DEKRA Certification, Inc.
405 Glenn Dr. Suite 12,
Sterling, VA 20164
United States of America

FCC LISTED, REGISTRATION NUMBER: 2764.01

ISED LISTED REGISTRATION NUMBER: 23595-1

Test report No:
3492ERM.024A1

Test report

USA FCC Part 15.407 (U-NII), 15.209
CANADA RSS-210, RSS-Gen
Unlicensed National Information Infrastructure Devices. General technical requirements.
License-Exempt Radio Apparatus (All Frequency Bands): Category I Equipment. General Requirements and Information for the Certification of Radio Apparatus.

() Identification of item tested	Motorcycle cockpit domain controller, called Infotainment Front Control Unit (IFCU) of 12.3 inch
() Trademark	Visteon
() Model and /or type reference tested	HARLEYIFCU
Other identification of the product	FCC ID: NT8- HARLEYIFCU IC: 3043A- HARLEYIFCU Hw version: 1.E / 1.F / 1.G Sw version: v1315 FVIN:1.0 HVIN: 1.E / 1.F / 1.G
(*) Features	Audio, Tuner (FM, MW, LW, DAB+, AM WB, HD Radio), Bluetooth (Dual HFP), USB (C Type), Wi-Fi (Access Point / Master 5GHz - STA / Slave mode 2.4GHz & 5GHz), A2B (RF Link), GNSS, Display (Capacitive, 12.7") 1.E Variant: AM/FM HD, Tuner and water band 1.G Variant: AM/FM, Tuner 1.F: AM/FM, DAB Tuner and Radio
Manufacturer	Visteon Corporation One Village Center Drive, Van Buren Township, MI 48111, USA
Test method requested, standard	USA FCC Part 15.407 10-1-20 Edition : Unlicensed National Information Infrastructure Devices. General technical requirements. USA FCC Part 15.209 10-1-20 Edition: Radiated emission limits; general requirements. CANADA RSS-247 Issue 2 (February 2017). CANADA RSS-Gen Issue 5 (April 2018). 789033 D02 General UNII Test Procedures New Rules v02r01 Guidance for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Domingo Galvez EMC&RF Lab Manager Digitally signed by Domingo Galvez DN: cn=Domingo Galvez, o=DEKRA Certification Inc., ou=Regulatory Lab, email=dgalvez@dekra.com, c=US
Date of issue	04-20-2023
Report template No	FDT08_23 () "Data provided by the client"

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Acronyms

Acronym ID	Acronym Description
# of Tx Chains	Number of Transmission Chains
26Ebw	Emission Bandwidth
Avg Power	Maximum Average Conducted Output Power
DC	Duty Cycle
Detector	Detector used
Freq	Frequency
Freq Rng	Frequency Range
Inband Peak Lvl	Inband Peak Level
Lvl	Level
MP	Measurement Point
Max EIRP	Maximum Burst EIRP
Mod	Modulation
Mode	MIMO Mode
Occ Ch BW	Occupied Channel Bandwidth
Operation Band	Operation Band
PSD	Power Spectrum Density
Pol	Polarization
Port	Active Port
TPC	TPC
Unwanted Freq	Unwanted Emissions Frequency
Unwanted Lvl	Unwanted Emissions Level

Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Certification Inc. has a calibration and maintenance program for its measurement equipment.

DEKRA Certification Inc. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Certification at the time of performance of the test.

DEKRA Certification Inc. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Certification Inc.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Certification internal document PODT000.

Test case	Frequency (MHz)	U (k=2)	Units
RF Power and PSD	5150-5850	0.88	dB
Occupied Bandwidth		1.87	%
Band Edge		0.64	dB
Radiated Spurious Emission	30-180	4.27	dB
	180-1000	3.14	dB
	1000-18000	3.30	dB
	18000-40000	3.49	dB

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").

2. The sample consists of Instrument cluster functionality with Speedometer, Tachometer, Battery, Fuel Main Gages plus common warning lights. Infotainment functionality as included HD Radio NA, DAB Radio EU, or FM/AM Radio RoW, plus connectivity (USB, Bluetooth and Wi-Fi connections for Cellphone and Helmets).

3. Applicant's declaration letter shown below for model similarity

Name
Heidi Sepanik
Corporate Secretary

Visteon Corporation
One Village Center Drive
Van Buren Township, MI, 48111
Tel 734.710.4672
Fax 734.736.5540
hdiebol@visteon.com

Date: March 20, 2023

To:	From:
Regulatory Certification Body DEKRA Testing and Certification, S.A.U. Parque Tecnológico de Andalucía C/ Severo Ochoa 2 & 6, 29590,Málaga, España	**Visteon Corporation** One Village Center Drive, Van Buren Township, MI, USA. Postcode/Zip Code: 48111

Ref: EU-TEC/FCC/ISED update related to product:

Type of equipment:	Infotainment Control Unit
Brand name:	Visteon
Model name:	HARLEYIFCU

To whom it may concern,

Model name:	HARLEYIFCU	**CHANGES**
HW version:	1.E	Audio Hub, Audio Processing, HD digital radio and weather band
HW version:	1.F	Audio Hub, Audio Processing, DAB digital radio and Radion
HW version:	1.G	Audio Hub and Audio Processing
SW version:	v1315	Same for 3 HW versions

*Same PCB, different Tunner Specs, weather band only populated on 1.E variant and Radion only populated on 1.F variant.
*Same electrical and mechanical features.
*Same PCB board is used on the 3 Hardware versions. However, only the 1.F Hardware has the DAB digital radio populated and therefore is being considered as the most complex hardware for RED certification. 1.E hardware has HD radio and water band, which make if the most complex one for FCC.
*For RED certification, partial tests have been performed over 1.E and 1.G hardware to corroborate the behaviour is the same as on 1.F hardware, test report results for 1.F product version are valid and representative for the rest of hardware versions 1.E and 1.G and partial test reports were performer for each variant depending on the product features.
*For FCC/ISED certification, partial tests have been performed over 1.F and 1.G hardware to corroborate the behaviour is the same as on 1.E hardware, test report results for 1.E product version are valid and representative for the rest of hardware versions 1.F and 1.G and partial test reports were performer for each variant depending on the product features.
*According to the geolocation of the product, the features available will be automatically activates or deactivated.

Sincerely,

By:	Heidi Sepanik	Heidi A Sepanik
Title:	Corporate Secretary	
Company:	Visteon Corporation	
Telephone:	734.710.4672	
e-mail:	hdiebol@visteon.com	**Signature**

Visteon Corporation CORPORATE SEAL JAN. 5, 2000 DELAWARE

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: The client.

Sample S/01 is composed of the following elements, accessories and auxiliary equipment:

Id	Control Number	Description	Manufacturer / Model	Serial Nº	Date of Reception	Application
S/01	3492/77	IFCU-HD (NA)	Visteon / HARLEYIFCU	999947	2022-11-14	Element Under Test
S/01	3492/71	Display 12.7"	-	220505003086	2022-11-14	Element Under Test
S/01	3492/79	Break out board & Main harness	-	-	2022-11-14	Accessory
S/01	3492/13	HSD to USB Cable	Visteon	-	2022-11-14	Accessory
S/01	3492/19	USB type A (male) to USB type A (male) Cable	-	-	2022-11-14	Accessory
S/01	3492/85	VCAN	V-CAN / FV 5.2	4300922	2022-11-14	Accessory
S/01	3492/82	Coaxial cable	-	-	2022-11-14	Accessory
S/01	3492/83	Coaxial cable	-	-	2022-11-14	Accessory
S/01	3492/84	Coaxial cable	-	-	2022-11-14	Accessory
S/01	3492/59	USB type A (male) to USB type A (Female) Cable	-	-	2022-11-14	Accessory
S/01	1482	Laptop	LENOVO / V14 G2 ITL	PF3QAFFH	-	Auxiliary

1. Sample S/01, was used for the following test(s): All Conducted tests indicated in appendix B.

Sample S/02 is composed of the following elements, accessories and auxiliary equipment:

Id	Control Number	Description	Manufacturer / Model	Serial Nº	Date of Reception	Application
S/02	3492/88	IFCU-HD (NA)	Visteon / HARLEYIFCU	P70901090_C23260087	2023-01-04	Element Under Test
S/02	3492/02	GPS antenna	PKG001238	-	2022-11-14	Element Under Test
S/02	3492/28	Break out board & Main harness	-	-	2022-11-14	Accessory
S/02	3492/38	FM/AM/DAB Antenna	NEXTIUM	-	2022-11-14	Accessory
S/02	3492/06	Amplifier Harness	-	-	2022-11-14	Accessory
S/02	3492/09	Audio Amplifier	ROCKFORDFOSGATE / DV3	6300000207-71	2022-11-14	Accessory
S/02	3492/12	HSD to USB Cable	Visteon	-	2022-11-14	Accessory
S/02	3492/17	USB type A (male) to USB type A (male) Cable	-	-	2022-11-14	Accessory
S/02	3492/33	Speaker	Kicker / DSC50	40214091010343	2022-11-14	Accessory
S/02	3492/62	VCAN	V-CAN / FV 5.2	4280922	2022-11-14	Accessory
S/02	Dekra 53	USB type A (male) to USB type A (Female) Cable	-	-	-	Auxiliary
S/02	1484	Laptop	LENOVO / V14 G2 ITL	PF3Q2NKL	-	Auxiliary

1. Sample S/02, was used for the following test(s): All Radiated tests indicated in appendix B.

Sample S/03 is composed of the following elements, accessories and auxiliary equipment:

Id	Control Number	Description	Manufacturer / Model	Serial Nº	Date of Reception	Application
S/03	3492/90	IFCU-HD (EU)	Visteon / HARLEYIFCU	P70901092_B22940084	2023-01-04	Element Under Test
S/03	3492/02	GPS antenna	PKG001238	-	2022-11-14	Element Under Test
S/03	3492/28	Break out board & Main harness	-	-	2022-11-14	Accessory
S/03	3492/38	FM/AM/DAB Antenna	NEXTIUM	-	2022-11-14	Accessory
S/03	3492/06	Amplifier Harness	-	-	2022-11-14	Accessory
S/03	3492/09	Audio Amplifier	ROCKFORDFOSGATE / DV3	6300000207-71	2022-11-14	Accessory
S/03	3492/12	HSD to USB Cable	Visteon	-	2022-11-14	Accessory
S/03	3492/17	USB type A (male) to USB type A (male) Cable	-	-	2022-11-14	Accessory
S/03	3492/33	Speaker	Kicker / DSC50	40214091010343	2022-11-14	Accessory
S/03	3492/62	VCAN	V-CAN / FV 5.2	4280922	2022-11-14	Accessory
S/03	Dekra 53	USB type A (male) to USB type A (Female) Cable	-	-	-	Auxiliary
S/03	1484	Laptop	LENOVO / V14 G2 ITL	PF3Q2NKL	-	Auxiliary

1. Sample S/03, was used for the following test(s): All Radiated tests indicated in appendix C.

Sample S/04 is composed of the following elements, accessories and auxiliary equipment:

Id	Control Number	Description	Manufacturer / Model	Serial Nº	Date of Reception	Application
S/04	3492/94	IFCU-HD (ROW)	Visteon / HARLEYIFCU	P70901093_C23260050	2023-01-04	Element Under Test
S/04	3492/02	GPS antenna	PKG001238	-	2022-11-14	Element Under Test
S/04	3492/28	Break out board & Main harness	-	-	2022-11-14	Accessory
S/04	3492/38	FM/AM/DAB Antenna	NEXTIUM	-	2022-11-14	Accessory
S/04	3492/06	Amplifier Harness	-	-	2022-11-14	Accessory
S/04	3492/09	Audio Amplifier	ROCKFORDFOSGATE / DV3	6300000207-71	2022-11-14	Accessory
S/04	3492/12	HSD to USB Cable	Visteon	-	2022-11-14	Accessory
S/04	3492/17	USB type A (male) to USB type A (male) Cable	-	-	2022-11-14	Accessory
S/04	3492/33	Speaker	Kicker / DSC50	40214091010343	2022-11-14	Accessory
S/04	3492/62	VCAN	V-CAN / FV 5.2	4280922	2022-11-14	Accessory
S/04	Dekra 53	USB type A (male) to USB type A (Female) Cable	-	-	-	Auxiliary
S/04	1484	Laptop	LENOVO / V14 G2 ITL	PF3Q2NKL	-	Auxiliary

1. Sample S/04, was used for the following test(s): All Radiated tests indicated in appendix D.

Test sample description

Test Sample description (compulsory information for EMC and RF testing services

Ports……:	Port name and description	Cable				
		Specified length [m]]	Attached during test	Shielded	Coupled to patient (3)	
	Main Connector Harness	1.5	[X]	[ ]	[ ]	
	AM/FM Antenna Connector	0.1	[X]	[ ]	[ ]	
	GPS Antenna Connector	0.1	[X]	[ ]	[ ]	
	USB Connector	0.1	[X]	[ ]	[ ]	
			[ ]	[ ]	[ ]	
Supplementary information to the ports…… :	No Data Provided					
Rated power supply .....:	Voltage and Frequency		Reference poles			
			L1	L2	L3	N	PE
	[ ]	AC:	[ ]	[ ]	[ ]	[ ]	[ ]
	[ ]	AC:	[ ]	[ ]	[ ]	[ ]	[ ]
	[X]	DC: 13.2 V					
	[ ]	DC:					
Rated Power .....:	16A						
Clock frequencies.....:	40 MHz, 8MHz, 38.4MHz, 55.4667MHz						
Other parameters .....:	No Data Provided						
Software version .....:	v1315						
Hardware version .....:	1.E / 1.F / 1.G						
Dimensions in cm (W x H x D) :	36.8 x 15.4 x 6.3						
Mounting position .....:	[ ]	Table top equipment					
	[ ]	Wall/Ceiling mounted equipment					
	[ ]	Floor standing equipment					
	[ ]	Hand-held equipment					
	[X]	Other:					
Modules/parts..... :	Module/parts of test item		Type		Manufacturer	
	No Data Provided					
Accessories (not part of the test item)..... :	Description		Type		Manufacturer	
	Break Out Board + Main harness					
	Amplifier + Amplifier Harness + Speaker					
	AM/FM or AM/FM/DAF Antenna					
	GPS Antenna					
	VCAN + VCAN Connection					
	Wireless Headset					

Documents as provided by the applicant..... :	Description	File name	Issue date
	Declaration Equipment Data	FDT30_18 Declaration Equipment Data – R4	03/08/2023
	Test Instructions		
	Technical Files		
	DUT Manual		

Copy of marking plate:

Identification of the client

Visteon Corporation
One Village Center Drive, Van Buren Township,
MI 48111, USA

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	01-13-2023
Date (finish)	03-10-2023

Document history

Report number	Date	Description
3492ERM.024	04-20-2023	First release
3492ERM.024A1	04-20-2023	Second release. Typo was detected for Antenna gain information and it is updated to show correct gain value. This modification of test report cancels and replaces the test report 3492ERM.024.

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 75 %

In the semi anechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 75 %

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: Lakshmi Gollamudi, Yuri Barone, Qi Zhang and Koji Nishimoto.

List of equipment used during the test

Conducted Measurements

CONTROL NUMBER	DESCRIPTION	Serial No	LAST CALIBRATION	NEXT CALIBRATION
897	Power supply (AMETEK / PROG-DC-PS)	1707A01906	N/A	N/A
1039	FSV40 Signal Analyzer 40GHz	101627	2022-11-01	2024-11-01
1042	SMBV 100A Vector Signal Generator	262575	2022-03-16	2024-03-16
1107	Ethernet SNMP Thermometer- RF1 Room	60038026952	2022-10-18	2024-10-18
1313	Wireless Measurement Software R&S EMC32	-	N/A	N/A

Radiated Measurements

CONTROL NUMBER	DESCRIPTION	Serial No	LAST CALIBRATION	NEXT CALIBRATION
878	Power supply (AMETEK / PROG-DC-PS)	1707A01783	N/A	N/A
1012	ESR26 EMI Test Receiver	101478	2022-04-12	2024-04-12
1014	FSV40 Signal Analyzer 40GHz	101626	2021-05-19	2023-05-19
1055	3116C Double-Ridged Waveguide Horn Antenna	211394	2023-02-06	2026-02-06
1057	3115 Double-Ridged Waveguide Horn Antenna	211373	2020-06-03	2023-06-03
1065	Ethernet SNMP Thermometer- CR Room	208587	2020-08-13	2023-08-13
1108	Ethernet SNMP Thermometer- SAC	60038026954	2022-10-18	2024-10-18
1111	Semi anechoic Absorber Lined Chamber	60038026577	2022-10-18	2024-10-18
1179	Wireless Measurement Software R&S EMC32	F169021	N/A	N/A
1314	Low Noise Preamplifier	1040-OT102236	N/A	N/A

Testing verdicts

Fail	F
Inconclusive	I
Not applicable	N/A
Not measured	N/M
Pass	P

Summary

Appendix B: Hw: 1.E (NA variant)

FCC PART 15.407 PARAGRAPH / RSS-247			
Requirement	**Test case**	**Verdict**	**Remark**
FCC 15.407 (a) / RSS-247 6.2	Power Limits. Maximum Output Power	P	N/A
FCC 15.407 (a) / RSS-247 6.2	Maximum Power Spectral Density	P	N/A
FCC 2.1049 / RSS-Gen 6.7	99% Occupied Bandwidth	P	N/A
FCC 15.403 / RSS-Gen 6.7	26 dB Emission Bandwidth	P	N/A
FCC 15.407 (b) / RSS-247 6.2	Band-edge Conducted Emissions	P	N/A
FCC 15.407 (e) / RSS 247 6.2.4.1	6 dB Emission Bandwidth	P	Refer 1
FCC 15.407 (b), 15.205 & 15.209 / RSS-Gen 8.9 & 8.10	Undesirable radiated emissions	P	N/A
Supplementary information and remarks: 1. Only applicable to sub-band U-NII-3: 5.725 - 5.85 GHz.			

Appendix C: Hw: 1.F (EU variant)

FCC PART 15.407 PARAGRAPH / RSS-247			
Requirement	**Test case**	**Verdict**	**Remark**
FCC 15.407 (a) / RSS-247 6.2	Power Limits. Maximum Output Power	N/M	Refer 1
FCC 15.407 (a) / RSS-247 6.2	Maximum Power Spectral Density	N/M	Refer 1
FCC 2.1049 / RSS-Gen 6.7	99% Occupied Bandwidth	N/M	Refer 1
FCC 15.403 / RSS-Gen 6.7	26 dB Emission Bandwidth	N/M	Refer 1
FCC 15.407 (b) / RSS-247 6.2	Band-edge Conducted Emissions	N/M	Refer 1
FCC 15.407 (e) / RSS 247 6.2.4.1	6 dB Emission Bandwidth	N/M	Refer 1
FCC 15.407 (b), 15.205 & 15.209 / RSS-Gen 8.9 & 8.10	Undesirable radiated emissions	P	Refer 2
Supplementary information and remarks: 1. Test case not requested. 2. Only partial testing has been performed because the test result of spurious emission is similar to the variant full tested (1.E).			

Appendix D: Hw: 1.G (ROW variant)

FCC PART 15.407 PARAGRAPH / RSS-247			
Requirement	**Test case**	**Verdict**	**Remark**
FCC 15.407 (a) / RSS-247 6.2	Power Limits. Maximum Output Power	N/M	Refer 1
FCC 15.407 (a) / RSS-247 6.2	Maximum Power Spectral Density	N/M	Refer 1
FCC 2.1049 / RSS-Gen 6.7	99% Occupied Bandwidth	N/M	Refer 1
FCC 15.403 / RSS-Gen 6.7	26 dB Emission Bandwidth	N/M	Refer 1
FCC 15.407 (b) / RSS-247 6.2	Band-edge Conducted Emissions	N/M	Refer 1
FCC 15.407 (e) / RSS 247 6.2.4.1	6 dB Emission Bandwidth	N/M	Refer 1
FCC 15.407 (b), 15.205 & 15.209 / RSS-Gen 8.9 & 8.10	Undesirable radiated emissions	P	Refer 2
Supplementary information and remarks: 1. Test case not requested. 2. Only partial testing has been performed because the test result of spurious emission is similar to the variant full tested (1.E).			

Appendix A: DUT Description

PRODUCT INFORMATION

Information	Description
Equipment type	Wi-Fi 5GHz
DFS Operating Mode	Slave without Radar detection
TPC Function	Yes
Antenna Specification	Integral
Operating Frequency Range	5150 - 5825 MHz
Nominal Channel Bandwidth	20/ 40/ 80 MHz
Antenna type	SISO: Radio A
RF Output Power	21 dBm
Antenna gain	2.6 dBi
Supply Voltage	13.5 Vdc
Modulation:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Transmit Data Rate:	802 .11 a/n/ac/ax Rates: IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, & 54 Mbps IEEE 802.11n: HT20 (OFDM MCS0-MCS23) HT40 (OFDM MCS0-MCS23) IEEE 802.11ac: VHT20 SS1 (OFDM MCS0-MCS9) VHT40 SS1 (OFDM MCS0-MCS9) VHT80 SS1 (OFDM MCS0-MCS9) IEEE 802.11ax: HE20 (OFDMA MCS0-MCS11) HE40 SS1 (OFDMA MCS0-MCS11) HE80 SS1 (OFDM MCS0-MCS11)

Appendix B: TEST RESULTS Wi-Fi 5GHz; HW: 1.E (NA VARIANT)

Appendix B

TEST CONDITIONS

(*): Data provided by the client.

TEST CONDITIONS	DESCRIPTION
TC#01(1) **(a mode)**	Power supply (V): $V_{nominal}$ = 13.5 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz UNII-2A: Lowest channel: 5260 MHz Middle channel: 5280 MHz Highest channel: 5320 MHz UNII-2C: Lowest channel: 5500 MHz Middle channel: 5580 MHz Highest channel: 5700 MHz UNII-3: Lowest channel: 5745 MHz Middle channel: 5785 MHz Highest channel: 5825 MHz

TEST CONDITIONS	DESCRIPTION
TC#02(1) **(n mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz UNII-2A: Lowest channel: 5260 MHz Middle channel: 5280 MHz Highest channel: 5320 MHz UNII-2C: Lowest channel: 5500 MHz Middle channel: 5580 MHz Highest channel: 5700 MHz UNII-3: Lowest channel: 5745 MHz Middle channel: 5785 MHz Highest channel: 5825 MHz Channel Bandwidth: 40 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5190 MHz Highest channel: 5230 MHz UNII-2A: Lowest channel: 5270 MHz Highest channel: 5310 MHz UNII-2C: Lowest channel: 5510 MHz Middle channel: 5550 MHz Highest channel: 5670 MHz UNII-3: Lowest channel: 5755 MHz Highest channel: 5795 MHz

TEST CONDITIONS	DESCRIPTION
TC#03(1) **(ac mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz UNII-2A: Lowest channel: 5260 MHz Middle channel: 5280 MHz Highest channel: 5320 MHz UNII-2C: Lowest channel: 5500 MHz Middle channel: 5580 MHz Highest channel: 5700 MHz UNII-3: Lowest channel: 5745 MHz Middle channel: 5785 MHz Highest channel: 5825 MHz Channel Bandwidth:40 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5190 MHz Highest channel: 5230 MHz UNII-2A: Lowest channel: 5270 MHz Highest channel: 5310 MHz UNII-2C: Lowest channel: 5510 MHz Middle channel: 5550 MHz Highest channel: 5670 MHz UNII-3: Lowest channel: 5755 MHz Highest channel: 5795 MHz Channel Bandwidth: 80 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5210 MHz UNII-2A: Lowest channel: 5290 MHz UNII-2C: Lowest channel: 5530 MHz Highest channel: 5610 MHz UNII-3: Lowest channel: 5775 MHz

TEST CONDITIONS	DESCRIPTION
	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5180 MHz Middle channel: 5200 MHz Highest channel: 5240 MHz UNII-2A: Lowest channel: 5260 MHz Middle channel: 5280 MHz Highest channel: 5320 MHz UNII-2C: Lowest channel: 5500 MHz Middle channel: 5580 MHz Highest channel: 5700 MHz UNII-3: Lowest channel: 5745 MHz Middle channel: 5785 MHz Highest channel: 5825 MHz
TC#04(1)(2) **(ax mode)**	Channel Bandwidth:40 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5190 MHz Highest channel: 5230 MHz UNII-2A: Lowest channel: 5270 MHz Highest channel: 5310 MHz UNII-2C: Lowest channel: 5510 MHz Middle channel: 5550 MHz Highest channel: 5670 MHz UNII-3: Lowest channel: 5755 MHz Highest channel: 5795 MHz Channel Bandwidth: 80 MHz Test Frequencies for Conducted/Radiated tests: (Radio A) UNII-1: Lowest channel: 5210 MHz UNII-2A: Lowest channel: 5290 MHz UNII-2C: Lowest channel: 5530 MHz Highest channel: 5610 MHz UNII-3: Lowest channel: 5775 MHz

Note (1): The test set-up was made in accordance to the general provisions of FCC Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.

The EUT was tested in the following operating mode:

- Continuously transmitting with a modulated carrier at maximum power in all required channels using the supported data rates/modulation types.
- Preliminary tests for 26 dB and Occupied bandwidth determined the SISO worst case: Port A.
- For spurious emissions for OFDM modes 802.11a, 802.11n20/40, 802.11ac20/40/80, and 11ax20/40/80 a preliminary scan was performed to determine the worst case. The following tables and plots show the results for the worst case in 802.11ac mode.
- The data rates of 24Mb/s for 802.11a, MCS 7 for 802.11n, MCS8 for 802.11ac20 and MCS9 for 802.11ac40/80, MCS8 for ax20, MCS 9 for ax40 and MCS11 for ax80 were selected based on preliminary testing that identified those rates corresponding to the worst cases.
- For all modes, the EUT was configured in test mode using a software application. The application was used to enable a continuous transmission and to select the test channels as required. The client supplied instructions to configure the EUT. The customer supplied a document containing the setup instructions.
- Beamforming mode is only supported with OFDMA Full RU according to manufacturer specifications (see annex B.2).

Note (2): Preliminary measurements determined the PSD levels of partial RU is higher than the full RU in ax mode. RU 26 tone was identified as the worst-case RU (Resource Unit) carrier allocation for all non-beamforming ax mode testing.

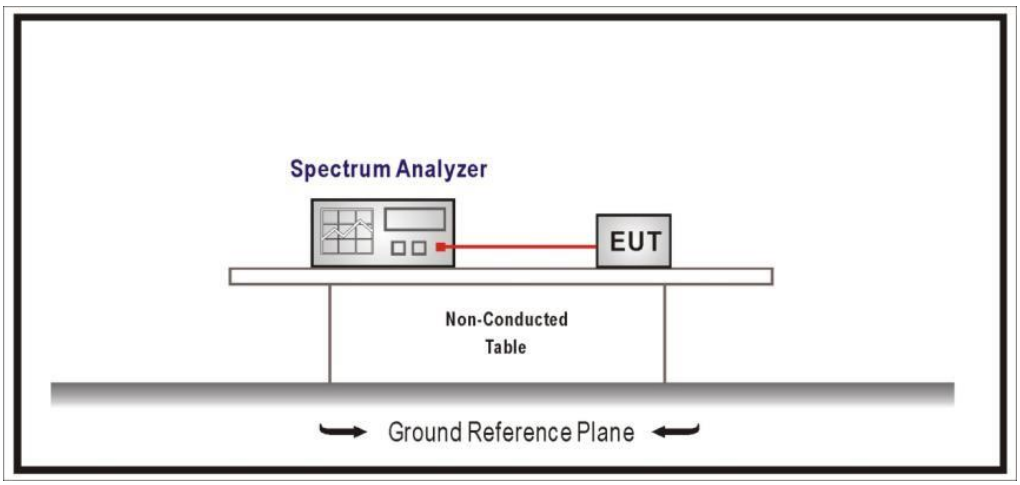
The worst-case RU combinations used in the ax mode SISO/MIMO measurement (all test cases except Band Edge testing) are indicated as follows:

- 20 MHz BW - RU26 offset 0
- 40 MHz BW - RU26 offset 17
- 80 MHz BW - RU26 offset 18

The worst-case RU combinations used in the ax mode SISO/MIMO measurement (Band Edge testing) are indicated as follows:

- 20 MHz BW - RU26 offset 0 & 8
- 40 MHz BW - RU26 offset 0 & 17
- 80 MHz BW - RU26 offset 0 & 36

CONDUCTED MEASUREMENTS:



RADIATED MEASUREMENTS:

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at 3 m for the frequency range 30-1000 MHz (Bilog antenna) and 1-18 GHz Double ridge horn antennas, and 1m for the frequency range 18 GHz- 26 GHz Double ridge horn antenna.

For radiated emissions in the range 18 - 26 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

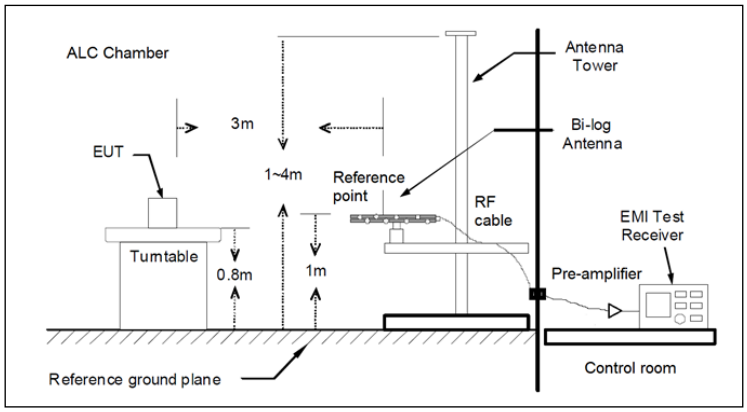


Fig A1: Radiated measurements Setup f < 1 GHz

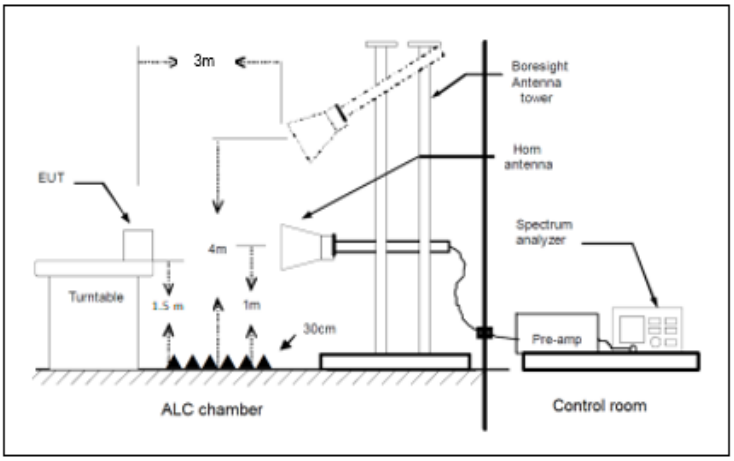


Fig A2: Radiated measurements setup f > 1-18 GHz

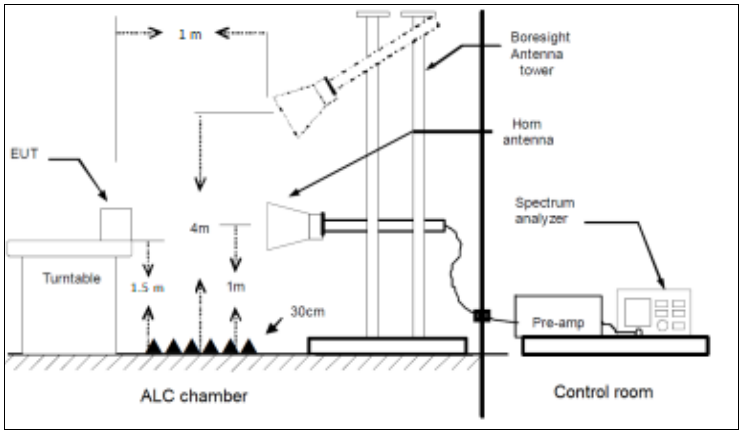


Fig A3: Radiated measurements setup f > 18 GHz

TEST CASES DETAILS

FCC 15.407 (a) / RSS-247 6.2 Power Limits. Maximum Output Power

Limits

FCC 15.407:

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. 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).

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

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. 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.

RSS-247:

For OEM devices installed in vehicles, the maximum e.i.r.p. shall not exceed 30 mW or 1.76 + 10 log10B, dBm, whichever is less. Devices shall implement TPC in order to have the capability to operate at least 3 dB below the maximum permitted e.i.r.p. of 30 mW.

For devices other than devices installed in vehicles:

For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW (23 dBm) or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

For the 5.25-5.35 GHz, 5.470-5.6 GHz, and 5.650-5.725 GHz bands, the maximum conducted output power shall not exceed 250 mW (24 dBm) or 11 + 10 log10B, dBm, whichever power is less. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less

For the band 5.725-5.850 GHz, the maximum conducted output power shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Maximum declared antenna gain: 2.6 dBi

Note: The following test results are shown based on KDB 662911 D01 Multiple Transmitter Output v02r01 E) 1) In-Band Power Measurements.

Mode: SISO

Modulation: 802.11a (OFDM 24 Mbit/s)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5180.00000	15.5	18.1
5200.00000	16.2	18.8
5240.00000	14.2	16.8
5260.00000	13.3	15.9
5280.00000	13.7	16.3
5320.00000	11.1	13.7
5500.00000	7.2	9.8
5580.00000	8.1	10.7
5700.00000	8.0	10.6
5745.00000	5.0	7.6
5785.00000	6.5	9.1
5825.00000	7.4	10.0

Verdict

Pass

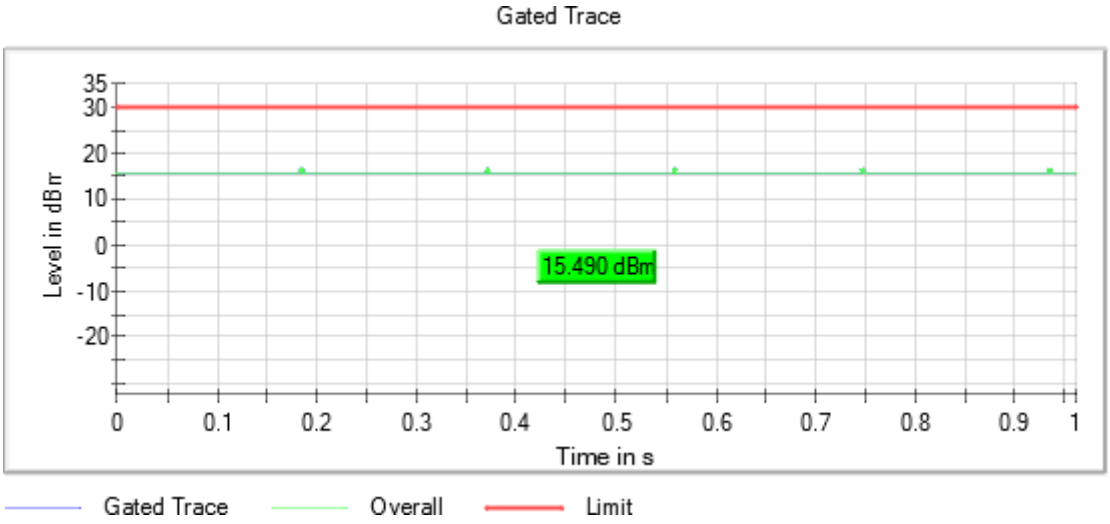
Attachments

Frequency MHz = 5180.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

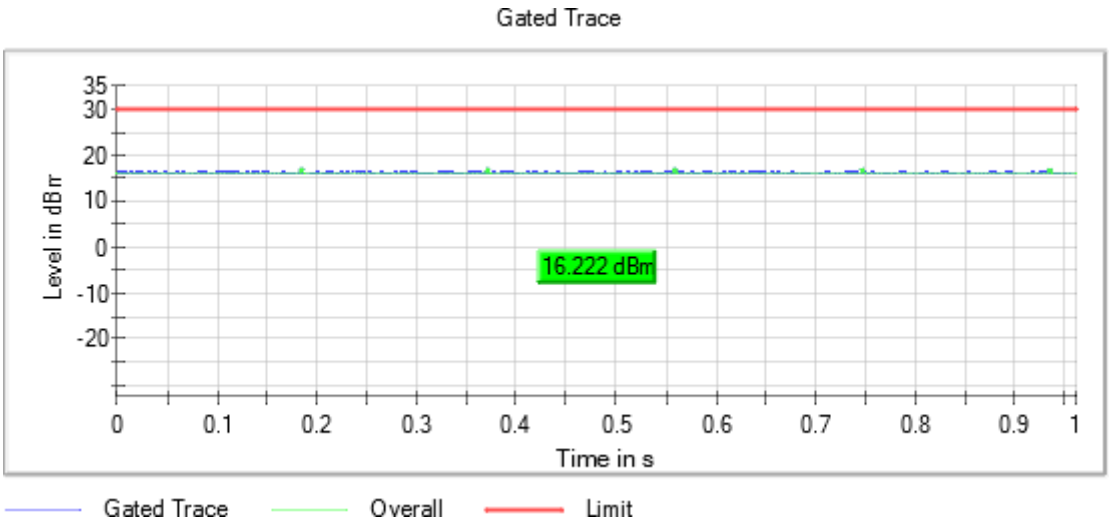
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5200.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

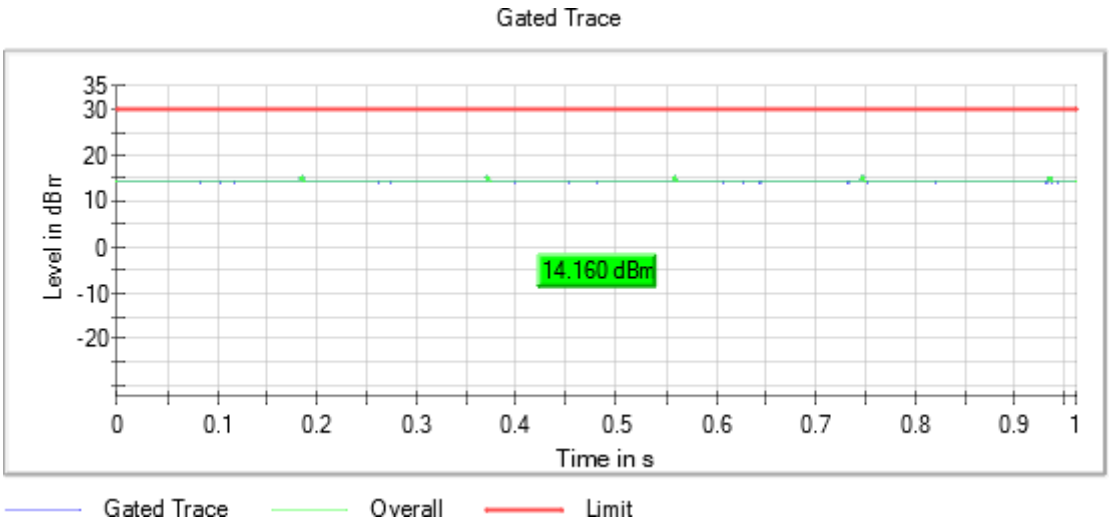
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5240.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

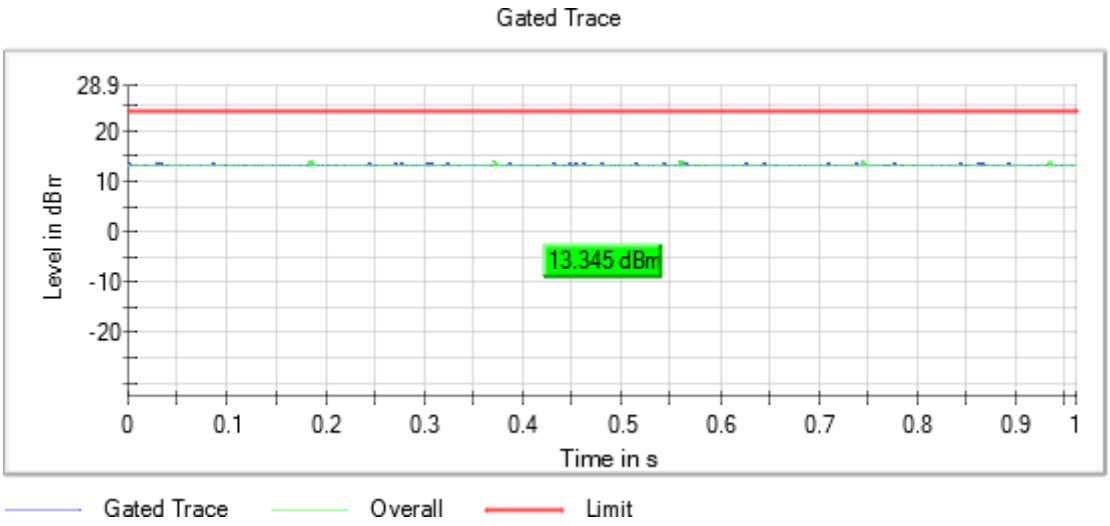
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5260.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

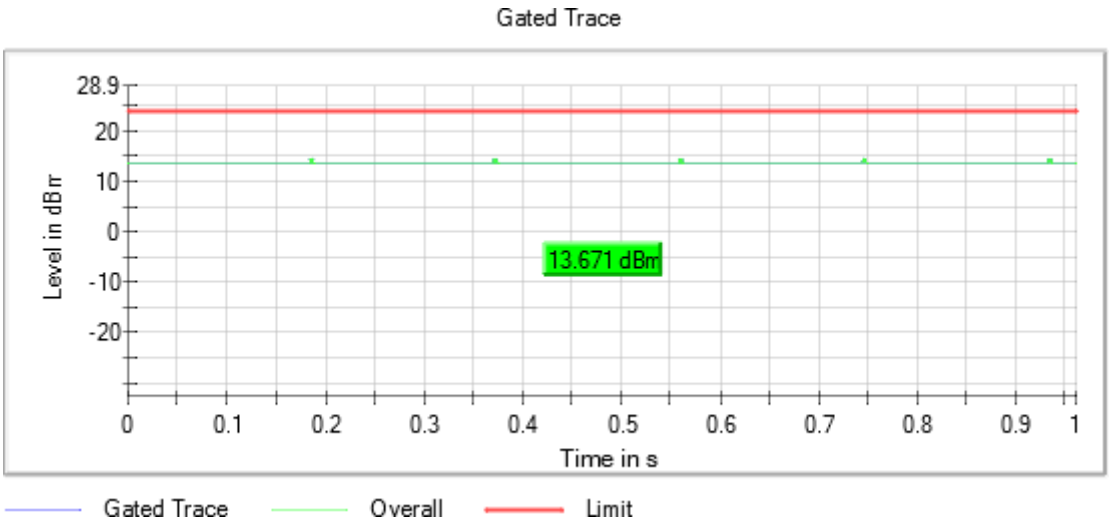
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5280.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

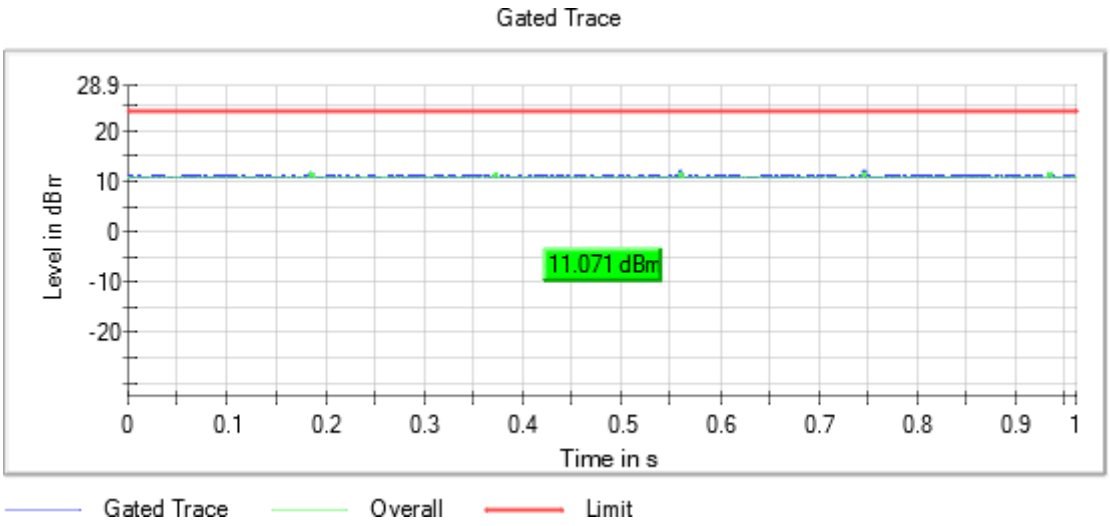
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5320.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

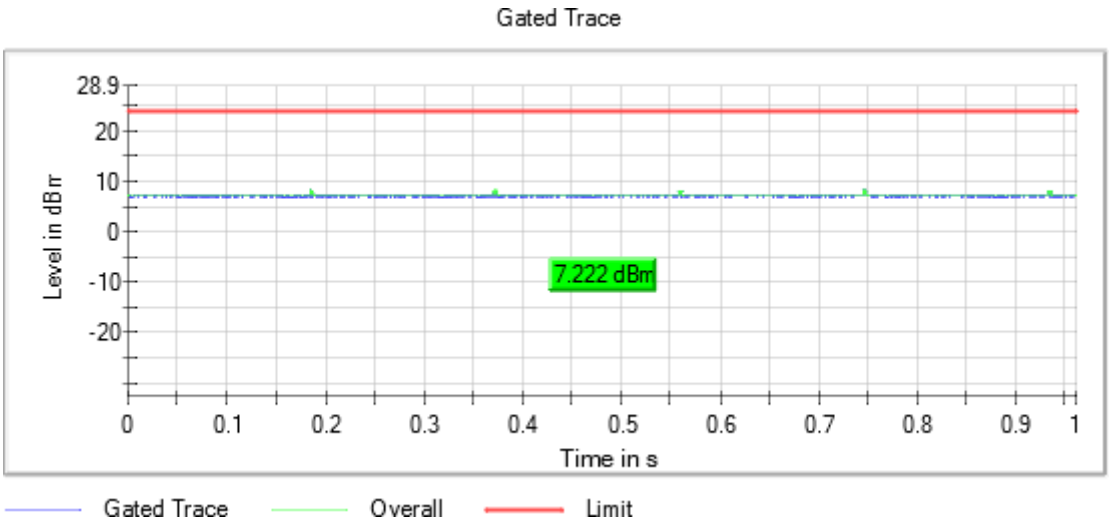
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5500.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

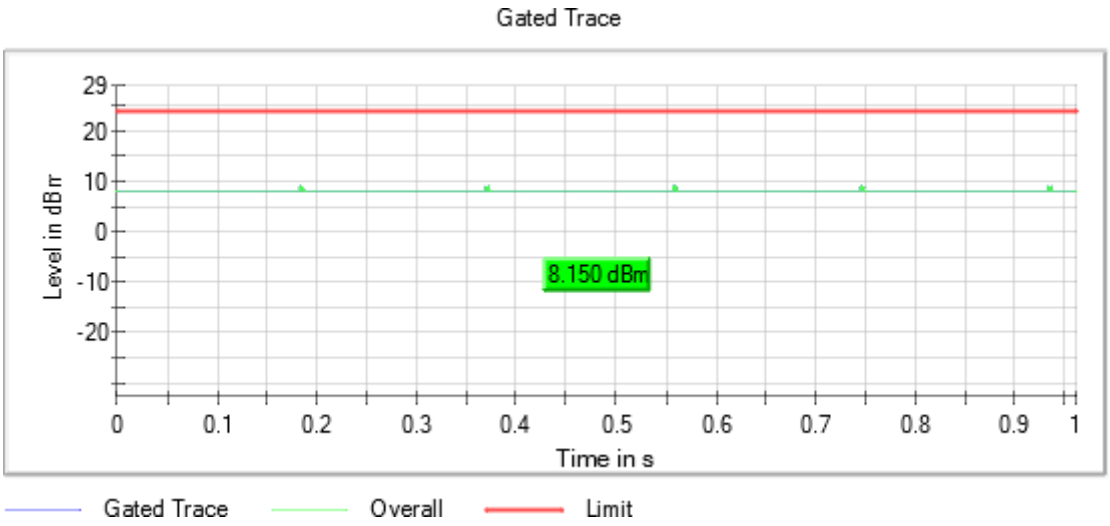
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5580.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

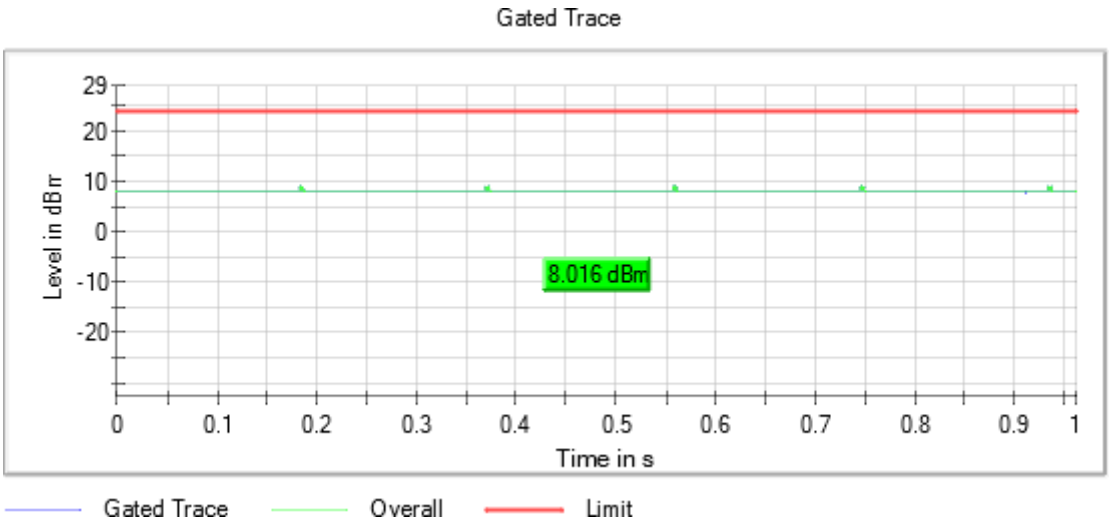
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5700.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

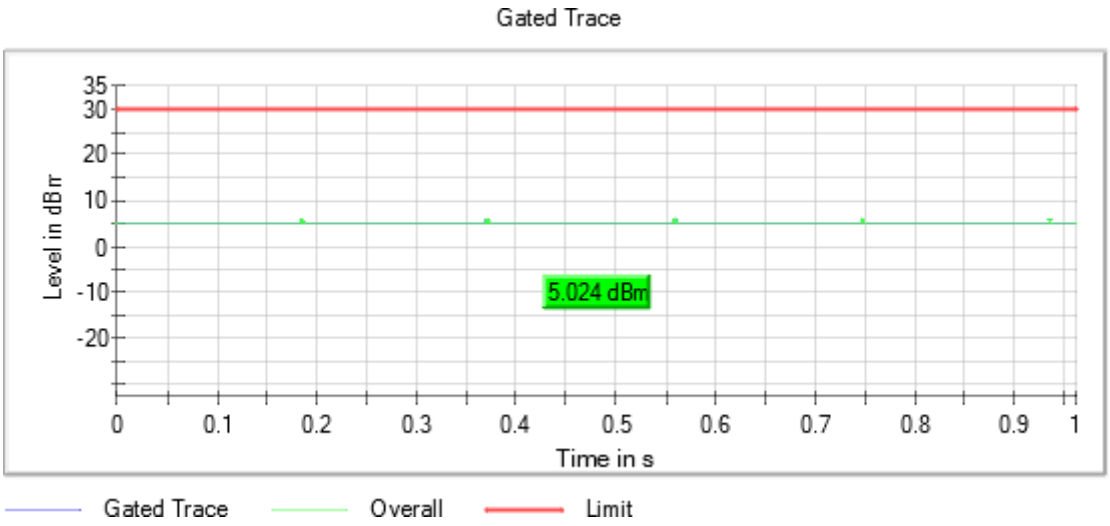
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5745.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

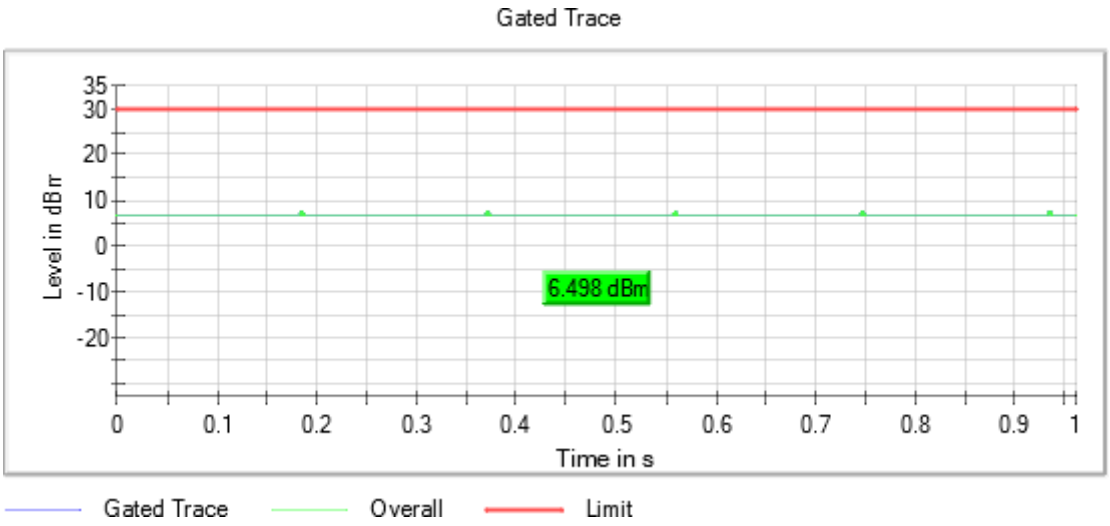
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5785.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

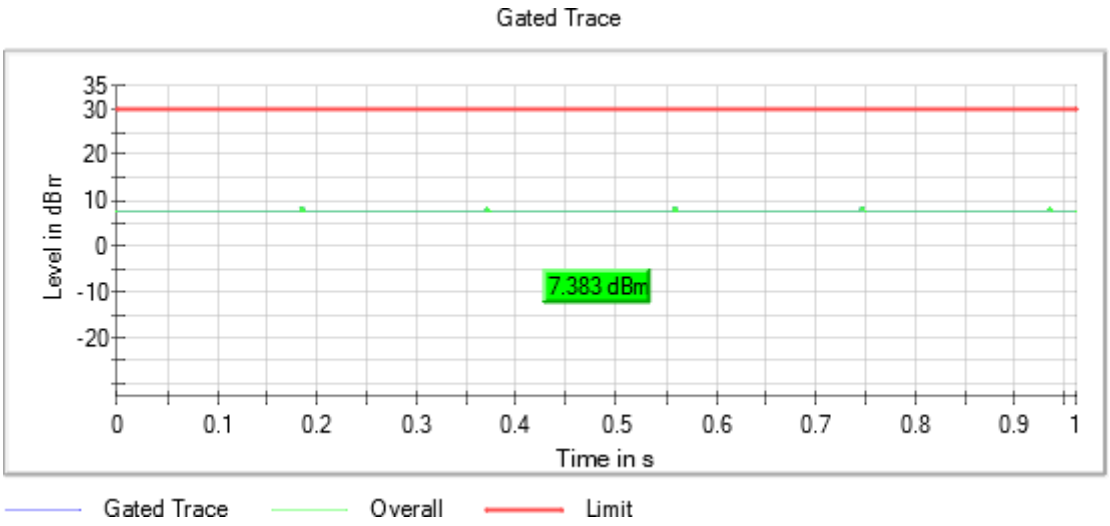
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5825.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11n HT20 (OFDM MCS7)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5180.00000	15.8	18.4
5200.00000	16.4	19.0
5240.00000	14.6	17.2
5260.00000	13.8	16.4
5280.00000	14.0	16.6
5320.00000	11.3	13.9
5500.00000	7.4	10.0
5580.00000	8.2	10.8
5700.00000	8.1	10.7
5745.00000	5.2	7.8
5785.00000	6.5	9.1
5825.00000	7.5	10.1

Verdict

Pass

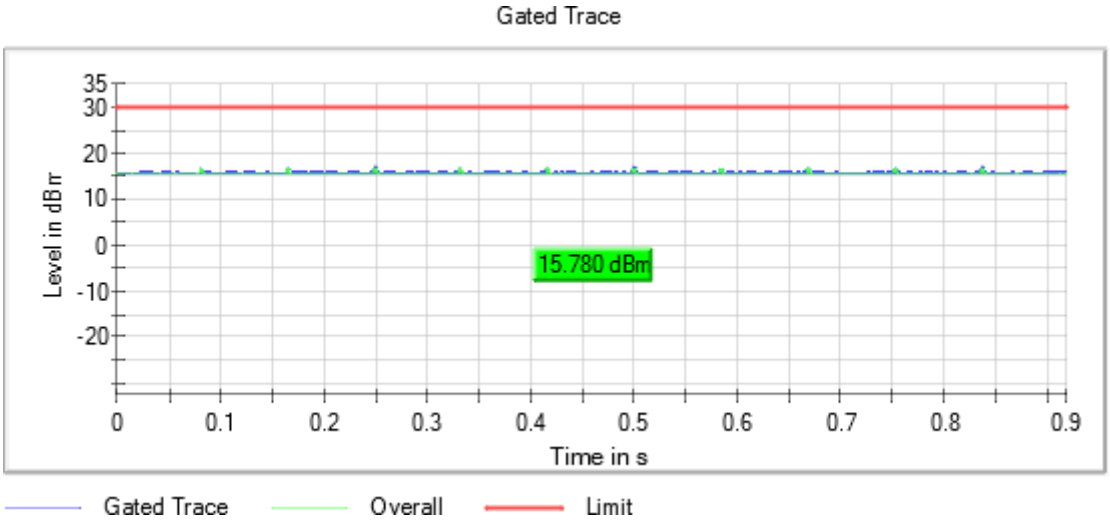
Attachments

Frequency MHz = 5180.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

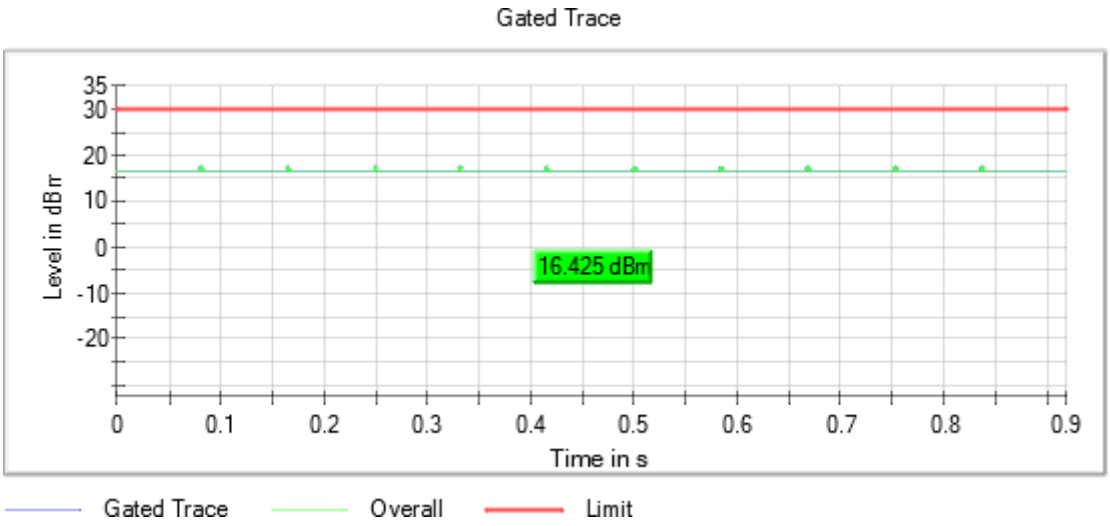
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5200.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

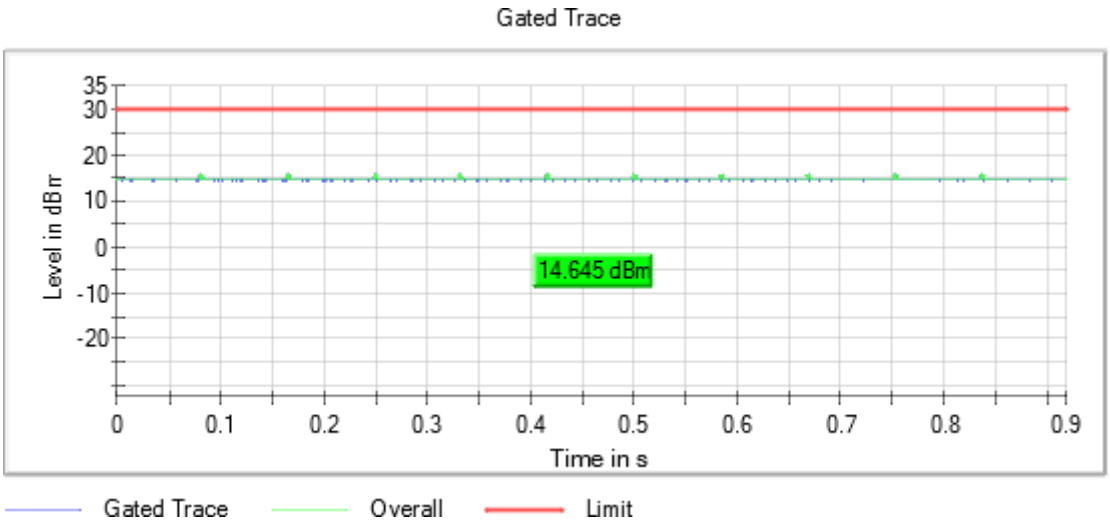
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5240.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

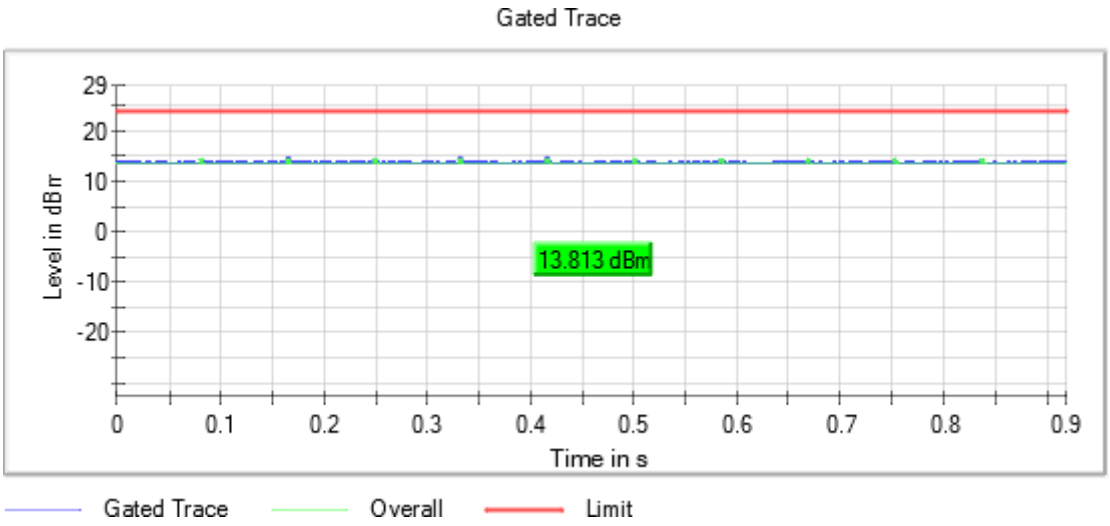
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5260.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

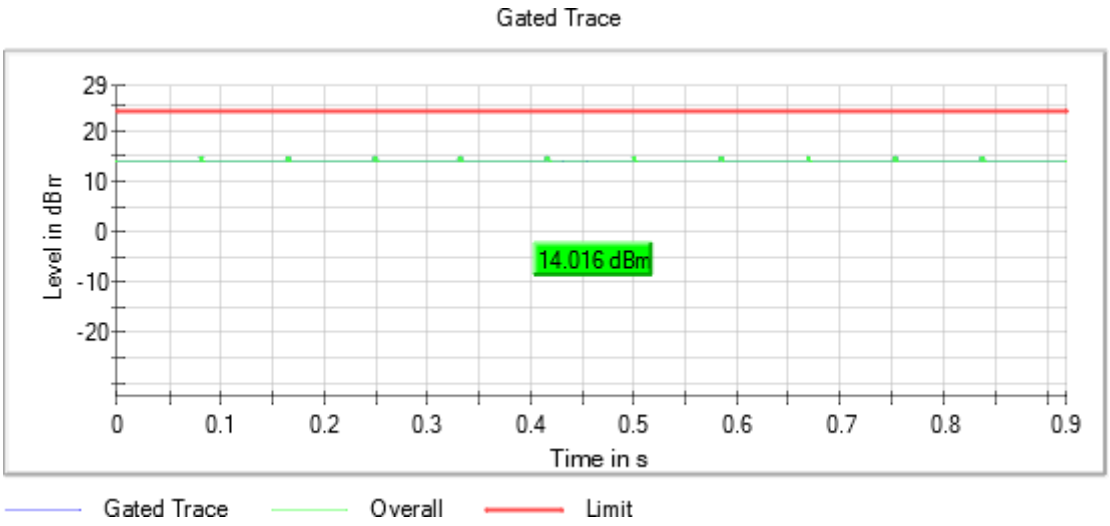
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5280.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

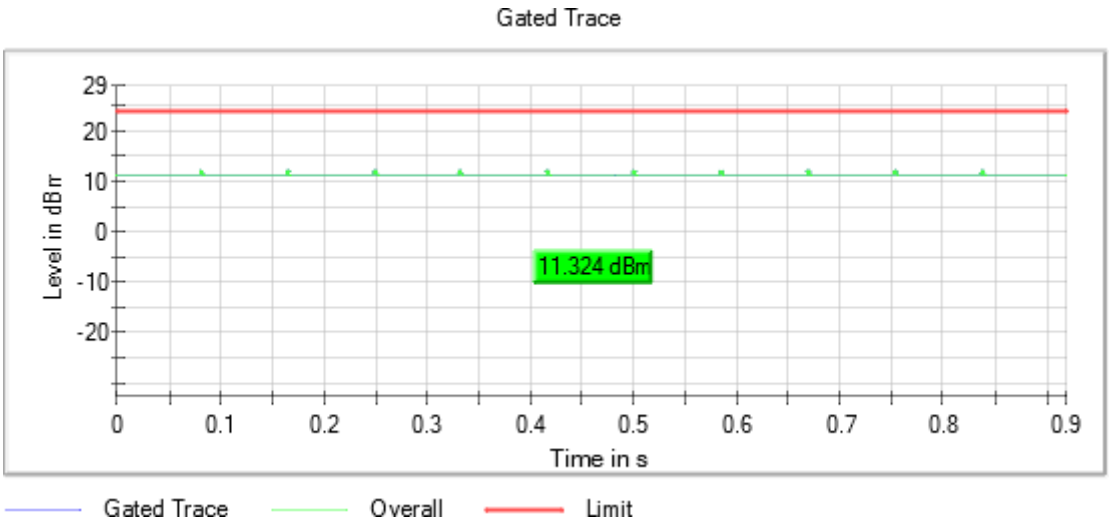
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5320.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5500.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

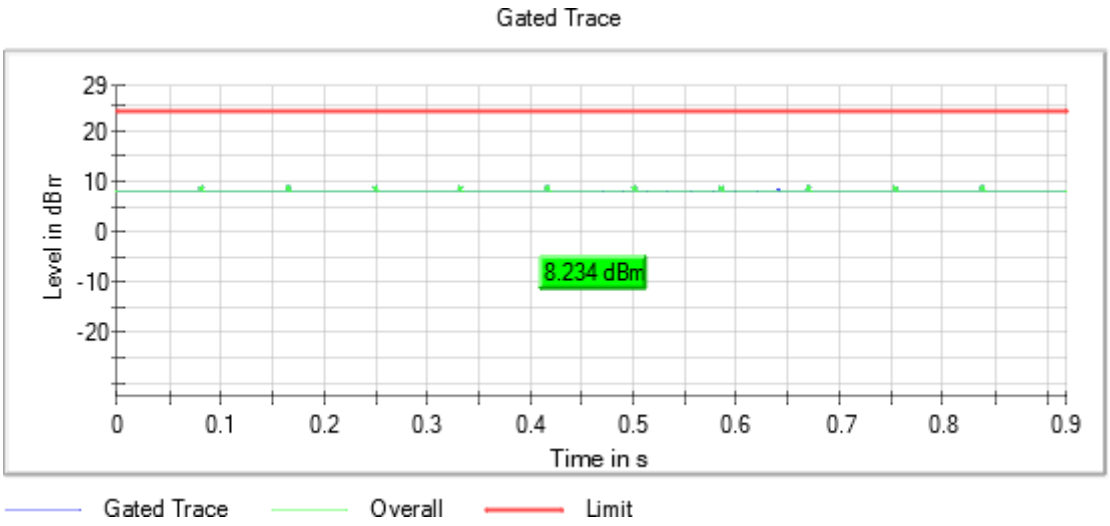
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5580.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

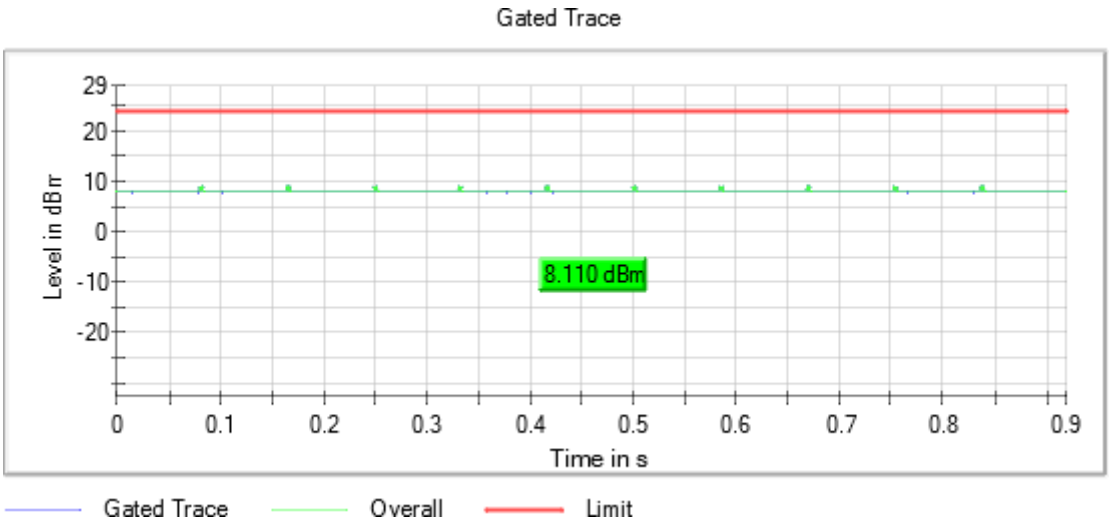
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5700.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

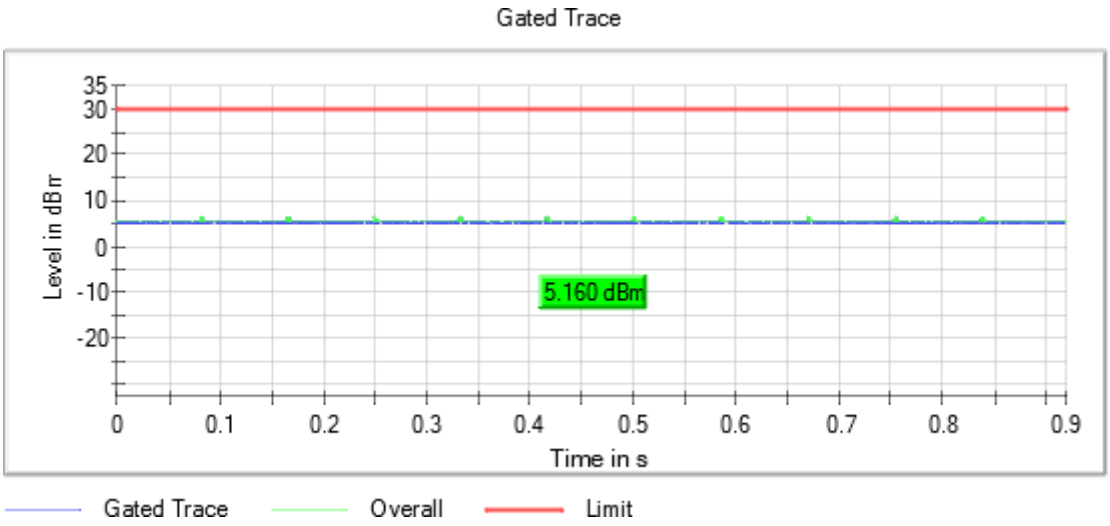
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5745.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5785.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5825.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11n HT40 (OFDM MCS7)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5190.00000	16.2	18.8
5230.00000	15.0	17.6
5270.00000	13.7	16.3
5310.00000	11.8	14.4
5510.00000	8.3	10.9
5550.00000	7.9	10.5
5670.00000	8.1	10.7
5755.00000	5.8	8.4
5795.00000	6.0	8.6

Verdict

Pass

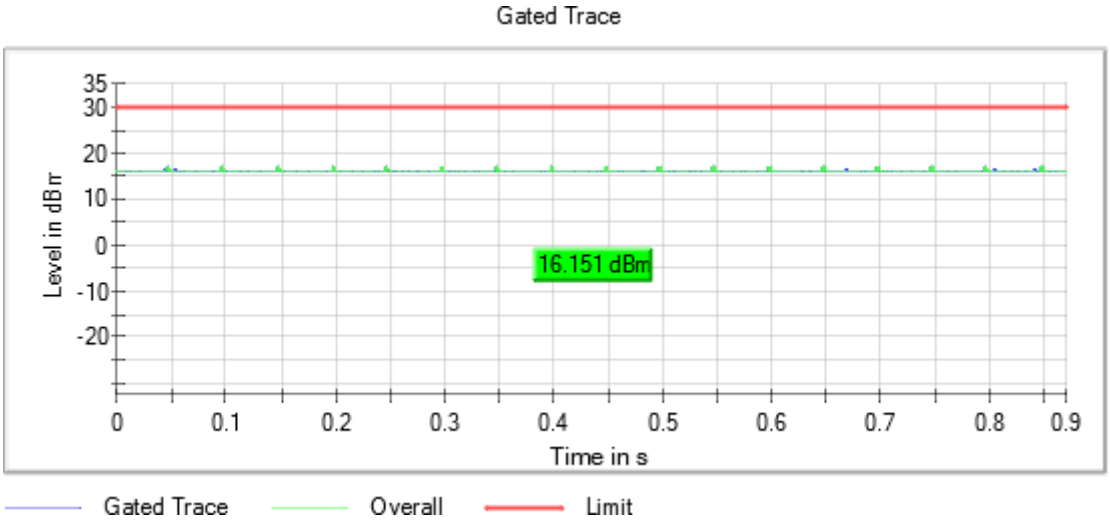
Attachments

Frequency MHz = 5190.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

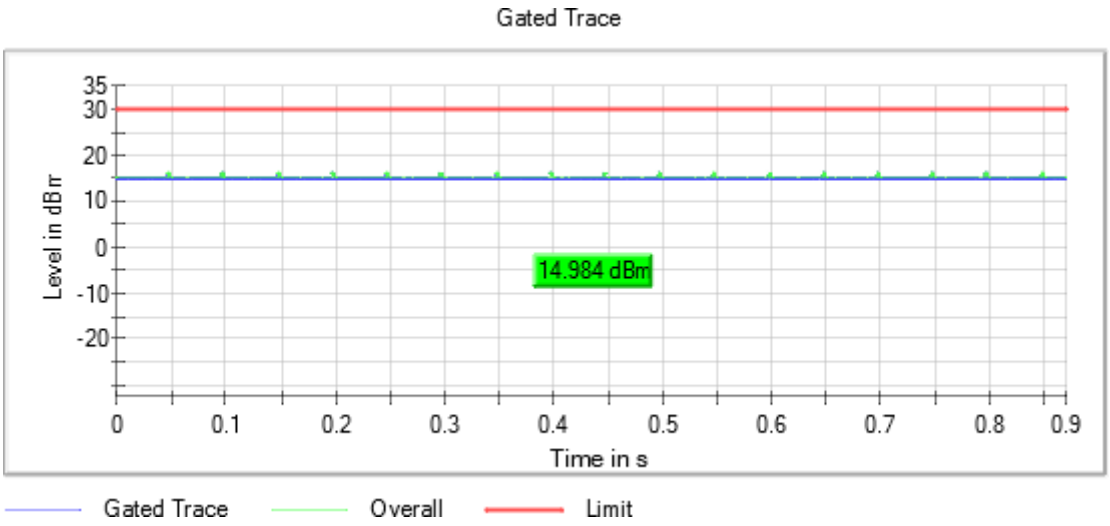
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5230.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

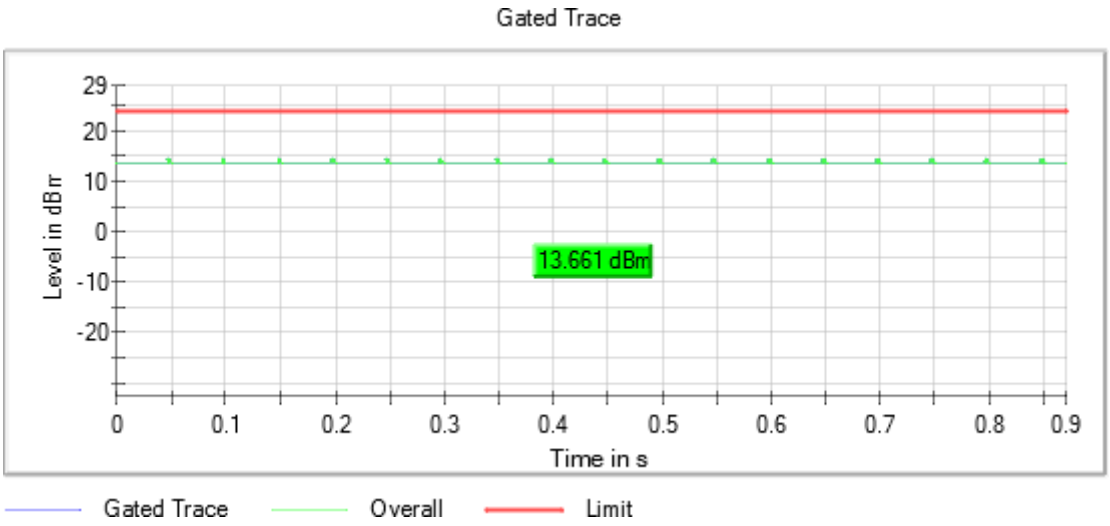
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5270.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

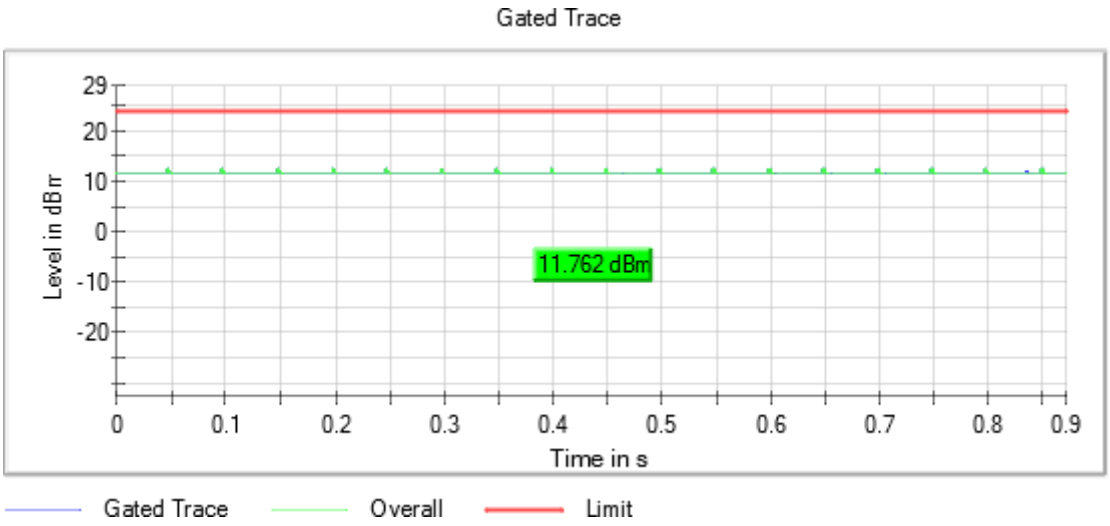
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5310.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

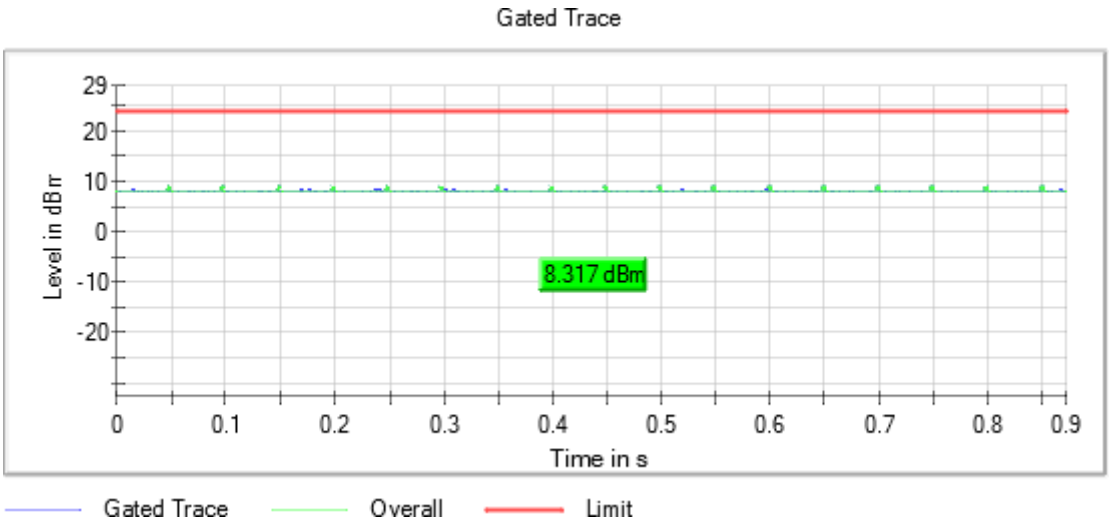
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5510.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

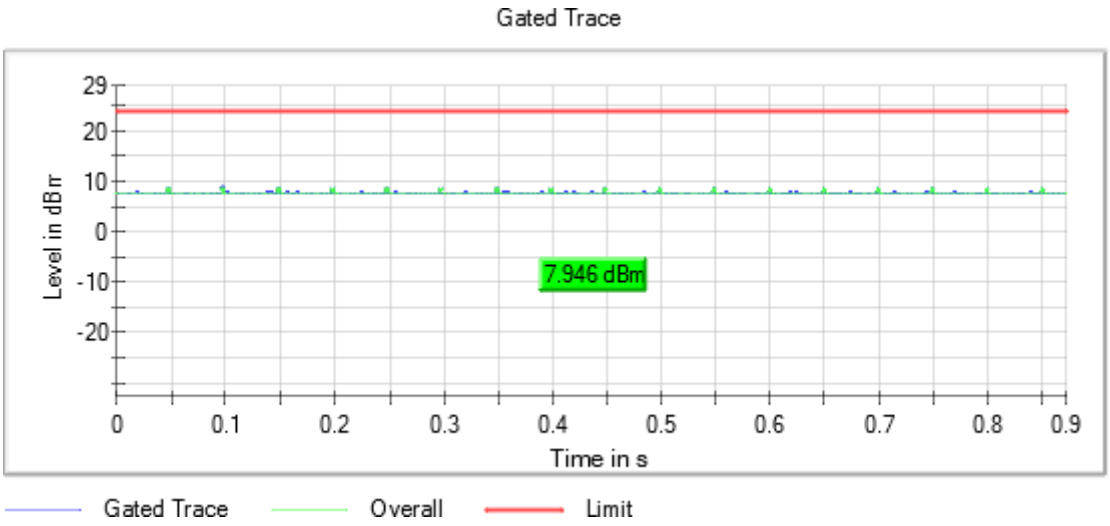
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5550.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

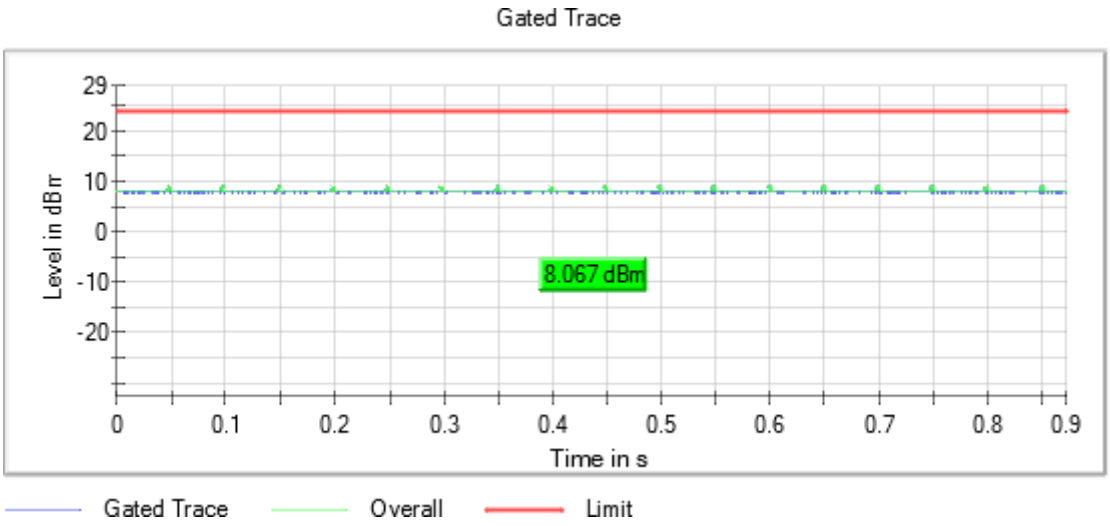
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5670.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5755.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5795.00000 Modulation = 802.11n HT40 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ac VHT20 SS1 (OFDM MCS8)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5180.00000	16.0	18.6
5200.00000	16.6	19.2
5240.00000	14.5	17.1
5260.00000	13.6	16.2
5280.00000	14.0	16.6
5320.00000	11.1	13.7
5500.00000	7.4	10.0
5580.00000	8.2	10.8
5700.00000	8.1	10.7
5745.00000	5.1	7.7
5785.00000	6.5	9.1
5825.00000	7.4	10.0

Verdict

Pass

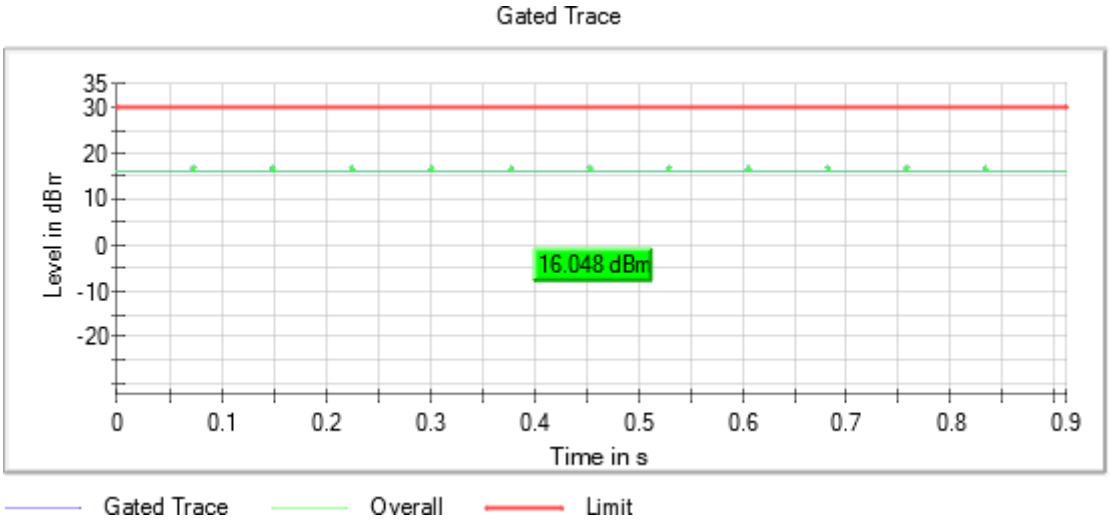
Attachments

Frequency MHz = 5180.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

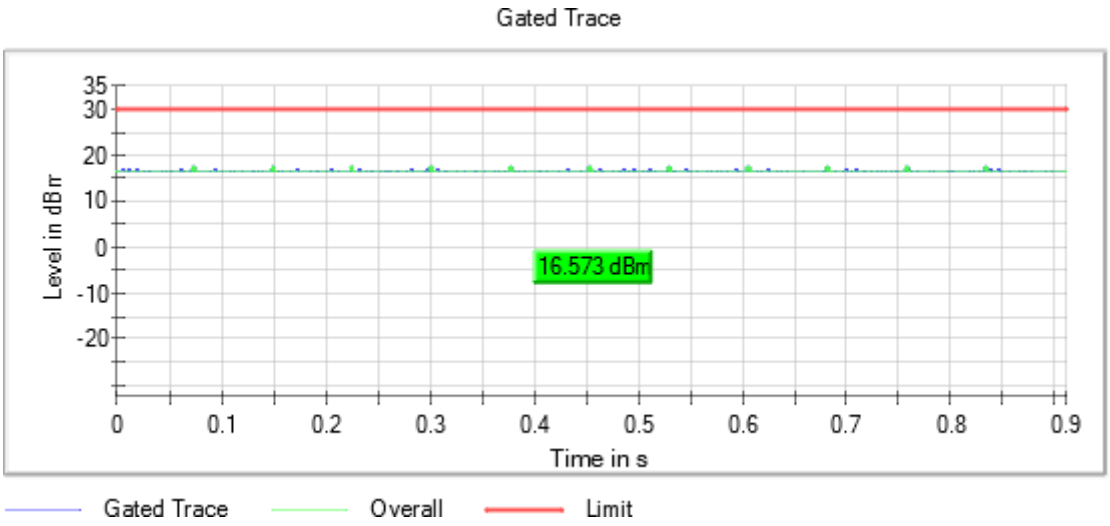
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5200.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

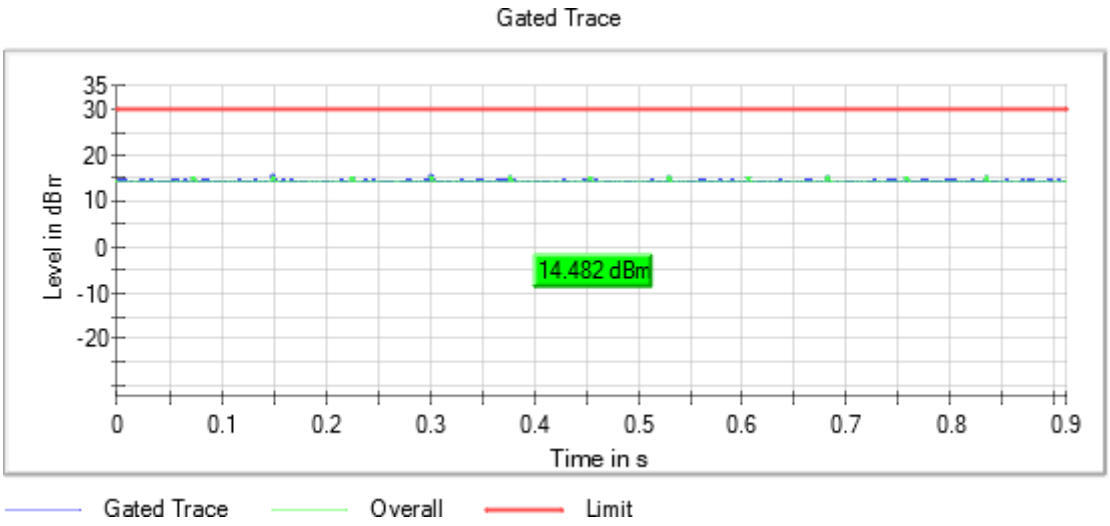
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5240.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

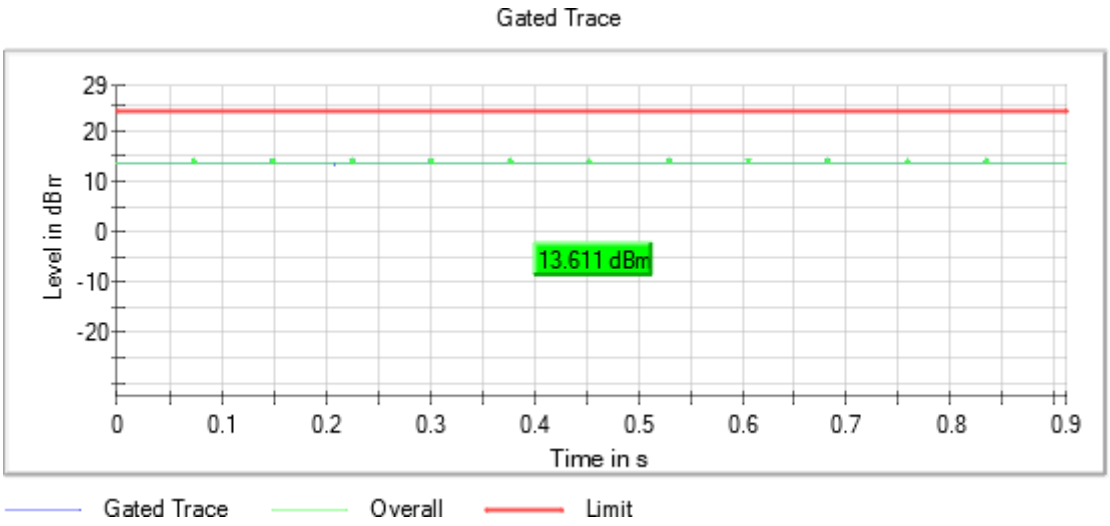
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5260.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

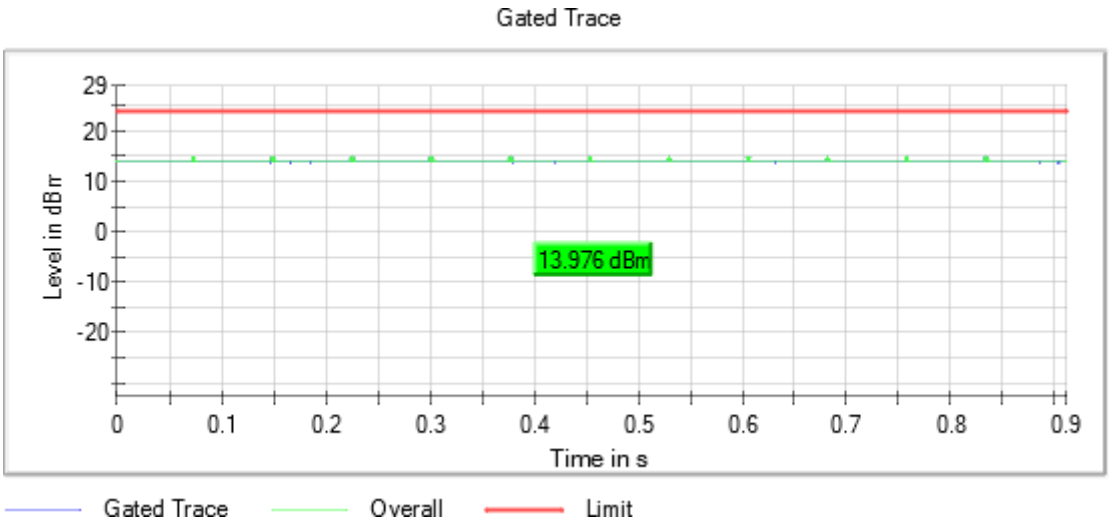
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5280.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

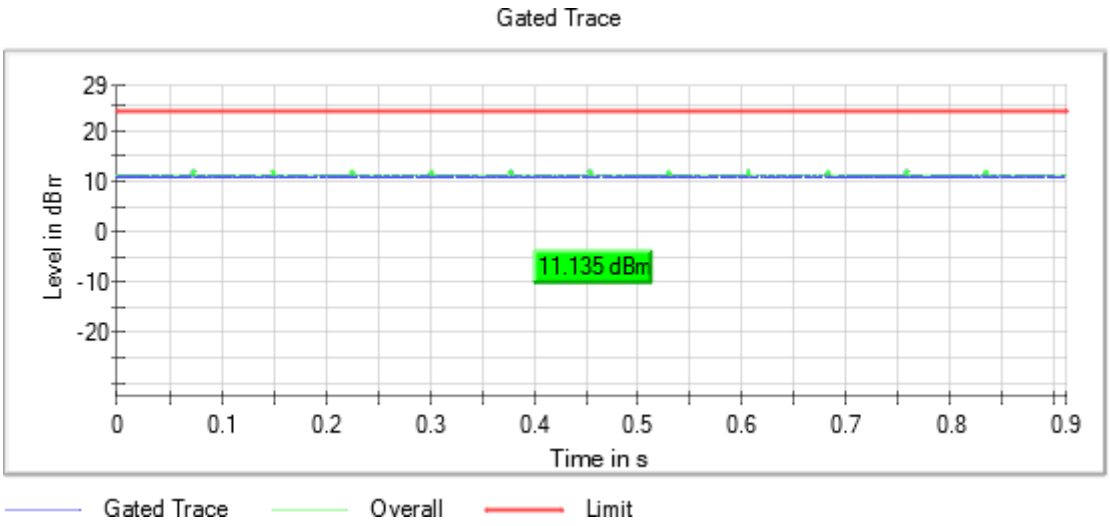
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5320.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

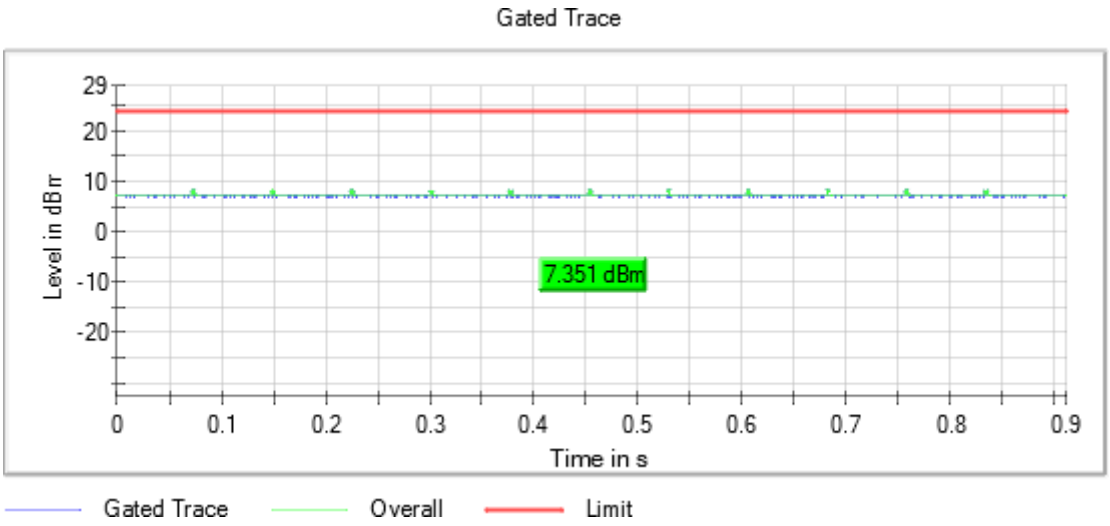
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5500.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

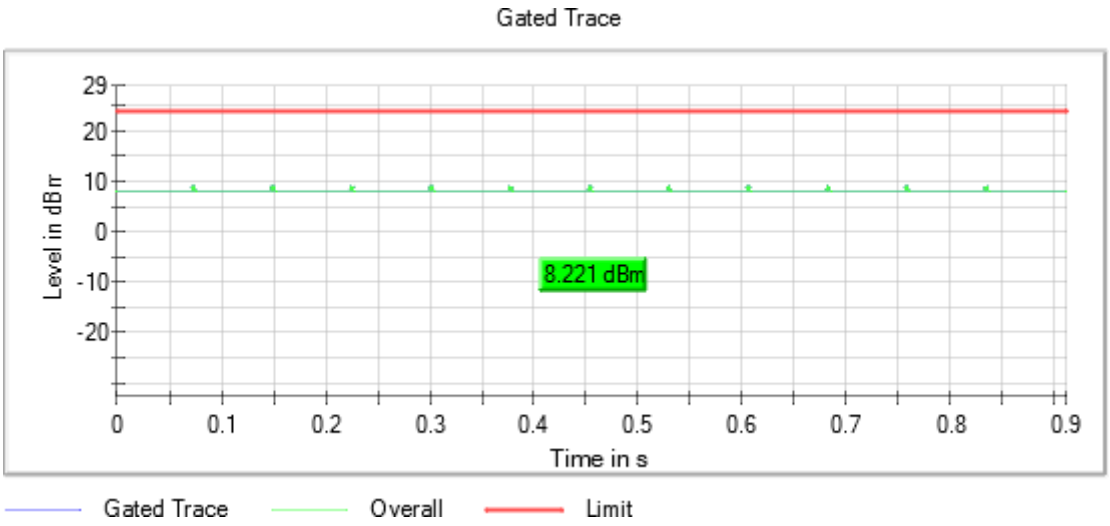
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5580.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

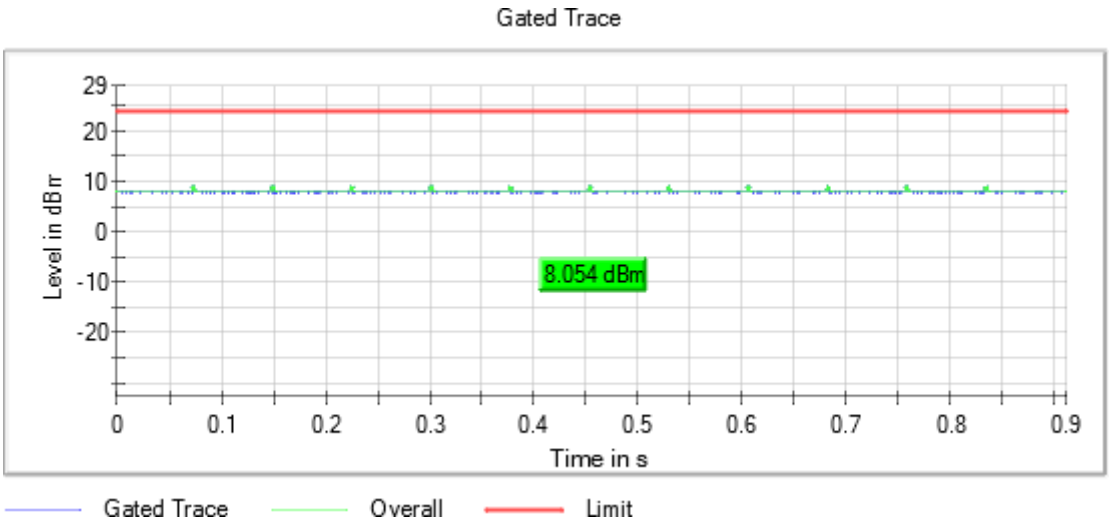
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5700.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

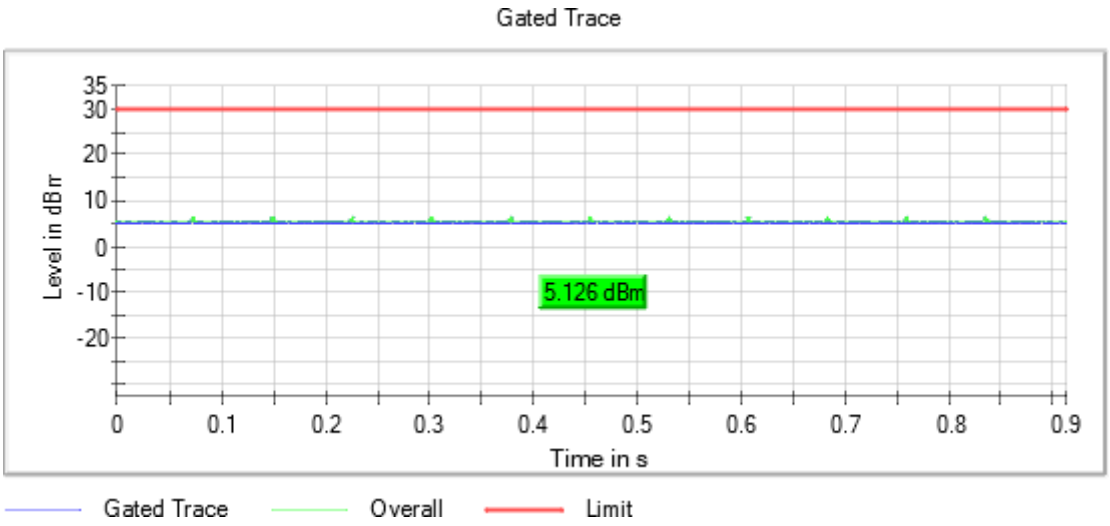
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5745.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

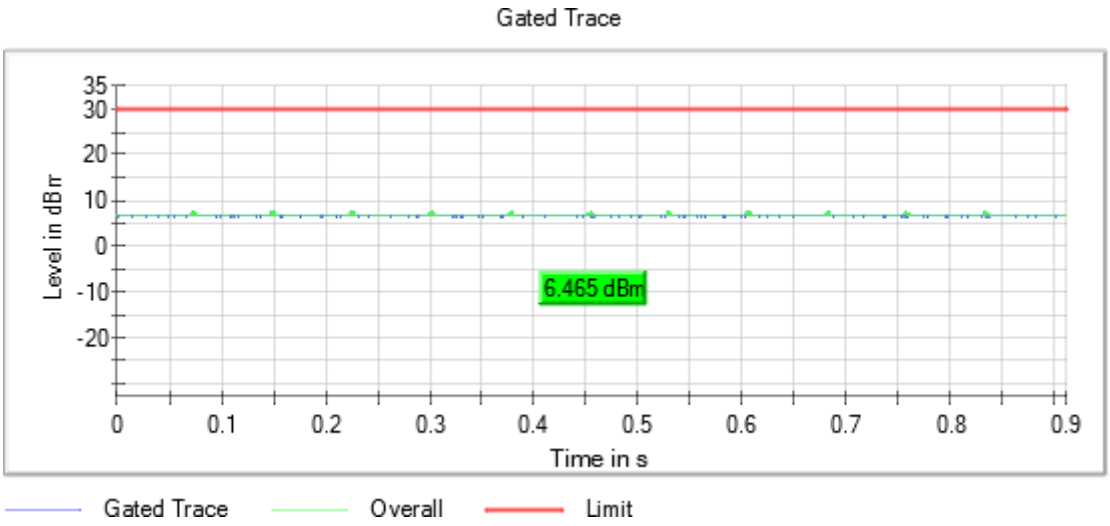
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5785.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5825.00000 Modulation = 802.11ac VHT20 SS1 (OFDM MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ac VHT40 SS1 (OFDM MCS9)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5190.00000	16.1	18.7
5230.00000	14.9	17.5
5270.00000	13.7	16.3
5310.00000	11.8	14.4
5510.00000	8.3	10.9
5550.00000	7.9	10.5
5670.00000	8.0	10.6
5755.00000	5.6	8.2
5795.00000	5.8	8.4

Verdict

Pass

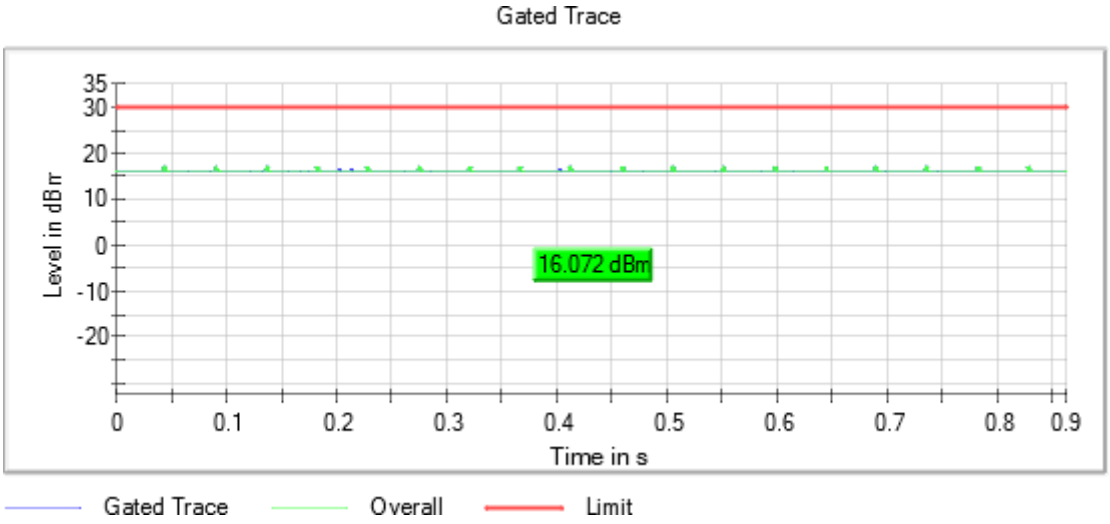
Attachments

Frequency MHz = 5190.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

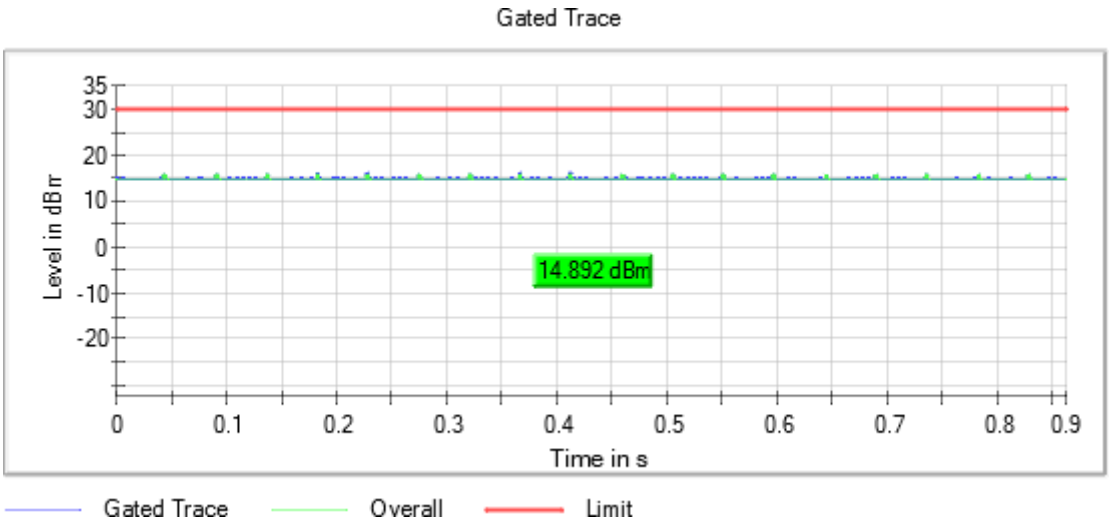
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5230.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

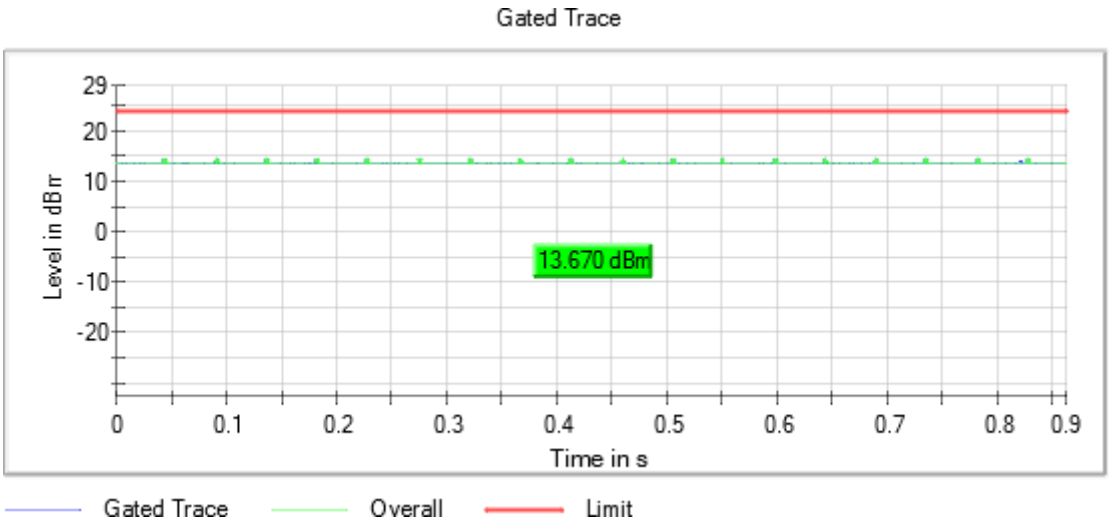
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5270.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

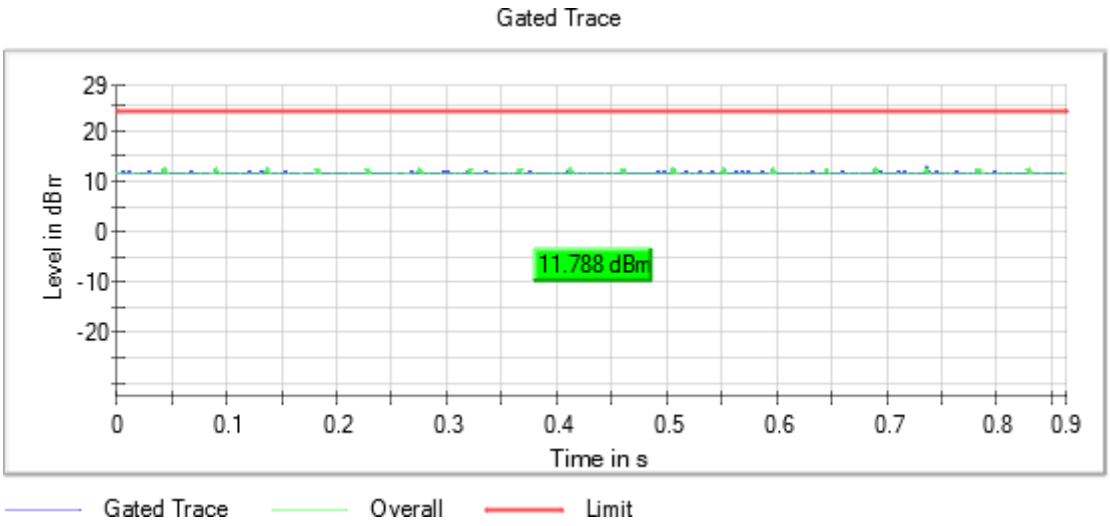
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5310.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

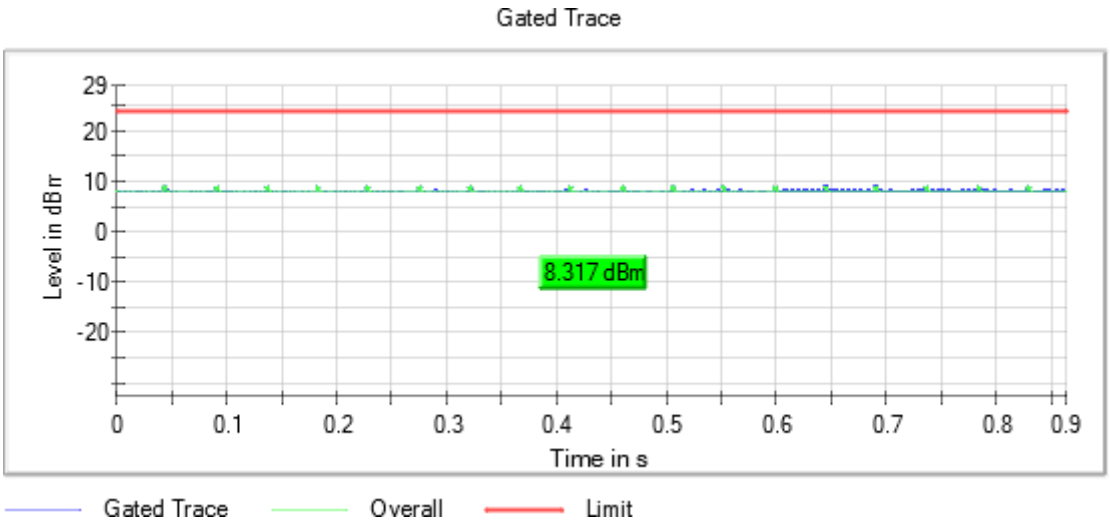
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5510.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

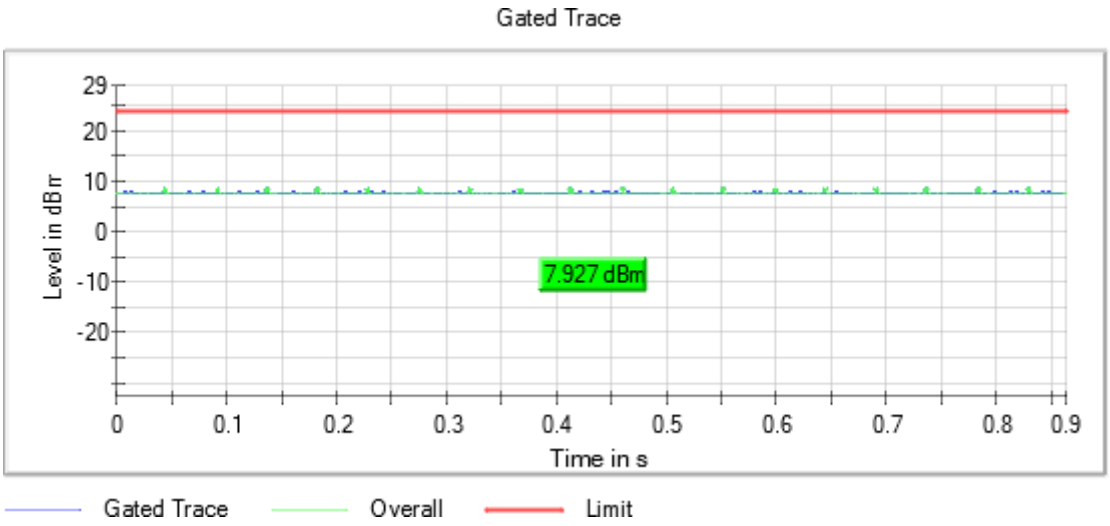
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5550.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

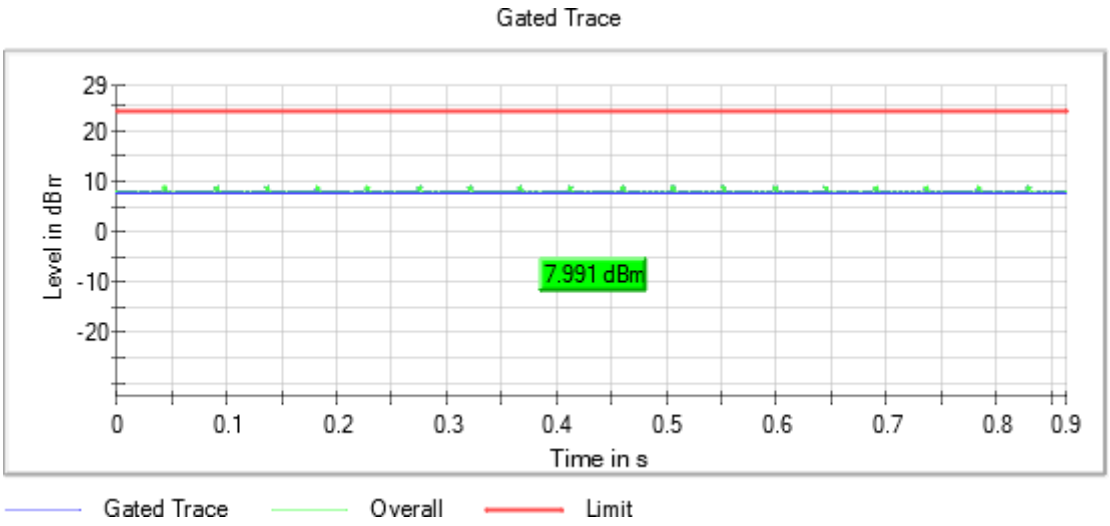
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5670.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

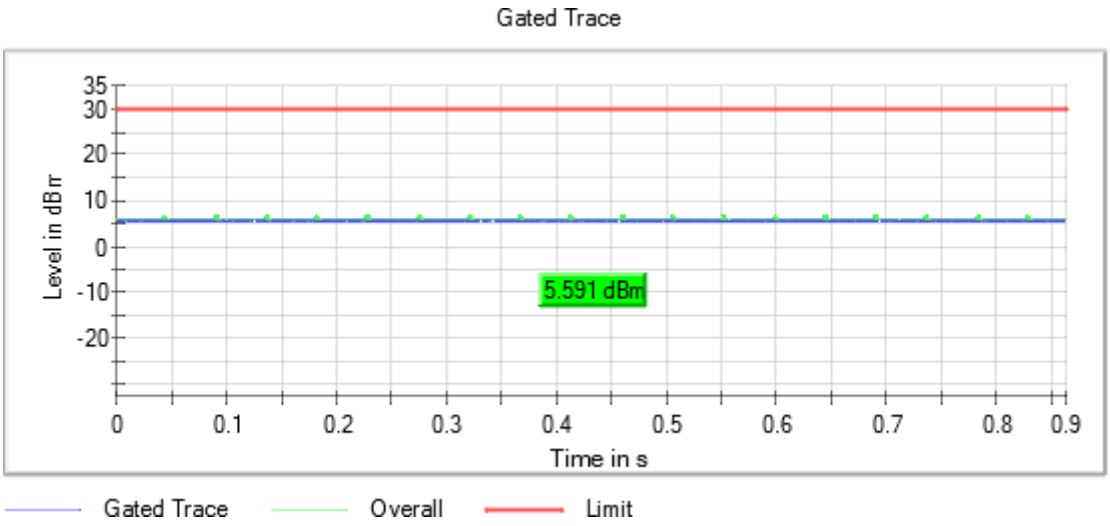
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5755.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

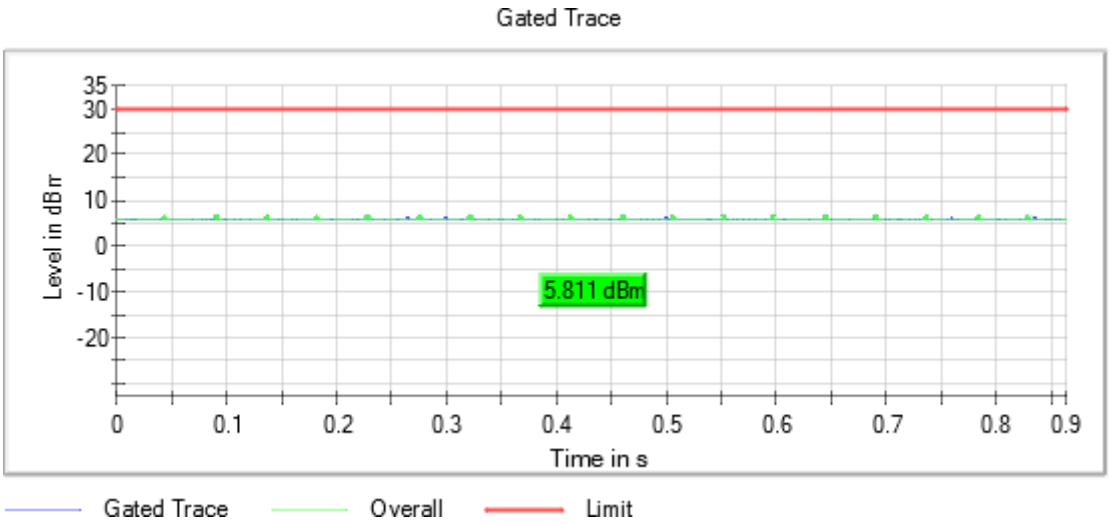
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5795.00000 Modulation = 802.11ac VHT40 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ac VHT80 SS1 (OFDM MCS9)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5210.00000	11.5	14.1
5290.00000	10.4	13.0
5530.00000	7.5	10.1
5610.00000	8.1	10.7
5775.00000	5.5	8.1

Verdict

Pass

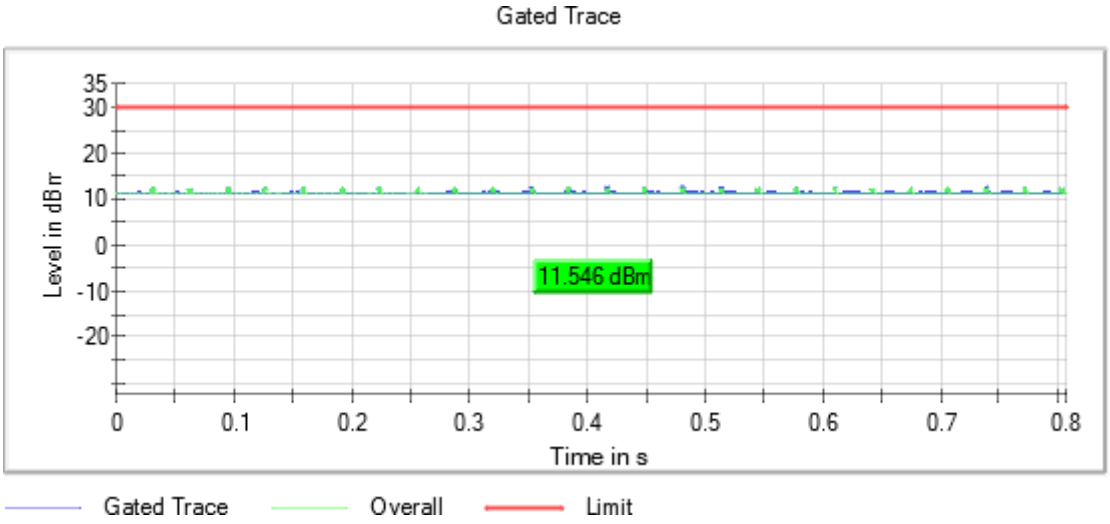
Attachments

Frequency MHz = 5210.00000 Modulation = 802.11ac VHT80 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

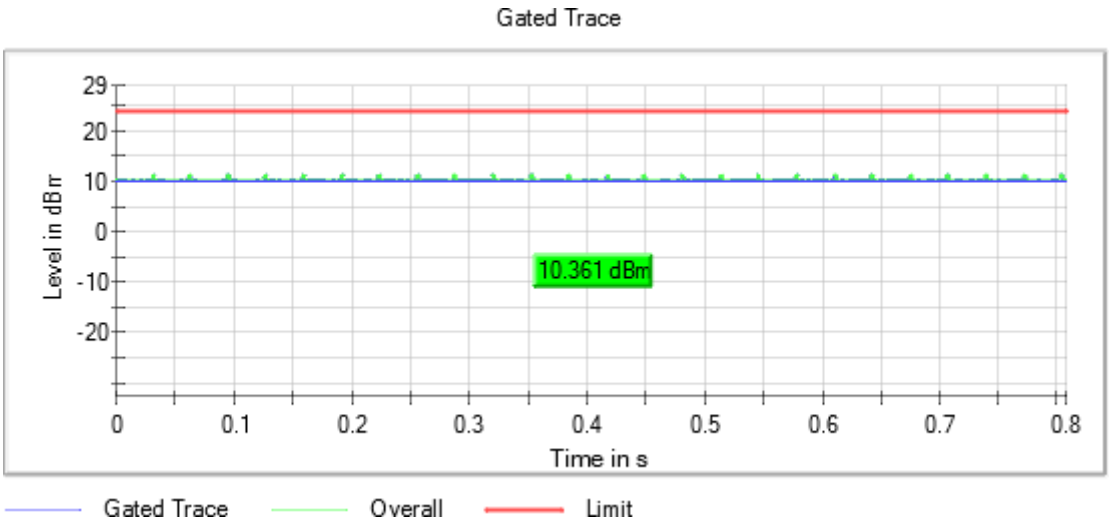
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5290.00000 Modulation = 802.11ac VHT80 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

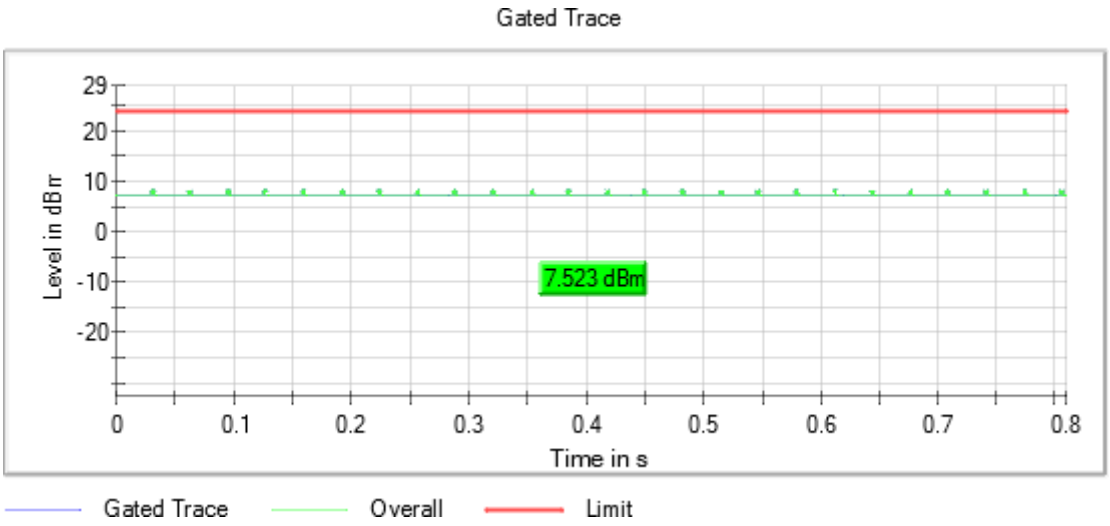
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5530.00000 Modulation = 802.11ac VHT80 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

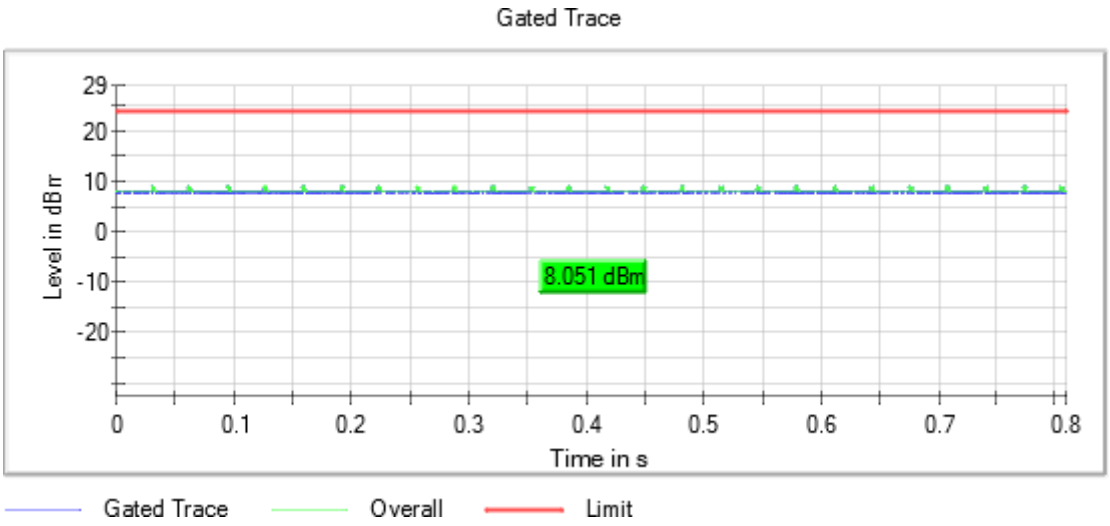
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5610.00000 Modulation = 802.11ac VHT80 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

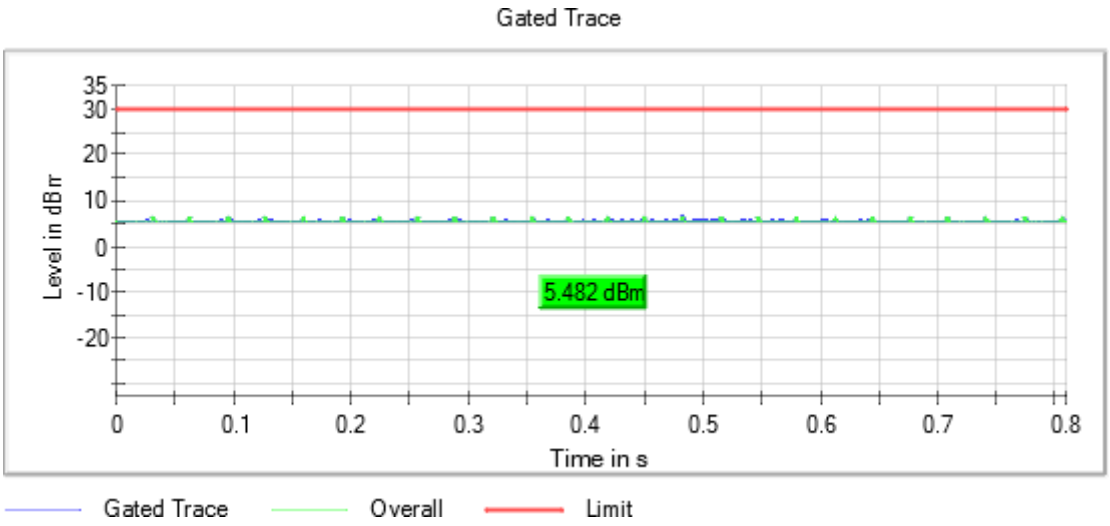
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5775.00000 Modulation = 802.11ac VHT80 SS1 (OFDM MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ax HE20 (OFDMA MCS8) – Full RU

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5180.00000	0.6	3.2
5200.00000	1.6	4.2
5240.00000	0.7	3.3
5260.00000	0.4	3.0
5280.00000	1.3	3.9
5320.00000	-0.3	2.3
5500.00000	-3.7	-1.1
5580.00000	-2.2	0.4
5700.00000	0.5	3.1
5745.00000	-0.2	2.4
5785.00000	2.3	4.9
5825.00000	2.1	4.7

Verdict

Pass

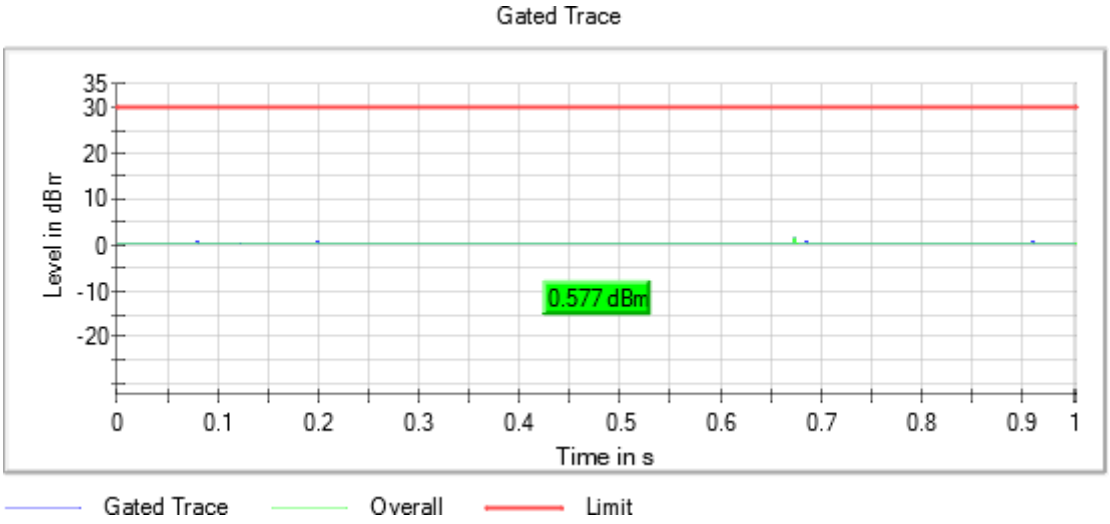
Attachments

Frequency MHz = 5180.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

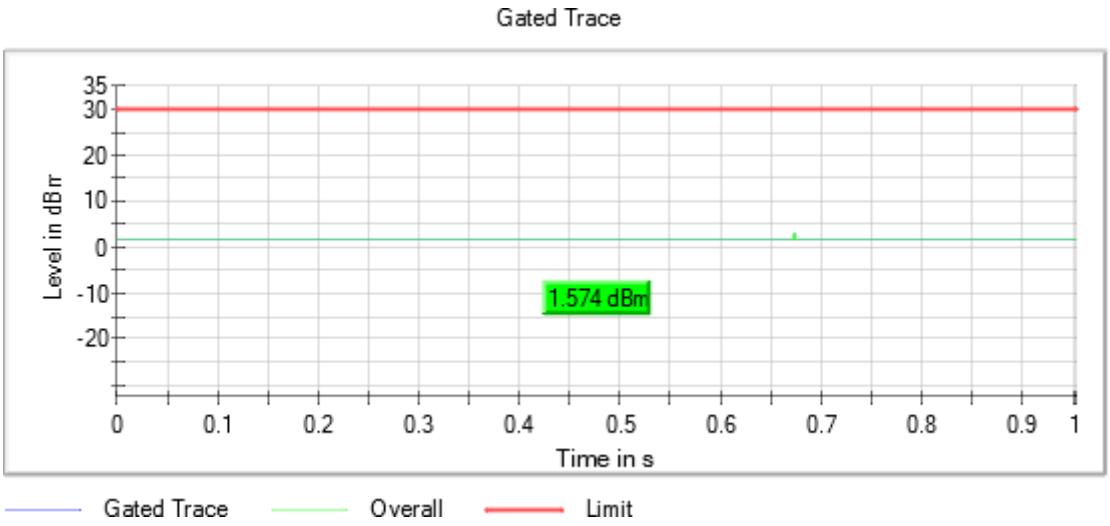
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5200.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

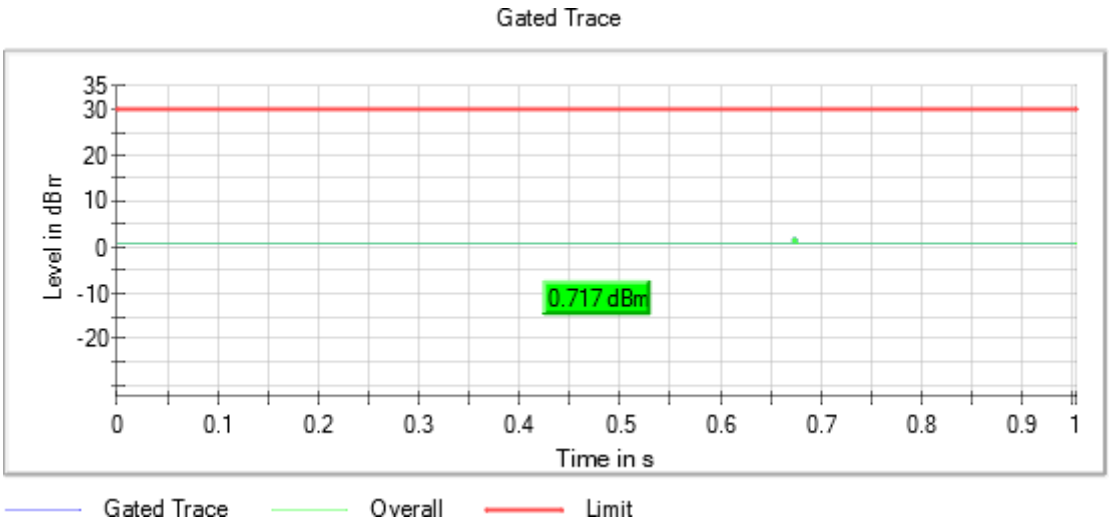
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5240.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

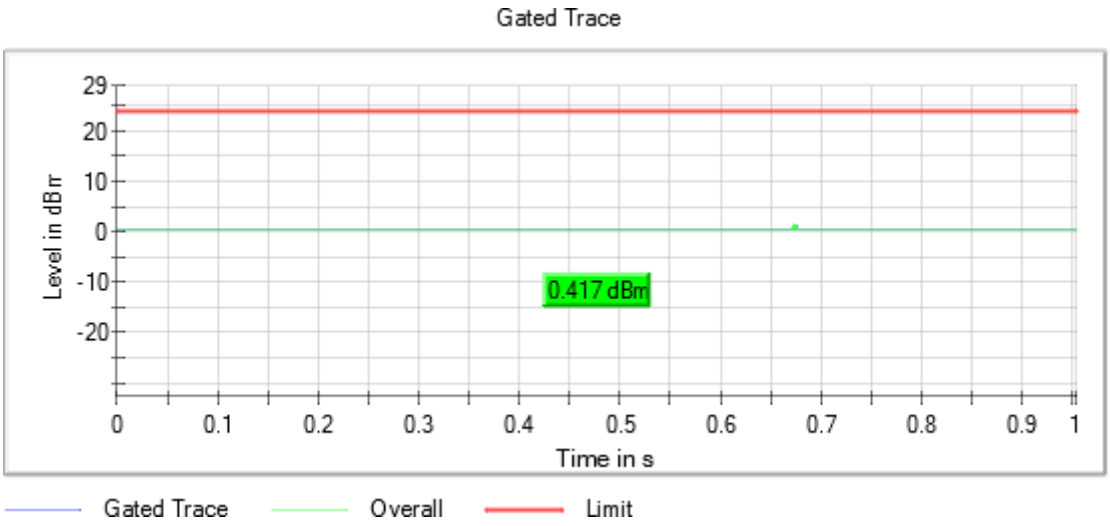
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5260.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

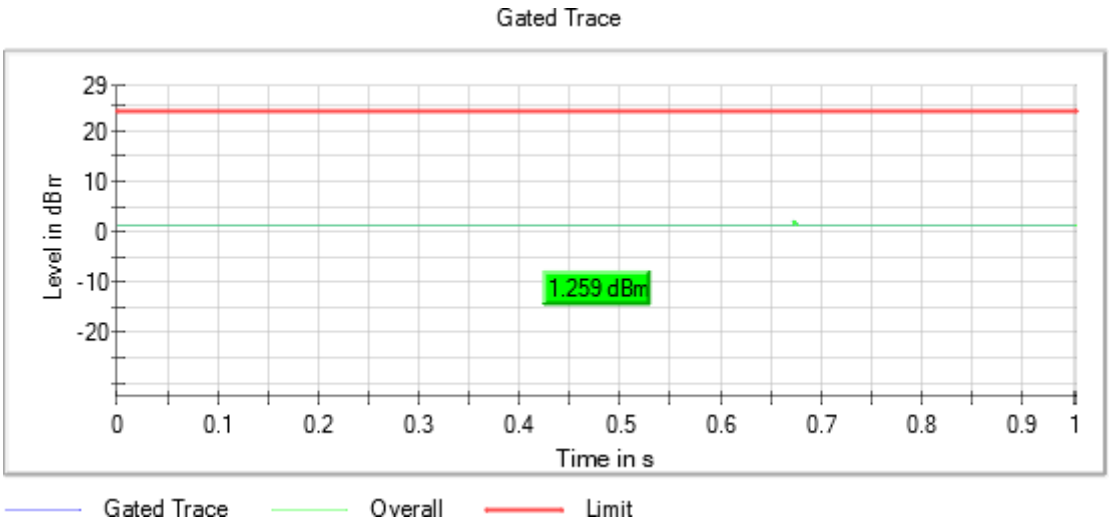
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5280.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

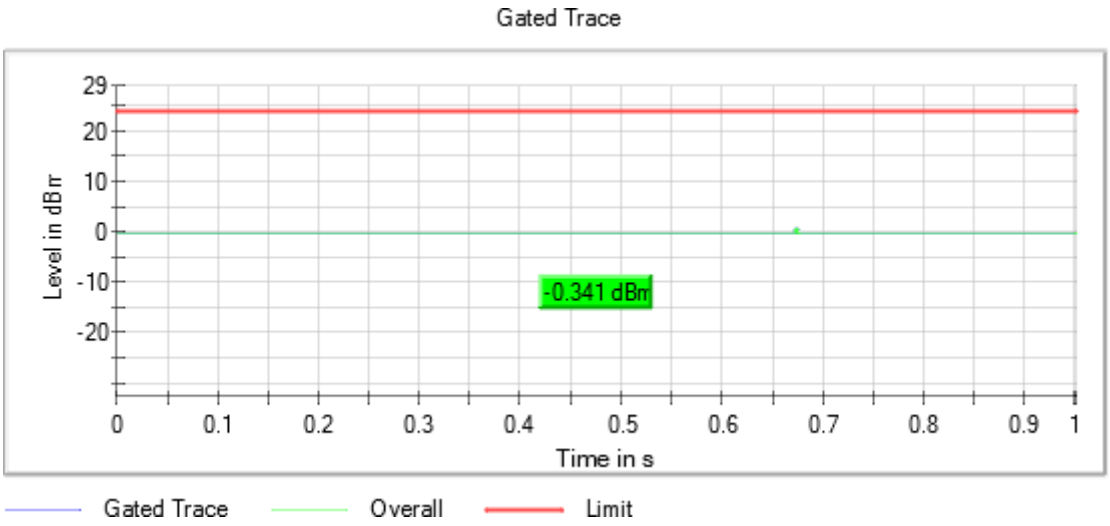
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5320.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

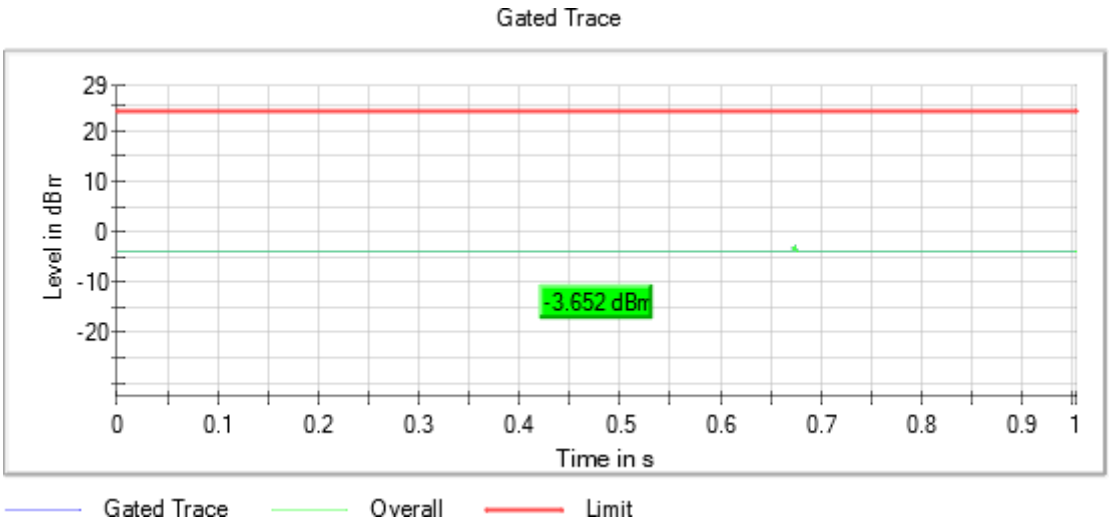
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5500.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

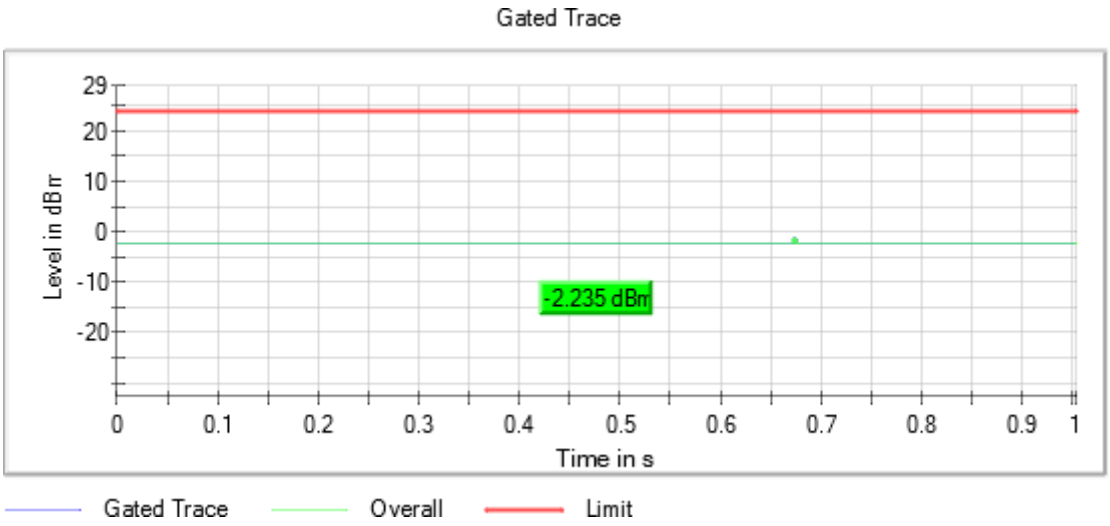
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5580.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

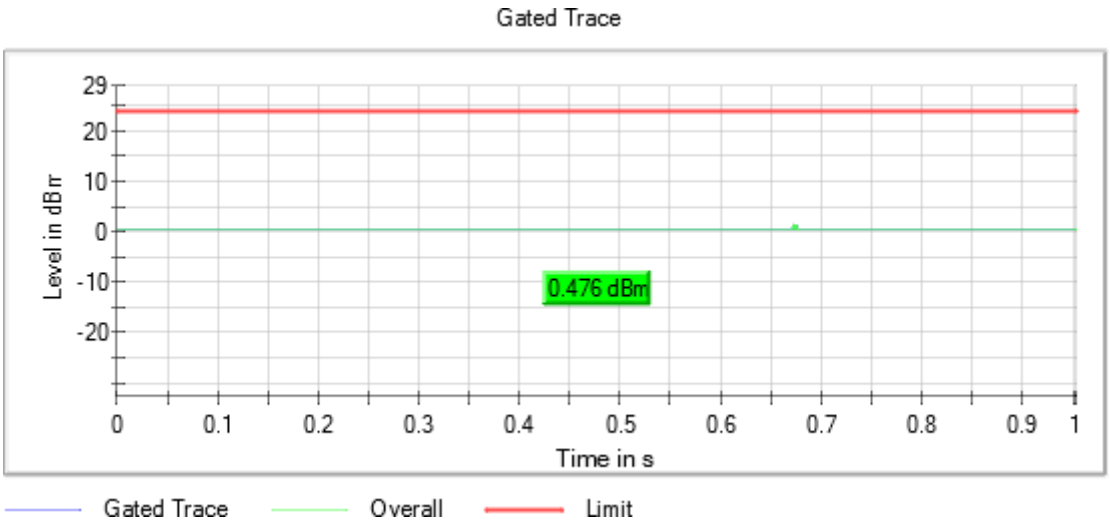
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5700.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

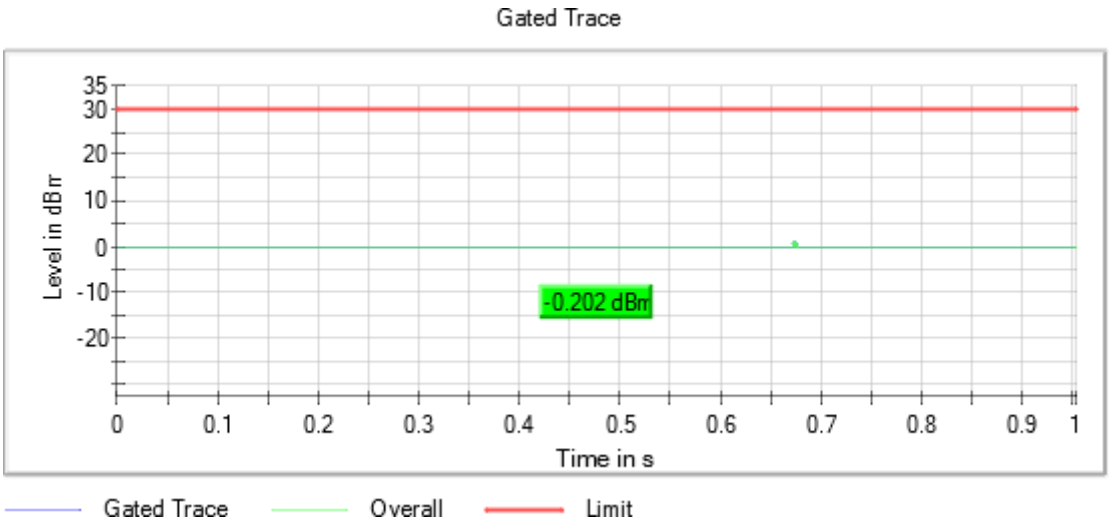
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5745.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

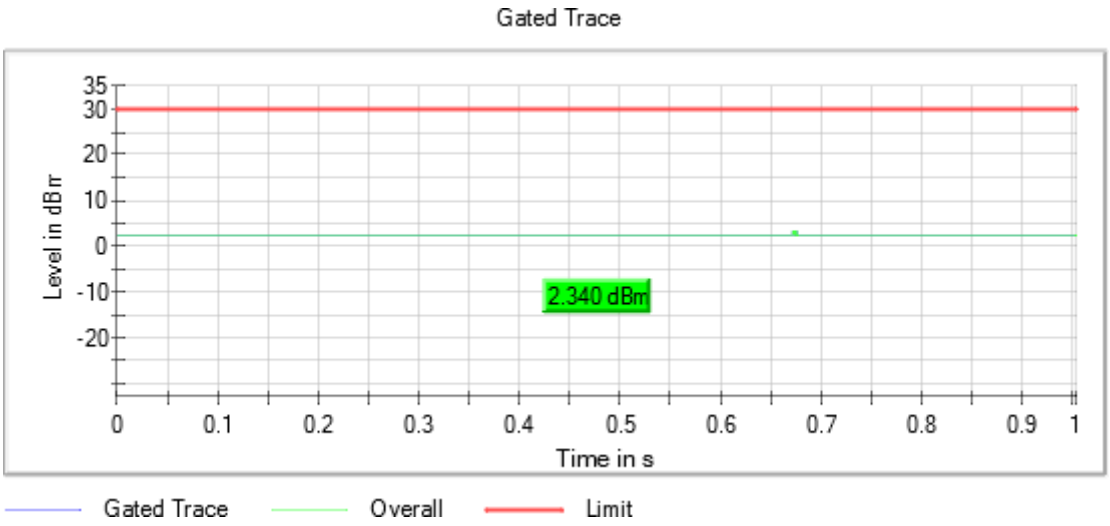
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5785.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5825.00000 Modulation = 802.11ax HE20 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ax HE20 SS1 (OFDMA MCS8) – Partial RU

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5180.00000	1.3	3.9
5200.00000	2.0	4.6
5240.00000	2.0	4.6
5260.00000	0.5	3.1
5280.00000	1.1	3.7
5320.00000	0.4	3.0
5500.00000	-1.1	1.5
5580.00000	-0.2	2.4
5700.00000	1.3	3.9
5745.00000	-1.0	1.6
5785.00000	1.1	3.7
5825.00000	0.7	3.3

Verdict

Pass

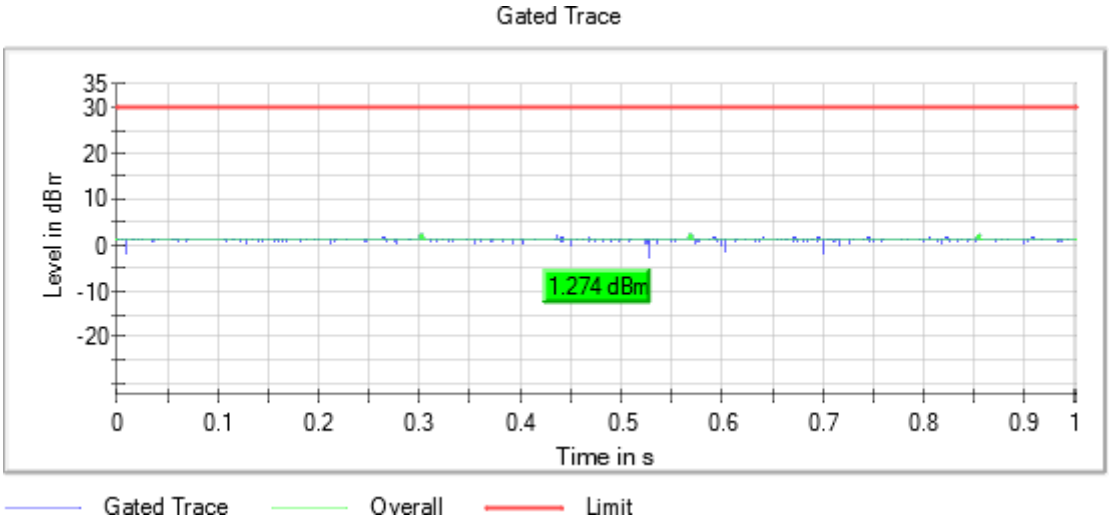
Attachments

Frequency MHz = 5180.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

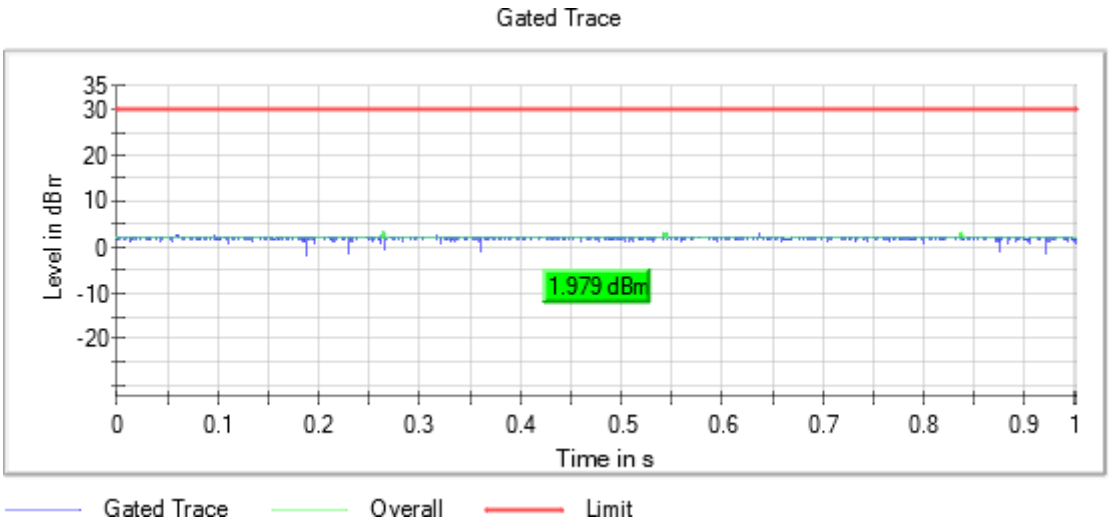
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5200.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

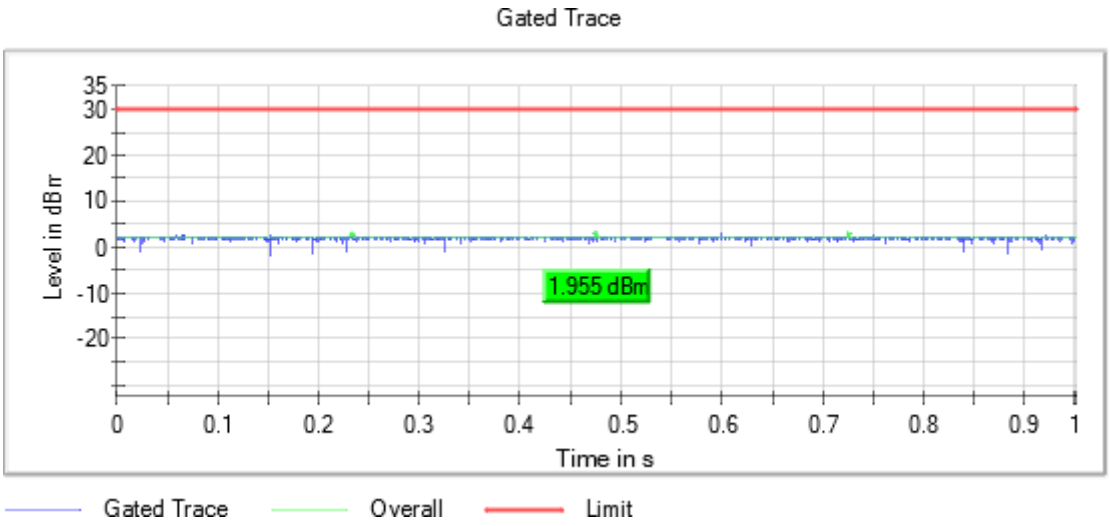
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5240.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5260.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

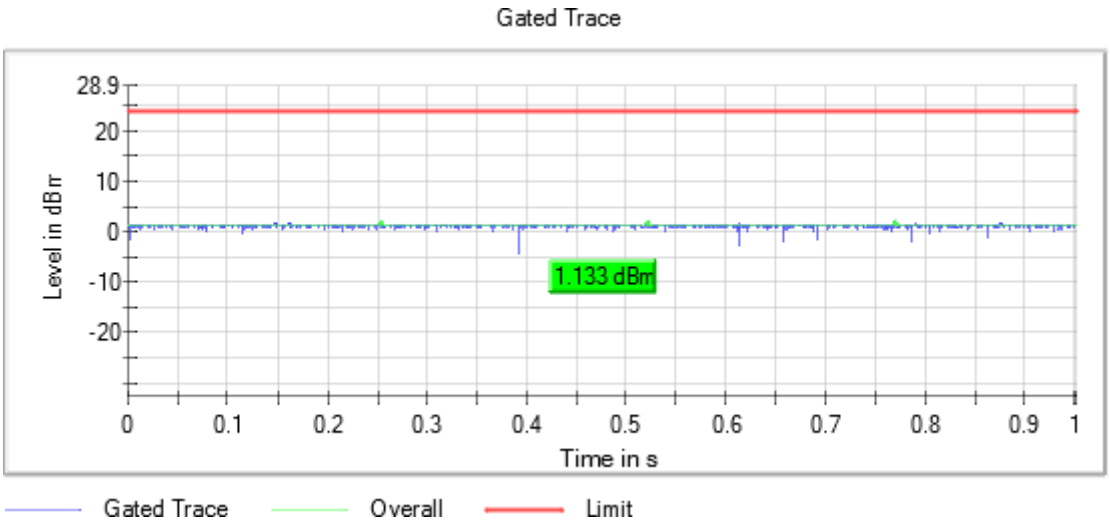
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5280.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5320.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

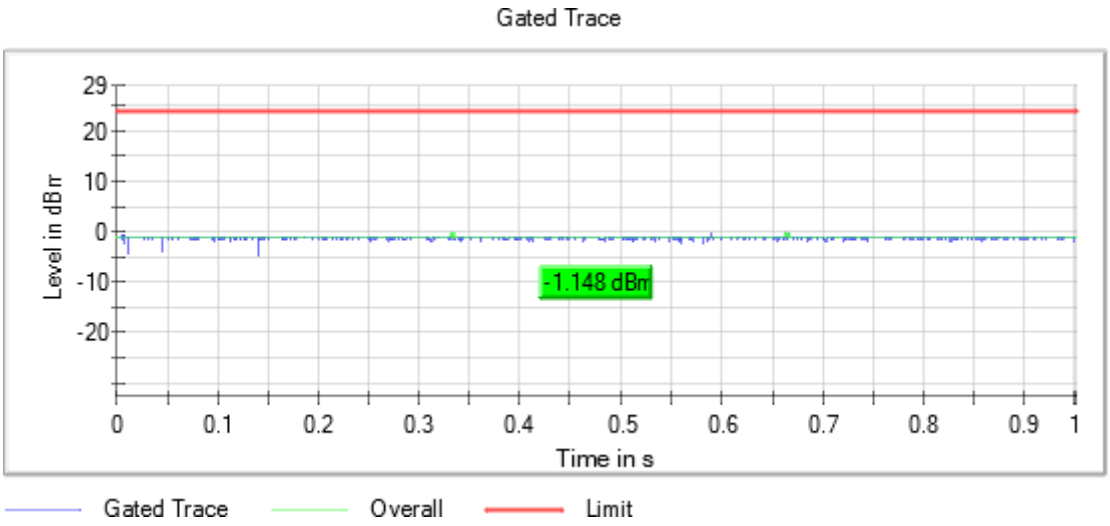
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5500.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

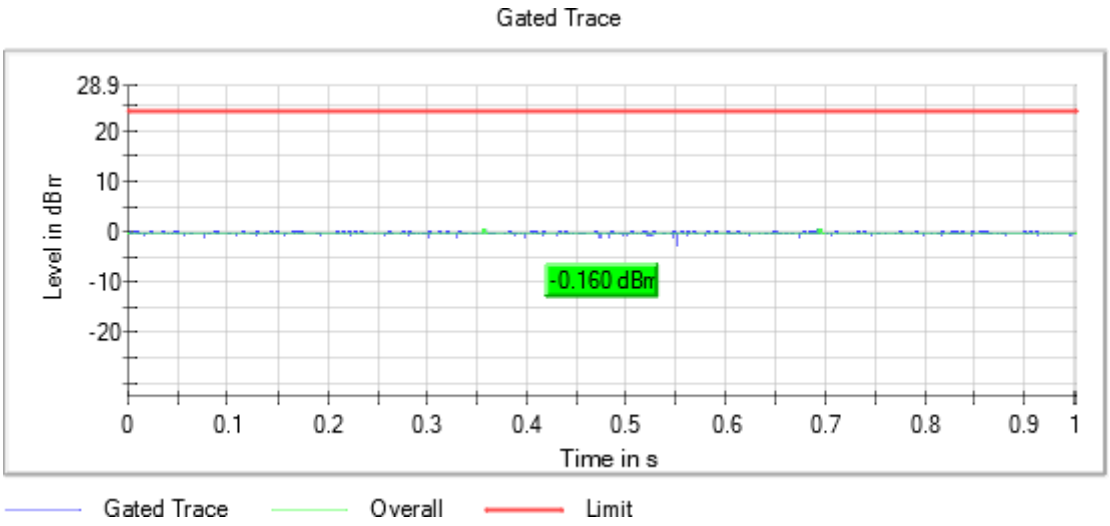
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5580.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

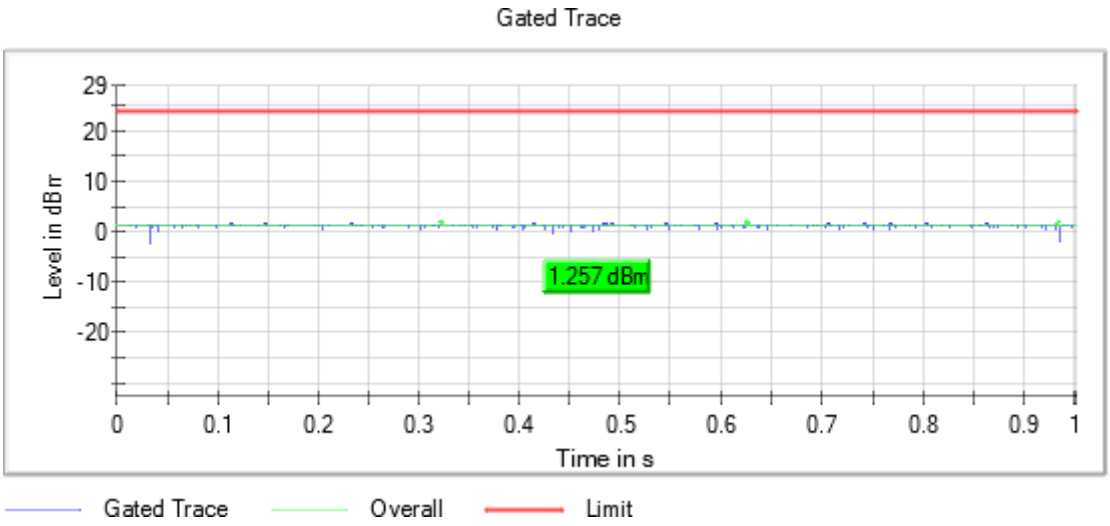
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5700.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

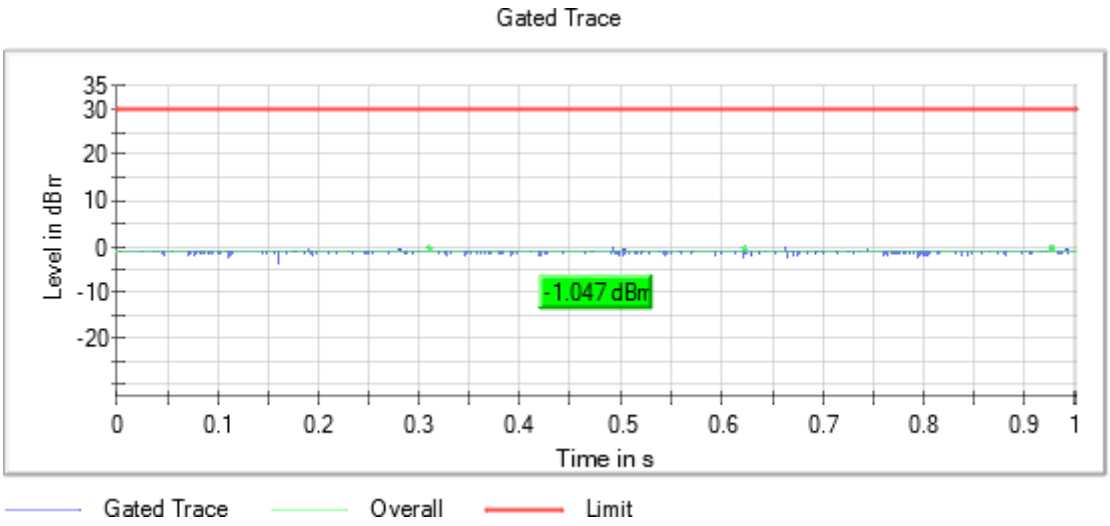
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5745.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5785.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

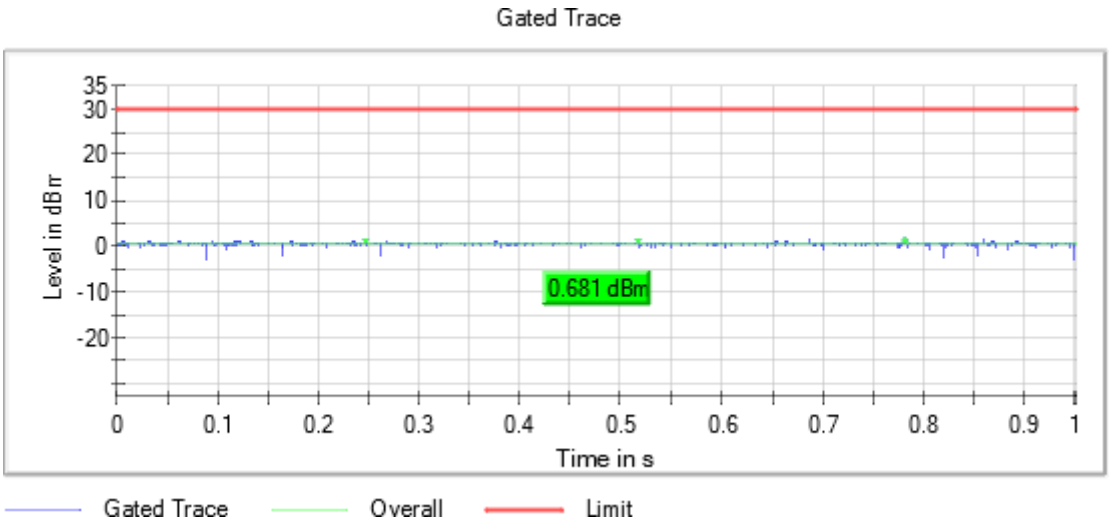
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5825.00000 Modulation = 802.11ax HE20 SS1 (OFDMA MCS8)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ax HE40 (OFDMA MCS9) – Full RU

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5190.00000	0.2	2.8
5230.00000	0.4	3.0
5270.00000	-0.1	2.5
5310.00000	-0.4	2.2
5510.00000	-3.6	-1.0
5550.00000	-2.1	0.5
5670.00000	-1.6	1.0
5755.00000	-0.1	2.5
5795.00000	1.1	3.7

Verdict

Pass

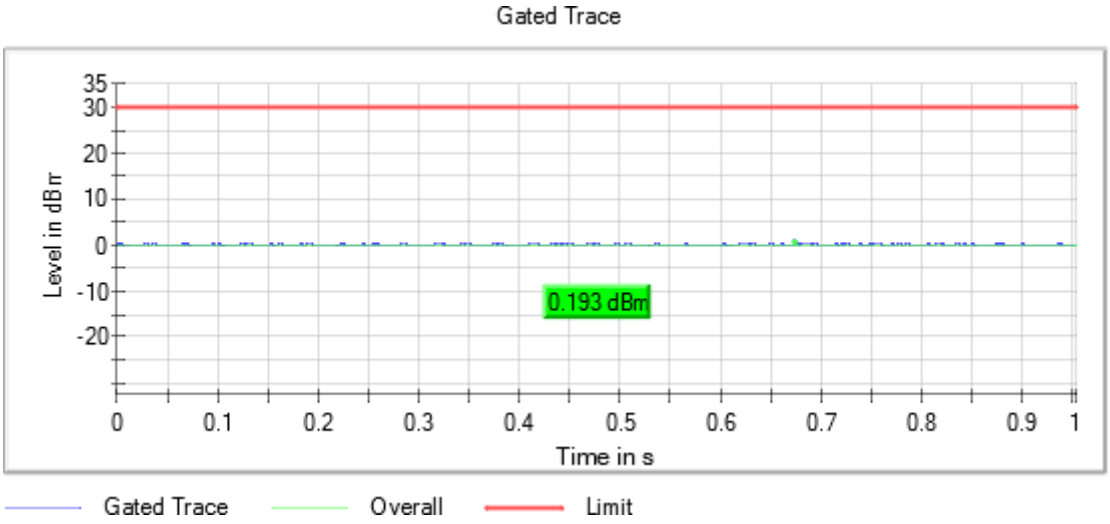
Attachments

Frequency MHz = 5190.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

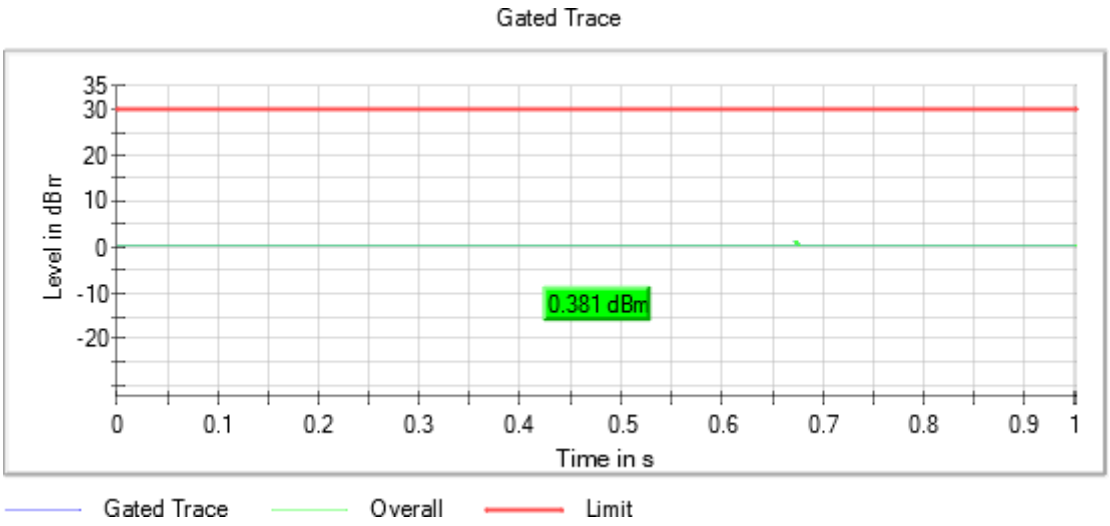
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5230.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

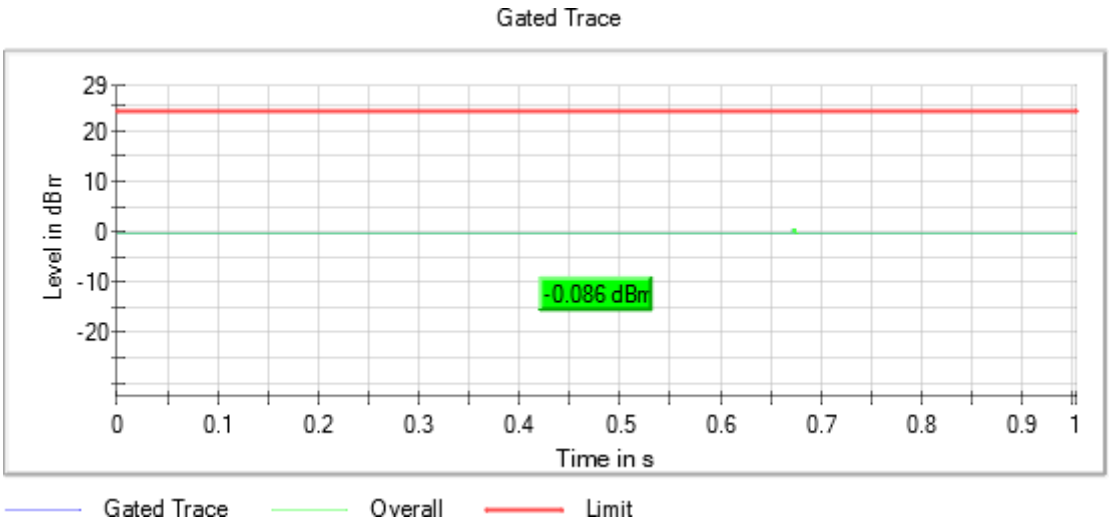
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5270.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

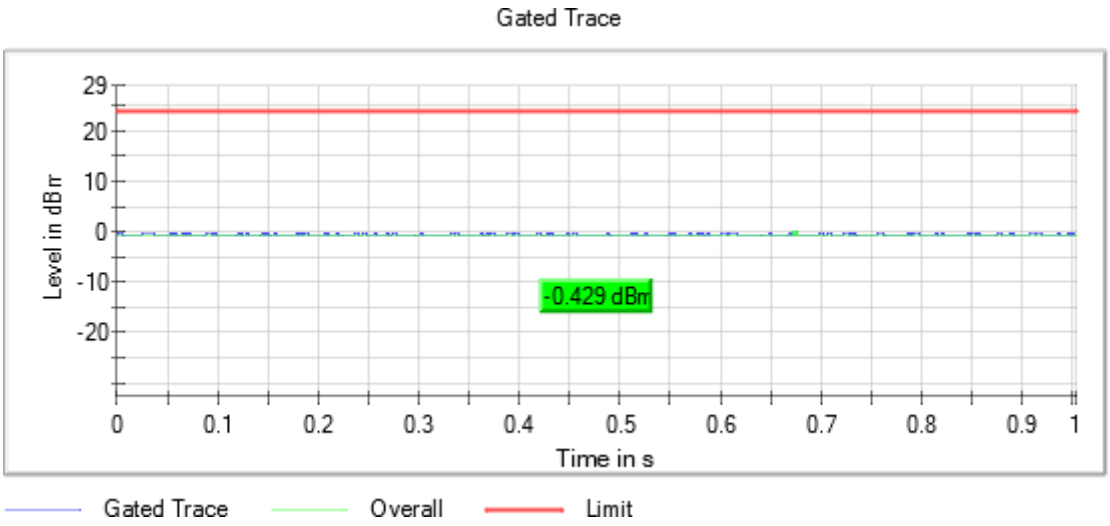
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5310.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

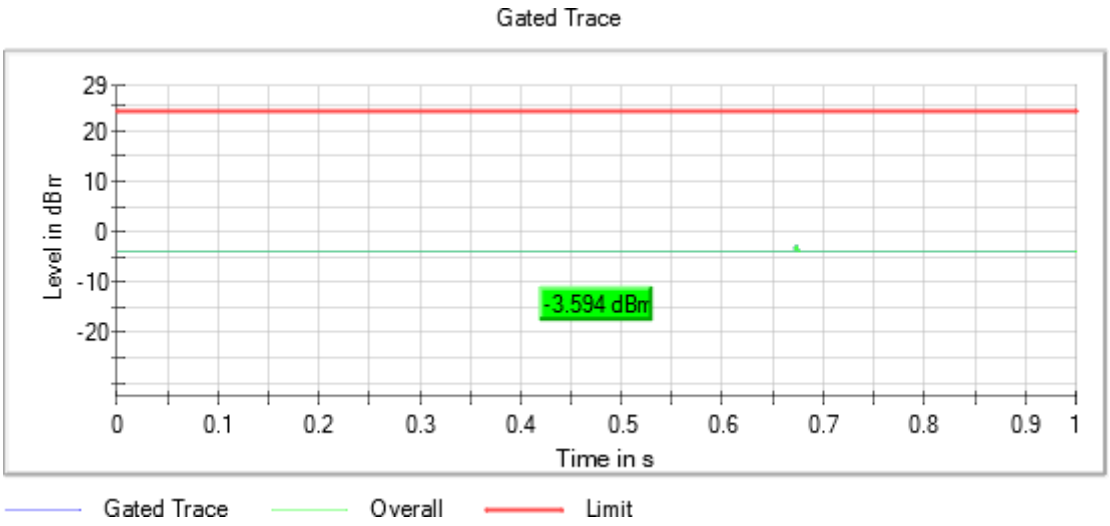
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5510.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

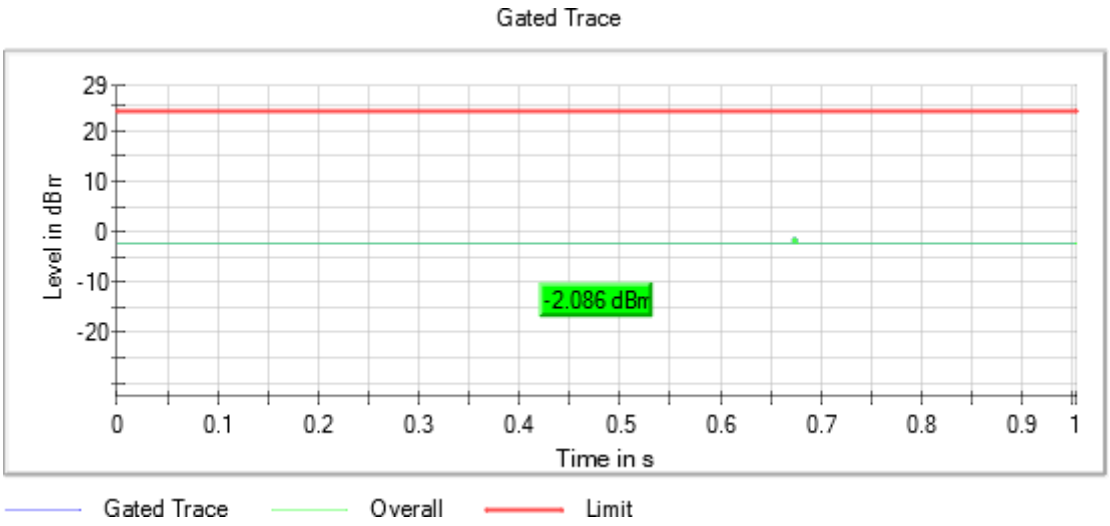
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5550.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

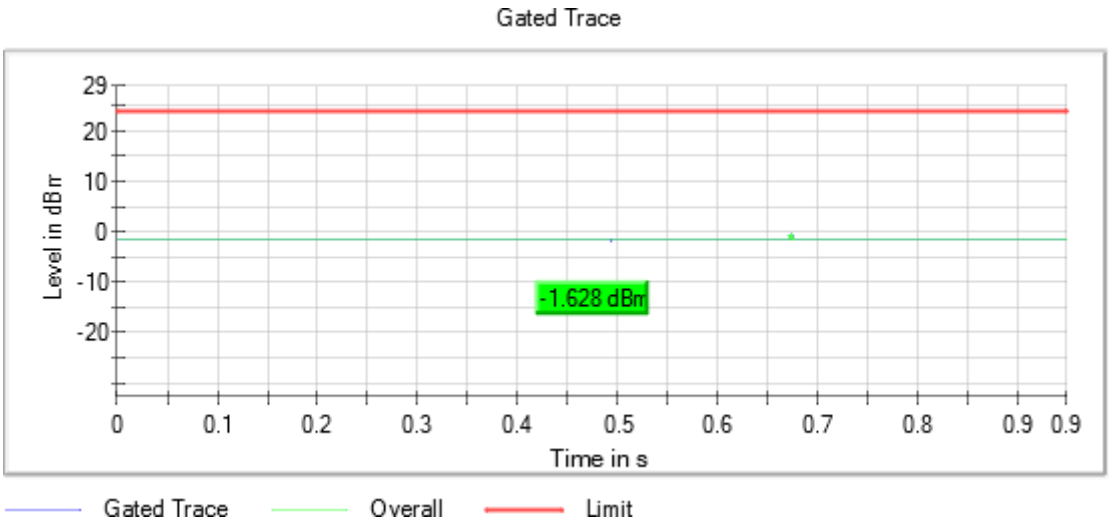
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5670.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

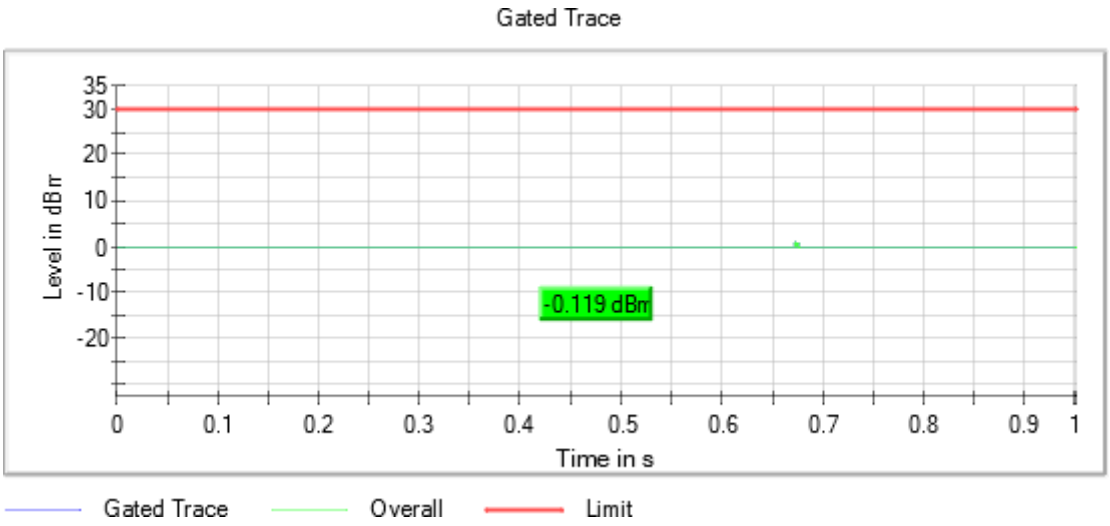
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5755.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

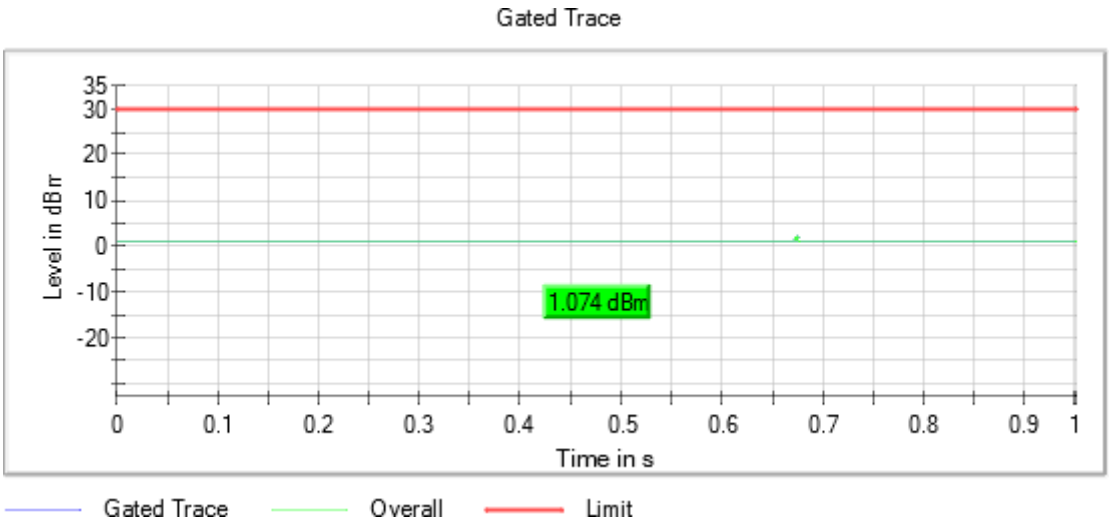
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5795.00000 Modulation = 802.11ax HE40 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ax HE40 SS1 (OFDMA MCS9) – Partial RU

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5190.00000	0.6	3.2
5230.00000	-1.0	1.6
5270.00000	0.1	2.7
5310.00000	-2.2	0.4
5510.00000	-2.2	0.4
5550.00000	-3.8	-1.2
5670.00000	-0.6	2.0
5755.00000	1.1	3.7
5795.00000	0.3	2.9

Verdict

Pass

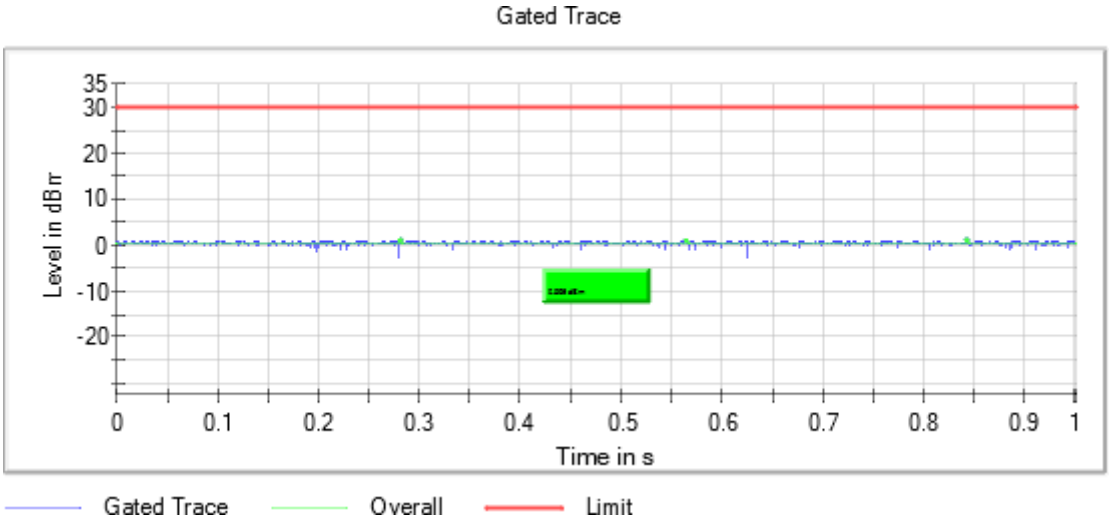
Attachments

Frequency MHz = 5190.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

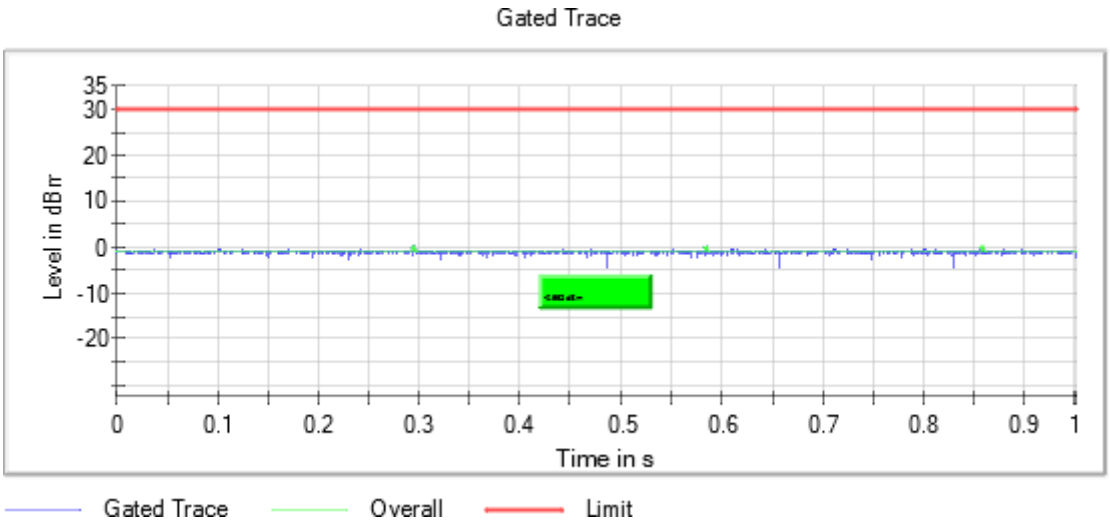
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5230.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

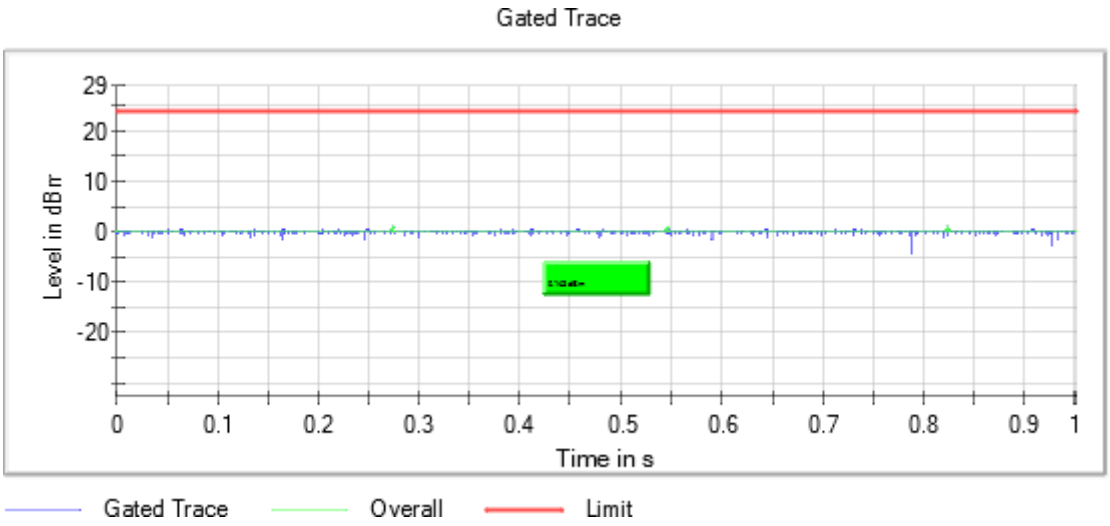
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5270.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5310.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:

Tables:

Spectrum Analyzer Parameters

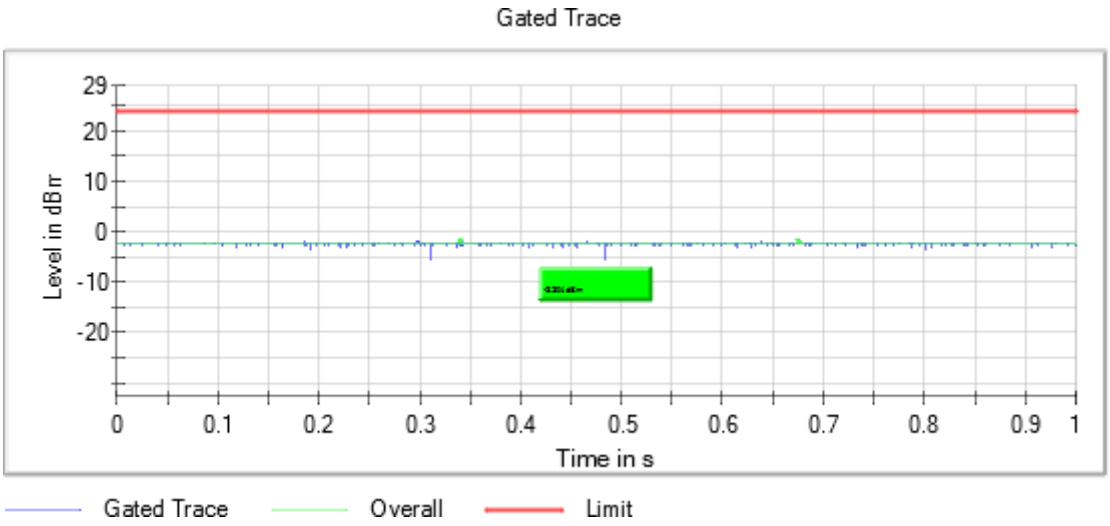
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5510.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

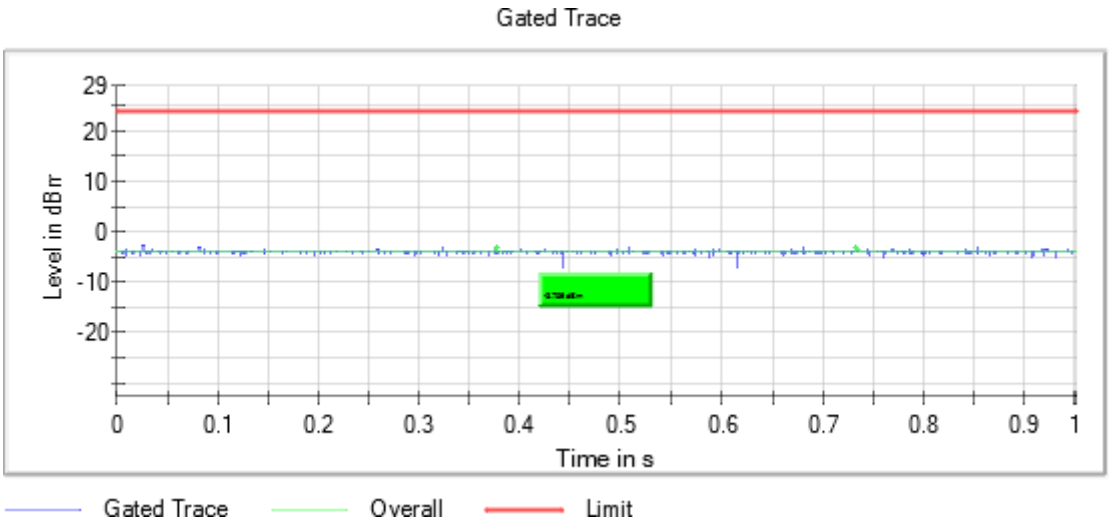
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5550.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

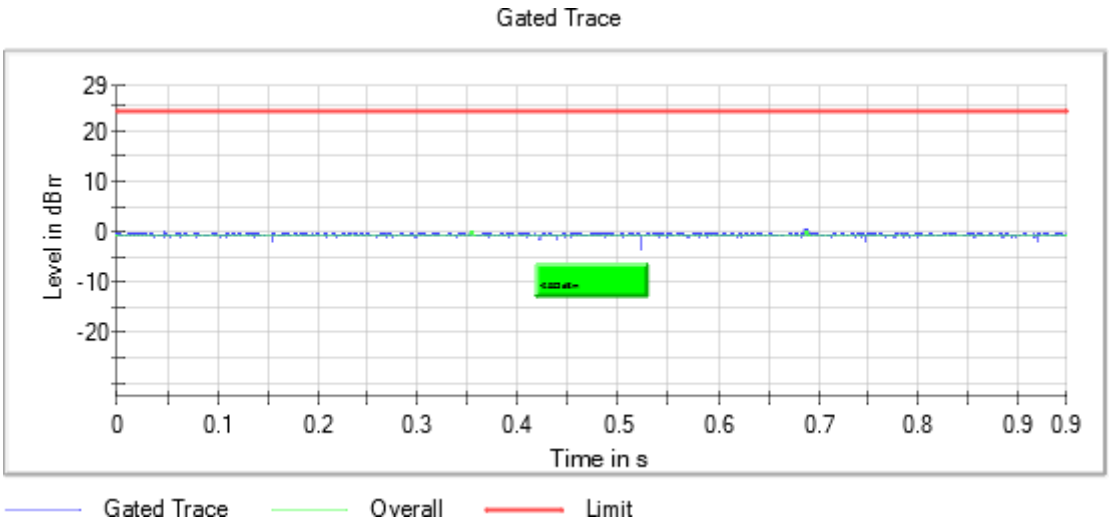
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5670.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

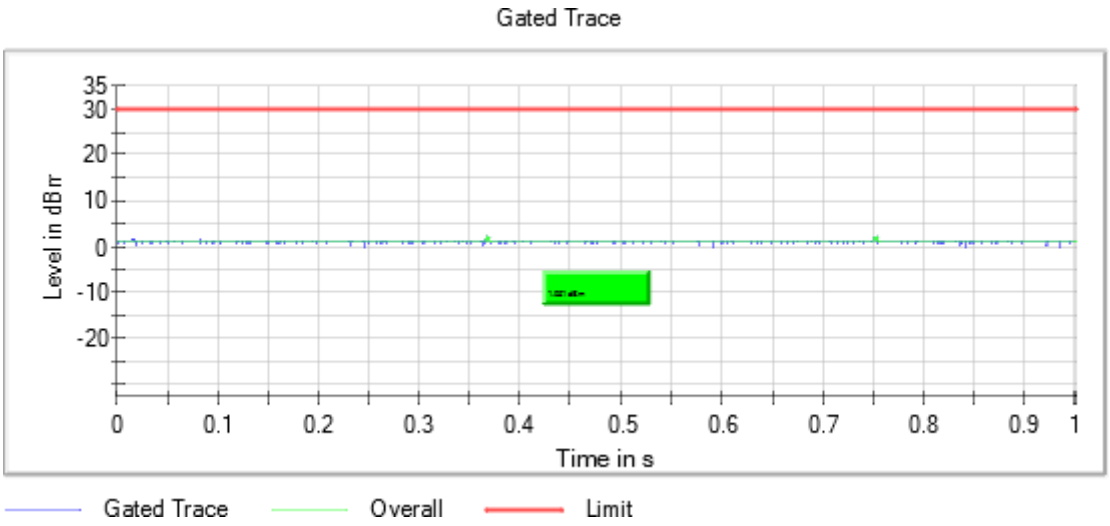
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5755.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

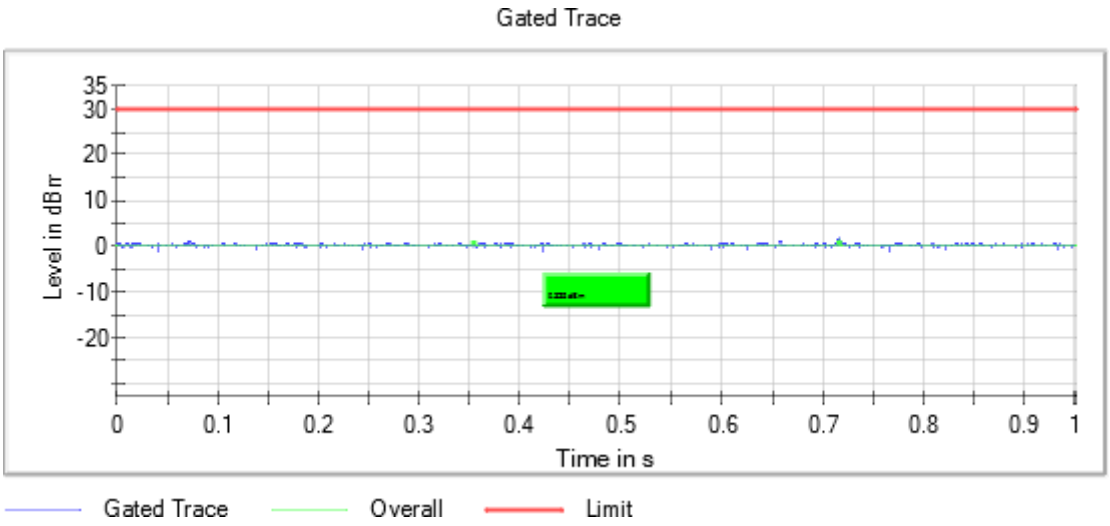
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5795.00000 Modulation = 802.11ax HE40 SS1 (OFDMA MCS9)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ax HE80 SS1 (OFDMA MCS11) – Full RU

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5210.00000	-1.5	1.1
5290.00000	-2.1	0.5
5530.00000	-4.6	-2.0
5610.00000	-3.8	-1.2
5775.00000	-0.9	1.7

Verdict

Pass

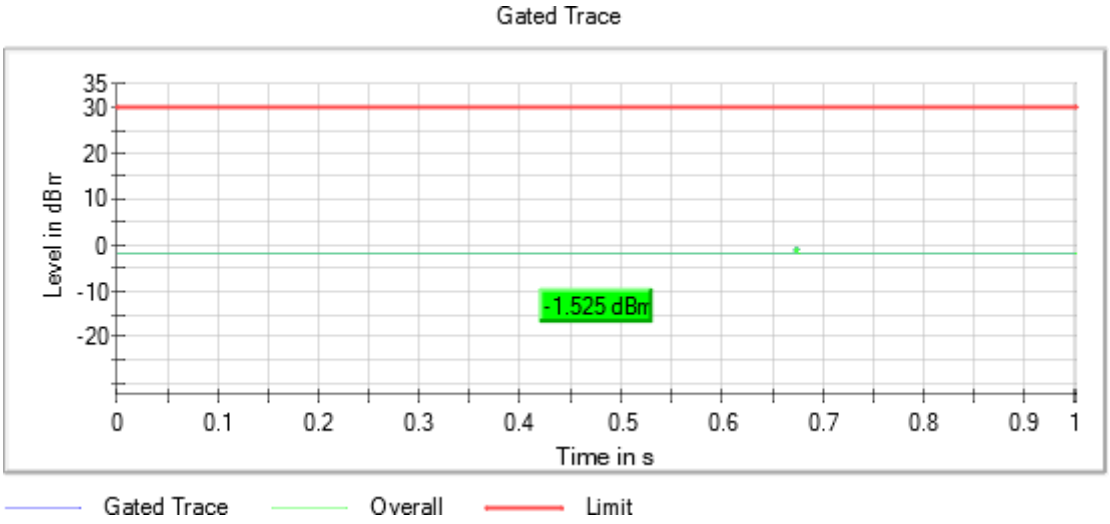
Attachments

Frequency MHz = 5210.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

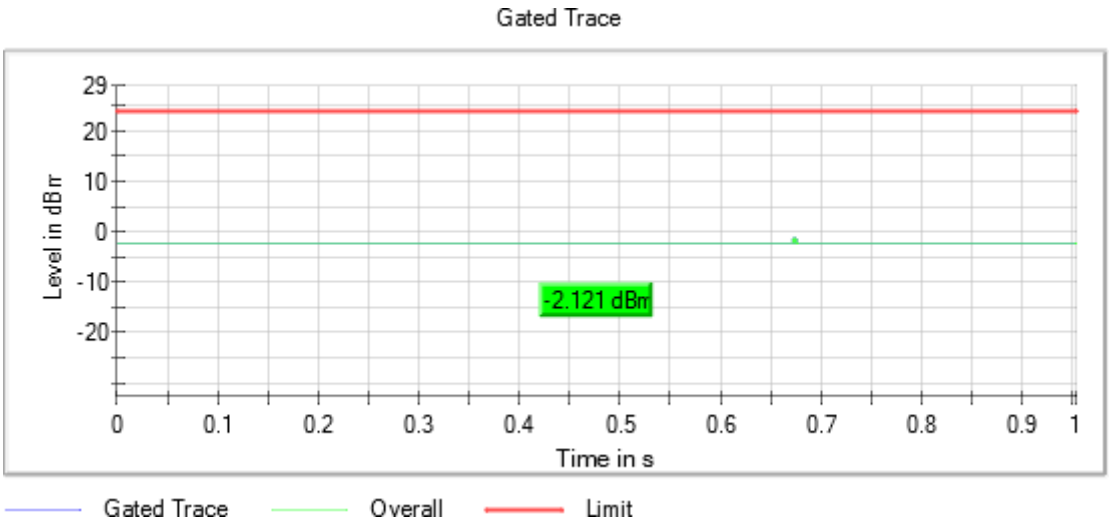
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5290.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

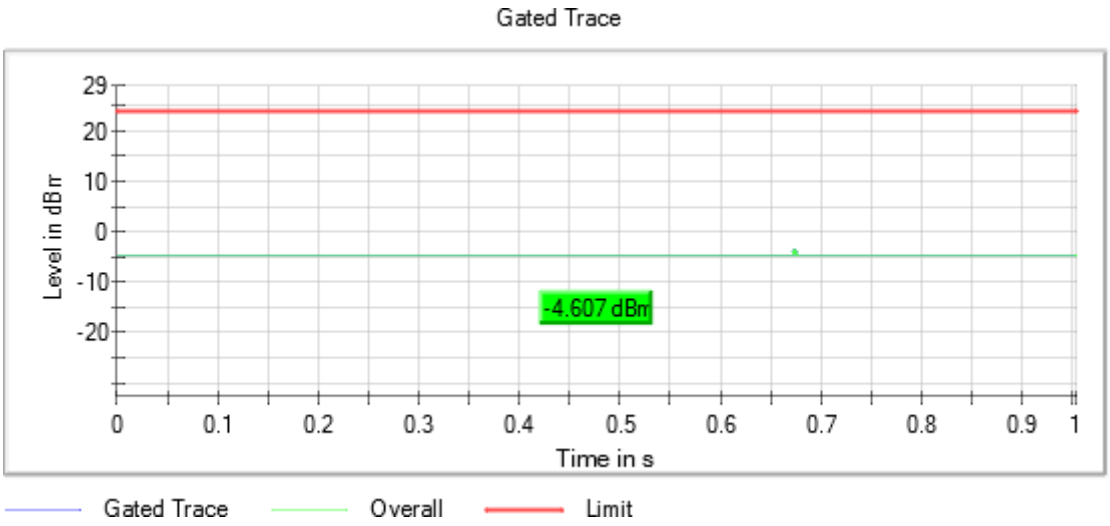
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5530.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

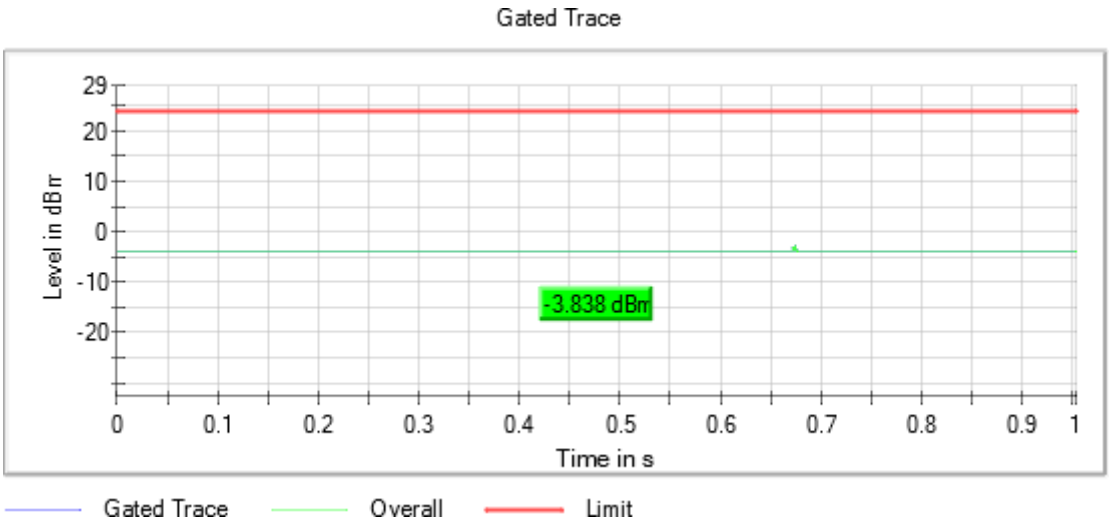
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5610.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

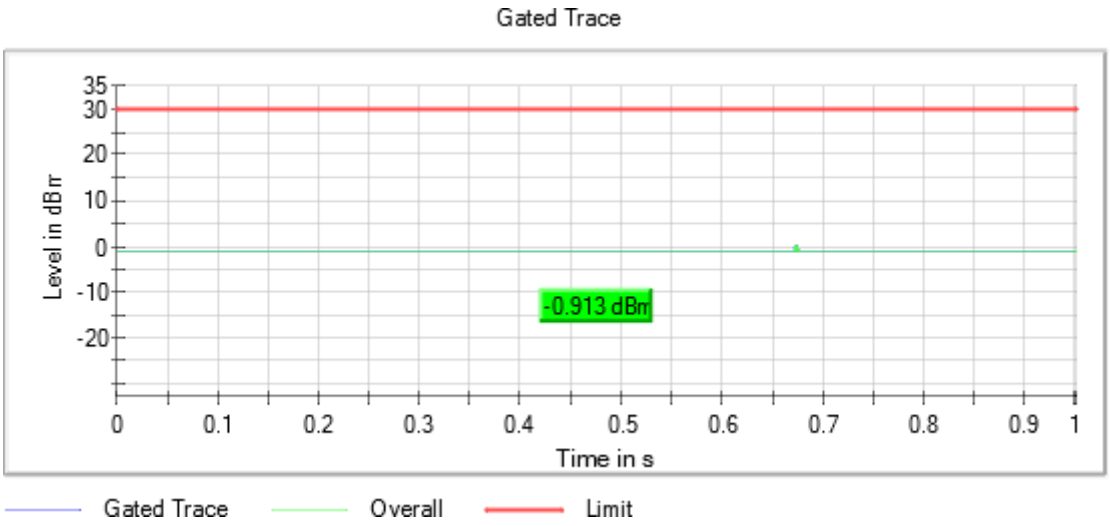
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5775.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Mode: SISO

Modulation: 802.11ax HE80 SS1 (OFDMA MCS11) – Partial RU

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5210.00000	0.7	3.3
5290.00000	0.5	3.1
5530.00000	-3.7	-1.1
5610.00000	-2.5	0.1
5775.00000	-1.1	1.5

Verdict

Pass

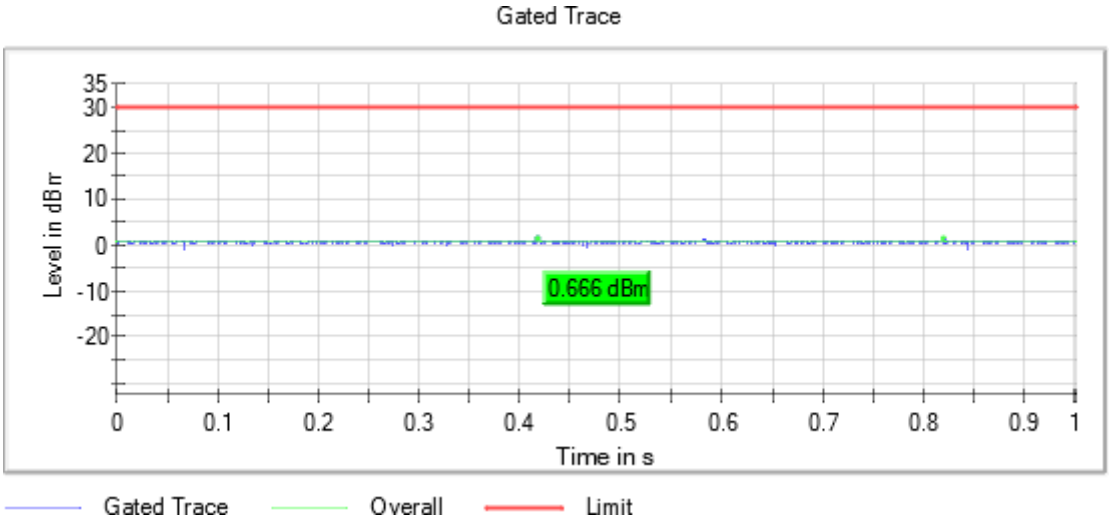
Attachments

Frequency MHz = 5210.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

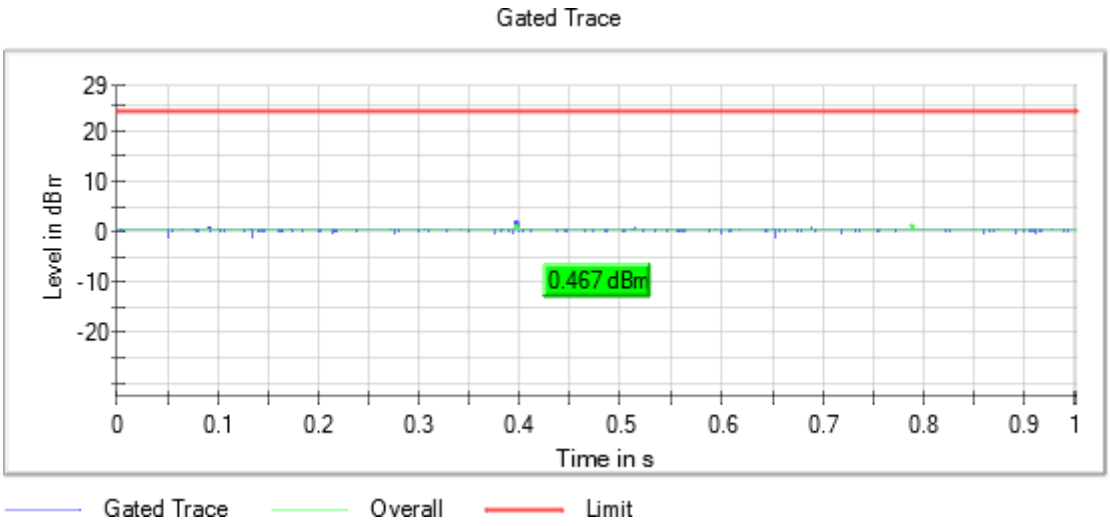
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5290.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

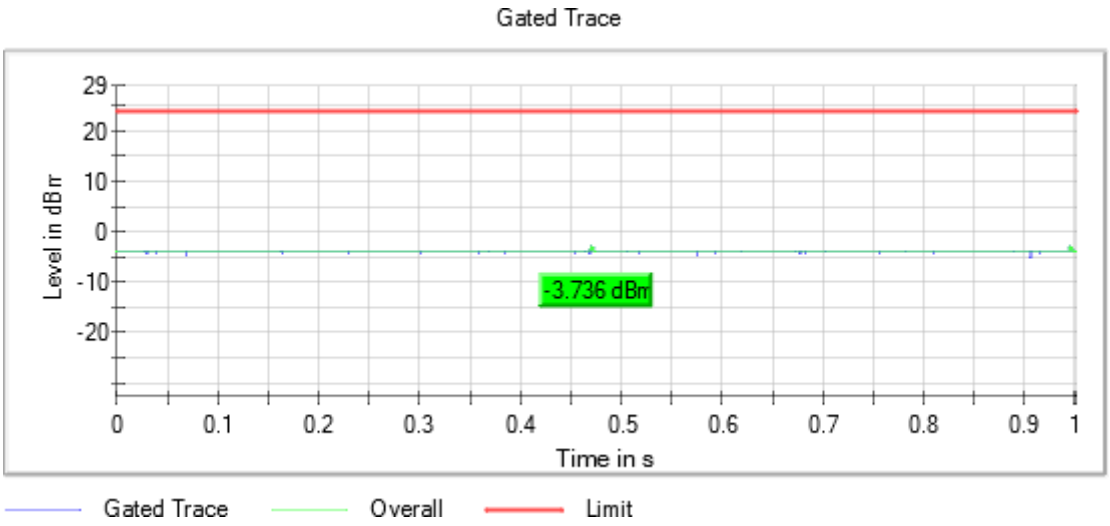
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5530.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

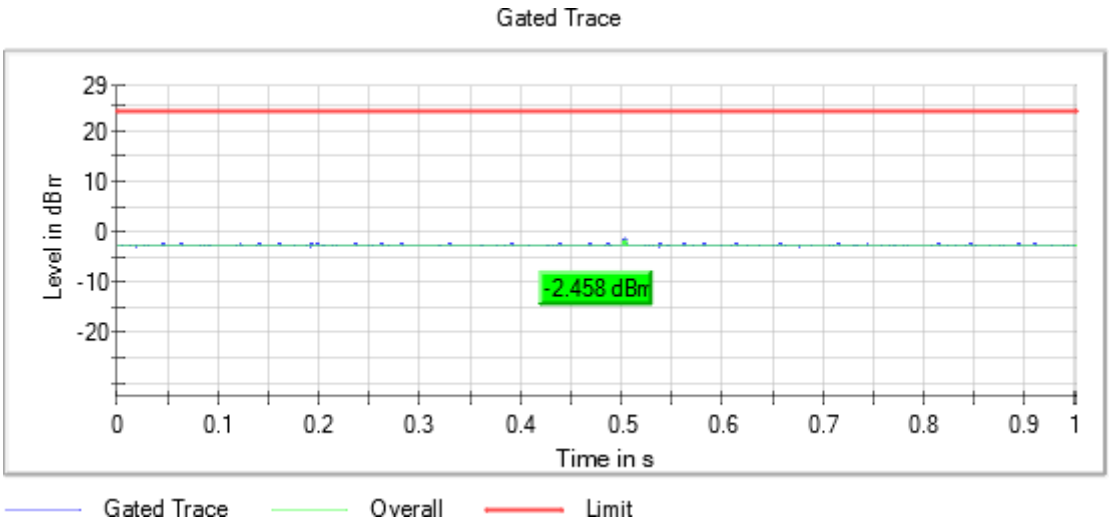
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5610.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

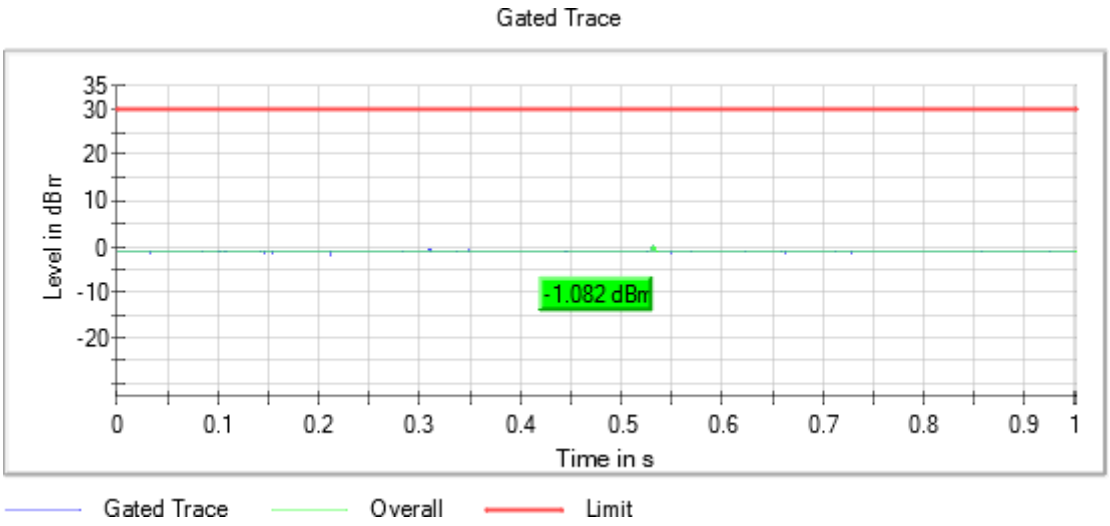
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5775.00000 Modulation = 802.11ax HE80 SS1 (OFDMA MCS11)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

FCC 15.407 (a) / RSS-247 6.2 Maximum Power Spectral Density

Limits

FCC 15.407:

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.

RSS-247:

For the 5.25-5.35 GHz, 5.470-5.6 GHz, and 5.650-5.725 GHz bands, the power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

For the band 5.725-5.850 GHz, the output power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the output power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note: The following test results are shown based on KDB 662911 D01 Multiple Transmitter Output v02r01 E) 3) a) (ii) Measure and sum spectral maxima across the outputs as described in section E)2)b).

Mode: SISO

Modulation: 802.11a (OFDM 24 Mbit/s)

Results

Freq (MHz)	Marker Freq (MHz)	PSD (dBm)
5180.00000	5187.128713	5.97
5200.00000	5203.168317	6.87
5240.00000	5237.227723	4.48
5260.00000	5263.168317	3.77
5280.00000	5276.633663	4.26
5320.00000	5316.435644	1.13
5500.00000	5507.128713	-0.88
5580.00000	5587.128713	-0.63
5700.00000	5697.227723	-1.31
5745.00000	5752.722772	-5.72
5785.00000	5781.831683	-5.08
5825.00000	5832.722772	-4.06

Verdict

Pass

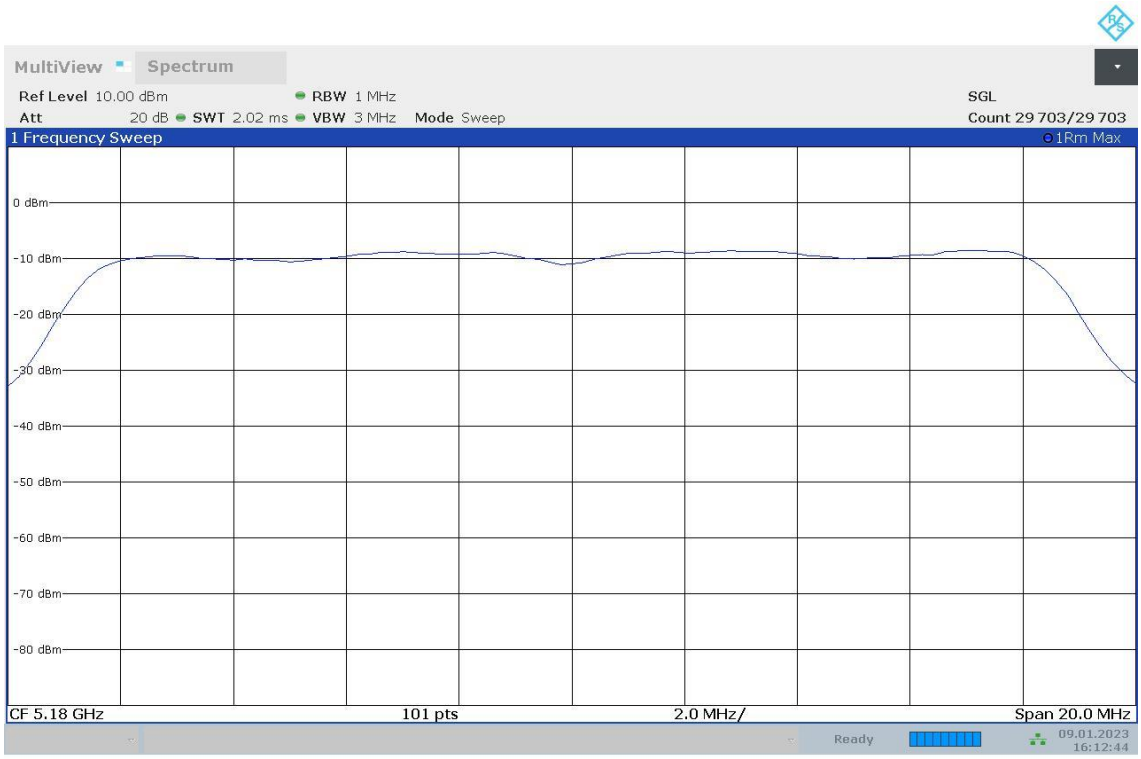
Attachments

Frequency MHz = 5180.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

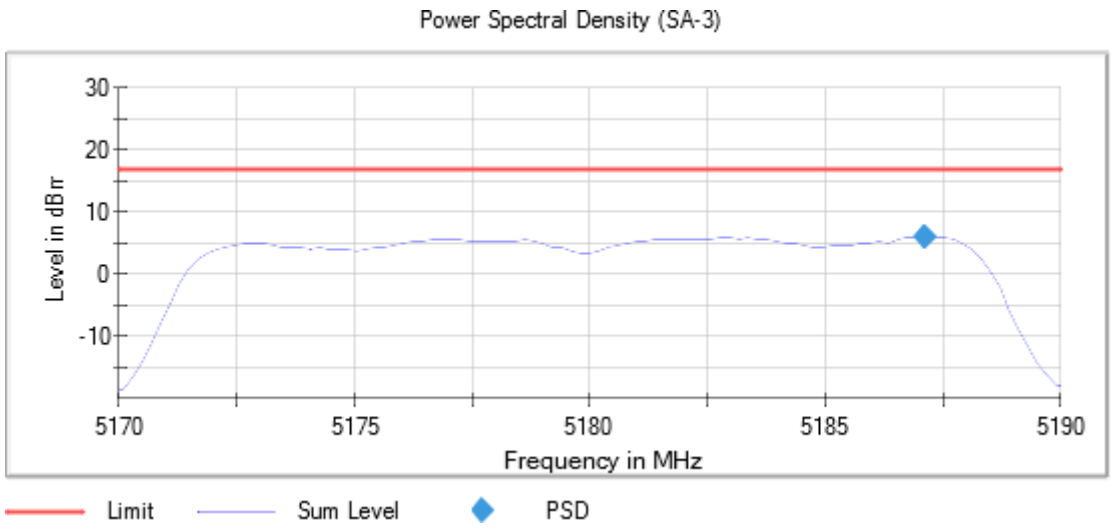
TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



16:12:45 09.01.2023

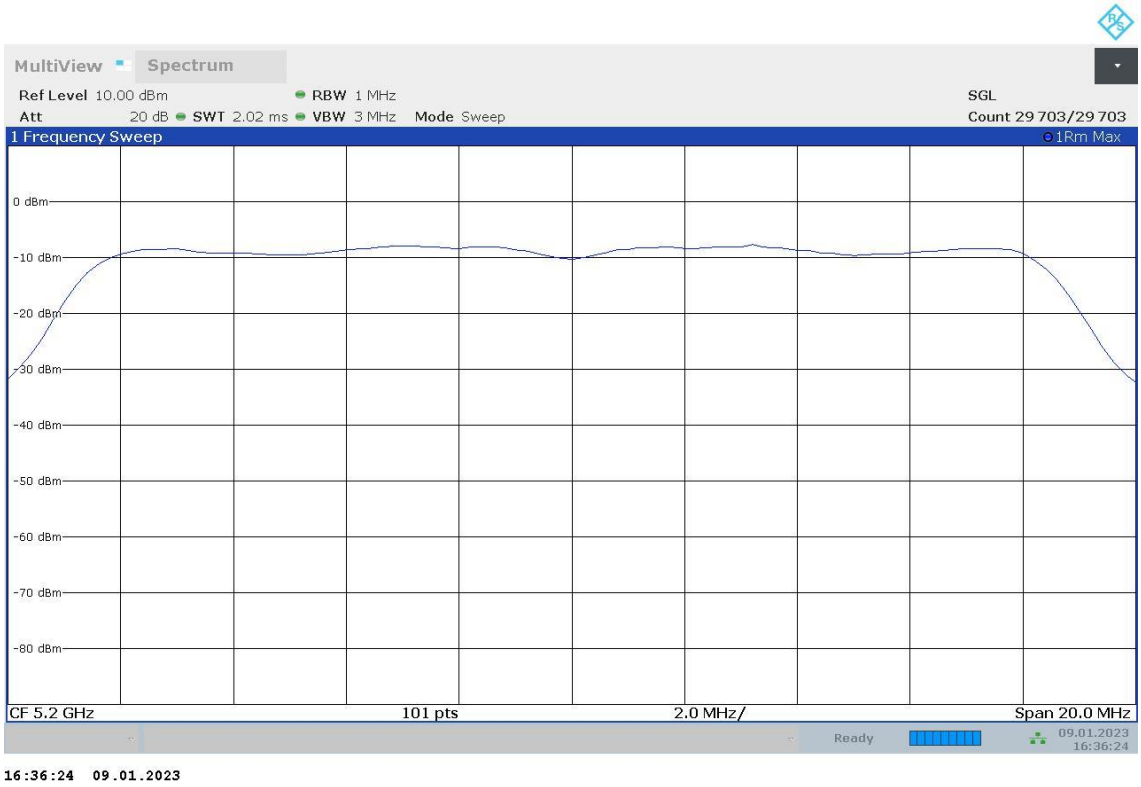


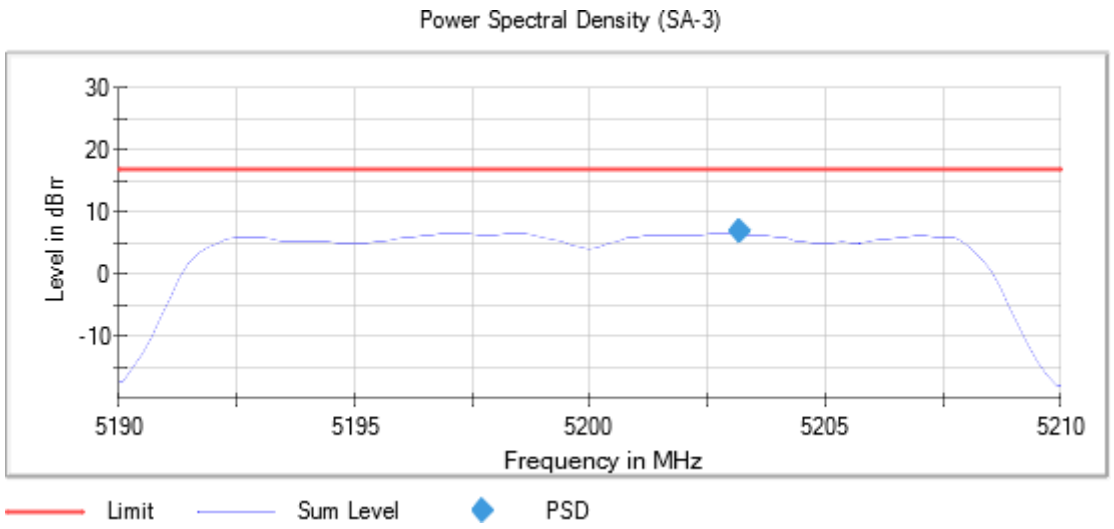
Frequency MHz = 5200.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



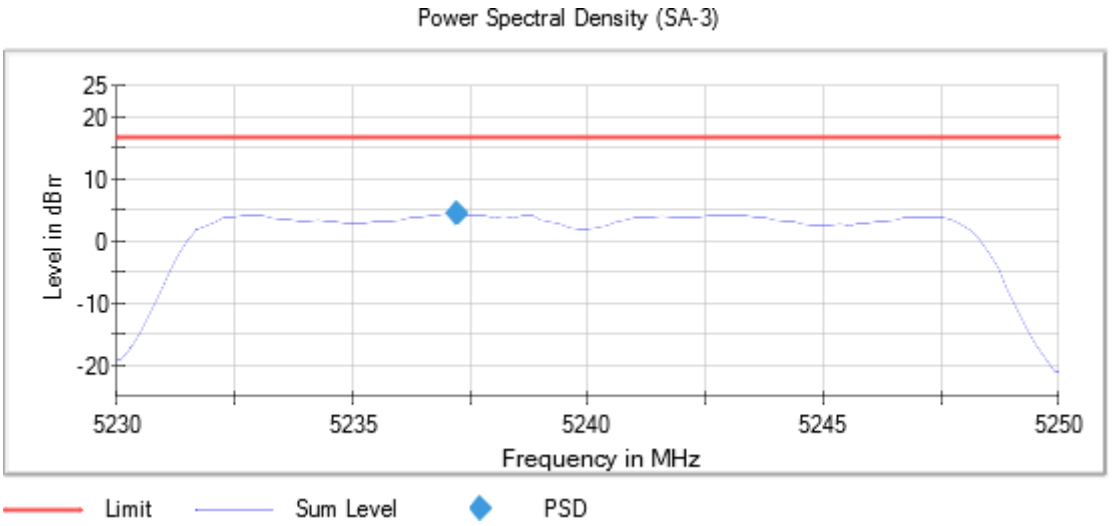


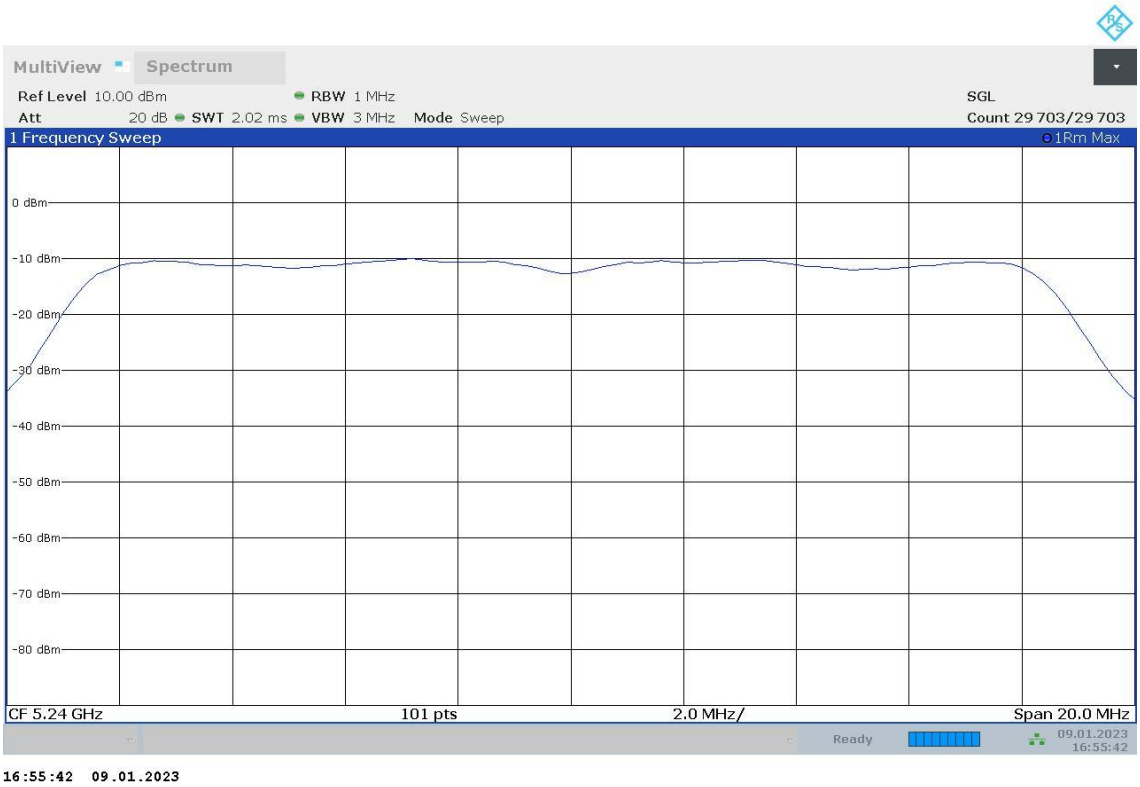
Frequency MHz = 5240.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



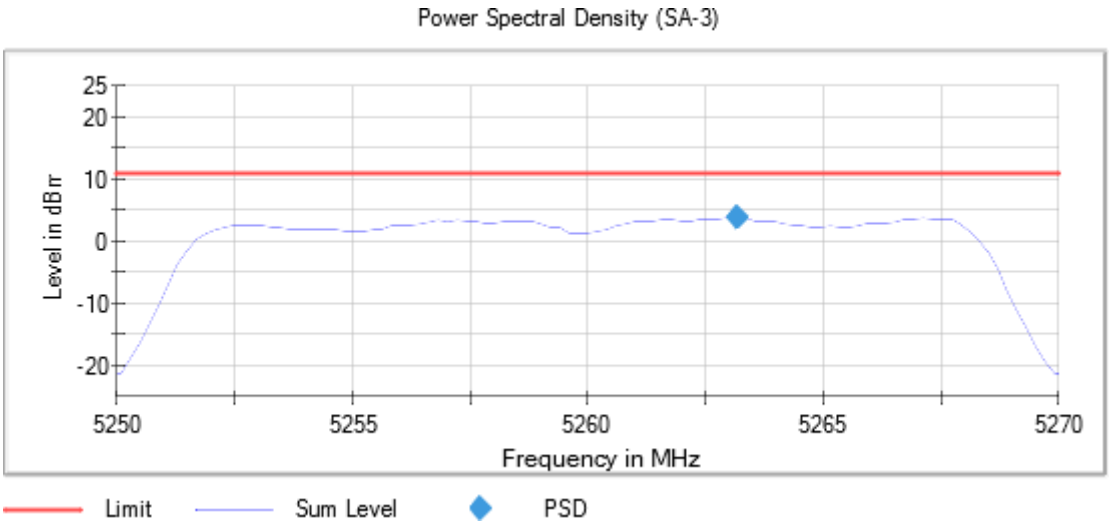


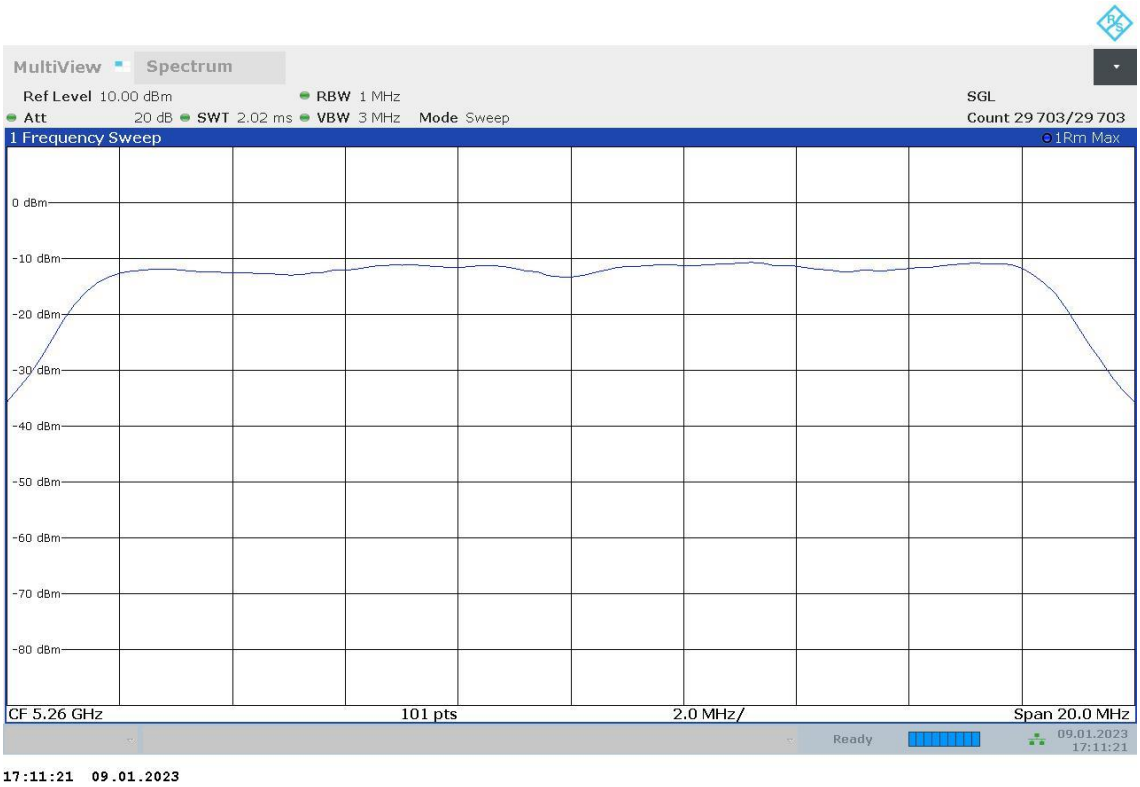
Frequency MHz = 5260.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:





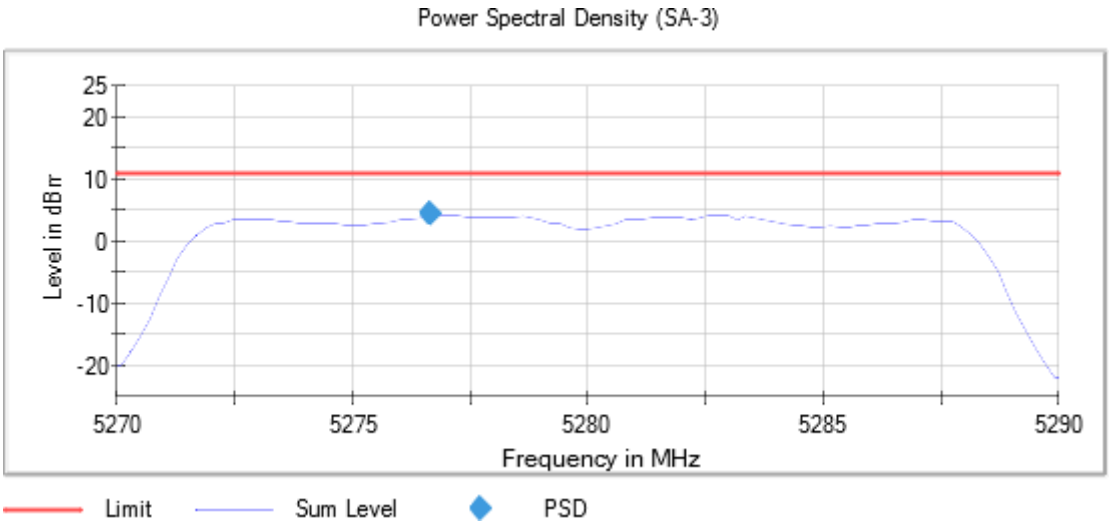
17:11:21 09.01.2023

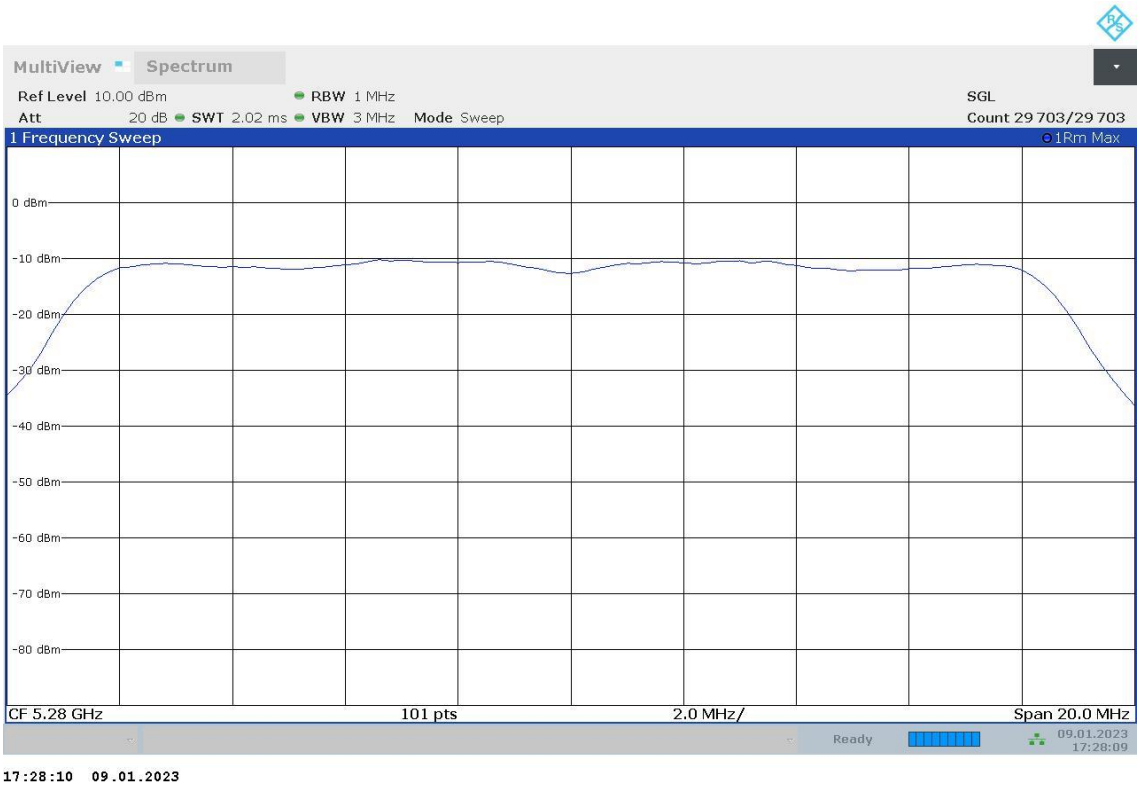
Frequency MHz = 5280.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:





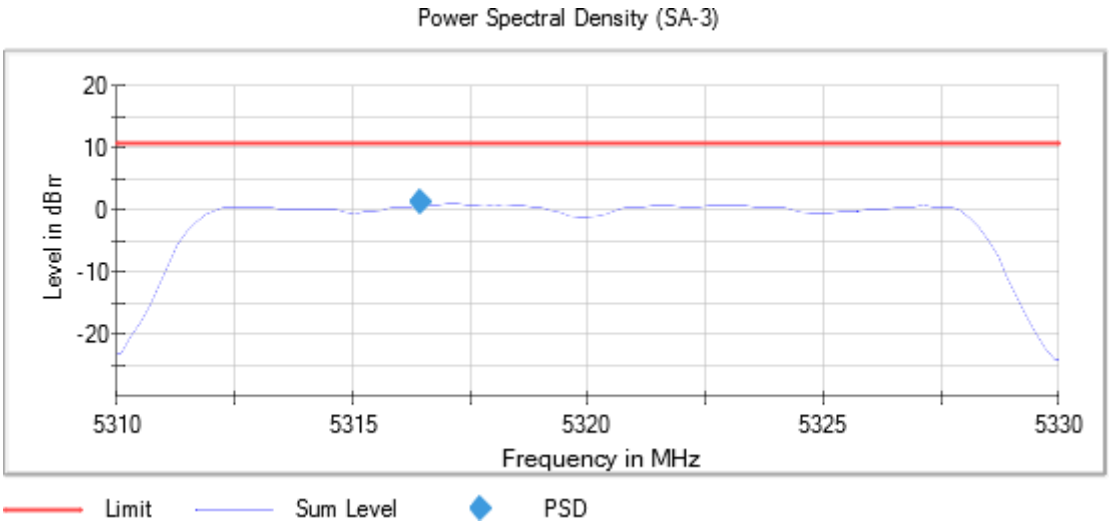
17:28:10 09.01.2023

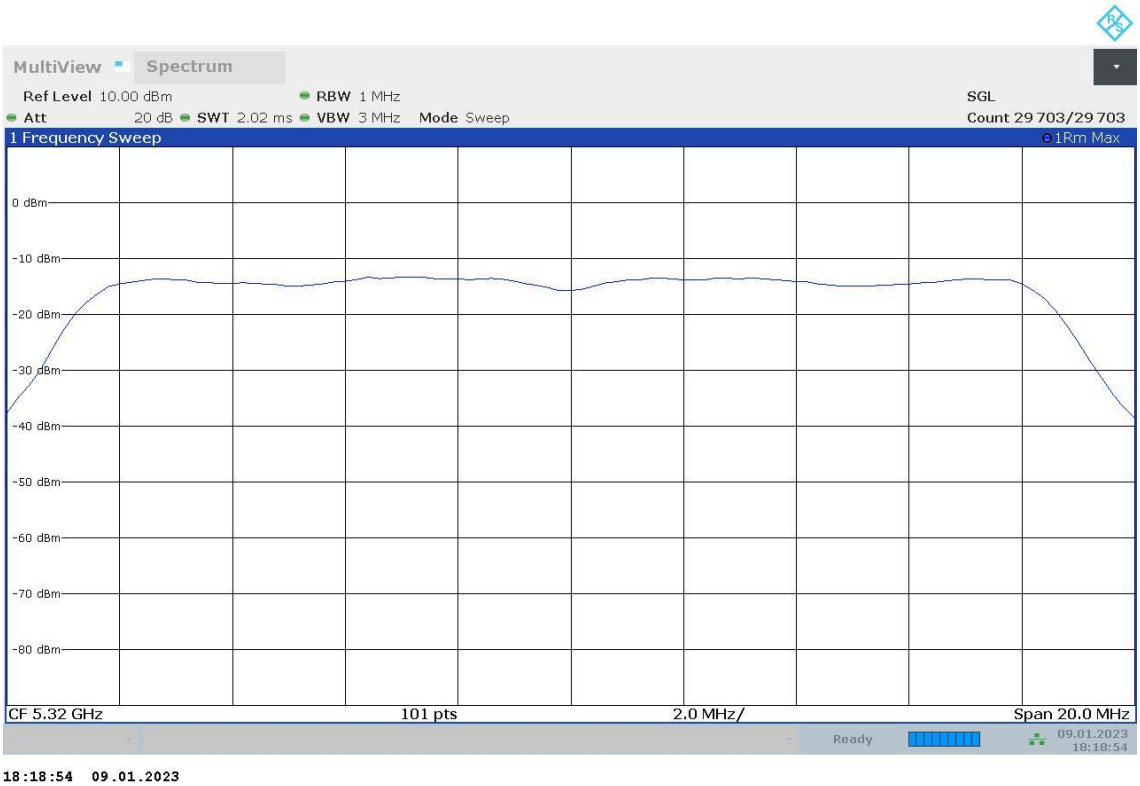
Frequency MHz = 5320.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



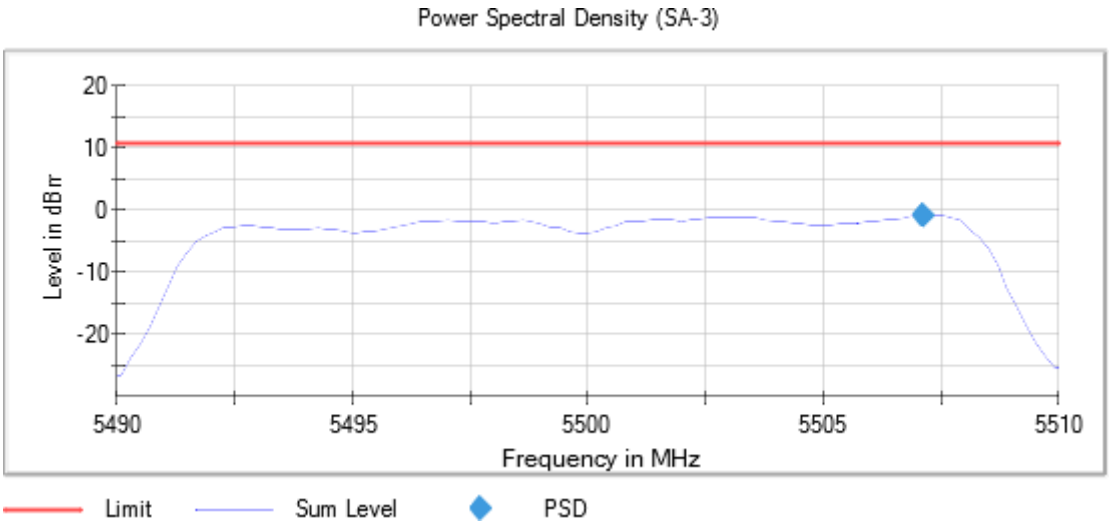


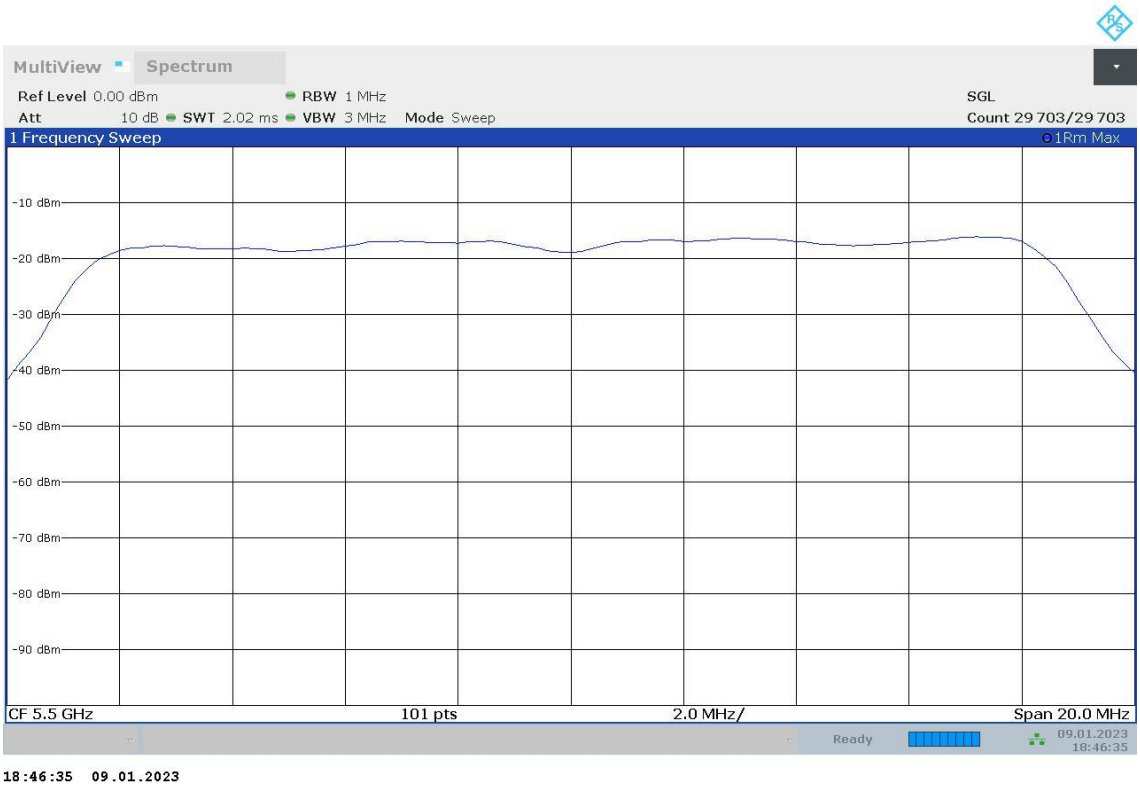
Frequency MHz = 5500.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:





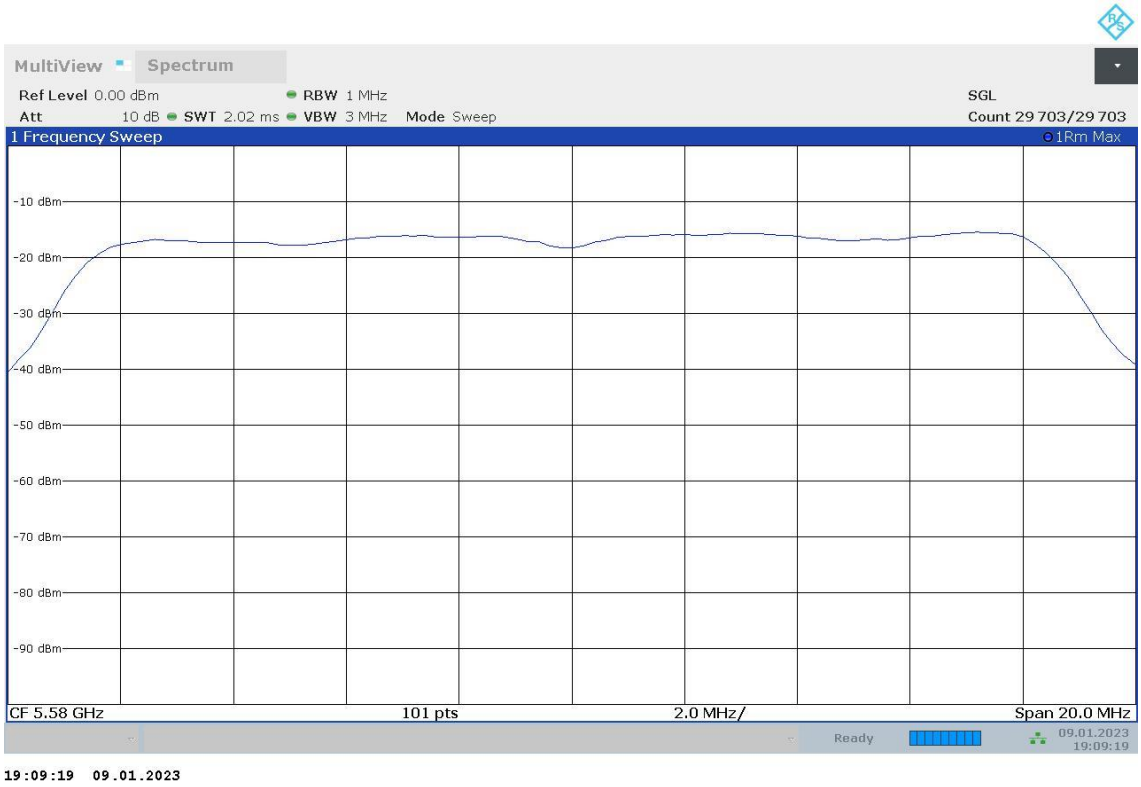
18:46:35 09.01.2023

Frequency MHz = 5580.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

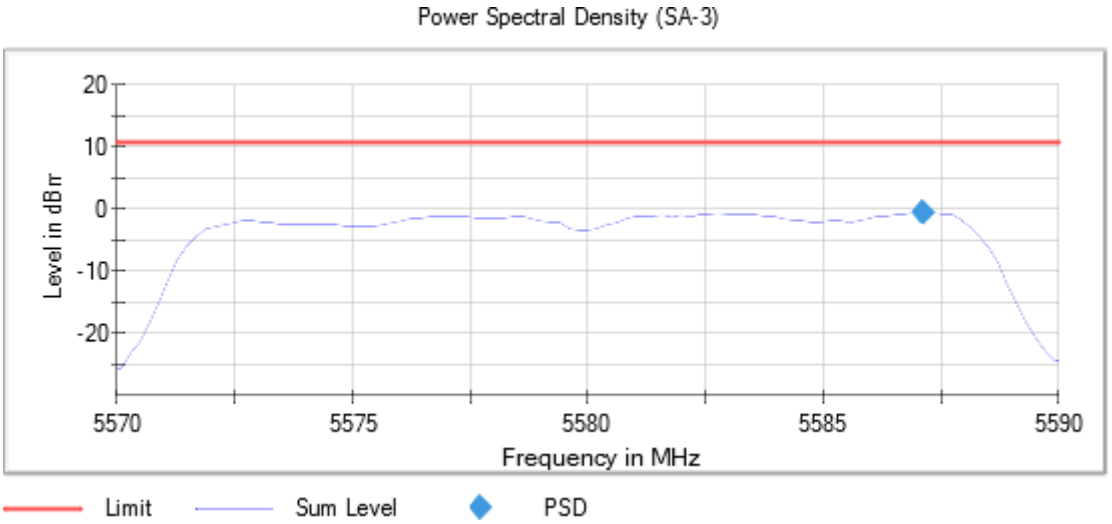
TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



19:09:19 09.01.2023

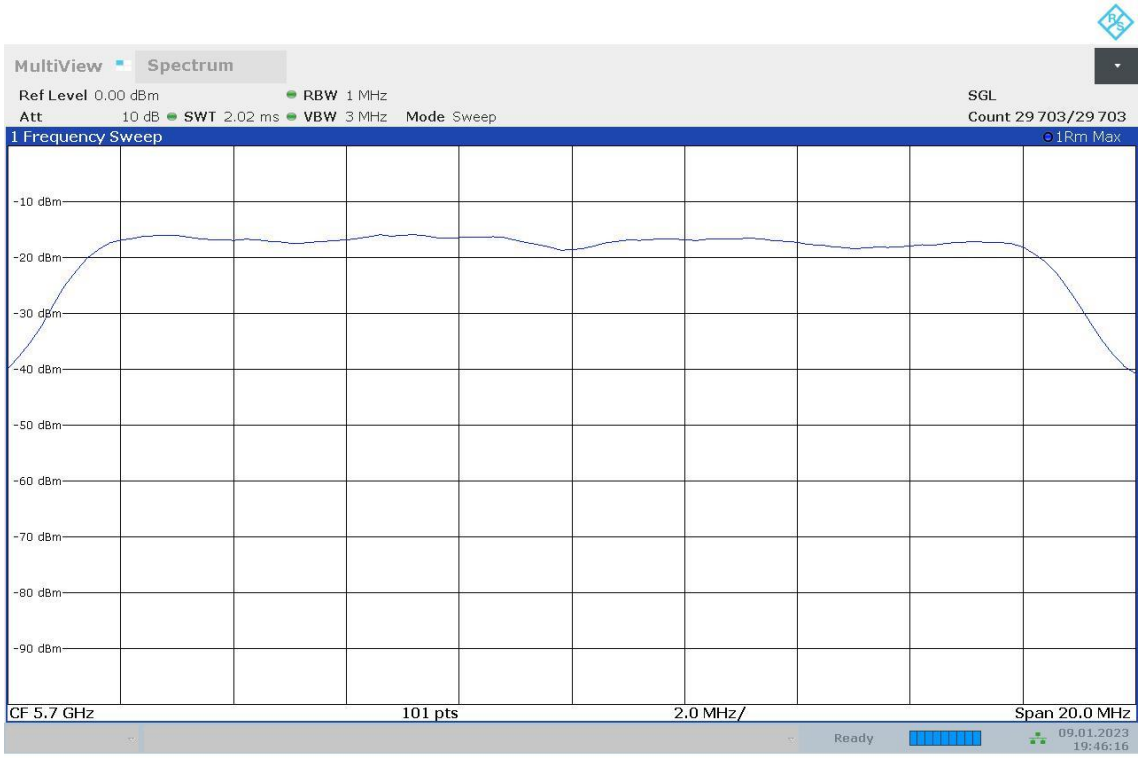


Frequency MHz = 5700.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

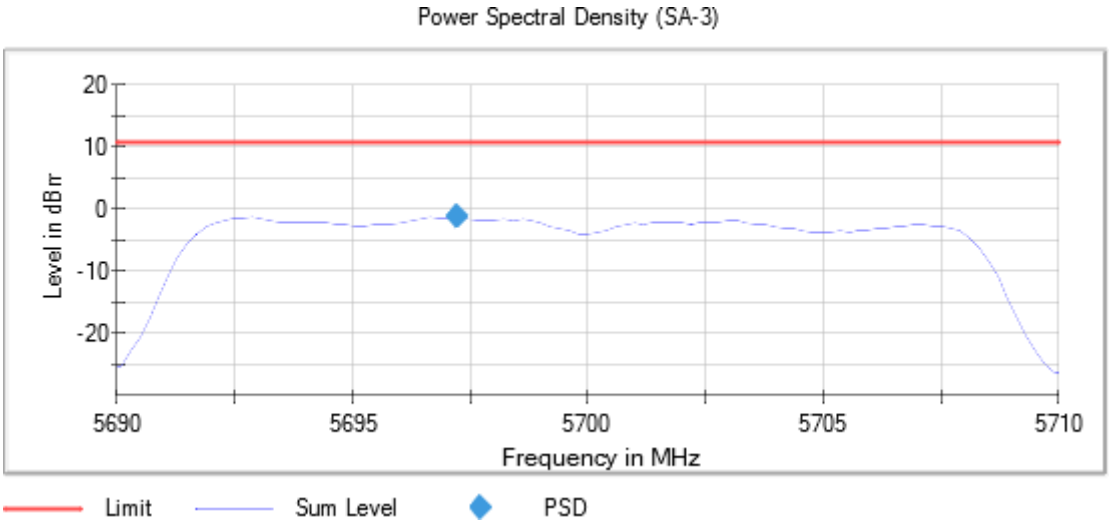
TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



19:46:17 09.01.2023

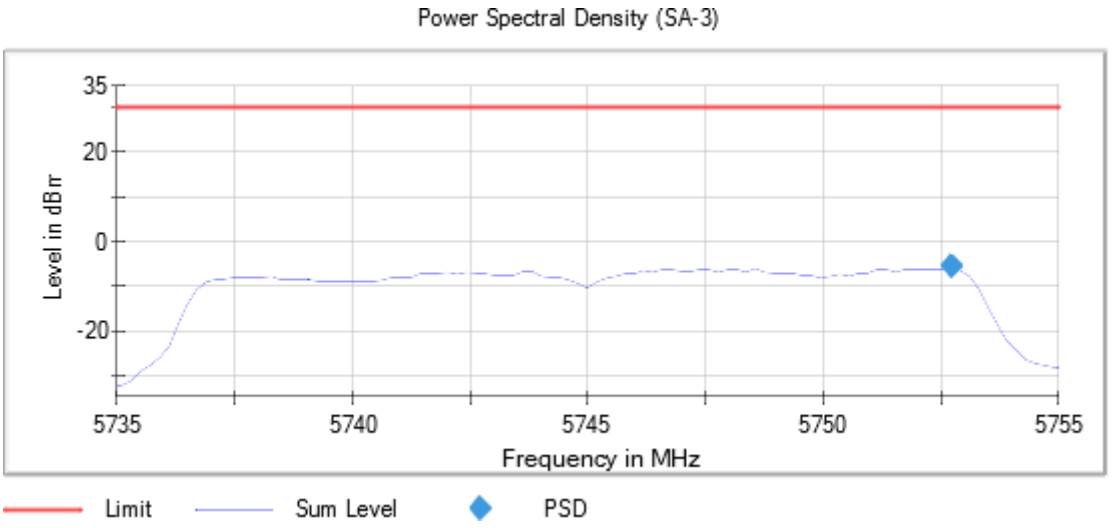


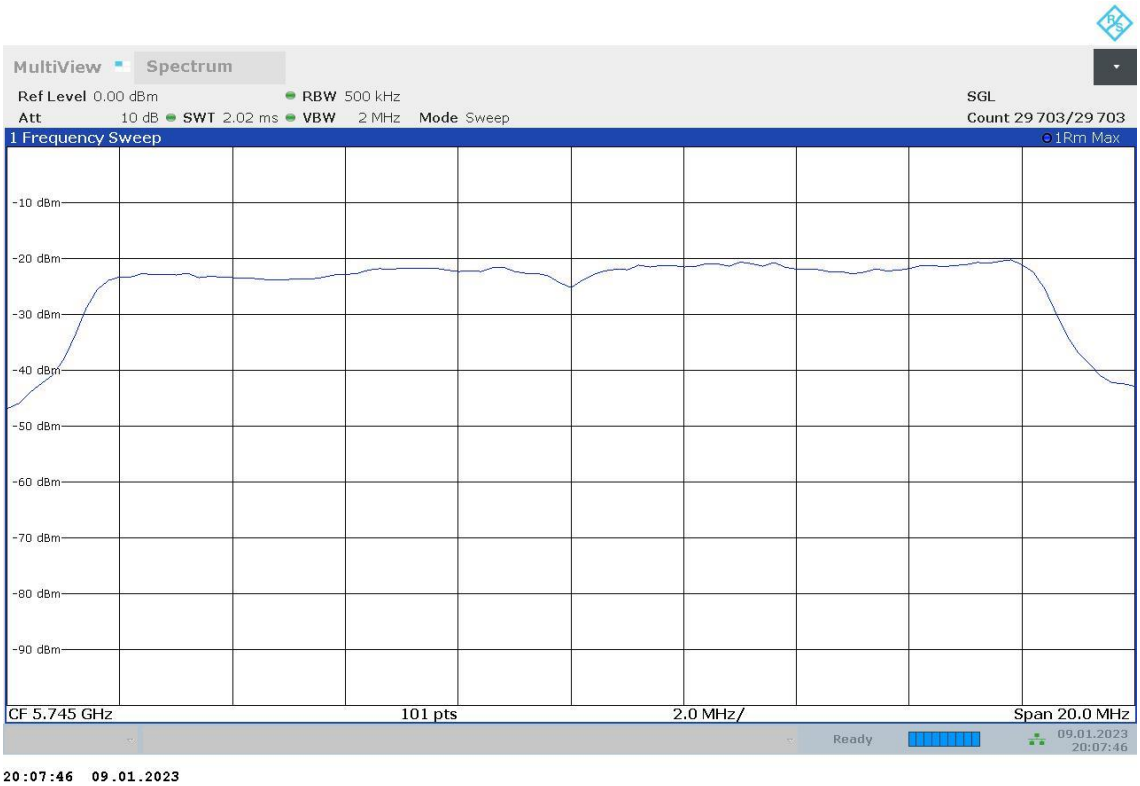
Frequency MHz = 5745.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:





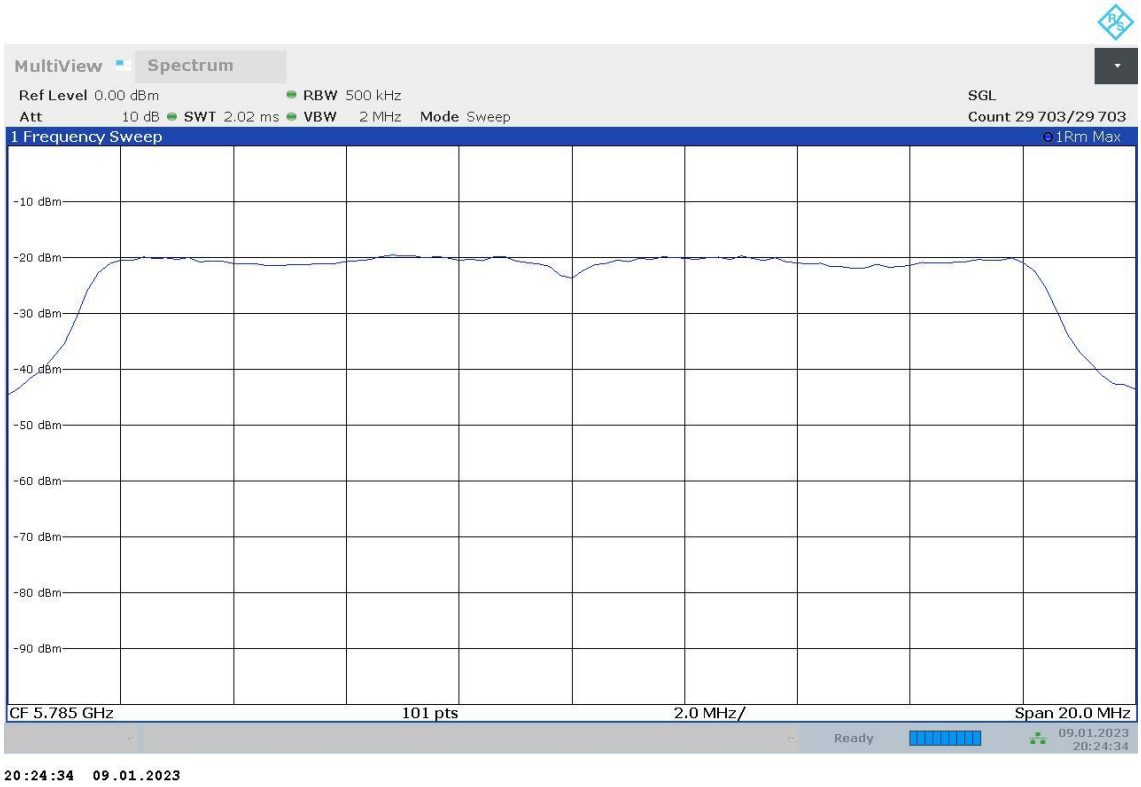
20:07:46 09.01.2023

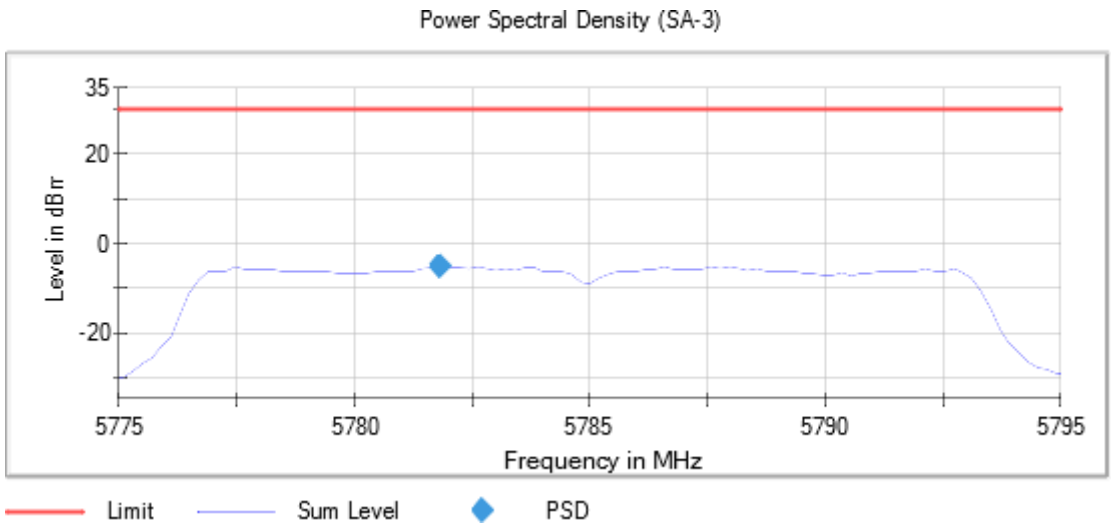
Frequency MHz = 5785.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



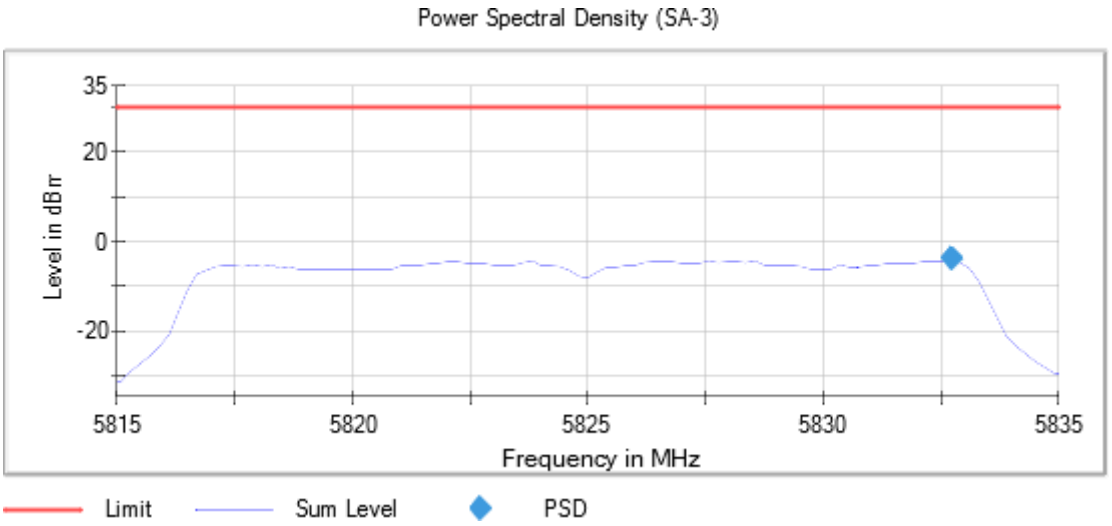


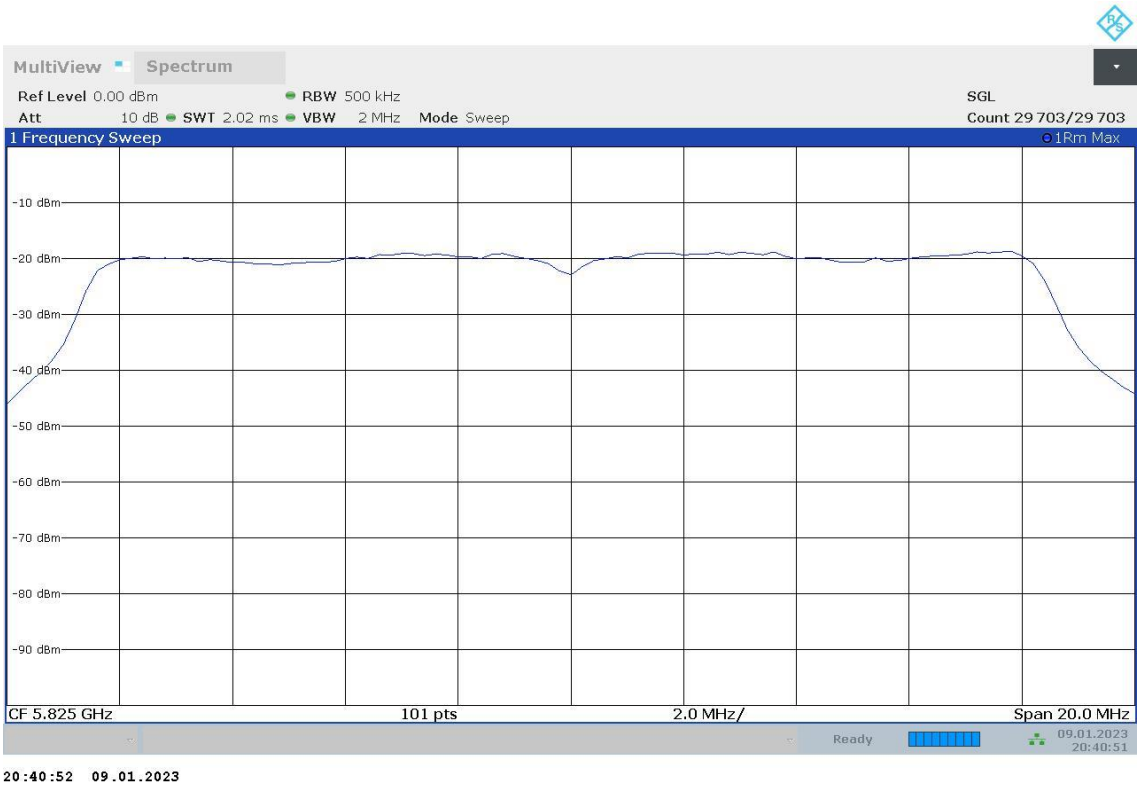
Frequency MHz = 5825.00000 Modulation = 802.11a (OFDM 24 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:





Mode: SISO

Modulation: 802.11n HT20 (OFDM MCS7)

Results

Freq (MHz)	Marker Freq (MHz)	PSD (dBm)
5180.00000	5187.722772	6.25
5200.00000	5197.425743	7.57
5240.00000	5237.227723	4.90
5260.00000	5267.722772	3.95
5280.00000	5277.425743	4.51
5320.00000	5317.425743	1.26
5500.00000	5507.722772	-0.87
5580.00000	5587.722772	-0.73
5700.00000	5697.425743	-1.35
5745.00000	5752.524752	-6.09
5785.00000	5782.425743	-5.18
5825.00000	5832.524752	-4.15

Verdict

Pass

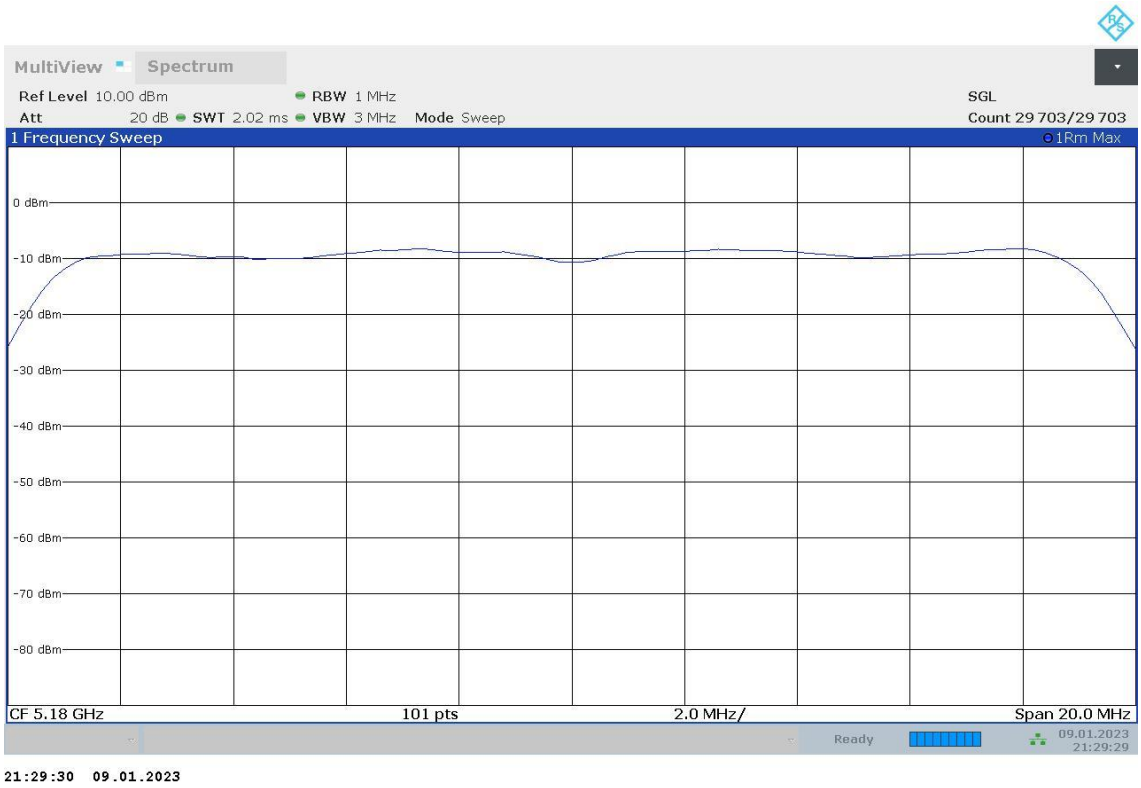
Attachments

Frequency MHz = 5180.00000 Modulation = 802.11n HT20 (OFDM MCS7)

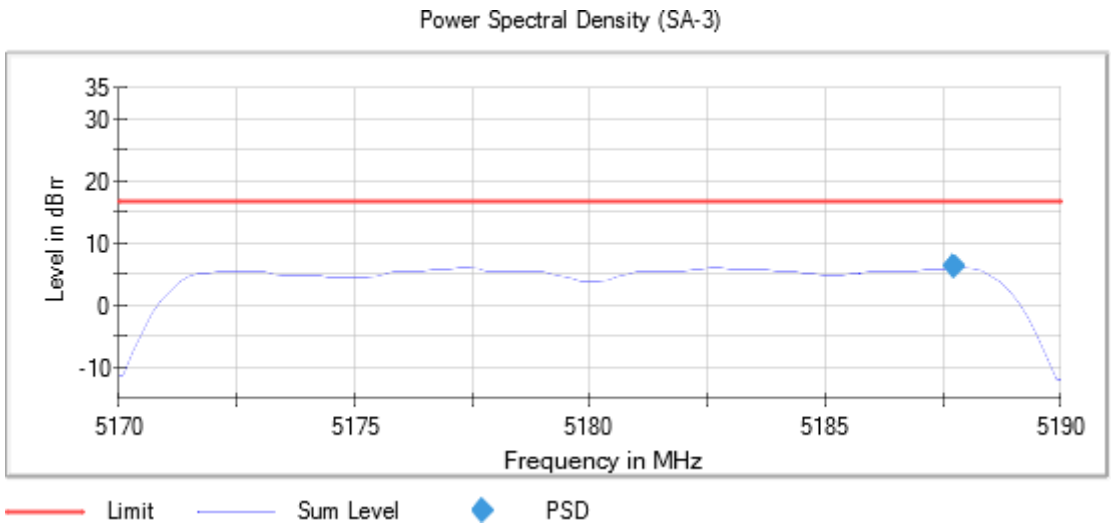
TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



21:29:30 09.01.2023



Frequency MHz = 5200.00000 Modulation = 802.11n HT20 (OFDM MCS7)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images: