



TEST REPORT

ETSI EN 301 893 V2.1.1 (2017-05)

Product : KidsTablet
Model Name : Q88,C1,C3,C5,C6,C8,C9,Q80,K1,K2,K3,K4,K5,K6,K7,K8,K9,T1,T4,T5,T6,T7,T9,T8
Brand : BDF
Report No. : PTC26011002301E-EM04

Prepared for

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1 TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Bu Dong Feng Technology Co., Ltd
Address : 204, Factory building 2, No. 16 Kangzheng Road, Danzhutou Community, Nanwan Street, Longgang District, Shenzhen
Manufacture's name : Shenzhen Bu Dong Feng Technology Co., Ltd
Address : 204, Factory building 2, No. 16 Kangzheng Road, Danzhutou Community, Nanwan Street, Longgang District, Shenzhen
Product name : KidsTablet
Model name : Q88,C1,C3,C5,C6,C8,C9,Q80,K1,K2,K3,K4,K5,K6,K7,K8,K9,T1,T4,T5,T6,T7,T9,T8

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the requirements as documented in this report. And it is applicable only to the tested sample identified in the report.

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Date of Test

Date (s) of performance of tests: Jan. 16, 2026 to Jan. 28, 2026

Date of Issue: Feb. 10, 2026

Test Result: **Pass**

Test Engineer:

Technical Manager:



Simon Pu / Manager



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2 General Description of E.U.T.

Product Name	:	KidsTablet
Model Number	:	Q88
Additional model	:	C1,C3,C5,C6,C8,C9,Q80,K1,K2,K3,K4,K5,K6,K7,K8,K9,T1,T4,T5,T6,T7,T9,T8
Models Difference	:	Model coverage: The differences between the main inspection model and this one are as follows: only the exterior color and camera position differ.
Specification	:	IEEE 802.11a/n/ac HT20/HT40
Operating frequency	:	WIFI: Band 1: 5150-5250 MHz(TX/RX) Band 2: 5250-5350 MHz(TX/RX) Band 3: 5470-5725 MHz(TX/RX)
Modulation	:	IEEE 802.11a/n/ac: OFDM(BPSK/QPSK/16QAM/64QAM)
Antenna installation	:	FPC antenna
Antenna Gain	:	0 dBi
Power supply	:	DC20V
Hardware version	:	N/A
Software version	:	N/A
DFS Function	:	Slave without Radar detection
TPC Function	:	Without TPC function



3 MEASURING DEVICE AND TEST EQUIPMENT

RF Conducted Test:

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
MXG Signal Analyzer	Agilent	N9020A	SER MY5111038	10Hz-26.5GHz	Aug. 14, 2025	1 Year
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug. 14, 2025	1 Year
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug. 14, 2025	1 Year
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug. 14, 2025	1 Year
MXG Vector Signal Generator	Agilent	N5182A	AT0-71847	9kHz-6GHz	Aug. 14, 2025	1 Year
Analog Signal Generator	HP	83620A	3420A01830	10M~20GHZ	Aug. 14, 2025	1 Year
Test S/W	Tonscend	JS1120-3 Test System	/	/	/	/

Radiated Emissions:

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESPI7	101671	9KHz-7GHz	Aug. 14, 2025	1 Year
Loop Antenna	Schwarzbeck	FMZB 1519B	192	9 KHz -30MHz	Aug. 14, 2025	1 Year
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Sep.10, 2025	1 Year
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	1MHz-1GHz	Mar. 23,2025	1 Year
Cable	Schwarzbeck	PLF-100	549489	9KHz-3GHz	Aug. 14, 2025	1 year
Spectrum Analyzer	Rohde&Schwarz	FSV40	6625-01-588-5515	9KHz-40GHz	Aug. 14, 2025	1 Year
Horn Antenna	SCHWARZBECK	9120D	9120D-1246	1GHz-18GHz	Aug. 14, 2025	1 Year



Power Amplifier	ZHINAN	ZN3380C	15002	1GHz-26.5GHz z	Aug. 14, 2025	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-1066	15GHz-40GHz z	Jun. 24, 2025	1 Year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz z	Jun. 23, 2025	1 Year
Cable	H+S	CBL-26	N/A	1GHz-26.5GHz z	Aug. 14, 2025	1 Year
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug. 14, 2025	1 Year
Test S/W	Tonscend	JS36-RSE	/	/	/	/



4 TECHNICAL TEST

4.1. Summary of Test Results

No Deviations from the technical specification(s) were ascertained in the course of the tests Performed	
Final Verdict: (only "Passed" if all single measurements are "Passed")	Passed

4.2. Test Report

Test Report Reference

Test Standard	Description of Test	Result
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.1	Centre frequencies	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.2	Nominal Channel Bandwidth and Occupied Channel Bandwidth	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.3	RF output power	Compliance(DUT Without TPC function)
	Transmit Power Control (TPC)	
	Power Density	
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.4	Transmitter unwanted emissions outside the 5 GHz RLAN bands	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.4	Transmitter unwanted emissions Within the 5 GHz RLAN bands	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.5	Receiver spurious emissions	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.6	Dynamic Frequency Selection (DFS)	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.7	Adaptivity (Channel Access Mechanism)	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.8	Receiver Blocking	Compliance
ETSI EN 301 893 V2.1.1 (2017-05) § 4.2.9	User Access Restrictions	Compliance



4.3. Description of Test Modes

For IEEE 802.11a/ac20/n-HT20 mode, channel 36, channel 48 was tested.

For 802.11 n-HT40/ac40 mode, channel 38 was tested.

The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power and PSD across all data rates bandwidths, and modulations.

Channel List:

Channel	Center Frequency (MHz)	Frequency Range (MHz)	Bandwidth (MHz)	Europe
36	5180	5170-5190	20	Indoors
40	5200	5190-5210	20	
44	5220	5210-5230	20	
48	5240	5230-5250	20	
52	5260	5250-5270	20	
56	5280	5270-5290	20	
60	5300	5290-5310	20	
64	5320	5310-5330	20	
100	5500	5490-5510	20	Both outdoor and indoor use
104	5520	5510-5530	20	
108	5540	5530-5550	20	
112	5560	5550-5570	20	
116	5580	5570-5590	20	
120	5600	5590-5610	20	
124	5620	5610-5630	20	
128	5640	5630-5650	20	
132	5660	5650-5670	20	
136	5680	5670-5690	20	
140	5700	5690-5710	20	
38	5190	5170-5210	40	Indoors
46	5230	5210-5250	40	
54	5270	5250-5290	40	
62	5310	5290-5330	40	
102	5510	5490-5530	40	Both outdoor and indoor use
110	5550	5530-5570	40	
118	5590	5570-5610	40	
126	5630	5610-5650	40	
134	5670	5650-5690	40	
42	5210	5170-5250	80	
58	5290	5250-5330	80	



106	5530	5490-5570	80
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The test condition:

Environment Parameter	Selected Values During the Testes	
Relative Humidity	Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	25	5
LTLV	-10	4.5
LTHV	-10	4.5
HTLV	40	5.5
HTHV	40	5.5
Note: NV: Normal Voltage; NT: Normal Temperature LT: Low Extreme Test Temperature; HT: High Extreme Test Temperature LV: Low Extreme Test Voltage; HV: High Extreme Test Voltage		

5 CENTRE FREQUENCIES

5.1. Applicable Standard

The actual centre frequency for any given channel declared by the manufacturer shall be maintained within the range $f_c \pm 20$ ppm.

5.2. Measurement Procedure

Equipment operating without modulation, this test method requires that the UUT can be operated in an unmodulated test mode. The UUT shall be connected to a frequency counter and operated in an unmodulated mode. The result shall be recorded. Equipment operating with modulation

This method is an alternative to the above method in case the UUT cannot be operated in an un-modulated mode. The UUT shall be connected to spectrum analyzer. The settings of the spectrum analyzer shall be adjusted to optimize the instruments frequency accuracy. Max Hold shall be selected and the centre frequency adjusted to that of the UUT. The peak value of the power envelope shall be measured and noted. The span shall be reduced and the marker moved in a positive frequency increment until the upper, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f1.

The marker shall then be moved in a negative frequency increment until the lower, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f2. The centre frequency is calculated as $(f1 + f2) / 2$.

5.3. Measurement Result

Environmental conditions:

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.9 kPa

Test Condition	TestMode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	11A	Ant1	5180	-4.72973	± 20	PASS
NTNV	11A	Ant1	5500	-5.11455	± 20	PASS
NTNV	11AC20SISO	Ant1	5180	-5.43051	± 20	PASS
NTNV	11AC20SISO	Ant1	5500	-5.63636	± 20	PASS
NTNV	11AC40SISO	Ant1	5190	-5.78035	± 20	PASS
NTNV	11AC40SISO	Ant1	5510	-5.56987	± 20	PASS
NTNV	11AC80SISO	Ant1	5210	-4.72973	± 20	PASS
NTNV	11AC80SISO	Ant1	5530	-5.11455	± 20	PASS
NTNV	11N20SISO	Ant1	5180	-5.43051	± 20	PASS
NTNV	11N20SISO	Ant1	5500	-5.63636	± 20	PASS
NTNV	11N40SISO	Ant1	5190	-5.78035	± 20	PASS
NTNV	11N40SISO	Ant1	5510	-5.56987	± 20	PASS

6 Nominal Channel Bandwidth and Occupied Channel Bandwidth

6.1. Applicable Standard

- 1) Channel Bandwidth $\geq 5\text{MHz}$
- 2) Occupied Channel Bandwidth between 80 % and 100 % of the declared Nominal Channel Bandwidth

6.2. Measurement Procedure

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurement, the best estimate of the uncertainty of a radiation emissions measurement at PTC is 4.3 dB.

Step 1:

Connect the UUT to the spectrum analyser and use the following settings:

Centre Frequency: The centre frequency of the channel under test

Resolution Bandwidth: 100 kHz

Video Bandwidth: 300 kHz

Frequency Span: $2 \times \text{Nominal Bandwidth}$ (e.g. 40 MHz for a 20 MHz channel)

Detector Mode: Peak

Trace Mode: Max Hold

Step 2:

When the trace is complete, capture the trace, for example using the "View" option on the spectrum analyzer.

Find the peak value of the trace and place the analyzer marker on this peak.

Step 3:

Use the 99 % bandwidth function of the spectrum analyzer to measure the Occupied Channel Bandwidth of the UUT. This value shall be recorded.

The RBW extending across the DTS bandwidth.

The measurement described in steps 1 to 3 above shall be repeated in case of simultaneous transmissions in non-adjacent channels.

6.3. Measurement Result

According to the final data, the EUT complied with the EN 301893 standards, and had the worst margin of:

**Environmental conditions:**

Test Item : Occupied Channel Bandwidth
Test Voltage : NV
Test Result : PASS

Test Mode : CH Low ~ CH High
Temperature : 25°C
Humidity : 54%RH

TestMode	Antenna	Frequency[MHz]	OCB[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.420	16 to 20	PASS
11A	Ant1	5500	16.462	16 to 20	PASS
11N20SISO	Ant1	5180	17.583	16 to 20	PASS
11N20SISO	Ant1	5500	17.587	16 to 20	PASS
11N40SISO	Ant1	5190	35.951	32 to 40	PASS
11N40SISO	Ant1	5510	36.000	32 to 40	PASS



Test Graphs:







7 RF output power, Transmit Power CONTROL (TPC), Power Density

7.1. Applicable Standard

1: RF output power and power density at the highest power level

Frequency range	Mean e.i.r.p. limit		Mean e.i.r.p. density limit	
	dBm		dBm/MHz	
MHz	with TPC	without TPC	with TPC	without TPC
5150 to 5350	23	20 / 23 (see note 1)	10	7 / 10 (see note 2)
5470 to 5725	30 (see note 3)	27 (see note 3)	17 (see note 3)	14 (see note 3)
NOTE 1: The applicable limit is 20 dBm, except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 23 dBm. NOTE 2: The applicable limit is 7 dBm/MHz, except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 10 dBm/MHz. NOTE 3: Slave devices without a Radar Interference Detection function shall comply with the limits for the band 5 250 MHz to 5 350 MHz.				

2: RF output power at the lowest power level of the TPC range

Frequency range	Mean e.i.r.p. (dBm)
5250 MHz to 5350 MHz	17
5470 MHz to 5725 MHz	24 (see note)
NOTE: Slave devices without a Radar Interference Detection function shall comply with the limits for the band 5 250 MHz to 5 350 MHz.	

7.2. Measurement Procedure

RF Output Power

The RF Output Power is the mean equivalent isotropically radiated power (e.i.r.p.) during a transmission burst.

RF output power

Step 1: Measuring the Total Peak Power within the lower sub-band.

- Connect the UUT to the spectrum analyser and use the following settings:
- Start Frequency: 5 100 MHz
- Stop Frequency: 5 400 MHz
- RBW: 1 MHz
- VBW: 3 MHz
- Detector Mode: Peak
- Trace Mode: Max Hold
- Sweep Time: Auto

When the trace is complete, use the "Channel Power" function to measure the total peak power of the

transmissions within the band 5 150 MHz to 5 350 MHz.

Step 2: Measuring the Total Peak Power within the upper sub-band.

- Change the Start Frequency to 5 420 MHz and the Stop Frequency to 5 775 MHz.
- When the trace is complete, use the "Channel Power" function to measure the total peak power of all transmissions with the band 5 470 MHz to 5 725 MHz.



Power Density

Step 1:

- Connect the UUT to the spectrum analyser and use the following settings:
- Centre Frequency: The centre frequency of the channel under test
- RBW: 1 MHz
- VBW: 3 MHz
- Frequency Span: 2 × Nominal Bandwidth (e.g. 40 MHz for a 20 MHz channel)
- Detector Mode: Peak
- Trace Mode: Max Hold

Step 2:

- When the trace is complete, find the peak value of the power envelope and record the frequency.

Step 3:

- Make the following changes to the settings of the spectrum analyser:
- Centre Frequency: Equal to the frequency recorded in step 2
- Frequency Span: 3 MHz
- RBW: 1 MHz
- VBW: 3 MHz
- Sweep Time: 1 minute
- Detector Mode: RMS
- Trace Mode: Max Hold

7.3. Measurement Result

Environmental conditions:

Temperature	Relative Humidity	ATM Pressure
25°C	50%	1014 mbar

RF Output Power:

Test condition: NTVN

Test Mode	Antenna	Frequency[MHz]	Conducted power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
11A	Ant1	5180	18.92	73.12	1.36	20.28	0	20.28	23	PASS
11A	Ant1	5320	18.96	73.12	1.36	20.32	0	20.32	20	PASS
11A	Ant1	5500	17.60	73.12	1.36	18.96	0	18.96	20	PASS
11A	Ant1	5700	16.45	73.12	1.36	17.81	0	17.81	20	PASS
11N20SISO	Ant1	5180	16.31	71.35	1.47	17.78	0	17.78	23	PASS
11N20SISO	Ant1	5320	17.76	71.35	1.47	19.23	0	19.23	20	PASS
11N20SISO	Ant1	5500	17.66	71.35	1.47	19.13	0	19.13	20	PASS



11N20SIS O	Ant1	5700	17.74	71.3 5	1.47	19.2 1	0	19.2 1	20	PASS
11N40SIS O	Ant1	5190	15.24	55.7 5	2.54	17.7 8	0	17.7 8	23	PASS
11N40SIS O	Ant1	5310	13.96	55.2 6	2.58	16.5 4	0	16.5 4	20	PASS
11N40SIS O	Ant1	5510	14.80	55.2 6	2.58	17.3 8	0	17.3 8	20	PASS
11N40SIS O	Ant1	5670	15.96	55.2 6	2.58	18.5 4	0	18.5 4	20	PASS



Power density:
Test Mode: Transmitting

TestMode	Antenna	Channel	PD [dBm/MHz]	DC Factor [dB]	Gain [dBi]	EIRP PSD [dBm/MHz]	Limit [dBm]	Verdict
11A	Ant1	5180	5.37	1.36	0	6.73	10	PASS
11A	Ant1	5320	5.91	1.36	0	7.27	7	PASS
11A	Ant1	5500	5.91	1.36	0	7.27	7	PASS
11A	Ant1	5700	4.99	1.36	0	6.35	7	PASS
11N20SISO	Ant1	5180	5.30	1.44	0	6.74	10	PASS
11N20SISO	Ant1	5320	5.60	1.44	0	7.04	7	PASS
11N20SISO	Ant1	5500	5.12	1.44	0	6.56	7	PASS
11N20SISO	Ant1	5700	5.08	1.44	0	6.52	7	PASS
11N40SISO	Ant1	5190	4.36	2.54	0	6.90	10	PASS
11N40SISO	Ant1	5310	3.32	2.54	0	5.86	7	PASS
11N40SISO	Ant1	5510	3.51	2.54	0	6.05	7	PASS
11N40SISO	Ant1	5670	3.49	2.54	0	6.03	7	PASS

8 Transmitter unwanted emissions outside the 5 GHz RLAN bands

8.1. Applicable Standard

Table 3: Transmitter unwanted emission limits outside the 5 GHz RLAN bands

Frequency range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 862 MHz	-54 dBm	100 kHz
862 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 5,15 GHz	-30 dBm	1 MHz
5,35 GHz to 5,47 GHz	-30 dBm	1 MHz
5,725 GHz to 26 GHz	-30 dBm	1 MHz

8.2. Measurement Procedure

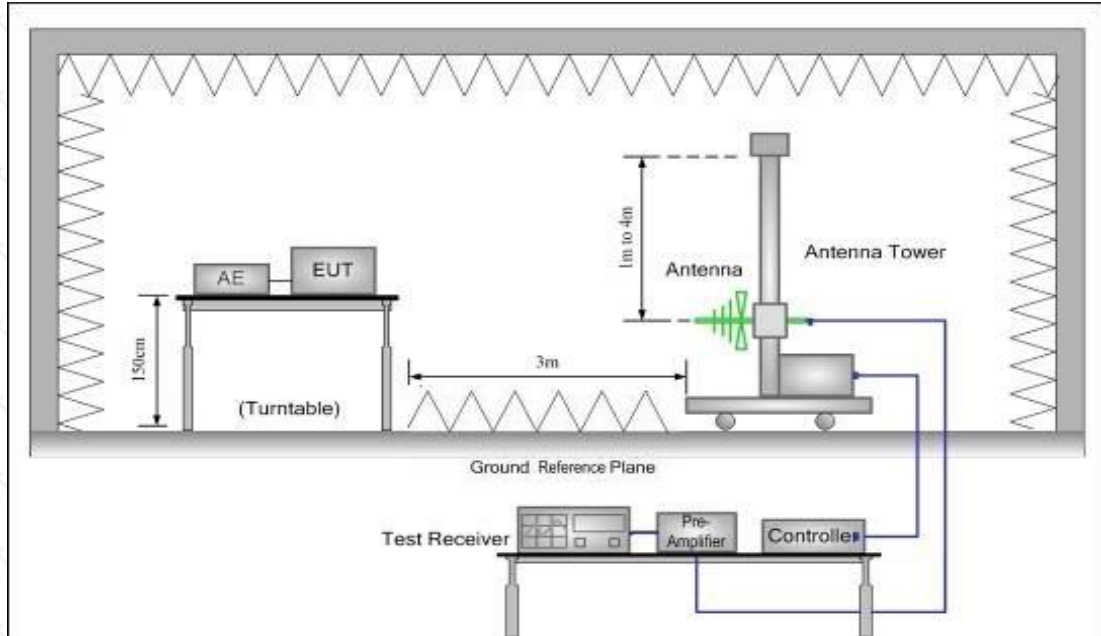
Measurement uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

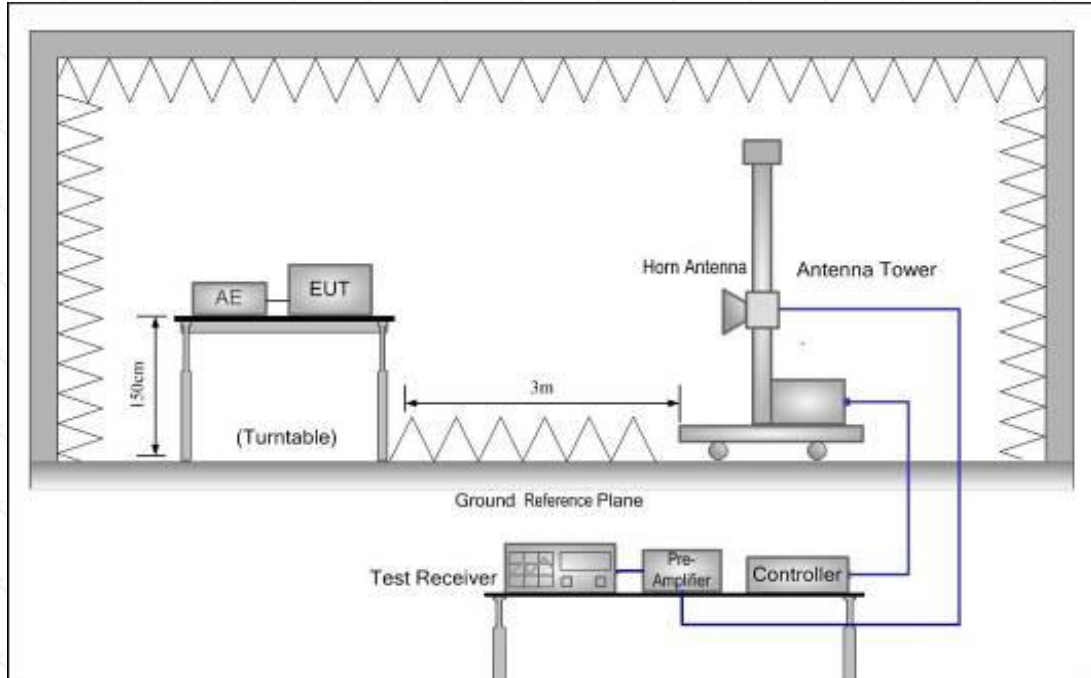
Based on NIS 81, The Treatment of Uncertainty in EMC Measurement, the best estimate of the uncertainty of a radiation emissions measurement at PTC is 4.3 dB.

Test Setup

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz.



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz.





Test Procedure

The EUT was placed on the top of the turntable in chamber.

The test shall be made in the transmitting mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

Set the spectrum analyzer as follows to measure the emissions (Below 1 GHz):

- Resolution BW : 100 kHz.
- Resolution BW :300 kHz.
- Detector : RMS.
- Trace Mode : Max Hold.
- Sweep time : 1s.
- Span :100M.
- Amplitude :Adjust for middle of the instrument's range.

Set the spectrum analyzer as follows to measure the emissions (Above 1 GHz):

- Resolution BW : 1 MHz.
- Resolution BW :3 MHz.
- Detector : RMS.
- Trace Mode : Max Hold.
- Sweep time : 1s.
- Span :100M.
- Amplitude :Adjust for middle of the instrument's range.

For 30~1000MHz spurious emissions measurement, the broad band bi-log receiving antenna was placed 3 meters far away from the turntable. .

The broadband receiving antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Each recorded suspected value is indicated as Read Level (Raw).

Replace the EUT by standard antenna and feed the RF port by signal generator.

Adjust the frequency of the signal generator to the suspected emission and slightly rotate the turntable to locate the position with maximum reading.

Adjust the power level of the signal generator to reach the same reading with Read Level (Raw).

The level of the spurious emission is the power level of (g) plus the gain of the standard antenna in dBi and minus the loss of the cable used between the signal generator and the standard antenna.

If the measuring emissions that exceed the level of 6 dB below the applicable limit, the resolution bandwidth shall be switched to 30 kHz and the span shall be adjusted accordingly. If the level does not change by more than 2 dB, it is a narrowband emission; the observed value shall be recorded. If the level changes by more than 2 dB, the emission is a wideband emission and its level shall be



measured and recorded. The measurement shall be repeated at the lowest and the highest channel of the stated frequency range.

8.3. Measurement Result

Environmental conditions:

Temperature	Relative Humidity	ATM Pressure
23°C	48%	1014 mbar

Test Result

All of the modes were tested the data of the worst mode are recorded in the following pages.

Worst case(ANT1 IEEE 802.11a):

Bellow 1GHz:

Bellow 1GHz:					
IEEE 802.11a, 5180MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
152.62	V	TX	-63.48	-36	27.48
786.39	V	TX	-64.24	-54	10.24
192.97	H	TX	-62.65	-36	26.65
426.65	H	TX	-62.72	-54	8.72
IEEE 802.11a, 5240MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
165.34	V	TX	-62.03	-36	26.03
625.32	V	TX	-65.23	-54	11.23
210.52	H	TX	-63.70	-36	27.70
496.52	H	TX	-61.40	-54	7.40

Note: Margins= Limits- Measured.

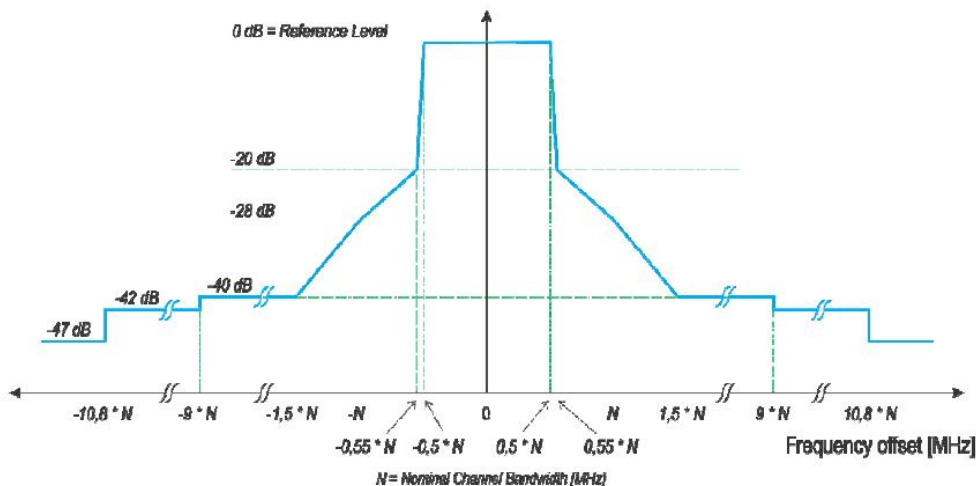
**Above 1GHz:**

IEEE 802.11a, 5180MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
1036.53	V	TX	-39.93	-30	9.93
1530.81	V	TX	-42.45	-30	12.45
1361.86	H	TX	-40.41	-30	10.41
1716.75	H	TX	-42.18	-30	12.18
IEEE 802.11a, 5240MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
1481.54	V	TX	-37.19	-30	7.19
1546.92	V	TX	-41.59	-30	11.59
1479.62	H	TX	-36.16	-30	6.16
1784.65	H	TX	-40.08	-30	10.08

Note: Margins= Limits- Measured.

9 Transmitter unwanted emissions within the 5 GHz RLAN bands

9.1. Applicable Standard



NOTE: dBc is the spectral density relative to the maximum spectral power density of the transmitted signal.

9.2. Measurement Procedure

The UUT shall be connected to a spectrum analyser capable of RF power measurements. If possible, the UUT shall be set to continuous transmit (duty cycle = 1) for the duration of this test. If continuous transmit is not possible, the UUT should be configured to operate at its maximum duty cycle. The test procedure below shall be used to identify potential unwanted emissions of the UUT.

Test Procedure:

Option 1: For equipment with continuous transmission capability

The UUT shall be configured for continuous transmit mode (duty cycle equal to 100 %).

Step 1: Determination of the reference average power level.

Spectrum analyzer settings:

Resolution bandwidth: 1 MHz

Video bandwidth: 30 kHz

Detector mode: Peak

Trace mode: Video Average

Sweep Time: Coupled

Centre Frequency: Centre frequency of the channel being tested

Span: 2 times the Nominal Channel Bandwidth

Use the marker to find the highest average power level of the power envelope of the UUT. This level shall be used as the reference level for the relative measurements.

Step 2: Determination of the relative average power levels.

Adjust the frequency range of the spectrum analyser to allow the measurement to be performed within the sub-bands 5 150 MHz to 5 350 MHz and 5 470 MHz to 5 725 MHz. No other parameter of the spectrum analyser should be changed.



Compare the relative power envelope of the UUT with the limits defined in clause 4.5.2.2
Sweep time: For non continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 100 kHz frequency step, the measurement time is greater than two transmissions of the UUT.

9.3. Measurement Result

TestMode	Antenna	Frequency[MHz]	Result [dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	See test graph	See test graph	PASS
11A	Ant1	5320	See test graph	See test graph	PASS
11A	Ant1	5500	See test graph	See test graph	PASS
11A	Ant1	5700	See test graph	See test graph	PASS
11N20SISO	Ant1	5180	See test graph	See test graph	PASS
11N20SISO	Ant1	5320	See test graph	See test graph	PASS
11N20SISO	Ant1	5500	See test graph	See test graph	PASS
11N20SISO	Ant1	5700	See test graph	See test graph	PASS
11N40SISO	Ant1	5190	See test graph	See test graph	PASS
11N40SISO	Ant1	5310	See test graph	See test graph	PASS
11N40SISO	Ant1	5510	See test graph	See test graph	PASS
11N40SISO	Ant1	5670	See test graph	See test graph	PASS

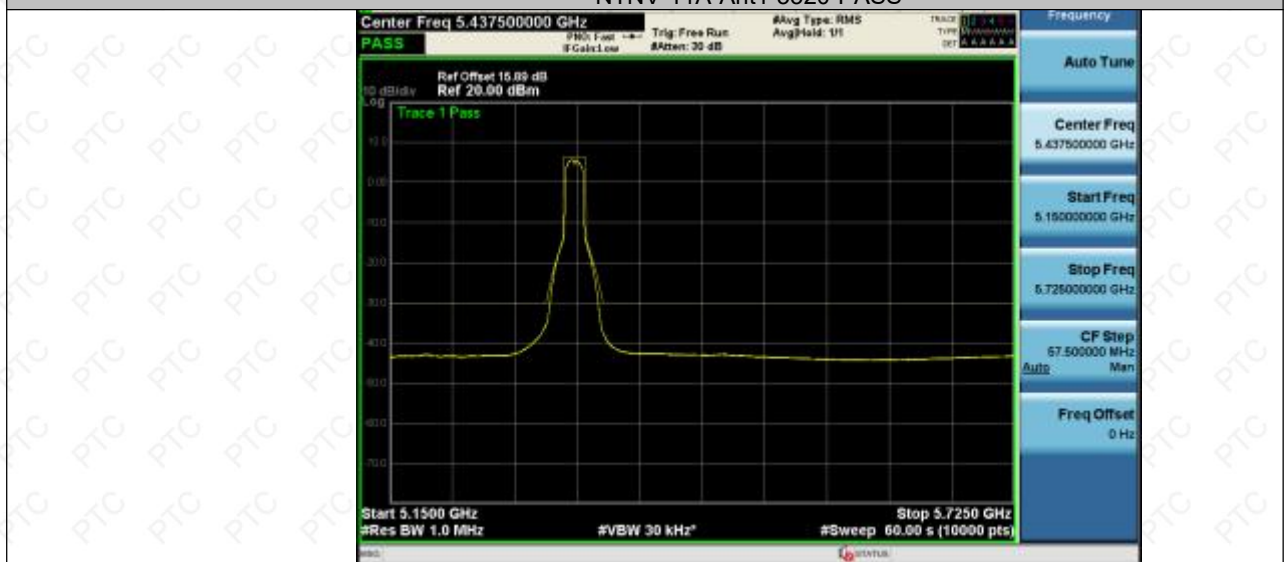


Test Graphs-Pre-scan





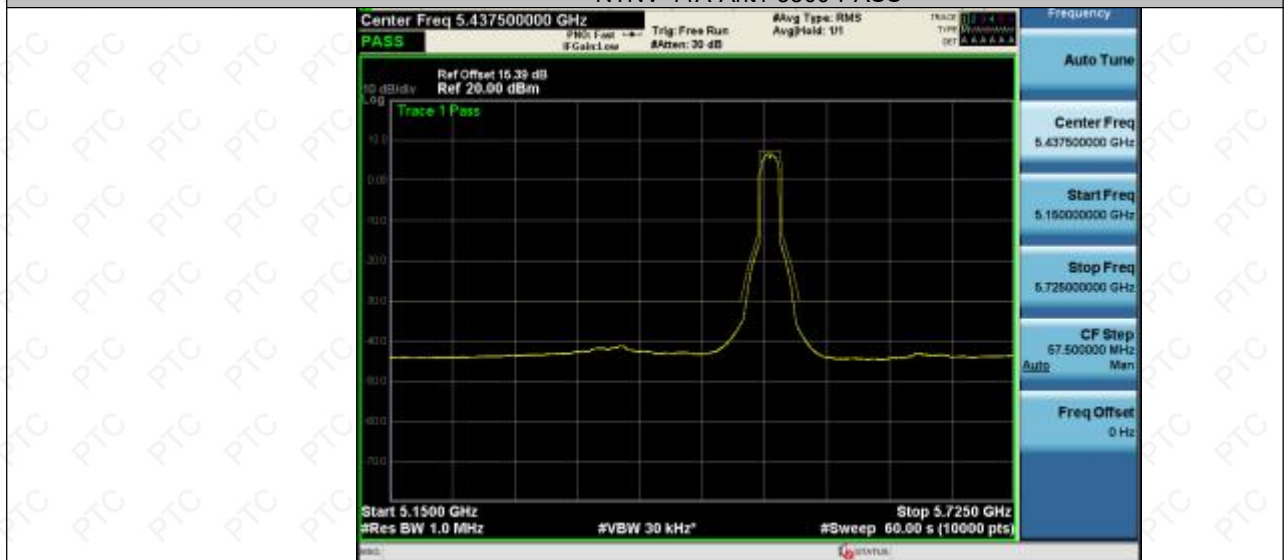
NTNV-11A-Ant1-5320-PASS



NTNV-11A-Ant1-5500-PASS



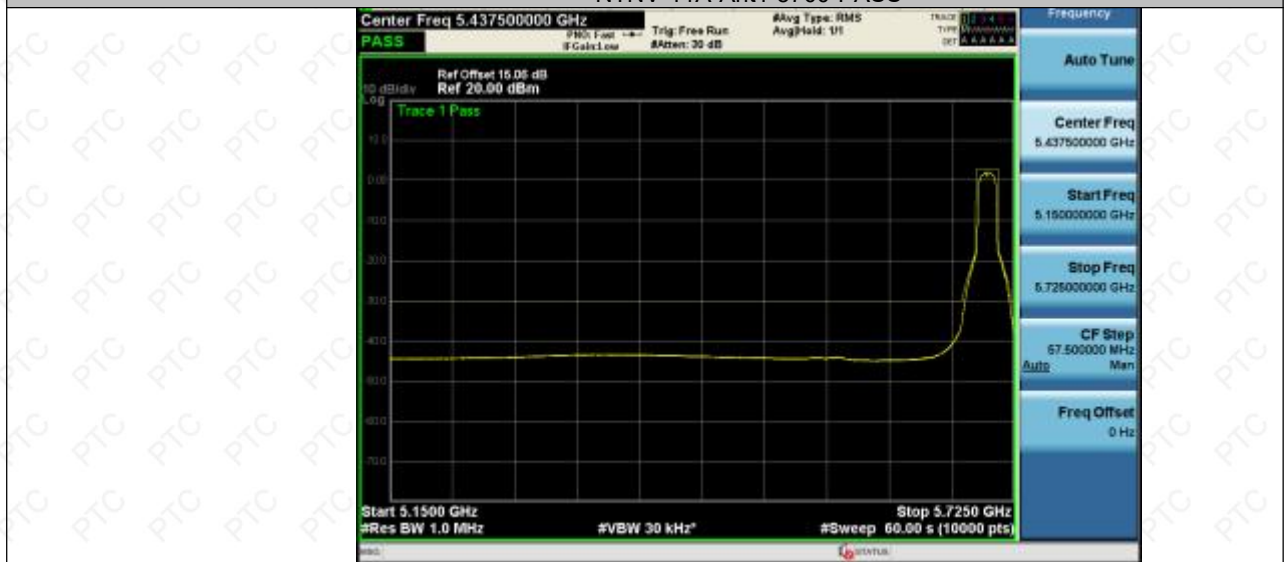
NTNV-11A-Ant1-5500-PASS



NTNV-11A-Ant1-5700-PASS



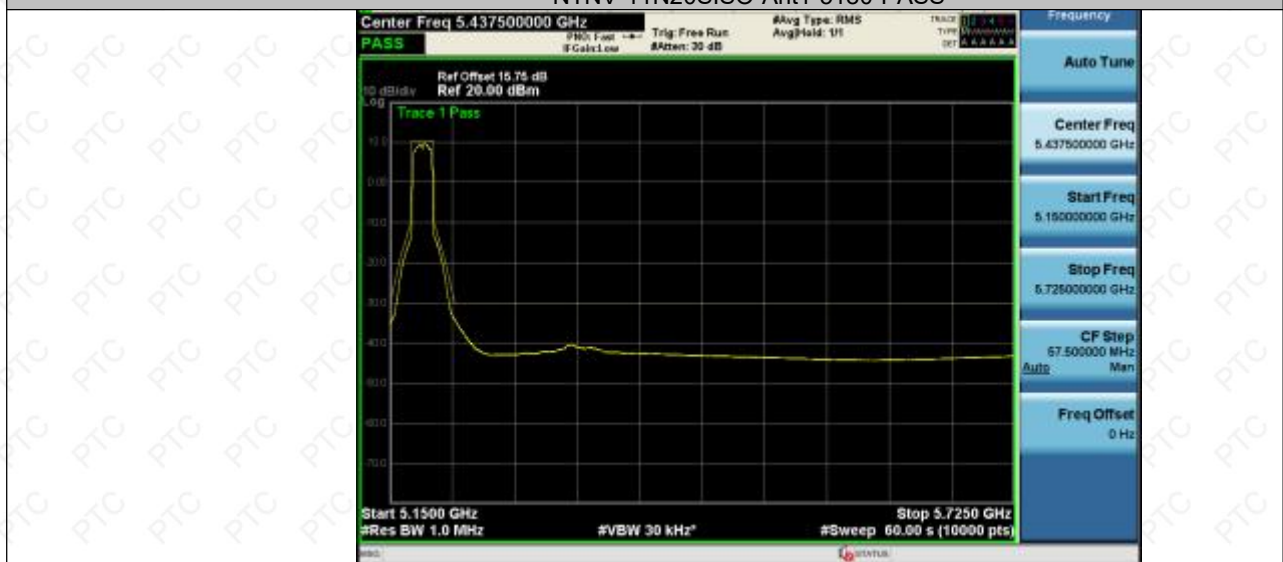
NTNV-11A-Ant1-5700-PASS



NTNV-11N20SISO-Ant1-5180-PASS



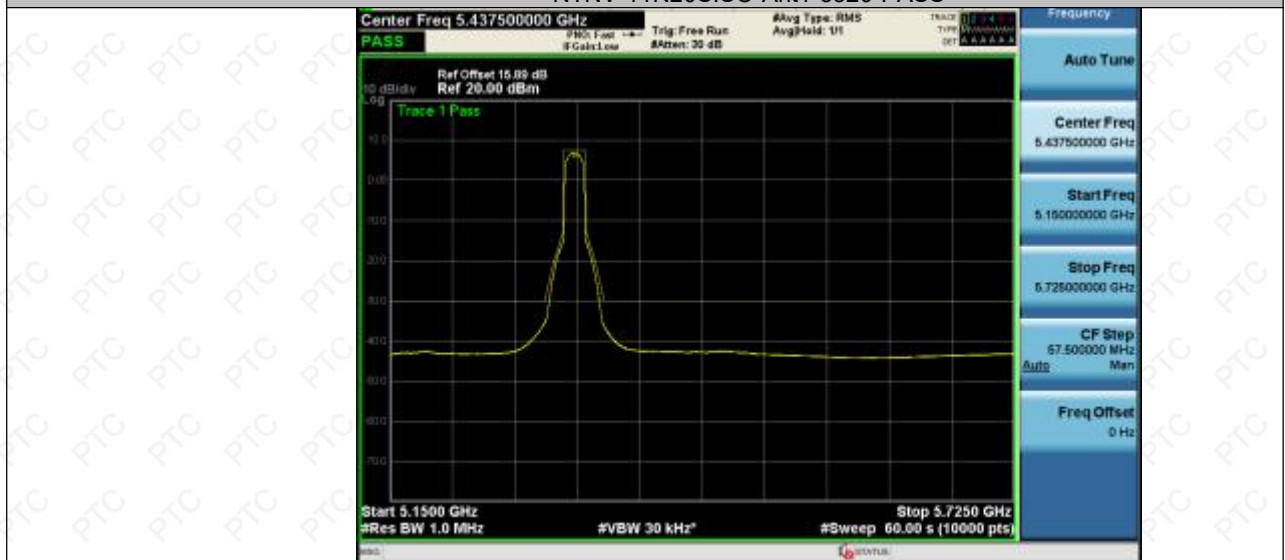
NTNV-11N20SISO-Ant1-5180-PASS



NTNV-11N20SISO-Ant1-5320-PASS



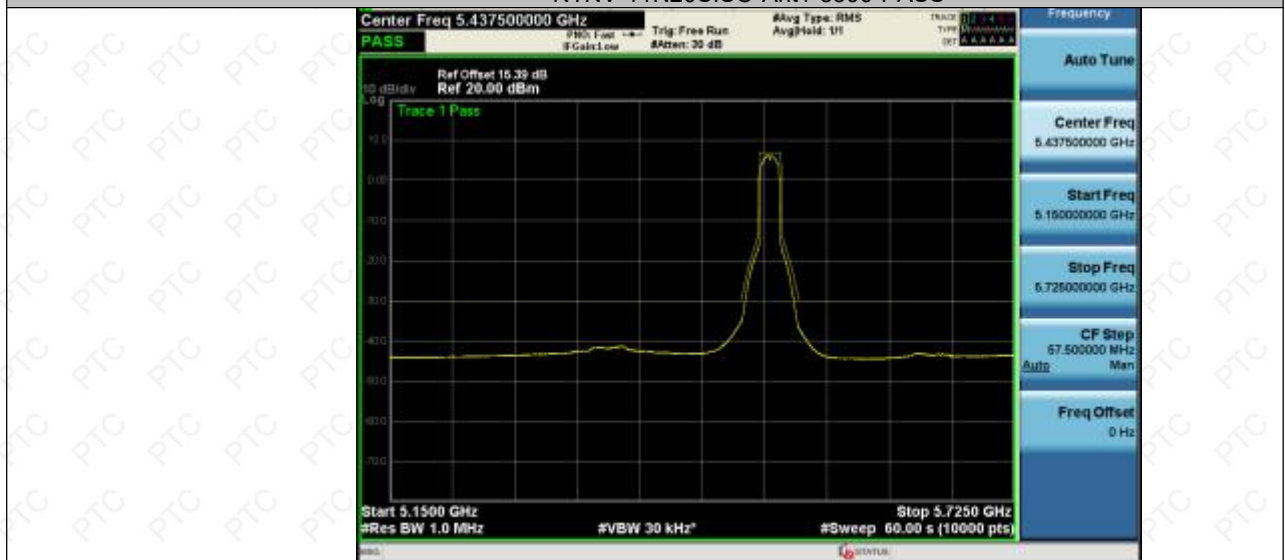
NTNV-11N20SISO-Ant1-5320-PASS



NTNV-11N20SISO-Ant1-5500-PASS



NTNV-11N20SISO-Ant1-5500-PASS



NTNV-11N20SISO-Ant1-5700-PASS



NTNV-11N20SISO-Ant1-5700-PASS



NTNV-11N40SISO-Ant1-5190-PASS



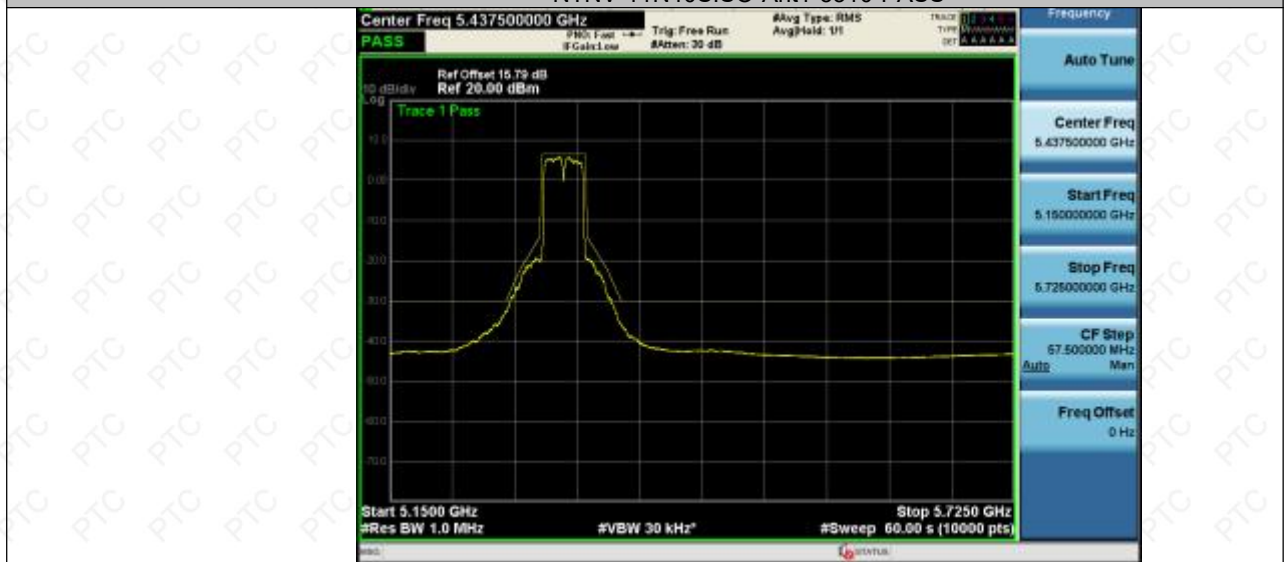
NTNV-11N40SISO-Ant1-5190-PASS



NTNV-11N40SISO-Ant1-5310-PASS



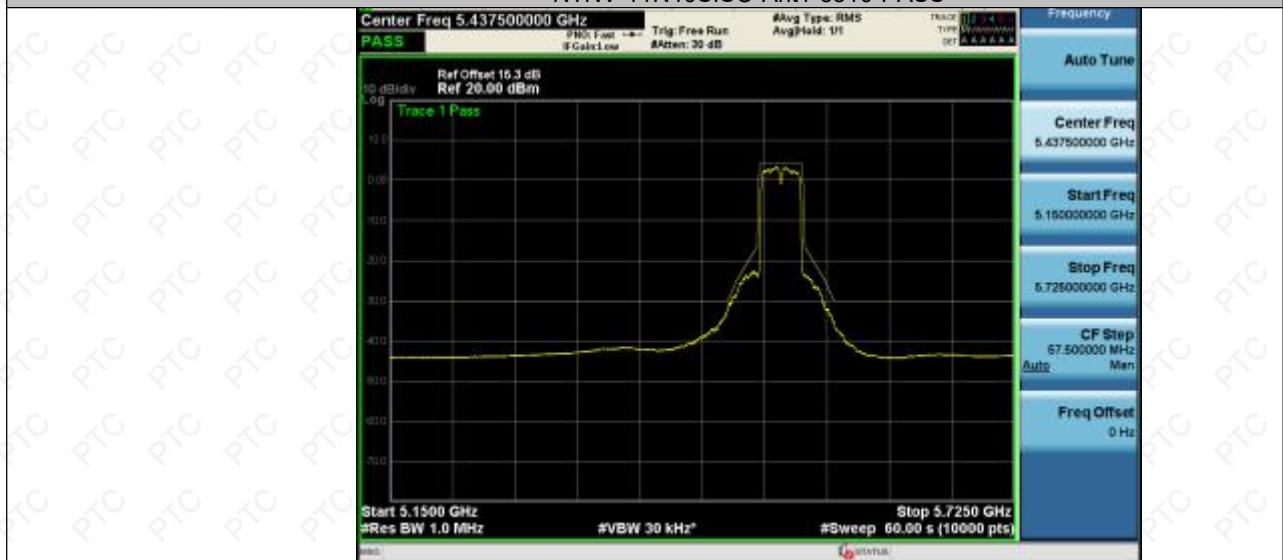
NTNV-11N40SISO-Ant1-5310-PASS



NTNV-11N40SISO-Ant1-5510-PASS



NTNV-11N40SISO-Ant1-5510-PASS



NTNV-11N40SISO-Ant1-5670-PASS



NTNV-11N40SISO-Ant1-5670-PASS



10 Receiver Spurious Emissions

10.1. Applicable Standard

Table 4: Spurious radiated emission limits

Frequency range	Maximum power	Measurement bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 26 GHz	-47 dBm	1 MHz

10.2. Measurement Procedure

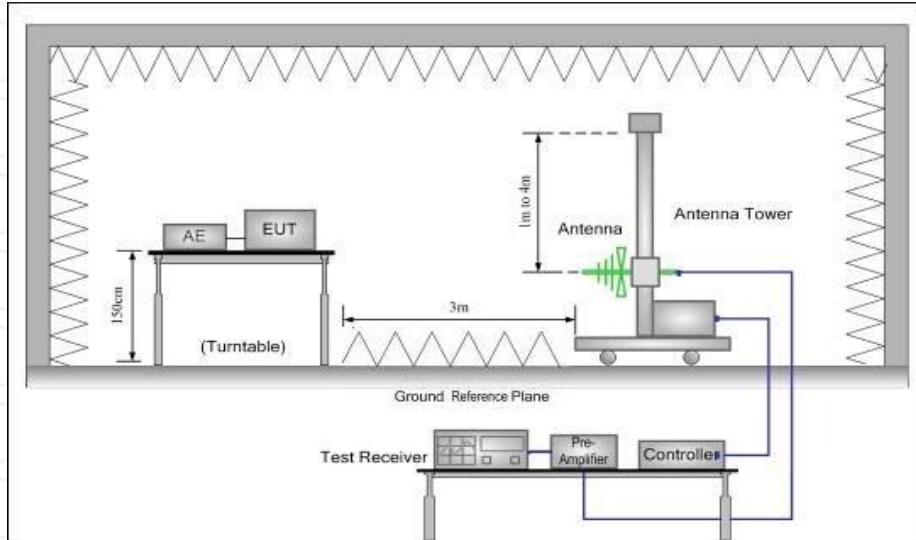
Measurement uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

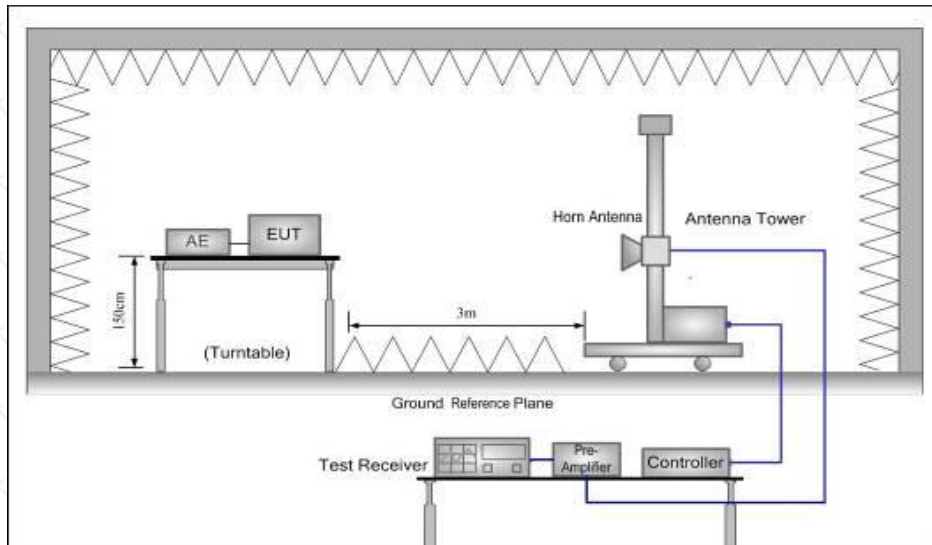
Based on NIS 81, The Treatment of Uncertainty in EMC Measurement, the best estimate of the uncertainty of a radiation emissions measurement at PTC is 4.3 dB.

Test Setup

(A) Radiated Emission Test Set-Up Frequency Bellow 1 GHz.



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz.



Test Procedure

The EUT was placed on the top of the turntable in chamber.

The test shall be made in the transmitting mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.

Set the spectrum analyzer as follows to measure the emissions (Bellow 1 GHz):

- Resolution BW : 100 kHz.
- Resolution BW : 300 kHz.
- Detector : RMS.



- Trace Mode : Max Hold.
- Sweep time : 1s.
- Span :100M.
- Amplitude :Adjust for middle of the instrument's range.

Set the spectrum analyzer as follows to measure the emissions (Above 1 GHz):

- Resolution BW : 1 MHz.
- Resolution BW :3 MHz.
- Detector : RMS.
- Trace Mode : Max Hold.
- Sweep time : 1s.
- Span :100M.
- Amplitude :Adjust for middle of the instrument's range.

For 30~1000MHz spurious emissions measurement, the broad band bi-log receiving antenna was placed 3 meters far away from the turntable. .

The broadband receiving antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Each recorded suspected value is indicated as Read Level (Raw).

Replace the EUT by standard antenna and feed the RF port by signal generator.

Adjust the frequency of the signal generator to the suspected emission and slightly rotate the turntable to locate the position with maximum reading.

Adjust the power level of the signal generator to reach the same reading with Read Level (Raw).

The level of the spurious emission is the power level of (g) plus the gain of the standard antenna in dBi and minus the loss of the cable used between the signal generator and the standard antenna.

If the measuring emissions that exceed the level of 6 dB below the applicable limit, the resolution bandwidth shall be switched to 30 kHz and the span shall be adjusted accordingly. If the level does not change by more than 2 dB, it is a narrowband emission; the observed value shall be recorded. If the level changes by more than 2 dB, the emission is a wideband emission and its level shall be measured and recorded. The measurement shall be repeated at the lowest and the highest channel of the stated frequency range.

10.3. Measurement Result

Test Result: PASS.

Please refer to the following data.

Test Result:

For ANT1:



Note: All of the modes were tested the data of the worst mode are recorded in the following pages. Worst case(IEEE 802.11a):

Bellow 1GHz:

802.11a20, 5180MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
46.46	V	RX	-65.21	-57	8.21
---	V	RX	---	---	---
---	V	RX	---	---	---
184.85	H	RX	-69.82	-57	12.82
46.46	V	RX	-65.21	-57	8.21
---	V	RX	---	---	---
802.11a20, 5240MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
250.11	V	RX	-65.58	-57	8.58
---	V	RX	---	---	---
---	V	RX	---	---	---
622.97	H	RX	-68.63	-57	11.63
250.11	V	RX	-65.58	-57	8.58
---	V	RX	---	---	---

Note: Margins= Limits- Measured.



Above 1GHz:

802.11a20, 5180MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
1124.78	V	RX	-60.89	-47	13.89
---	V	RX	---	---	---
---	V	RX	---	---	---
1652.04	H	RX	-65.1	-47	18.1
---	H	RX	---	---	---
---	H	RX	---	---	---
802.11a20, 5240MHz					
Frequency	Ant polarization	EUT Test Mode	Measured	Limits	Margins(dB)
(MHz)	H / V	TX/RX	(dBm)	(dBm)	
1992.99	V	RX	-57.01	-47	10.01
---	V	RX	---	---	---
---	V	RX	---	---	---
2401.17	H	RX	-57.58	-47	10.58
---	H	RX	---	---	---
---	H	RX	---	---	---

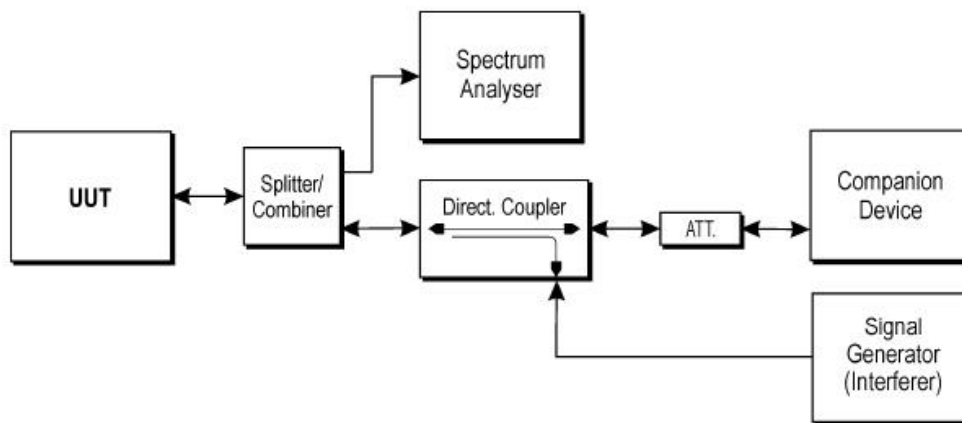
Note: Margins= Limits- Measured.

11 Adaptively (Channel Access Mechanism)

11.1. Applicable Standard

Adaptively is an automatic channel access mechanism by which a device avoids transmissions in a channel in the presence of transmissions from other systems in that channel

11.2. Test Setup



11.3. Measurement Procedure

Step 1:

- The UUT may connect to a companion device during the test. The signal generator, spectrum analyser, UUT and the companion device are connected using a Set-up equivalent to the example given by figure 13 although the signal generator does not generate any signals at this point in time. The spectrum analyser is used to monitor the transmissions of the UUT in response to the interference signal.
- The received signal level (wanted signal from the companion device) at the UUT shall be sufficient to maintain a reliable link for the duration of the test.
- The analyser shall be set as follows:
 - RBW: $\geq$ Occupied Channel Bandwidth (if the analyser does not support this setting, the highest available setting shall be used)
 - VBW: $3 \times$ RBW (if the analyser does not support this setting, the highest available setting shall be used)
 - Detector Mode: RMS
 - Centre Frequency: Equal to the centre frequency of the operating channel
 - Span: 0 Hz
 - Sweep time: $>$ Channel Occupancy Time
 - Trace Mode: Clear/Write
 - Trigger Mode: Video or External

Step 2:

- Configure the UUT for normal transmissions with a sufficiently high payload (transmitter activity ratio > 30 %) to allow demonstration of compliance of the adaptive mechanism on the channel being tested.
- For Frame Based Equipment, using the procedure defined in clause 5.3.9.2.2, it shall be verified that the UUT complies with the maximum Channel Occupancy Time and the minimum Idle Period defined in clause 4.9.2.1.
- For Load Based equipment, using the procedure defined in clause 5.3.9.2.2, it shall be verified that the UUT complies with the maximum Channel Occupancy Time defined in clause 4.9.2.2. It shall also be verified (if necessary by repeating the test) that the measured Idle Period varies between CCA and $q \times \text{CCA}$ as defined in clause 4.9.2.2.

NOTE 1: For IEEE 802.11 [9] equipment (see first paragraph of clause 4.9.2.2) the Idle Period and the maximum

Channel Occupancy Time are as defined for other types of Load Based Equipment (see clause 4.9.2.2 points 2 and 3). The CCA observation time is declared by the manufacturer (see clause 5.3.1.q)).

Step 3: Adding the interference signal.

- A 100 % duty cycle interference signal is injected on the current operating channel of the UUT. This interference signal shall be a band limited noise signal which has a flat power density (maximum ripple $\pm 1,5$ dB), and shall have a bandwidth of at least 10 MHz. The total power level of this interference signal shall be equal to the power density value defined in clause 4.9.2.1 point 5 or clause 4.9.2.2 point 5, multiplied by the Occupied Channel Bandwidth of the UUT.

Step 4: Verification of reaction to the interference signal.

- The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected operating channel after the interference signal was injected. This may require the spectrum analyser sweep to be triggered by the start of the interfering signal.

- Using the procedure defined in clause 5.3.9.2.2, it shall be verified that:

i) The UUT stops transmissions on the current operating channel.

NOTE 2: The UUT is assumed to stop transmissions within a period equal to the maximum Channel Occupancy

Time defined in clause 4.9.2.1 for Frame Based Equipment or clause 4.9.2.2 for Load Based Equipment.

The UUT is allowed to have Short Control Signalling Transmissions on the current operating channel (see

ii) and iii).

NOTE 3: For equipment having simultaneous transmissions on multiple (adjacent or non-adjacent) operating

channels, the equipment is allowed to continue transmissions on other Operating Channels.

ii) Apart from Short Control Signalling Transmissions there shall be no subsequent transmissions while the

interfering signal is present.

iii) The Short Control Signalling Transmissions shall comply with the limits defined in clause 4.9.2.3.

NOTE 4: The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).

NOTE 5: On removal of the interference signal the UUT may start transmissions again on this



channel however this is not a requirement and therefore does not require testing.

Step 5:

- The steps 2 to 4 shall be repeated for each of the channels to be tested.

Test Results

Environmental conditions:

Test data:

PASS. Please refer to the following data.

Test Item : Spurious Emissions
Test Voltage : NV
Test Result : PASS

Test Mode : Normal
Temperature : 25°C
Humidity : 54%RH

Test mode: Transmitting in IEEE 802.11a mode low channel o.
Please refer to the following plots:
Worst case(IEEE 802.11a ANT1):

Condition	Mode	Frequency (MHz)	Antenna	Interfer Type	Interfer Level (dBm)	Short Control (ms)	Limit (ms)	Short Control (n)	Limit (n)	Verdict
NVNT	a	5180	Ant1	AWGN	-64	0.93	<=2.5	2	<=50	Pass
NVNT	a	5180	Ant1	LTE	-64	1.4	<=2.5	3	<=50	Pass
NVNT	a	5180	Ant1	OFDM	-64	2.33	<=2.5	3	<=50	Pass
NVNT	a	5320	Ant1	AWGN	-64	0.47	<=2.5	1	<=50	Pass
NVNT	a	5320	Ant1	LTE	-64	0.47	<=2.5	1	<=50	Pass
NVNT	a	5320	Ant1	OFDM	-64	0.47	<=2.5	1	<=50	Pass
NVNT	a	5500	Ant1	AWGN	-64	0	<=2.5	0	<=50	Pass
NVNT	a	5500	Ant1	LTE	-64	0	<=2.5	0	<=50	Pass
NVNT	a	5500	Ant1	OFDM	-64	0	<=2.5	0	<=50	Pass
NVNT	a	5700	Ant1	AWGN	-60	0	<=2.5	0	<=50	Pass
NVNT	a	5700	Ant1	LTE	-60	0	<=2.5	0	<=50	Pass
NVNT	a	5700	Ant1	OFDM	-60	0	<=2.5	0	<=50	Pass

Adaptive COT:

Condition	Mode	Frequency (MHz)	Antenna	Priority Class	Payload	Max COT (ms)	Limit COT (ms)	Min Idle Time (ms)	Limit Idle Time (ms)	Verdict
NVNT	a	5180	Ant1	2	42.62	0.365	<=6	0.045	>0.027	Pass
NVNT	a	5320	Ant1	2	42.84	0.365	<=6	0.063	>0.027	Pass
NVNT	a	5500	Ant1	2	44.26	0.365	<=6	0.262	>0.027	Pass
NVNT	a	5700	Ant1	2	97.95	1.393	<=6	0.03	>0.027	Pass

Idle Period Probability:

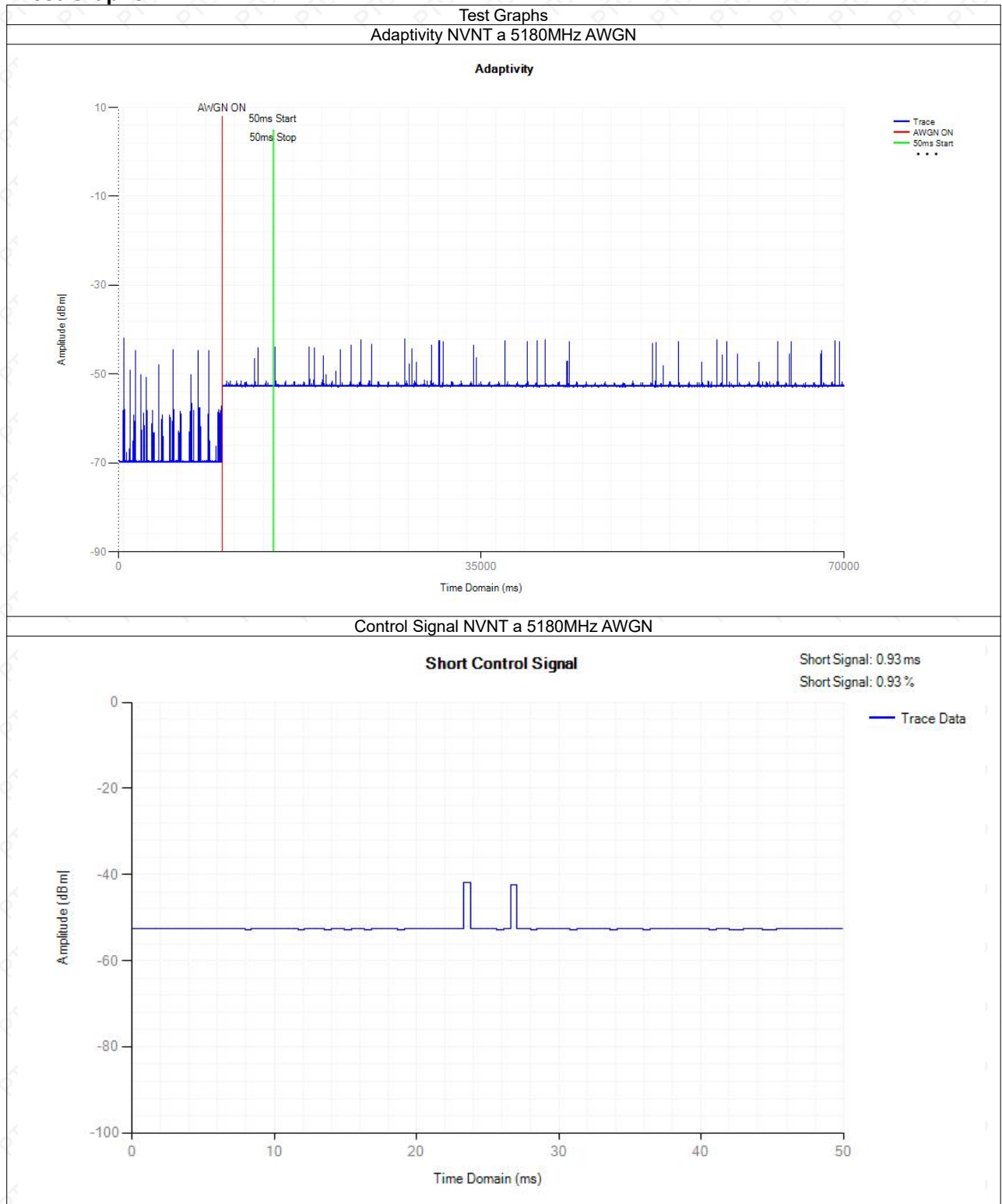
Condition	Mode	Frequency (MHz)	Antenna	Priority Class	Bn	H(Bn)	Pn (%)	Limit (%)	Verdict
NVNT	a	5180	Ant1	2	0	116	1.16	5	Pass
NVNT	a	5180	Ant1	2	1	1	1.17	12	Pass
NVNT	a	5180	Ant1	2	2	0	1.17	18.25	Pass
NVNT	a	5180	Ant1	2	3	1159	12.73	24.5	Pass
NVNT	a	5180	Ant1	2	4	0	12.73	30.75	Pass
NVNT	a	5180	Ant1	2	5	0	12.73	37	Pass
NVNT	a	5180	Ant1	2	6	0	12.73	43.25	Pass
NVNT	a	5180	Ant1	2	7	18	12.91	49.5	Pass
NVNT	a	5180	Ant1	2	8	31	13.22	55.75	Pass
NVNT	a	5180	Ant1	2	9	49	13.7	62	Pass

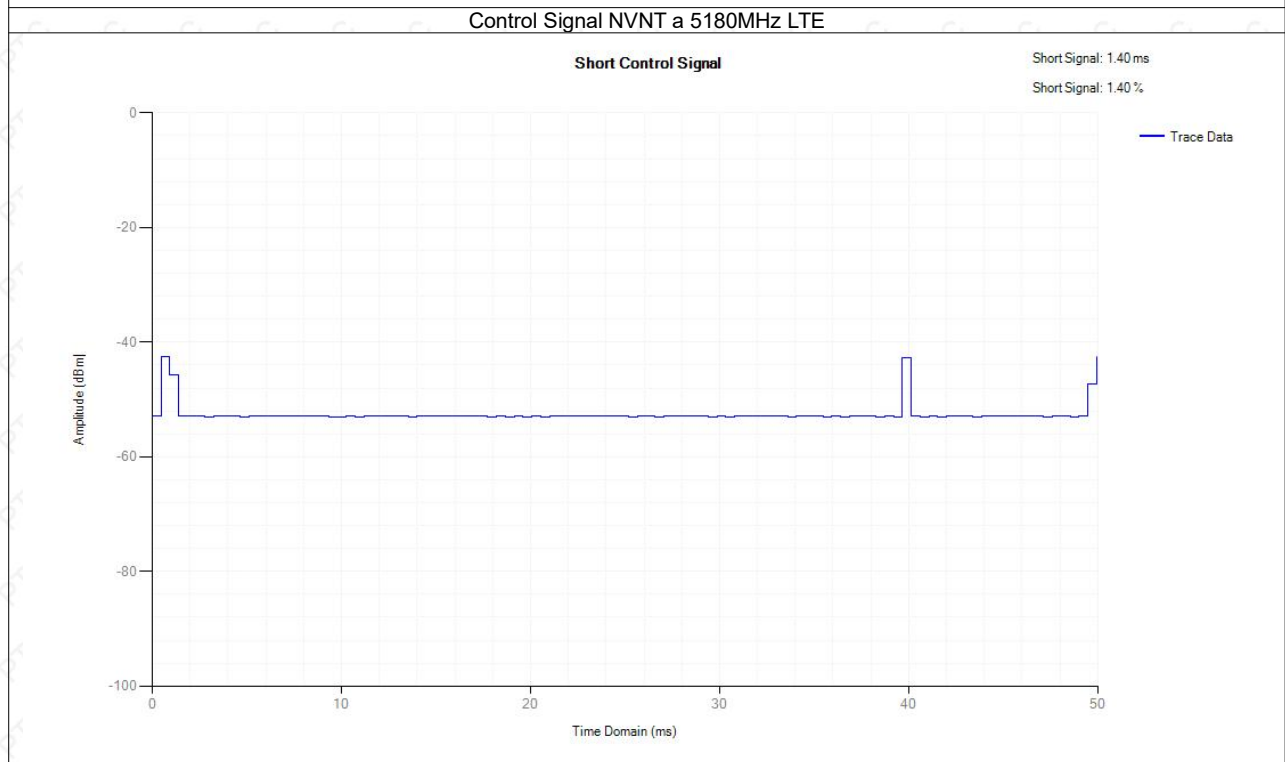
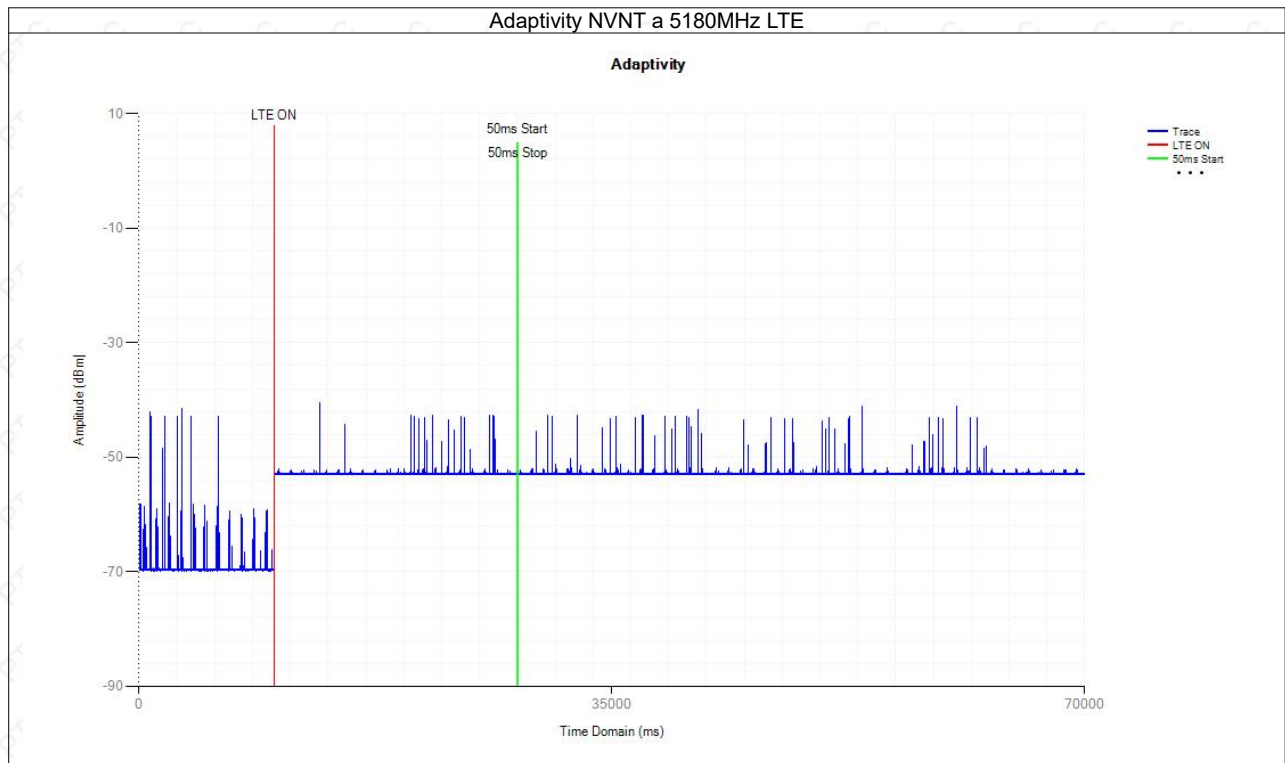


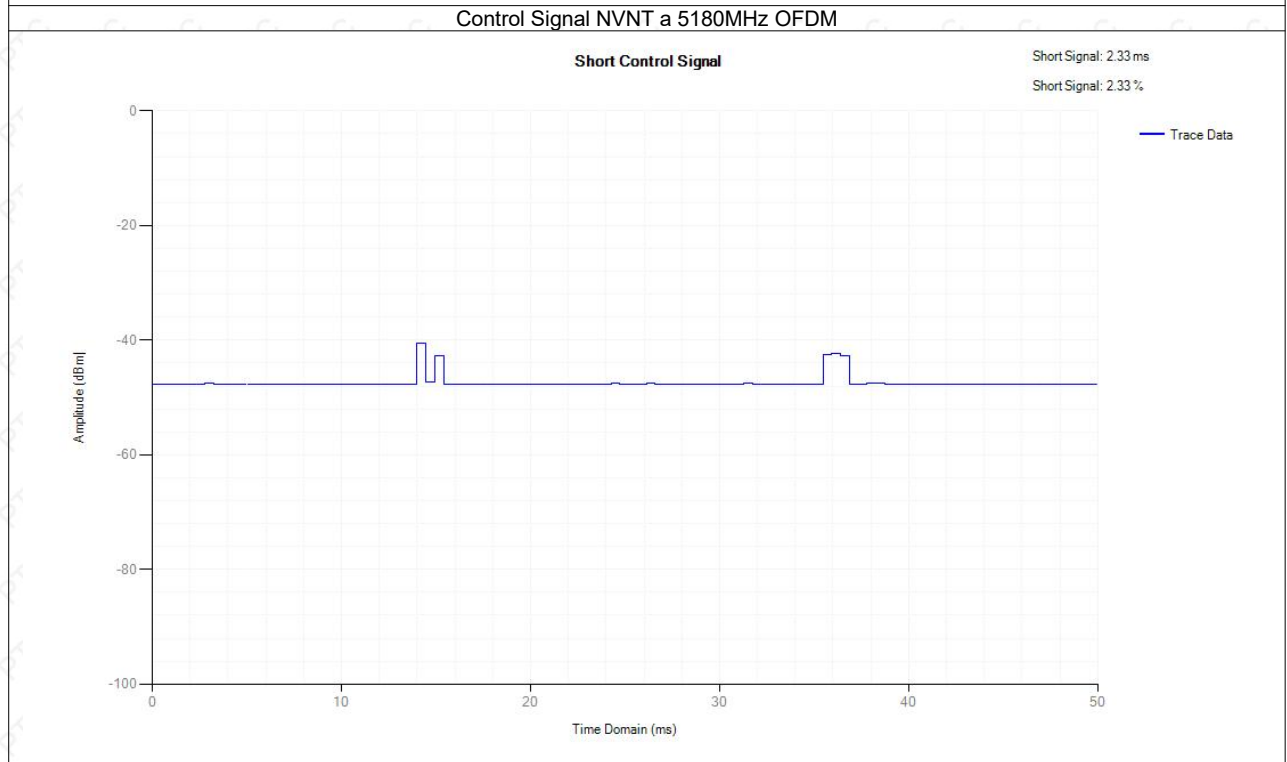
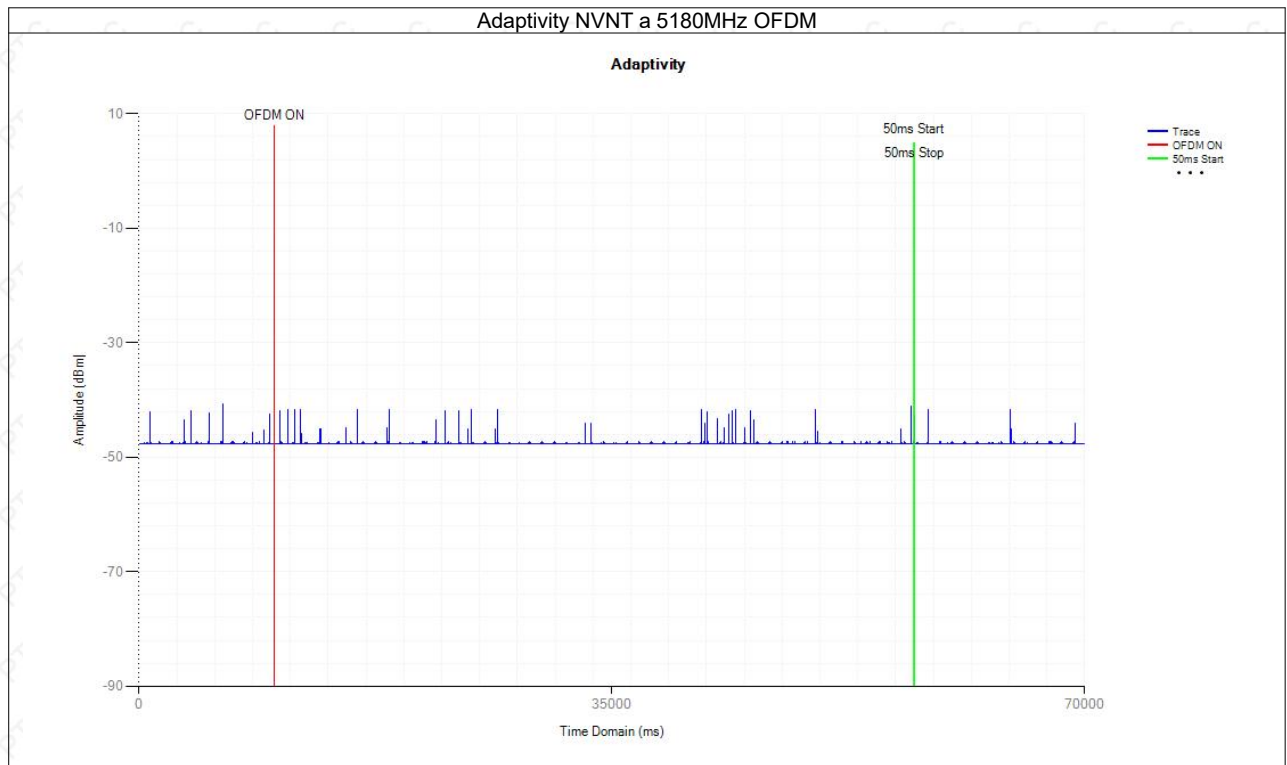
NVNT	a	5180	Ant1	2	10	52	14.22	68.25	Pass
NVNT	a	5180	Ant1	2	11	45	14.67	74.5	Pass
NVNT	a	5180	Ant1	2	12	64	15.31	80.75	Pass
NVNT	a	5180	Ant1	2	13	62	15.93	87	Pass
NVNT	a	5180	Ant1	2	14	95	16.88	93.25	Pass
NVNT	a	5180	Ant1	2	15	111	17.98	99.5	Pass
NVNT	a	5180	Ant1	2	16	8223	100	100	Pass
NVNT	a	5320	Ant1	2	0	116	1.16	5	Pass
NVNT	a	5320	Ant1	2	1	0	1.16	12	Pass
NVNT	a	5320	Ant1	2	2	0	1.16	18.25	Pass
NVNT	a	5320	Ant1	2	3	1142	12.56	24.5	Pass
NVNT	a	5320	Ant1	2	4	1	12.57	30.75	Pass
NVNT	a	5320	Ant1	2	5	0	12.57	37	Pass
NVNT	a	5320	Ant1	2	6	0	12.57	43.25	Pass
NVNT	a	5320	Ant1	2	7	13	12.7	49.5	Pass
NVNT	a	5320	Ant1	2	8	33	13.03	55.75	Pass
NVNT	a	5320	Ant1	2	9	45	13.48	62	Pass
NVNT	a	5320	Ant1	2	10	43	13.91	68.25	Pass
NVNT	a	5320	Ant1	2	11	59	14.5	74.5	Pass
NVNT	a	5320	Ant1	2	12	53	15.03	80.75	Pass
NVNT	a	5320	Ant1	2	13	83	15.86	87	Pass
NVNT	a	5320	Ant1	2	14	95	16.81	93.25	Pass
NVNT	a	5320	Ant1	2	15	91	17.72	99.5	Pass
NVNT	a	5320	Ant1	2	16	8240	100	100	Pass
NVNT	a	5500	Ant1	2	0	163	1.62	5	Pass
NVNT	a	5500	Ant1	2	1	0	1.62	12	Pass
NVNT	a	5500	Ant1	2	2	0	1.62	18.25	Pass
NVNT	a	5500	Ant1	2	3	0	1.62	24.5	Pass
NVNT	a	5500	Ant1	2	4	0	1.62	30.75	Pass
NVNT	a	5500	Ant1	2	5	0	1.62	37	Pass
NVNT	a	5500	Ant1	2	6	0	1.62	43.25	Pass
NVNT	a	5500	Ant1	2	7	0	1.62	49.5	Pass
NVNT	a	5500	Ant1	2	8	0	1.62	55.75	Pass
NVNT	a	5500	Ant1	2	9	0	1.62	62	Pass
NVNT	a	5500	Ant1	2	10	0	1.62	68.25	Pass
NVNT	a	5500	Ant1	2	11	0	1.62	74.5	Pass
NVNT	a	5500	Ant1	2	12	0	1.62	80.75	Pass
NVNT	a	5500	Ant1	2	13	0	1.62	87	Pass
NVNT	a	5500	Ant1	2	14	0	1.62	93.25	Pass
NVNT	a	5500	Ant1	2	15	0	1.62	99.5	Pass
NVNT	a	5500	Ant1	2	16	9877	100	100	Pass
NVNT	a	5700	Ant1	2	0	394	3.94	5	Pass
NVNT	a	5700	Ant1	2	1	0	3.94	12	Pass
NVNT	a	5700	Ant1	2	2	0	3.94	18.25	Pass
NVNT	a	5700	Ant1	2	3	0	3.94	24.5	Pass
NVNT	a	5700	Ant1	2	4	0	3.94	30.75	Pass
NVNT	a	5700	Ant1	2	5	0	3.94	37	Pass
NVNT	a	5700	Ant1	2	6	0	3.94	43.25	Pass
NVNT	a	5700	Ant1	2	7	0	3.94	49.5	Pass
NVNT	a	5700	Ant1	2	8	0	3.94	55.75	Pass
NVNT	a	5700	Ant1	2	9	0	3.94	62	Pass
NVNT	a	5700	Ant1	2	10	0	3.94	68.25	Pass
NVNT	a	5700	Ant1	2	11	0	3.94	74.5	Pass
NVNT	a	5700	Ant1	2	12	0	3.94	80.75	Pass
NVNT	a	5700	Ant1	2	13	0	3.94	87	Pass
NVNT	a	5700	Ant1	2	14	0	3.94	93.25	Pass
NVNT	a	5700	Ant1	2	15	0	3.94	99.5	Pass
NVNT	a	5700	Ant1	2	16	9611	100	100	Pass

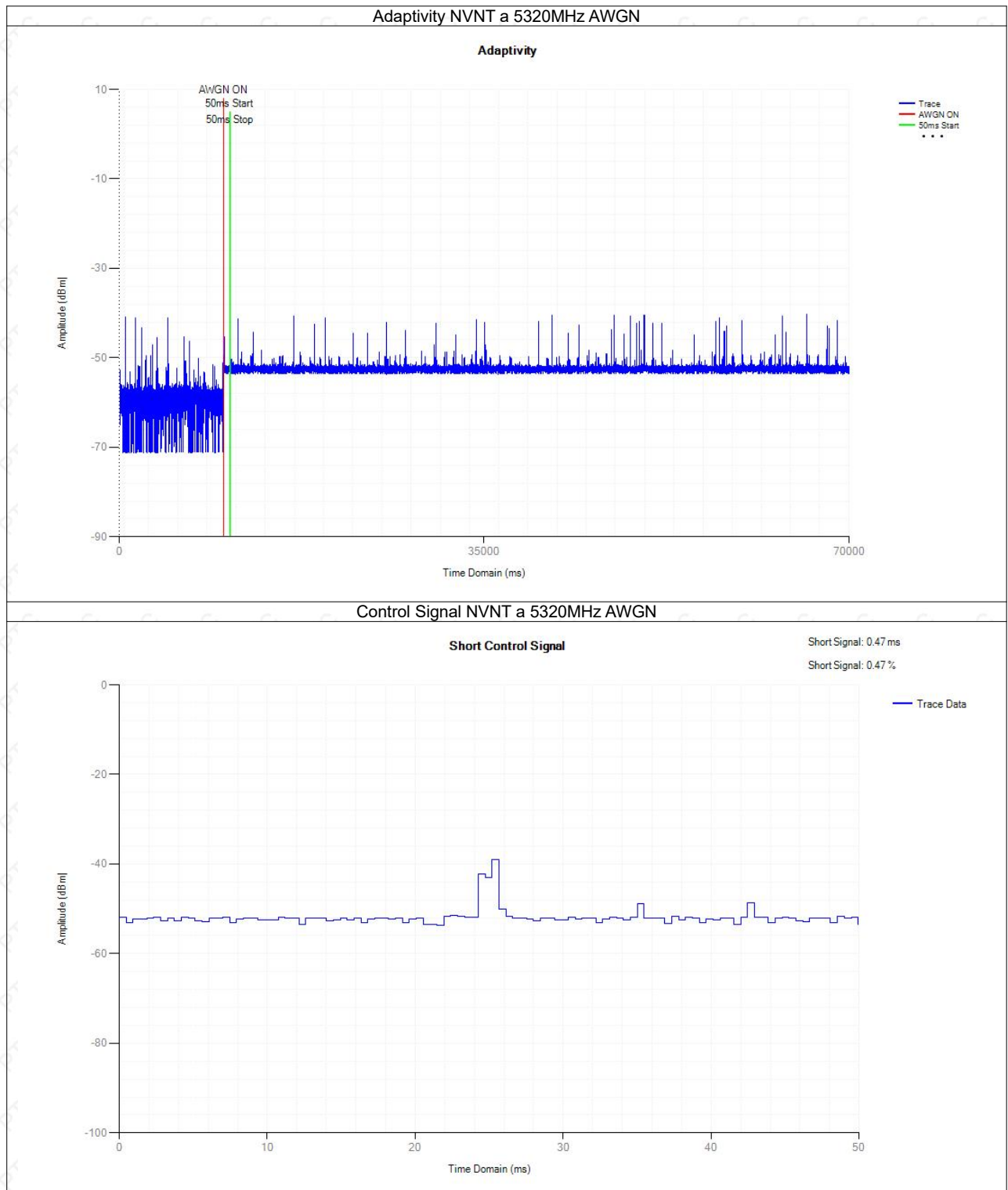


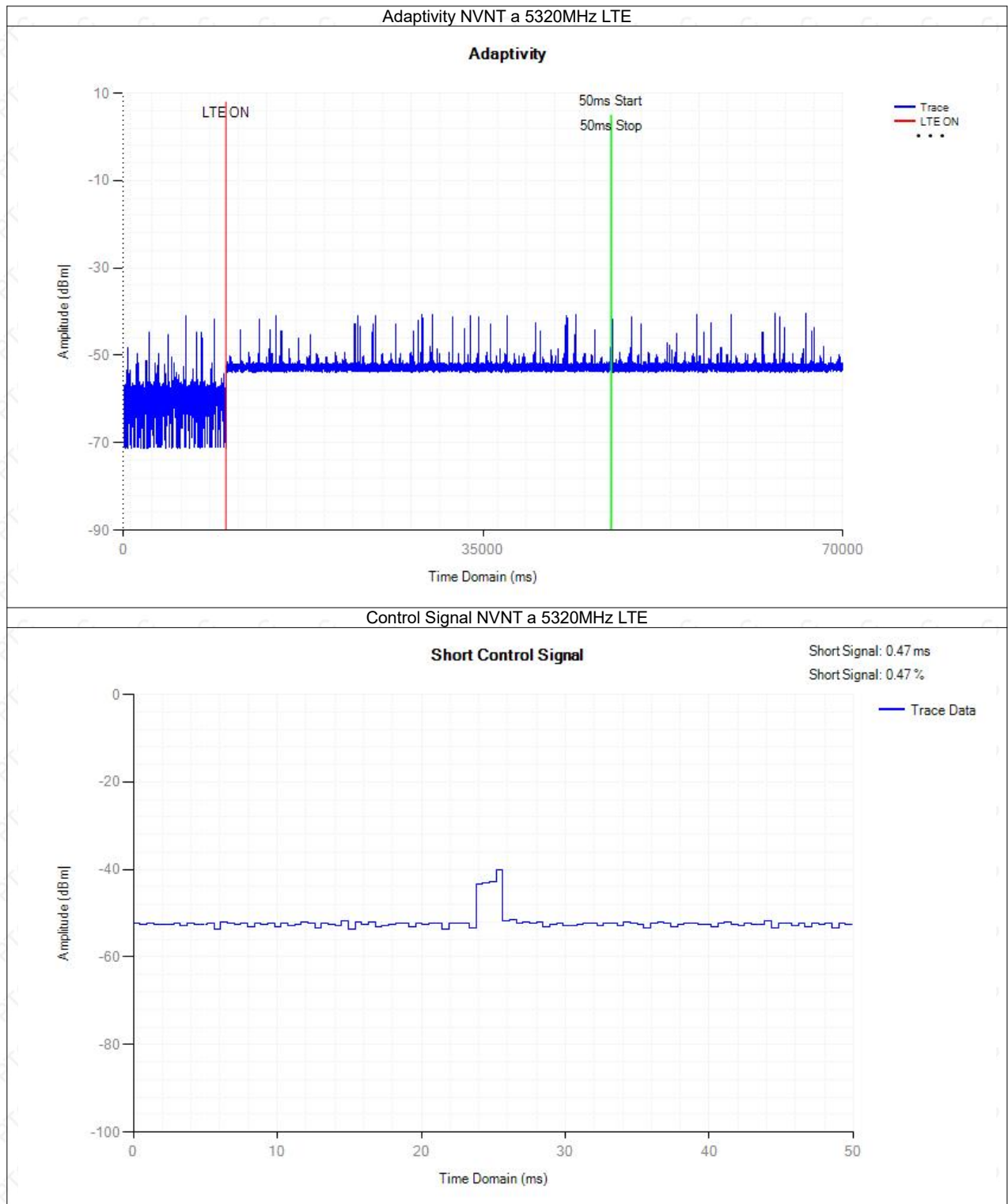
Test Graphs:

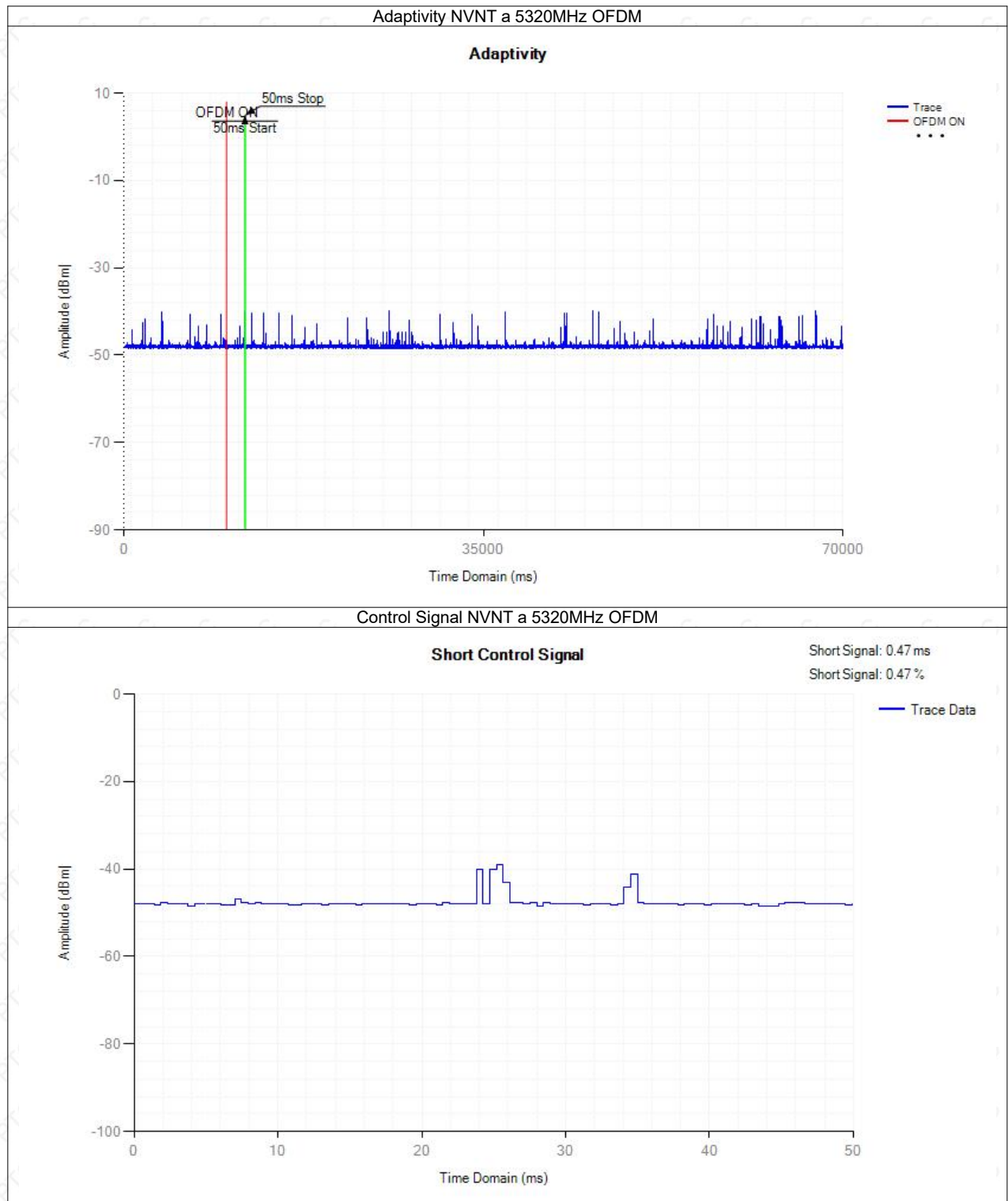


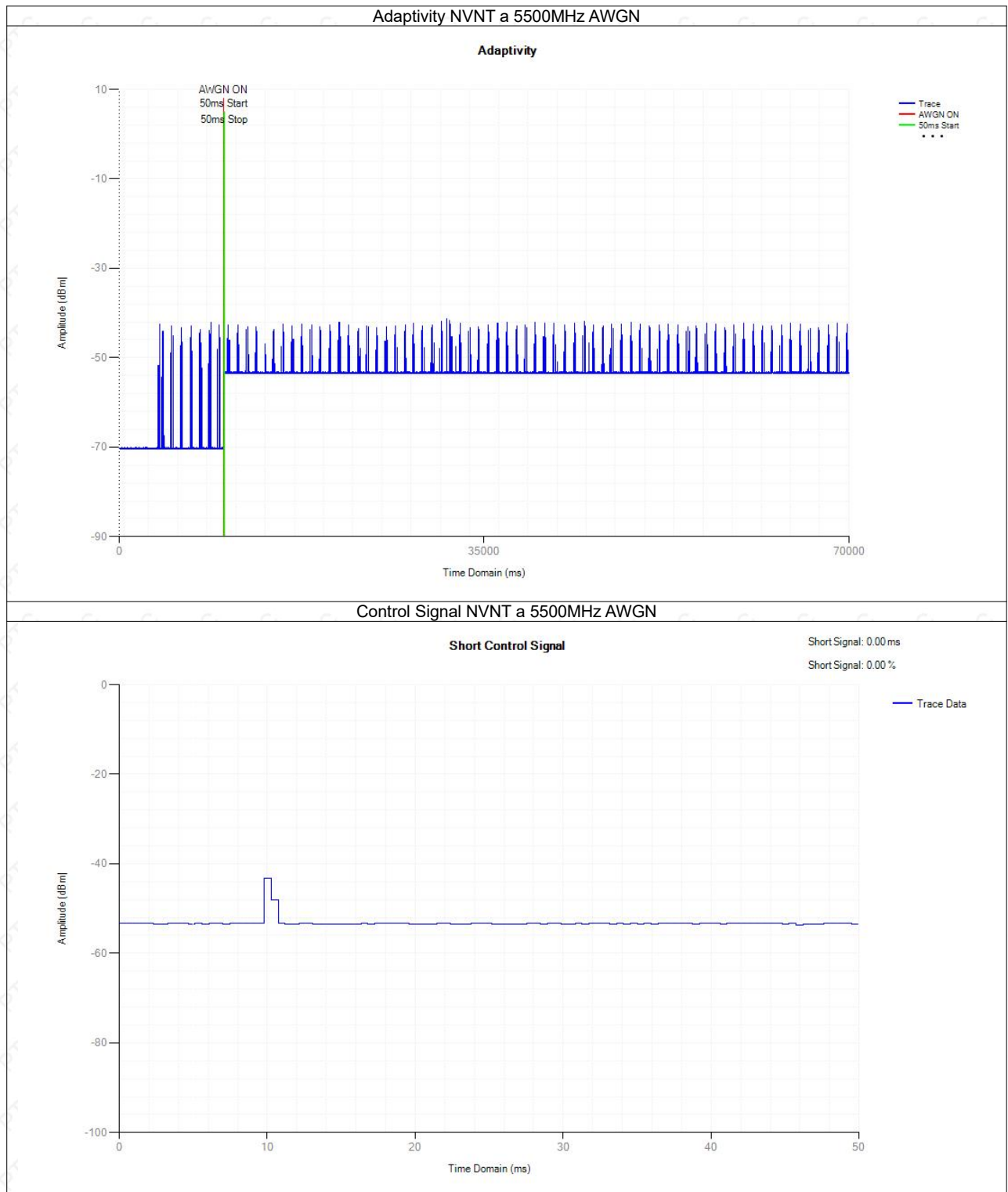


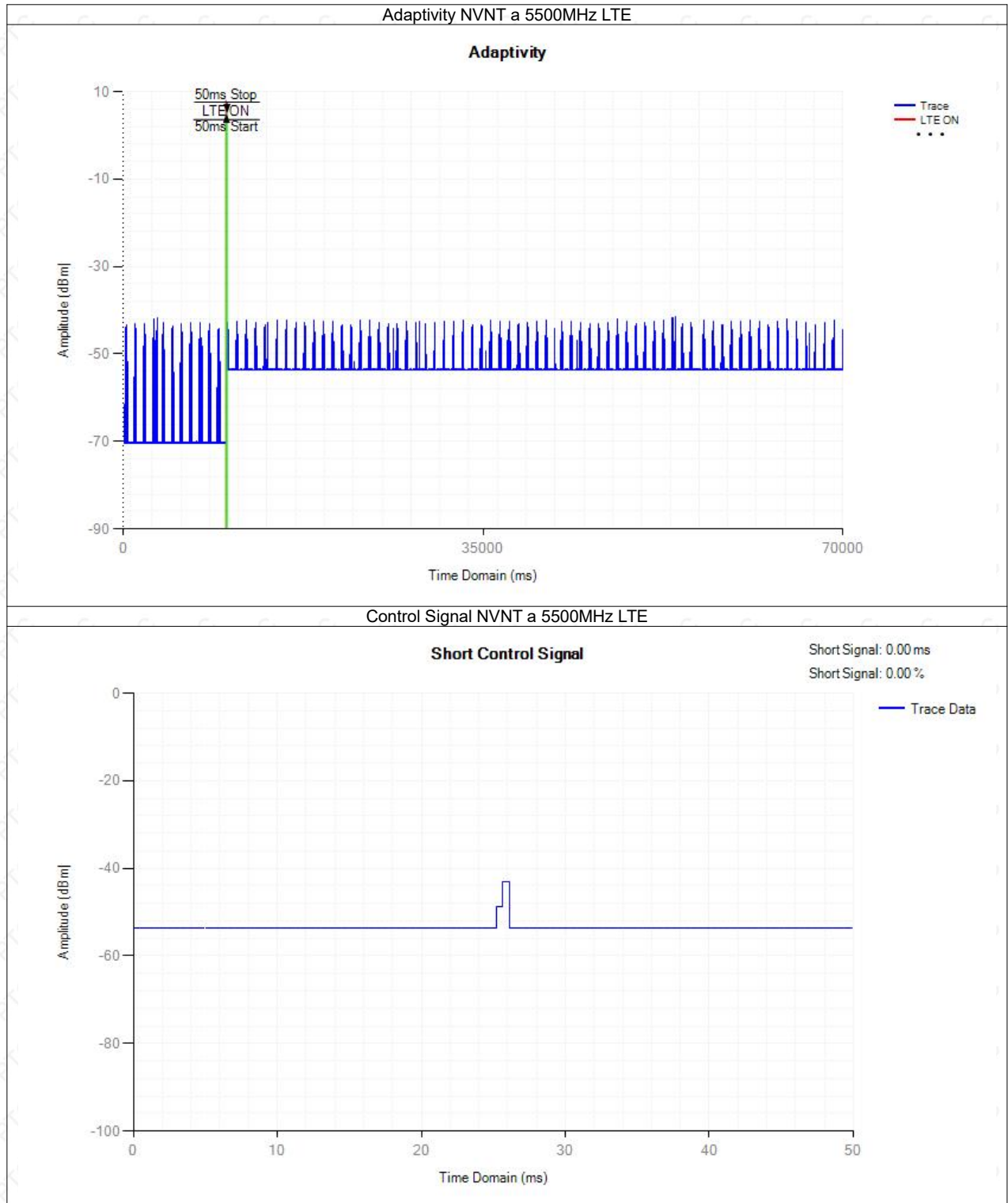


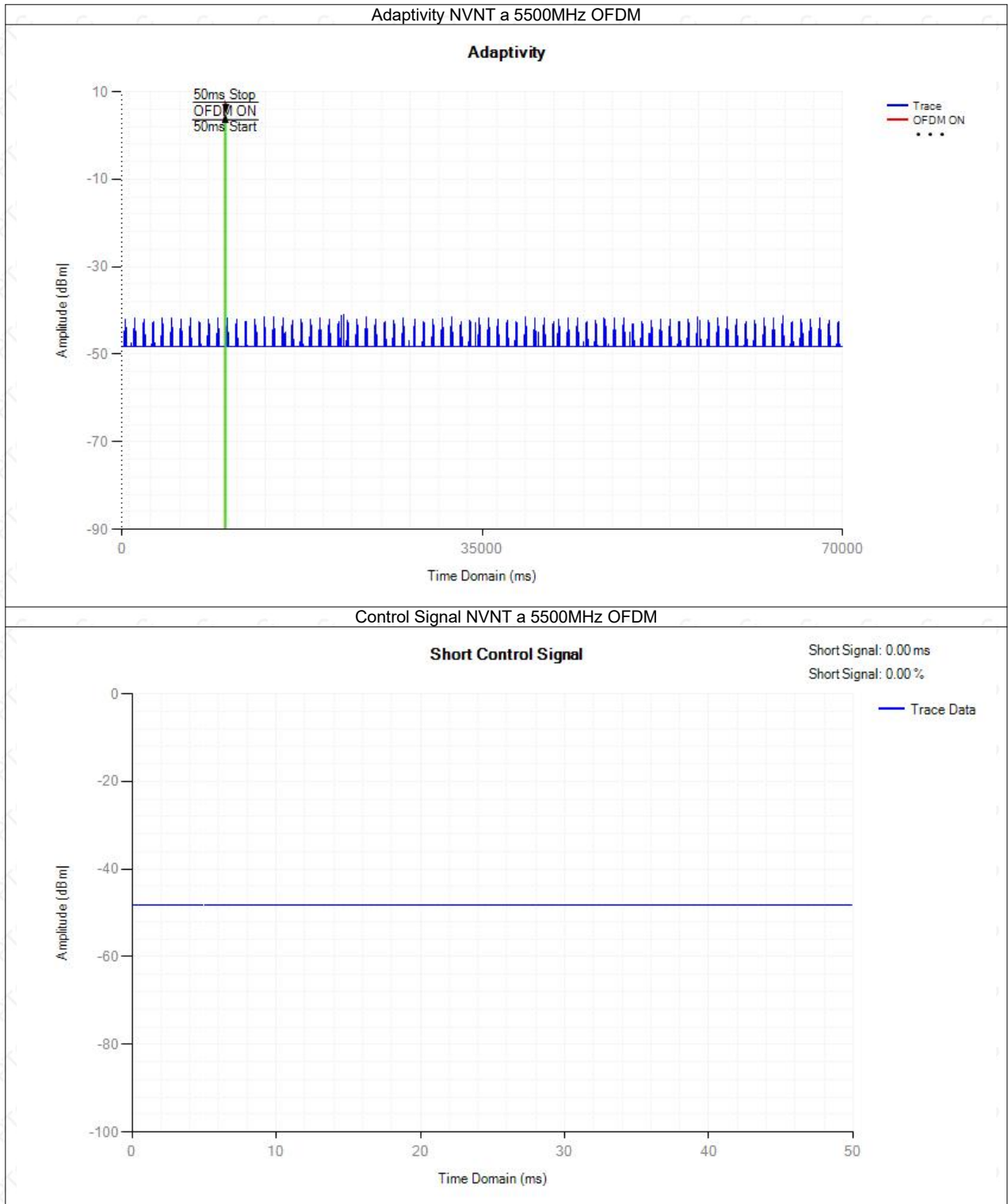


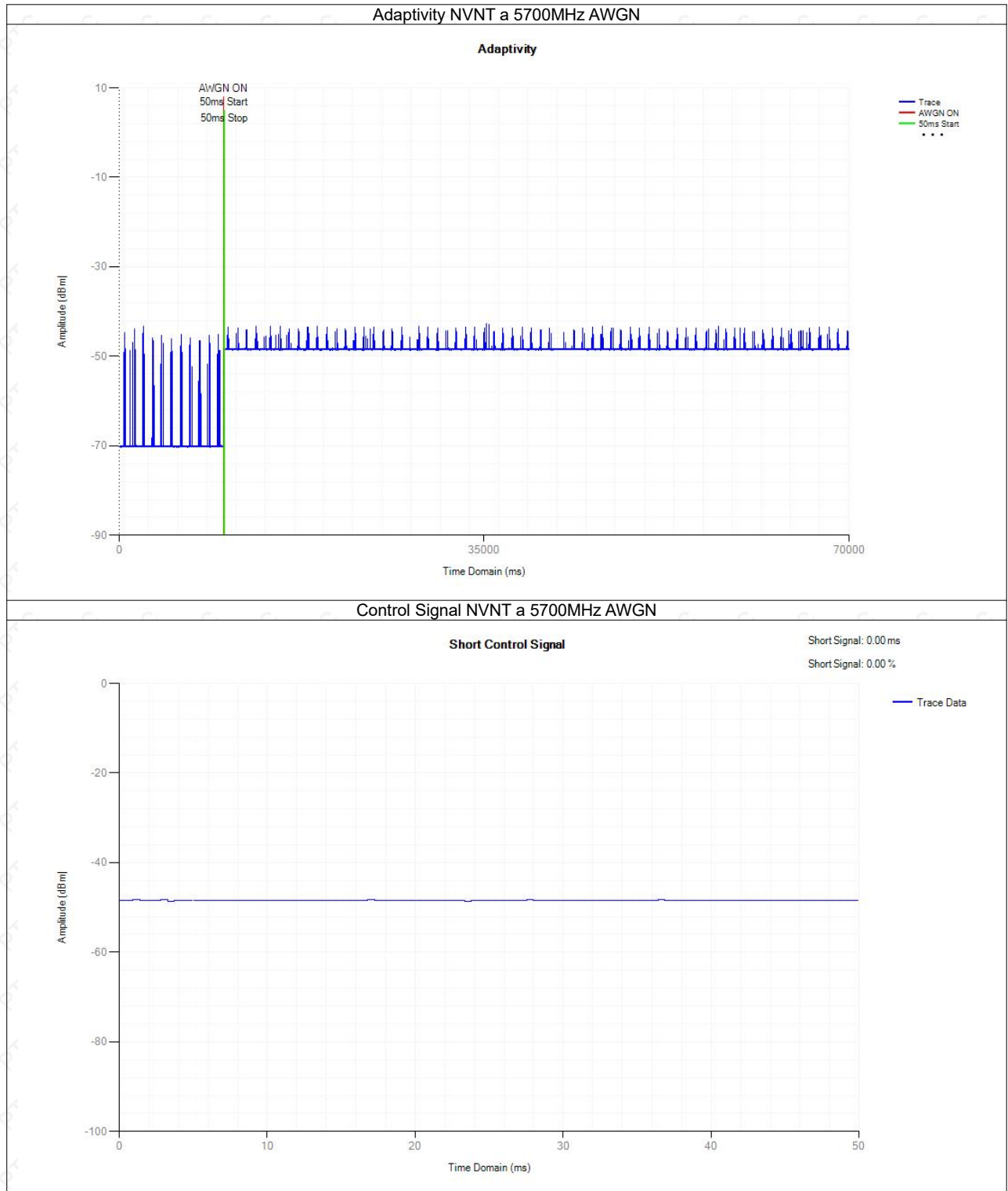


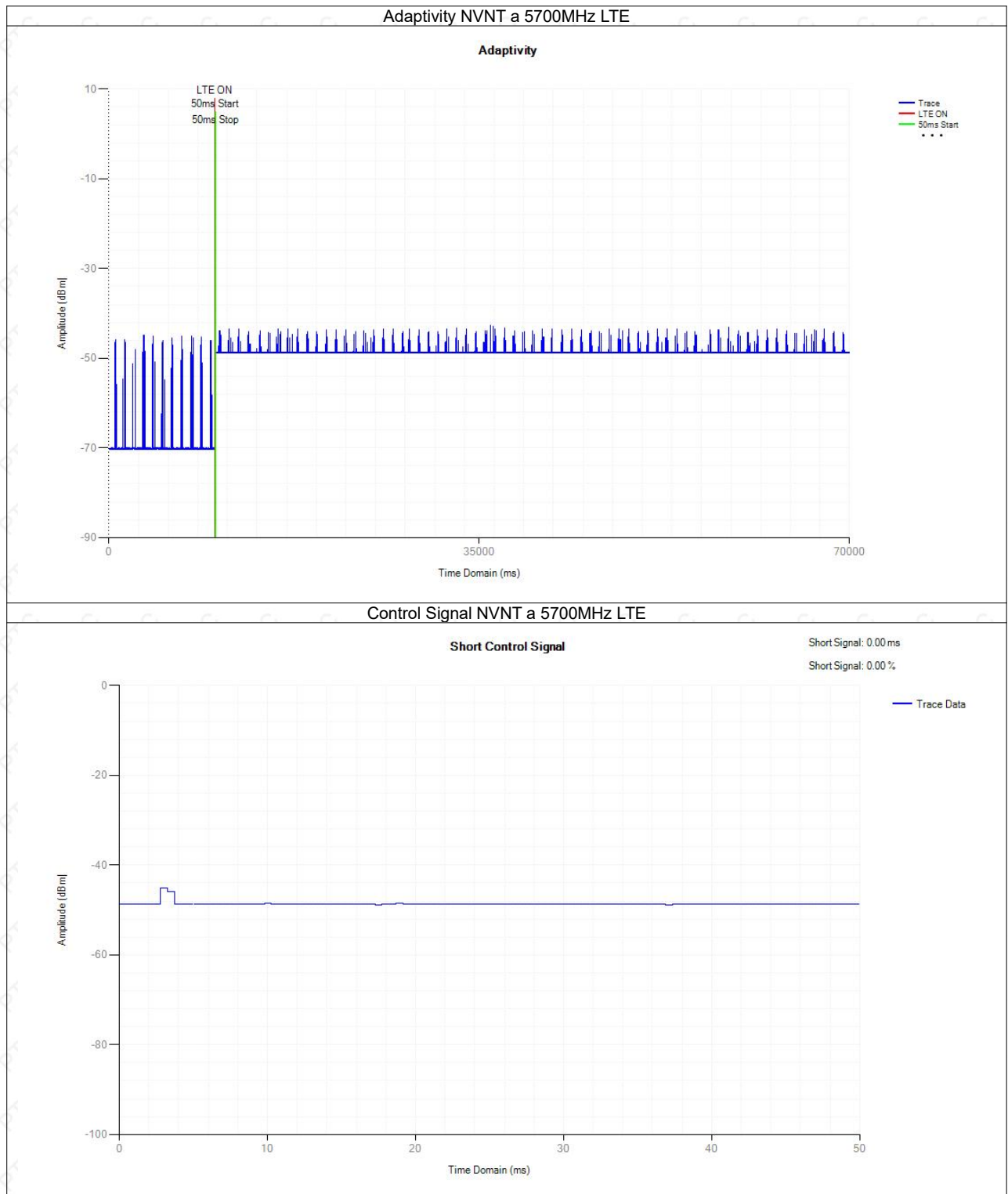


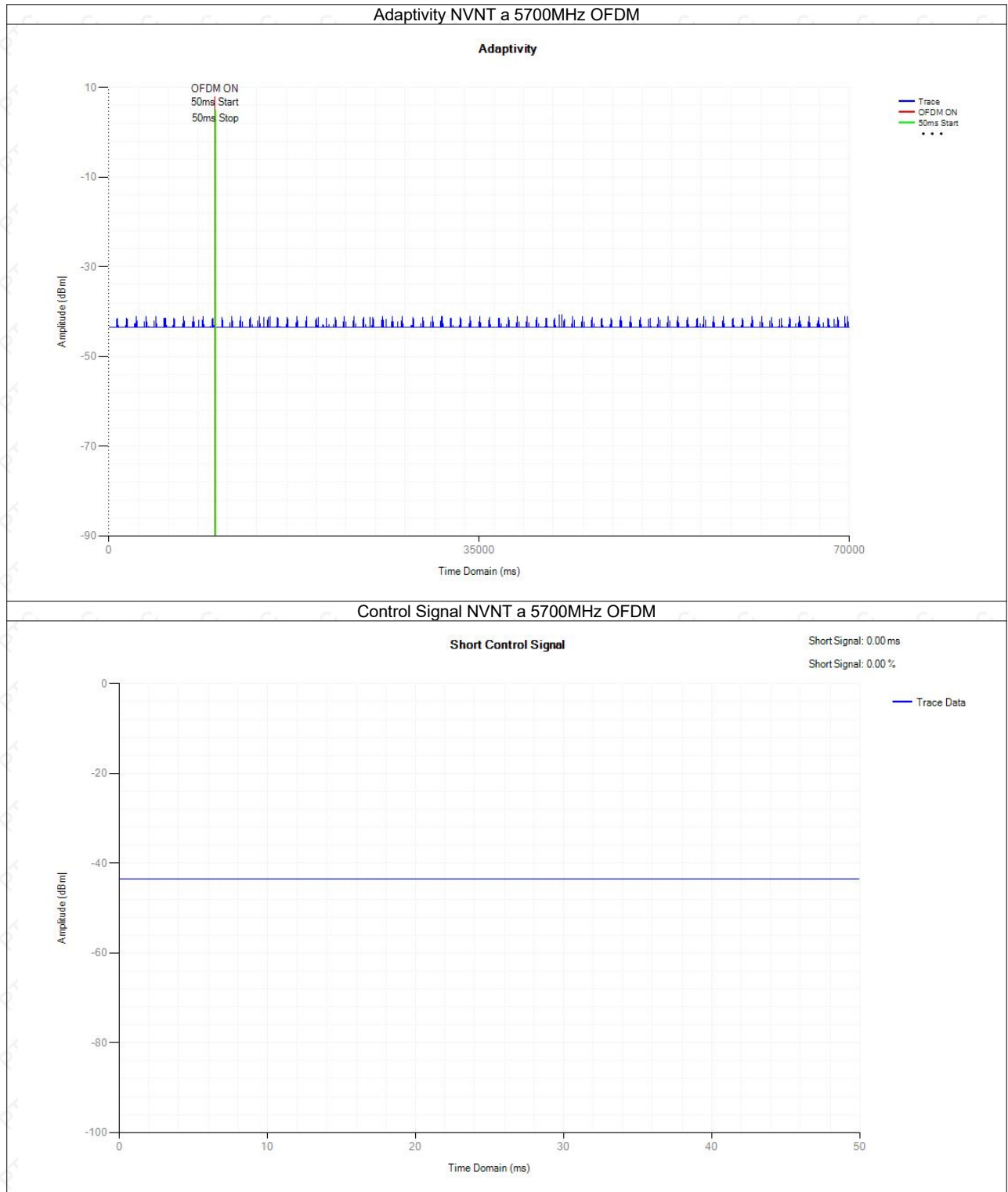






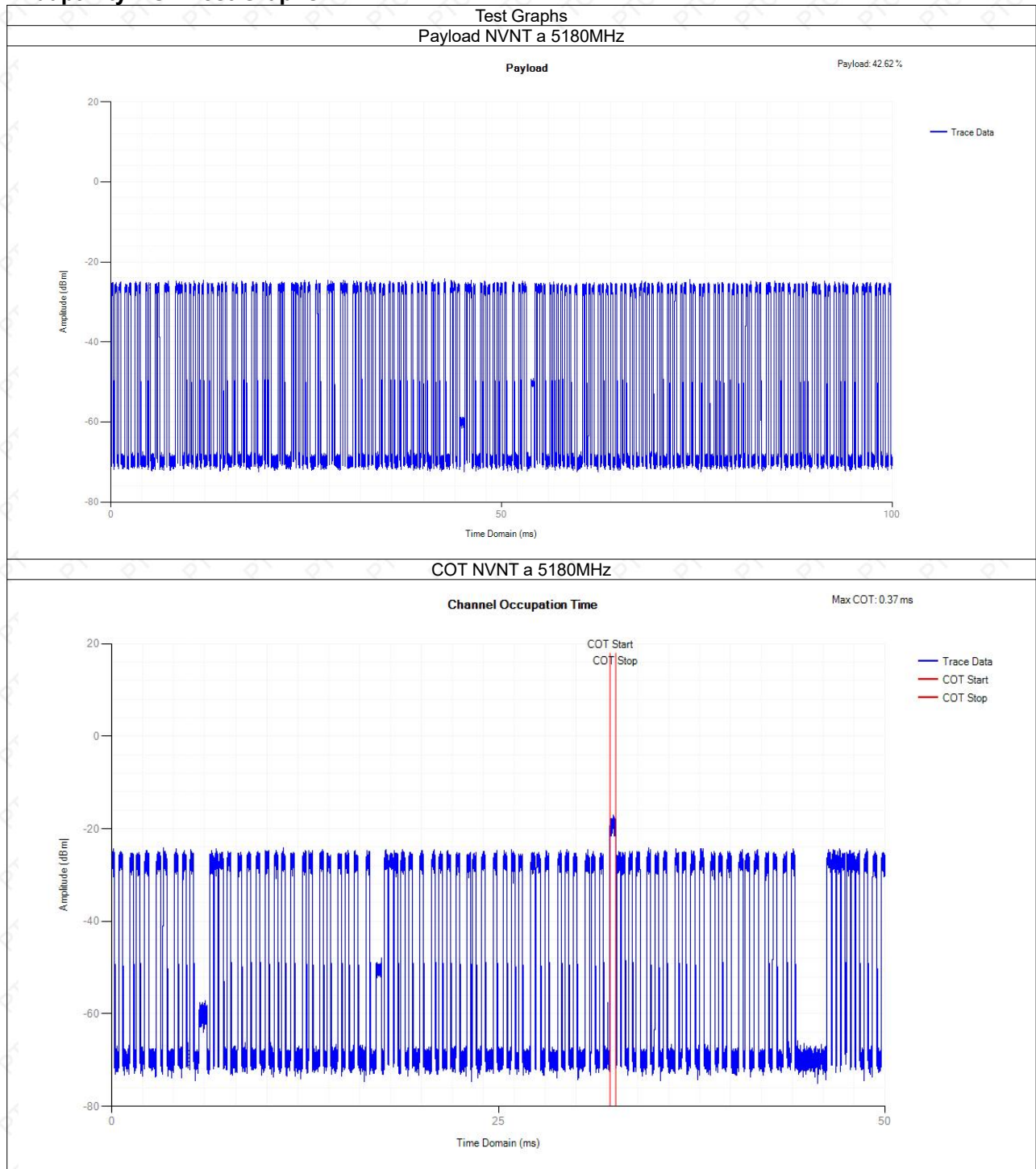


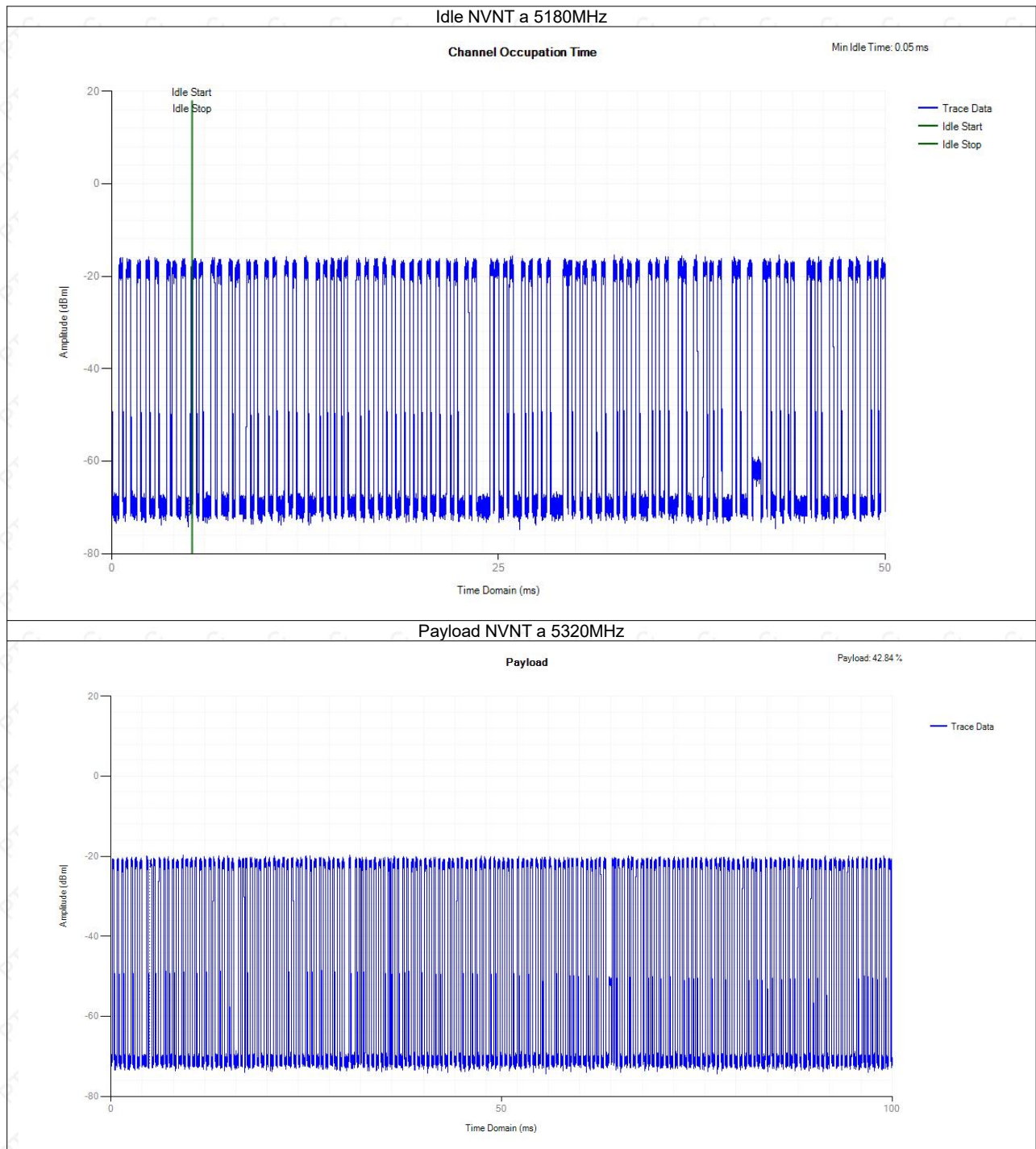


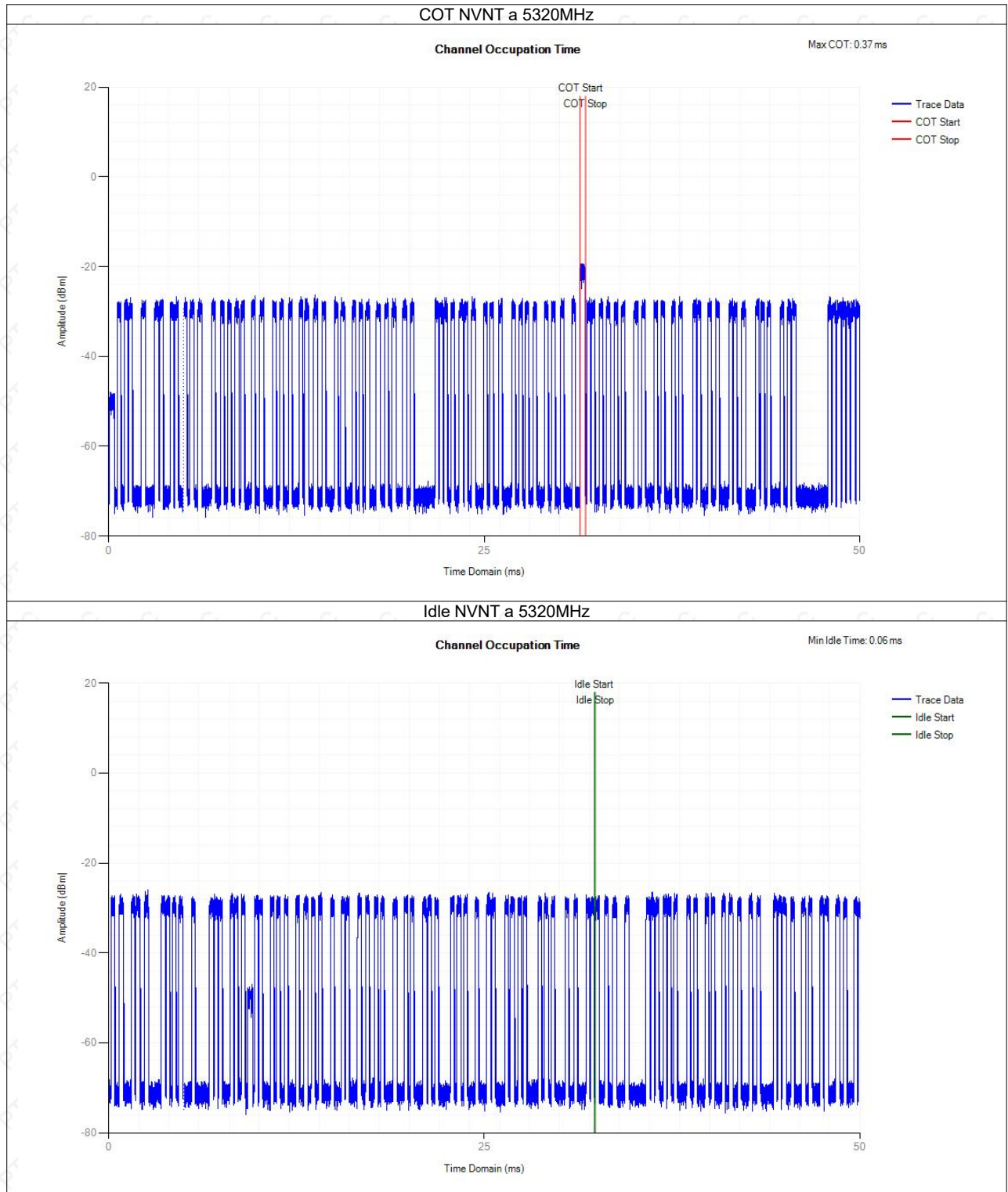


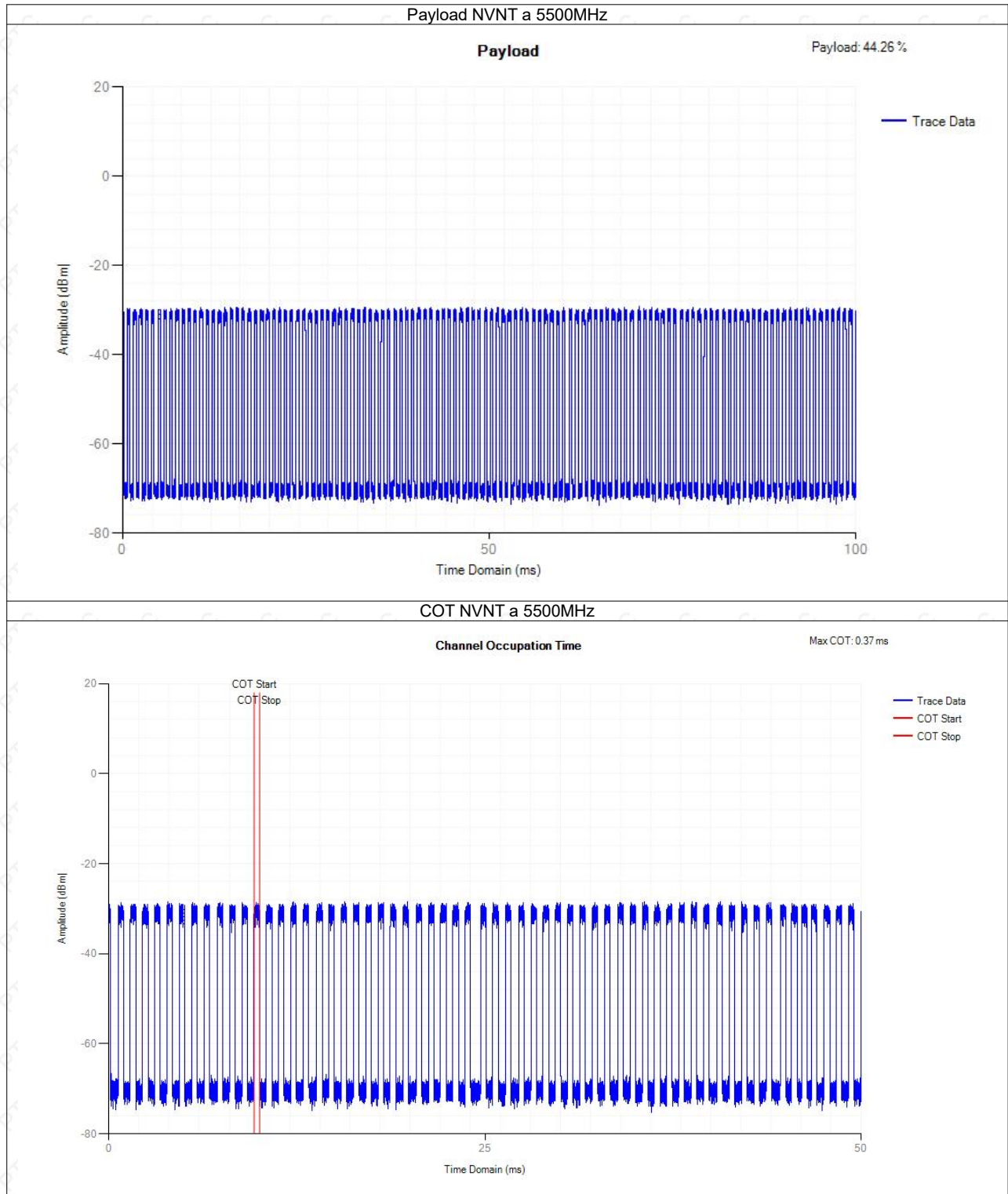


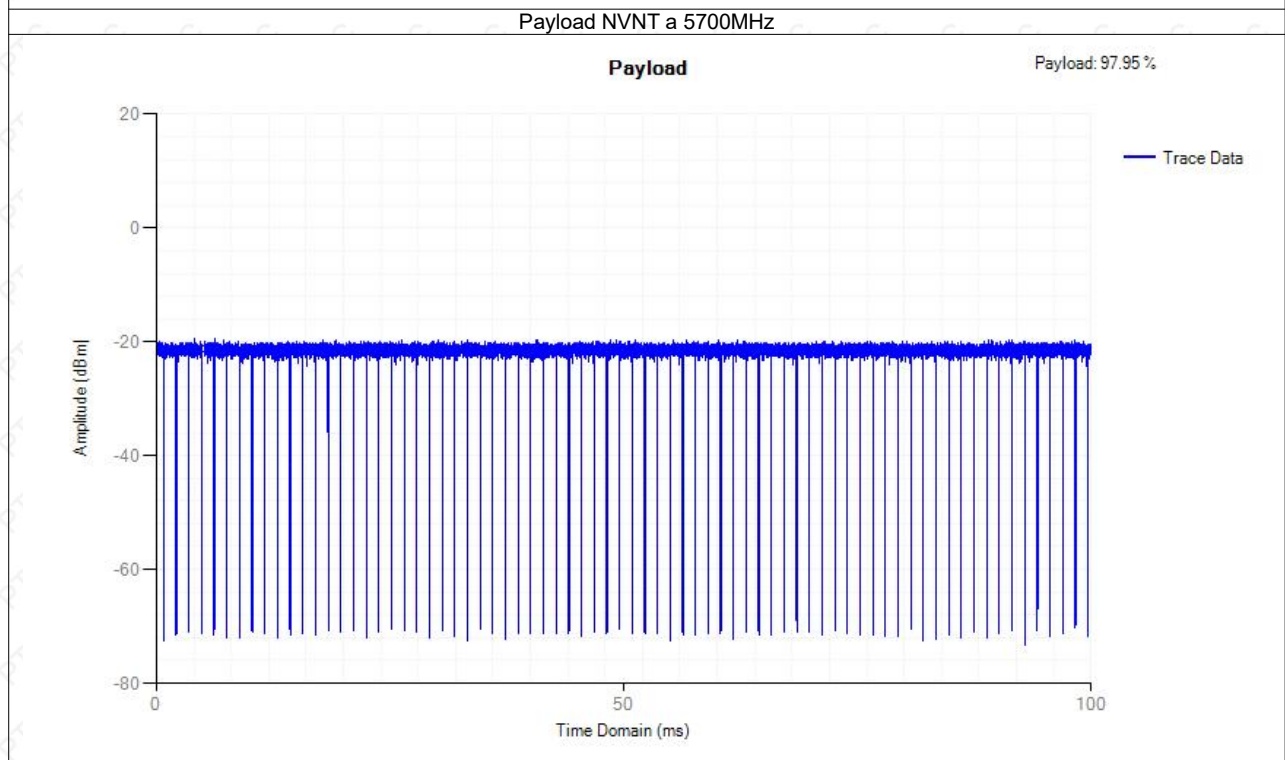
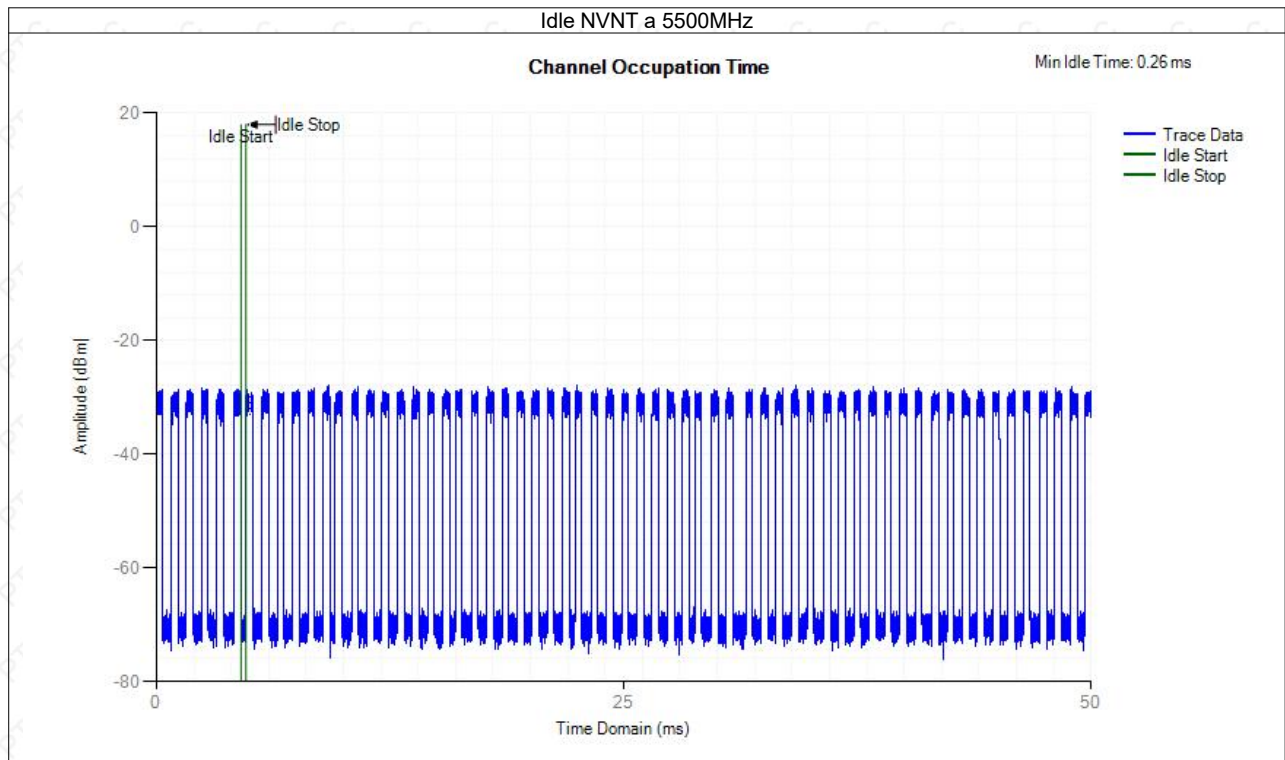
Adaptivity COT Test Graphs:

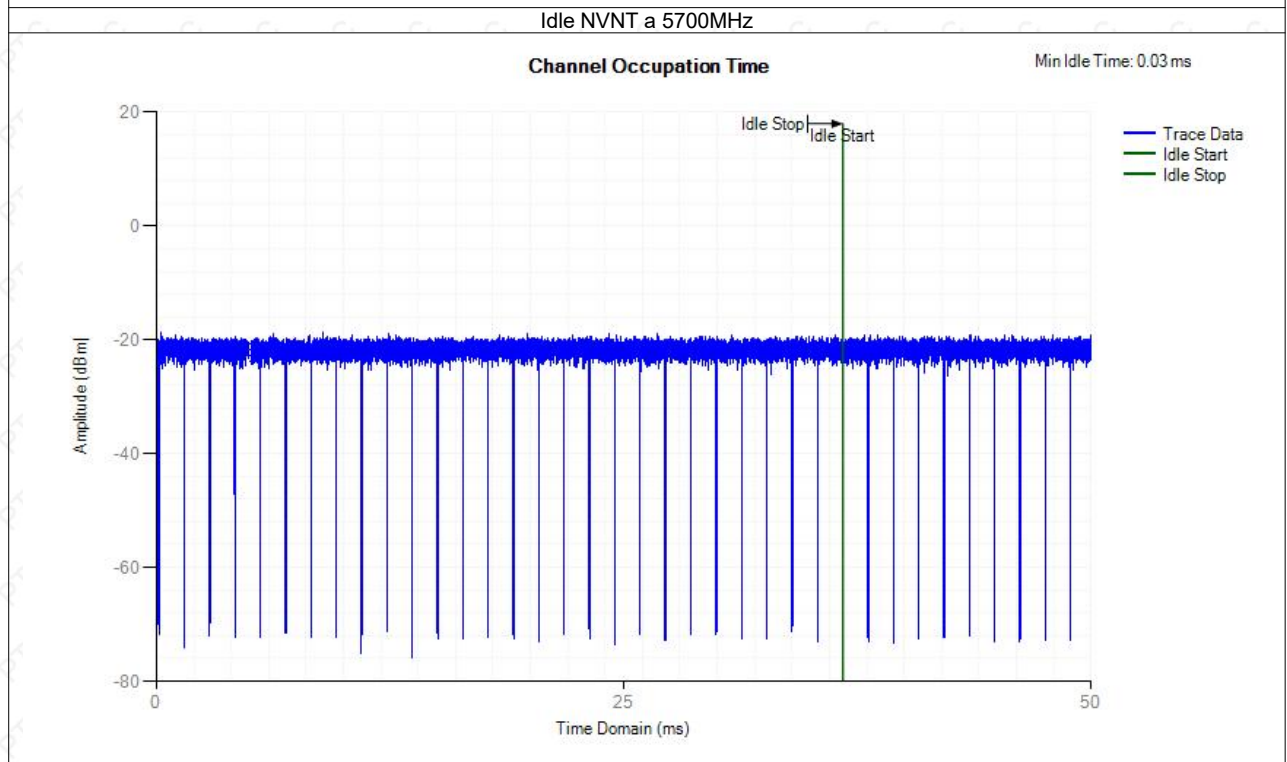
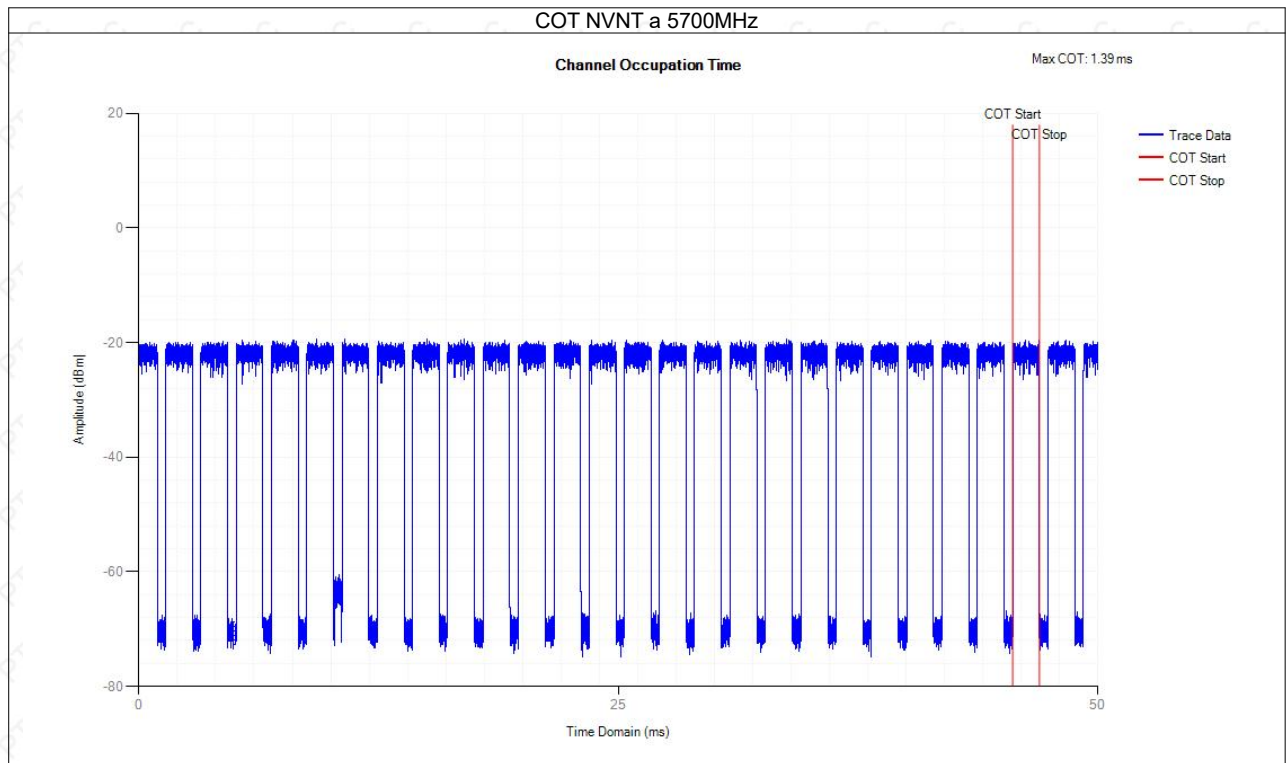






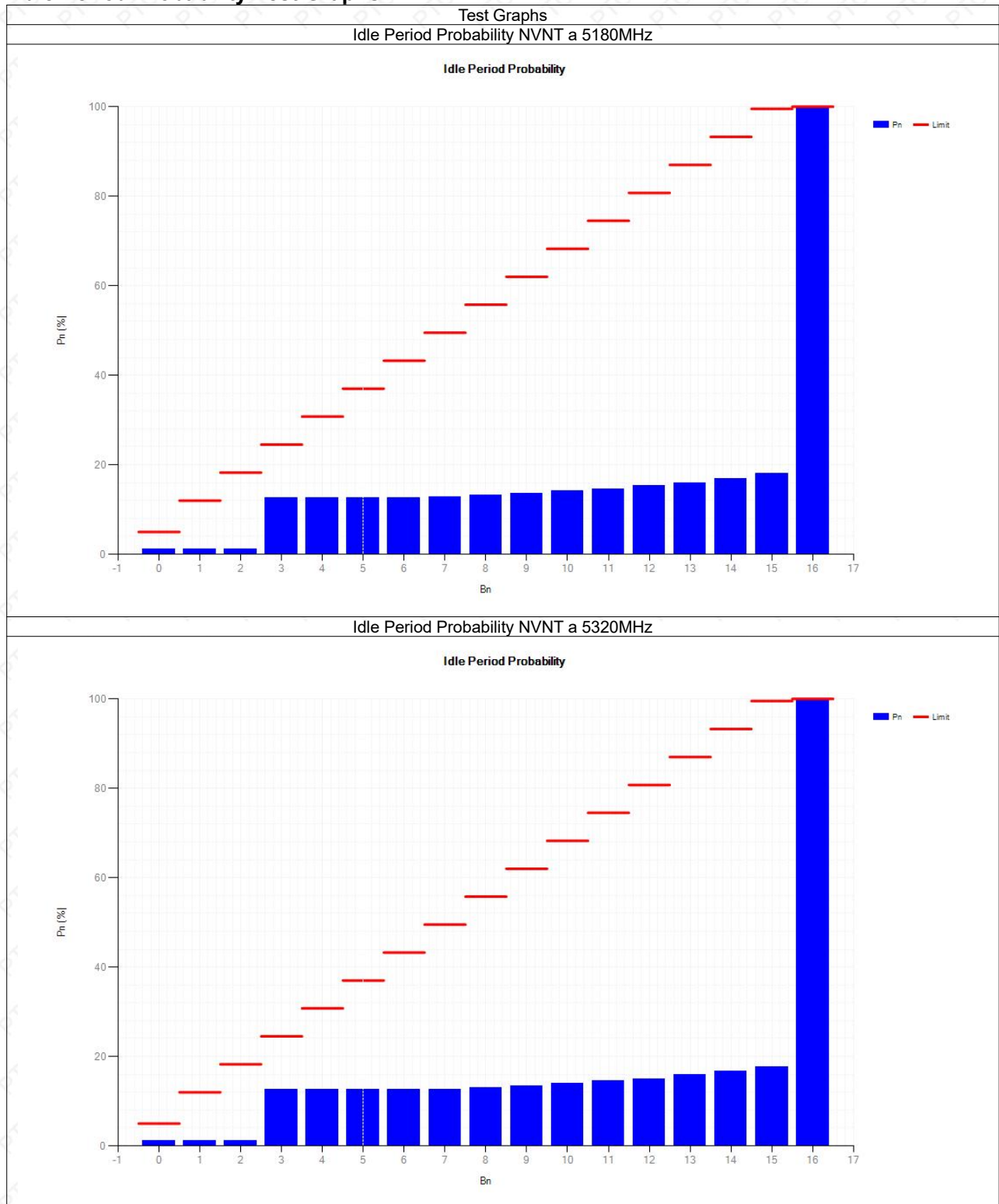


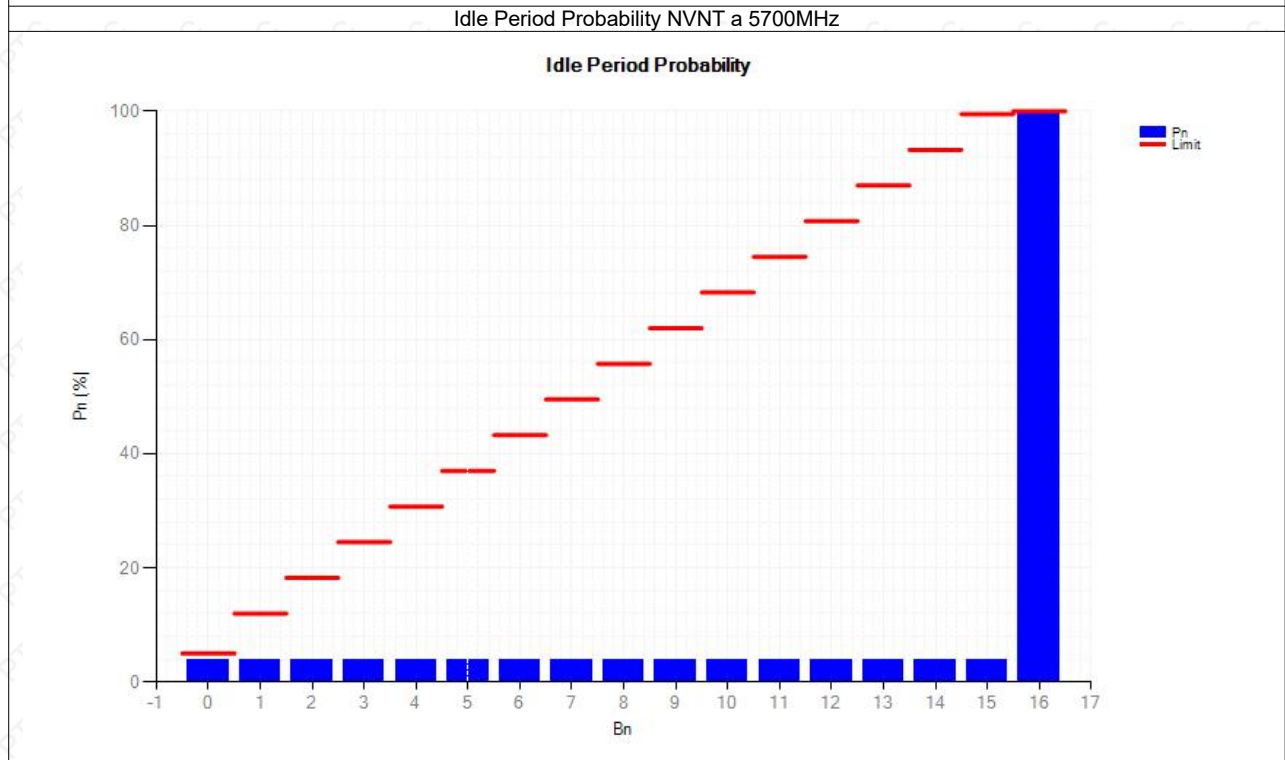
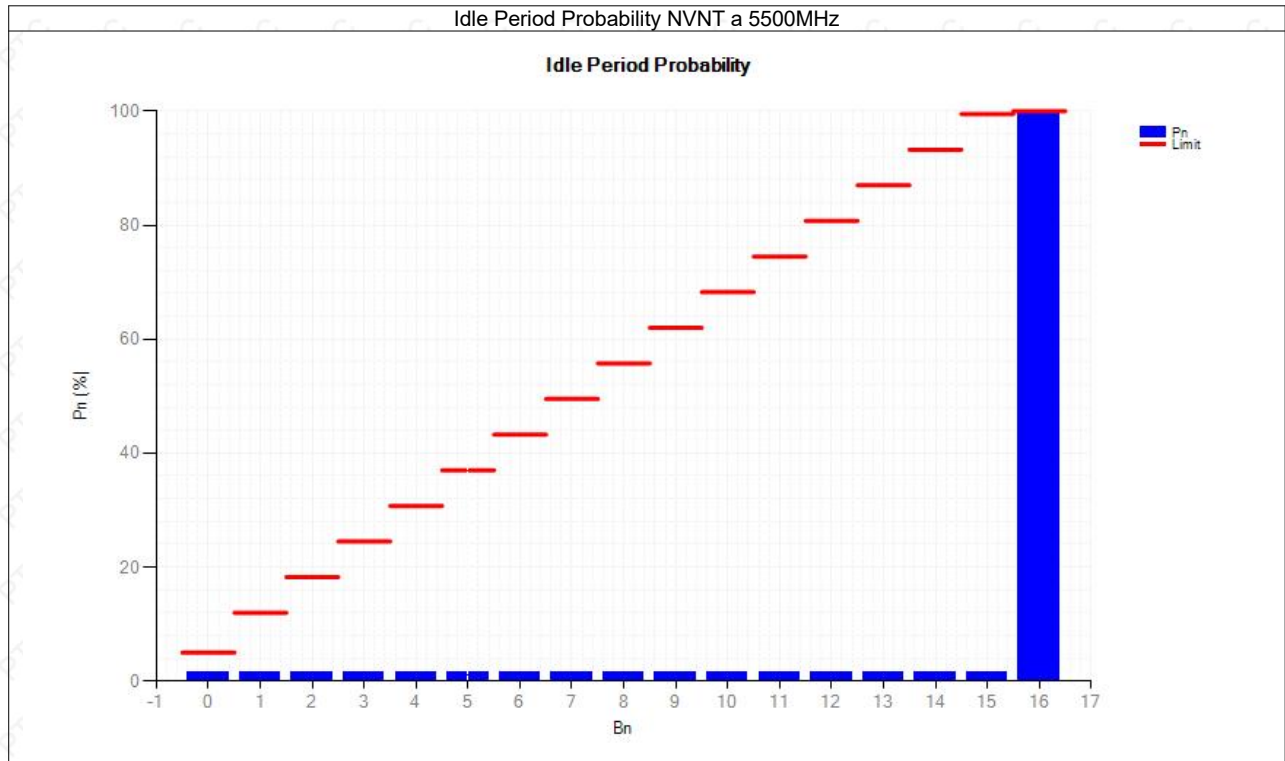






Idle Period Probability Test Graphs:





12 RECEIVER BLOCKING

12.1. Applicable Standard

ETSI EN 301 893 clause 4.2.8

12.2. Conformance Limit

The minimum performance criterion shall be a PER of less than or equal to 10 %. The manufacturer may declare alternative performance criteria as long as that is appropriate for the intended use of the equipment (see clause 5.4.1,item t)).

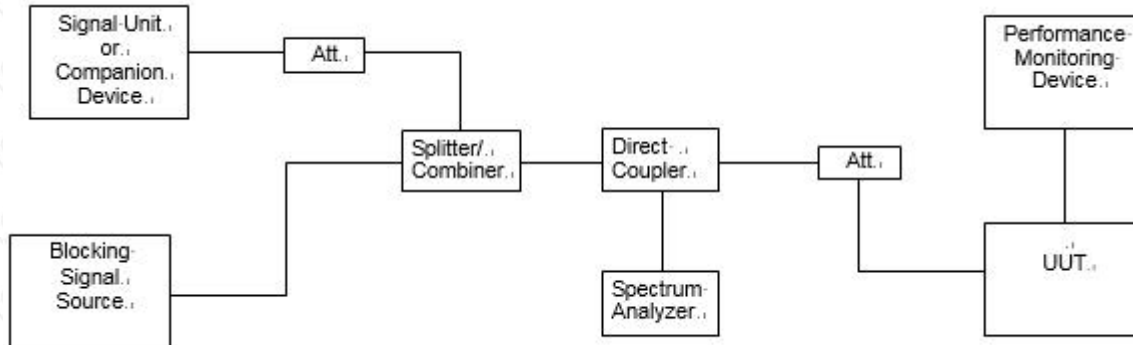
■ General

While maintaining the minimum performance criteria as defined in clause 4.2.8.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined in table 9.

Table 9: Receiver Blocking parameters

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)		Type of blocking signal
		Master or Slave signal with radar detection (see table D.2, note 2)	Slave without radar detection (see table D.2, note 2)	
Pmin + 6 dB	5100	-57	-59	CW
Pmin + 6 dB	4900 5000 5975	-47	-53	CW
NOTE 1: Pmin is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined clause 4.2.8.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the same levels should be used at the antenna connector irrespective of antenna gain.				

12.3. Test Setup



Test Procedure

Please refer to ETSI EN 301 893 (V2.1.1) clause 5.4.10 for the test conditions.

12.4. Test Results

All of the modes were tested the data of the worst mode are recorded in the following pages.
Worst case(IEEE 802.11a)

Operation Mode:	☒ IEEE 802.11a			
Test Frequency:	☒ 5180MHz			
Device type	☐ Master or Slave signal with radar detection ☒ Slave without radar detection			
Temperature:	24°C		Humidity:	53 % RH
Blocking signal frequency (MHz)	Blocking signal power (dBm)	Type of blocking signal	PER(%)	Result
5100	-59	CW	0.00	Pass
4900	-53	CW	0.00	Pass
5000	-53	CW	0.00	Pass
5975	-53	CW	0.00	Pass

13 DYNAMIC FREQUENCY SELECTION

13.1. Applicable Standard

ETSI EN 301 893 clause 4.2.6

13.2. Conformance Limit

Parameter	Value
Channel Availability Check Time	60 s (see note 1)
Minimum Off-Channel CAC Time	6 minutes (see note 2)
Maximum Off-Channel CAC Time	4 hours (see note 2)
Channel Move Time	10 s
Channel Closing Transmission Time	1 s
Non-Occupancy Period	30 minutes
NOTE 1: For channels whose nominal bandwidth falls completely or partly within the band 5 600 MHz to 5 650 MHz, the <i>Channel Availability Check Time</i> shall be 10 minutes.	
NOTE 2: For channels whose nominal bandwidth falls completely or partly within the band 5 600 MHz to 5 650 MHz, the <i>Off-Channel CAC Time</i> shall be within the range 1 hour to 24 hours.	

Applicability of DFS requirements

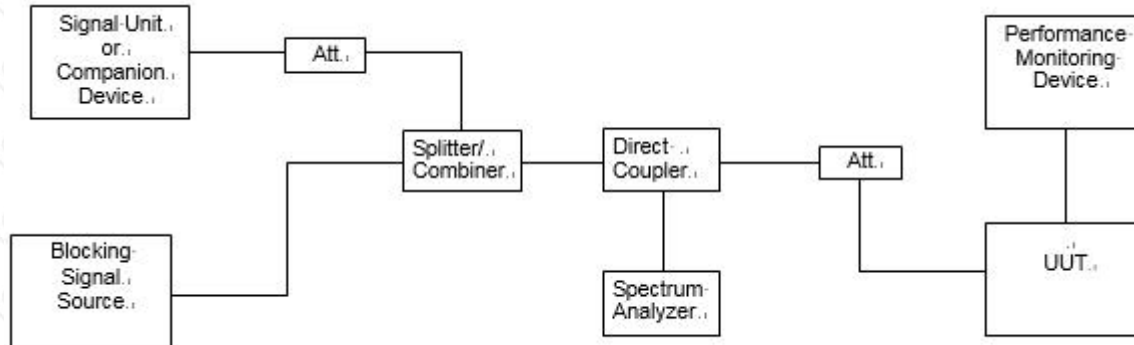
Requirement	Operational Mode		
	Master	Slave (without radar detection)	Slave (with radar detection)
Channel Availability Check	✓	Not required	✓ (see note 2)
Off-Channel CAC (see note 1)	✓	Not required	✓ (see note 2)
In-Service Monitoring	✓	Not required	✓
Channel Shutdown	✓	✓	✓
Non-Occupancy Period	✓	Not required	✓
Uniform Spreading	✓	Not required	Not required

NOTE 1: Where implemented by the manufacturer.

NOTE 2: A slave with radar detection is not required to perform a CAC or Off-Channel CAC at initial use of the channel but only after the slave has detected a radar signal on the Operating Channel by In-Service Monitoring.

The radar detection requirements specified in EN 301 893 clauses 4.7.2.1 to 4.7.2.3 assume that the centre frequencies of the radar signals fall within the central 80 % of the Occupied Channel Bandwidth of the RLAN channel.

13.3. Test Setup



Test Procedure

Please refer to ETSI EN 301 893 (V2.1.1) clause 5.4.8 for the test conditions.

DFS Detection Threshold

e.i.r.p. Spectral Density (dBm/MHz)	Value (see note 1 and note 2)
10	-62 dBm
NOTE 1: This is the level at the input of the receiver of an RLAN device with a maximum e.i.r.p. density of 10 dBm/MHz and assuming a 0 dBi receive antenna. For devices employing different e.i.r.p. spectral density and/or a different receive antenna gain G (dBi) the Radar Detection Threshold Level at the receiver input follows the following relationship: $\text{DFS Detection Threshold (dBm)} = -62 + 10 \cdot \text{e.i.r.p. Spectral Density (dBm/MHz)} + G \text{ (dBi)}$ however the Radar Detection Threshold Level shall not be less than -64 dBm assuming a 0 dBi receive antenna gain.	
NOTE 2: Slave devices with a maximum e.i.r.p. of less than 23 dBm do not have to implement radar detection unless these devices are used in fixed outdoor point to point or fixed outdoor point to multipoint applications (see clause 4.2.6.1.3).	

13.4. Test Results

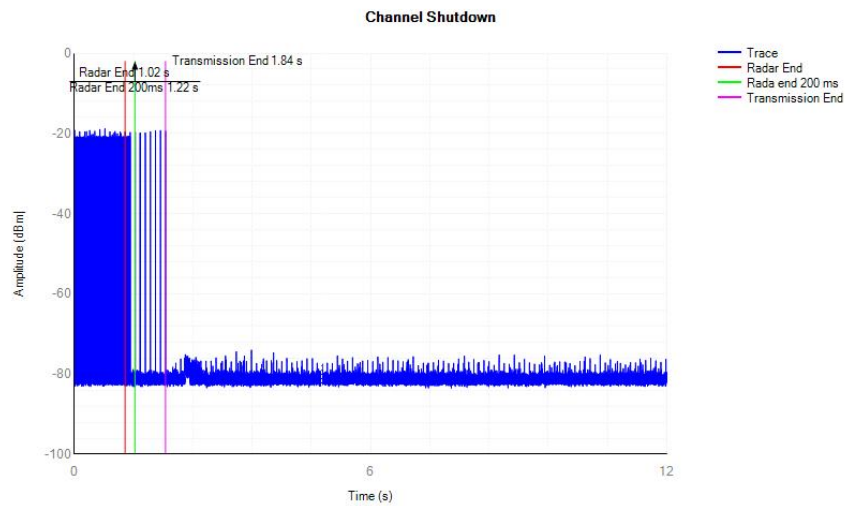


Worst case(ANT1 IEEE 802.11a):

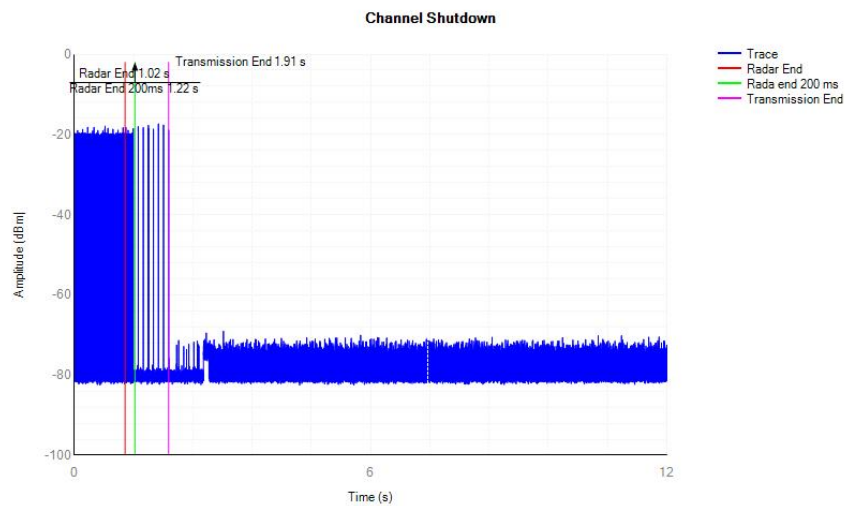
Mode	Frequency (MHz)	Channel Move Time (s)	Limit Channel Move Time (s)	Close Transmission Time (s)	Limit Close Transmission Time (s)	Verdict
a	5320	0.8205	10	0.0248	1	Pass
a	5500	0.8817	10	0.0272	1	Pass

Test Graphs:

IEEE 802.11a 5320



IEEE 802.11a 5500



14 TEST SETUP PHOTOGRAPHS

Photo of Radiation Spurious Emission Below 1 GHz

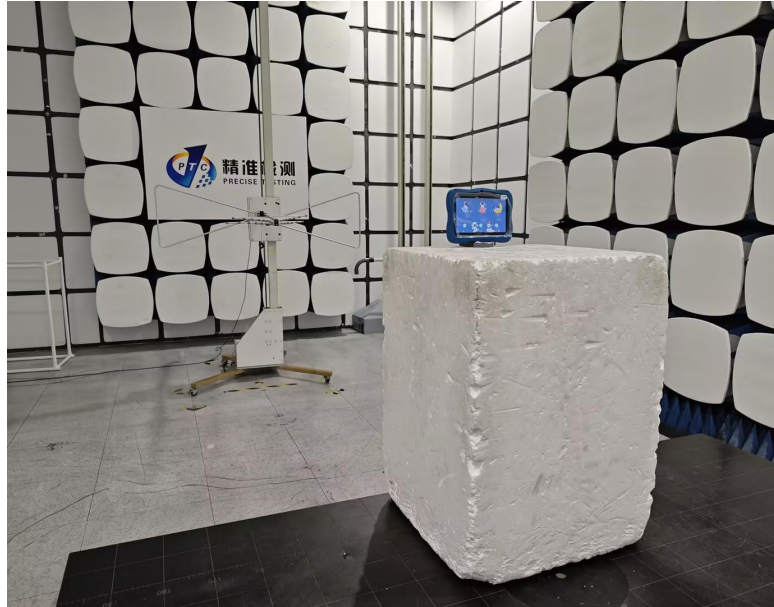


Photo of Radiation Spurious Emission Above 1 GHz



*****THE END REPORT*****