TEST REPORT

APPLICANT	:	Soundmax Electronics Limited
PRODUCT NAME	:	MONITOR WITH RECEIVER
MODEL NAME	:	DMX5710S, DMX50S, DMX500S, DMX723WS, DMX80AXS, DMX6523S, KW-M695BW, KW-M690BW
BRAND NAME	:	KENWOOD, JVC
FCC ID	:	2AB7S-YL5077K00
STANDARD(S)	:	47 CFR Part 15 Subpart E
RECEIPT DATE	:	2024-06-07
TEST DATE	:	2024-07-02 to 2024-08-05
ISSUE DATE	:	2024-09-10

Edited by: Peng Mi (Rapporteur)

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DIRECTORY

Change History		
Version	**Date**	**Reason for change**
1.0	2024-09-10	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	Jul. 06, 2024	Li Zikai	PASS	No deviation
3	15.407(a)	Maximum Conducted Output Power	Jul. 06, 2024	Li Zikai	PASS	No deviation
4	15.407(a) (e)	Emission Bandwidth	Jul. 06, 2024	Li Zikai	PASS	No deviation
5	15.407(a)	Peak Power Spectral Density	Jul. 06, 2024	Li Zikai	PASS	No deviation
6	15.407(g)	Frequency Stability	Jul. 06, 2024	Li Zikai	PASS	No deviation
7	15.207	Conducted Emission	N/A	N/A	N/A$_{Note1}$	N/A
8	15.407(b)	Restricted Frequency Bands	Aug. 05, 2024	Yang Lian	PASS	No deviation
9	15.407(b)	Radiated Emission	Aug. 05, 2024	Yang Lian	PASS	No deviation

Note 1: Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

Note 2: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.102013.

Note 3: These RF tests were performed according to the method of measurements prescribed in KDB789033 D02 v02r01.

Note 4: These RF tests were performed according to the method of measurements prescribed in KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02.

Note 5: 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 6: 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 Equipment

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2024.02.19	2025.02.18
USB Wideband Power Sensor	MY541800008	U2021XA	Agilent	2023.10.17	2024.10.16
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 Equipment

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY564000093	N9038A	KEYSIGHT	2024.01.25	2025.01.24
LISN	8127449	NSLK 8127	Schwarzbeck	2024.02.02	2025.02.01
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2024.05.30	2025.05.29
RF Coaxial Cable (DC-100MHz)	BNC	MRE04	Qualwave	2024.07.02	2025.07.01

1.2.3 List of Software Used

Description	Manufacturer	Software Version
Test System	MaiWei	2.0.0.0
TS+ -[JS36-RSE]	Tonscend	V3.0.0.0
TS+ -[JS32-CE]	Tonscend	V2.5.0.0

1.2.4 Radiated Test Equipment

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Signal Analyzer	MY56060145	N9020A	Agilent	2024.05.30	2025.05.29
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2024.06.22	2025.06.21
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2024.06.03	2025.06.02
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2024.06.22	2025.06.21
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2024.06.22	2025.06.21
Preamplifier (10MHz-6GHz)	46732	S10M100L3802	LUCIX CORP.	2024.05.30	2025.05.29
Preamplifier (2GHz-18GHz)	61171/61172	S020180L3203	LUCIX CORP.	2024.05.30	2025.05.29
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2024.05.30	2025.05.29
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2024.05.30	2025.05.29
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	N/A	N/A
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	N/A	N/A
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	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
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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	Soundmax Electronics Limited
Applicant Address	17/F EU YANG SANG TOWER, 11-15 CHATHAM ROAD,T.S.T, KOWLOON, Hong Kong, China
Manufacturer	Soundmax Electronics Limited
Manufacturer Address	17/F EU YANG SANG TOWER, 11-15 CHATHAM ROAD,T.S.T, KOWLOON, Hong Kong, China

2.2. Information of EUT

Product Name:	MONITOR WITH RECEIVER
Sample No.:	1#
Hardware Version:	V1.0
Software Version:	V1.0
Modulation Technology:	OFDM
Modulation Mode:	802.11a, 802.11n (HT20), 802.11n (HT40) 802.11ac (VHT20), 802.11ac (VHT40), 802.11ac (VHT80)
Operating Frequency Range:	5745MHz-5825MHz
Antenna Type:	PCB Antenna
Antenna Gain:	-6.79dBi

Note 1: According to the certificate holder, they declared that the models DMX5710S, DMX50S, DMX500S, DMX723WS, DMX80AXS, DMX6523S, KW-M695BW and KW-M690BW o have the same hardware and software, the differences are as bellowing, all RF parameters remain the same.

Model	Brand	Display Size	Description
KW-M695BW	JVC	6.8″	- Base Model
KW-M690BW	JVC	6.8″	Compared with base model: - No SiriusXM
DMX5710S	KENWOOD	6.8″	Compared with base model: - Different Brand
DMX50S	KENWOOD	6.8″	Compared with base model: - Different Brand

DMX500S	KENWOOD	6.8″	Compared with base model: - Different Brand - No SiriusXM
DMX6523S	KENWOOD	6.8″	Compared with base model: - No SiriusXM
DMX723WS	KENWOOD	6.8″	Compared with base model: - Different Brand - Different size of front panel - Touch keys on two sides (left & right) - No SiriusXM
DMX80AXS	KENWOOD	9″	Compared with base model: - Different Brand - Different display size and panel size - Touch keys on two sides (left & right) - No SiriusXM

The main measuring model is DMX5710S, only the results for DMX5710S were recorded in this report.

Note 2: We use the dedicated software to control the EUT continuous transmission.

Note 3: 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-3) 5745MHz-5825MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	**149**	**5745**	153	5765
	157	**5785**	161	5805
	165	**5825**		
40MHz	**151**	**5755**	**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	**BPSK**	**6**/9/12/18/24/36/48/54Mbps	N/A
			QPSK		
			16QAM		
			64QAM		
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		

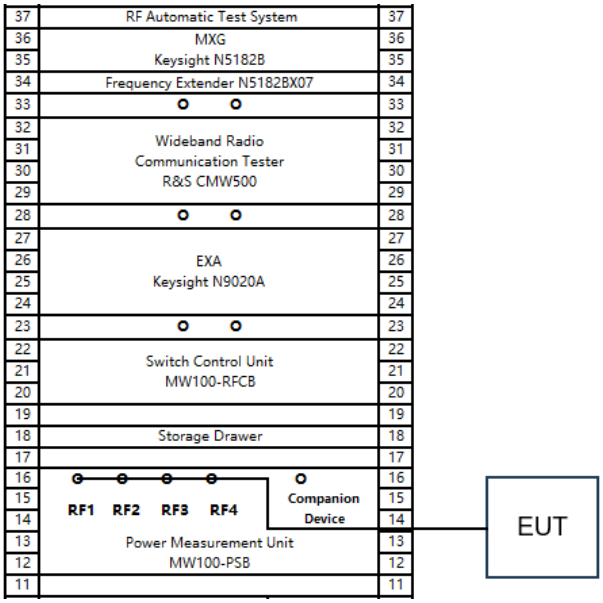
Note1: The worst-case mode (bold face) in all data rates has been determined during the pre-scan, only the test data of the worst-case were recorded in this report.

2.5. Test Conditions

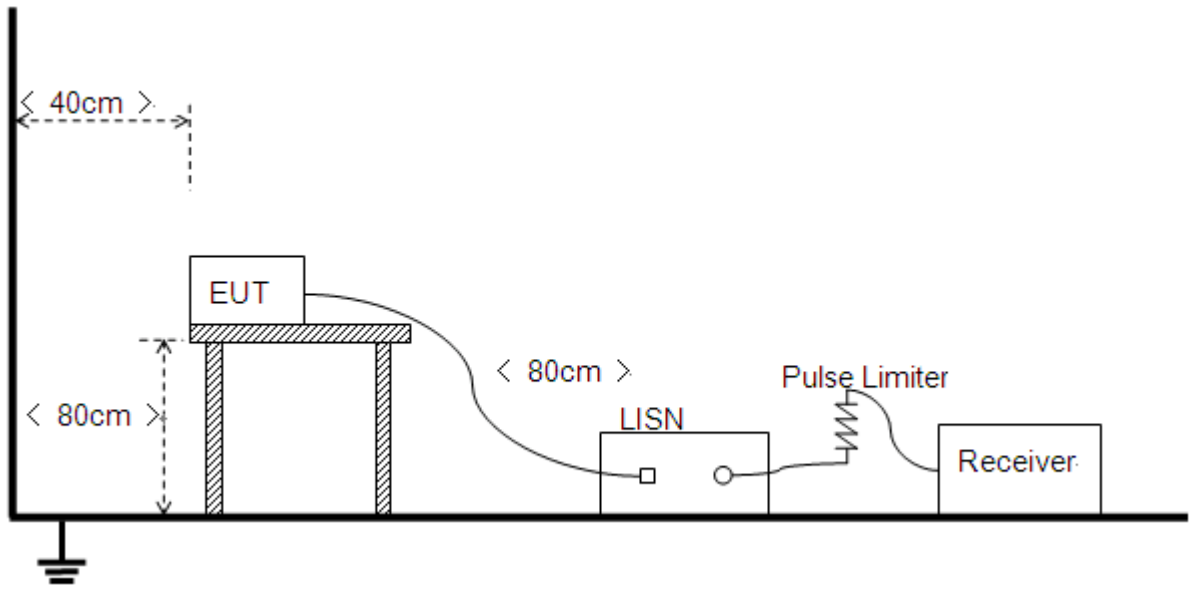
Temperature (°C)	15-35
Relative Humidity (%)	30-60
Atmospheric Pressure (kPa)	86-106

2.6. Test Setup Layout Diagram

2.6.1.Conducted Measurement

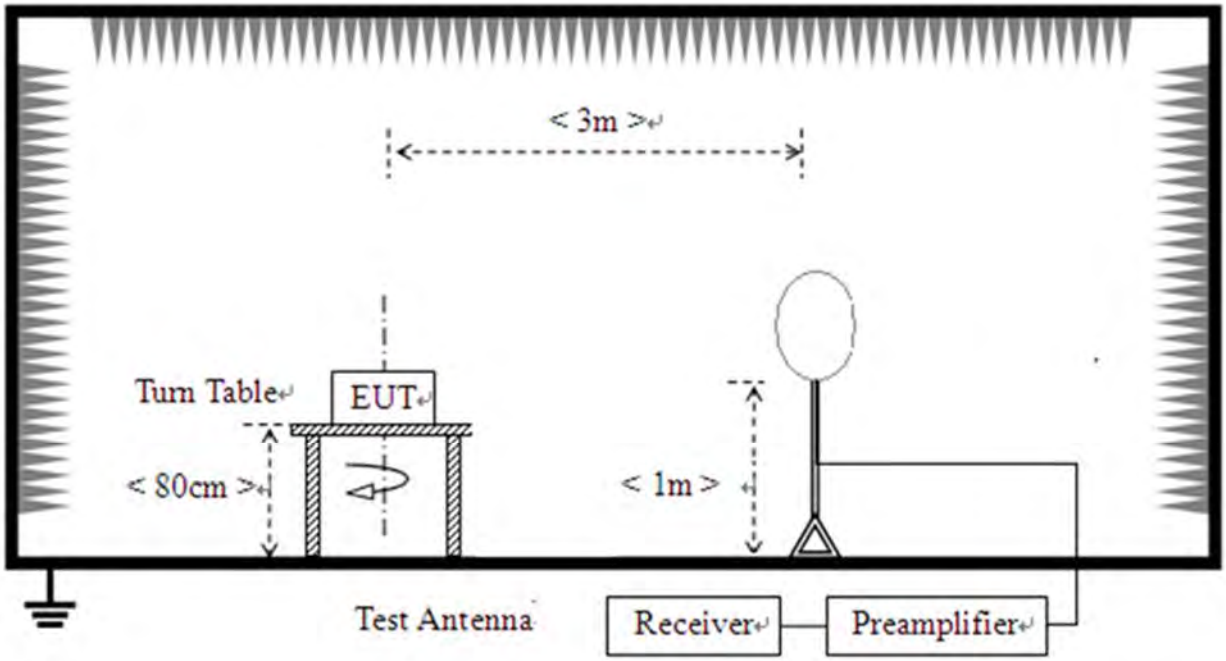


2.6.2.Conducted Emission Measurement

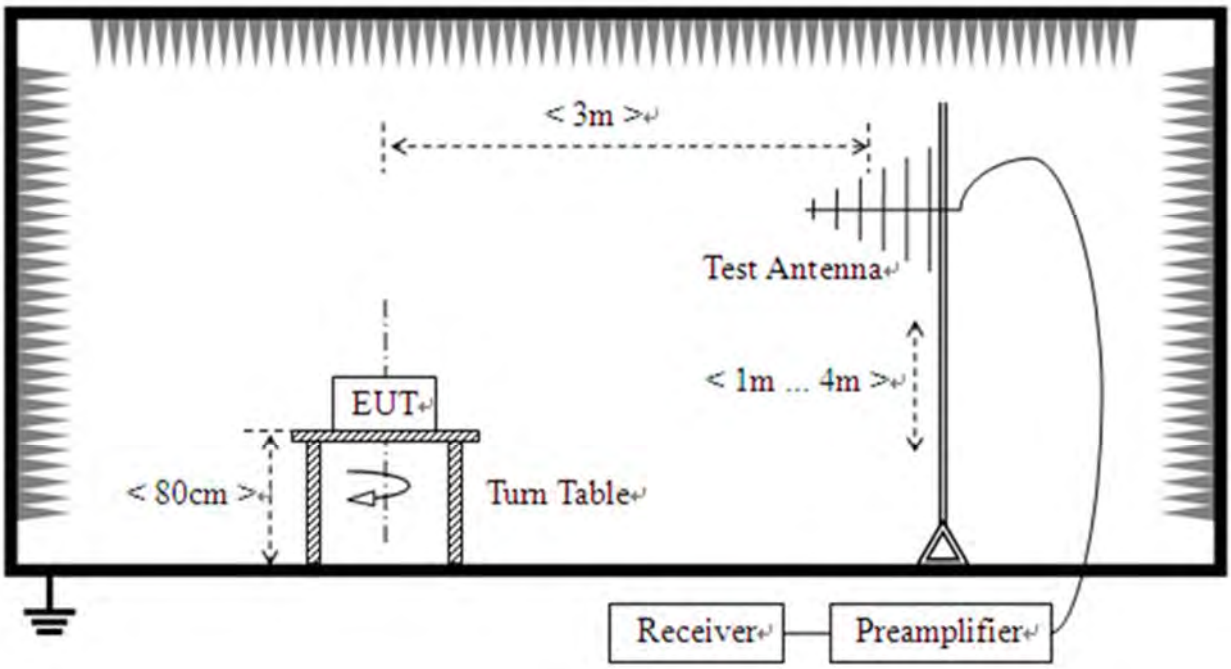


2.6.3.Radiation Measurement

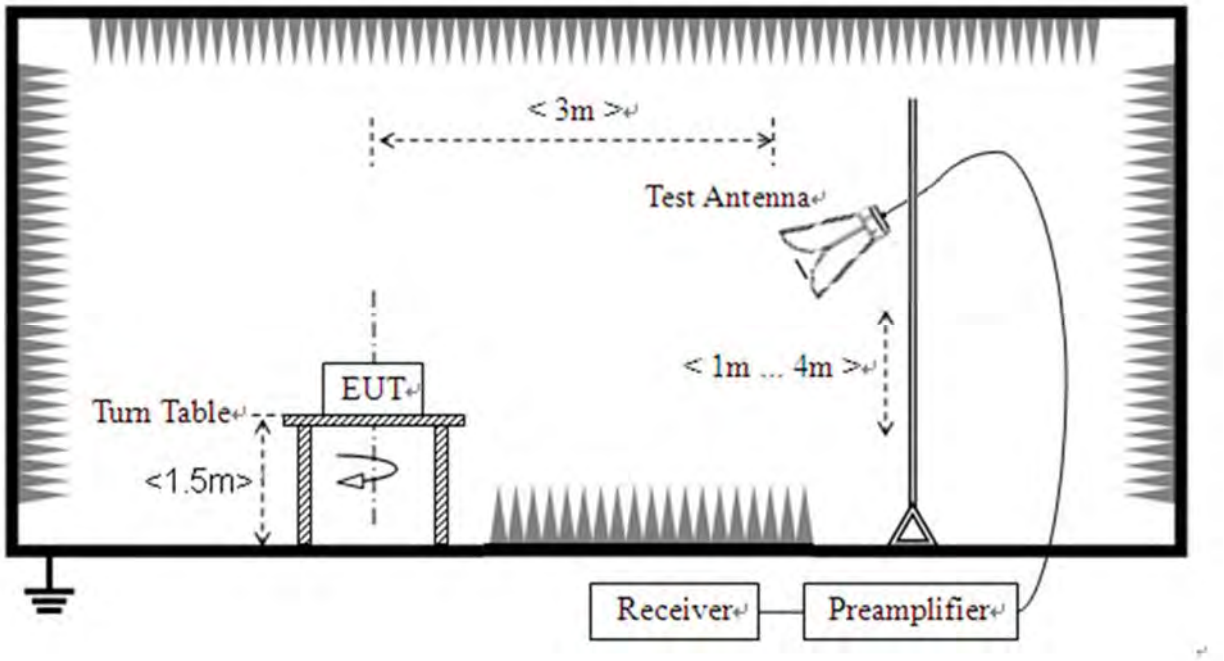
1) For radiated emissions from 9kHz to 30MHz



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

Antenna location	Antenna Type	Coupling Method
☒Internal ☐External	☐FPC Antenna ☐Spring Antenna ☐Ceramic Antenna ☐Integrated Antenna ☐Dipole Antenna ☒PCB Antenna ☐PIFA Antenna	☐I-PEX Connector ☐SMA Connector ☐RP-SMA Connector ☐Metal Shrapnel ☒Layout

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

Based on method PM-G in Section Ⅱ.E.3.b) of KDB 789033 D02.

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.

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

This test case does not apply this kind of EUT.

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.6 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

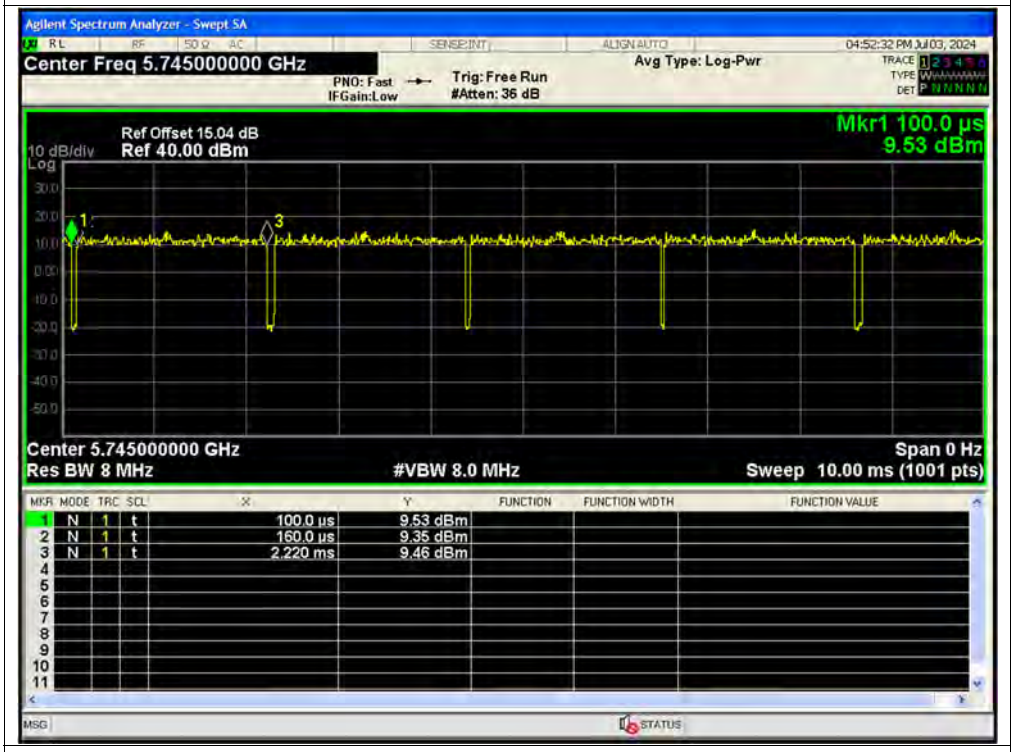
Refer to Annex A.7 in this report.

Annex A Test Data and Result

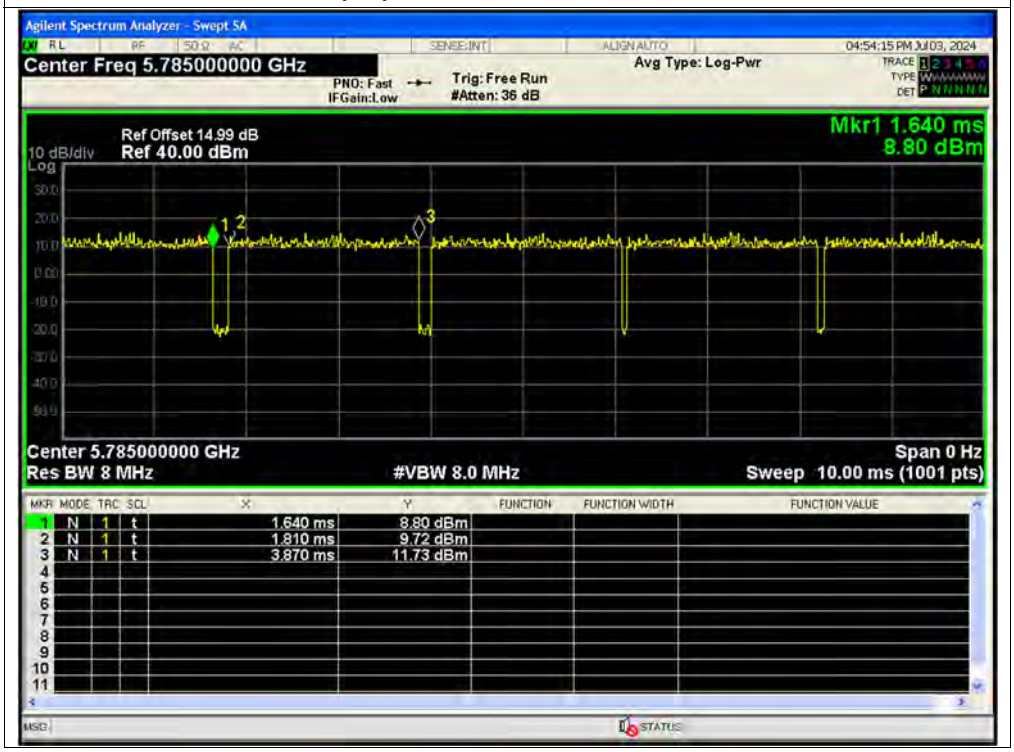
A.1. Duty Cycle of Test Signal

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	Ant1	97.17	0.12	0.49
NVNT	a	5785	Ant1	92.38	0.34	0.49
NVNT	a	5825	Ant1	92.41	0.34	0.48
NVNT	n20	5745	Ant1	96	0.18	0.52
NVNT	n20	5785	Ant1	91.43	0.39	0.52
NVNT	n20	5825	Ant1	92.31	0.35	0.52
NVNT	n40	5755	Ant1	93.14	0.31	1.05
NVNT	n40	5795	Ant1	88.79	0.52	1.05
NVNT	ac20	5745	Ant1	95.07	0.22	0.52
NVNT	ac20	5785	Ant1	91.9	0.37	0.52
NVNT	ac20	5825	Ant1	94.15	0.26	0.52
NVNT	ac40	5755	Ant1	86.36	0.64	1.05
NVNT	ac40	5795	Ant1	90.57	0.43	1.04
NVNT	ac80	5775	Ant1	86.79	0.62	2.17

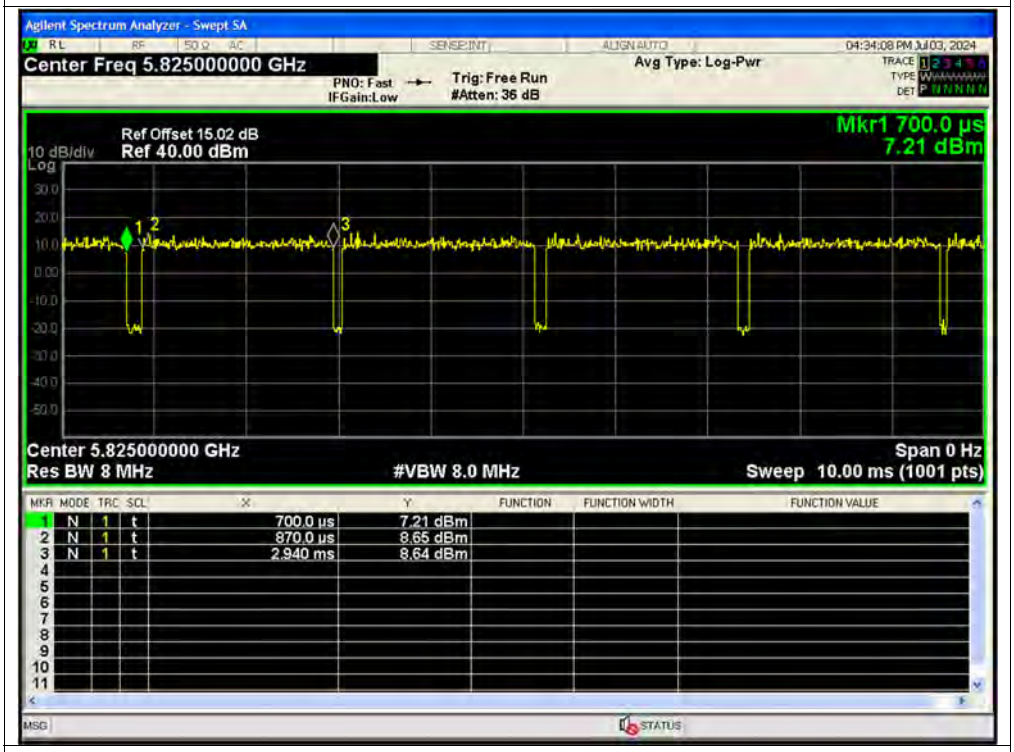
Test Graphs
Duty Cycle NVNT a 5745MHz Ant1



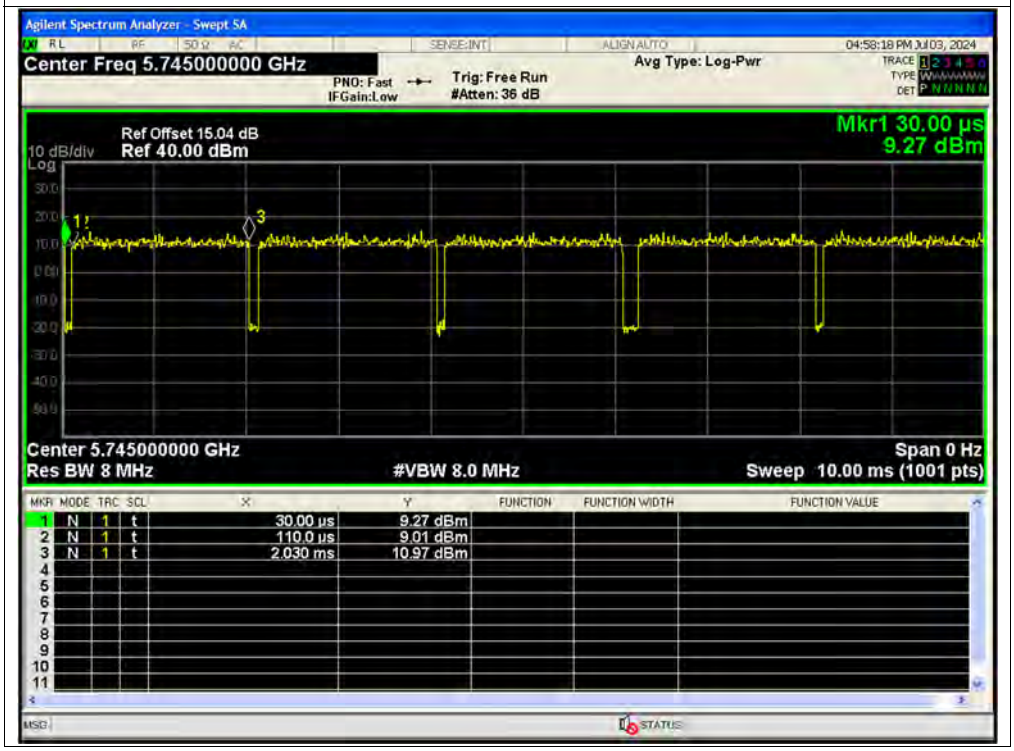
Duty Cycle NVNT a 5785MHz Ant1



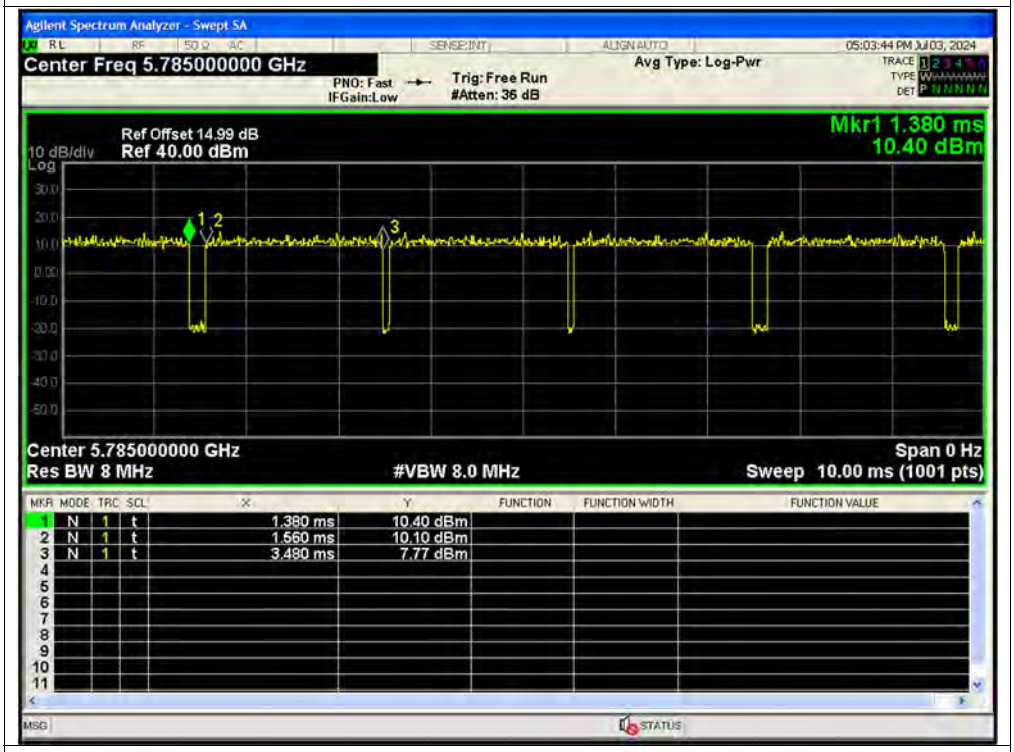
Duty Cycle NVNT a 5825MHz Ant1



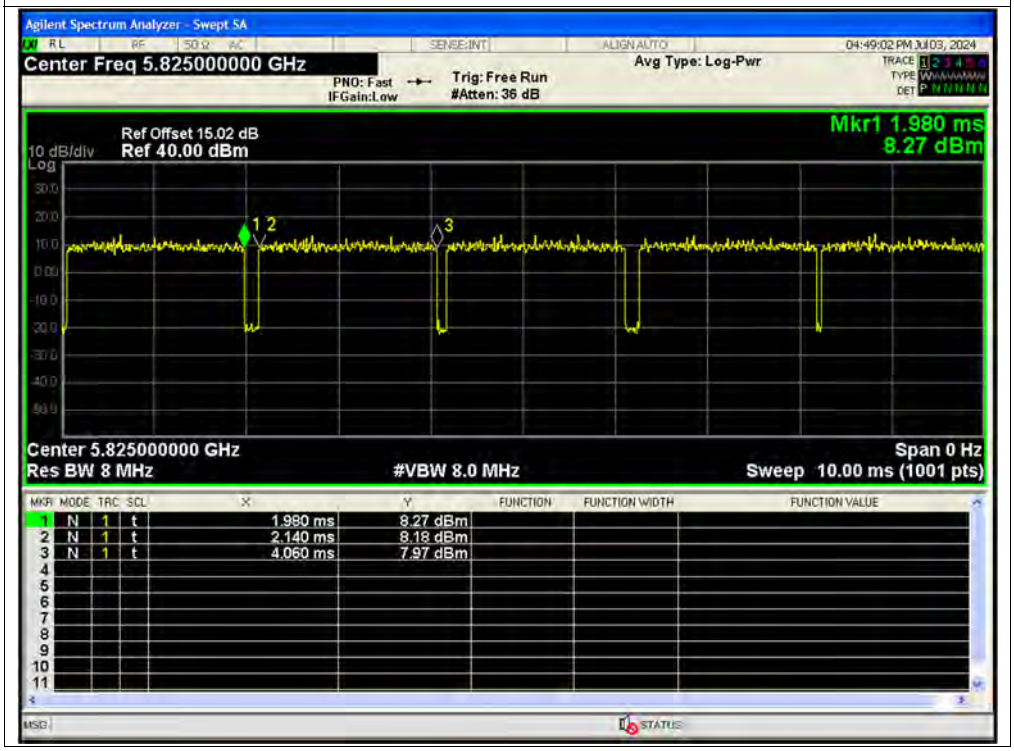
Duty Cycle NVNT n20 5745MHz Ant1



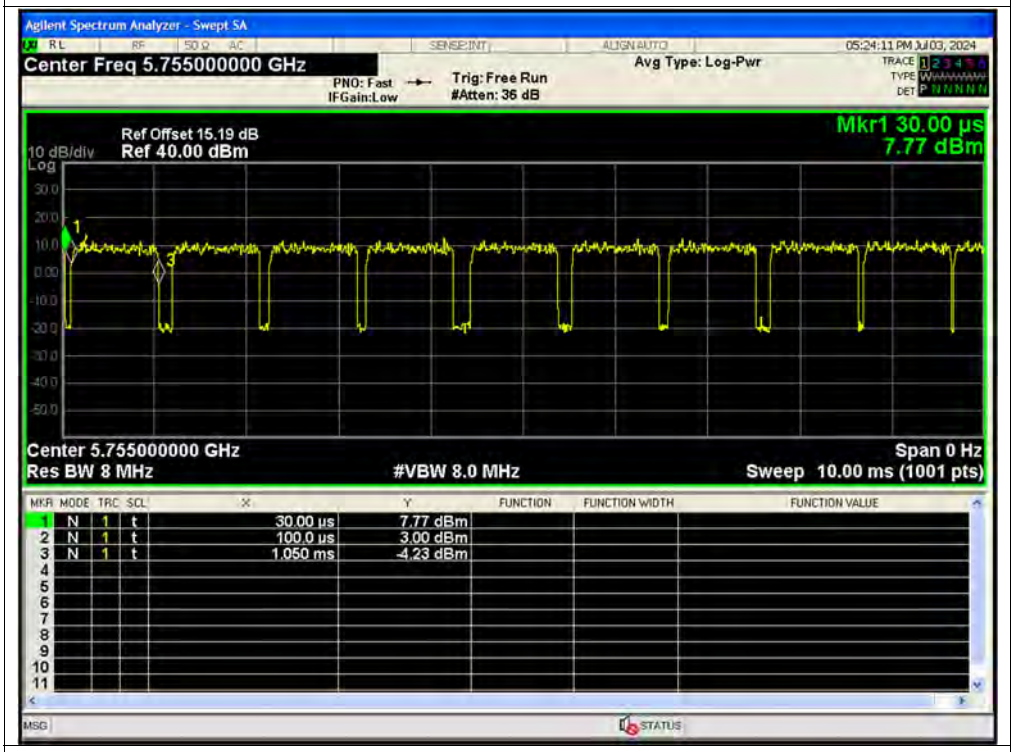
Duty Cycle NVNT n20 5785MHz Ant1



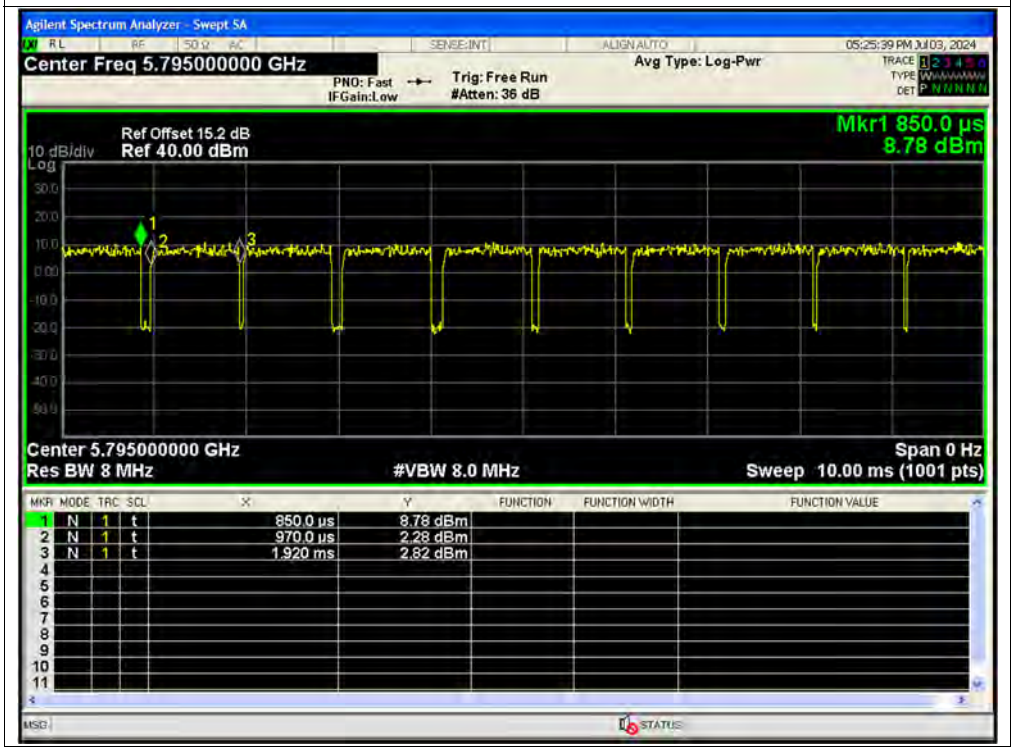
Duty Cycle NVNT n20 5825MHz Ant1



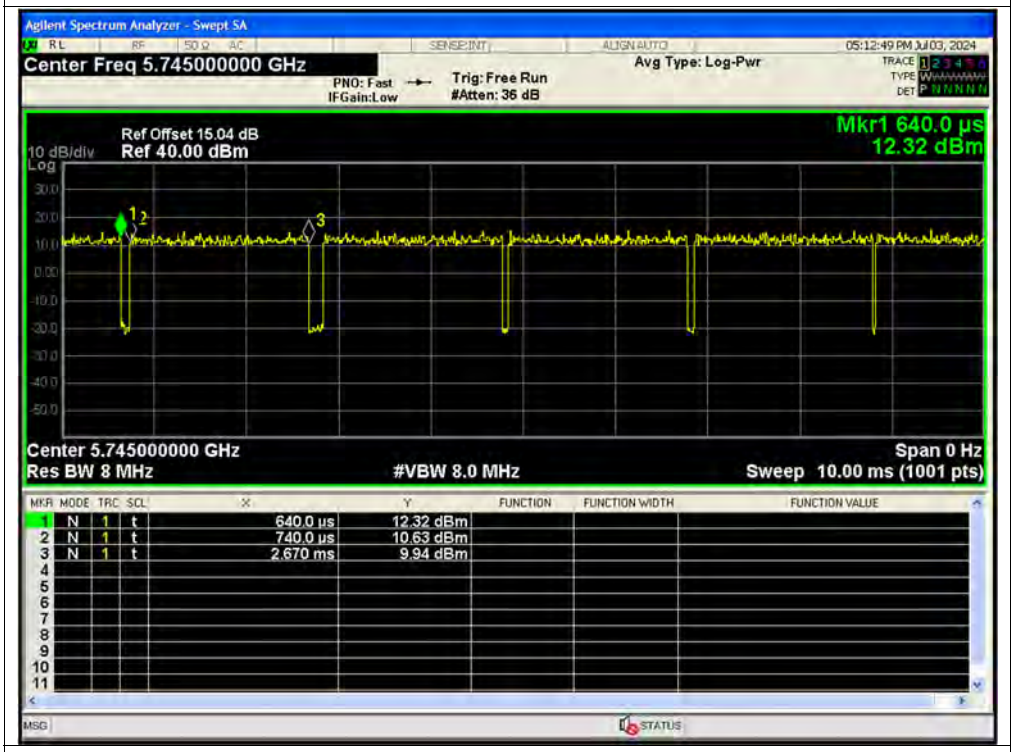
Duty Cycle NVNT n40 5755MHz Ant1



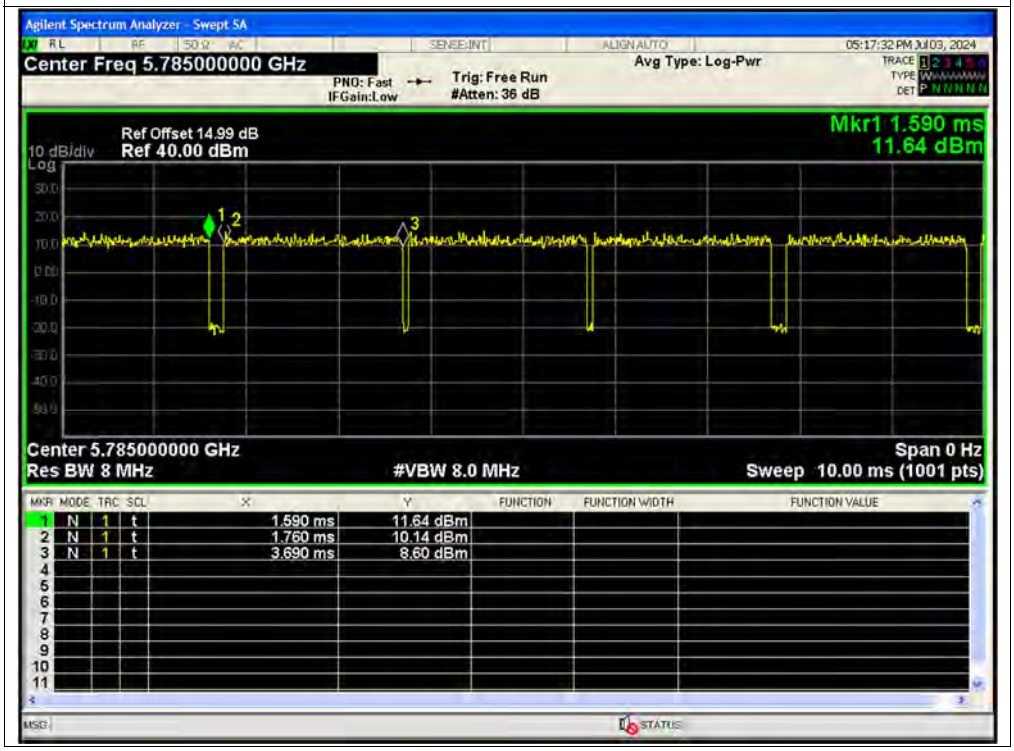
Duty Cycle NVNT n40 5795MHz Ant1



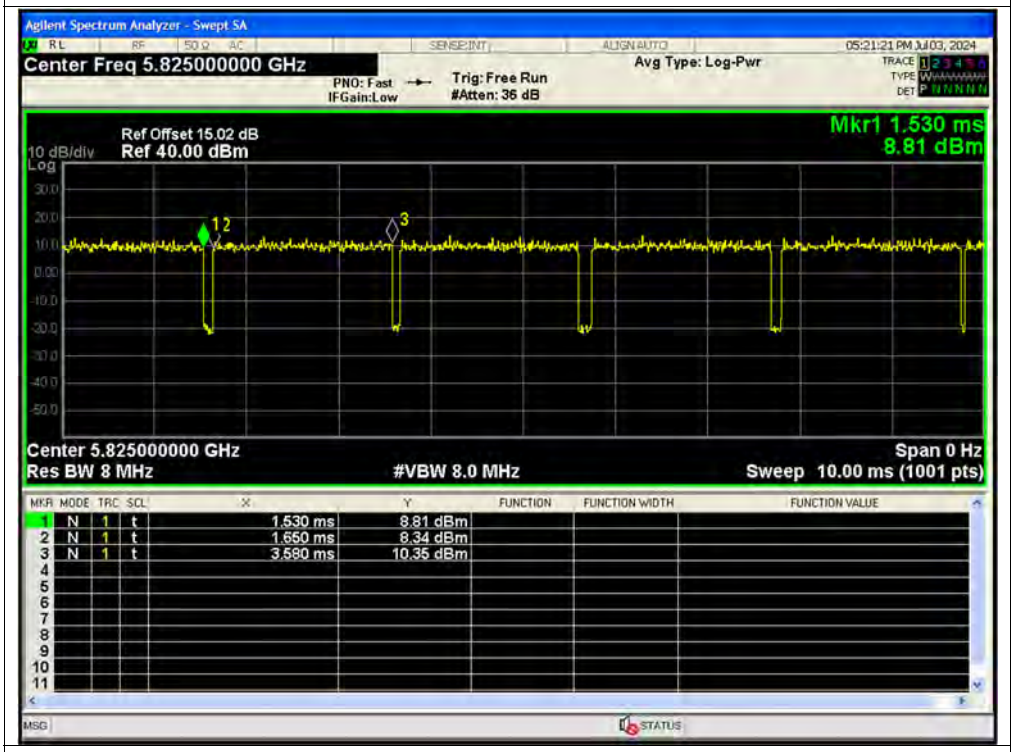
Duty Cycle NVNT ac20 5745MHz Ant1



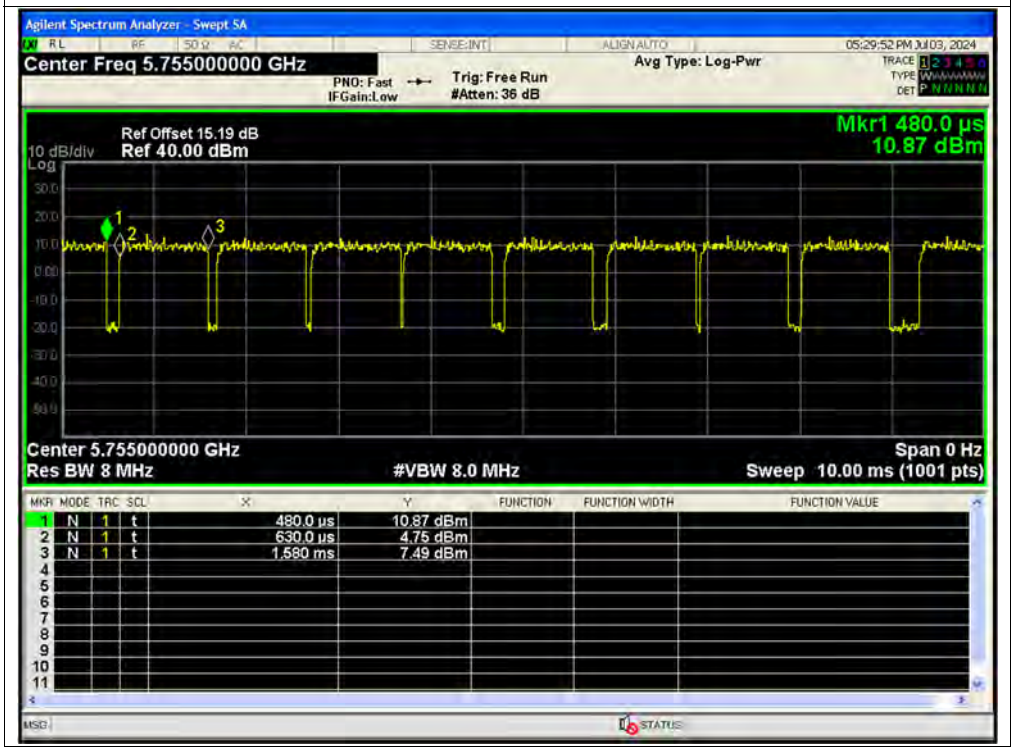
Duty Cycle NVNT ac20 5785MHz Ant1



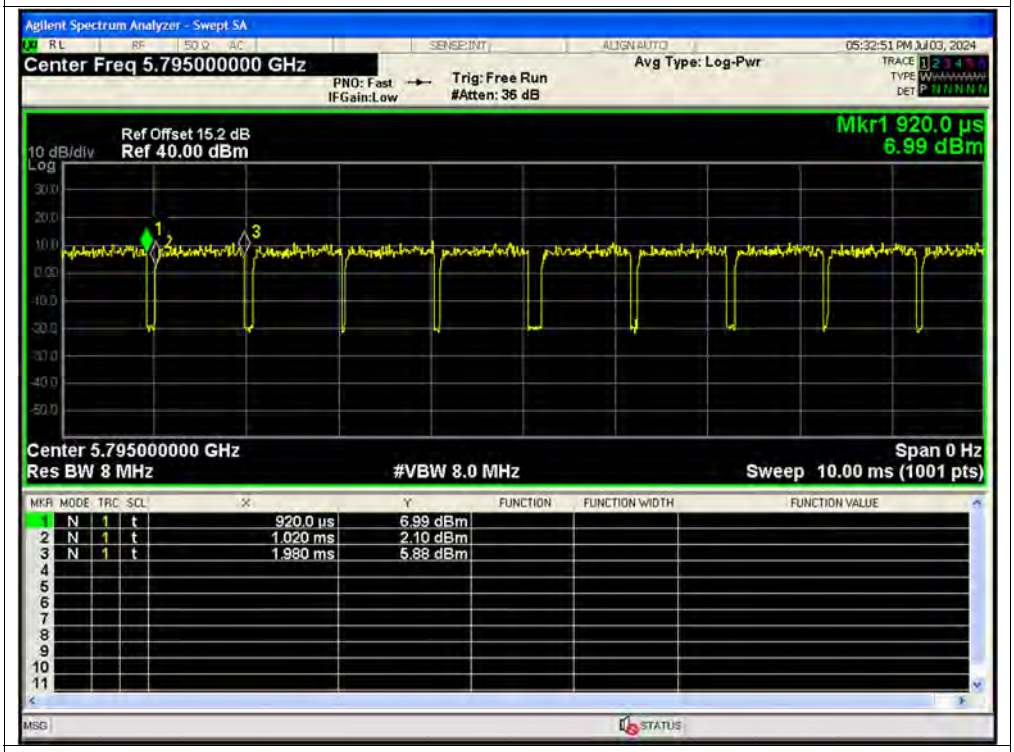
Duty Cycle NVNT ac20 5825MHz Ant1



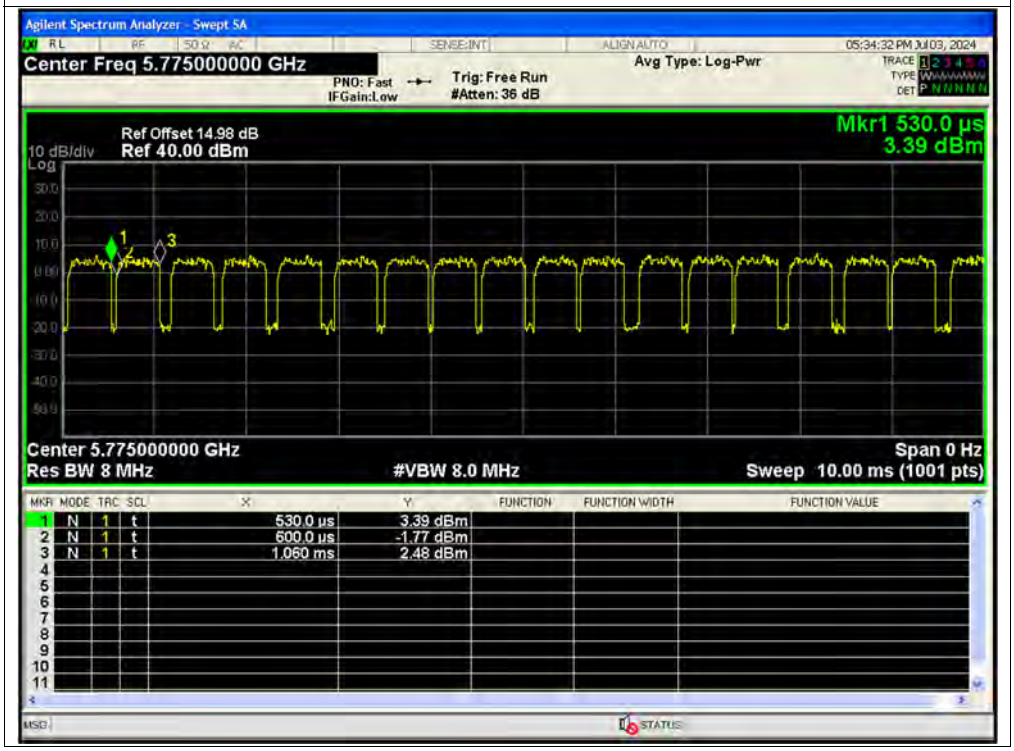
Duty Cycle NVNT ac40 5755MHz Ant1



Duty Cycle NVNT ac40 5795MHz Ant1



Duty Cycle NVNT ac80 5775MHz Ant1



A.2. Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	13.59	0.02286	30	Pass
NVNT	a	5785	Ant1	12.94	0.01968	30	Pass
NVNT	a	5825	Ant1	12.24	0.01675	30	Pass
NVNT	n20	5745	Ant1	13.56	0.0227	30	Pass
NVNT	n20	5785	Ant1	12.38	0.0173	30	Pass
NVNT	n20	5825	Ant1	11.38	0.01374	30	Pass
NVNT	n40	5755	Ant1	13.78	0.02388	30	Pass
NVNT	n40	5795	Ant1	12.23	0.01671	30	Pass
NVNT	ac20	5745	Ant1	13.22	0.02099	30	Pass
NVNT	ac20	5785	Ant1	13.18	0.0208	30	Pass
NVNT	ac20	5825	Ant1	11.66	0.01466	30	Pass
NVNT	ac40	5755	Ant1	11.6	0.01445	30	Pass
NVNT	ac40	5795	Ant1	12.44	0.01754	30	Pass
NVNT	ac80	5775	Ant1	13.21	0.02094	30	Pass

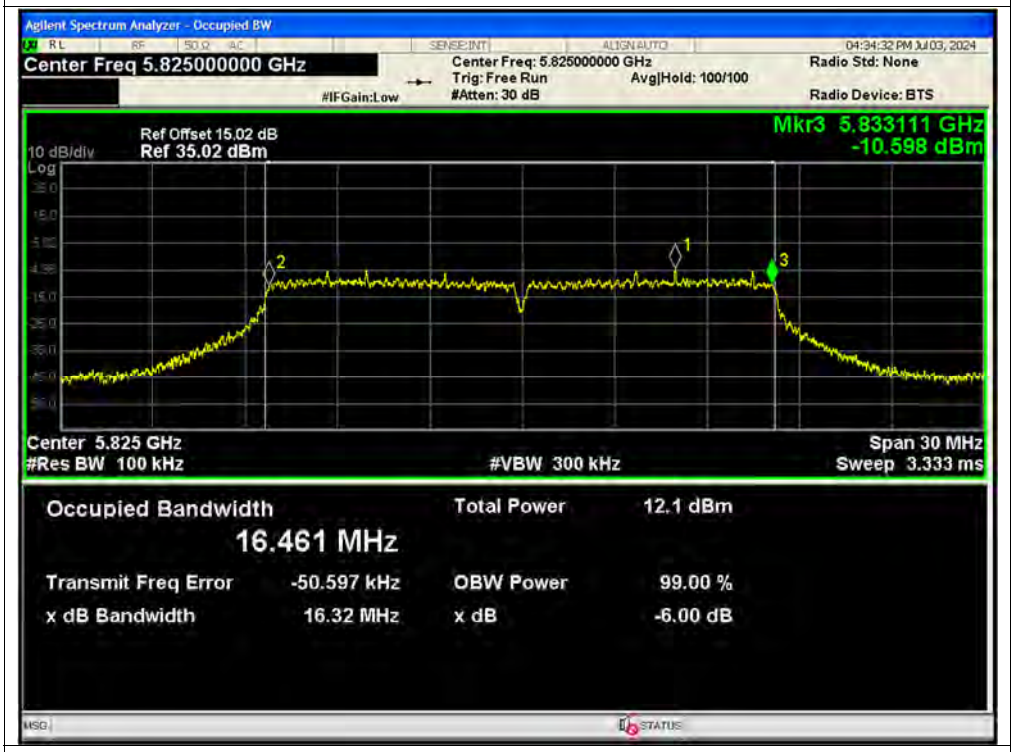
A.3. Emission Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	16.327	0.5	Pass
NVNT	a	5785	Ant1	16.357	0.5	Pass
NVNT	a	5825	Ant1	16.323	0.5	Pass
NVNT	n20	5745	Ant1	17.526	0.5	Pass
NVNT	n20	5785	Ant1	17.271	0.5	Pass
NVNT	n20	5825	Ant1	17.308	0.5	Pass
NVNT	n40	5755	Ant1	35.799	0.5	Pass
NVNT	n40	5795	Ant1	35.808	0.5	Pass
NVNT	ac20	5745	Ant1	17.254	0.5	Pass
NVNT	ac20	5785	Ant1	17.103	0.5	Pass
NVNT	ac20	5825	Ant1	17.358	0.5	Pass
NVNT	ac40	5755	Ant1	35.882	0.5	Pass
NVNT	ac40	5795	Ant1	35.312	0.5	Pass
NVNT	ac80	5775	Ant1	73.908	0.5	Pass

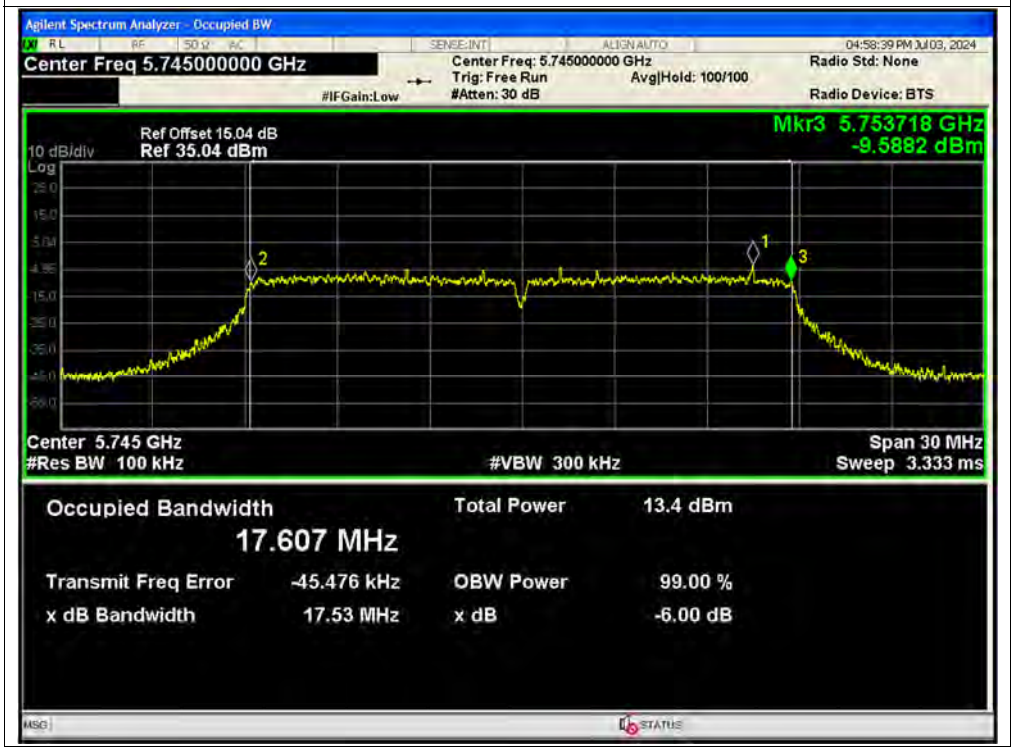
Test Graphs
-6dB Bandwidth NVNT a 5745MHz Ant1

-6dB Bandwidth NVNT a 5785MHz Ant1

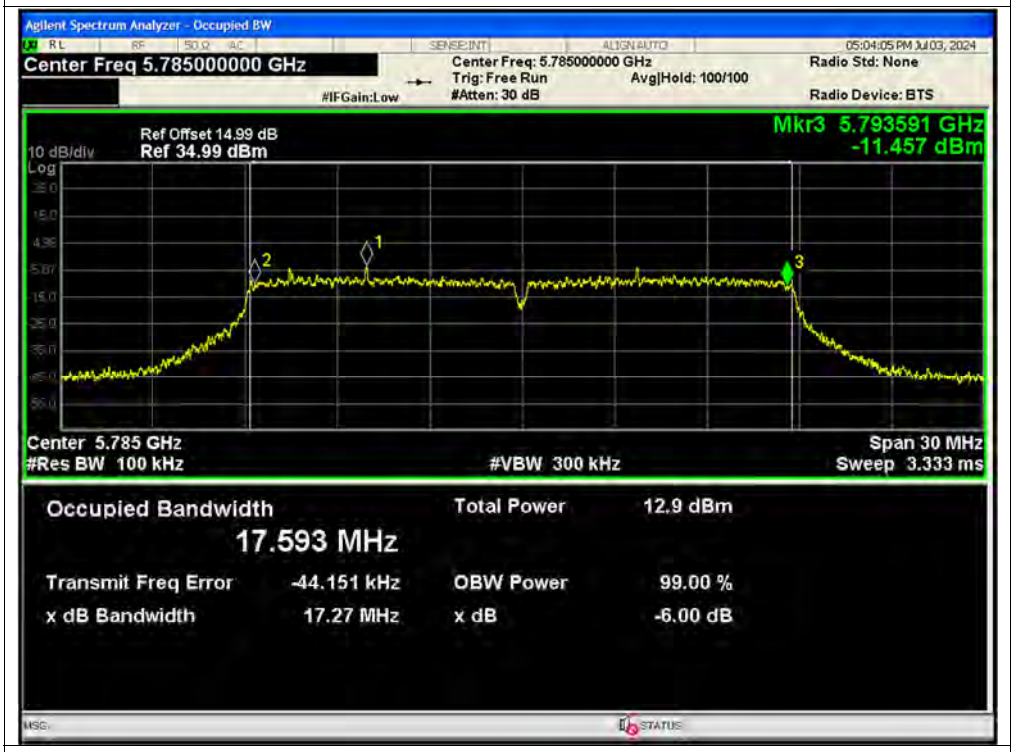
-6dB Bandwidth NVNT a 5825MHz Ant1



-6dB Bandwidth NVNT n20 5745MHz Ant1

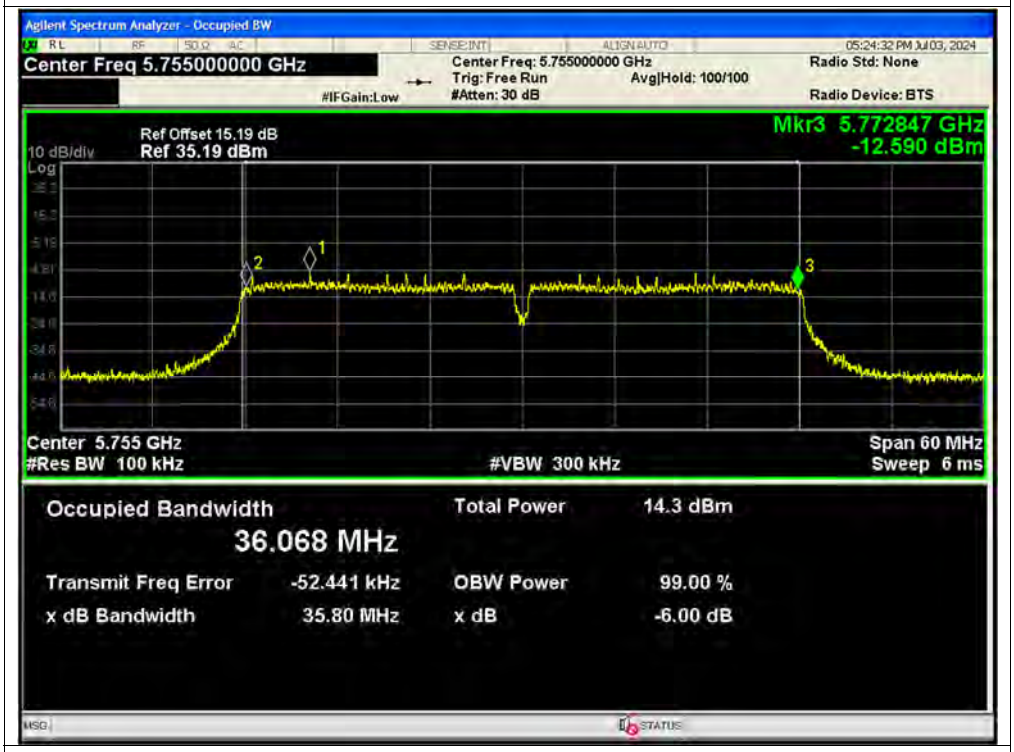


-6dB Bandwidth NVNT n20 5785MHz Ant1



-6dB Bandwidth NVNT n20 5825MHz Ant1

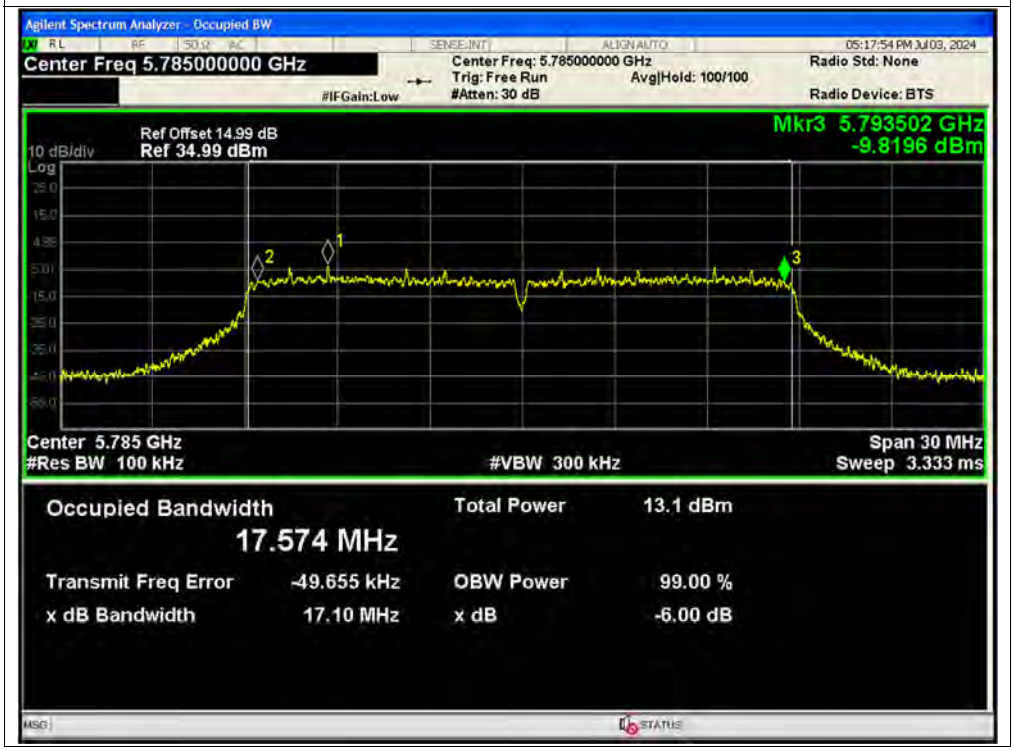
-6dB Bandwidth NVNT n40 5755MHz Ant1



-6dB Bandwidth NVNT n40 5795MHz Ant1

-6dB Bandwidth NVNT ac20 5745MHz Ant1

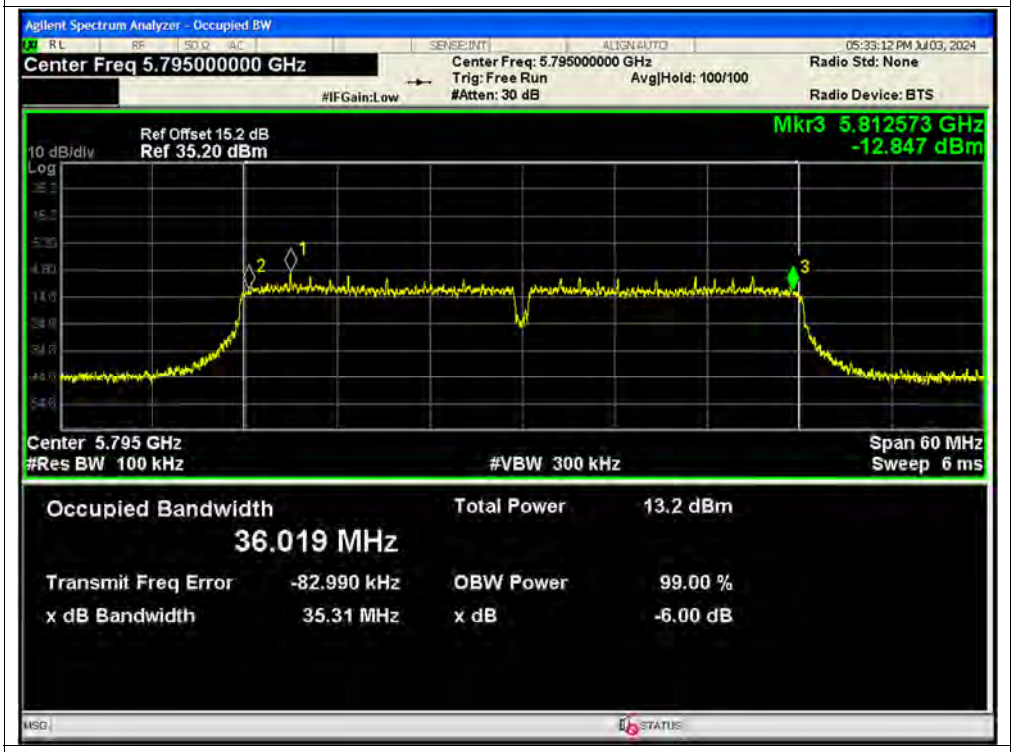
-6dB Bandwidth NVNT ac20 5785MHz Ant1



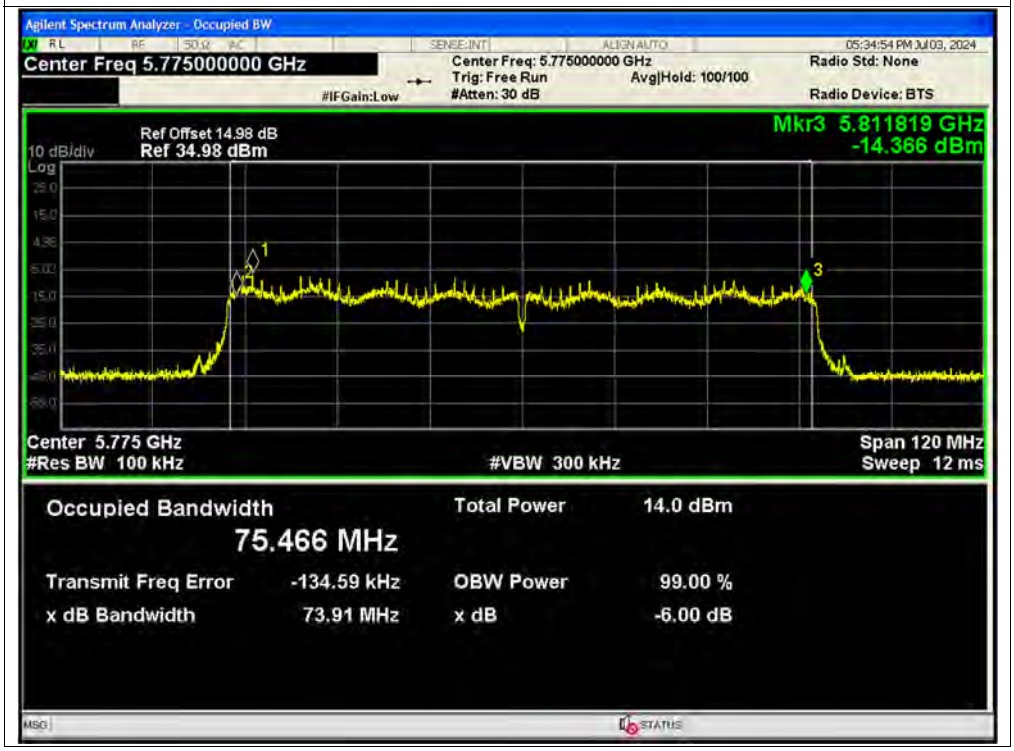
-6dB Bandwidth NVNT ac20 5825MHz Ant1

-6dB Bandwidth NVNT ac40 5755MHz Ant1

-6dB Bandwidth NVNT ac40 5795MHz Ant1



-6dB Bandwidth NVNT ac80 5775MHz Ant1



A.4. Peak Power Spectral Density

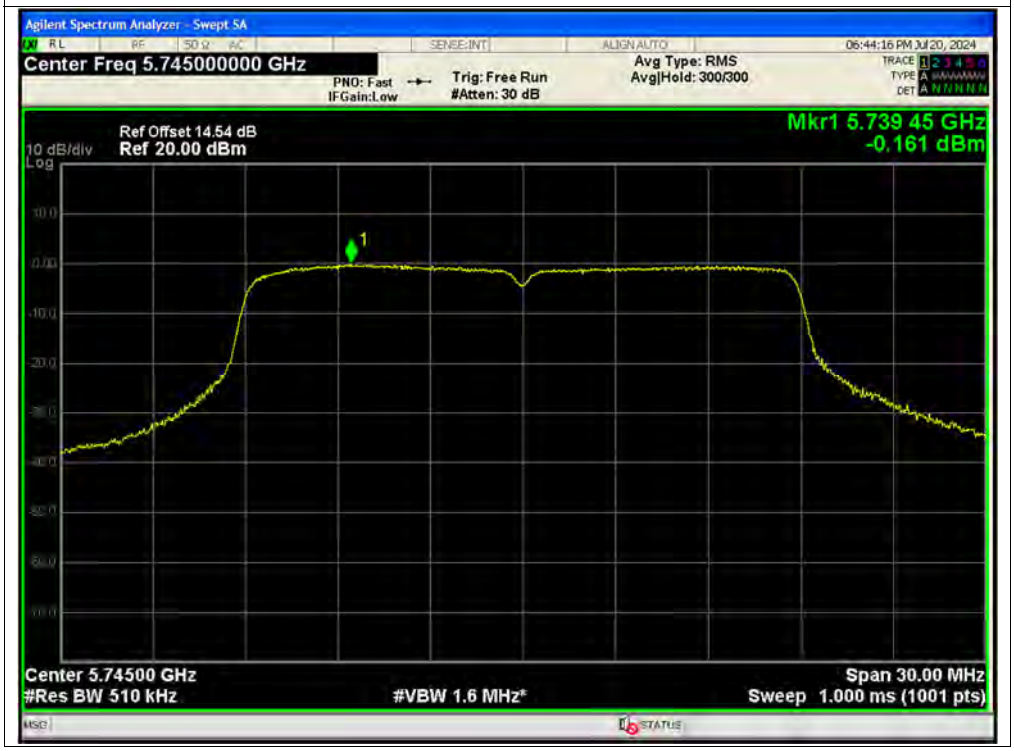
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	0.25	0.12	0.37	30	Pass
NVNT	a	5785	Ant1	-0.95	0.34	-0.61	30	Pass
NVNT	a	5825	Ant1	-1.82	0.34	-1.48	30	Pass
NVNT	n20	5745	Ant1	-0.16	0.18	0.02	30	Pass
NVNT	n20	5785	Ant1	-1.41	0.39	-1.02	30	Pass
NVNT	n20	5825	Ant1	-2.51	0.35	-2.16	30	Pass
NVNT	n40	5755	Ant1	-3.55	0.31	-3.24	30	Pass
NVNT	n40	5795	Ant1	-4.17	0.52	-3.65	30	Pass
NVNT	ac20	5745	Ant1	-1.03	0.22	-0.81	30	Pass
NVNT	ac20	5785	Ant1	-1.57	0.37	-1.2	30	Pass
NVNT	ac20	5825	Ant1	-2.78	0.26	-2.52	30	Pass
NVNT	ac40	5755	Ant1	-3.53	0.64	-2.89	30	Pass
NVNT	ac40	5795	Ant1	-4.37	0.43	-3.94	30	Pass
NVNT	ac80	5775	Ant1	-5.02	0.62	-4.4	30	Pass

Test Graphs
PSD NVNT a 5745MHz Ant1

PSD NVNT a 5785MHz Ant1

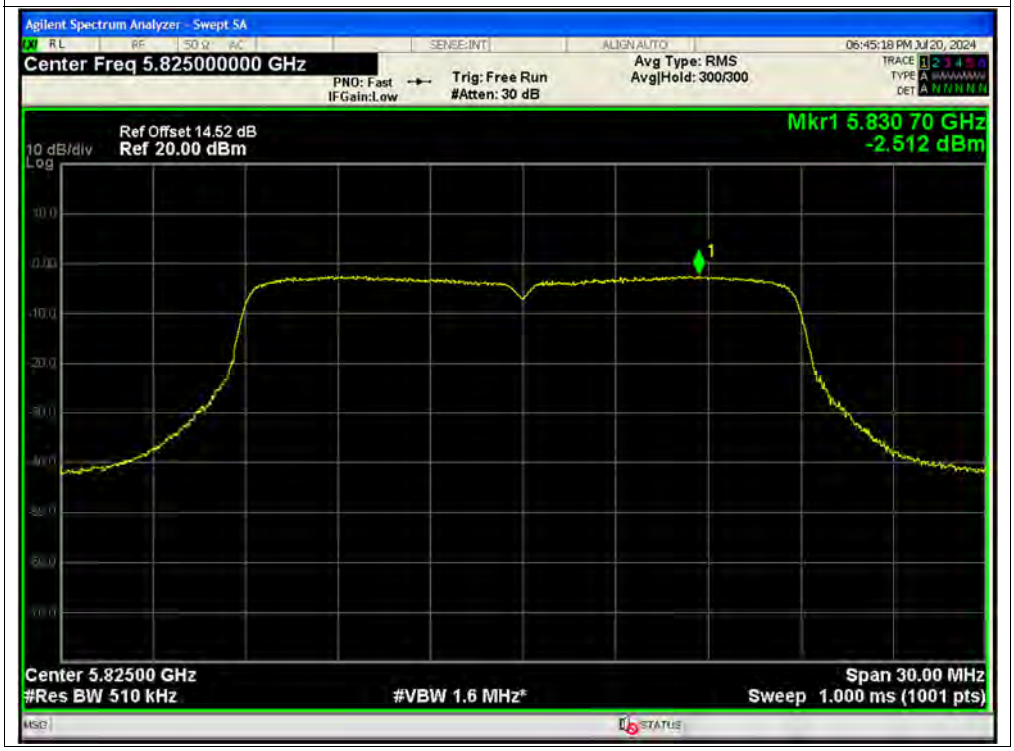
PSD NVNT a 5825MHz Ant1

PSD NVNT n20 5745MHz Ant1

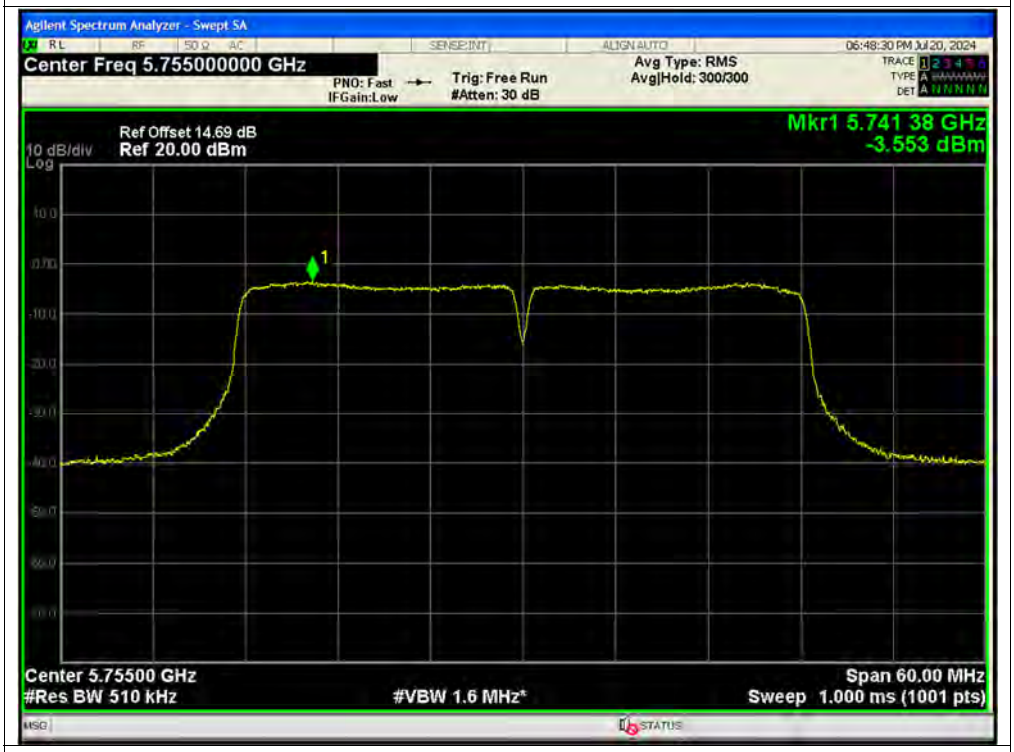


PSD NVNT n20 5785MHz Ant1

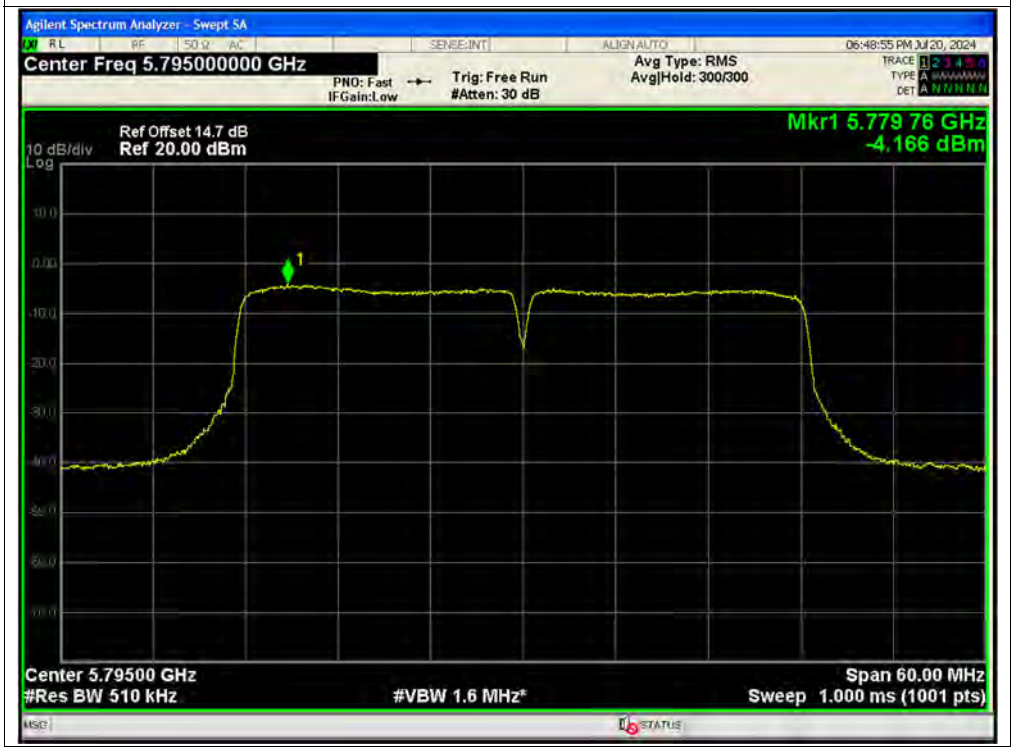
PSD NVNT n20 5825MHz Ant1



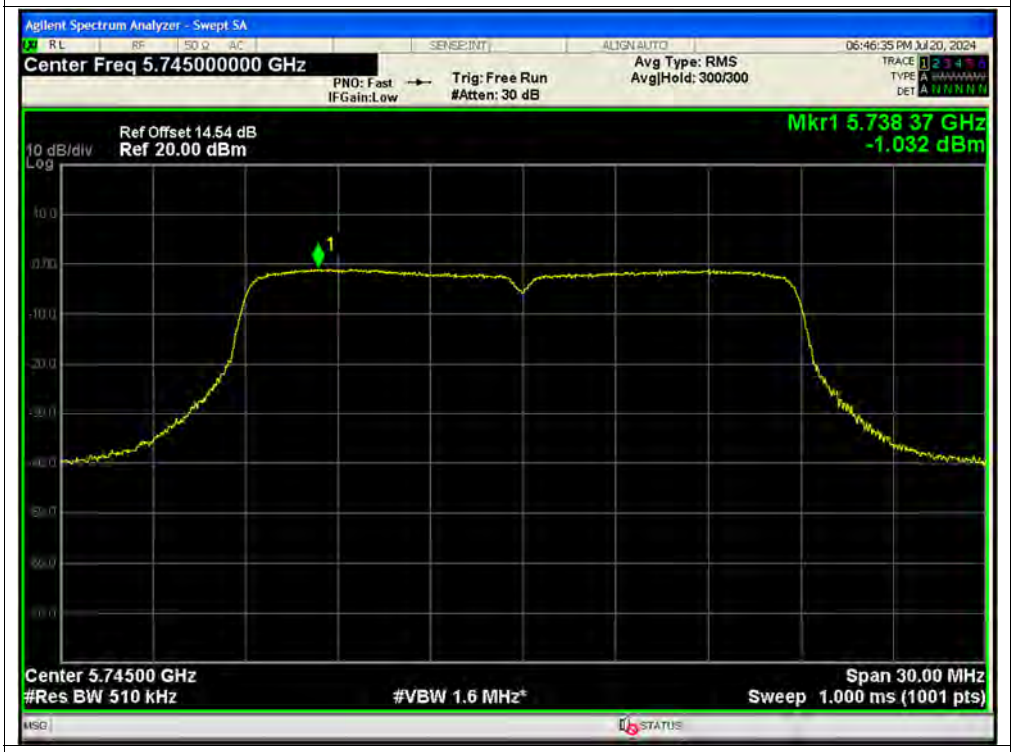
PSD NVNT n40 5755MHz Ant1



PSD NVNT n40 5795MHz Ant1

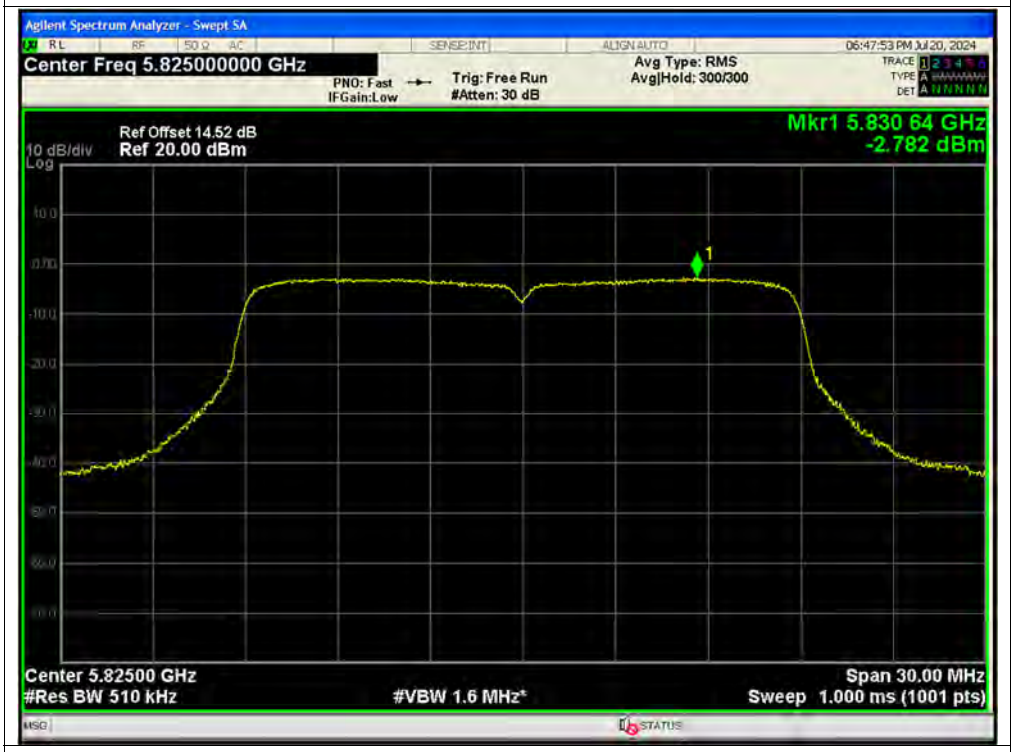


PSD NVNT ac20 5745MHz Ant1

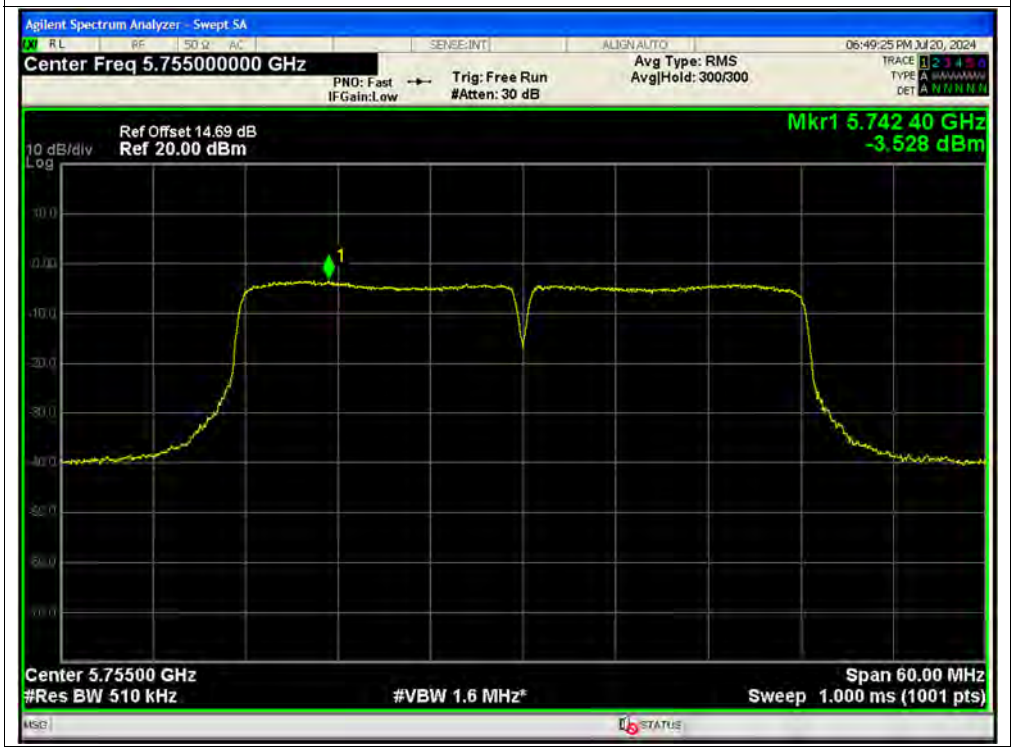


PSD NVNT ac20 5785MHz Ant1

PSD NVNT ac20 5825MHz Ant1

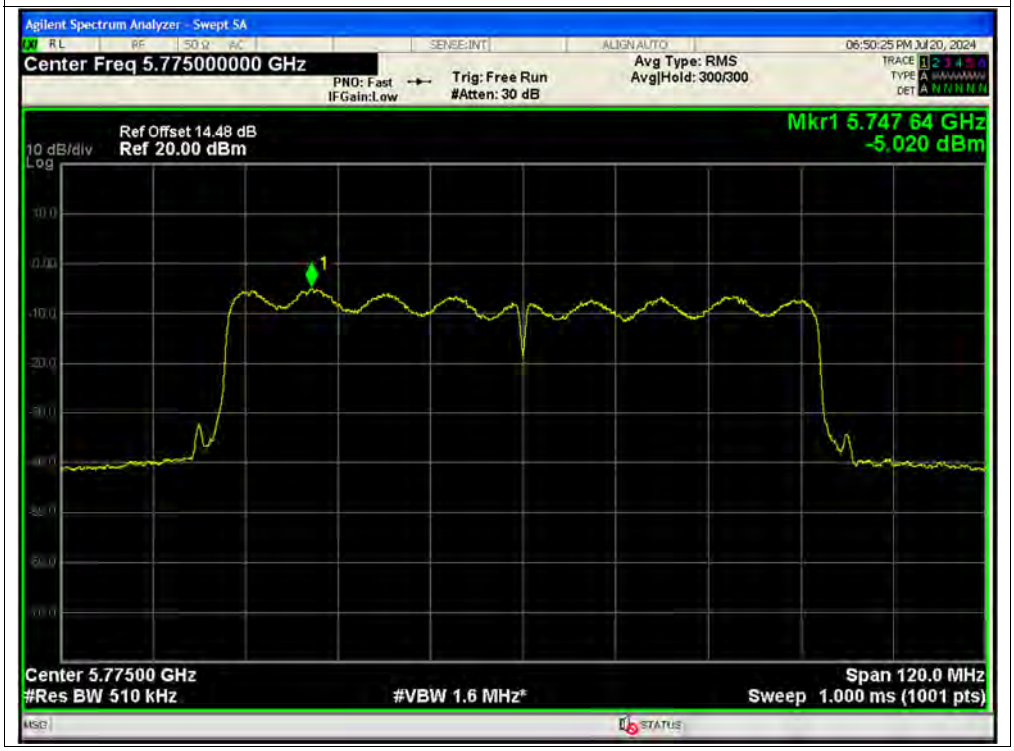


PSD NVNT ac40 5755MHz Ant1



PSD NVNT ac40 5795MHz Ant1

PSD NVNT ac80 5775MHz Ant1



A.5. Frequency Stability

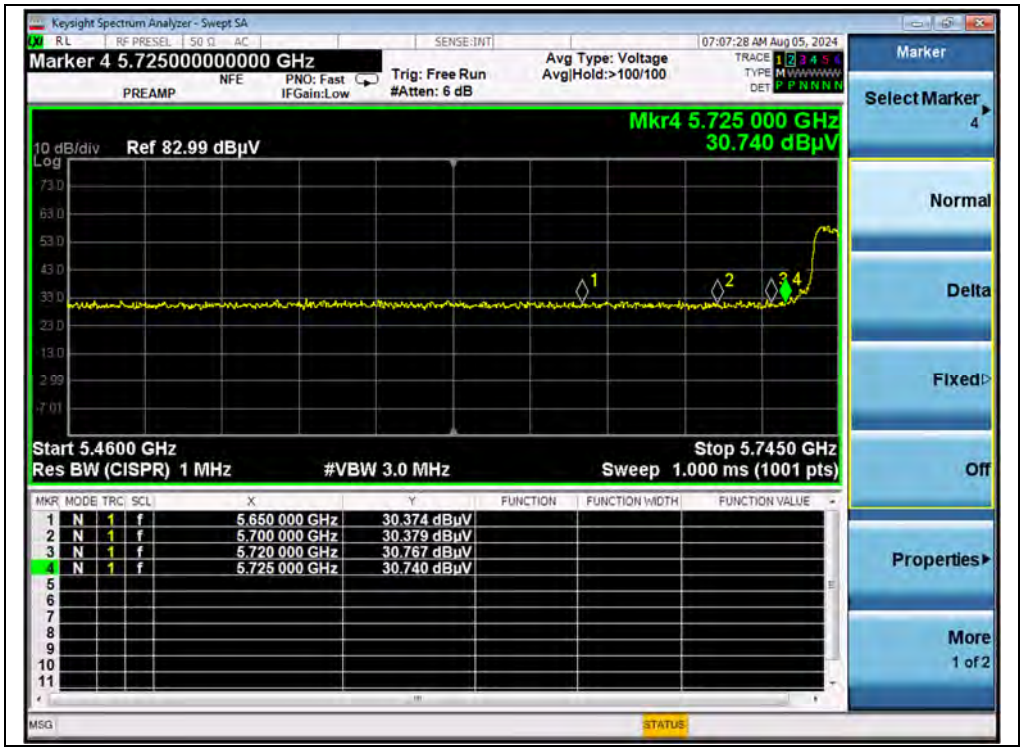
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20C 10.8V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
20C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
20C 13.2V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
-20C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
-10C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
0C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
10C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
30C 12V	Carrier	5745	Ant1	5744.973	-27000	-4.7	25	Pass
40C 12V	Carrier	5745	Ant1	5744.973	-27000	-4.7	25	Pass
50C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
60C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass
70C 12V	Carrier	5745	Ant1	5744.972	-28000	-4.87	25	Pass

A.6. Restricted Frequency Bands

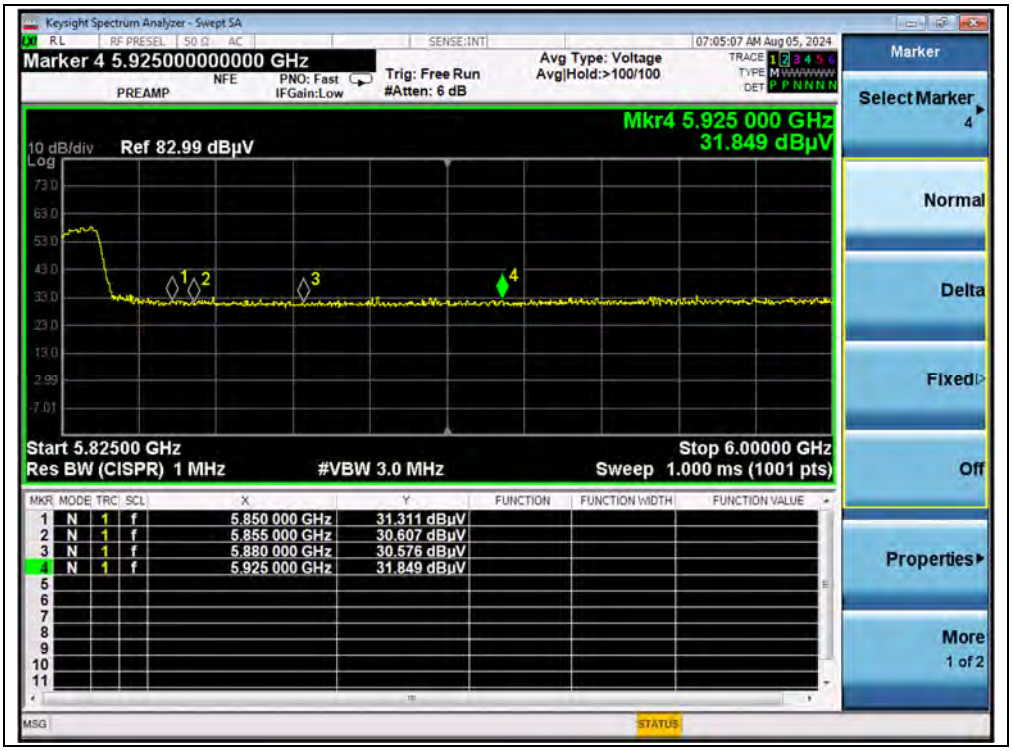
The lowest and highest channels are tested to verify the Restricted Frequency Bands.
The measurement results are obtained as below:
E [dBμV/m] =U_R + A_T + A_{Factor} [dB]; A_T =$L_{Cable\ loss}$ [dB]-G_{preamp} [dB]
A_T: Total correction Factor except Antenna
U_R: Receiver Reading
G_{preamp}: Preamplifier Gain
A_{Factor}: Antenna Factor at 3m
Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.
Note 2 All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

802.11n (HT20) Mode

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@ 3m)	Max. Emission E (dBμV/m)	Limit (dBμV/ m)	Verdict
		PK/ AV						
149	5720.00	PK	30.77	-19.01	32.20	43.96	110.83	PASS
165	5925.00	PK	31.85	-19.01	32.20	45.04	68.23	PASS



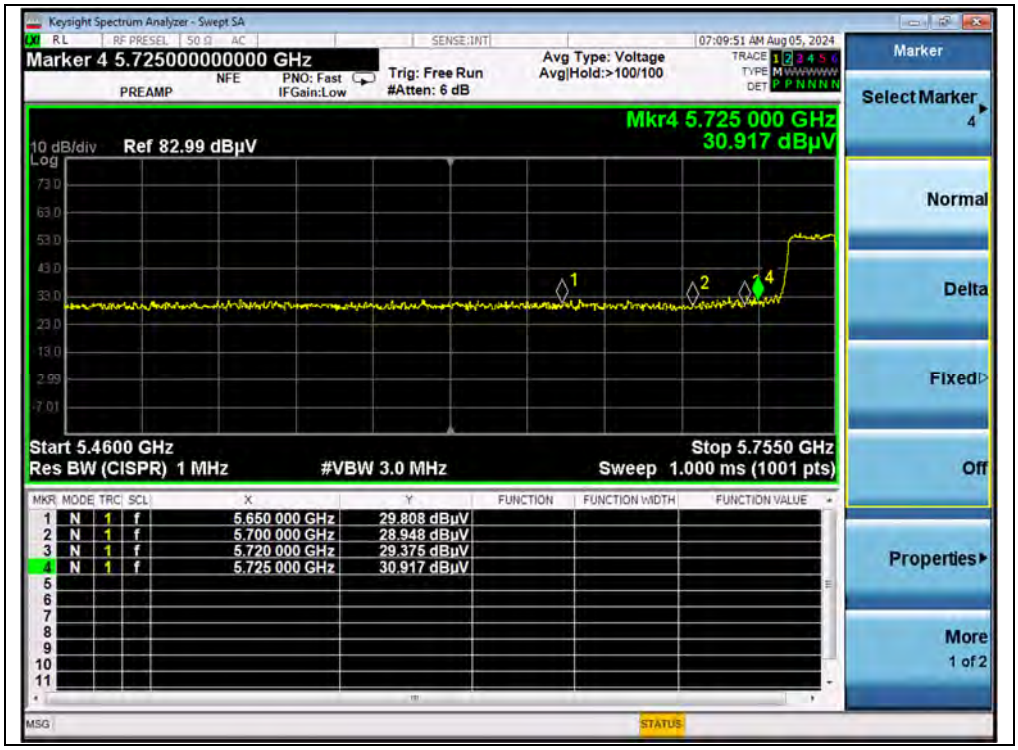
(PEAK, Channel 149, 802.11n(HT20))



(PEAK, Channel 165, 802.11n(HT20))

802.11ac (VHT40) Mode

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBμV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
151	5725.00	PK	30.92	-19.01	32.20	44.11	122.23	PASS
159	5850.00	PK	31.05	-19.01	32.20	44.24	122.23	PASS



(PEAK, Channel 151, 802.11ac (VHT40))

(PEAK, Channel 159, 802.11ac (VHT40))

802.11 ac (VHT80) Mode

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@ 3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
155	5650.00	PK	32.36	-19.01	32.20	45.55	68.23	PASS
155	5855.00	PK	33.03	-19.01	32.20	46.22	110.83	PASS

(Channel 155, PEAK, 802.11ac (VHT80))

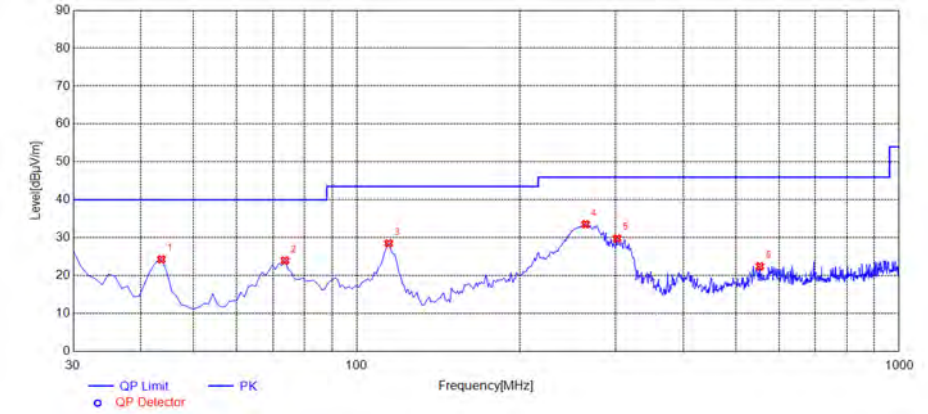
A.7. Radiated Emission

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

The measurement results are obtained as below:
$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$
A_T: Total correction Factor except Antenna
U_R: Receiver Reading
G_{preamp}: Preamplifier Gain
A_{Factor}: Antenna Factor at 3m
During the test, the total correction Factor A_T and A_{Factor} were built in test software.
Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.
Note3: For the frequency, which started from 18GHz to 40GHz harmonic of the highest frequency, was pre-scanned and the result which was 20dB lower than the limit was not recorded.
Note 4: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

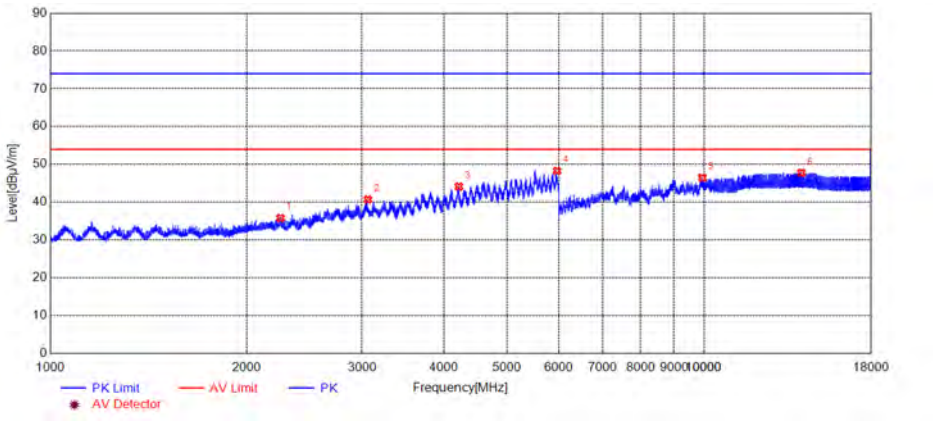
802.11n(HT20) Mode

Plot for Channel 149



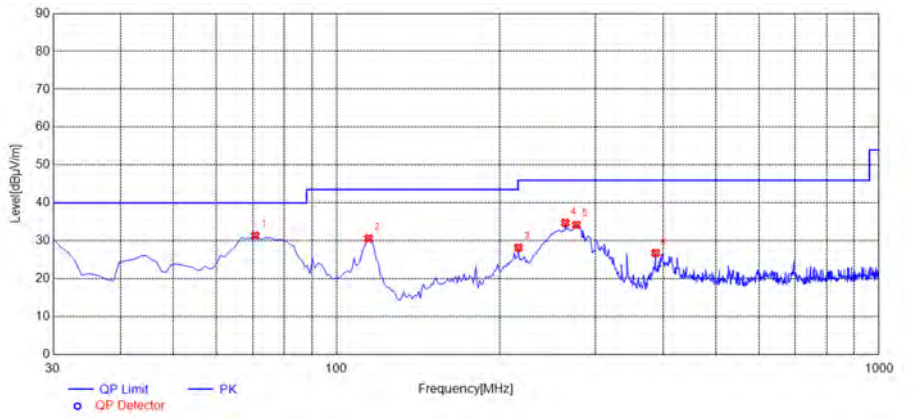
Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Antenna	Verdict
43.5936	24.28	-29.09	40.00	Horizontal	PASS
73.6937	23.97	-34.45	40.00	Horizontal	PASS
114.4745	28.52	-32.19	43.50	Horizontal	PASS
264.0040	33.58	-30.12	46.00	Horizontal	PASS
301.8719	29.80	-29.17	46.00	Horizontal	PASS
553.3534	22.47	-23.31	46.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



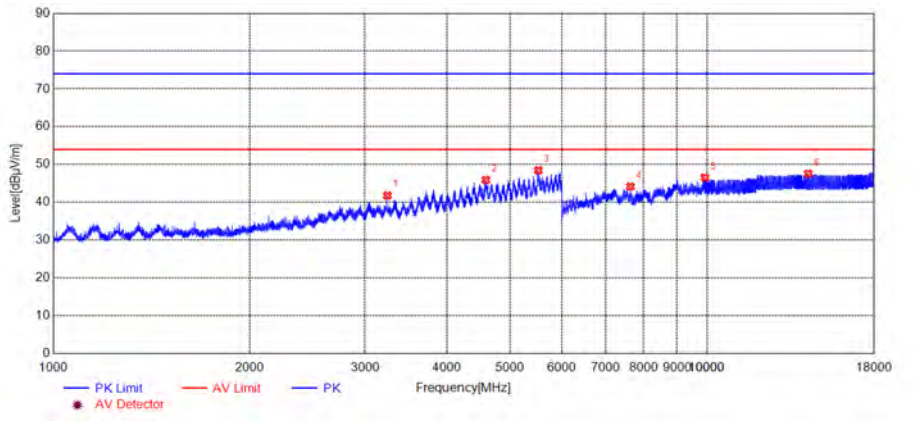
Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Antenna	Verdict
2250.1250	35.84	-20.99	74.00	Horizontal	PASS
3060.7061	40.70	-17.43	74.00	Horizontal	PASS
4218.3218	44.15	-13.71	74.00	Horizontal	PASS
5958.9959	48.29	-8.11	74.00	Horizontal	PASS
9942.3942	46.51	0.23	74.00	Horizontal	PASS
14085.2085	47.81	6.49	74.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 18GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
70.7808	31.40	-33.44	40.00	Vertical	PASS
114.4745	30.63	-32.19	43.50	Vertical	PASS
216.4264	28.21	-31.89	46.00	Vertical	PASS
264.0040	34.75	-30.12	46.00	Vertical	PASS
276.6266	34.21	-29.81	46.00	Vertical	PASS
387.3173	26.79	-26.71	46.00	Vertical	PASS

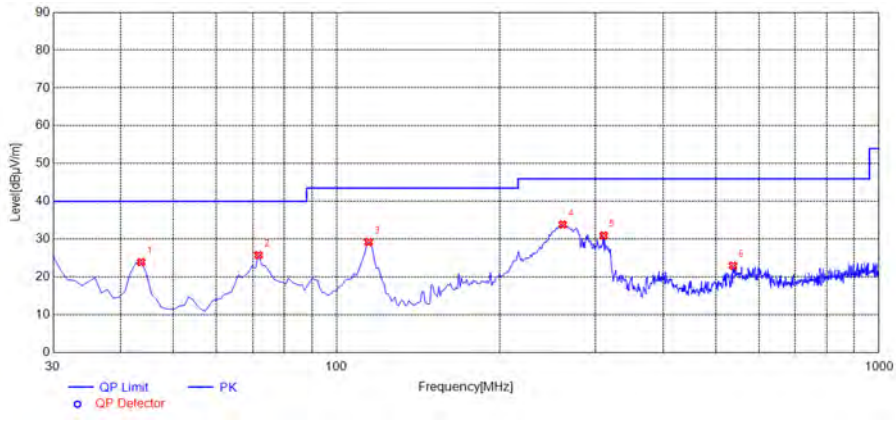
(Antenna Vertical, 30MHz to 1GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
3244.7245	41.83	-17.15	74.00	Vertical	PASS
4590.3590	45.93	-12.09	74.00	Vertical	PASS
5519.4519	48.47	-9.08	74.00	Vertical	PASS
7630.9631	44.19	-3.80	74.00	Vertical	PASS
9923.1923	46.58	0.37	74.00	Vertical	PASS
14279.6280	47.58	6.38	74.00	Vertical	PASS

(Antenna Vertical, 1GHz to 18GHz)

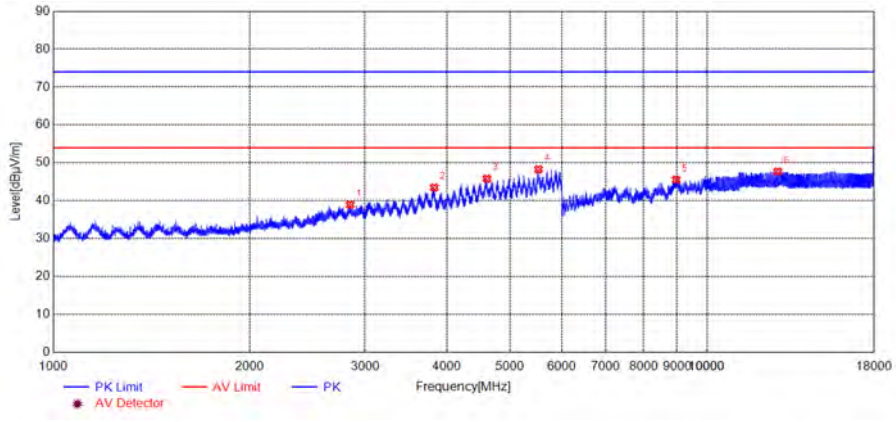
Plot for Channel 157



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
43.5936	23.93	-29.09	40.00	Horizontal	PASS
71.7518	25.79	-33.75	40.00	Horizontal	PASS
114.4745	29.25	-32.19	43.50	Horizontal	PASS
261.0911	33.90	-30.13	46.00	Horizontal	PASS
310.6106	31.00	-28.87	46.00	Horizontal	PASS
537.8178	23.01	-23.46	46.00	Horizontal	PASS

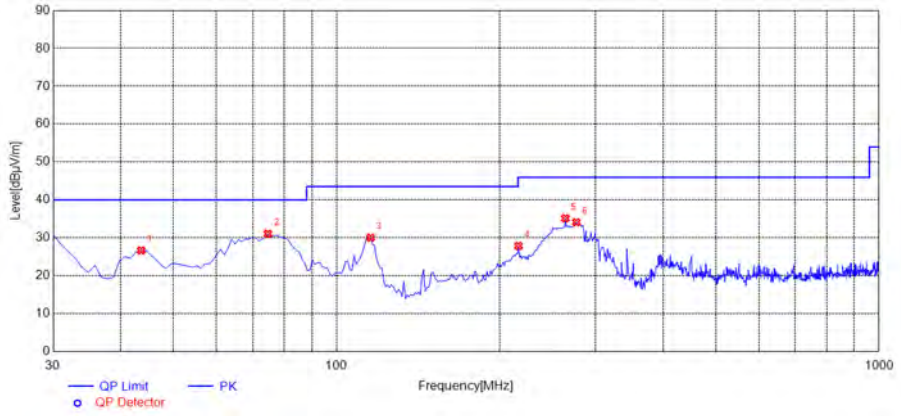
B.

(Antenna Horizontal, 30MHz to 1GHz)



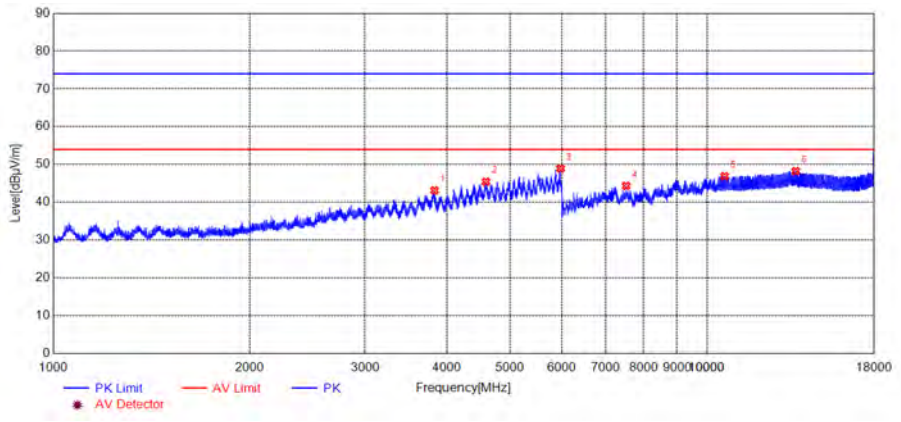
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
2845.6846	38.95	-18.38	74.00	Horizontal	PASS
3825.7826	43.48	-15.12	74.00	Horizontal	PASS
4603.8604	45.83	-12.05	74.00	Horizontal	PASS
5521.9522	48.28	-9.01	74.00	Horizontal	PASS
8971.4972	45.57	-1.07	74.00	Horizontal	PASS
12829.8830	47.69	3.74	74.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 18GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
43.5936	26.67	-29.09	40.00	Vertical	PASS
74.6647	31.07	-34.80	40.00	Vertical	PASS
115.4454	30.03	-32.43	43.50	Vertical	PASS
216.4264	27.87	-31.89	46.00	Vertical	PASS
264.0040	35.16	-30.12	46.00	Vertical	PASS
276.6266	34.11	-29.81	46.00	Vertical	PASS

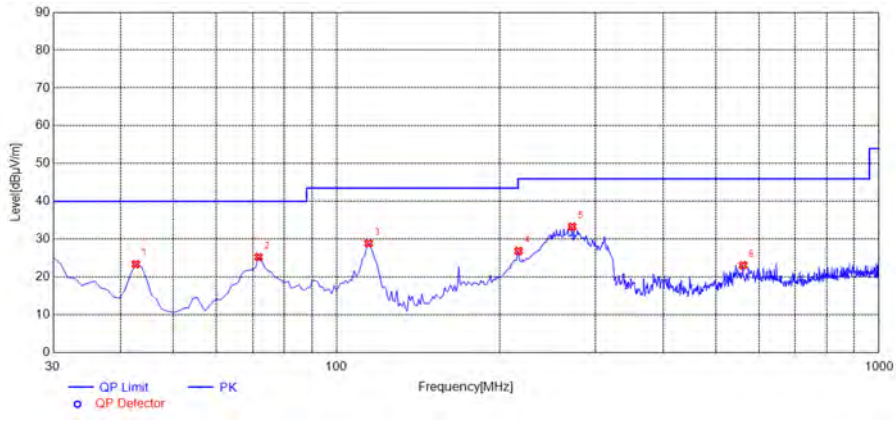
(Antenna Vertical, 30MHz to 1GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
3830.2830	43.17	-15.16	74.00	Vertical	PASS
4590.8591	45.45	-12.09	74.00	Vertical	PASS
5969.4970	48.93	-8.25	74.00	Vertical	PASS
7521.7522	44.35	-4.49	74.00	Vertical	PASS
10633.6634	46.92	2.58	74.00	Vertical	PASS
13663.9664	48.26	4.75	74.00	Vertical	PASS

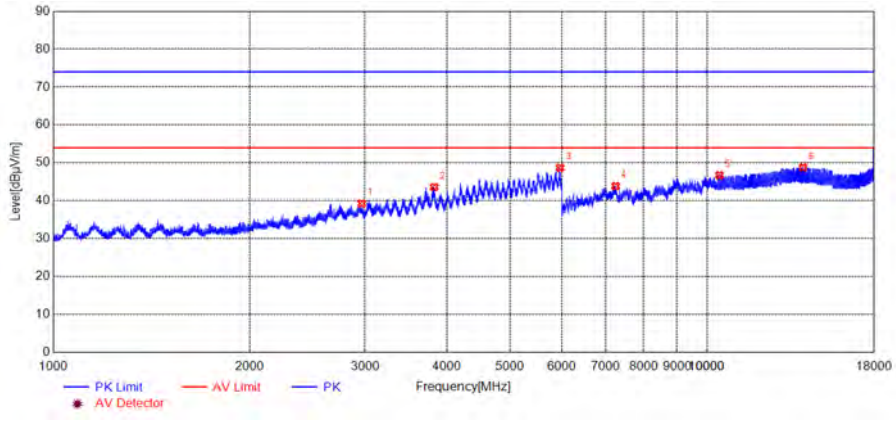
(Antenna Vertical, 1GHz to 18GHz)

Plot for Channel 165



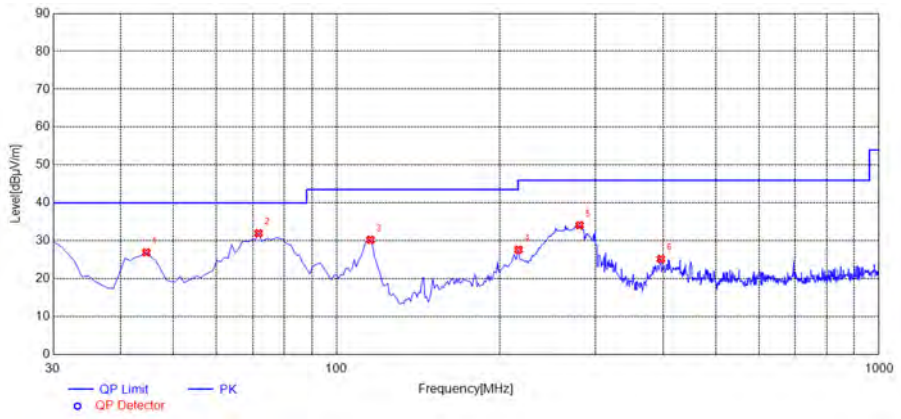
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
42.6226	23.40	-29.25	40.00	Horizontal	PASS
71.7518	25.26	-33.75	40.00	Horizontal	PASS
114.4745	28.92	-32.19	43.50	Horizontal	PASS
216.4264	26.91	-31.89	46.00	Horizontal	PASS
271.7718	33.32	-29.93	46.00	Horizontal	PASS
561.1211	23.13	-23.23	46.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



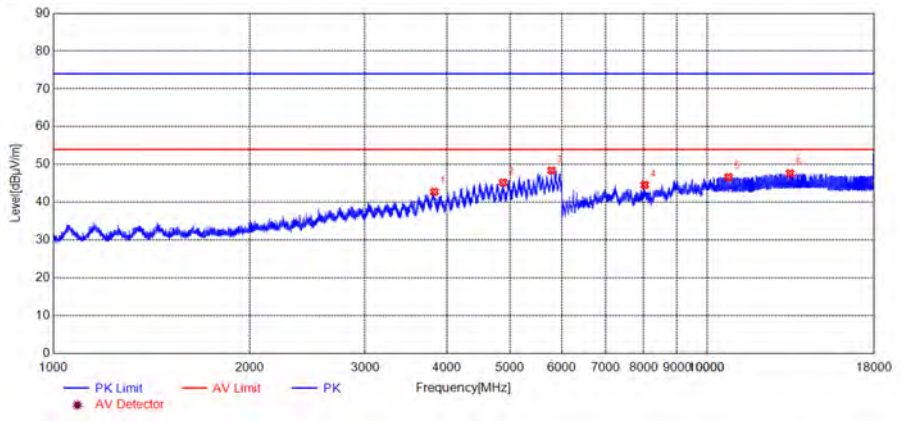
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
2964.6965	39.27	-18.43	74.00	Horizontal	PASS
3825.7826	43.59	-15.12	74.00	Horizontal	PASS
5960.4961	48.69	-8.13	74.00	Horizontal	PASS
7246.9247	43.88	-2.95	74.00	Horizontal	PASS
10446.4446	46.74	2.09	74.00	Horizontal	PASS
14022.8023	48.80	6.18	74.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 18GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
44.5646	26.96	-29.00	40.00	Vertical	PASS
71.7518	32.01	-33.75	40.00	Vertical	PASS
115.4454	30.29	-32.43	43.50	Vertical	PASS
216.4264	27.66	-31.89	46.00	Vertical	PASS
280.5105	34.12	-29.73	46.00	Vertical	PASS
396.0561	25.23	-26.46	46.00	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)

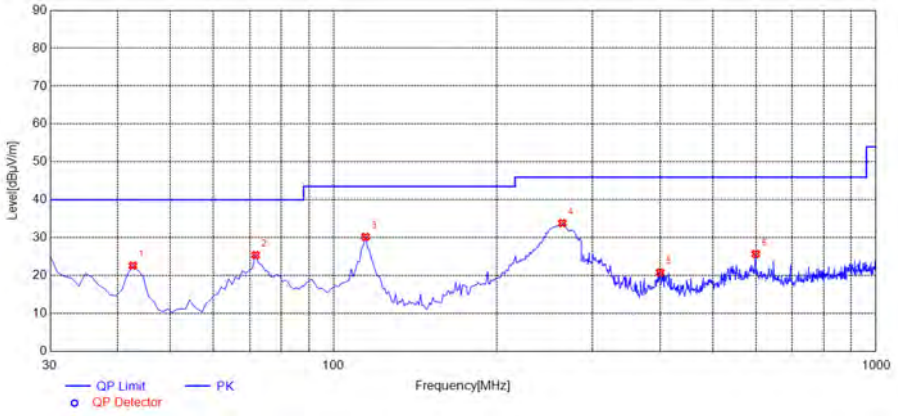


Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
3827.7828	42.76	-15.14	74.00	Vertical	PASS
4876.8877	45.25	-11.59	74.00	Vertical	PASS
5783.9784	48.41	-8.58	74.00	Vertical	PASS
8030.6031	44.61	-3.34	74.00	Vertical	PASS
10788.4788	46.66	2.03	74.00	Vertical	PASS
13402.3402	47.65	6.51	74.00	Vertical	PASS

(Antenna Vertical, 1GHz to 18GHz)

802.11ac (VHT40) mode

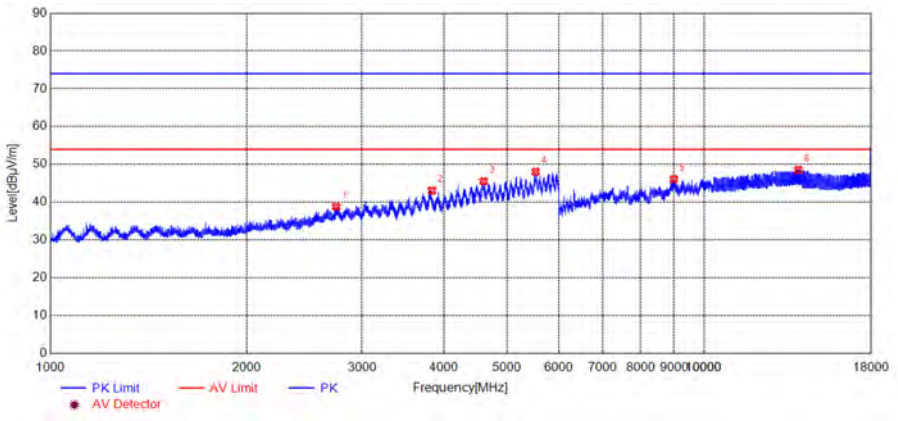
Plot for Channel 151



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
42.6226	22.66	-29.25	40.00	Horizontal	PASS
71.7518	25.43	-33.75	40.00	Horizontal	PASS
114.4745	30.25	-32.19	43.50	Horizontal	PASS
264.0040	33.86	-30.12	46.00	Horizontal	PASS
399.9399	20.85	-26.29	46.00	Horizontal	PASS
599.9600	25.73	-21.99	46.00	Horizontal	PASS

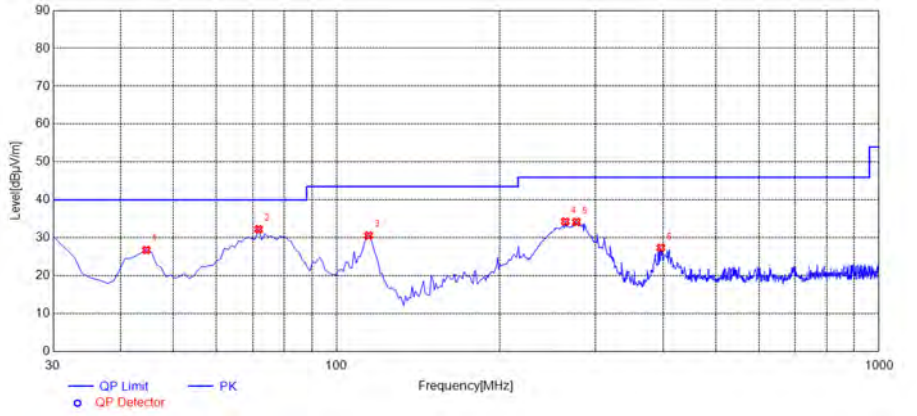
B.

(Antenna Horizontal, 30MHz to 1GHz)



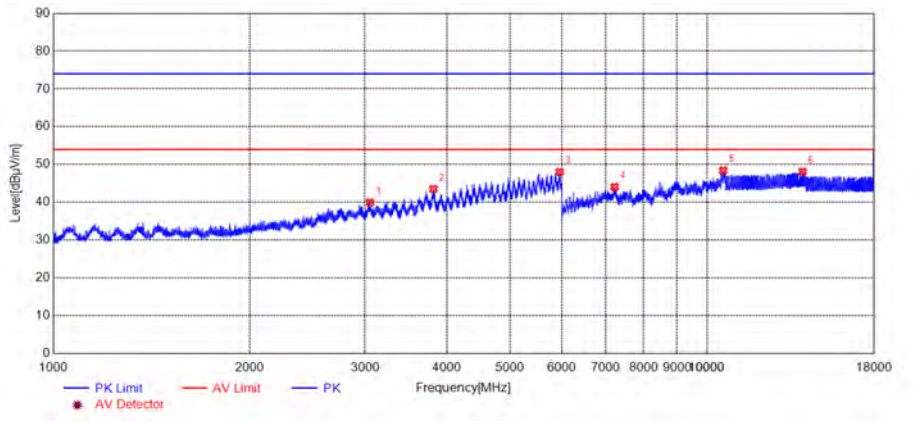
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
2739.1739	38.80	-18.64	74.00	Horizontal	PASS
3834.7835	43.08	-15.20	74.00	Horizontal	PASS
4600.8601	45.56	-12.10	74.00	Horizontal	PASS
5526.9527	48.07	-8.87	74.00	Horizontal	PASS
8989.4990	46.06	-0.90	74.00	Horizontal	PASS
13932.7933	48.56	6.00	74.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 18GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
44.5646	26.80	-29.00	40.00	Vertical	PASS
71.7518	32.27	-33.75	40.00	Vertical	PASS
114.4745	30.61	-32.19	43.50	Vertical	PASS
264.0040	34.30	-30.12	46.00	Vertical	PASS
276.6266	34.18	-29.81	46.00	Vertical	PASS
396.0561	27.37	-26.46	46.00	Vertical	PASS

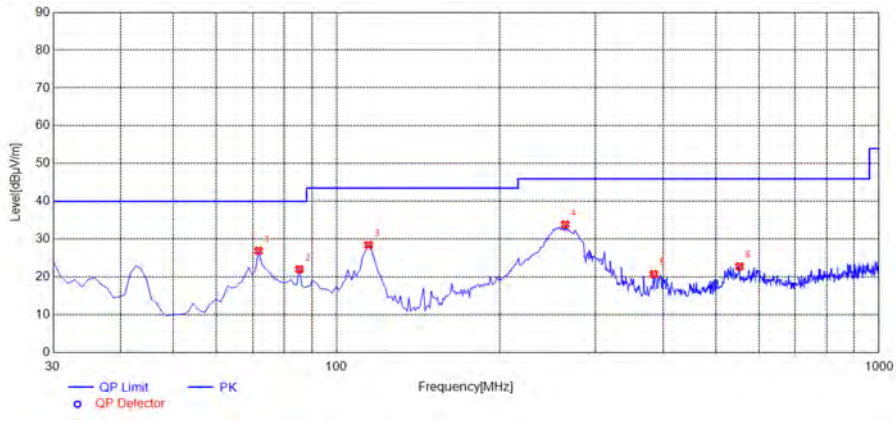
(Antenna Vertical, 30MHz to 1GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
3053.2053	39.96	-17.42	74.00	Vertical	PASS
3815.2815	43.54	-15.04	74.00	Vertical	PASS
5951.4952	48.04	-8.01	74.00	Vertical	PASS
7219.3219	44.05	-3.57	74.00	Vertical	PASS
10584.4584	48.42	2.15	74.00	Vertical	PASS
13992.7993	48.10	5.44	74.00	Vertical	PASS

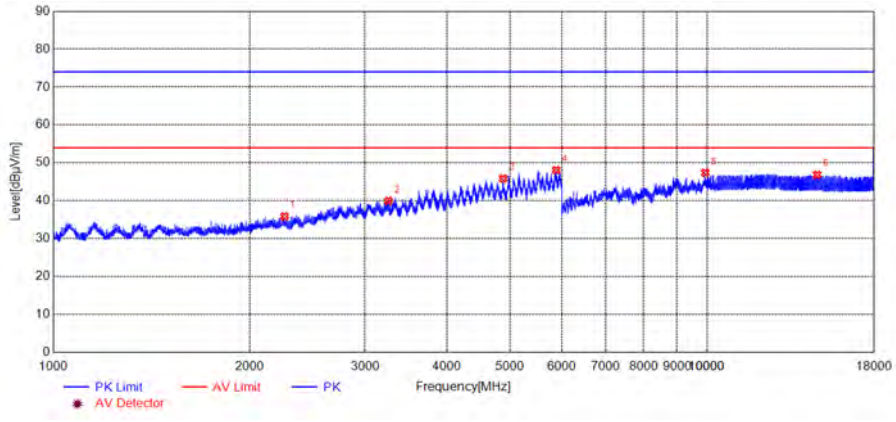
(Antenna Vertical, 1GHz to 18GHz)

Plot for Channel 159



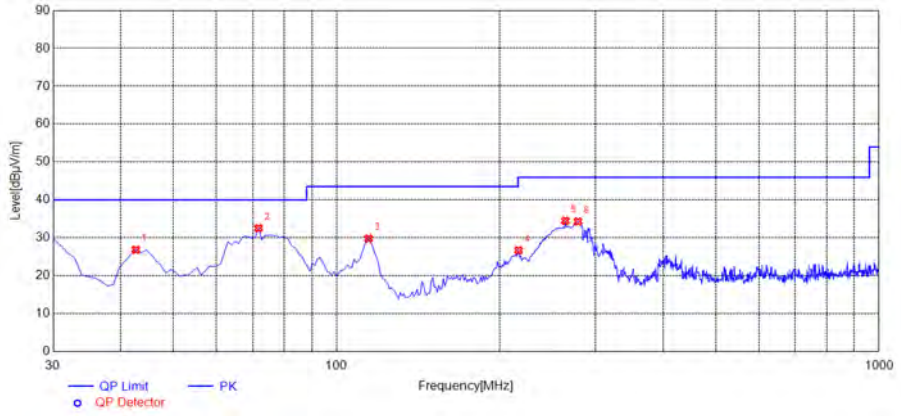
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
71.7518	26.96	-33.75	40.00	Horizontal	PASS
85.3453	22.04	-33.98	40.00	Horizontal	PASS
114.4745	28.49	-32.19	43.50	Horizontal	PASS
264.0040	33.92	-30.12	46.00	Horizontal	PASS
384.4044	20.81	-26.80	46.00	Horizontal	PASS
553.3534	22.83	-23.31	46.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



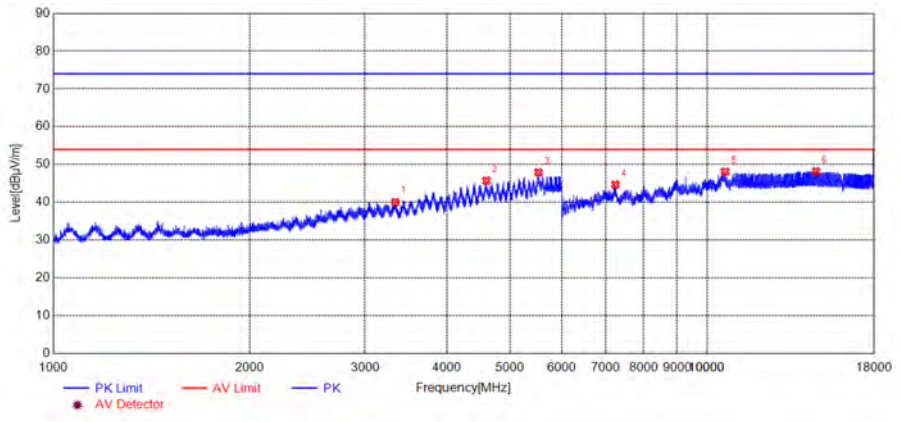
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
2258.1258	35.89	-21.08	74.00	Horizontal	PASS
3256.2256	40.00	-17.06	74.00	Horizontal	PASS
4878.3878	45.88	-11.62	74.00	Horizontal	PASS
5878.4878	48.08	-8.09	74.00	Horizontal	PASS
9938.7939	47.41	0.26	74.00	Horizontal	PASS
14732.0732	46.86	5.64	74.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 18GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
42.6226	26.85	-29.25	40.00	Vertical	PASS
71.7518	32.57	-33.75	40.00	Vertical	PASS
114.4745	29.82	-32.19	43.50	Vertical	PASS
216.4264	26.68	-31.89	46.00	Vertical	PASS
264.0040	34.51	-30.12	46.00	Vertical	PASS
278.5686	34.32	-29.78	46.00	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)

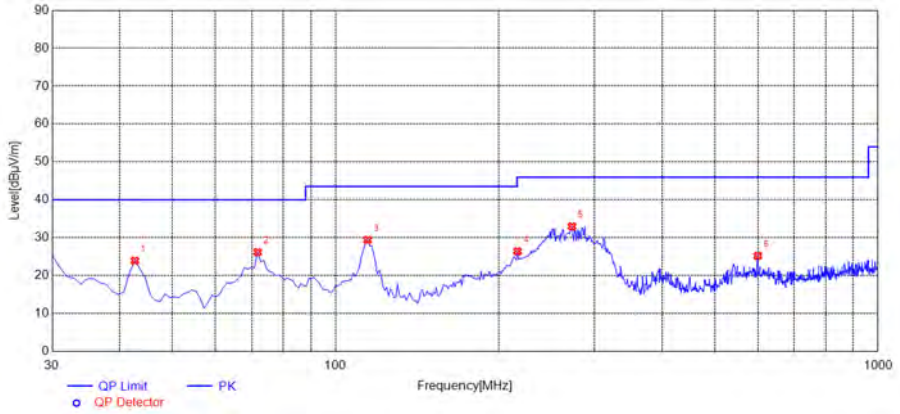


Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
3337.2337	40.06	-16.53	74.00	Vertical	PASS
4598.3598	45.73	-12.11	74.00	Vertical	PASS
5521.9522	47.95	-9.01	74.00	Vertical	PASS
7239.7240	44.72	-3.11	74.00	Vertical	PASS
10655.2655	48.12	2.87	74.00	Vertical	PASS
14675.6676	48.21	6.94	74.00	Vertical	PASS

(Antenna Vertical, 1GHz to 18GHz)

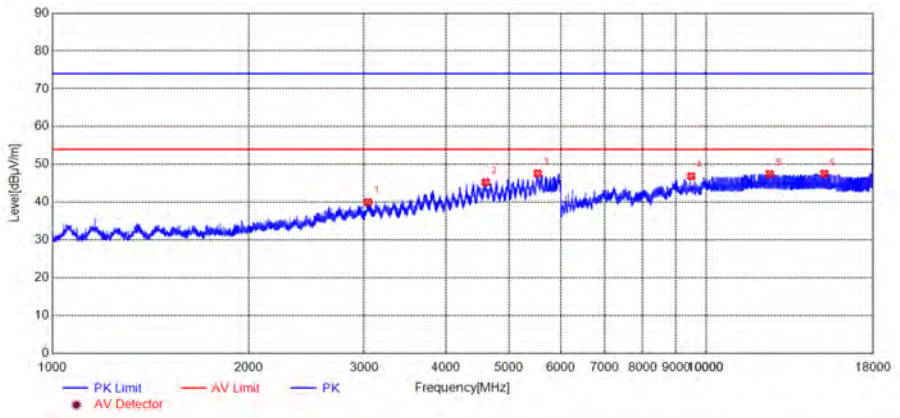
802.11ac (VHT80) Mode

Plot for Channel 155



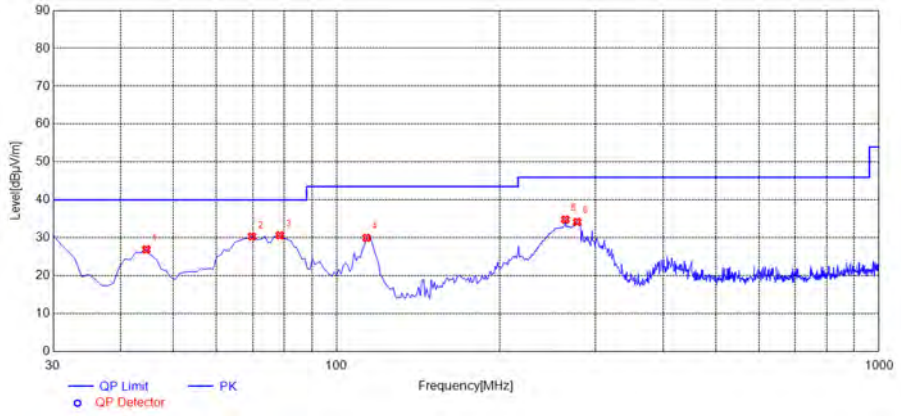
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
42.6226	23.94	-29.25	40.00	Horizontal	PASS
71.7518	26.25	-33.75	40.00	Horizontal	PASS
114.4745	29.40	-32.19	43.50	Horizontal	PASS
216.4264	26.42	-31.89	46.00	Horizontal	PASS
272.7427	33.00	-29.90	46.00	Horizontal	PASS
599.9600	25.24	-21.99	46.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 1GHz)



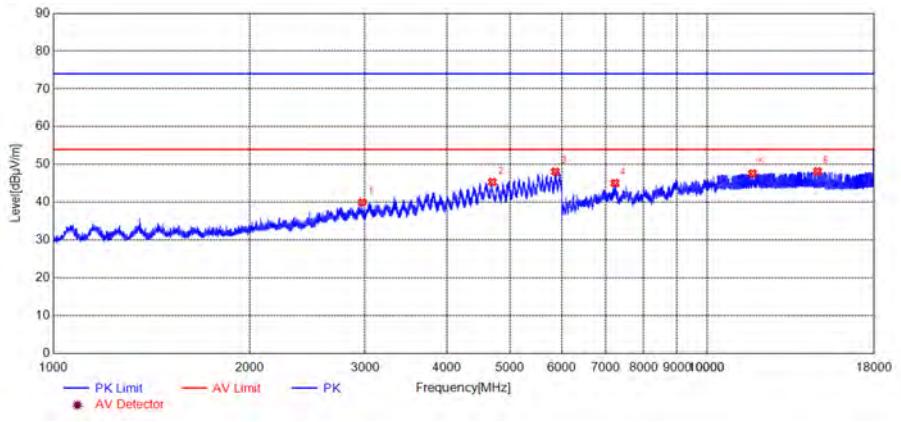
Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
3043.2043	40.02	-17.53	74.00	Horizontal	PASS
4601.8602	45.28	-12.08	74.00	Horizontal	PASS
5527.4527	47.62	-8.85	74.00	Horizontal	PASS
9488.7489	46.87	-0.88	74.00	Horizontal	PASS
12510.6511	47.48	3.17	74.00	Horizontal	PASS
15158.1158	47.53	6.75	74.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 18GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
44.5646	26.95	-29.00	40.00	Vertical	PASS
69.8098	30.38	-33.23	40.00	Vertical	PASS
78.5485	30.65	-34.94	40.00	Vertical	PASS
113.5035	30.00	-31.97	43.50	Vertical	PASS
264.0040	34.84	-30.12	46.00	Vertical	PASS
277.5976	34.21	-29.80	46.00	Vertical	PASS

(Antenna Vertical, 30MHz to 1GHz)



Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Antenna	Verdict
2971.1971	39.99	-18.40	74.00	Vertical	PASS
4695.8696	45.38	-11.96	74.00	Vertical	PASS
5862.9863	48.10	-8.00	74.00	Vertical	PASS
7228.9229	45.09	-3.35	74.00	Vertical	PASS
11737.7738	47.63	3.48	74.00	Vertical	PASS
14754.8755	48.18	5.41	74.00	Vertical	PASS

(Antenna Vertical, 1GHz to 18GHz)

END OF REPORT