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:
3830ERM.002

Test report

USA FCC Part 15.407 (U-NII), 15.209; & CANADA RSS-247, 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	Infotainment Head Unit
(*) Trademark	Garmin
(*) Model and /or type reference	MGU22
Other identification of the product	FCC ID: IPH-03910 IC: 1792A-03910
(*) Features	USB2.0 (3 ports), HS-CAN, 100BaseT1(OABR), 1000BaseT1(GBit), Bluetooth, WLAN 802.11ax,u MIMO (2.4GHz/5GHz), APIX2 &APIX3 display link (HDCP2.3), FPD-Link III, GNSS
Manufacturer	Garmin International, Inc. 1200 E. 151st Street Olathe, Kansas 66062, USA
Test method requested, standard	USA FCC Part 15.407 10-1-22 Edition : Unlicensed National Information Infrastructure Devices. General technical requirements. USA FCC Part 15.209 10-1-22 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	05-08-2023
Report template No	FDT08_23 (*) "Data provided by the client"

Index

Acronyms

Acronym ID	Acronym Description
	Emission Bandwidth
# of Tx Chains	Number of Transmission Chains
Avg Power	Maximum Average Conducted Output Power
DC	Duty Cycle
Freq	Frequency
Max EIRP	Maximum Burst EIRP
Mod	Modulation
Mode	Mode
Occ Ch BW	Occupied Channel Bandwidth
Operation Band	Operation Band
PSD	Power Spectrum Density
Port	Active Port
TPC	TPC

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 a The main functionalities are: Navigation, USB, voice recognition and several interfaces to the vehicle and Bluetooth / WLAN. The Head-unit provides different interfaces like: AR-CAM input, Video-out APIX3 (for the connection of an external Display), 3 USB interfaces.

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 used for testing have been selected by: The client.

1. Sample S/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
2874/102	Garmin MGU 22 sample	MGU22	GAG104N1000203	01/30/2023

2. Sample S/01 is composed of the following accessories:

Control Nº	Description	Model	Serial Nº	Date of reception
2874/05	Harness	--	--	03/26/2021
2874/11	Fakra to SMA Connector	--	--	03/26/2021
2874/13	OABR Connector cable	--	--	03/26/2021
3171/05	CAN Interface	13724	--	03/05/2021
3171/11	Ethernet Cable	--	--	03/05/2021

3. Sample S/01 was used for the test(s): All Conducted and Radiated tests indicated in appendix A AND B.

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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	
	BT/Wi-Fi Antenna	2	☒	☐	☐	
	USB1/2	2	☒	☐	☐	
	Power	2	☒	☐	☐	
	CID	2	☒	☐	☐	
	AR-Cam	2	☒	☐	☐	
	100 Base T1/1G Base T1/GPS/DCS/HUD/DFE	2	☒	☐	☐	
Supplementary information to the ports…… :	N/A					
Rated power supply .....:	Voltage and Frequency		Reference poles			
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 8 - 16 Vdc					
	☐	DC:					
Rated Power .....:	No Data Provided						
Clock frequencies.....:	No Data Provided						
Other parameters .....:	No Data Provided						
Software version .....:	22w05.3-1-21						
Hardware version .....:	5.1.5						
Dimensions in cm (W x H x D) ....:	No Data Provided						
Mounting position .....:	☐	*Table top equipment*					
	☐	*Wall/Ceiling mounted equipment*					
	☐	*Floor standing equipment*					
	☐	*Hand-held equipment*					

	☒	*Other: Automotive*

Modules/parts.....:	Module/parts of test item	Type	Manufacturer
	N/A		
Accessories (not part of the test item) .....:	Description	Type	Manufacturer
	N/A		
Documents as provided by the applicant.....:	Description	File name	Issue date
	Declaration Equipment Data	FDT30_18 Declaration Equipment Data	04/01/2022
Copy of marking plate:			

Identification of the client

Garmin International, Inc.
1200 E. 151st Street
Olathe, Kansas 66062, USA.

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	06-27-2022
Date (finish)	03-22-2023

Document history

Report number	Date	Description
3830ERM.002	05-08-2023	First release.

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
1039	Fsv40 Signal Analyzer 40GHz	101627	2022-11-01	2024-11-01
1041	SMB100A Signal Generator	180180	2022-10-06	2024-10-06
1042	SMBV100A Vector Signal Generator	262575	2022-03-16	2024-03-16
1107	Ethernet SNMP Thermometer	60038026952	2022-08-16	2023-08-16
1313	Wireless Measurement Software R&S WMS32	-	N/A	N/A

Radiated Measurements

CONTROL NUMBER	DESCRIPTION	Serial No	LAST CALIBRATION	NEXT CALIBRATION
1461	Low Noise Preamplifier	2213857B	2022-06-01	2024-06-01
1012	ESR26 EMI Test Receiver	101478	2022-04-12	2024-04-12
1014	FSV40 Signal Analyzer 40GHz	101626	2021-05-19	2023-05-19
1056	3116C Double-Ridged Waveguide Horn Antennas	213179	2020-01-10	2023-01-10
1057	3115 Double-Ridged Waveguide Horn Antennas	211373	2020-06-03	2023-06-03
1065	3142E Biconilog Antenna	208587	2020-08-13	2023-08-13
1111	Ethernet SNMP Thermometer	60038026577	2022-08-16	2023-08-16
1179	Semi-Anechoic Chamber	F169021	N/A	N/A
1314	Wireless Measurement Software R&S WMS32	1040-OT102236	N/A	N/A

Testing verdicts

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

Summary

FCC PART 15 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
FCC 15.407 (g) / RSS-Gen 6.11 & 8.11	Frequency Stability	N/M	Refer 2

Supplementary information and remarks:

1. Only applicable to sub-band U-NII-3: 5.725 - 5.85 GHz.
2. The compliance is checked through a description of how this requirement is met that is provided by the applicant.

Appendix B.1: SISO
Appendix B.2: MIMO

Appendix A: DUT Description

DUT Description

(*): The following information is provided by the client

Information	Description
Equipment type	Wi-Fi 5GHz
DFS Operating Mode	---
TPC Function	Yes
Antenna Specification	Equipment with two antennas (1/4 wave coax)
Operating Frequency Range	5150 - 5250 MHz 5250 – 5350 MHz 5470 – 5725 MHz 5725 – 5825 MHz
Nominal Channel Bandwidth	20/ 40/ 80 MHz
Antenna type	SISO: Radio A SISO Radio B MIMO Radio A + Radio B
RF Output Power	14 dBm
Antenna gain	-2.8 dBi
Supply Voltage	12 Vdc
Modulation:	OFDM (QPSK, BPSK,16QAM,64QAM,256QAM,1024QAM)
Communication Mode:	IP Based (Load Based)
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: MCS0-7 IEEE 802.11ac: VHT SS1 MCS 0-9 VHT SS2 MCS 0-9 IEEE 802.11ax: HE SS1 MCS8 HE SS1 MCS9 HE SS1 MCS11
Geo-location capability	No

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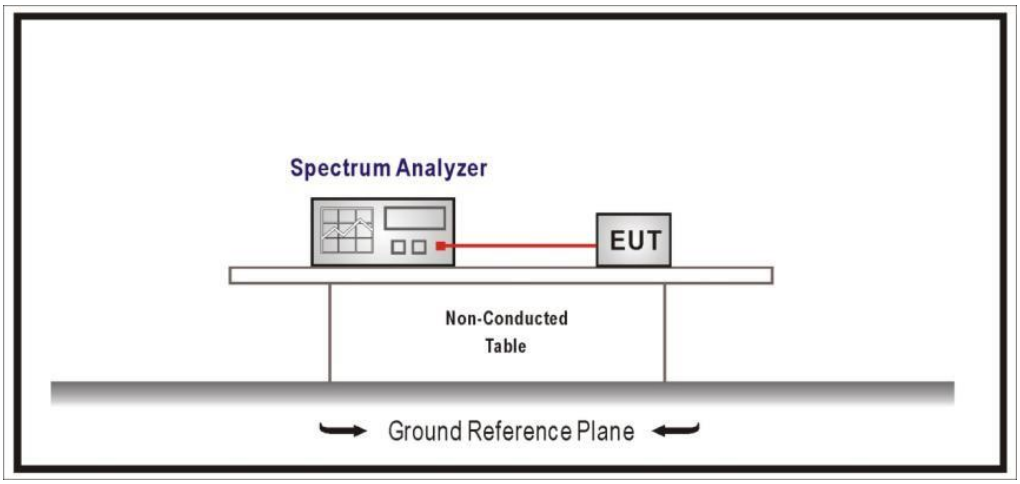
Appendix B: Tests results. Wi-Fi 5GHz

TEST CONDITIONS

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.

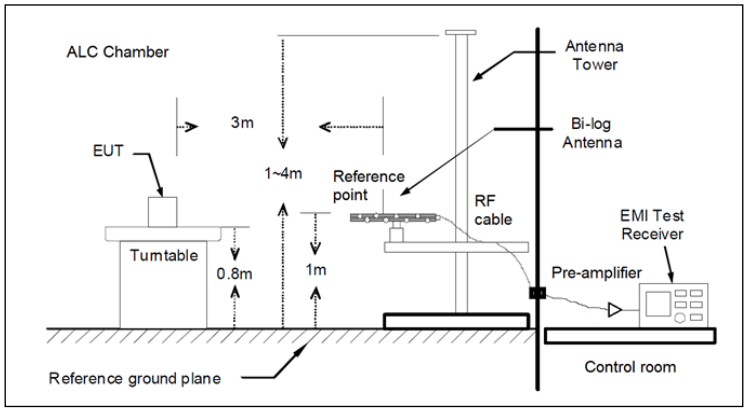


Fig A1: Radiated measurements Setup f < 1 GHz

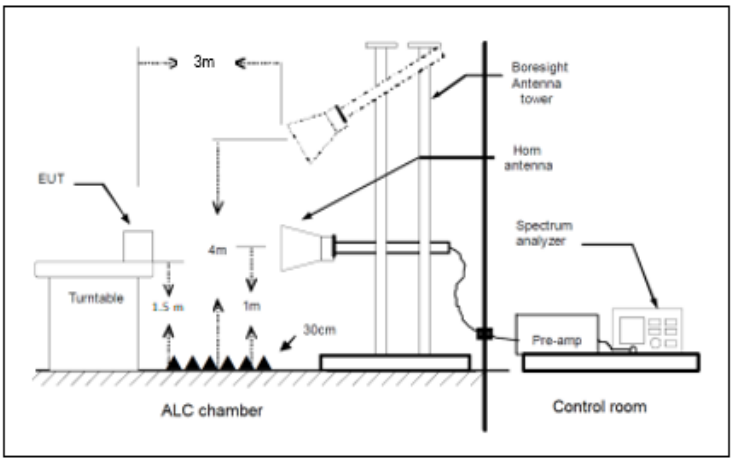


Fig A2: Radiated measurements setup f > 1-18 GHz

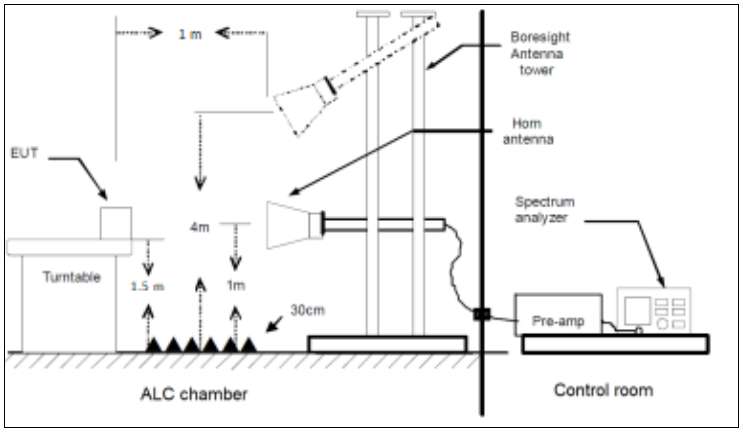


Fig A3: Radiated measurements setup f > 18 GHz

Appendix B.1: SISO

Appendix B.1

TEST CONDITIONS

(*): Data provided by the client.

TEST CONDITIONS	DESCRIPTION
TC#01(1) **(a mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted tests: (Radio A) 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
TC#02(1) **(n mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted tests: (Radio A) 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 Channel Bandwidth: 40 MHz Test Frequencies for Conducted tests: (Radio A) UNII-2A: Lowest channel: 5270 MHz Highest channel: 5310 MHz UNII-2C: Lowest channel: 5510 MHz Middle channel: 5550 MHz Highest channel: 5670 MHz

TEST CONDITIONS	DESCRIPTION
TC#03(1) **(ac mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted tests: (Radio A) 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 Channel Bandwidth:40 MHz Test Frequencies for Conducted tests: (Radio A) UNII-2A: Lowest channel: 5270 MHz Highest channel: 5310 MHz UNII-2C: Lowest channel: 5510 MHz Middle channel: 5550 MHz Highest channel: 5670 MHz Channel Bandwidth: 80 MHz Test Frequencies for Conducted tests: (Radio A) UNII-2A: Lowest channel: 5290 MHz UNII-2C: Lowest channel: 5530 MHz Highest channel: 5610 MHz

TEST CONDITIONS	DESCRIPTION
TC#04[1][2] **(ax mode)**	Power supply (V): $V_{nominal}$ = 12 Vdc Channel Bandwidth: 20 MHz Test Frequencies for Conducted tests: (Radio A) UNII-1: Lowest range: 5180 MHz Middle channel: 5200 MHz Highest range: 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 range: 5745 MHz Middle channel: 5785 MHz Highest range: 5825 MHz Channel Bandwidth:40 MHz Test Frequencies for Conducted 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 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 54Mb/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.
- Test report 3154ERM.010 for UNII 1 and UNII 3 has all modulations except ax mode Resource units, so ax mode Resource unit combinations were tested in this version.
- 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. Partial 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) for UNII 1 and UNII 3 are indicated as follows:

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

The worst-case RU combinations used in the ax mode SISO/MIMO measurement (all test cases except Band Edge testing) for UNII 2A and UNII 2C are indicated as follows:

- 20 MHz BW - RU26 offset 8
- 40 MHz BW - RU26 offset 8
- 80 MHz BW - RU26 offset 0

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

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

Full RU combinations for ax mode SISO/MIMO measurement (all test cases) are indicated as follows:

- 20 MHz BW – RU242 offset 61
- 40 MHz BW – RU484 offset 65
- 80 MHz BW – RU996 offset 67

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 $\log_{10}$B, 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 $\log_{10}$ 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 $\log_{10}$B, 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.

Antenna gain: -2.8 dBi

Mode: SISO

Modulation: 802.11a (OFDM 54 Mbit/s)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5260.00000	12.1	9.3
5280.00000	12.4	9.6
5320.00000	12.1	9.3
5500.00000	9.1	6.3
5580.00000	9.9	7.1
5700.00000	9.5	6.7

Verdict

Pass

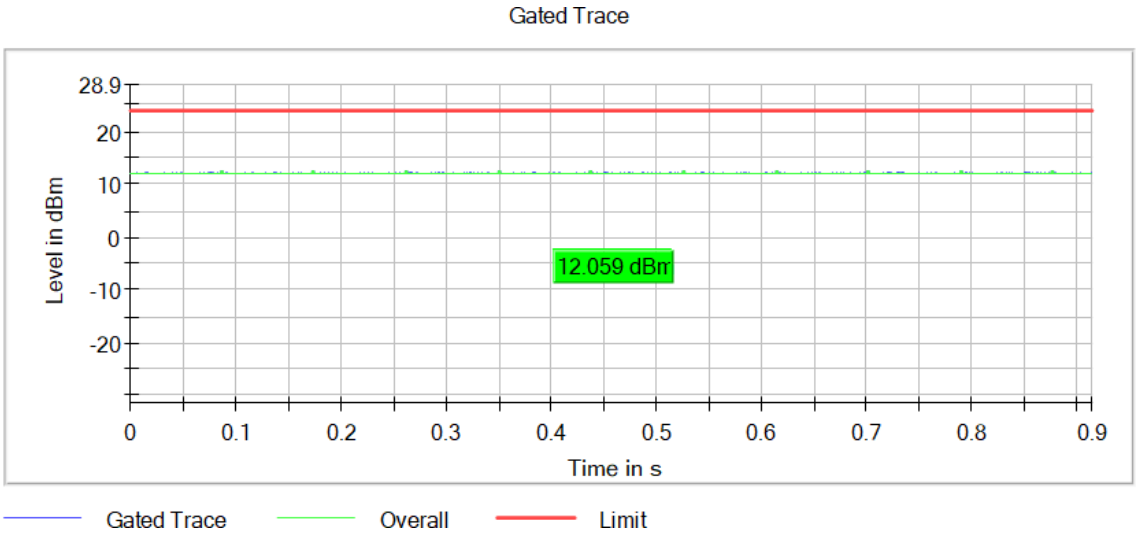
Attachments

Frequency MHz = 5260.00000 Modulation = 802.11a (OFDM 54 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

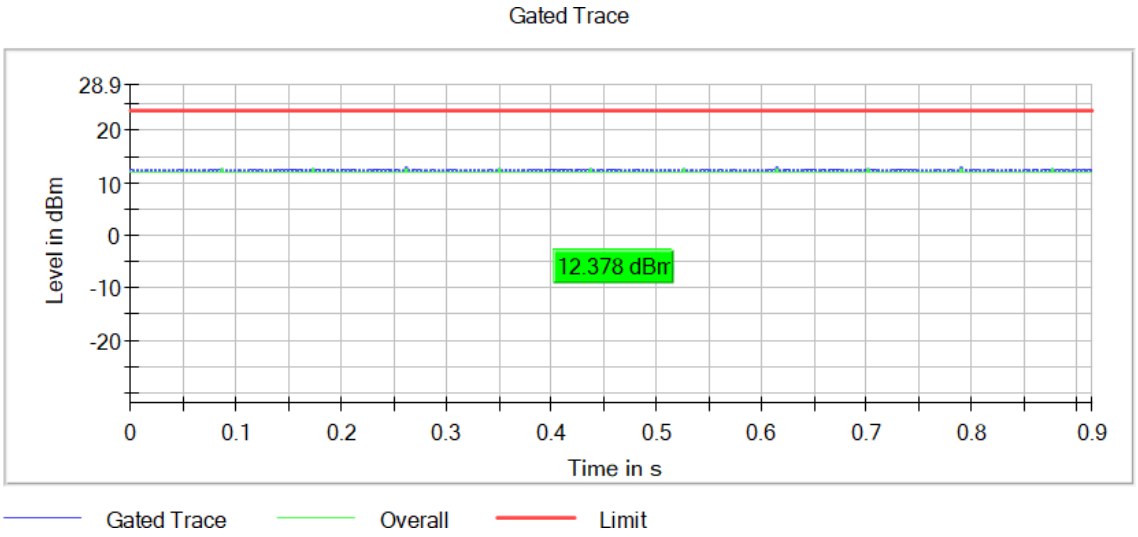
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5280.00000 Modulation = 802.11a (OFDM 54 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

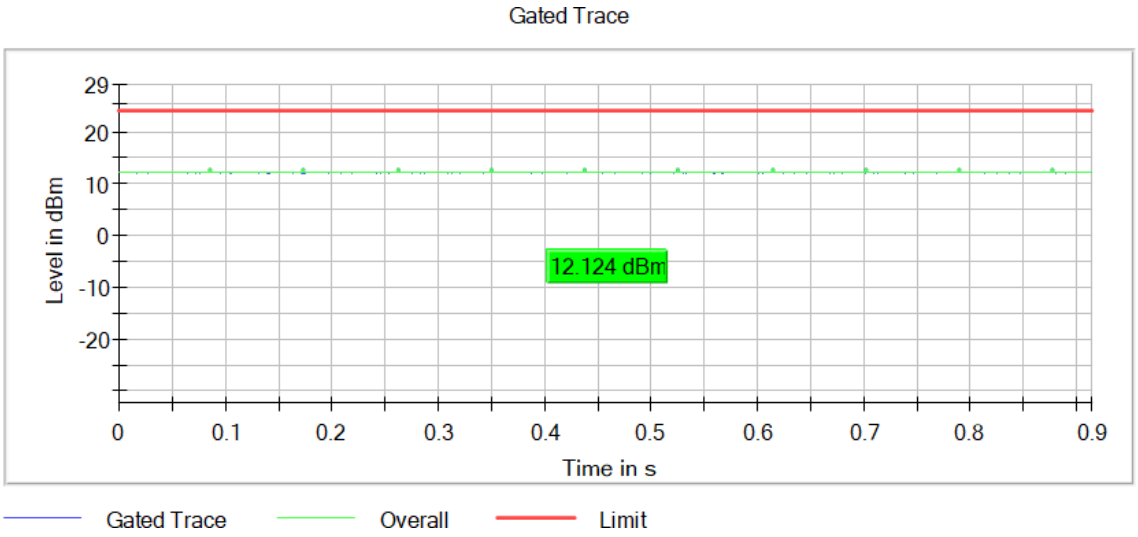
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5320.00000 Modulation = 802.11a (OFDM 54 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

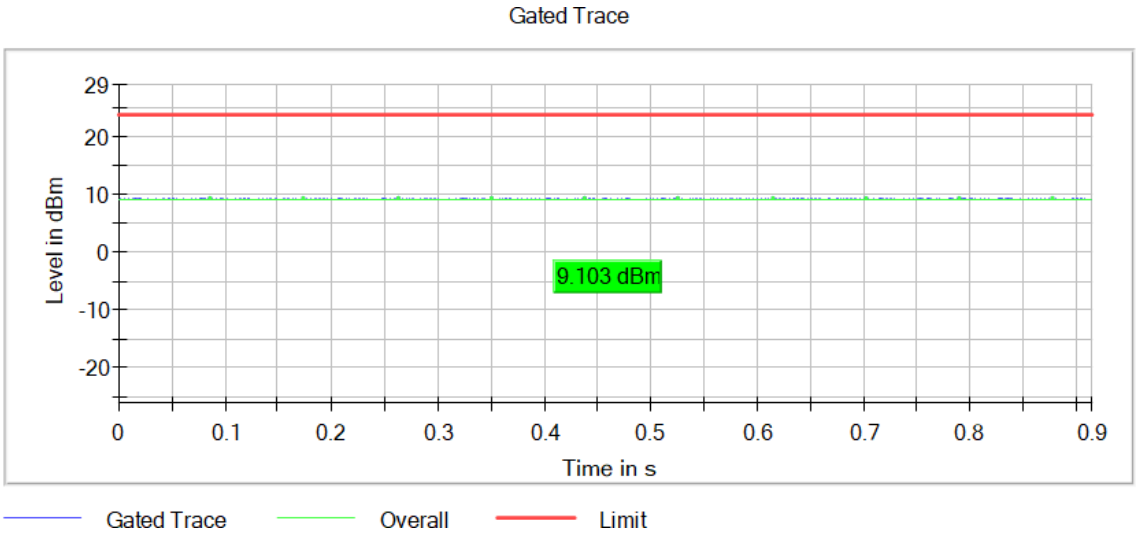
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5500.00000 Modulation = 802.11a (OFDM 54 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

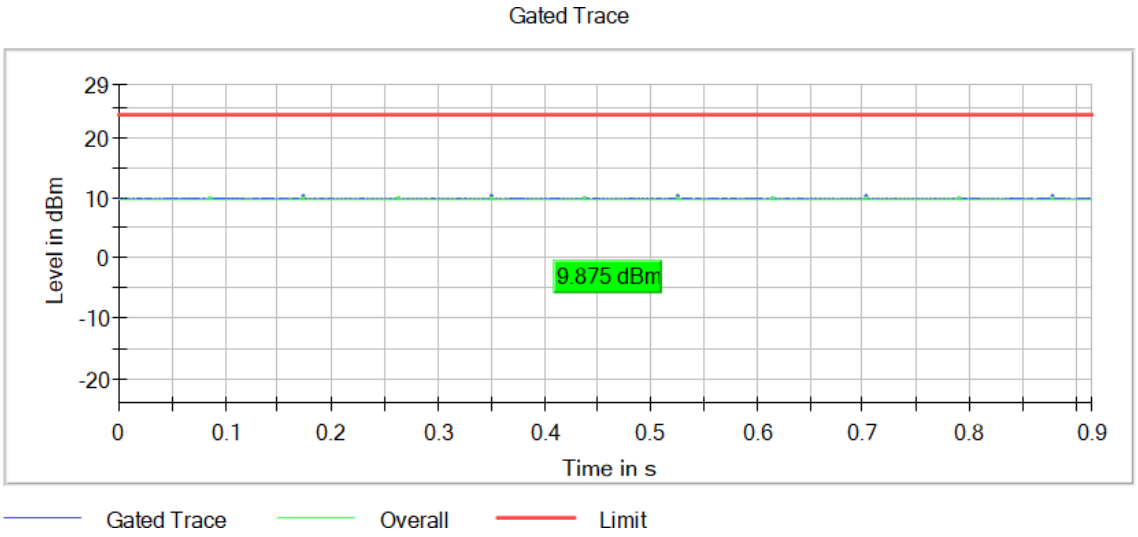
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5580.00000 Modulation = 802.11a (OFDM 54 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

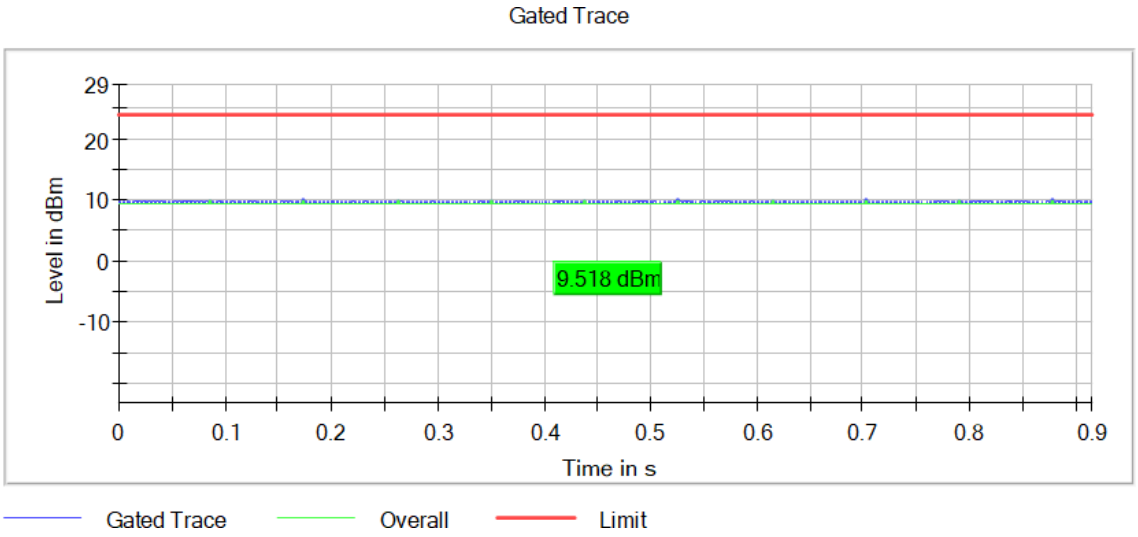
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

Frequency MHz = 5700.00000 Modulation = 802.11a (OFDM 54 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

Antenna gain: -2.8 dBi

Modulation: 802.11n HT20 (OFDM MCS7)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5260.00000	9.4	6.6
5280.00000	9.9	7.1
5320.00000	10.1	7.3
5500.00000	7.4	4.6
5580.00000	8.6	5.8
5700.00000	8.4	5.6

Verdict

Pass

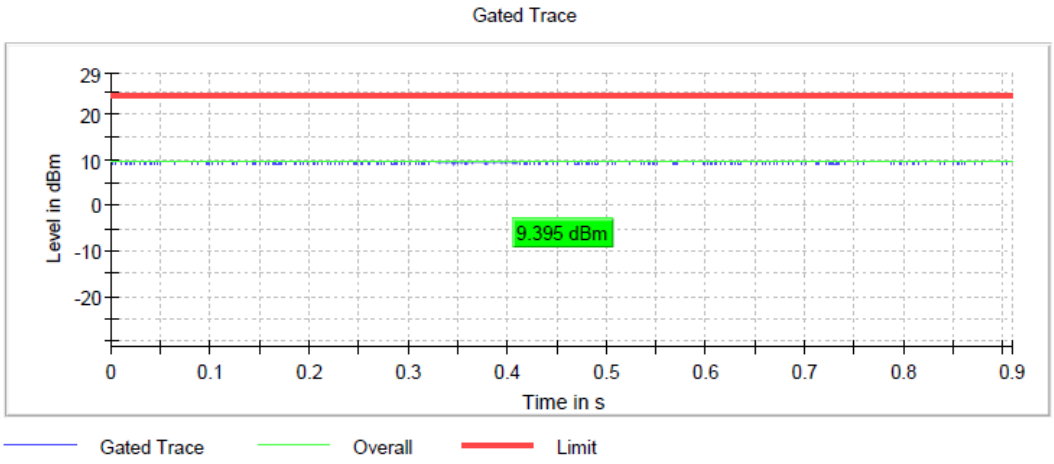
Attachments

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

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

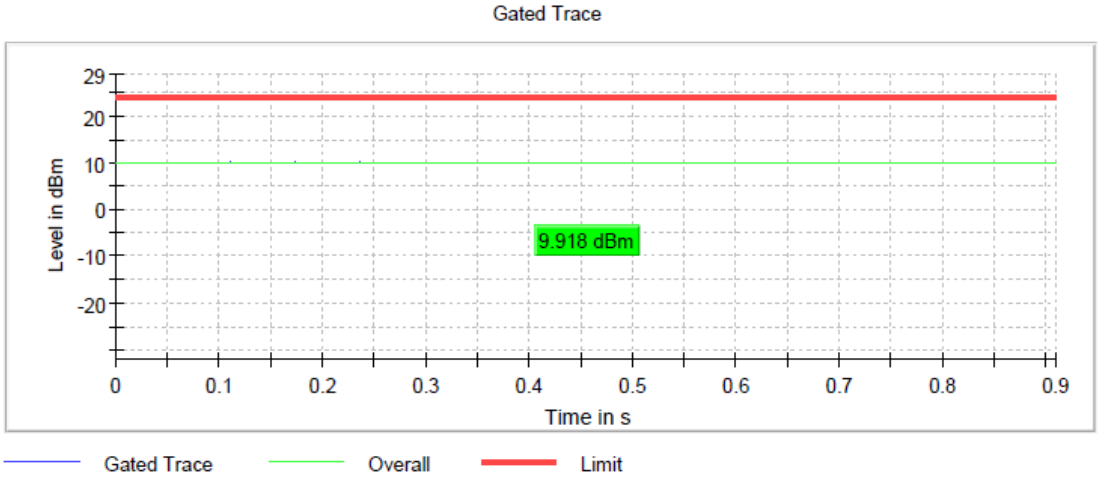
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

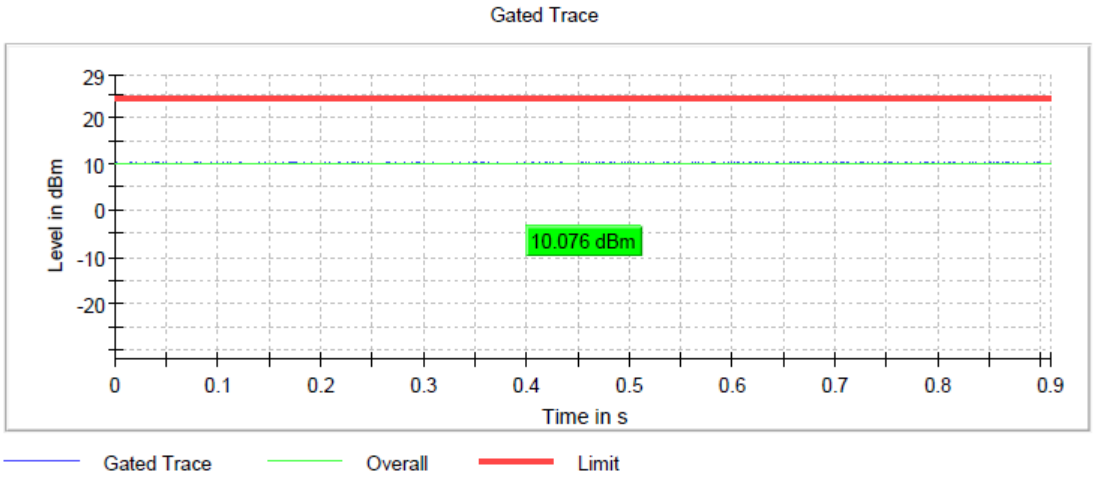
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

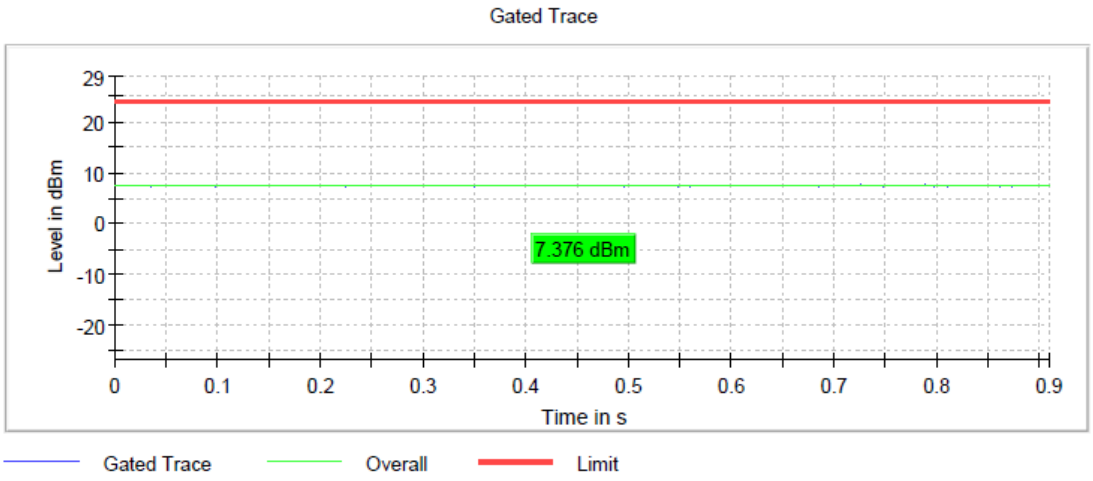
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

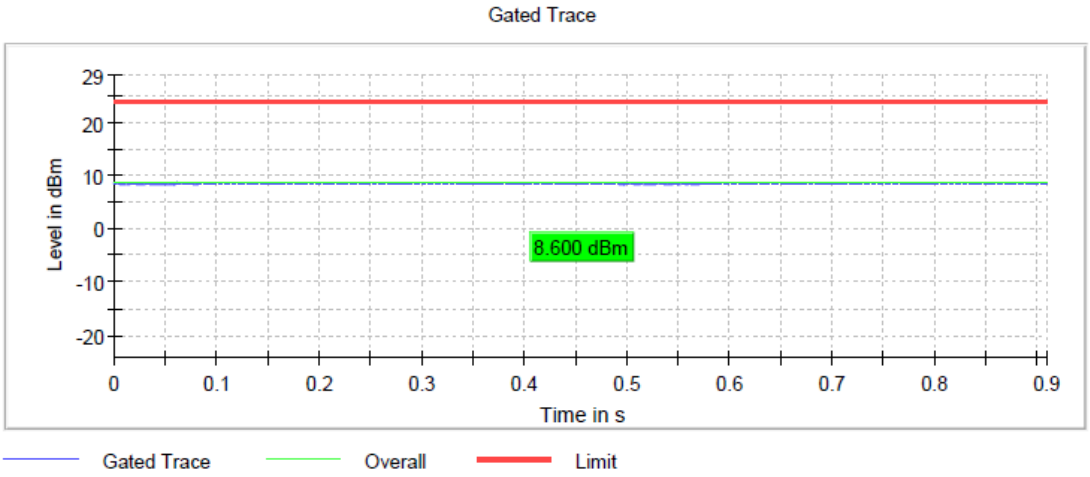
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Tables:

Spectrum Analyzer Parameters

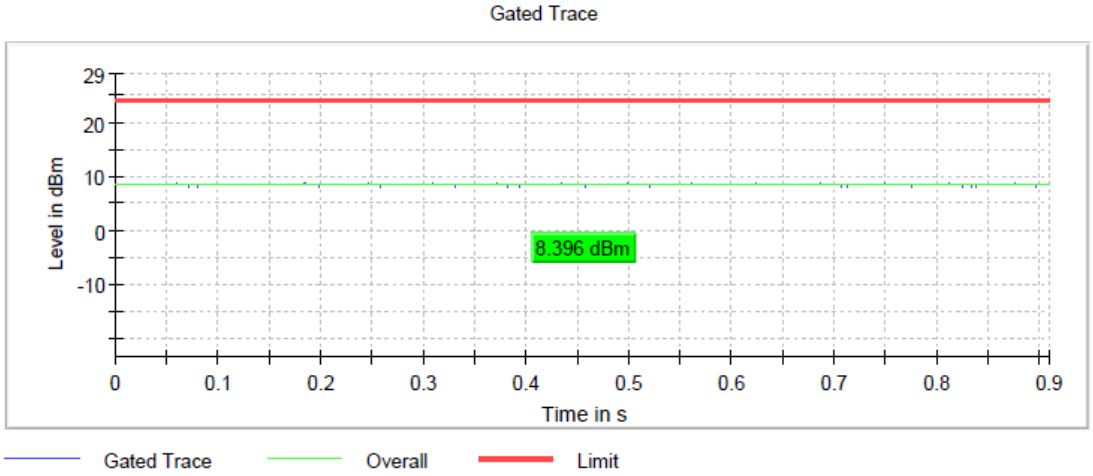
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

Modulation: 802.11n HT40 (OFDM MCS7)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5270.00000	9.8	7.0
5310.00000	10.1	7.3
5510.00000	7.5	4.7
5550.00000	8.7	5.9
5670.00000	7.6	4.8

Verdict

Pass

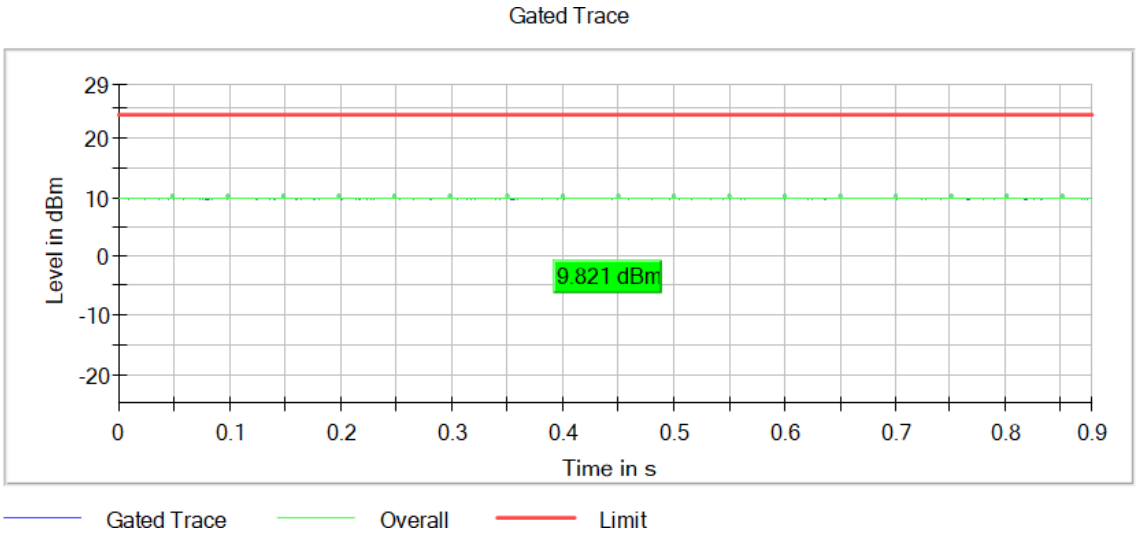
Attachments

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

TPC = No Mode = SISO

Number of Transmission Chains = 2

Images:



Tables:

Spectrum Analyzer Parameters

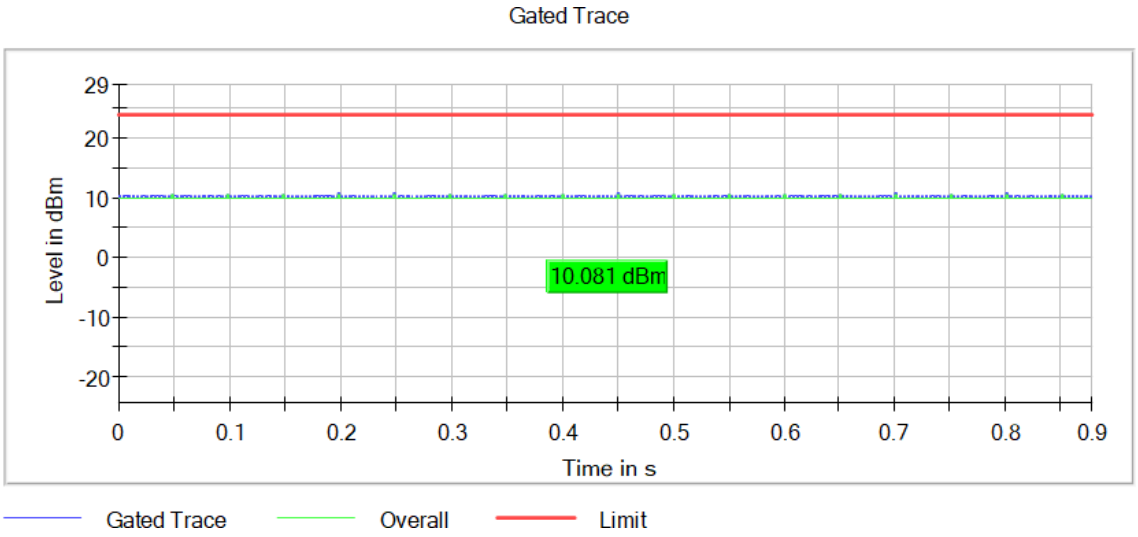
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 2

Images:



Tables:

Spectrum Analyzer Parameters

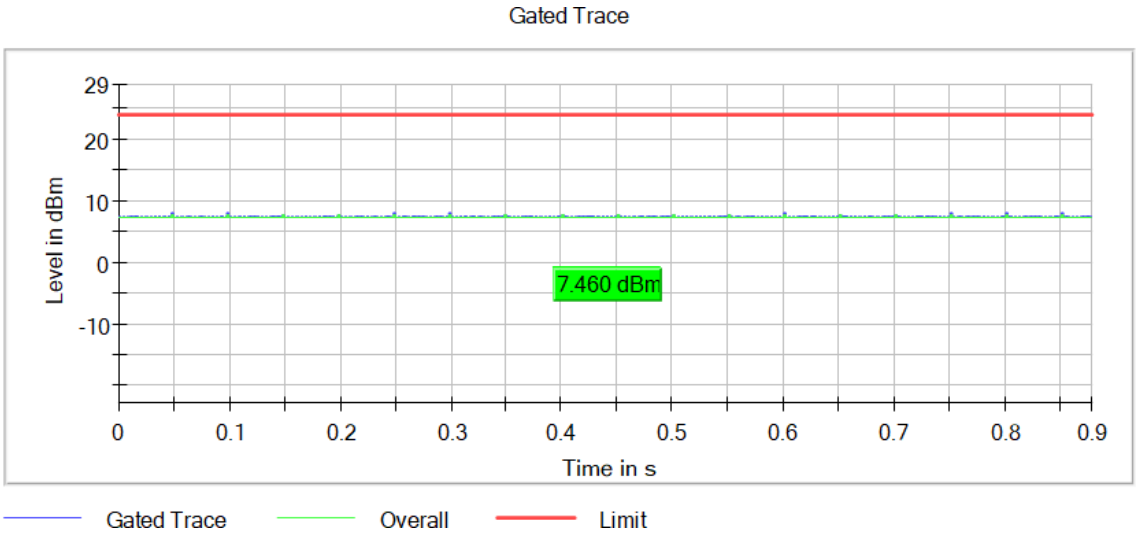
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 2

Images:



Tables:

Spectrum Analyzer Parameters

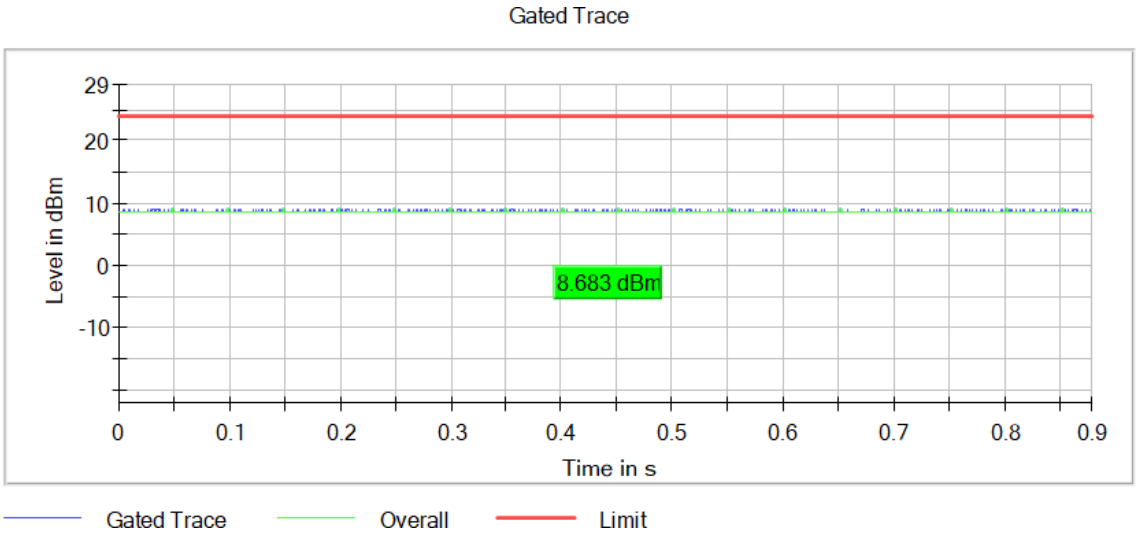
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 2

Images:



Tables:

Spectrum Analyzer Parameters

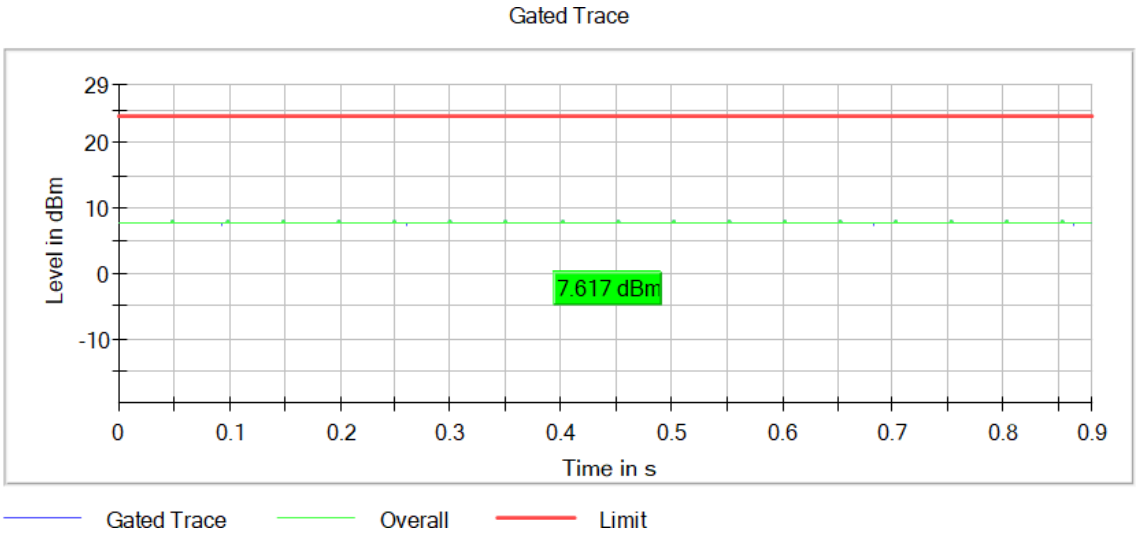
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 2

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)
5260.00000	11.6	8.8
5280.00000	12.1	9.3
5320.00000	12.1	9.3
5500.00000	8.8	6.0
5580.00000	10.0	7.2
5700.00000	9.5	6.7

Verdict

Pass

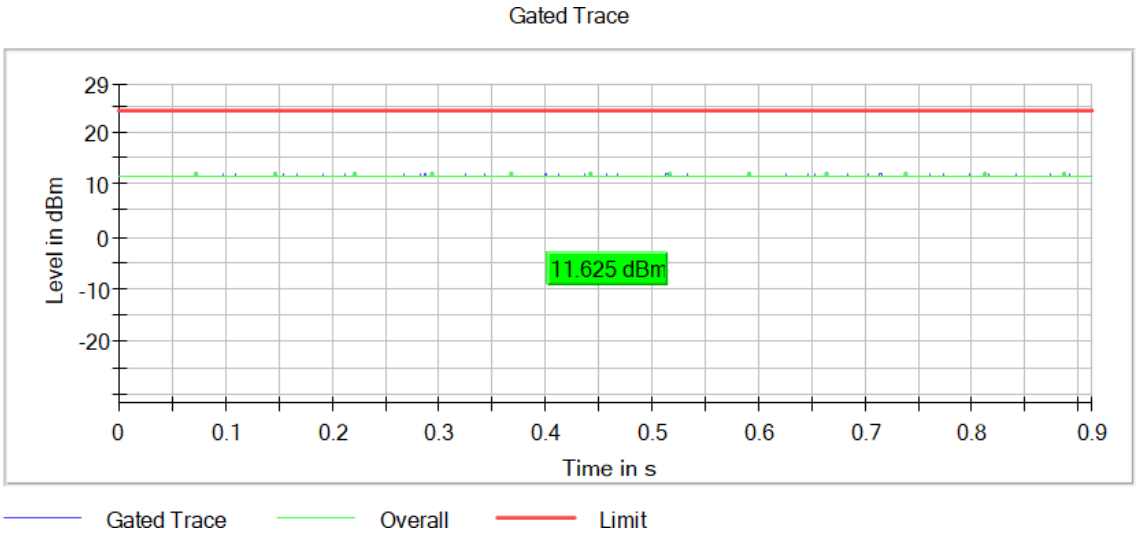
Attachments

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

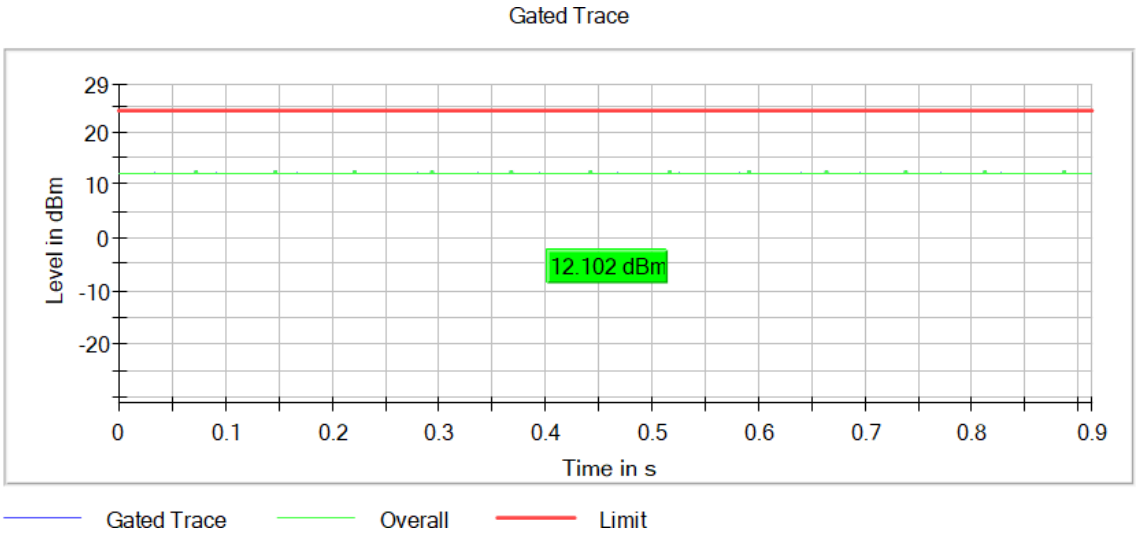
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

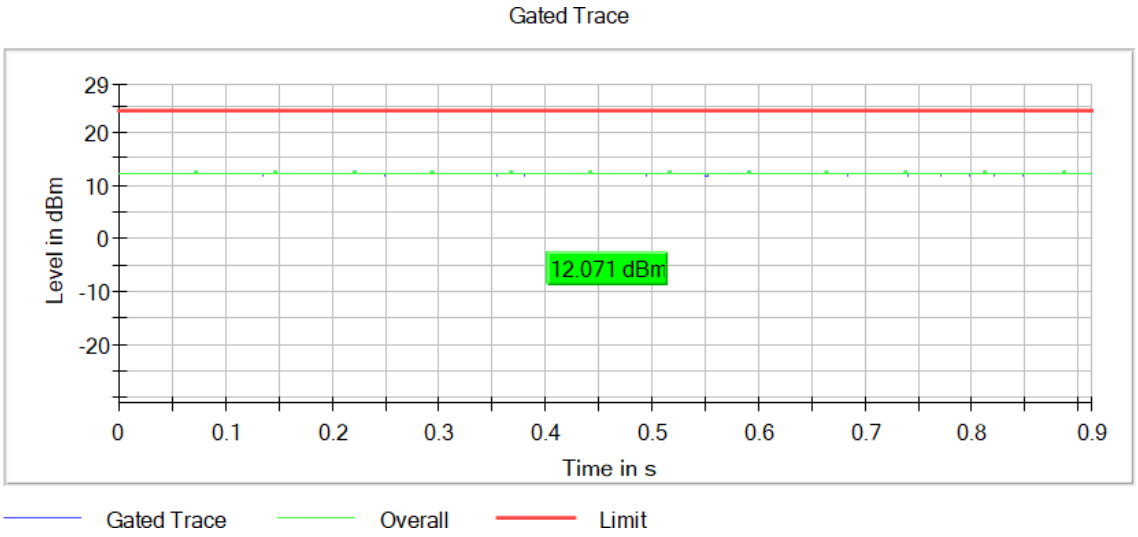
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

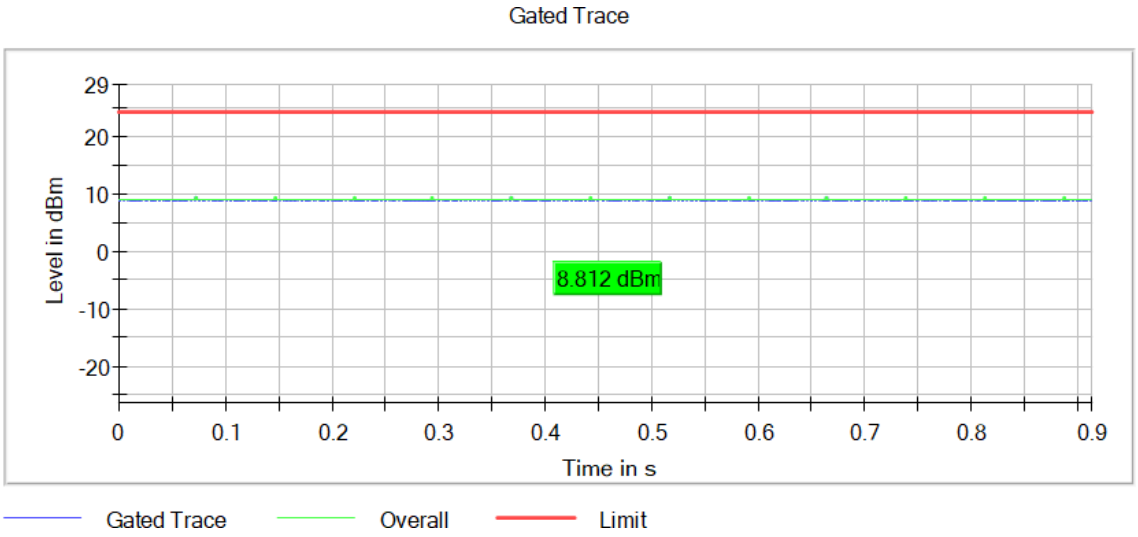
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

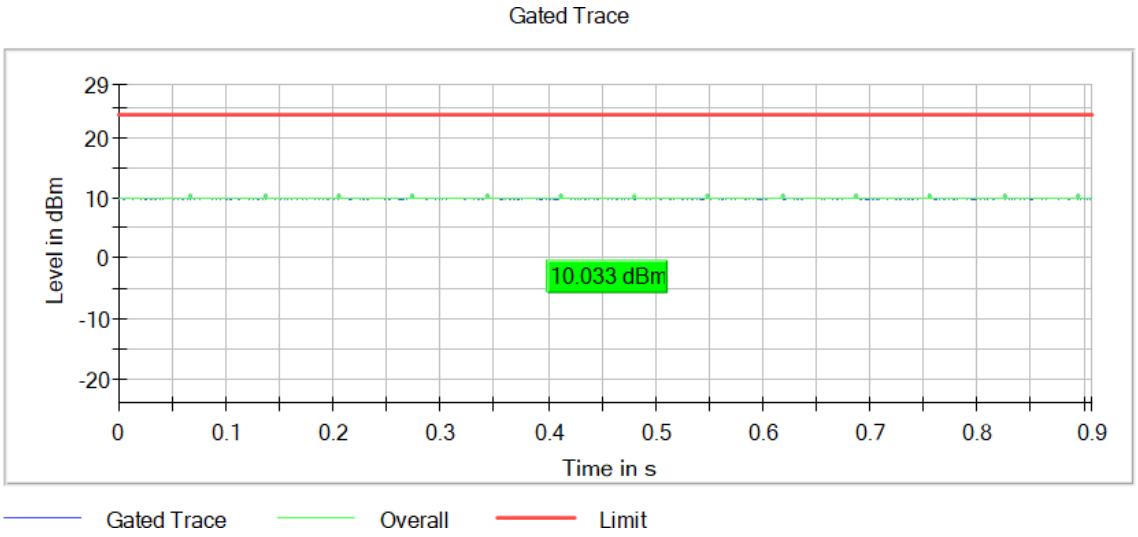
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

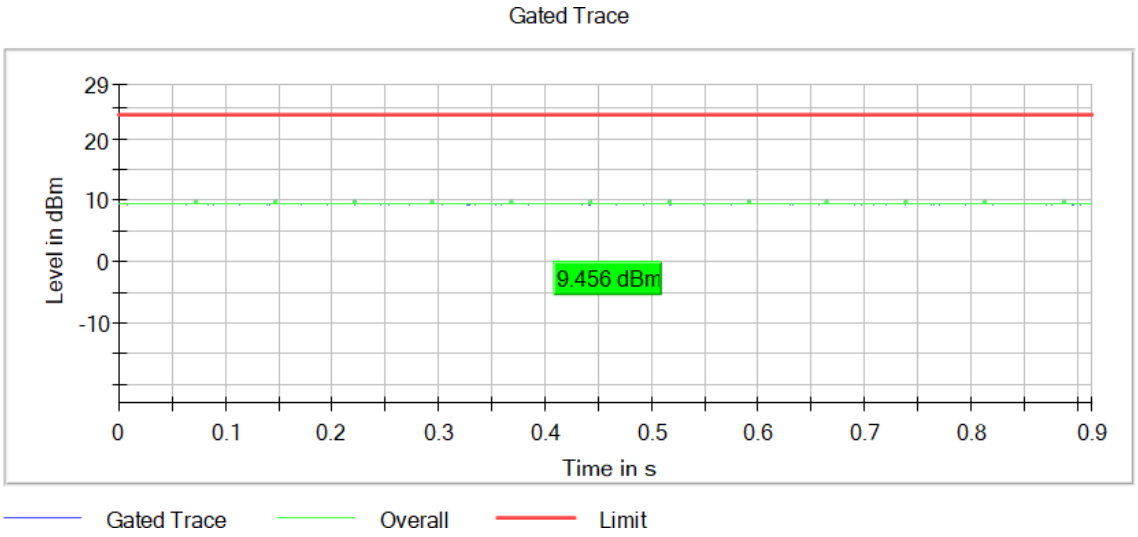
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

Modulation: 802.11ac VHT40 SS1 (OFDM MCS9) non-beam forming

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5270.00000	9.6	6.8
5310.00000	9.8	7.0
5510.00000	6.2	3.4
5550.00000	7.5	4.7
5670.00000	6.6	3.8

Verdict

Pass

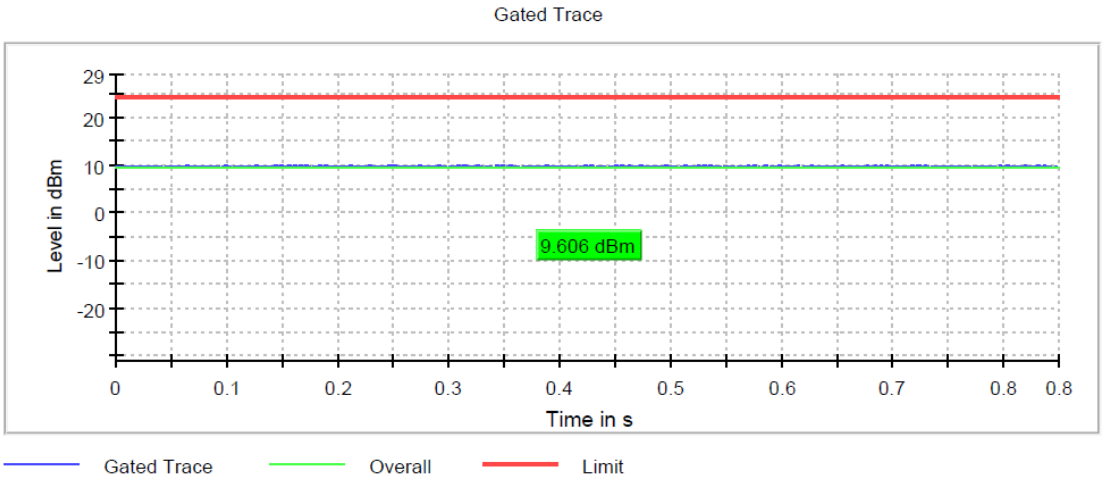
Attachments

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

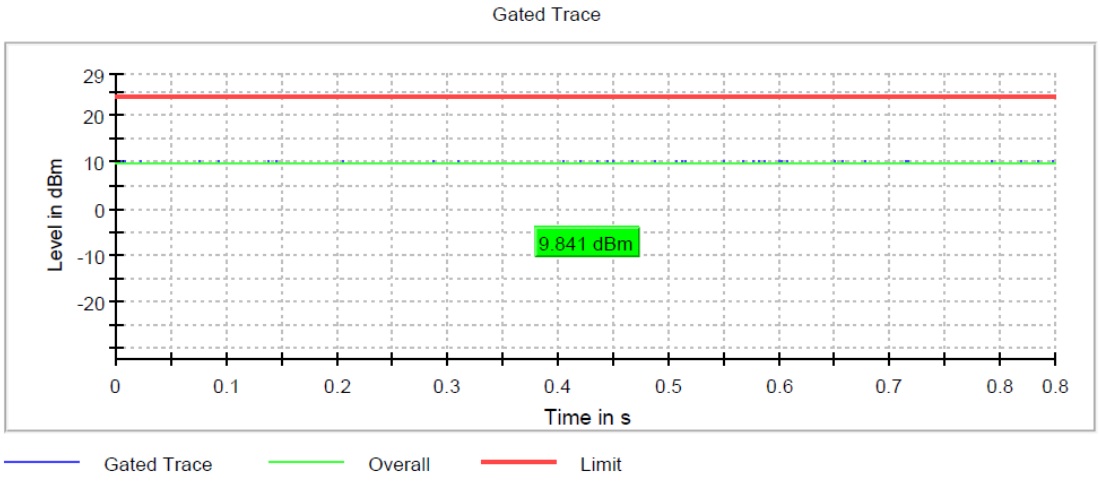
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

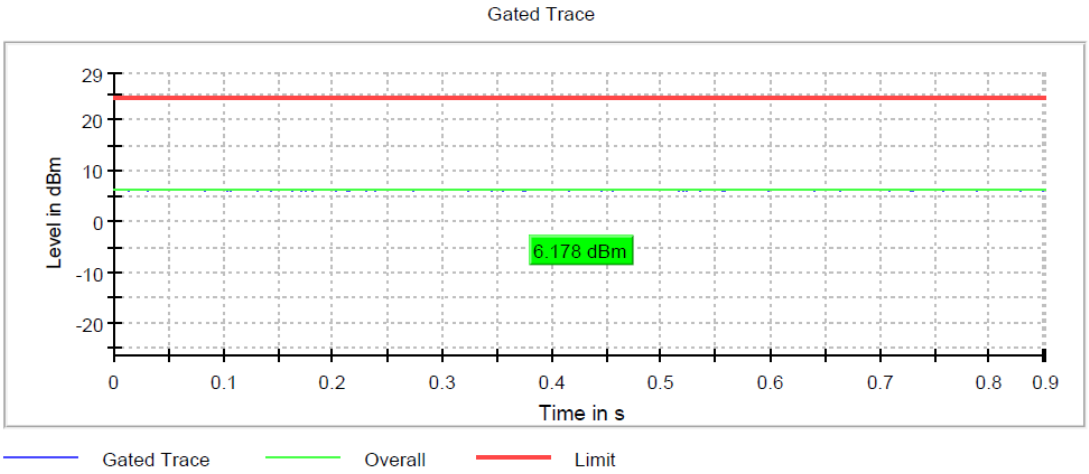
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

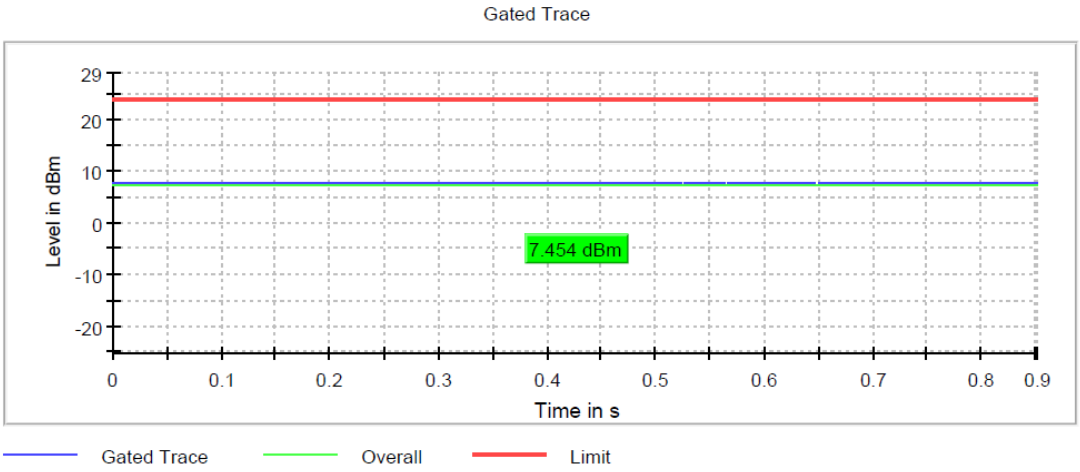
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

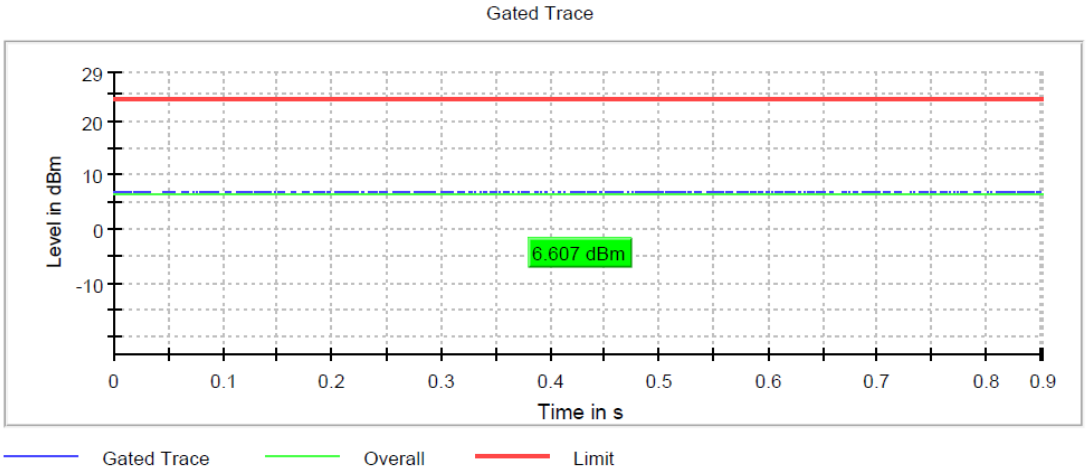
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

Modulation: 802.11ac VHT80 SS1 (OFDM MCS9)

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5290.00000	8.8	6.0
5530.00000	7.9	5.1
5610.00000	9.7	6.9

Verdict

Pass

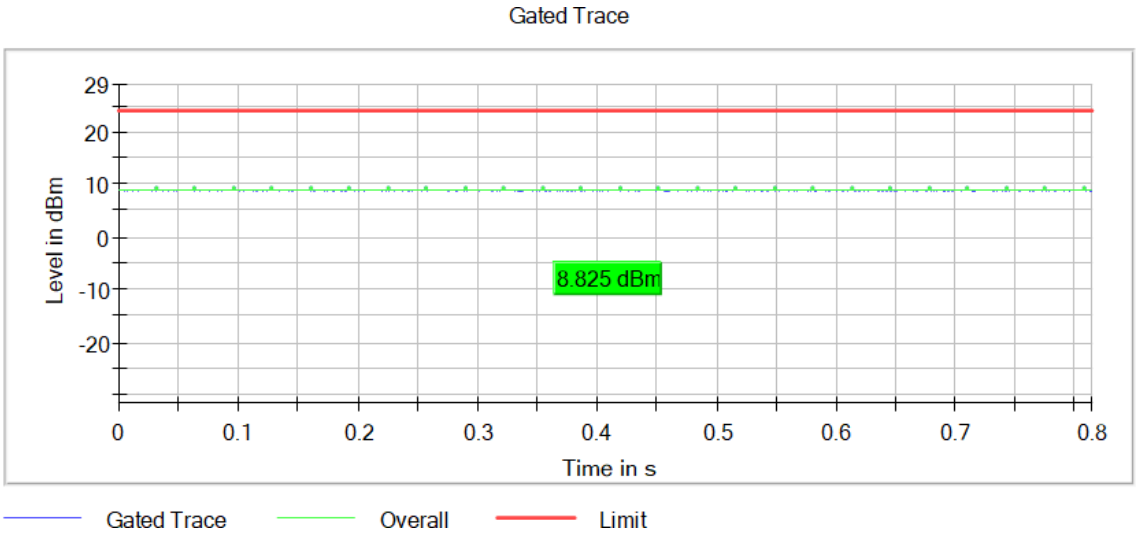
Attachments

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

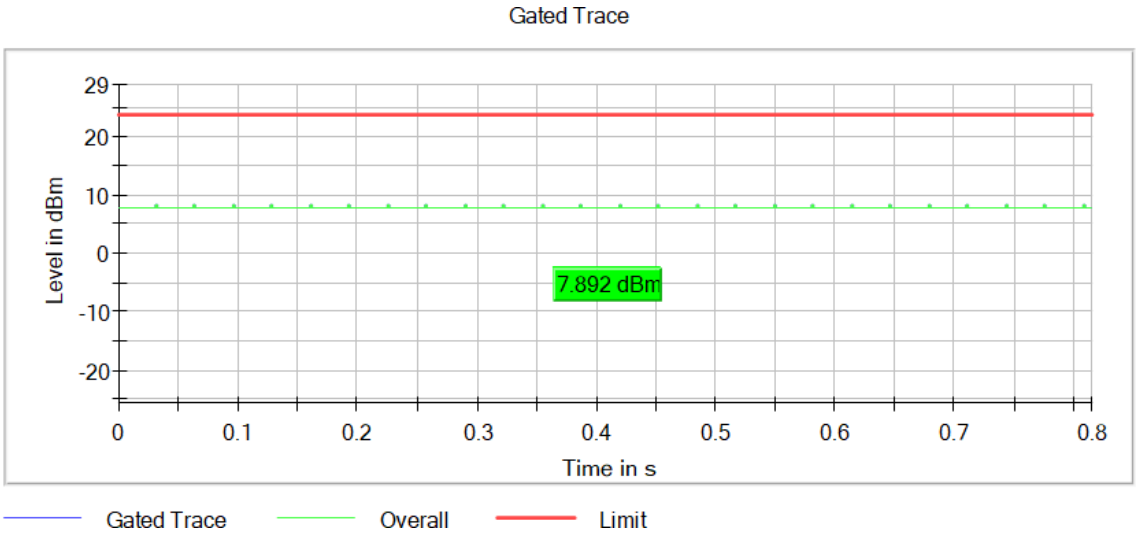
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

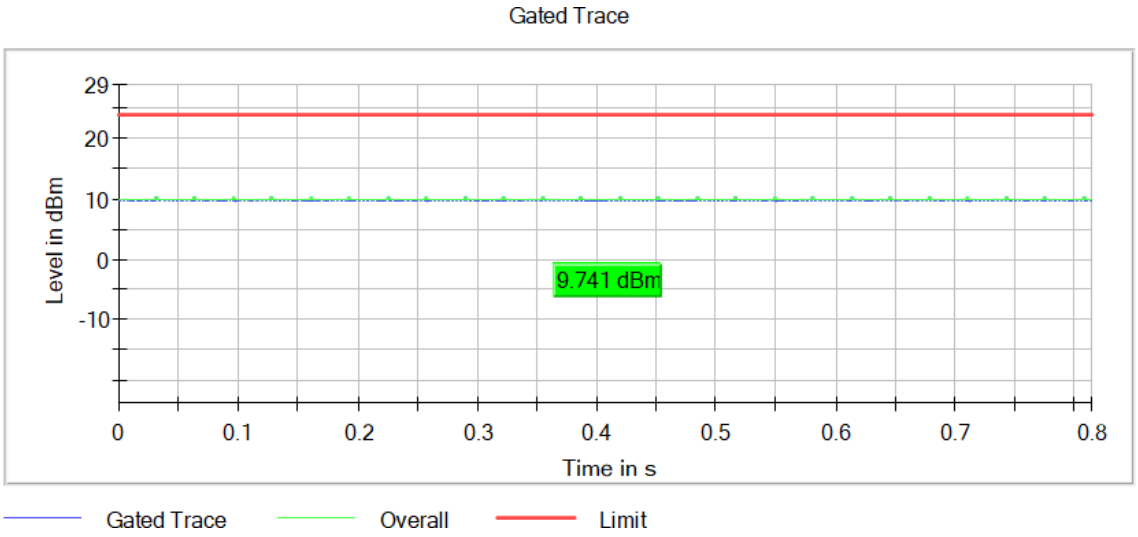
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

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

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5180.00000	5.8	3.0
5200.00000	5.5	2.7
5240.00000	6.1	3.3
5260.00000	8.6	5.8
5280.00000	8.6	5.8
5320.00000	8.7	5.9
5500.00000	7.9	5.1
5580.00000	9.6	6.8
5700.00000	9.7	6.9
5745.00000	6.0	3.2
5785.00000	5.9	3.1
5825.00000	5.5	2.7

Verdict

Pass

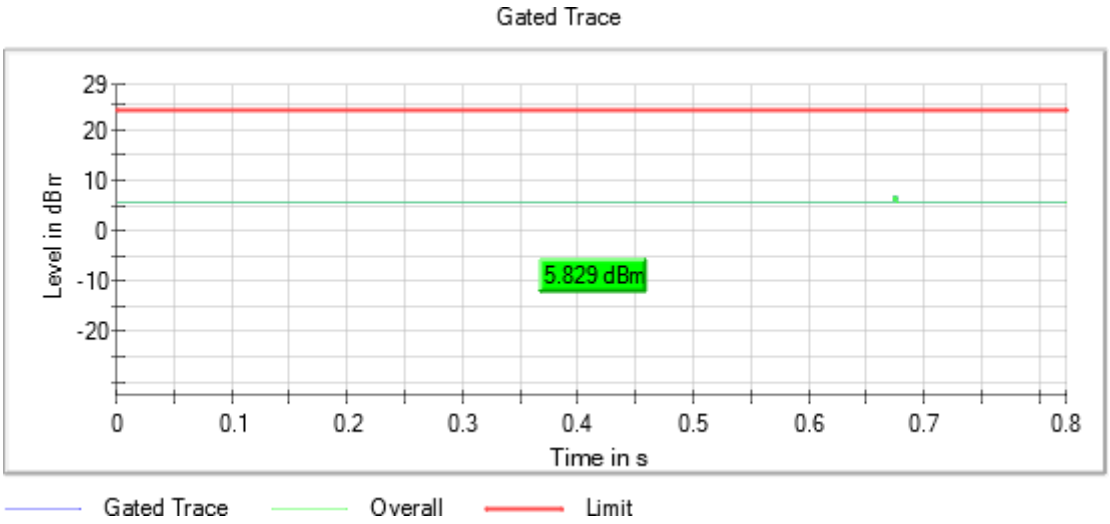
Attachments

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

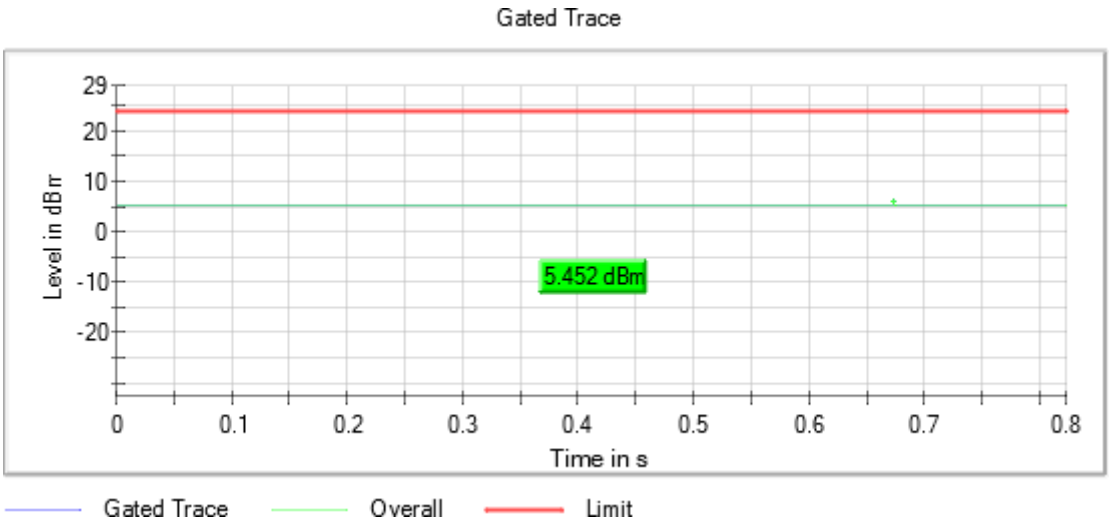
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

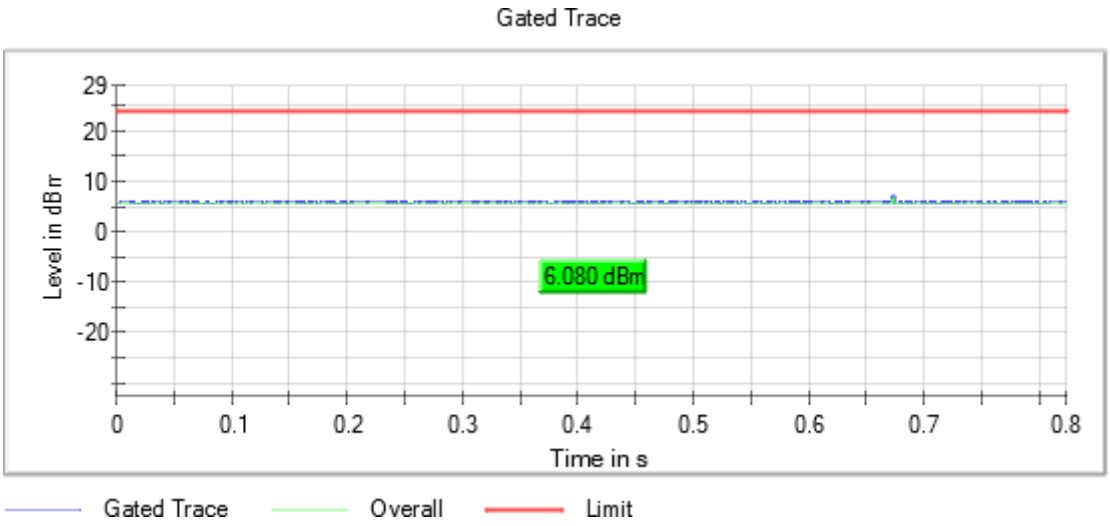
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

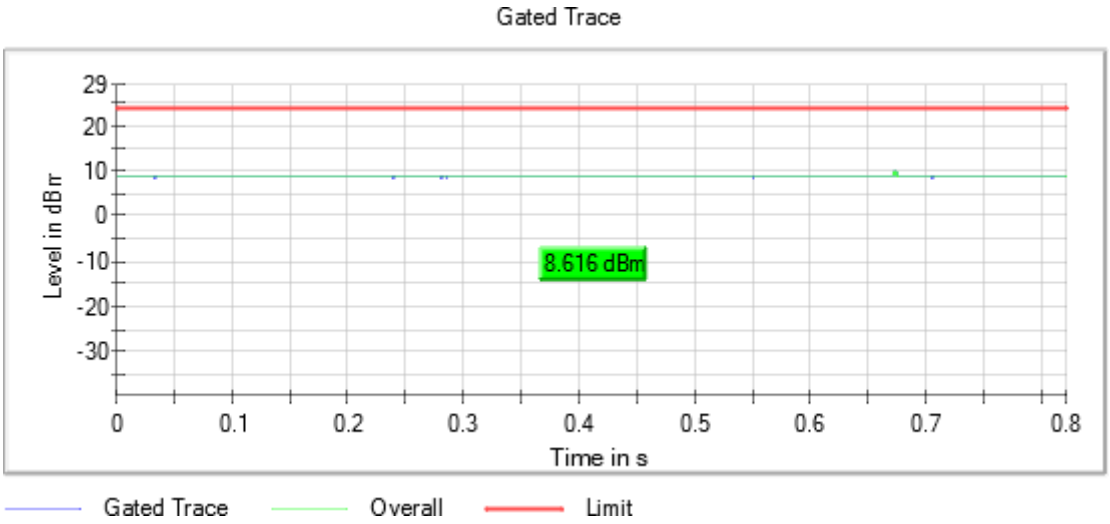
Attachments

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

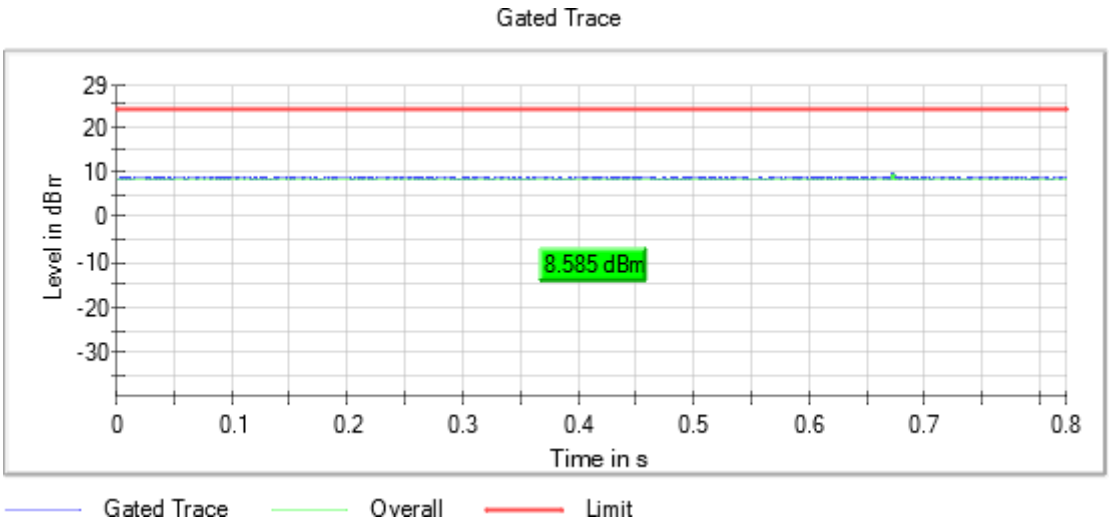
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

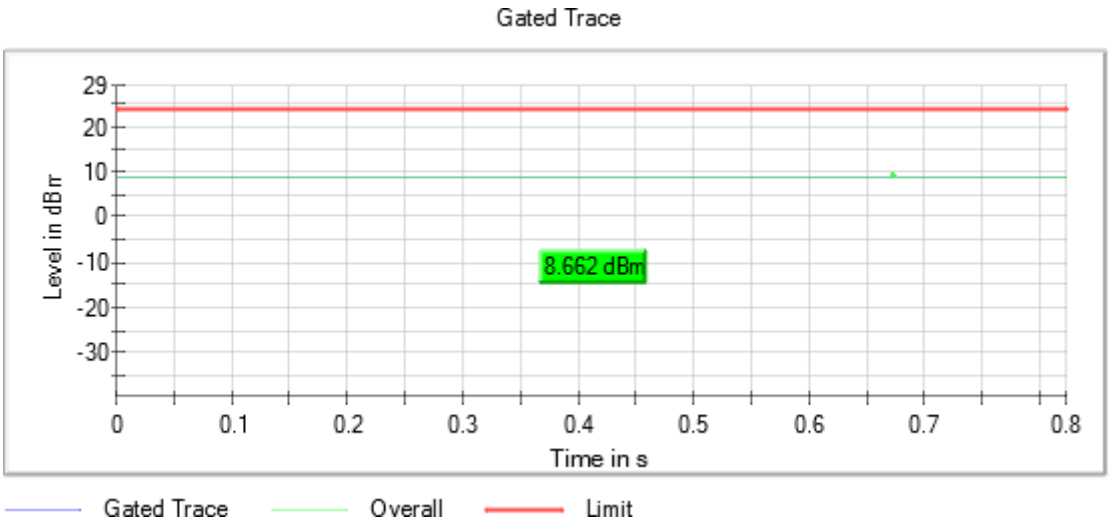
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

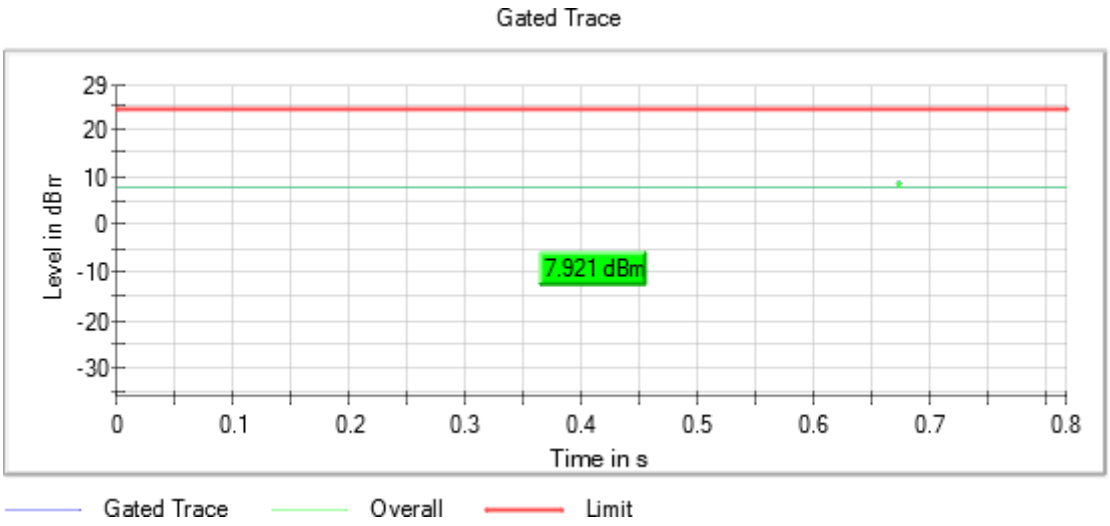
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

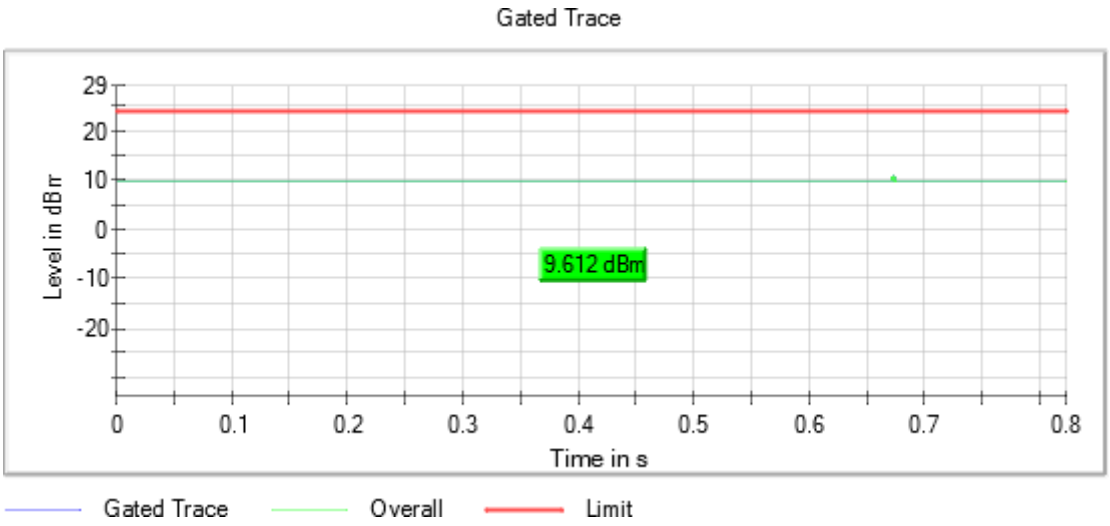
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

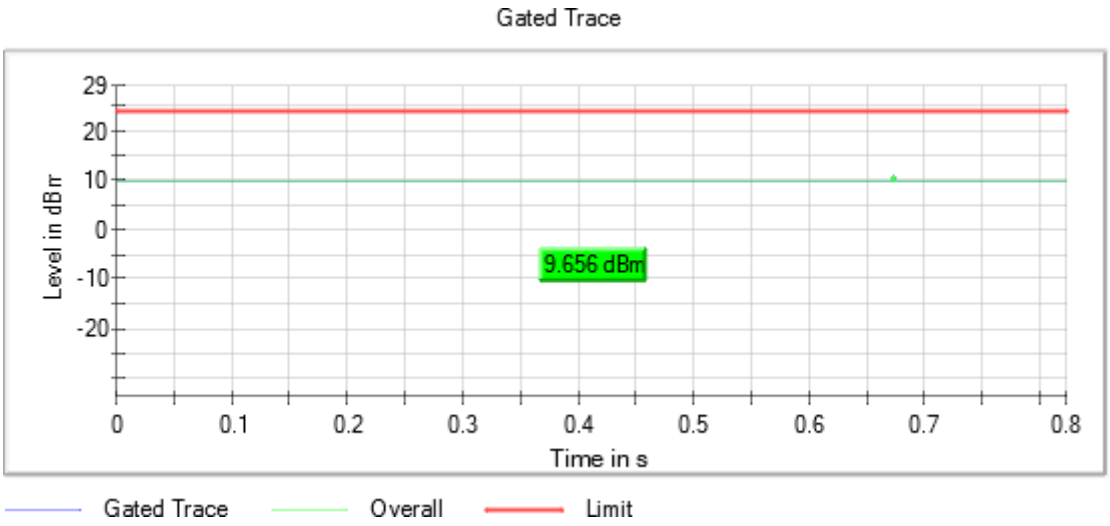
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

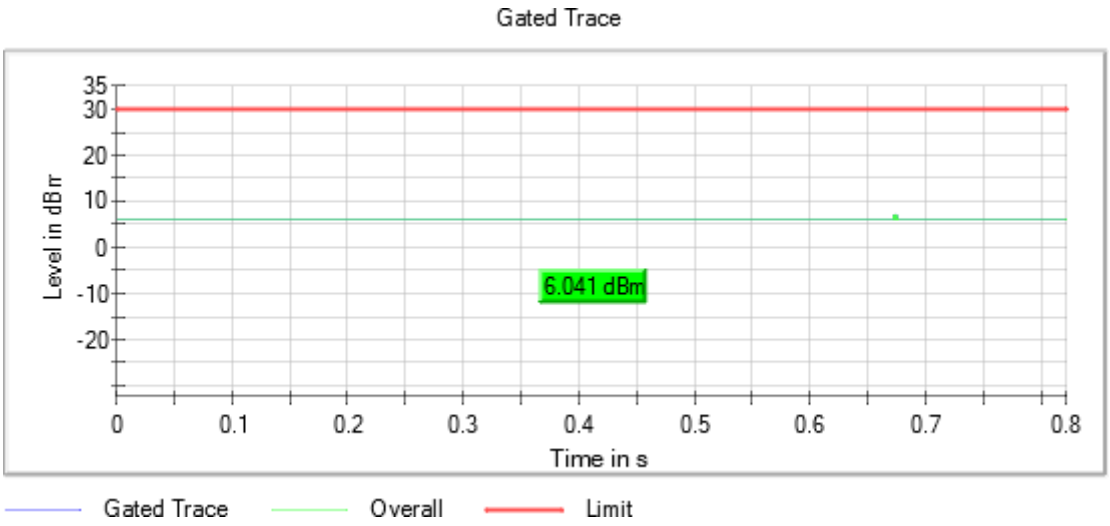
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

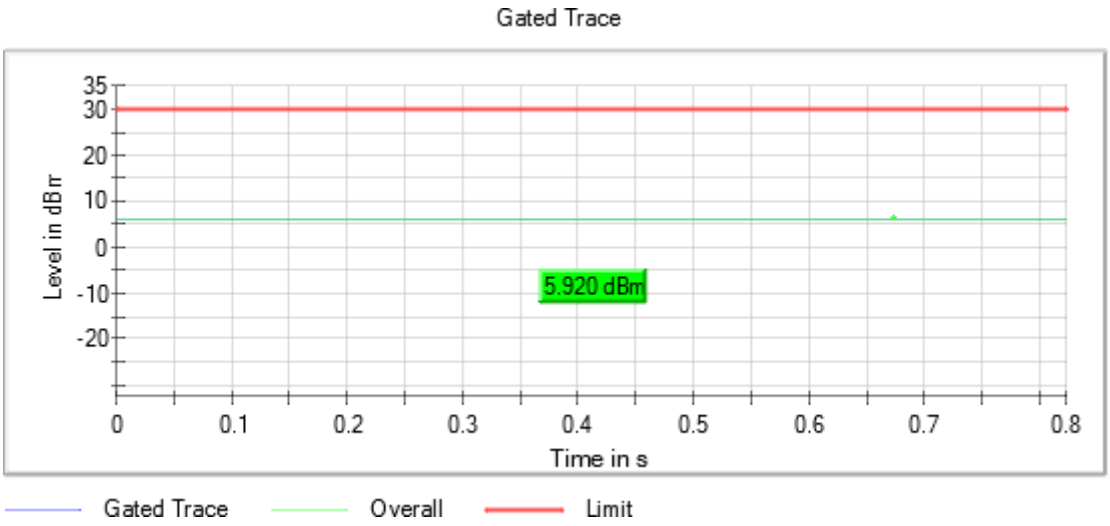
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

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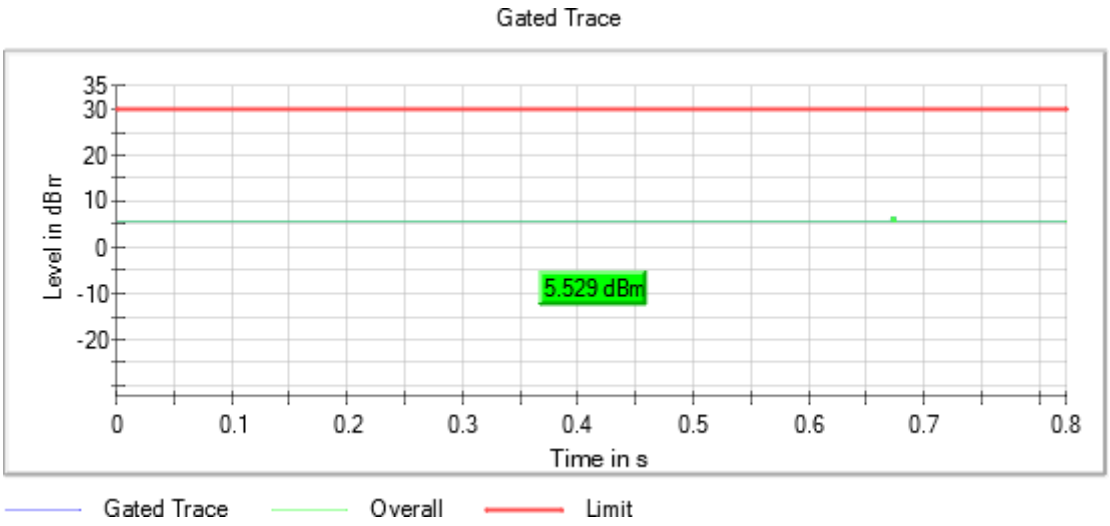


Tables:

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

Antenna gain: -2.8 dBi

Mode: SISO

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

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5190.00000	4.8	2.0
5230.00000	5.2	2.4
5270.00000	7.8	5.0
5310.00000	7.9	5.1
5510.00000	7.5	4.7
5550.00000	8.4	5.6
5670.00000	8.2	5.4
5755.00000	5.0	2.2
5795.00000	5.0	2.2

Verdict

Pass

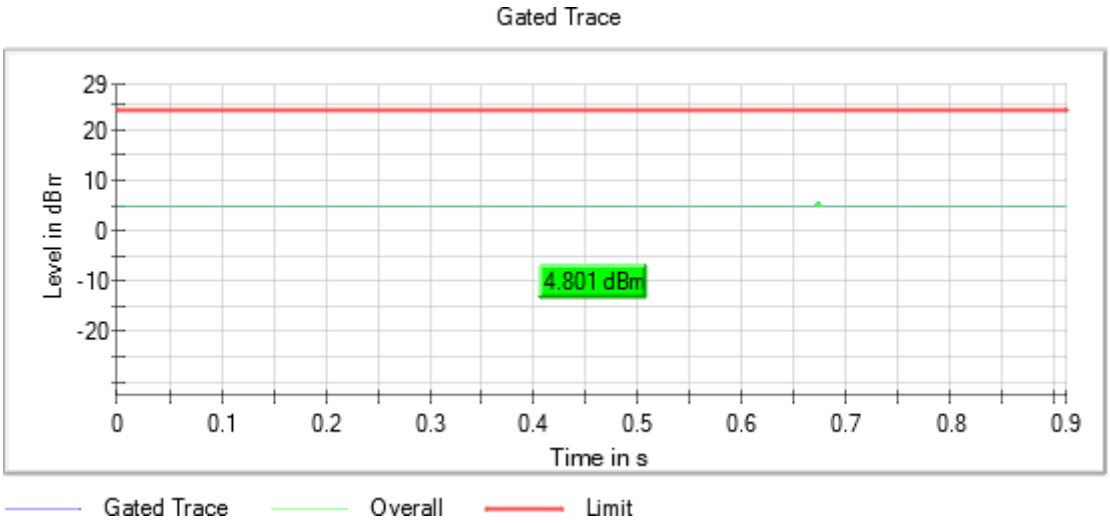
Attachments

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

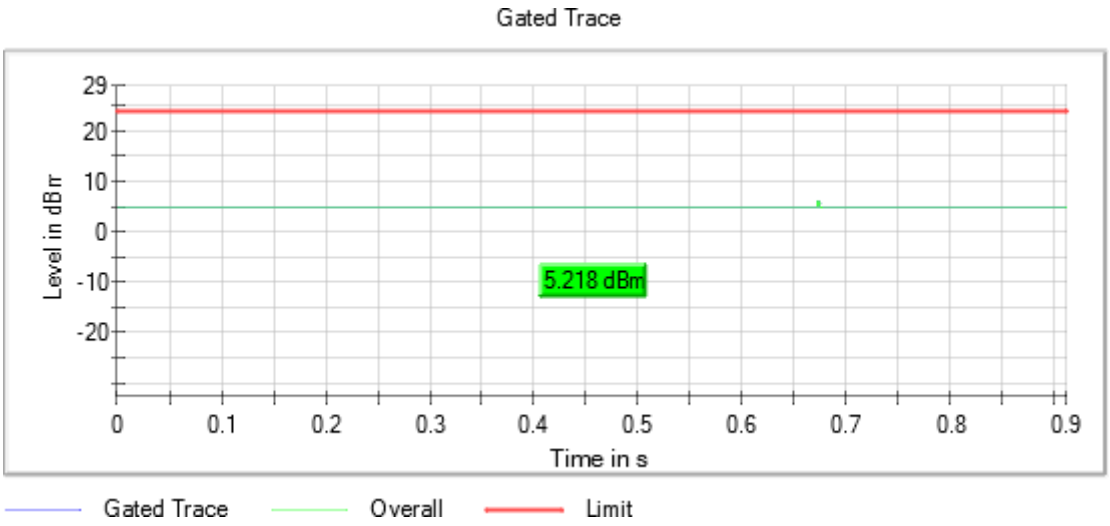
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

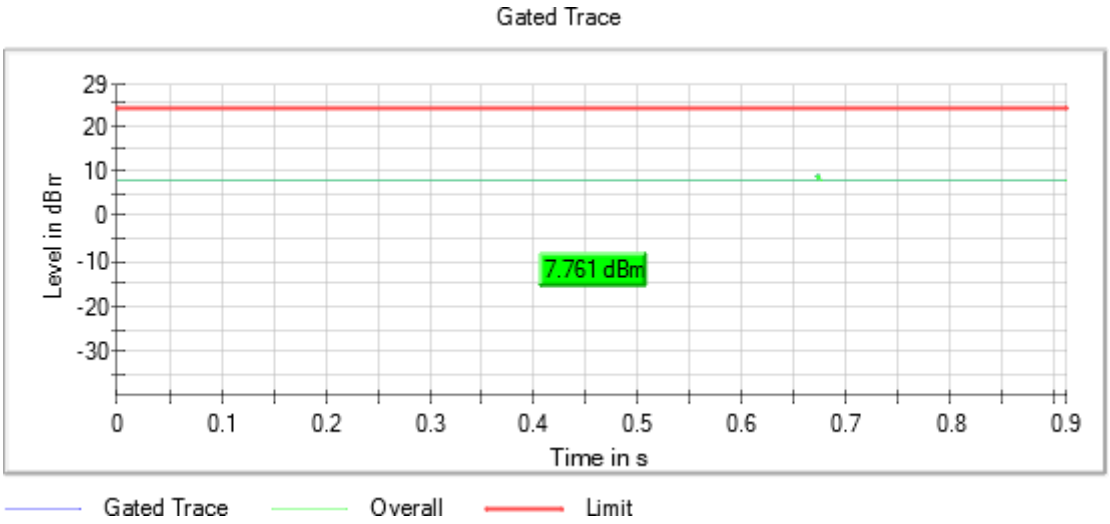
Attachments

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

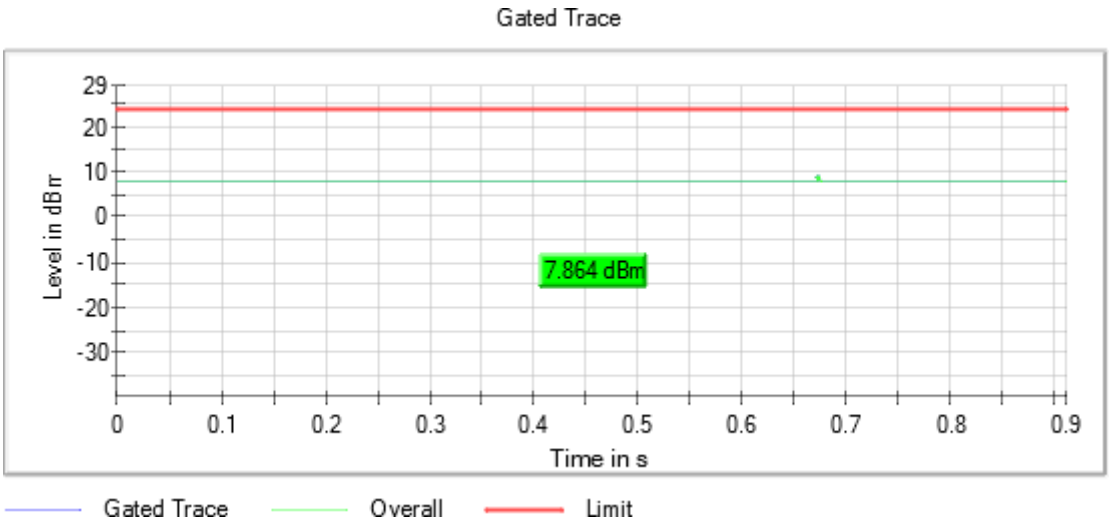
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

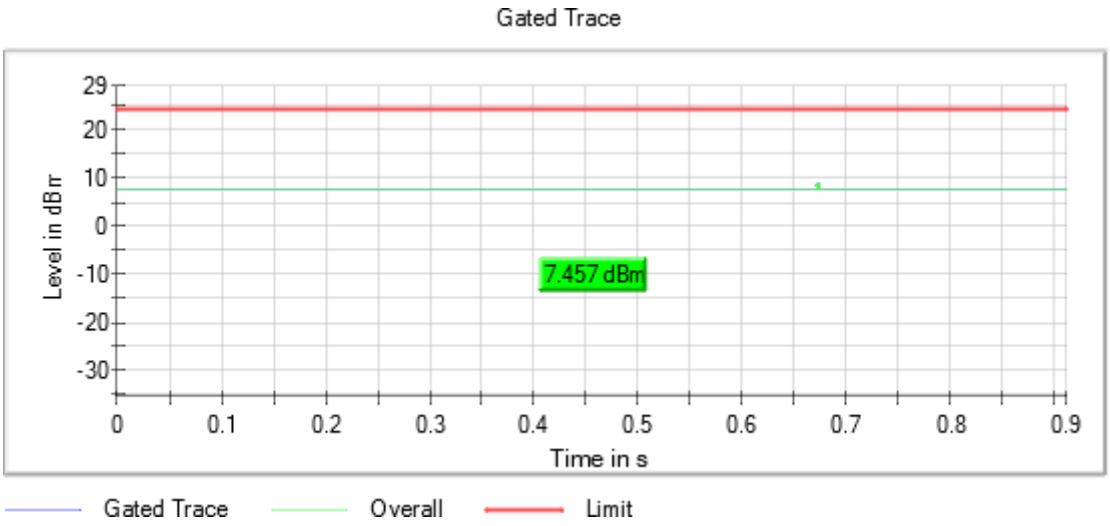
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

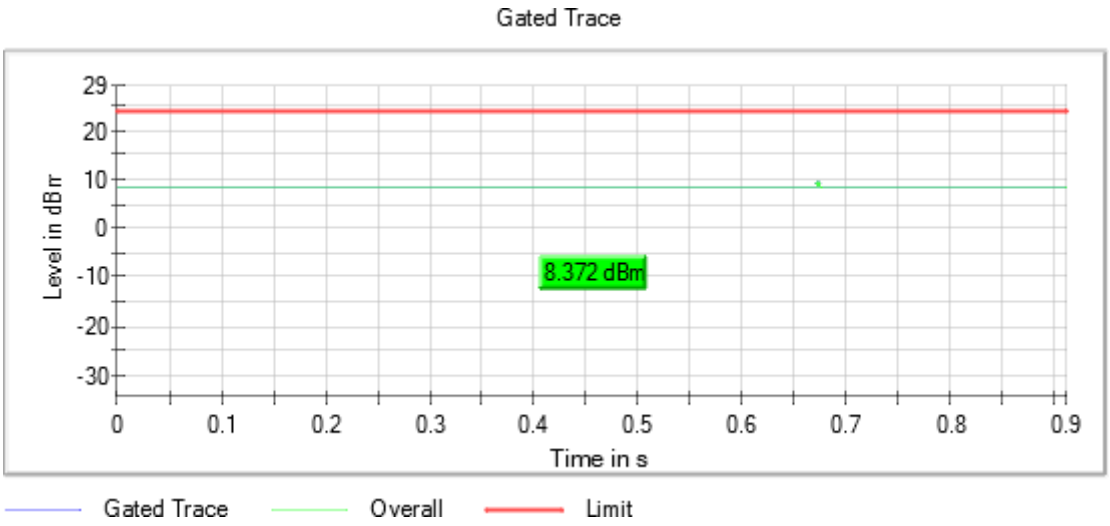
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

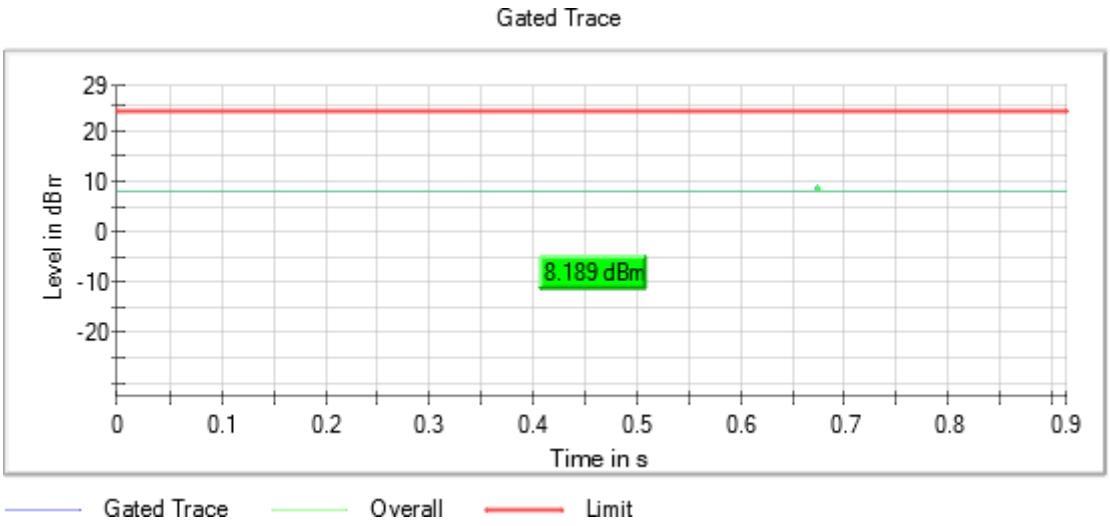
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

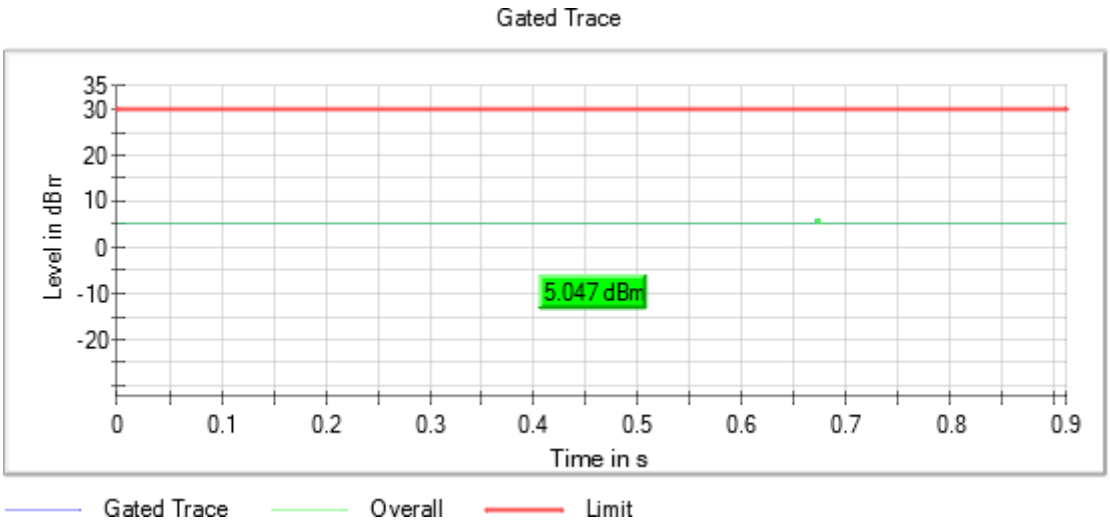
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

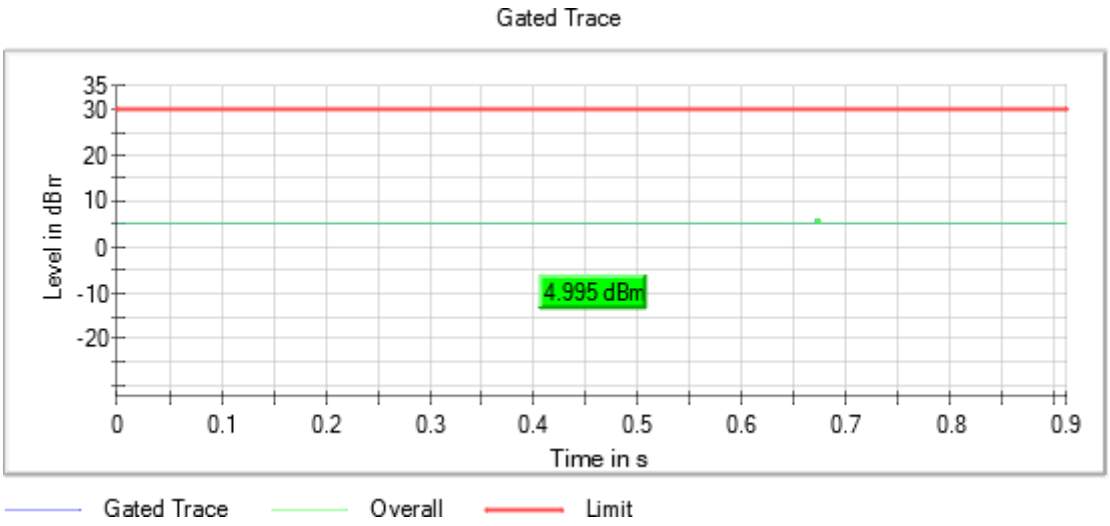
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

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

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5210.00000	3.1	0.3
5290.00000	6.1	3.3
5530.00000	5.9	3.1
5610.00000	7.6	4.8
5775.00000	2.8	0.0

Verdict

Pass

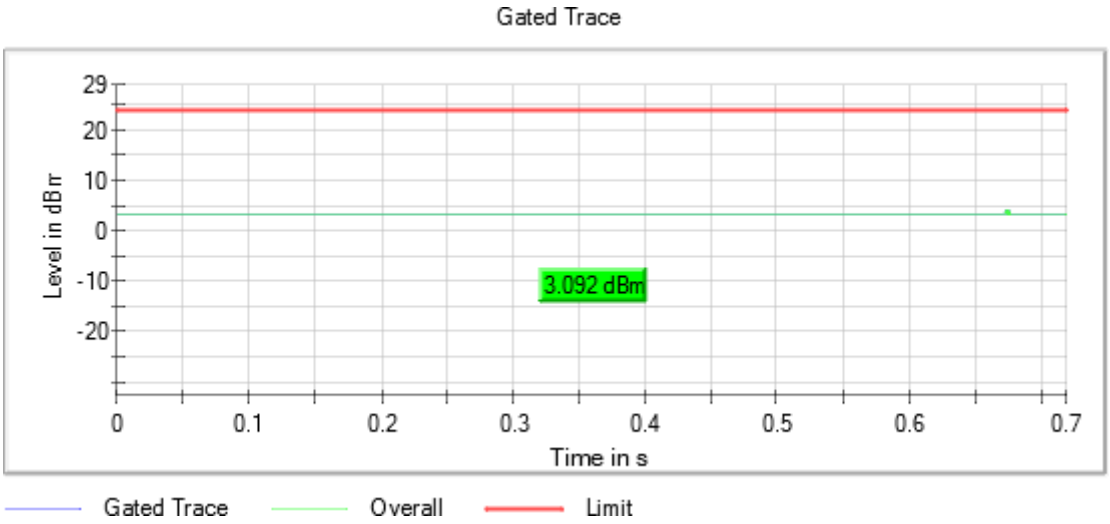
Attachments

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

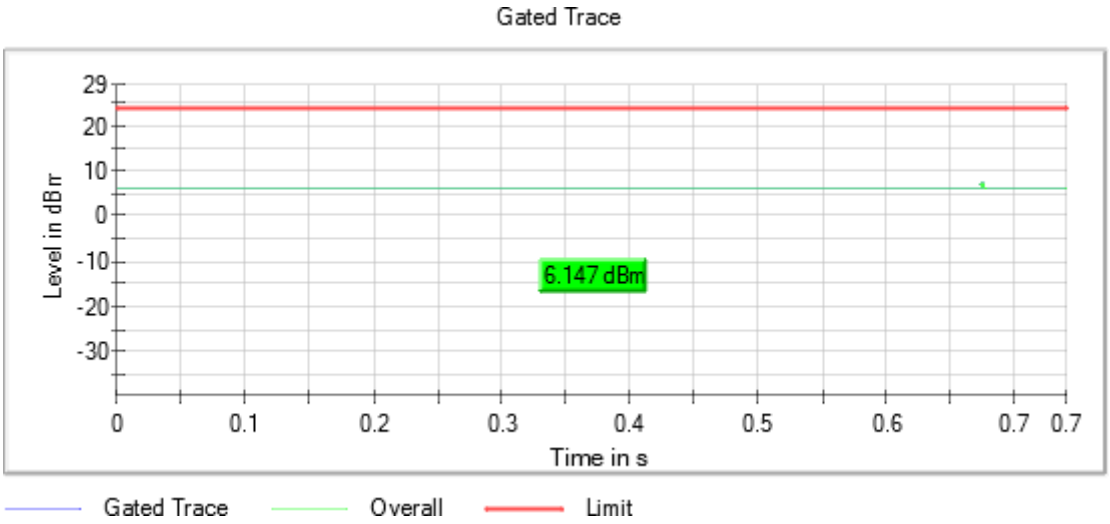
Attachments

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

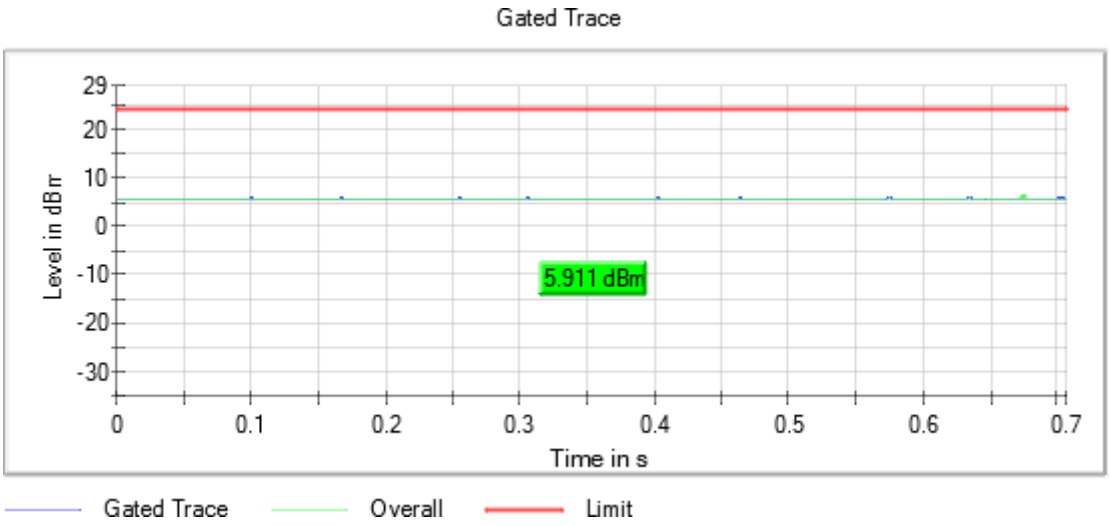
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



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Spectrum Analyzer Parameters

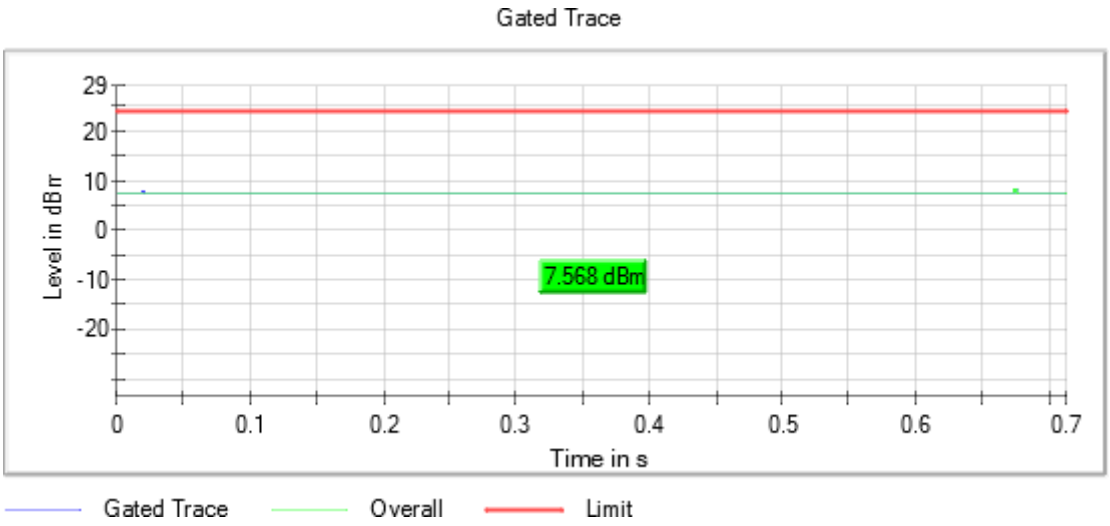
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

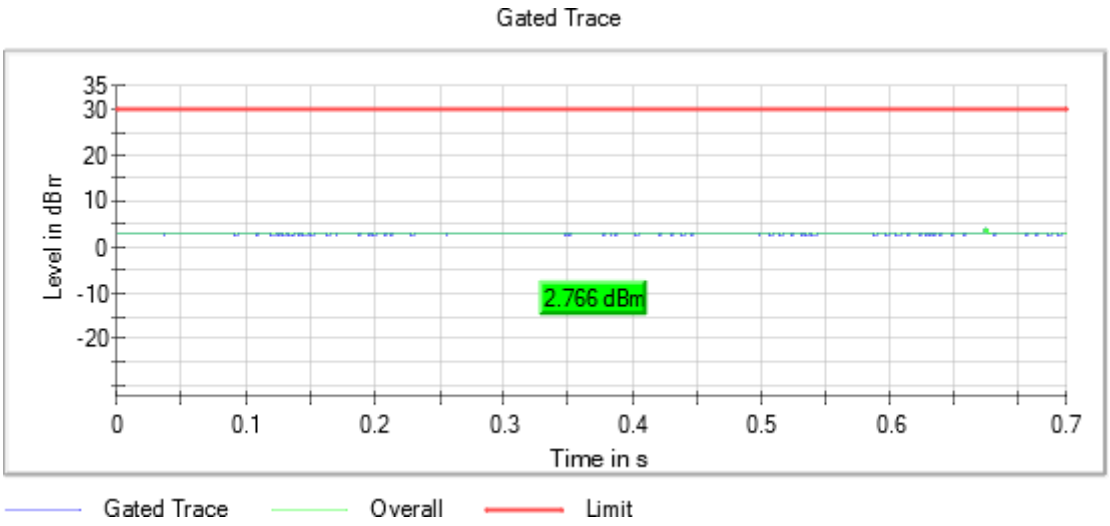
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

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

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5180.00000	5.3	2.5
5200.00000	4.9	2.1
5240.00000	5.9	3.1
5260.00000	8.2	5.4
5280.00000	8.0	5.2
5320.00000	7.7	4.9
5500.00000	7.9	5.1
5580.00000	9.4	6.6
5700.00000	8.8	6.0
5745.00000	5.4	2.6
5785.00000	5.3	2.5
5825.00000	5.2	2.4

Verdict

Pass

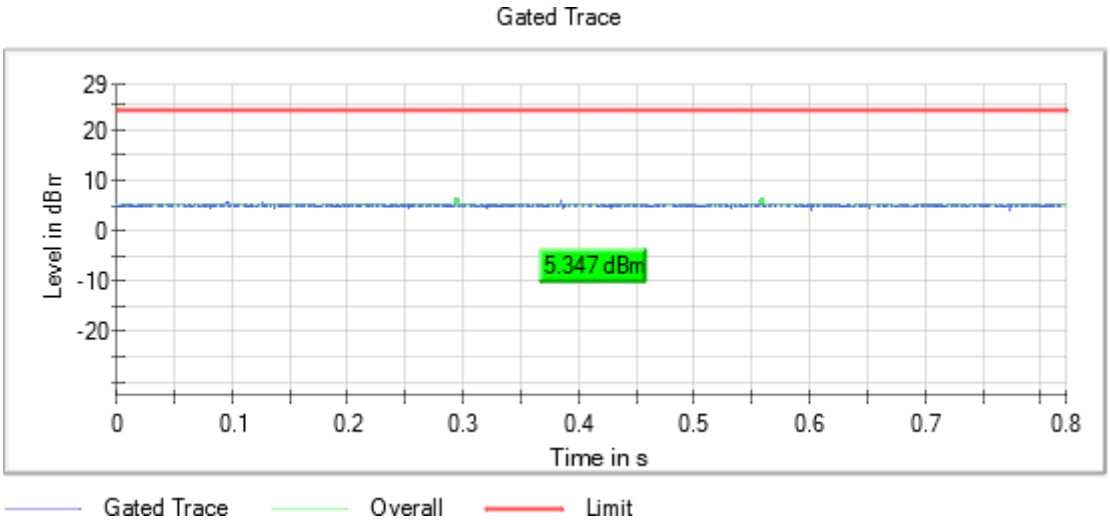
Attachments

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

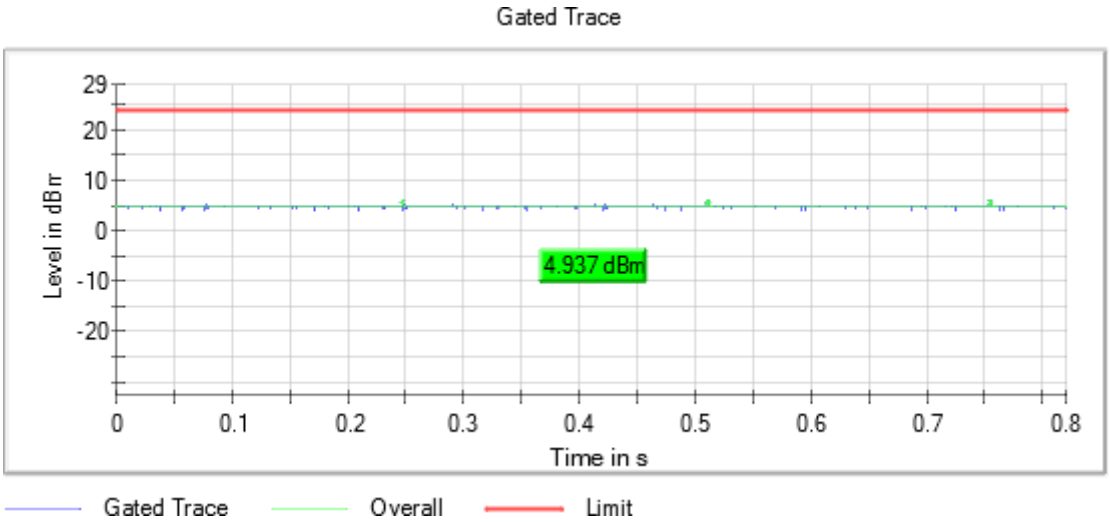
Attachments

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

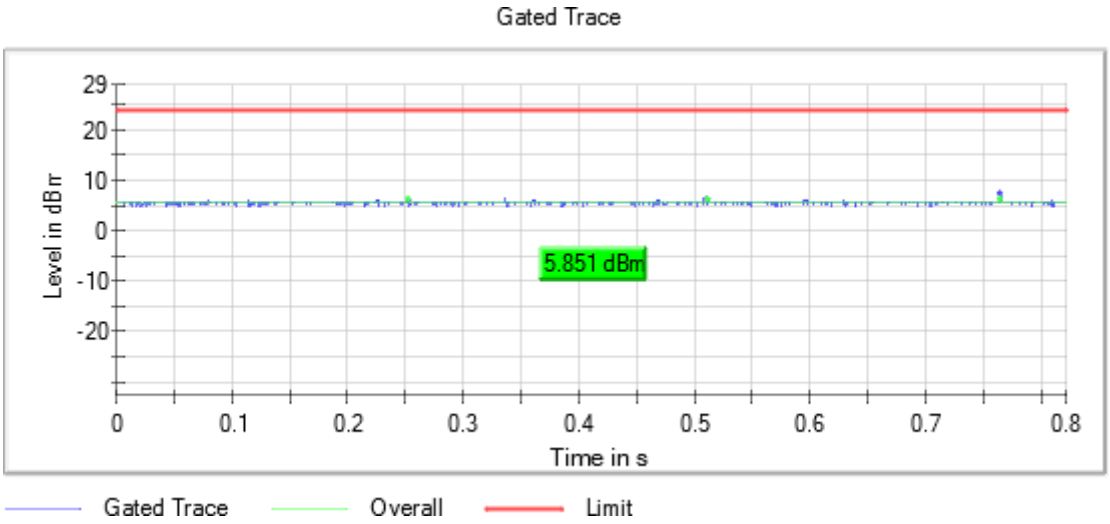
Attachments

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

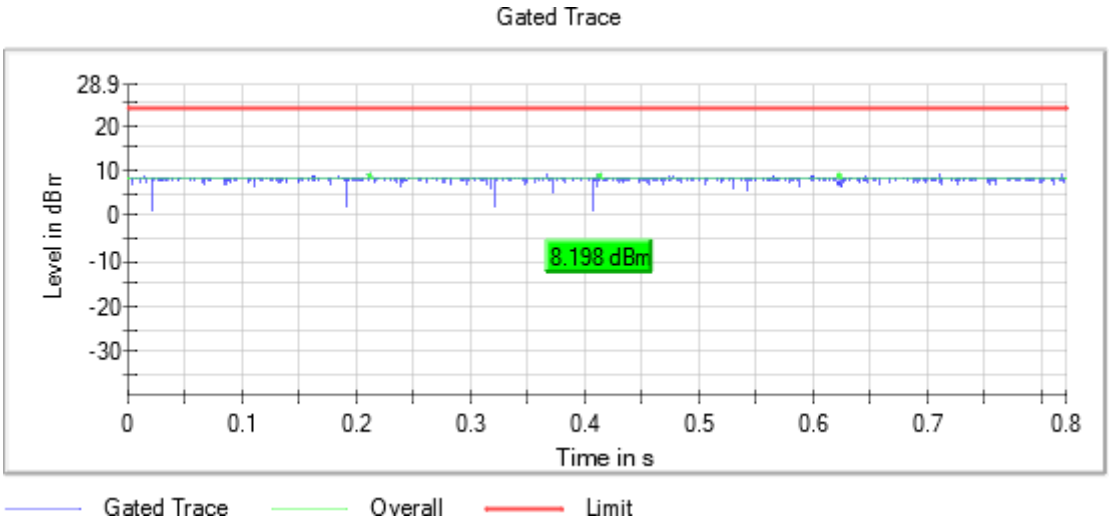
Attachments

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

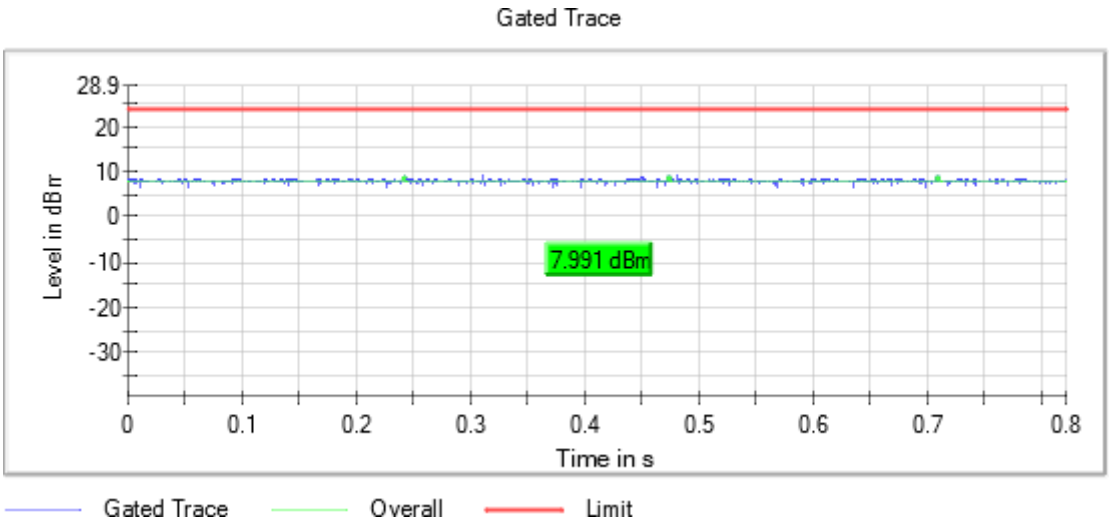
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

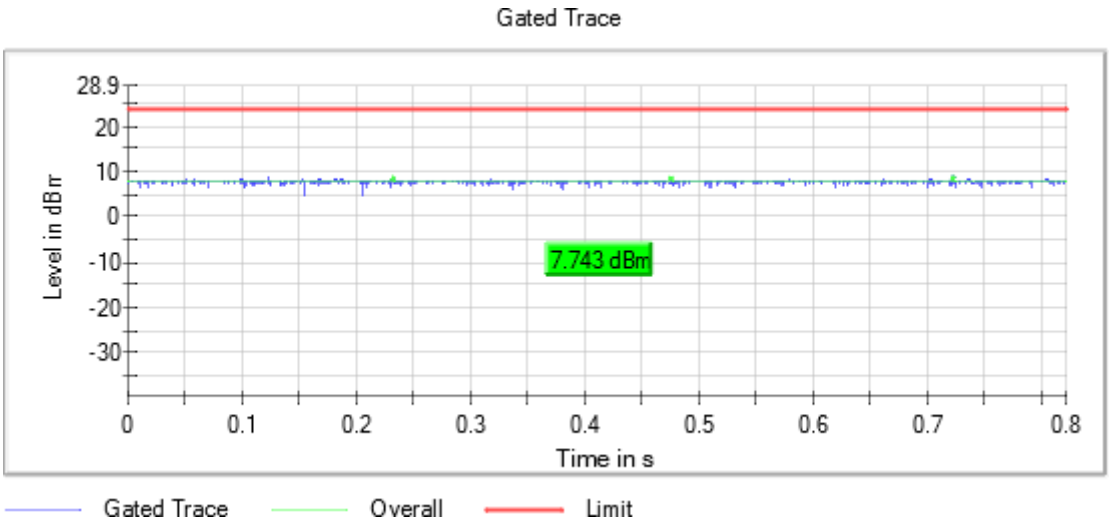
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

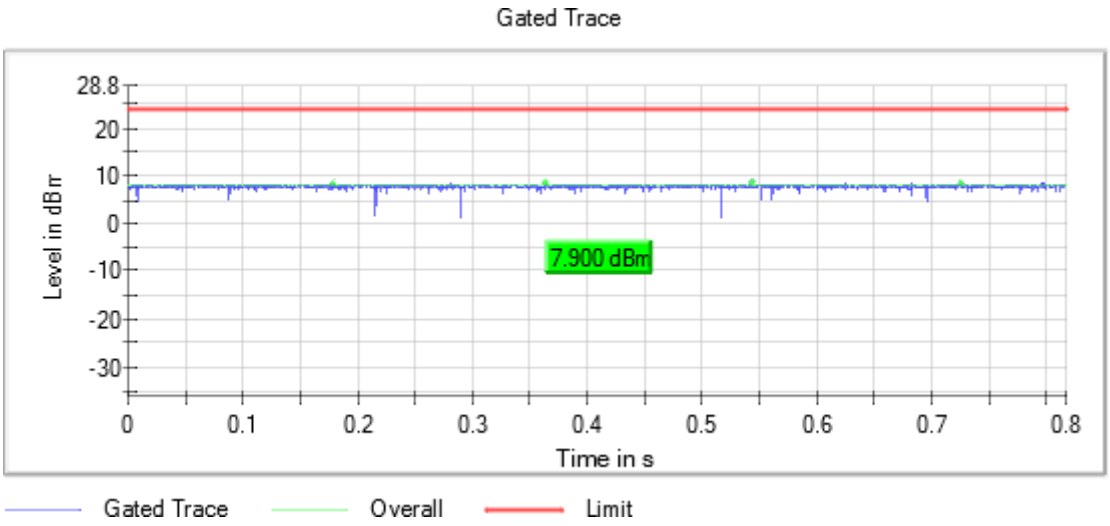
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

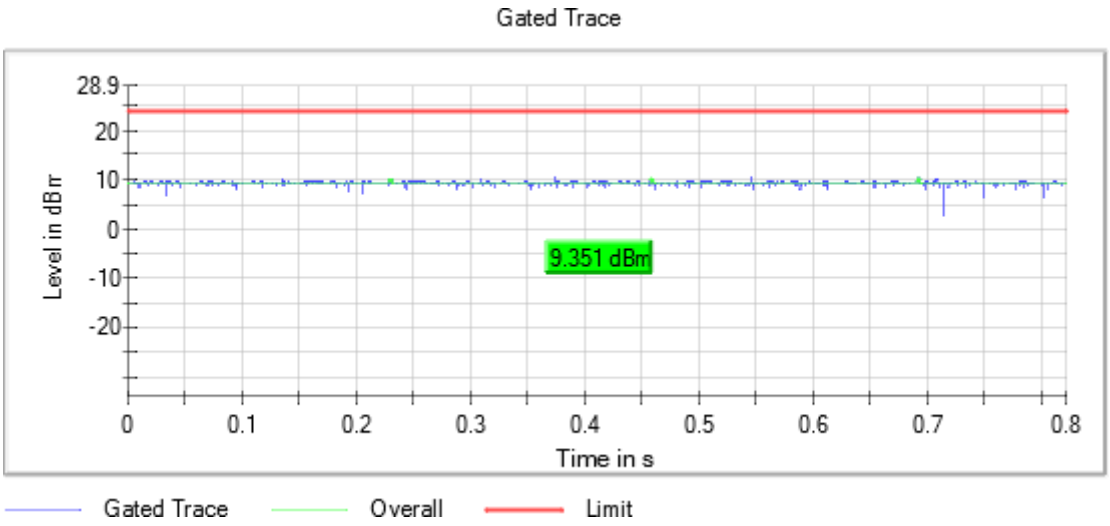
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

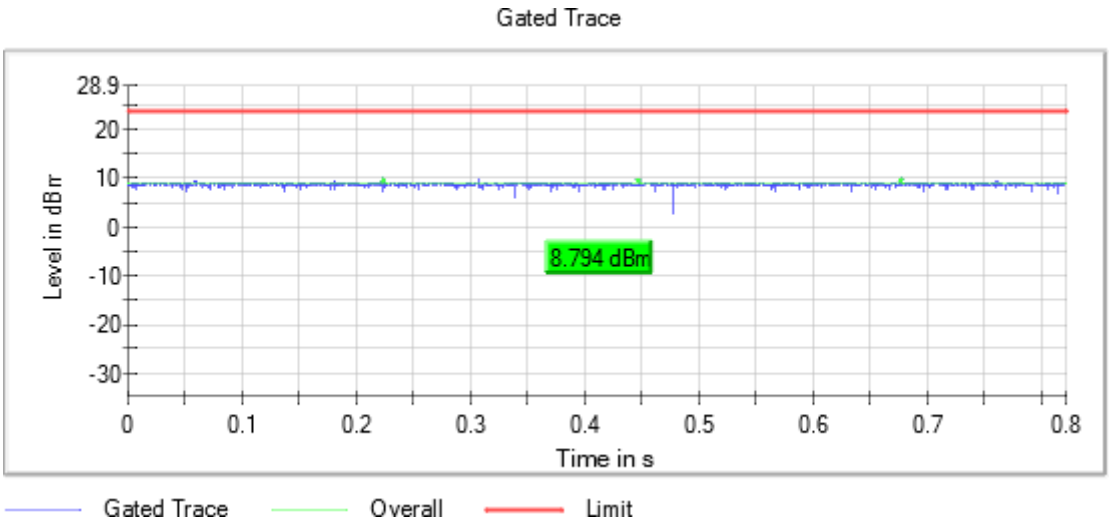
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

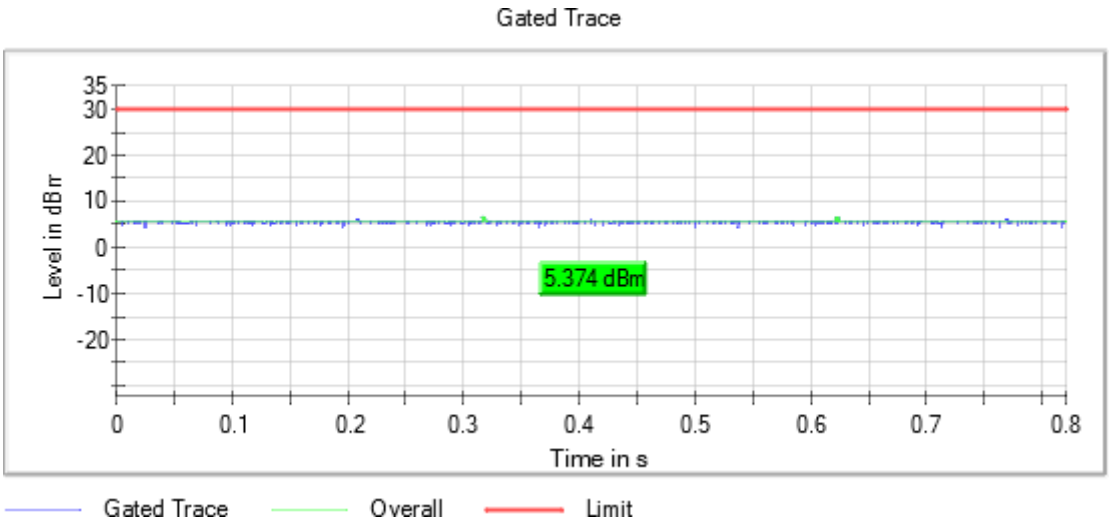
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

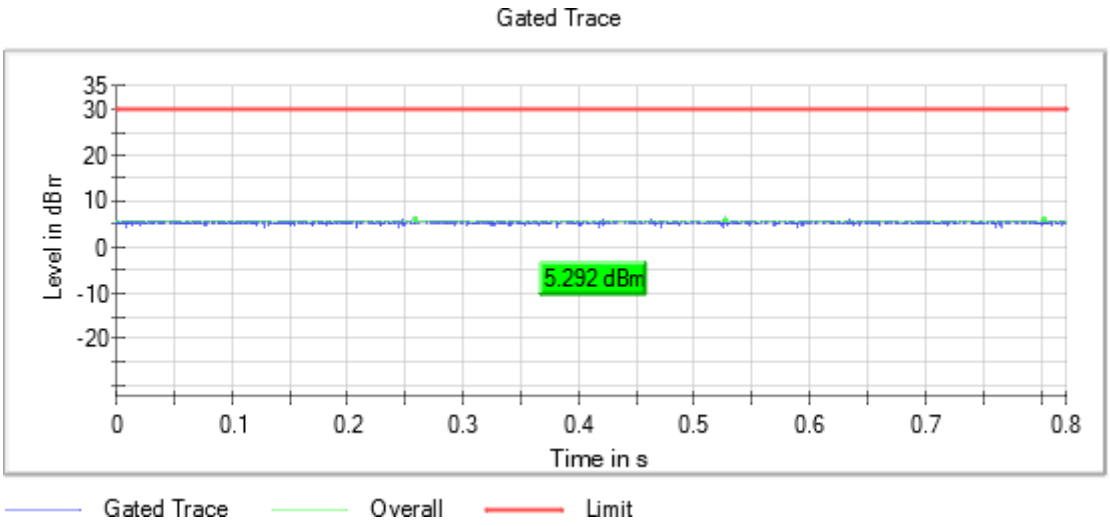
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

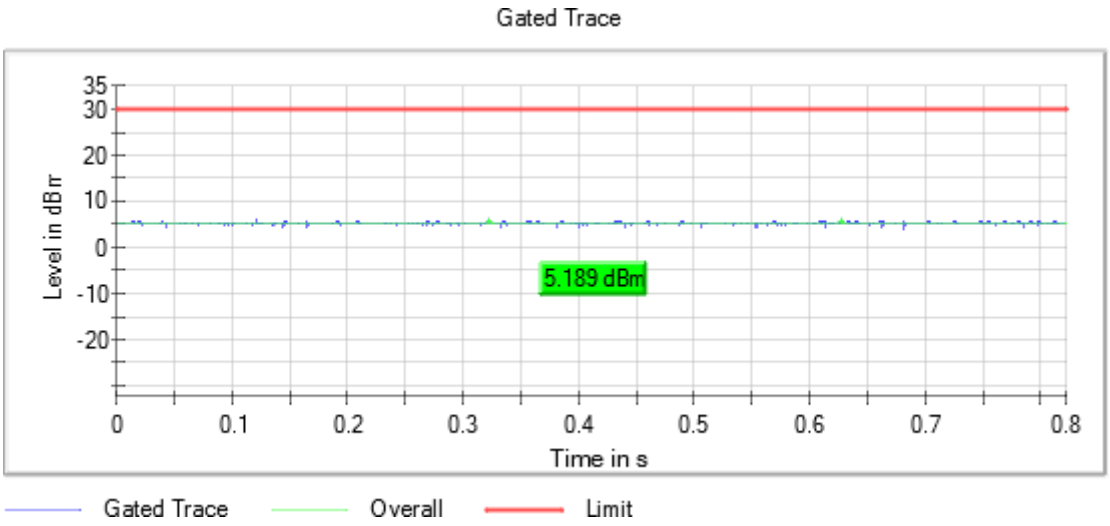
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

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

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5190.00000	8.8	6.0
5230.00000	8.8	6.0
5270.00000	8.3	5.5
5310.00000	8.5	5.7
5510.00000	8.2	5.4
5550.00000	9.0	6.2
5670.00000	8.4	5.6
5755.00000	7.4	4.6
5795.00000	7.8	5.0

Verdict

Pass

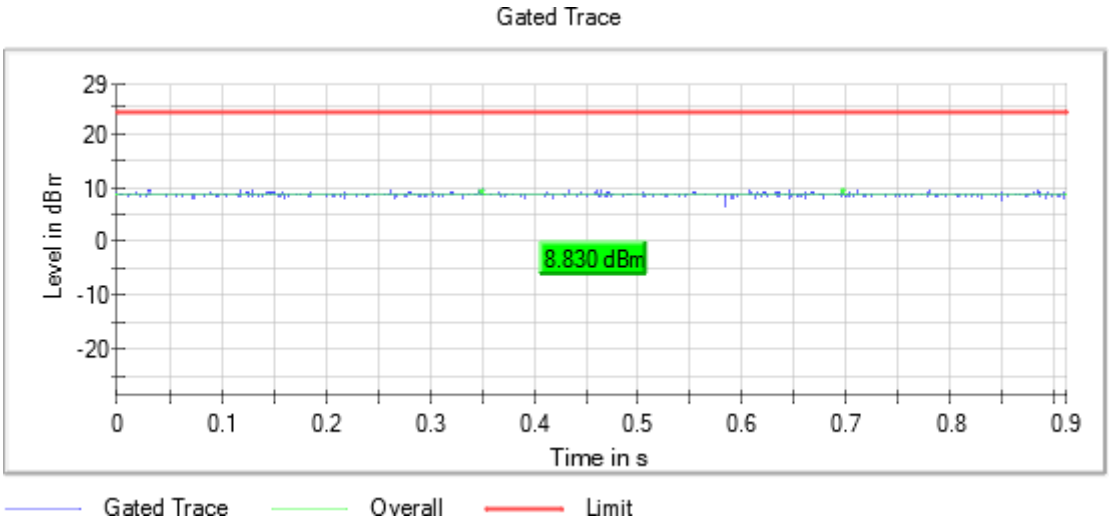
Attachments

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

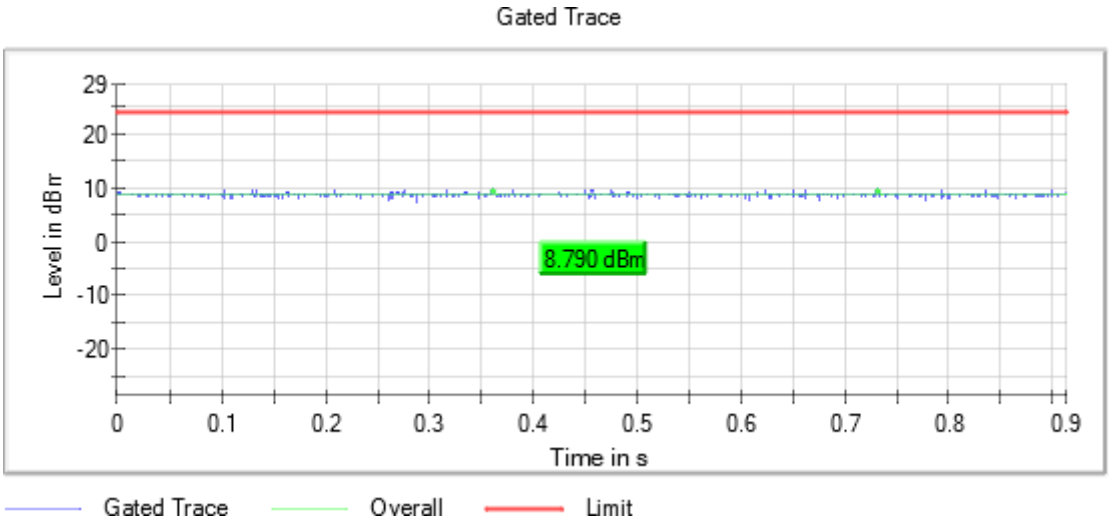
Attachments

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

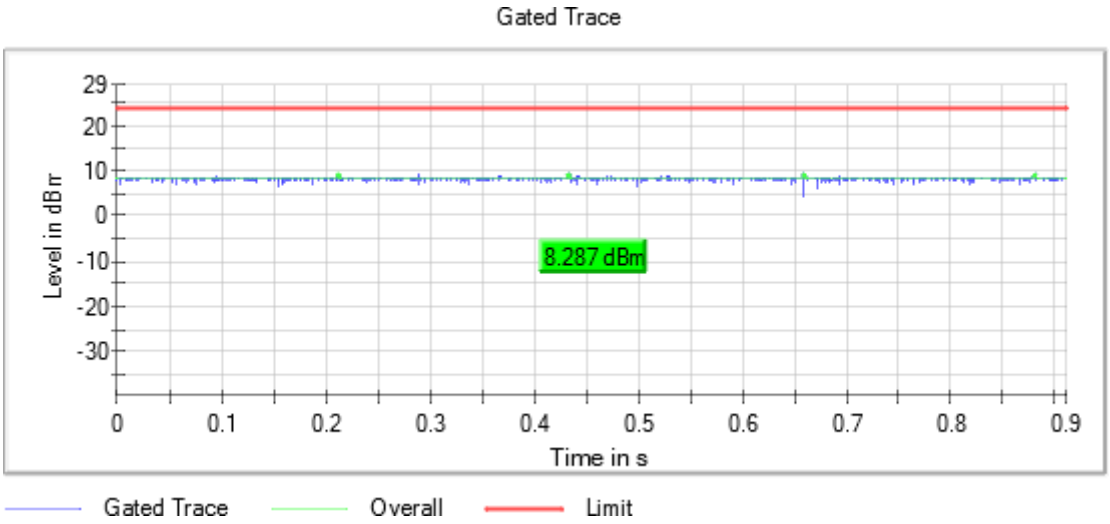
Attachments

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

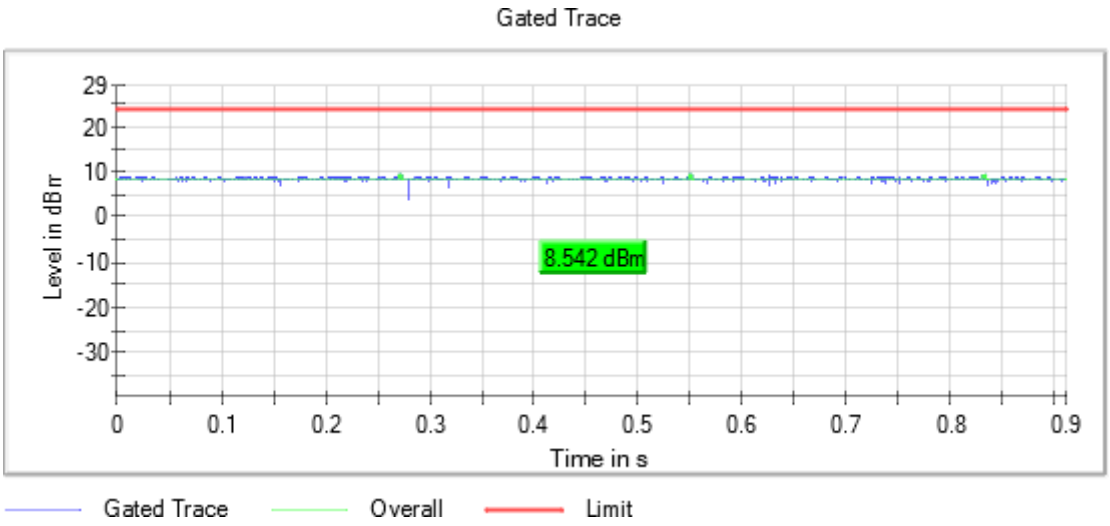
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

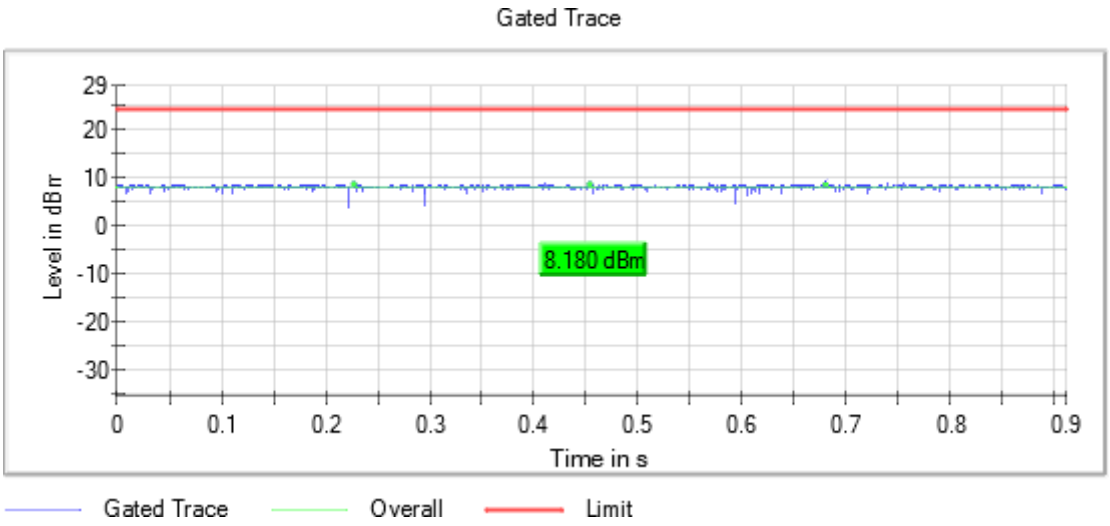
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

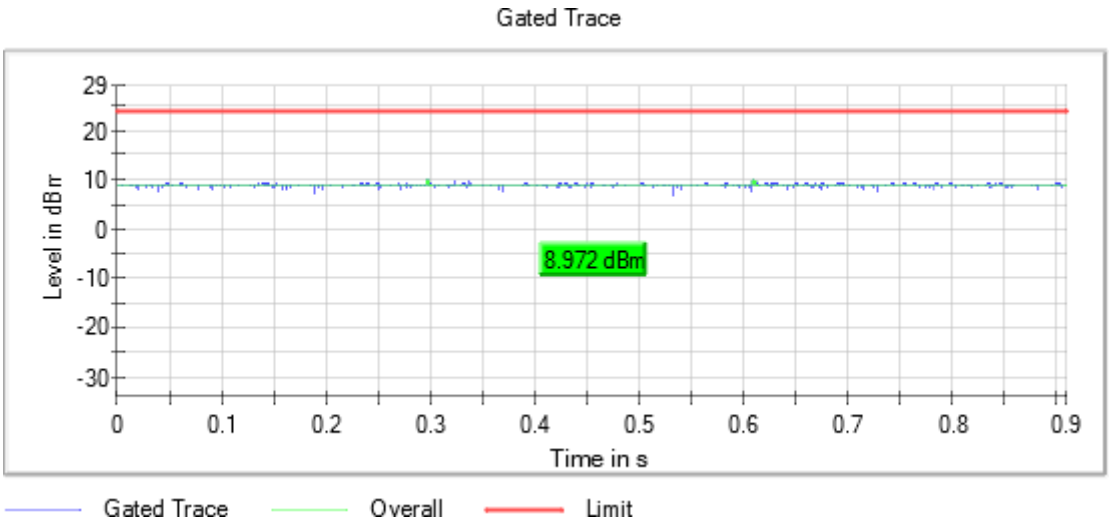
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

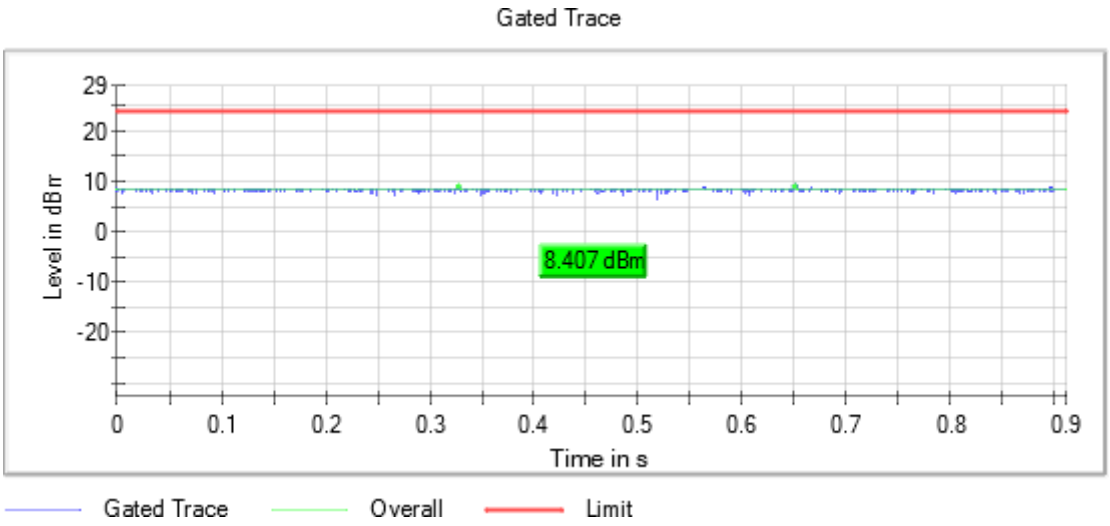
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

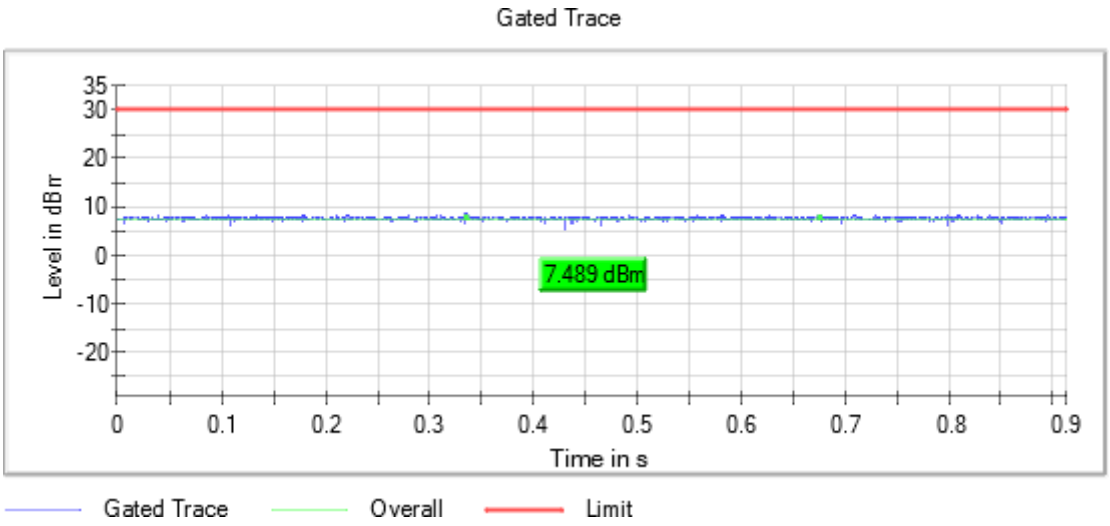
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

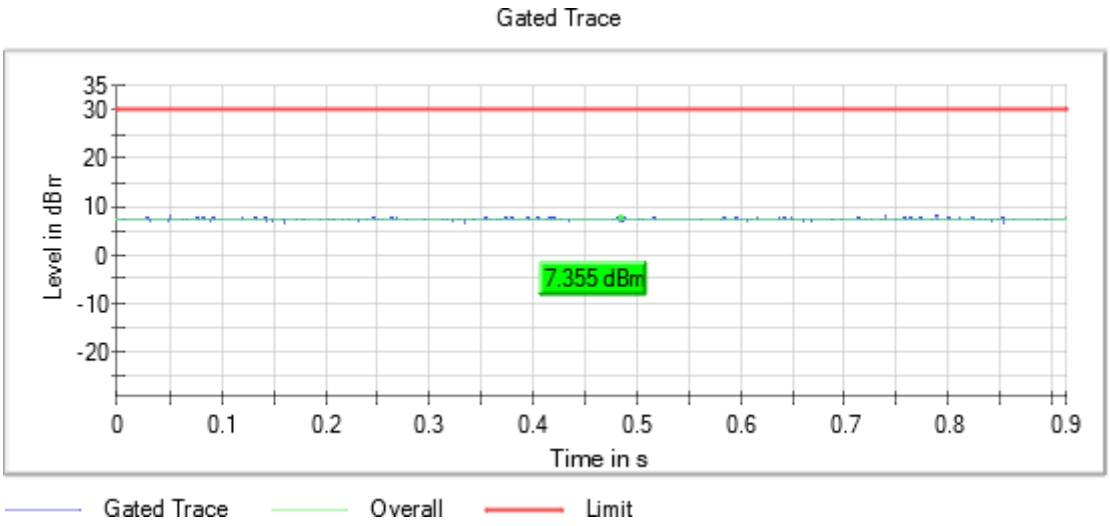
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

Antenna gain: -2.8 dBi

Mode: SISO

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

Results

Freq (MHz)	Avg Power (dBm)	Max EIRP (dBm)
5210.00000	9.7	6.9
5290.00000	8.6	5.8
5530.00000	5.6	2.8
5610.00000	7.3	4.5
5775.00000	8.5	5.7

Verdict

Pass

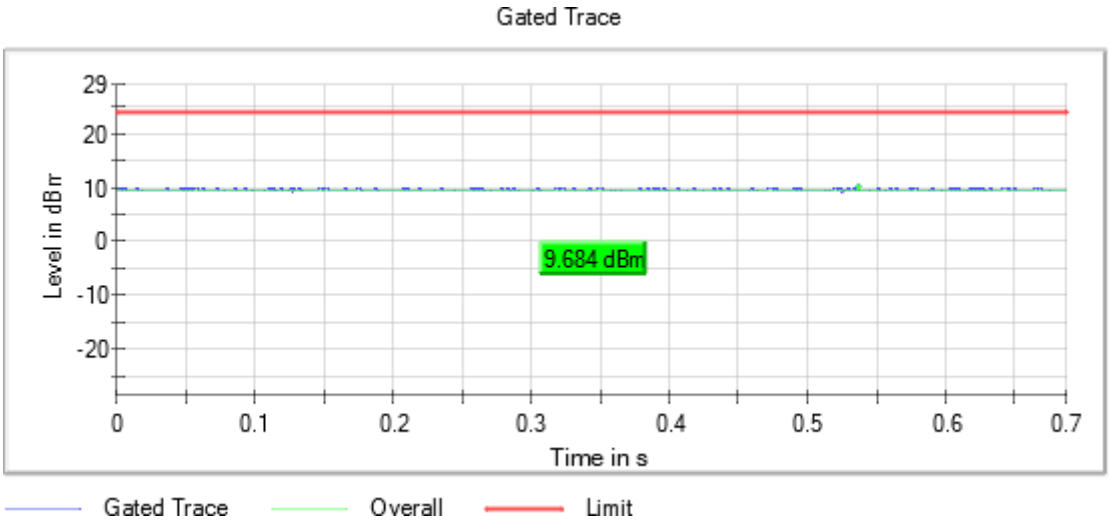
Attachments

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

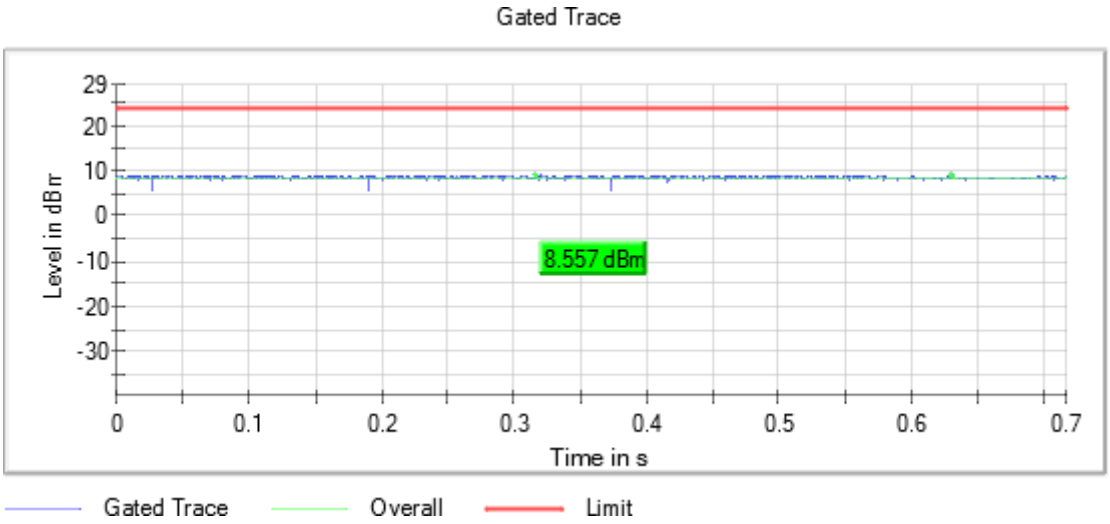
Attachments

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

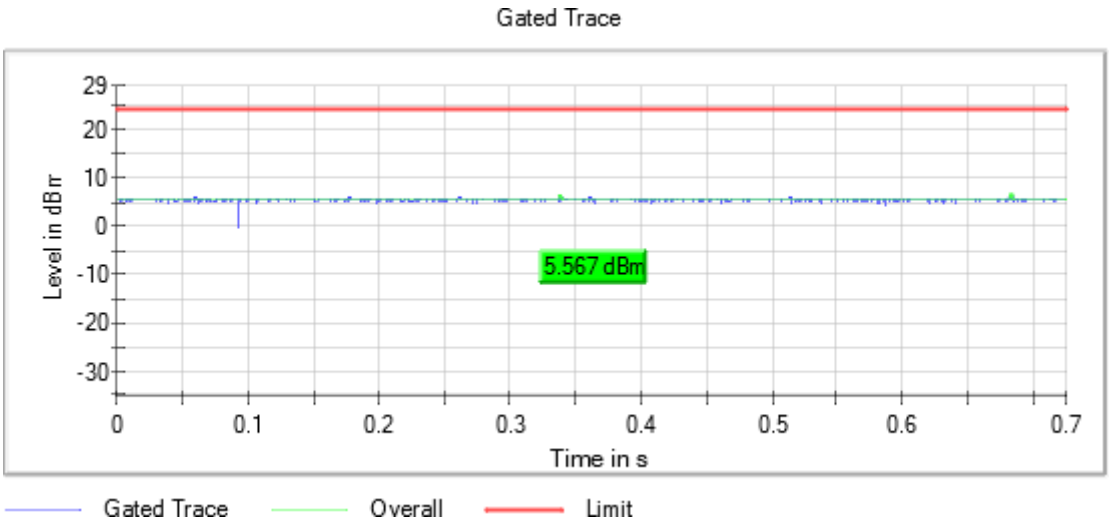
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

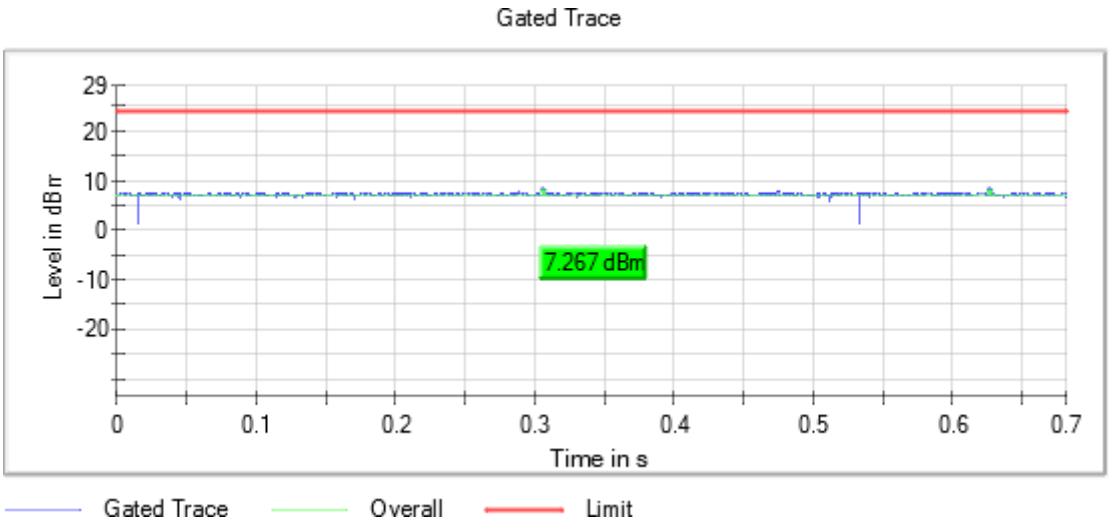
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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

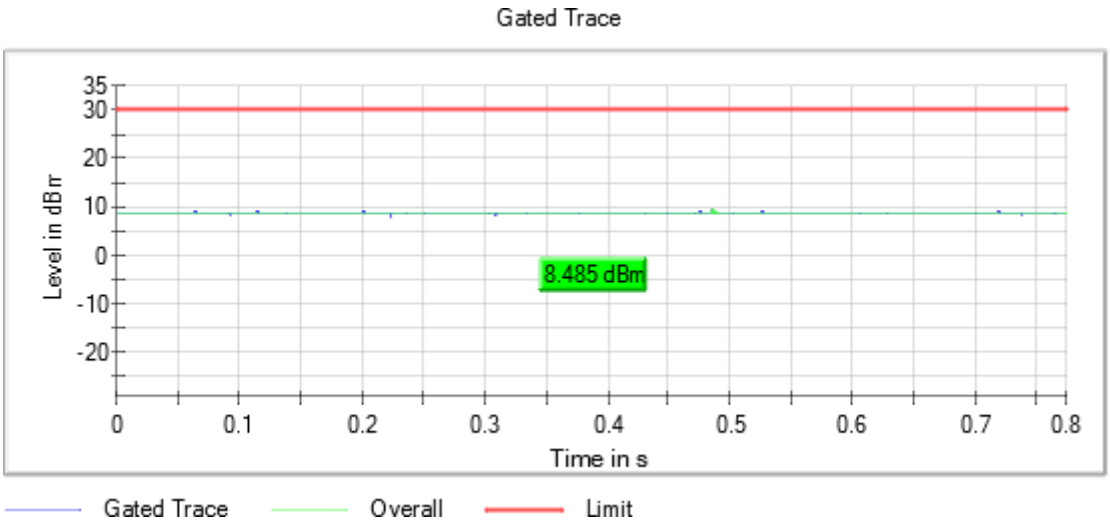
Setting	Instrument Value	Target Value
Measurement Time	1.000 s	1.000 s
Points	1000000	1000000
Time resolution	1.000 µs	1.000 µs

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.

Mode: SISO

Modulation: 802.11a (OFDM 54 Mbit/s)

Results

Freq (MHz)	Marker Freq (MHz)	PSD (dBm)
5260.00000	5267.524752	3.05
5280.00000	5277.227723	2.74
5320.00000	5319.405941	2.93
5500.00000	5502.772277	0.48
5580.00000	5581.980198	2.47
5700.00000	5697.425743	1.55

Verdict

Pass

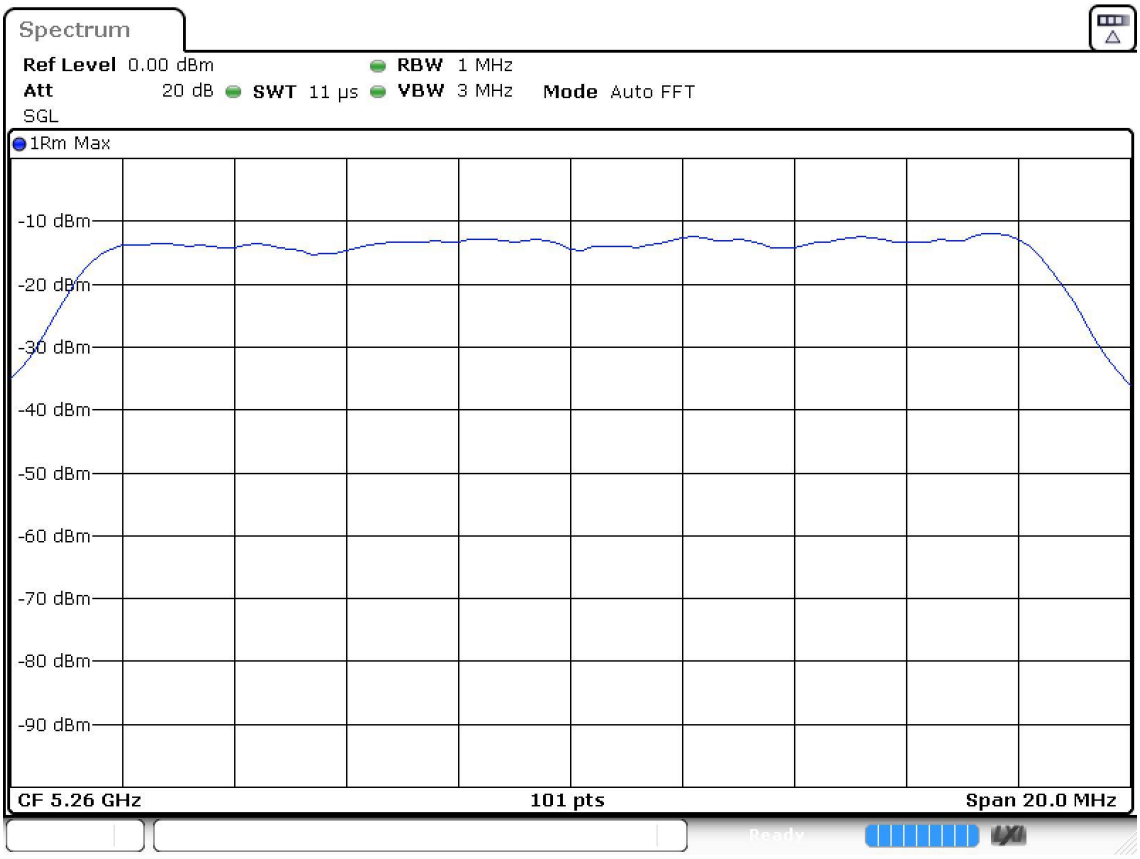
Attachments

Frequency MHz = 5260.00000 Modulation = 802.11a (OFDM 54 Mbit/s)

TPC = No Mode = SISO

Number of Transmission Chains = 1

Images:



Date: 24.SEP.2021 15:01:00