8/18/2022
Chamber 19	EMI Receiver	R&S	ESR3	102461	05/05/2021	05/05/2022
Chamber 19	Loop Antenna	EM	EM-6879	271	09/29/2021	09/29/2022
Chamber 19	Bilog Antenna (30MHz-1GHz)	Schwarzbeck	VULB9168 w 6dB Att.	9168-736	03/09/2022	03/09/2023
Chamber 19	Horn antenna (1GHz-18GHz)	ETS	3117	00218718	10/12/2021	10/12/2022
Chamber 19	Horn antenna (18GHz-26GHz)	Com-power	AH-826	081001	11/30/2021	11/30/2022
Chamber 19	Horn antenna (26GHz-40GHz)	Com-power	AH-640	100A	03/18/2022	03/18/2023
Chamber 19	Preamplifier (9kHz-1GHz)	HP	8447F	3113A04621	06/22/2021	06/22/2022
Chamber 19	Preamplifier (1GHz - 26GHz)	EM	EM01M26G	060681	05/07/2021	05/07/2022
Chamber 19	Preamplifier (26GHz-40GHz)	MITEQ	JS4-26004000-27-5A	818471	05/07/2021	05/07/2022
Chamber 19	RF Cable (100kHz-26.5GHz)	Huber Suhner	Sucoflex 104A	MY1394/4A & 50886/4A	08/30/2021	08/30/2022
Chamber 19	RF Cable (18GHz-40GHz)	HUBER SU-HNER	Sucoflex 102	27963/2&37421/2	11/17/2021	11/17/2022
Chamber 19	Signal Generator	Anritsu	MG3692A	20311	12/28/2021	12/28/2022
Chamber 19	Test Software	Audix	E3 Ver:6.12023	N/A	N/A	N/A

8.6. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

8.7. Measurement Result

Refer to attach tabular data sheets.

NOTE:

The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 100kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz. And RBW 1MHz for frequency above 1GHz.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	110.51	42.12	-8.92	33.20	43.50	-10.30	Peak	VERTICAL
2	311.30	35.79	-3.87	31.92	46.00	-14.08	Peak	VERTICAL
3	350.10	38.32	-3.52	34.80	46.00	-11.20	Peak	VERTICAL
4	399.57	41.78	-2.66	39.12	46.00	-6.88	Peak	VERTICAL
5	450.01	40.80	-1.08	39.72	46.00	-6.28	Peak	VERTICAL
6	750.71	35.05	4.45	39.50	46.00	-6.50	Peak	VERTICAL
1	299.66	41.10	-4.17	36.93	46.00	-9.07	Peak	HORIZONTAL
2	350.10	40.79	-3.52	37.27	46.00	-8.73	Peak	HORIZONTAL
3	450.01	40.56	-1.08	39.48	46.00	-6.52	Peak	HORIZONTAL
4	500.45	34.61	-0.69	33.92	46.00	-12.08	Peak	HORIZONTAL
5	649.83	33.32	2.26	35.58	46.00	-10.42	Peak	HORIZONTAL
6	833.16	32.43	5.27	37.70	46.00	-8.30	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	350.10	38.57	-3.52	35.05	46.00	-10.95	Peak	VERTICAL
2	399.57	41.37	-2.66	38.71	46.00	-7.29	Peak	VERTICAL
3	450.01	40.53	-1.08	39.45	46.00	-6.55	Peak	VERTICAL
4	649.83	33.41	2.26	35.67	46.00	-10.33	Peak	VERTICAL
5	750.71	35.20	4.45	39.65	46.00	-6.35	Peak	VERTICAL
6	833.16	33.42	5.27	38.69	46.00	-7.31	Peak	VERTICAL
1	250.19	41.69	-6.08	35.61	46.00	-10.39	Peak	HORIZONTAL
2	350.10	40.55	-3.52	37.03	46.00	-8.97	Peak	HORIZONTAL
3	450.01	40.85	-1.08	39.77	46.00	-6.23	Peak	HORIZONTAL
4	649.83	32.96	2.26	35.22	46.00	-10.78	Peak	HORIZONTAL
5	833.16	33.14	5.27	38.41	46.00	-7.59	Peak	HORIZONTAL
6	940.83	31.97	7.06	39.03	46.00	-6.97	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	54.25	38.87	-5.75	33.12	40.00	-6.88	Peak	VERTICAL
2	399.57	41.36	-2.66	38.70	46.00	-7.30	Peak	VERTICAL
3	450.01	41.15	-1.08	40.07	46.00	-5.93	Peak	VERTICAL
4	649.83	33.90	2.26	36.16	46.00	-9.84	Peak	VERTICAL
5	750.71	34.78	4.45	39.23	46.00	-6.77	Peak	VERTICAL
6	833.16	34.24	5.27	39.51	46.00	-6.49	Peak	VERTICAL
1	226.91	42.02	-8.09	33.93	46.00	-12.07	Peak	HORIZONTAL
2	299.66	39.83	-4.17	35.66	46.00	-10.34	Peak	HORIZONTAL
3	350.10	40.75	-3.52	37.23	46.00	-8.77	Peak	HORIZONTAL
4	450.01	41.19	-1.08	40.11	46.00	-5.89	Peak	HORIZONTAL
5	649.83	33.77	2.26	36.03	46.00	-9.97	Peak	HORIZONTAL
6	833.16	33.73	5.27	39.00	46.00	-7.00	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	54.25	38.91	-5.75	33.16	40.00	-6.84	Peak	VERTICAL
2	306.45	38.77	-4.04	34.73	46.00	-11.27	Peak	VERTICAL
3	350.10	38.77	-3.52	35.25	46.00	-10.75	Peak	VERTICAL
4	399.57	41.62	-2.66	38.96	46.00	-7.04	Peak	VERTICAL
5	450.01	40.82	-1.08	39.74	46.00	-6.26	Peak	VERTICAL
6	750.71	35.69	4.45	40.14	46.00	-5.86	Peak	VERTICAL
1	228.85	41.11	-7.95	33.16	46.00	-12.84	Peak	HORIZONTAL
2	299.66	40.50	-4.17	36.33	46.00	-9.67	Peak	HORIZONTAL
3	350.10	40.91	-3.52	37.39	46.00	-8.61	Peak	HORIZONTAL
4	450.01	41.02	-1.08	39.94	46.00	-6.06	Peak	HORIZONTAL
5	649.83	32.87	2.26	35.13	46.00	-10.87	Peak	HORIZONTAL
6	842.86	31.74	5.39	37.13	46.00	-8.87	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	54.25	39.48	-5.75	33.73	40.00	-6.27	Peak	VERTICAL
2	350.10	38.16	-3.52	34.64	46.00	-11.36	Peak	VERTICAL
3	399.57	41.27	-2.66	38.61	46.00	-7.39	Peak	VERTICAL
4	450.01	40.69	-1.08	39.61	46.00	-6.39	Peak	VERTICAL
5	750.71	35.14	4.45	39.59	46.00	-6.41	Peak	VERTICAL
6	850.62	32.78	5.42	38.20	46.00	-7.80	Peak	VERTICAL
1	250.19	40.42	-6.08	34.34	46.00	-11.66	Peak	HORIZONTAL
2	299.66	40.22	-4.17	36.05	46.00	-9.95	Peak	HORIZONTAL
3	350.10	41.15	-3.52	37.63	46.00	-8.37	Peak	HORIZONTAL
4	450.01	40.76	-1.08	39.68	46.00	-6.32	Peak	HORIZONTAL
5	649.83	33.19	2.26	35.45	46.00	-10.55	Peak	HORIZONTAL
6	883.60	31.75	5.75	37.50	46.00	-8.50	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	54.25	38.86	-5.75	33.11	40.00	-6.89	Peak	VERTICAL
2	350.10	38.11	-3.52	34.59	46.00	-11.41	Peak	VERTICAL
3	399.57	42.06	-2.66	39.40	46.00	-6.60	Peak	VERTICAL
4	450.01	40.15	-1.08	39.07	46.00	-6.93	Peak	VERTICAL
5	649.83	34.43	2.26	36.69	46.00	-9.31	Peak	VERTICAL
6	750.71	35.78	4.45	40.23	46.00	-5.77	Peak	VERTICAL
1	229.82	41.83	-7.89	33.94	46.00	-12.06	Peak	HORIZONTAL
2	299.66	40.32	-4.17	36.15	46.00	-9.85	Peak	HORIZONTAL
3	350.10	40.52	-3.52	37.00	46.00	-9.00	Peak	HORIZONTAL
4	450.01	41.17	-1.08	40.09	46.00	-5.91	Peak	HORIZONTAL
5	649.83	33.85	2.26	36.11	46.00	-9.89	Peak	HORIZONTAL
6	901.06	31.41	6.28	37.69	46.00	-8.31	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	54.25	38.90	-5.75	33.15	40.00	-6.85	Peak	VERTICAL
2	111.48	41.99	-8.86	33.13	43.50	-10.37	Peak	VERTICAL
3	350.10	38.29	-3.52	34.77	46.00	-11.23	Peak	VERTICAL
4	399.57	41.88	-2.66	39.22	46.00	-6.78	Peak	VERTICAL
5	450.01	40.10	-1.08	39.02	46.00	-6.98	Peak	VERTICAL
6	750.71	36.25	4.45	40.70	46.00	-5.30	Peak	VERTICAL
1	230.79	41.29	-7.74	33.55	46.00	-12.45	Peak	HORIZONTAL
2	299.66	39.57	-4.17	35.40	46.00	-10.60	Peak	HORIZONTAL
3	350.10	40.93	-3.52	37.41	46.00	-8.59	Peak	HORIZONTAL
4	450.01	40.56	-1.08	39.48	46.00	-6.52	Peak	HORIZONTAL
5	649.83	33.53	2.26	35.79	46.00	-10.21	Peak	HORIZONTAL
6	859.35	31.85	5.56	37.41	46.00	-8.59	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	54.25	38.83	-5.75	33.08	40.00	-6.92	Peak	VERTICAL
2	350.10	38.30	-3.52	34.78	46.00	-11.22	Peak	VERTICAL
3	399.57	41.67	-2.66	39.01	46.00	-6.99	Peak	VERTICAL
4	450.01	40.04	-1.08	38.96	46.00	-7.04	Peak	VERTICAL
5	649.83	33.80	2.26	36.06	46.00	-9.94	Peak	VERTICAL
6	750.71	35.40	4.45	39.85	46.00	-6.15	Peak	VERTICAL
1	250.19	39.98	-6.08	33.90	46.00	-12.10	Peak	HORIZONTAL
2	299.66	41.11	-4.17	36.94	46.00	-9.06	Peak	HORIZONTAL
3	350.10	40.95	-3.52	37.43	46.00	-8.57	Peak	HORIZONTAL
4	450.01	40.67	-1.08	39.59	46.00	-6.41	Peak	HORIZONTAL
5	820.55	30.96	5.07	36.03	46.00	-9.97	Peak	HORIZONTAL
6	917.55	31.42	6.55	37.97	46.00	-8.03	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	VHT80_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	55.22	38.59	-5.82	32.77	40.00	-7.23	Peak	VERTICAL
2	350.10	38.57	-3.52	35.05	46.00	-10.95	Peak	VERTICAL
3	399.57	42.16	-2.66	39.50	46.00	-6.50	Peak	VERTICAL
4	450.01	40.75	-1.08	39.67	46.00	-6.33	Peak	VERTICAL
5	649.83	33.94	2.26	36.20	46.00	-9.80	Peak	VERTICAL
6	750.71	36.69	4.45	41.14	46.00	-4.86	Peak	VERTICAL
1	227.88	41.39	-8.02	33.37	46.00	-12.63	Peak	HORIZONTAL
2	299.66	41.09	-4.17	36.92	46.00	-9.08	Peak	HORIZONTAL
3	350.10	40.85	-3.52	37.33	46.00	-8.67	Peak	HORIZONTAL
4	450.01	40.80	-1.08	39.72	46.00	-6.28	Peak	HORIZONTAL
5	649.83	34.20	2.26	36.46	46.00	-9.54	Peak	HORIZONTAL
6	859.35	31.94	5.56	37.50	46.00	-8.50	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	HE80_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Pol	Ver./Hor
Humidity	65 %		

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	54.25	38.49	-5.75	32.74	40.00	-7.26	Peak	VERTICAL
2	115.36	41.50	-8.55	32.95	43.50	-10.55	Peak	VERTICAL
3	275.41	39.36	-4.84	34.52	46.00	-11.48	Peak	VERTICAL
4	399.57	41.52	-2.66	38.86	46.00	-7.14	Peak	VERTICAL
5	450.01	41.07	-1.08	39.99	46.00	-6.01	Peak	VERTICAL
6	750.71	34.59	4.45	39.04	46.00	-6.96	Peak	VERTICAL
1	228.85	42.87	-7.95	34.92	46.00	-11.08	Peak	HORIZONTAL
2	299.66	39.80	-4.17	35.63	46.00	-10.37	Peak	HORIZONTAL
3	350.10	40.63	-3.52	37.11	46.00	-8.89	Peak	HORIZONTAL
4	450.01	40.81	-1.08	39.73	46.00	-6.27	Peak	HORIZONTAL
5	649.83	33.37	2.26	35.63	46.00	-10.37	Peak	HORIZONTAL
6	865.17	31.13	5.69	36.82	46.00	-9.18	Peak	HORIZONTAL

Remark:

1 emission is 20dB lower, so that emission as measured between 9kHz to 30MHz is not reported

2 Measuring frequencies from the lowest internal frequency to the 1GHz.

3 Radiated emissions measured in frequency range from 9MHz to 1000MHz were made with an instrument detector setting 9-90kHz/110-490kHz using PK/AV and other Frequency Band using PK/QP

4 Measurement result within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10360.00	44.80	3.13	47.93	68.20	-20.27	Peak	VERTICAL
2	15540.00	44.57	9.24	53.81	74.00	-20.19	Peak	VERTICAL
1	10360.00	45.15	3.13	48.28	68.20	-19.92	Peak	HORIZONTAL
2	15540.00	44.23	9.24	53.47	74.00	-20.53	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10400.00	43.43	3.25	46.68	68.20	-21.52	Peak	VERTICAL
2	15600.00	42.84	9.29	52.13	74.00	-21.87	Peak	VERTICAL
1	10400.00	43.13	3.25	46.38	68.20	-21.82	Peak	HORIZONTAL
2	15600.00	42.25	9.29	51.54	74.00	-22.46	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10480.00	45.26	3.42	48.68	68.20	-19.52	Peak	VERTICAL
2	15720.00	41.70	9.31	51.01	74.00	-22.99	Peak	VERTICAL
1	10480.00	44.18	3.42	47.60	68.20	-20.60	Peak	HORIZONTAL
2	15720.00	41.76	9.31	51.07	74.00	-22.93	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10360.00	44.88	3.13	48.01	68.20	-20.19	Peak	VERTICAL
2	15540.00	43.72	9.24	52.96	74.00	-21.04	Peak	VERTICAL
1	10360.00	44.29	3.13	47.42	68.20	-20.78	Peak	HORIZONTAL
2	15540.00	42.91	9.24	52.15	74.00	-21.85	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	CH Mid	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10400.00	44.85	3.25	48.10	68.20	-20.10	Peak	VERTICAL
2	15600.00	41.75	9.29	51.04	74.00	-22.96	Peak	VERTICAL
1	10400.00	44.74	3.25	47.99	68.20	-20.21	Peak	HORIZONTAL
2	15600.00	43.57	9.29	52.86	74.00	-21.14	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10480.00	44.84	3.42	48.26	68.20	-19.94	Peak	VERTICAL
2	15720.00	43.36	9.31	52.67	74.00	-21.33	Peak	VERTICAL
1	10480.00	44.53	3.42	47.95	68.20	-20.25	Peak	HORIZONTAL
2	15720.00	43.05	9.31	52.36	74.00	-21.64	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10380.00	44.20	3.19	47.39	68.20	-20.81	Peak	VERTICAL
2	15570.00	43.26	9.27	52.53	74.00	-21.47	Peak	VERTICAL
1	10380.00	41.73	3.19	44.92	68.20	-23.28	Peak	HORIZONTAL
2	15570.00	41.82	9.27	51.09	74.00	-22.91	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	CH High	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10460.00	43.99	3.38	47.37	68.20	-20.83	Peak	VERTICAL
2	15690.00	42.91	9.29	52.20	74.00	-21.80	Peak	VERTICAL
1	10460.00	44.28	3.38	47.66	68.20	-20.54	Peak	HORIZONTAL
2	15690.00	43.73	9.29	53.02	74.00	-20.98	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	VHT80_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10420.00	43.38	3.29	46.67	68.20	-21.53	Peak	VERTICAL
2	15630.00	41.82	9.30	51.12	74.00	-22.88	Peak	VERTICAL
1	10420.00	45.20	3.29	48.49	68.20	-19.71	Peak	HORIZONTAL
2	15630.00	42.09	9.30	51.39	74.00	-22.61	Peak	HORIZONTAL

Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	HE80_mode	Test Date	2022/05/05
Channel Number	CH Low	Test By	Barry
Temperature	25 ℃	Humidity	60 %

No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	10420.00	44.21	3.29	47.50	68.20	-20.70	Peak	VERTICAL
2	15630.00	41.17	9.30	50.47	74.00	-23.53	Peak	VERTICAL
1	10420.00	44.06	3.29	47.35	68.20	-20.85	Peak	HORIZONTAL
2	15630.00	43.33	9.30	52.63	74.00	-21.37	Peak	HORIZONTAL

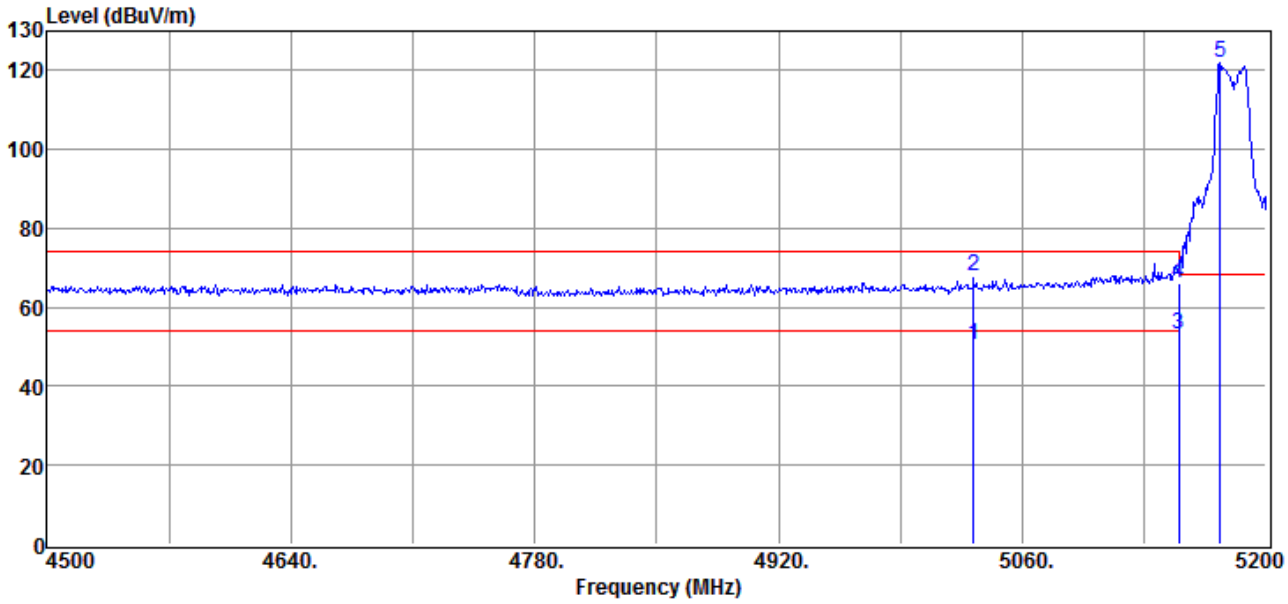
Remark:

1 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

2 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Band Edges test -Radiated

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	5180 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5032.00	8.00	42.57	50.57	54.00	-3.43	Average	VERTICAL
2	5032.00	25.40	42.57	67.97	74.00	-6.03	Peak	VERTICAL
3	5150.00	10.27	42.69	52.96	54.00	-1.04	Average	VERTICAL
4	5150.00	23.56	42.69	66.25	68.20	-1.95	Peak	VERTICAL
5	5173.40	78.95	42.85	121.80	F	--	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

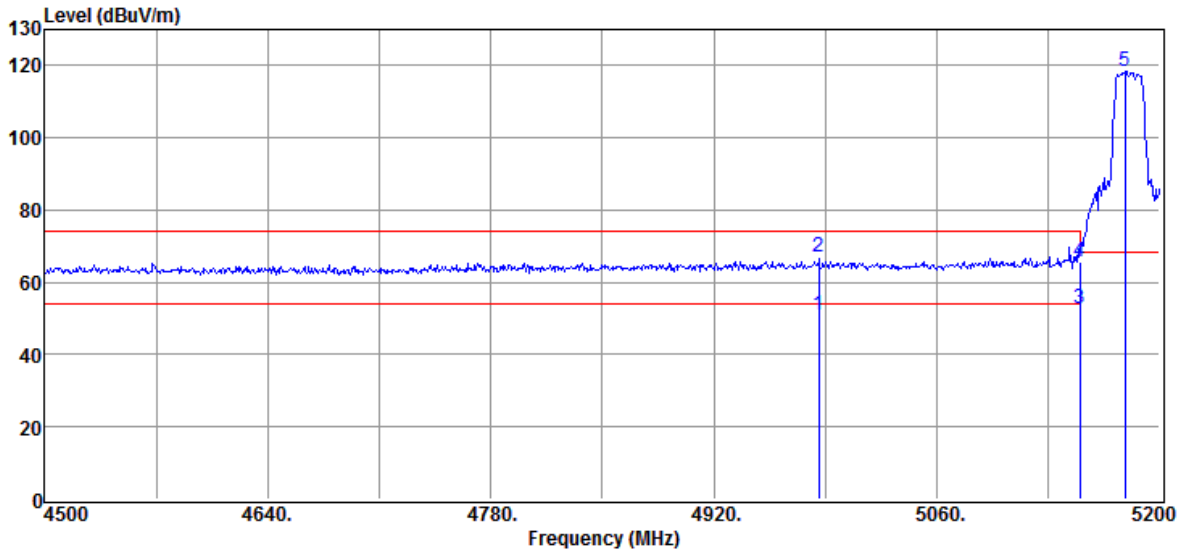
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	5180 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4985.80	8.23	42.63	50.86	54.00	-3.14	Average	HORIZONTAL
2	4985.80	24.39	42.63	67.02	74.00	-6.98	Peak	HORIZONTAL
3	5150.00	10.12	42.69	52.81	54.00	-1.19	Average	HORIZONTAL
4	5150.00	23.13	42.69	65.82	68.20	-2.38	Peak	HORIZONTAL
5	5178.30	75.62	42.88	118.50	F	--	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

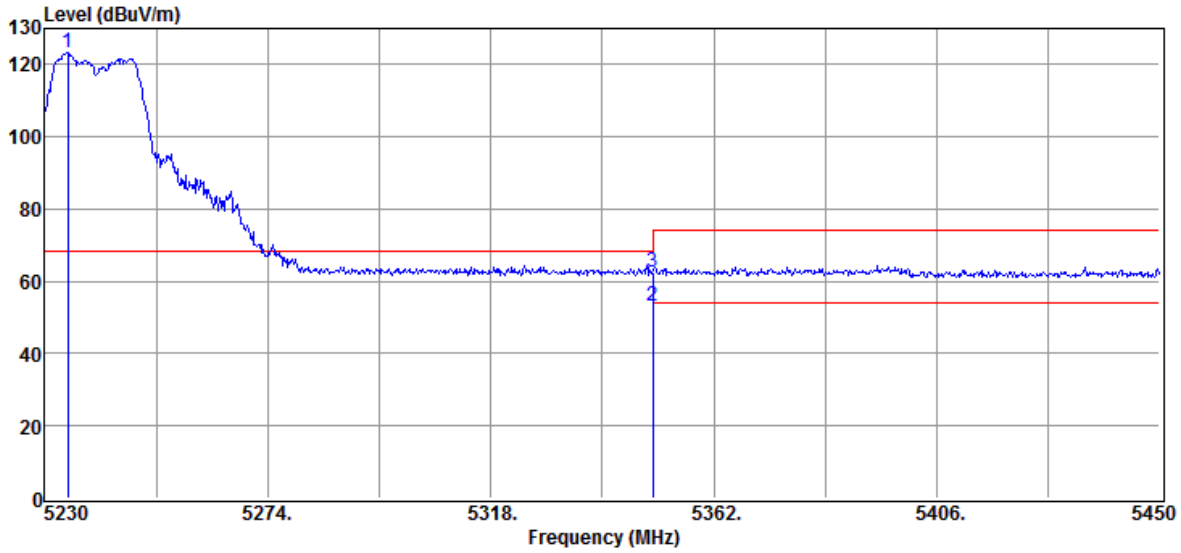
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	5240MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5234.62	80.10	43.06	123.16	F	--	Peak	VERTICAL
2	5350.00	10.12	43.05	53.17	54.00	-0.83	Average	VERTICAL
3	5350.00	19.41	43.05	62.46	68.20	-5.74	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

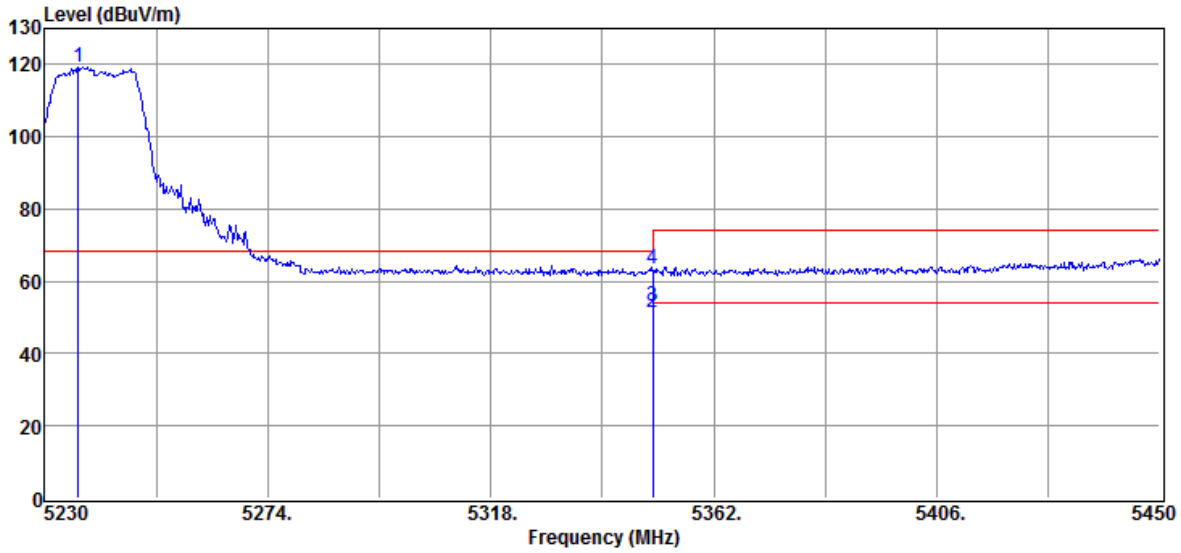
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	a_mode	Test Date	2022/05/05
Channel Number	5240MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5236.60	76.09	43.06	119.15	F	--	Peak	HORIZONTAL
2	5351.00	8.23	43.05	51.28	54.00	-2.72	Average	HORIZONTAL
3	5350.00	10.24	43.05	53.29	54.00	-0.71	Average	HORIZONTAL
4	5350.00	20.35	43.05	63.40	68.20	-4.80	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

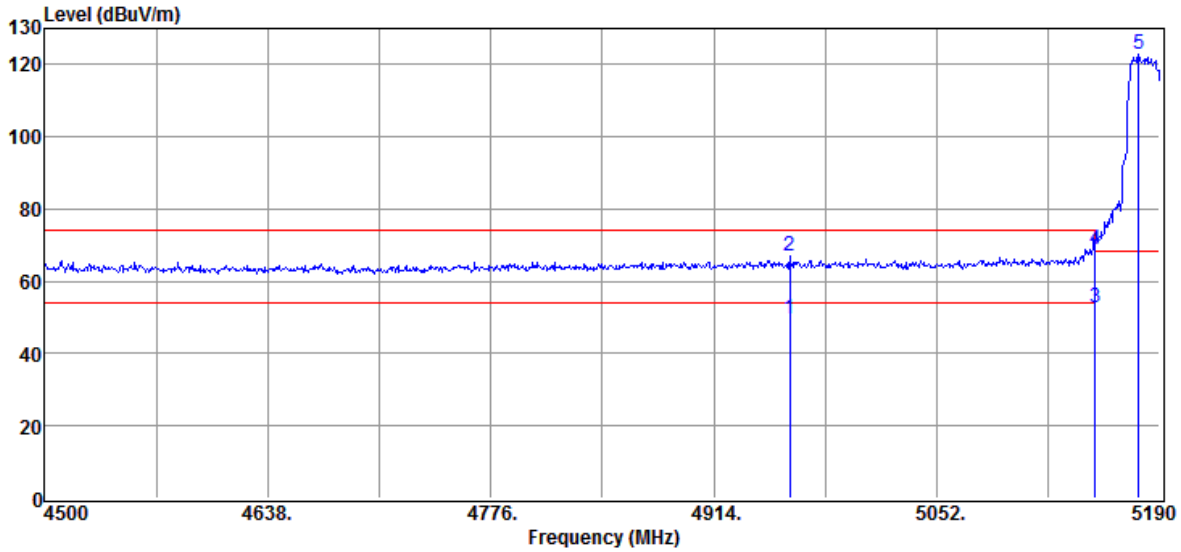
4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Band Edges test -Radiated

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	5180 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4960.92	7.24	42.56	49.80	54.00	-4.20	Average	VERTICAL
2	4960.92	24.50	42.56	67.06	74.00	-6.94	Peak	VERTICAL
3	5150.00	10.02	42.69	52.71	54.00	-1.29	Average	VERTICAL
4	5150.00	24.17	42.69	66.86	68.20	-1.34	Peak	VERTICAL
5	5176.89	79.86	42.87	122.73	F	--	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

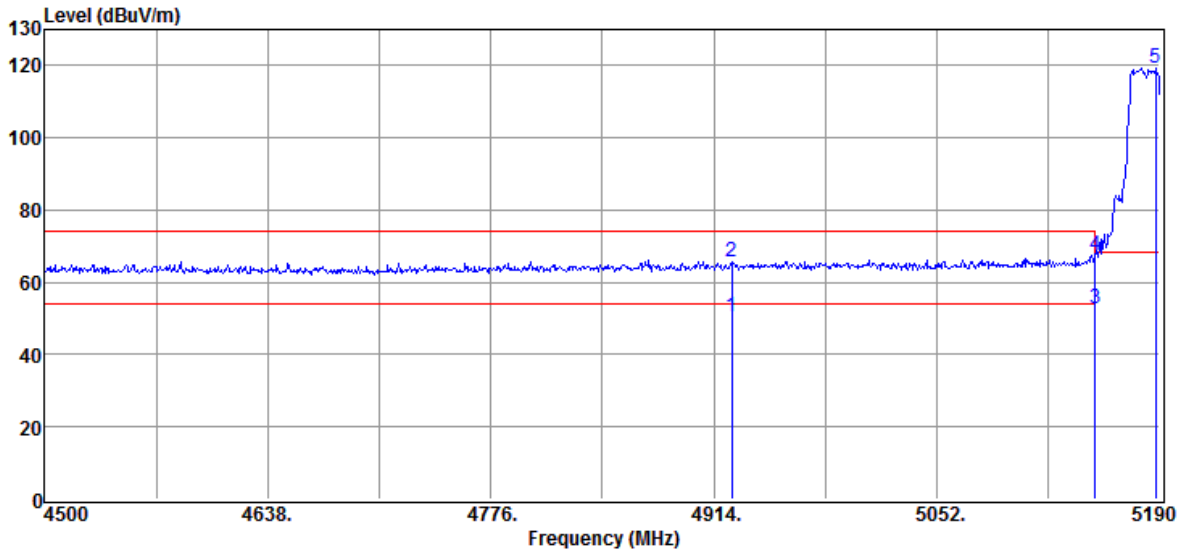
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	5180 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4925.04	7.92	42.46	50.38	54.00	-3.62	Average	HORIZONTAL
2	4925.04	23.08	42.46	65.54	74.00	-8.46	Peak	HORIZONTAL
3	5150.00	10.01	42.69	52.70	54.00	-1.30	Average	HORIZONTAL
4	5150.00	24.82	42.69	67.51	68.20	-0.69	Peak	HORIZONTAL
5	5187.24	76.39	42.94	119.33	F	--	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

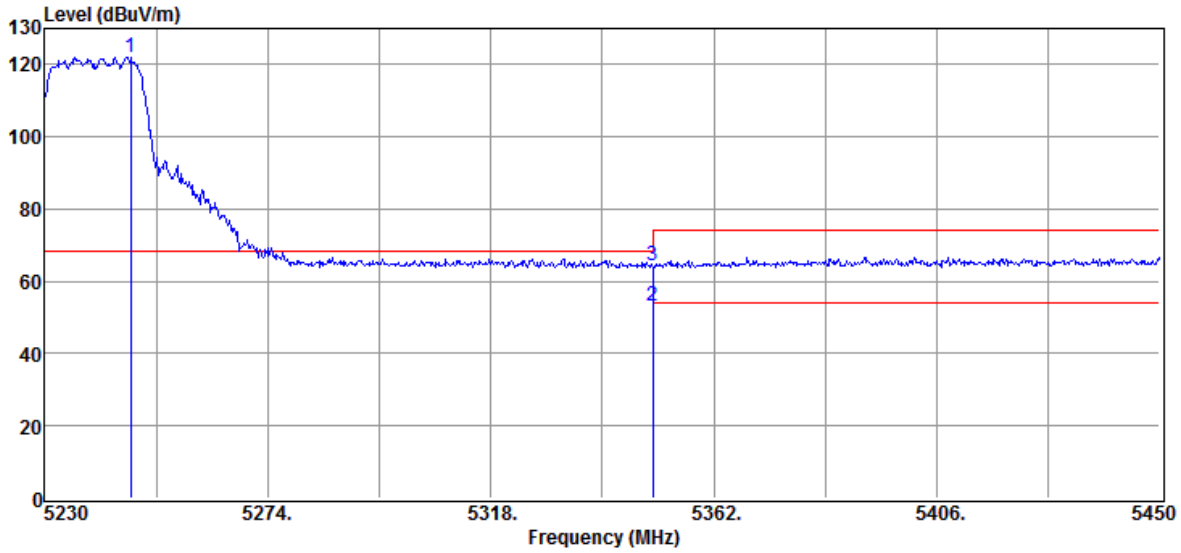
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	5240MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5246.94	78.98	43.07	122.05	F	--	Peak	VERTICAL
2	5350.00	9.98	43.05	53.03	54.00	-0.97	Average	VERTICAL
3	5350.00	21.42	43.05	64.47	68.20	-3.73	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

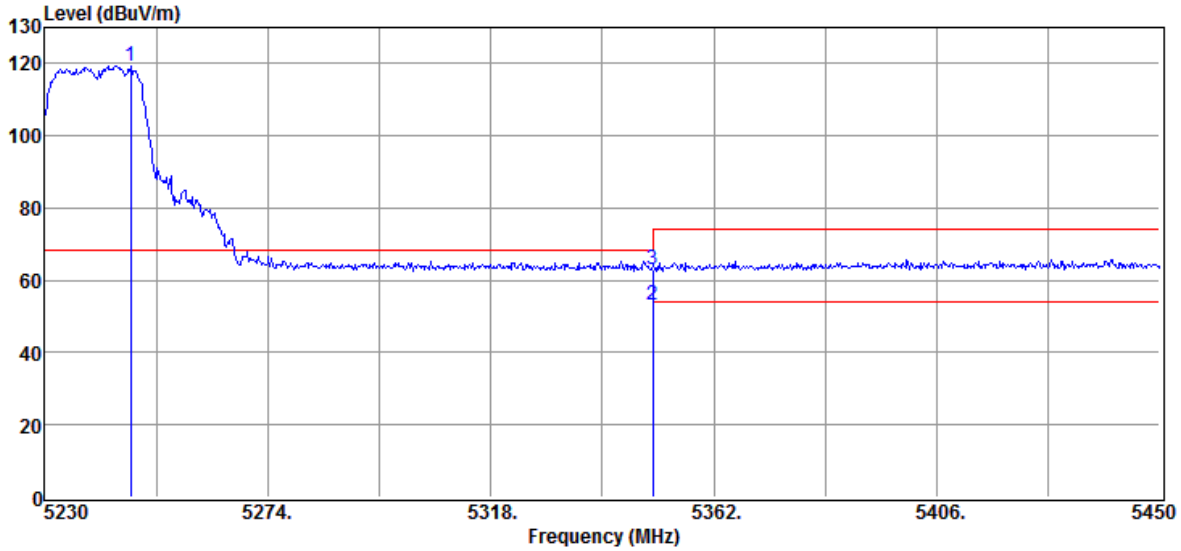
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT20_mode	Test Date	2022/05/05
Channel Number	5240MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5246.94	76.36	43.07	119.43	F	--	Peak	HORIZONTAL
2	5350.00	10.12	43.05	53.17	54.00	-0.83	Average	HORIZONTAL
3	5350.00	19.73	43.05	62.78	68.20	-5.42	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

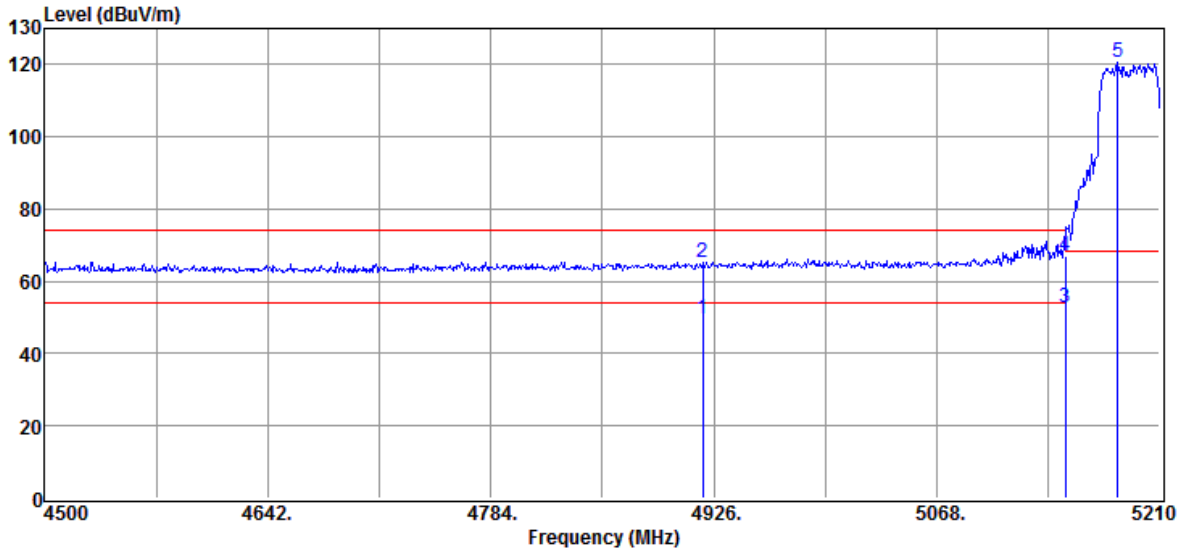
4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Band Edges test -Radiated

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	5190 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4918.90	7.23	42.45	49.68	54.00	-4.32	Average	VERTICAL
2	4918.90	22.93	42.45	65.38	74.00	-8.62	Peak	VERTICAL
3	5150.00	10.21	42.69	52.90	54.00	-1.10	Average	VERTICAL
4	5150.00	24.24	42.69	66.93	68.20	-1.27	Peak	VERTICAL
5	5183.02	77.73	42.92	120.65	F	--	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

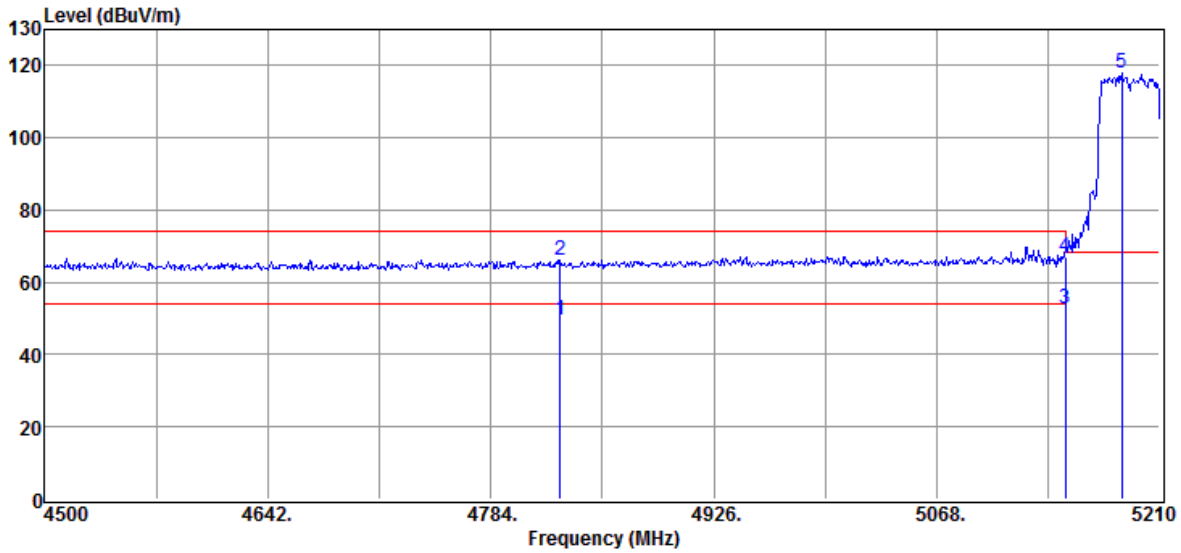
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	5190 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4828.02	7.24	42.33	49.57	54.00	-4.43	Average	HORIZONTAL
2	4828.02	23.93	42.33	66.26	74.00	-7.74	Peak	HORIZONTAL
3	5150.00	10.13	42.69	52.82	54.00	-1.18	Average	HORIZONTAL
4	5150.00	24.13	42.69	66.82	68.20	-1.38	Peak	HORIZONTAL
5	5185.86	74.97	42.94	117.91	F	--	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

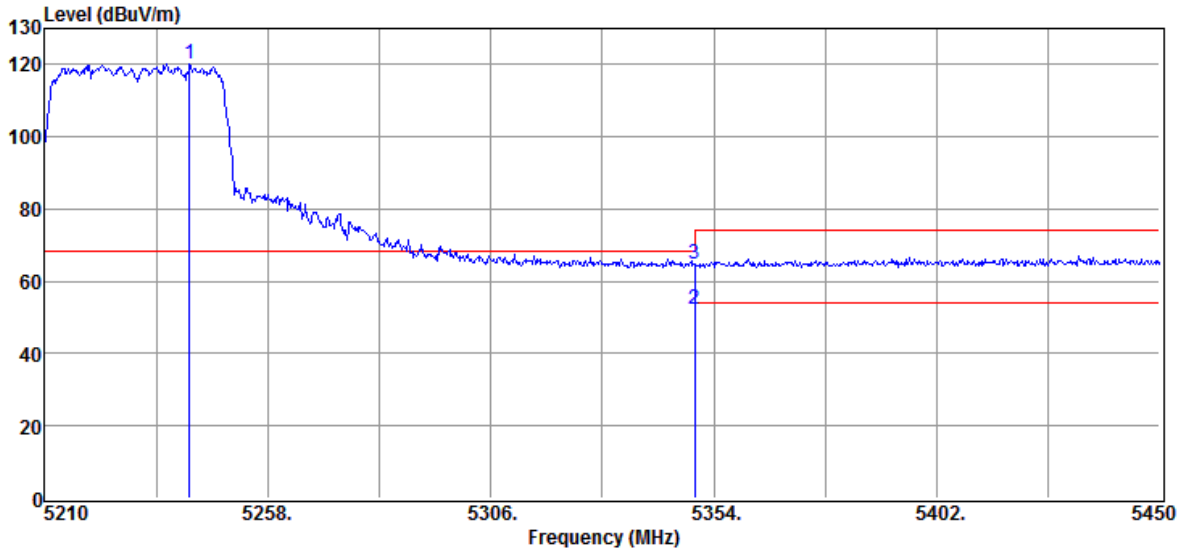
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	5230MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5241.20	77.15	43.06	120.21	F	--	Peak	VERTICAL
2	5350.00	9.02	43.05	52.07	54.00	-1.93	Average	VERTICAL
3	5350.00	21.62	43.05	64.67	68.20	-3.53	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

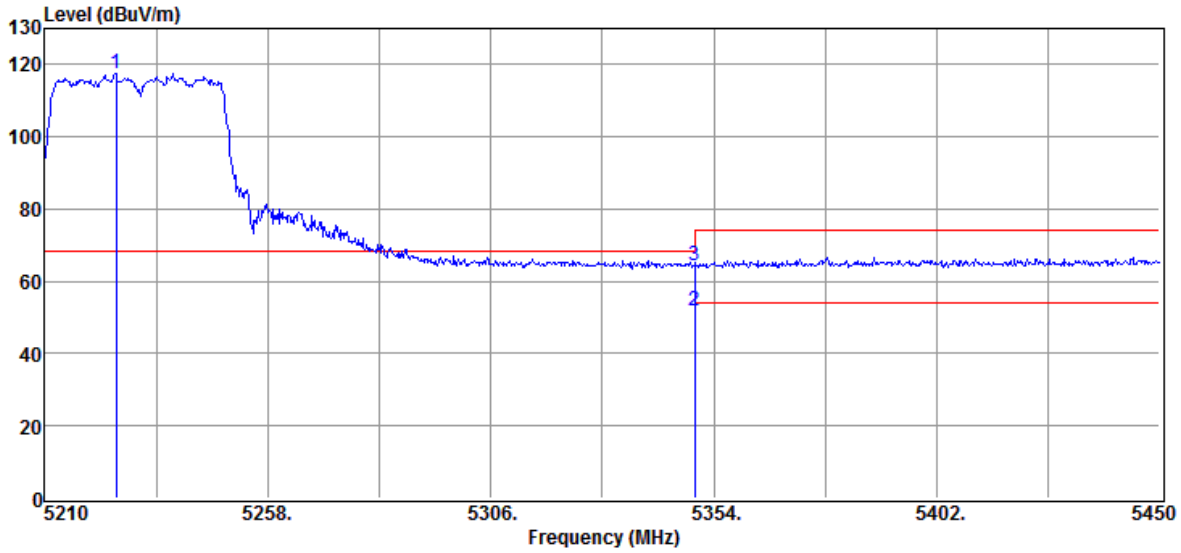
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT40_mode	Test Date	2022/05/05
Channel Number	5230MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5225.36	74.38	43.05	117.43	F	--	Peak	HORIZONTAL
2	5350.00	8.92	43.05	51.97	54.00	-2.03	Average	HORIZONTAL
3	5350.00	21.16	43.05	64.21	68.20	-3.99	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

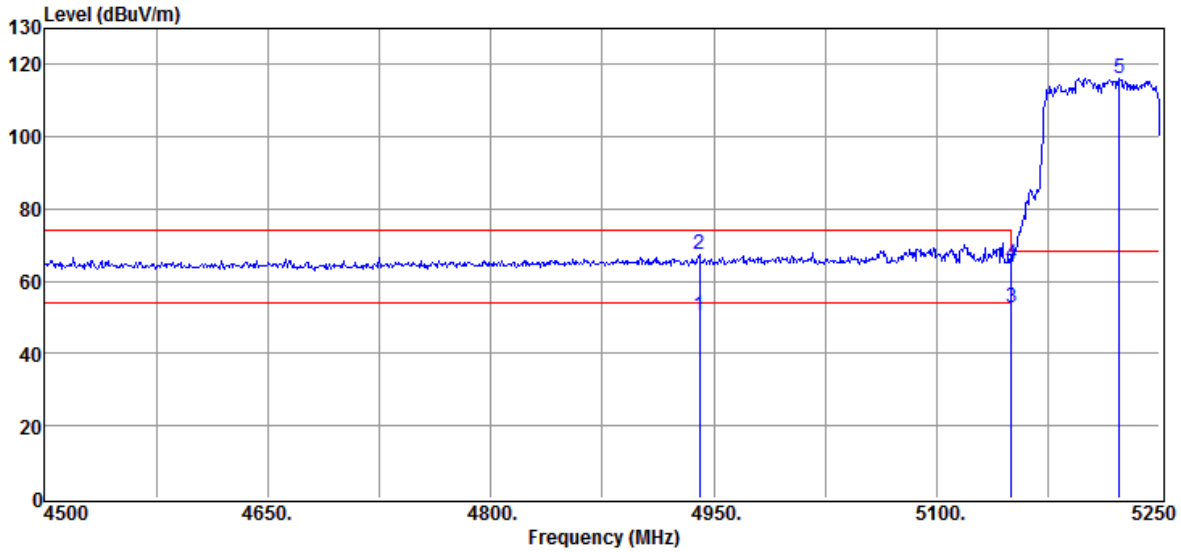
4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Band Edges test -Radiated

Operation Mode	VHT80_mode	Test Date	2022/05/05
Channel Number	5210 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4940.25	7.93	42.50	50.43	54.00	-3.57	Average	VERTICAL
2	4940.25	25.00	42.50	67.50	74.00	-6.50	Peak	VERTICAL
3	5150.00	10.01	42.69	52.70	54.00	-1.30	Average	VERTICAL
4	5150.00	21.87	42.69	64.56	68.20	-3.64	Peak	VERTICAL
5	5223.00	73.23	43.05	116.28	F	--	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

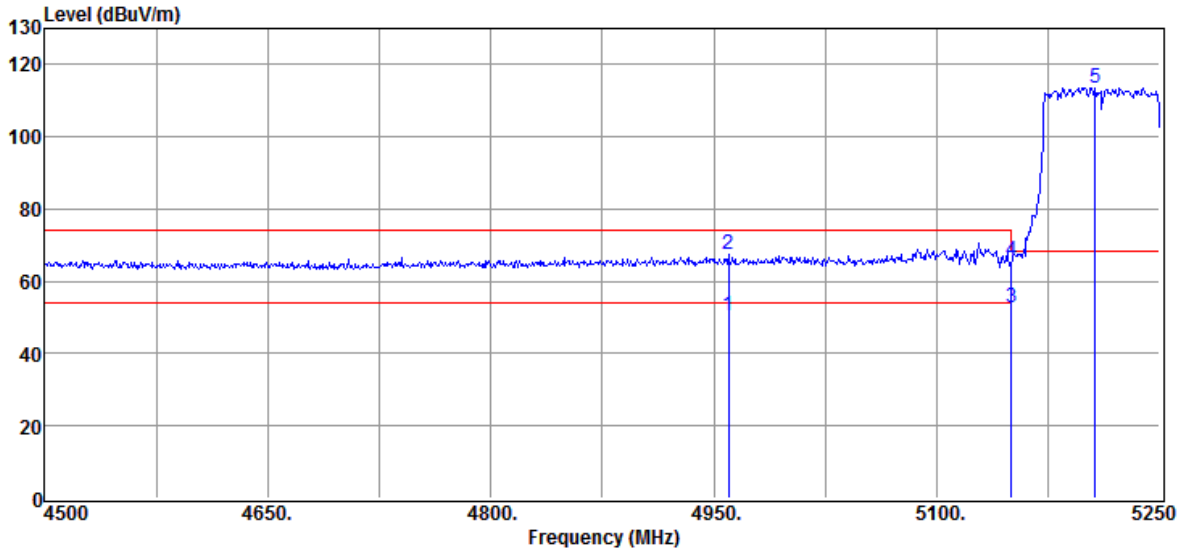
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT80_mode	Test Date	2022/05/05
Channel Number	5210 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4959.75	7.99	42.56	50.55	54.00	-3.45	Average	HORIZONTAL
2	4959.75	24.81	42.56	67.37	74.00	-6.63	Peak	HORIZONTAL
3	5150.00	10.02	42.69	52.71	54.00	-1.29	Average	HORIZONTAL
4	5150.00	22.85	42.69	65.54	68.20	-2.66	Peak	HORIZONTAL
5	5206.50	70.55	43.04	113.59	F	--	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

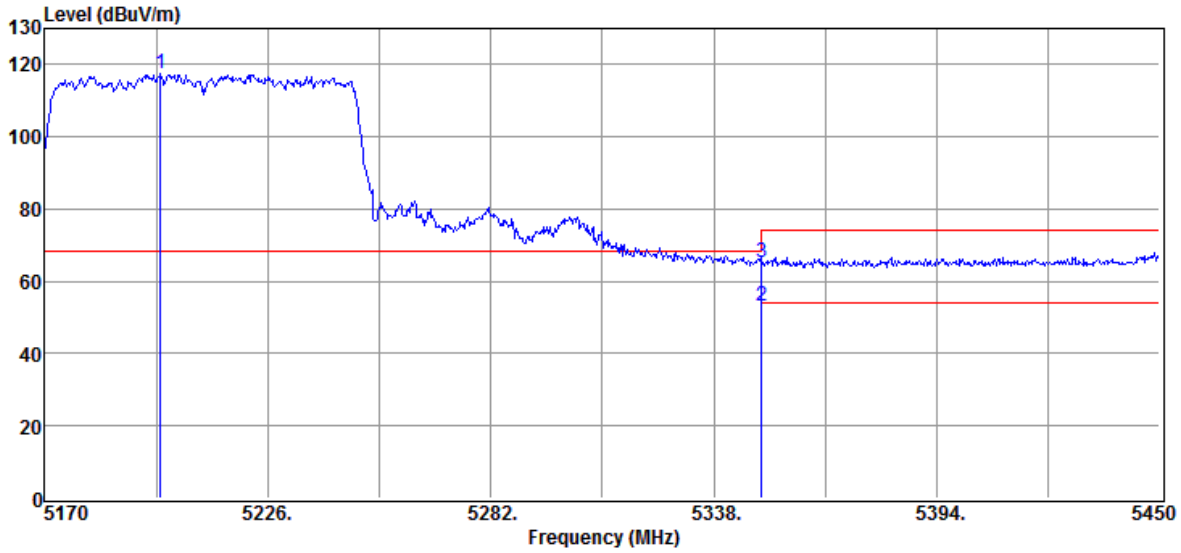
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT80_mode	Test Date	2022/05/05
Channel Number	5210MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5199.12	74.61	43.02	117.63	F	--	Peak	VERTICAL
2	5350.00	10.02	43.05	53.07	54.00	-0.93	Average	VERTICAL
3	5350.00	22.01	43.05	65.06	68.20	-3.14	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

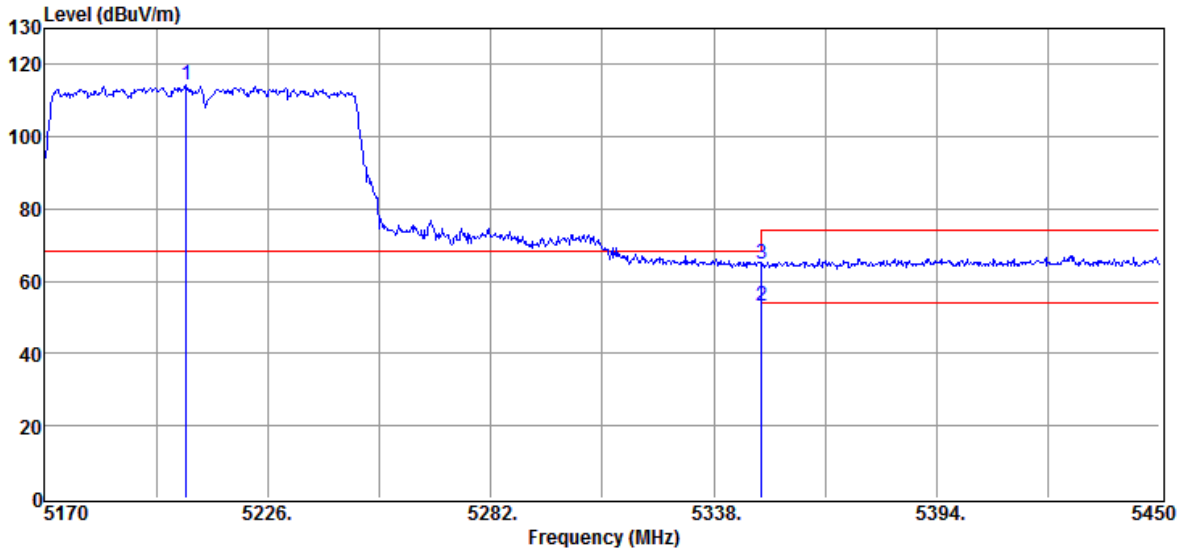
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	VHT80_mode	Test Date	2022/05/05
Channel Number	5210MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5205.56	71.48	43.03	114.51	F	--	Peak	HORIZONTAL
2	5350.00	10.03	43.05	53.08	54.00	-0.92	Average	HORIZONTAL
3	5350.00	21.86	43.05	64.91	68.20	-3.29	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

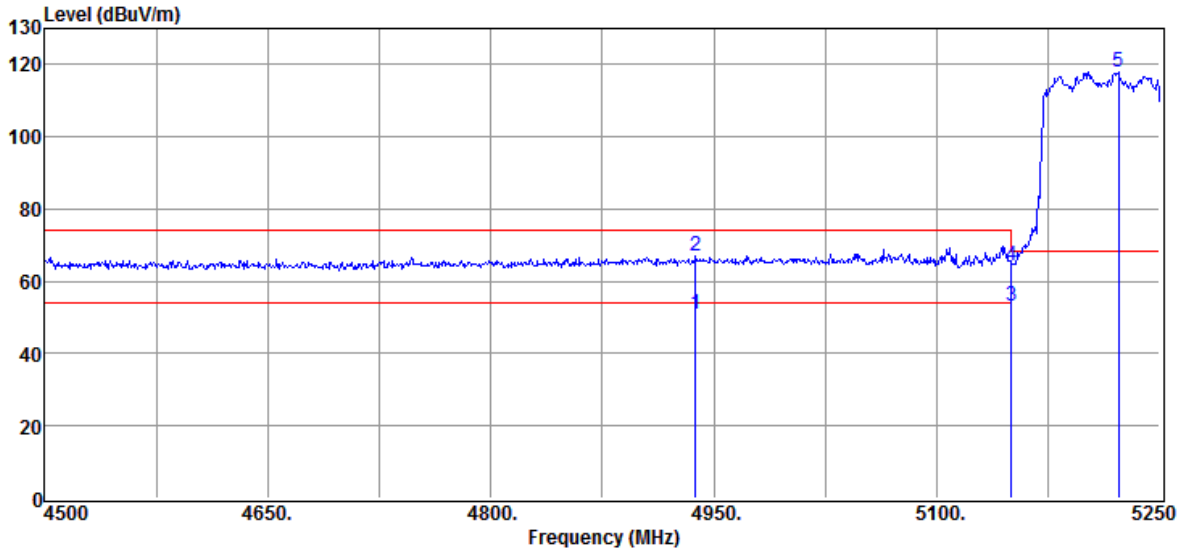
4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Band Edges test -Radiated

Operation Mode	HE80_mode	Test Date	2022/05/05
Channel Number	5210 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4938.00	8.23	42.50	50.73	54.00	-3.27	Average	VERTICAL
2	4938.00	24.67	42.50	67.17	74.00	-6.83	Peak	VERTICAL
3	5150.00	10.26	42.69	52.95	54.00	-1.05	Average	VERTICAL
4	5150.00	21.75	42.69	64.44	68.20	-3.76	Peak	VERTICAL
5	5222.25	74.95	43.05	118.00	F	--	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

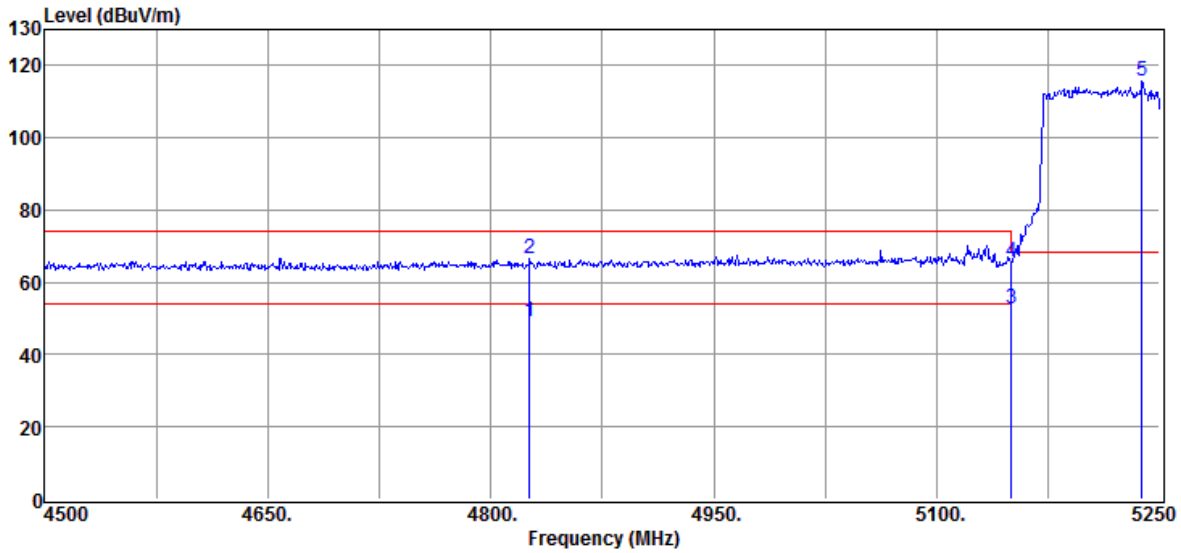
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	HE80_mode	Test Date	2022/05/05
Channel Number	5210 MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	4826.25	7.03	42.33	49.36	54.00	-4.64	Average	HORIZONTAL
2	4826.25	24.44	42.33	66.77	74.00	-7.23	Peak	HORIZONTAL
3	5150.00	10.24	42.69	52.93	54.00	-1.07	Average	HORIZONTAL
4	5150.00	22.88	42.69	65.57	68.20	-2.63	Peak	HORIZONTAL
5	5238.00	72.83	43.06	115.89	F	--	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

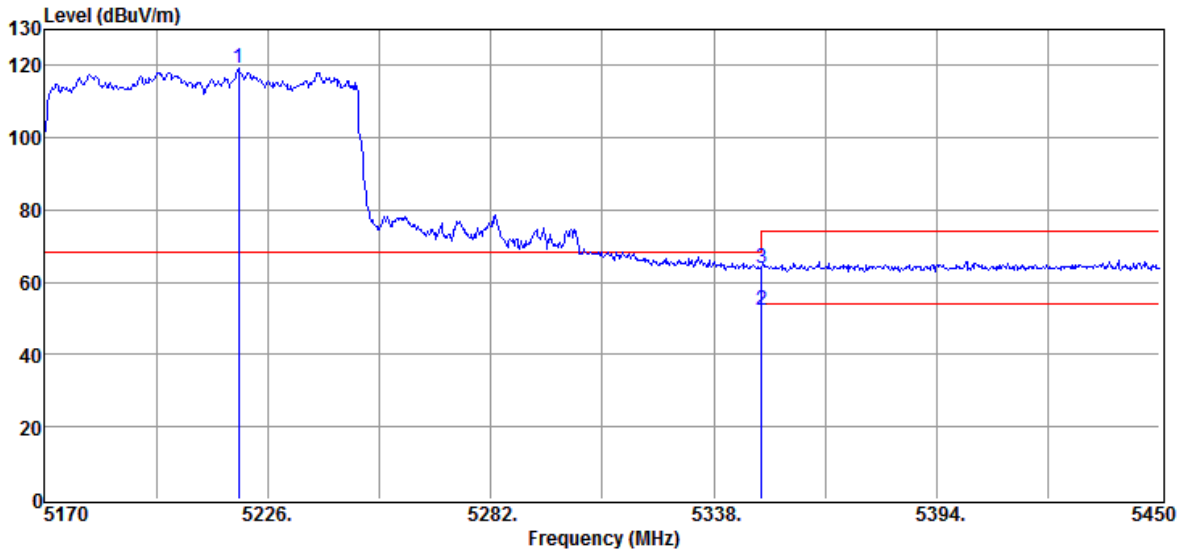
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	HE80_mode	Test Date	2022/05/05
Channel Number	5210MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5218.72	76.03	43.05	119.08	F	--	Peak	VERTICAL
2	5350.00	9.02	43.05	52.07	54.00	-1.93	Average	VERTICAL
3	5350.00	20.69	43.05	63.74	68.20	-4.46	Peak	VERTICAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

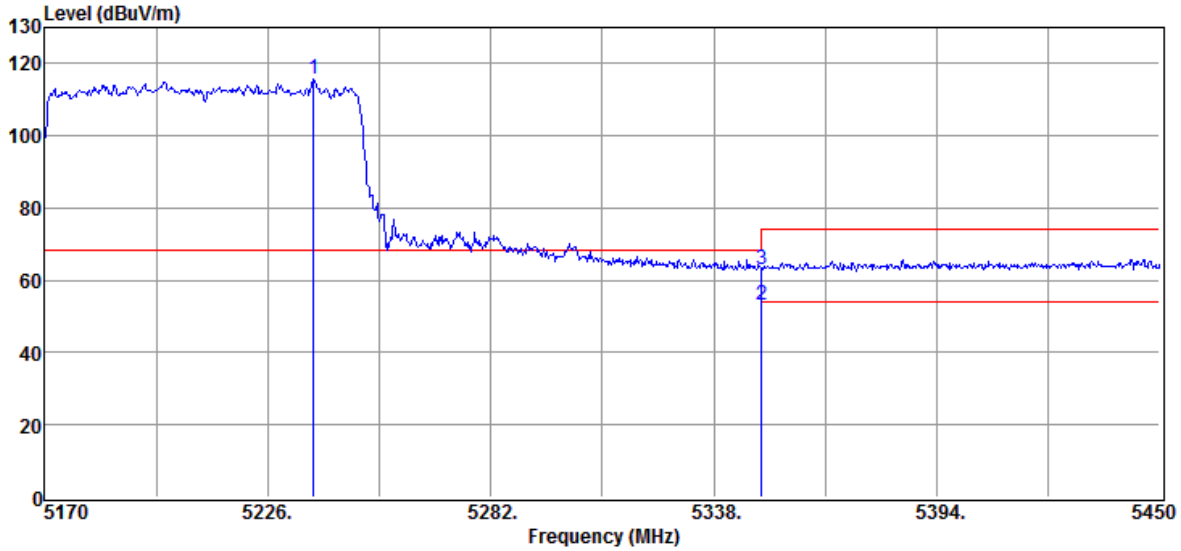
3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

Operation Mode	HE80_mode	Test Date	2022/05/05
Channel Number	5210MHz	Test By	Barry
Temperature	25 ℃	Humidity	65 %



No	Freq MHz	Reading dBuV	Factor dB	Level dBuV/m	Limit dBuV/m	Margin dB	Remark	Pol V/H
1	5237.48	72.73	43.06	115.79	F	--	Peak	HORIZONTAL
2	5350.00	10.03	43.05	53.08	54.00	-0.92	Average	HORIZONTAL
3	5350.00	20.15	43.05	63.20	68.20	-5.00	Peak	HORIZONTAL

Remark:

1 Measuring frequencies from the lowest internal frequency to the 10th of fundamental frequency

2 Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.

3 Measurement of data within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

4 Spectrum Peak mode IF bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, Sweep time= 200 ms., the VBW setting was 3 MHz.

5 Spectrum AV mode if bandwidth Setting : 1GHz- 40GHz, RBW= 1MHz, VBW ≥ 1/Ton, Sweep time= 200 ms.

Note: "F" denotes fundamental frequency

9. Transmission in the Absence of Data

9.1. Standard Applicable

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

9.2. Result:

Compliance. This device automatically discontinue transmission in case of either absence of information to transmit or operational failure.

10. Antenna Requirement

10.1. Standard Applicable

According to §15.203, Antenna 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 shall be considered sufficient to comply with the provisions of this Section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

10.2. Antenna Connected Construction

The directional gins of antenna used for transmitting is below table, and the antenna connector is designed with unique type RF connector and no consideration of replacement. Please see EUT photo and antenna spec. for details.

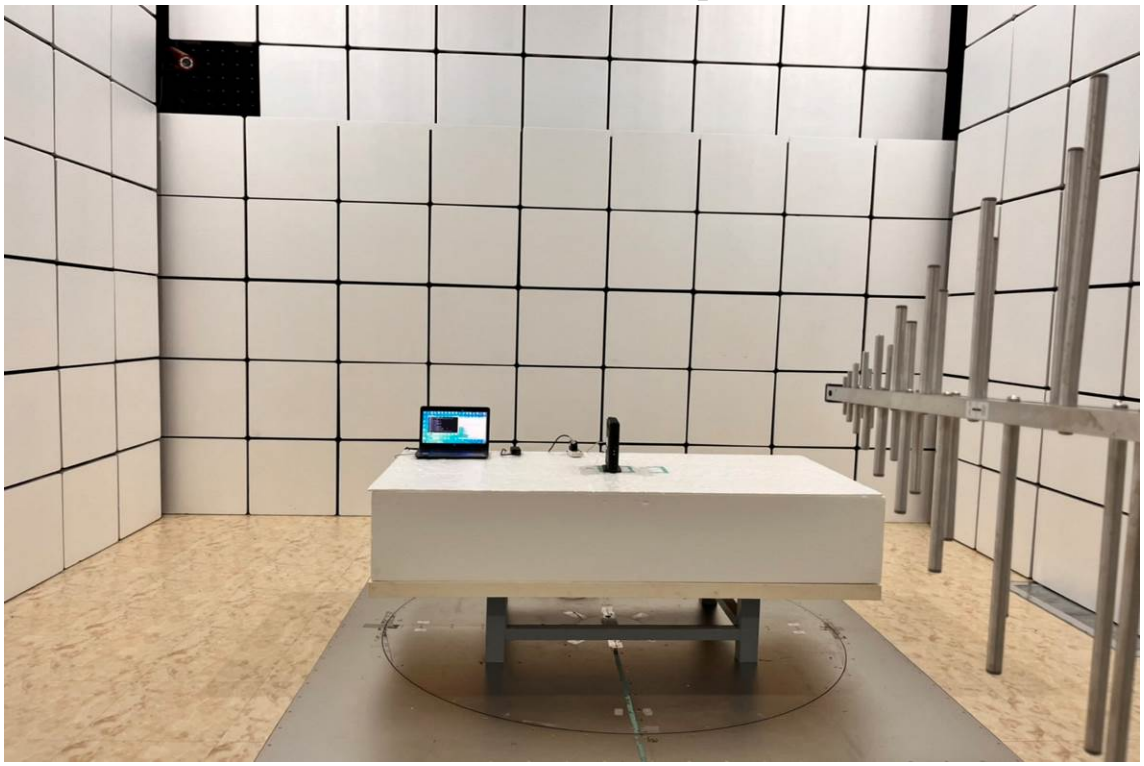
Antenna Designation:

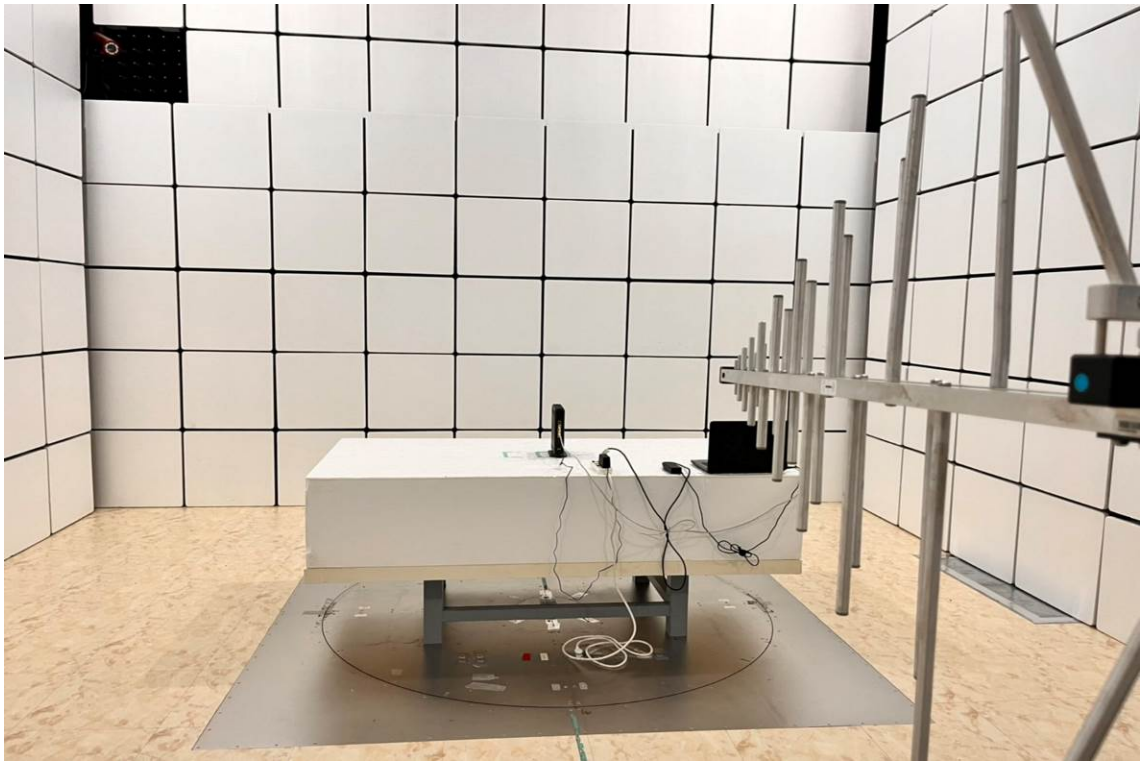
	Antenna Type	Brand	Model	Peak Gain(dBi)	Frequency Range(MHz)	Connector Type
1	PCB	Galtronics	02102140-06825-1	3.7	5150~5250MHz	U.FL
2	PCB	Galtronics	02102140-06825-2	3.5	5150~5250MHz	U.FL
3	PCB	Galtronics	02102140-06825-3	3.7	5150~5250MHz	U.FL
	PCB	Galtronics	02102140-06825-4	3.5	5150~5250MHz	U.FL

APPENDIX 1

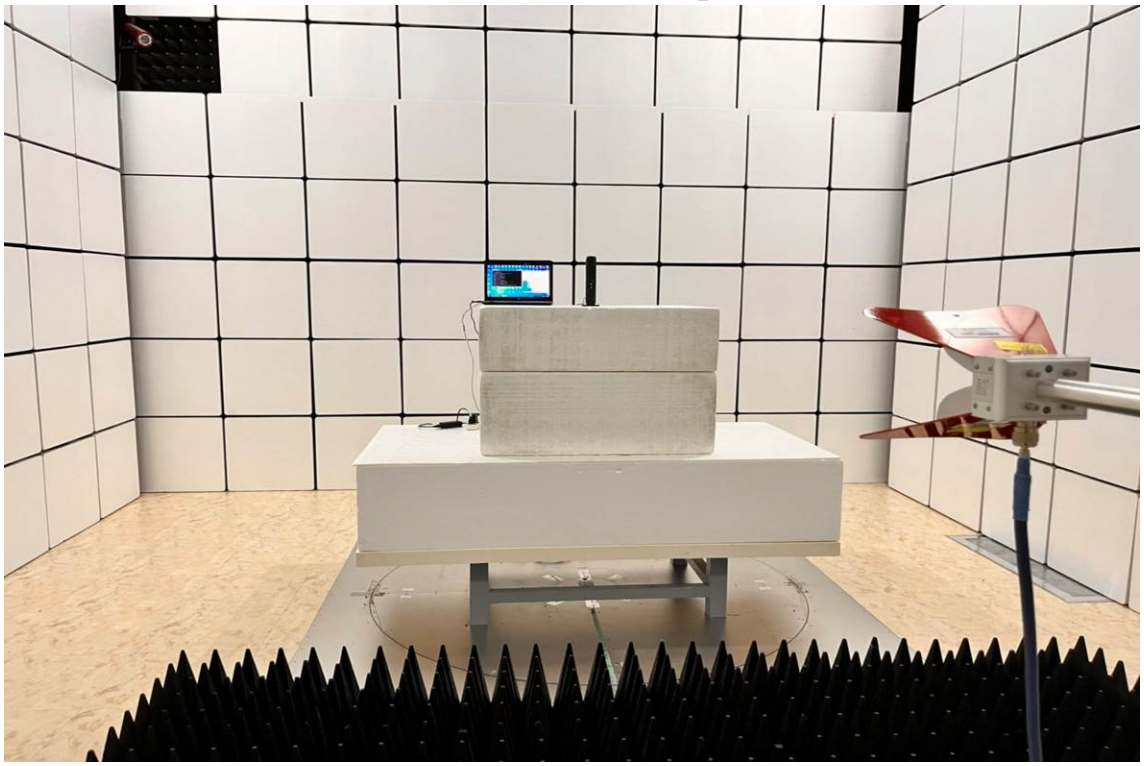
PHOTOGRAPHS OF SET UP

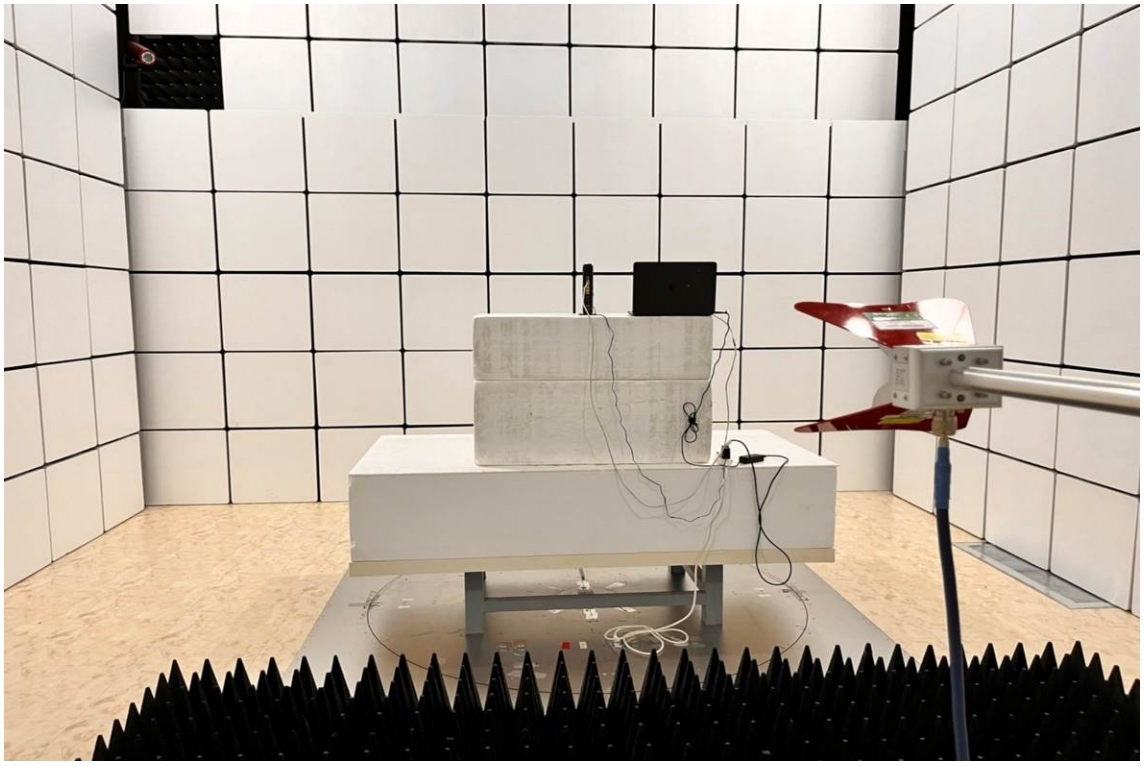
Radiated Emission Set up Photos





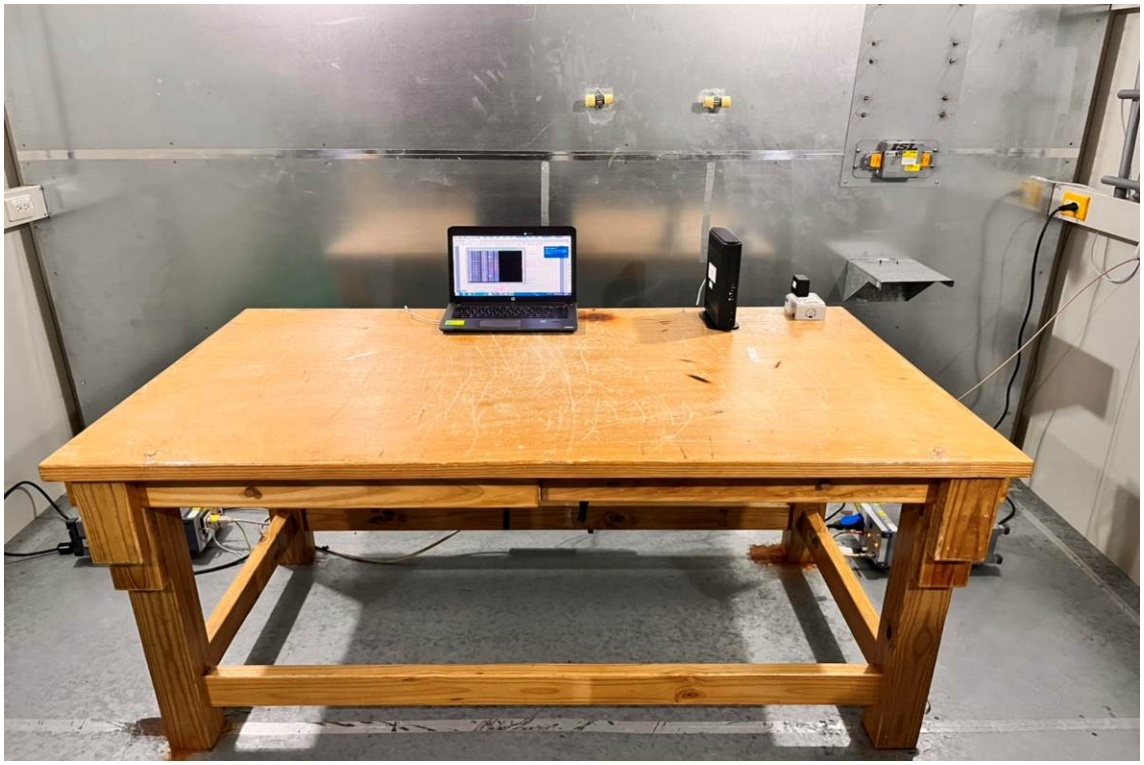
Radiated Emission Set up Photos

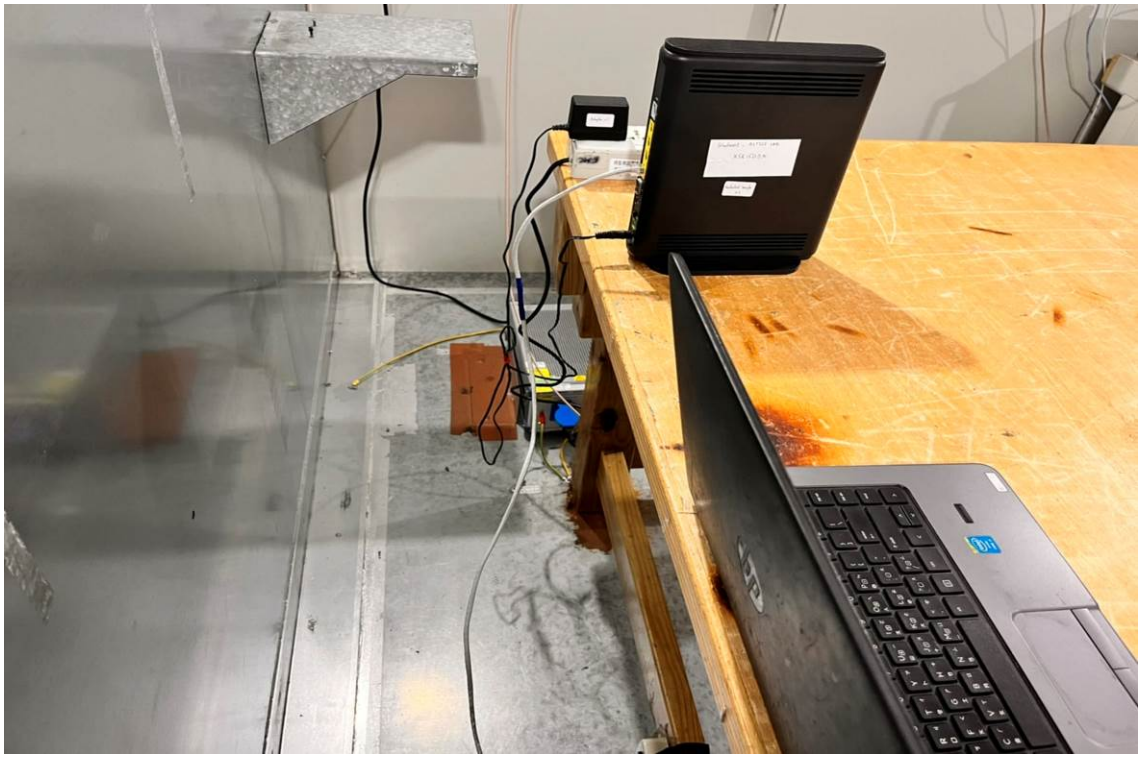




Radiated Emission Set up Photos

Conducted Emission Set up Photo





APPENDIX 2

PHOTOGRAPHS OF EUT

Refer to file ISL-22LR0095P