

FCC - DFS TEST REPORT

Report Number : 709502279701-00B Date of Issue: March 15, 2023

Model : Cra 3W

Product Type : Cradle

Applicant : SHINING 3D Tech Co., Ltd.

Address : No.1398, Xiangbin Road, Wenyan, Xiaoshan, Hangzhou, Zhejiang, China

Manufacturer : SHINING 3D Tech Co., Ltd.

Address : No.1398, Xiangbin Road, Wenyan, Xiaoshan, Hangzhou, Zhejiang, China

Test Result : ☒ Positive ☐ Negative

Total pages including Appendices : 72

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2 Details about the Test Laboratory

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch
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3 Description of the Equipment Under Test

Product:	Cradle
Model no.:	Cra 3W
FCC ID:	2AMG4-CRA3W
Options and accessories:	NA
Rating:	100-240V~, 50/60Hz
RF Transmission Frequency:	For 5G Wi-Fi For 802.11a/n/ac/ax: 5180~5240 MHz (U-NII-1) 5260~5320 MHz (U-NII-2A) 5500~5720 MHz (U-NII-2C) 5745~5825 MHz (U-NII-3)
RF Transmission Frequency (DFS band):	5260~5320 MHz (U-NII-2A) 5500~5720 MHz (U-NII-2C)
No. of Operated Channel:	5180~5240 MHz (U-NII-1) 5260~5320 MHz (U-NII-2A) 5500~5720 MHz (U-NII-2C) 5745~5825 MHz (U-NII-3)
Modulation:	Orthogonal Frequency Division Multiplexing (OFDM) for 802.11a/n/ac/ax
Hardware Version:	V1.0
Software Version:	V1.0
Data speed:	Wi-Fi: SISO: 11a 6 ~ 54Mbps, 11n HT20 6.5 ~ 72.2Mbps, 11n HT 40 13.5 ~ 150Mbps, 11ac VHT20 6.5 ~ 86.7Mbps, 11ac VHT40 13.5 ~ 200Mbps, 11ac VHT80 29.3 ~ 433.3Mbps 11ax HE20 7.313 ~ 143.382Mbps, 11ax HE40 14.625 ~ 286.765Mbps, 11ax HE80 30.625 ~ 600.490Mbps MIMO: 11a 6 ~ 54Mbps, 11n HT20 13 ~ 144.4Mbps, 11n HT 40 27 ~ 300Mbps, 11ac VHT20 13 ~ 173.3Mbps, 11ac VHT40 27 ~ 400Mbps, 11ac VHT80 58.5 ~ 866.7Mbps 11ax HE20 14.625 ~ 286.765Mbps, 11ax HE40 29.250 ~ 573.529Mbps, 11ax HE80 61.250 ~ 1200.980Mbps
Antenna Type:	FPC
Antenna Gain:	Antenna1: 1.59 dBi, Antenna2: 1.52 dBi

Directional gain: For output power: 1.59 dBi
Max. gain +array gain
Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$
For power spectral density: 4.60 dBi
GANT+ Array Gain
Array Gain= $10 \log(NANT/Nss)$ dB.

TPC function: ☒ With TPC ☐ Without TPC

Max EIRP: 20.62dBm(115.35mW)

Description of the EUT: The Equipment Under Test (EUT) is a Cradle with Wi-Fi Module. The EUT support Wi-Fi operated at 5GHz.

Test sample no.: SHA-687657-1

The sample's mentioned in this report is/are submitted/ supplied/ manufactured by client. The laboratory therefore assumes no responsibility for accuracy of information on the brand name, model number, origin of manufacture, consignment, antenna gain or any information supplied

4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart E 15.407(h)	PART 15 - RADIO FREQUENCY DEVICES Subpart E - Unlicensed National Information Infrastructure Devices

Test Method:

KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02

KDB 662911 D01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band

ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices

5 Summary of Test Results

Technical Requirements				
FCC Part 15 Subpart E; KDB 905462 D02				
Clause	Test	Test Result		
		Pass	Fail	N/A
15.407(h)(2); 6.3; 7.8.1	UNII Detection Bandwidth	☒	☐	☐
15.407(h)(2); 6.3; 7.8.2 Performance Requirement Check	Initial Channel Availability Check Time (CAC)	☒	☐	☐
	Radar Burst at the Beginning of the CAC	☒	☐	☐
	Radar Burst at the End of the CAC	☒	☐	☐
15.407(h)(2); 6.3; 7.8.3 In-Service Monitoring	Channel Move Time	☒	☐	☐
	Channel Closing Transmission Time	☒	☐	☐
	Non-Occupancy Period	☒	☐	☐
15.407; 6.3; 7.8.4	Statistical Performance Check	☒	☐	☐

Remark: ^a The EUT is a Master Device with Radar Detection.

6 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: 2AMG4-CRA3W, complies with DFS requirement in FCC Part 15 Subpart E.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: Feb. 01, 2023

Testing Start Date: Feb. 01, 2023

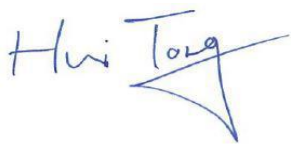
Testing End Date: Mar. 10, 2023

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shanghai Branch –

Reviewed by:

Prepared by:

Tested by:



Hui TONG
Reviewer Engineer

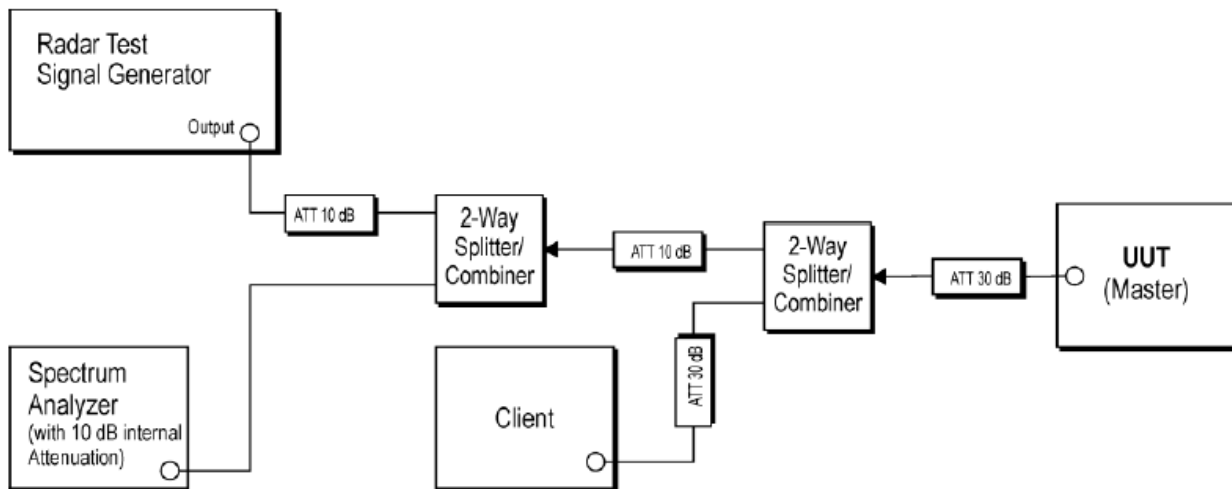


Wenqiang LU
Project Engineer

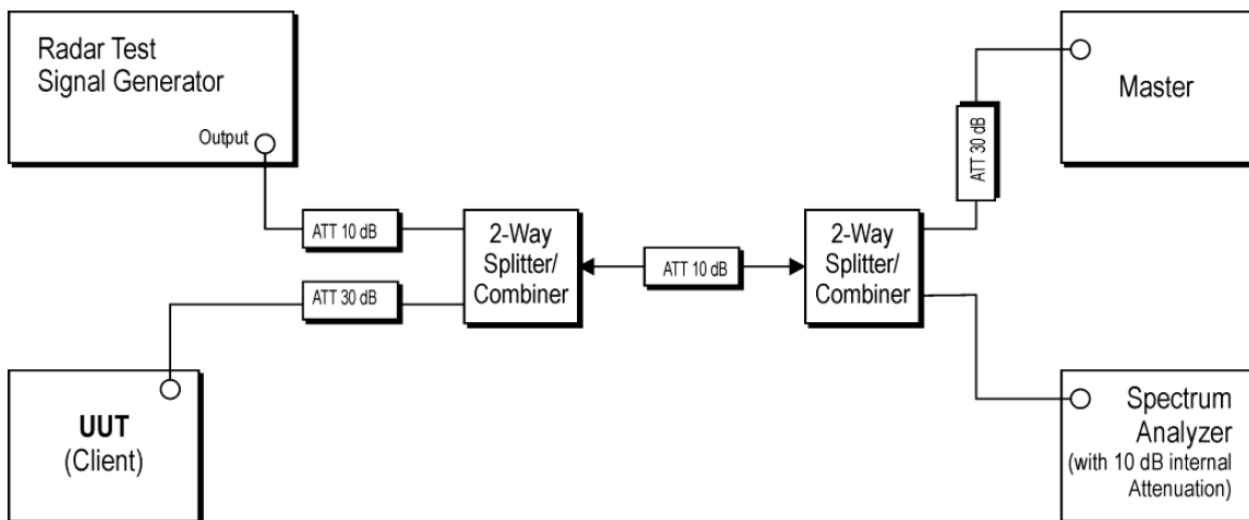
Huali CHENG
Test Engineer

7 Test setups

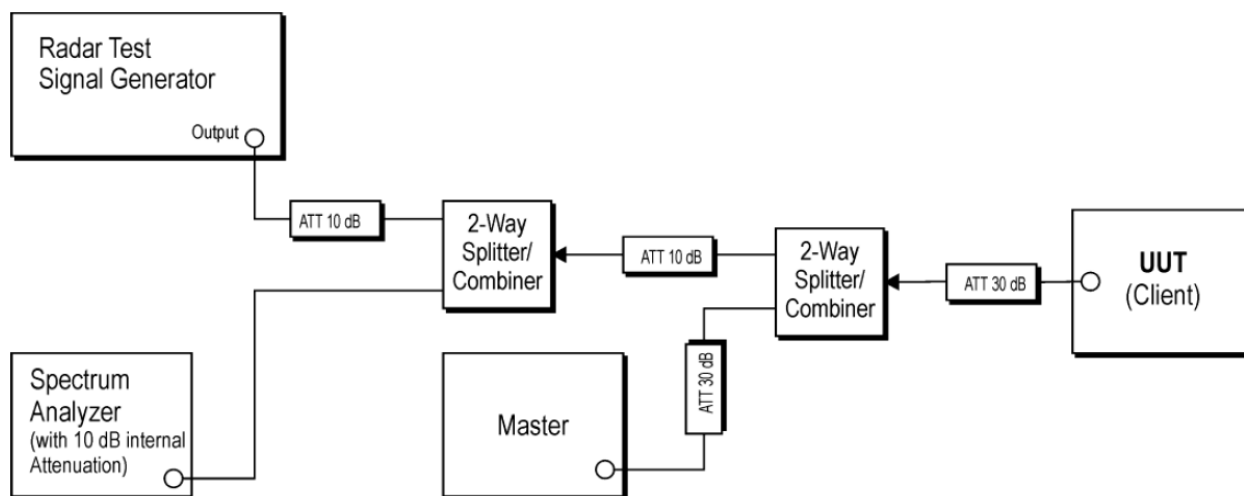
7.1 Setup for Master with injection at the Master



7.2 Setup for Client with injection at the Master



7.3 Setup for Client with injection at the Client



8. Systems test configuration

8.1 Auxiliary Equipment and software Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Notebook	MSI	Crossnair 15 R6E B12UEZ	--

Test software: QATool_Dbg.exe, which used to control the EUT in continues transmitting mode.

The system was configured to channel:

Test Mode	Channel (MHz)		
802.11a	5G WIFI-Band 1		
802.11n HT20	CH36 (5180MHz)	CH40 (5200MHz)	CH48 (5240MHz)
802.11ac VHT20	5G WIFI-Band 4		
802.11ax HE20	CH149 (5745MHz),	CH157 (5785MHz)	CH165 (5825MHz)

Test Mode	Channel (MHz)	
802.11n HT40	5G WIFI-Band 1	
802.11ac VHT40	CH38 (5190MHz)	CH46 (5230MHz)
802.11ax HE40	5G WIFI-Band 4	
	CH151 (5755MHz)	CH159 (5795MHz)

Test Mode	Channel (MHz)		
802.11ac VHT80	5G WIFI-Band 1		
802.11ax HE80	CH42 (5210MHz)		
	5G WIFI-Band 2		
	CH58 (5290MHz)		
	5G WIFI-Band 3		
	CH106 (5530MHz)	CH123 (5610MHz)	CH138 (5690MHz)
	5G WIFI-Band 4		
	CH155 (5775MHz)		

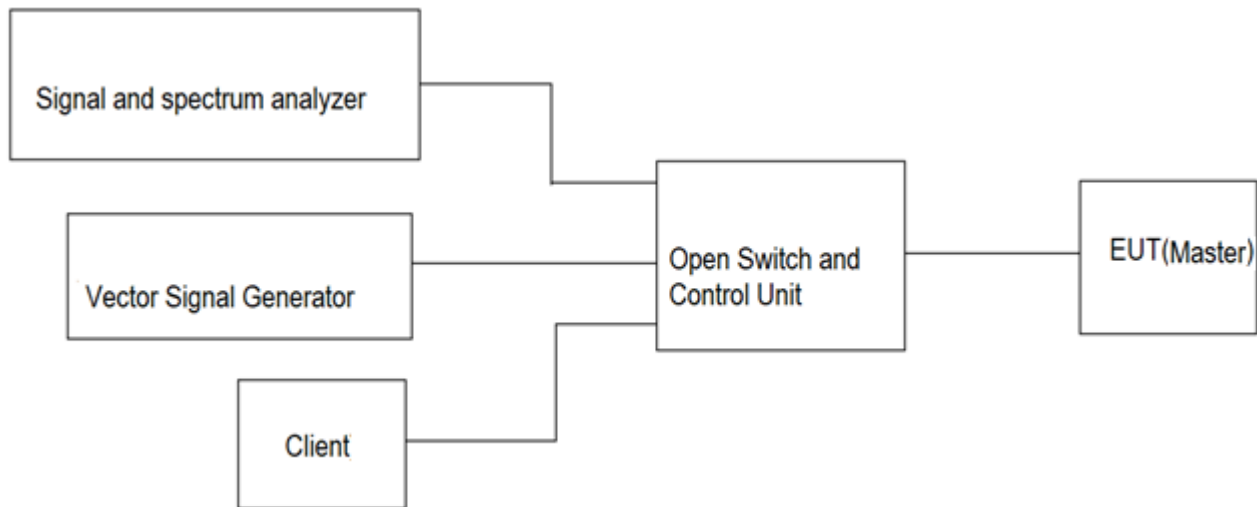
The pre-test has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

	Modulation Type	Data Rate
SISO	802.11a OFDM	6Mbps
	802.11n (HT20): OFDM	MCS0 (6.5Mbps)
	802.11n (HT40): OFDM	MCS0 (13.5Mbps)
	802.11ac (VHT20): OFDM	11ac 6.5Mbps
	802.11ac (VHT40): OFDM	11ac 13.5Mbps
	802.11ac (VHT80): OFDM	11ac 29.3Mbps
	802.11ax (HE20): OFDM	11ax 7.313Mbps
	802.11ax (HE40): OFDM	11ax 14.625Mbps
	802.11ax (HE80): OFDM	11ax 30.625Mbps

	Modulation Type	Data Rate
MIMO	802.11a OFDM	6Mbps
	802.11n (HT20): OFDM	MCS0 (13Mbps)
	802.11n (HT40): OFDM	MCS0 (27Mbps)
	802.11ac (VHT20): OFDM	11ac 13Mbps
	802.11ac (VHT40): OFDM	11ac 27Mbps
	802.11ac (VHT80): OFDM	11ac 58.5Mbps
	802.11ax (HE20): OFDM	11ax 14.625Mbps
	802.11ax (HE40): OFDM	11ax 29.250Mbps
	802.11ax (HE80): OFDM	11ax 61.250Mbps

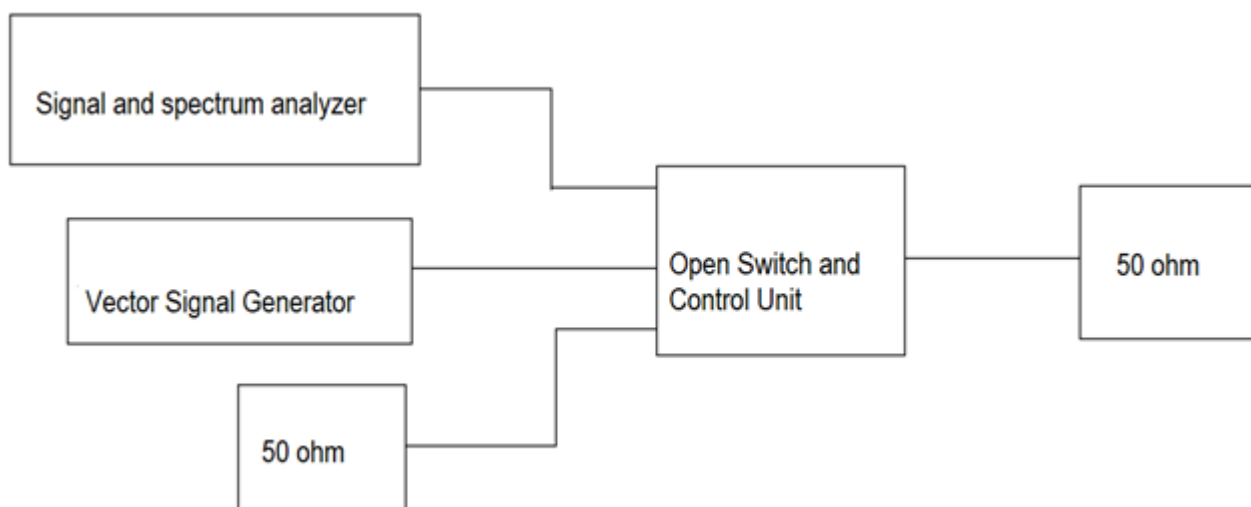
8.2 MWRF test system configuration

Conducted Test



Conducted Radar waveform calibration

- (1) A 50ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master.
- (2) The interference Radar Detection Threshold Level is $-62\text{dBm} + 2.9\text{dB} + 1.5\text{dB} = -57.6\text{dBm}$ that had been taken into account the output power range and antenna gain.
- (3) The following equipment setup was used to calibrate the conducted radar waveform. A vector signal generator was utilized to establish the test signal level for radar type 0. During this process there were no transmissions by either the master or client device. The spectrum analyzer was switched to the zero spans (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 3MHz. The spectrum analyzer had offset -1.5dB to compensate RF cable loss 1.5dB. And antenna cable is supplied with device, so antenna cable loss is 0.4dB.
- (4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was $-62\text{dBm} + 2.9\text{dB} + 1.5\text{dB} = -57.6\text{dBm}$. Capture the spectrum analyzer plots on short pulse radar waveform.



8.3 Channel Loading

System testing will be performed with channel-loading using means appropriate to the data types that are used by the unlicensed device. The following requirements apply:

☐	a) The data file must be of a type that is typical for the device (i.e., MPEG-2, MPEG-4, WAV, MP3, MP4, AVI, etc.) and must generally be transmitting in a streaming mode.
☒	b) Software to ping the client is permitted to simulate data transfer but must have random ping intervals.
☒	c) Timing plots are required with calculations demonstrating a minimum channel loading of approximately 17% or greater. For example, channel loading can be estimated by setting the spectrum analyzer for zero span and approximate the Time On/ (Time On + Off Time). This can be done with any appropriate channel BW and modulation type.
☐	d) Unicast or Multicast protocols are preferable but other protocols may be used. The appropriate protocol used must be described in the test procedures.

9 Dynamic Frequency Selection (DFS) Requirement

9.1 DFS Overview

The following table from KDB 905462 lists the applicable requirements for the DFS testing.

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

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

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
<i>DFS Detection Threshold</i>	Yes	Not required
<i>Channel Closing Transmission Time</i>	Yes	Yes
<i>Channel Move Time</i>	Yes	Yes
<i>U-NII Detection Bandwidth</i>	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
<i>U-NII Detection Bandwidth and Statistical Performance Check</i>	All BW modes must be tested	Not required
<i>Channel Move Time and Channel Closing Transmission Time</i>	Test using widest BW mode available	Test using the widest BW mode available for the link
<i>All other tests</i>	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.		

9.2 DFS Detection Thresholds

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

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

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

9.3 Response Requirements

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

Table 4: DFS Response Requirement Values

Parameter	Value
<i>Non-occupancy period</i>	Minimum 30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds See Note 1.
<i>Channel Closing Transmission Time</i>	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
<i>U-NII Detection Bandwidth</i>	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1: <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> 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 <i>U-NII Detection Bandwidth</i> 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.	

9.5 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.

Table 5 – 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 Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	Roundup $\left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	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	11-20	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.

For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 μsec is selected, the number of pulses would be

$$\text{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{3066} \right) \right\} = \text{Round up } \{17.2\} = 18.$$

Table 5a - 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

The aggregate is the average of the percentage of successful detections of Short Pulse Radar Types 1-4. For example, the following table indicates how to compute the aggregate of percentage of successful detections.

Radar Type	Number of Trials	Number of Successful Detections	Minimum Percentage of Successful Detection
1	35	29	82.9%
2	30	18	60%
3	30	27	90%
4	50	44	88%
Aggregate $(82.9\% + 60\% + 90\% + 88\%)/4 = 80.2\%$			

Table 6 – 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 $(12,000,000 / \text{Burst Count})$ microseconds. Each interval contains one *Burst*. The start time for the *Burst*, relative to the beginning of the interval, is between 1 and $[(12,000,000 / \text{Burst Count}) - (\text{Total Burst Length}) + (\text{One Random PRI Interval})]$ 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).

Table 7 – 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

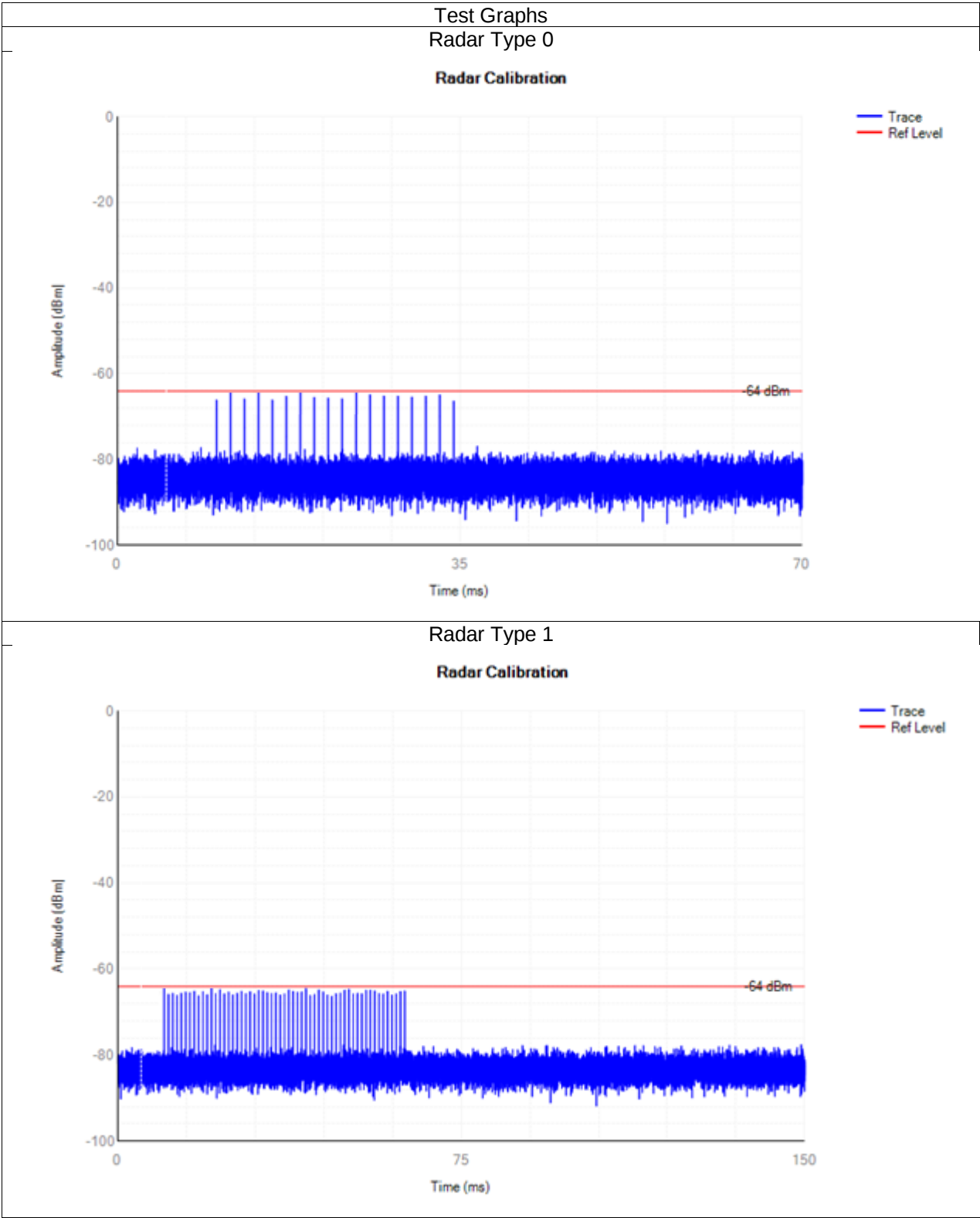
For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

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.



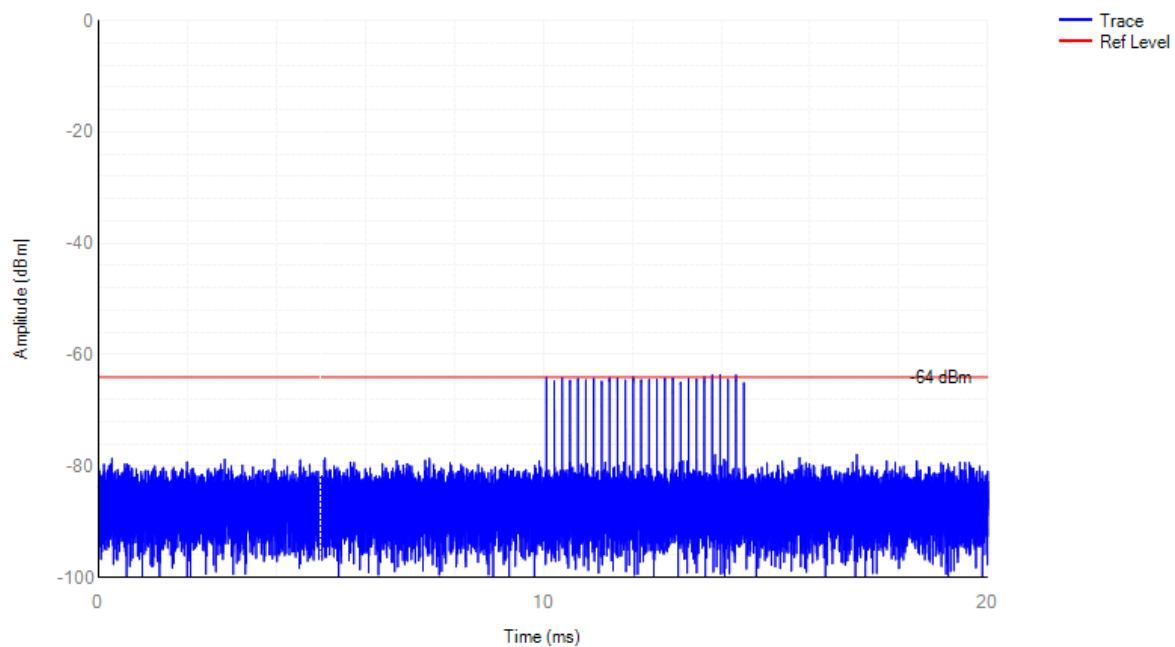
10 Test Result

DFS Calibration



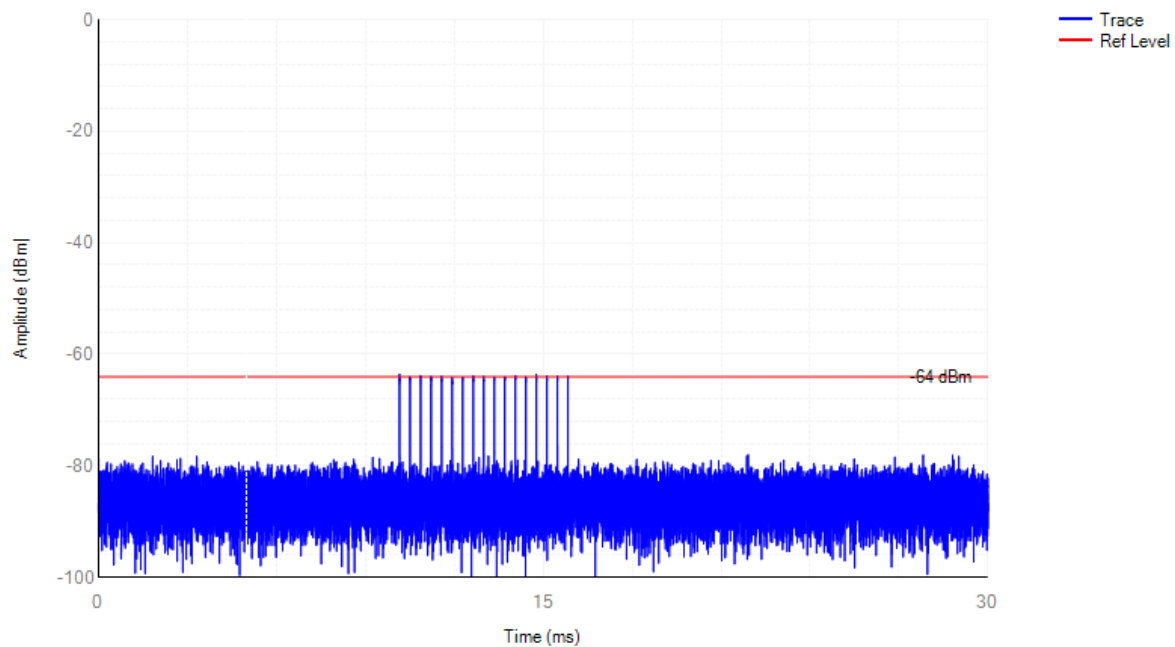
Radar Type 2

Radar Calibration



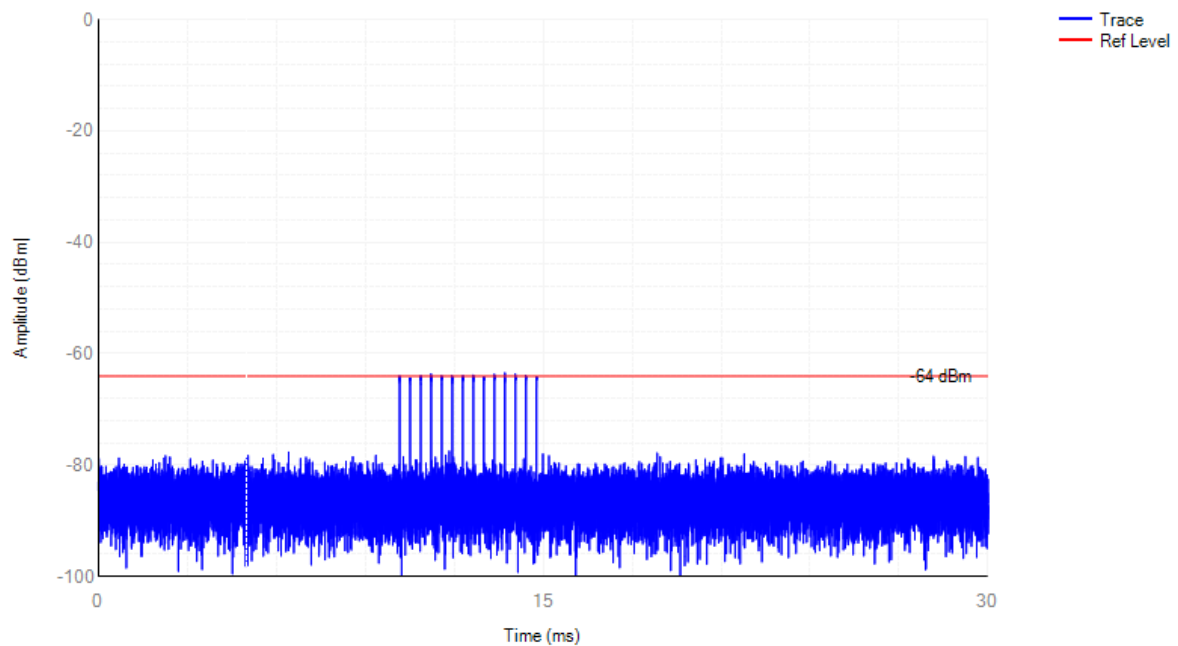
Radar Type 3

Radar Calibration



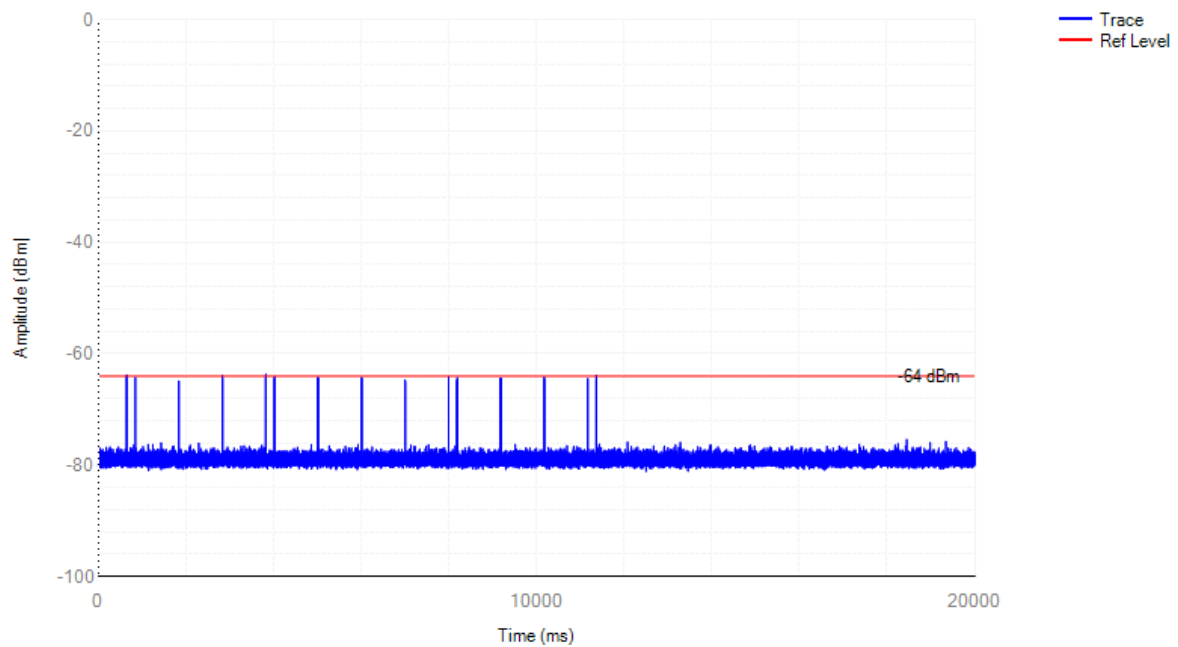
Radar Type 4

Radar Calibration



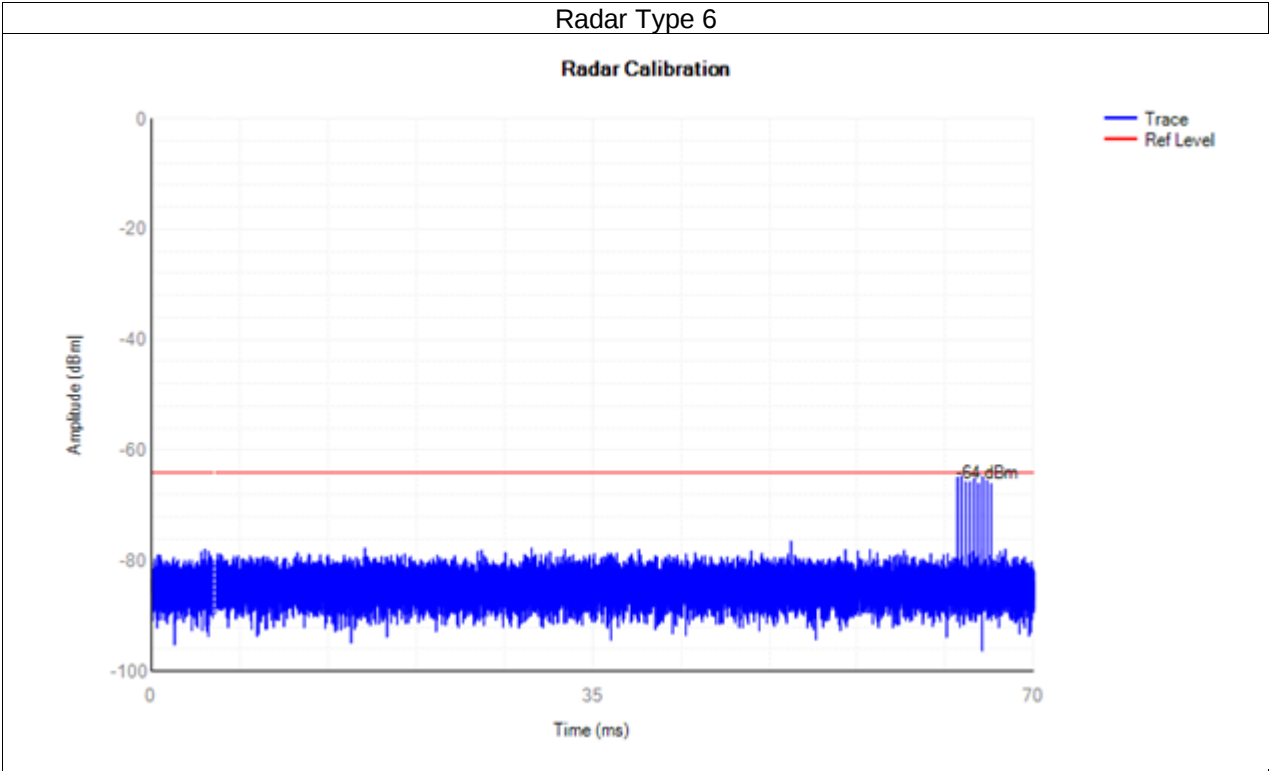
Radar Type 5

Radar Calibration





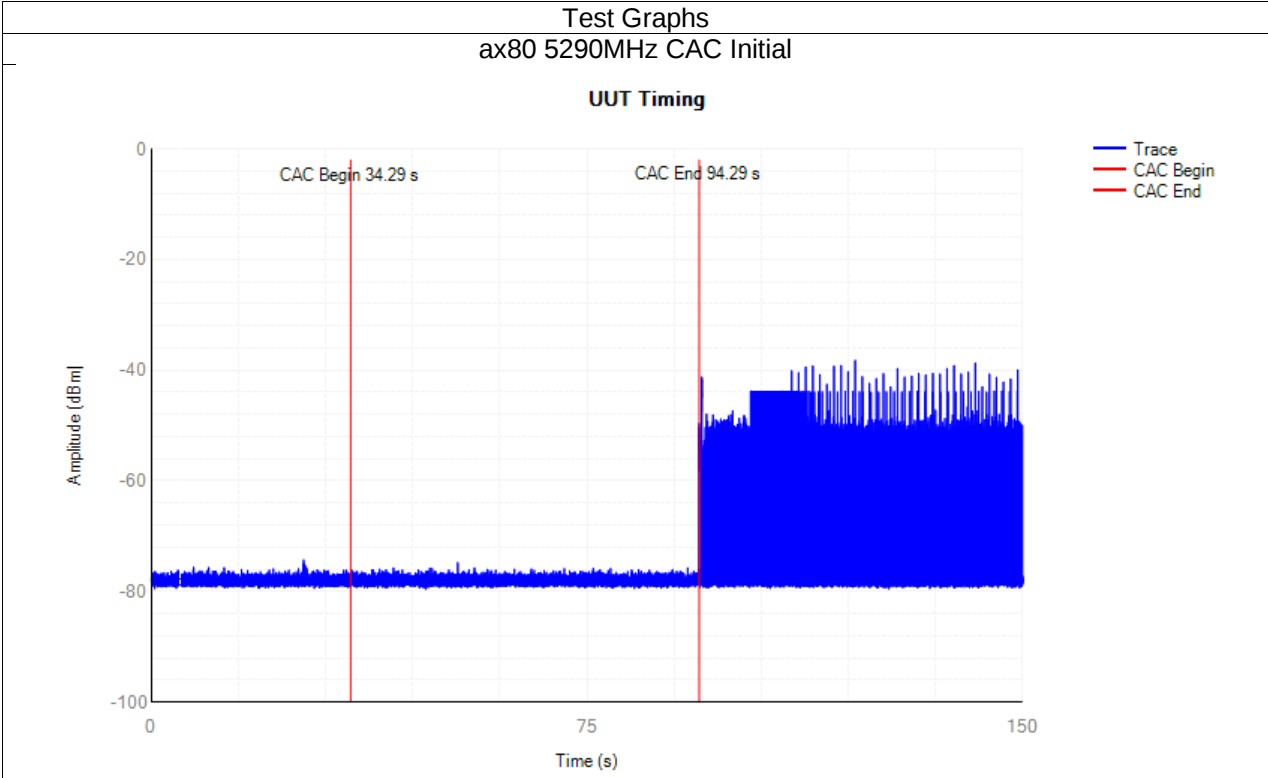
Radar Type 6





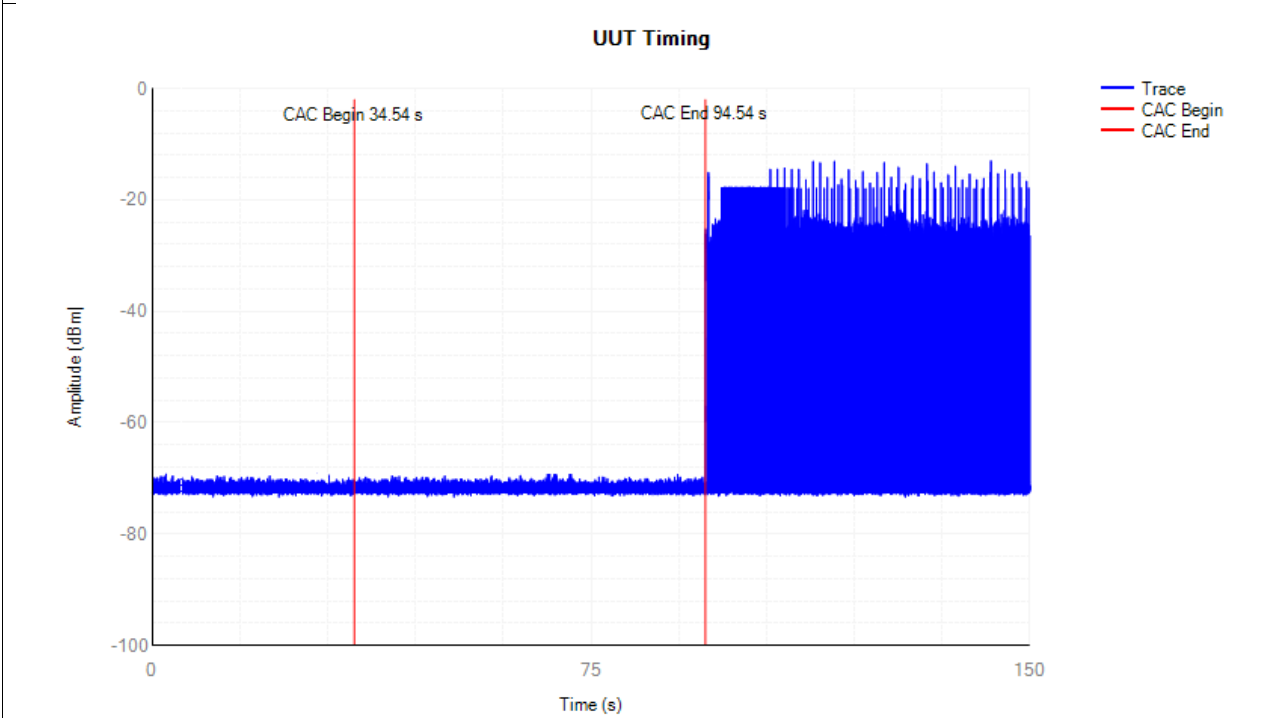
Initial Channel Availability Check Time

The EUT does not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle



Note: Channel Availability Check time is equal to (CAC Begin Time–CAC End Time)=(94.29-34.29)s=60s

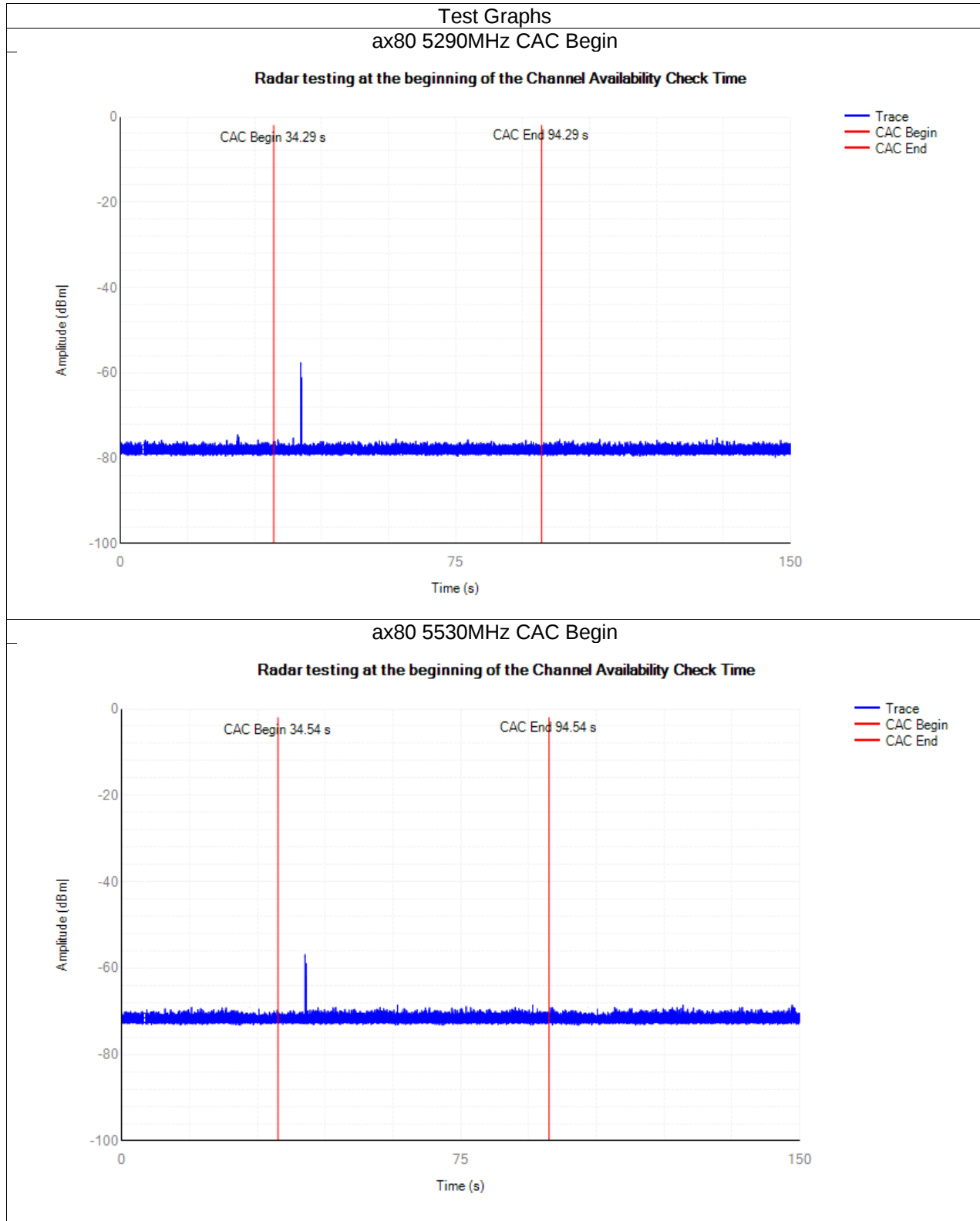
ax80 5530MHz CAC Initial



Note: Channel Availability Check time is equal to (CAC Begin Time–CAC End Time)=(94.54-34.54)s=60s

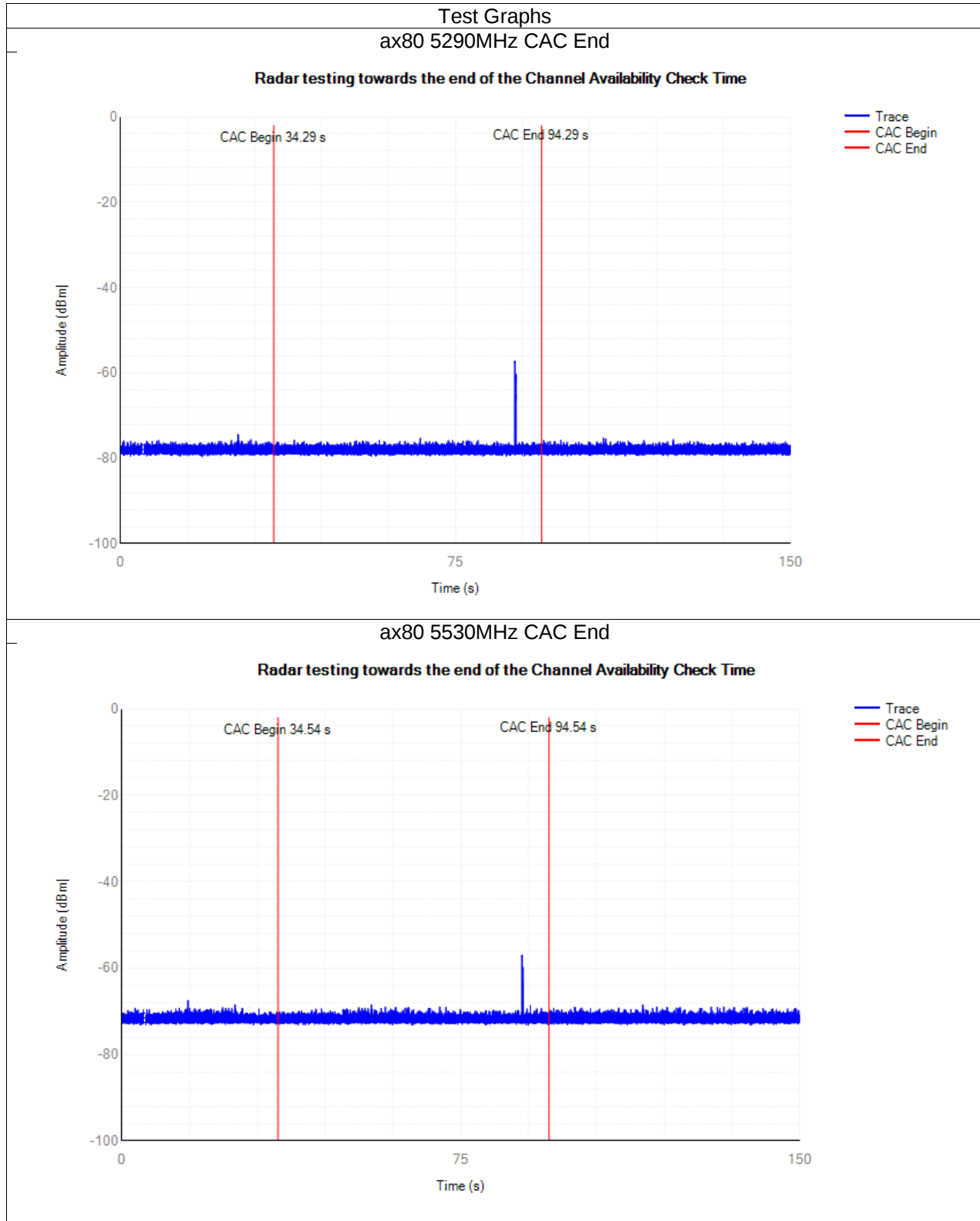
Radar Burst at the Beginning of the Channel Availability Check Time

If the UUT successfully detected the radar burst, it should be observed as the UUT has no transmissions occurred until the UUT starts transmitting on another channel.



Radar Burst at the End of the Channel Availability Check Time

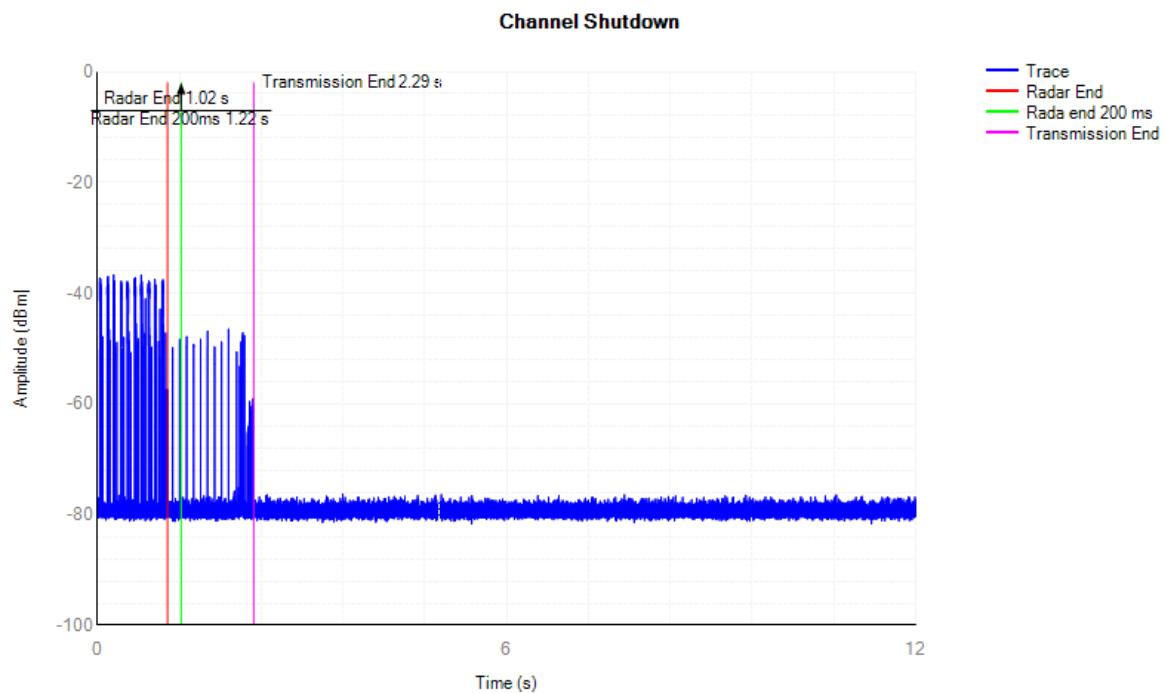
If the UUT successfully detected the radar burst, it should be observed as the UUT has no transmissions occurred until the UUT starts transmitting on another channel.



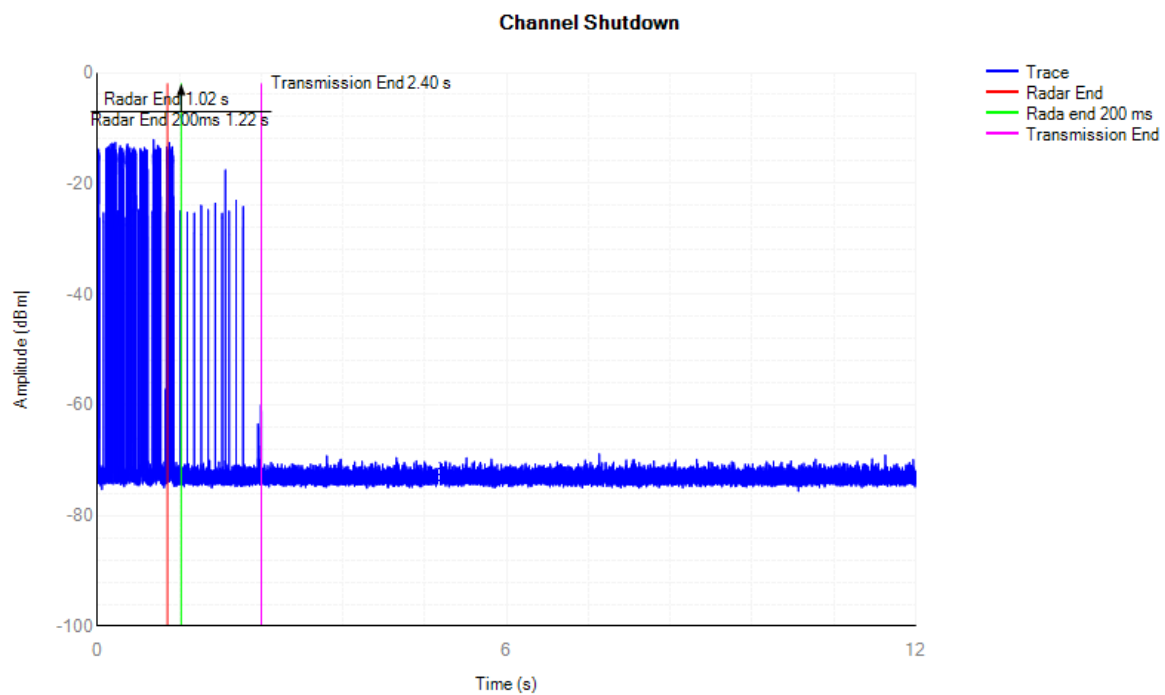
Shutdown Time

Mode	Frequency (MHz)	Channel Move Time (s)	Limit Channel Move Time (s)	Close Transmission Time (s)	Limit Close Transmission Time (s)	Close Transmission Time after 200ms(s)	Limit Close Transmission Time after 200ms (s)	Verdict
ax80	5290	1.2641	10	0.0392	0.26	0.0364	0.06	Pass
ax80	5530	1.3777	10	0.0864	0.26	0.0128	0.06	Pass

Test Graphs
ax80 5290MHz Shutdown



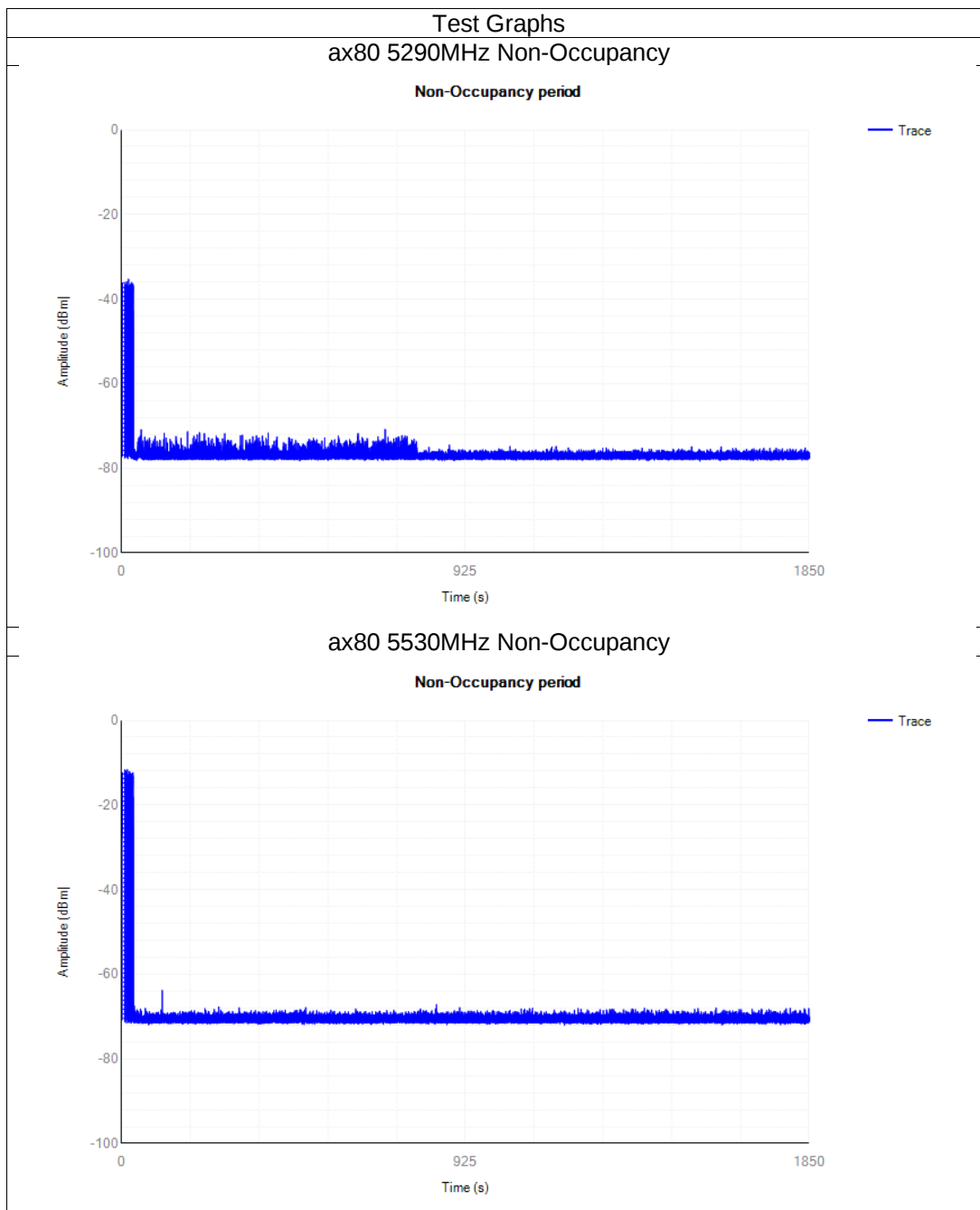
ax80 5530MHz Shutdown



Non-Occupancy

During the 30 minutes observation time, UUT did not make any transmissions on a channel after a radar signal was detected on that channel by either the Channel Availability Check or the In-Service Monitoring.

Channel Bandwidth (MHz)	Channel (MHz)	Non-Occupancy	Limit Non-Occupancy	Result
80	5290	>30min	30min	Pass
	5530	>30min	30min	Pass



UNII Detection Bandwidth

Channel Bandwidth (MHz)	Channel (MHz)	99% Occupied Bandwidth (MHz)	UNII Detection Bandwidth	UNII Detection Bandwidth Min. Limit (MHz)	Result
80	5290	76.972	78	76.972	Pass
	5530	76.684	80	76.684	Pass

UNII Detection Bandwidth is minimum 100% of the 99% power bandwidth. A single radar Burst is generated for a minimum of 10 trials, and the response of the UUT is noted. The UUT must detect the Radar Waveform 90% or more of the time.

80 MHz Signal Bandwidth											
EUT Frequency = 5290MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, Blank= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5250	0	0	0	0	0	0	0	0	0	0	0%
5251 Fl	1	1	1	1	1	1	1	1	1	1	100%
5252	1	1	1	1	1	1	1	1	1	1	100%
5253	1	1	1	1	1	1	1	1	1	1	100%
5254	1	1	1	1	1	1	1	1	1	1	100%
5255	1	1	1	1	1	1	1	1	1	1	100%
5260	1	1	1	1	1	1	1	1	1	1	100%
5265	1	1	1	1	1	1	1	1	1	1	100%
5270	1	1	1	1	1	1	1	1	1	1	100%
5275	1	1	1	1	1	1	1	1	1	1	100%
5280	1	1	1	1	1	1	1	1	1	1	100%
5285	1	1	1	1	1	1	1	1	1	1	100%
5290	1	1	1	1	1	1	1	1	1	1	100%
5295	1	1	1	1	1	1	1	1	1	1	100%
5300	1	1	1	1	1	1	1	1	1	1	100%
5305	1	1	1	1	1	1	1	1	1	1	100%
5310	1	1	1	1	1	1	1	1	1	1	100%
5315	1	1	1	1	1	1	1	1	1	1	100%
5320	1	1	1	1	1	1	1	1	1	1	100%
5325	1	1	1	1	1	1	1	1	1	1	100%
5326	1	1	1	1	1	1	1	1	1	1	100%
5327	1	1	1	1	1	1	1	1	1	1	100%
5328	1	1	1	1	1	1	1	1	1	1	100%
5329 Fh	1	1	1	1	1	1	1	1	1	1	100%
5330	0	0	0	1	0	0	0	0	0	0	10%
80 MHz Detection Bandwidth = Fh - Fl = 5329MHz - 5251MHz = 78MHz											
EUT 99% Bandwidth = 76.972MHz											
76.972MHz × 100% = 76.972MHz											

80 MHz Signal Bandwidth											
EUT Frequency = 5530MHz											
Radar Frequency (MHz)	DFS Detection Trials (1=Detection, 0= No Detection)										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5490 FI	1	1	1	1	1	1	1	1	0	1	90%
5491	1	1	1	1	1	1	1	1	1	1	100%
5492	1	1	1	1	1	1	1	1	1	1	100%
5493	1	1	1	1	1	1	1	1	1	1	100%
5494	1	1	1	1	1	1	1	1	1	1	100%
5495	1	1	1	1	1	1	1	1	1	1	100%
5500	1	1	1	1	1	1	1	1	1	1	100%
5505	1	1	1	1	1	1	1	1	1	1	100%
5510	1	1	1	1	1	1	1	1	1	1	100%
5515	1	1	1	1	1	1	1	1	1	1	100%
5520	1	1	1	1	1	1	1	1	1	1	100%
5525	1	1	1	1	1	1	1	1	1	1	100%
5530	1	1	1	1	1	1	1	1	1	1	100%
5535	1	1	1	1	1	1	1	1	1	1	100%
5540	1	1	1	1	1	1	1	1	1	1	100%
5545	1	1	1	1	1	1	1	1	1	1	100%
5550	1	1	1	1	1	1	1	1	1	1	100%
5555	1	1	1	1	1	1	1	1	1	1	100%
5560	1	1	1	1	1	1	1	1	1	1	100%
5565	1	1	1	1	1	1	1	1	1	1	100%
5566	1	1	1	1	1	1	1	1	1	1	100%
5567	1	1	1	1	1	1	1	1	1	1	100%
5568	1	1	1	1	1	1	1	1	1	1	100%
5569	1	1	1	1	1	1	1	1	1	1	100%
5570 Fh	1	1	1	1	1	1	1	1	1	1	100%
80 MHz Detection Bandwidth = Fh - FI = 5570MHz - 5490MHz = 80MHz											
EUT 99% Bandwidth = 76.684MHz											
76.684MHz × 100% = 76.684MHz											

In-Service Monitoring

Mode	Frequency (MHz)	Radar Type	Detection Threshold (dBm)	Total No.	Detected No.	Detection Rate (%)	Limit (%)	Verdict
ax80	5290	Type1	-63	30	26	86.67	60	Pass
ax80	5290	Type2	-63	30	25	83.33	60	Pass
ax80	5290	Type3	-63	30	29	96.67	60	Pass
ax80	5290	Type4	-63	30	25	83.33	60	Pass
ax80	5290	Aggregate (Radar Types 1-4)	-63	--	--	87.5	80	Pass
ax80	5290	Type5	-63	30	25	83.33	80	Pass
ax80	5290	Type6	-63	30	25	83.33	70	Pass
ax80	5530	Type1	-63	30	29	96.67	60	Pass
ax80	5530	Type2	-63	30	25	83.33	60	Pass
ax80	5530	Type3	-63	30	29	96.67	60	Pass
ax80	5530	Type4	-63	30	26	86.67	60	Pass
ax80	5530	Aggregate (Radar Types 1-4)	-63			90.835	80	Pass
ax80	5530	Type5	-63	30	25	83.33	80	Pass
ax80	5530	Type6	-63	30	25	83.33	70	Pass

Type 1 Radar Statistical Performance for 5290 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	1	938	57	1
2	1	698	76	1
3	1	618	86	1
4	1	538	99	1
5	1	878	61	1
6	1	3066	18	1
7	1	638	83	1
8	1	918	58	1
9	1	838	63	1
10	1	858	62	1
11	1	798	67	1
12	1	718	74	1
13	1	578	82	1
14	1	598	89	1
15	1	558	95	1
16	1	2536	21	1
17	1	966	55	1
18	1	827	64	1
19	1	2501	22	1
20	1	2595	21	0
21	1	1114	48	0
22	1	1302	41	1
23	1	3045	18	1
24	1	1624	33	0
25	1	2878	19	1
26	1	1027	52	1
27	1	2485	22	0
28	1	1600	33	1
29	1	1172	46	1
30	1	1177	45	1
Detection Percentage				86.67% (>60%)

Type 2 Radar Statistical Performance for 5290 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	4.6	172	25	1
2	4.1	223	28	1
3	4.9	227	23	1
4	3.0	156	23	1
5	1.6	162	26	1
6	2.0	213	28	1
7	4.4	167	26	1
8	3.7	170	24	1
9	4.9	183	26	1
10	3.0	165	23	0
11	3.8	201	29	1
12	1.0	217	26	1
13	1.3	151	27	1
14	2.8	166	23	1
15	1.7	184	26	0
16	4.6	212	27	1
17	2.6	221	23	1
18	4.8	215	29	1
19	1.8	214	29	0
20	2.0	185	26	1
21	2.0	171	27	1
22	1.9	218	28	1
23	1.2	157	26	0
24	1.5	217	25	1
25	1.0	167	25	1
26	2.0	213	24	1
27	4.1	197	26	1
28	4.6	172	24	1
29	2.9	162	29	1
30	1.3	222	24	0
Detection Percentage				83.33% (>60%)

Type 3 Radar Statistical Performance for 5290 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	6.2	341	16	1
2	6.5	498	16	1
3	8.2	271	17	1
4	8.7	418	16	1
5	9.6	376	17	1
6	6.2	373	17	1
7	7.2	455	16	1
8	8.2	481	18	1
9	8.8	469	16	1
10	6.7	378	18	1
11	9.1	401	16	1
12	8.2	485	17	1
13	6.0	325	18	1
14	8.9	309	17	1
15	7.8	419	16	1
16	6.4	377	17	1
17	6.1	372	16	1
18	7.7	357	18	1
19	7.3	402	17	1
20	9.1	300	17	1
21	8.6	485	17	1
22	8.3	258	16	1
23	6.8	414	18	1
24	6.1	414	17	0
25	6.5	381	18	1
26	9.1	255	18	1
27	7.3	460	18	1
28	7.7	442	17	1
29	9.2	405	18	1
30	8.1	397	16	1
Detection Percentage				96.67% (>60%)

Type 4 Radar Statistical Performance for 5290 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	16.0	387	14	1
2	12.1	375	12	1
3	14.3	258	15	1
4	13.3	301	15	1
5	15.4	466	16	1
6	16.6	291	14	1
7	17.5	398	16	1
8	18.3	456	15	1
9	14.1	486	14	1
10	14.3	288	15	1
11	17.5	272	15	0
12	13.6	250	12	1
13	15.8	397	15	1
14	17.9	251	15	1
15	11.4	456	16	0
16	13.9	343	13	1
17	19.3	374	14	1
18	16.1	344	16	1
19	13.5	431	13	1
20	14.9	481	14	1
21	12.4	445	15	0
22	14.0	342	13	1
23	15.8	407	13	1
24	14.8	432	12	0
25	15.0	451	12	1
26	16.8	321	14	1
27	16.4	432	13	0
28	19.1	289	14	1
29	12.3	398	13	1
30	18.8	300	15	1
Detection Percentage				83.33% (>60%)

In addition an average minimum percentage of successful detection across all four Short pulse radar test waveforms is as follows: $\frac{P_d1 + P_d2 + P_d3 + P_d4}{4} = (86.67\% + 83.33\% + 96.67\% + 83.33\%) / 4 = 87.5\% (>80\%)$

Type 5 Radar Statistical Performance for 5290 MHz
See the type 5 Radar Characteristics at the end of this report.

Trial Number	File name	1=Detection 0=No Detection
1	Statistical_Check_RandParm_For_Radar_Type_5_1_trail	1
2	Statistical_Check_RandParm_For_Radar_Type_5_2_trail	1
3	Statistical_Check_RandParm_For_Radar_Type_5_3_trail	1
4	Statistical_Check_RandParm_For_Radar_Type_5_4_trail	0
5	Statistical_Check_RandParm_For_Radar_Type_5_5_trail	1
6	Statistical_Check_RandParm_For_Radar_Type_5_6_trail	1
7	Statistical_Check_RandParm_For_Radar_Type_5_7_trail	0
8	Statistical_Check_RandParm_For_Radar_Type_5_8_trail	1
9	Statistical_Check_RandParm_For_Radar_Type_5_9_trail	1
10	Statistical_Check_RandParm_For_Radar_Type_5_10_trail	1
11	Statistical_Check_RandParm_For_Radar_Type_5_11_trail	1
12	Statistical_Check_RandParm_For_Radar_Type_5_12_trail	1
13	Statistical_Check_RandParm_For_Radar_Type_5_13_trail	0
14	Statistical_Check_RandParm_For_Radar_Type_5_14_trail	1
15	Statistical_Check_RandParm_For_Radar_Type_5_15_trail	1
16	Statistical_Check_RandParm_For_Radar_Type_5_16_trail	1
17	Statistical_Check_RandParm_For_Radar_Type_5_17_trail	1
18	Statistical_Check_RandParm_For_Radar_Type_5_18_trail	1
19	Statistical_Check_RandParm_For_Radar_Type_5_19_trail	1
20	Statistical_Check_RandParm_For_Radar_Type_5_20_trail	0
21	Statistical_Check_RandParm_For_Radar_Type_5_21_trail	1
22	Statistical_Check_RandParm_For_Radar_Type_5_22_trail	1
23	Statistical_Check_RandParm_For_Radar_Type_5_23_trail	1
24	Statistical_Check_RandParm_For_Radar_Type_5_24_trail	1
25	Statistical_Check_RandParm_For_Radar_Type_5_25_trail	1
26	Statistical_Check_RandParm_For_Radar_Type_5_26_trail	0
27	Statistical_Check_RandParm_For_Radar_Type_5_27_trail	1
28	Statistical_Check_RandParm_For_Radar_Type_5_28_trail	1
29	Statistical_Check_RandParm_For_Radar_Type_5_29_trail	1
30	Statistical_Check_RandParm_For_Radar_Type_5_30_trail	1
Detection Percentage		83.33% (>80 %)

Type 6 Radar Statistical Performance for 5290 MHz
See the type 6 Radar Characteristics at the end of this report.

Trial Number	File name	1=Detection 0=No Detection
1	Statistical_Check_RandParm_For_Radar_Type_6_1_trail	1
2	Statistical_Check_RandParm_For_Radar_Type_6_2_trail	1
3	Statistical_Check_RandParm_For_Radar_Type_6_3_trail	1
4	Statistical_Check_RandParm_For_Radar_Type_6_4_trail	1
5	Statistical_Check_RandParm_For_Radar_Type_6_5_trail	1
6	Statistical_Check_RandParm_For_Radar_Type_6_6_trail	1
7	Statistical_Check_RandParm_For_Radar_Type_6_7_trail	0
8	Statistical_Check_RandParm_For_Radar_Type_6_8_trail	1
9	Statistical_Check_RandParm_For_Radar_Type_6_9_trail	1
10	Statistical_Check_RandParm_For_Radar_Type_6_10_trail	1
11	Statistical_Check_RandParm_For_Radar_Type_6_11_trail	1
12	Statistical_Check_RandParm_For_Radar_Type_6_12_trail	1
13	Statistical_Check_RandParm_For_Radar_Type_6_13_trail	0
14	Statistical_Check_RandParm_For_Radar_Type_6_14_trail	1
15	Statistical_Check_RandParm_For_Radar_Type_6_15_trail	1
16	Statistical_Check_RandParm_For_Radar_Type_6_16_trail	1
17	Statistical_Check_RandParm_For_Radar_Type_6_17_trail	1
18	Statistical_Check_RandParm_For_Radar_Type_6_18_trail	1
19	Statistical_Check_RandParm_For_Radar_Type_6_19_trail	1
20	Statistical_Check_RandParm_For_Radar_Type_6_20_trail	1
21	Statistical_Check_RandParm_For_Radar_Type_6_21_trail	1
22	Statistical_Check_RandParm_For_Radar_Type_6_22_trail	0
23	Statistical_Check_RandParm_For_Radar_Type_6_23_trail	1
24	Statistical_Check_RandParm_For_Radar_Type_6_24_trail	1
25	Statistical_Check_RandParm_For_Radar_Type_6_25_trail	1
26	Statistical_Check_RandParm_For_Radar_Type_6_26_trail	1
27	Statistical_Check_RandParm_For_Radar_Type_6_27_trail	1
28	Statistical_Check_RandParm_For_Radar_Type_6_28_trail	1
29	Statistical_Check_RandParm_For_Radar_Type_6_29_trail	0
30	Statistical_Check_RandParm_For_Radar_Type_6_30_trail	0
Detection Percentage		83.33 % (>70 %)

Type 1 Radar Statistical Performance for 5530 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	1	938	57	1
2	1	698	76	1
3	1	618	86	1
4	1	538	99	1
5	1	878	61	1
6	1	3066	18	1
7	1	638	83	1
8	1	918	58	1
9	1	838	63	1
10	1	858	62	0
11	1	798	67	1
12	1	718	74	1
13	1	578	82	1
14	1	598	89	1
15	1	558	95	1
16	1	2536	21	1
17	1	966	55	1
18	1	827	64	1
19	1	2501	22	1
20	1	2595	21	1
21	1	1114	48	1
22	1	1302	41	1
23	1	3045	18	1
24	1	1624	33	1
25	1	2878	19	1
26	1	1027	52	1
27	1	2485	22	1
28	1	1600	33	1
29	1	1172	46	1
30	1	1177	45	1
Detection Percentage				96.67% (>60%)

Type 2 Radar Statistical Performance for 5530 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	4.6	172	25	1
2	4.1	223	28	1
3	4.9	227	23	1
4	3.0	156	23	1
5	1.6	162	26	0
6	2.0	213	28	1
7	4.4	167	26	1
8	3.7	170	24	1
9	4.9	183	26	1
10	3.0	165	23	1
11	3.8	201	29	1
12	1.0	217	26	1
13	1.3	151	27	1
14	2.8	166	23	1
15	1.7	184	26	0
16	4.6	212	27	1
17	2.6	221	23	1
18	4.8	215	29	1
19	1.8	214	29	0
20	2.0	185	26	1
21	2.0	171	27	1
22	1.9	218	28	1
23	1.2	157	26	0
24	1.5	217	25	1
25	1.0	167	25	1
26	2.0	213	24	1
27	4.1	197	26	1
28	4.6	172	24	1
29	2.9	162	29	1
30	1.3	222	24	0
Detection Percentage				83.33% (>60%)

Type 3 Radar Statistical Performance for 5530 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	6.2	341	16	1
2	6.5	498	16	1
3	8.2	271	17	1
4	8.7	418	16	1
5	9.6	376	17	1
6	6.2	373	17	1
7	7.2	455	16	1
8	8.2	481	18	1
9	8.8	469	16	1
10	6.7	378	18	1
11	9.1	401	16	1
12	8.2	485	17	1
13	6.0	325	18	1
14	8.9	309	17	1
15	7.8	419	16	1
16	6.4	377	17	1
17	6.1	372	16	1
18	7.7	357	18	1
19	7.3	402	17	1
20	9.1	300	17	1
21	8.6	485	17	1
22	8.3	258	16	1
23	6.8	414	18	1
24	6.1	414	17	0
25	6.5	381	18	1
26	9.1	255	18	1
27	7.3	460	18	1
28	7.7	442	17	1
29	9.2	405	18	1
30	8.1	397	16	1
Detection Percentage				96.67% (>60%)

Type 4 Radar Statistical Performance for 5530 MHz

Trial Number	Pulse Width (us)	PRI (us)	Pulses/Burst	1=Detection 0=No Detection
1	16.0	387	14	1
2	12.1	375	12	1
3	14.3	258	15	1
4	13.3	301	15	1
5	15.4	466	16	1
6	16.6	291	14	1
7	17.5	398	16	1
8	18.3	456	15	1
9	14.1	486	14	1
10	14.3	288	15	1
11	17.5	272	15	1
12	13.6	250	12	1
13	15.8	397	15	1
14	17.9	251	15	1
15	11.4	456	16	0
16	13.9	343	13	1
17	19.3	374	14	1
18	16.1	344	16	1
19	13.5	431	13	1
20	14.9	481	14	1
21	12.4	445	15	0
22	14.0	342	13	1
23	15.8	407	13	1
24	14.8	432	12	0
25	15.0	451	12	1
26	16.8	321	14	1
27	16.4	432	13	1
28	19.1	289	14	0
29	12.3	398	13	1
30	18.8	300	15	1
Detection Percentage				86.67% (>60%)

In addition an average minimum percentage of successful detection across all four Short pulse radar test waveforms is as follows:

$$\frac{P_{d1} + P_{d2} + P_{d3} + P_{d4}}{4} = (96.67\% + 83.33\% + 96.67\% + 86.67\%) / 4 = 90.835\% (>80\%)$$

Type 5 Radar Statistical Performance for 5530 MHz
See the type 5 Radar Characteristics at the end of this report.

Trial Number	File name	1=Detection 0=No Detection
1	Statistical_Check_RandParm_For_Radar_Type_5_1_trail	1
2	Statistical_Check_RandParm_For_Radar_Type_5_2_trail	1
3	Statistical_Check_RandParm_For_Radar_Type_5_3_trail	1
4	Statistical_Check_RandParm_For_Radar_Type_5_4_trail	0
5	Statistical_Check_RandParm_For_Radar_Type_5_5_trail	1
6	Statistical_Check_RandParm_For_Radar_Type_5_6_trail	1
7	Statistical_Check_RandParm_For_Radar_Type_5_7_trail	0
8	Statistical_Check_RandParm_For_Radar_Type_5_8_trail	1
9	Statistical_Check_RandParm_For_Radar_Type_5_9_trail	1
10	Statistical_Check_RandParm_For_Radar_Type_5_10_trail	1
11	Statistical_Check_RandParm_For_Radar_Type_5_11_trail	1
12	Statistical_Check_RandParm_For_Radar_Type_5_12_trail	1
13	Statistical_Check_RandParm_For_Radar_Type_5_13_trail	0
14	Statistical_Check_RandParm_For_Radar_Type_5_14_trail	1
15	Statistical_Check_RandParm_For_Radar_Type_5_15_trail	1
16	Statistical_Check_RandParm_For_Radar_Type_5_16_trail	1
17	Statistical_Check_RandParm_For_Radar_Type_5_17_trail	1
18	Statistical_Check_RandParm_For_Radar_Type_5_18_trail	0
19	Statistical_Check_RandParm_For_Radar_Type_5_19_trail	1
20	Statistical_Check_RandParm_For_Radar_Type_5_20_trail	0
21	Statistical_Check_RandParm_For_Radar_Type_5_21_trail	1
22	Statistical_Check_RandParm_For_Radar_Type_5_22_trail	1
23	Statistical_Check_RandParm_For_Radar_Type_5_23_trail	1
24	Statistical_Check_RandParm_For_Radar_Type_5_24_trail	1
25	Statistical_Check_RandParm_For_Radar_Type_5_25_trail	1
26	Statistical_Check_RandParm_For_Radar_Type_5_26_trail	1
27	Statistical_Check_RandParm_For_Radar_Type_5_27_trail	1
28	Statistical_Check_RandParm_For_Radar_Type_5_28_trail	1
29	Statistical_Check_RandParm_For_Radar_Type_5_29_trail	1
30	Statistical_Check_RandParm_For_Radar_Type_5_30_trail	1
Detection Percentage		83.33% (>80 %)

Type 6 Radar Statistical Performance for 5530 MHz
See the type 6 Radar Characteristics at the end of this report.

Trial Number	File name	1=Detection 0=No Detection
1	Statistical_Check_RandParm_For_Radar_Type_6_1_trail	1
2	Statistical_Check_RandParm_For_Radar_Type_6_2_trail	1
3	Statistical_Check_RandParm_For_Radar_Type_6_3_trail	1
4	Statistical_Check_RandParm_For_Radar_Type_6_4_trail	1
5	Statistical_Check_RandParm_For_Radar_Type_6_5_trail	1
6	Statistical_Check_RandParm_For_Radar_Type_6_6_trail	1
7	Statistical_Check_RandParm_For_Radar_Type_6_7_trail	0
8	Statistical_Check_RandParm_For_Radar_Type_6_8_trail	1
9	Statistical_Check_RandParm_For_Radar_Type_6_9_trail	1
10	Statistical_Check_RandParm_For_Radar_Type_6_10_trail	1
11	Statistical_Check_RandParm_For_Radar_Type_6_11_trail	1
12	Statistical_Check_RandParm_For_Radar_Type_6_12_trail	1
13	Statistical_Check_RandParm_For_Radar_Type_6_13_trail	0
14	Statistical_Check_RandParm_For_Radar_Type_6_14_trail	1
15	Statistical_Check_RandParm_For_Radar_Type_6_15_trail	1
16	Statistical_Check_RandParm_For_Radar_Type_6_16_trail	1
17	Statistical_Check_RandParm_For_Radar_Type_6_17_trail	1
18	Statistical_Check_RandParm_For_Radar_Type_6_18_trail	1
19	Statistical_Check_RandParm_For_Radar_Type_6_19_trail	1
20	Statistical_Check_RandParm_For_Radar_Type_6_20_trail	1
21	Statistical_Check_RandParm_For_Radar_Type_6_21_trail	1
22	Statistical_Check_RandParm_For_Radar_Type_6_22_trail	0
23	Statistical_Check_RandParm_For_Radar_Type_6_23_trail	1
24	Statistical_Check_RandParm_For_Radar_Type_6_24_trail	1
25	Statistical_Check_RandParm_For_Radar_Type_6_25_trail	1
26	Statistical_Check_RandParm_For_Radar_Type_6_26_trail	1
27	Statistical_Check_RandParm_For_Radar_Type_6_27_trail	0
28	Statistical_Check_RandParm_For_Radar_Type_6_28_trail	1
29	Statistical_Check_RandParm_For_Radar_Type_6_29_trail	0
30	Statistical_Check_RandParm_For_Radar_Type_6_30_trail	1
Detection Percentage		83.33 % (>70 %)

Appendix for Type 5~6 radar waveform test characteristic

Type 5 Radar Waveform_1.txt

Waveform Num = 1
 Num of Bursts = 12
 Burst Interval (us) = 1000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
820200										
1		3	20	100	1661	1550	1382	820200	0	999999
551487										
2		2	5	70	1907	1234	0	1376280	1000000	1999999
1525160										
3		3	15	80	1994	1468	1063	2904581	2000000	2999999
679124										
4		2	19	85	1125	1526	0	3588230	3000000	3999999
1269951										
5		1	12	95	1787	0	0	4860832	4000000	4999999
640270										
6		1	11	90	1123	0	0	5502889	5000000	5999999
582005										
7		1	8	100	1211	0	0	6086017	6000000	6999999
1090270										
8		2	17	55	1061	1639	0	7177498	7000000	7999999
1643204										
9		2	20	85	1238	1245	0	8023402	8000000	8999999
1022239										
10		2	18	75	1110	1746	0	9848124	9000000	9999999
996778										
11		1	6	85	1606	0	0	10847758	10000000	10999999
27065										
12		2	19	85	1186	1806	0	11120021	11000000	11999999

Total number of pulses in waveform = 22

Type 5 Radar Waveform_2.txt

Waveform Num = 2
 Num of Bursts = 15
 Burst Interval (us) = 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	218012									
1	800795	2	9	65	1933	1380	0	218012	0	799999
2										
2	702362	1	16	75	1162	0	0	1022120	800000	1599999
3										
3	1177653	3	19	100	1018	1556	1255	1725644	1600000	2399999
4										
4	970458	2	6	90	1365	1608	0	2907126	2400000	3199999
5										
5	448340	3	15	80	1012	1935	1728	3880557	3200000	3999999
6										
6	819161	2	16	90	1664	1602	0	4333572	4000000	4799999
7										
7	821062	1	9	85	1409	0	0	5155999	4800000	5599999
8										
8	513548	1	15	65	1532	0	0	5978470	5600000	6399999
9										
9	1033059	2	19	70	1187	1200	0	6493550	6400000	7199999
10										
10	1187482	2	12	95	1782	1488	0	7528996	7200000	7999999
11										
11	621910	3	7	60	1330	1330	1803	8719748	8000000	8799999
12										
12	749828	1	17	50	1111	0	0	9346121	8800000	9599999
13										
13	801125	2	10	55	1922	1432	0	10097060	9600000	10399999
14										
14	1044582	3	7	100	1842	1041	1052	10901539	10400000	11199999
15										
15		3	17	90	1923	1514	1802	11950056	11200000	11999999

Total number of pulses in waveform = 31

Type 5 Radar Waveform_3.txt

Waveform Num = 3
Num of Bursts = 11
Burst Interval (us)= 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	602884	3	6	50	1006	1165	1640	602884	0	1090908
2	524698	1	15	50	1970	0	0	1131393	1090909	2181817
3	1932660	1	5	75	1740	0	0	3066023	2181818	3272726
4	665175	3	18	95	1130	1124	1964	3732938	3272727	4363635
5	1072737	3	10	95	1421	1350	1303	4809893	4363636	5454544
6	1526915	2	5	75	1157	1588	0	6340882	5454545	6545453
7	809483	2	12	95	1433	1279	0	7153110	6545454	7636362
8	1500025	3	5	90	1546	1483	1693	8655847	7636363	8727271
9	1119783	3	5	80	1720	1333	1840	9780352	8727272	9818180
10	331013	2	5	70	1786	1005	0	10116258	9818181	10909089
11	1217989	1	9	80	1595	0	0	11337038	10909090	11999998

Total number of pulses in waveform = 24

Type 5 Radar Waveform_4.txt

Waveform Num = 4 ; Num of Bursts = 19 ; Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	626494	1	14	55	1620	0	0	626494	0	631578
2	225329	2	6	70	1935	1176	0	853443	631579	1263157
3	1032230	3	12	85	1703	1011	1296	1888784	1263158	1894736
4	400837	3	5	95	1004	1026	1053	2293631	1894737	2526315
5	391286	1	13	65	1384	0	0	2688000	2526316	3157894
6	900549	1	20	50	1736	0	0	3589933	3157895	3789473
7	807150	1	7	95	1308	0	0	4398819	3789474	4421052
8	69127	2	20	70	1175	1496	0	4469254	4421053	5052631
9	817796	1	8	55	1103	0	0	5209721	5052632	5684210
10	523319	3	15	95	1445	1628	1420	5814143	5684211	6315789
11	1014615	3	18	55	1142	1036	1257	6833251	6315790	6947368
12	230234	2	7	65	1313	1260	0	7066920	6947369	7578947
13	923661	3	18	70	1717	1184	1886	7993154	7578948	8210526
14	713398	1	5	75	1055	0	0	8711339	8210527	8842105
15	495108	3	10	65	1548	1399	1868	9207502	8842106	9473684
16	615210	2	8	80	1089	1065	0	9827527	9473685	10105263
17	760290	3	11	55	1210	1282	1543	10589971	10105264	10736842
18	226847	3	18	90	1737	1236	1395	10820853	10736843	11368421
19	1032521	3	9	75	1010	1456	1176	11857742	11368422	12000000

Total number of pulses in waveform = 41

Type 5 Radar Waveform_5.txt

Waveform Num = 5
Num of Bursts = 8
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	913681	2	6	80	1168	1730	0	913681	0	1499999
2	1030418	1	18	50	1820	0	0	1946997	1500000	2999999
3	1148770	3	10	80	1644	1350	1673	3097587	3000000	4499999
4	2391961	3	10	55	1799	1638	1610	5494215	4500000	5999999
5	980509	1	6	50	1575	0	0	6479771	6000000	7499999
6	2430962	3	8	95	1529	1513	1543	8912308	7500000	8999999
7	1449955	3	8	85	1939	1056	1910	10366848	9000000	10499999
8	1208243	2	19	80	1155	1189	0	11579996	10500000	11999999

Total number of pulses in waveform = 18

Type 5 Radar Waveform_6.txt

Waveform Num = 6
 Num of Bursts = 16
 Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	509071	1	6	50	1230	0	0	509071	0	749999
2	548613	3	6	85	1684	1095	1279	1058914	750000	1499999
3	655166	1	5	95	1702	0	0	1718138	1500000	2249999
4	1161398	3	10	80	1190	1978	1174	2881238	2250000	2999999
5	116624	1	9	50	1751	0	0	3002204	3000000	3749999
6	1087687	3	12	65	1358	1692	1126	4091642	3750000	4499999
7	847913	3	12	60	1947	1792	1047	4943731	4500000	5249999
8	464559	3	6	70	1841	1567	1416	5413076	5250000	5999999
9	1060133	2	17	90	1995	1517	0	6478033	6000000	6749999
10	331992	2	9	50	1464	1050	0	6813537	6750000	7499999
11	1137935	1	16	80	1903	0	0	7953986	7500000	8249999
12	382287	3	6	75	1286	1838	1276	8338176	8250000	8999999
13	905426	3	5	85	1361	1282	1251	9248002	9000000	9749999
14	638690	2	7	70	1518	1985	0	9890586	9750000	10499999
15	1335858	3	20	50	1594	1635	1980	11229947	10500000	11249999
16	523922	2	5	60	1254	1913	0	11759078	11250000	11999999

Total number of pulses in waveform = 36

Type 5 Radar Waveform_7.txt

Waveform Num = 7
 Num of Bursts = 15
 Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	390523	2	11	80	1588	1537	0	390523	0	799999
2	1034167	1	16	90	1008	0	0	1427815	800000	1599999
3	612126	2	8	100	1684	1560	0	2040949	1600000	2399999
4	1143657	2	10	55	1053	1245	0	3187850	2400000	3199999
5	675780	1	15	60	1982	0	0	3865928	3200000	3999999
6	814906	3	6	100	1886	1106	1145	4682816	4000000	4799999
7	277699	2	5	95	1311	1594	0	4964652	4800000	5599999
8	1045292	3	9	75	1065	1630	1073	6012849	5600000	6399999
9	1172818	1	9	60	1898	0	0	7189435	6400000	7199999
10	189175	3	6	80	1156	1206	1549	7380508	7200000	7999999
11	1184310	2	10	80	1667	1507	0	8560729	8000000	8799999
12	650111	3	10	75	1578	1612	1255	9222014	8800000	9599999
13	999949	3	16	100	1653	1354	1442	10226408	9600000	10399999
14	804791	2	13	70	1811	1652	0	11035648	10400000	11199999
15	297131	1	8	80	1628	0	0	11336242	11200000	11999999

Total number of pulses in waveform = 31

Type 5 Radar Waveform_8.txt

Waveform Num = 8
 Num of Bursts = 15
 Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	566503	1	17	55	1024	0	0	566503	0	799999
2	865890	1	15	80	1162	0	0	1433417	800000	1599999
3	897086	3	15	60	1125	1245	1783	2331665	1600000	2399999
4	150259	3	12	60	1556	1717	1386	2486077	2400000	3199999
5	744505	1	19	95	1737	0	0	3235241	3200000	3999999
6	1389942	2	15	65	1288	1177	0	4626920	4000000	4799999
7	424907	1	5	75	1186	0	0	5054292	4800000	5599999
8	751488	3	17	90	1510	1410	1207	5806958	5600000	6399999
9	1163594	3	16	75	1882	1881	1852	6974679	6400000	7199999
10	693297	3	8	85	1601	1866	1530	7673591	7200000	7999999
11	775459	3	11	100	1817	1204	1871	8454047	8000000	8799999
12	1020116	3	17	90	1119	1352	1820	9479055	8800000	9599999
13	402112	2	6	100	1532	1612	0	9885458	9600000	10399999
14	908476	3	6	65	1058	1245	1695	10797078	10400000	11199999
15	950783	1	6	85	1893	0	0	11751859	11200000	11999999

Total number of pulses in waveform = 33

Type 5 Radar Waveform_9.txt

Waveform Num = 9 ; Num of Bursts = 18 ; Burst Interval (us)= 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	636918	3	7	65	1018	1062	1091	636918	0	666666
2	458123	1	5	60	1665	0	0	1098212	666667	1333333
3	548037	1	19	80	1799	0	0	1647914	1333334	2000000
4	980643	2	12	85	1346	1333	0	2630356	2000001	2666667
5	367532	1	17	80	1733	0	0	3000567	2666668	3333334
6	876109	2	14	50	1945	1510	0	3878409	3333335	4000001
7	447006	1	10	90	1911	0	0	4328870	4000002	4666668
8	526324	2	16	65	1083	1818	0	4857105	4666669	5333335
9	1101964	1	15	90	1600	0	0	5961970	5333336	6000002
10	647182	3	12	90	1782	1725	1374	6610752	6000003	6666669
11	702295	3	7	60	1886	1381	1307	7317928	6666670	7333336
12	110926	2	10	95	1969	1794	0	7433428	7333337	8000003
13	996346	1	9	95	1367	0	0	8433537	8000004	8666670
14	883384	3	10	95	1916	1604	1326	9318288	8666671	9333337
15	72600	3	18	90	1477	1005	1424	9395734	9333338	10000004
16	1098770	2	13	75	1172	1210	0	10498410	10000005	10666671
17	475205	3	9	100	1619	1336	1856	10975997	10666672	11333338
18	991453	2	7	80	1627	1901	0	11972261	11333339	12000005

Total number of pulses in waveform = 36

Type 5 Radar Waveform_10.txt

Waveform Num = 10
 Num of Bursts = 10
 Burst Interval (us)= 1200000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	242149	2	16	75	1684	1744	0	242149	0	1199999
2	1433550	2	5	100	1903	1862	0	1679127	1200000	2399999
3	1166067	3	11	55	1591	1503	1224	2848959	2400000	3599999
4	1242677	3	12	80	1537	1969	1989	4095954	3600000	4799999
5	948783	2	17	100	1634	1671	0	5050232	4800000	5999999
6	1233161	3	15	90	1603	1708	1149	6286698	6000000	7199999
7	1719631	2	13	50	1739	1592	0	8010789	7200000	8399999
8	414024	3	10	75	1969	1262	1969	8428144	8400000	9599999
9	2073919	2	12	50	1230	1206	0	10507263	9600000	10799999
10	512132	2	17	55	1470	1588	0	11021831	10800000	11999999

Total number of pulses in waveform = 24

Type 5 Radar Waveform_11.txt

Waveform Num = 11 ; Num of Bursts = 18 ; Burst Interval (us)= 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	330300	2	7	100	1489	1267	0	330300	0	666666
2	471297	1	18	80	1683	0	0	804353	666667	1333333
3	599835	2	13	75	1248	1038	0	1405871	1333334	2000000
4	819736	1	15	50	1431	0	0	2227893	2000001	2666667
5	574102	2	13	75	1293	1505	0	2803426	2666668	3333334
6	1108884	2	20	75	1786	1551	0	3915108	3333335	4000001
7	112247	3	15	50	1151	1132	1472	4030692	4000002	4666668
8	768534	1	19	75	1382	0	0	4802981	4666669	5333335
9	626531	1	15	60	1225	0	0	5430894	5333336	6000002
10	661688	2	15	60	1025	1449	0	6093807	6000003	6666669
11	888585	3	8	85	1248	1727	1351	6984866	6666670	7333336
12	420117	2	17	90	1842	1135	0	7409309	7333337	8000003
13	689892	2	11	95	1798	1758	0	8102178	8000004	8666670
14	767653	2	7	85	1342	1311	0	8873387	8666671	9333337
15	792718	2	11	75	1620	1257	0	9668758	9333338	10000004
16	665433	3	19	95	1802	1047	1501	10337068	10000005	10666671
17	372913	2	13	90	1544	1142	0	10714331	10666672	11333338
18	1018527	3	5	60	1207	1285	1118	11735544	11333339	12000005

Total number of pulses in waveform = 36

Type 5 Radar Waveform_12.txt

Waveform Num = 12
 Num of Bursts = 16
 Burst Interval (us)= 750000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	206535	1	17	90	1058	0	0	206535	0	749999
2	1085055	1	17	95	1186	0	0	1292648	750000	1499999
3	759830	2	19	95	1456	1579	0	2053664	1500000	2249999
4	248216	2	8	90	1946	1435	0	2304915	2250000	2999999
5	743974	1	5	60	1143	0	0	3052270	3000000	3749999
6	1175410	2	20	80	1350	1536	0	4228823	3750000	4499999
7	994390	1	16	90	1002	0	0	5226099	4500000	5249999
8	674565	2	18	75	1666	1033	0	5901666	5250000	5999999
9	96480	1	13	95	1747	0	0	6000845	6000000	6749999
10	1299581	1	18	80	1967	0	0	7302173	6750000	7499999
11	909846	1	15	60	1141	0	0	8213986	7500000	8249999
12	271205	1	16	90	1056	0	0	8486332	8250000	8999999
13	1009146	2	12	90	1682	1566	0	9496534	9000000	9749999
14	652211	1	5	80	1666	0	0	10151993	9750000	10499999
15	979914	3	17	60	1282	1433	1866	11133573	10500000	11249999
16	171997	1	12	65	1285	0	0	11310151	11250000	11999999

Total number of pulses in waveform = 23

Type 5 Radar Waveform_13.txt

Waveform Num = 13
 Num of Bursts = 9
 Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	1038038	2	16	85	1316	1512	0	1038038	0	1333332
2	573319	2	16	65	1656	1576	0	1614185	1333333	2666665
3	2310088	3	12	70	1300	1028	1571	3927505	2666666	3999998
4	413766	1	17	95	1724	0	0	4345170	3999999	5333331
5	1804650	3	20	90	1082	1889	1118	6231544	5333332	6666664
6	1672096	3	8	90	1977	1372	1734	7907729	6666665	7999997
7	347764	2	19	75	1558	1058	0	8260576	7999998	9333330
8	1587540	2	6	95	1910	1311	0	9850732	9333331	10666663
9	1990439	2	14	90	1922	1690	0	11844392	10666664	11999996

Total number of pulses in waveform = 20

Type 5 Radar Waveform_14.txt

Waveform Num = 14 ; Num of Bursts = 19 ; Burst Interval (us)= 631579										
Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	349349	2	10	85	1030	1591	0	349349	0	631578
2	611892	1	13	90	1052	0	0	963862	631579	1263157
3	610614	1	9	65	1092	0	0	1575528	1263158	1894736
4	531157	1	18	65	1815	0	0	2107777	1894737	2526315
5	861366	1	15	70	1262	0	0	2970958	2526316	3157894
6	255476	2	14	50	1621	1385	0	3227696	3157895	3789473
7	861586	3	8	90	1464	1552	1895	4092288	3789474	4421052
8	794083	2	17	50	1956	1725	0	4891282	4421053	5052631
9	293512	3	11	100	1926	1161	1264	5188475	5052632	5684210
10	958872	2	10	60	1376	1417	0	6151698	5684211	6315789
11	286136	3	20	65	1335	1265	1392	6440627	6315790	6947368
12	890489	2	10	80	1770	1713	0	7335108	6947369	7578947
13	837183	2	13	90	1295	1849	0	8175774	7578948	8210526
14	498605	2	12	55	1606	1062	0	8677523	8210527	8842105
15	408630	1	6	85	1812	0	0	9088821	8842106	9473684
16	843034	3	11	85	1293	1996	1271	9933667	9473685	10105263
17	311424	1	10	75	1477	0	0	10249651	10105264	10736842
18	1106840	2	7	55	1437	1951	0	11357968	10736843	11368421
19	368685	2	11	55	1527	1948	0	11730041	11368422	12000000

Total number of pulses in waveform = 36

Type 5 Radar Waveform_15.txt

Waveform Num = 15
 Num of Bursts = 17
 Burst Interval (us)= 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	99482	2	9	95	1729	1352	0	99482	0	705881
2	1050140	2	9	85	1722	1593	0	1152703	705882	1411763
3	468203	3	8	50	1565	1404	1052	1624221	1411764	2117645
4	803875	3	8	70	1215	1500	1686	2432117	2117646	2823527
5	930636	3	9	50	1499	1940	1817	3367154	2823528	3529409
6	169900	2	19	85	1109	1083	0	3542310	3529410	4235291
7	1222360	2	20	100	1061	1429	0	4766862	4235292	4941173
8	217414	3	15	85	1094	1790	1671	4986766	4941174	5647055
9	806665	3	12	100	1365	1968	1972	5797986	5647056	6352937
10	1211285	2	20	75	1360	1658	0	7014576	6352938	7058819
11	706559	3	17	65	1893	1198	1285	7724153	7058820	7764701
12	240451	2	9	85	1909	1976	0	7968980	7764702	8470583
13	570688	2	12	55	1681	1828	0	8543553	8470584	9176465
14	738293	1	5	80	1679	0	0	9285355	9176466	9882347
15	1204281	1	7	65	1236	0	0	10491315	9882348	10588229
16	696918	3	5	90	1600	1454	1073	11189469	10588230	11294111
17	533604	1	16	55	1511	0	0	11727200	11294112	11999993

Total number of pulses in waveform = 38

Type 5 Radar Waveform_16.txt

Waveform Num = 16 ; Num of Bursts = 18 ; Burst Interval (us)= 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	51111	1	11	70	1898	0	0	51111	0	666666
2	1141026	2	9	50	1080	1383	0	1194035	666667	1333333
3	624860	1	13	85	1988	0	0	1821358	1333334	2000000
4	573533	2	18	80	1898	1409	0	2396879	2000001	2666667
5	746356	1	6	95	1996	0	0	3146542	2666668	3333334
6	556460	1	15	95	1267	0	0	3704998	3333335	4000001
7	559198	3	8	70	1140	1074	1416	4265463	4000002	4666668
8	693954	1	19	90	1654	0	0	4963047	4666669	5333335
9	668493	3	10	55	1922	1913	1109	5633194	5333336	6000002
10	894289	1	5	55	1381	0	0	6532427	6000003	6666669
11	781347	3	11	85	1774	1885	1354	7315155	6666670	7333336
12	60538	3	16	60	1282	1310	1544	7380706	7333337	8000003
13	646296	1	7	50	1775	0	0	8031138	8000004	8666670
14	1278657	1	12	65	1420	0	0	9311570	8666671	9333337
15	49566	1	14	95	1338	0	0	9362556	9333338	10000004
16	759313	3	8	70	1382	1998	1390	10123207	10000005	10666671
17	818416	3	6	65	1130	1866	1518	10946393	10666672	11333338
18	703499	3	9	60	1859	1143	1601	11654406	11333339	12000005

Total number of pulses in waveform = 34

Type 5 Radar Waveform_17.txt

Waveform Num = 17

Num of Bursts = 14

Burst Interval (us)= 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	277075	3	14	70	1868	1584	1383	277075	0	857142
2	1365182	3	14	65	1381	1804	1005	1647092	857143	1714285
3	158353	3	18	75	1769	1268	1538	1809635	1714286	2571428
4	1499550	1	17	100	1292	0	0	3313760	2571429	3428571
5	776512	1	5	80	1515	0	0	4091564	3428572	4285714
6	498915	2	10	85	1662	1073	0	4591994	4285715	5142857
7	628448	3	10	60	1492	1100	1094	5223177	5142858	6000000
8	1053242	3	9	100	1202	1534	1416	6280105	6000001	6857143
9	1078168	2	15	70	1291	1966	0	7362425	6857144	7714286
10	908388	3	14	80	1173	1843	1763	8274070	7714287	8571429
11	380679	3	10	60	1503	1712	1896	8659528	8571430	9428572
12	1065803	2	9	80	1940	1241	0	9730442	9428573	10285715
13	1324495	3	17	100	1615	1090	1559	11058118	10285716	11142858
14	458519	1	17	80	1908	0	0	11520901	11142859	12000001

Total number of pulses in waveform = 33

Type 5 Radar Waveform_18.txt

Waveform Num = 18
 Num of Bursts = 14
 Burst Interval (us) = 857143

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	806486	1	15	75	1189	0	0	806486	0	857142
2	532300	2	9	85	1232	1850	0	1339975	857143	1714285
3	946901	2	18	65	1639	1617	0	2289958	1714286	2571428
4	549856	3	11	60	1689	1729	1927	2843070	2571429	3428571
5	1343931	2	20	85	1103	1248	0	4192346	3428572	4285714
6	624847	2	12	85	1172	1836	0	4819544	4285715	5142857
7	383224	1	13	60	1075	0	0	5205776	5142858	6000000
8	818704	3	11	85	1102	1689	1953	6025555	6000001	6857143
9	1673899	2	5	80	1199	1840	0	7704198	6857144	7714286
10	590229	1	13	75	1205	0	0	8297466	7714287	8571429
11	783007	3	7	65	1203	1550	1003	9081678	8571430	9428572
12	756761	2	20	90	1366	1278	0	9842195	9428573	10285715
13	888356	1	10	80	1039	0	0	10733195	10285716	11142858
14	608963	3	10	75	1175	1077	1210	11343197	11142859	12000001

Total number of pulses in waveform = 28

Type 5 Radar Waveform_19.txt

Waveform Num = 19 ; Num of Bursts = 18 ; Burst Interval (us) = 666667

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	553764	2	19	80	1642	1858	0	553764	0	666666
2	203504	3	14	60	1723	1939	1997	760768	666667	1333333
3	863589	2	10	75	1693	1627	0	1630016	1333334	2000000
4	766208	1	8	90	1222	0	0	2399544	2000001	2666667
5	418313	3	10	80	1604	1443	1163	2819079	2666668	3333334
6	648647	2	13	65	1247	1940	0	3471936	3333335	4000001
7	986975	1	13	65	1753	0	0	4462098	4000002	4666668
8	537427	3	19	65	1512	1346	1700	5001278	4666669	5333335
9	845076	1	18	100	1500	0	0	5850912	5333336	6000002
10	411483	2	16	60	1030	1577	0	6263895	6000003	6666669
11	619847	3	16	100	1175	1089	1384	6886349	6666670	7333336
12	517413	1	20	65	1141	0	0	7407410	7333337	8000003
13	762300	2	16	50	1998	1003	0	8170851	8000004	8666670
14	803831	2	10	55	1533	1061	0	8977683	8666671	9333337
15	641312	3	9	75	1992	1593	1529	9621589	9333338	10000004
16	653291	3	6	95	1095	1878	1697	10279994	10000005	10666671
17	470334	2	5	55	1569	1103	0	10754998	10666672	11333338
18	956909	2	9	100	1014	1258	0	11714579	11333339	12000005

Total number of pulses in waveform = 38

Type 5 Radar Waveform_20.txt

Waveform Num = 20 ; Num of Bursts = 17 ; Burst Interval (us) = 705882

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	218925	1	18	50	1730	0	0	218925	0	705881
2	539476	2	16	90	1735	1084	0	760131	705882	1411763
3	1145791	1	7	55	1299	0	0	1908741	1411764	2117645
4	568905	1	13	55	1052	0	0	2478945	2117646	2823527
5	401620	2	13	80	1811	1803	0	2881617	2823528	3529409
6	1339229	2	6	100	1956	1579	0	4224460	3529410	4235291
7	563254	2	7	75	1854	1245	0	4791249	4235292	4941173
8	784746	1	11	65	1778	0	0	5579094	4941174	5647055
9	367307	2	5	85	1022	1687	0	5948179	5647056	6352937
10	1095589	3	11	75	1350	1121	1247	7046477	6352938	7058819
11	45827	1	16	65	1808	0	0	7096022	7058820	7764701
12	1345243	3	20	70	1618	1687	1194	8443073	7764702	8470583
13	462595	2	13	100	1347	1908	0	8910167	8470584	9176465
14	548646	2	12	90	1052	1698	0	9462068	9176466	9882347
15	753655	1	17	85	1874	0	0	10218473	9882348	10588229
16	789817	1	13	75	1720	0	0	11010164	10588230	11294111
17	700270	1	14	55	1119	0	0	11712154	11294112	11999993

Total number of pulses in waveform = 28

Type 5 Radar Waveform_21.txt

Waveform Num = 21

Num of Bursts = 11

Burst Interval (us) = 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	447216	2	17	95	1158	1914	0	447216	0	1090908
2	790496	1	10	60	1210	0	0	1240784	1090909	2181817
3	1308924	2	9	90	1138	1508	0	2550918	2181818	3272726
4	1014269	2	20	95	1188	1507	0	3567833	3272727	4363635
5	964485	3	7	85	1294	1916	1236	4535013	4363636	5454544
6	1852635	2	11	60	1138	1264	0	6392094	5454545	6545453
7	467119	2	13	90	1704	1323	0	6861615	6545454	7636362
8	874073	2	20	55	1151	1164	0	7738715	7636363	8727271
9	1745825	2	16	60	1091	1633	0	9486855	8727272	9818180
10	925044	1	19	75	1416	0	0	10414623	9818181	10909089
11	1433634	1	12	80	1884	0	0	11849673	10909090	11999998

Total number of pulses in waveform = 20

Type 5 Radar Waveform_22.txt

Waveform Num = 21

Num of Bursts = 11

Burst Interval (us) = 1090909

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	447216	2	17	95	1158	1914	0	447216	0	1090908
2	790496	1	10	60	1210	0	0	1240784	1090909	2181817
3	1308924	2	9	90	1138	1508	0	2550918	2181818	3272726
4	1014269	2	20	95	1188	1507	0	3567833	3272727	4363635
5	964485	3	7	85	1294	1916	1236	4535013	4363636	5454544
6	1852635	2	11	60	1138	1264	0	6392094	5454545	6545453
7	467119	2	13	90	1704	1323	0	6861615	6545454	7636362
8	874073	2	20	55	1151	1164	0	7738715	7636363	8727271
9	1745825	2	16	60	1091	1633	0	9486855	8727272	9818180
10	925044	1	19	75	1416	0	0	10414623	9818181	10909089
11	1433634	1	12	80	1884	0	0	11849673	10909090	11999998

Total number of pulses in waveform = 20

Type 5 Radar Waveform_23.txt

Waveform Num = 23 ; Num of Bursts = 19 ; Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	14622	2	16	65	1011	1730	0	14622	0	631578
2	848450	3	5	65	1741	1678	1140	865813	631579	1263157
3	690815	2	13	60	1048	1714	0	1561187	1263158	1894736
4	730413	1	19	60	1146	0	0	2294362	1894737	2526315
5	730881	3	10	50	1455	1159	1952	3026389	2526316	3157894
6	299277	3	16	50	1802	1459	1850	3330232	3157895	3789473
7	906291	1	9	100	1210	0	0	4241634	3789474	4421052
8	234880	3	17	60	1636	1329	1867	4477724	4421053	5052631
9	863583	3	12	75	1693	1065	1001	5346139	5052632	5684210
10	946926	3	18	65	1664	1987	1045	6296824	5684211	6315789
11	517660	1	15	70	1714	0	0	6819180	6315790	6947368
12	377731	1	13	100	1828	0	0	7198625	6947369	7578947
13	1002743	3	8	75	1175	1248	1056	8203196	7578948	8210526
14	351889	3	13	55	1157	1114	1340	8558564	8210527	8842105
15	730339	3	16	70	1268	1271	1964	9292514	8842106	9473684
16	763398	1	8	80	1458	0	0	10060415	9473685	10105263
17	607671	1	12	80	1574	0	0	10669544	10105264	10736842
18	554868	1	10	95	1123	0	0	11225986	10736843	11368421
19	619570	1	6	75	1712	0	0	11846679	11368422	12000000

Total number of pulses in waveform = 39

Type 5 Radar Waveform_24.txt

Waveform Num = 24
Num of Bursts = 15
Burst Interval (us)= 800000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	10517	1	14	60	1925	0	0	10517	0	799999
2	969118	1	14	60	1089	0	0	981560	800000	1599999
3	845779	1	6	55	1734	0	0	1828428	1600000	2399999
4	1330051	3	5	95	1512	1790	1094	3160213	2400000	3199999
5	489653	2	8	100	1296	1295	0	3654262	3200000	3999999
6	488459	3	17	100	1311	1734	1171	4145312	4000000	4799999
7	925645	3	14	60	1414	1491	1019	5075173	4800000	5599999
8	558871	1	13	65	1582	0	0	5637968	5600000	6399999
9	1088265	3	11	70	1537	1201	1401	6727815	6400000	7199999
10	1246826	3	6	50	1396	1396	1067	7978780	7200000	7999999
11	130346	2	18	70	1293	1840	0	8112985	8000000	8799999
12	1080640	1	14	65	1084	0	0	9196758	8800000	9599999
13	1018251	3	16	75	1687	1516	1859	10216093	9600000	10399999
14	843437	3	20	85	1814	1109	1469	11064592	10400000	11199999
15	863444	3	8	95	1827	1756	1037	11932428	11200000	11999999

Total number of pulses in waveform = 33

Type 5 Radar Waveform_25.txt

Waveform Num = 25
Num of Bursts = 12
Burst Interval (us)= 1000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	32566	3	19	65	1783	1671	1186	32566	0	999999
2	1009409	2	13	100	1128	1143	0	1046615	1000000	1999999
3	1880312	1	7	55	1796	0	0	2929198	2000000	2999999
4	331253	1	14	65	1956	0	0	3262247	3000000	3999999
5	1576577	1	8	65	1469	0	0	4840780	4000000	4999999
6	840697	3	11	50	1900	1637	1087	5682946	5000000	5999999
7	518236	1	5	55	1330	0	0	6205806	6000000	6999999
8	1573141	2	5	100	1039	1602	0	7780277	7000000	7999999
9	301129	2	10	95	1306	1047	0	8084047	8000000	8999999
10	976858	2	16	60	1401	1973	0	9063258	9000000	9999999
11	1416740	1	8	55	1378	0	0	10483372	10000000	10999999
12	995555	2	13	90	1754	1717	0	11480305	11000000	11999999

Total number of pulses in waveform = 21

Type 5 Radar Waveform_26.txt

Waveform Num = 26 ; Num of Bursts = 19 ; Burst Interval (us)= 631579

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	34834	1	14	60	1972	0	0	34834	0	631578
2	698987	3	19	70	1857	1098	1888	735793	631579	1263157
3	1051578	3	5	90	1531	1593	1419	1792214	1263158	1894736
4	202997	1	11	100	1194	0	0	1999754	1894737	2526315
5	1067421	3	18	90	1348	1172	1338	3068369	2526316	3157894
6	442704	2	19	95	1710	1059	0	3514931	3157895	3789473
7	567351	1	12	90	1594	0	0	4085051	3789474	4421052
8	940644	1	20	95	1990	0	0	5027289	4421053	5052631
9	245627	3	16	100	1530	1024	1405	5274906	5052632	5684210
10	465118	1	19	70	1190	0	0	5743983	5684211	6315789
11	1123929	1	11	65	1205	0	0	6869102	6315790	6947368
12	98641	3	7	60	1212	1136	1280	6968948	6947369	7578947
13	1021350	2	18	75	1441	1198	0	7993926	7578948	8210526
14	303267	3	20	55	1736	1025	1918	8299832	8210527	8842105
15	919143	1	13	50	1275	0	0	9223654	8842106	9473684
16	395559	1	18	95	1698	0	0	9620488	9473685	10105263
17	666123	3	20	70	1439	1057	1585	10288309	10105264	10736842
18	500172	3	11	95	1684	1109	1384	10792562	10736843	11368421
19	753337	3	16	75	1780	1706	1509	11550076	11368422	12000000

Total number of pulses in waveform = 39

Type 5 Radar Waveform_27.txt

Waveform Num = 27
Num of Bursts = 9
Burst Interval (us)= 1333333

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	86982	2	7	80	1611	1866	0	86982	0	1333332
2	2306741	2	8	65	1966	1274	0	2397200	1333333	2666665
3	1481901	1	8	50	1876	0	0	3882341	2666666	3999998
4	1231288	1	10	55	1955	0	0	5115505	3999999	5333331
5	1442305	1	19	60	1506	0	0	6559765	5333332	6666664
6	1395595	1	20	95	1130	0	0	7956866	6666665	7999997
7	635773	3	17	65	1000	1565	1360	8593769	7999998	9333330
8	889788	3	13	50	1616	1964	1244	9487482	9333331	10666663
9	1759256	1	13	95	1341	0	0	11251562	10666664	11999996

Total number of pulses in waveform = 15

Type 5 Radar Waveform_28.txt

Waveform Num = 28
Num of Bursts = 8
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	930175	3	18	60	1781	1270	1106	930175	0	1499999
2	1302273	1	14	95	1647	0	0	2236605	1500000	2999999
3	1906668	3	5	95	1210	1186	1500	4144920	3000000	4499999
4	1424349	2	20	50	1364	1887	0	5573165	4500000	5999999
5	1564611	3	7	90	1761	1906	1911	7141027	6000000	7499999
6	454244	1	11	85	1013	0	0	7600849	7500000	8999999
7	2618630	1	16	85	1226	0	0	10220492	9000000	10499999
8	290939	1	16	60	1468	0	0	10512657	10500000	11999999

Total number of pulses in waveform = 15

Type 5 Radar Waveform_29.txt

Waveform Num = 29
Num of Bursts = 8
Burst Interval (us)= 1500000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	293750	2	15	85	1242	1115	0	293750	0	1499999
2	1673442	2	16	90	1098	1124	0	1969549	1500000	2999999
3	1580019	1	20	60	1985	0	0	3551790	3000000	4499999
4	2403550	3	15	80	1050	1669	1282	5957325	4500000	5999999
5	805021	2	14	50	1582	1637	0	6766347	6000000	7499999
6	1137139	2	18	55	1289	1594	0	7906705	7500000	8999999
7	2127640	2	16	85	1406	1495	0	10037228	9000000	10499999
8	1133164	2	10	70	1889	1457	0	11173293	10500000	11999999

Total number of pulses in waveform = 16

Type 5 Radar Waveform_30.txt

Waveform Num = 30
Num of Bursts = 11
Burst Interval (us)= 1000000

Burst #	Off Time (us)	# Pulses	Chirp (MHz)	PW (us)	Pulse 1 Pri(us)	Pulse 2 Pri(us)	Pulse 3 Pri(us)	Start Loc (us)	Start Burst Interval(us)	End Burst Interval(us)
1	160556	2	6	85	1180	1863	0	160556	0	1000000
2	1834449	2	10	100	1733	1731	0	1998048	1000000	2181817
3	345029	3	11	95	1138	1109	1791	2346541	2181818	3272726
4	1422474	1	19	100	1461	0	0	3773053	3272727	4363635
5	696147	2	20	70	1705	1834	0	4470661	4363636	5454544
6	1456105	2	20	50	1561	1138	0	5930305	5454545	6545453
7	881659	1	7	95	1871	0	0	6814663	6545454	7636362
8	1049777	3	19	80	1129	1701	1258	7866311	7636363	8727271
9	1407308	1	18	70	1313	0	0	9277707	8727272	9818180
10	1038825	1	5	80	1607	0	0	10317845	9818181	10909089
11	1138901	1	16	95	1066	0	0	11458353	10909090	11999998

Total number of pulses in waveform = 19

Type 6 Radar Waveform_1.txt

Hop number	Frequency (MHz)	Pulse Start (ms)
2	5317	6
4	5301	12
18	5297	54
20	5298	60
22	5316	66
23	5306	69
27	5270	81
34	5314	102
43	5313	129
56	5289	168
68	5268	204
70	5303	210
76	5264	228
94	5275	282

Type 6 Radar Waveform_2.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
0	5279	0
6	5319	18
9	5273	27
13	5293	39
25	5278	75
28	5273	84
35	5276	105
42	5307	126
74	5301	222
77	5294	231
78	5265	234
91	5270	273
99	5280	297

Type 6 Radar Waveform_3.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
15	5289	45
16	5264	48
42	5296	126
47	5292	141
48	5305	144
50	5269	150
60	5278	180
69	5285	207
73	5314	219
84	5298	252
87	5309	261

Type 6 Radar Waveform_4.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
9	5318	27
20	5275	60
24	5314	72
23	5301	69
30	5308	90
33	5271	99
41	5320	123
58	5292	174
60	5288	180
73	5277	219
78	5316	234
83	5261	249

Type 6 Radar Waveform_5.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
46	5295	138
55	5317	165
61	5307	183
62	5310	186
65	5294	195
70	5281	210
71	5271	213
81	5293	243
82	5313	246
87	5274	261
97	5265	291

Type 6 Radar Waveform_6.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
2	5310	6
6	5303	18
13	5284	39
16	5302	48
18	5279	54
31	5276	93
35	5288	105
38	5262	114
42	5298	126
50	5283	150
51	5289	153
57	5311	171
64	5317	192
65	5314	195
70	5295	210
79	5275	237
90	5266	270

Type 6 Radar Waveform_7.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
0	5310	0
39	5289	117
44	5274	132
51	5288	153
58	5260	174
59	5273	177
64	5291	192
71	5316	213
77	5271	231
86	5284	258
96	5294	288

Type 6 Radar Waveform_8.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
36	5281	108
39	5293	117
43	5299	129
45	5275	135
56	5310	168
72	5317	216
78	5272	234
82	5312	246
83	5314	249
88	5263	264
95	5273	285
98	5282	294
99	5307	297

Type 6 Radar Waveform_9.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
2	5260	6
12	5281	36
25	5302	75
27	5315	81
51	5317	153
60	5318	180
64	5271	192
66	5261	198
73	5301	219
76	5285	228
81	5266	243
91	5304	273

Type 6 Radar Waveform_10.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
2	5268	6
8	5263	24
10	5306	30
12	5272	36
17	5283	51
44	5298	132
47	5302	141
61	5309	183
71	5267	213
79	5291	237
83	5308	249
85	5264	255

Type 6 Radar Waveform_11.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
4	5319	12
12	5320	36
16	5278	48
27	5312	81
31	5263	93
35	5265	105
68	5271	204
69	5273	207
77	5297	231
79	5284	237
85	5303	255
89	5261	267
97	5277	291

Type 6 Radar Waveform_12.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
17	5271	51
19	5320	57
28	5315	84
30	5279	90
40	5308	120
72	5301	216

Type 6 Radar Waveform_13.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
6	5319	18
8	5297	24
22	5261	66
29	5313	87
42	5290	126
49	5285	147
73	5308	219
74	5291	222
75	5301	225
76	5274	228
77	5289	231
82	5277	246
90	5320	270
94	5278	282
97	5312	291

Type 6 Radar Waveform_14.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
7	5283	21
11	5279	33
14	5281	42
23	5319	69
33	5274	99
34	5309	102
44	5287	132
45	5288	135
63	5299	189
66	5318	198
69	5306	207
72	5294	216
95	5314	285
96	5305	288
97	5284	291

Type 6 Radar Waveform_15.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
3	5310	9
4	5317	12
33	5311	99
43	5283	129
47	5318	141
48	5274	144
62	5291	186
67	5312	201
74	5284	222
75	5303	225
81	5288	243
85	5262	255
90	5290	270

Type 6 Radar Waveform_16.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
5	5277	15
9	5269	27
12	5293	36
17	5320	51
24	5304	72
29	5309	87
54	5295	162
61	5289	183
71	5307	213
79	5319	237
82	5268	246
90	5262	270

Type 6 Radar Waveform_17.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
5	5262	15
9	5292	27
10	5299	30
15	5263	45
19	5293	57
20	5287	60
27	5317	81
30	5282	90
34	5298	102
37	5275	111
84	5308	252
93	5290	279
94	5264	282

Type 6 Radar Waveform_18.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
6	5272	18
7	5298	21
17	5306	51
30	5293	90
32	5295	96
35	5264	105
45	5266	135
51	5291	153
62	5273	186
78	5287	234
97	5294	291
99	5277	297

Type 6 Radar Waveform_19.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
6	5262	18
14	5279	42
20	5317	60
26	5282	78
35	5298	105
43	5294	129
47	5291	141
66	5287	198
91	5285	273
92	5283	276
93	5300	279

Type 6 Radar Waveform_20.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
4	5267	12
5	5304	15
9	5276	27
39	5316	117
46	5312	138
48	5280	144
52	5260	156
58	5277	174
60	5281	180
68	5317	204
69	5282	207
89	5303	267

Type 6 Radar Waveform_21.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
5	5269	15
14	5284	42
17	5320	51
19	5291	57
34	5319	102
38	5266	114
40	5272	120
43	5307	129
44	5281	132
48	5288	144
55	5289	165
57	5274	171
65	5276	195
70	5268	210
71	5308	213
95	5293	285

Type 6 Radar Waveform_22.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
3	5285	9
5	5320	15
10	5280	30
18	5297	54
21	5269	63
25	5263	75
30	5317	90
35	5305	105
44	5302	132
46	5268	138
49	5319	147
52	5278	156
65	5281	195
71	5306	213
87	5288	261
92	5277	276

Type 6 Radar Waveform_23.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
16	5288	48
33	5265	99
43	5307	129
51	5302	153
55	5318	165
62	5289	186
67	5268	201
83	5266	249
93	5298	279

Type 6 Radar Waveform_24.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
9	5306	27
13	5282	39
23	5304	69
32	5296	96
41	5272	123
43	5290	129
56	5301	168
59	5274	177
70	5294	210
77	5300	231
81	5267	243
85	5315	255
93	5298	279
96	5318	288

Type 6 Radar Waveform_25.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
15	5303	45
20	5296	60
29	5266	87
32	5300	96
35	5309	105
36	5265	108
43	5312	129
95	5274	285
96	5297	288
97	5280	291

Type 6 Radar Waveform_26.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
1	5270	3
4	5311	12
11	5307	33
12	5289	36
30	5288	90
42	5282	126
58	5264	174
59	5296	177
61	5276	183
84	5284	252
97	5299	291

Type 6 Radar Waveform_27.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
11	5291	33
12	5282	36
13	5284	39
14	5289	42
17	5317	51
26	5315	78
30	5283	90
38	5310	114
50	5296	150
55	5312	165
57	5293	171
62	5275	186
66	5302	198
67	5261	201
75	5287	225
82	5270	246

Type 6 Radar Waveform_28.txt

Hop number	Frequency (GHz)	Pulse Start (ms)
7	5314	21
20	5270	60
25	5319	75
27	5308	81
41	5293	123
47	5313	141
52	5297	156
53	5312	159
55	5266	165
56	5309	168
58	5263	174
60	5315	180
64	5279	192
67	5298	201
98	5261	294

Type 6 Radar Waveform_29

Hop number	Frequency (GHz)	Pulse Start (ms)
5	5269	15
20	5299	60
30	5294	90
35	5281	105
38	5267	114
40	5297	120
41	5284	123
46	5285	138
48	5268	144
84	5280	252

Type 6 Radar Waveform_30

Hop number	Frequency (GHz)	Pulse Start (ms)
10	5268	30
20	5275	60
40	5276	120
64	5281	192
68	5298	204
69	5313	207
72	5261	216
89	5285	267

11 Test Equipment List

MWRF Test System

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
C	Vector signal generator	Agilent	N5182A	S2110417b-YQ-EMC	2022-11-24	2023-11-23
	RF automatic control unit	MWRFtest	MW100-RFCB	S2110418b-YQ-EMC	2022-9-30	2023-9-29
	Signal Analyzer	R & S	FSV40	S1503003-YQ-EMC	2022-8-1	2023-7-31

Measurement Software Information			
Test Item	Software	Manufacturer	Version
C	MTS 8310	MWRFtest	2.0.0.0

12 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Conducted Disturbance at Mains Terminals	150kHz to 30MHz, LISN, $\pm 3.16\text{dB}$
Radiated Disturbance	30MHz to 1GHz, $\pm 5.03\text{dB}$ (Horizontal) $\pm 5.12\text{dB}$ (Vertical) 1GHz to 18GHz, $\pm 5.15\text{dB}$ (Horizontal) $\pm 5.12\text{dB}$ (Vertical) 18GHz to 25GHz, $\pm 4.76\text{dB}$

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.

-----End of Test Report-----