REPORT No.: SZ25040043W03

TEST REPORT

APPLICANT	:	Anker Innovations Limited
PRODUCT NAME	:	NEBULA Wireless Satellite Speaker
MODEL NAME	:	D2040R
BRAND NAME	:	NEBULA
FCC ID	:	2AOKB-D2040R
STANDARD(S)	:	47 CFR Part 15 Subpart E
RECEIPT DATE	:	2025-04-03
TEST DATE	:	2025-04-15 to 2025-04-22
ISSUE DATE	:	2025-04-23

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DIRECTORY

Change History		
Version	**Date**	**Reason for change**
1.0	2025-04-23	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	Apr. 16, 2025	Li Xinpeng	PASS	No deviation
3	15.407(a)	Maximum Conducted Output Power	Apr. 16, 2025	Li Xinpeng	PASS	No deviation
4	15.407(a) (e)	Emission Bandwidth	Apr. 19, 2025	Li Xinpeng	PASS	No deviation
5	15.407(a)	Peak Power Spectral Density	Apr. 19, 2025	Li Xinpeng	PASS	No deviation
6	15.407(g)	Frequency Stability	Apr. 22, 2025	Li Xinpeng	PASS	No deviation
7	15.407(h)	DFS	Apr. 22, 2025	Li Xinpeng	PASS	No deviation
8	15.207	Conducted Emission	Apr. 21, 2025	Fan Shengquan	PASS	No deviation
9	15.407(b)	Restricted Frequency Bands	Apr. 22, 2025	Tian Xin	PASS	No deviation
10	15.407(b)	Radiated Emission	Apr. 22, 2025	Tian Xin	PASS	No deviation

Note 1: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.102013.

Note 2: These RF tests were performed according to the method of measurements prescribed in KDB789033 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 Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2025.01.15	2026.02.14
USB Wideband Power Sensor	MY54180008	U2021XA	Agilent	2024.09.11	2025.09.10
Temperature Chamber	12108015	DTL-003S101	YOMA	2024.09.11	2025.09.10
RF Cable (30MHz-26GHz)	CB01	RF01	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	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2025.01.06	2026.01.05
LISN	8127449	NSLK 8127	Schwarzbeck	2025.01.09	2026.01.08
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
JS32-RE	Tonscend	5.0.0
TS+ -[JS32-CE]	Tonscend	2.5.0.0

1.2.4 Radiated Test Equipment

Equipment	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	2024.07.03	2025.07.02
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2024.07.03	2025.07.02
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2024.07.03	2025.07.02
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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FCC Designation Number:	CN1192
FCC Test Firm Registration Number:	226174

2. General Description

2.1. Information of Applicant and Manufacturer

Applicant:	Anker Innovations Limited
Applicant Address:	Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong
Manufacturer:	Anker Innovations Limited
Manufacturer Address:	Unit 56, 8th Floor, Tower 2, Admiralty Centre, 18 Harcourt Road, Hong Kong

2.2. Information of EUT

Product Name:	NEBULA Wireless Satellite Speaker	
Sample No.:	2#, 4#, 42#	
Hardware Version:	V02	
Software Version:	RX V1.1.54	
Modulation Technology:	OFDM	
Modulation Mode:	802.11a, 802.11n (HT20), 802.11n (HT40)	
Operating Frequency Range:	5180MHz-5240MHz; 5260MHz-5320MHz; 5500MHz-5720MHz; 5745MHz-5825MHz	
DFS Function:	☒Slave without radar detection ☐Slave with radar detection ☐Master	
Antenna Type:	FPC Antenna	
Antenna Gain:	5.54dBi	
Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	C0914K5
	Serial No.:	N/A
	Capacity:	6000mAh
	Rated Voltage:	7.2V
	Charge Limit:	8.4V
	Manufacturer:	Guangdong Pow-Tech New Power Co., Ltd.

Note 1: 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**
(U-NII-2A) 5260MHz-5320MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	**52**	**5260**	56	5280
	60	**5300**	**64**	**5320**
40MHz	**54**	**5270**	**62**	**5310**
(U-NII-2C) 5500MHz-5720MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	**100**	**5500**	105	5520
	108	5540	112	5560
	116	**5580**	120	5600
	124	5620	128	5640
	132	5660	136	5680
	140	5700	**144**	**5720**
40MHz	**102**	**5510**	**110**	**5550**
	118	5590	126	5630
	134	5670	**142**	**5710**
(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**

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
802.11a	20	OFDM	**BPSK**	**6**/9/12/18/24/36/48/54 Mbps
			QPSK	
			16QAM	
			64QAM	
802.11n	20/40 (HT20/40)	OFDM	**BPSK**	**MCS0**~MCS7
			QPSK	
			16QAM	
			64QAM	

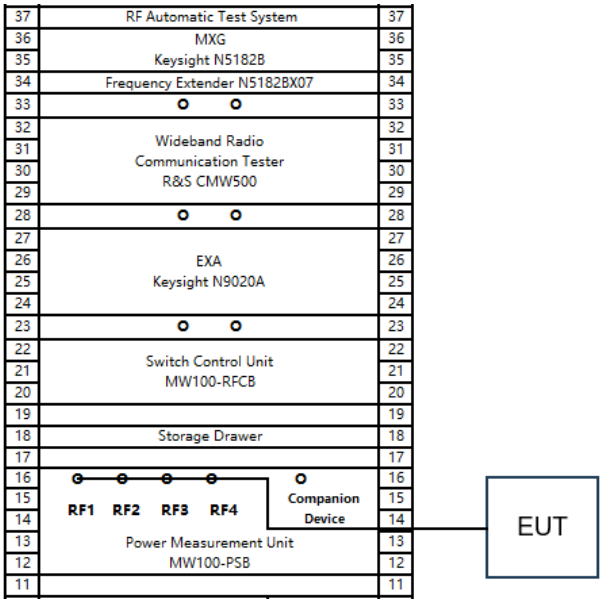
Note1: The worst-case mode (bold face) in all data rates has been determined during the pre-scan, only the test data of the worst-case were recorded in this report.

2.5. Test Conditions

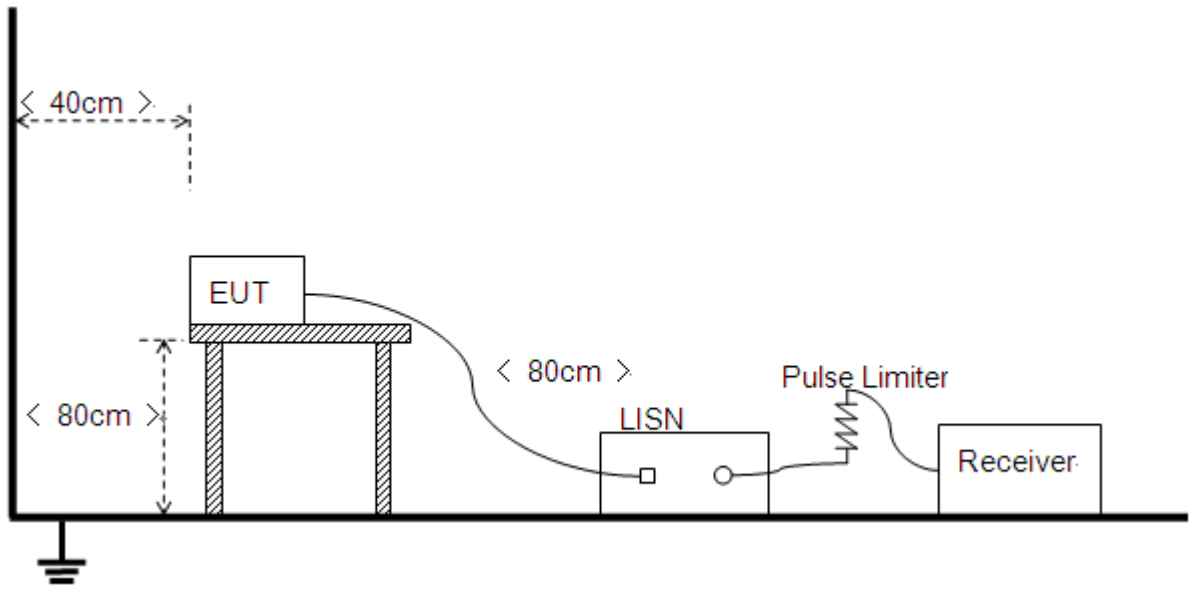
Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106

2.6. Test Setup Layout Diagram

2.6.1.Conducted Measurement

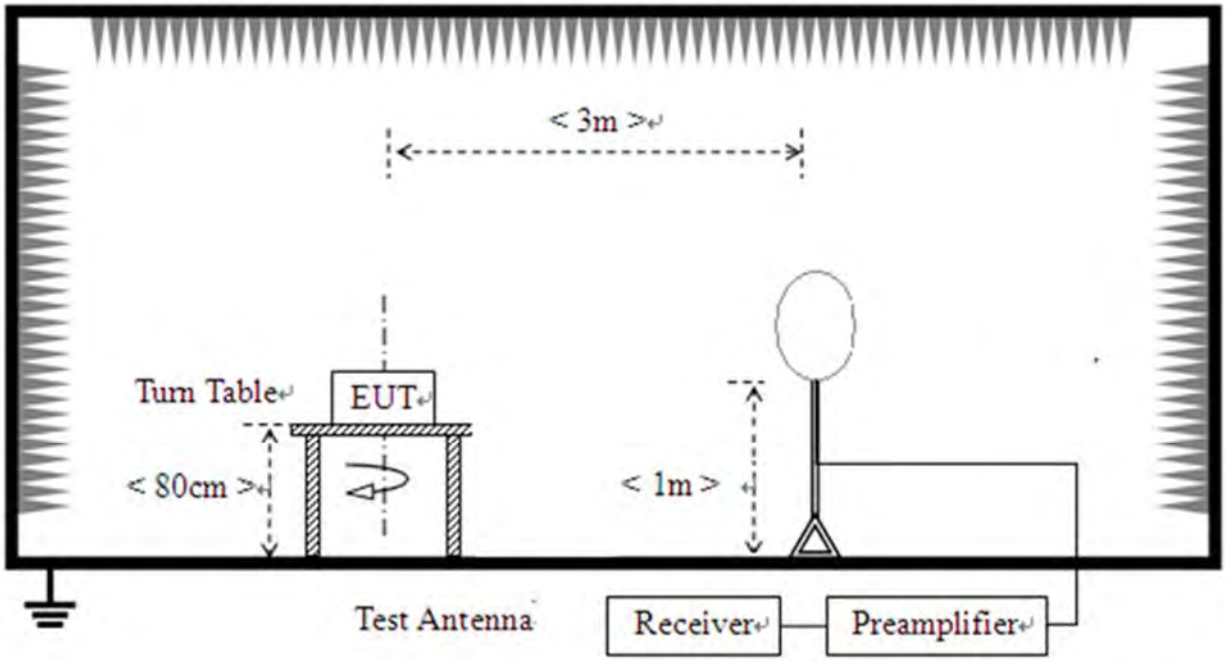


2.6.2.Conducted Emission Measurement

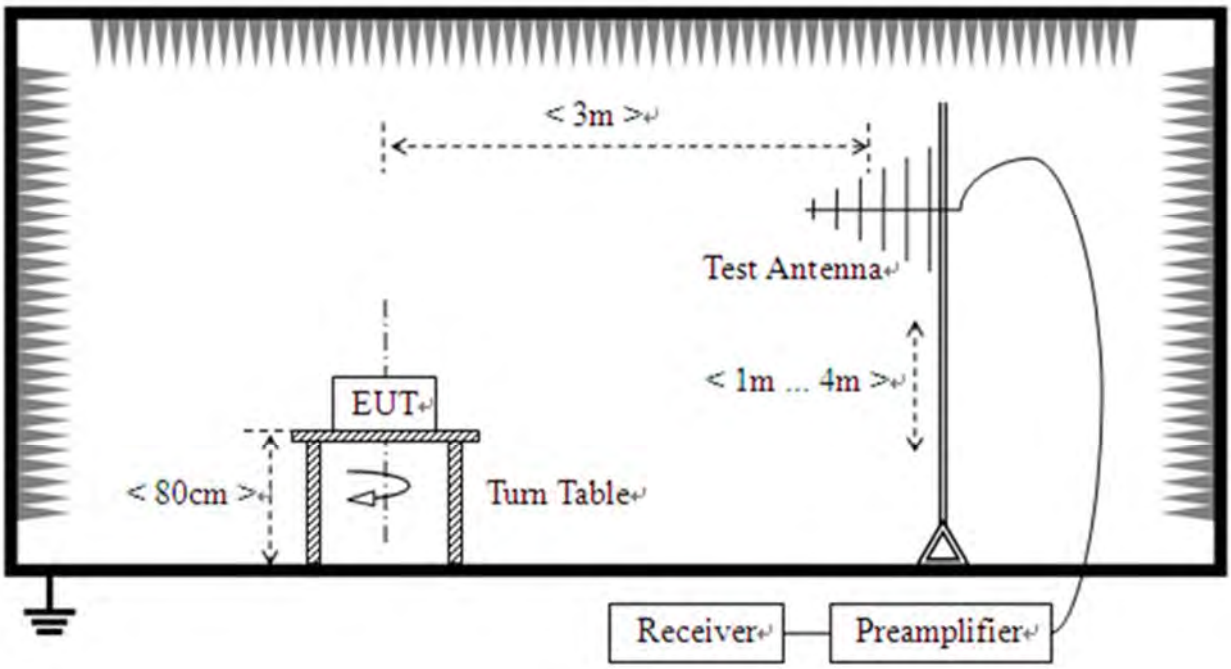


2.6.3.Radiation Measurement

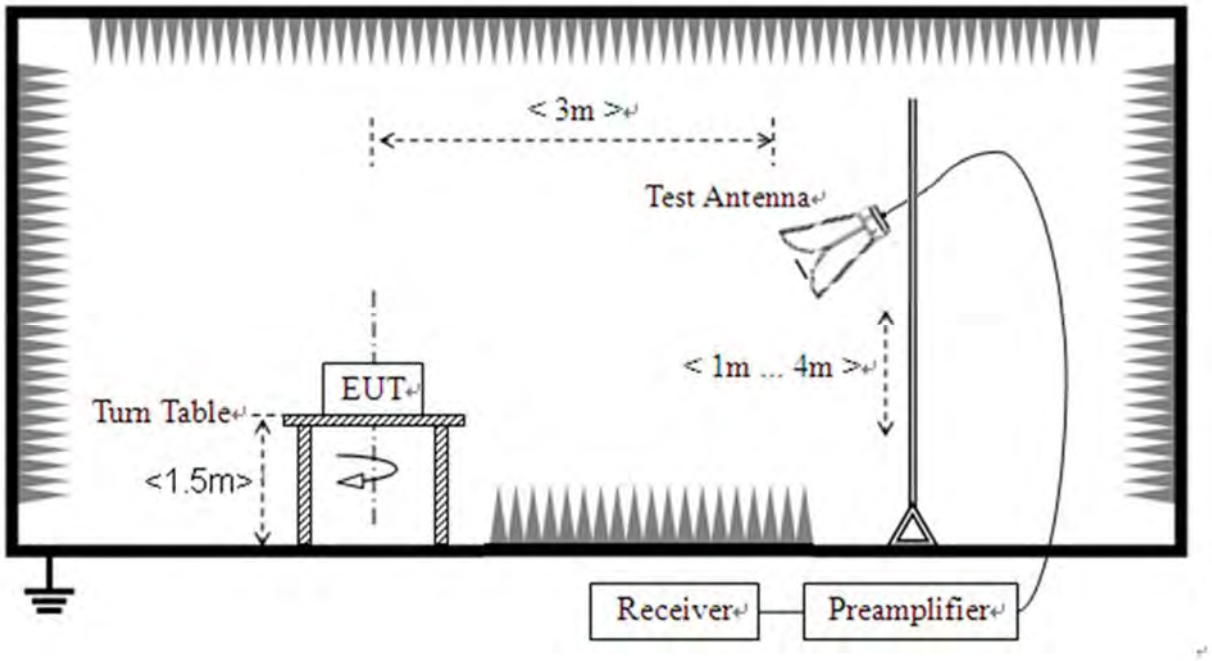
1) For radiated emissions from 9kHz to 30MHz



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 ☐On-board 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.

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.

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. Dynamic Frequency Selection

3.7.1.Requirement

According to FCC section 15.407(h), (1) Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW. (2) Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems. Operators shall only use equipment with a DFS mechanism that is turned on when operating in these bands. The device must sense for radar signals at 100 percent of its emission bandwidth. The minimum DFS detection threshold for devices with a maximum e.i.r.p. of 200 mW to 1 W is −64 dBm. For devices that operate with less than 200 mW e.i.r.p. and a power spectral density of less than 10 dBm in a 1 MHz band, the minimum detection threshold is −62 dBm. The detection threshold is the received power averaged over 1 microsecond referenced to a 0 dBi antenna. For the initial channel setting, the manufacturers shall be permitted to provide for either random channel selection or manual channel selection.

A U-NII network will employ a DFS function to detect signals from radar systems and to avoid co-channel operation with these systems. This applies to the 5250-5350 MHz and/or 5470-5725 MHz bands.1

Within the context of the operation of the DFS function, a U-NII device will operate in either Master Mode or Client Mode. U-NII devices operating in Client Mode can only operate in a network controlled by a U-NII device operating in Master Mode.2

Tables 1 and 2 shown below summarize the information contained in sections 5.1.1 and 5.1.2.

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode

	Master	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

The operational behavior and individual DFS requirements that are associated with these modes are as follows:

Master Devices

a) The Master Device will use DFS in order to detect Radar Waveforms with received signal strength above the DFS Detection Threshold in the 5250 − 5350 MHz and 5470 − 5725 MHz bands. DFS is not required in the 5150 − 5250 MHz or 5725 − 5825 MHz bands.

b) Before initiating a network on a Channel, the Master Device will perform a Channel Availability Check for specified time duration (Channel Availability Check Time) to ensure that there is no radar system operating on the Channel, using DFS described under subsection a) above.

c) The Master Device initiates a U-NII network by transmitting control signals that will enable other U-NII devices to Associate with the Master Device.

d) During normal operation, the Master Device will monitor the Channel (In-Service Monitoring) to ensure that there is no radar system operating on the Channel, using DFS described under a).

e) If the Master Device has detected a Radar Waveform during In-Service Monitoring as described under d), the Operating Channel of the U-NII network is no longer an Available Channel. The Master Device will instruct all associated Client Device(s) to stop transmitting on this Channel within the Channel Move Time. The transmissions during the Channel Move Time will be limited to the Channel Closing Transmission Time.

f) Once the Master Device has detected a Radar Waveform it will not utilize the Channel for the duration of the Non-Occupancy Period. 3.

g) If the Master Device delegates the In-Service Monitoring to a Client Device, then the combination will be tested to the requirements described under d) through f) above.

Client Devices

a) A Client Device will not transmit before having received appropriate control signals from a Master Device.

b) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements. The Client Device will not resume any transmissions until it has again received control signals from a Master Device.

c) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply.

d) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.

e) The client test frequency must be monitored to ensure no transmission of any type has occurred for 30 minutes. Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear.

DFS Detection Thresholds

Table 3 below provides the DFS Detection Thresholds for Master Devices as well as Client Devices incorporating In-Service Monitoring.

Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ⩾ 200 mill watt	-64 dBm
EIRP < 200 mill watt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 mill watt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Response Requirements

Table 4 provides the response requirements for Master and Client Devices incorporating DFS.

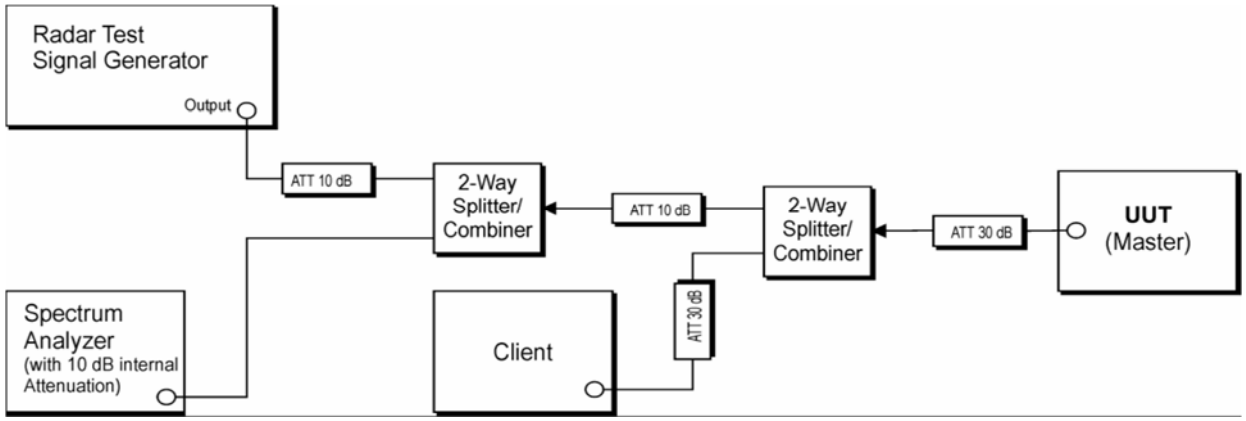
Table 4: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. **Note 2:** The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. **Note 3:** During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

3.7.2.Test Description

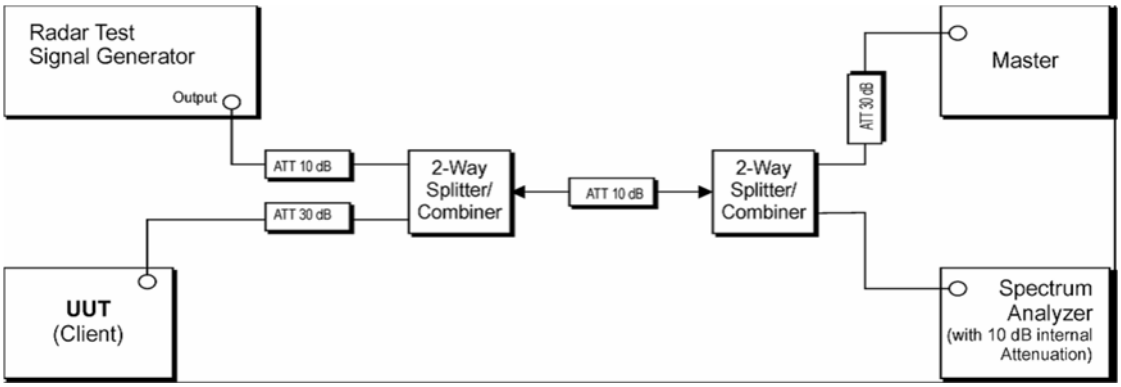
According to Section 7.2 of KDB 905462 D02 V01R01

1. Setup for Master with injection at the Master



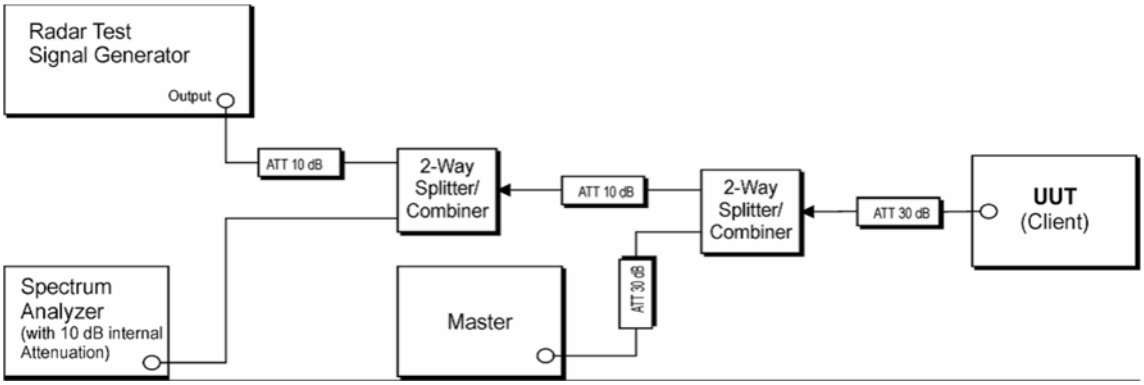
(Example Conducted Setup where UUT is a Master and Radar Test Waveforms are injected into the Master)

2. Setup for Client with injection at the Master



(Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Master)

3. Setup for Client with injection at the Client



(Example Conducted Setup where UUT is a Client and Radar Test Waveforms are injected into the Client)

3.7.3.Information of Companion Device

Product Name:	Router
Manufacturer:	ASUS
FCC ID:	MSQ-RTAXJF00
Device Type:	Master Device
Operating Mode:	Master Mode
Serial No:	M3IAJF201046
Antenna Gain:	2.0dBi

3.7.4.Test Result

Refer to Annex A.6 in this report.

3.8. Conducted Emission

3.8.1.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.

3.8.2.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.

3.8.3.Test Setup Layout

Refer to chapter 2.6.2 in this report.

3.8.4.Test Result

Refer to Annex A.7 in this report.

3.9. Restricted Frequency Bands

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:

(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).

3.9.2.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.

3.9.3.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.

3.10. Radiated Emission

3.10.1.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).

3.10.2.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.

3.10.3.Test Setup Layout

Refer to chapter 2.6.3 in this report.

3.10.4.Test Result

Refer to Annex A.9 in this report.

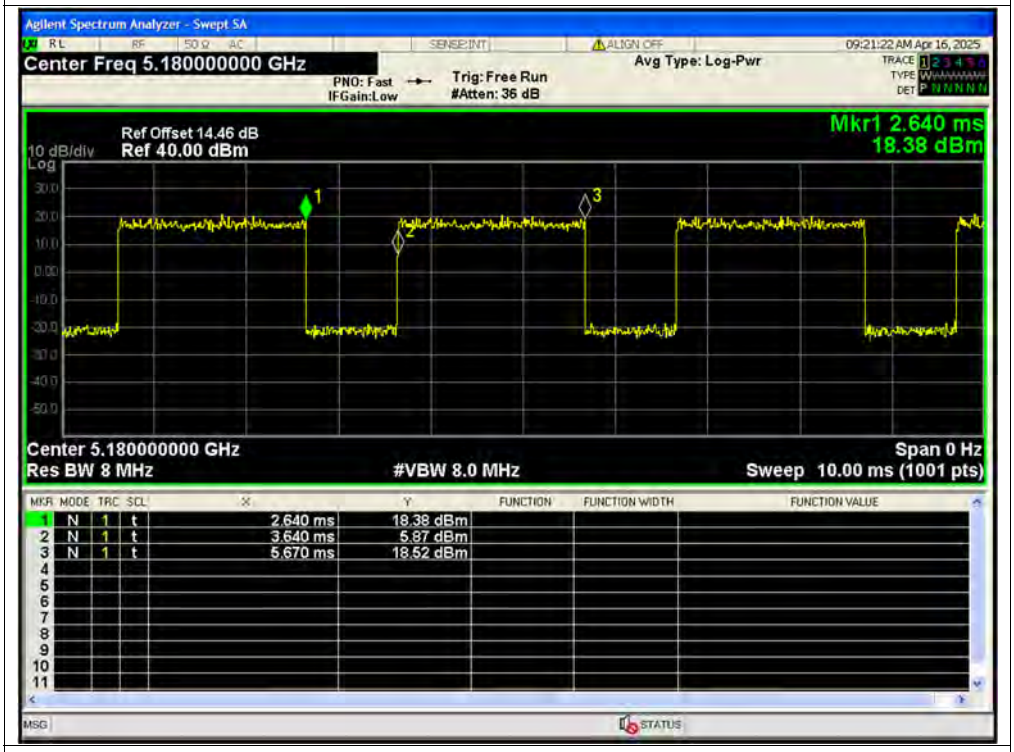
Annex A Test Data and Result

A.1. Duty Cycle of Test Signal

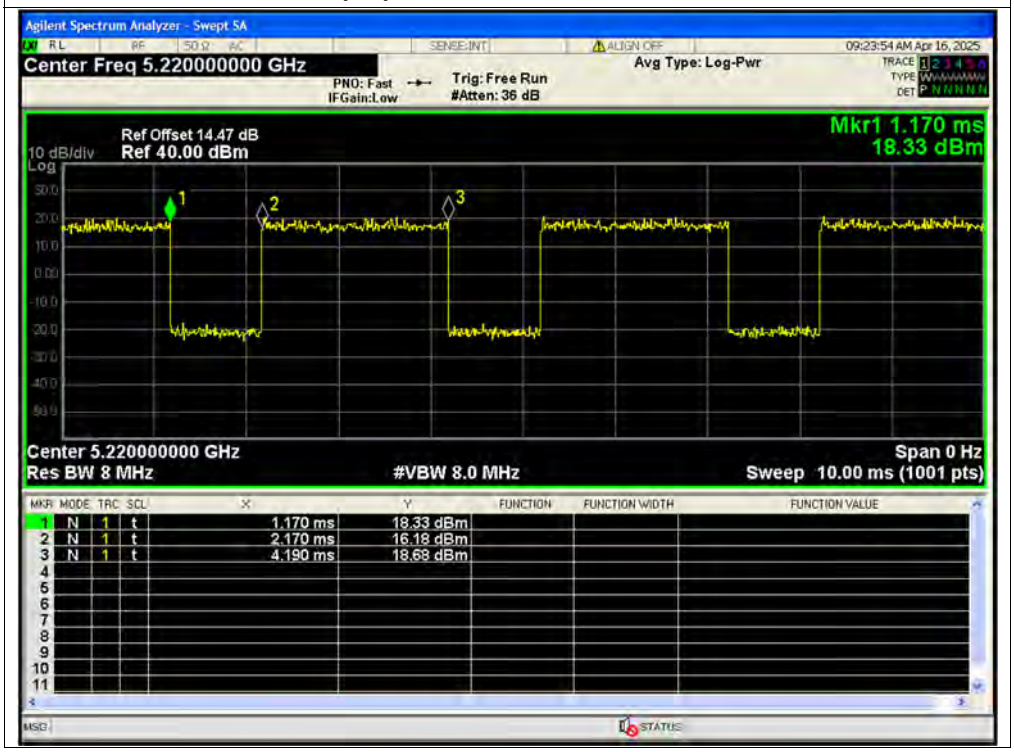
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	67	1.74	0.49
NVNT	a	5220	Ant1	66.89	1.75	0.5
NVNT	a	5240	Ant1	66.67	1.76	0.5
NVNT	a	5260	Ant1	67	1.74	0.49
NVNT	a	5300	Ant1	66.89	1.75	0.5
NVNT	a	5320	Ant1	66.89	1.75	0.5
NVNT	a	5500	Ant1	66.89	1.75	0.5
NVNT	a	5580	Ant1	66.89	1.75	0.5
NVNT	a	5720	Ant1	67	1.74	0.49
NVNT	a	5745	Ant1	66.67	1.76	0.5
NVNT	a	5785	Ant1	66.89	1.75	0.5
NVNT	a	5825	Ant1	67	1.74	0.49
NVNT	n20	5180	Ant1	65.4	1.84	0.53
NVNT	n20	5220	Ant1	65.4	1.84	0.53
NVNT	n20	5240	Ant1	65.4	1.84	0.53
NVNT	n20	5260	Ant1	65.4	1.84	0.53
NVNT	n20	5300	Ant1	65.4	1.84	0.53
NVNT	n20	5320	Ant1	65.4	1.84	0.53
NVNT	n20	5500	Ant1	65.4	1.84	0.53
NVNT	n20	5580	Ant1	65.4	1.84	0.53
NVNT	n20	5720	Ant1	65.4	1.84	0.53
NVNT	n20	5745	Ant1	65.05	1.87	0.53
NVNT	n20	5785	Ant1	65.4	1.84	0.53
NVNT	n20	5825	Ant1	65.4	1.84	0.53
NVNT	n40	5190	Ant1	47.67	3.22	1.09
NVNT	n40	5230	Ant1	47.94	3.19	1.08
NVNT	n40	5270	Ant1	48.19	3.17	1.08
NVNT	n40	5310	Ant1	48.19	3.17	1.08
NVNT	n40	5510	Ant1	48.19	3.17	1.08
NVNT	n40	5550	Ant1	47.67	3.22	1.09
NVNT	n40	5710	Ant1	47.94	3.19	1.08
NVNT	n40	5755	Ant1	47.67	3.22	1.09

NVNT	n40	5795	Ant1	47.67	3.22	1.09

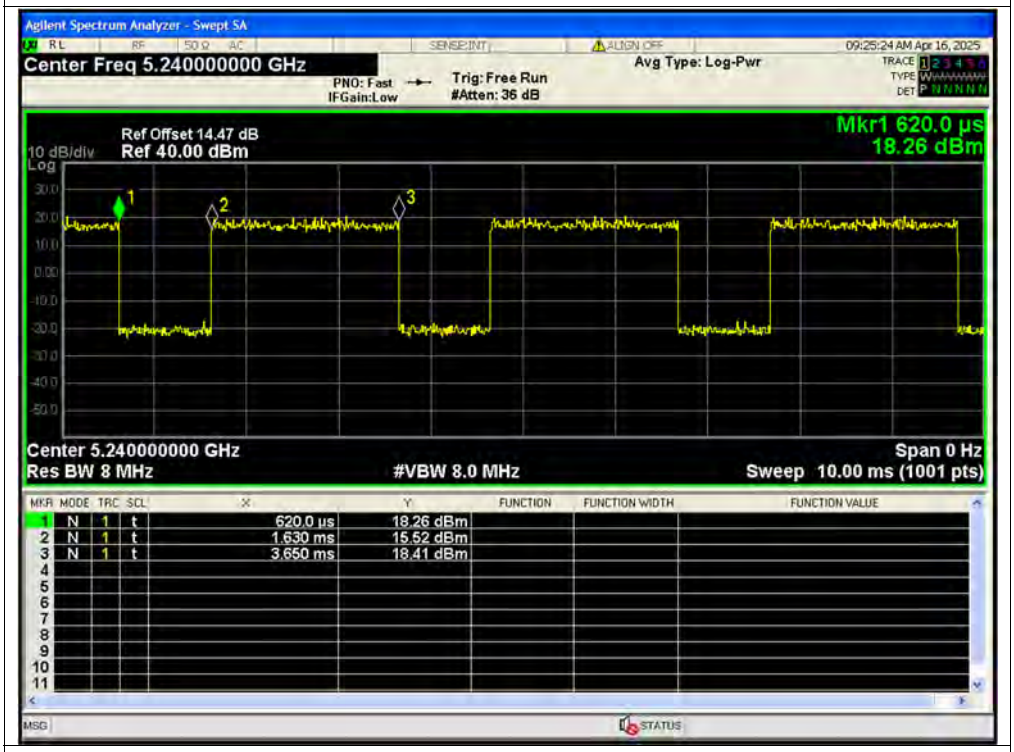
Test Graphs
Duty Cycle NVNT a 5180MHz Ant1



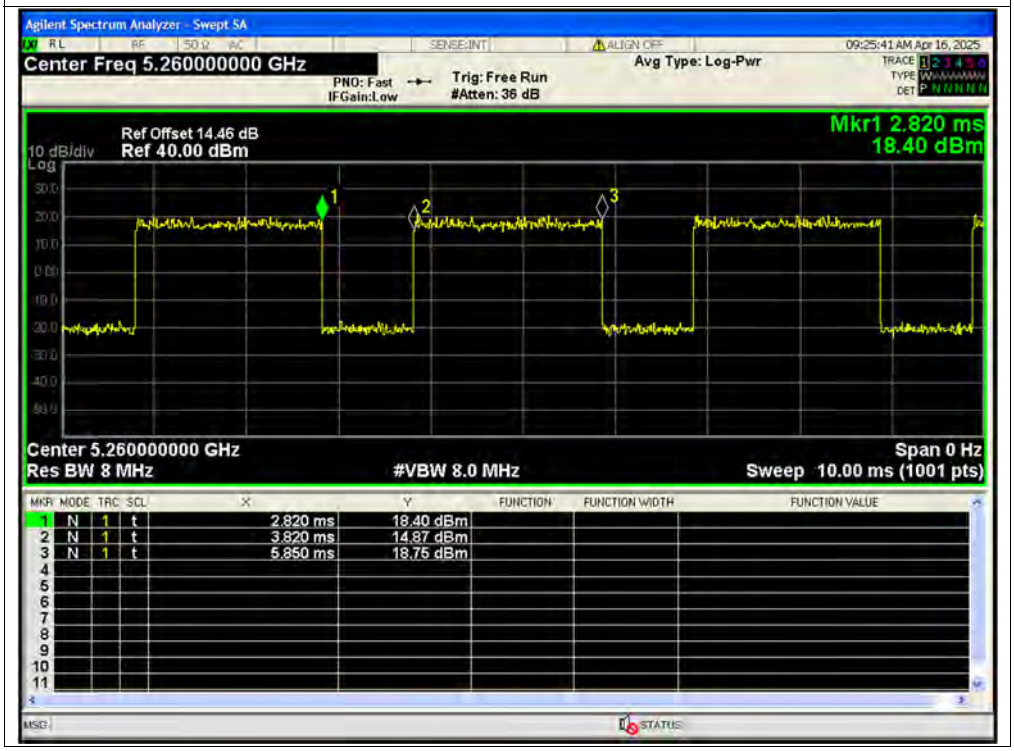
Duty Cycle NVNT a 5220MHz Ant1



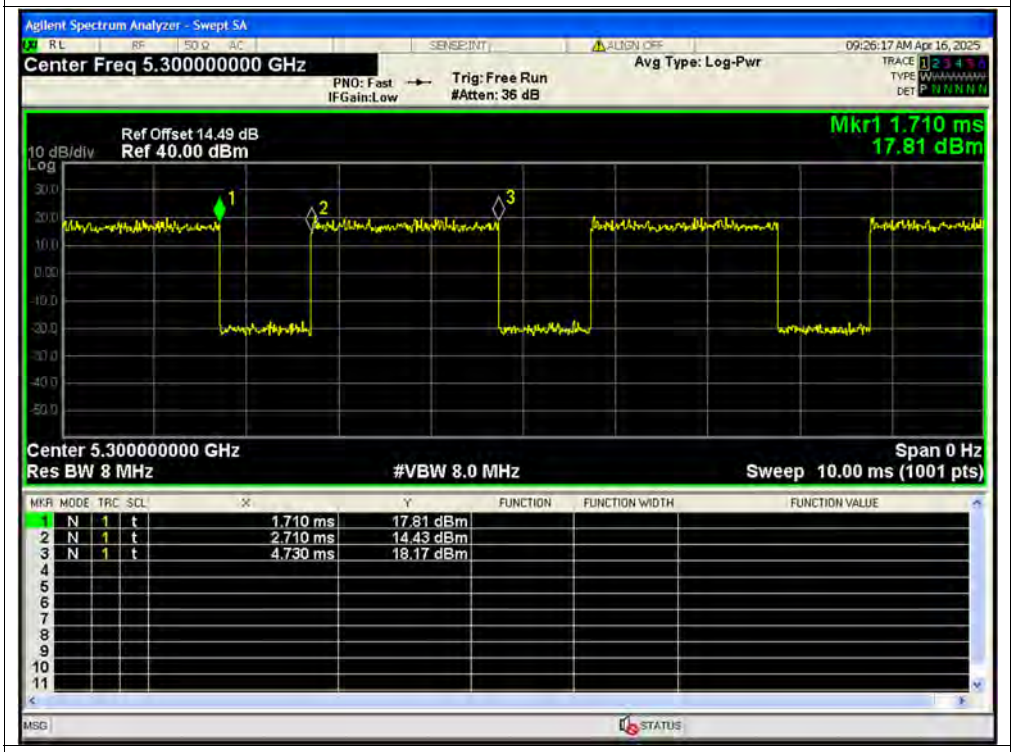
Duty Cycle NVNT a 5240MHz Ant1



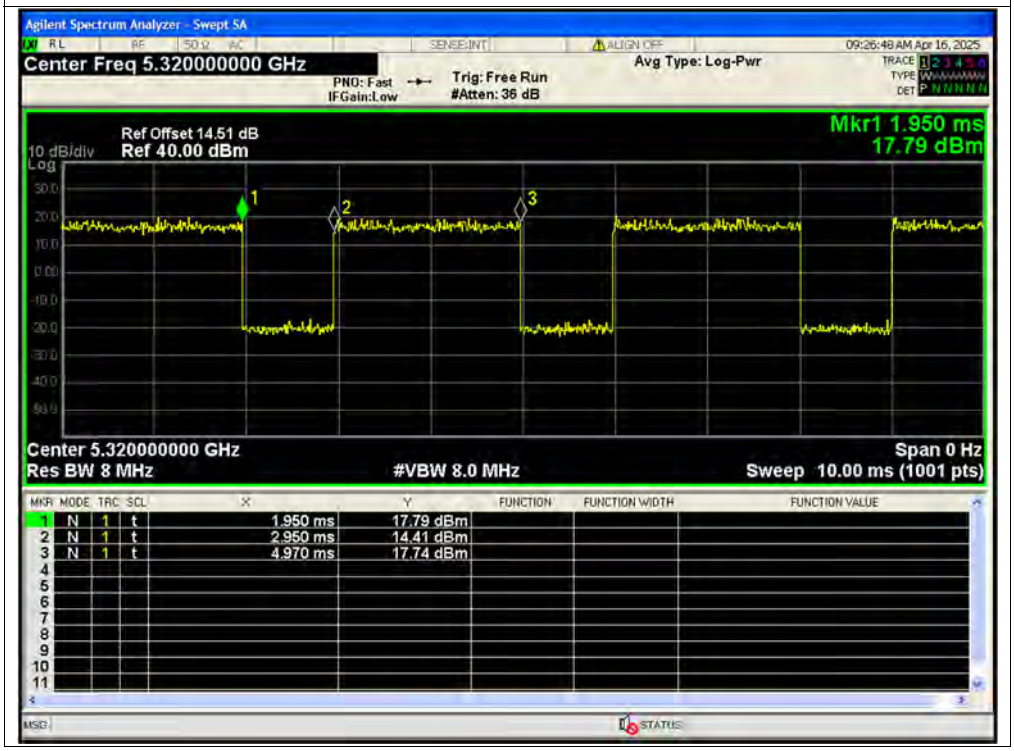
Duty Cycle NVNT a 5260MHz Ant1



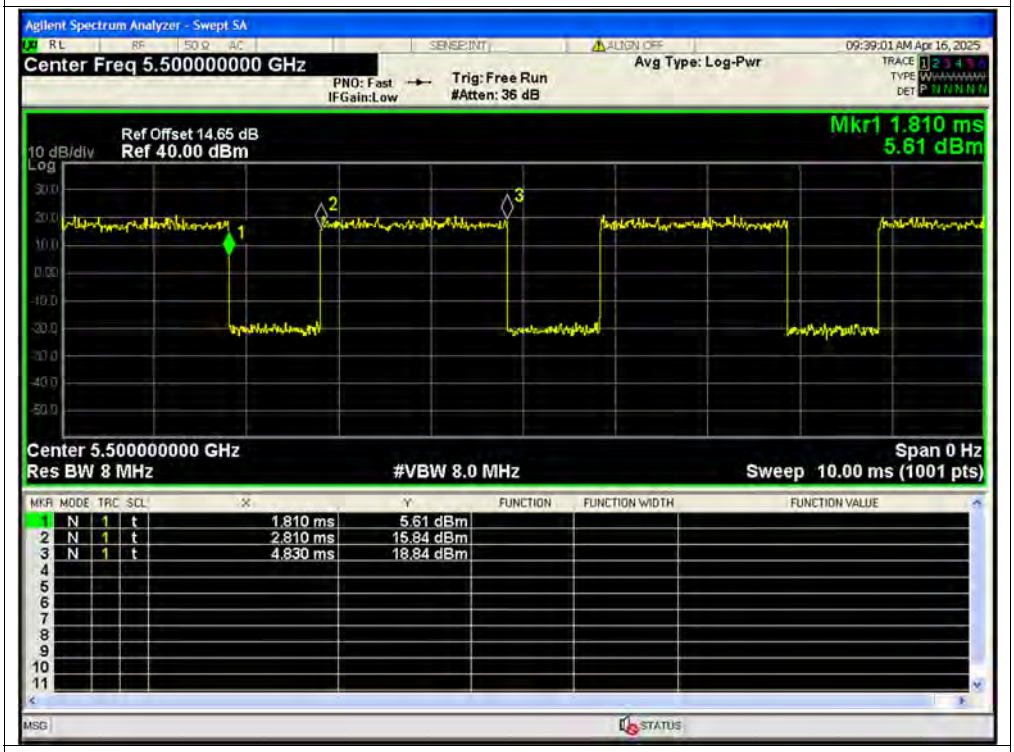
Duty Cycle NVNT a 5300MHz Ant1



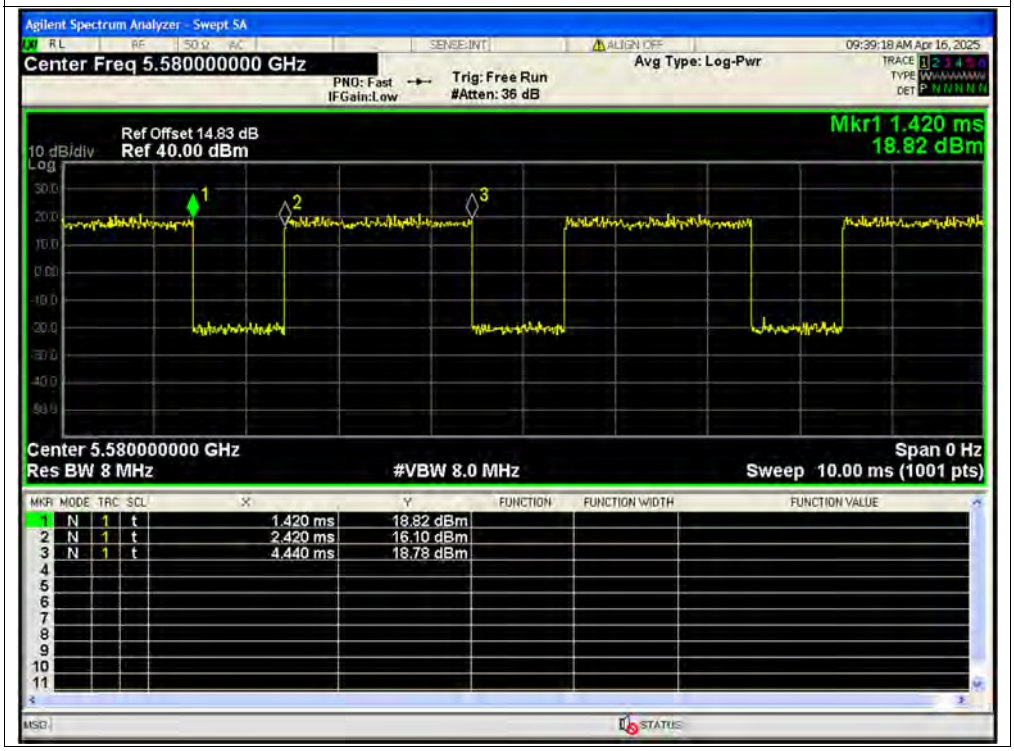
Duty Cycle NVNT a 5320MHz Ant1



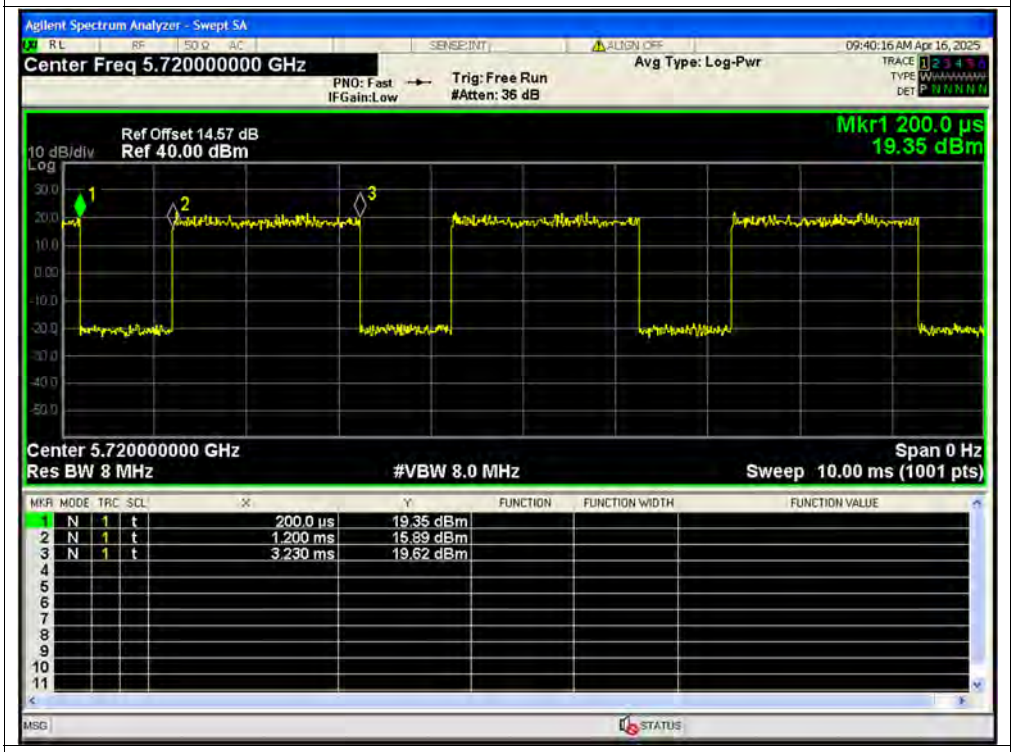
Duty Cycle NVNT a 5500MHz Ant1



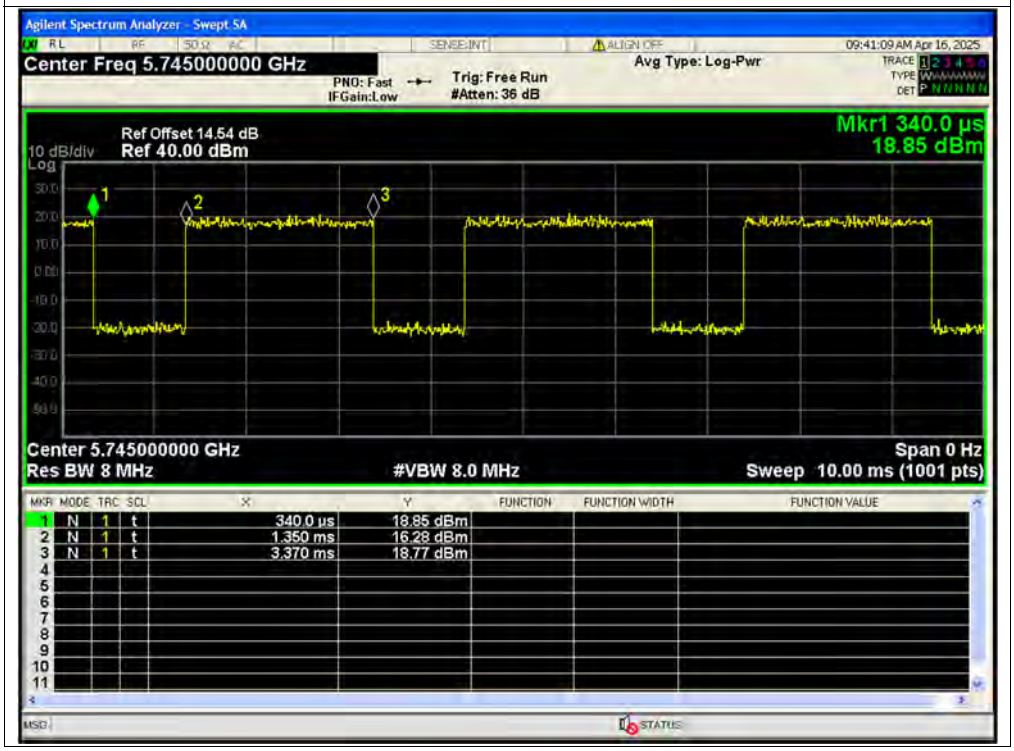
Duty Cycle NVNT a 5580MHz Ant1



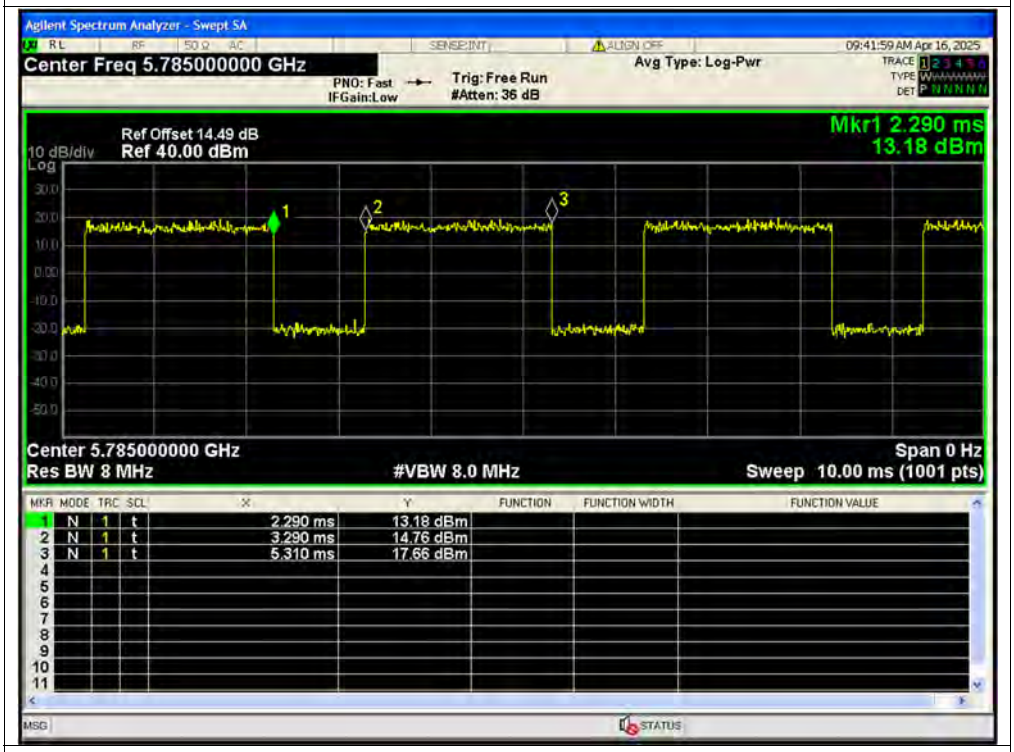
Duty Cycle NVNT a 5720MHz Ant1



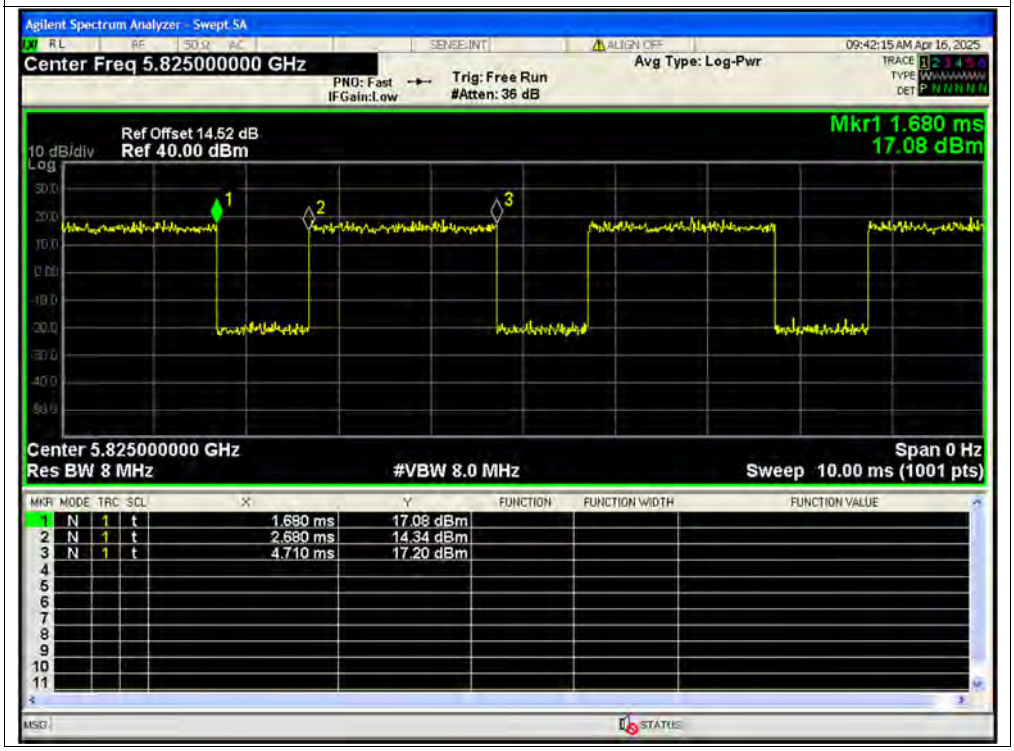
Duty Cycle NVNT a 5745MHz Ant1



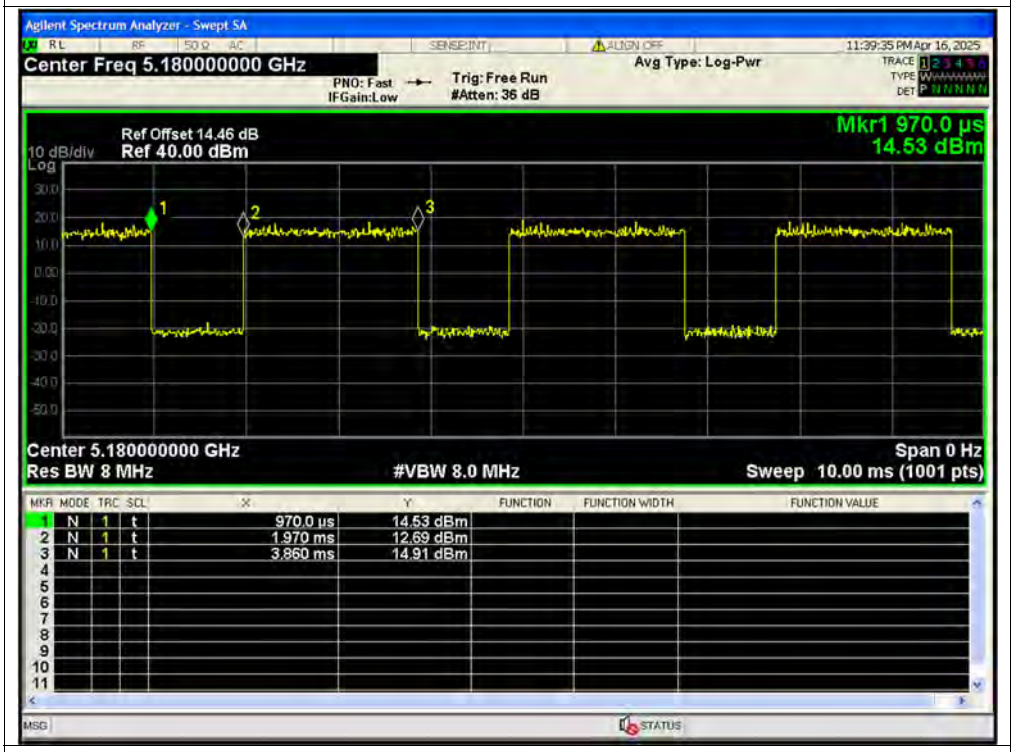
Duty Cycle NVNT a 5785MHz Ant1



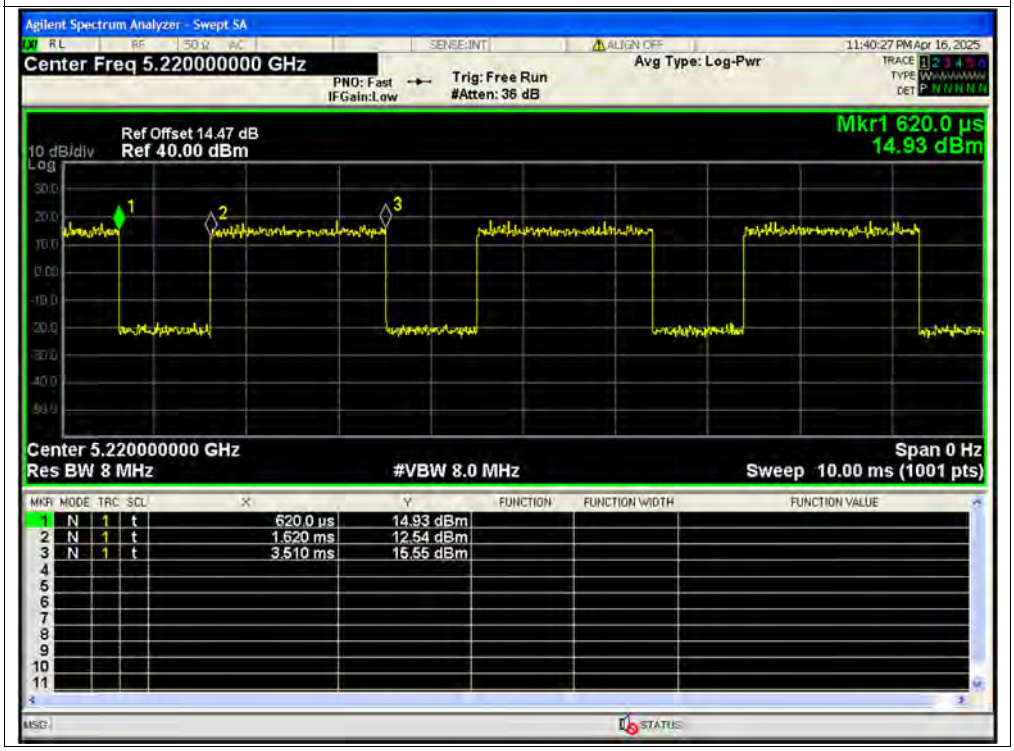
Duty Cycle NVNT a 5825MHz Ant1



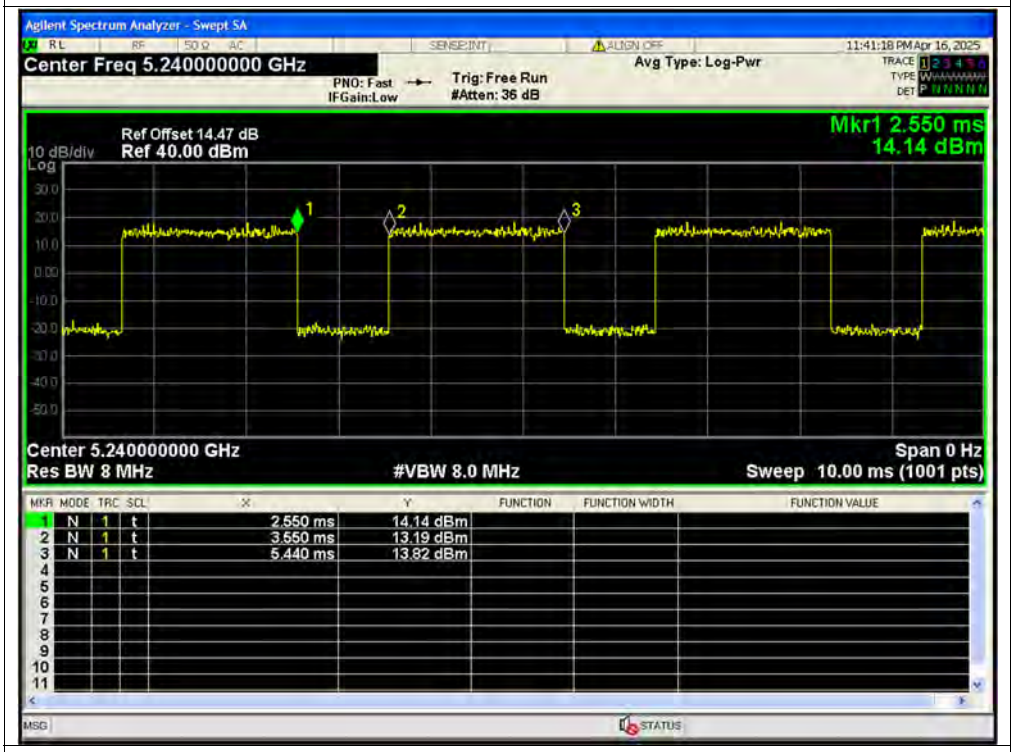
Duty Cycle NVNT n20 5180MHz Ant1



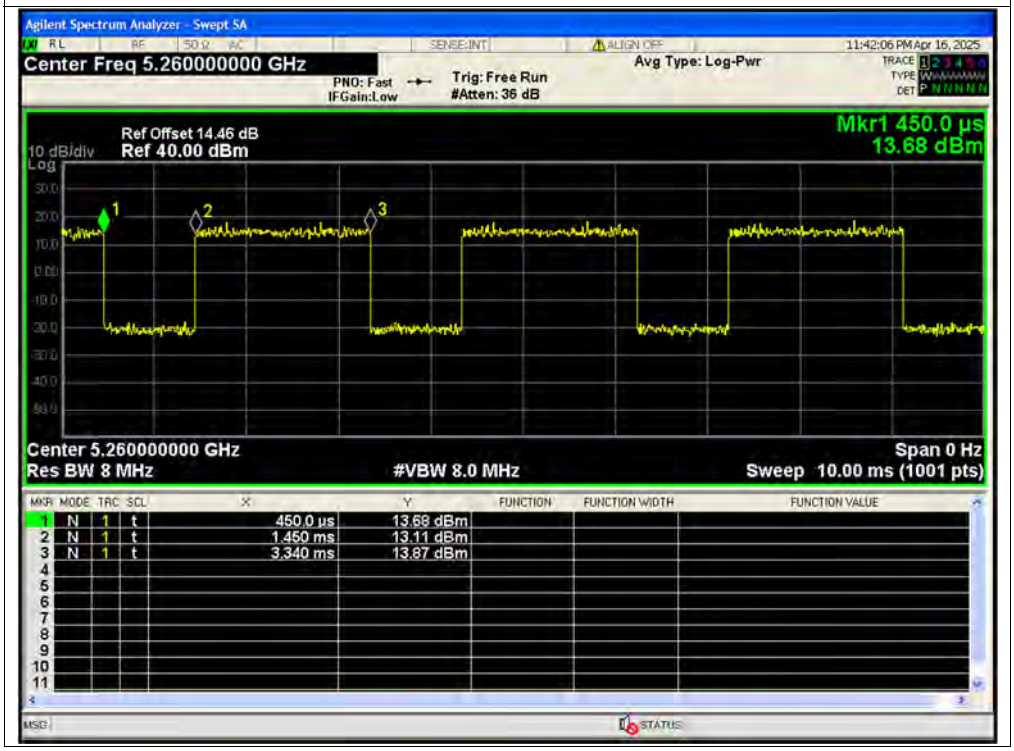
Duty Cycle NVNT n20 5220MHz Ant1



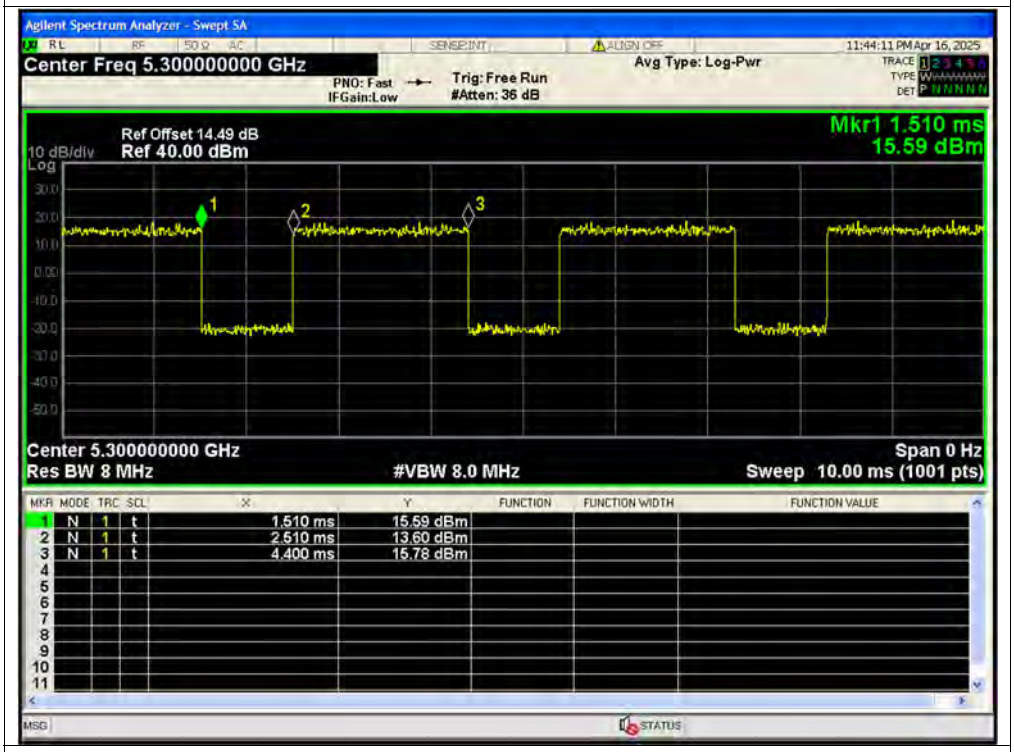
Duty Cycle NVNT n20 5240MHz Ant1



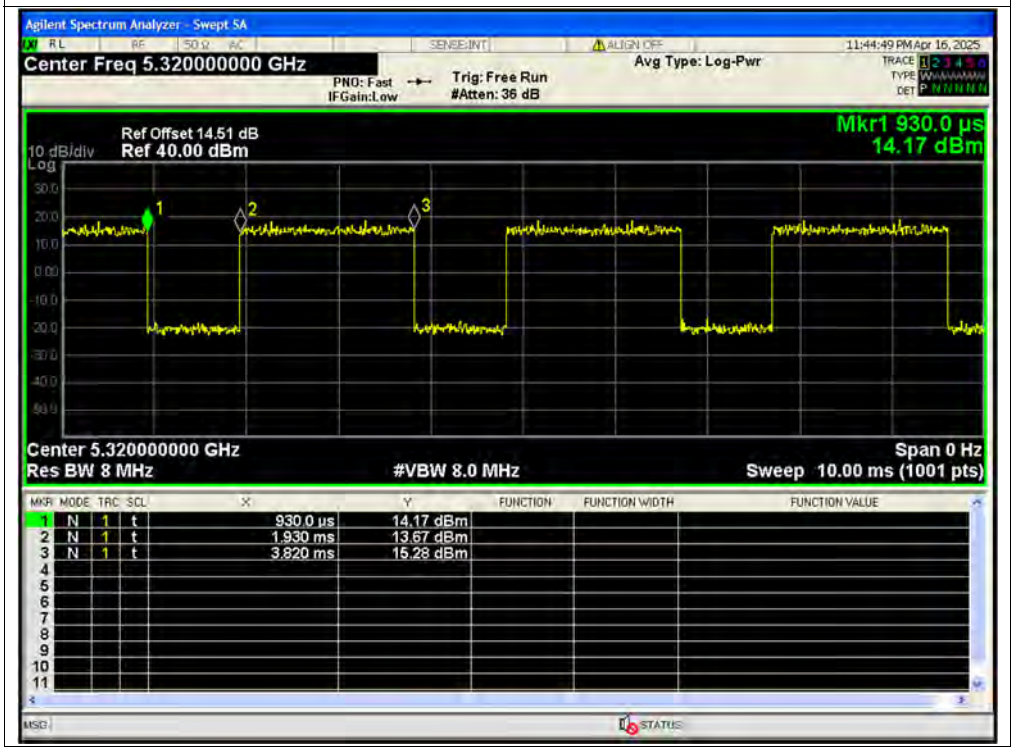
Duty Cycle NVNT n20 5260MHz Ant1



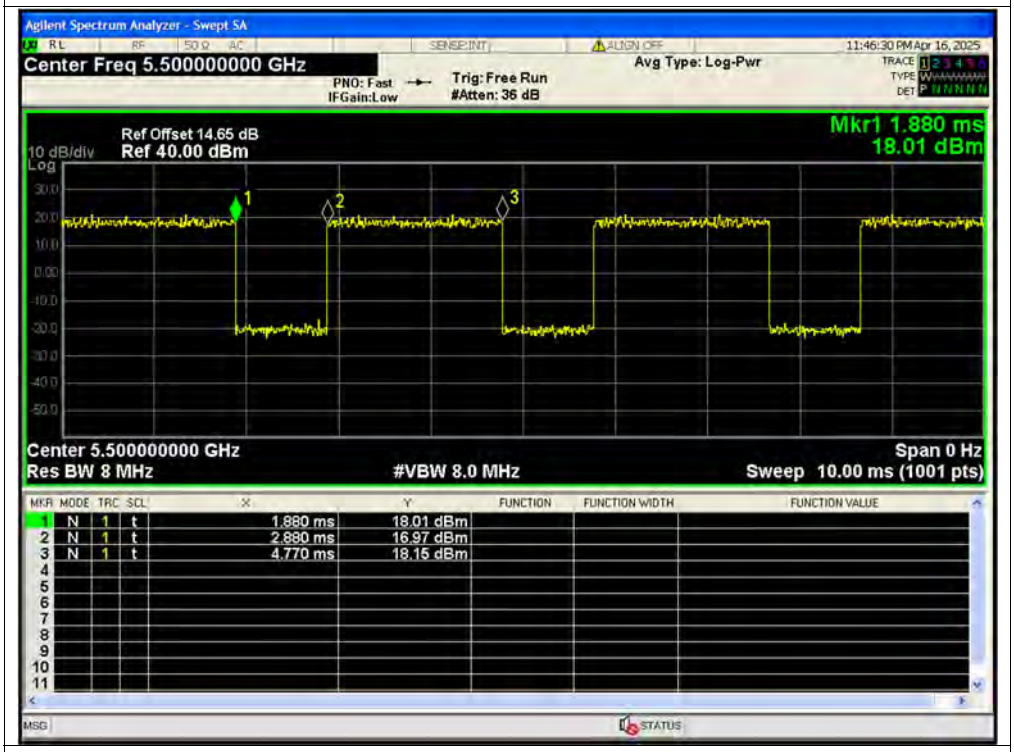
Duty Cycle NVNT n20 5300MHz Ant1



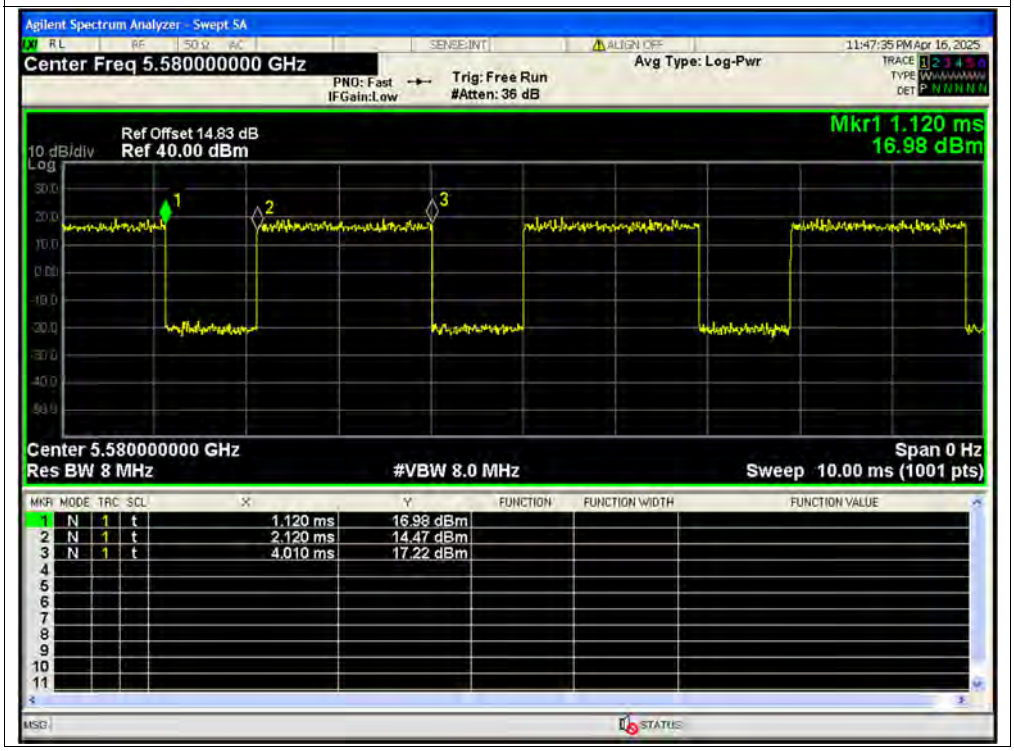
Duty Cycle NVNT n20 5320MHz Ant1



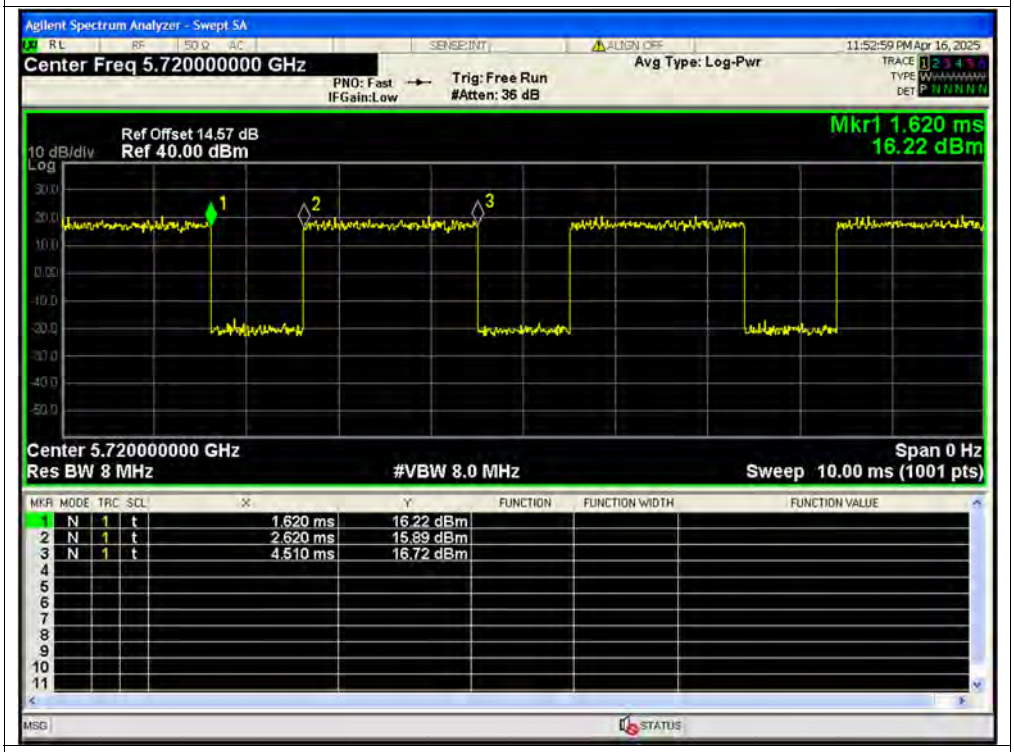
Duty Cycle NVNT n20 5500MHz Ant1



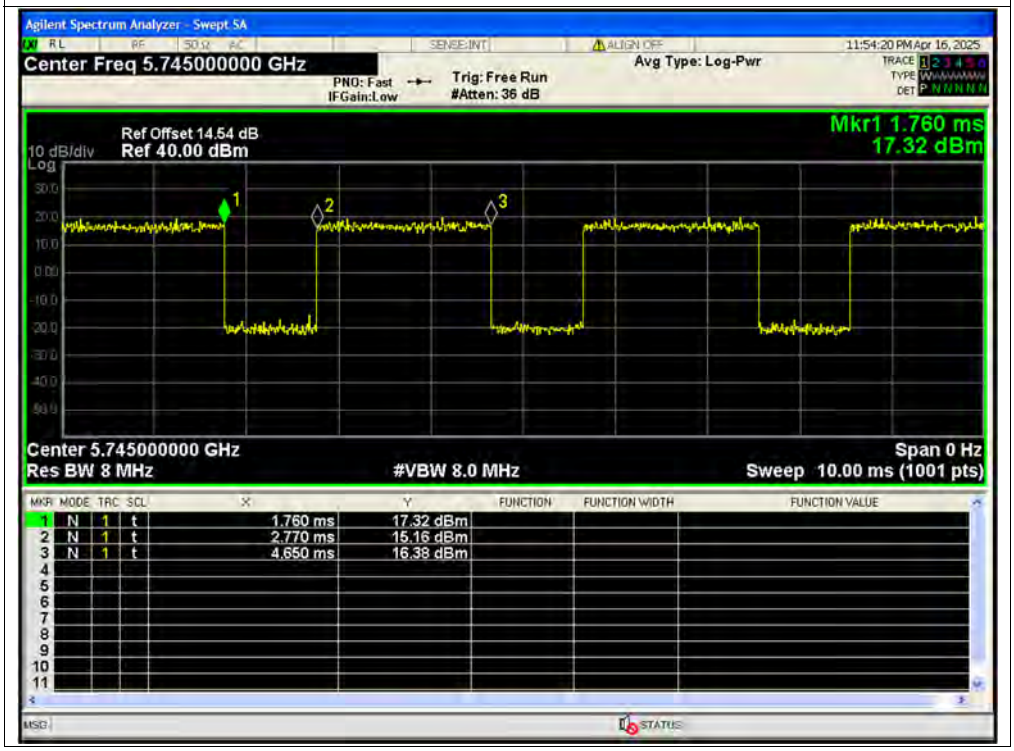
Duty Cycle NVNT n20 5580MHz Ant1



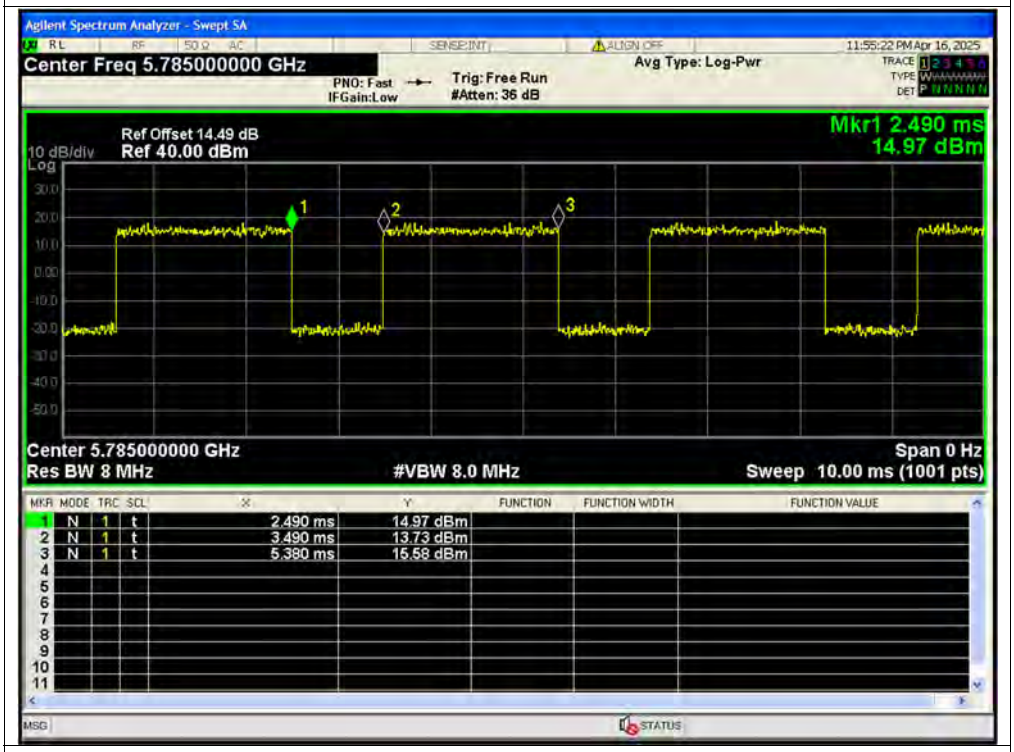
Duty Cycle NVNT n20 5720MHz Ant1



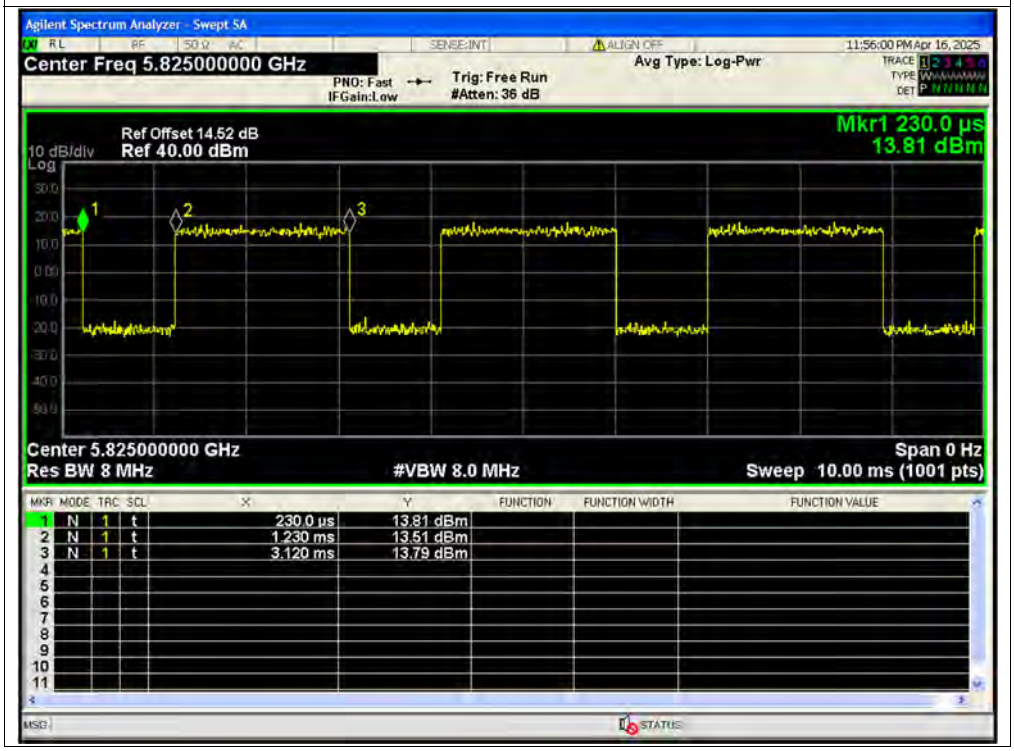
Duty Cycle NVNT n20 5745MHz Ant1



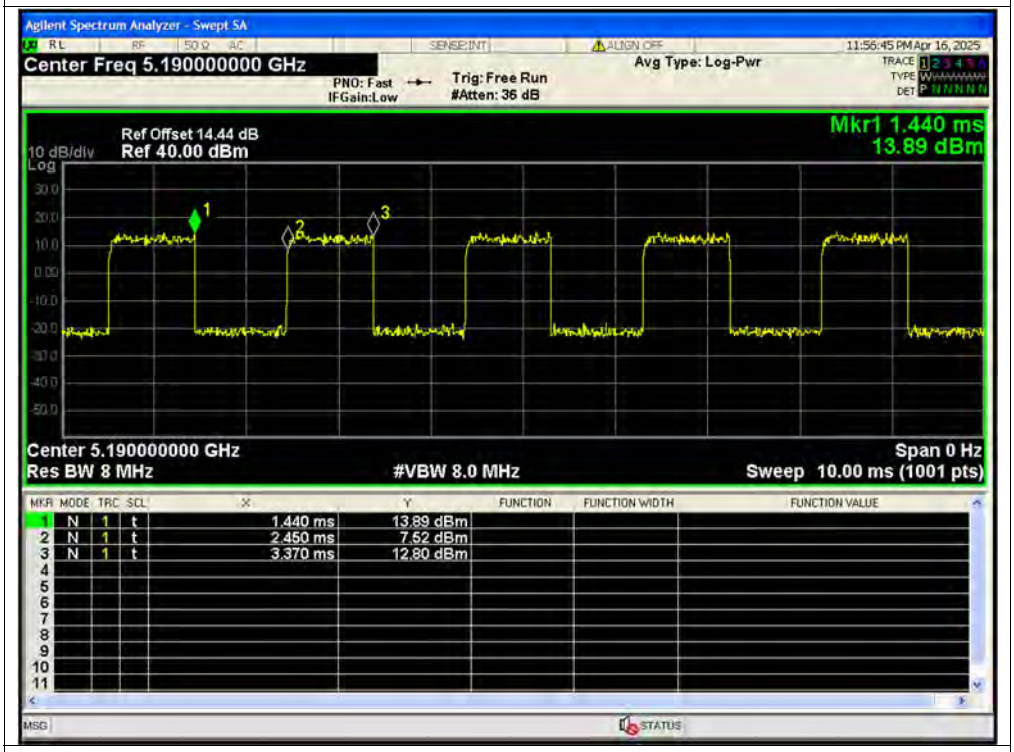
Duty Cycle NVNT n20 5785MHz Ant1



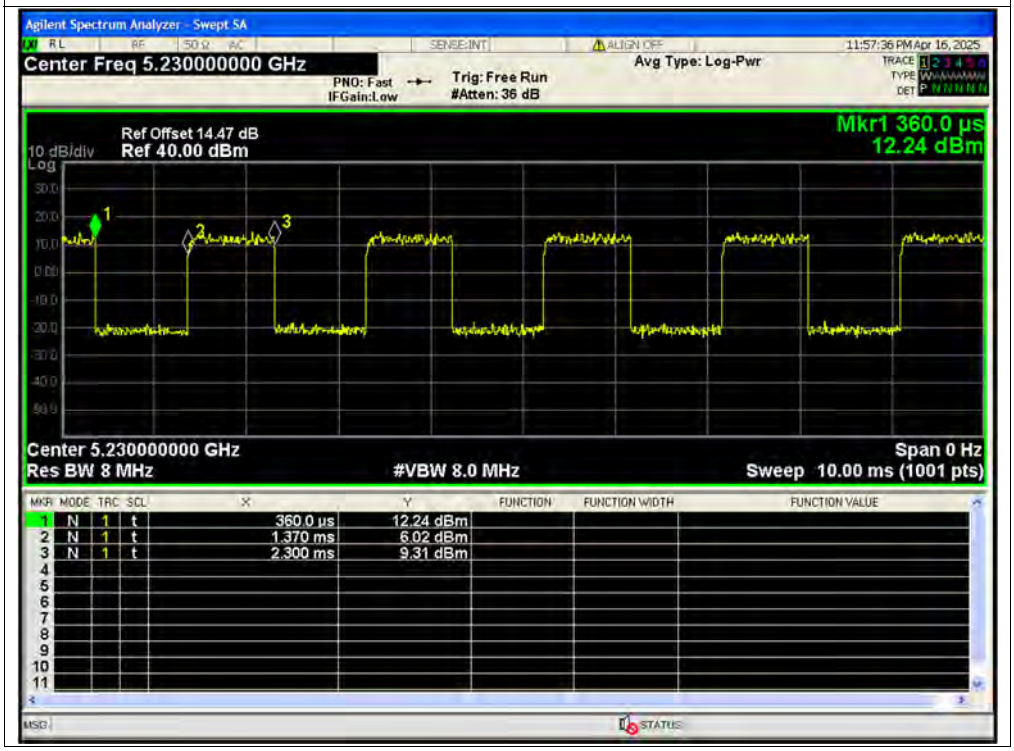
Duty Cycle NVNT n20 5825MHz Ant1



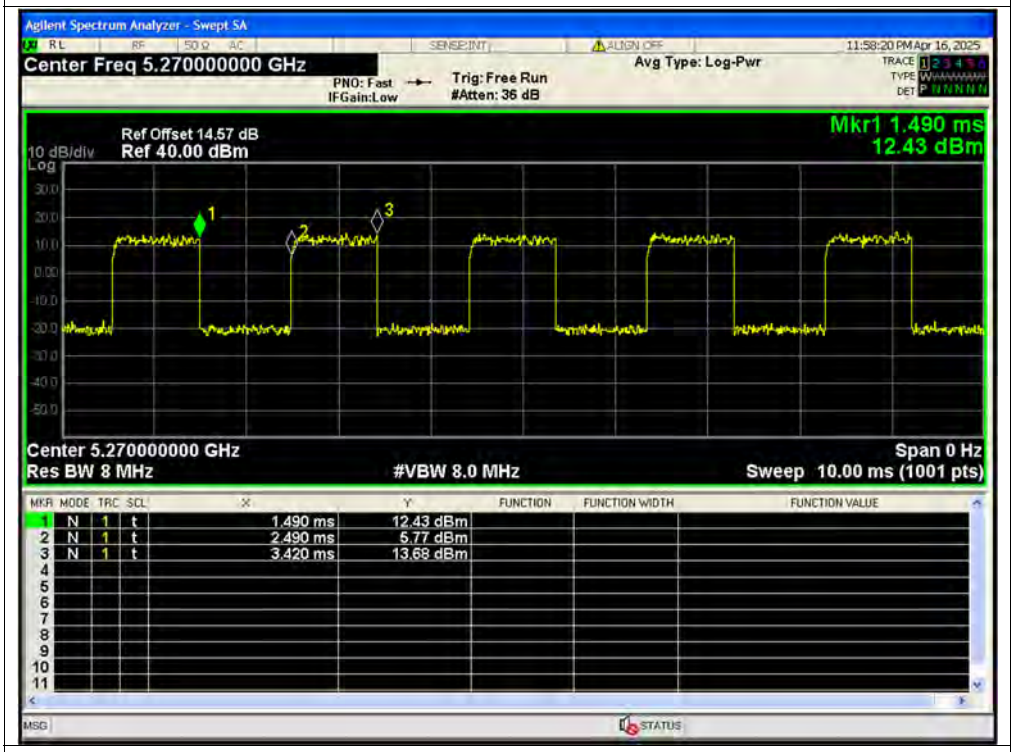
Duty Cycle NVNT n40 5190MHz Ant1



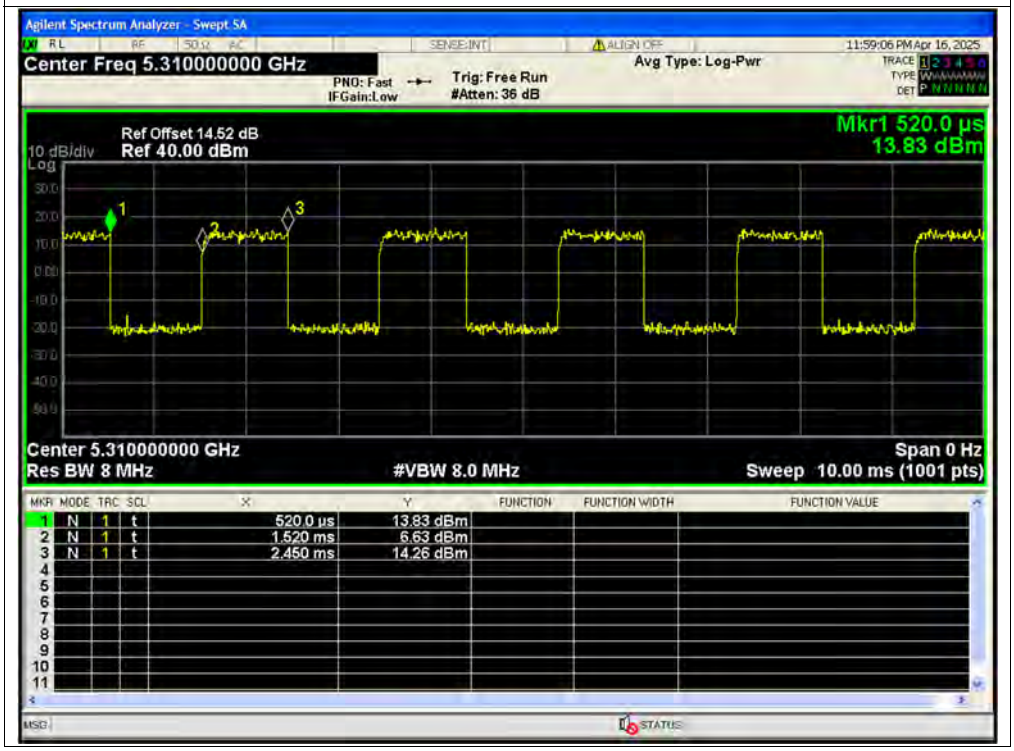
Duty Cycle NVNT n40 5230MHz Ant1



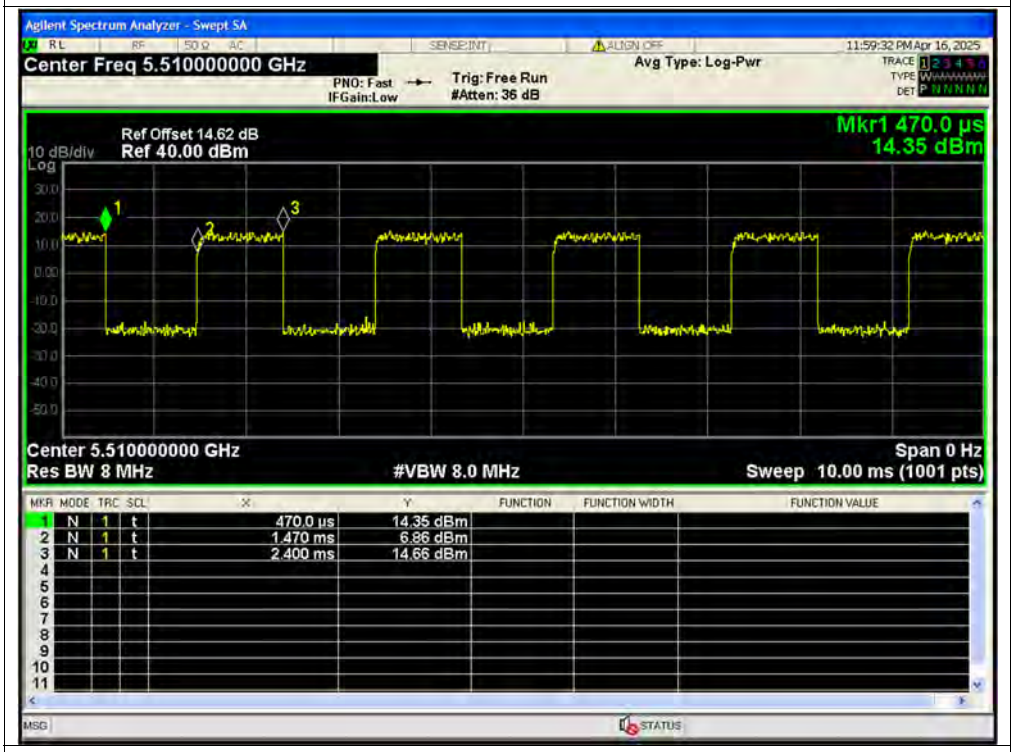
Duty Cycle NVNT n40 5270MHz Ant1



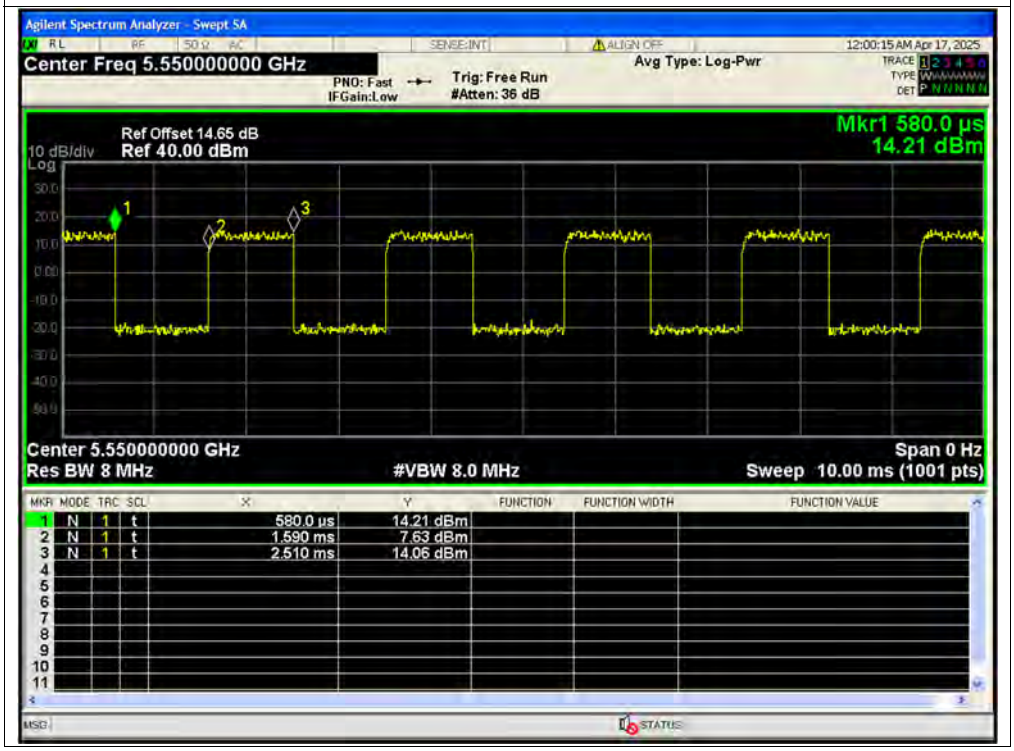
Duty Cycle NVNT n40 5310MHz Ant1



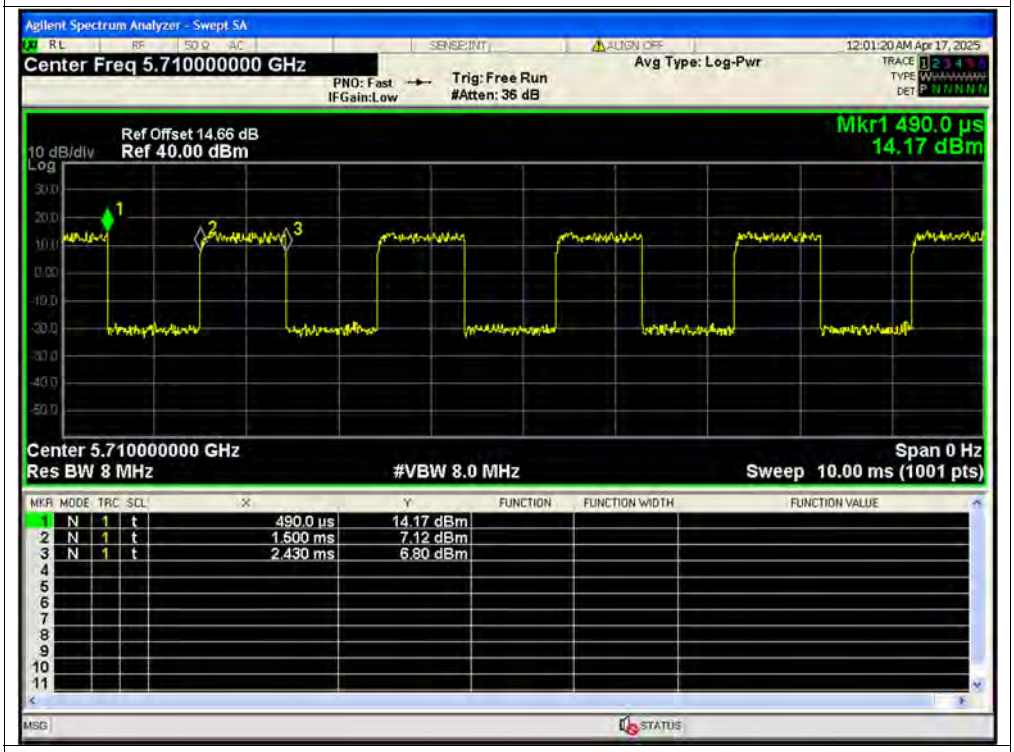
Duty Cycle NVNT n40 5510MHz Ant1



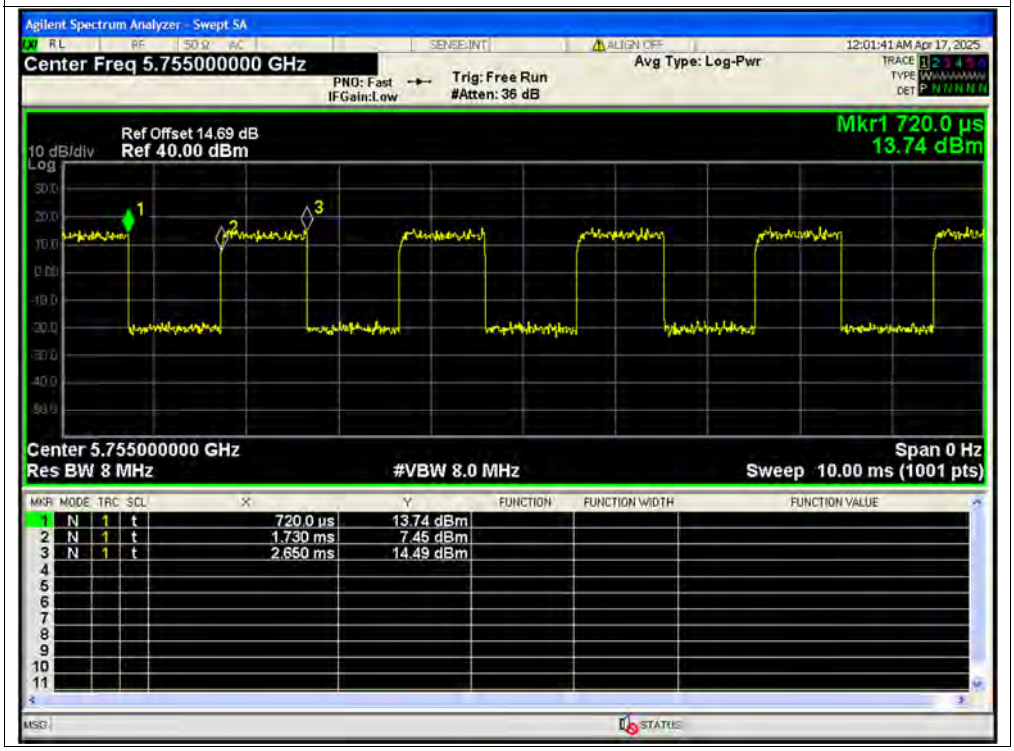
Duty Cycle NVNT n40 5550MHz Ant1



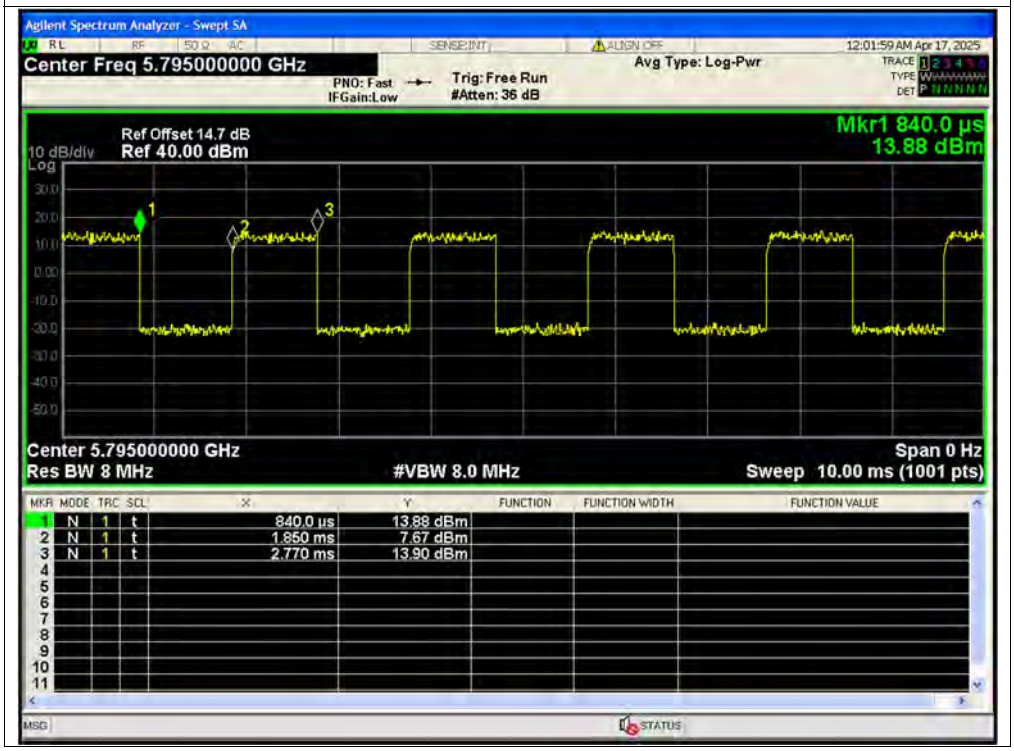
Duty Cycle NVNT n40 5710MHz Ant1



Duty Cycle NVNT n40 5755MHz Ant1



Duty Cycle NVNT n40 5795MHz Ant1



A.2. Maximum Conducted Output Power

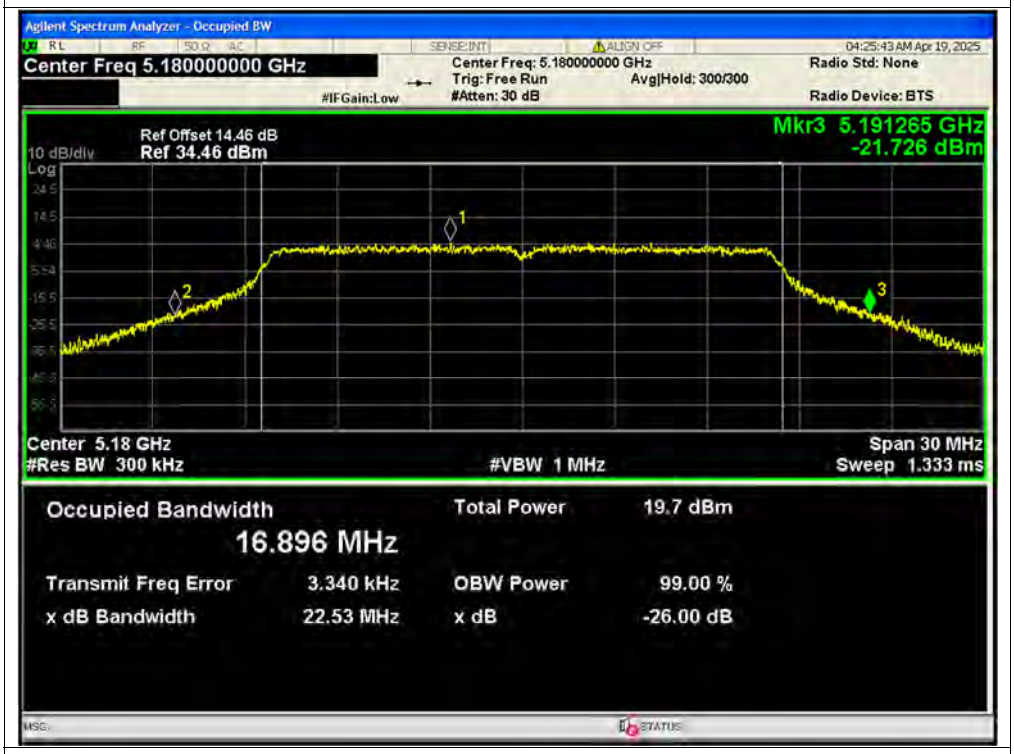
Condition	Mode	Frequency (MHz)	Antenna	Total Conducted Power (dBm)	Total Conducted Power (W)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	13.38	0.02178	24	Pass
NVNT	a	5220	Ant1	13.4	0.02188	24	Pass
NVNT	a	5240	Ant1	13.18	0.0208	24	Pass
NVNT	a	5260	Ant1	13.36	0.02168	24	Pass
NVNT	a	5300	Ant1	12.66	0.01845	24	Pass
NVNT	a	5320	Ant1	12.14	0.01637	24	Pass
NVNT	a	5500	Ant1	13.53	0.02254	24	Pass
NVNT	a	5580	Ant1	13.05	0.02018	24	Pass
NVNT	a	5720	Ant1	13.83	0.02415	24	Pass
NVNT	a	5745	Ant1	13.12	0.02051	30	Pass
NVNT	a	5785	Ant1	12.49	0.01774	30	Pass
NVNT	a	5825	Ant1	12.45	0.01758	30	Pass
NVNT	n20	5180	Ant1	11.47	0.01403	24	Pass
NVNT	n20	5220	Ant1	11.46	0.014	24	Pass
NVNT	n20	5240	Ant1	11.24	0.0133	24	Pass
NVNT	n20	5260	Ant1	12.28	0.0169	24	Pass
NVNT	n20	5300	Ant1	11.76	0.015	24	Pass
NVNT	n20	5320	Ant1	11.67	0.01469	24	Pass
NVNT	n20	5500	Ant1	12.53	0.01791	24	Pass
NVNT	n20	5580	Ant1	12.64	0.01837	24	Pass
NVNT	n20	5720	Ant1	12.82	0.01914	24	Pass
NVNT	n20	5745	Ant1	11.82	0.01521	30	Pass
NVNT	n20	5785	Ant1	11.77	0.01503	30	Pass
NVNT	n20	5825	Ant1	11.74	0.01493	30	Pass
NVNT	n40	5190	Ant1	11.67	0.01469	24	Pass
NVNT	n40	5230	Ant1	11.33	0.01358	24	Pass
NVNT	n40	5270	Ant1	11.67	0.01469	24	Pass
NVNT	n40	5310	Ant1	11.93	0.0156	24	Pass
NVNT	n40	5510	Ant1	12.19	0.01656	24	Pass
NVNT	n40	5550	Ant1	11.99	0.01581	24	Pass
NVNT	n40	5710	Ant1	12.33	0.0171	24	Pass
NVNT	n40	5755	Ant1	12.07	0.01611	30	Pass
NVNT	n40	5795	Ant1	12.07	0.01611	30	Pass

A.3. Emission Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)
NVNT	a	5180	Ant1	22.53
NVNT	a	5220	Ant1	22.74
NVNT	a	5240	Ant1	23.07
NVNT	a	5260	Ant1	22.51
NVNT	a	5300	Ant1	23.07
NVNT	a	5320	Ant1	22.54
NVNT	a	5500	Ant1	22.89
NVNT	a	5580	Ant1	22.84
NVNT	a	5720	Ant1	22.65
NVNT	n20	5180	Ant1	24.88
NVNT	n20	5220	Ant1	24.43
NVNT	n20	5240	Ant1	25.09
NVNT	n20	5260	Ant1	24.63
NVNT	n20	5300	Ant1	24.41
NVNT	n20	5320	Ant1	24.55
NVNT	n20	5500	Ant1	24.48
NVNT	n20	5580	Ant1	24.13
NVNT	n20	5720	Ant1	24.42
NVNT	n40	5190	Ant1	39.1
NVNT	n40	5230	Ant1	39.25
NVNT	n40	5270	Ant1	39.06
NVNT	n40	5310	Ant1	39.42
NVNT	n40	5510	Ant1	39.15
NVNT	n40	5550	Ant1	39.13
NVNT	n40	5710	Ant1	39.3

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	16.36	0.5	Pass
NVNT	a	5785	Ant1	16.36	0.5	Pass
NVNT	a	5825	Ant1	16.34	0.5	Pass
NVNT	n20	5745	Ant1	17.59	0.5	Pass
NVNT	n20	5785	Ant1	17.6	0.5	Pass
NVNT	n20	5825	Ant1	17.58	0.5	Pass
NVNT	n40	5755	Ant1	35.85	0.5	Pass
NVNT	n40	5795	Ant1	35.88	0.5	Pass

Test Graphs
-26dB Bandwidth NVNT a 5180MHz Ant1



-26dB Bandwidth NVNT a 5220MHz Ant1

-26dB Bandwidth NVNT a 5240MHz Ant1

-26dB Bandwidth NVNT a 5260MHz Ant1

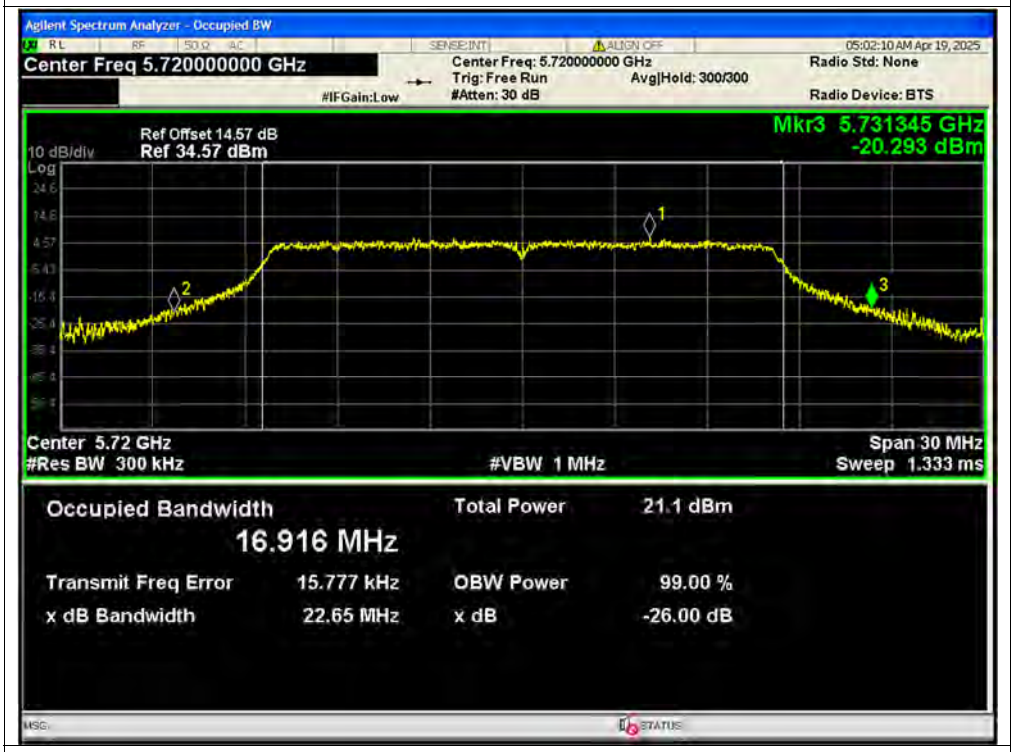
-26dB Bandwidth NVNT a 5300MHz Ant1

-26dB Bandwidth NVNT a 5320MHz Ant1

-26dB Bandwidth NVNT a 5500MHz Ant1

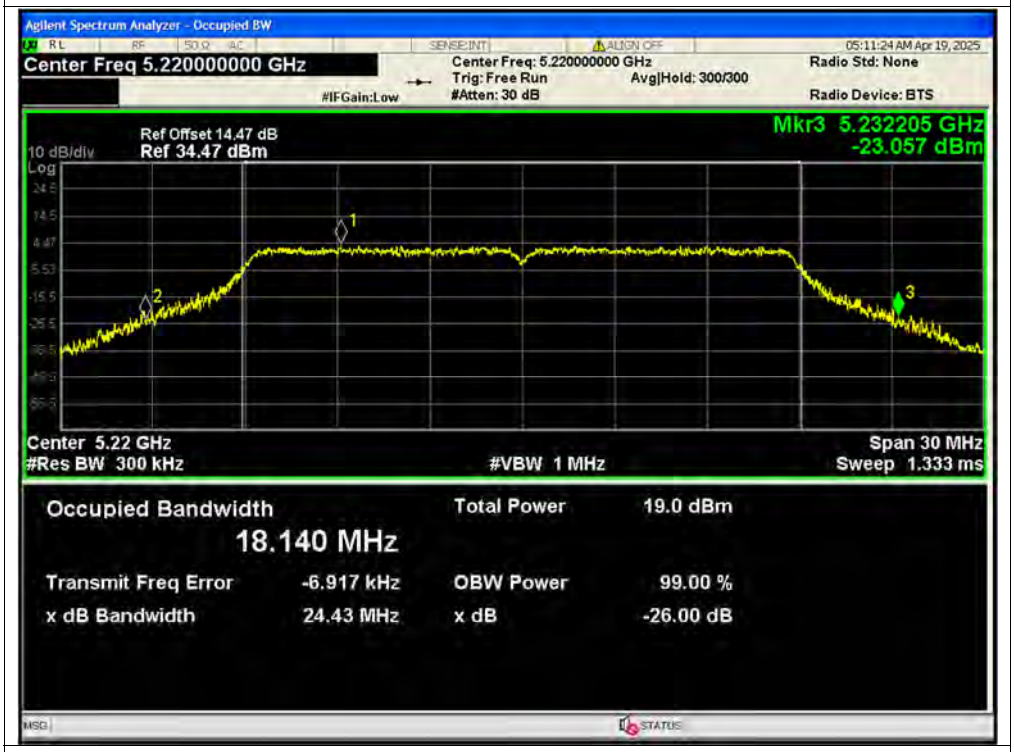
-26dB Bandwidth NVNT a 5580MHz Ant1

-26dB Bandwidth NVNT a 5720MHz Ant1



-26dB Bandwidth NVNT n20 5180MHz Ant1

-26dB Bandwidth NVNT n20 5220MHz Ant1

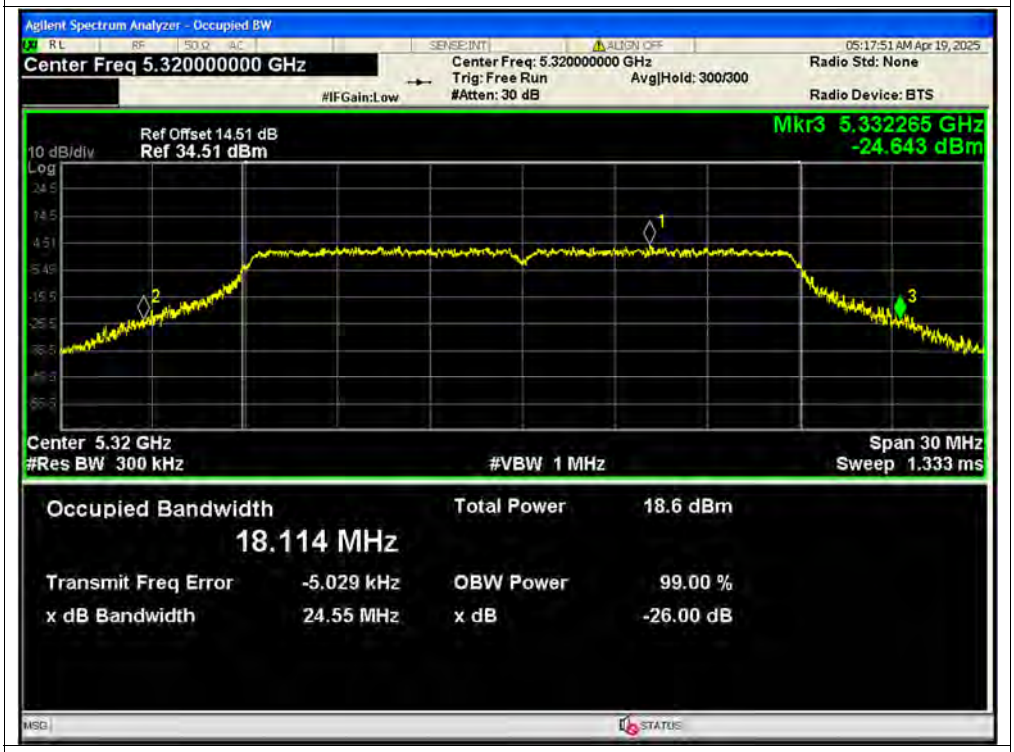


-26dB Bandwidth NVNT n20 5240MHz Ant1

-26dB Bandwidth NVNT n20 5260MHz Ant1

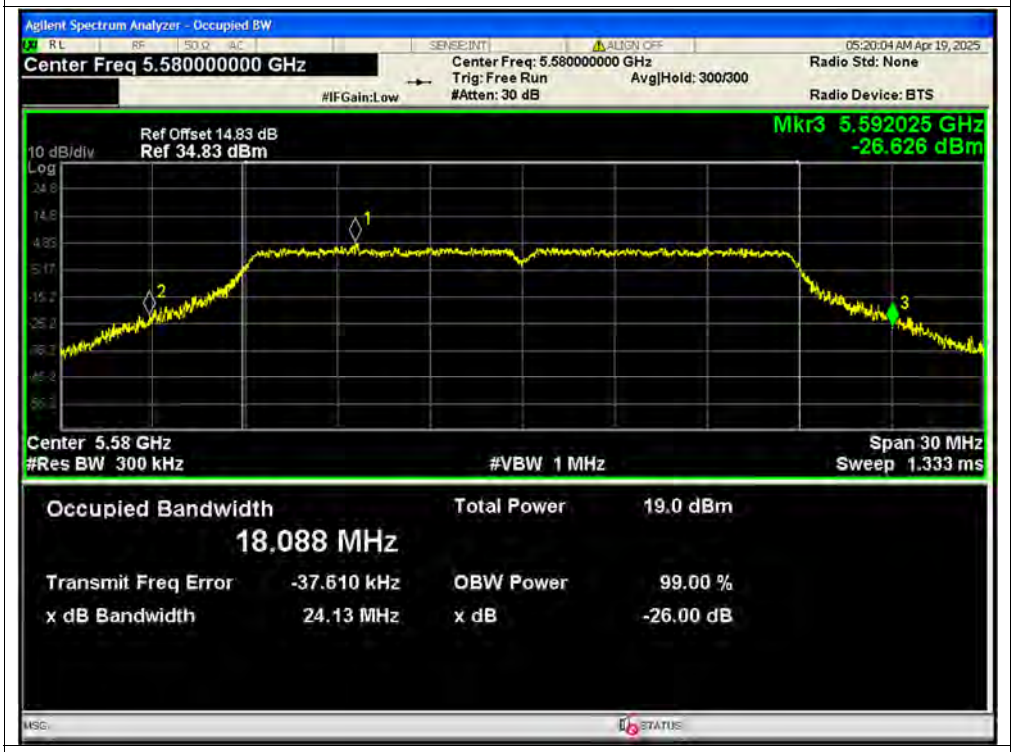
-26dB Bandwidth NVNT n20 5300MHz Ant1

-26dB Bandwidth NVNT n20 5320MHz Ant1

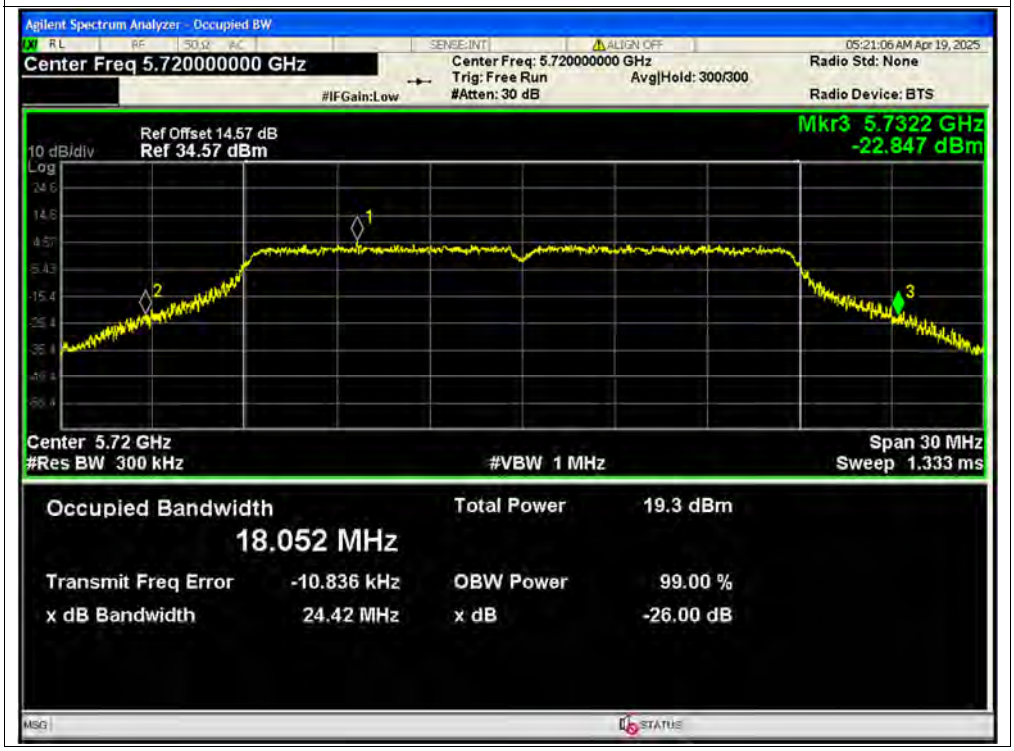


-26dB Bandwidth NVNT n20 5500MHz Ant1

-26dB Bandwidth NVNT n20 5580MHz Ant1



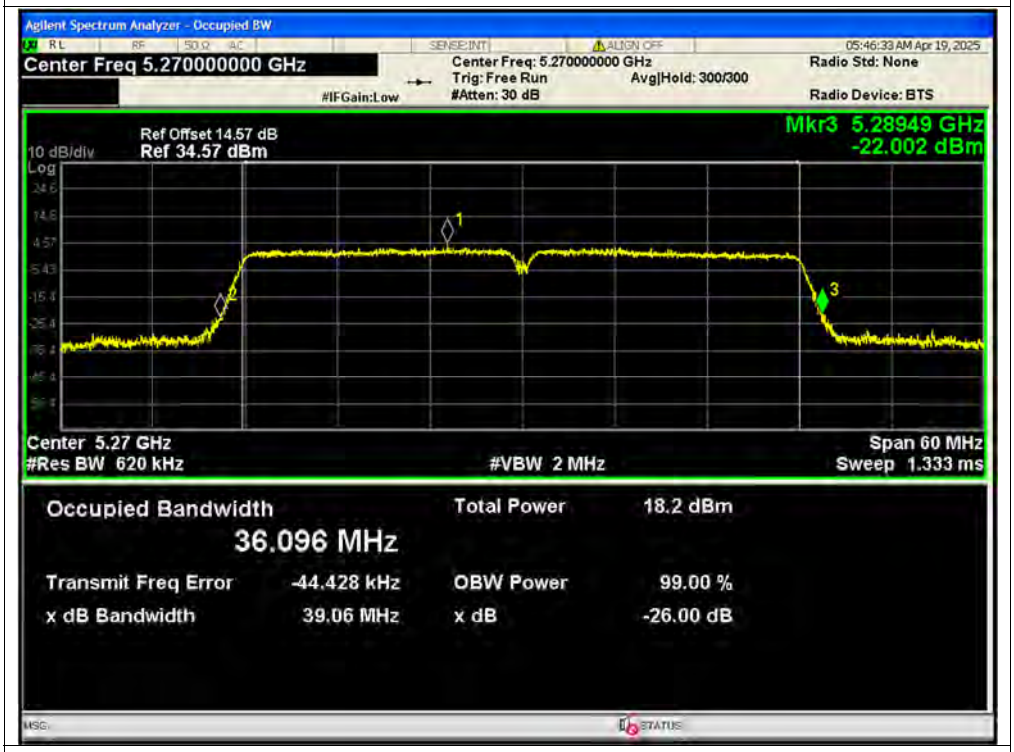
-26dB Bandwidth NVNT n20 5720MHz Ant1



-26dB Bandwidth NVNT n40 5190MHz Ant1

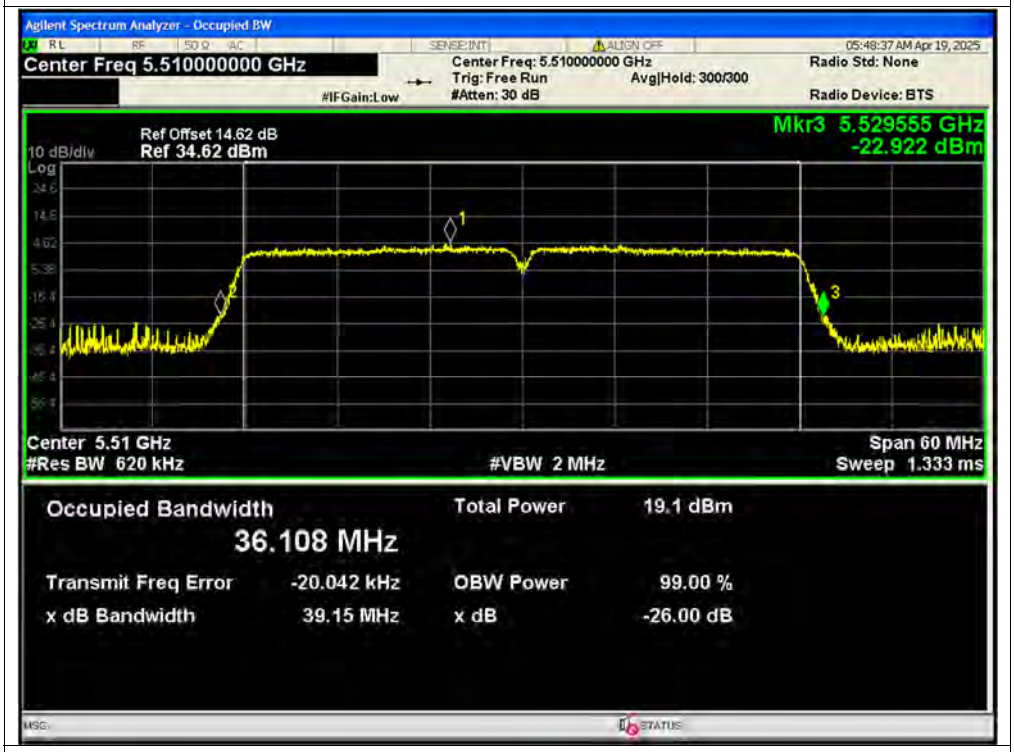
-26dB Bandwidth NVNT n40 5230MHz Ant1

-26dB Bandwidth NVNT n40 5270MHz Ant1



-26dB Bandwidth NVNT n40 5310MHz Ant1

-26dB Bandwidth NVNT n40 5510MHz Ant1

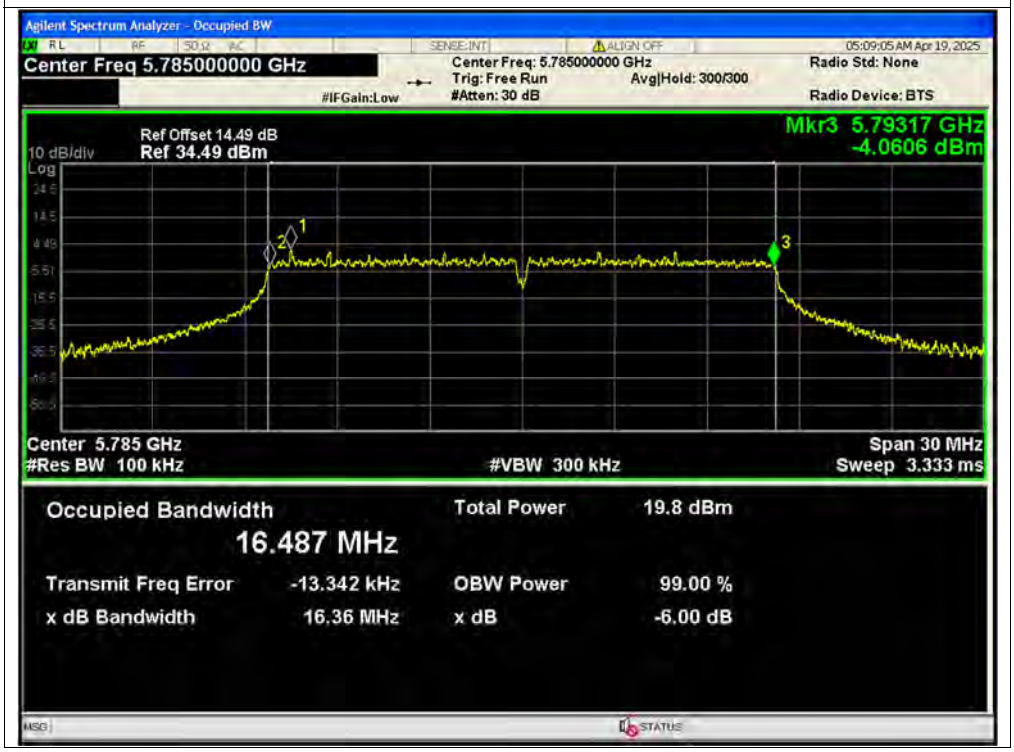


-26dB Bandwidth NVNT n40 5550MHz Ant1

-26dB Bandwidth NVNT n40 5710MHz Ant1

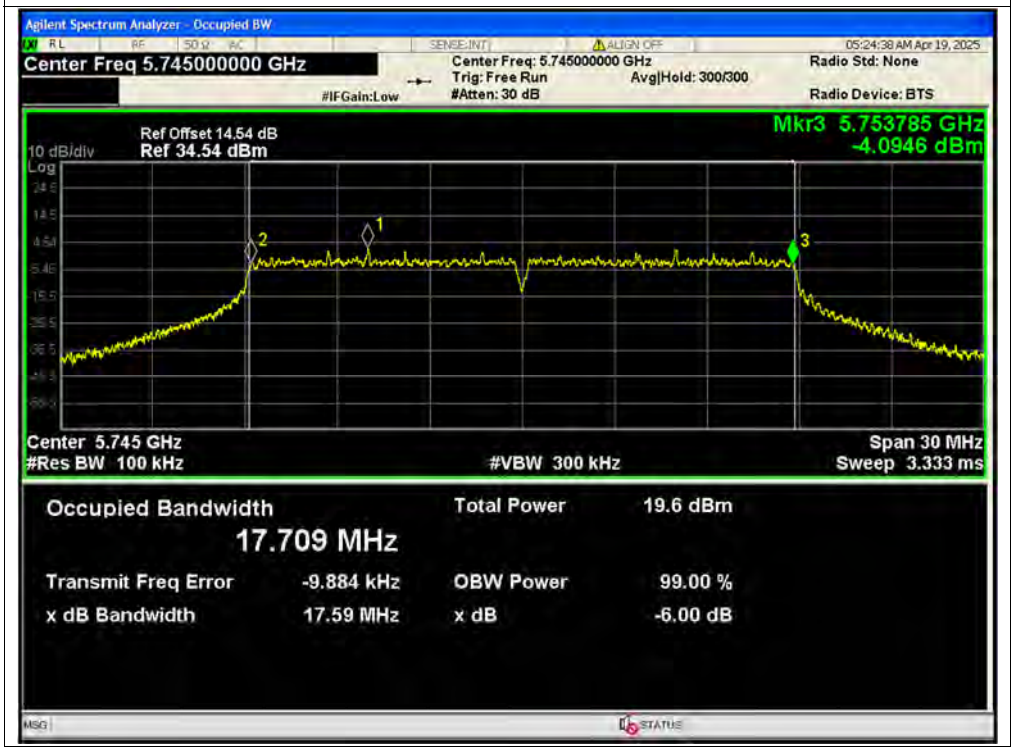
Test Graphs
-6dB Bandwidth NVNT a 5745MHz Ant1

-6dB Bandwidth NVNT a 5785MHz Ant1

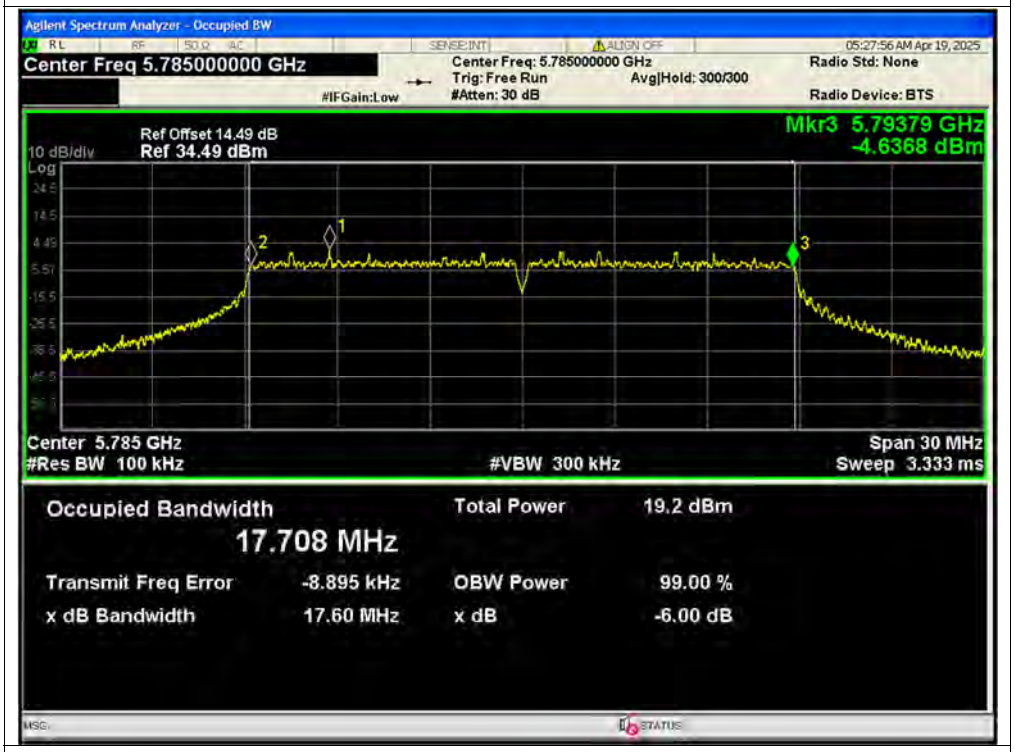


-6dB Bandwidth NVNT a 5825MHz Ant1

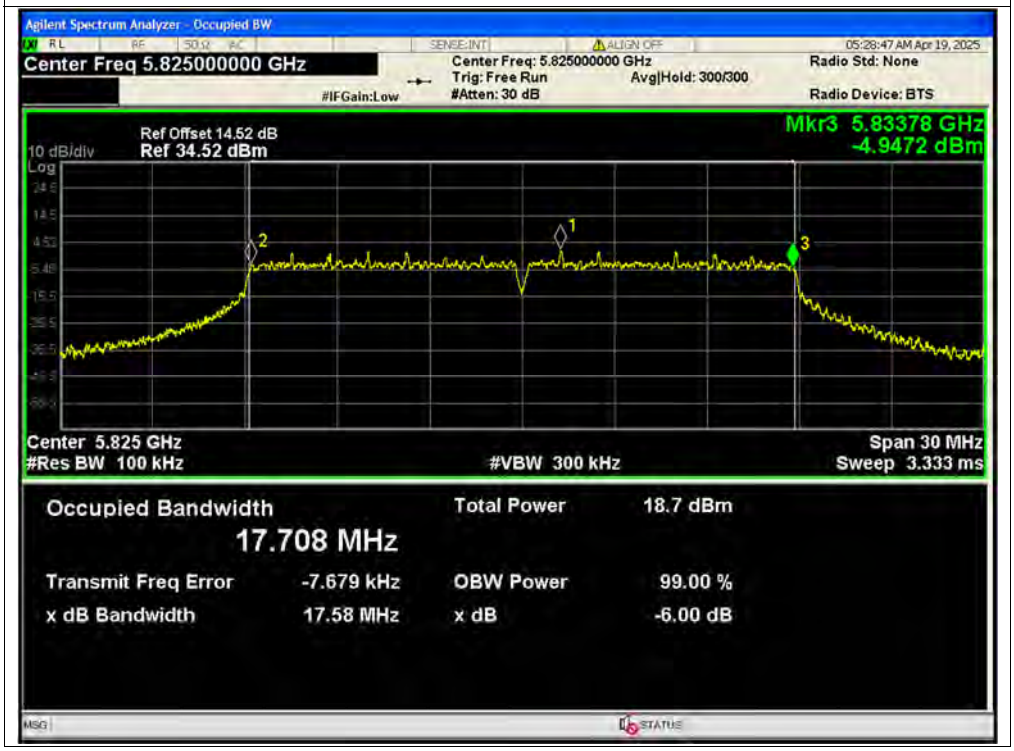
-6dB Bandwidth NVNT n20 5745MHz Ant1



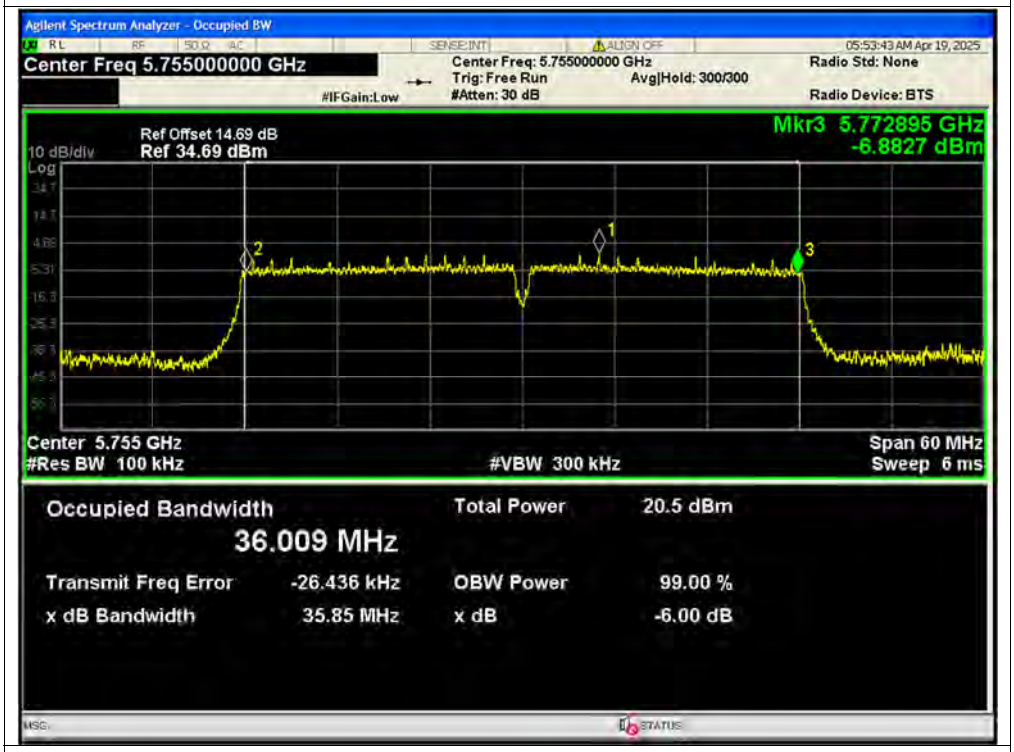
-6dB Bandwidth NVNT n20 5785MHz Ant1



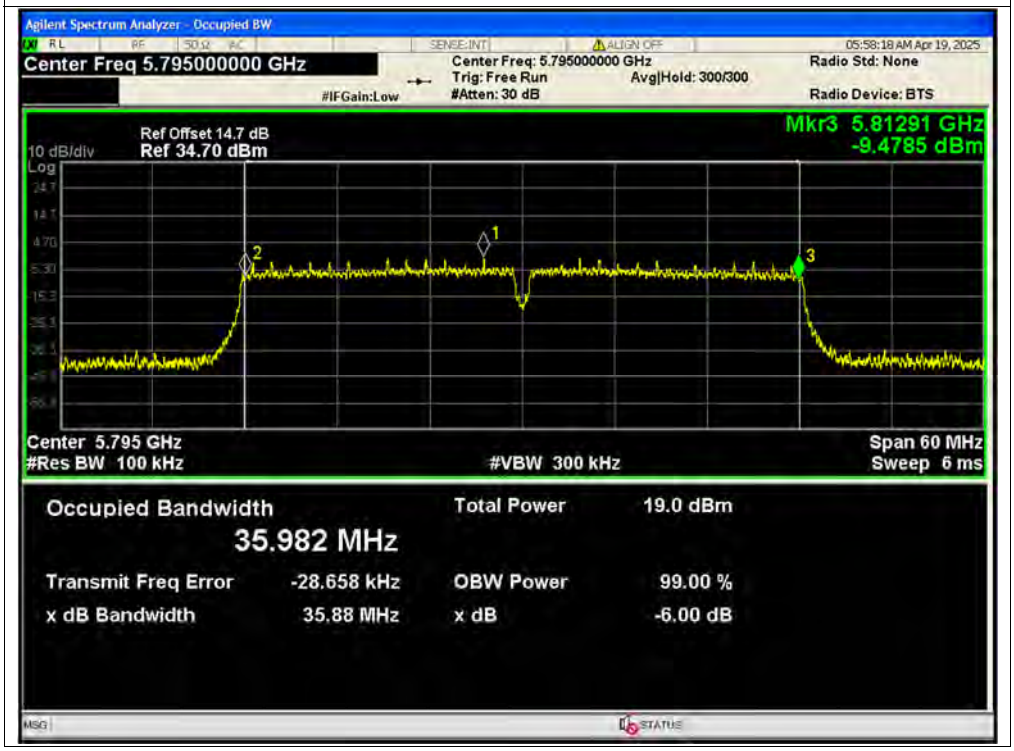
-6dB Bandwidth NVNT n20 5825MHz Ant1



-6dB Bandwidth NVNT n40 5755MHz Ant1



-6dB Bandwidth NVNT n40 5795MHz Ant1

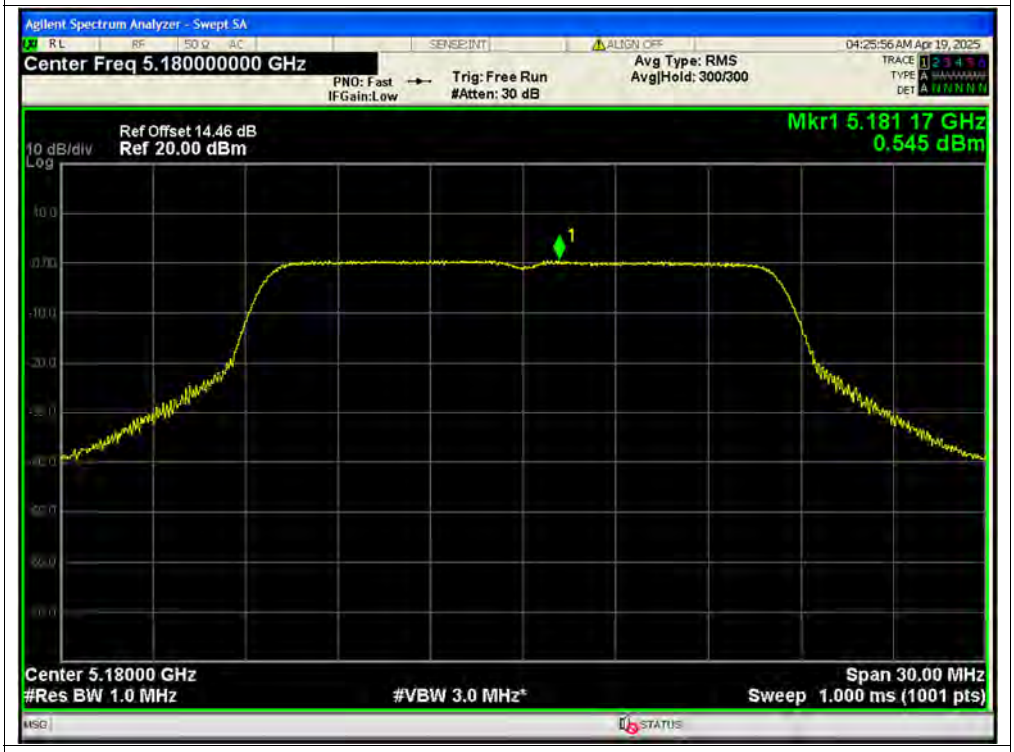


A.4. Peak Power Spectral Density

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/MHz) (dBm/500kHz @U-NII-3)	Duty Factor (dB)	Total Conducted PSD (dBm/MHz) (dBm/500kHz @ U-NII-3)	Total Conducted PSD (dBm/MHz) (dBm/500kHz @ U-NII-3)	Verdict
NVNT	a	5180	Ant1	0.55	1.74	2.29	11	Pass
NVNT	a	5220	Ant1	0.41	1.75	2.16	11	Pass
NVNT	a	5240	Ant1	0.38	1.76	2.14	11	Pass
NVNT	a	5260	Ant1	0.63	1.74	2.37	11	Pass
NVNT	a	5300	Ant1	-1.08	1.75	0.67	11	Pass
NVNT	a	5320	Ant1	-1.3	1.75	0.45	11	Pass
NVNT	a	5500	Ant1	0.81	1.75	2.56	11	Pass
NVNT	a	5580	Ant1	1.55	1.75	3.3	11	Pass
NVNT	a	5720	Ant1	1.96	1.74	3.7	11	Pass
NVNT	a	5745	Ant1	-1.82	1.76	-0.06	30	Pass
NVNT	a	5785	Ant1	-2.06	1.75	-0.31	30	Pass
NVNT	a	5825	Ant1	-2.42	1.74	-0.68	30	Pass
NVNT	n20	5180	Ant1	-2.65	1.84	-0.81	11	Pass
NVNT	n20	5220	Ant1	-2.23	1.84	-0.39	11	Pass
NVNT	n20	5240	Ant1	-1.93	1.84	-0.09	11	Pass
NVNT	n20	5260	Ant1	-0.61	1.84	1.23	11	Pass
NVNT	n20	5300	Ant1	-1.67	1.84	0.17	11	Pass
NVNT	n20	5320	Ant1	-2.26	1.84	-0.42	11	Pass
NVNT	n20	5500	Ant1	1.35	1.84	3.19	11	Pass
NVNT	n20	5580	Ant1	-0.47	1.84	1.37	11	Pass
NVNT	n20	5720	Ant1	0.39	1.84	2.23	11	Pass
NVNT	n20	5745	Ant1	-3.87	1.87	-2	30	Pass
NVNT	n20	5785	Ant1	-4.3	1.84	-2.46	30	Pass
NVNT	n20	5825	Ant1	-4.57	1.84	-2.73	30	Pass
NVNT	n40	5190	Ant1	-5.87	3.22	-2.65	11	Pass
NVNT	n40	5230	Ant1	-4.81	3.19	-1.62	11	Pass
NVNT	n40	5270	Ant1	-4.91	3.17	-1.74	11	Pass
NVNT	n40	5310	Ant1	-3.76	3.17	-0.59	11	Pass
NVNT	n40	5510	Ant1	-4.17	3.17	-1	11	Pass
NVNT	n40	5550	Ant1	-5.06	3.22	-1.84	11	Pass
NVNT	n40	5710	Ant1	-2.94	3.19	0.25	11	Pass

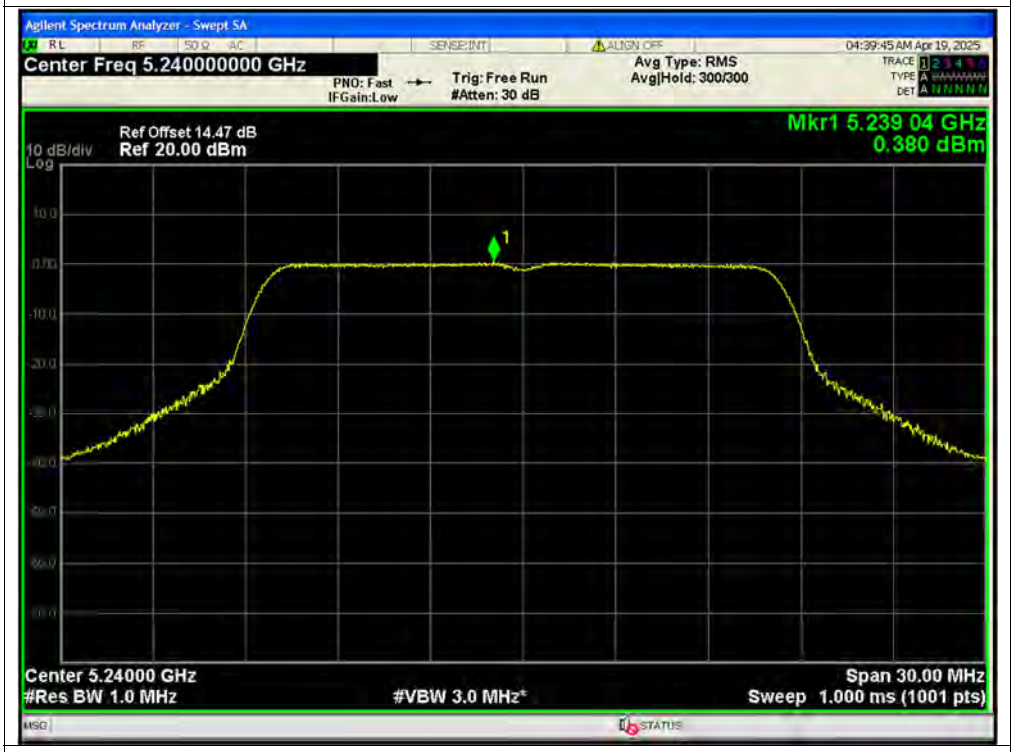
NVNT	n40	5755	Ant1	-6.24	3.22	-3.02	30	Pass
NVNT	n40	5795	Ant1	-7	3.22	-3.78	30	Pass

Test Graphs
PSD NVNT a 5180MHz Ant1

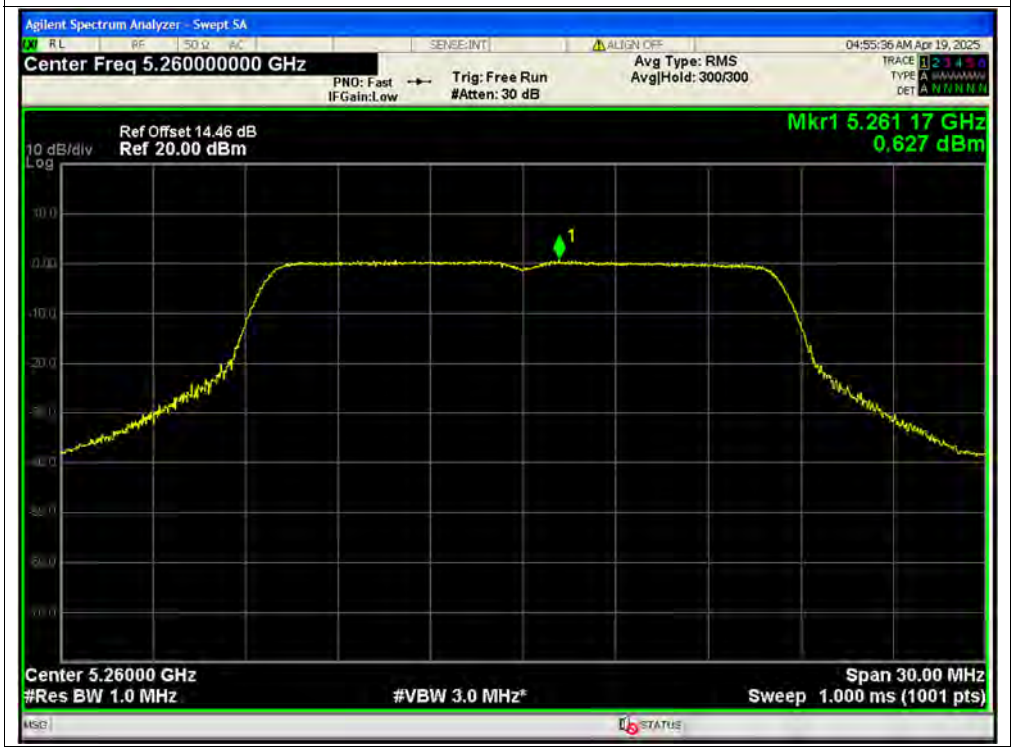


PSD NVNT a 5220MHz Ant1

PSD NVNT a 5240MHz Ant1

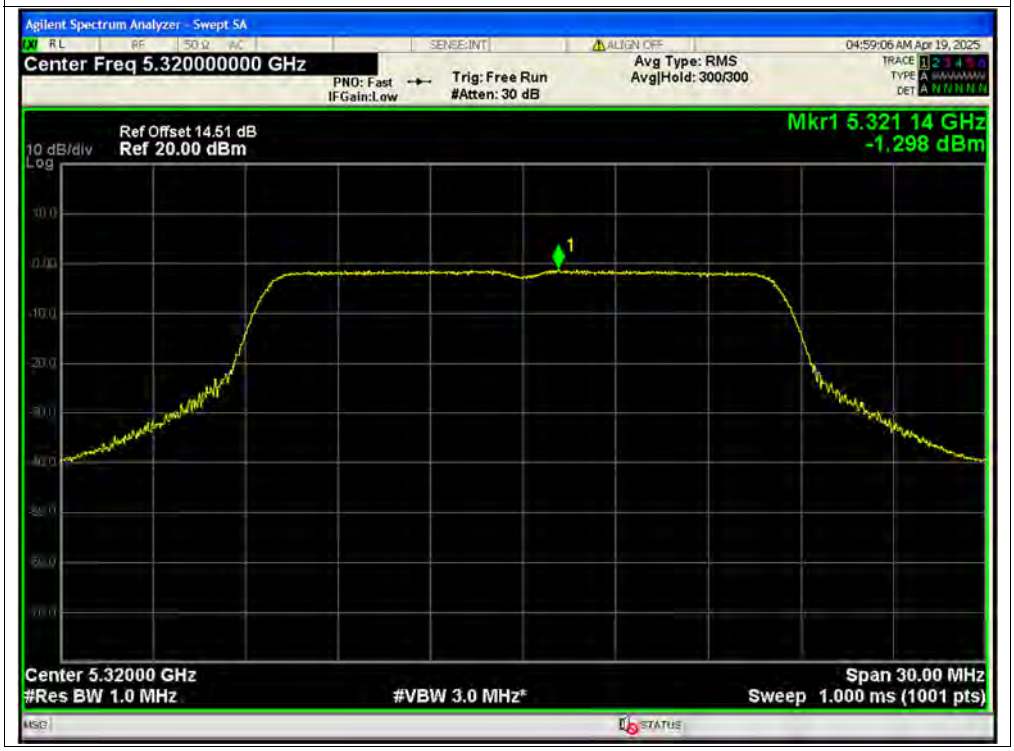


PSD NVNT a 5260MHz Ant1

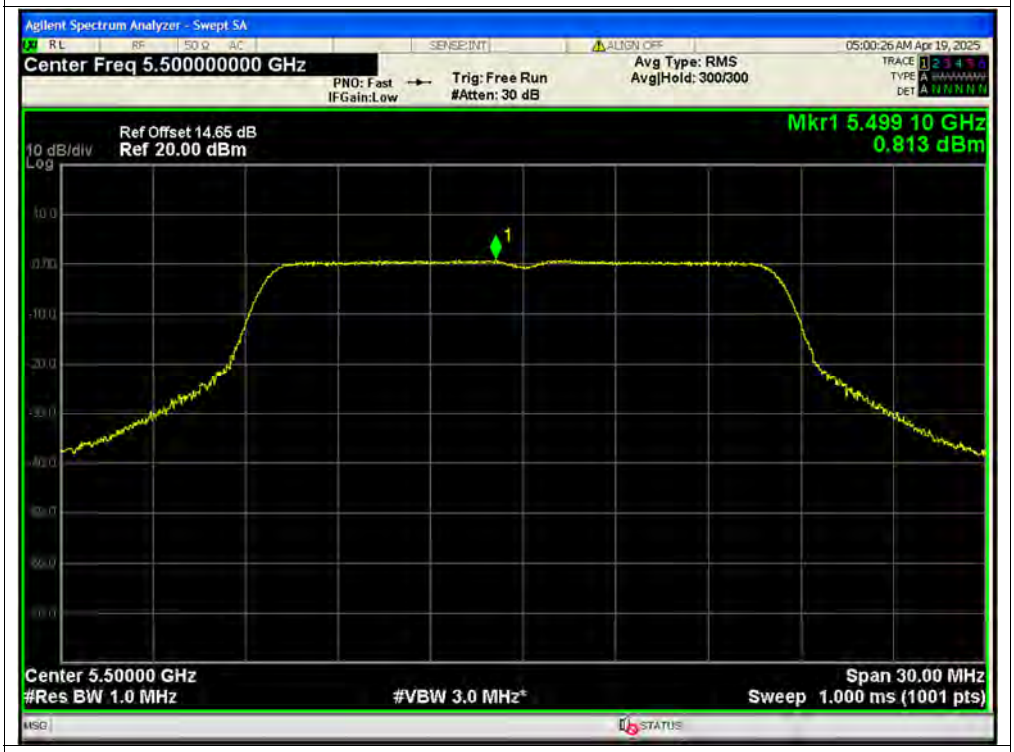


PSD NVNT a 5300MHz Ant1

PSD NVNT a 5320MHz Ant1

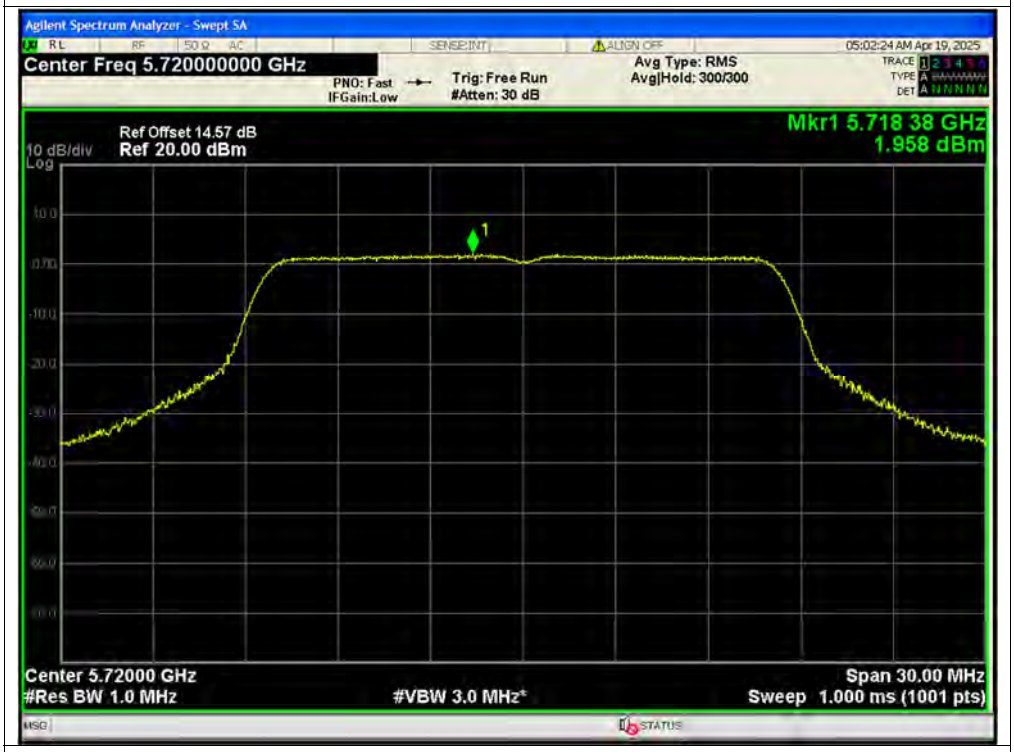


PSD NVNT a 5500MHz Ant1



PSD NVNT a 5580MHz Ant1

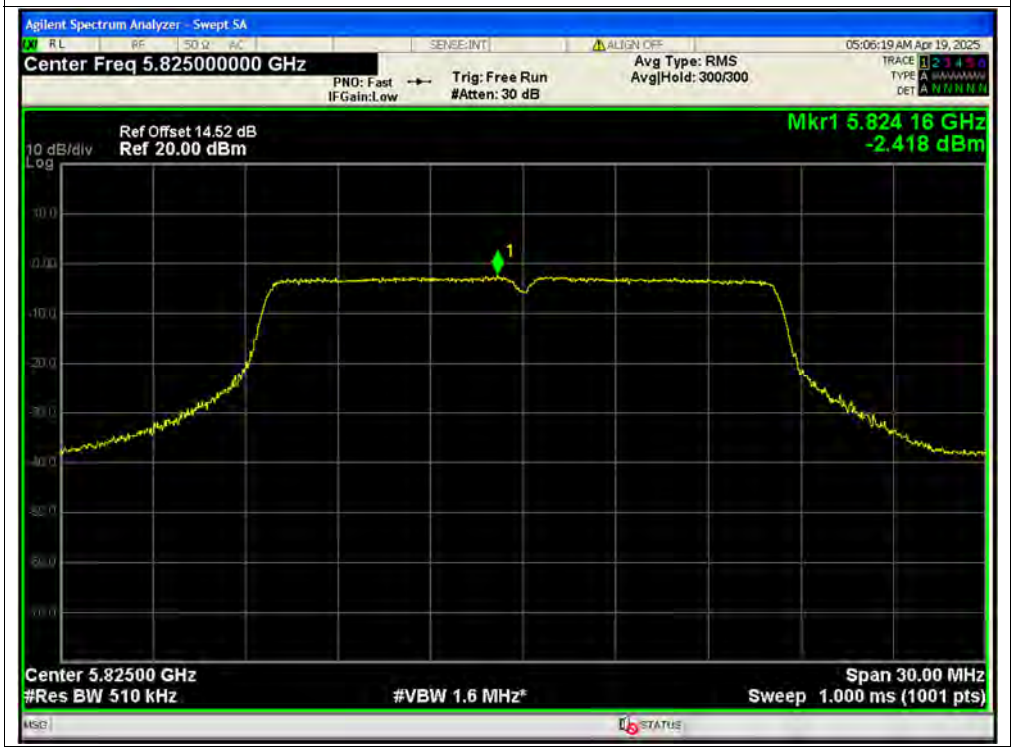
PSD NVNT a 5720MHz Ant1



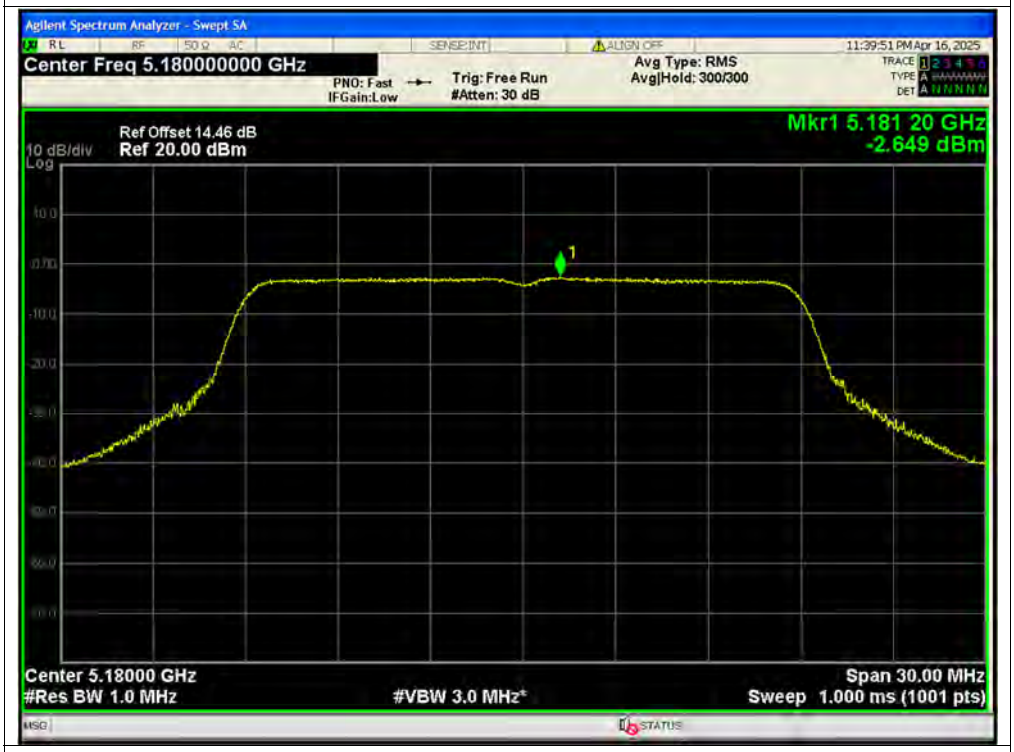
PSD NVNT a 5745MHz Ant1

PSD NVNT a 5785MHz Ant1

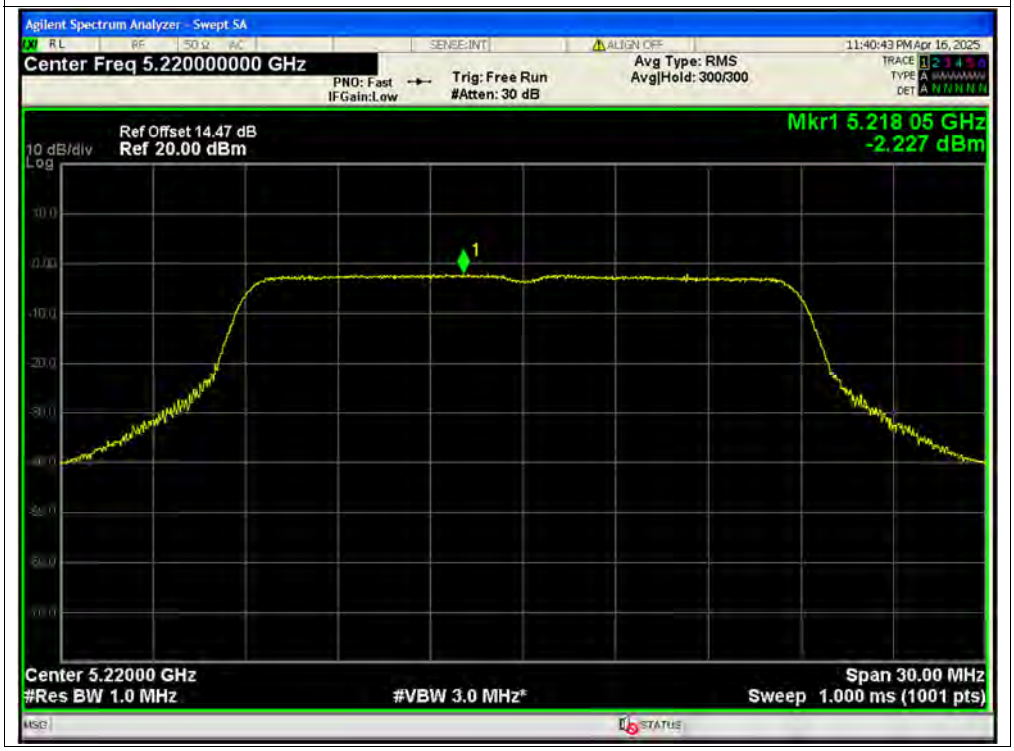
PSD NVNT a 5825MHz Ant1



PSD NVNT n20 5180MHz Ant1

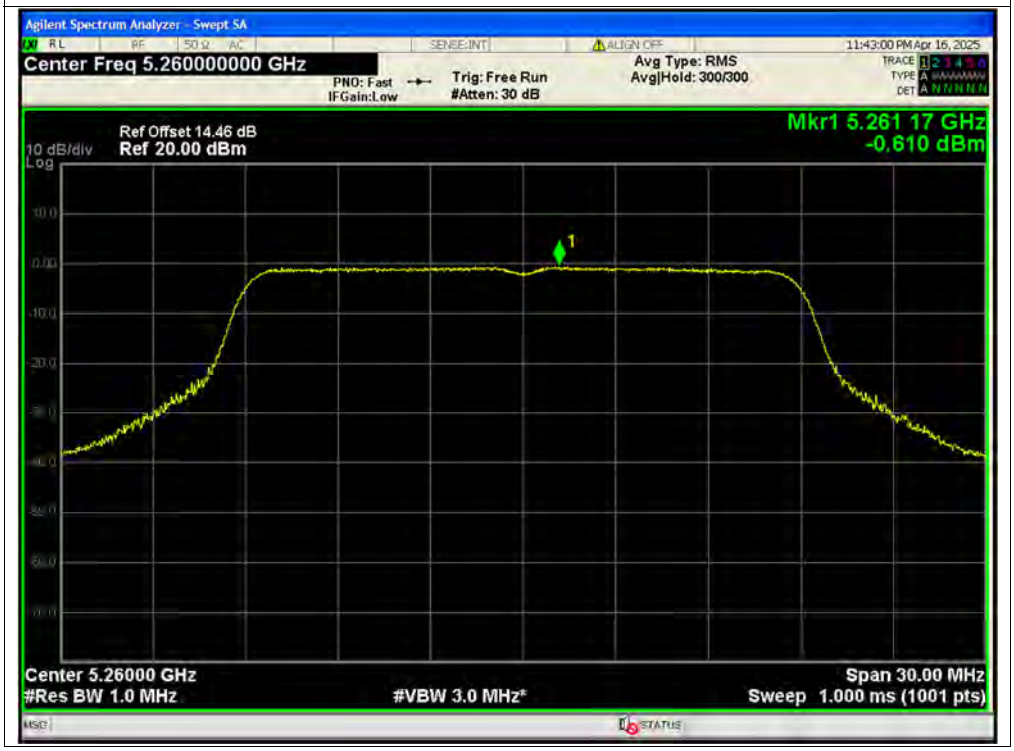


PSD NVNT n20 5220MHz Ant1



PSD NVNT n20 5240MHz Ant1

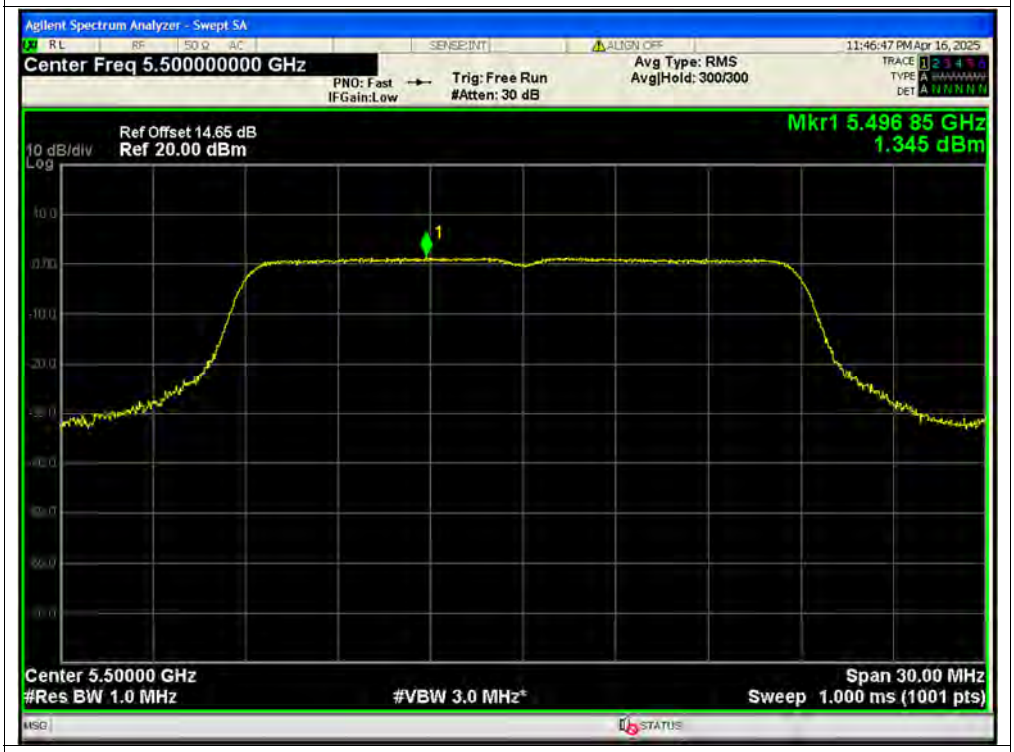
PSD NVNT n20 5260MHz Ant1



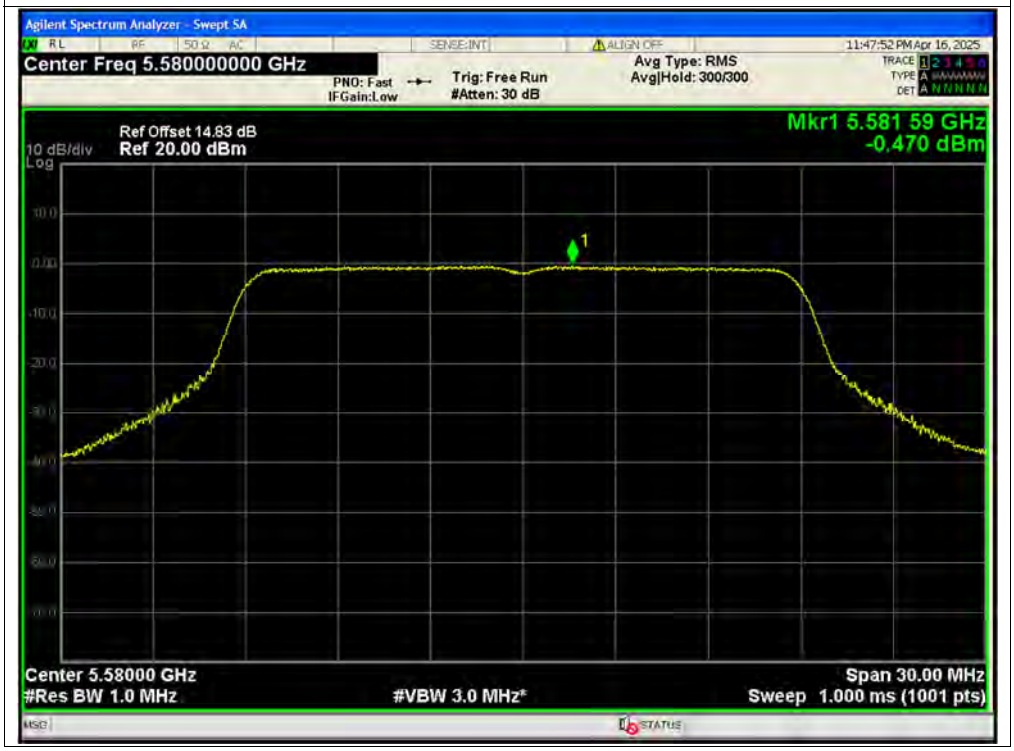
PSD NVNT n20 5300MHz Ant1

PSD NVNT n20 5320MHz Ant1

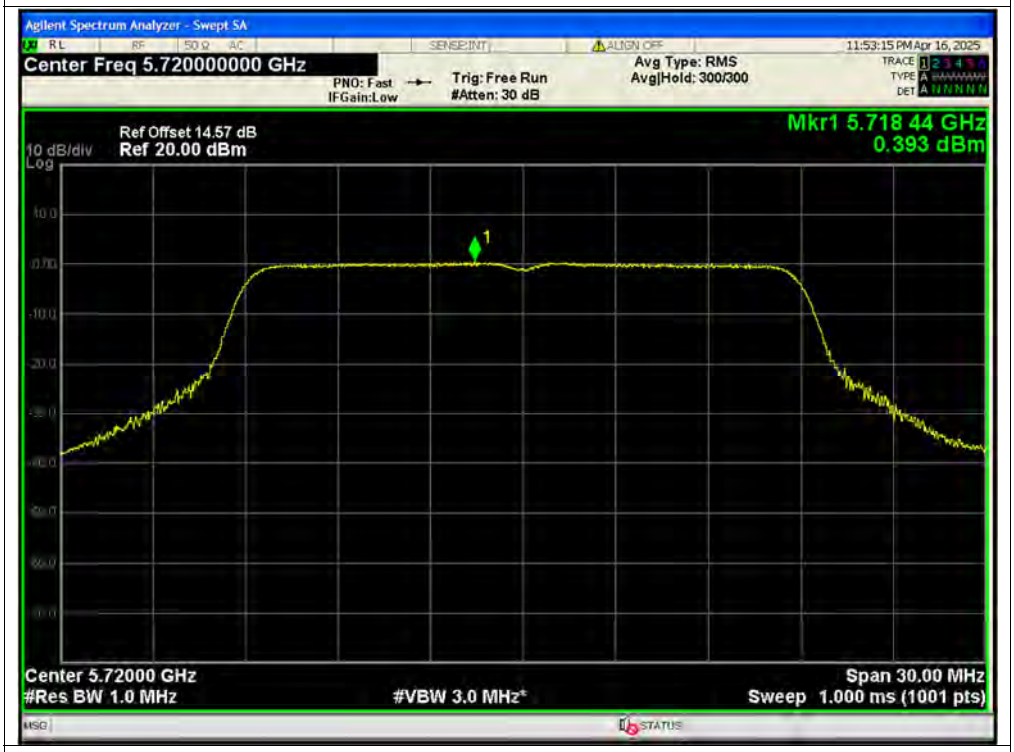
PSD NVNT n20 5500MHz Ant1



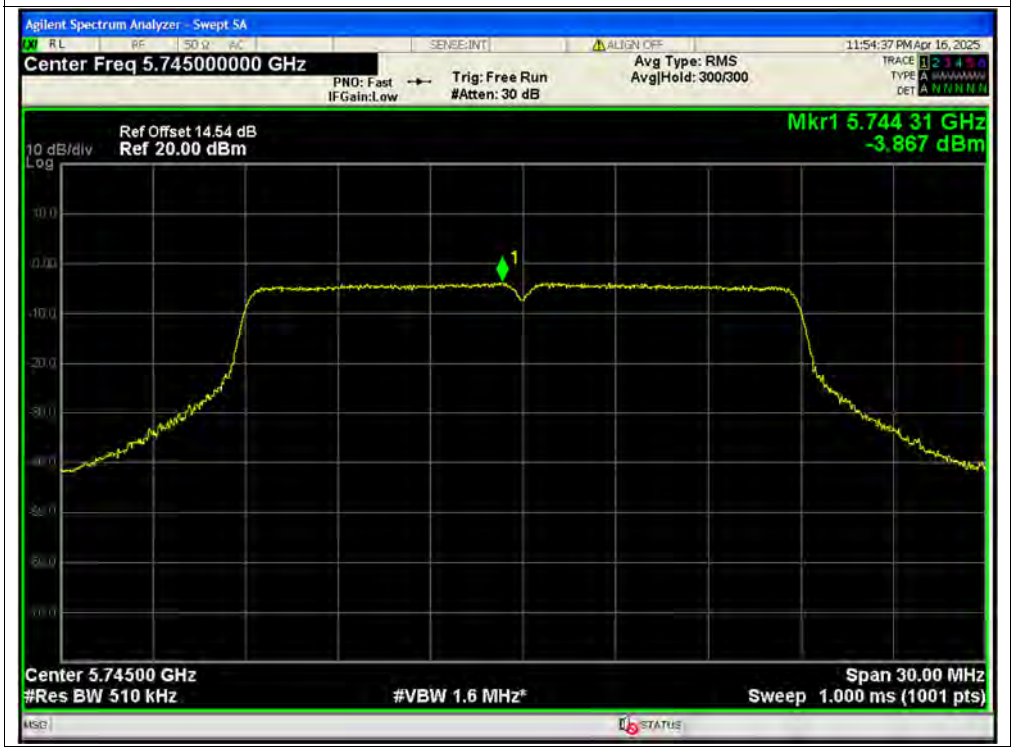
PSD NVNT n20 5580MHz Ant1



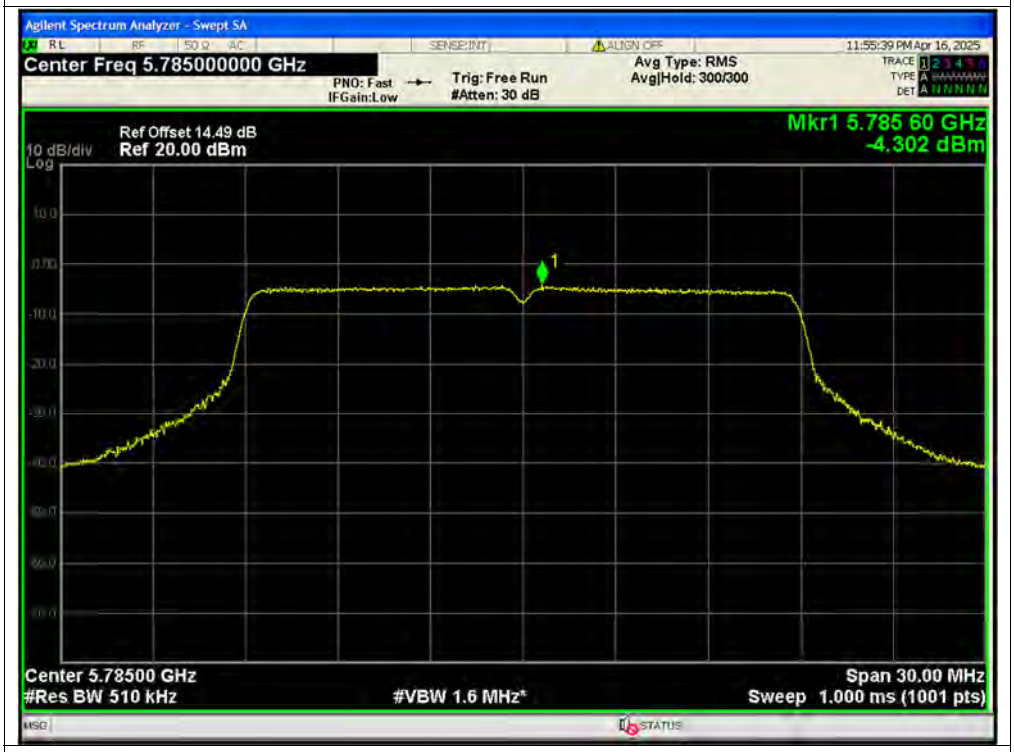
PSD NVNT n20 5720MHz Ant1



PSD NVNT n20 5745MHz Ant1



PSD NVNT n20 5785MHz Ant1



PSD NVNT n20 5825MHz Ant1

PSD NVNT n40 5190MHz Ant1

PSD NVNT n40 5230MHz Ant1

PSD NVNT n40 5270MHz Ant1

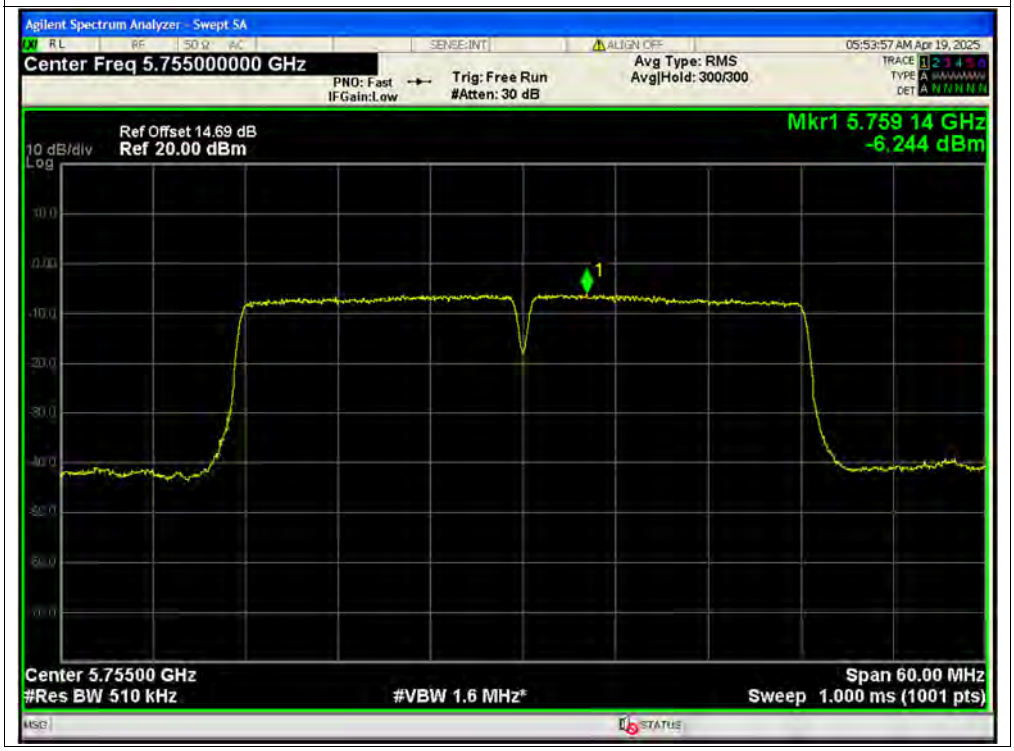
PSD NVNT n40 5310MHz Ant1

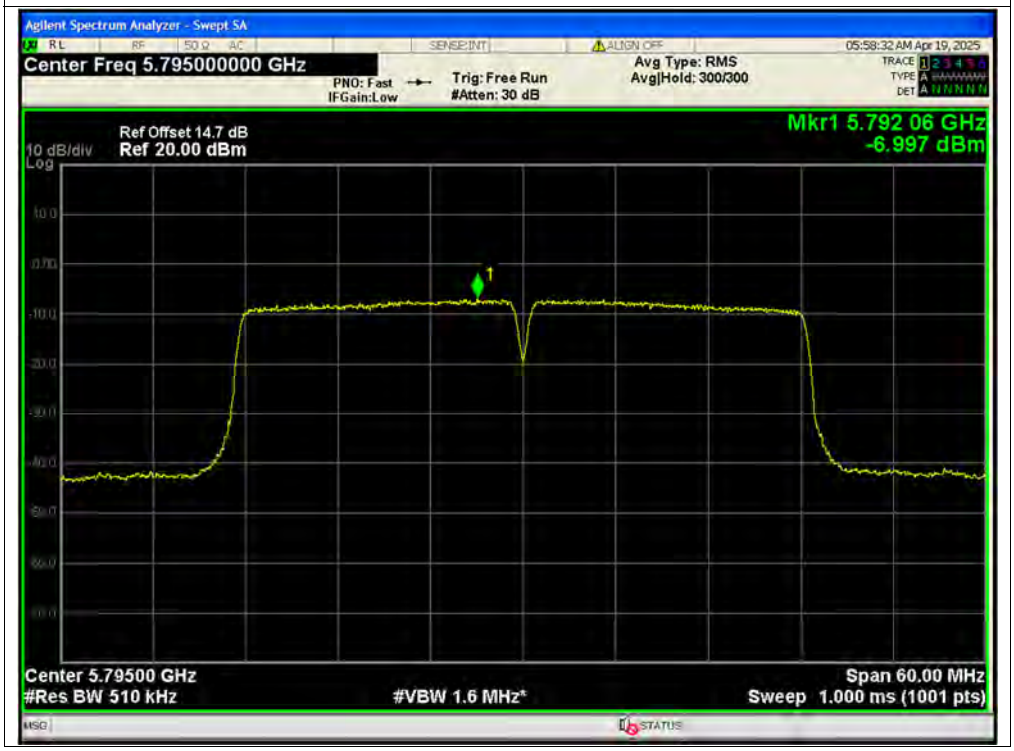
PSD NVNT n40 5510MHz Ant1

PSD NVNT n40 5550MHz Ant1

PSD NVNT n40 5710MHz Ant1

PSD NVNT n40 5755MHz Ant1



PSD NVNT n40 5795MHz Ant1


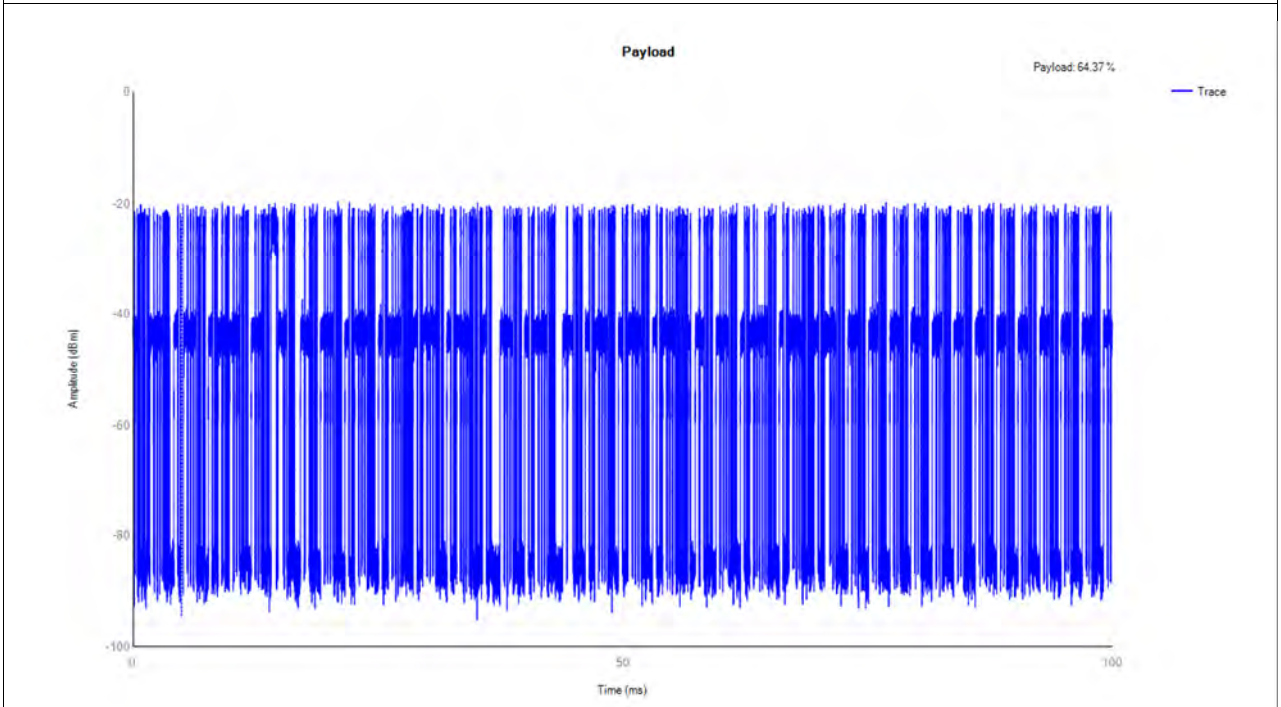
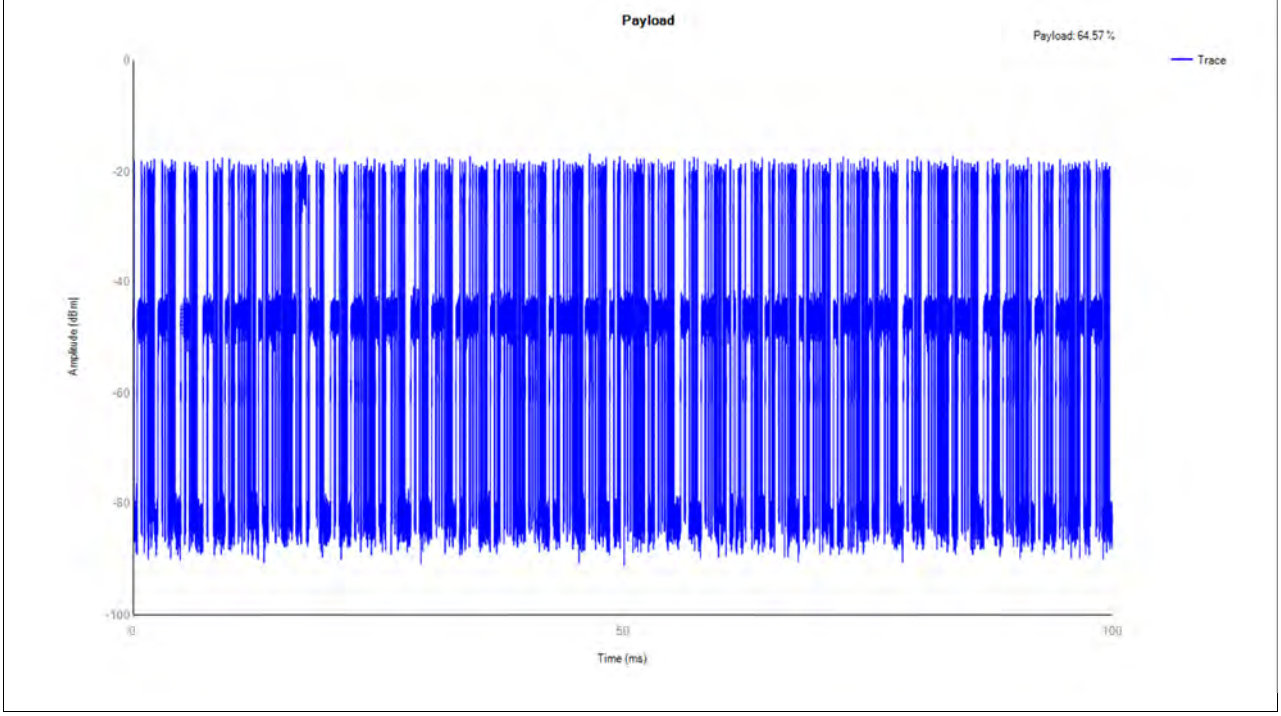
A.5. Frequency Stability

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20C 5.5V	Carrier	5180	Ant1	5179.996	-4000	-0.77	25	Pass
20C 7.2V	Carrier	5180	Ant1	5179.996	-4000	-0.77	25	Pass
20C 8.4V	Carrier	5180	Ant1	5179.996	-4000	-0.77	25	Pass
0C 7.2V	Carrier	5180	Ant1	5179.997	-3000	-0.58	25	Pass
10C 7.2V	Carrier	5180	Ant1	5179.996	-4000	-0.77	25	Pass
30C 7.2V	Carrier	5180	Ant1	5179.996	-4000	-0.77	25	Pass
35C 7.2V	Carrier	5180	Ant1	5179.996	-4000	-0.77	25	Pass
20C 5.5V	Carrier	5260	Ant1	5259.997	-3000	-0.57	25	Pass
20C 7.2V	Carrier	5260	Ant1	5259.997	-3000	-0.57	25	Pass
20C 8.4V	Carrier	5260	Ant1	5259.997	-3000	-0.57	25	Pass
0C 7.2V	Carrier	5260	Ant1	5259.997	-3000	-0.57	25	Pass
10C 7.2V	Carrier	5260	Ant1	5259.997	-3000	-0.57	25	Pass
30C 7.2V	Carrier	5260	Ant1	5259.997	-3000	-0.57	25	Pass
35C 7.2V	Carrier	5260	Ant1	5259.997	-3000	-0.57	25	Pass
20C 5.5V	Carrier	5500	Ant1	5499.996	-4000	-0.73	25	Pass
20C 7.2V	Carrier	5500	Ant1	5499.996	-4000	-0.73	25	Pass
20C 8.4V	Carrier	5500	Ant1	5499.996	-4000	-0.73	25	Pass
0C 7.2V	Carrier	5500	Ant1	5499.996	-4000	-0.73	25	Pass
10C 7.2V	Carrier	5500	Ant1	5499.996	-4000	-0.73	25	Pass
30C 7.2V	Carrier	5500	Ant1	5499.996	-4000	-0.73	25	Pass
35C 7.2V	Carrier	5500	Ant1	5499.996	-4000	-0.73	25	Pass
20C 5.5V	Carrier	5745	Ant1	5744.998	-2000	-0.35	25	Pass
20C 7.2V	Carrier	5745	Ant1	5744.997	-3000	-0.52	25	Pass
20C 8.4V	Carrier	5745	Ant1	5744.997	-3000	-0.52	25	Pass
0C 7.2V	Carrier	5745	Ant1	5744.997	-3000	-0.52	25	Pass
10C 7.2V	Carrier	5745	Ant1	5744.997	-3000	-0.52	25	Pass
30C 7.2V	Carrier	5745	Ant1	5744.997	-3000	-0.52	25	Pass
35C 7.2V	Carrier	5745	Ant1	5744.997	-3000	-0.52	25	Pass

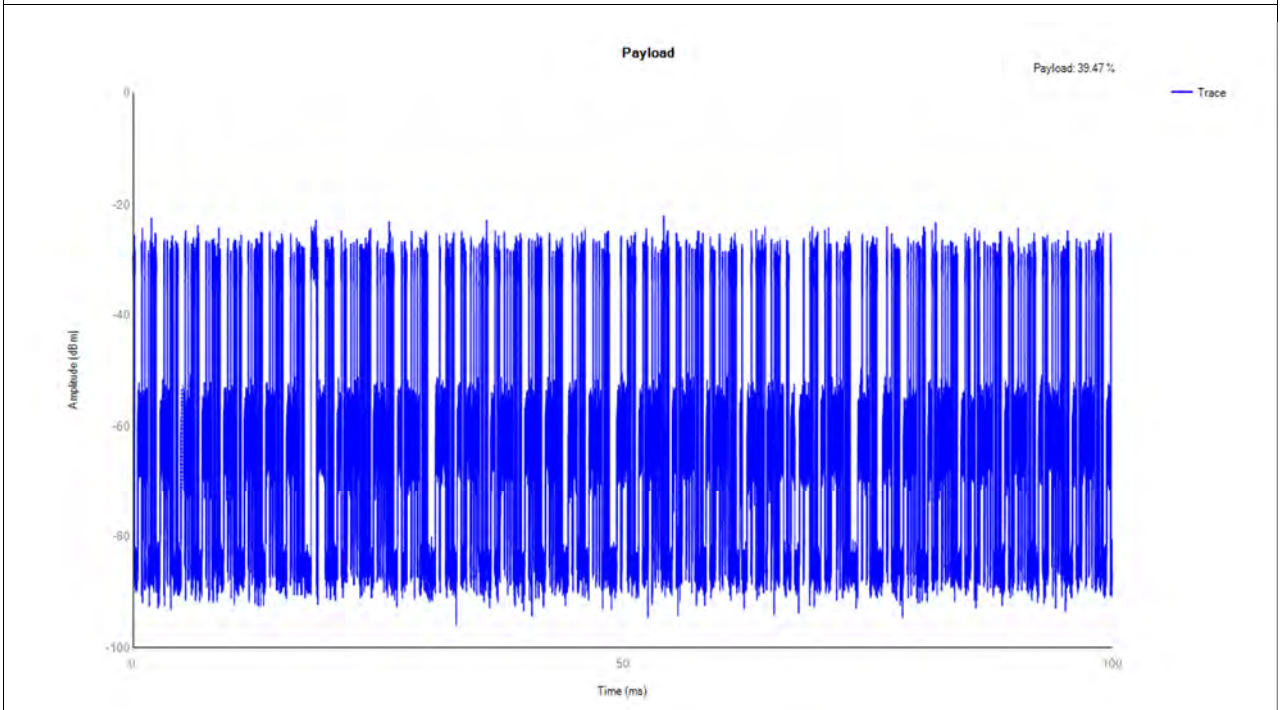
A.6. Dynamic Frequency Selection

Payload

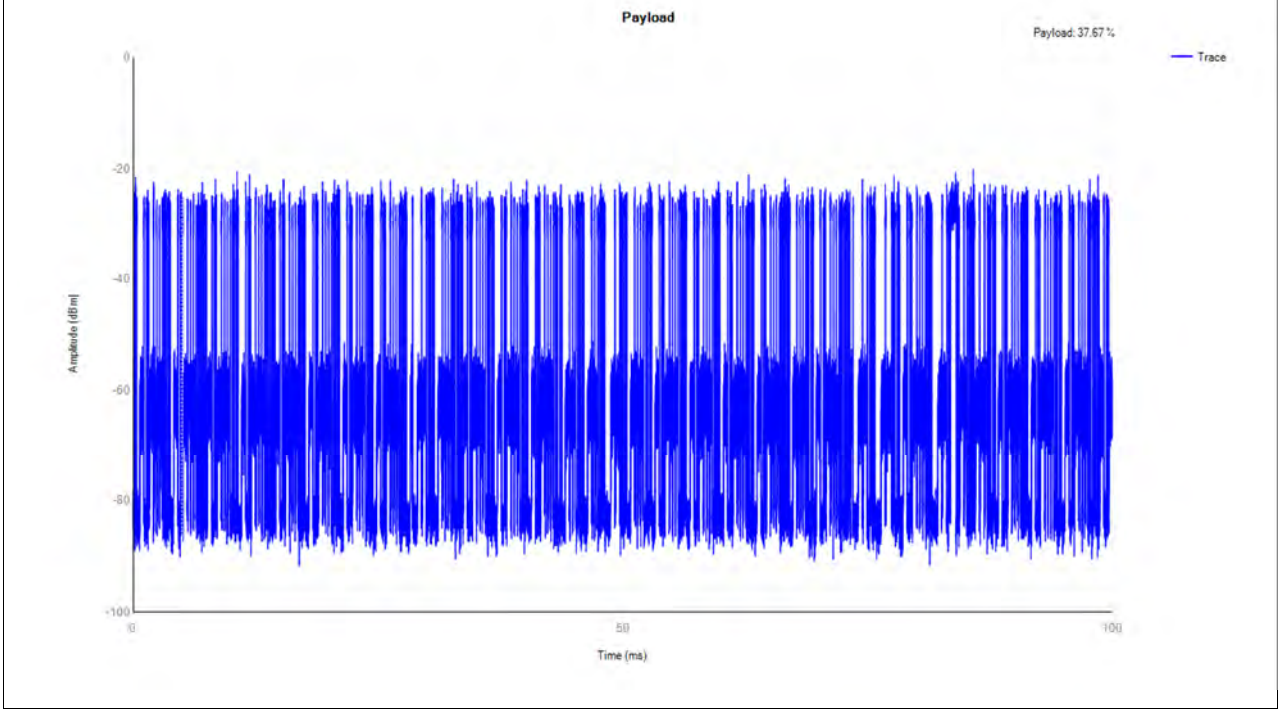
Mode	Frequency (MHz)	Result	Verdict
n20	5260	64.37	Pass
n20	5500	64.57	Pass
n40	5270	39.47	Pass
n40	5510	37.67	Pass

Test Graphs
n20 5260MHz Payload

n20 5500MHz Payload


n40 5270MHz Payload



n40 5510MHz Payload



Detection Thresholds

Mode	Frequency (MHz)	Type	Result	Verdict
n20	5260	DFS_FCC_T0	See test Graph	Pass
n20	5500	DFS_FCC_T0	See test Graph	Pass
n40	5270	DFS_FCC_T0	See test Graph	Pass
n40	5510	DFS_FCC_T0	See test Graph	Pass

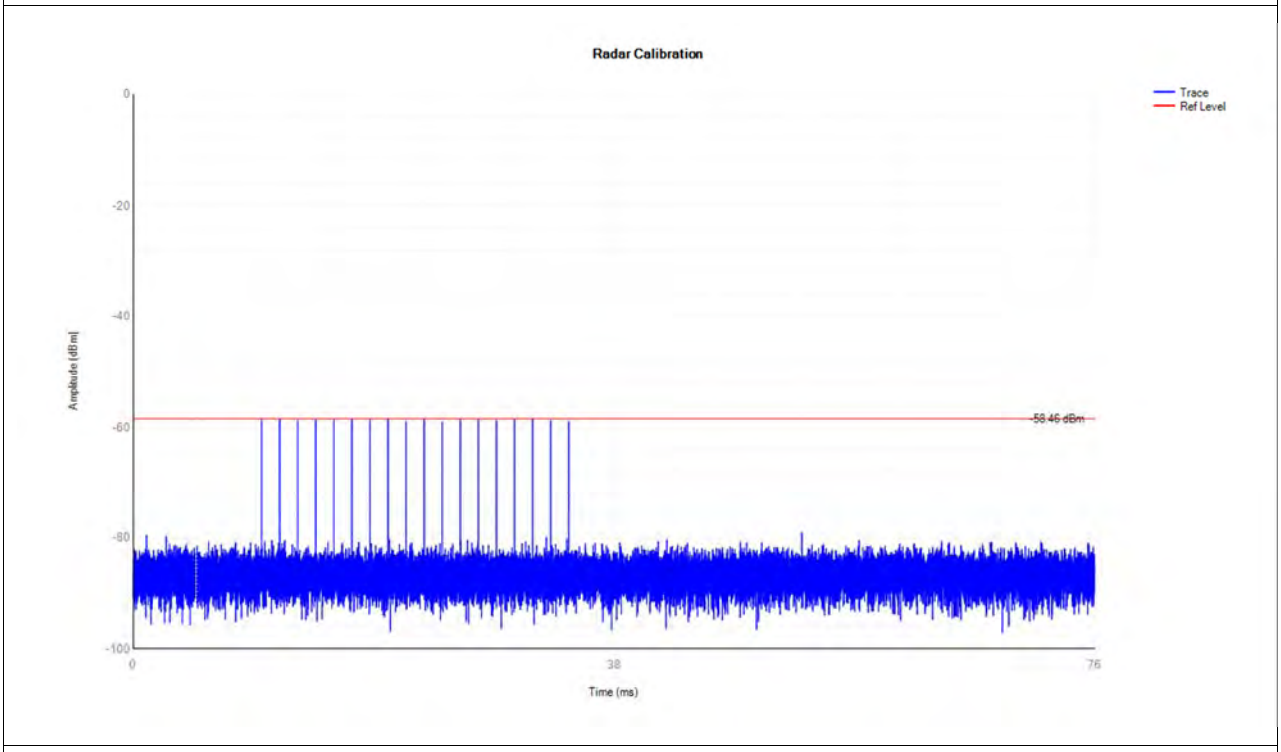
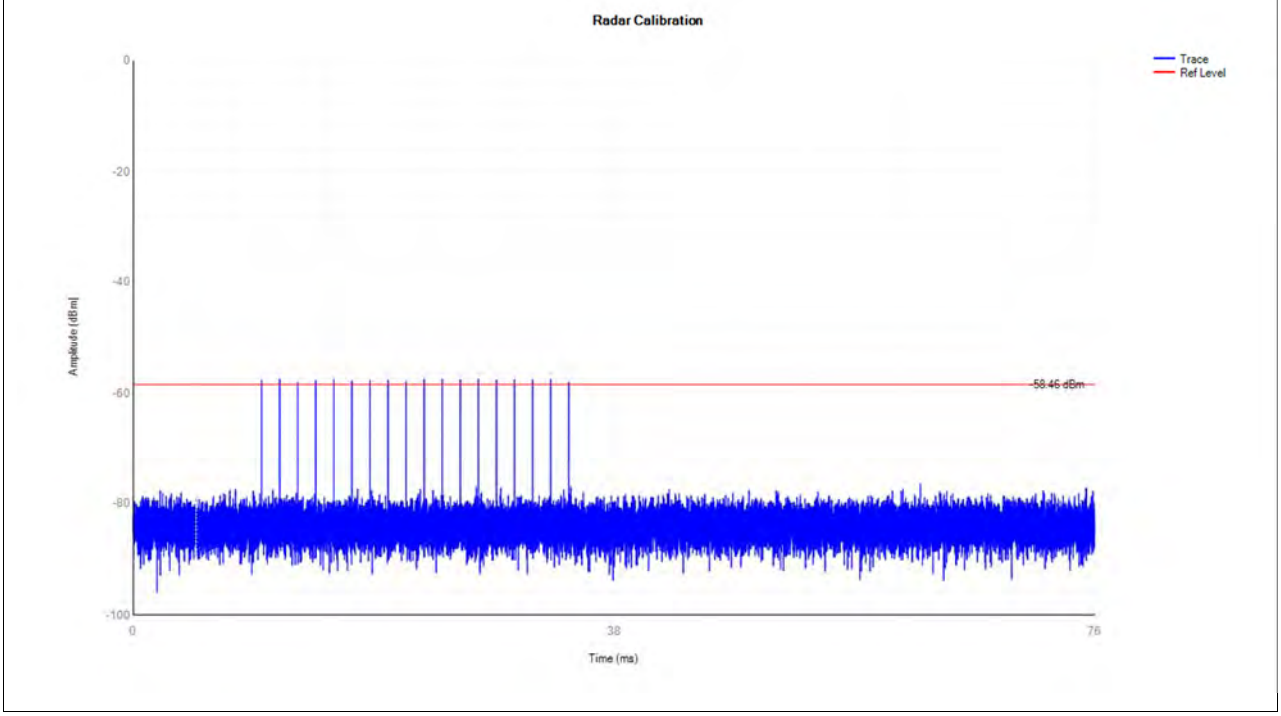
Spectrum analyzer settings:

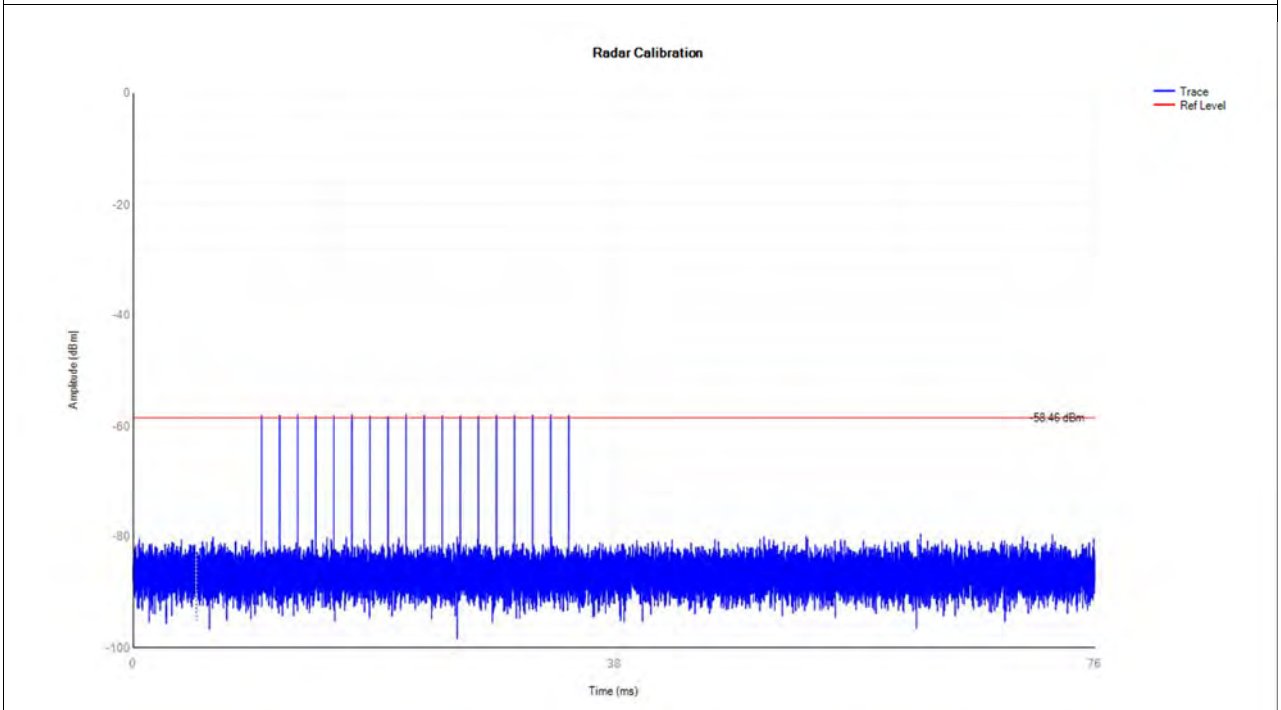
Span: Zero

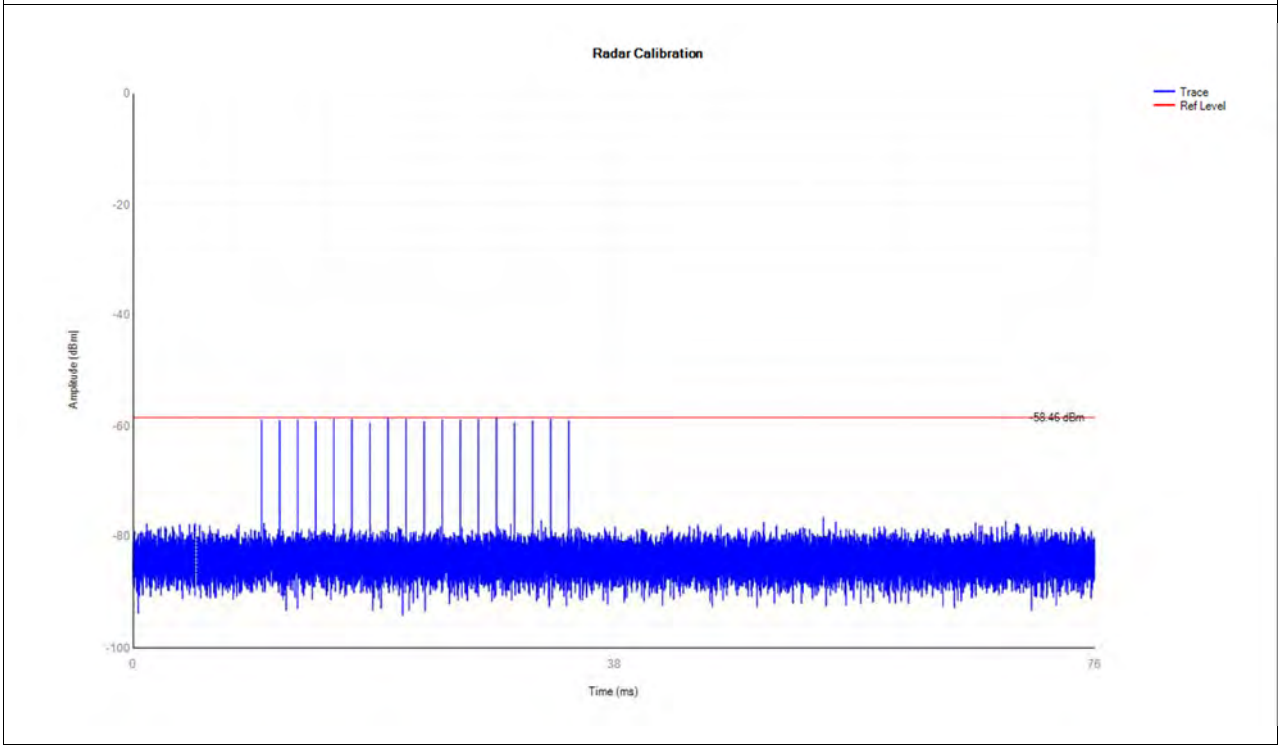
Detector Type: Peak

RBW: 3MHz

VBW: 3MHz

Test Graphs
5260MHz DFS_FCC_T0

5500MHz DFS_FCC_T0


5270MHz DFS_FCC_T0


5510MHz DFS_FCC_T0


Channel Move Time and Channel Closing Transmission Time

Mode	Frequency (MHz)	Channel Move Time (s)	Limit Channel Move Time (s)	Close Transmission Time (s)	Limit Close Transmission Time (s)	Close Transmission Time after 200ms(s)	Limit Close Transmission Time after 200ms (s)	Verdict
n20	5260	0.793	10	0.012	0.26	0.007	0.06	Pass
n20	5500	0.822	10	0.015	0.26	0.011	0.06	Pass
n40	5270	0.784	10	0.013	0.26	0.009	0.06	Pass
n40	5510	0.844	10	0.023	0.26	0.011	0.06	Pass

Spectrum analyzer settings:

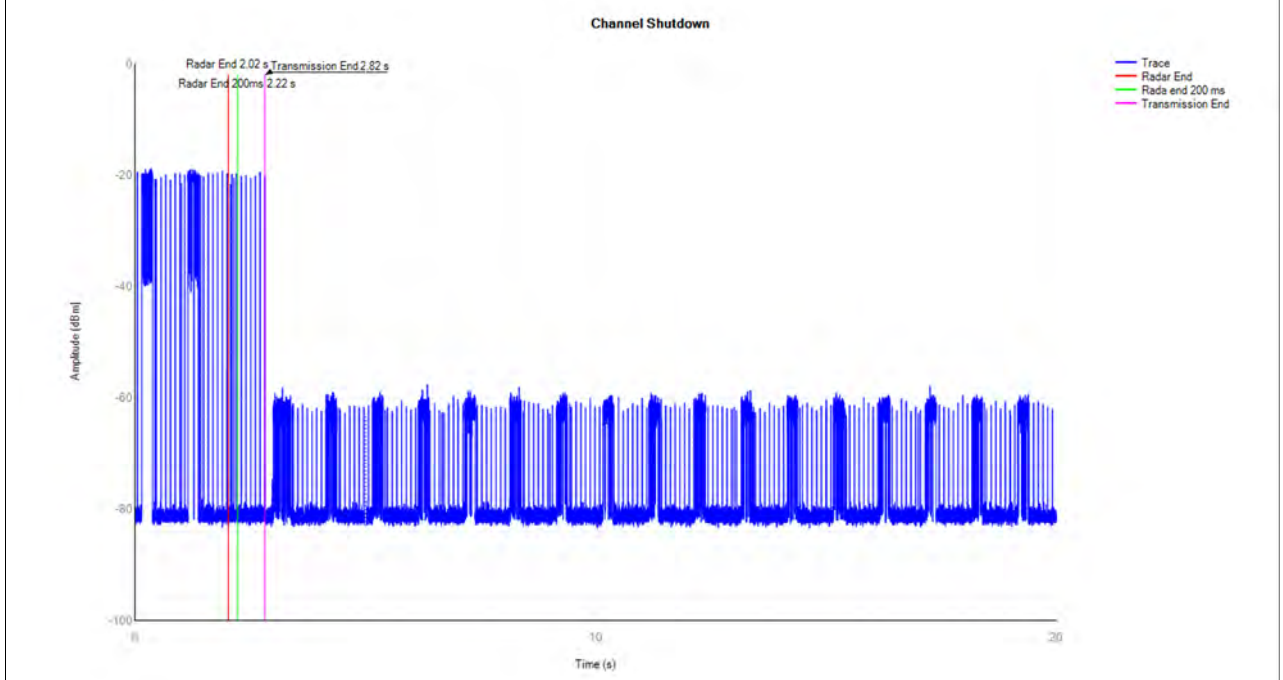
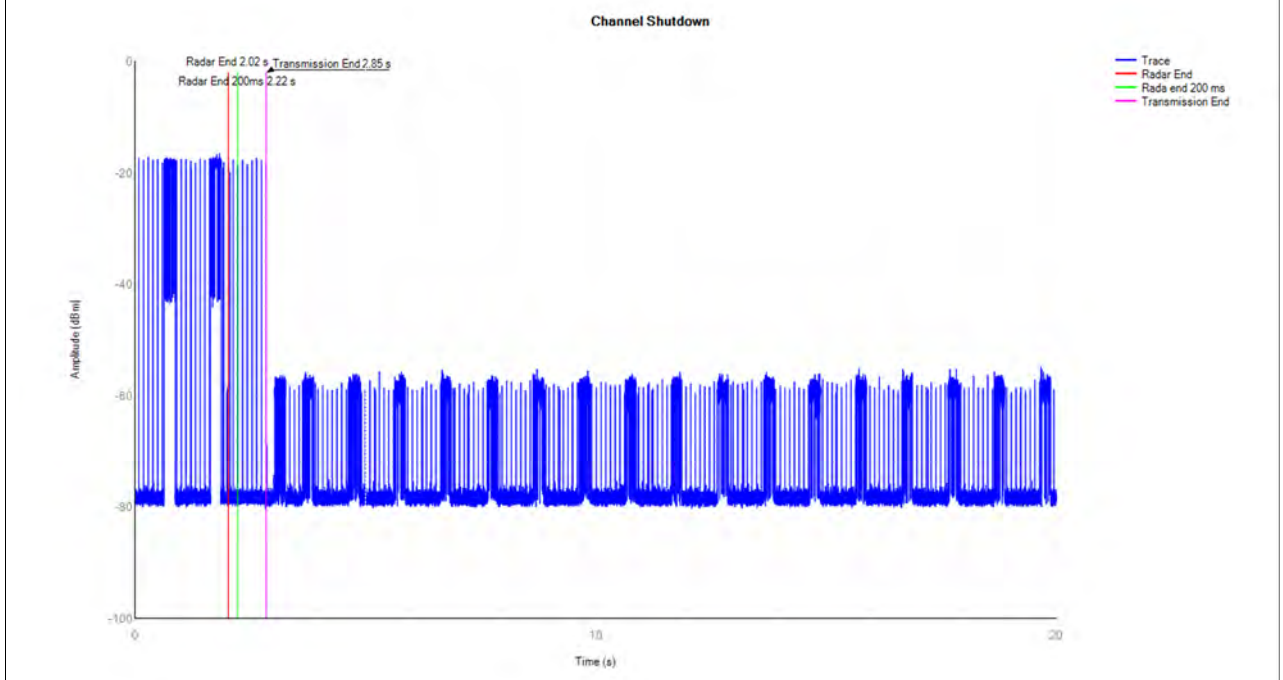
Span: Zero

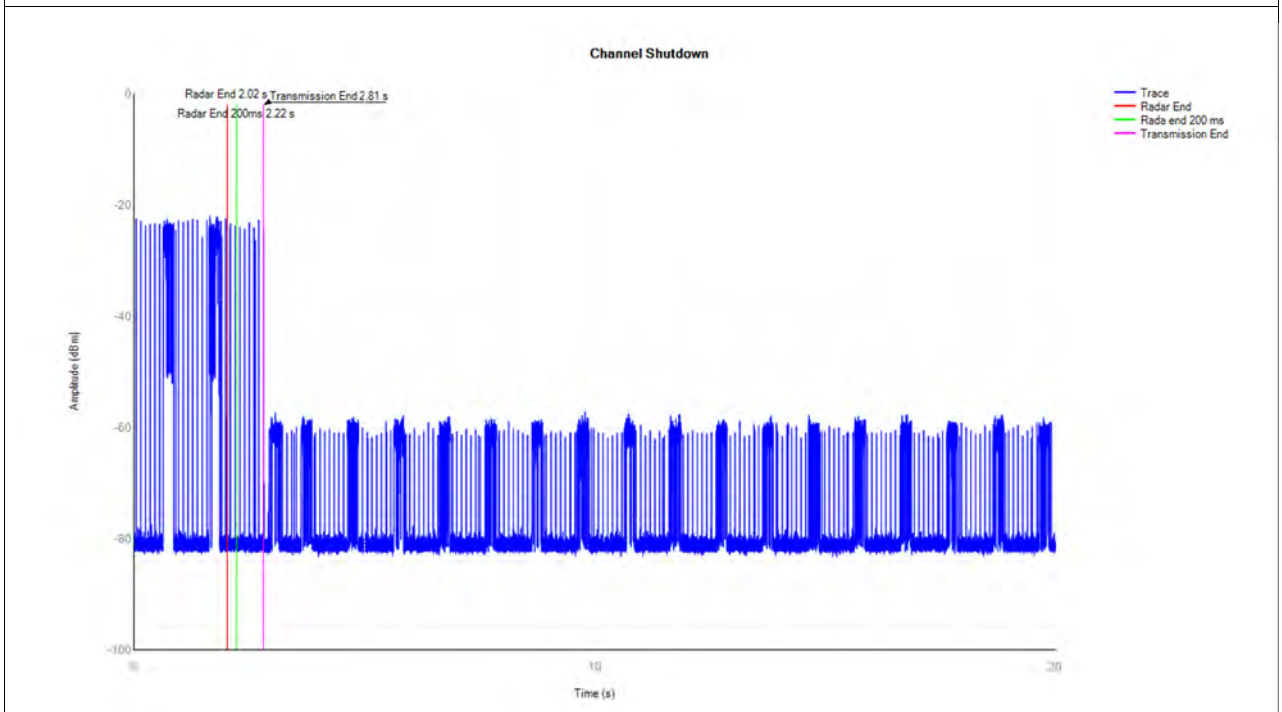
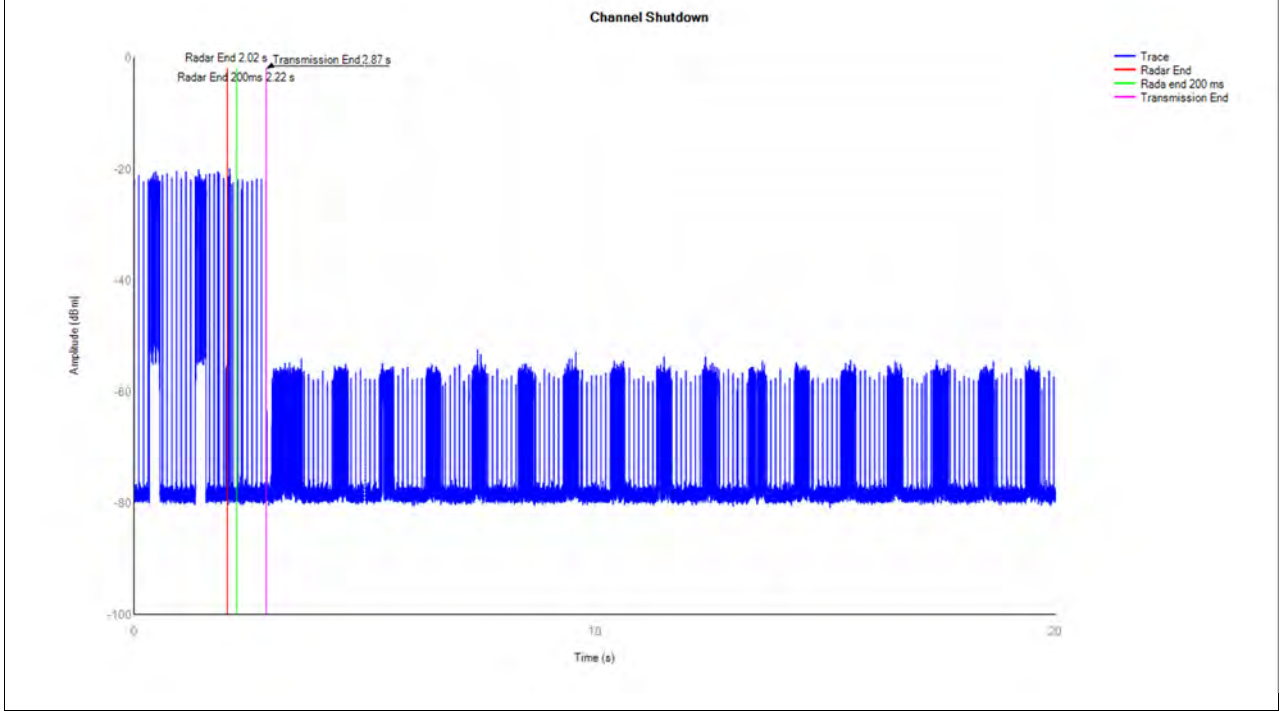
Detector type: Peak

RBW: 3MHz

VBW: 3MHz

Sweep time: 20s

Test Graphs
n20 5260MHz Shutdown

n20 5500MHz Shutdown


n40 5270MHz Shutdown

n40 5510MHz Shutdown


Note：The signal above the noise floor after the radar signal ends is the signal which leaked from other channels that have been moved following the Master device.

Non-Occupancy Period

Mode	Frequency (MHz)	Result	Verdict
n20	5260	See test Graph	Pass
n20	5500	See test Graph	Pass

Spectrum analyzer settings:

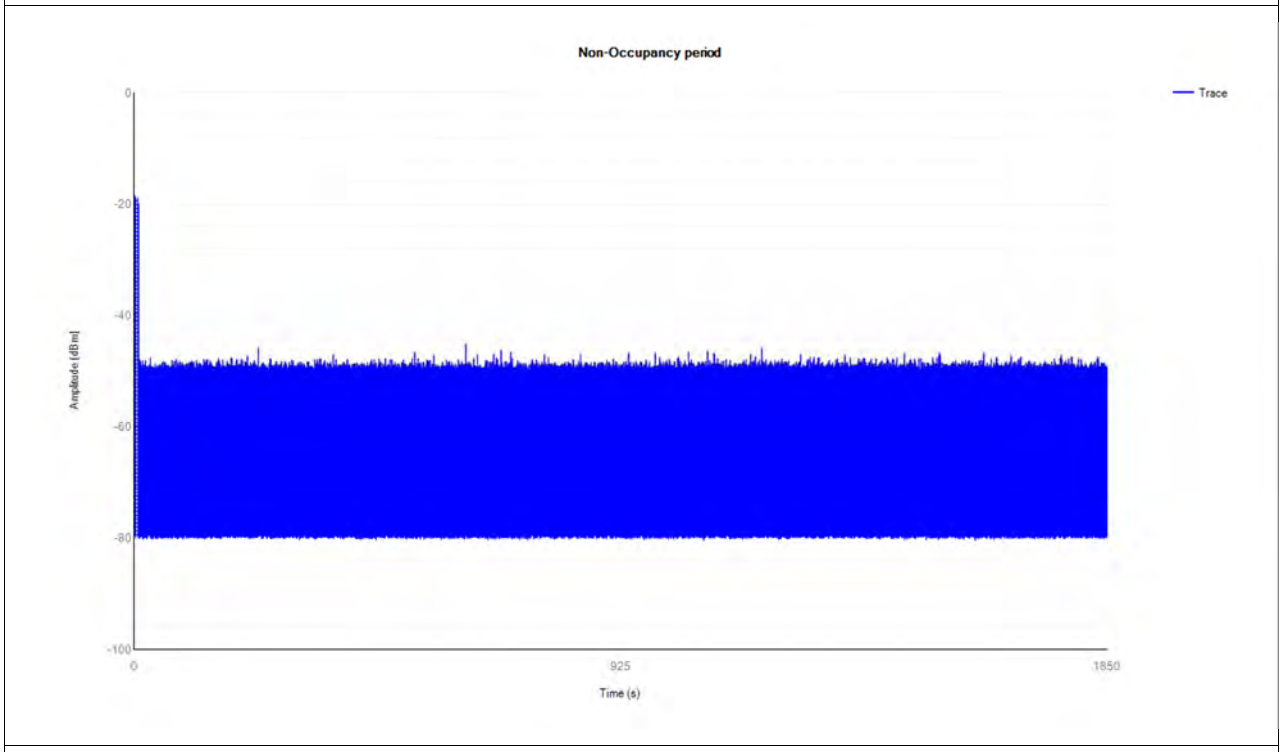
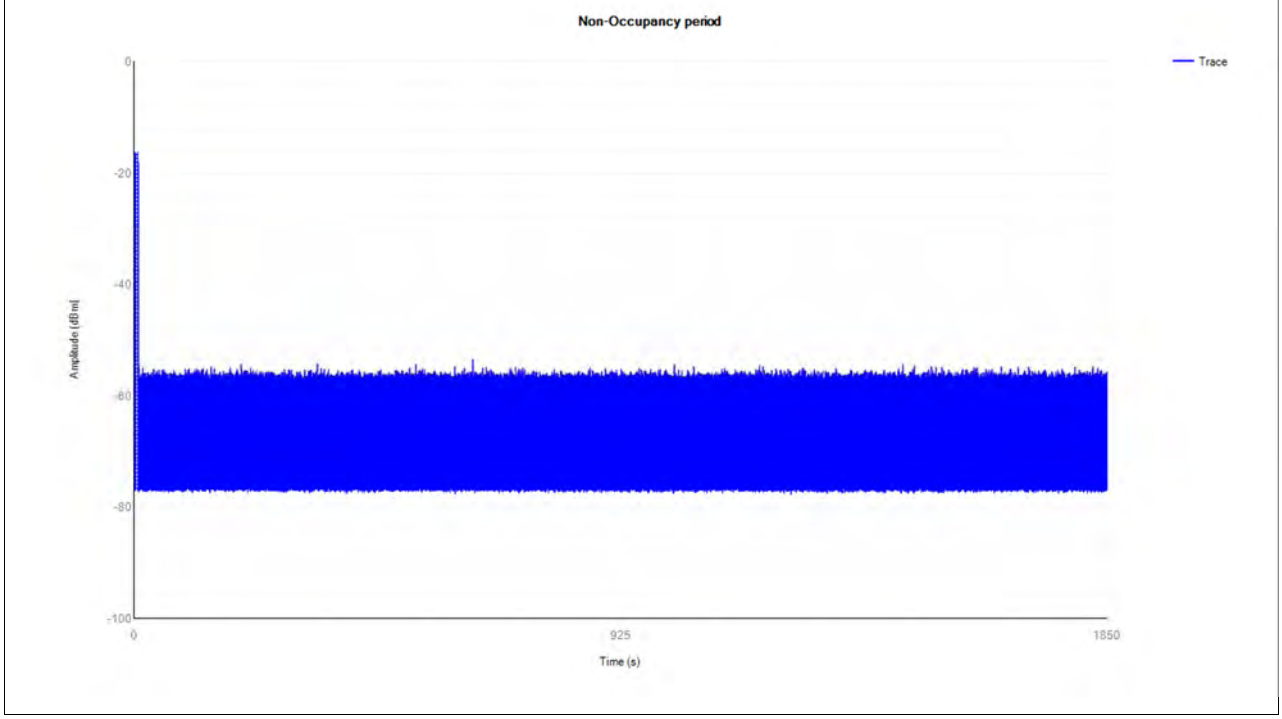
Span: Zero

Detector type: Peak

RBW: 3MHz

VBW: 3MHz

Sweep time: 1850s

Test Graphs
n20 5260MHz Non-Occupancy

n20 5500MHz Non-Occupancy


A.7. Conducted Emission

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and plots below.

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test Setup:

Test Mode: EUT+Microphone+Adapter+Charging cable+Projectort+Projector adapter+WIFI TX

Test voltage: AC 120V/60Hz

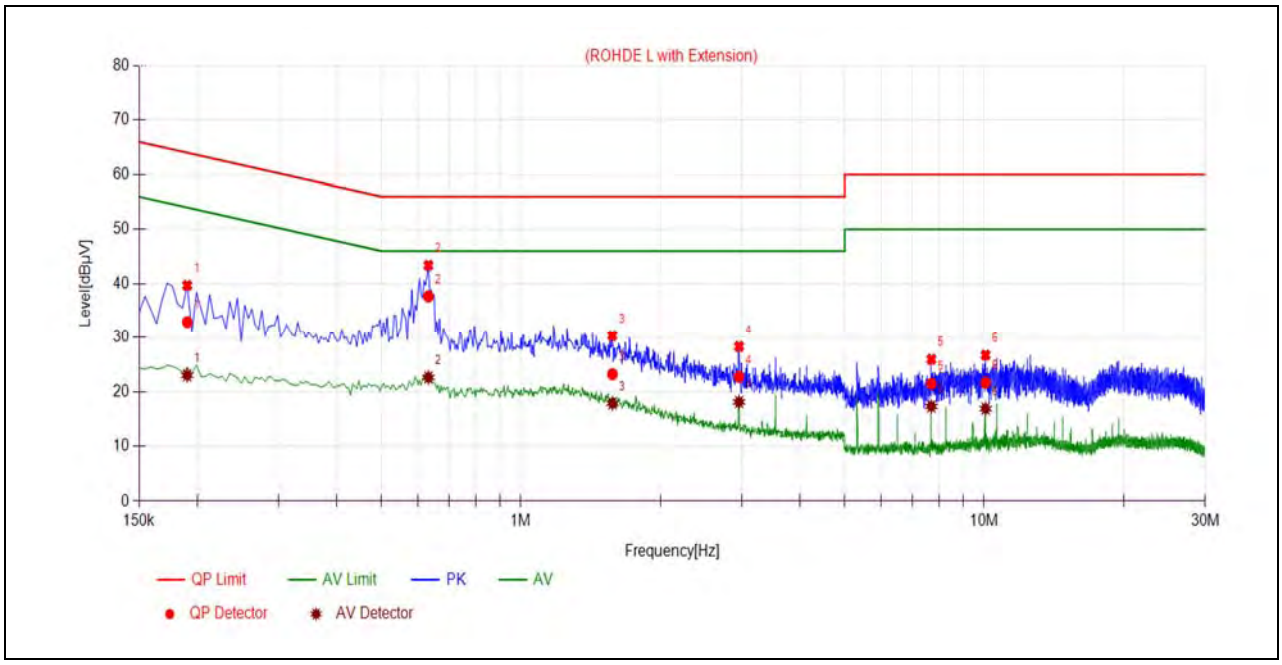
The measurement results are obtained as below:

$E\ [dB\mu V] = U_R + L_{Cable\ loss}\ [dB] + A_{Factor}$

U_R: Receiver Reading

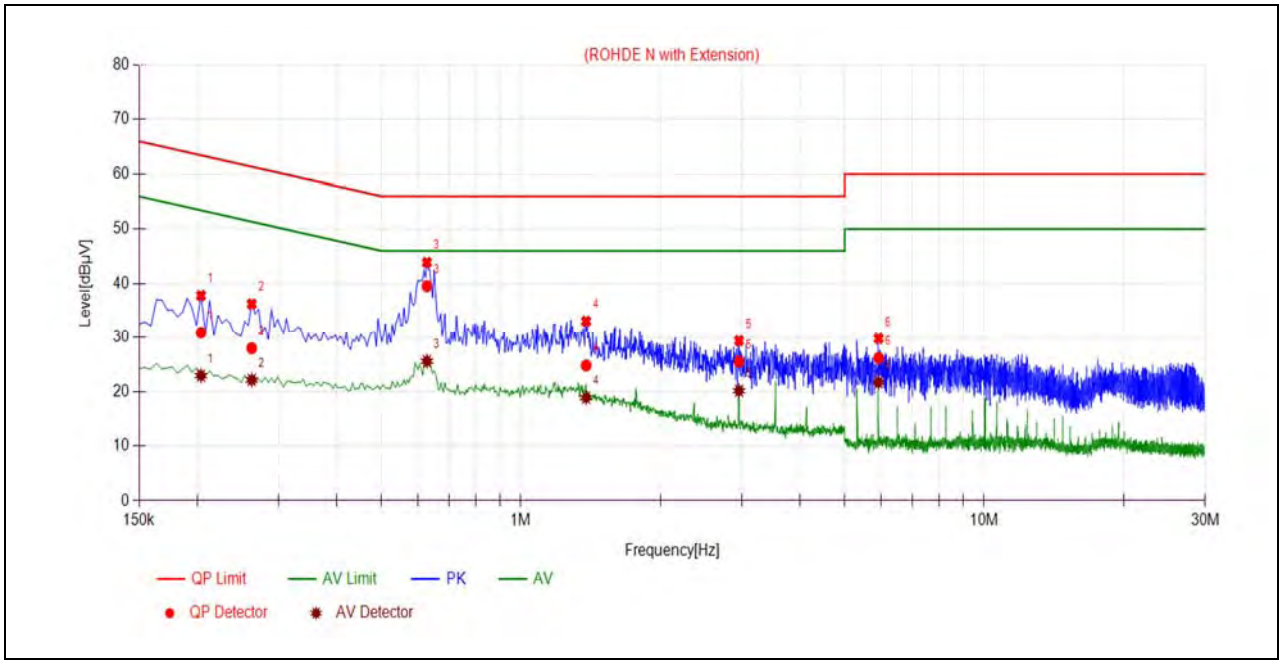
A_{Factor}: Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1905	32.91	54.01	64.01	54.01	Line	PASS
2	0.6315	37.66	46.00	56.00	46.00		PASS
3	1.5765	23.20	46.00	56.00	46.00		PASS
4	2.9579	22.72	46.00	56.00	46.00		PASS
5	7.6918	21.45	50.00	60.00	50.00		PASS
6	10.0721	21.66	50.00	60.00	50.00		PASS



(N Phase)

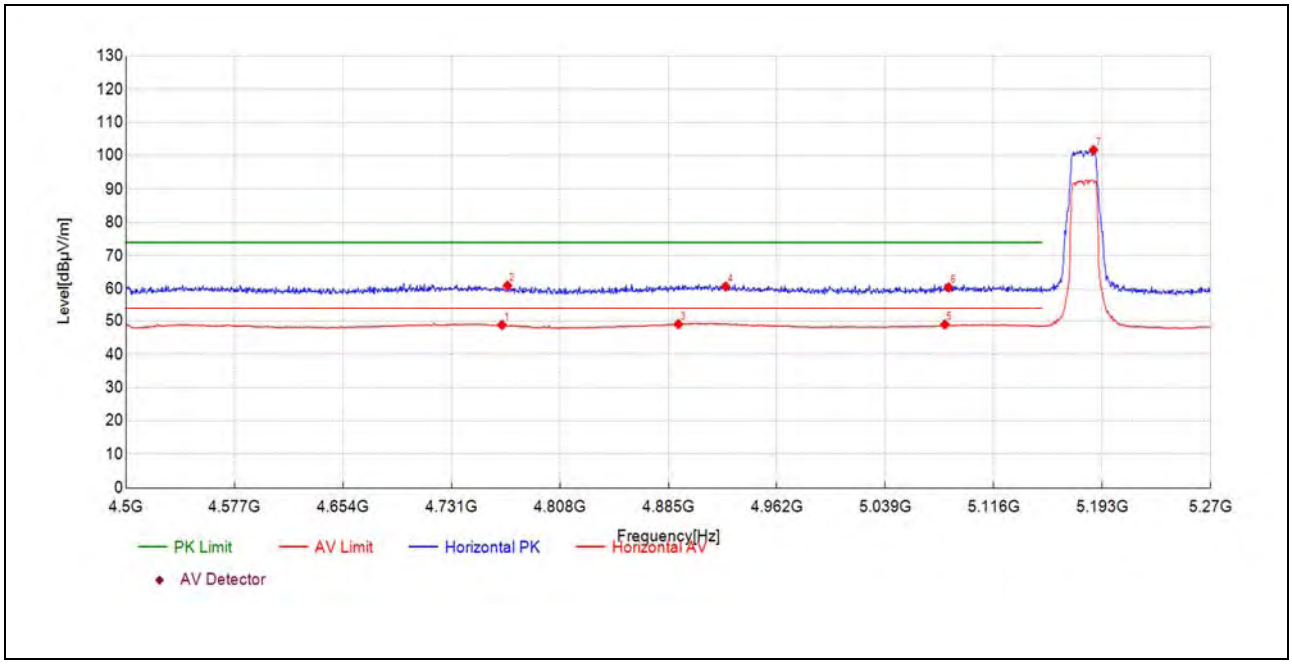
No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2040	30.91	22.91	63.45	22.91	Neutral	PASS
2	0.2625	27.99	22.12	61.35	22.12		PASS
3	0.6270	39.55	25.58	56.00	25.58		PASS
4	1.3830	24.79	18.85	56.00	18.85		PASS
5	2.9579	25.50	20.12	56.00	20.12		PASS
6	5.9190	26.17	21.68	60.00	21.68		PASS

A.8. Restricted Frequency Bands

Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (Horizontal) 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.

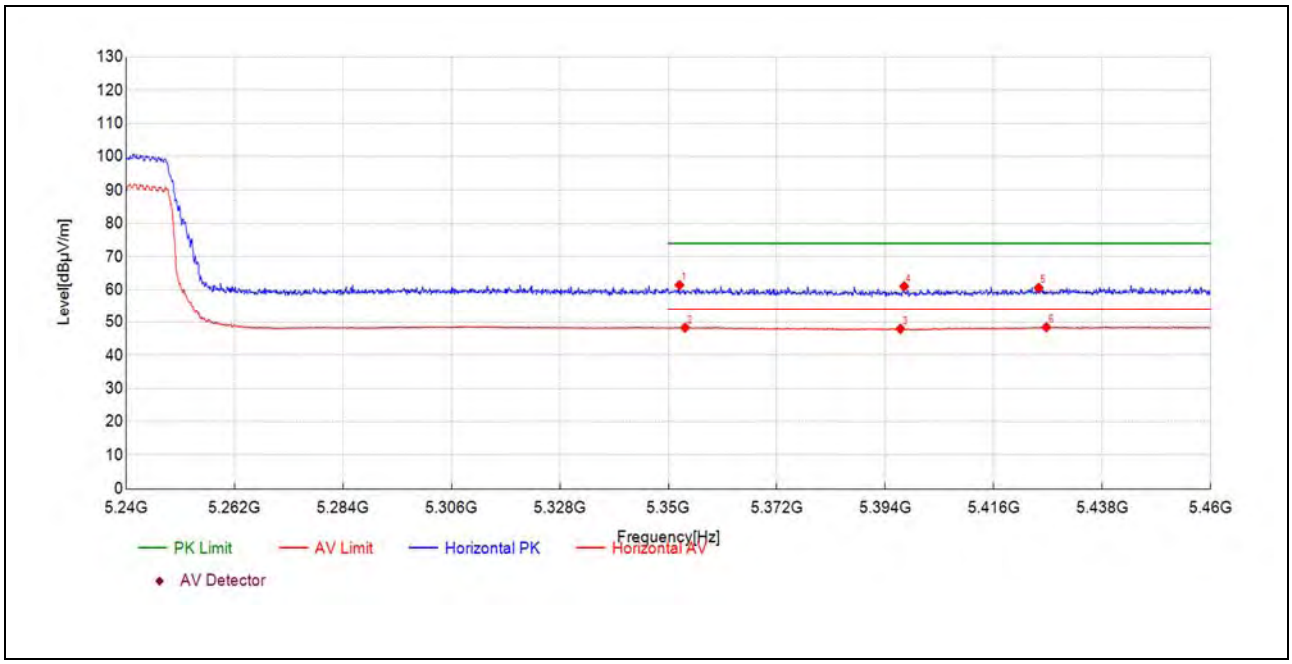
802.11a Mode

Plot for Channel 36



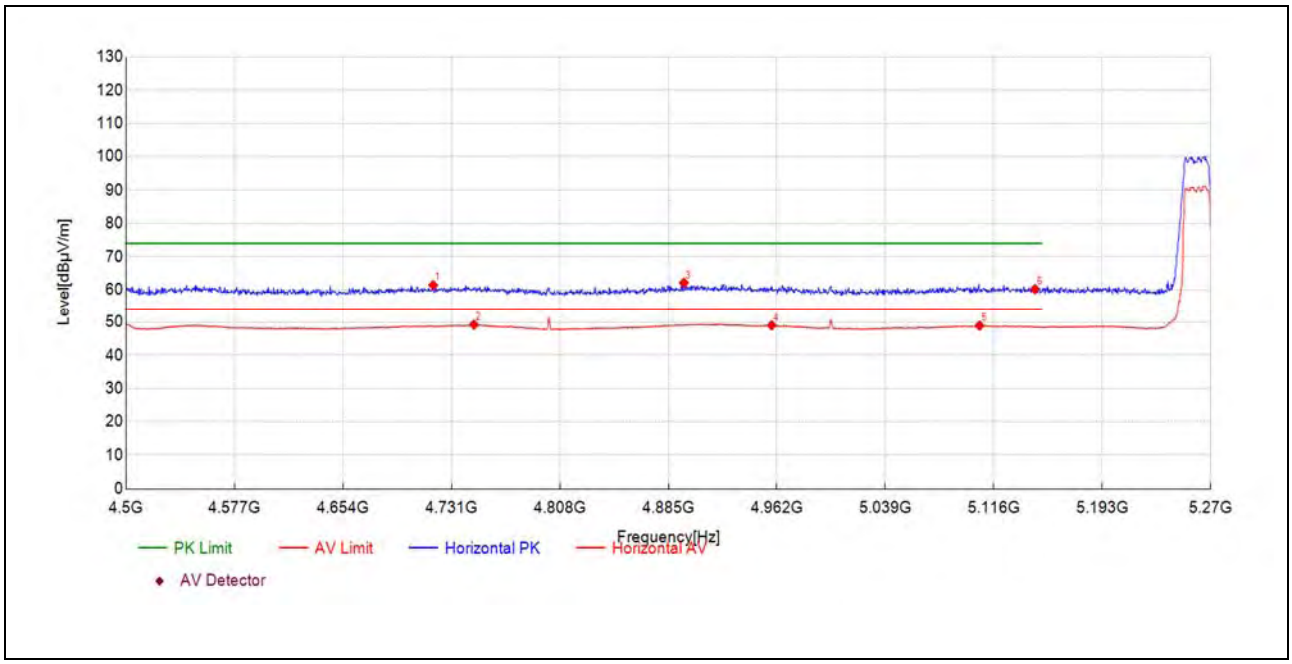
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4766.94	28.8	48.80	20.020	54.00	5.20	150	267	AV	PASS
4770.79	41.0	60.95	19.960	74.00	13.05	150	29	PK	PASS
4892.13	28.9	49.06	20.200	54.00	4.94	150	205	AV	PASS
4925.64	40.7	60.69	20.040	74.00	13.31	150	279	PK	PASS
5081.26	28.5	48.95	20.410	54.00	5.05	150	49	AV	PASS
5083.95	40.0	60.42	20.420	74.00	13.58	150	40	PK	PASS
5186.80	81.3	101.69	20.400	-	-	150	195	PK	NA

Plot for Channel 48



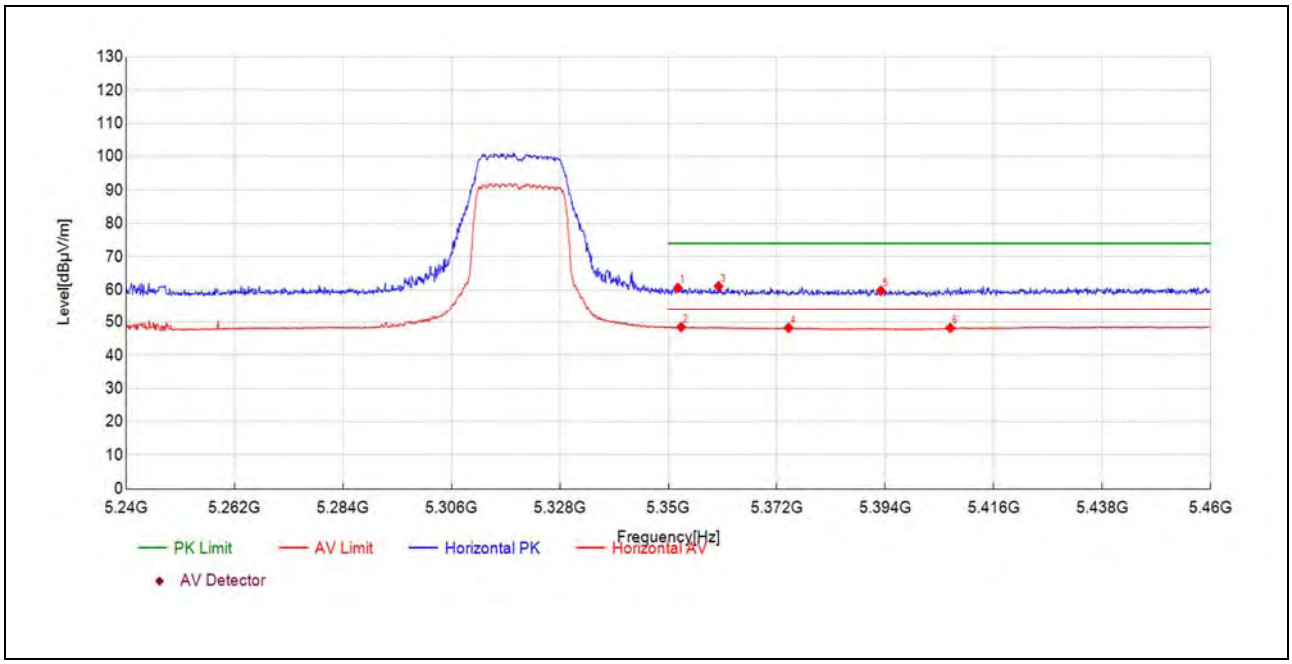
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5352.26	41.5	61.41	19.940	74.00	12.59	150	215	PK	PASS
5353.36	28.4	48.28	19.930	54.00	5.72	150	0	AV	PASS
5397.05	28.1	47.93	19.840	54.00	6.07	150	225	AV	PASS
5397.82	41.2	61.02	19.830	74.00	12.98	150	340	PK	PASS
5425.11	40.5	60.60	20.150	74.00	13.40	150	3	PK	PASS
5426.65	28.2	48.41	20.170	54.00	5.59	150	71	AV	PASS

Plot for Channel 52



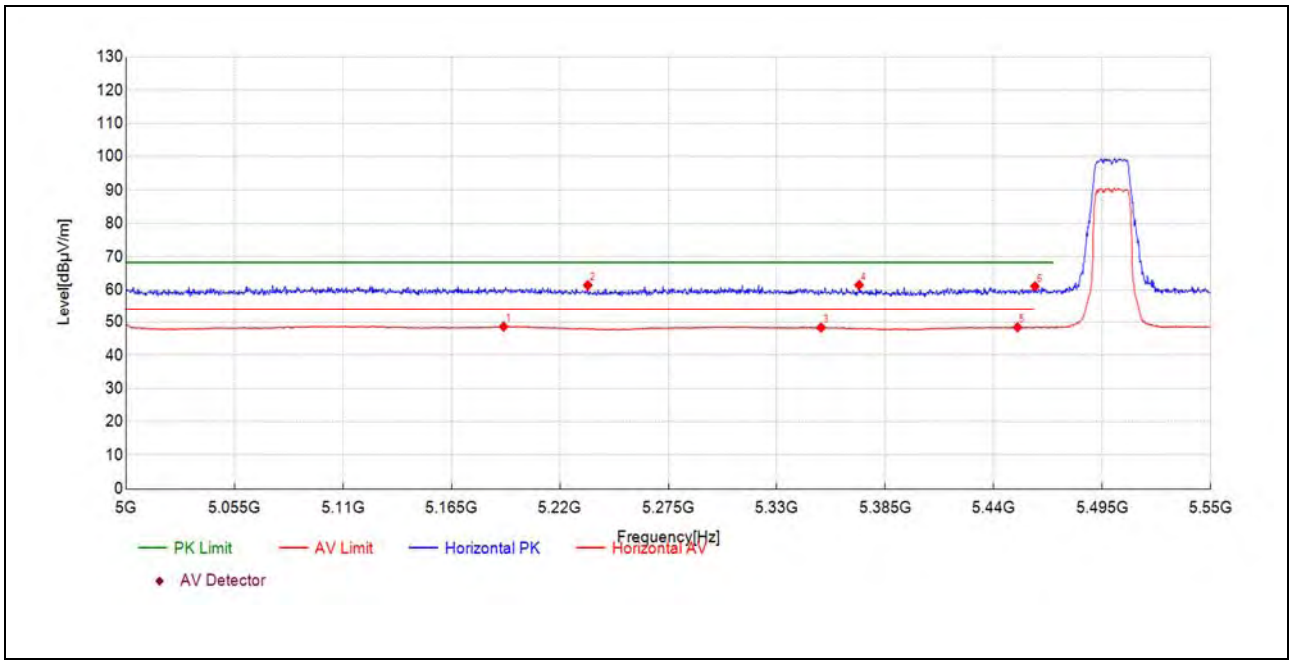
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4718.02	41.1	61.38	20.300	74.00	12.62	150	197	PK	PASS
4746.91	28.9	49.21	20.320	54.00	4.79	150	30	AV	PASS
4895.98	41.9	62.09	20.230	74.00	11.91	150	320	PK	PASS
4958.38	29.2	49.01	19.840	54.00	4.99	150	258	AV	PASS
5105.91	28.4	48.92	20.500	54.00	5.08	150	0	AV	PASS
5145.20	39.9	60.19	20.340	74.00	13.81	150	320	PK	PASS

Plot for Channel 64



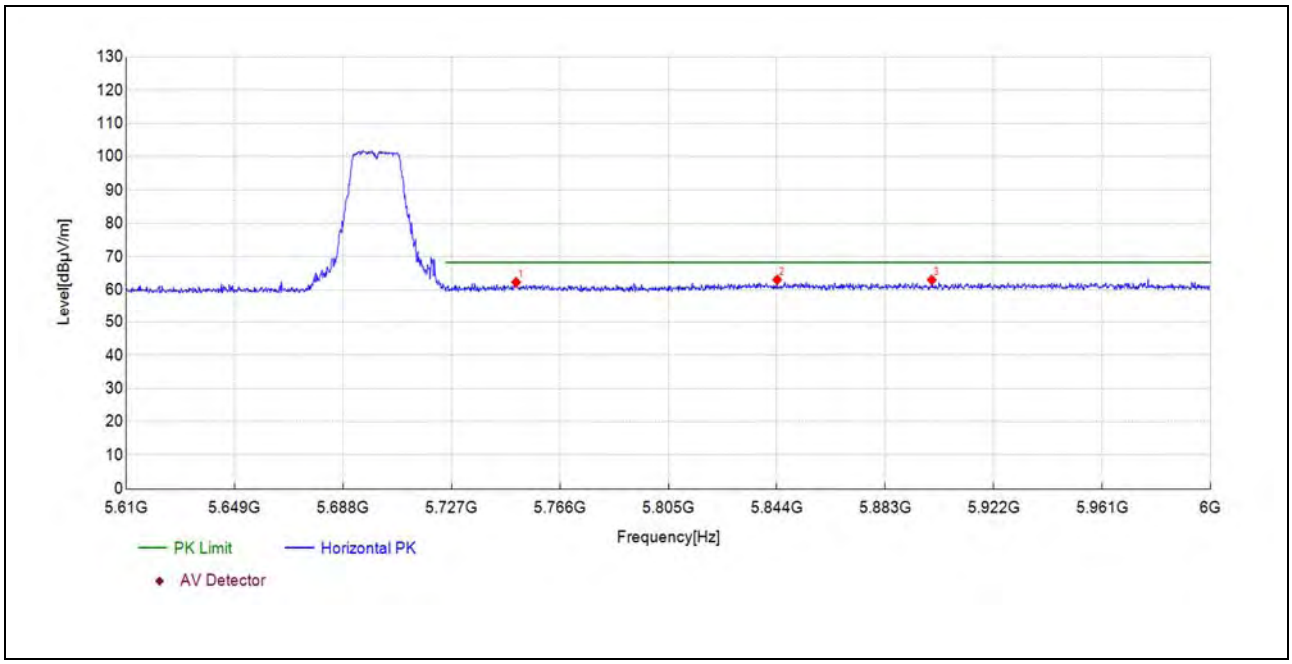
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5351.93	40.6	60.58	19.940	74.00	13.42	150	31	PK	PASS
5352.59	28.5	48.46	19.930	54.00	5.54	150	157	AV	PASS
5360.18	41.1	61.05	19.920	74.00	12.95	150	332	PK	PASS
5374.38	28.3	48.22	19.890	54.00	5.78	150	280	AV	PASS
5393.09	39.9	59.70	19.840	74.00	14.30	150	84	PK	PASS
5407.17	28.3	48.22	19.930	54.00	5.78	150	4	AV	PASS

Plot for Channel 100



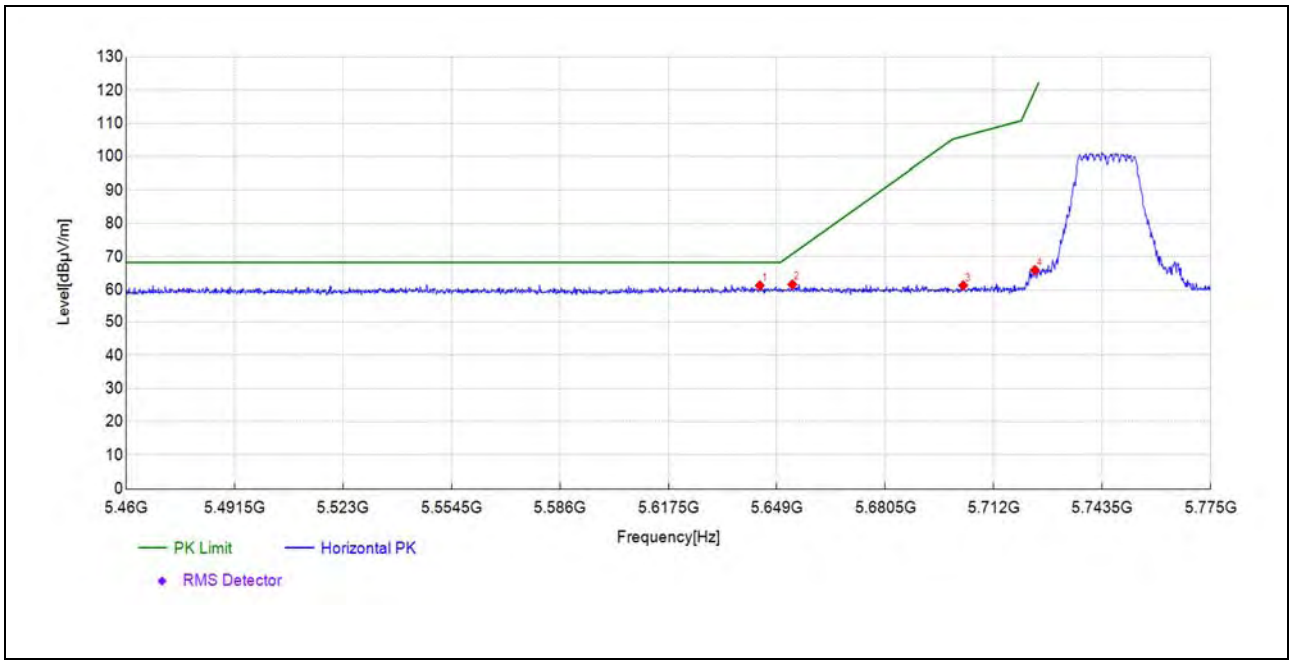
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5191.50	28.2	48.60	20.410	54.00	5.40	150	257	AV	PASS
5234.14	41.3	61.36	20.020	68.23	6.87	150	37	PK	PASS
5352.45	28.4	48.33	19.940	54.00	5.67	150	49	AV	PASS
5371.71	41.5	61.44	19.900	68.23	6.79	150	357	PK	PASS
5452.05	27.9	48.39	20.460	54.00	5.61	150	1	AV	PASS
5460.86	40.6	61.04	20.410	68.23	7.19	150	80	PK	PASS

Plot for Channel 140



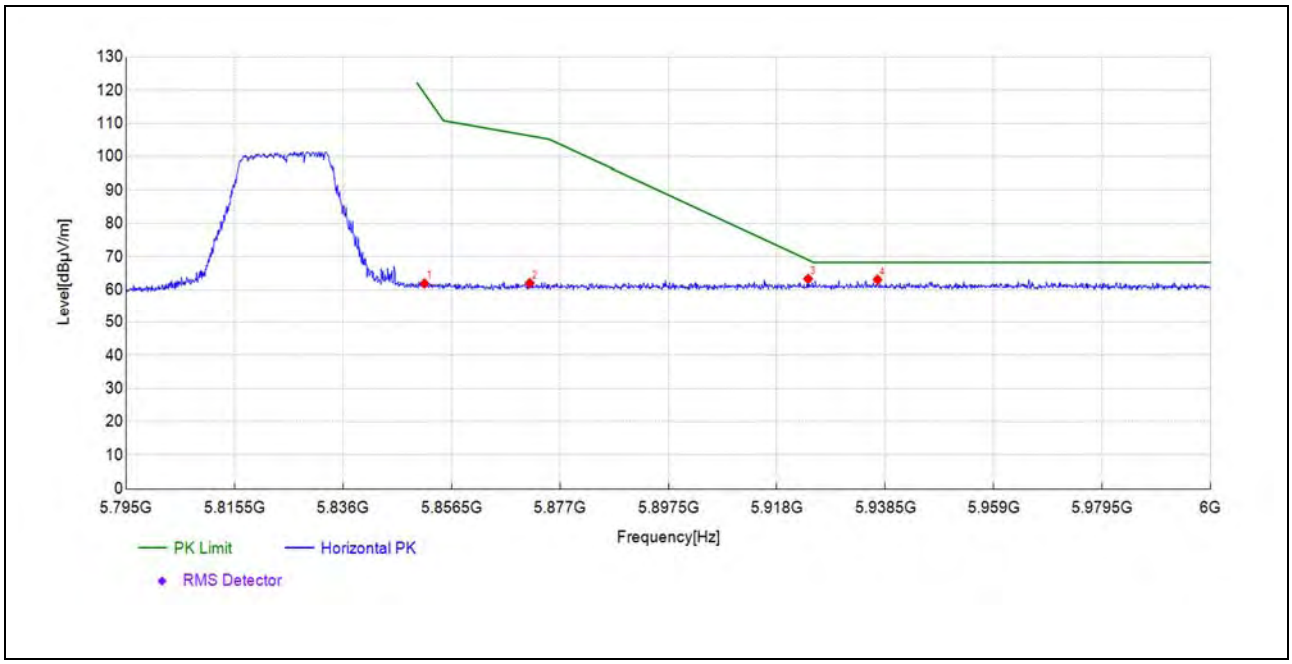
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5750.28	40.7	62.29	21.640	68.23	5.94	150	55	PK	PASS
5844.12	40.7	63.02	22.370	68.23	5.21	150	66	PK	PASS
5899.72	41.3	62.99	21.720	68.23	5.24	150	236	PK	PASS

Plot for Channel 149



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5644.05	40.4	61.26	20.900	68.23	6.97	150	189	PK	PASS
5653.51	40.6	61.60	21.000	70.82	9.22	150	151	PK	PASS
5703.14	40.4	61.30	20.920	106.11	44.81	150	208	PK	PASS
5723.94	44.7	65.95	21.250	119.82	53.87	150	170	PK	PASS

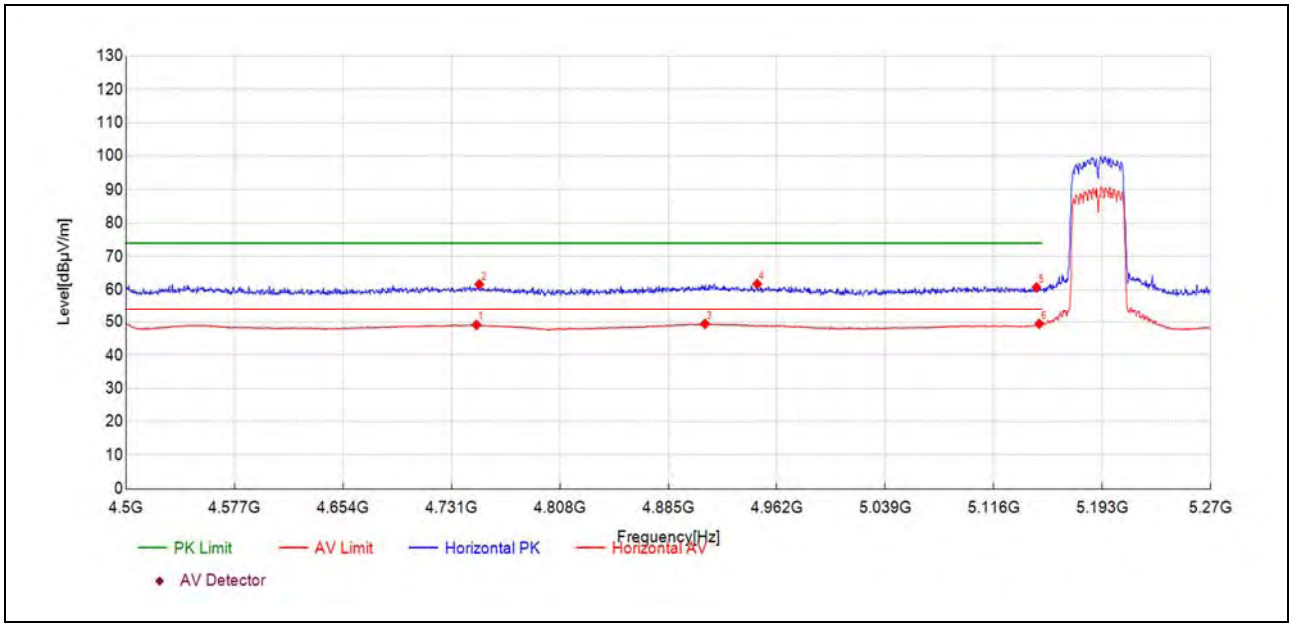
Plot for Channel 165



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5851.40	39.5	61.89	22.440	119.03	57.14	150	76	PK	PASS
5871.30	39.9	62.00	22.140	106.27	44.27	150	348	PK	PASS
5923.91	41.4	63.28	21.910	69.04	5.76	150	305	PK	PASS
5937.03	41.0	63.05	22.010	68.23	5.18	150	134	PK	PASS

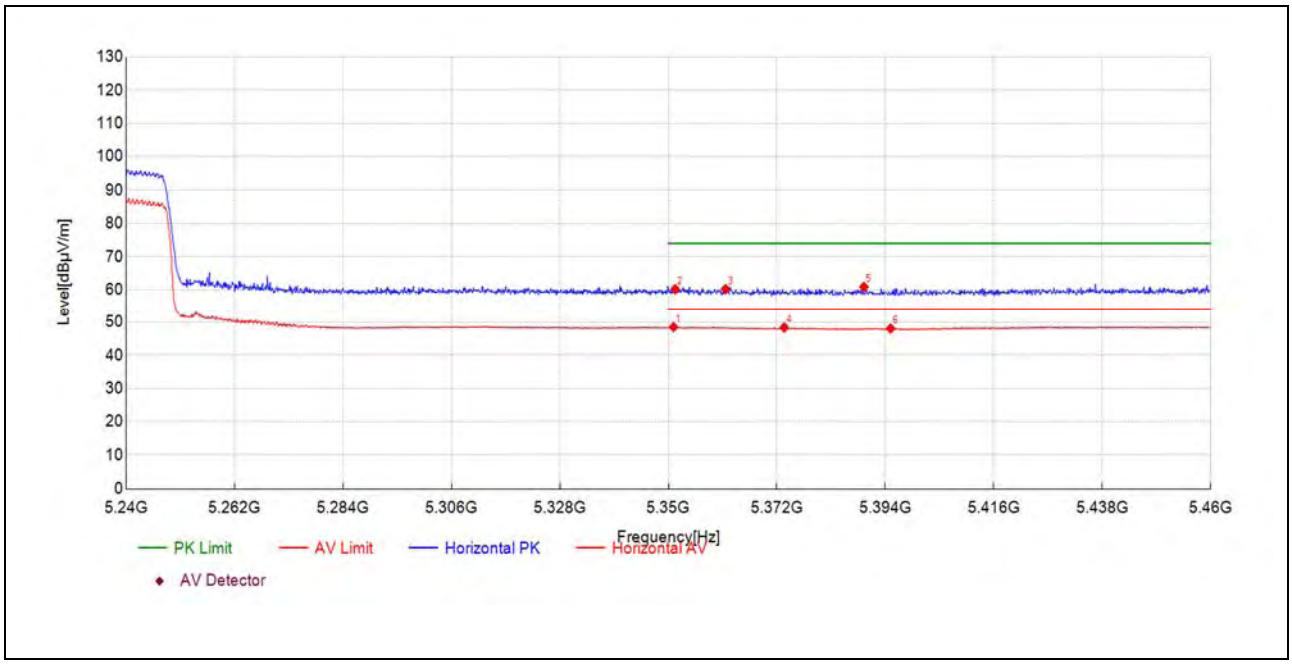
802.11n (HT40) Mode

Plot for Channel 38



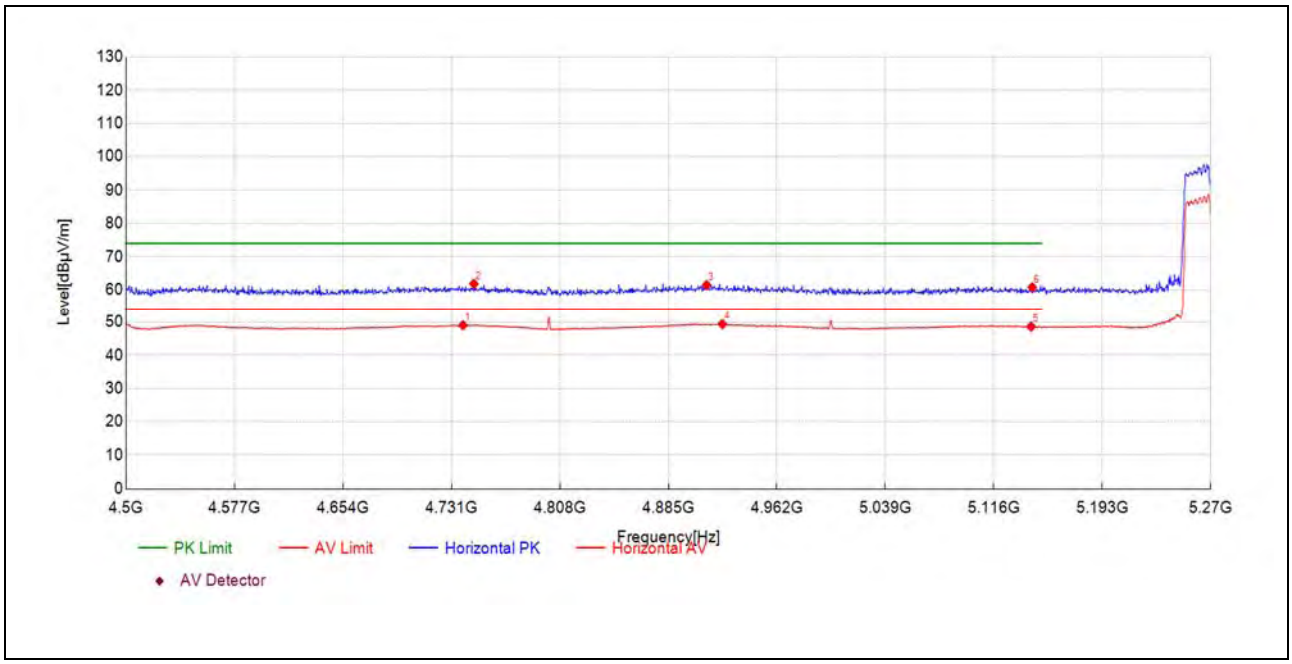
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4748.83	28.8	49.11	20.320	54.00	4.89	150	307	AV	PASS
4750.76	41.3	61.58	20.300	74.00	12.42	150	152	PK	PASS
4911.00	29.3	49.44	20.170	54.00	4.56	150	133	AV	PASS
4947.98	41.8	61.66	19.850	74.00	12.34	150	133	PK	PASS
5146.35	40.4	60.69	20.340	74.00	13.31	150	195	PK	PASS
5148.28	29.1	49.43	20.320	54.00	4.57	150	205	AV	PASS

Plot for Channel 46



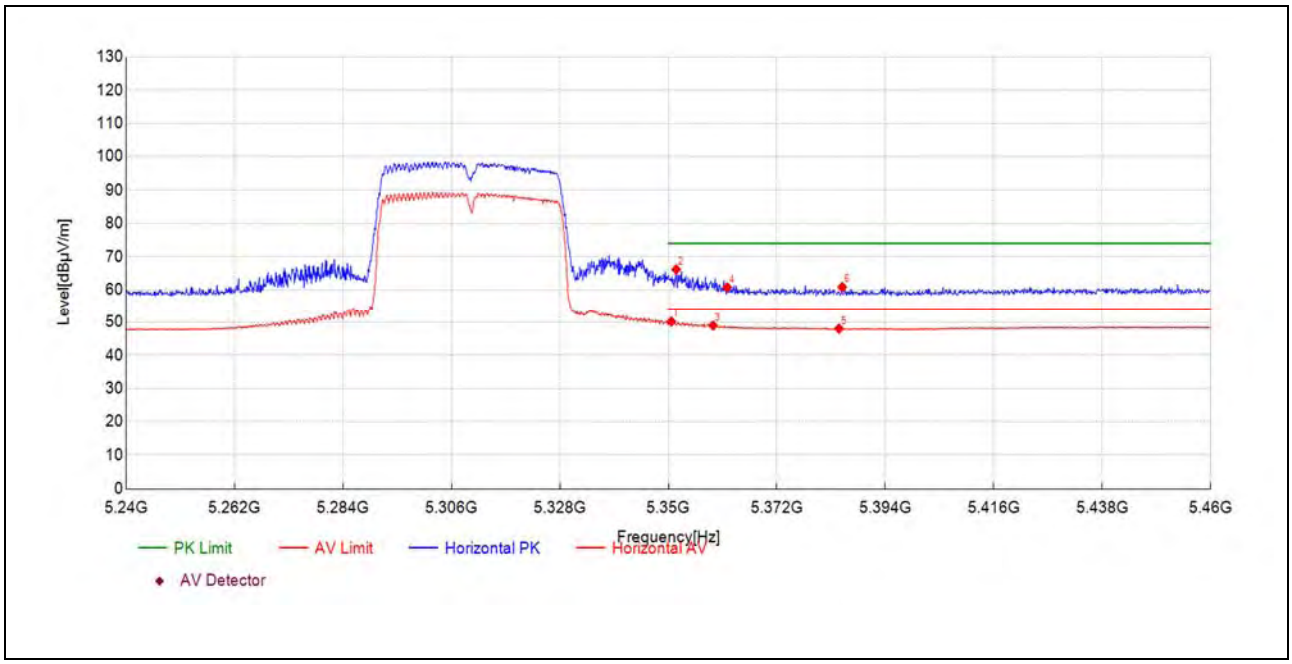
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5351.05	28.5	48.47	19.940	54.00	5.53	150	301	AV	PASS
5351.38	40.2	60.14	19.940	74.00	13.86	150	218	PK	PASS
5361.61	40.3	60.20	19.920	74.00	13.80	150	332	PK	PASS
5373.50	28.4	48.33	19.890	54.00	5.67	150	349	AV	PASS
5389.67	41.0	60.87	19.850	74.00	13.13	150	208	PK	PASS
5395.07	28.2	48.04	19.840	54.00	5.96	150	332	AV	PASS

Plot for Channel 54



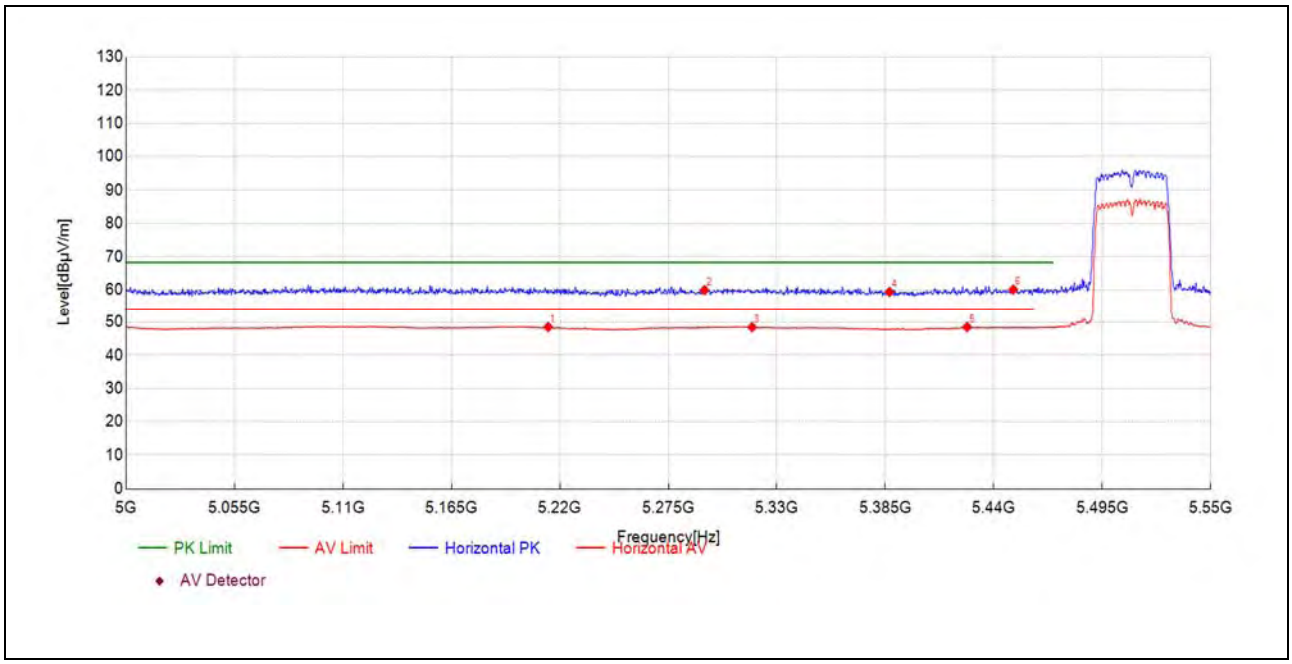
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4739.20	28.7	49.04	20.310	54.00	4.96	150	249	AV	PASS
4746.91	41.5	61.78	20.320	74.00	12.22	150	0	PK	PASS
4912.16	41.2	61.40	20.160	74.00	12.60	150	0	PK	PASS
4923.33	29.3	49.38	20.060	54.00	4.62	150	156	AV	PASS
5142.50	28.3	48.61	20.340	54.00	5.39	150	1	AV	PASS
5143.27	40.4	60.76	20.340	74.00	13.24	150	0	PK	PASS

Plot for Channel 62



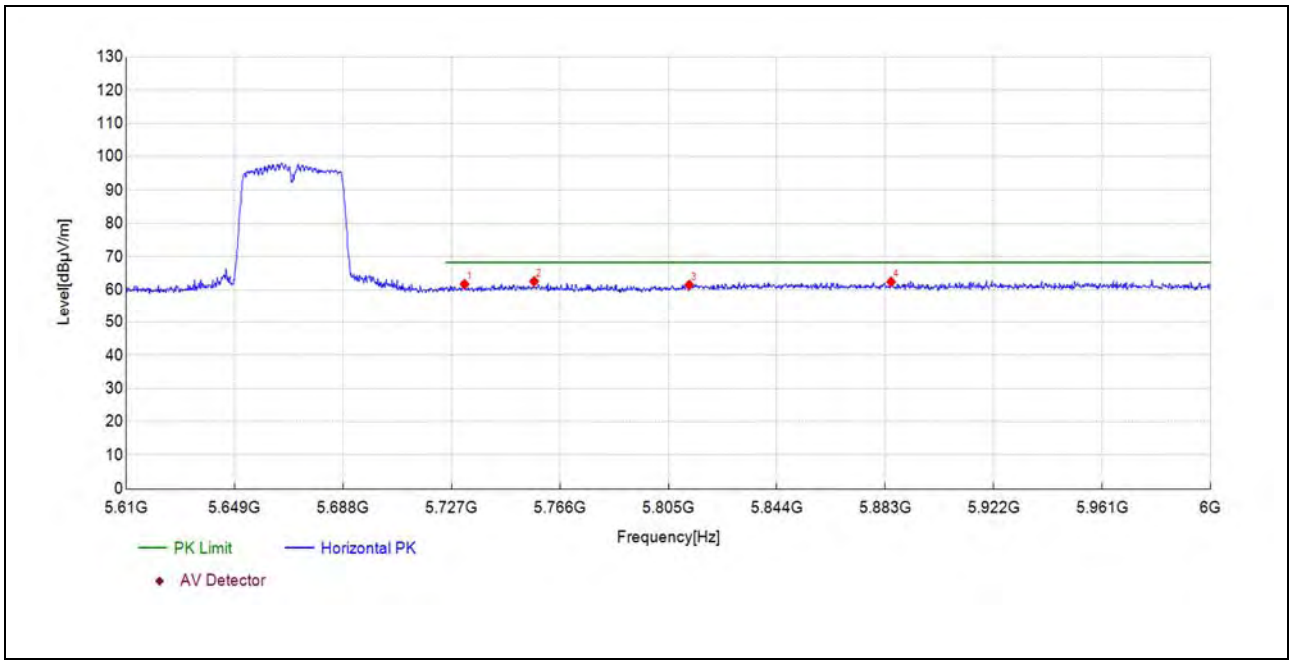
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5350.61	30.2	50.14	19.940	54.00	3.86	150	195	AV	PASS
5351.60	46.2	66.12	19.940	74.00	7.88	150	195	PK	PASS
5359.08	29.0	48.96	19.920	54.00	5.04	150	195	AV	PASS
5361.94	40.8	60.73	19.920	74.00	13.27	150	82	PK	PASS
5384.61	28.2	48.01	19.860	54.00	5.99	150	71	AV	PASS
5385.27	41.0	60.81	19.860	74.00	13.19	150	248	PK	PASS

Plot for Channel 102



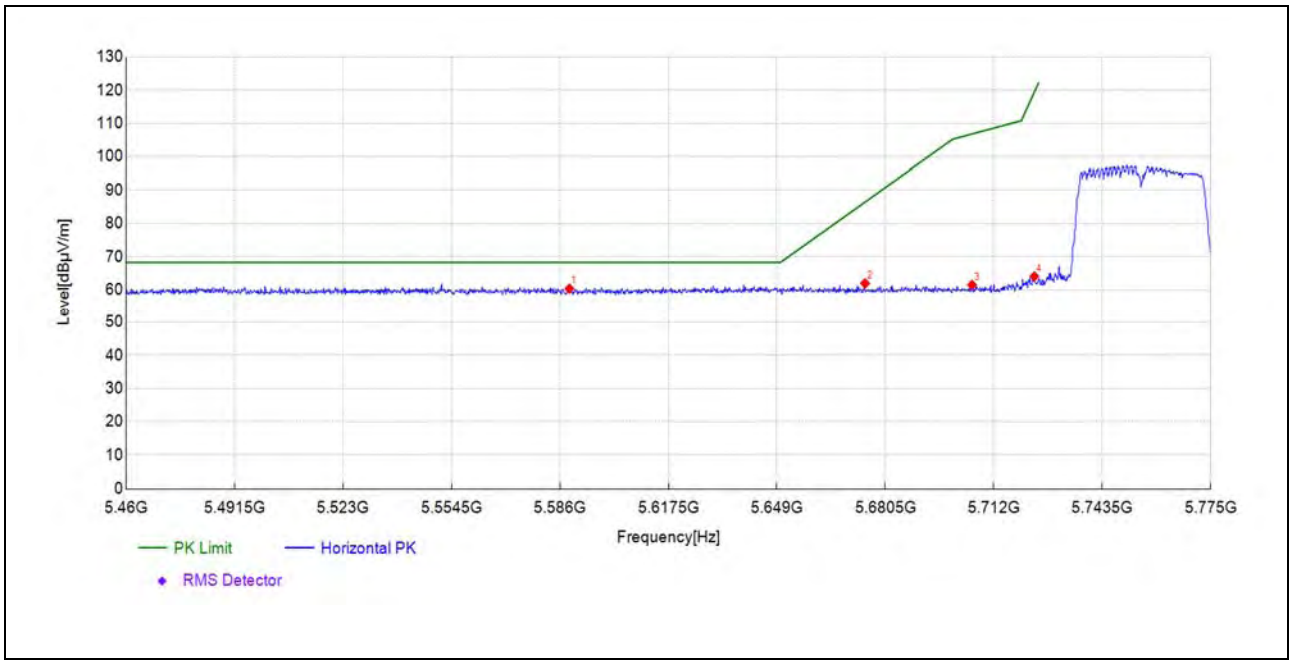
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5214.06	28.2	48.48	20.250	54.00	5.52	150	71	AV	PASS
5293.30	39.7	59.90	20.200	68.23	8.33	150	144	PK	PASS
5317.51	28.3	48.44	20.140	54.00	5.56	150	307	AV	PASS
5387.12	39.5	59.33	19.860	68.23	8.90	150	122	PK	PASS
5426.46	28.3	48.47	20.170	54.00	5.53	150	1	AV	PASS
5449.85	39.6	60.07	20.470	68.23	8.16	150	175	PK	PASS

Plot for Channel 134



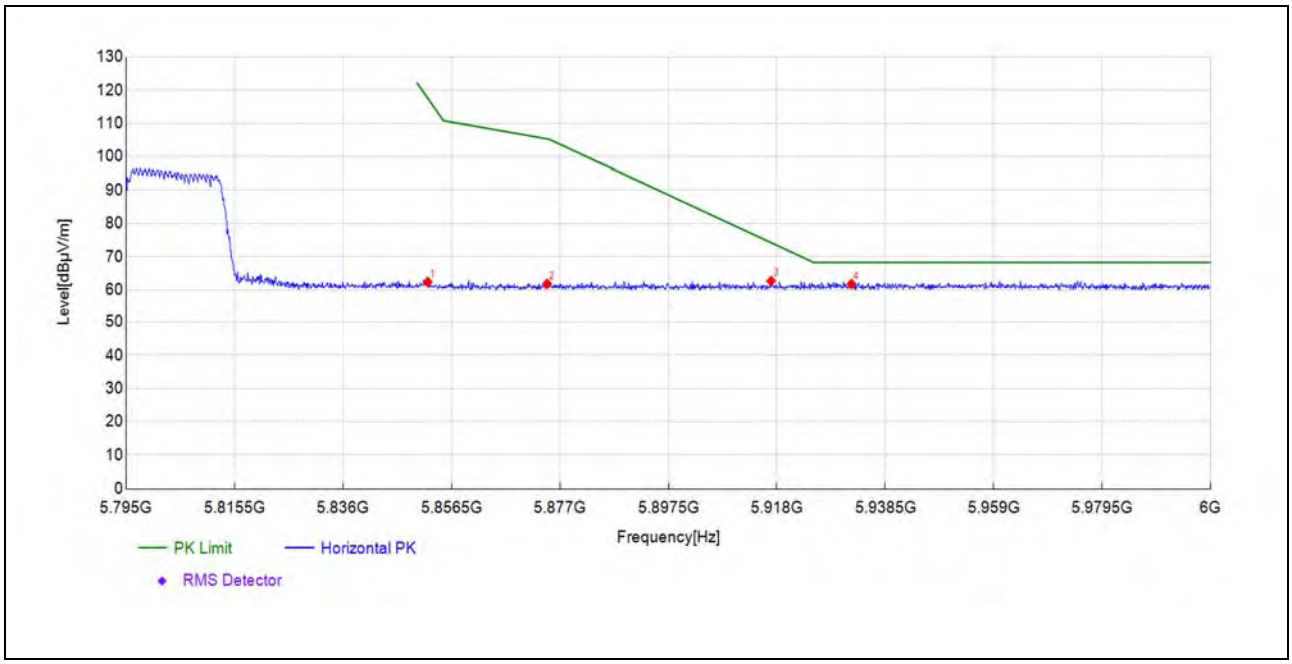
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5731.74	40.3	61.68	21.360	68.23	6.55	150	133	PK	PASS
5756.71	40.9	62.52	21.650	68.23	5.71	150	353	PK	PASS
5812.51	39.6	61.49	21.890	68.23	6.74	150	267	PK	PASS
5885.09	40.5	62.39	21.940	68.23	5.84	150	238	PK	PASS

Plot for Channel 151



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5588.74	40.2	60.34	20.160	68.23	7.89	150	160	PK	PASS
5674.62	41.0	61.93	20.940	86.45	24.52	150	256	PK	PASS
5705.67	40.5	61.47	20.970	106.82	45.35	150	170	PK	PASS
5723.79	42.8	64.03	21.240	119.46	55.43	150	181	PK	PASS

Plot for Channel 159



Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
5852.02	39.9	62.32	22.430	117.63	55.31	150	4	PK	PASS
5874.58	39.7	61.76	22.100	105.35	43.59	150	133	PK	PASS
5916.93	40.8	62.63	21.850	74.20	11.57	150	209	PK	PASS
5932.11	39.8	61.74	21.970	68.23	6.49	150	256	PK	PASS

A.9. 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.

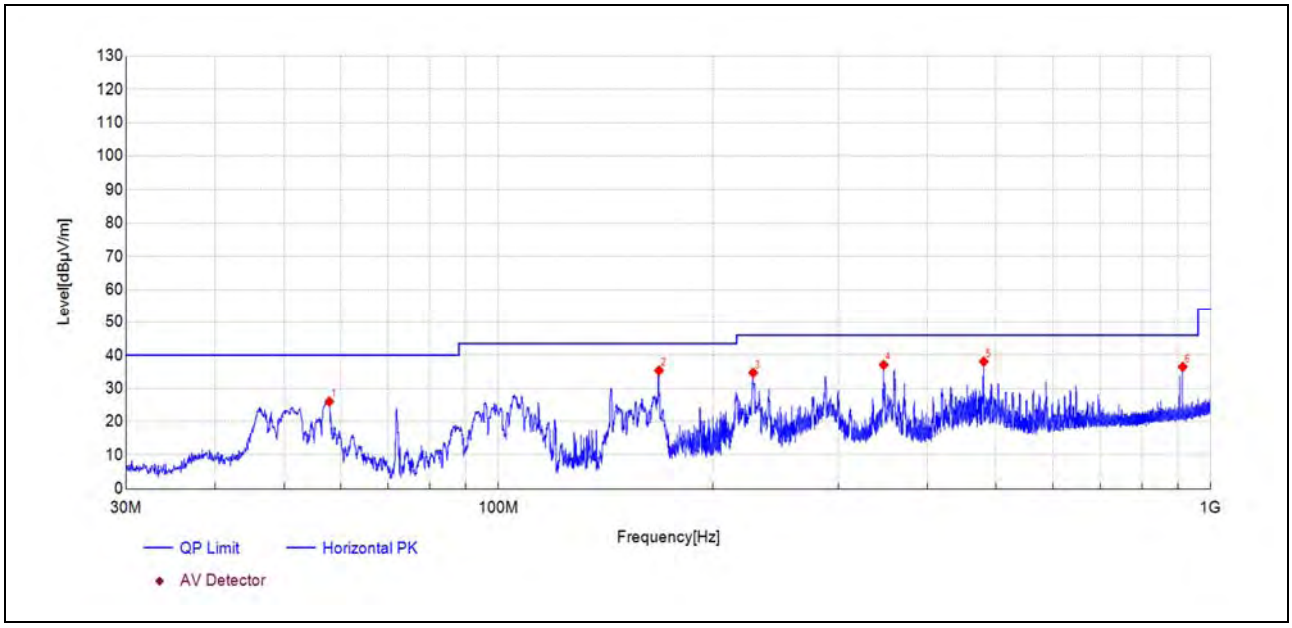
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

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.

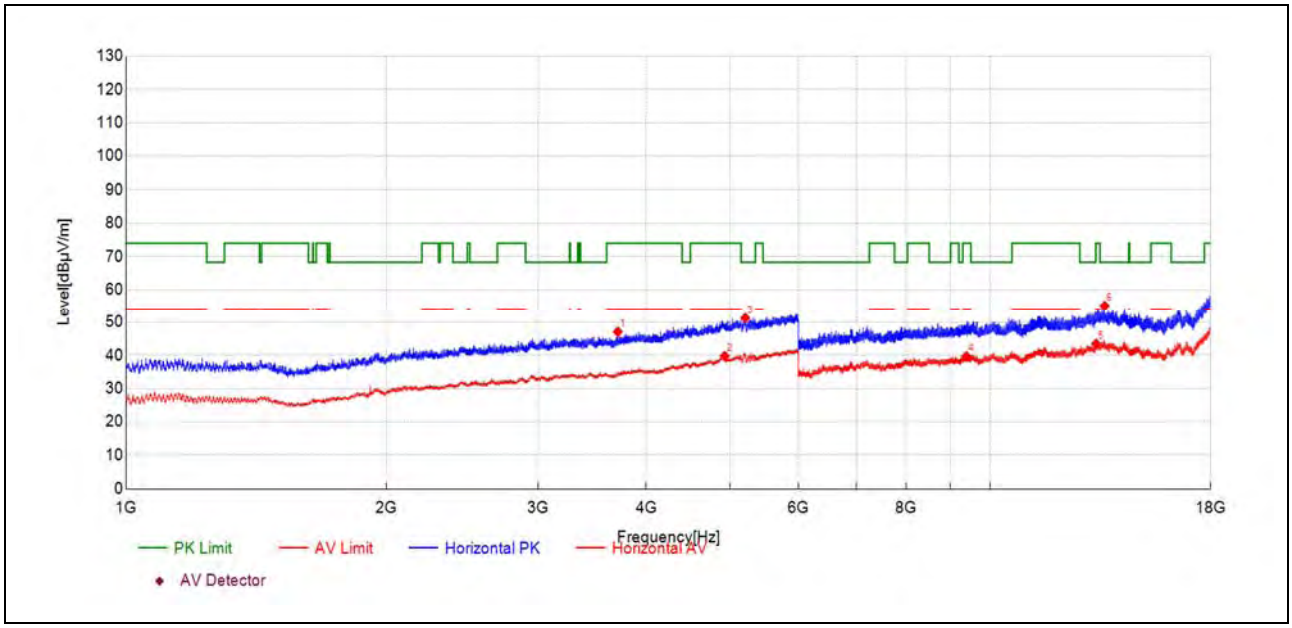
802.11a Mode

Plot for Channel 44



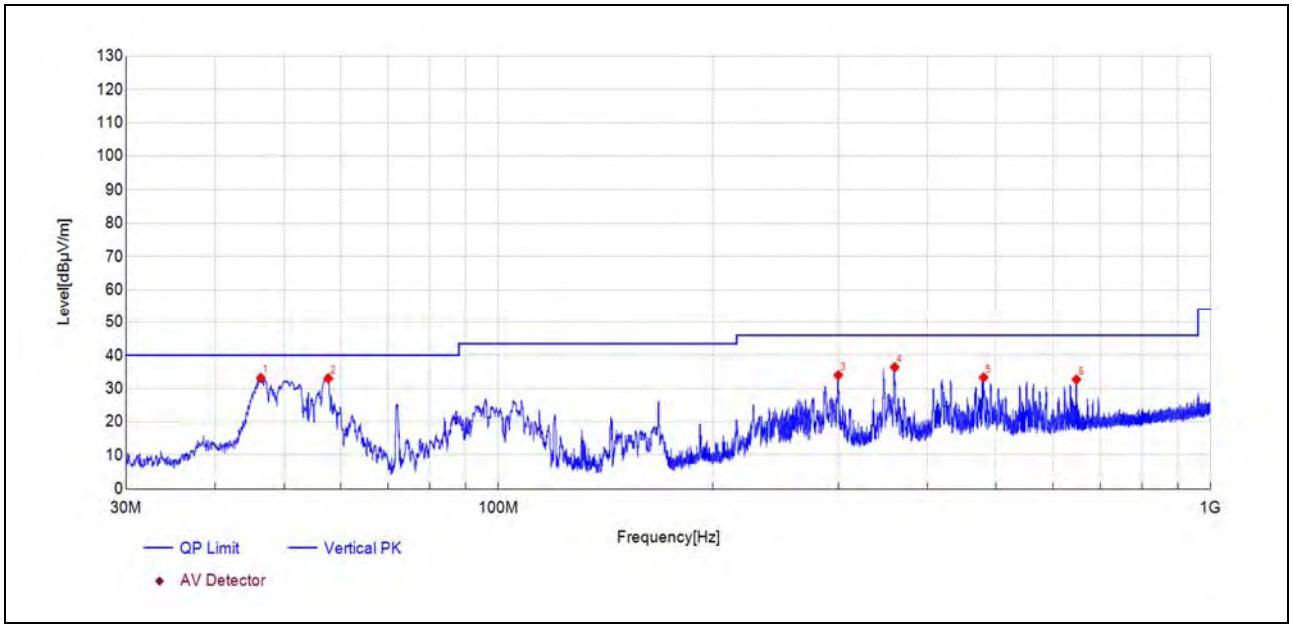
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
57.89	56.3	26.06	-30.200	40.00	13.94	150	337	PK	PASS
168.04	67.7	35.36	-32.330	43.50	8.14	150	255	PK	PASS
227.79	63.5	34.70	-28.820	46.00	11.30	150	77	PK	PASS
347.40	62.3	37.08	-25.240	46.00	8.92	150	227	PK	PASS
480.15	60.4	38.05	-22.330	46.00	7.95	150	240	PK	PASS
913.42	51.2	36.48	-14.750	46.00	9.52	150	118	PK	PASS



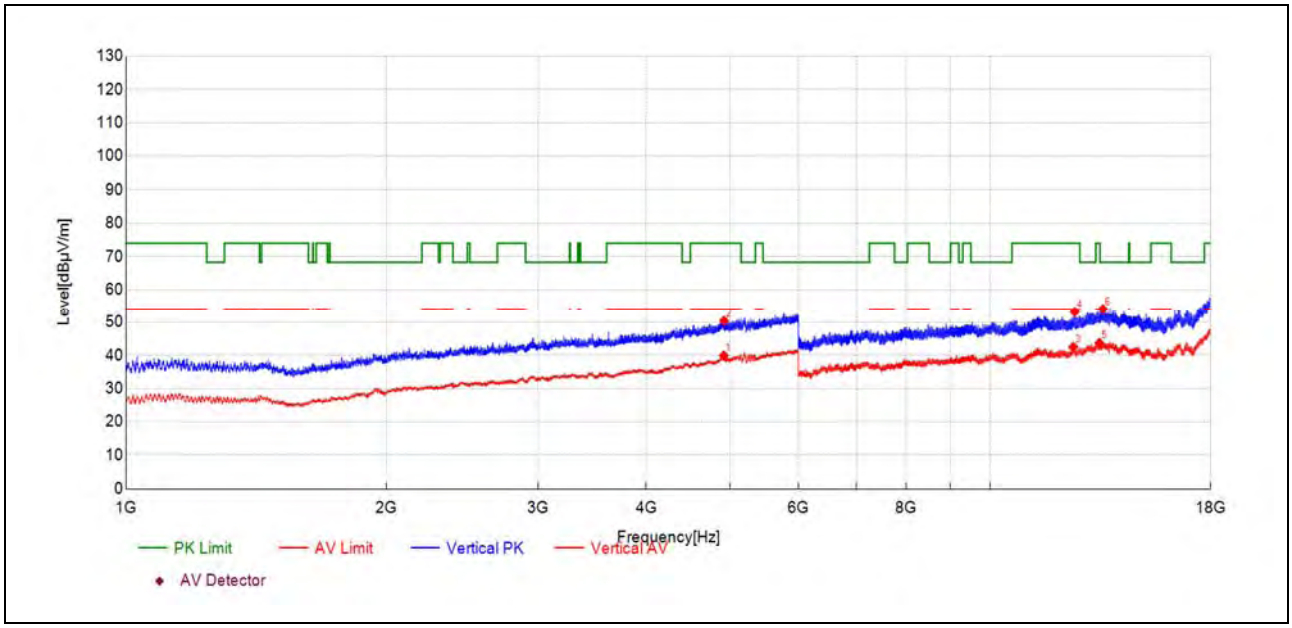
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
3707.77	42.5	47.09	4.590	74.00	26.91	150	359	PK	PASS
4929.39	30.7	39.79	9.100	54.00	14.21	150	105	AV	PASS
5207.42	41.0	51.29	10.260	68.23	16.94	150	118	PK	PASS
9388.64	41.1	39.71	-1.380	54.00	14.29	150	56	AV	PASS
13263.80	38.3	43.48	5.180	54.00	10.52	150	163	AV	PASS
13566.32	50.2	55.10	4.920	68.23	13.13	150	56	PK	PASS



(AntenN/A Vertical, 30MHz to 1GHz)

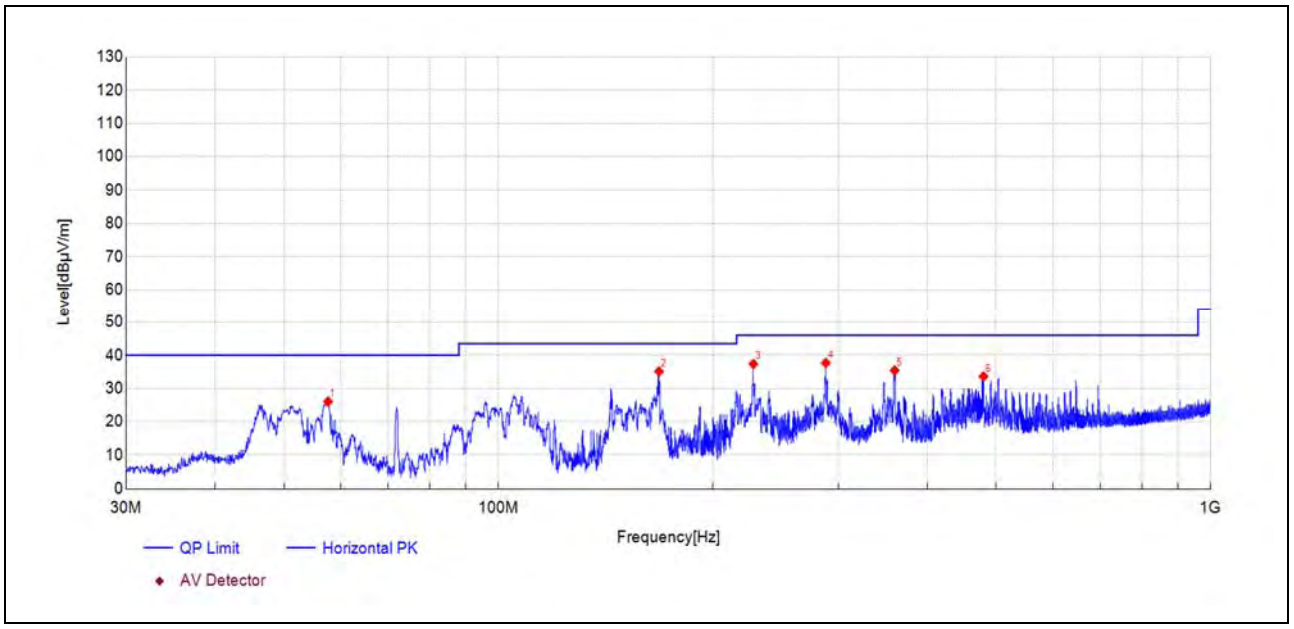
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
46.39	61.5	33.19	-28.310	40.00	6.81	150	132	PK	PASS
57.69	63.2	33.05	-30.140	40.00	6.95	150	79	PK	PASS
299.96	61.0	34.03	-26.970	46.00	11.97	150	359	PK	PASS
360.06	61.7	36.38	-25.350	46.00	9.62	150	186	PK	PASS
479.96	55.7	33.33	-22.330	46.00	12.67	150	240	PK	PASS
647.87	51.5	32.72	-18.800	46.00	13.28	150	298	PK	PASS



(AntenN/A Vertical, 1GHz to 18GHz)

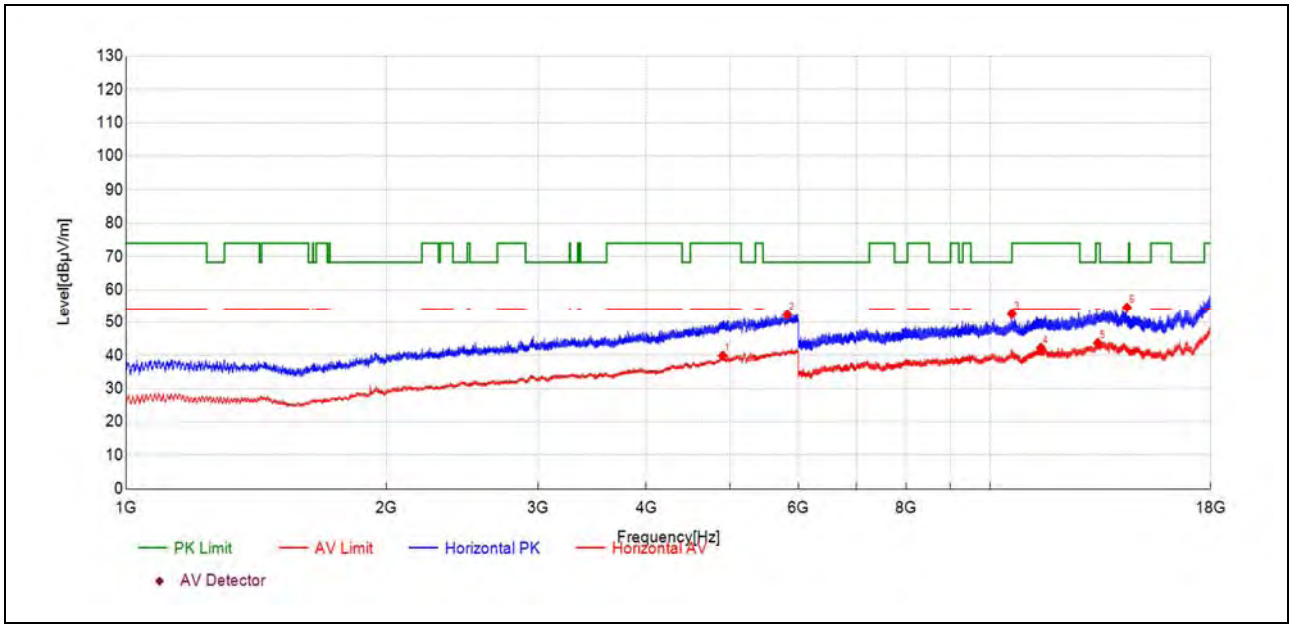
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4917.89	30.7	39.91	9.170	54.00	14.09	150	232	AV	PASS
4921.89	41.2	50.37	9.140	74.00	23.63	150	160	PK	PASS
12481.77	39.0	42.47	3.520	54.00	11.53	150	206	AV	PASS
12530.77	49.7	53.17	3.460	74.00	20.83	150	313	PK	PASS
13381.81	38.9	43.68	4.750	54.00	10.32	150	1	AV	PASS
13506.31	49.1	54.02	4.890	68.23	14.21	150	185	PK	PASS

Plot for Channel 60



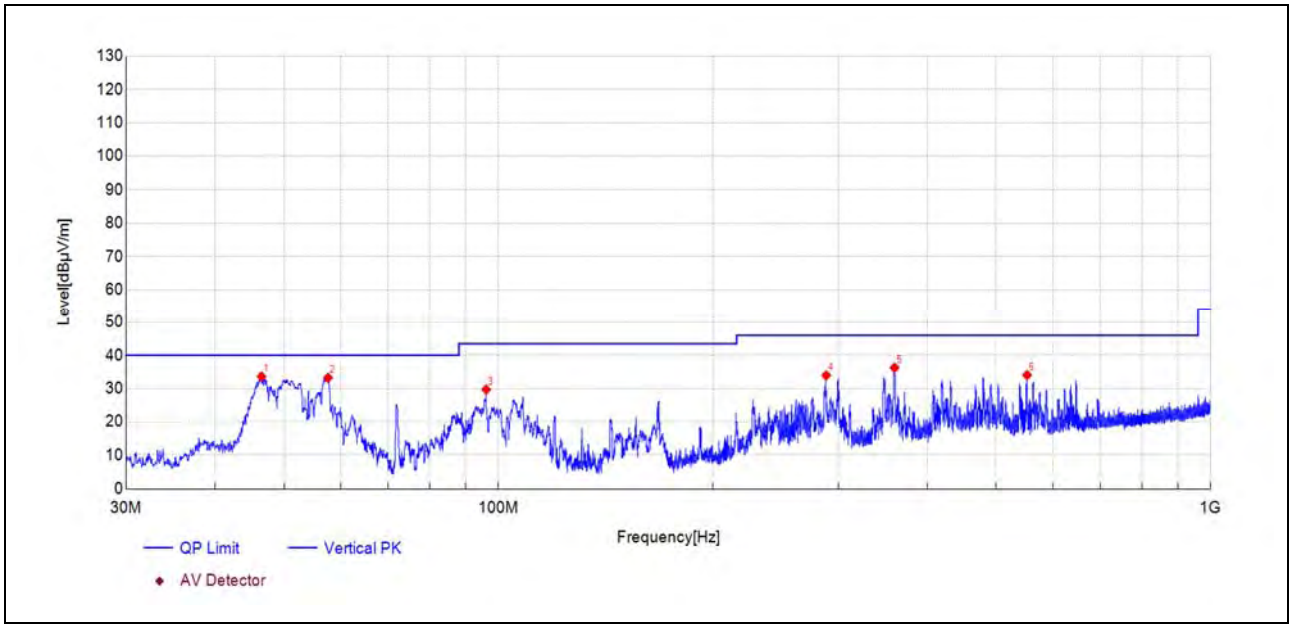
(AntenN/A Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
57.65	56.2	26.08	-30.120	40.00	13.92	150	348	PK	PASS
168.09	67.5	35.12	-32.330	43.50	8.38	150	284	PK	PASS
228.04	66.2	37.36	-28.810	46.00	8.64	150	360	PK	PASS
288.18	65.0	37.69	-27.320	46.00	8.31	150	38	PK	PASS
360.01	60.8	35.40	-25.350	46.00	10.60	150	106	PK	PASS
479.81	56.0	33.62	-22.330	46.00	12.38	150	257	PK	PASS



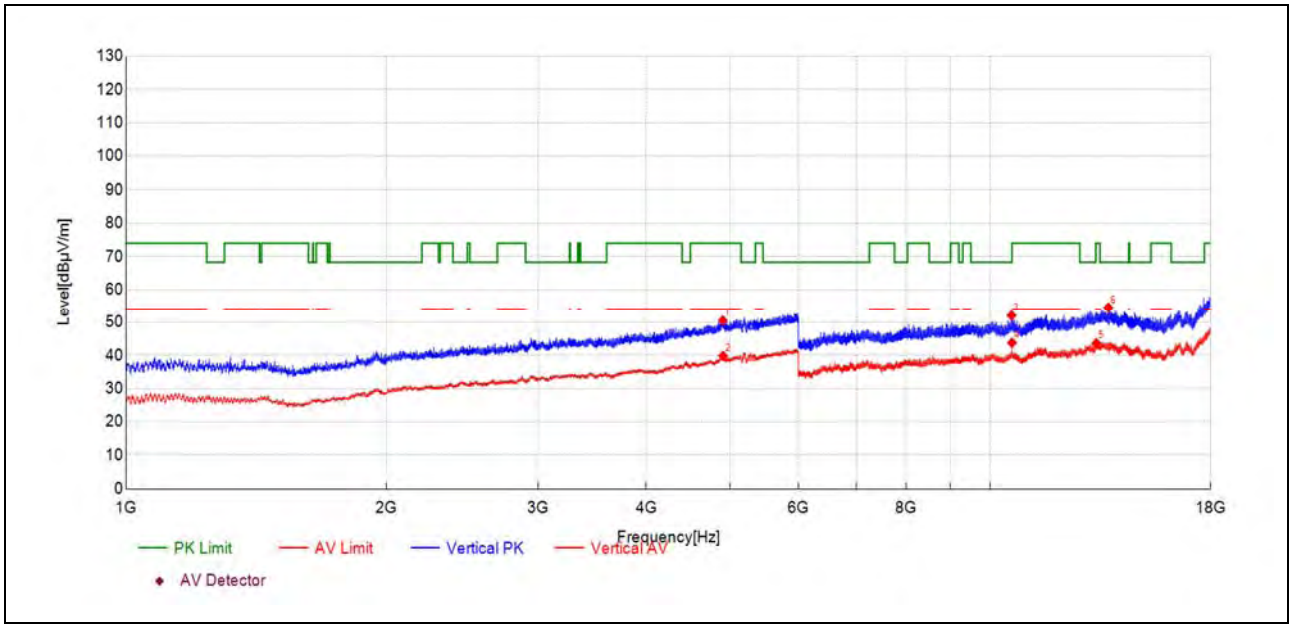
(AntenN/A Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4904.39	30.6	39.87	9.230	54.00	14.13	150	48	AV	PASS
5824.48	40.1	52.25	12.130	68.23	15.98	150	301	PK	PASS
10597.69	52.1	52.51	0.370	68.23	15.72	150	273	PK	PASS
11448.23	39.7	42.23	2.520	54.00	11.77	150	1	AV	PASS
13321.31	38.3	43.69	5.360	54.00	10.31	150	354	AV	PASS
14397.85	50.1	54.55	4.500	68.23	13.68	150	59	PK	PASS



(AntenN/A Vertical, 30MHz to 1GHz)

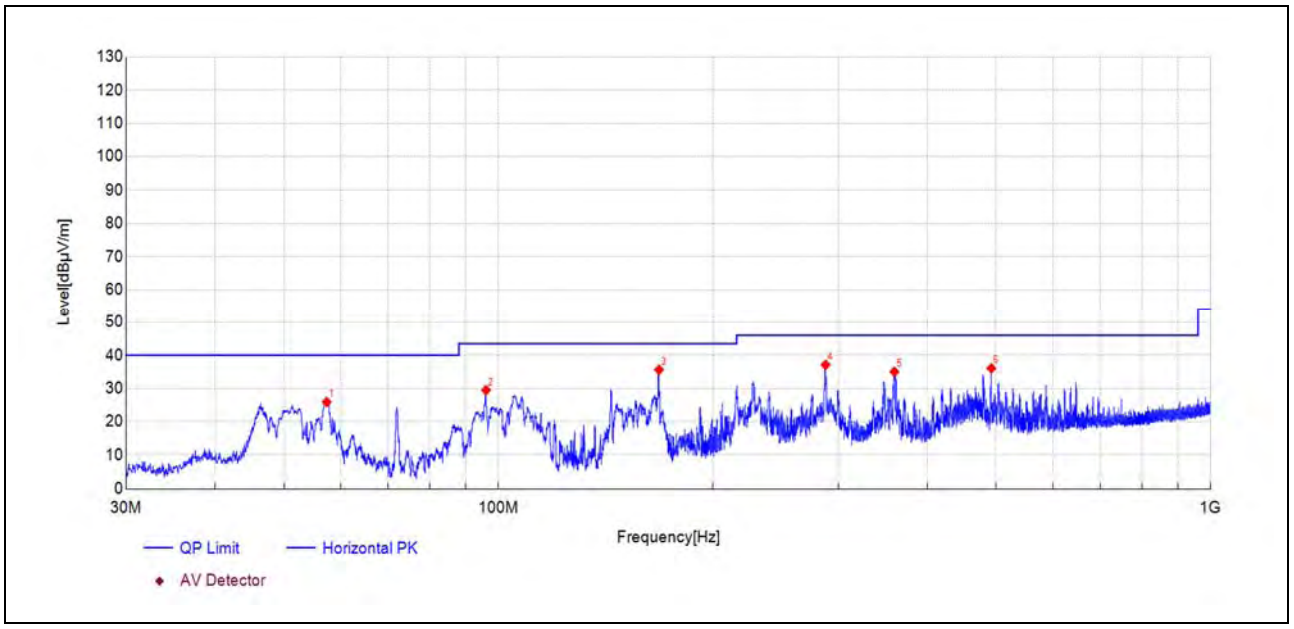
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
46.49	61.9	33.62	-28.310	40.00	6.38	150	158	PK	PASS
57.65	63.3	33.21	-30.120	40.00	6.79	150	117	PK	PASS
96.11	60.2	29.72	-30.490	43.50	13.78	150	268	PK	PASS
288.52	61.3	33.96	-27.310	46.00	12.04	150	62	PK	PASS
359.82	61.6	36.25	-25.350	46.00	9.75	150	172	PK	PASS
552.27	55.0	34.03	-20.930	46.00	11.97	150	213	PK	PASS



(AntenN/A Vertical, 1GHz to 18GHz)

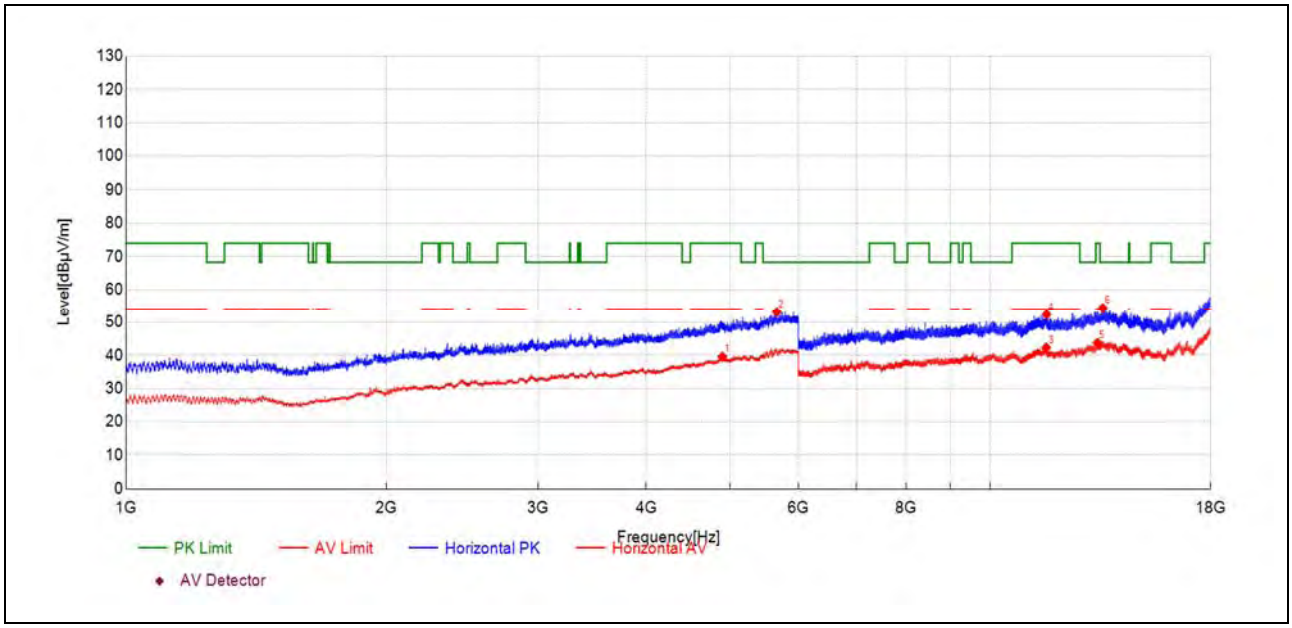
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4904.89	41.3	50.51	9.230	74.00	23.49	150	92	PK	PASS
4908.39	30.6	39.83	9.210	54.00	14.17	150	290	AV	PASS
10588.69	51.7	52.04	0.310	68.23	16.19	150	227	PK	PASS
10601.19	43.4	43.76	0.380	54.00	10.24	150	162	AV	PASS
13270.30	38.4	43.62	5.260	54.00	10.38	150	0	AV	PASS
13701.82	49.8	54.53	4.710	68.23	13.70	150	120	PK	PASS

Plot for Channel 116



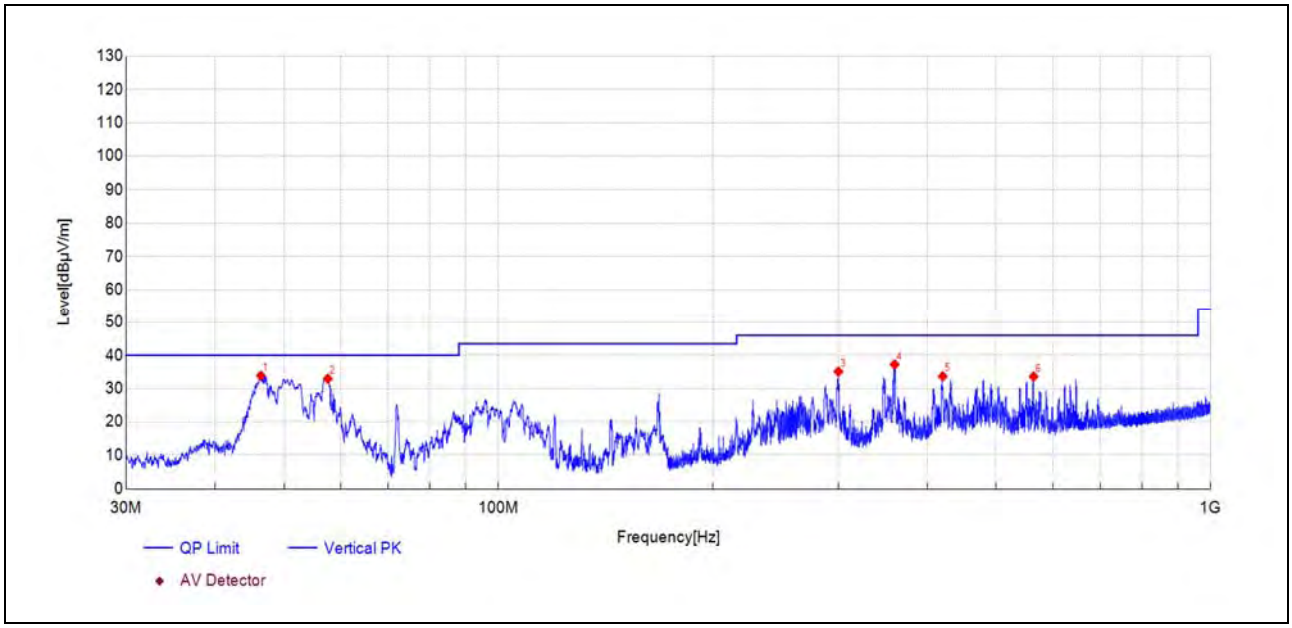
(AntenN/A Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
57.40	56.0	25.95	-30.050	40.00	14.05	150	337	PK	PASS
96.06	60.0	29.50	-30.490	43.50	14.00	150	38	PK	PASS
168.04	68.0	35.62	-32.330	43.50	7.88	150	271	PK	PASS
287.98	64.4	37.11	-27.320	46.00	8.89	150	25	PK	PASS
359.62	60.4	35.03	-25.350	46.00	10.97	150	120	PK	PASS
492.03	58.1	36.06	-22.010	46.00	9.94	150	257	PK	PASS



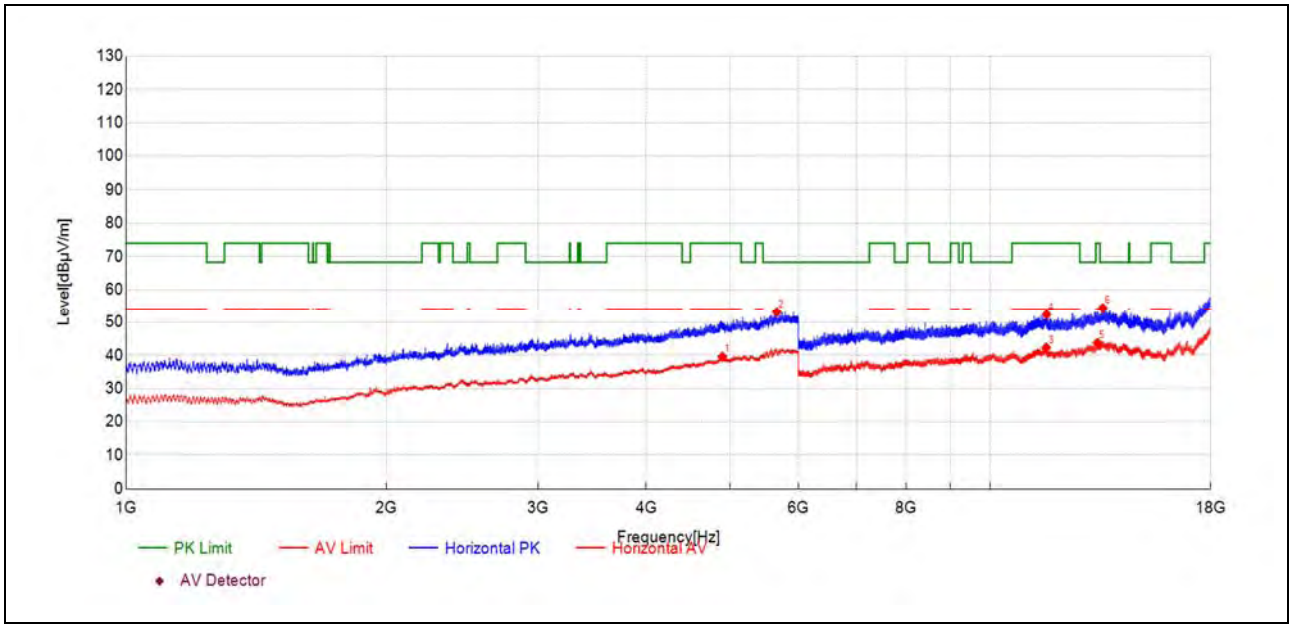
(AntenN/A Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4899.39	30.4	39.54	9.160	54.00	14.46	150	132	AV	PASS
5663.97	41.2	53.10	11.950	68.23	15.13	150	305	PK	PASS
11610.23	39.3	42.28	3.020	54.00	11.72	150	100	AV	PASS
11623.73	49.6	52.35	2.790	74.00	21.65	150	0	PK	PASS
13308.80	38.2	43.73	5.490	54.00	10.27	150	0	AV	PASS
13499.81	49.5	54.37	4.890	68.23	13.86	150	228	PK	PASS



(AntenN/A Vertical, 30MHz to 1GHz)

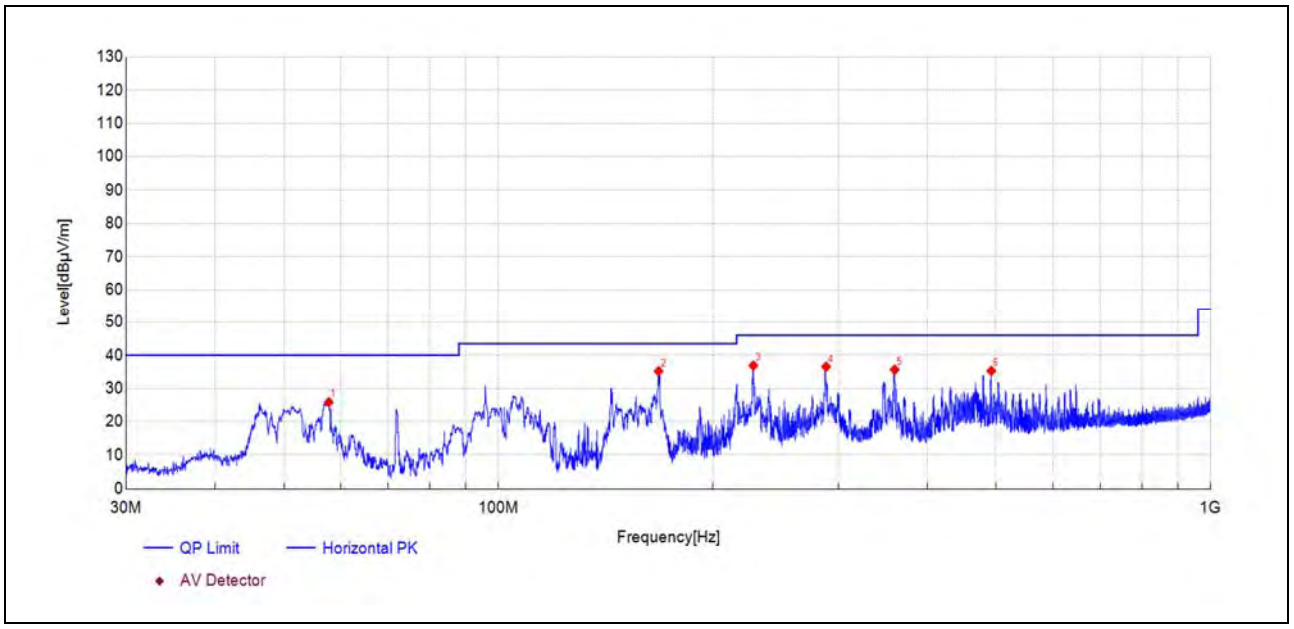
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
46.39	62.2	33.87	-28.310	40.00	6.13	150	145	PK	PASS
57.60	63.1	32.94	-30.110	40.00	7.06	150	50	PK	PASS
300.11	62.1	35.10	-26.970	46.00	10.90	150	22	PK	PASS
360.01	62.6	37.24	-25.350	46.00	8.76	150	187	PK	PASS
420.49	57.0	33.69	-23.340	46.00	12.31	150	187	PK	PASS
564.06	54.4	33.60	-20.840	46.00	12.40	150	90	PK	PASS



(AntenN/A Vertical, 1GHz to 18GHz)

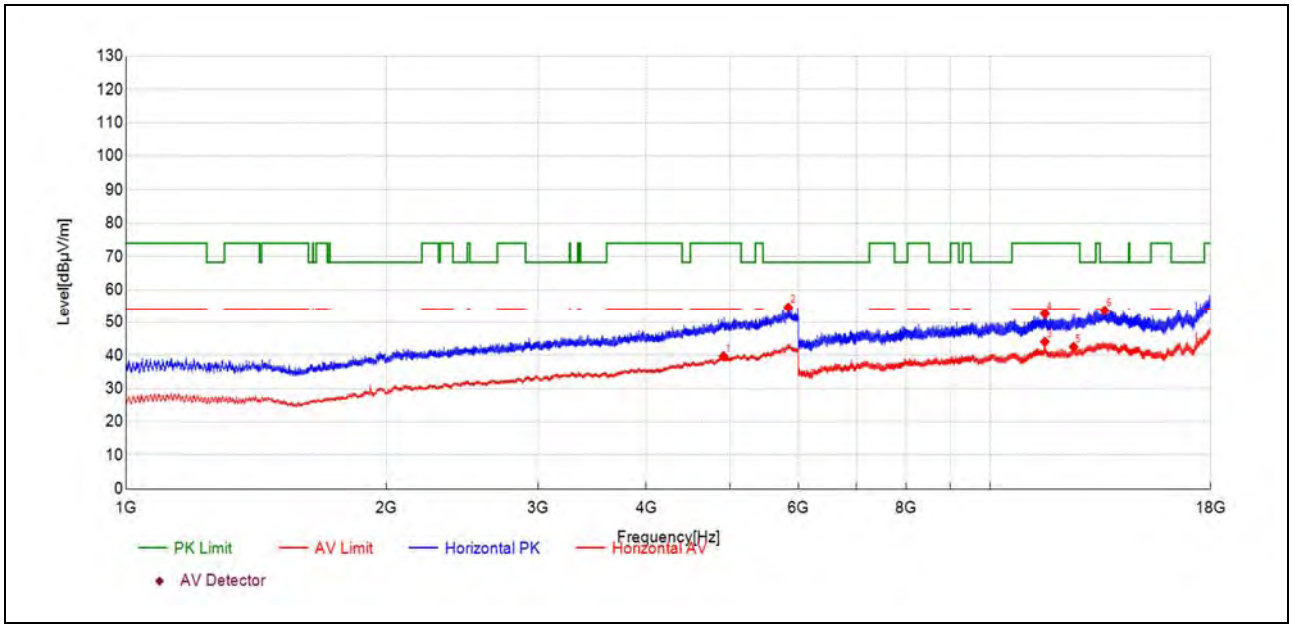
Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4899.39	30.4	39.54	9.160	54.00	14.46	150	132	AV	PASS
5663.97	41.2	53.10	11.950	68.23	15.13	150	305	PK	PASS
11610.23	39.3	42.28	3.020	54.00	11.72	150	100	AV	PASS
11623.73	49.6	52.35	2.790	74.00	21.65	150	0	PK	PASS
13308.80	38.2	43.73	5.490	54.00	10.27	150	0	AV	PASS
13499.81	49.5	54.37	4.890	68.23	13.86	150	228	PK	PASS

Plot for Channel 157



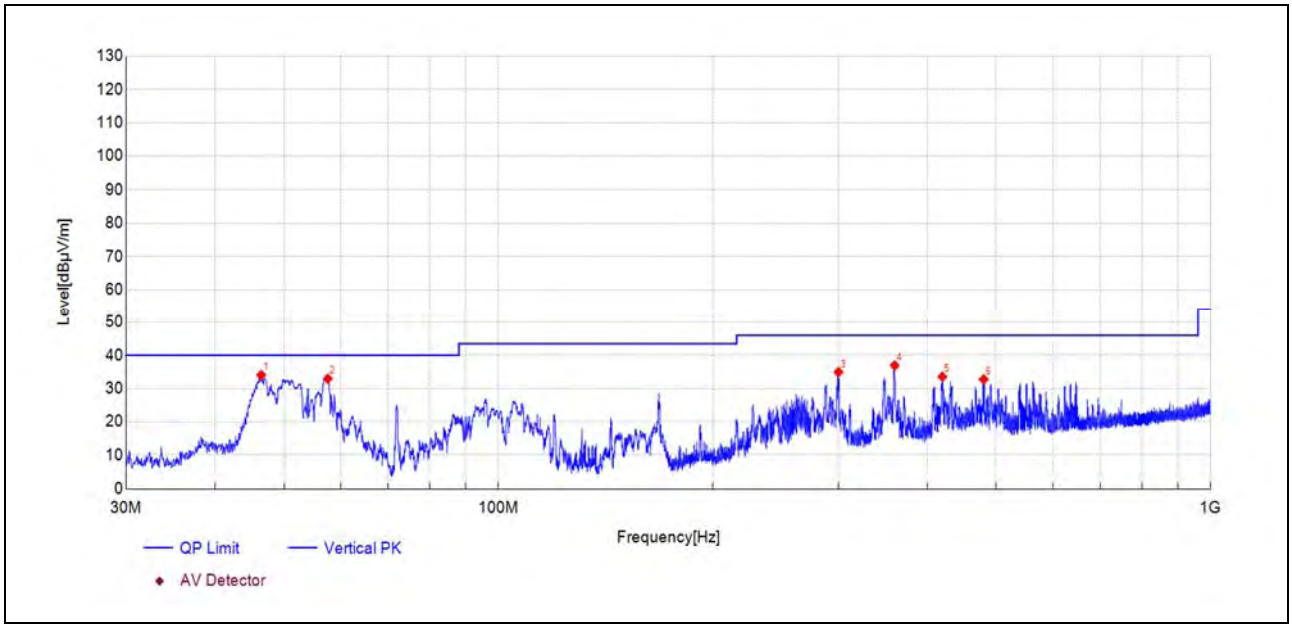
(AntenN/A Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
57.79	56.1	25.92	-30.170	40.00	14.08	150	350	PK	PASS
167.80	67.5	35.20	-32.330	43.50	8.30	150	280	PK	PASS
227.99	65.7	36.89	-28.810	46.00	9.11	150	0	PK	PASS
288.42	63.9	36.55	-27.310	46.00	9.45	150	0	PK	PASS
360.01	61.0	35.65	-25.350	46.00	10.35	150	115	PK	PASS
491.99	57.3	35.29	-22.010	46.00	10.71	150	239	PK	PASS



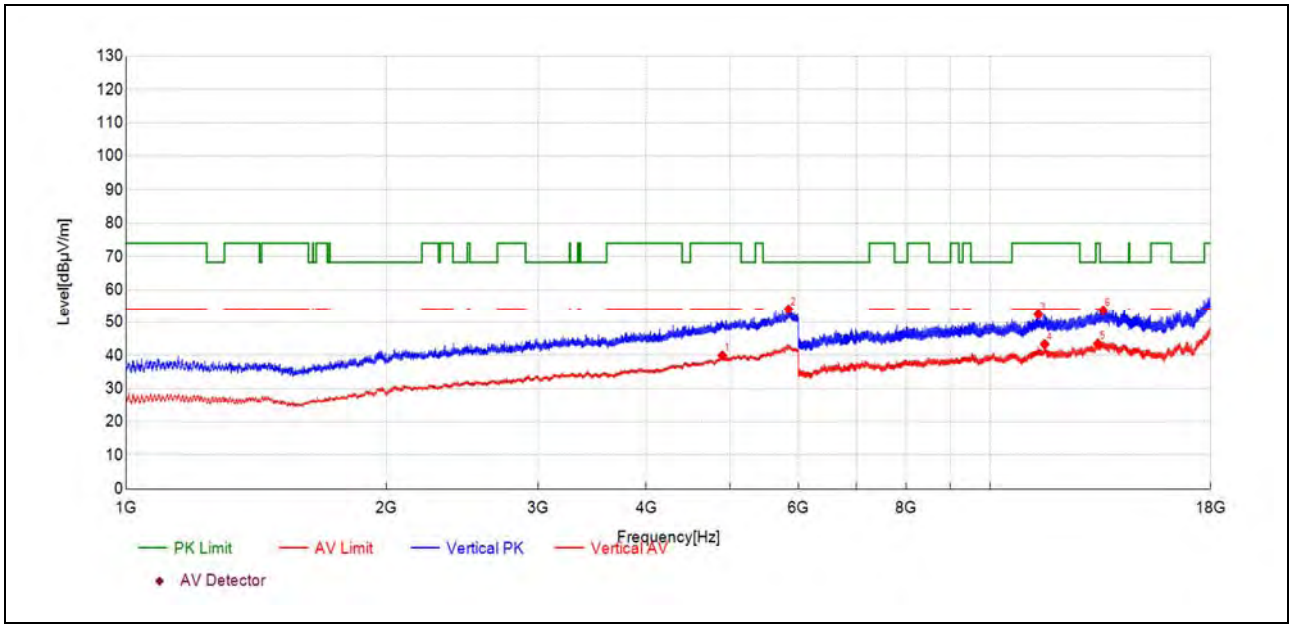
(AntenN/A Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4913.89	30.3	39.67	9.340	54.00	14.33	150	360	AV	PASS
5839.98	40.7	54.55	13.860	68.23	13.68	150	360	PK	PASS
11569.73	41.1	44.05	2.940	54.00	9.95	150	251	AV	PASS
11571.23	49.6	52.58	2.960	74.00	21.42	150	251	PK	PASS
12492.77	38.9	42.50	3.560	54.00	11.50	150	35	AV	PASS
13569.32	48.7	53.62	4.920	68.23	14.61	150	35	PK	PASS



(AntenN/A Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
46.44	62.4	34.07	-28.310	40.00	5.93	150	147	PK	PASS
57.60	63.0	32.92	-30.110	40.00	7.08	150	66	PK	PASS
300.16	61.9	34.94	-26.970	46.00	11.06	150	10	PK	PASS
359.96	62.3	36.93	-25.350	46.00	9.07	150	189	PK	PASS
420.15	56.9	33.54	-23.360	46.00	12.46	150	66	PK	PASS
480.01	55.1	32.74	-22.330	46.00	13.26	150	230	PK	PASS



(AntenN/A Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4899.89	30.5	39.91	9.400	54.00	14.09	150	353	AV	PASS
5844.48	40.0	53.97	13.940	68.23	14.26	150	357	PK	PASS
11371.22	49.9	52.39	2.470	74.00	21.61	150	35	PK	PASS
11565.73	40.4	43.32	2.910	54.00	10.68	150	228	AV	PASS
13325.81	38.2	43.52	5.320	54.00	10.48	150	0	AV	PASS
13514.81	48.8	53.68	4.900	68.23	14.55	150	121	PK	PASS

END OF REPORT