FCC TEST REPORT
FCC ID:2AWIZHL4BX3VF

Report Number. ..... :	**ZKT-240409L3555**
Date of Test	March 11, 2024 to April 22, 2024
Date of issue ..... :	April 22, 2024
Total number of pages	64
Test Result ..... :	PASS
Testing Laboratory. ..... :	**Shenzhen ZKT Technology Co., Ltd.**
Address ..... :	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name ..... :	**Fibrain Sp. z o.o.**
Address ..... :	Poland, Zaczernie 190F, 36-062
Manufacturer's name ..... :	**Fibrain Sp. z o.o.**
Address ..... :	Poland, Zaczernie 190F, 36-062
Test specification:	
Standard ..... :	FCC CFR Title 47 Part 15 Subpart E Section 15.407 ANSI C63.10:2013 KDB 905462 D02v02, KDB 905462 D04v01
Test procedure ..... :	/
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	/
Test Report Form(s) Originator .... :	**Shenzhen ZKT Technology Co., Ltd.**
Master TRF ..... :	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name ..... :	**HGU**
Trademark ..... :	HALNY
Model/Type reference ..... :	HL-4BX3V-F, HLE-4BX3V-F
Ratings ..... :	Input: DC12V ⎓ 1.5A

Testing procedure and testing location:

Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address .....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature) .....:	Jim Liu
Reviewer (name + signature) .....:	Jackson Fang
Approved (name + signature).....:	Lake Xie

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1. VERSION

Report No.	Issue Date	Description	Approved
ZKT-240409L3555	April 22, 2024	Original	Lake Xie

2. TEST SUMMARY

The Product has been tested according to the following specifications:

Test Item	Test Requirement	Test method	Result
DFS Detection Threshold	47 CFR Part 15 Subpart E Section 15.407 (h)(2)	KDB 905462 D02	PASS
Channel Availability Check Time	47 CFR Part 15 Subpart E Section 15.407 (h)(2)(ii)	KDB 905462 D02	PASS
U-NII Detection Bandwidth	47 CFR Part 15 Subpart E Section 15.407 (h)(2)	KDB 905462 D02	PASS
In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time	47 CFR Part 15 Subpart E Section 15.407 (h)(2)	KDB 905462 D02	PASS
Channel Closing Transmission Time	47 CFR Part 15 Subpart E Section 15.407 (h)(2)(iii)	KDB 905462 D02	PASS
Channel Move Time	47 CFR Part 15 Subpart E Section 15.407 (h)(2)(iii)	KDB 905462 D02	PASS
Non-Occupancy Period	47 CFR Part 15 Subpart E Section 15.407 (h)(2)(iv)	KDB 905462 D02	PASS

Remark:
The tested sample and the sample information are provided by the client.
Tx: In this whole report Tx (or tx) means Transmitter.
Rx: In this whole report Rx (or rx) means Receiver.
RF: In this whole report RF means Radiated Frequency.
CH: In this whole report CH means channel.
Volt: In this whole report Volt means Voltage.
Temp: In this whole report Temp means Temperature.
Humid: In this whole report Humid means humidity.
Press: In this whole report Press means Pressure.
N/A: In this whole report not application.

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	Occupancy bandwidth	U=±54.3Hz
2	Adjacent channel power	U=±1.3dB
3	Conducted Adjacent channel power	U=±1.38dB
4	Conducted output power Above 1G	U=±1.0dB
5	Conducted output power below 1G	U=±0.9dB
6	Power Spectral Density, Conduction	U=±1.0dB
7	Conduction spurious emissions	U=±2.8dB
8	Out of band emission	U=±54Hz
9	3m camber Radiated spurious emission(30MHz-1GHz)	U=±4.3dB
10	3m chamber Radiated spurious emission(1GHz-18GHz)	U=±4.5dB
11	humidity uncertainty	U=±5.3%
12	Temperature uncertainty	U=±0.59℃
13	Supply volyages	U=±3%
14	Time	U=±5%

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	HL-4BX3V-F, HLE-4BX3V-F
Sample No.:	Q240301024-1
Model Description:	HGU
Wi-Fi Specification:	802.11a/n/ac/ax
Operating Mode:	Master
Hardware Version:	94V-0
Software Version:	SecureCRT
Operation Frequency:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11ac/ax(80M): 5150MHz ~5250MHz/ 1 channel IEEE 802.11a/n/ac(20M): 5250MHz ~5350 MHz/ 4 channel IEEE802.11n/ac(40M): 5250MHz ~5350 MHz/ 2 channel IEEE802.11ac/ax(80M): 5250MHz ~5350 MHz/ 1 channel IEEE 802.11a/n/ac(20M): 5470MHz ~5725 MHz/ 11 channel IEEE802.11n/ac(40M): 5470MHz ~5725 MHz/ 5 channel IEEE802.11ac/ax(80M): 5470MHz ~5725 MHz/ 3 channel IEEE 802.11a/n/ac(20M): 5725MHz ~5850MHz/ 5 channel IEEE 802.11n/ac(40M): 5725MHz ~5850MHz/ 2 channel IEEE 802.11ac/ax(80M): 5725MHz ~5850MHz/ 1 channel
Type of Modulation:	WiFi (5G):OFDM/OFDMA, DSSS, OFDM, CCK
Antenna Gain:	ANT1: 5.2G:4.34dBi ; 5.3G:4.52dBi ; 5.6G:5.19dBi ; 5.8G:3.62dBi ANT2: 5.2G:3.37dBi ; 5.3G:3.78dBi ; 5.6G:3.67dBi ; 5.8G:4.11dBi ANT3: 5.2G:4.20dBi ; 5.3G:3.21dBi ; 5.6G:3.97dBi ; 5.8G:4.45dBi MIMO:5.2G:3.99dBi ; 5.3G:3.87dBi; 5.6G:4.33dBi ; 5.8G:4.07dBi Note: According to KDB662911 D01 Multiple Transmitter Output v02r01, the MIMO antenna is increased to Direct gain=10 log $[(10^{G1/10}+10^{G2/10}+...+10^{GN/10})/N_{ANT}]$ dBi= 3.99dBi/3.78dBi/4.33dBi/4.07dBi.
Ratings:	Input: 12V ⎓ 1.5A

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Power Cord
1.	PHONE	HUAWEI	P40 PRO	N/A	N/A

Notes: 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 DFS Band Carrier Frequencies Operation

For 802.11a/n/ac/ax(20M-BW)

Operation in the 5250MHz ~5350 MHz band			
Channel	Frequency	Channel	Frequency
52	5260MHz	60	5300MHz
56	5280MHz	64	5320MHz
Operation in the 5470MHz ~5725 MHz band			
Channel	Frequency	Channel	Frequency
100	5500MHz	124	5620 MHz
104	5520MHz	128	5640 MHz
108	5540MHz	132	5660 MHz
112	5560MHz	136	5680MHz
116	5580MHz	140	5700MHz
120	5600 MHz		

For 802.11n/ac/ax(40M-BW)

Operation in the 5250MHz ~5350 MHz band			
Channel	Frequency	Channel	Frequency
54	5270MHz	62	5310MHz
Operation in the 5470MHz ~5725 MHz band			
Channel	Frequency	Channel	Frequency
102	5510MHz	126	5630MHz
110	5550MHz	134	5670MHz
118	5590MHz		

For 802.11ac/ax(80M)

Operation in the 5250MHz ~5350 MHz band			
Channel	Frequency	Channel	Frequency
58	5290MHz	NA	NA
Operation in the 5470MHz ~5725 MHz band			
Channel	Frequency	Channel	Frequency
106	5530MHz	122	5610MHz

4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

802.11a/n/ac/ax(20M)	5250MHz ~5350 MHz	Channel 52	Channel 56	Channel 64
		5260MHz	5280MHz	5320MHz
802.11n/ac/ax(40M)	5250MHz ~5350 MHz	Channel54	N/A	Channel62
		5270MHz	N/A	5310MHz
802.11ac/ax(80M)	5250MHz ~5350 MHz	N/A	Channel 58	N/A
		N/A	5290MHz	N/A
802.11a/n/ac/ax(20M)	5470MHz ~5725 MHz	Channel 100	Channel116	Channel140
		5500MHz	5580MHz	5700MHz
802.11n/ac/ax(40M)	5470MHz ~5725 MHz	Channel 102	Channel118	Channel 134
		5510MHz	5590MHz	5670MHz
802.11ac/ax(80M)	5470MHz ~5725 MHz	Channel 106	N/A	Channel 122
		5530MHz	N/A	5610MHz

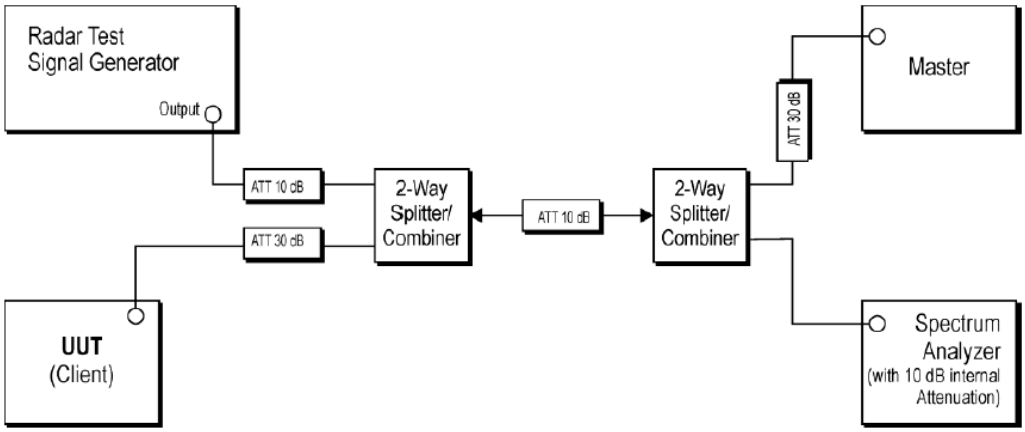
For the 5250-5350MHz, 5470-5725 MHz bands, the Master device provides, on aggregate, uniform loading

of the spectrum across all devices by selecting an operating channel among the available channels using a random algorithm.

The test report only records the worst mode and channel.

802.11a(20M)	5250MHz ~5350 MHz	Channel 52
		5260MHz
802.11n(40M)	5250MHz ~5350 MHz	Channel54
		5270MHz
802.11ac(80M)	5250MHz ~5350 MHz	Channel 58
		5290MHz

4.6 Test setup



4.7 Conduted Output Power and EIRP:

Modulation	Frequency	Conducted Power(dBm)			Antenna Gain (dBi)			Total Maximum EIRP Power
	(MHz)	ANT1	ANT2	ANT3	ANT1	ANT2	ANT3	(mW)
802.11a	5260.00	13.65	16.82	17.23	4.52	3.78	3.21	114.815
802.11a	5300.00	13.59	17.22	17.35	4.52	3.78	3.21	125.893
802.11a	5320.00	13.51	17.04	17.17	4.52	3.78	3.21	120.781
802.11n(HT20)	5260.00	10.09	13.38	13.76	4.52	3.78	3.21	130.68
802.11n(HT20)	5300.00	10.02	13.75	13.92	4.52	3.78	3.21	136.71
802.11n(HT20)	5320.00	10.03	13.54	13.68	4.52	3.78	3.21	131.33
802.11ac(VHT20)	5260.00	9.18	12.34	12.72	4.52	3.78	3.21	103.54
802.11ac(VHT20)	5300.00	9.03	12.82	12.99	4.52	3.78	3.21	110.04
802.11ac(VHT20)	5320.00	9.07	12.52	12.74	4.52	3.78	3.21	104.87
802.11ax(HE20)	5260.00	10.30	13.54	13.83	4.52	3.78	3.21	134.87
802.11ax(HE20)	5300.00	10.24	13.88	14.21	4.52	3.78	3.21	143.47
802.11ax(HE20)	5320.00	10.20	13.70	13.95	4.52	3.78	3.21	137.62
802.11n(HT40)	5270.00	10.54	13.81	14.05	4.52	3.78	3.21	142.69
802.11n(HT40)	5310.00	10.45	14.10	14.22	4.52	3.78	3.21	148.12
802.11ac(VHT40)	5270.00	9.54	13.10	13.20	4.52	3.78	3.21	117.97
802.11ac(VHT40)	5310.00	9.31	13.19	13.17	4.52	3.78	3.21	117.38
802.11ax(HE40)	5270.00	10.94	13.18	13.42	4.52	3.78	3.21	130.84
802.11ax(HE40)	5310.00	10.81	14.33	14.52	4.52	3.78	3.21	158.13
802.11ac(VHT80)	5290.00	8.71	12.53	12.70	4.52	3.78	3.21	102.79
802.11ax(HE80)	5290.00	8.93	10.63	10.89	4.52	3.78	3.21	75.44

Modulation	Frequency	Conducted Power(dBm)			Antenna Gain (dBi)			Total Maximum EIRP Power
	(MHz)	ANT1	ANT2	ANT3	ANT1	ANT2	ANT3	(mW)
802.11a	5500.00	12.80	15.61	16.37	5.19	3.67	3.97	108.143
802.11a	5600.00	12.57	15.00	15.96	5.19	3.67	3.97	98.401
802.11a	5700.00	13.03	15.59	16.52	5.19	3.67	3.97	111.944
802.11n(HT20)	5500.00	13.26	16.03	16.82	5.19	3.67	3.97	283.26
802.11n(HT20)	5600.00	12.46	14.94	15.88	5.19	3.67	3.97	227.43
802.11n(HT20)	5700.00	12.85	15.35	16.31	5.19	3.67	3.97	250.14
802.11ac(VHT20)	5500.00	12.64	15.52	16.23	5.19	3.67	3.97	248.37
802.11ac(VHT20)	5600.00	12.93	15.40	16.27	5.19	3.67	3.97	251.27
802.11ac(VHT20)	5700.00	13.26	15.87	16.86	5.19	3.67	3.97	280.99
802.11ax(HE20)	5500.00	12.66	15.91	16.56	5.19	3.67	3.97	264.72
802.11ax(HE20)	5600.00	13.17	15.71	16.76	5.19	3.67	3.97	273.55
802.11ax(HE20)	5700.00	13.25	15.72	16.63	5.19	3.67	3.97	271.53
802.11n(HT40)	5510.00	13.06	15.64	16.46	5.19	3.67	3.97	262.55
802.11n(HT40)	5670.00	12.98	15.94	16.24	5.19	3.67	3.97	261.98
802.11n(HT40)	5590.00	12.48	15.00	15.86	5.19	3.67	3.97	228.26
802.11ac(VHT40)	5510.00	13.23	15.92	16.81	5.19	3.67	3.97	280.17
802.11ac(VHT40)	5670.00	12.88	15.81	16.19	5.19	3.67	3.97	256.59
802.11ac(VHT40)	5590.00	12.69	15.35	16.28	5.19	3.67	3.97	247.10
802.11ax(HE40)	5510.00	13.82	16.54	17.38	5.19	3.67	3.97	321.03
802.11ax(HE40)	5670.00	12.96	15.96	16.33	5.19	3.67	3.97	264.30
802.11ax(HE40)	5590.00	13.34	16.08	17.01	5.19	3.67	3.97	291.01
802.11ac(VHT80)	5530.00	12.47	14.90	15.76	5.19	3.67	3.97	224.26
802.11ac(VHT80)	5610.00	13.08	15.60	16.35	5.19	3.67	3.97	259.32
802.11ax(HE80)	5530.00	13.00	15.55	16.45	5.19	3.67	3.97	259.63
802.11ax(HE80)	5610.00	10.58	13.10	14.93	5.19	3.67	3.97	162.92

NOTE: 802.11a does not support MIMO mode, therefore select the maximum value.

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1&2F., Building A, No. 26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	A.17.05	Nov. 02, 2023	Nov. 01, 2024
2	Spectrum Analyzer (10kHz-39.9GHz)	R&S	FSV40-N	100363	1.71 SP2	Nov. 02, 2023	Nov. 01, 2024
3	Test Cable	N/A	R-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
4	Test Cable	N/A	R-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
5	Test Cable	N/A	R-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
6	Test Cable	N/A	RF-01	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
7	Test Cable	N/A	RF-02	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
8	Test Cable	N/A	RF-03	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
9	ESG Signal Generator	Agilent	E4421B	N/A	B.03.84	Nov. 02, 2023	Nov. 01, 2024
10	Signal Generator	Agilent	N5182A	N/A	A.01.87	Nov. 02, 2023	Nov. 01, 2024
11	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	N/A	Nov. 16, 2023	Nov. 15, 2024
12	Wideband Radio Communication Test	R&S	CMW500	106504	V 3.7.22	Nov. 02, 2023	Nov. 01, 2024
13	MWRF Power Meter Test system	MW	MW100-RF CB	N/A	N/A	Nov. 02, 2023	Nov. 01, 2024
14	Power Meter	KEYSIGHT	N1912A P	N/A	A.05.00	Nov. 02, 2023	Nov. 01, 2024
15	D.C. Power Supply	LongWei	TPR-6405D	N/A	N/A	\	\
16	RF Software	MW	MTS8310	V2.0.0.0	N/A	\	\

6. DFS DETECTION THRESHOLDS AND RADAR TEST WAVEFORMS

6.1 Applicability of DFS Requirements

The following table from FCC KDB 905462 D02 NII DFS Compliance Procedures New Rules v02 lists the applicable requirements for the DFS testing.

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

Applicability of DFS Requirements during Normal Operation

Requirement	Operational Mode	
	Master or Client With Radar Detection	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	Operational Mode	
	Master 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.		

6.2 DFS Detection Thresholds and Response Requirement

Below table provides the DFS Detection Thresholds for Master Devices as well as Client Devices incorporating In-Service Monitoring.

DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection.

Maximum Transmit Power	Value (See Notes 1 , 2 and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm / MHz	-62 dBm
EIRP < 200 milliwatt and 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.	

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.	

6.3 Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

6.3.1 Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note1	See Note1
1		Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{\text{PRI}_{\mu sec}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	1-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique

and not repeated from the previous waveforms in Tests A or B.

Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658
9	1474.9	678
10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

6.3.2 Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage Of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type waveforms, then each additional waveform must also be unique and not repeated from the previous waveforms.

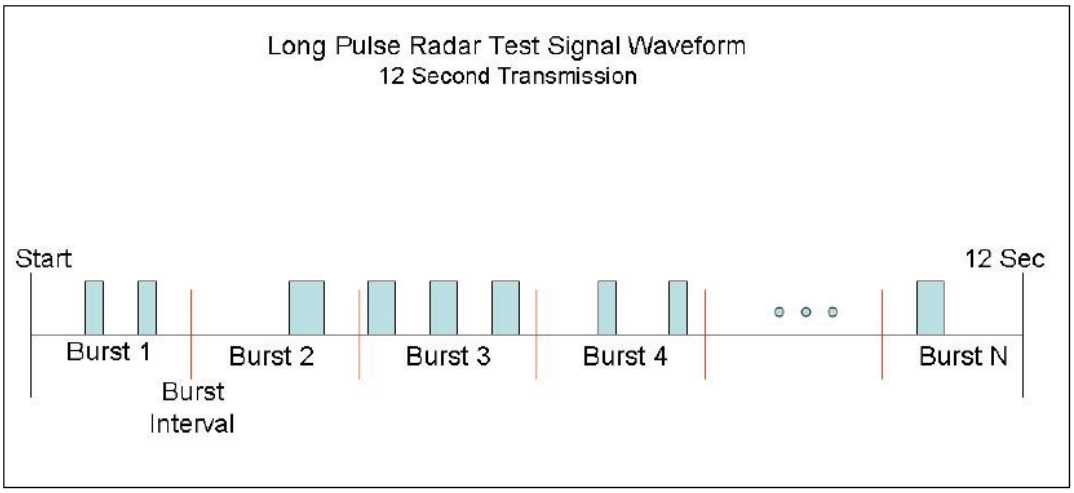
Each waveform is defined as follows:

1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst Count.
3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the same pulse width. Pulses in different Bursts may have different pulse widths.
5) Each pulse has a linear frequency modulated chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a transmission period will have the same chirp width. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.
6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the random time interval between the first and second pulses is chosen independently of the random time interval between the second and third pulses.
7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst

Count. Each interval is of length (12,000,000 / Burst Count) microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and [(12,000,000 / Burst Count) – (Total Burst Length) + (One Random PRI Interval)] microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen randomly.

A representative example of a Long Pulse Radar Type waveform:
1) The total test waveform length is 12 seconds.
2) Eight (8) Bursts are randomly generated for the Burst Count.
3) Burst 1 has 2 randomly generated pulses.
4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
5) The PRI is randomly selected to be at 1213 microseconds.
6) Bursts 2 through 8 are generated using steps 3 – 5.
7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 – 3,000,000 microsecond range).

Graphical representation of the Long Pulse Radar Test Waveform.



6.3.3 Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

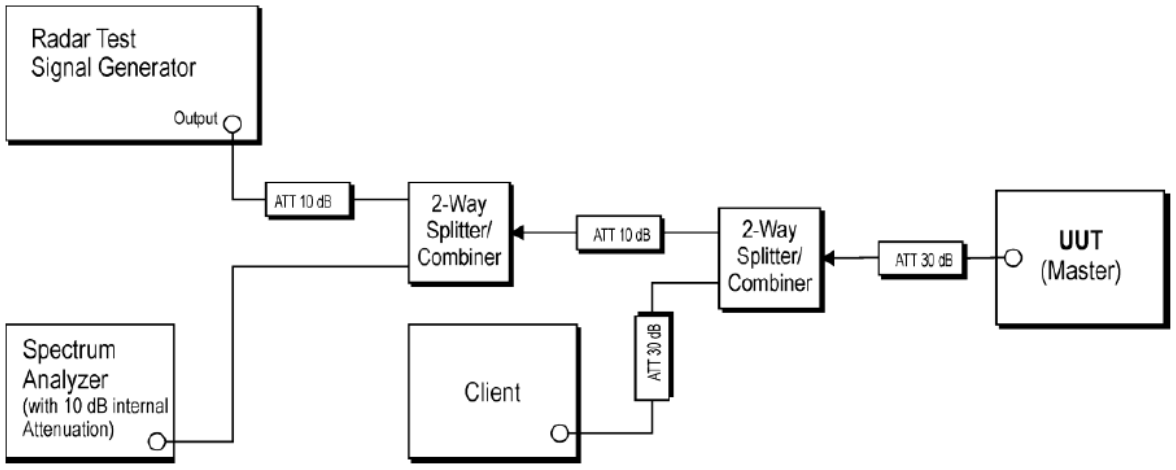
For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:
The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely

Radar Waveform Calibration

The following equipment setup was used to calibrate the conducted radar waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were replace 50ohm terminal from master and client device and no transmissions by either the master or client device. The spectrum analyzer was switched to the zero span (time domain) at the frequency of the radar waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3MHz and 3 MHz.
The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -61dBm due to the interference threshold level is not required

6.3.4 DFS test setup

Setup for Master with injection at the Master



Conducted Test Setup

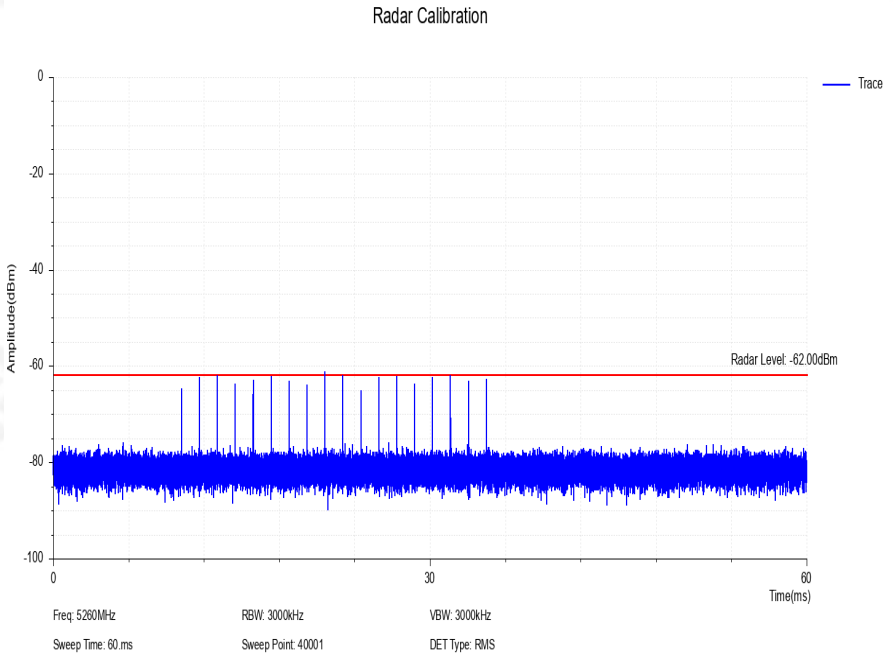
Calibration Procedure

The Interference Radar Detection Threshold Level is (-64dBm) + (0) [dBi] + 1 dB= -63 dBm that had been taken into account the output power range and antenna gain. The above equipment setup was used to calibrate the conducted Radar Waveform. A vector signal generator was utilized to establish the test signal level for each radar type. During this process there were replace 50ohm terminal form Master and Client device and no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) at the frequency of the Radar Waveform generator. Peak detection was used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to at least 3MHz. The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was (-64dBm) + (0) [dBi] + 1 dB= -63dBm. Capture the spectrum analyzer plots on short pulse radar types, long pulse radar type and hopping radar waveform.

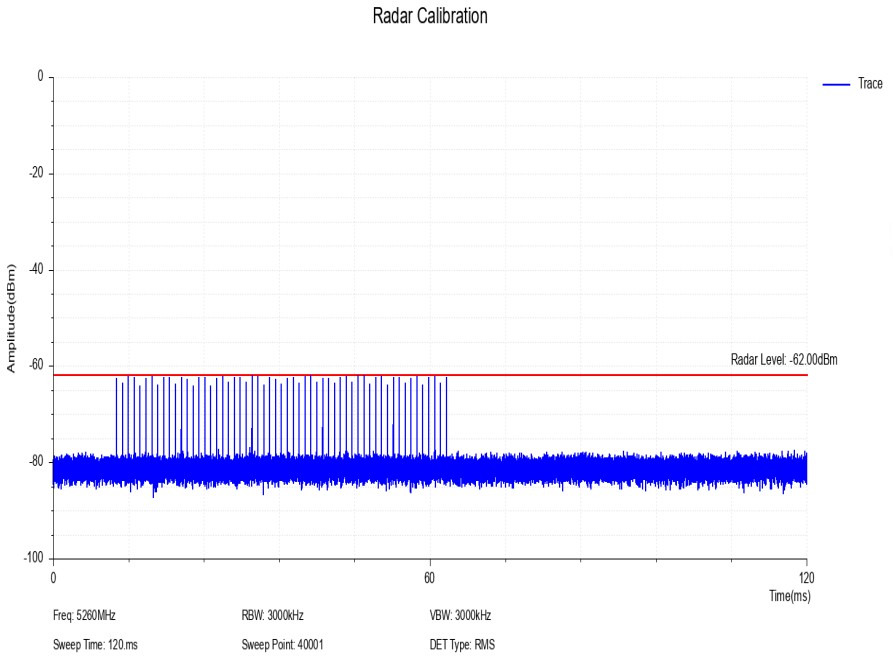
7. TEST RESULT

7.1 Cablibration Result

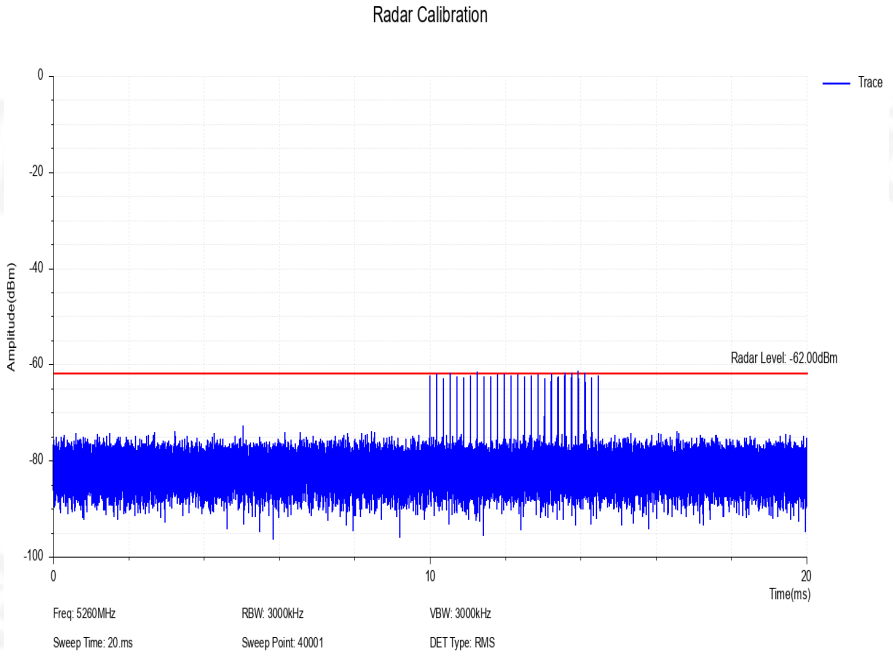
NVNT_ANT1_802_11a_Calibration_type_0



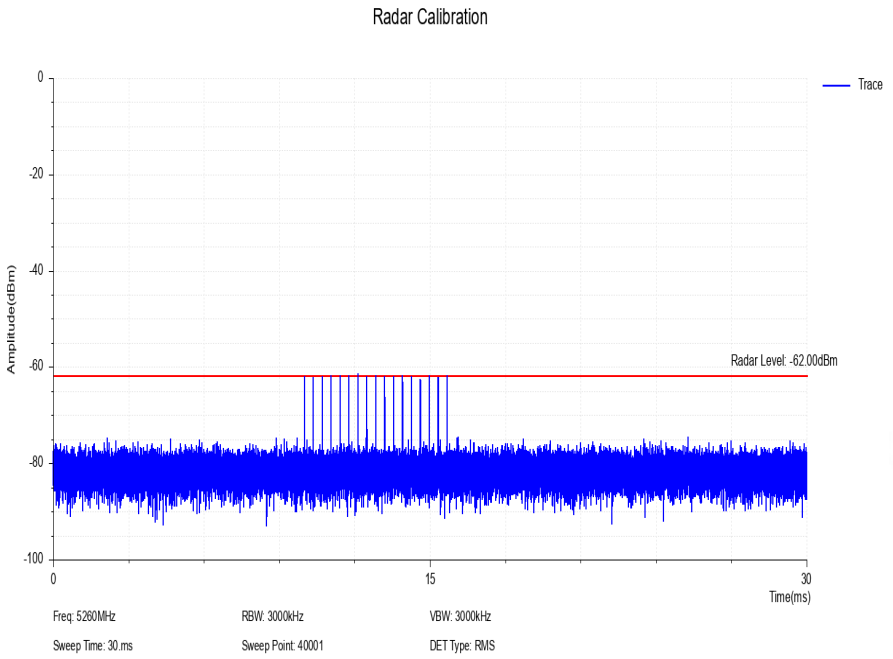
NVNT_ANT1_802_11a_Calibration_type_1



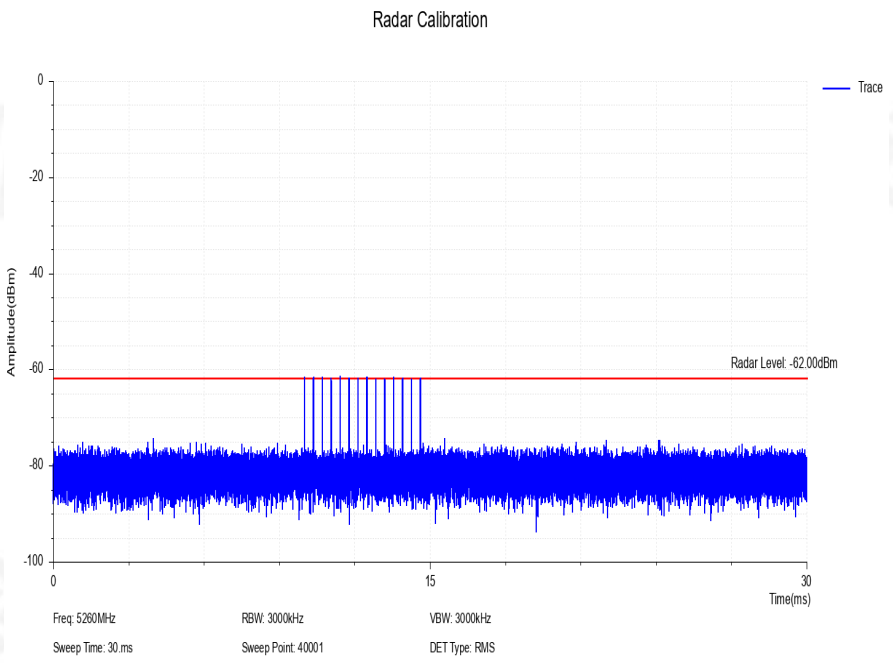
NVNT_ANT1_802_11a_Calibration_type_2



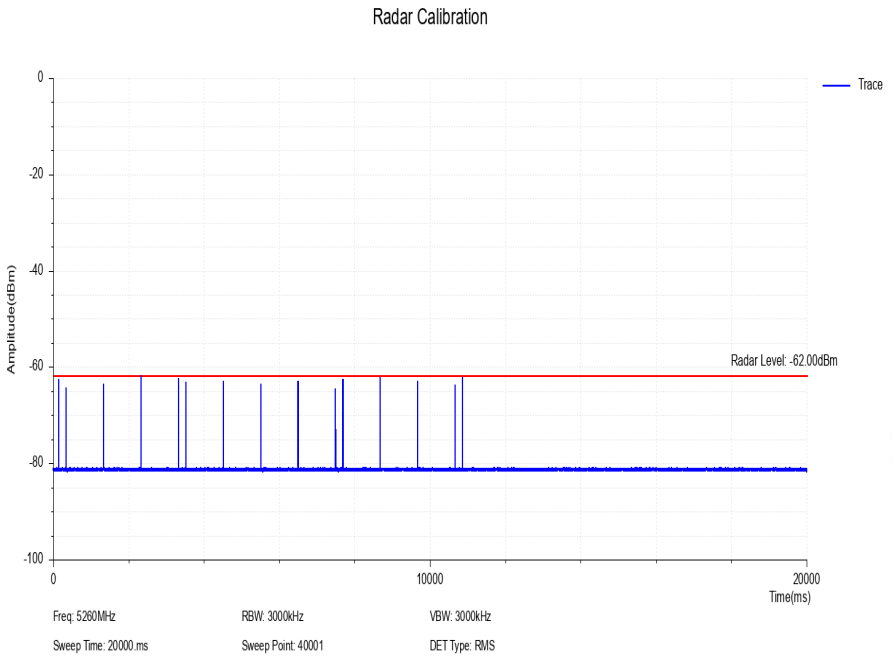
NVNT_ANT1_802_11a_Calibration_type_3



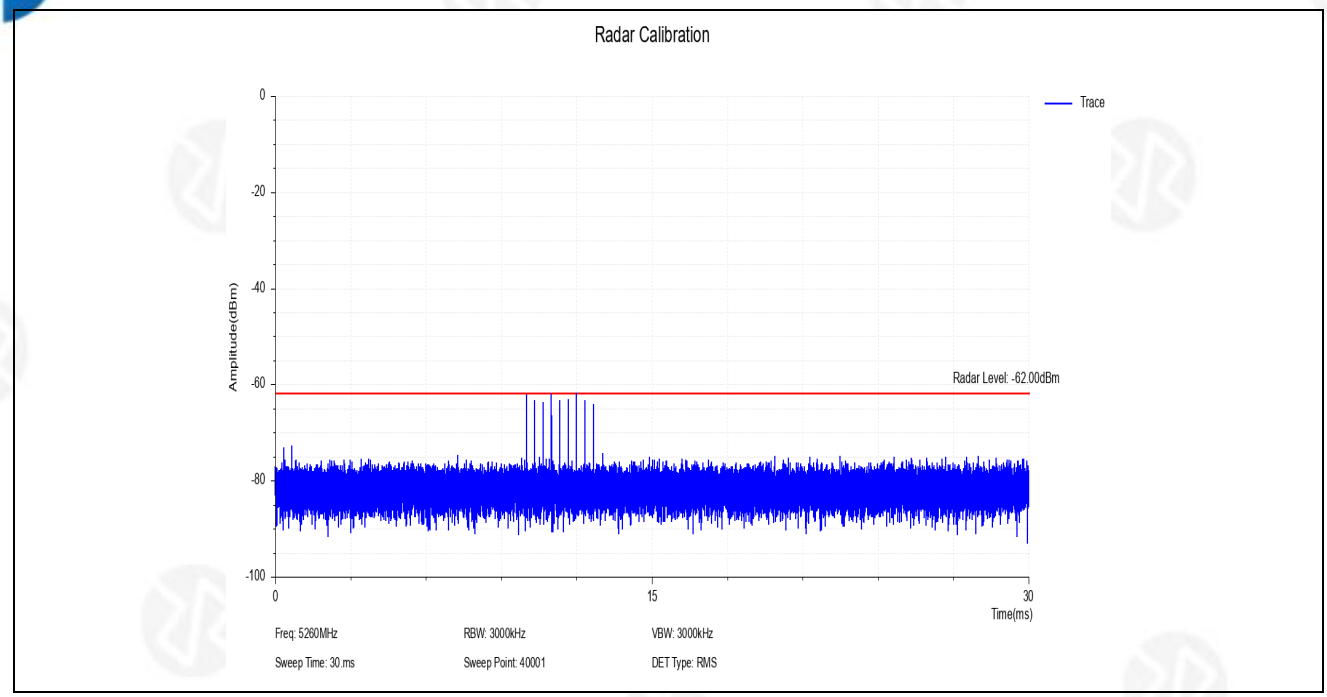
NVNT_ANT1_802_11a_Calibration_type_4



NVNT_ANT1_802_11a_Calibration_type_5



NVNT_ANT1_802_11a_Calibration_type_6


Radar Calibration
Trace
Amplitude(dBm)
0
-20
-40
-60
-80
-100
Radar Level: -62.00dBm
0
15
30
Time(ms)
Freq: 5260MHz
RBW: 3000kHz
VBW: 3000kHz
Sweep Time: 30.ms
Sweep Point: 40001
DET Type: RMS

Radar 0 Statical Perfomances

Trial #	Number of Pukes per Burst	Pde Width (μsec)	PRI (μs)
1	18	1	428

Radar 1 Statical Performances

Trial #	Number of Pukes per Burst	Pde Width (μsec)	PRI (μs)
1	65	1	818
2	102	1	518
3	72	1	738
4	18	1	3066
5	92	1	578
6	58	1	918
7	68	1	658
8	76	1	558
9	58	1	918
10	81	1	658
11	95	1	558
12	76	1	698
13	65	1	818
14	68	1	778
15	89	1	598
16	89	1	598
17	78	1	678
18	72	1	738
19	65	1	818
20	74	1	718
21	81	1	658
22	81	1	658
23	65	1	818
24	59	1	898
25	63	1	838
26	62	1	858
27	57	1	938
28	58	1	918
29	63	1	838
30	63	1	838

Radar 2 Statical Performances

Trial #	Number of Pukes per Burst	Pde Width (μsec)	PRI (μs)
1	25	1.3	170
2	24	1.8	171
3	27	2.5	152
4	25	2.6	203
5	28	3.8	210
6	26	2.6	195
7	26	1.4	202
8	29	2.8	214
9	28	2.3	189
10	28	2	200
11	24	4.2	226
12	25	3.6	229
13	27	4	172
14	25	2.4	201
15	27	1.8	159
16	23	4.7	222
17	26	4.9	197
18	25	4	211
19	29	3.3	212
20	24	2.4	206
21	25	4.6	229
22	25	3.4	189
23	29	2.9	153
24	24	4.8	174
25	24	2.1	207
26	27	2	213
27	25	4.9	153
28	23	2	230
29	24	4.9	156
30	26	3.4	170

Radar 3 Statical Performances

Trial #	Number of Pukes per Burst	Pde Width (μsec)	PRI (μs)
1	17	7.9	472
2	17	7.8	491
3	18	6.3	457
4	18	6.8	429
5	18	6.1	420
6	17	9.8	210
7	18	7.8	322
8	17	9.7	464
9	18	6.2	497
10	16	9.1	203
11	17	10	265
12	17	8.3	467
13	16	7.5	370
14	17	9.2	264
15	17	9.8	483
16	17	7.1	257
17	17	6.5	479
18	16	8.4	225
19	18	8.4	335
20	17	9.6	332
21	16	8.3	385
22	18	6.2	361
23	18	8.6	289
24	17	9.8	261
25	17	6.9	317
26	18	9.8	356
27	17	8.8	373
28	17	9.9	481
29	16	9.7	200
30	16	8.7	460

Radar 4 Statical Performances

Trial #	Number of Pukes per Burst	Pde Width (μsec)	PRI (μs)
1	14	16	412
2	15	17	315
3	13	16.3	444
4	14	16.9	344
5	15	13.5	373
6	12	14	217
7	12	13	486
8	14	12.6	425
9	13	15.1	416
10	12	11.5	488
11	14	12.1	300
12	15	17.5	434
13	15	11.5	368
14	15	16	222
15	16	12.4	407
16	14	17.5	329
17	13	18.3	392
18	13	16.1	464
19	14	12.5	276
20	16	16	287
21	13	11.1	228
22	13	20	419
23	15	11.7	266
24	13	18.6	419
25	13	11	239
26	13	12.4	490
27	16	15.6	213
28	15	13.9	415
29	13	13.9	481
30	15	16.9	301

Radar 5 Statical Perfonmances

Trial Number:1						
Bursts in Trial:12						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	93.6	16	1847	1350	618.231
2	2	84.2	6	1338		68.31
3	3	75.9	6	1690	1973	639.15
4	2	91.6	16	1720		9606
5	3	96.9	16	1048	1685	298.69
6	2	90.6	16	1893		226.04
7	2	60.1	16	1020		862.36
8	2	67.2	16	1239		661.55
9	2	59.1	16	1171		859.75
10	2	94.3	6	1647		13.25
11	1	87.5	6			401.6
12	2	98.9	16	1753		845.5
Trial Number:2						
Bursts in Trial:19						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	74.1	18	1187	1405	249.631
2	2	69.3	18	639		418.411
3	2	53.1	18	1793		314.492
4	1	95.9	18			225.313
5	1	78.2	18			62.294
6	2	918	18	1999		494.655
7	1	92.2	18			160.016
8	2	58.5	18	1527		231.397
9	3	64.9	18	1924	1018	441.748
10	3	839	18	1571	1639	294.549
11	1	63.1	18			386.191
12	2	907	18	1544		56.352
13	2	87.1	18	1055		96.003
14	3	97	18	1942	1225	87.254
15	1	94.3	18			398.315
16	1	89.2	18			515.726
17	1	6-4.8	18			580.937
18	2	67.1	18	1485		304.758
19	2	88.2	18	1212		94.179

Trial Number:3						
Bursts in Trial:14						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	1	97.6	19			692.765
2	2	95.1	19	1390		106.502
3	1	52.7	19			529.344
4	3	67.7	19	1141	1221	508.721
5	2	97.7	19	1677		462.179
6	2	87.3	19	1617		483.886

7	2	99.7	19	1771		399.373
8	1	82.8	19			699.02
9	1	80.4	19			415.507
10	2	707	19	1620		197.354
11	2	76	19	1425		728.081
12	2	62.5	19	1690		149.749
13	3	53.9	19	1824	1104	673.086
14	2	78.3	19	1483		267.943

Trial Number:4						
Bursts in Trial:15						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	1	54.6	11			427.995
2	2	74.8	11	1230		712.91
3	2	51.7	11	1507		751.14
4	1	73.1	11			21.69
5	3	70.3	11	1270	1181	69.52
6	2	82.3	11	1048		73.51
7	2	52.1	11	1728		210.74
8	2	86	11	1245		370.44
9	3	84.6	11	1838	1195	214.03
10	2	90.8	11	1189		564.28
11	2	54.9	11	1560		60.36
12	2	71.1	11	1569		372.87
13	2	94.2	11	1248		228.77
14	2	77.6	11	1763		317.4
15	2	61.7	11	1370		274.4

Trial Number:5						
Bursts in Trial:9						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	1	91.6	15			693.623
2	3	62.4	15	1978	1641	1178.497
3	2	93.3	15	1567		711.783
4	2	82.8	15	1362		1126.17
5	1	84.2	15			89.487
6	2	55	15	1488		250.723
7	2	83.4	15	1707		934.27
8	1	78.8	15			1273.967
9	3	65.5	15	1596	1332	560.083

Trial Number:6						
Bursts in Trial:19						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	529	18	1594	1257	475.626
2	1	57.7	18			433.001
3	2	75.3	18	1324		598.282
4	2	606	18	1417		458.563
5	1	66.1	18			168.324
6	3	69.4	18	1695	1745	262.225
7	1	83.6	18			349.636
8	3	77.9	18	1164	1192	291.167
9	2	97.8	18	1371		451.288
10	2	69.8	18	046		545.409
11	1	100	18			174.291
12	1	53.2	18			444.202
13	2	68.3	18	2000		544.193
14	3	98.2	18	1913	1917	218.574
15	3	68.3	18	1584	1690	566.185
16	2	86.1	18	1521		34.606
17	3	56.2	18	1339	1515	138.937
18	3	83.7	18	1803	1784	74.058
19	1	77.7	18			271.779

Trial Number:7						
Bursts in Trial:13						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	70.4	6	1871	1880	432.293
2	1	73.2	6			300.273
3	3	82	6	1957	1588	896.636
4	2	98.9	6	1842		449.659
5	1	85.3	6			163.562
6	2	89.6	6	1307		667.155
7	3	94.5	6	1373	1613	439.908
8	3	84.9	6	1109	1433	914.212
9	2	89.6	6	1272		99.915
10	1	77.1	6			338.698
11	3	57.1	6	1171	1339	83.661
12	2	86.6	6	1148		204.454
13	2	82.6	6	1837		612.077

Trial Number:8						
Bursts in Trial:20						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	2	81.3	20	1304		114.157
2	3	71.4	20	1613	1197	170.909
3	2	64.9	20	1410		85.48
4	2	51.7	20	1543		468.54
5	3	85.1	20	1900	1361	549.71
6	2	60.2	20	1223		373.85
7	3	64.7	20	290	1585	228.32
8	2	74.1	20	1559		400.12
9	2	58.5	20	1623		312.47
10	2	639	20	1824		392.7
11	2	62	20	1531		490.88
12	2	95.8	20	1405		511.67
13	3	60.2	20	1595	1505	420.69
14	2	83.1	20	1114		1506
15	2	55.6	20	1001		387.64
16	3	77	20	1953	1919	479.57
17	2	94.8	20	1053		9.7
18	2	939	20	1313		194.6
19	3	91	20	1263	1081	591.5
20	2	99.5	20	1534		327.8

Trial Number:9						
Bursts in Trial:19						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	2	78.7	9	1088		104.957
2	2	84.4	9	1428		178.996
3	3	65.9	9	1468	1793	332.952
4	3	59.6	9	1686	1484	121.883
5	2	99.5	9	1659		306.804
6	2	77.7	9	1826		139.755
7	2	73.9	9	1632		569.436
8	3	79.2	9	1223	1462	524.157
9	2	87.4	9	1102		601.698
10	2	539	9	1257		208.049
11	3	68.4	9	1767	1476	273.191
12	2	86.1	9	1395		202.672
13	1	60.9	9			14.453
14	3	74.9	9	1654	1642	561.524
15	2	74.1	9	1169		122.475
6	3	59	9	1633	1603	146.356
17	2	78.8	9	1092		427.637
18	2	85.1	9	1379		522.758
19	1	96.3	9			337.379

Trial Number:10						
Bursts in Trial:17						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	85.9	13	1471	1765	428.302
2	1	72.7	13			509.188
3	2	73.5	13	1797		579.005
4	3	64.4	13	1631	1485	308.803
5	3	79.6	13	1021	1534	58.021
6	3	66.7	13	1392	1413	150.378
7	2	54	13	1261		371.176
8	3	76.9	13	1438	1070	175.254
9	2	69.7	13	1072		140.141
10	2	53.8	13	1579		218.969
11	2	95.2	13	2000		456.416
12	2	87.1	13	1606		692.184
13	2	91.4	13	1900		227.752
14	2	67.2	13	1822		220.709
15	2	97.2	13	1227		71.747
16	2	607	13	1646		110.265
17	3	57.8	13	1347	1271	42.982

Trial Number:11						
Bursts in Trial:16						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	2	79.4	19	1480		489.968
2	1	74.9	19			998.89
3	2	79.1	19	1694		5.79
4	2	57.9	19	1916		704.72
5	2	90.3	19	1797		46.44
6	2	97.4	19	1943		532.32
7	1	76.6	19			644.09
8	3	57.1	19	1732	1768	561.64
9	3	97.2	19	1787	1784	4.68
10	1	80	19			40.07
11	3	501	19	1357	1626	324.43
12	1	83	19			672.03
13	3	91.5	19	1752	1549	659.72
14	3	87	19	1364	1987	299.8
15	1	73.8	19			124.3
16	2	62.1	19	1903		17.2

Trial Number:12						
Bursts in Tnial:16						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	1	79	10			195.998
2	2	53.1	10	1384		450.33
3	3	77.8	10	1316	1424	341.76
4	3	693	10	1179	1603	708.72
5	2	84.2	10	1183		538.9
6	2	70.5	10	1241		97.71
7	3	78.8	10	1959	1050	4.88
8	1	82.5	10			183.31
9	3	91.2	10	1350	1829	486.34
10	2	65.5	10	1697		42535
11	3	84.9	10	1975	1913	702.58
12	2	94.3	10	1588		203.23
13	2	90.3	10	1762		219.51
14	2	74.4	10	1197		740.3
15	2	56.3	10	1005		439
16	2	94.1	10	1807		374.8

Trial Number:13						
Bursts in Tnial:12						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
	2	78.9	17	1929		442.93
2	2	70.3	17	1330		786.67
3	2	74.4	17	1654		213.51
4	2	94.1	17	1452		644.49
5	2	99.8	17	1482		703.45
6	2	94.7	17	1654		663.56
7	3	80.4	17	1476	1661	80491
8	1	54.4	17			507.3
9	2	52.2	17	1277		25.02
10	3	66.3	17	1704	1743	761.02
11	2	70.3	17	1059		168.8
12	3	63.6	17	1560	1739	388.5

Trial Number:14						
Bursts in Trial:10						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
	3	71.3	20	1785	1212	1029.59
2	3	91.2	20	1240	1775	320.72
3	2	92.2	20	1965		773.72
4	2	87.3	20	1680		220.79
5	2	85.2	20	609		830.69
6	3	69.2	20	1112	1812	65.45
7	2	73.3	20	1611		1044.95
8	1	73.8	20			292.87
9	3	91.2	20	1249	1379	653.6
10	3	56.5	20	1504	1075	2904

Trial Number:15						
Bursts in Trial:8						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	51.4	7	1518	1727	809.176
2	2	83.6	7	1307		970.86
3	3	51.6	7	1760	1082	1217.56
4	3	79.2	7	1888	1432	1217.64
5	3	84.7	7	1493	1553	269.02
6	3	97.3	7	1833	1142	791.9
7	2	64.6	7	1701		487.8
8	2	80	7	1061		1124.4

Trial Number:16						
Bursts in Trial:13						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	80.3	20	1960	1308	718.009
2	1	63.6	20			466.473
3	2	77.3	20	1531		652.676
4	3	76	20	1121	1470	189.589
5	2	73.1	20	1480		558.132
6	2	87.8	20	1250		219.425
7	2	77.9	20	1250		131.458
8	1	75.1	20			439.232
9	2	90.2	20	1069		109.375
10	2	69.5	20	1761		608.468
11	1	50.8	20			290.581
12	3	78.7	20	1937	1650	440.554
13	2	92.4	20	1566		242.177

Trial Number:17						
Bursts in Trial:9						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	2	90	15	1710		902.011
2	2	65.9	15	1591		101.297
3	2	92.8	15	1945		1247.383
4	2	79.6	15	1052		86.16
5	1	81.6	15			589.737
6	2	68.3	15	1747		460.733
7	3	54.9	15	1864	1416	1184.22
8	2	77.4	15	1123		477.887
9	2	60.9	15	1012		872.083

Trial Number:18						
Bursts in Trial:16						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	3	60.6	11	1629	1909	283.408
2	1	97.9	11			AT9.38
3	1	73.4	11			636.22
4	2	84.7	11	1791		1.3
5	2	81.1	11	1734		260.41
6	2	97.1	11	1947		716.79
7	3	70.8	11	1285	1955	243.25
8	1	84.9	11			55,047
9	1	74.5	11			19.36
10	3	93.3	11	1362	1729	266.59
11	2	84.3	11	1626		9.78
12	2	88.5	11	1238		328.18
13	2	73.2	11	1835		119.3
14	1	61.4	11			454
15	2	89.7	11	1765		12.3
16	3	63.7	11	1044	1445	743.4

Trial Number:19						
Bursts in Trial:16						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	2	69.5	15	1071		242.805
2	1	57.8	15			350.09
3	2	91.1	15	1491		484.08
4	2	90.2	15	1654		673.94
5	2	75.9	15	1461		389.7
6	1	72.5	15			454.11
7	3	88.5	15	1338	1930	63.29
8	1	60	15			41.53
9	1	92.2	15			391.15
10	3	68.2	15	1114	1967	201.82
11	2	66.1	15	1851		693.88
12	2	57.4	15	1950		90.13
13	3	53.8	15	1753	1560	252.33
14	1	92.3	15			436.9
15	3	71.9	15	1499	1617	6429
16	1	85.6	15			600.8

Trial Number:20						
Bursts in Trial:12						
Burst	**Number of Fules**	**Pulse Wildth (μsec)**	**Chirp Width (MHz)**	**Pulse 1-Lo-2 PRI (μsec)**	**Pulse 2-to-3 PRI (usec)**	**Start Locatiom Within Interval (msec)**
1	2	96.6	17	1980		412.166
2	2	56.8	17	1416		910.49
3	3	52.1	17	1095	1684	370.27
4	2	62.7	17	1709		972.13
5	2	51.7	17	1801		820.75
6	1	74.2	17			979.07
7	2	58.3	17	1529		885.68
8	3	75.1	17	1305	1180	971.98
9	2	94	17	1894		718.84
10	3	99.1	17	1084	1537	59.89
11	1	97.2	17			712.5
12	3	95.1	17	1268	1454	783.4

Trial Number:21						
Bursts in Trial:13						
Burst	Number of Fules	Pulse Wildth (μsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (μsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	1	54.1	8			402.22
2	2	78.2	8	1825		487.693
3	1	77.5	8			481.576
4	1	80.9	8			302.08
5	3	73.8	8	294	1539	501.412
6	1	67.2	8			543.475
7	1	79.9	8			174.448
8	2	54.4	8	1270		783.622
9	1	70.9	8			116.785
10	1	82.6	8			90.048
11	2	58	8	1285		595.601
2	1	53.7	8			265.06
13	2	83.1	8	1624		367.577

Trial Number:22						
Bursts im Trial:13						
Burst	Number of Fules	Pulse Wildth (μsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (μsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	1	72.8	18			291.86
2	2	77.6	18	1650		551643
3	2	72.2	18	1120		793.426
4	1	77.5	18			135.049
5	2	92.6	18	1665		336.912
6	1	81.4	18			562.305
7	2	6	18	1937		57.268
8	3	67	18	1315	1692	756.272
9	2	57.8	18	1573		461.145
10	2	83.6	18	1886		105.458
11	2	58.6	18	118		232.771
2	2	62.8	18	1241		244.854
13	2	81.4	18	1897		912677

Trial Number:23						
Bursts in Trial:8						
Burst	Number of Fules	Pulse Wildth (μsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (μsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	2	88.2	10	1704		1119.56
2	1	50.5	10			1385.62
3	3	84.6	0	1995	1424	622.77
4	3	89.4	0	961	1285	85.03
5	1	76.9	10			628.59
6	3	69.7	10	1493	1156	48.53
7	1	86	10			551.12
8	2	68.3	10	1310		1286.4

Trial Number:24						
Bursts in Trial:11						
Burst	Number of Fules	Pulse Wildth (μsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (μsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	2	85.2	13	1947		658.822
2	1	95.8	13			762.801
3	2	97.2	13	1096		751.442
4	2	61.7	13	1838		107.123
5	1	59.7	13			991.764
6	2	75.8	13	1883		11.575
7	3	50	3	1682	1325	697.815
8	3	56.1	13	1611	1949	743.626
9	2	89	13	1215		821.807
10	1	56.8	13			650.018
11	3	69.8	13	1139	1688	59.309

Trial Number:25						
Bursts in Trial:14						
Burst	Number of Fules	Pulse Wildth (μsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (μsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	1	836	5			315.874
2	1	65.3	5			0.113
3	1	56.5	5			213.084
4	3	58.2	5	1956	1109	101.101
5	2	54	5	1904		37.759
6	2	89.4	5	1070		43.276
7	3	92.4	5	1105	1707	420.83
8	3	66.8	5	1708	1280	431.02
9	2	62.1	5	1124		634.157
10	2	88.6	5	1631		70.914
11	3	66.9	5	1790	1297	7.901
12	2	84.7	5	1897		822.429
13	1	85.6	5			639.186
14	2	88.9	5	1866		598.543

Trial Number:26						
Bursts in Trial:15						
Burst	Number of Fules	Pulse Wildth (µsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (µsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	1	82.8	13			644.239
2	3	70.2	13	1495	1030	689.39
3	2	52.9	13	1458		139.58
4	1	701	13			85.86
5	2	77.5	13	1631		562.08
6	2	70.2	13	1500		531.08
7	2	82.9	13	1829		402.97
8	2	50	13	1596		654.68
9	1	51	13			468.5
10	3	90.4	13	1523	1382	641.36
11	3	55.6	13	1638	130	310.94
12	2	89.3	13	1333		268.27
13	3	69.6	13	1993	1263	783.4
14	1	507	13			236.1
15	3	80.8	13	1921	1556	86.8

Trial Number:27						
Bursts in Trial:12						
Burst	Number of Fules	Pulse Wildth (µsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (µsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	1	63	20			23.935
2	3	91.1	20	1018	1610	869.96
3	1	98.1	20			677
4	1	84.5	20			806.74
5	2	96.4	20	1983		74.08
6	2	79.7	20	1321		453.55
7	1	90	20			675.92
8	3	99.2	20	1932	622	6.4
9	2	60.5	20	1266		608.04
10	3	58.5	20	1753	1333	976.52
11	3	51.9	20	1435	965	825
12	1	57.2	20			745.4

Trial Number:28						
Bursts in Trial:10						
Burst	Number of Fules	Pulse Wildth (µsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (µsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	3	77.1	11	1968	1325	213.606
2	3	54.3	11	1897	1020	249.26
3	2	75.2	11	1370		984.34
4	2	77.2	11	1570		1068.88
5	2	68.9	11	1077		624.85
6	3	95.2	11	1504	1591	63.93
7	2	70.4	11	1948		113364
8	3	57.5	11	1144	1229	365.38
9	2	61.7	11	1939		499.8
10	2	99.5	11	13%5		716.3

Trial Number:29						
Bursts in Trial:19						
Burst	Number of Fules	Pulse Wildth (µsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (µsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	2	96.2	15	1357		431.184
2	1	73	15			393.801
3	2	86.7	15	1952		182.322
4	3	79.9	15	1332	1651	230.583
5	2	90.7	15	1276		13.344
6	1	54.3	15			374.635
7	3	58.5	15	1228	1184	442.896
8	2	82.8	15	1414		159.577
9	2	72.1	15	1953		201.808
0	2	81.3	15	186		409.059
11	2	84.1	15	1280		83.361
12	2	94.5	15	1396		451.772
13	2	56.9	15	1357		592.873
14	2	73	15	1639		350.104
15	2	61.3	15	1751		573.515
6	3	76	15	1040	1130	387.316
17	1	54.9	15			612.637
18	3	61.4	15	1678	1827	525.058
19	2	68.6	15	1400		29.379

Trial Number:30						
Bursts in Trial:12						
Burst	Number of Fules	Pulse Wildth (µsec)	Chirp Width (MHz)	Pulse 1-Lo-2 PRI (µsec)	Pulse 2-to-3 PRI (usec)	Start Locatiom Within Interval (msec)
1	3	79.7	10	1968	1828	271.775
2	2	56.3	10	1144		680.91
3	2	81.9	10	1423		652.33
4	2	62.6	10	1529		92
5	3	55.4	10	1721	564	122.39
6	2	60.2	10	1069		912.03
7	2	93.5	10	1920		645.18
8	2	89.6	10	1018		408.17
9	3	90	10	1387	1463	80.64
10	3	57.4	10	1401	1921	744.38
11	3	91.8	10	1485	1883	01
12	3	72.9	10	1392	1443	370.4

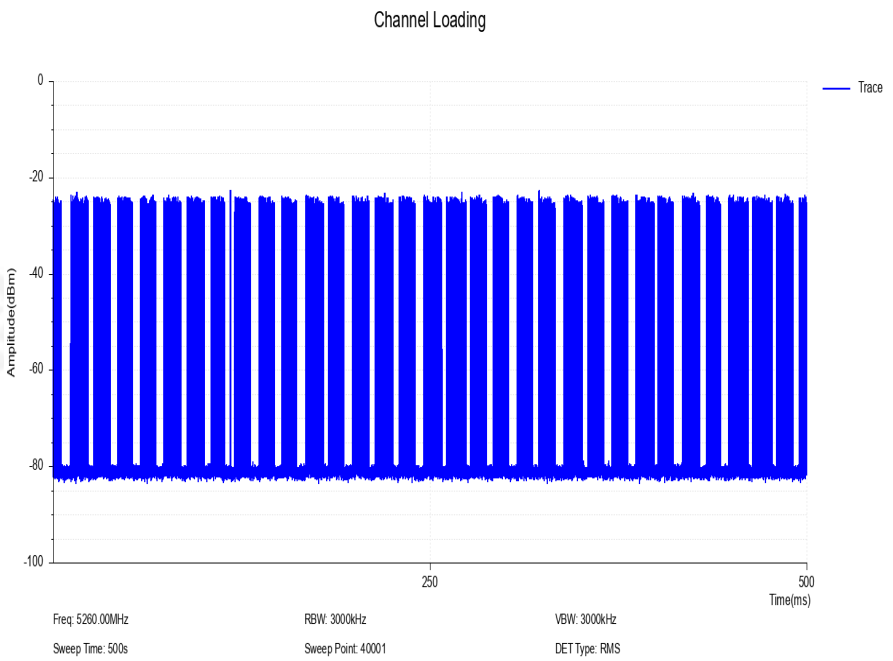
Radar 6 Statical Performances

Trial #	Pulse Width (μs)	PRI (μs)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (ms)	Number of Pulses
1	1	9	9	0.3333	300	16
2	1	9	9	0.3333	300	10
3	1	333.3	9	0.3333	300	14
4	1	333.3	9	0.3333	300	19
5	1	333.3	9	0.3333	300	15
6	1	333.3	9	0.3333	300	18
7	1	333.3	9	0.3333	300	14
8	1	333.3	9	0.3333	300	14
9	1	333.3	9	0.3333	300	21
10	1	333.3	9	0.3333	300	15
11	1	333.3	9	03328	300	16
12	1	333.3	9	0.3333	300	24
13	1	333.3	9	0.3333	300	13
14	1	333.3	9	0.3333	300	20
15	1	333.3	9	0.3333	300	17
16	1	333.3	9	0.3333	300	20
17	1	333.3	9	0.3333	300	16
18	1	333.3	9	0.3333	300	18
19	1	333.3	9	0.3333	300	14
20	1	333.3	9	0.3333	300	16
21	1	333.3	9	0.3333	300	20
22	1	333.3	9	03388	300	19
23	1	333.3	9	0333g	300	23
24	1	333.3	9	0.3333	300	17
25	1	333.3	9	0.3333	300	16
26	1	333.3	9	0.3333	300	13
27	1	333.3	9	0.3333	300	13
28	1	333.3	9	0.3333	300	18
29	1	333.3	9	0.3333	300	19
30	1	333.3	9	0.3333	300	20

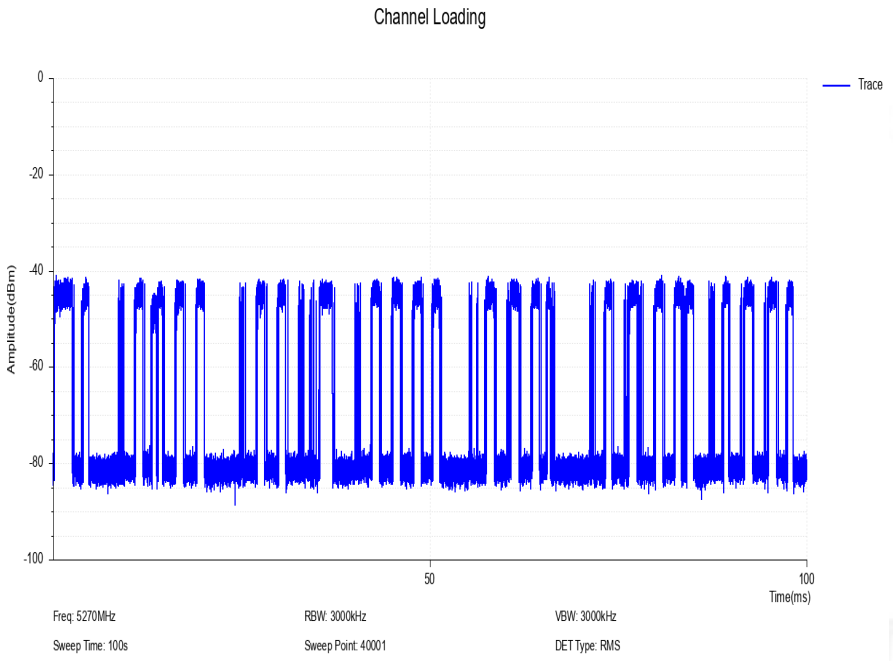
7.2 Channel Loading Test Result

Condition	Antenna	Modulation	Frequency(MHz)	Time On(ms)	Total Time(ms)	Radio(%)	Limit(%)	Result
NVNT	ANT1	802.11a	5260	133.74	500	26.75	17	Pass
NVNT	ANT1	802.11n(HT40)	5270	30.44	100	30.44	17	Pass
NVNT	ANT1	802.11ac(VHT80)	5290	35.93	100	35.93	17	Pass

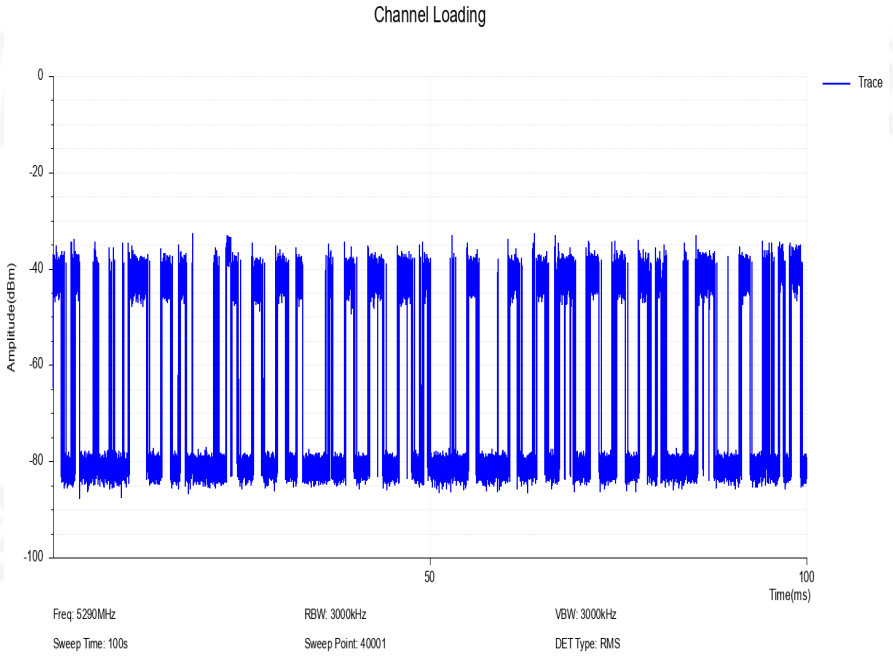
NVNT_ANT1_802_11a_Channel_Loading_802_11a_5260



NVNT_ANT1_802_11n(HT40)_Channel_Loading_802_11n(HT40)_5270



NVNT_ANT1_802_11ac(VHT80)_Channel_Loading_802_11ac(VHT80)_5290



7.3 NII Detection Bandwidth Measurement

7.3.1 Test Limit

Minimum 100% of the NII 99% transmission power bandwidth. During the U-NII Detection Bandwidth detection test, each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

7.3.2 Test Procedure

1. Adjust the equipment to produce a single Burst of any one of the Short Pulse Radar Types 0-4 in Table 3-5 at the center frequency of the EUT Operating Channel at the specified DFS Detection Threshold level.
2. The generating equipment is configured as shown in the Conducted Test Setup above section 3.5.
3. The EUT is set up as a stand-alone device (no associated Client or Master, as appropriate) and no traffic. Frame based systems will be set to a talk/listen ratio reflecting the worst case (maximum) that is user configurable during this test.
4. Generate a single radar Burst, and note the response of the EUT. Repeat for a minimum of 10 trials. The EUT must detect the Radar Waveform using the specified U-NII Detection Bandwidth criterion shown in Table 3-5. In cases where the channel bandwidth may exceed past the DFS band edge on specific channels (i.e., 802.11ac or wideband frame based systems) select a channel that has the entire emission bandwidth within the DFS band. If this is not possible, test the detection BW to the DFS band edge.
5. Starting at the center frequency of the UUT operating Channel, increase the radar frequency in 5 MHz steps, repeating the above test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion specified in Table 3-3. Repeat this measurement in 1MHz steps at frequencies 5 MHz below where the detection rate begins to fall. Record the highest frequency (denote as FH) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies above FH is not required to demonstrate compliance.
6. Starting at the center frequency of the EUT operating Channel, decrease the radar frequency in 1 MHz steps, repeating the above item 4 test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion. Record the lowest frequency (denote as FL) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies below FL is not required to demonstrate compliance.
7. The U-NII Detection Bandwidth is calculated as follows: U-NII Detection Bandwidth = FH – FL
8. The U-NII Detection Bandwidth must be at least 100% of the EUT transmitter 99% power,otherwise, the EUT does not comply with DFS requirements.

7.3.3 Test Result:

Please Refer to Appendix for Details.

7.4 Initial Channel Availability Check Time Measurement

7.4.1. Test Limit

The EUT shall perform a Channel Availability Check to ensure that there is no radar operating on the channel. After power-up sequence, receive at least 1 minute on the intended operating frequency.

7.4.2. Test Procedure

1. The U-NII devices will be powered on and be instructed to operate on the appropriate U-NII Channel that must incorporate DFS functions. At the same time the EUT is powered on, the spectrum analyzer will be set to zero span mode with a 3 MHz RBW and 3 MHz VBW on the Channel occupied by the radar (Chr) with a 2.5 minute sweep time. The spectrum analyzer's sweep will be started at the same time power is applied to the U-NII device.
2. The EUT should not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle.
3. Confirm that the EUT initiates transmission on the channel. Measurement system showing its nominal noise floor is marker1.

7.4.3. Test Result:

Please Refer to Appendix for Details.

7.5 Radar Burst at the Beginning of the Channel Availability Check Time Measurement

7.5.1. Test Limit

In beginning of the Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

7.5.2. Test Procedure

1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning of the Channel Availability Check Time.
2. The EUT is in completion power-up cycle (from T0 to T1). T1 denotes the instant when the EUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner than T1 + 60 seconds. A single Burst of one of Short Pulse Radar Types 0-4 at DFS Detection Threshold + 1 dB will commence within a 6 second window starting at T1.
3. Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions will continue for 2.5 minutes after the radar Burst has been generated. Verify that during the 2.5 minutes measurement window no EUT transmissions occurred.

7.5.3. Test Result:

Please Refer to Appendix for Details.

7.6 Radar Burst at the End of the Channel Availability Check Time Measurement

7.6.1. Test Limit

In the end of Channel Availability Check (CAC) Time, radar is detected on this channel, select another intended channel and perform a CAC on that channel.

7.6.2. Test Procedure

1. The steps below define the procedure to verify successful radar detection on the selected Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning of the Channel Availability Check Time.
2. The EUT is powered on at T0. T1 denotes the instant when the EUT has completed its power-up sequence. The Channel Availability Check Time commences at instant T1 and will end no sooner thanT1 + 60 seconds. A single Burst of one of Short Pulse Radar Types 0-4 at DFS Detection Threshold + 1 dB will commence within a 6 second window starting at T1+ 54 seconds.
3. Visual indication on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of emissions will continue for 2.5 minutes after the radar Burst has been generated. Verify that during the 2.5 minutes measurement window no EUT transmissions occurred.

7.6.3. Test Result:

Please Refer to Appendix for Details.

7.7 In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period Measurement

7.7.1. Test Limit

The EUT has In-Service Monitoring function to continuously monitor the radar signals. If the radar is detected, must leave the channel (Shutdown). The Channel Move Time to cease all transmissions on the current channel upon detection of a Radar Waveform above the DFS Detection Threshold within 10 sec. The total duration of Channel Closing Transmission Time is 260ms, consisting of data signals and the aggregate of control signals, by a U-NII device during the Channel Move Time. The Non-Occupancy Period time is 30 minute during which a Channel will not be utilized after a Radar Waveform is detected on that Channel.

7.7.2. Test Procedure Used

1. The test should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0.
2. When the radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device. A U-NII device operating as a Master Device will associate with the Client Device at Channel. Stream the MPEG test file from the Master Device to the Client Device on the selected Channel for the entire period of the test. At time T0 the Radar Waveform generator sends a Burst of pulses for each of the radar types at Detection Threshold + 1dB.
3. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel. Measure and record the transmissions from the EUT during the observation time (Channel Move Time).
4. Measurement of the aggregate duration of the Channel Closing Transmission Time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (1.5ms) = S (12 sec) / B (8000); where Dwell is the dwell time per spectrum analyzer sampling bin, S is the sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of Channel Closing Transmission Time is calculated by: C = N X Dwell; where C is the Closing Time, N is the number of spectrum analyzer sampling bins showing a U-NII transmission and Dwell is the dwell time per bin.
5. Measure the EUT for more than 30 minutes following the channel close/move time to verify that the EUT does not resume any transmissions on this Channel.

7.7.3. Test Result:

Please Refer to Appendix for Details.

7.8 Performance Check Measurement

7.8.1. Test Limit

The minimum percentage of successful detection requirements found in below table when a radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

Radar Type	Minimum Number of Trails	Minimum Percentage of successful Detection(Pd)
1	30	60%
2	30	60%
3	30	60%
4	30	60%
Aggregate (Radar Types 1-4)	120	80%
5	30	80%
6	30	70%
Note: The percentage of successful detection is calculated by: (Total Waveform Detections / Total Waveform Trails) * 100 = Probability of Detection Radar Waveform In addition an aggregate minimum percentage of successful detection across all Short Pulse Radar Types 1-4 is required and is calculated as follows: (Pd1 + Pd2 + Pd3 + Pd4) / 4.		

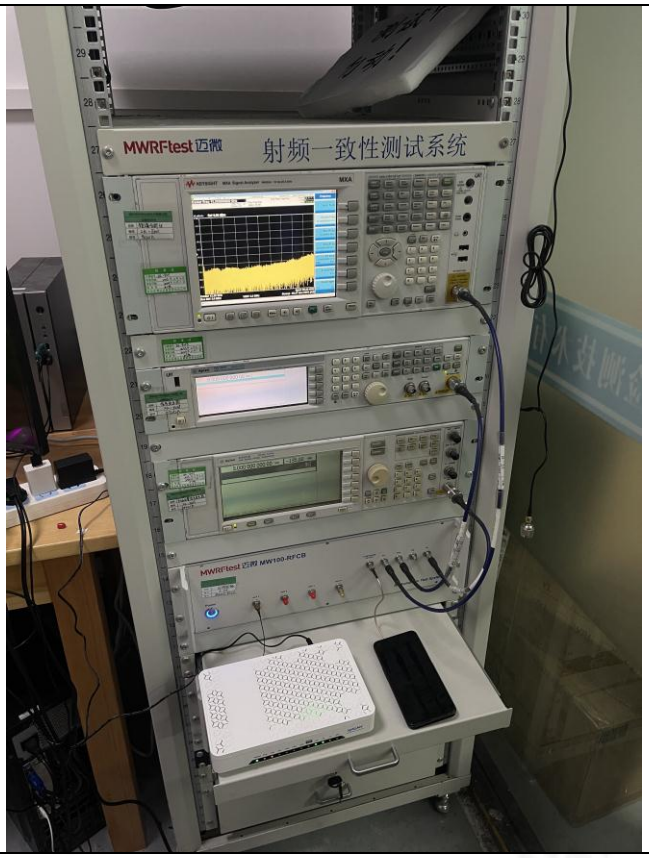
7.8.2. Test Procedure

1. Stream the MPEG test file from the Master Device to the Client Device on the test Channel for the entire period of the test.
2. At time T0 the Radar Waveform generator sends the individual waveform for each of the Radar Types 1-6, at levels equal to the DFS Detection Threshold + 1dB, on the Operating Channel.
3. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Short Pulse Radar Types 0 to ensure detection occurs.
4. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs.
5. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs.
6. The Minimum number of trails, minimum percentage of successful detection and the average minimum percentage of successful detection are found in below table.

7.8.3. Test Result:

Please Refer to Appendix for Details.

8. TEST SETUP PHOTOGRAPH



9. PHOTOS OF THE EUT

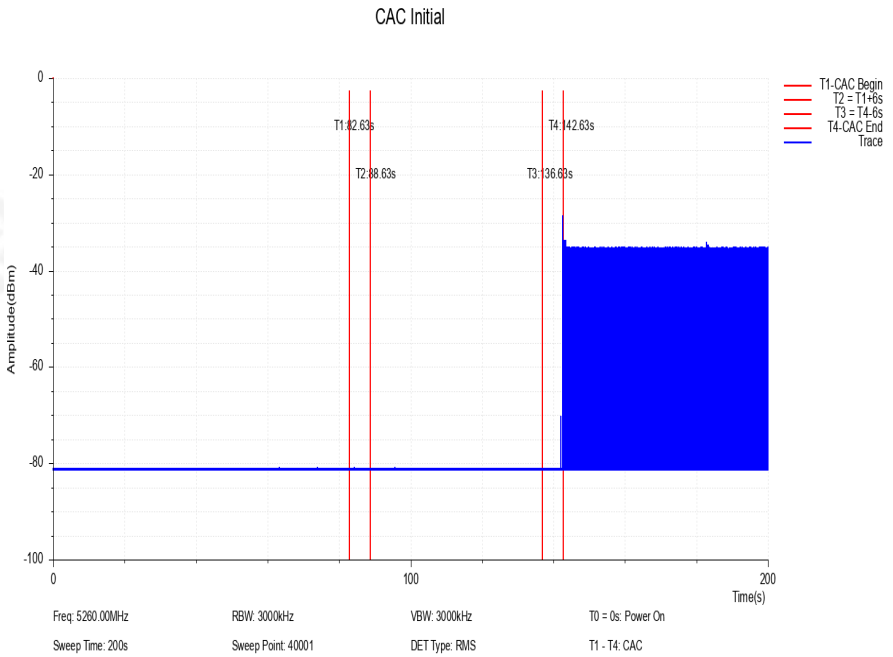
PLEASE REFER TO REPORT NO.: POCE240305009RL001 FOR DETAILS.

APPENDIX

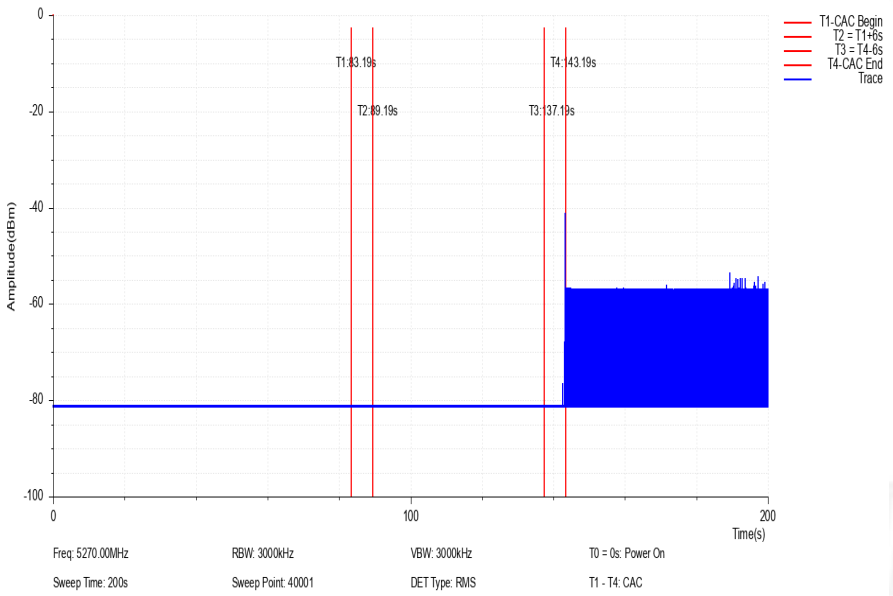
1. CAC Initial

Condition	Antenna	Modulation	Frequency (MHz)	T1 Power Up Time(s)	T4 Initial Time(s)	CAC(s)	Limit(s)	Result
NVNT	ANT1	802.11a	5260.00	82.63	142.63	60.00	60	Pass
NVNT	ANT1	802.11n(HT40)	5270.00	83.19	143.19	60.00	60	Pass
NVNT	ANT1	802.11ac(VHT80)	5290.00	82.31	142.31	60.00	60	Pass

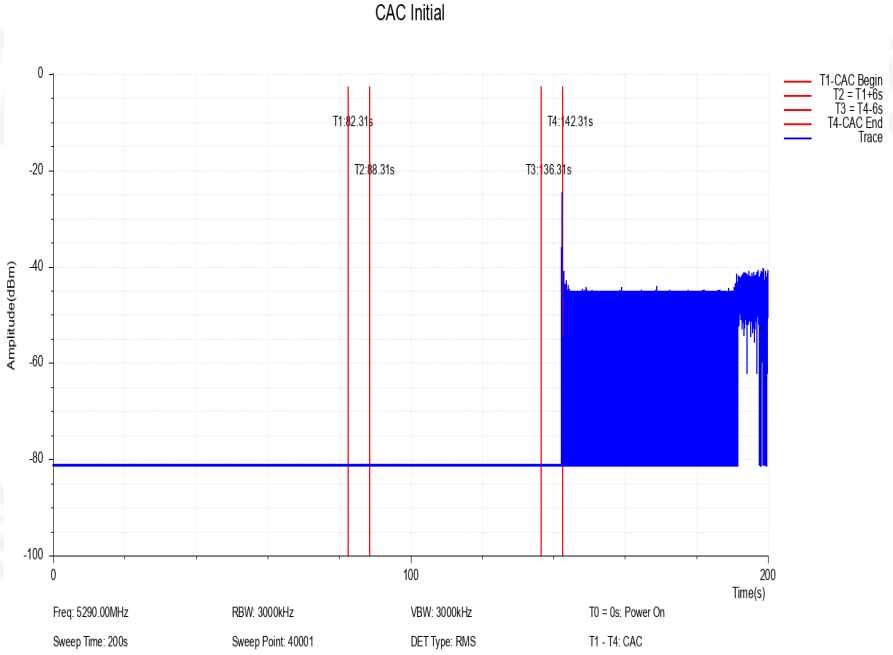
NVNT_ANT1_802_11a_CAC_Initial_802_11a_5260



NVNT_ANT1_802_11n(HT40)_CAC_Initial_802_11n(HT40)_5270



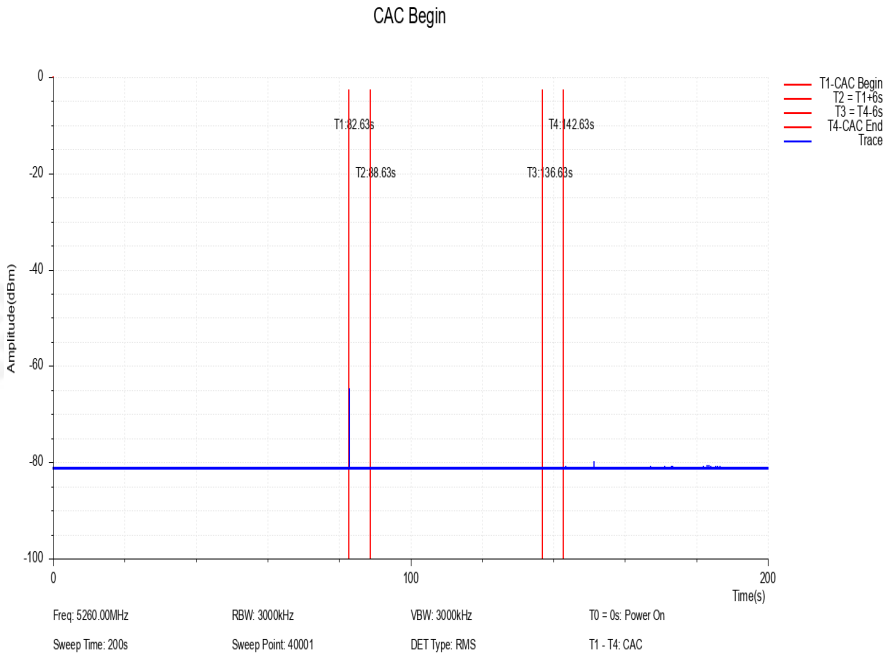
NVNT_ANT1_802_11ac(VHT80)_CAC_Initial_802_11ac(VHT80)_5290



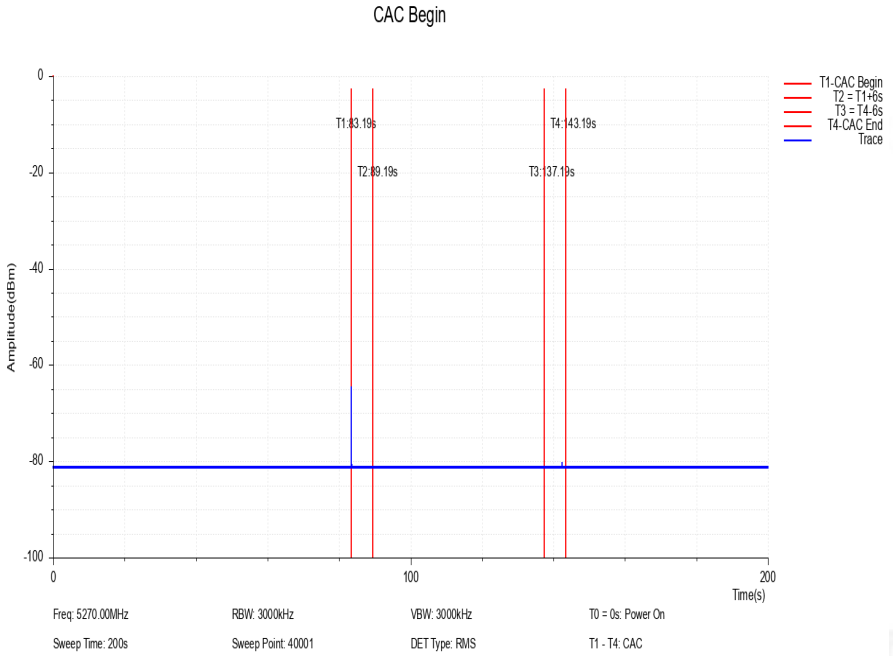
2. CAC Begin

Condition	Antenna	Modulation	Frequency (MHz)	Result
NVNT	ANT1	802.11a	5260.00	Pass
NVNT	ANT1	802.11n(HT40)	5270.00	Pass
NVNT	ANT1	802.11ac(VHT80)	5290.00	Pass

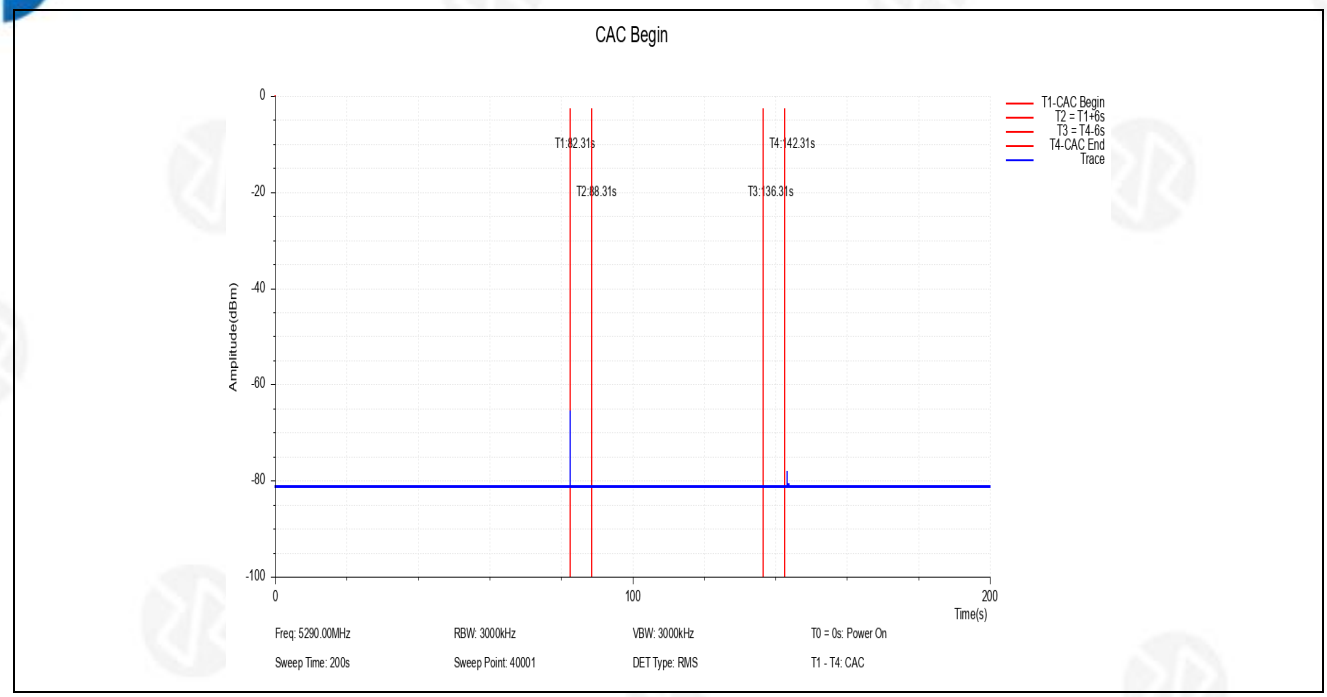
NVNT_ANT1_802_11a_CAC_Begin_802_11a_5260



NVNT_ANT1_802_11n(HT40)_CAC_Begin_802_11n(HT40)_5270



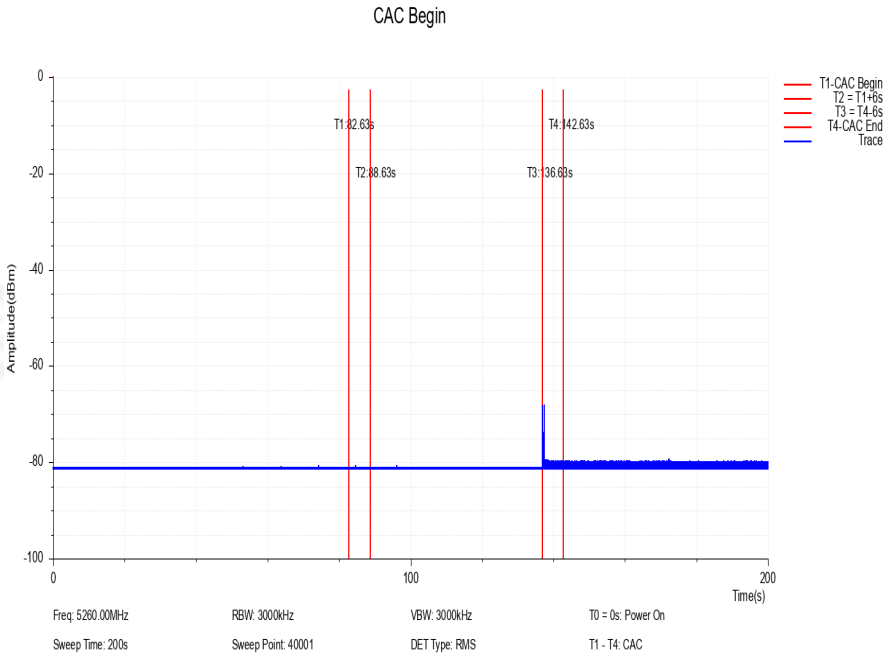
NVNT_ANT1_802_11ac(VHT80)_CAC_Begin_802_11ac(VHT80)_5290


CAC Begin
T1-CAC Begin
T2 = T1+6s
T3 = T4-6s
T4-CAC End
Trace
T1:82.31s
T2:88.31s
T3:136.31s
T4:142.31s
Amplitude(dBm)
0
-20
-40
-60
-80
-100
0
100
200
Time(s)
Freq: 5290.00MHz
RBW: 3000kHz
VBW: 3000kHz
T0 = 0s: Power On
Sweep Time: 200s
Sweep Point: 40001
DET Type: RMS
T1 - T4: CAC

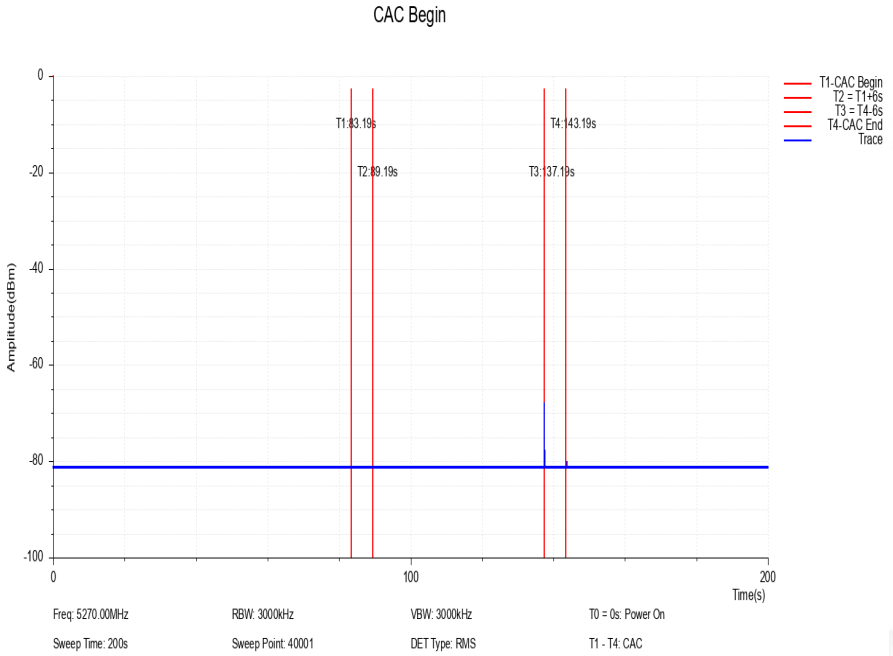
3. CAC End

Condition	Antenna	Modulation	Frequency (MHz)	Result
NVNT	ANT1	802.11a	5260.00	Pass
NVNT	ANT1	802.11n(HT40)	5270.00	Pass
NVNT	ANT1	802.11ac(VHT80)	5290.00	Pass

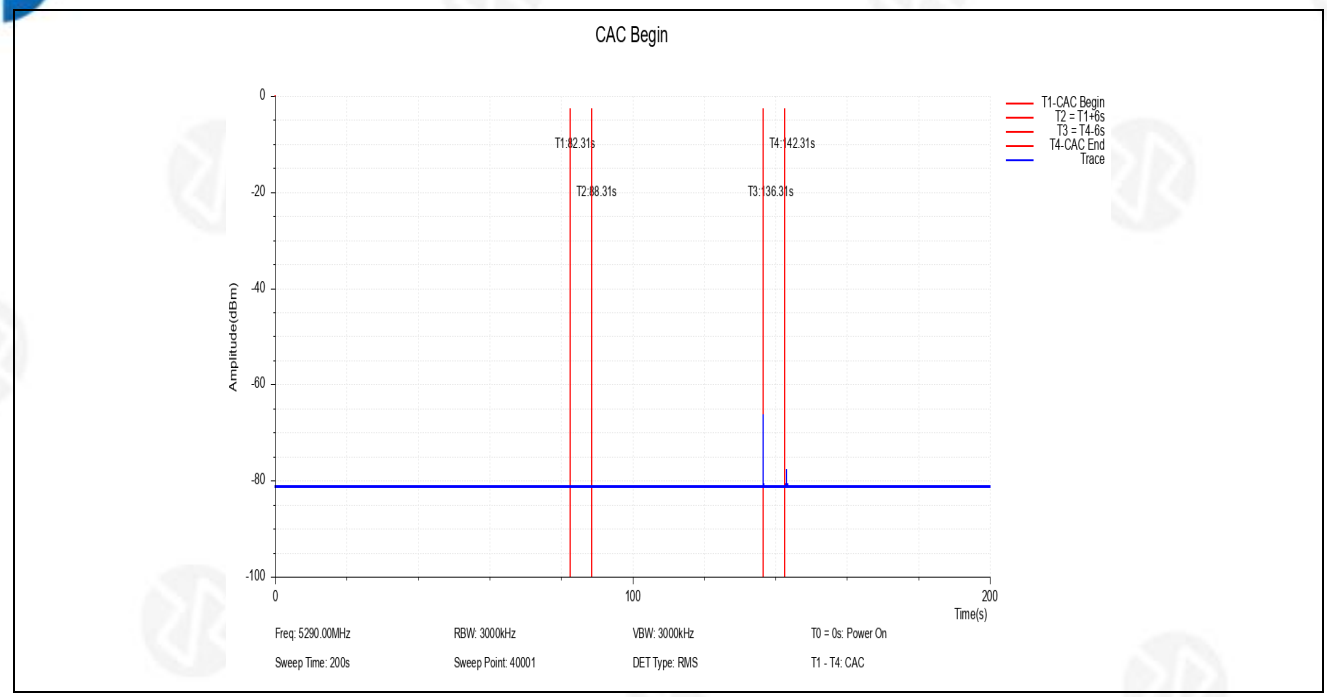
NVNT_ANT1_802_11a_CAC_End_802_11a_5260



NVNT_ANT1_802_11n(HT40)_CAC_End_802_11n(HT40)_5270



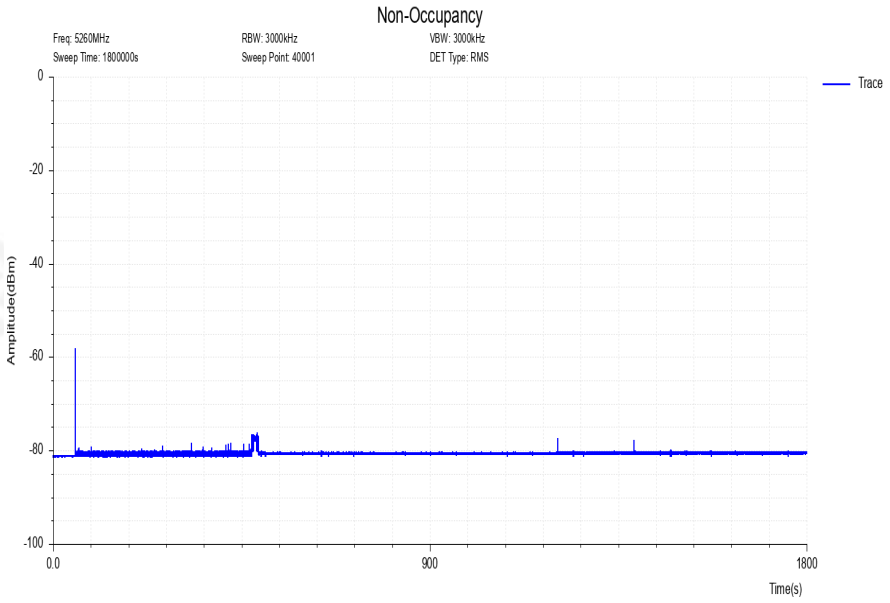
NVNT_ANT1_802_11ac(VHT80)_CAC_End_802_11ac(VHT80)_5290


CAC Begin
T1-CAC Begin
T2 = T1+6s
T3 = T4-6s
T4-CAC End
Trace
T1:82.31s
T2:88.31s
T3:136.31s
T4:142.31s
Amplitude(dBm)
0
-20
-40
-60
-80
-100
0
100
200
Time(s)
Freq: 5290.00MHz
RBW: 3000kHz
VBW: 3000kHz
T0 = 0s: Power On
Sweep Time: 200s
Sweep Point: 40001
DET Type: RMS
T1 - T4: CAC

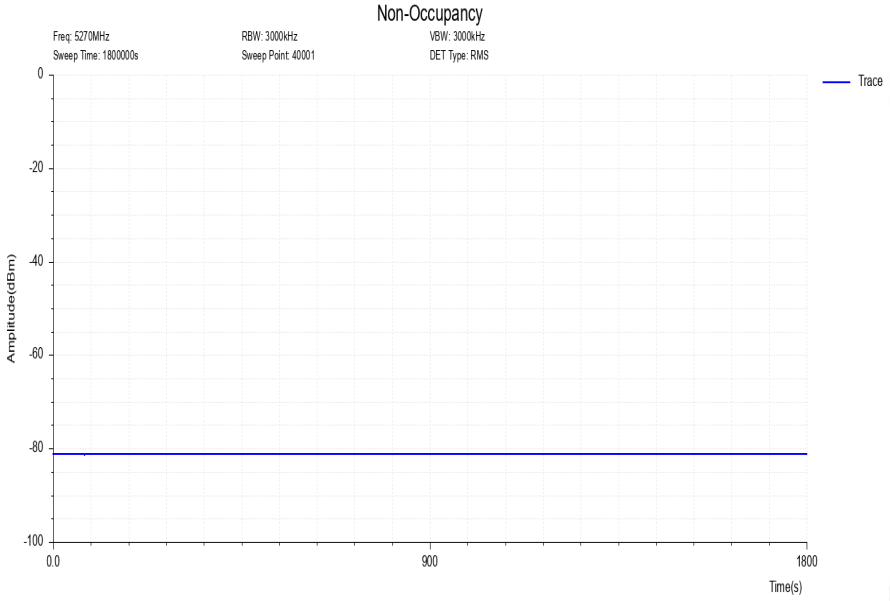
4. Shutdown&Non-Occupancy

Condition	Antenna	Modulation	Frequency (MHz)	Pulse NO.	Limit	Result
NVNT	ANT1	802.11a	5260	0	0	Pass
NVNT	ANT1	802.11n(HT40)	5270	0	0	Pass
NVNT	ANT1	802.11ac(VHT80)	5290	0	0	Pass

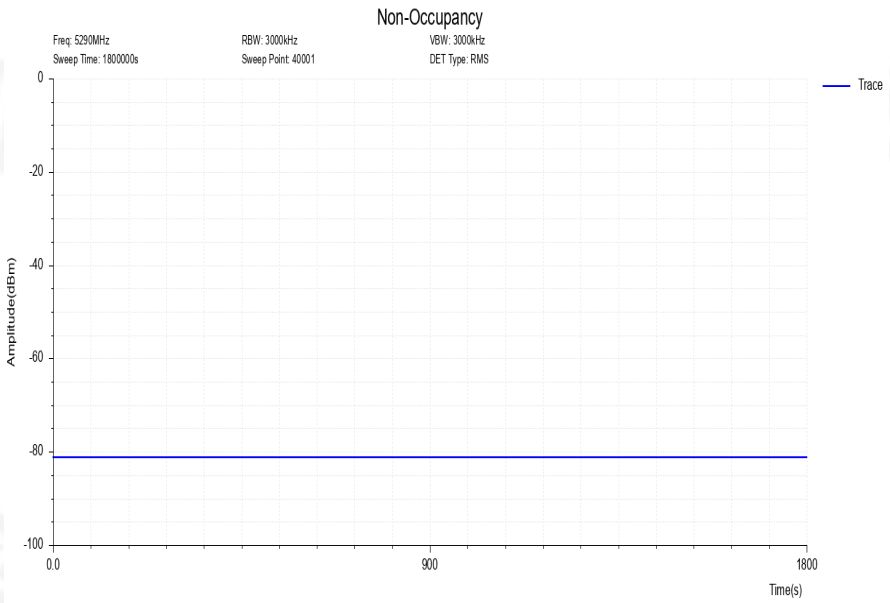
NVNT_ANT1_802_11a_Non-Occupancy_802_11a_5260



NVNT_ANT1_802_11n(HT40)_Non-Occupancy_802_11n(HT40)_5270

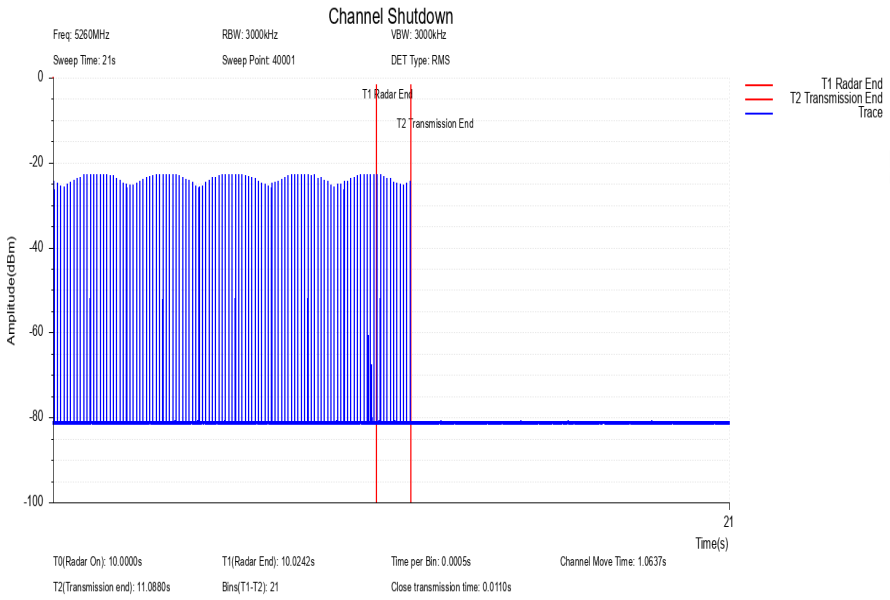


NVNT_ANT1_802_11ac(VHT80)_Non-Occupancy_802_11ac(VHT80)_5290

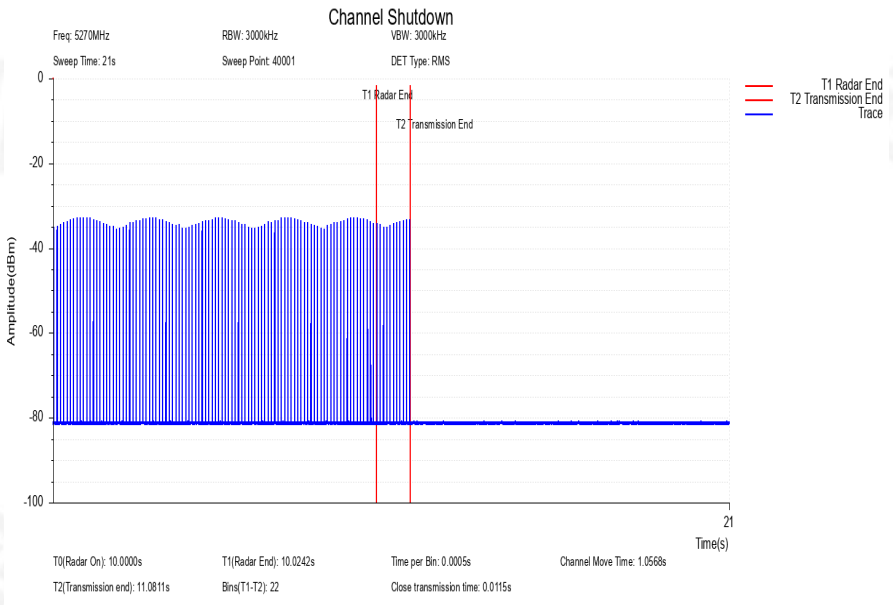


Condition	Antenna	Mode	Frequency (MHz)	Channel Move Time(s)	Channel Move Time Limit(s)	Close Transmission Time (s)	Close Transmission Time Limit(s)	Result
NVNT	ANT1	802.11a	5260	1.0637	10	0.0110	1	Pass
NVNT	ANT1	802.11n(HT40)	5270	1.0569	10	0.0116	1	Pass
NVNT	ANT1	802.11ac(VHT80)	5290	1.0989	10	0.0116	1	Pass

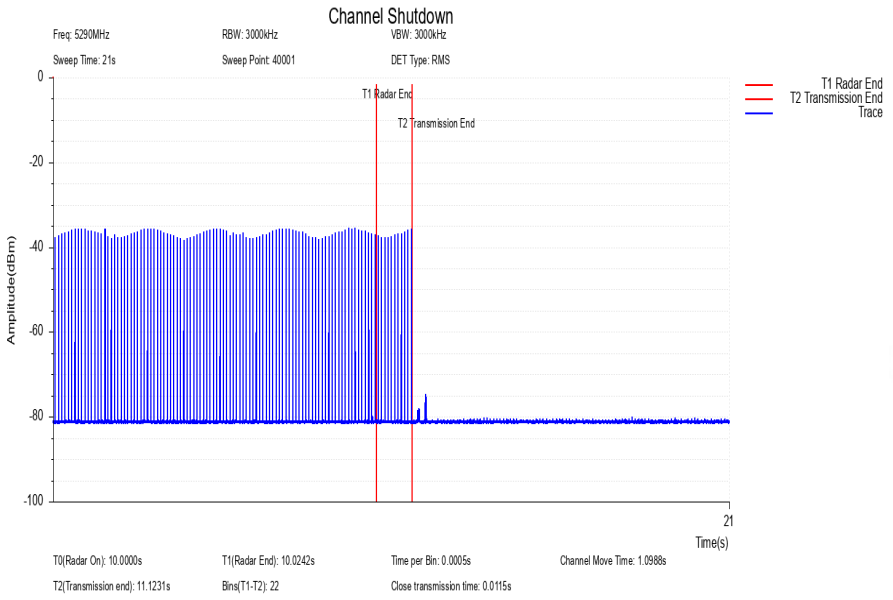
NVNT_ANT1_802_11a_Shutdown_802_11a_5260



NVNT_ANT1_802_11n(HT40)_Shutdown_802_11n(HT40)_5270



NVNT_ANT1_802_11ac(VHT80)_Shutdown_802_11ac(VHT80)_5290



5. Detection Bandwidth

EUT Frequency (MHz): 5260.00 Modulation: 802.11a												
Radar Frequency (MHz)	Trial1	Trial2	Trial3	Trial4	Trial5	Trial6	Trial7	Trial8	Trial9	Trial10	Detection Rate(%)	Limit(%)
5249	0	0	0	1	0	0	0	0	0	0	-	-
5250	1	0	1	1	1	1	1	1	1	1	90.00	90
5251	1	1	1	0	1	1	1	1	1	1	90.00	90
5252	1	1	1	1	1	1	1	1	1	1	100.00	90
5253	1	1	1	1	1	1	0	1	1	1	90.00	90
5254	1	1	1	1	1	1	1	1	1	1	100.00	90
5255	1	1	1	1	1	1	0	1	1	1	90.00	90
5265	1	1	1	1	1	1	1	1	1	1	100.00	90
5266	1	1	1	1	1	1	1	1	0	1	90.00	90
5267	0	1	1	1	1	1	1	1	1	1	90.00	90
5268	1	1	1	1	1	1	1	1	1	1	100.00	90
5269	1	1	1	1	0	1	1	1	1	1	90.00	90
5270	1	1	1	1	0	1	1	1	1	1	90.00	90
5271	0	0	0	0	1	0	0	0	0	0	-	-
Detection Bandwidth:20M												
100% of EUT 99% Power Bandwidth: 18												
Detect Bandwidth = (5269) FH - (5251) FL= 18 MHz; The 99% channel bandwidth is 16.45MHz. (See the 99% BW section of the RF report for further measurement details)NII Detection Bandwidth Limit (MHz):16.45MHz x 100% = 16.45MHz.												
"1" = Detection; "0" = No Detection												
Test Result: Pass												

EUT Frequency (MHz): 5270.00 Modulation: 802.11n(HT40)												
Radar Frequency (MHz)	Trial1	Trial2	Trial3	Trial4	Trial5	Trial6	Trial7	Trial8	Trial9	Trial10	Detection Rate(%)	Limit(%)
5249	0	0	0	0	0	0	0	0	0	0	-	-
5250	1	1	1	1	1	1	0	1	1	1	90.00	90
5251	1	1	1	1	1	1	1	1	1	1	100.00	90
5252	1	1	1	1	1	1	1	1	1	1	100.00	90
5253	1	1	1	1	1	1	1	1	1	0	90.00	90
5254	1	1	1	1	1	1	1	1	1	1	100.00	90
5255	1	1	1	1	1	1	1	1	1	1	100.00	90
5260	1	1	1	1	1	1	1	1	1	1	100.00	90
5265	1	1	1	1	1	1	1	1	1	1	100.00	90
5275	1	1	1	1	1	1	1	1	1	1	100.00	90
5280	1	1	1	1	1	1	1	1	1	1	100.00	90
5285	1	1	1	1	1	1	1	1	1	1	100.00	90
5286	1	1	1	1	1	1	1	1	1	1	100.00	90
5287	1	1	1	1	1	1	1	0	1	1	90.00	90
5288	1	1	1	1	1	1	1	1	1	1	100.00	90
5289	1	1	1	1	1	1	1	1	1	1	100.00	90
5290	1	1	1	1	1	1	1	1	0	1	90.00	90
5291	0	0	0	0	0	0	0	0	0	0	-	-
Detection Bandwidth:40M												
100%% of EUT 99%% Power Bandwidth: 38												
Detect Bandwidth = (5289) FH - (5251) FL= 38 MHz The 99% channel bandwidth is 36.09MHz. (See the 99% BW section of the RF report for further measurement details)NII Detection Bandwidth Limit (MHz):36.09MHz x 100% = 36.09MHz.												
"1" = Detection; "0" = No Detection												
Test Result: Pass												

EUT Frequency (MHz): 5290.00 Modulation: 802.11ac(VHT80)												
Radar Frequency (MHz)	Trial1	Trial2	Trial3	Trial4	Trial5	Trial6	Trial7	Trial8	Trial9	Trial10	Detection Rate(%)	Limit(%)
5249	0	0	0	0	0	0	0	0	0	0	-	-
5250	1	1	1	1	1	1	1	1	1	1	100.00	90
5251	1	1	1	1	1	1	1	1	1	1	100.00	90
5252	1	1	1	1	1	1	1	1	1	1	100.00	90
5253	1	1	1	1	1	1	1	1	1	1	100.00	90
5254	1	1	1	1	1	1	1	1	1	1	100.00	90
5255	1	1	1	1	1	1	1	1	1	1	100.00	90

5260	1	1	1	1	1	1	1	1	1	1	100.00	90
5265	1	1	1	1	1	1	1	1	1	1	100.00	90
5270	1	1	1	1	1	1	1	1	1	1	100.00	90
5275	1	1	1	1	1	1	1	1	1	1	100.00	90
5280	1	1	1	1	1	1	1	1	1	1	100.00	90
5285	0	1	1	1	1	1	1	1	1	1	90.00	90
5295	1	1	1	1	1	1	1	1	1	1	100.00	90
5300	1	1	1	1	1	1	1	1	1	1	100.00	90
5305	1	1	1	1	1	1	1	1	1	1	100.00	90
5310	1	1	1	1	1	1	1	1	0	1	90.00	90
5315	1	1	1	1	1	1	1	1	1	1	100.00	90
5320	1	1	1	1	1	1	1	1	1	1	100.00	90
5325	1	1	1	1	1	1	1	1	1	1	100.00	90
5326	1	1	1	1	1	1	1	1	1	1	100.00	90
5327	1	1	1	1	1	0	1	1	1	1	90.00	90
5328	1	1	1	1	1	1	1	1	1	1	100.00	90
5329	1	1	1	1	1	1	1	1	1	1	100.00	90
5330	1	1	1	1	1	1	1	1	1	1	100.00	90
5331	0	0	0	0	0	0	0	0	0	0	-	-
Detection Bandwidth:80M												
100%% of EUT 99%% Power Bandwidth: 78												
Detect Bandwidth = (5329) FH - (5251) FL= 78 MHz The 99% channel bandwidth is 76.12MHz. (See the 99% BW section of the RF report for further measurement details)NII Detection Bandwidth Limit (MHz):16.45MHz x 100% =76.12MHz.												
"1" = Detection; "0" = No Detection												
Test Result: Pass												

6. Statistical Performance Check

Frequency(MHz)	Modulation	Radar Type	Result(%)	Limit(%)	Verdict
5260.00	802.11a	Type1	90.00	60	Pass
5260.00	802.11a	Type2	90.00	60	Pass
5260.00	802.11a	Type3	93.33	60	Pass
5260.00	802.11a	Type4	93.33	60	Pass
5260.00	802.11a	Aggregate(Radar Types 1_4)	91.67	80	Pass
5260.00	802.11a	Type5	96.67	80	Pass
5260.00	802.11a	Type6	93.33	70	Pass
5270.00	802.11n(HT40)	Type1	96.67	60	Pass
5270.00	802.11n(HT40)	Type2	93.33	60	Pass
5270.00	802.11n(HT40)	Type3	96.67	60	Pass
5270.00	802.11n(HT40)	Type4	96.67	60	Pass
5270.00	802.11n(HT40)	Aggregate(Radar Types 1_4)	95.00	80	Pass
5270.00	802.11n(HT40)	Type5	90.00	80	Pass
5270.00	802.11n(HT40)	Type6	90.00	70	Pass
5290.00	802.11ac(VHT80)	Type1	100.00	60	Pass
5290.00	802.11ac(VHT80)	Type2	90.00	60	Pass
5290.00	802.11ac(VHT80)	Type3	93.33	60	Pass
5290.00	802.11ac(VHT80)	Type4	90.00	60	Pass
5290.00	802.11ac(VHT80)	Aggregate(Radar Types 1_4)	93.33	80	Pass
5290.00	802.11ac(VHT80)	Type5	96.67	80	Pass
5290.00	802.11ac(VHT80)	Type6	90.00	70	Pass

Frequency(MHz)	Modulation	Radar Type	Trial#	Detection(YES/NO)
5260.00	802.11a	Type1	00	YES
5260.00	802.11a	Type1	01	YES
5260.00	802.11a	Type1	02	NO
5260.00	802.11a	Type1	03	YES
5260.00	802.11a	Type1	04	YES
5260.00	802.11a	Type1	05	NO
5260.00	802.11a	Type1	06	YES
5260.00	802.11a	Type1	07	YES
5260.00	802.11a	Type1	08	YES
5260.00	802.11a	Type1	09	YES
5260.00	802.11a	Type1	10	YES
5260.00	802.11a	Type1	11	NO
5260.00	802.11a	Type1	12	YES
5260.00	802.11a	Type1	13	YES
5260.00	802.11a	Type1	14	YES
5260.00	802.11a	Type1	15	YES
5260.00	802.11a	Type1	16	YES
5260.00	802.11a	Type1	17	YES
5260.00	802.11a	Type1	18	YES
5260.00	802.11a	Type1	19	YES
5260.00	802.11a	Type1	20	YES
5260.00	802.11a	Type1	21	YES
5260.00	802.11a	Type1	22	YES
5260.00	802.11a	Type1	23	YES
5260.00	802.11a	Type1	24	YES
5260.00	802.11a	Type1	25	YES
5260.00	802.11a	Type1	26	YES
5260.00	802.11a	Type1	27	YES
5260.00	802.11a	Type1	28	YES
5260.00	802.11a	Type1	29	YES
5260.00	802.11a	Type2	00	YES
5260.00	802.11a	Type2	01	YES
5260.00	802.11a	Type2	02	YES
5260.00	802.11a	Type2	03	YES
5260.00	802.11a	Type2	04	YES
5260.00	802.11a	Type2	05	YES
5260.00	802.11a	Type2	06	YES
5260.00	802.11a	Type2	07	NO
5260.00	802.11a	Type2	08	YES
5260.00	802.11a	Type2	09	YES
5260.00	802.11a	Type2	10	YES
5260.00	802.11a	Type2	11	YES
5260.00	802.11a	Type2	12	YES
5260.00	802.11a	Type2	13	YES
5260.00	802.11a	Type2	14	YES
5260.00	802.11a	Type2	15	YES

5260.00	802.11a	Type2	16	YES
5260.00	802.11a	Type2	17	YES
5260.00	802.11a	Type2	18	YES
5260.00	802.11a	Type2	19	YES
5260.00	802.11a	Type2	20	NO
5260.00	802.11a	Type2	21	YES
5260.00	802.11a	Type2	22	YES
5260.00	802.11a	Type2	23	YES
5260.00	802.11a	Type2	24	YES
5260.00	802.11a	Type2	25	YES
5260.00	802.11a	Type2	26	YES
5260.00	802.11a	Type2	27	NO
5260.00	802.11a	Type2	28	YES
5260.00	802.11a	Type2	29	YES
5260.00	802.11a	Type3	00	YES
5260.00	802.11a	Type3	01	NO
5260.00	802.11a	Type3	02	YES
5260.00	802.11a	Type3	03	YES
5260.00	802.11a	Type3	04	YES
5260.00	802.11a	Type3	05	YES
5260.00	802.11a	Type3	06	YES
5260.00	802.11a	Type3	07	YES
5260.00	802.11a	Type3	08	YES
5260.00	802.11a	Type3	09	YES
5260.00	802.11a	Type3	10	YES
5260.00	802.11a	Type3	11	YES
5260.00	802.11a	Type3	12	YES
5260.00	802.11a	Type3	13	YES
5260.00	802.11a	Type3	14	YES
5260.00	802.11a	Type3	15	YES
5260.00	802.11a	Type3	16	YES
5260.00	802.11a	Type3	17	YES
5260.00	802.11a	Type3	18	YES
5260.00	802.11a	Type3	19	YES
5260.00	802.11a	Type3	20	YES
5260.00	802.11a	Type3	21	YES
5260.00	802.11a	Type3	22	YES
5260.00	802.11a	Type3	23	YES
5260.00	802.11a	Type3	24	YES
5260.00	802.11a	Type3	25	YES
5260.00	802.11a	Type3	26	YES
5260.00	802.11a	Type3	27	YES
5260.00	802.11a	Type3	28	YES
5260.00	802.11a	Type3	29	NO
5260.00	802.11a	Type4	00	YES
5260.00	802.11a	Type4	01	YES
5260.00	802.11a	Type4	02	YES
5260.00	802.11a	Type4	03	YES
5260.00	802.11a	Type4	04	YES
5260.00	802.11a	Type4	05	YES
5260.00	802.11a	Type4	06	YES
5260.00	802.11a	Type4	07	NO
5260.00	802.11a	Type4	08	NO
5260.00	802.11a	Type4	09	NO
5260.00	802.11a	Type4	10	YES
5260.00	802.11a	Type4	11	YES
5260.00	802.11a	Type4	12	YES
5260.00	802.11a	Type4	13	NO
5260.00	802.11a	Type4	14	YES
5260.00	802.11a	Type4	15	NO
5260.00	802.11a	Type4	16	YES
5260.00	802.11a	Type4	17	YES
5260.00	802.11a	Type4	18	NO
5260.00	802.11a	Type4	19	YES
5260.00	802.11a	Type4	20	YES
5260.00	802.11a	Type4	21	YES
5260.00	802.11a	Type4	22	YES
5260.00	802.11a	Type4	23	YES
5260.00	802.11a	Type4	24	YES
5260.00	802.11a	Type4	25	YES
5260.00	802.11a	Type4	26	YES
5260.00	802.11a	Type4	27	YES
5260.00	802.11a	Type4	28	YES
5260.00	802.11a	Type4	29	YES
5260.00	802.11a	Type5	00	YES

5260.00	802.11a	Type5	01	YES
5260.00	802.11a	Type5	02	YES
5260.00	802.11a	Type5	03	YES
5260.00	802.11a	Type5	04	YES
5260.00	802.11a	Type5	05	YES
5260.00	802.11a	Type5	06	YES
5260.00	802.11a	Type5	07	YES
5260.00	802.11a	Type5	08	YES
5260.00	802.11a	Type5	09	YES
5260.00	802.11a	Type5	10	YES
5260.00	802.11a	Type5	11	YES
5260.00	802.11a	Type5	12	YES
5260.00	802.11a	Type5	13	NO
5260.00	802.11a	Type5	14	YES
5260.00	802.11a	Type5	15	YES
5260.00	802.11a	Type5	16	YES
5260.00	802.11a	Type5	17	YES
5260.00	802.11a	Type5	18	YES
5260.00	802.11a	Type5	19	YES
5260.00	802.11a	Type5	20	YES
5260.00	802.11a	Type5	21	YES
5260.00	802.11a	Type5	22	NO
5260.00	802.11a	Type5	23	YES
5260.00	802.11a	Type5	24	YES
5260.00	802.11a	Type5	25	YES
5260.00	802.11a	Type5	26	YES
5260.00	802.11a	Type5	27	YES
5260.00	802.11a	Type5	28	YES
5260.00	802.11a	Type5	29	YES
5260.00	802.11a	Type6	00	YES
5260.00	802.11a	Type6	01	YES
5260.00	802.11a	Type6	02	YES
5260.00	802.11a	Type6	03	NO
5260.00	802.11a	Type6	04	YES
5260.00	802.11a	Type6	05	YES
5260.00	802.11a	Type6	06	YES
5260.00	802.11a	Type6	07	YES
5260.00	802.11a	Type6	08	YES
5260.00	802.11a	Type6	09	NO
5260.00	802.11a	Type6	10	YES
5260.00	802.11a	Type6	11	YES
5260.00	802.11a	Type6	12	YES
5260.00	802.11a	Type6	13	YES
5260.00	802.11a	Type6	14	YES
5260.00	802.11a	Type6	15	NO
5260.00	802.11a	Type6	16	YES
5260.00	802.11a	Type6	17	YES
5260.00	802.11a	Type6	18	YES
5260.00	802.11a	Type6	19	YES
5260.00	802.11a	Type6	20	YES
5260.00	802.11a	Type6	21	YES
5260.00	802.11a	Type6	22	YES
5260.00	802.11a	Type6	23	YES
5260.00	802.11a	Type6	24	YES
5260.00	802.11a	Type6	25	YES
5260.00	802.11a	Type6	26	YES
5260.00	802.11a	Type6	27	YES
5260.00	802.11a	Type6	28	YES
5260.00	802.11a	Type6	29	YES
5270.00	802.11n(HT40)	Type1	00	YES
5270.00	802.11n(HT40)	Type1	01	YES
5270.00	802.11n(HT40)	Type1	02	YES
5270.00	802.11n(HT40)	Type1	03	YES
5270.00	802.11n(HT40)	Type1	04	YES
5270.00	802.11n(HT40)	Type1	05	YES
5270.00	802.11n(HT40)	Type1	06	YES
5270.00	802.11n(HT40)	Type1	07	YES
5270.00	802.11n(HT40)	Type1	08	YES
5270.00	802.11n(HT40)	Type1	09	YES
5270.00	802.11n(HT40)	Type1	10	YES
5270.00	802.11n(HT40)	Type1	11	YES
5270.00	802.11n(HT40)	Type1	12	YES
5270.00	802.11n(HT40)	Type1	13	YES
5270.00	802.11n(HT40)	Type1	14	YES
5270.00	802.11n(HT40)	Type1	15	YES

5270.00	802.11n(HT40)	Type1	16	YES
5270.00	802.11n(HT40)	Type1	17	YES
5270.00	802.11n(HT40)	Type1	18	YES
5270.00	802.11n(HT40)	Type1	19	YES
5270.00	802.11n(HT40)	Type1	20	YES
5270.00	802.11n(HT40)	Type1	21	YES
5270.00	802.11n(HT40)	Type1	22	YES
5270.00	802.11n(HT40)	Type1	23	YES
5270.00	802.11n(HT40)	Type1	24	YES
5270.00	802.11n(HT40)	Type1	25	NO
5270.00	802.11n(HT40)	Type1	26	YES
5270.00	802.11n(HT40)	Type1	27	YES
5270.00	802.11n(HT40)	Type1	28	YES
5270.00	802.11n(HT40)	Type1	29	YES
5270.00	802.11n(HT40)	Type2	00	YES
5270.00	802.11n(HT40)	Type2	01	YES
5270.00	802.11n(HT40)	Type2	02	YES
5270.00	802.11n(HT40)	Type2	03	YES
5270.00	802.11n(HT40)	Type2	04	YES
5270.00	802.11n(HT40)	Type2	05	YES
5270.00	802.11n(HT40)	Type2	06	YES
5270.00	802.11n(HT40)	Type2	07	NO
5270.00	802.11n(HT40)	Type2	08	YES
5270.00	802.11n(HT40)	Type2	09	YES
5270.00	802.11n(HT40)	Type2	10	YES
5270.00	802.11n(HT40)	Type2	11	YES
5270.00	802.11n(HT40)	Type2	12	YES
5270.00	802.11n(HT40)	Type2	13	YES
5270.00	802.11n(HT40)	Type2	14	YES
5270.00	802.11n(HT40)	Type2	15	YES
5270.00	802.11n(HT40)	Type2	16	YES
5270.00	802.11n(HT40)	Type2	17	YES
5270.00	802.11n(HT40)	Type2	18	NO
5270.00	802.11n(HT40)	Type2	19	YES
5270.00	802.11n(HT40)	Type2	20	YES
5270.00	802.11n(HT40)	Type2	21	YES
5270.00	802.11n(HT40)	Type2	22	YES
5270.00	802.11n(HT40)	Type2	23	YES
5270.00	802.11n(HT40)	Type2	24	YES
5270.00	802.11n(HT40)	Type2	25	YES
5270.00	802.11n(HT40)	Type2	26	YES
5270.00	802.11n(HT40)	Type2	27	YES
5270.00	802.11n(HT40)	Type2	28	YES
5270.00	802.11n(HT40)	Type2	29	YES
5270.00	802.11n(HT40)	Type3	00	YES
5270.00	802.11n(HT40)	Type3	01	YES
5270.00	802.11n(HT40)	Type3	02	YES
5270.00	802.11n(HT40)	Type3	03	YES
5270.00	802.11n(HT40)	Type3	04	YES
5270.00	802.11n(HT40)	Type3	05	YES
5270.00	802.11n(HT40)	Type3	06	YES
5270.00	802.11n(HT40)	Type3	07	YES
5270.00	802.11n(HT40)	Type3	08	YES
5270.00	802.11n(HT40)	Type3	09	YES
5270.00	802.11n(HT40)	Type3	10	YES
5270.00	802.11n(HT40)	Type3	11	YES
5270.00	802.11n(HT40)	Type3	12	YES
5270.00	802.11n(HT40)	Type3	13	YES
5270.00	802.11n(HT40)	Type3	14	YES
5270.00	802.11n(HT40)	Type3	15	YES
5270.00	802.11n(HT40)	Type3	16	YES
5270.00	802.11n(HT40)	Type3	17	YES
5270.00	802.11n(HT40)	Type3	18	YES
5270.00	802.11n(HT40)	Type3	19	YES
5270.00	802.11n(HT40)	Type3	20	YES
5270.00	802.11n(HT40)	Type3	21	YES
5270.00	802.11n(HT40)	Type3	22	YES
5270.00	802.11n(HT40)	Type3	23	YES
5270.00	802.11n(HT40)	Type3	24	YES
5270.00	802.11n(HT40)	Type3	25	YES
5270.00	802.11n(HT40)	Type3	26	YES
5270.00	802.11n(HT40)	Type3	27	YES
5270.00	802.11n(HT40)	Type3	28	NO
5270.00	802.11n(HT40)	Type3	29	YES
5270.00	802.11n(HT40)	Type4	00	YES

5270.00	802.11n(HT40)	Type4	01	YES
5270.00	802.11n(HT40)	Type4	02	YES
5270.00	802.11n(HT40)	Type4	03	YES
5270.00	802.11n(HT40)	Type4	04	YES
5270.00	802.11n(HT40)	Type4	05	YES
5270.00	802.11n(HT40)	Type4	06	YES
5270.00	802.11n(HT40)	Type4	07	YES
5270.00	802.11n(HT40)	Type4	08	YES
5270.00	802.11n(HT40)	Type4	09	YES
5270.00	802.11n(HT40)	Type4	10	YES
5270.00	802.11n(HT40)	Type4	11	YES
5270.00	802.11n(HT40)	Type4	12	YES
5270.00	802.11n(HT40)	Type4	13	NO
5270.00	802.11n(HT40)	Type4	14	YES
5270.00	802.11n(HT40)	Type4	15	YES
5270.00	802.11n(HT40)	Type4	16	YES
5270.00	802.11n(HT40)	Type4	17	YES
5270.00	802.11n(HT40)	Type4	18	YES
5270.00	802.11n(HT40)	Type4	19	YES
5270.00	802.11n(HT40)	Type4	20	YES
5270.00	802.11n(HT40)	Type4	21	YES
5270.00	802.11n(HT40)	Type4	22	YES
5270.00	802.11n(HT40)	Type4	23	YES
5270.00	802.11n(HT40)	Type4	24	YES
5270.00	802.11n(HT40)	Type4	25	YES
5270.00	802.11n(HT40)	Type4	26	YES
5270.00	802.11n(HT40)	Type4	27	YES
5270.00	802.11n(HT40)	Type4	28	YES
5270.00	802.11n(HT40)	Type4	29	YES
5270.00	802.11n(HT40)	Type5	00	YES
5270.00	802.11n(HT40)	Type5	01	YES
5270.00	802.11n(HT40)	Type5	02	NO
5270.00	802.11n(HT40)	Type5	03	YES
5270.00	802.11n(HT40)	Type5	04	YES
5270.00	802.11n(HT40)	Type5	05	YES
5270.00	802.11n(HT40)	Type5	06	YES
5270.00	802.11n(HT40)	Type5	07	YES
5270.00	802.11n(HT40)	Type5	08	YES
5270.00	802.11n(HT40)	Type5	09	YES
5270.00	802.11n(HT40)	Type5	10	YES
5270.00	802.11n(HT40)	Type5	11	YES
5270.00	802.11n(HT40)	Type5	12	NO
5270.00	802.11n(HT40)	Type5	13	YES
5270.00	802.11n(HT40)	Type5	14	YES
5270.00	802.11n(HT40)	Type5	15	YES
5270.00	802.11n(HT40)	Type5	16	YES
5270.00	802.11n(HT40)	Type5	17	YES
5270.00	802.11n(HT40)	Type5	18	YES
5270.00	802.11n(HT40)	Type5	19	YES
5270.00	802.11n(HT40)	Type5	20	YES
5270.00	802.11n(HT40)	Type5	21	YES
5270.00	802.11n(HT40)	Type5	22	YES
5270.00	802.11n(HT40)	Type5	23	YES
5270.00	802.11n(HT40)	Type5	24	YES
5270.00	802.11n(HT40)	Type5	25	YES
5270.00	802.11n(HT40)	Type5	26	NO
5270.00	802.11n(HT40)	Type5	27	YES
5270.00	802.11n(HT40)	Type5	28	YES
5270.00	802.11n(HT40)	Type5	29	YES
5270.00	802.11n(HT40)	Type6	00	YES
5270.00	802.11n(HT40)	Type6	01	YES
5270.00	802.11n(HT40)	Type6	02	YES
5270.00	802.11n(HT40)	Type6	03	YES
5270.00	802.11n(HT40)	Type6	04	YES
5270.00	802.11n(HT40)	Type6	05	YES
5270.00	802.11n(HT40)	Type6	06	YES
5270.00	802.11n(HT40)	Type6	07	YES
5270.00	802.11n(HT40)	Type6	08	NO
5270.00	802.11n(HT40)	Type6	09	YES
5270.00	802.11n(HT40)	Type6	10	YES
5270.00	802.11n(HT40)	Type6	11	YES
5270.00	802.11n(HT40)	Type6	12	NO
5270.00	802.11n(HT40)	Type6	13	YES
5270.00	802.11n(HT40)	Type6	14	YES
5270.00	802.11n(HT40)	Type6	15	YES

5270.00	802.11n(HT40)	Type6	16	YES
5270.00	802.11n(HT40)	Type6	17	YES
5270.00	802.11n(HT40)	Type6	18	YES
5270.00	802.11n(HT40)	Type6	19	YES
5270.00	802.11n(HT40)	Type6	20	YES
5270.00	802.11n(HT40)	Type6	21	YES
5270.00	802.11n(HT40)	Type6	22	YES
5270.00	802.11n(HT40)	Type6	23	NO
5270.00	802.11n(HT40)	Type6	24	YES
5270.00	802.11n(HT40)	Type6	25	YES
5270.00	802.11n(HT40)	Type6	26	YES
5270.00	802.11n(HT40)	Type6	27	YES
5270.00	802.11n(HT40)	Type6	28	YES
5270.00	802.11n(HT40)	Type6	29	YES
5290.00	802.11ac(VHT80)	Type1	00	YES
5290.00	802.11ac(VHT80)	Type1	01	YES
5290.00	802.11ac(VHT80)	Type1	02	YES
5290.00	802.11ac(VHT80)	Type1	03	YES
5290.00	802.11ac(VHT80)	Type1	04	YES
5290.00	802.11ac(VHT80)	Type1	05	YES
5290.00	802.11ac(VHT80)	Type1	06	YES
5290.00	802.11ac(VHT80)	Type1	07	YES
5290.00	802.11ac(VHT80)	Type1	08	YES
5290.00	802.11ac(VHT80)	Type1	09	YES
5290.00	802.11ac(VHT80)	Type1	10	YES
5290.00	802.11ac(VHT80)	Type1	11	YES
5290.00	802.11ac(VHT80)	Type1	12	YES
5290.00	802.11ac(VHT80)	Type1	13	YES
5290.00	802.11ac(VHT80)	Type1	14	YES
5290.00	802.11ac(VHT80)	Type1	15	YES
5290.00	802.11ac(VHT80)	Type1	16	YES
5290.00	802.11ac(VHT80)	Type1	17	YES
5290.00	802.11ac(VHT80)	Type1	18	YES
5290.00	802.11ac(VHT80)	Type1	19	YES
5290.00	802.11ac(VHT80)	Type1	20	YES
5290.00	802.11ac(VHT80)	Type1	21	YES
5290.00	802.11ac(VHT80)	Type1	22	YES
5290.00	802.11ac(VHT80)	Type1	23	YES
5290.00	802.11ac(VHT80)	Type1	24	YES
5290.00	802.11ac(VHT80)	Type1	25	YES
5290.00	802.11ac(VHT80)	Type1	26	YES
5290.00	802.11ac(VHT80)	Type1	27	YES
5290.00	802.11ac(VHT80)	Type1	28	YES
5290.00	802.11ac(VHT80)	Type1	29	YES
5290.00	802.11ac(VHT80)	Type2	00	YES
5290.00	802.11ac(VHT80)	Type2	01	YES
5290.00	802.11ac(VHT80)	Type2	02	YES
5290.00	802.11ac(VHT80)	Type2	03	YES
5290.00	802.11ac(VHT80)	Type2	04	YES
5290.00	802.11ac(VHT80)	Type2	05	YES
5290.00	802.11ac(VHT80)	Type2	06	NO
5290.00	802.11ac(VHT80)	Type2	07	YES
5290.00	802.11ac(VHT80)	Type2	08	YES
5290.00	802.11ac(VHT80)	Type2	09	YES
5290.00	802.11ac(VHT80)	Type2	10	YES
5290.00	802.11ac(VHT80)	Type2	11	YES
5290.00	802.11ac(VHT80)	Type2	12	YES
5290.00	802.11ac(VHT80)	Type2	13	YES
5290.00	802.11ac(VHT80)	Type2	14	NO
5290.00	802.11ac(VHT80)	Type2	15	YES
5290.00	802.11ac(VHT80)	Type2	16	YES
5290.00	802.11ac(VHT80)	Type2	17	YES
5290.00	802.11ac(VHT80)	Type2	18	YES
5290.00	802.11ac(VHT80)	Type2	19	YES
5290.00	802.11ac(VHT80)	Type2	20	YES
5290.00	802.11ac(VHT80)	Type2	21	YES
5290.00	802.11ac(VHT80)	Type2	22	YES
5290.00	802.11ac(VHT80)	Type2	23	YES
5290.00	802.11ac(VHT80)	Type2	24	YES
5290.00	802.11ac(VHT80)	Type2	25	YES
5290.00	802.11ac(VHT80)	Type2	26	YES
5290.00	802.11ac(VHT80)	Type2	27	NO
5290.00	802.11ac(VHT80)	Type2	28	YES
5290.00	802.11ac(VHT80)	Type2	29	YES
5290.00	802.11ac(VHT80)	Type3	00	YES

5290.00	802.11ac(VHT80)	Type3	01	YES
5290.00	802.11ac(VHT80)	Type3	02	YES
5290.00	802.11ac(VHT80)	Type3	03	YES
5290.00	802.11ac(VHT80)	Type3	04	YES
5290.00	802.11ac(VHT80)	Type3	05	YES
5290.00	802.11ac(VHT80)	Type3	06	YES
5290.00	802.11ac(VHT80)	Type3	07	YES
5290.00	802.11ac(VHT80)	Type3	08	YES
5290.00	802.11ac(VHT80)	Type3	09	YES
5290.00	802.11ac(VHT80)	Type3	10	YES
5290.00	802.11ac(VHT80)	Type3	11	YES
5290.00	802.11ac(VHT80)	Type3	12	YES
5290.00	802.11ac(VHT80)	Type3	13	YES
5290.00	802.11ac(VHT80)	Type3	14	YES
5290.00	802.11ac(VHT80)	Type3	15	YES
5290.00	802.11ac(VHT80)	Type3	16	YES
5290.00	802.11ac(VHT80)	Type3	17	YES
5290.00	802.11ac(VHT80)	Type3	18	YES
5290.00	802.11ac(VHT80)	Type3	19	YES
5290.00	802.11ac(VHT80)	Type3	20	NO
5290.00	802.11ac(VHT80)	Type3	21	NO
5290.00	802.11ac(VHT80)	Type3	22	YES
5290.00	802.11ac(VHT80)	Type3	23	YES
5290.00	802.11ac(VHT80)	Type3	24	YES
5290.00	802.11ac(VHT80)	Type3	25	YES
5290.00	802.11ac(VHT80)	Type3	26	YES
5290.00	802.11ac(VHT80)	Type3	27	YES
5290.00	802.11ac(VHT80)	Type3	28	YES
5290.00	802.11ac(VHT80)	Type3	29	YES
5290.00	802.11ac(VHT80)	Type4	00	YES
5290.00	802.11ac(VHT80)	Type4	01	YES
5290.00	802.11ac(VHT80)	Type4	02	YES
5290.00	802.11ac(VHT80)	Type4	03	YES
5290.00	802.11ac(VHT80)	Type4	04	YES
5290.00	802.11ac(VHT80)	Type4	05	YES
5290.00	802.11ac(VHT80)	Type4	06	YES
5290.00	802.11ac(VHT80)	Type4	07	NO
5290.00	802.11ac(VHT80)	Type4	08	NO
5290.00	802.11ac(VHT80)	Type4	09	NO
5290.00	802.11ac(VHT80)	Type4	10	YES
5290.00	802.11ac(VHT80)	Type4	11	YES
5290.00	802.11ac(VHT80)	Type4	12	YES
5290.00	802.11ac(VHT80)	Type4	13	YES
5290.00	802.11ac(VHT80)	Type4	14	YES
5290.00	802.11ac(VHT80)	Type4	15	YES
5290.00	802.11ac(VHT80)	Type4	16	YES
5290.00	802.11ac(VHT80)	Type4	17	YES
5290.00	802.11ac(VHT80)	Type4	18	YES
5290.00	802.11ac(VHT80)	Type4	19	YES
5290.00	802.11ac(VHT80)	Type4	20	YES
5290.00	802.11ac(VHT80)	Type4	21	YES
5290.00	802.11ac(VHT80)	Type4	22	YES
5290.00	802.11ac(VHT80)	Type4	23	YES
5290.00	802.11ac(VHT80)	Type4	24	YES
5290.00	802.11ac(VHT80)	Type4	25	YES
5290.00	802.11ac(VHT80)	Type4	26	YES
5290.00	802.11ac(VHT80)	Type4	27	NO
5290.00	802.11ac(VHT80)	Type4	28	YES
5290.00	802.11ac(VHT80)	Type4	29	YES
5290.00	802.11ac(VHT80)	Type5	00	YES
5290.00	802.11ac(VHT80)	Type5	01	YES
5290.00	802.11ac(VHT80)	Type5	02	NO
5290.00	802.11ac(VHT80)	Type5	03	YES
5290.00	802.11ac(VHT80)	Type5	04	YES
5290.00	802.11ac(VHT80)	Type5	05	YES
5290.00	802.11ac(VHT80)	Type5	06	YES
5290.00	802.11ac(VHT80)	Type5	07	YES
5290.00	802.11ac(VHT80)	Type5	08	YES
5290.00	802.11ac(VHT80)	Type5	09	YES
5290.00	802.11ac(VHT80)	Type5	10	YES
5290.00	802.11ac(VHT80)	Type5	11	YES
5290.00	802.11ac(VHT80)	Type5	12	YES
5290.00	802.11ac(VHT80)	Type5	13	YES
5290.00	802.11ac(VHT80)	Type5	14	YES
5290.00	802.11ac(VHT80)	Type5	15	YES

5290.00	802.11ac(VHT80)	Type5	16	YES
5290.00	802.11ac(VHT80)	Type5	17	YES
5290.00	802.11ac(VHT80)	Type5	18	YES
5290.00	802.11ac(VHT80)	Type5	19	YES
5290.00	802.11ac(VHT80)	Type5	20	YES
5290.00	802.11ac(VHT80)	Type5	21	YES
5290.00	802.11ac(VHT80)	Type5	22	YES
5290.00	802.11ac(VHT80)	Type5	23	YES
5290.00	802.11ac(VHT80)	Type5	24	YES
5290.00	802.11ac(VHT80)	Type5	25	YES
5290.00	802.11ac(VHT80)	Type5	26	YES
5290.00	802.11ac(VHT80)	Type5	27	YES
5290.00	802.11ac(VHT80)	Type5	28	YES
5290.00	802.11ac(VHT80)	Type5	29	YES
5290.00	802.11ac(VHT80)	Type6	00	NO
5290.00	802.11ac(VHT80)	Type6	01	YES
5290.00	802.11ac(VHT80)	Type6	02	YES
5290.00	802.11ac(VHT80)	Type6	03	YES
5290.00	802.11ac(VHT80)	Type6	04	YES
5290.00	802.11ac(VHT80)	Type6	05	YES
5290.00	802.11ac(VHT80)	Type6	06	YES
5290.00	802.11ac(VHT80)	Type6	07	YES
5290.00	802.11ac(VHT80)	Type6	08	YES
5290.00	802.11ac(VHT80)	Type6	09	YES
5290.00	802.11ac(VHT80)	Type6	10	YES
5290.00	802.11ac(VHT80)	Type6	11	YES
5290.00	802.11ac(VHT80)	Type6	12	YES
5290.00	802.11ac(VHT80)	Type6	13	YES
5290.00	802.11ac(VHT80)	Type6	14	YES
5290.00	802.11ac(VHT80)	Type6	15	YES
5290.00	802.11ac(VHT80)	Type6	16	NO
5290.00	802.11ac(VHT80)	Type6	17	YES
5290.00	802.11ac(VHT80)	Type6	18	YES
5290.00	802.11ac(VHT80)	Type6	19	YES
5290.00	802.11ac(VHT80)	Type6	20	YES
5290.00	802.11ac(VHT80)	Type6	21	YES
5290.00	802.11ac(VHT80)	Type6	22	YES
5290.00	802.11ac(VHT80)	Type6	23	YES
5290.00	802.11ac(VHT80)	Type6	24	YES
5290.00	802.11ac(VHT80)	Type6	25	NO
5290.00	802.11ac(VHT80)	Type6	26	YES
5290.00	802.11ac(VHT80)	Type6	27	YES
5290.00	802.11ac(VHT80)	Type6	28	YES
5290.00	802.11ac(VHT80)	Type6	29	YES

※※※※※ END OF REPORT ※※※※※