TEST REPORT

APPLICANT	:	YINUOLINK CO.,LTD
PRODUCT NAME	:	AX1800 Wi-Fi 6 High Power Range Extender
MODEL NAME	:	Y5
BRAND NAME	:	YINUO-LINK
FCC ID	:	2A66J-Y5
STANDARD(S)	:	47 CFR Part 15 Subpart E
RECEIPT DATE	:	2023-09-12
TEST DATE	:	2023-09-20 to 2023-10-24
ISSUE DATE	:	2023-10-30

Edited by: Peng Mi (Rapporteur)

Approved by: Shen Junsheng (Supervisor)

MORLAB
Shenzhen Morlab Communications Technology Co., Ltd.
FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Tel: 86-755-36698555 Fax: 86-755-36698525
Http://www.morlab.cn E-mail: service@morlab.cn

DIRECTORY

Change History		
Version	**Date**	**Reason for change**
1.0	2023-10-30	First edition

1. Summary of Test Result

No.	Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	No deviation
2	ANSI C63.10	Duty Cycle of the Test Signal	Sep. 20, 2023	Zhong Yanshan	PASS	No deviation
3	15.407(a)	Maximum Conducted Output Power	Oct. 20, 2023	Zhong Yanshan	PASS	No deviation
4	15.407(a) (e)	Emission Bandwidth	Oct. 20, 2023	Zhong Yanshan	PASS	No deviation
5	15.407(a)	Peak Power Spectral Density	Sep. 20, 2023	Zhong Yanshan	PASS	No deviation
6	15.407(g)	Frequency Stability	Sep. 20, 2023	Zhong Yanshan	PASS	No deviation
7	15.207	Conducted Emission	Sep. 25, 2023	Wang Deyong	PASS	No deviation
8	15.407(b)	Restricted Frequency Bands	Oct. 17, 2023	Gao Jianrou	PASS	No deviation
9	15.407(b)	Radiated Emission	Oct. 16, 2023	Gao Jianrou	PASS	No deviation

Note 1: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013.

Note 2: These RF tests were performed according to the method of measurements prescribed in KDB 789033 D02 v02r01.

Note 3: These RF tests were performed according to the method of measurements prescribed in KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02.

Note 4: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 5: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.1. Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

• 47 CFR Part 15 Subpart E Radio Frequency Devices

1.2. Test Equipment List

1.2.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2023.02.27	2024.02.26
USB Wideband Power Sensor	MY541800008	U2021XA	Agilent	2023.09.19	2024.09.18
Temperature Chamber	12108015	DTL-003S101	YOMA	2023.09.19	2024.09.18
RF Cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial Cable	CB02	RF02	Morlab	N/A	N/A
SMA Connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Attenuator	MTJ6004-10	10dB	MTJ cooperation	N/A	N/A

1.2.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY564000093	N9038A	KEYSIGHT	2023.02.09	2024.02.08
LISN	8127449	NSLK 8127	Schwarzbeck	2023.02.21	2024.02.20
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2023.06.27	2024.06.26
RF Coaxial Cable (DC-100MHz)	BNC	MRE04	Qualwave	N/A	N/A

1.2.3 List of Software Used

Description	Manufacturer	Software Version
Test System	MaiWei	2.0.0.0
Morlab EMCR	Morlab	V1.2
TS+ -[JS32-CE]	Tonscend	V2.5.0.0

1.2.4 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY54130016	N9038A	Agilent	2023.06.21	2024.06.20
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2022.05.25	2025.05.24
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2022.02.11	2025.02.10
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2022.07.13	2025.07.12
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2022.07.14	2025.07.13
Preamplifier (10MHz-6GHz)	46732	S10M100L3802	LUCIX CORP.	2023.06.27	2024.06.26
Preamplifier (2GHz-18GHz)	61171/61172	S020180L3203	LUCIX CORP.	2023.06.27	2024.06.26
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2023.07.04	2024.07.03
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2023.07.04	2024.07.03
Notch Filter	N/A	WRCG-5150-5350	Wainwright	N/A	N/A
Notch Filter	N/A	WRCG-5470-5725	Wainwright	N/A	N/A
Notch Filter	N/A	WRCG-5725-5850	Wainwright	N/A	N/A

Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.05.10	2025.05.09

1.3. Measurement Uncertainty

Test Items	Uncertainty	Remark
Peak Output Power	±2.22dB	Confidence levels of 95%
Power Spectral Density	±2.22dB	Confidence levels of 95%
Bandwidth	±5%	Confidence levels of 95%
Restricted Frequency Bands	±5%	Confidence levels of 95%
Radiated Emission	±2.95dB	Confidence levels of 95%
Conducted Emission	±2.44dB	Confidence levels of 95%

1.4. Testing Laboratory

Laboratory Name	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone	+86 755 36698555
Facsimile	+86 755 36698525
FCC Designation Number	CN1192
FCC Test Firm Registration Number	226174

2. General Description

2.1. Information of Applicant and Manufacturer

Applicant	YINUOLINK CO.,LTD
Applicant Address	301,Bldg 6, Gaoxinjian Industrial Park, Fuyuan 1st Road, Heping, Fuhai, Bao'an, Shenzhen, China
Manufacturer	YINUOLINK CO.,LTD
Manufacturer Address	301,Bldg 6, Gaoxinjian Industrial Park, Fuyuan 1st Road, Heping, Fuhai, Bao'an, Shenzhen, China

2.2. Information of EUT

Product Name:	AX1800 Wi-Fi 6 High Power Range Extender
Sample No.:	1#
Hardware Version:	1.2
Software Version:	Y5EN140623OV1.01
Modulation Technology:	OFDM
Modulation Mode:	802.11a, 802.11n (HT20), 802.11n (HT40) 802.11ac (VHT20), 802.11ac (VHT40),802.11ac (VHT80) 802.11ax (HEW20), 802.11ax (HEW40),802.11ax (HEW80)
Operating Frequency Range:	5180MHz-5240MHz; 5745MHz-5825MHz
Antenna Type:	PCB Antenna
Antenna Gain:	ANT 1: 4.22dBi; ANT 2: 5.17dBi
Directional Gain:	7.72dBi Note 2

Note 1: The EUT supports a MIMO function. Physically, the EUT provides two completed transmitters and two receivers for 802.11n, 802.11ac and 802.11ax modulation mode.

Modulation Mode:	**TX Function**
802.11a	1TX
802.11n, 802.11ac, 802.11ax	2TX

Note 2: According to KDB 662911 D01, the directional gain = $10\log[(10^{G0/20}+10^{G1/20})^2/2] = 7.72$dBi.

Note 3: All radiation test items for 802.11n, 802.11ac and 802.11ax modulation mode operate at MIMO mode during the test. Other modulation mode operate at SISO mode, both of the two antennas were tested separately, we only recorded the worst test result(ANT1) in this report.

Note 4: We use the dedicated software to control the EUT continuous transmission.

Note 5: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.3. Channel List of EUT

(U-NII-1) 5180MHz-5240MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	**36**	**5180**	40	5200
	44	**5220**	**48**	**5240**
40MHz	**38**	**5190**	**46**	**5230**
80MHz	**42**	**5210**		
(U-NII-3) 5745MHz-5825MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	**149**	**5745**	153	5765
	157	**5785**	161	5805
	165	**5825**		
40MHz	**151**	**5775**	**159**	**5795**
80MHz	**155**	**5775**		

Note 1: The black bold channels were selected for test.

2.4. Test Configuration of EUT

2.4.1.Modulation Type and Data Rate of EUT

Mode	Bandwidth (MHz)	Modulation Technology	Modulation Type	Data Rate	RU Size
802.11a	20	OFDM	**DBPSK**	**1**/2/5.5/11Mbps	N/A
			DQPSK		
			CCK		
802.11n	20/40 (HT20/40)	OFDM	**BPSK**	**MCS0**~MCS7	N/A
			QPSK		
			16QAM		
			64QAM		
802.11ac	20/40/80 (VHT20/40/80)	OFDM	**BPSK**	**MSC0**~MCS9	N/A
			QPSK		
			16QAM		
			64QAM		
			256QAM		
802.11ax	20/40/80 (HEW20/40/80)	OFDMA	**BPSK**	**MSC0**~MCS11	26/52/106/ 242/484
			QPSK		
			16QAM		
			64QAM		
			256QAM		
			1024QAM		

Note1: The worst-case mode (bold face) in all data rates has been determined during the pre-scan, only the test data of the worst-case were recorded in this report.

Note2: Only the full ru allocation is supported for 802.11ax mode.

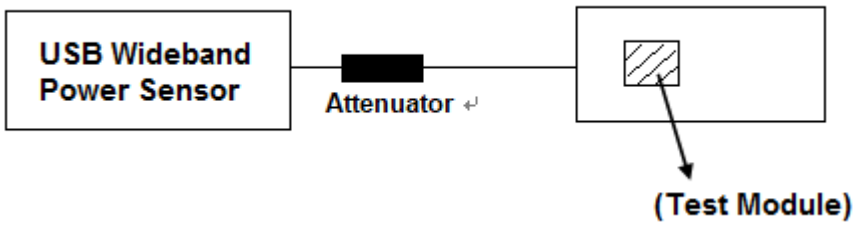
2.5. Test Conditions

Temperature (°C)	15-35
Relative Humidity (%)	30-60
Atmospheric Pressure (kPa)	86-106

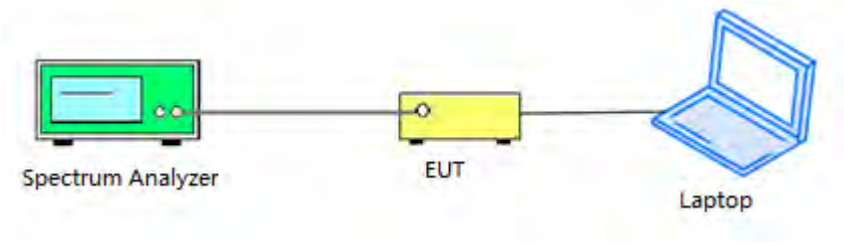
2.6. Test Setup Layout Diagram

2.6.1.Conducted Measurement

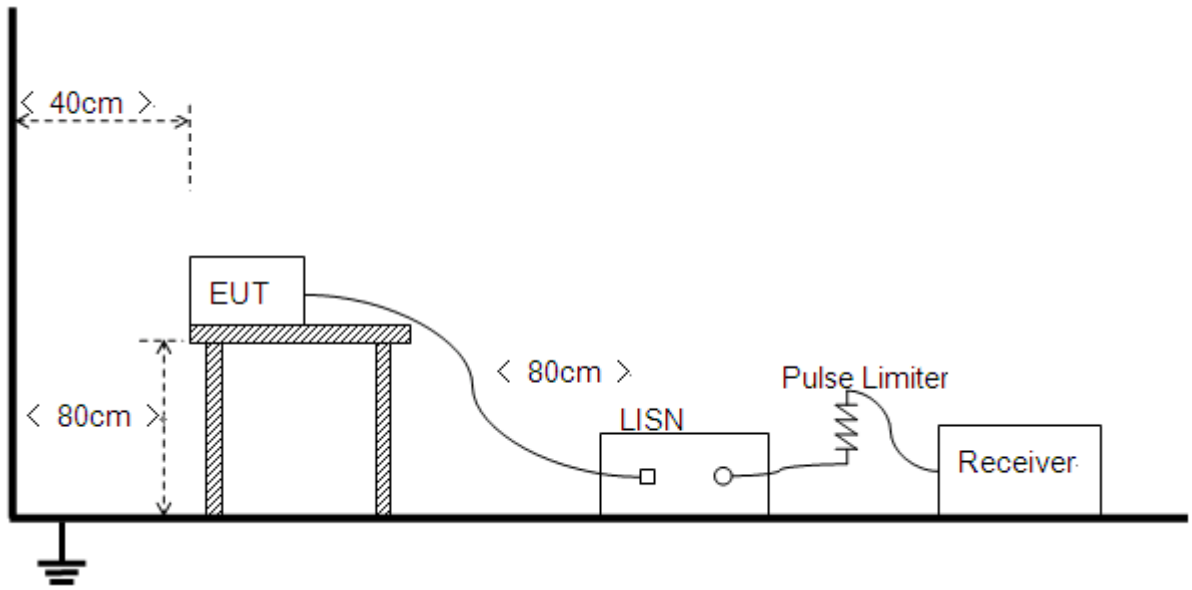
For power item that BW below 80MHz system:



For power item that BW equal or above 80MHz and other items:

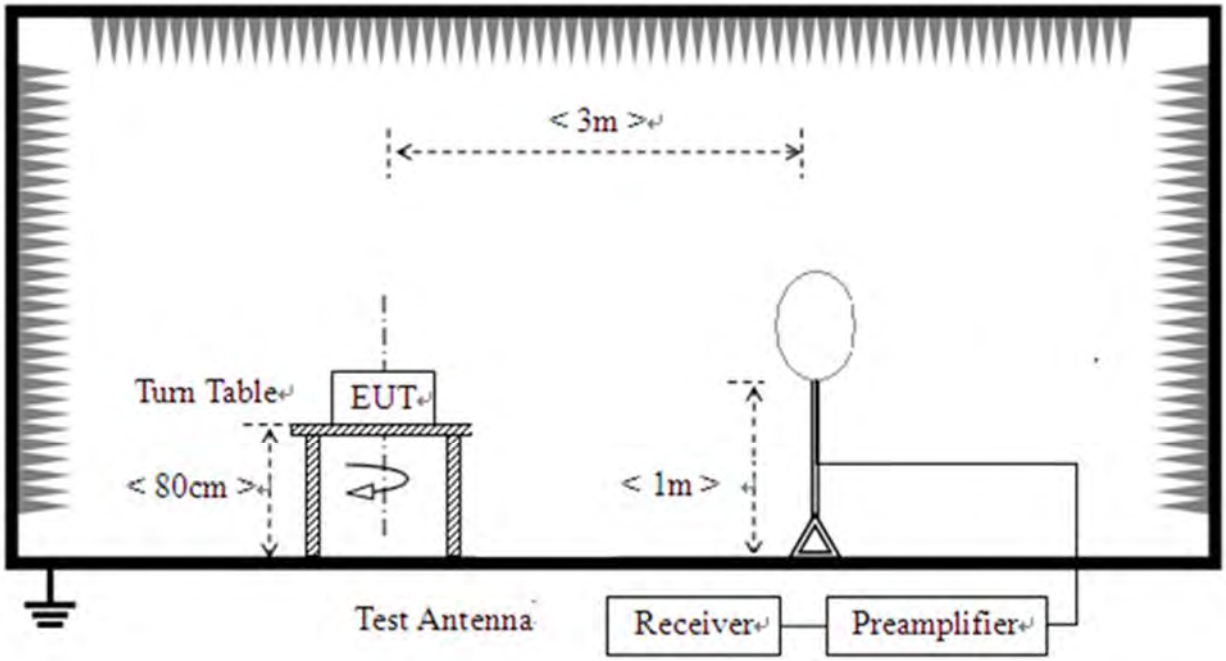


2.6.2.Conducted Emission Measurement

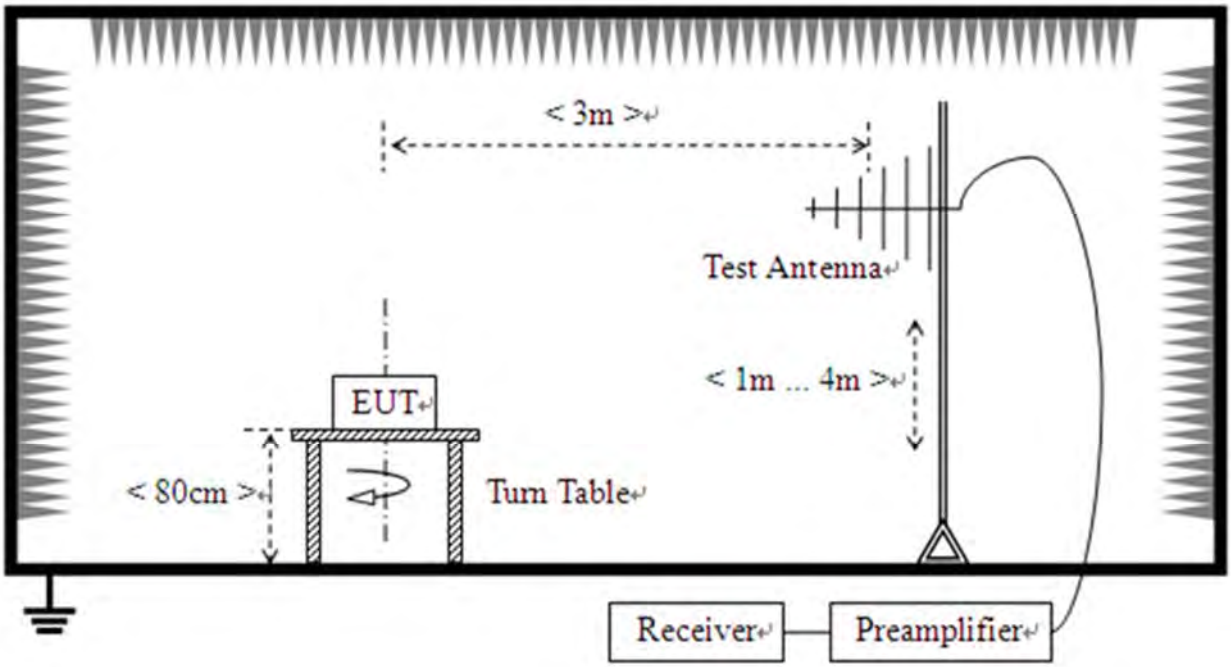


2.6.3.Radiation Measurement

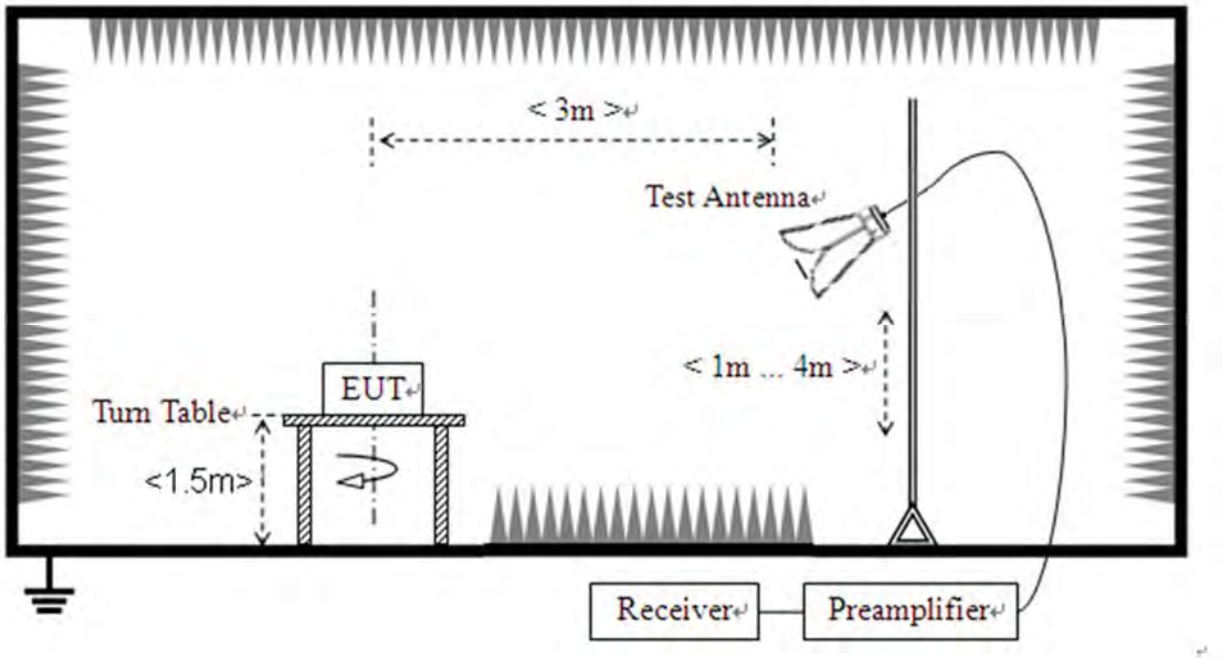
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



3. Test Results

3.1. Antenna Requirement

3.1.1.Requirement

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.1.2.Test Result

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

3.2. Duty Cycle of Test Signal

3.2.1.Requirement

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%).When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be used to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration(T) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can then be used if the measurement/sweep time of the analyzer can be set such that it does not exceed T at any time that data are being acquired (i.e.,no transmitter OFF-time is to be considered).
When continuous transmission cannot be achieved and sweep triggering/signal gating cannot be implemented, alternative procedures are provided that can be used to measure the average power; however, they will require an additional measurement of the transmitter duty cycle (D). Within this sub clause, the duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than ±2%; otherwise, the duty cycle is considered to be non constant.

3.2.2.Test Result

Refer to Annex A.1 in this report.

3.3. Maximum Conducted Output Power

3.3.1.Requirement

(1) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6dBi.
(2)For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250mW or 11dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.
(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.
If transmitting antennas of directional gain greater than 6dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.
(4) According to KDB662911D01Measure-and-sum technique, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in units that are directly proportional to power.
(5) According to KDB 662911 D01, the directional gain = G_{ANT} +10log(N_{ANT})dBi, where G_{ANT} is the antenna gain in dBi, N_{ANT} is the number of outputs.

3.3.2.Test Procedures

The EUT (Equipment under the test) which is coupled to the USB Wideband Power Sensor; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in USB Wideband Power Sensor.

For ac (VHT80) mode power
The EUT (Equipment under the test) is coupled to the Spectrum analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in Spectrum analyzer.

3.3.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.3.4.Test Result

Refer to Annex A.2 in this report.

Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	11dB+10*log$_{10}$(26dB BW)
a SISO	5260	Ant0	20.158	24.04
a SISO	5260	Ant1	26.954	25.31
a SISO	5300	Ant0	22.713	24.56
a SISO	5300	Ant1	26.688	25.26
a SISO	5320	Ant0	20.013	24.01
a SISO	5320	Ant1	20.114	24.03
a SISO	5500	Ant0	19.969	24.00
a SISO	5500	Ant1	19.946	24.00
a SISO	5580	Ant0	20.35	24.09
a SISO	5580	Ant1	20.333	24.08
a SISO	5600	Ant0	20.32	24.08
a SISO	5600	Ant1	20.1	24.03
a SISO	5720	Ant0	20.306	24.08
a SISO	5720	Ant1	20.102	24.03
n20 SISO	5260	Ant0	20.422	24.10
n20 SISO	5260	Ant1	20.608	24.14
n20 SISO	5300	Ant0	20.393	24.09
n20 SISO	5300	Ant1	20.78	24.18
n20 SISO	5320	Ant0	20.391	24.09
n20 SISO	5320	Ant1	20.36	24.09
n20 SISO	5500	Ant0	20.302	24.08
n20 SISO	5500	Ant1	20.344	24.08
n20 SISO	5580	Ant0	20.434	24.10
n20 SISO	5580	Ant1	20.35	24.09
n20 SISO	5600	Ant0	20.384	24.09
n20 SISO	5600	Ant1	20.418	24.10
n20 SISO	5720	Ant0	20.508	24.12
n20 SISO	5720	Ant1	20.452	24.11

ac20 SISO	5260	Ant0	20.504	24.12
ac20 SISO	5260	Ant1	20.71	24.16
ac20 SISO	5300	Ant0	20.486	24.11
ac20 SISO	5300	Ant1	20.742	24.17
ac20 SISO	5320	Ant0	20.402	24.10
ac20 SISO	5320	Ant1	20.266	24.07
ac20 SISO	5500	Ant0	20.262	24.07
ac20 SISO	5500	Ant1	20.356	24.09
ac20 SISO	5580	Ant0	20.351	24.09
ac20 SISO	5580	Ant1	20.501	24.12
ac20 SISO	5600	Ant0	20.377	24.09
ac20 SISO	5600	Ant1	20.35	24.09
ac20 SISO	5720	Ant0	20.373	24.09
ac20 SISO	5720	Ant1	20.538	24.13

3.4. Emission Bandwidth

3.4.1.Requirement

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement. Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

3.4.1.Test Procedures

1. KDB 789033 Section C) 1) Emission Bandwidth was used in order to prove compliance
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
2. KDB 789033 Section C) 2) minimum emission bandwidth for the band 5.725-5.85GHz was used in order to prove compliance.
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for theband5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.4.2.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.4.3.Test Result

Refer to Annex A.3 in this report.

3.5. Peak Power Spectral Density

3.5.1.Requirement

(1) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.
(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band.
(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30dBm in any 500kHz band.
If transmitting antennas of directional gain greater than 6dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.
(4) According to KDB662911D01Measure-and-sum technique, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in units that are directly proportional to power.
(5) According to KDB 662911 D01, the directional gain = G_{ANT} +10log(N_{ANT}) dBi, where G_{ANT} is the antenna gain in dBi, N_{ANT} is the number of outputs.

3.5.2.Test Procedures

KDB 789033 Section F) Maximum Power Spectral Density (PSD) Method SA-3 was used in order to prove compliance
1) Set span to encompass the entire 26-dB emission bandwidth
2) Set RBW = 1MHz. Set VBW ≥ 3MHz
3) Number of points in sweep ≥ 2 Span / RBW. Sweep time = auto
4) Detector = Average
5) Trace mode=Max hold
Record the max value

3.5.3.Test Setup Layout

Refer to chapter 2.6.1 in this report.

3.5.4.Test Result

Refer to Annex A.4 in this report.

3.6. Frequency Stability

3.6.1.Requirement

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

3.6.2.Test Procedures

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between 5°Cto 40°C. The temperature was incremented by 10º intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

3.6.3.Test Result

Refer to Annex A.5 in this report.

3.7. Conducted Emission

3.7.1.Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency Range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

Note:

(a) The lower limit shall apply at the band edges.

(b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.7.2.Test Procedures

The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10: 2013.

3.7.3.Test Setup Layout

Refer to chapter 2.6.2 in this report.

3.7.4.Test Result

Refer to Annex A.6 in this report.

3.8. Restricted Frequency Bands

3.8.1.Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
(2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
(3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
The following formula is used to convert the equipment isotropic radiated power(e.i.r.p.) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \ \mu V/m$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dBuV/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).

3.8.2.Test Procedures

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.
KDB 789033 Section H) 3)5)6(d)) was used in order to prove compliance
For the Test Antenna:
Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.

3.8.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.8.4.Test Result

Refer to Annex A.7 in this report.

3.9. Radiated Emission

3.9.1.Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
(2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
(3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.
The following formula is used to convert the equipment isotropic radiated power(e.i.r.p.) to field strength (dBμV/m);

$$E = 1000000 \times \sqrt{30P} / 3 \ \mu V/m$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dBuV/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).

3.9.2.Test Procedures

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz.The antenna to EUT distance is 3meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 30MHz, the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9kHz-90 kHz, 110kHz-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

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

The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions. For measurements above 1 GHz, keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.

3.9.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.9.4.Test Result

Refer to Annex A.8 in this report.

Annex A Test Data and Result

A.1. Duty Cycle of Test Signal

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	96.01	0.18	0.72
NVNT	a	5180	Ant2	96.01	0.18	0.72
NVNT	a	5220	Ant1	96.01	0.18	0.72
NVNT	a	5220	Ant2	96.01	0.18	0.72
NVNT	a	5240	Ant1	95.88	0.18	0.72
NVNT	a	5240	Ant2	96.01	0.18	0.72
NVNT	a	5745	Ant1	96.01	0.18	0.72
NVNT	a	5745	Ant2	96.01	0.18	0.72
NVNT	a	5785	Ant1	96.01	0.18	0.72
NVNT	a	5785	Ant2	96.01	0.18	0.72
NVNT	a	5825	Ant1	96.02	0.18	0.72
NVNT	a	5825	Ant2	95.88	0.18	0.72
NVNT	n20	5180	Ant1	95.75	0.19	0.76
NVNT	n20	5180	Ant2	95.75	0.19	0.76
NVNT	n20	5180	Sum	95.75	0.19	0.76
NVNT	n20	5220	Ant1	95.75	0.19	0.76
NVNT	n20	5220	Ant2	95.75	0.19	0.76
NVNT	n20	5220	Sum	95.75	0.19	0.76
NVNT	n20	5240	Ant1	95.75	0.19	0.76
NVNT	n20	5240	Ant2	95.75	0.19	0.76
NVNT	n20	5240	Sum	95.75	0.19	0.76
NVNT	n20	5745	Ant1	95.75	0.19	0.76
NVNT	n20	5745	Ant2	95.75	0.19	0.76
NVNT	n20	5745	Sum	95.75	0.19	0.76
NVNT	n20	5785	Ant1	95.75	0.19	0.76
NVNT	n20	5785	Ant2	95.75	0.19	0.76
NVNT	n20	5785	Sum	95.75	0.19	0.76
NVNT	n20	5825	Ant1	95.75	0.19	0.76
NVNT	n20	5825	Ant2	95.75	0.19	0.76
NVNT	n20	5825	Sum	95.75	0.19	0.76
NVNT	n40	5190	Ant1	91.78	0.37	1.54

NVNT	n40	5190	Ant2	91.78	0.37	1.54
NVNT	n40	5190	Sum	92.07	0.36	1.54
NVNT	n40	5230	Ant1	91.78	0.37	1.54
NVNT	n40	5230	Ant2	91.78	0.37	1.54
NVNT	n40	5230	Sum	92.07	0.36	1.54
NVNT	n40	5755	Ant1	91.78	0.37	1.54
NVNT	n40	5755	Ant2	91.78	0.37	1.54
NVNT	n40	5755	Sum	91.78	0.37	1.54
NVNT	n40	5795	Ant1	91.78	0.37	1.54
NVNT	n40	5795	Ant2	91.78	0.37	1.54
NVNT	n40	5795	Sum	91.78	0.37	1.54
NVNT	ac20	5180	Ant1	92.18	0.35	1.46
NVNT	ac20	5180	Ant2	95.78	0.19	0.76
NVNT	ac20	5180	Sum	92.18	0.35	1.46
NVNT	ac20	5220	Ant1	92.18	0.35	1.46
NVNT	ac20	5220	Ant2	95.78	0.19	0.76
NVNT	ac20	5220	Sum	92.18	0.35	1.46
NVNT	ac20	5240	Ant1	92.18	0.35	1.46
NVNT	ac20	5240	Ant2	95.78	0.19	0.76
NVNT	ac20	5240	Sum	92.18	0.35	1.46
NVNT	ac20	5745	Ant1	92.18	0.35	1.46
NVNT	ac20	5745	Ant2	95.78	0.19	0.76
NVNT	ac20	5745	Sum	92.18	0.35	1.46
NVNT	ac20	5785	Ant1	92.18	0.35	1.46
NVNT	ac20	5785	Ant2	95.78	0.19	0.76
NVNT	ac20	5785	Sum	92.18	0.35	1.46
NVNT	ac20	5825	Ant1	92.18	0.35	1.46
NVNT	ac20	5825	Ant2	95.78	0.19	0.76
NVNT	ac20	5825	Sum	92.18	0.35	1.46
NVNT	ac40	5190	Ant1	92.16	0.35	1.52
NVNT	ac40	5190	Ant2	85.85	0.66	2.84
NVNT	ac40	5190	Sum	85.85	0.66	2.84
NVNT	ac40	5230	Ant1	91.88	0.37	1.52
NVNT	ac40	5230	Ant2	85.85	0.66	2.84
NVNT	ac40	5230	Sum	85.85	0.66	2.84
NVNT	ac40	5755	Ant1	91.88	0.37	1.52
NVNT	ac40	5755	Ant2	85.85	0.66	2.84
NVNT	ac40	5755	Sum	85.85	0.66	2.84

NVNT	ac40	5795	Ant1	91.88	0.37	1.52
NVNT	ac40	5795	Ant2	85.85	0.66	2.84
NVNT	ac40	5795	Sum	85.85	0.66	2.84
NVNT	ac80	5210	Ant1	35.34	4.52	5.32
NVNT	ac80	5210	Ant2	35.21	4.53	5.32
NVNT	ac80	5210	Sum	85.26	0.69	3.09
NVNT	ac80	5775	Ant1	34.06	4.68	5.32
NVNT	ac80	5775	Ant2	35.34	4.52	5.32
NVNT	ac80	5775	Sum	84.82	0.72	3.09
NVNT	ax20	5180	Ant1	90.3	0.44	1.85
NVNT	ax20	5180	Ant2	94.61	0.24	0.98
NVNT	ax20	5180	Sum	90.64	0.43	1.85
NVNT	ax20	5220	Ant1	90.3	0.44	1.85
NVNT	ax20	5220	Ant2	94.61	0.24	0.98
NVNT	ax20	5220	Sum	90.64	0.43	1.85
NVNT	ax20	5240	Ant1	90.33	0.44	1.85
NVNT	ax20	5240	Ant2	94.6	0.24	0.98
NVNT	ax20	5240	Sum	90.64	0.43	1.85
NVNT	ax20	5745	Ant1	90.64	0.43	1.85
NVNT	ax20	5745	Ant2	94.61	0.24	0.98
NVNT	ax20	5745	Sum	90.33	0.44	1.85
NVNT	ax20	5785	Ant1	90.33	0.44	1.85
NVNT	ax20	5785	Ant2	94.61	0.24	0.98
NVNT	ax20	5785	Sum	90.64	0.43	1.85
NVNT	ax20	5825	Ant1	90.33	0.44	1.85
NVNT	ax20	5825	Ant2	94.61	0.24	0.98
NVNT	ax20	5825	Sum	90.33	0.44	1.85
NVNT	ax40	5190	Ant1	90.57	0.43	1.86
NVNT	ax40	5190	Ant2	83.8	0.77	3.33
NVNT	ax40	5190	Sum	83.8	0.77	3.33
NVNT	ax40	5230	Ant1	90.27	0.44	1.86
NVNT	ax40	5230	Ant2	83.8	0.77	3.33
NVNT	ax40	5230	Sum	83.8	0.77	3.33
NVNT	ax40	5755	Ant1	90.27	0.44	1.86
NVNT	ax40	5755	Ant2	83.8	0.77	3.33
NVNT	ax40	5755	Sum	83.89	0.76	3.31
NVNT	ax40	5795	Ant1	90.27	0.44	1.86
NVNT	ax40	5795	Ant2	83.89	0.76	3.31

NVNT	ax40	5795	Sum	83.8	0.77	3.33
NVNT	ax80	5210	Ant1	33.46	4.75	5.75
NVNT	ax80	5210	Ant2	32.46	4.89	5.75
NVNT	ax80	5210	Sum	83.14	0.8	3.5
NVNT	ax80	5775	Ant1	34.66	4.6	5.75
NVNT	ax80	5775	Ant2	33.46	4.75	5.75
NVNT	ax80	5775	Sum	83.72	0.77	3.47

A.2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit Conducted(dBm)	Verdict
NVNT	a	5180	Ant1	19.87	0.09705	30	Pass
NVNT	a	5180	Ant2	17.88	0.06138	30	Pass
NVNT	a	5220	Ant1	20.31	0.1074	30	Pass
NVNT	a	5220	Ant2	17.39	0.05483	30	Pass
NVNT	a	5240	Ant1	19.8	0.0955	30	Pass
NVNT	a	5240	Ant2	17.78	0.05998	30	Pass
NVNT	a	5745	Ant1	22.69	0.18578	30	Pass
NVNT	a	5745	Ant2	20.68	0.11695	30	Pass
NVNT	a	5785	Ant1	22.37	0.17258	30	Pass
NVNT	a	5785	Ant2	21.01	0.12618	30	Pass
NVNT	a	5825	Ant1	21.82	0.15205	30	Pass
NVNT	a	5825	Ant2	21.57	0.14355	30	Pass
NVNT	n20	5180	Ant1	19.32	0.08551	30	Pass
NVNT	n20	5180	Ant2	17.78	0.05998	30	Pass
NVNT	n20	5180	Ant1	19.56	0.09036	30	Pass
NVNT	n20	5180	Ant2	17.47	0.05585	30	Pass
NVNT	n20	5180	Sum	21.65	0.14621	28.28	Pass
NVNT	n20	5220	Ant1	19.61	0.09141	30	Pass
NVNT	n20	5220	Ant2	17.46	0.05572	30	Pass
NVNT	n20	5220	Ant1	19.32	0.08551	30	Pass
NVNT	n20	5220	Ant2	17.29	0.05358	30	Pass
NVNT	n20	5220	Sum	21.43	0.139	28.28	Pass
NVNT	n20	5240	Ant1	19.27	0.08453	30	Pass
NVNT	n20	5240	Ant2	17.03	0.05047	30	Pass
NVNT	n20	5240	Ant1	18.65	0.07328	30	Pass
NVNT	n20	5240	Ant2	17.64	0.05808	30	Pass
NVNT	n20	5240	Sum	21.18	0.14723	28.28	Pass
NVNT	n20	5745	Ant1	22.04	0.15996	30	Pass
NVNT	n20	5745	Ant2	21.02	0.12647	30	Pass
NVNT	n20	5745	Ant1	21.24	0.13305	30	Pass
NVNT	n20	5745	Ant2	20.8	0.12023	30	Pass
NVNT	n20	5745	Sum	23.59	0.22854	28.28	Pass
NVNT	n20	5785	Ant1	21.74	0.14928	30	Pass

NVNT	n20	5785	Ant2	21.09	0.12853	30	Pass
NVNT	n20	5785	Ant1	20.8	0.12023	30	Pass
NVNT	n20	5785	Ant2	19.69	0.09311	30	Pass
NVNT	n20	5785	Sum	23.29	0.21334	28.28	Pass
NVNT	n20	5825	Ant1	21.33	0.13583	30	Pass
NVNT	n20	5825	Ant2	21.63	0.14555	30	Pass
NVNT	n20	5825	Ant1	20.34	0.10814	30	Pass
NVNT	n20	5825	Ant2	20.21	0.10495	30	Pass
NVNT	n20	5825	Sum	23.29	0.2131	28.28	Pass
NVNT	n40	5190	Ant1	20.01	0.10023	30	Pass
NVNT	n40	5190	Ant2	17.68	0.05861	30	Pass
NVNT	n40	5190	Ant1	19.3	0.08511	30	Pass
NVNT	n40	5190	Ant2	17.16	0.052	30	Pass
NVNT	n40	5190	Sum	21.37	0.13711	28.28	Pass
NVNT	n40	5230	Ant1	20.04	0.10093	30	Pass
NVNT	n40	5230	Ant2	18.93	0.07816	30	Pass
NVNT	n40	5230	Ant1	19.22	0.08356	30	Pass
NVNT	n40	5230	Ant2	18.28	0.0673	30	Pass
NVNT	n40	5230	Sum	21.79	0.15101	28.28	Pass
NVNT	n40	5755	Ant1	23	0.19953	30	Pass
NVNT	n40	5755	Ant2	21.05	0.12735	30	Pass
NVNT	n40	5755	Ant1	21.88	0.15417	30	Pass
NVNT	n40	5755	Ant2	20.35	0.10839	30	Pass
NVNT	n40	5755	Sum	24.19	0.26256	28.28	Pass
NVNT	n40	5795	Ant1	22.25	0.16788	30	Pass
NVNT	n40	5795	Ant2	20.81	0.1205	30	Pass
NVNT	n40	5795	Ant1	21.03	0.12677	30	Pass
NVNT	n40	5795	Ant2	20.97	0.12503	30	Pass
NVNT	n40	5795	Sum	24.01	0.25177	28.28	Pass
NVNT	ac20	5180	Ant1	19.37	0.0865	30	Pass
NVNT	ac20	5180	Ant2	17.99	0.06295	30	Pass
NVNT	ac20	5180	Ant1	18.85	0.07674	30	Pass
NVNT	ac20	5180	Ant2	17.62	0.05781	30	Pass
NVNT	ac20	5180	Sum	21.29	0.13459	28.28	Pass
NVNT	ac20	5220	Ant1	19.45	0.0881	30	Pass
NVNT	ac20	5220	Ant2	17.22	0.05272	30	Pass
NVNT	ac20	5220	Ant1	19.82	0.09594	30	Pass
NVNT	ac20	5220	Ant2	17.75	0.05957	30	Pass

NVNT	ac20	5220	Sum	21.92	0.1556	28.28	Pass
NVNT	ac20	5240	Ant1	18.95	0.07852	30	Pass
NVNT	ac20	5240	Ant2	17.83	0.06067	30	Pass
NVNT	ac20	5240	Ant1	18.75	0.07499	30	Pass
NVNT	ac20	5240	Ant2	17.73	0.05929	30	Pass
NVNT	ac20	5240	Sum	21.28	0.13428	28.28	Pass
NVNT	ac20	5745	Ant1	21.7	0.14791	30	Pass
NVNT	ac20	5745	Ant2	20.83	0.12106	30	Pass
NVNT	ac20	5745	Ant1	21.41	0.13836	30	Pass
NVNT	ac20	5745	Ant2	19.9	0.09772	30	Pass
NVNT	ac20	5745	Sum	23.73	0.23608	28.28	Pass
NVNT	ac20	5785	Ant1	21.3	0.1349	30	Pass
NVNT	ac20	5785	Ant2	20.9	0.12303	30	Pass
NVNT	ac20	5785	Ant1	20.96	0.12474	30	Pass
NVNT	ac20	5785	Ant2	19.8	0.0955	30	Pass
NVNT	ac20	5785	Sum	23.43	0.22024	28.28	Pass
NVNT	ac20	5825	Ant1	20.76	0.11912	30	Pass
NVNT	ac20	5825	Ant2	21.44	0.13932	30	Pass
NVNT	ac20	5825	Ant1	20.39	0.1094	30	Pass
NVNT	ac20	5825	Ant2	20.24	0.10568	30	Pass
NVNT	ac20	5825	Sum	23.33	0.21508	28.28	Pass
NVNT	ac40	5190	Ant1	19.91	0.09795	30	Pass
NVNT	ac40	5190	Ant2	17.91	0.0618	30	Pass
NVNT	ac40	5190	Ant1	19.04	0.08017	30	Pass
NVNT	ac40	5190	Ant2	17.84	0.06081	30	Pass
NVNT	ac40	5190	Sum	21.49	0.14093	28.28	Pass
NVNT	ac40	5230	Ant1	19.99	0.09977	30	Pass
NVNT	ac40	5230	Ant2	17.98	0.06281	30	Pass
NVNT	ac40	5230	Ant1	19.08	0.08091	30	Pass
NVNT	ac40	5230	Ant2	17.13	0.05164	30	Pass
NVNT	ac40	5230	Sum	21.22	0.13243	28.28	Pass
NVNT	ac40	5755	Ant1	22.95	0.19724	30	Pass
NVNT	ac40	5755	Ant2	20.93	0.12388	30	Pass
NVNT	ac40	5755	Ant1	21.78	0.15066	30	Pass
NVNT	ac40	5755	Ant2	20.25	0.10593	30	Pass
NVNT	ac40	5755	Sum	24.09	0.25659	28.28	Pass
NVNT	ac40	5795	Ant1	22.14	0.16368	30	Pass
NVNT	ac40	5795	Ant2	20.55	0.1135	30	Pass

NVNT	ac40	5795	Ant1	20.97	0.12503	30	Pass
NVNT	ac40	5795	Ant2	19.88	0.09727	30	Pass
NVNT	ac40	5795	Sum	23.47	0.2223	28.28	Pass
NVNT	ac80	5210	Ant1	20.34	0.10814	30	Pass
NVNT	ac80	5210	Ant2	18.53	0.07129	30	Pass
NVNT	ac80	5210	Ant1	18.4	0.06918	30	Pass
NVNT	ac80	5210	Ant2	17.91	0.0618	30	Pass
NVNT	ac80	5210	Sum	21.17	0.13098	28.28	Pass
NVNT	ac80	5775	Ant1	23.65	0.23174	30	Pass
NVNT	ac80	5775	Ant2	22.03	0.15959	30	Pass
NVNT	ac80	5775	Ant1	22.41	0.17418	30	Pass
NVNT	ac80	5775	Ant2	20.95	0.12445	30	Pass
NVNT	ac80	5775	Sum	24.75	0.29863	28.28	Pass
NVNT	ax20	5180	Ant1	19.26	0.08433	30	Pass
NVNT	ax20	5180	Ant2	17.9	0.06166	30	Pass
NVNT	ax20	5180	Ant1	18.89	0.07745	30	Pass
NVNT	ax20	5180	Ant2	17.66	0.05834	30	Pass
NVNT	ax20	5180	Sum	21.33	0.13583	28.28	Pass
NVNT	ax20	5220	Ant1	19.42	0.0875	30	Pass
NVNT	ax20	5220	Ant2	17.57	0.05715	30	Pass
NVNT	ax20	5220	Ant1	19.13	0.08185	30	Pass
NVNT	ax20	5220	Ant2	17.01	0.05023	30	Pass
NVNT	ax20	5220	Sum	21.09	0.12853	28.28	Pass
NVNT	ax20	5240	Ant1	19.04	0.08017	30	Pass
NVNT	ax20	5240	Ant2	17.23	0.05284	30	Pass
NVNT	ax20	5240	Ant1	18.8	0.07586	30	Pass
NVNT	ax20	5240	Ant2	17.78	0.05998	30	Pass
NVNT	ax20	5240	Sum	21.8	0.15136	28.28	Pass
NVNT	ax20	5745	Ant1	21.72	0.14859	30	Pass
NVNT	ax20	5745	Ant2	21.18	0.13122	30	Pass
NVNT	ax20	5745	Ant1	21.47	0.14028	30	Pass
NVNT	ax20	5745	Ant2	19.95	0.09886	30	Pass
NVNT	ax20	5745	Sum	23.79	0.23914	28.28	Pass
NVNT	ax20	5785	Ant1	21.37	0.13709	30	Pass
NVNT	ax20	5785	Ant2	21.19	0.13152	30	Pass
NVNT	ax20	5785	Ant1	21.12	0.12942	30	Pass
NVNT	ax20	5785	Ant2	19.89	0.0975	30	Pass
NVNT	ax20	5785	Sum	23.56	0.22692	28.28	Pass

NVNT	ax20	5825	Ant1	20.86	0.1219	30	Pass
NVNT	ax20	5825	Ant2	21.7	0.14791	30	Pass
NVNT	ax20	5825	Ant1	20.63	0.11561	30	Pass
NVNT	ax20	5825	Ant2	20.42	0.11015	30	Pass
NVNT	ax20	5825	Sum	23.54	0.22577	28.28	Pass
NVNT	ax40	5190	Ant1	20.01	0.10023	30	Pass
NVNT	ax40	5190	Ant2	17.72	0.05916	30	Pass
NVNT	ax40	5190	Ant1	19.2	0.08318	30	Pass
NVNT	ax40	5190	Ant2	17.04	0.05058	30	Pass
NVNT	ax40	5190	Sum	21.26	0.13376	28.28	Pass
NVNT	ax40	5230	Ant1	20.07	0.10162	30	Pass
NVNT	ax40	5230	Ant2	18.98	0.07907	30	Pass
NVNT	ax40	5230	Ant1	19.3	0.08511	30	Pass
NVNT	ax40	5230	Ant2	18.35	0.06839	30	Pass
NVNT	ax40	5230	Sum	21.86	0.15346	28.28	Pass
NVNT	ax40	5755	Ant1	22.99	0.19907	30	Pass
NVNT	ax40	5755	Ant2	21.01	0.12618	30	Pass
NVNT	ax40	5755	Ant1	22.09	0.16181	30	Pass
NVNT	ax40	5755	Ant2	20.52	0.11272	30	Pass
NVNT	ax40	5755	Sum	24.39	0.27453	28.28	Pass
NVNT	ax40	5795	Ant1	22.19	0.16558	30	Pass
NVNT	ax40	5795	Ant2	20.61	0.11508	30	Pass
NVNT	ax40	5795	Ant1	21.28	0.13428	30	Pass
NVNT	ax40	5795	Ant2	20.16	0.10375	30	Pass
NVNT	ax40	5795	Sum	23.77	0.23803	28.28	Pass
NVNT	ax80	5210	Ant1	20.67	0.11668	30	Pass
NVNT	ax80	5210	Ant2	18.64	0.07311	30	Pass
NVNT	ax80	5210	Ant1	19.34	0.0859	30	Pass
NVNT	ax80	5210	Ant2	16.91	0.04909	30	Pass
NVNT	ax80	5210	Sum	21.3	0.13499	28.28	Pass
NVNT	ax80	5775	Ant1	23.73	0.23605	30	Pass
NVNT	ax80	5775	Ant2	22.1	0.16218	30	Pass
NVNT	ax80	5775	Ant1	21.91	0.15524	30	Pass
NVNT	ax80	5775	Ant2	20.55	0.1135	30	Pass
NVNT	ax80	5775	Sum	24.29	0.26874	28.28	Pass

Note: Directional gain = $10\log[(10^{G0/20}+10^{G1/20})^2/2$ = 7.72dBi＞6dBi, so the power limit shall be reduced to 30-(7.72-6) = 28.28dBm.

A.3. Emission Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	19.77	Pass
NVNT	a	5180	Ant2	19.906	Pass
NVNT	a	5220	Ant1	20.824	Pass
NVNT	a	5220	Ant2	19.95	Pass
NVNT	a	5240	Ant1	20.207	Pass
NVNT	a	5240	Ant2	19.793	Pass
NVNT	n20	5180	Ant1	19.998	Pass
NVNT	n20	5180	Ant2	20.098	Pass
NVNT	n20	5180	Ant1	19.996	Pass
NVNT	n20	5180	Ant2	20.346	Pass
NVNT	n20	5220	Ant1	22.043	Pass
NVNT	n20	5220	Ant2	20.071	Pass
NVNT	n20	5220	Ant1	20.006	Pass
NVNT	n20	5220	Ant2	20.101	Pass
NVNT	n20	5240	Ant1	20.26	Pass
NVNT	n20	5240	Ant2	20.097	Pass
NVNT	n20	5240	Ant1	20.036	Pass
NVNT	n20	5240	Ant2	20.138	Pass
NVNT	n40	5190	Ant1	39.736	Pass
NVNT	n40	5190	Ant2	39.931	Pass
NVNT	n40	5190	Ant1	40.038	Pass
NVNT	n40	5190	Ant2	40.638	Pass
NVNT	n40	5230	Ant1	40.403	Pass
NVNT	n40	5230	Ant2	40.78	Pass
NVNT	n40	5230	Ant1	40.266	Pass
NVNT	n40	5230	Ant2	39.884	Pass
NVNT	ac20	5180	Ant1	19.966	Pass
NVNT	ac20	5180	Ant2	20.443	Pass
NVNT	ac20	5180	Ant1	19.714	Pass
NVNT	ac20	5180	Ant2	20.256	Pass
NVNT	ac20	5220	Ant1	20.14	Pass
NVNT	ac20	5220	Ant2	20.051	Pass
NVNT	ac20	5220	Ant1	19.817	Pass
NVNT	ac20	5220	Ant2	20.067	Pass
NVNT	ac20	5240	Ant1	19.948	Pass
NVNT	ac20	5240	Ant2	20.182	Pass

NVNT	ac20	5240	Ant1	19.839	Pass
NVNT	ac20	5240	Ant2	20.21	Pass
NVNT	ac40	5190	Ant1	40.805	Pass
NVNT	ac40	5190	Ant2	40.228	Pass
NVNT	ac40	5190	Ant1	39.953	Pass
NVNT	ac40	5190	Ant2	40.604	Pass
NVNT	ac40	5230	Ant1	40.093	Pass
NVNT	ac40	5230	Ant2	40.155	Pass
NVNT	ac40	5230	Ant1	40.03	Pass
NVNT	ac40	5230	Ant2	40.319	Pass
NVNT	ac80	5210	Ant1	87.351	Pass
NVNT	ac80	5210	Ant2	79.303	Pass
NVNT	ac80	5210	Ant1	79.346	Pass
NVNT	ac80	5210	Ant2	79.72	Pass
NVNT	ax20	5180	Ant1	22.007	Pass
NVNT	ax20	5180	Ant2	21.439	Pass
NVNT	ax20	5180	Ant1	21.434	Pass
NVNT	ax20	5180	Ant2	23.057	Pass
NVNT	ax20	5220	Ant1	25.312	Pass
NVNT	ax20	5220	Ant2	21.97	Pass
NVNT	ax20	5220	Ant1	22.472	Pass
NVNT	ax20	5220	Ant2	21.609	Pass
NVNT	ax20	5240	Ant1	19.934	Pass
NVNT	ax20	5240	Ant2	19.912	Pass
NVNT	ax20	5240	Ant1	20.575	Pass
NVNT	ax20	5240	Ant2	19.84	Pass
NVNT	ax40	5190	Ant1	39.621	Pass
NVNT	ax40	5190	Ant2	39.578	Pass
NVNT	ax40	5190	Ant1	39.588	Pass
NVNT	ax40	5190	Ant2	39.432	Pass
NVNT	ax40	5230	Ant1	39.63	Pass
NVNT	ax40	5230	Ant2	39.666	Pass
NVNT	ax40	5230	Ant1	39.552	Pass
NVNT	ax40	5230	Ant2	39.589	Pass
NVNT	ax80	5210	Ant1	80.153	Pass
NVNT	ax80	5210	Ant2	80.296	Pass
NVNT	ax80	5210	Ant1	80.193	Pass
NVNT	ax80	5210	Ant2	79.958	Pass

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	15.11	0.5	Pass
NVNT	a	5745	Ant2	14.183	0.5	Pass
NVNT	a	5785	Ant1	11.559	0.5	Pass
NVNT	a	5785	Ant2	12.906	0.5	Pass
NVNT	a	5825	Ant1	13.832	0.5	Pass
NVNT	a	5825	Ant2	13.833	0.5	Pass
NVNT	n20	5745	Ant1	15.064	0.5	Pass
NVNT	n20	5745	Ant2	13.82	0.5	Pass
NVNT	n20	5745	Ant1	15.005	0.5	Pass
NVNT	n20	5745	Ant2	15.074	0.5	Pass
NVNT	n20	5785	Ant1	15.005	0.5	Pass
NVNT	n20	5785	Ant2	12.603	0.5	Pass
NVNT	n20	5785	Ant1	15.062	0.5	Pass
NVNT	n20	5785	Ant2	15.041	0.5	Pass
NVNT	n20	5825	Ant1	15.298	0.5	Pass
NVNT	n20	5825	Ant2	13.852	0.5	Pass
NVNT	n20	5825	Ant1	15.05	0.5	Pass
NVNT	n20	5825	Ant2	14.511	0.5	Pass
NVNT	n40	5755	Ant1	35.031	0.5	Pass
NVNT	n40	5755	Ant2	33.772	0.5	Pass
NVNT	n40	5755	Ant1	31.331	0.5	Pass
NVNT	n40	5755	Ant2	33.787	0.5	Pass
NVNT	n40	5795	Ant1	35.05	0.5	Pass
NVNT	n40	5795	Ant2	35.032	0.5	Pass
NVNT	n40	5795	Ant1	35.041	0.5	Pass
NVNT	n40	5795	Ant2	33.778	0.5	Pass
NVNT	ac20	5745	Ant1	15.063	0.5	Pass
NVNT	ac20	5745	Ant2	16.869	0.5	Pass
NVNT	ac20	5745	Ant1	15.072	0.5	Pass
NVNT	ac20	5745	Ant2	13.786	0.5	Pass
NVNT	ac20	5785	Ant1	15.044	0.5	Pass
NVNT	ac20	5785	Ant2	11.333	0.5	Pass
NVNT	ac20	5785	Ant1	14.433	0.5	Pass
NVNT	ac20	5785	Ant2	15.103	0.5	Pass
NVNT	ac20	5825	Ant1	15.095	0.5	Pass

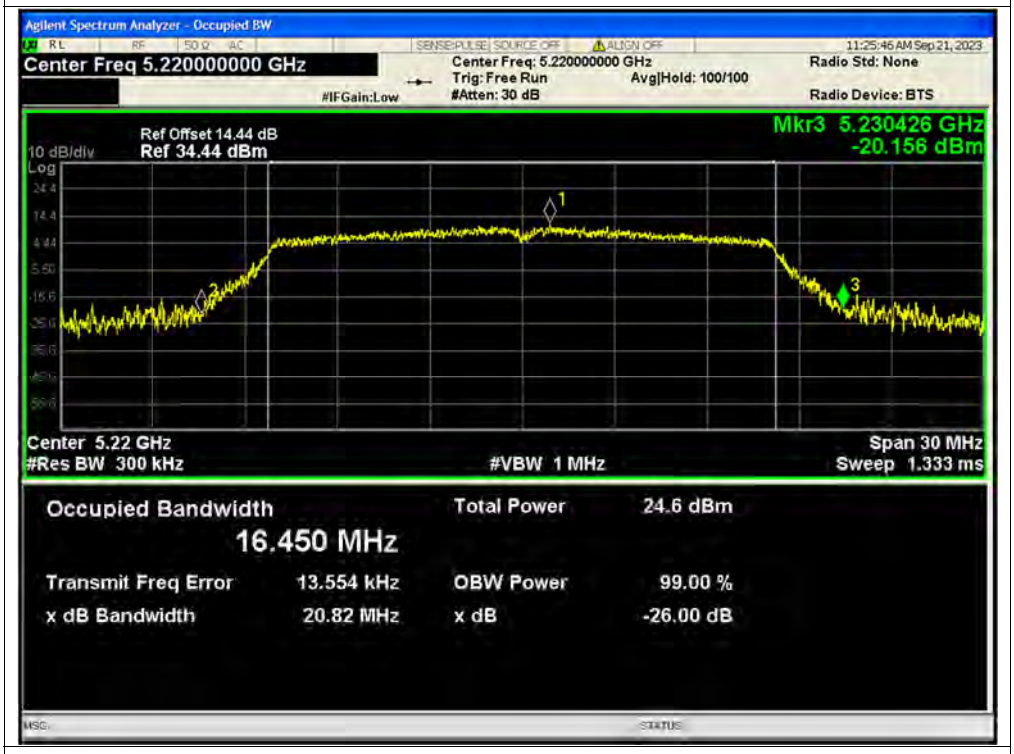
NVNT	ac20	5825	Ant2	13.891	0.5	Pass
NVNT	ac20	5825	Ant1	15.061	0.5	Pass
NVNT	ac20	5825	Ant2	13.812	0.5	Pass
NVNT	ac40	5755	Ant1	33.799	0.5	Pass
NVNT	ac40	5755	Ant2	35.019	0.5	Pass
NVNT	ac40	5755	Ant1	35.053	0.5	Pass
NVNT	ac40	5755	Ant2	33.831	0.5	Pass
NVNT	ac40	5795	Ant1	35.044	0.5	Pass
NVNT	ac40	5795	Ant2	33.845	0.5	Pass
NVNT	ac40	5795	Ant1	35.024	0.5	Pass
NVNT	ac40	5795	Ant2	35.071	0.5	Pass
NVNT	ac80	5775	Ant1	75.074	0.5	Pass
NVNT	ac80	5775	Ant2	75.089	0.5	Pass
NVNT	ac80	5775	Ant1	75.049	0.5	Pass
NVNT	ac80	5775	Ant2	75.094	0.5	Pass
NVNT	ax20	5745	Ant1	15.072	0.5	Pass
NVNT	ax20	5745	Ant2	15.077	0.5	Pass
NVNT	ax20	5745	Ant1	15.032	0.5	Pass
NVNT	ax20	5745	Ant2	15.203	0.5	Pass
NVNT	ax20	5785	Ant1	15.102	0.5	Pass
NVNT	ax20	5785	Ant2	18.171	0.5	Pass
NVNT	ax20	5785	Ant1	15.274	0.5	Pass
NVNT	ax20	5785	Ant2	15.552	0.5	Pass
NVNT	ax20	5825	Ant1	15.047	0.5	Pass
NVNT	ax20	5825	Ant2	14.226	0.5	Pass
NVNT	ax20	5825	Ant1	16.893	0.5	Pass
NVNT	ax20	5825	Ant2	14.116	0.5	Pass
NVNT	ax40	5755	Ant1	35.047	0.5	Pass
NVNT	ax40	5755	Ant2	37.185	0.5	Pass
NVNT	ax40	5755	Ant1	35.087	0.5	Pass
NVNT	ax40	5755	Ant2	35.525	0.5	Pass
NVNT	ax40	5795	Ant1	35.332	0.5	Pass
NVNT	ax40	5795	Ant2	35.171	0.5	Pass
NVNT	ax40	5795	Ant1	35.079	0.5	Pass
NVNT	ax40	5795	Ant2	35.123	0.5	Pass
NVNT	ax80	5775	Ant1	72.522	0.5	Pass
NVNT	ax80	5775	Ant2	75.102	0.5	Pass
NVNT	ax80	5775	Ant1	73.828	0.5	Pass

NVNT	ax80	5775	Ant2	75.057	0.5	Pass

Test Graphs
-26dB Bandwidth NVNT a 5180MHz Ant1

-26dB Bandwidth NVNT a 5180MHz Ant2

-26dB Bandwidth NVNT a 5220MHz Ant1



-26dB Bandwidth NVNT a 5220MHz Ant2

-26dB Bandwidth NVNT a 5240MHz Ant1

-26dB Bandwidth NVNT a 5240MHz Ant2

-26dB Bandwidth NVNT n20 5180MHz Ant1

-26dB Bandwidth NVNT n20 5180MHz Ant2

-26dB Bandwidth NVNT n20 5180MHz Ant1

-26dB Bandwidth NVNT n20 5180MHz Ant2

-26dB Bandwidth NVNT n20 5220MHz Ant1

-26dB Bandwidth NVNT n20 5220MHz Ant2

-26dB Bandwidth NVNT n20 5220MHz Ant1

-26dB Bandwidth NVNT n20 5220MHz Ant2

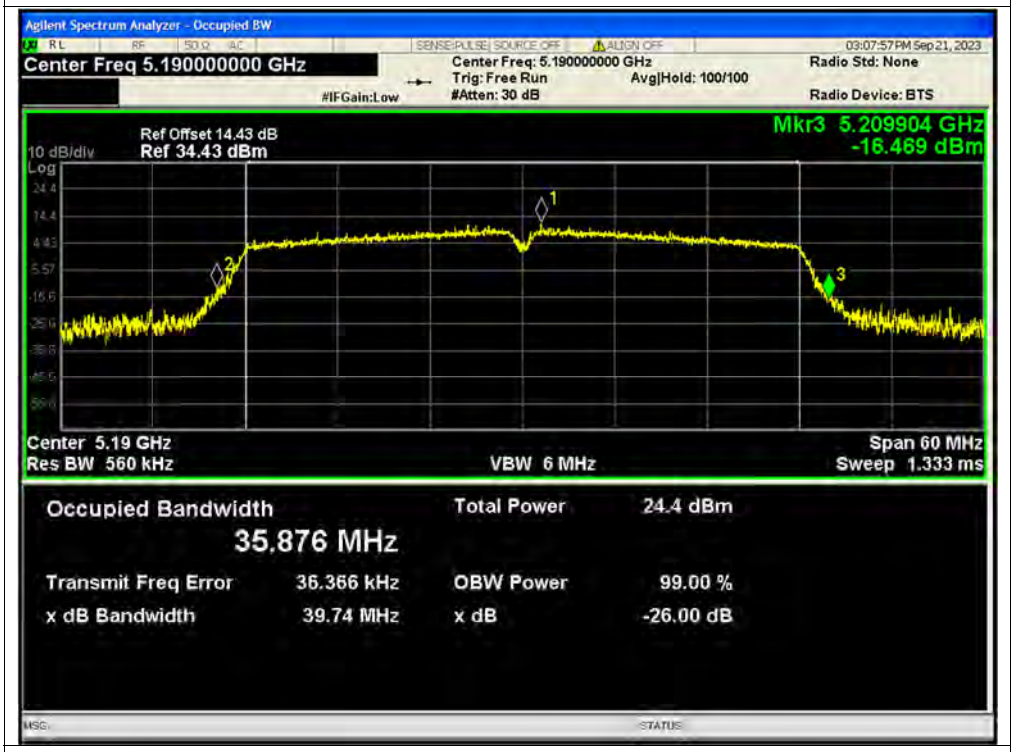
-26dB Bandwidth NVNT n20 5240MHz Ant1

-26dB Bandwidth NVNT n20 5240MHz Ant2

-26dB Bandwidth NVNT n20 5240MHz Ant1

-26dB Bandwidth NVNT n20 5240MHz Ant2

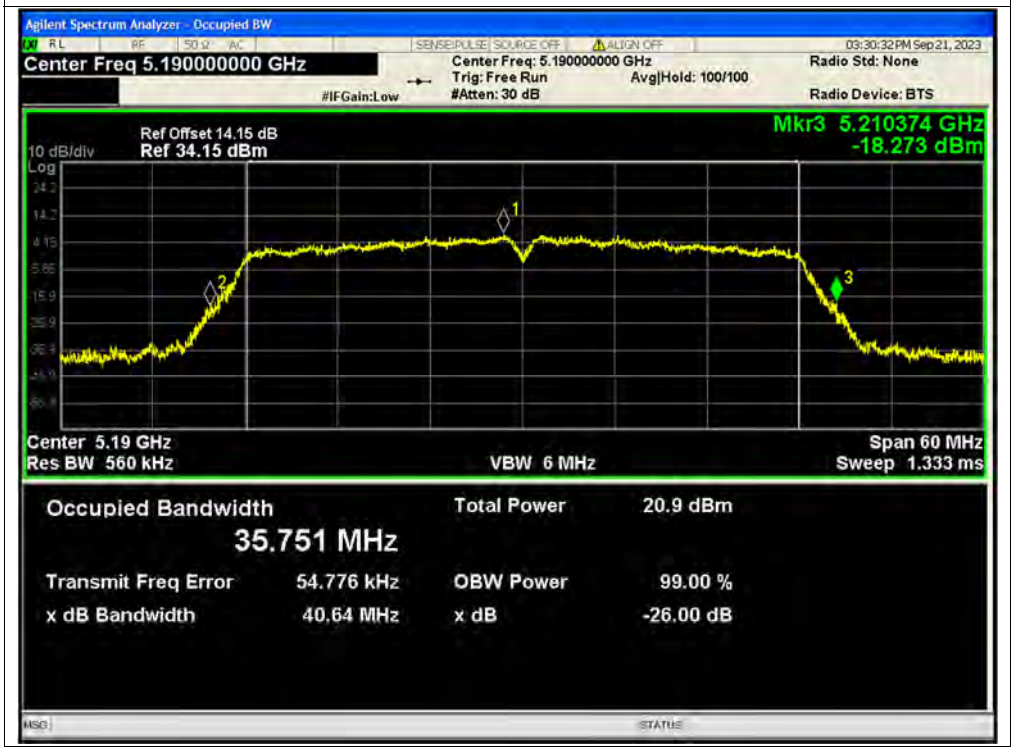
-26dB Bandwidth NVNT n40 5190MHz Ant1



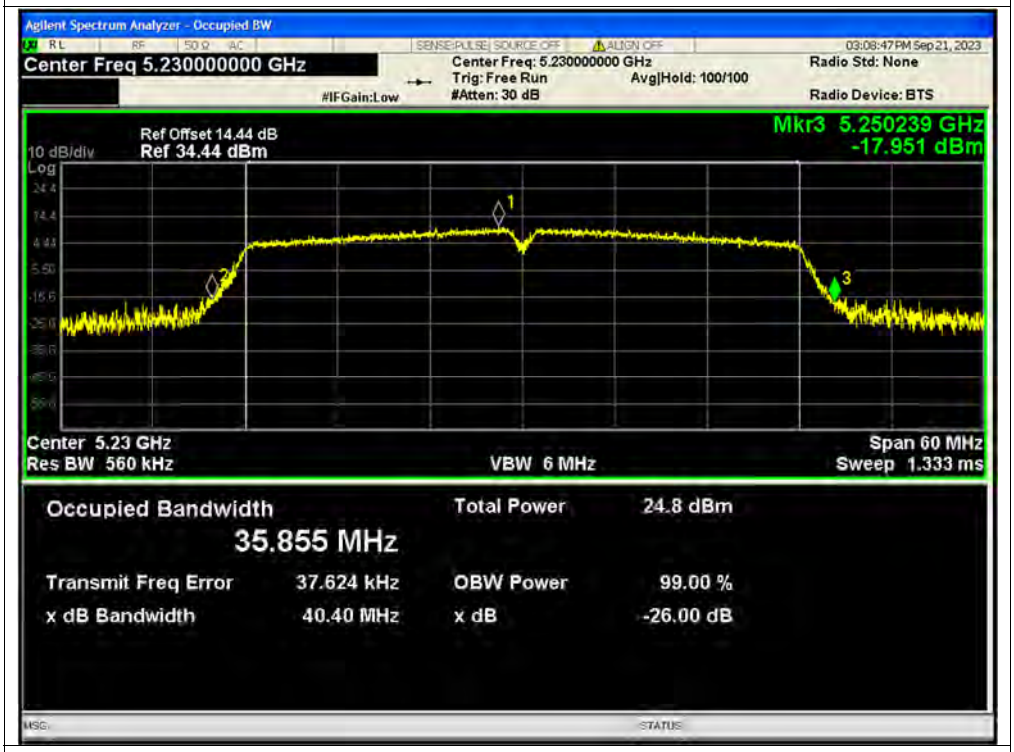
-26dB Bandwidth NVNT n40 5190MHz Ant2

-26dB Bandwidth NVNT n40 5190MHz Ant1

-26dB Bandwidth NVNT n40 5190MHz Ant2

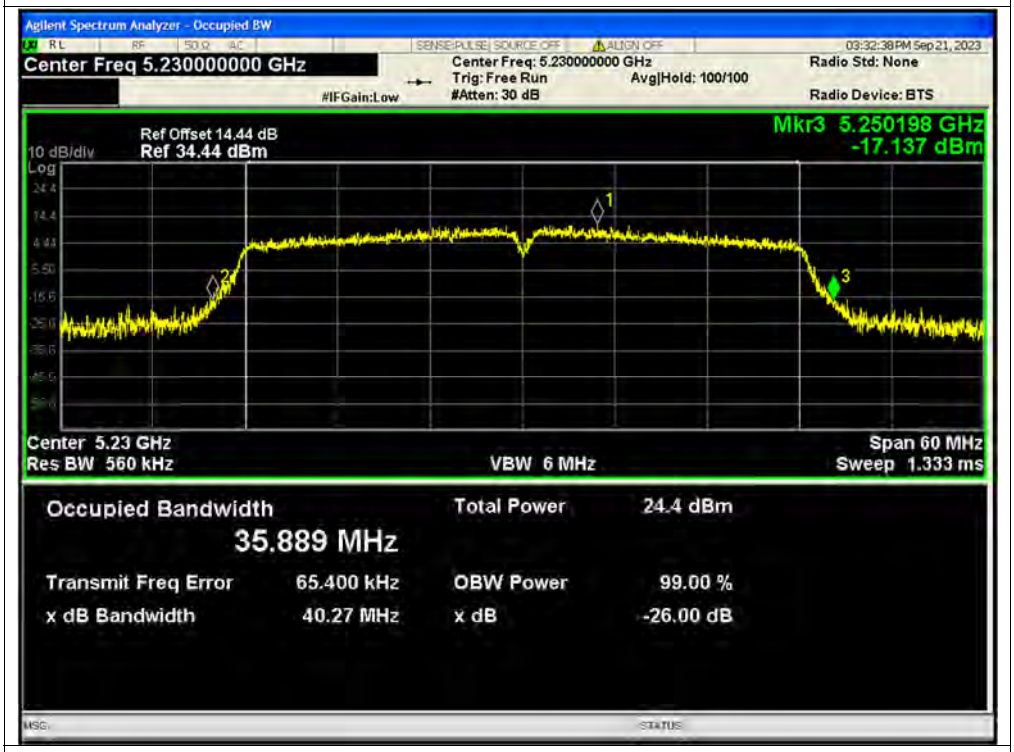


-26dB Bandwidth NVNT n40 5230MHz Ant1



-26dB Bandwidth NVNT n40 5230MHz Ant2

-26dB Bandwidth NVNT n40 5230MHz Ant1



-26dB Bandwidth NVNT n40 5230MHz Ant2

-26dB Bandwidth NVNT ac20 5180MHz Ant1

-26dB Bandwidth NVNT ac20 5180MHz Ant2

-26dB Bandwidth NVNT ac20 5180MHz Ant1

-26dB Bandwidth NVNT ac20 5180MHz Ant2

-26dB Bandwidth NVNT ac20 5220MHz Ant1

-26dB Bandwidth NVNT ac20 5220MHz Ant2

-26dB Bandwidth NVNT ac20 5220MHz Ant1

-26dB Bandwidth NVNT ac20 5220MHz Ant2

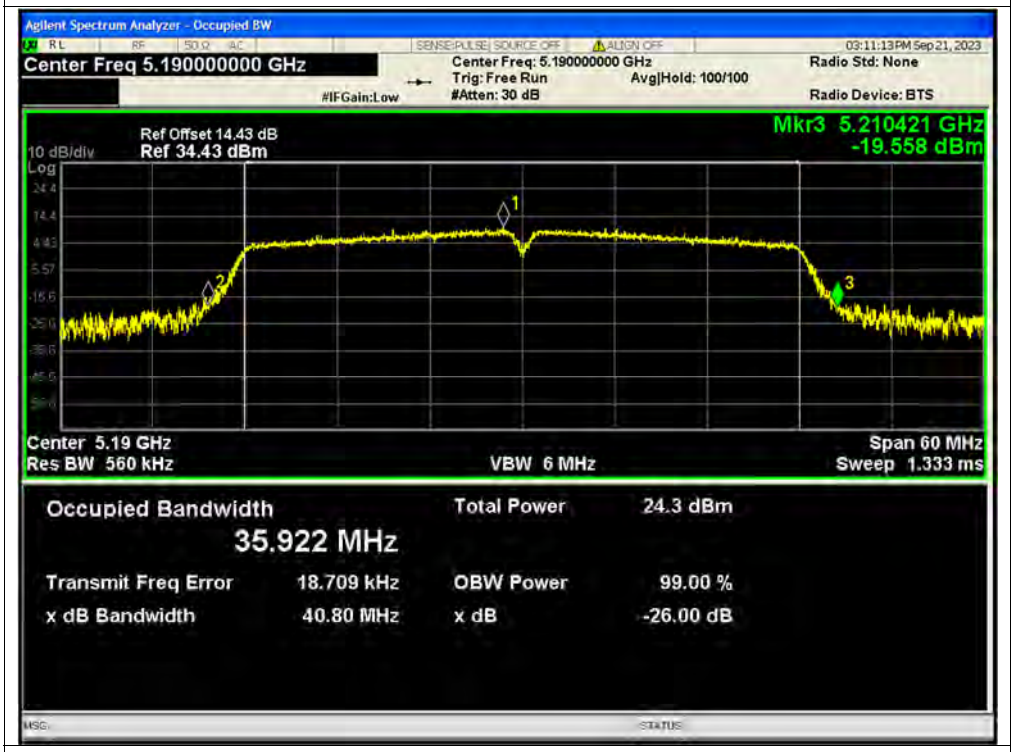
-26dB Bandwidth NVNT ac20 5240MHz Ant1

-26dB Bandwidth NVNT ac20 5240MHz Ant2

-26dB Bandwidth NVNT ac20 5240MHz Ant1

-26dB Bandwidth NVNT ac20 5240MHz Ant2

-26dB Bandwidth NVNT ac40 5190MHz Ant1



-26dB Bandwidth NVNT ac40 5190MHz Ant2

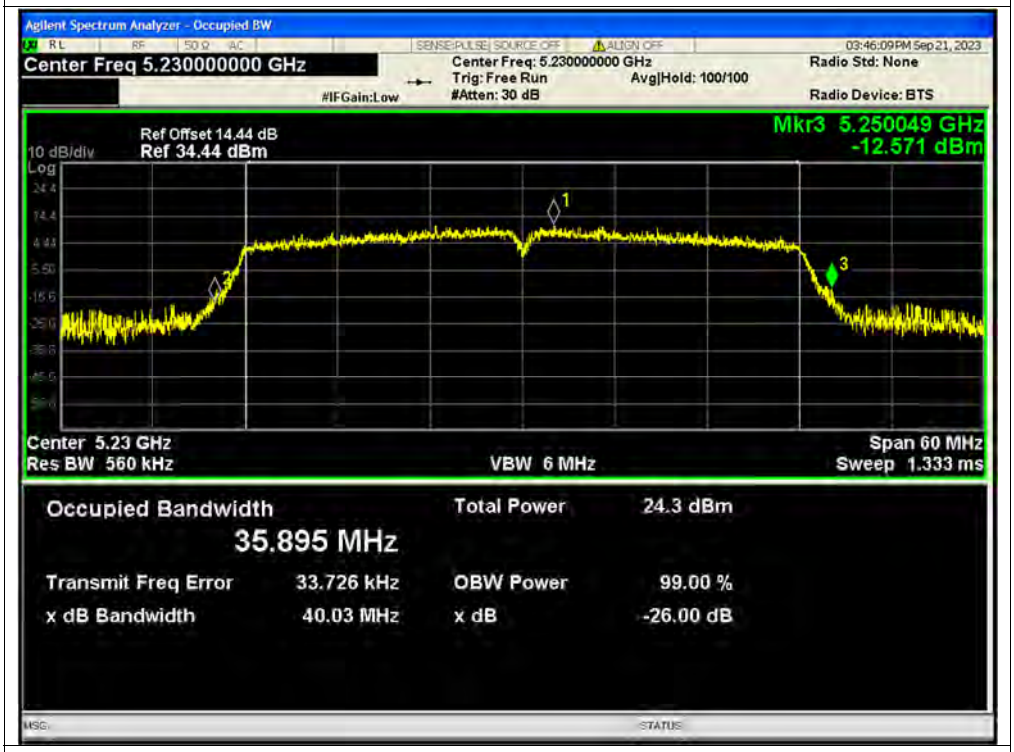
-26dB Bandwidth NVNT ac40 5190MHz Ant1

-26dB Bandwidth NVNT ac40 5190MHz Ant2

-26dB Bandwidth NVNT ac40 5230MHz Ant1

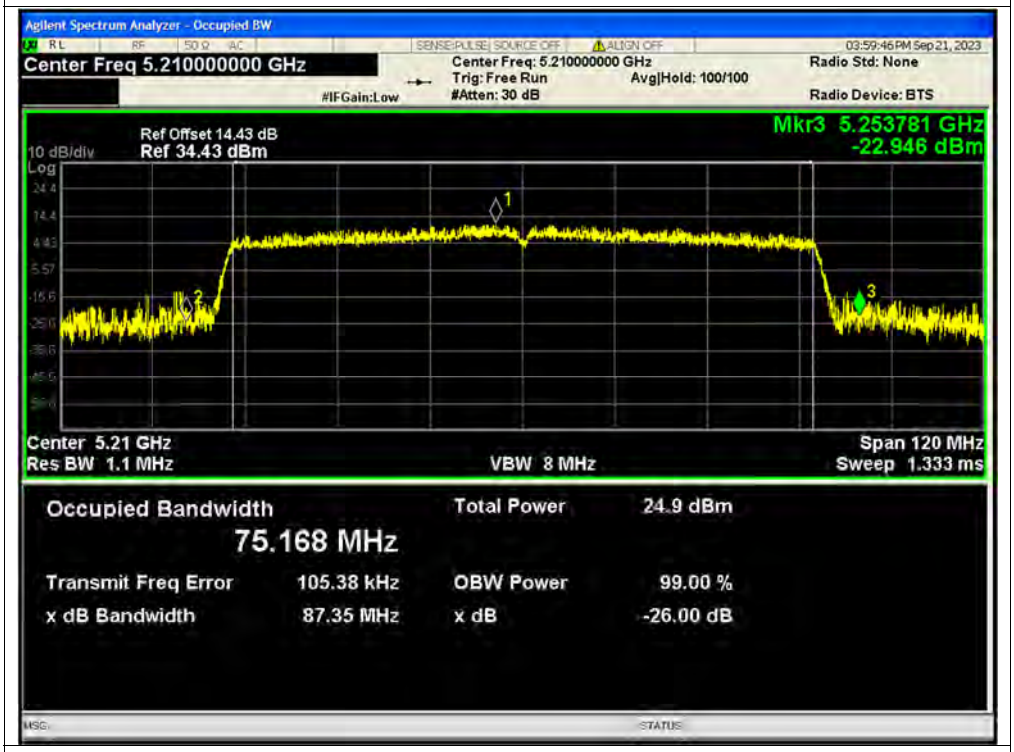
-26dB Bandwidth NVNT ac40 5230MHz Ant2

-26dB Bandwidth NVNT ac40 5230MHz Ant1



-26dB Bandwidth NVNT ac40 5230MHz Ant2

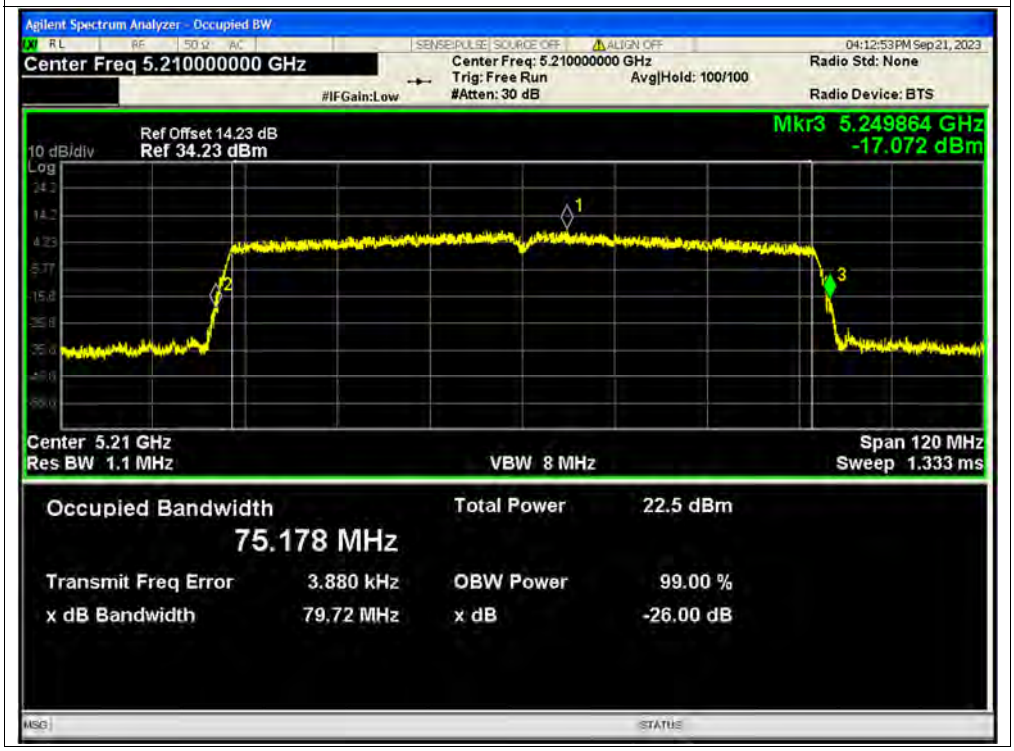
-26dB Bandwidth NVNT ac80 5210MHz Ant1



-26dB Bandwidth NVNT ac80 5210MHz Ant2

-26dB Bandwidth NVNT ac80 5210MHz Ant1

-26dB Bandwidth NVNT ac80 5210MHz Ant2



-26dB Bandwidth NVNT ax20 5180MHz Ant1

-26dB Bandwidth NVNT ax20 5180MHz Ant2

-26dB Bandwidth NVNT ax20 5180MHz Ant1

-26dB Bandwidth NVNT ax20 5180MHz Ant2

-26dB Bandwidth NVNT ax20 5220MHz Ant1

-26dB Bandwidth NVNT ax20 5220MHz Ant2

-26dB Bandwidth NVNT ax20 5220MHz Ant1

-26dB Bandwidth NVNT ax20 5220MHz Ant2

-26dB Bandwidth NVNT ax20 5240MHz Ant1

-26dB Bandwidth NVNT ax20 5240MHz Ant2

-26dB Bandwidth NVNT ax20 5240MHz Ant1

-26dB Bandwidth NVNT ax20 5240MHz Ant2

-26dB Bandwidth NVNT ax40 5190MHz Ant1

-26dB Bandwidth NVNT ax40 5190MHz Ant2

-26dB Bandwidth NVNT ax40 5190MHz Ant1

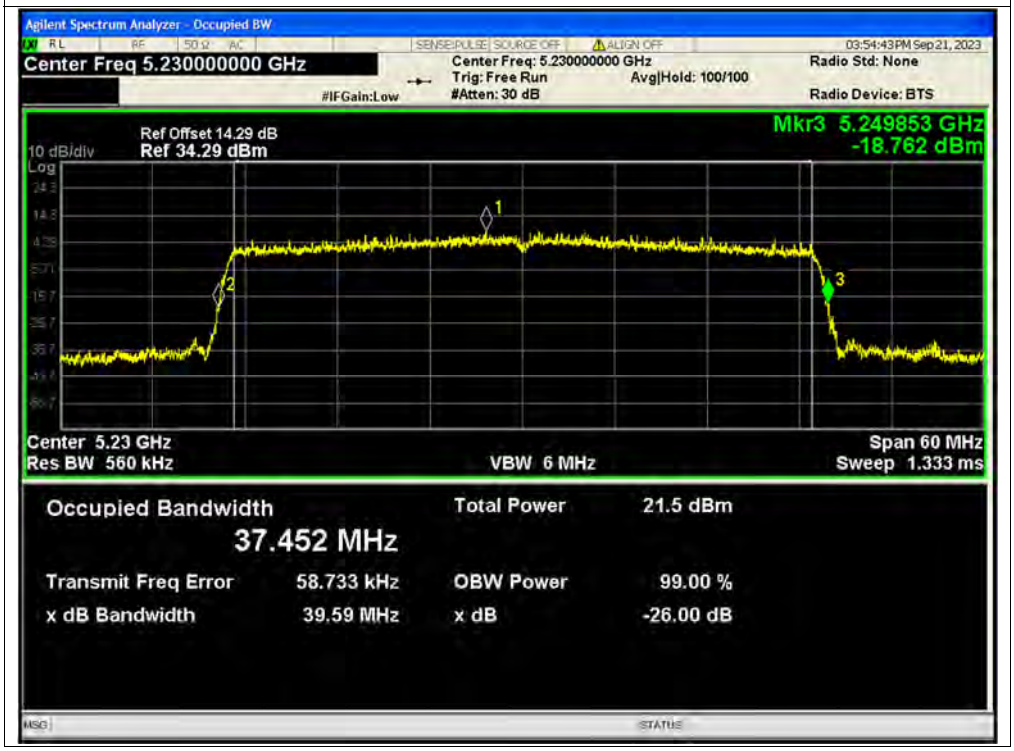
-26dB Bandwidth NVNT ax40 5190MHz Ant2

-26dB Bandwidth NVNT ax40 5230MHz Ant1

-26dB Bandwidth NVNT ax40 5230MHz Ant2

-26dB Bandwidth NVNT ax40 5230MHz Ant1

-26dB Bandwidth NVNT ax40 5230MHz Ant2



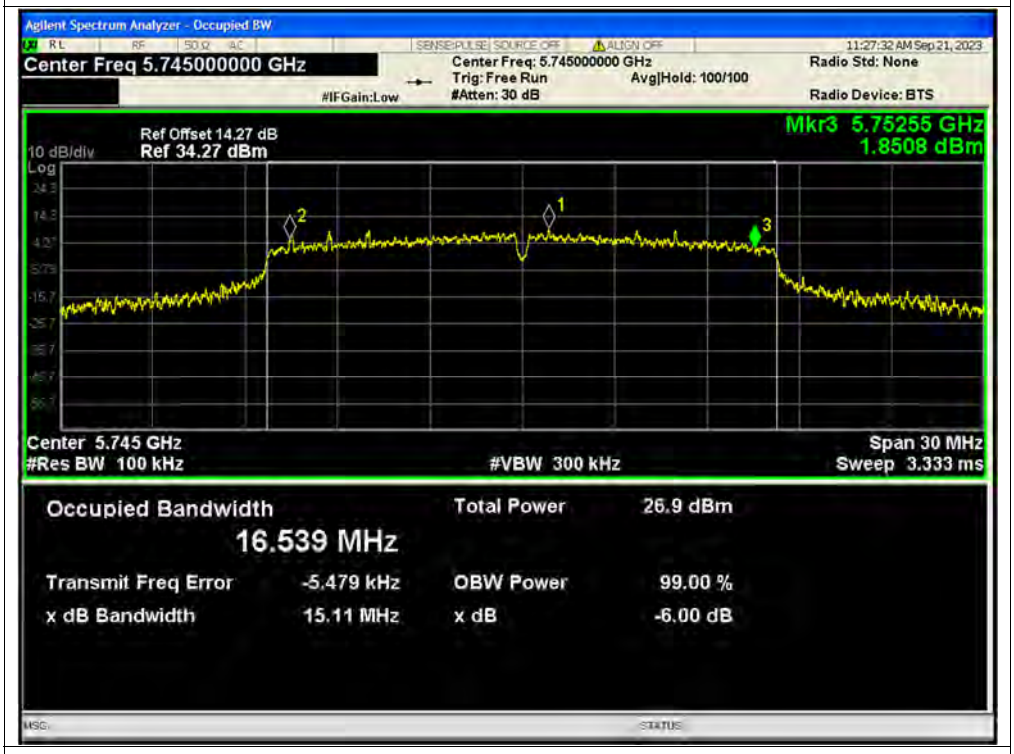
-26dB Bandwidth NVNT ax80 5210MHz Ant1

-26dB Bandwidth NVNT ax80 5210MHz Ant2

-26dB Bandwidth NVNT ax80 5210MHz Ant1

-26dB Bandwidth NVNT ax80 5210MHz Ant2

Test Graphs
-6dB Bandwidth NVNT a 5745MHz Ant1



-6dB Bandwidth NVNT a 5745MHz Ant2

-6dB Bandwidth NVNT a 5785MHz Ant1

-6dB Bandwidth NVNT a 5785MHz Ant2

-6dB Bandwidth NVNT a 5825MHz Ant1

-6dB Bandwidth NVNT a 5825MHz Ant2

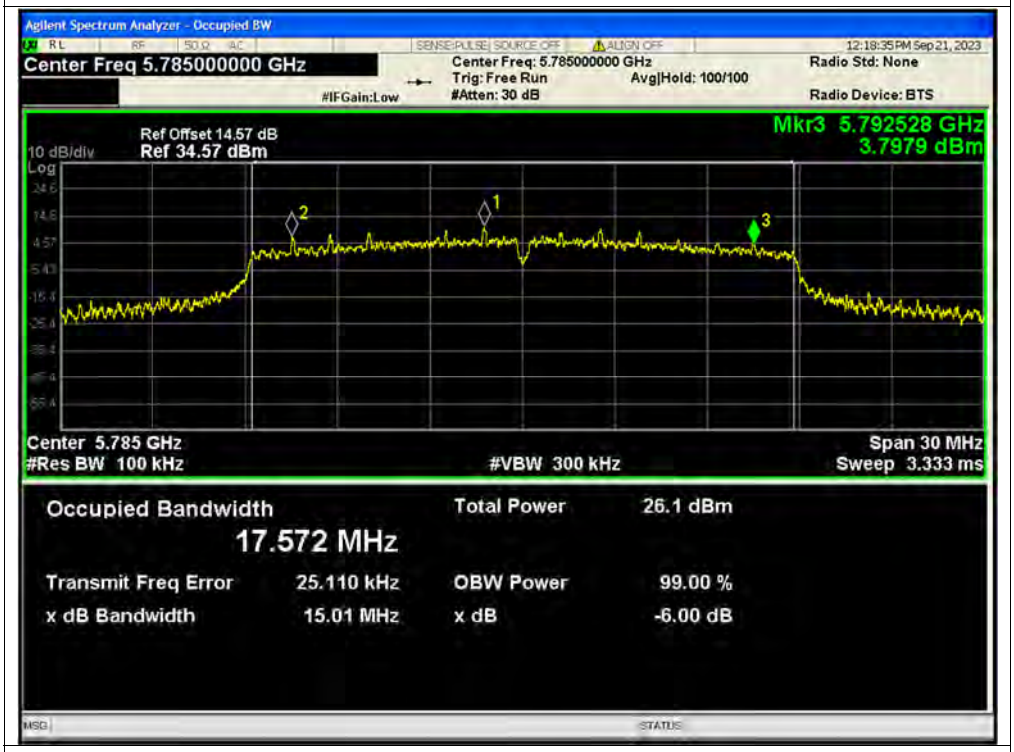
-6dB Bandwidth NVNT n20 5745MHz Ant1

-6dB Bandwidth NVNT n20 5745MHz Ant2

-6dB Bandwidth NVNT n20 5745MHz Ant1

-6dB Bandwidth NVNT n20 5745MHz Ant2

-6dB Bandwidth NVNT n20 5785MHz Ant1



-6dB Bandwidth NVNT n20 5785MHz Ant2

-6dB Bandwidth NVNT n20 5785MHz Ant1

-6dB Bandwidth NVNT n20 5785MHz Ant2

-6dB Bandwidth NVNT n20 5825MHz Ant1

-6dB Bandwidth NVNT n20 5825MHz Ant2

-6dB Bandwidth NVNT n20 5825MHz Ant1

-6dB Bandwidth NVNT n20 5825MHz Ant2

-6dB Bandwidth NVNT n40 5755MHz Ant1

-6dB Bandwidth NVNT n40 5755MHz Ant2

-6dB Bandwidth NVNT n40 5755MHz Ant1

-6dB Bandwidth NVNT n40 5755MHz Ant2

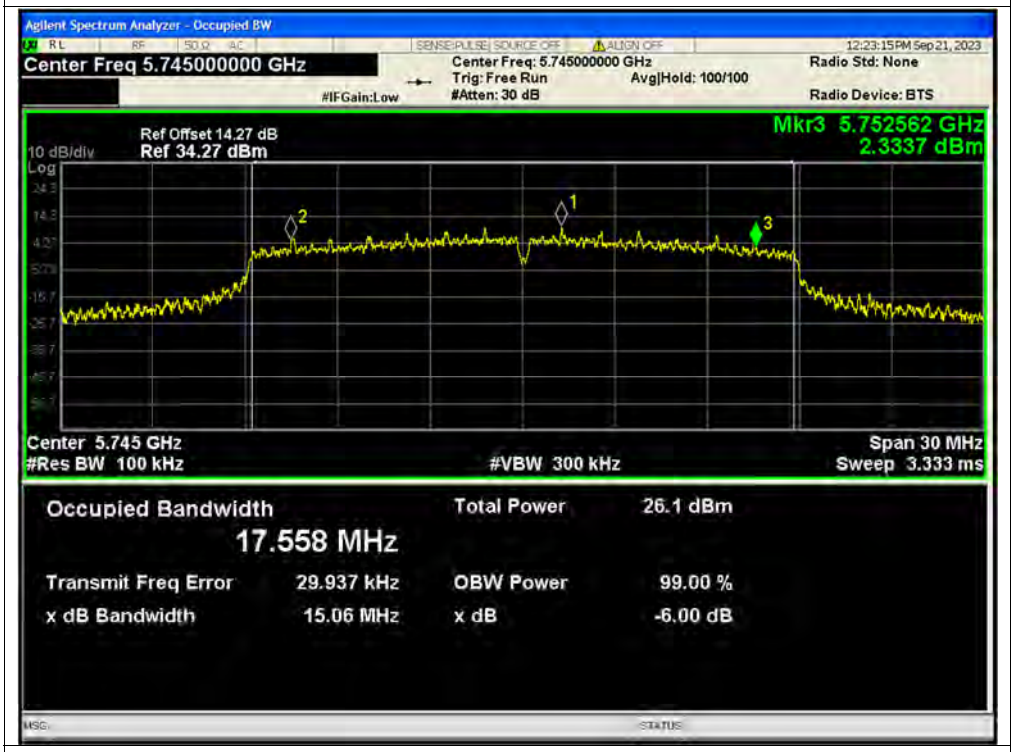
-6dB Bandwidth NVNT n40 5795MHz Ant1

-6dB Bandwidth NVNT n40 5795MHz Ant2

-6dB Bandwidth NVNT n40 5795MHz Ant1

-6dB Bandwidth NVNT n40 5795MHz Ant2

-6dB Bandwidth NVNT ac20 5745MHz Ant1



-6dB Bandwidth NVNT ac20 5745MHz Ant2

-6dB Bandwidth NVNT ac20 5745MHz Ant1

-6dB Bandwidth NVNT ac20 5745MHz Ant2

-6dB Bandwidth NVNT ac20 5785MHz Ant1

-6dB Bandwidth NVNT ac20 5785MHz Ant2

-6dB Bandwidth NVNT ac20 5785MHz Ant1

-6dB Bandwidth NVNT ac20 5785MHz Ant2

-6dB Bandwidth NVNT ac20 5825MHz Ant1

-6dB Bandwidth NVNT ac20 5825MHz Ant2

-6dB Bandwidth NVNT ac20 5825MHz Ant1

-6dB Bandwidth NVNT ac20 5825MHz Ant2

-6dB Bandwidth NVNT ac40 5755MHz Ant1

-6dB Bandwidth NVNT ac40 5755MHz Ant2

-6dB Bandwidth NVNT ac40 5755MHz Ant1

-6dB Bandwidth NVNT ac40 5755MHz Ant2

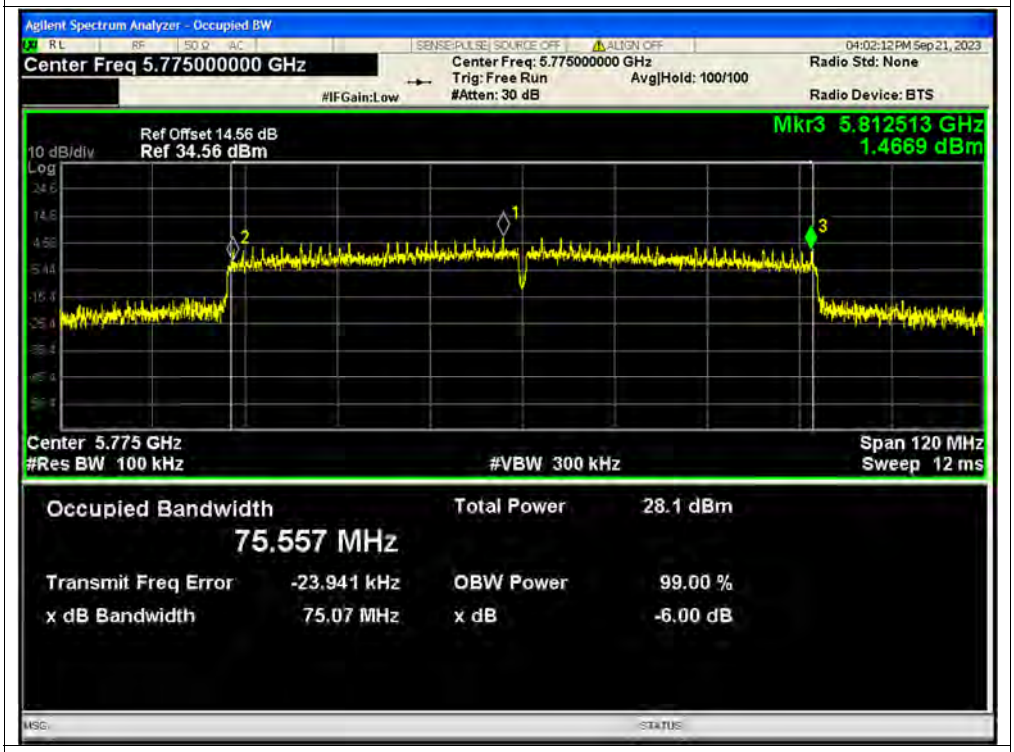
-6dB Bandwidth NVNT ac40 5795MHz Ant1

-6dB Bandwidth NVNT ac40 5795MHz Ant2

-6dB Bandwidth NVNT ac40 5795MHz Ant1

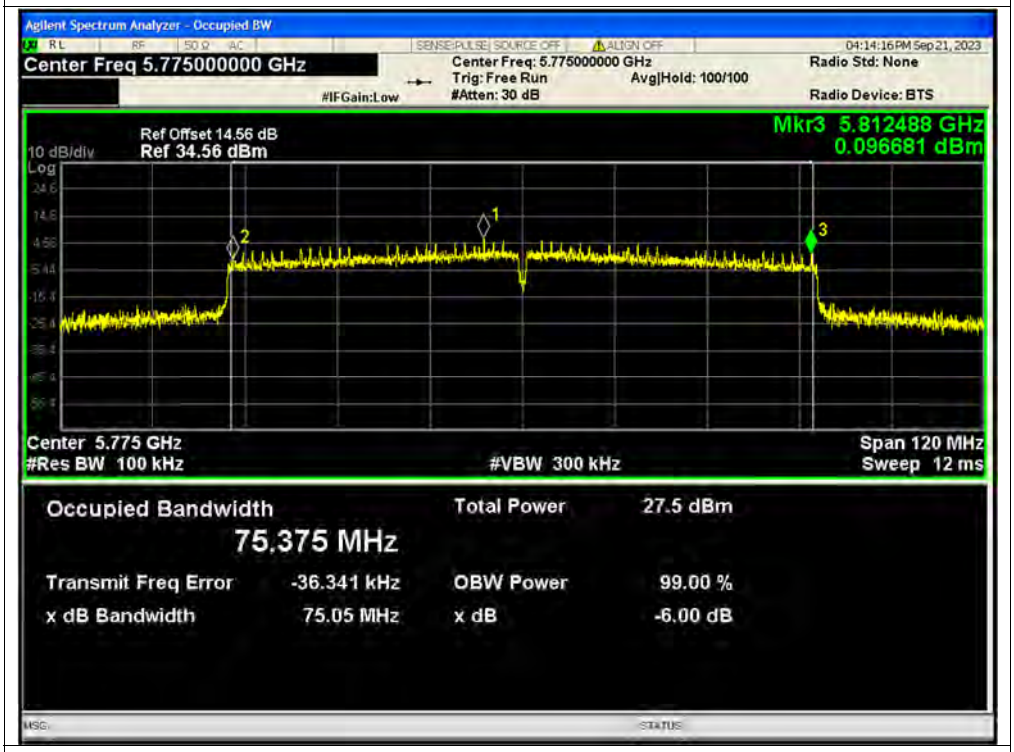
-6dB Bandwidth NVNT ac40 5795MHz Ant2

-6dB Bandwidth NVNT ac80 5775MHz Ant1



-6dB Bandwidth NVNT ac80 5775MHz Ant2

-6dB Bandwidth NVNT ac80 5775MHz Ant1



-6dB Bandwidth NVNT ac80 5775MHz Ant2

-6dB Bandwidth NVNT ax20 5745MHz Ant1

-6dB Bandwidth NVNT ax20 5745MHz Ant2

-6dB Bandwidth NVNT ax20 5745MHz Ant1

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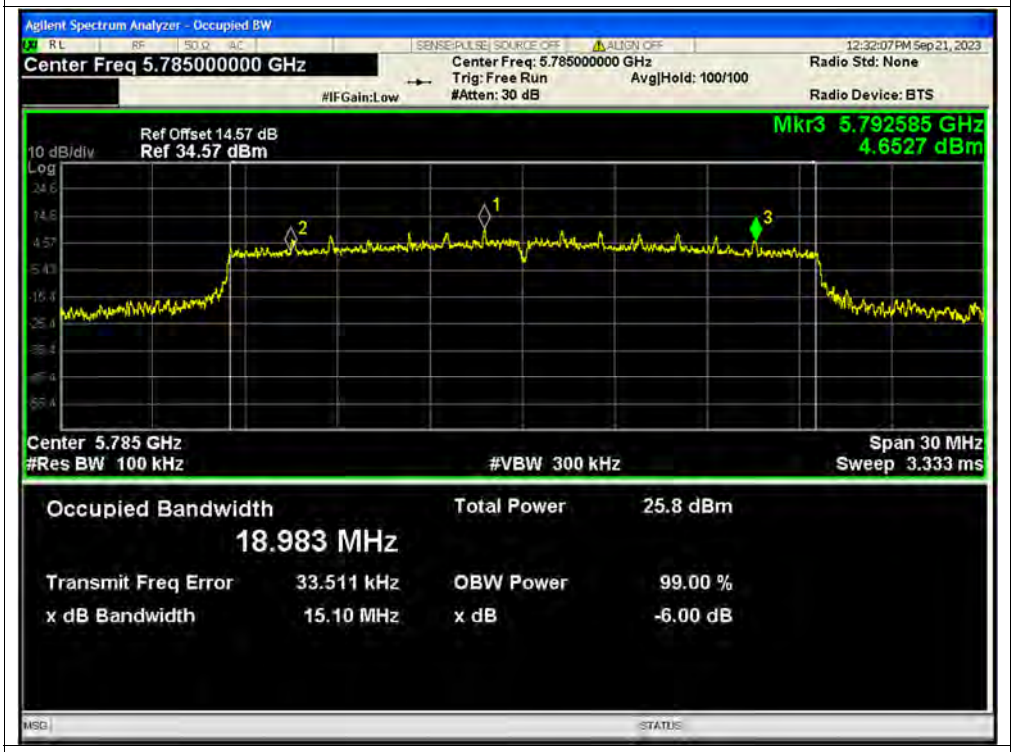
-6dB Bandwidth NVNT ax20 5785MHz Ant1



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-6dB Bandwidth NVNT ax20 5785MHz Ant1

-6dB Bandwidth NVNT ax20 5785MHz Ant2

-6dB Bandwidth NVNT ax20 5825MHz Ant1

-6dB Bandwidth NVNT ax20 5825MHz Ant2

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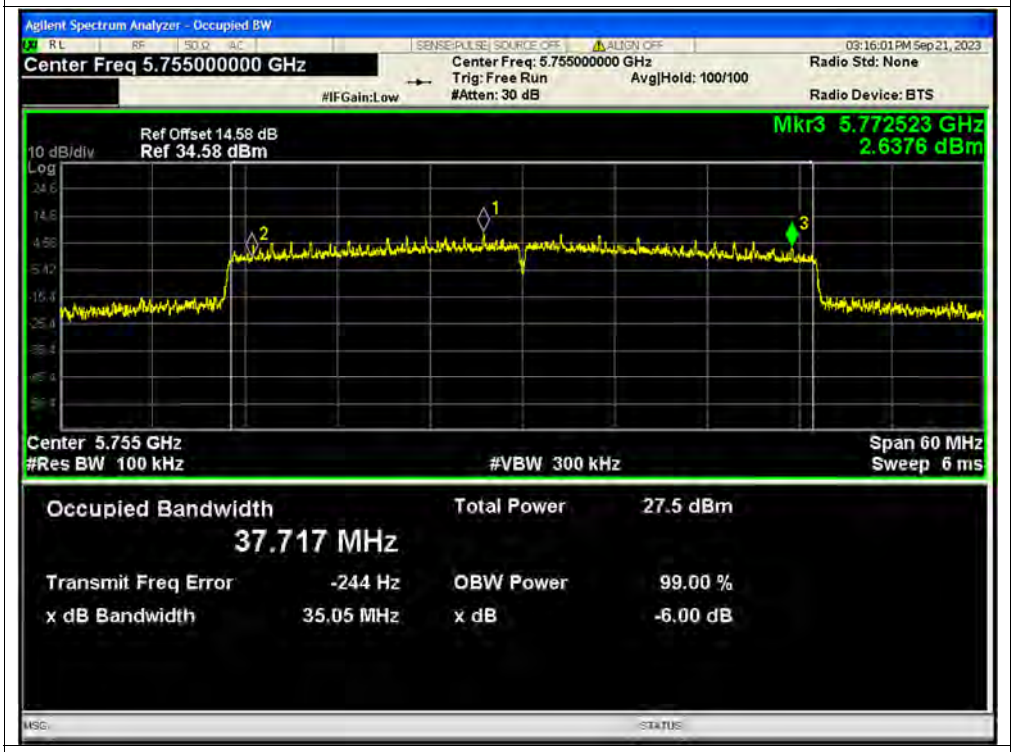
-6dB Bandwidth NVNT ax20 5825MHz Ant2

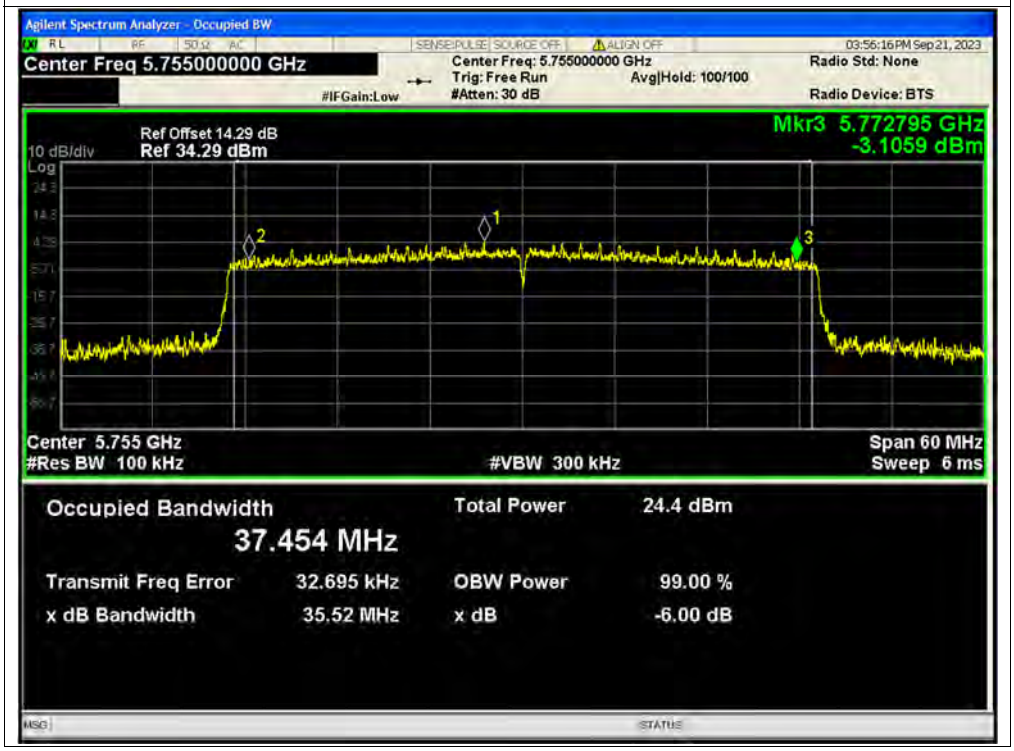
-6dB Bandwidth NVNT ax40 5755MHz Ant1



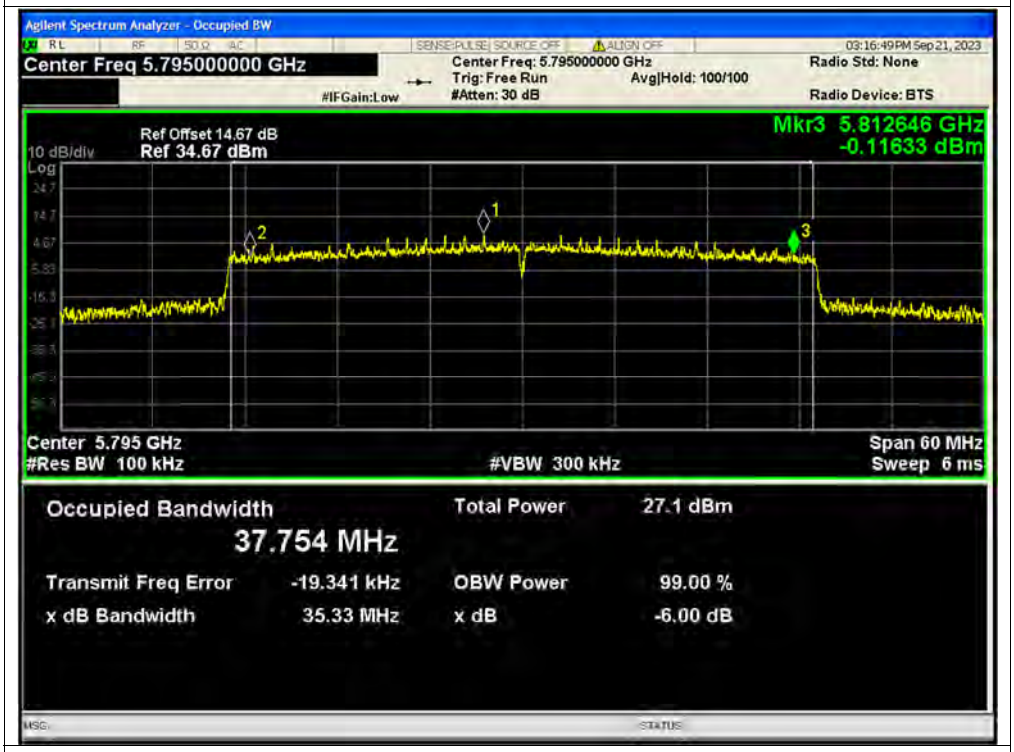
-6dB Bandwidth NVNT ax40 5755MHz Ant2

-6dB Bandwidth NVNT ax40 5755MHz Ant1

-6dB Bandwidth NVNT ax40 5755MHz Ant2



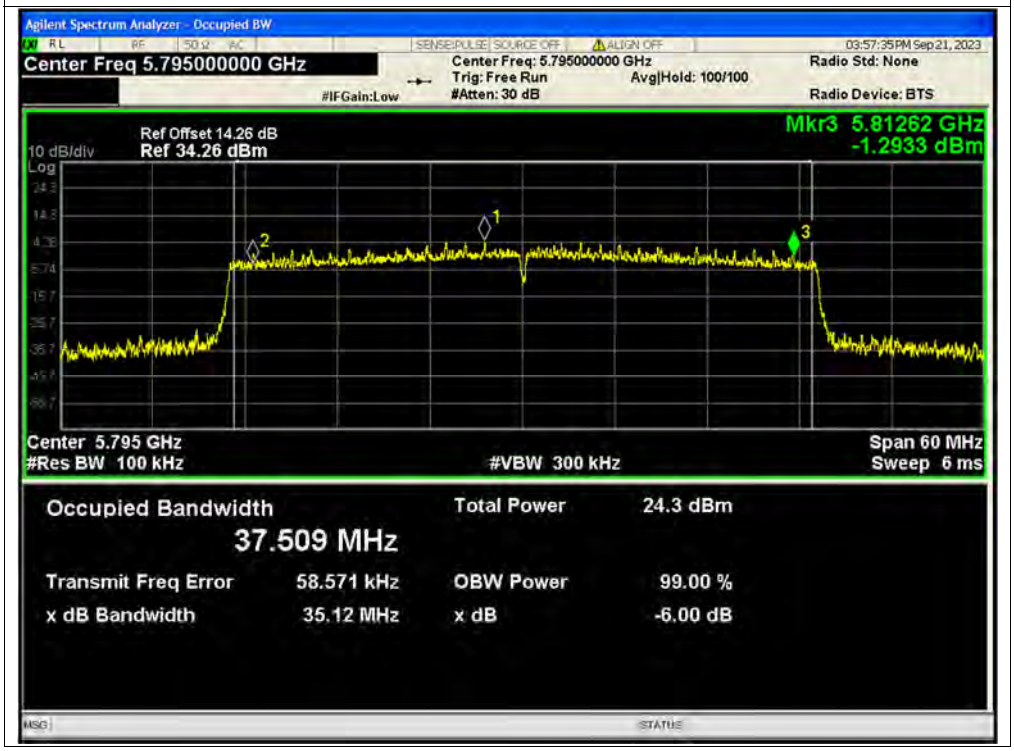
-6dB Bandwidth NVNT ax40 5795MHz Ant1



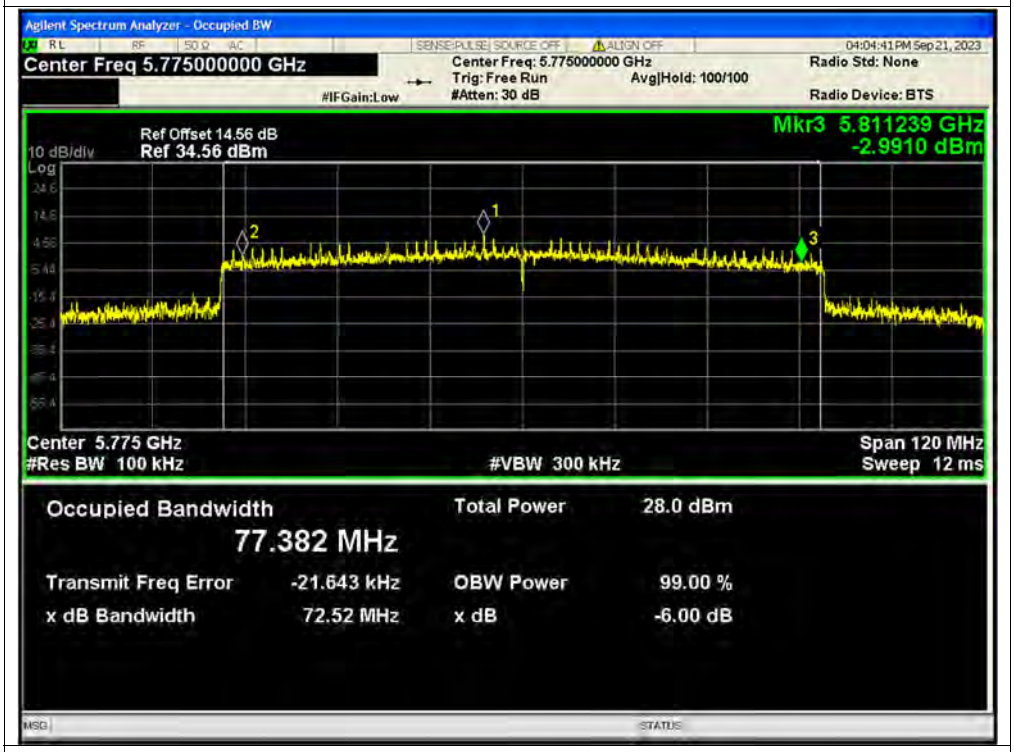
-6dB Bandwidth NVNT ax40 5795MHz Ant2

-6dB Bandwidth NVNT ax40 5795MHz Ant1

-6dB Bandwidth NVNT ax40 5795MHz Ant2



-6dB Bandwidth NVNT ax80 5775MHz Ant1



-6dB Bandwidth NVNT ax80 5775MHz Ant2