# DYNAMIC FREQUENCY SELECTION

# DFS TEST REPORT

## For

## 802.11ac Dual Band PoE Access Point

**Model / Trade Name:**

| Model No. | Trade name |
|---|---|
| C-100 | MOJO |
| | WatchGuard |
| WP8331 | LITE-ON |
| AP220 | WatchGuard |

*Issued to*

**Lite-On Technology Corp.**
**Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C**

*Issued by*

**Compliance Certification Services Inc.**
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**Issued Date: March 17, 2017**

Testing Laboratory
1309

## Revision History

| Rev. | | Issue Date | | Revisions | Effect Page | Revised By |
|---|---|---|---|---|---|---|
| 00 | | March 17, 2017 | | Initial Issue | ALL | Peter Chen |
| 01 | | June 22, 2017 | | 1. Modify section 4.2. | P.19, | Angel Cheng |

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# Summary of Dynamic Frequency of Selection Test

| UNII | Description | Limit | Result |
|---|---|---|---|
| U-NII Band 2-A 5250-5350MHz | Channel Availability Check Time | > 60sec | Pass |
| | U-NII Detection Bandwidth | > 100% of the U-NII 99% transmission power bandwidth | Pass |
| | Statistical Performance Check | Type 1,2,3,4 >= 60%<br>Type 1~4 and 5 >= 80%<br>Type 6 >= 70% | Pass |
| | Channel Move Time | < 10 sec | Pass |
| | Channel Closing Transmission Time | < 200 ms + aggregate of 60 ms over remaining 10 s period | Pass |
| | Non-Occupancy Period Test | > 30 minutes | Pass |
| U-NII Band 2-C 5470-5725MHz | Channel Availability Check Time | > 60sec | Pass |
| | U-NII Detection Bandwidth | > 100% of the U-NII 99% transmission power bandwidth | Pass |
| | Statistical Performance Check | Type 1,2,3,4 >= 60%<br>Type 1~4 and 5 >= 80%<br>Type 6 >= 70% | Pass |
| | Channel Move Time | < 10 sec | Pass |
| | Channel Closing Transmission Time | < 200 ms + aggregate of 60 ms over remaining 10 s period | Pass |
| | Non-Occupancy Period Test | > 30 minutes | Pass |

# 1. Certification of Conformity

**Applicant:** Lite-On Technology Corp.
Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C

**Manufacturer:** Lite-On Network Communication (Dongguan) Limited
30#Keji Rd.,Yin Hu Industrial Area,Qingxi Town,DongGuan City,Guangdong,China

**Equipment Under Test:** 802.11ac Dual Band PoE Access Point

**Model Name / Trade Name:**

| Model No. | Brand name |
|---|---|
| C-100 | MOJO |
| | WatchGuard |
| WP8331 | LITE-ON |
| AP220 | WatchGuard |

**Date of Test:** January 18 ~ March 17, 2017

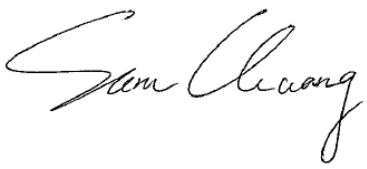
| APPLICABLE STANDARDS |
|---|
| FCC 47 CFR Part 15 Subpart E (Section 15.407)<br>KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02<br>KDB 905462 D04 Operational Modes for DFS Testing New Rules v01 |
| **TEST RESULT** |
| No non-compliance noted |

## We hereby certify that:

Compliance Certification Services Inc. tested the above equipment. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2014 & ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.407.

The test results of this report relate only to the tested sample identified in this report.

*Approved by:*



Sam Chuang
Manager
Compliance Certification Services Inc.

*Tested by:*

Peter Chen
Engineer
Compliance Certification Services Inc.

# 2. General Description

## 2.1 Product Description

| | | |
|---|---|---|
| **Product Name** | 802.11ac Dual Band PoE Access Point | |
| **Model Name/ Trade Name** | **Model No.** | **Brand name** |
| | C-100 | MOJO |
| | | WatchGuard |
| | WP8331 | LITE-ON |
| | AP220 | WatchGuard |
| **Model Discrepancy** | All the model number was just for marketing purpose only | |
| **Product SW/HW version** | V0.0.2p | |

WLAN 5GHz:

| Wi-Fi | Frequency Range | Channels | Max. Power | | Modulation Technology |
|---|---|---|---|---|---|
| | | | Output Power(dBm) | Output Power(W) | |
| 11a | 5150~5250 | 4 | 25.60 | 0.3631 | OFDM |
| | 5250~5350 | 4 | 19.10 | 0.0813 | |
| | 5470~5725 | 12 | 19.89 | 0.0975 | |
| | 5725-5850 | 5 | 25.02 | 0.3177 | |
| 11n / ac_20M | HT20/VHT20 5150~5250 | 4 | 25.07 | 0.3214 | OFDM |
| | HT20/VHT20 5250~5350 | 4 | 20.26 | 0.1062 | |
| | HT20/VHT20 5470~5725 | 12 | 20.82 | 0.1208 | |
| | HT20/VHT20 5725-5850 | 5 | 24.80 | 0.3020 | |
| 11n / ac_40M | HT40/VHT40 5150~5250 | 2 | 25.07 | 0.3214 | OFDM |
| | HT40/VHT40 5250~5350 | 2 | 23.08 | 0.2032 | |
| | HT40/VHT40 5470~5725 | 6 | 23.13 | 0.2056 | |
| | HT40/VHT40 5725-5850 | 2 | 24.12 | 0.2582 | |
| 11ac_80M | VHT80 5150~5250 | 1 | 20.88 | 0.1225 | OFDM |
| | VHT80 5250~5350 | 1 | 21.12 | 0.1294 | |
| | VHT80 5470~5725 | 2 | 20.84 | 0.1213 | |
| | VHT80 5725-5850 | 1 | 20.53 | 0.1130 | |

| | |
|---|---|
| **Antenna Designation** | 1. PIFA Antenna<br>5GHz Gain: 3.8dBi (5150MHz-5250MHz)<br>5GHz Gain: 4.3dBi (5250MHz-5350MHz)<br>5GHz Gain: 5.1dBi (5470MHz-5725MHz)<br>5GHz Gain: 5.1dBi (5725MHz-5850MHz)<br><br>2. PIFA Antenna<br>5GHz Gain: 5.0dBi (5150MHz-5250MHz)<br>5GHz Gain: 5.0dBi (5250MHz-5350MHz)<br>5GHz Gain: 4.7dBi (5470MHz-5725MHz)<br>5GHz Gain: 4.1dBi (5725MHz-5850MHz) |
| **Modulation type** | 64QAM, 16QAM, QPSK, BPSK for OFDM<br>256QAM for OFDM in 802.11ac only |
| **Transition Rate** | 802.11 a: 6/9/12/18/24/36/48/54 Mbps<br>802.11 n_20MHz: 6.5 – 144.4Mbps<br>802.11 n_40MHz: 13.5 – 300Mbps<br>802.11 ac_20MHz: 6.5 –144.4Mbps<br>802.11 ac_40MHz: 13.5 –300Mbps<br>802.11 ac_80MHz: 29.3 – 650Mbps |

## 2.2 Feature of Equipment Under Test

| Product Feature | | |
|---|---|---|
| **Product Name** | 802.11ac Dual Band PoE Access Point | |
| **Model Name/ Trade Name** | **Model No.** | **Brand name** |
| | C-100 | MOJO |
| | | WatchGuard |
| | WP8331 | LITE-ON |
| | AP220 | WatchGuard |
| **EUT supports Radios application** | WLAN 11a/b/g/n HT20/HT40<br>WLAN 11ac VHT20/VHT40/VHT80 | |
| **DFS Function** | Master | |

***Remark:*** *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*

## 2.3 Support Unit used in test configuration and system

| Item | Equipment | Trade Name | Model Name | FCC ID |
|---|---|---|---|---|
| 1. | Notebook | HP | Dv6-1332TX | PD9112BNHU |
| 2. | WLAN Dongle | EDIMAX | EW-7822UAC | NDD9578221212 |

# 3. Requirements and Parameters for DFS Test

## 3.1 Applicability of DFS Requirements

EUT is considered as a master device.

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

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

**Table 2: Applicability of DFS requirements during normal operation**

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

| Additional requirements for devices with multiple bandwidth modes | Operational Mode | |
|---|---|---|
| | Master Devise 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. | | |

## 3.2 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**

| 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 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.<br>**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.<br>**Note 3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01. | |

## 3.3 DFS Response requirement

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

**Table 4: DFS Response Requirement Values**

| Parameter | Value |
|---|---|
| *Non-occupancy period* | Minimum 30 minutes |
| *Channel Availability Check Time* | 60 seconds |
| *Channel Move Time* | 10 seconds See Note 1. |
| *Channel Closing Transmission Time* | 200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second periods. See Notes 1 and 2. |
| *U-NII Detection Bandwidth* | Minimum 100% of the 99% 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 *Channel* changes (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 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.

## 3.4 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.

### 3.4.1 Short Pulse Radar Test Waveforms

Radar Type 0 was used in the evaluation of the Client device for the purpose of measuring the Channel Move Time and the Channel Closing Transmission Time.

**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 | |
| 1 | 1 | Test A | $Roundup\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{PRI_{\mu\text{sec}}}\right)\right\}$ | 60% | 30 |
| | | Test B | | | |
| 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.

Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a

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

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.

The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

## 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 |

### 3.4.2 Long Pulse Radar Test Waveform

**Table 6 – Long Pulse Radar Test Waveforms**

| 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 test signal. If more than 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.

Each waveform is defined as follows:

Note: The center frequency for each of the 30 trials of the Bin 5 radar shall be randomly selected within 80% of the Occupied Bandwidth.

(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 time between the first and second pulses is chosen independently of the time 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 independently.

**A representative example of a Long Pulse radar test waveform:**

(1) The total test signal length is 12 seconds.

(2) 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).

### 3.4.3 Frequency Hopping Radar Test Waveform

**Table 7 – Frequency Hopping Radar Test Signal**

| 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:

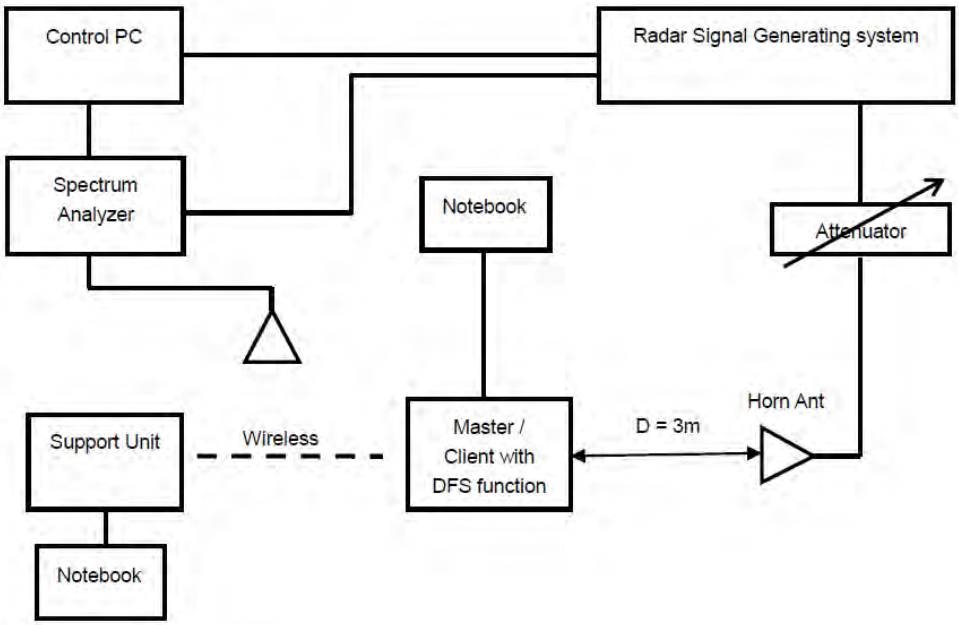
The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues 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.

# 4. Calibration Setup and DFS Test Setup Configuration

## 4.1 Radiated Test Setup Configuration

The EUT is a U-NII Device operating in Master mode. The radar test signals are injected into the Master Device.

**Radiated Setup Configuration of Master mode**




### Channel Loading

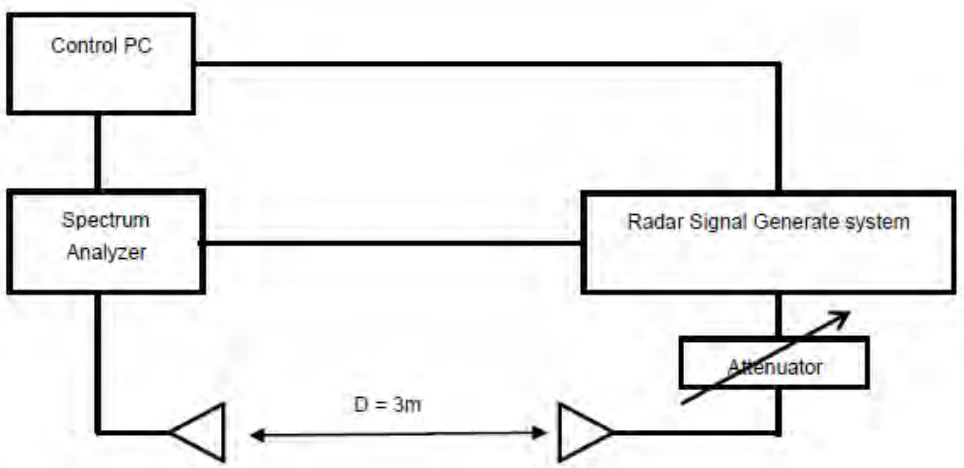
System testing will be performed with channel-loading using means appropriate to the data types that are used by the unlicensed device. The following requirements apply:

| | |
|---|---|
| ☐ | (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. |

## 4.2 Calibation of Radar Waveform

The radar signal was the same as transmitted channels, and injected into the antenna of AP (master) or Client Device with Radar Detection, measured the channel closing transmission time and channel move time.

**Radiated setup configuration of Calibration of DFS Detection Threshold Level**
The calibrated Radiated detection threshold level is set to -64dBm. The tested level is lower than required level hence it provides margin to the limit.

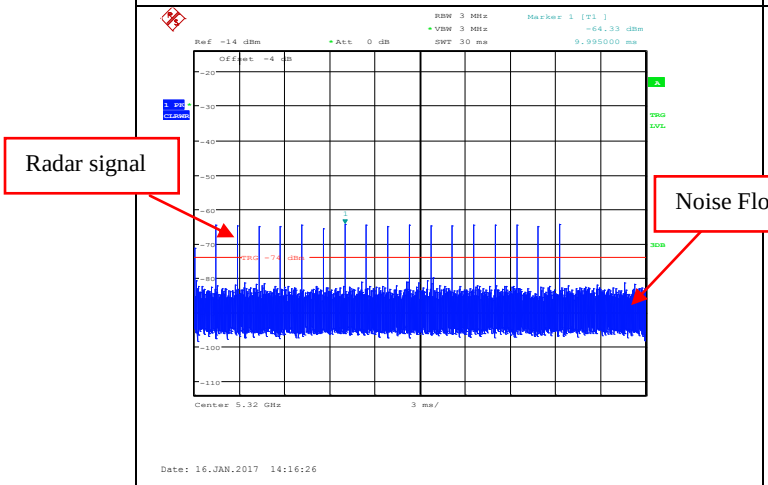


# 5. DFS Tset Result

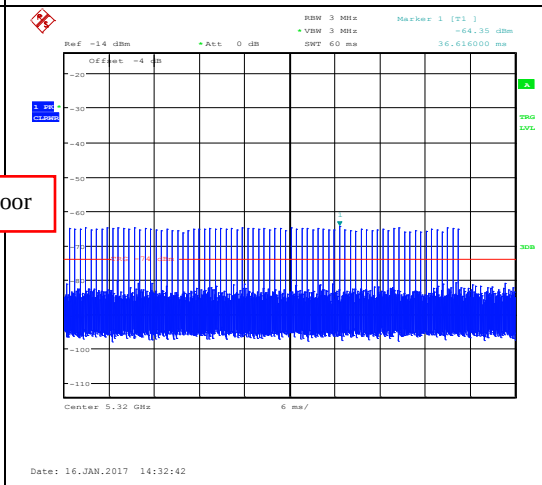
## 5.1 Radar Waveform Calibration Result

**< Channel Bandwidth 20MHz / 5320MHz >**

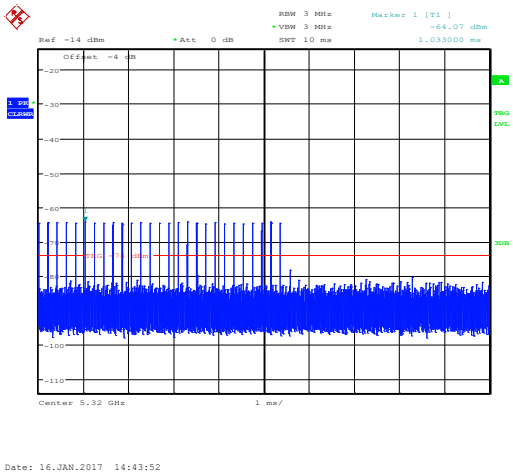
**Radar Type 0**



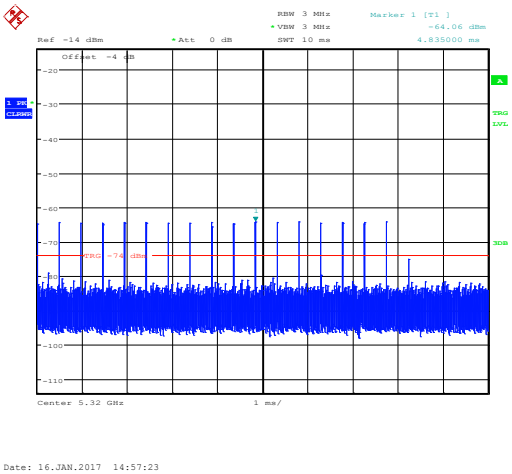

**Radar Type 1**



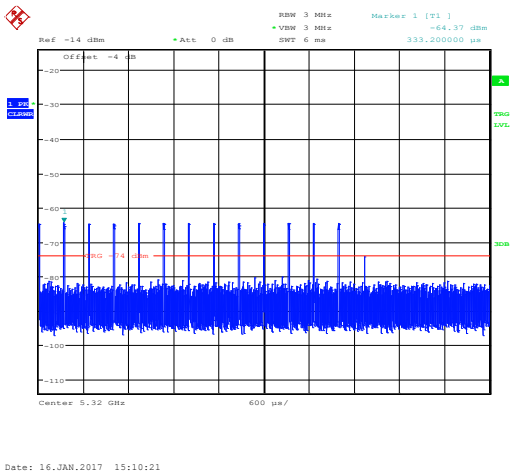

**Radar Type 2**



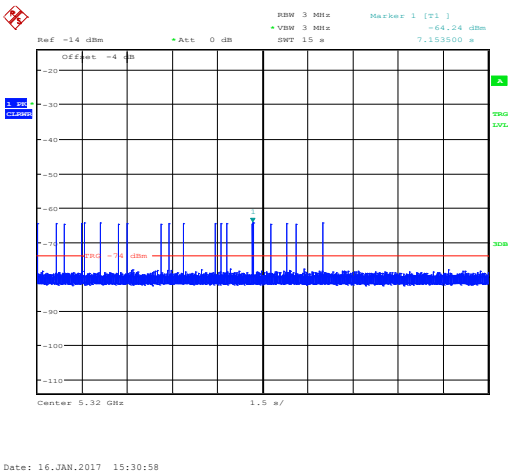

**Radar Type 3**



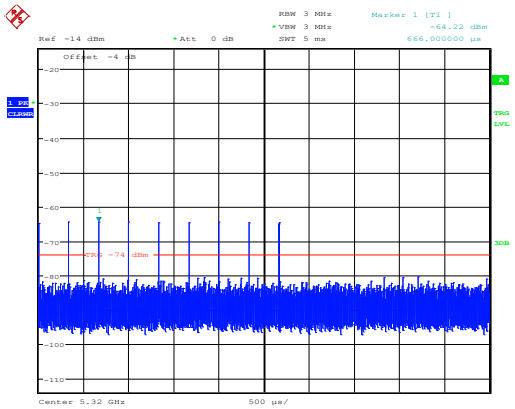

**Radar Type 4**




**Radar Type 5**



## Radar Type 6

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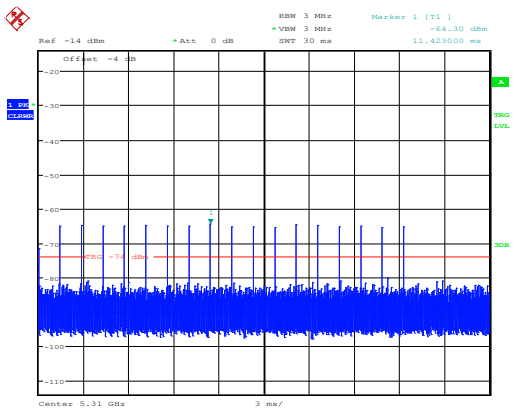
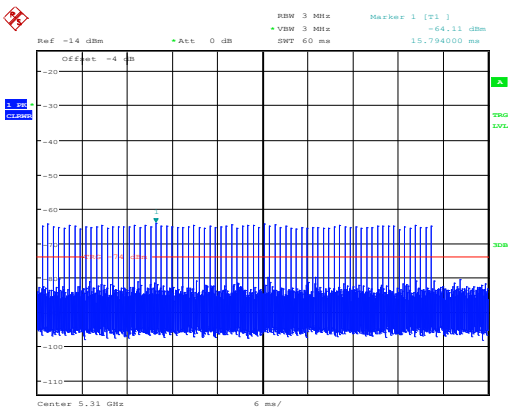
## < Channel Bandwidth 40MHz / 5310MHz >

| Radar Type 0 | Radar Type 1 |
|---|---|
|  |  |
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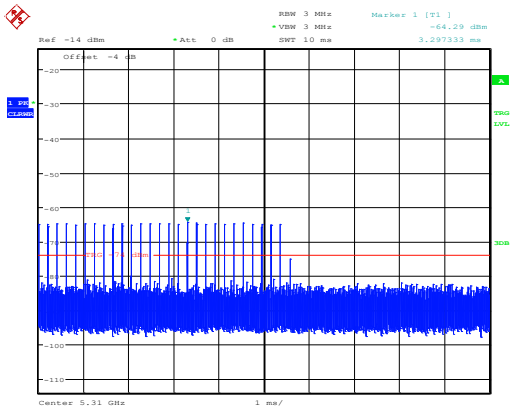
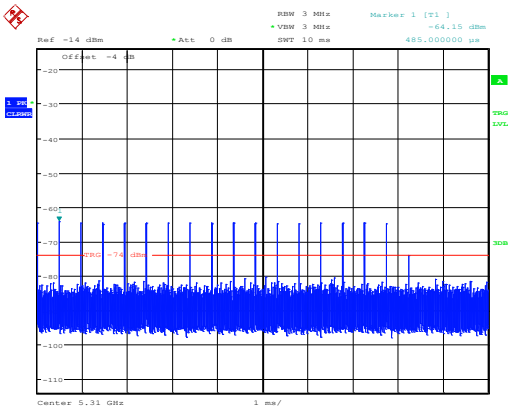
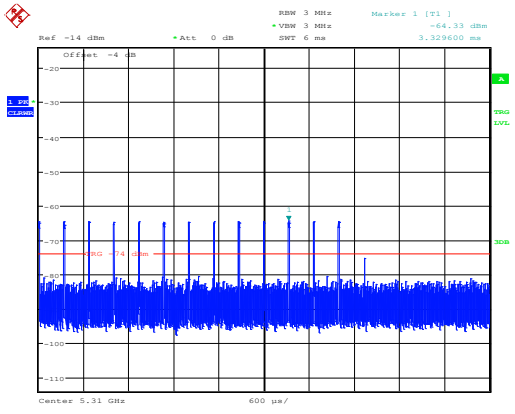
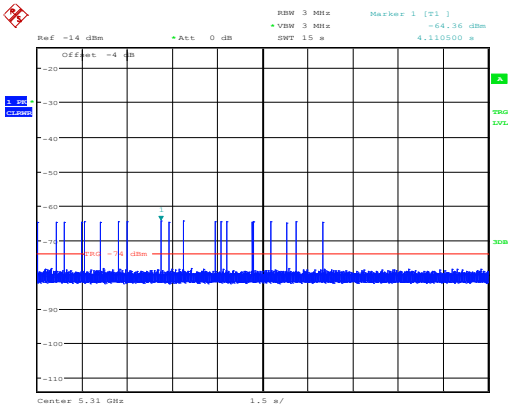
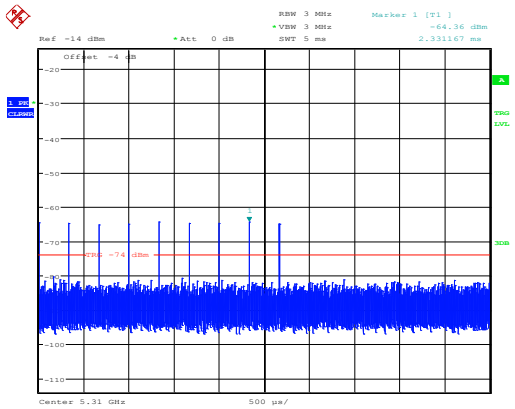
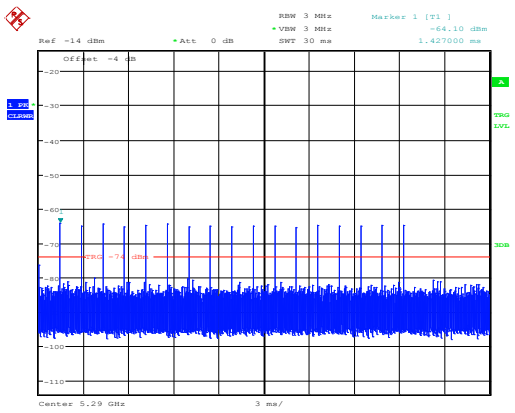
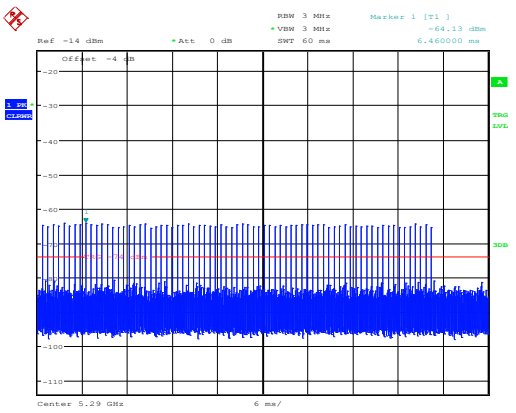
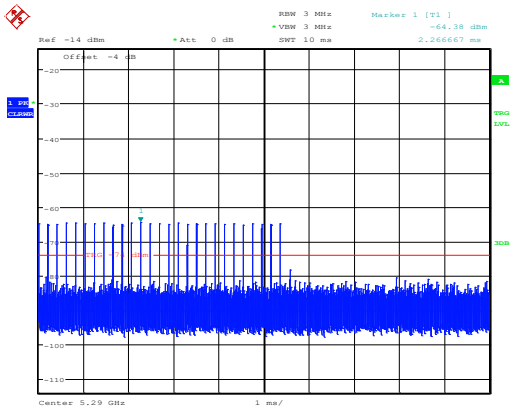
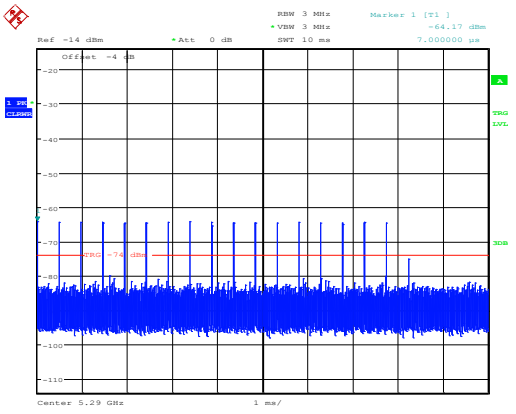
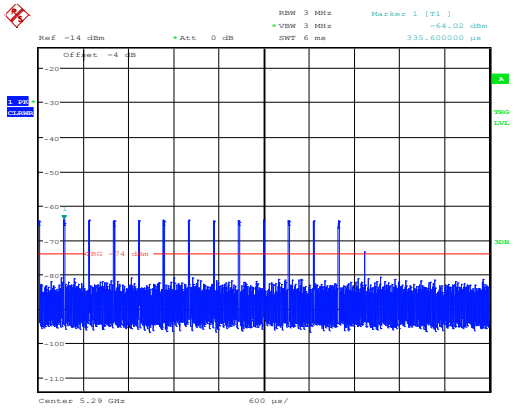
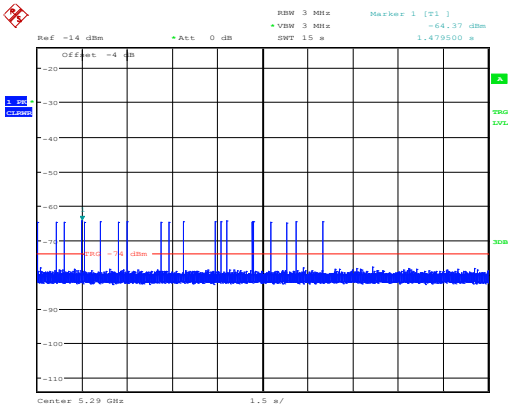
| **Radar Type 2** | **Radar Type 3** |
|  |  |
| Date: 16.JAN.2017 14:42:49 | Date: 16.JAN.2017 14:55:28 |
| **Radar Type 4** | **Radar Type 5** |
|  |  |
| Date: 16.JAN.2017 15:08:20 | Date: 16.JAN.2017 15:29:51 |

## Radar Type 6

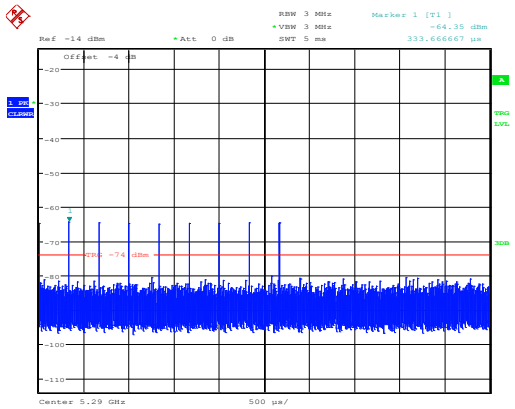



Date: 16.JAN.2017 15:58:55

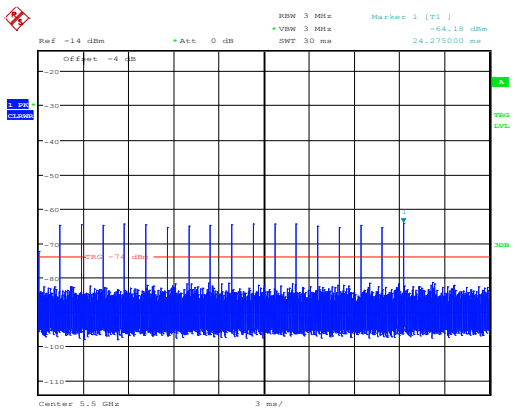
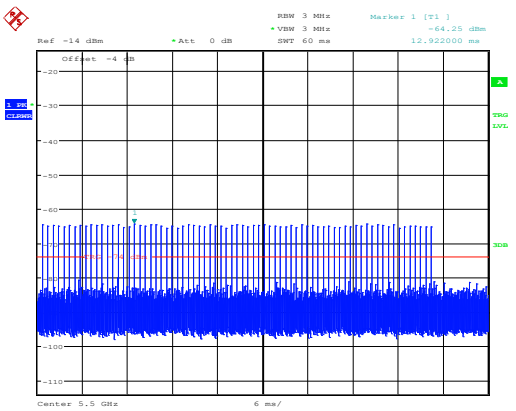
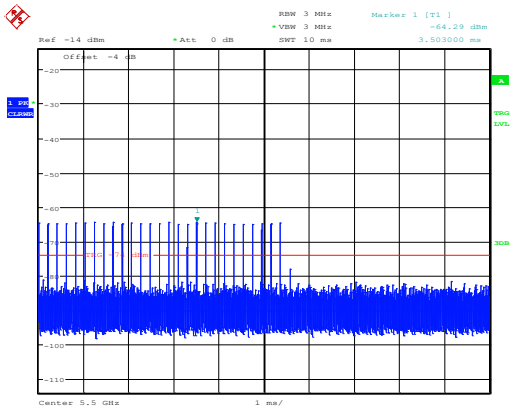
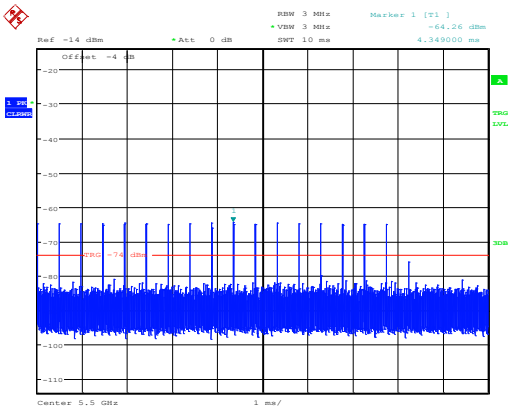
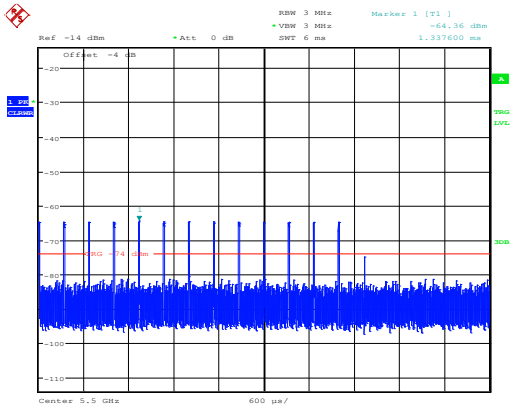
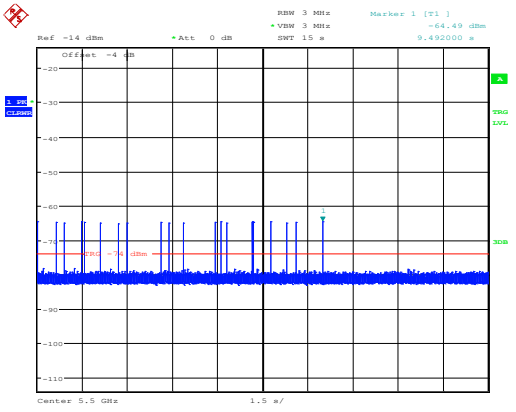
## < Channel Bandwidth 80MHz / 5290MHz >

| Radar Type 0 | Radar Type 1 |
|---|---|
|  |  |
| Date: 16.JAN.2017 14:13:47 | Date: 16.JAN.2017 14:29:31 |
| **Radar Type 2** | **Radar Type 3** |
|  |  |
| Date: 16.JAN.2017 14:41:09 | Date: 16.JAN.2017 14:54:50 |
| **Radar Type 4** | **Radar Type 5** |
|  |  |
| Date: 16.JAN.2017 15:06:17 | Date: 16.JAN.2017 15:27:35 |

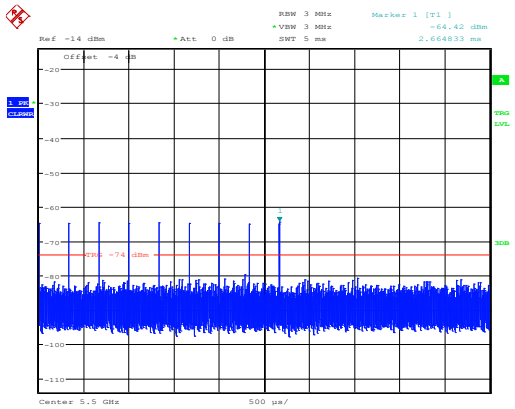
## Radar Type 6


RBW 3 MHz
VBW 3 MHz
SWT 5 ms
Marker 1 [T1 ]
-64.35 dBm
333.666667 µs
Ref -14 dBm
Att 0 dB
Offset -4 dB
TRG -74 dBm
Center 5.29 GHz
500 µs/
Date: 16.JAN.2017 15:58:17

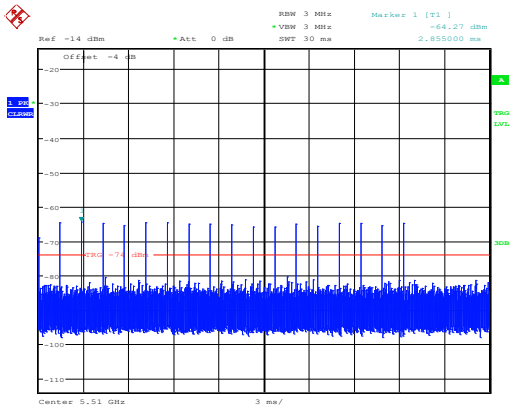
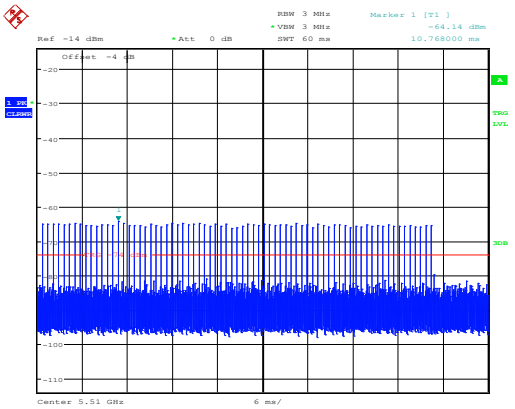
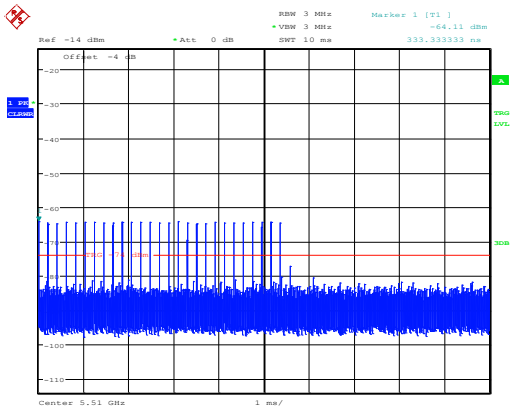
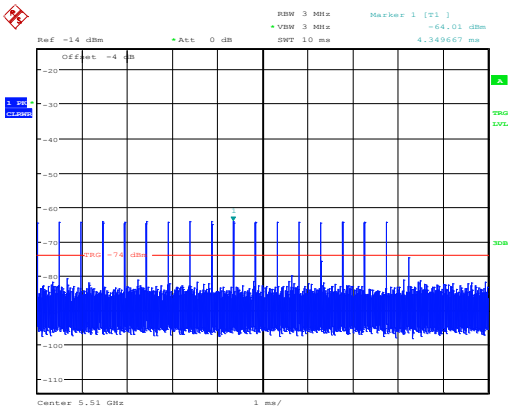
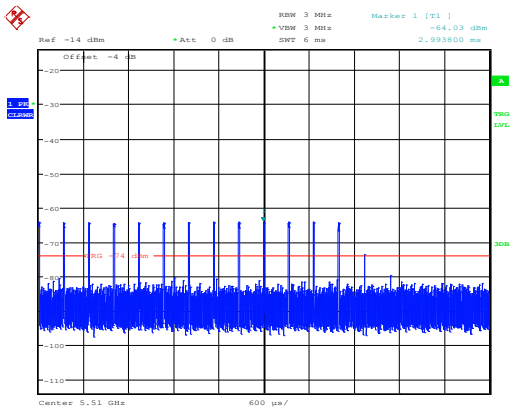
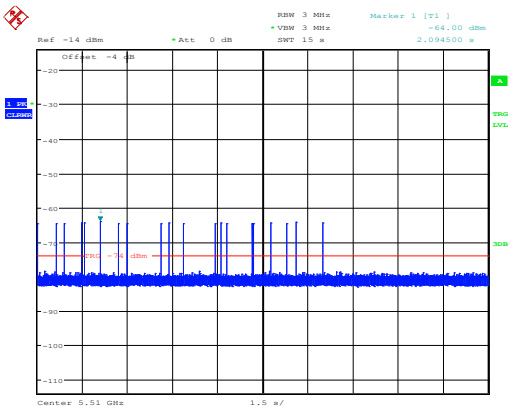
## < Channel Bandwidth 20MHz / 5500MHz >

| Radar Type 0 | Radar Type 1 |
|---|---|
|  |  |
| Date: 16.JAN.2017 14:17:07 | Date: 16.JAN.2017 14:33:53 |
| **Radar Type 2** | **Radar Type 3** |
|  |  |
| Date: 16.JAN.2017 14:45:02 | Date: 16.JAN.2017 14:59:10 |
| **Radar Type 4** | **Radar Type 5** |
|  |  |
| Date: 16.JAN.2017 15:12:16 | Date: 16.JAN.2017 15:31:59 |

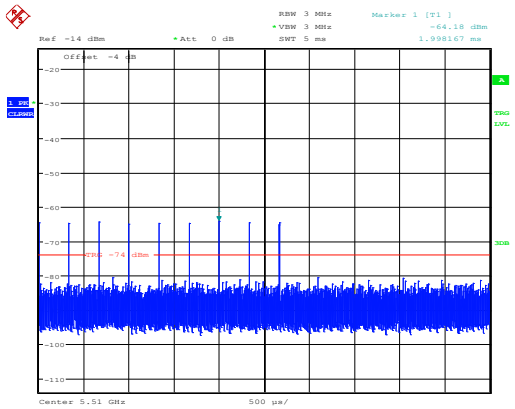
## Radar Type 6


RBW 3 MHz
VBW 3 MHz
SWT 5 ms
Marker 1 [T1 ]
-64.42 dBm
2.664833 ms
Ref -14 dBm
Att 0 dB
Offset -4 dB
TRG LVL -74 dBm
Center 5.5 GHz
500 µs/
Date: 16.JAN.2017 16:00:40

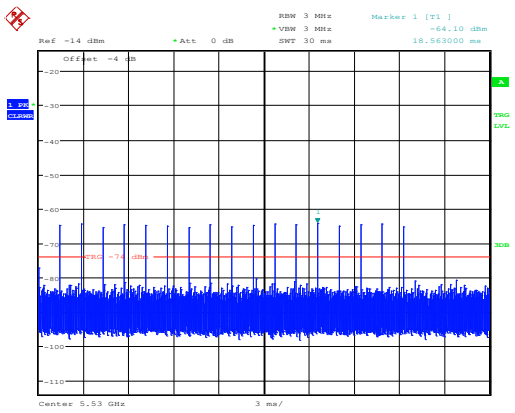
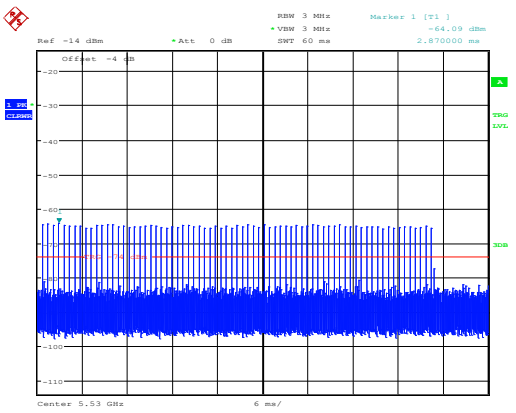
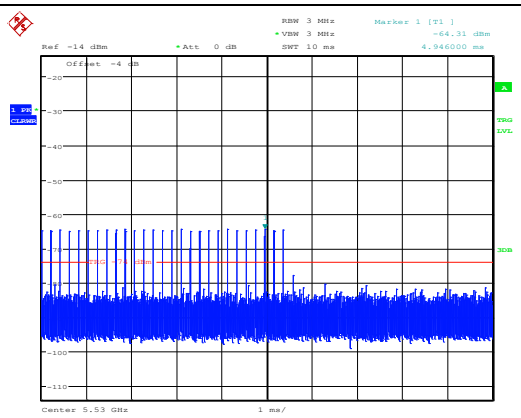
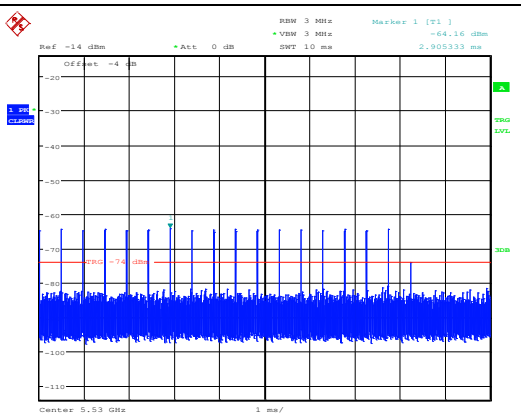
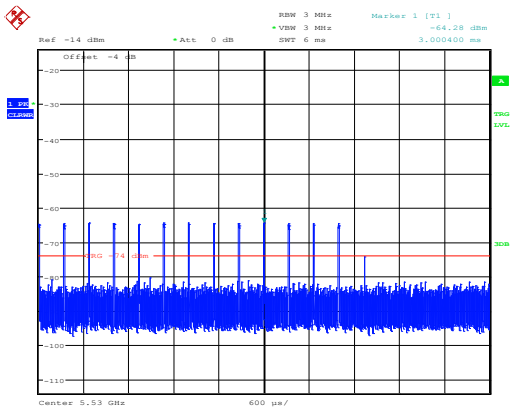
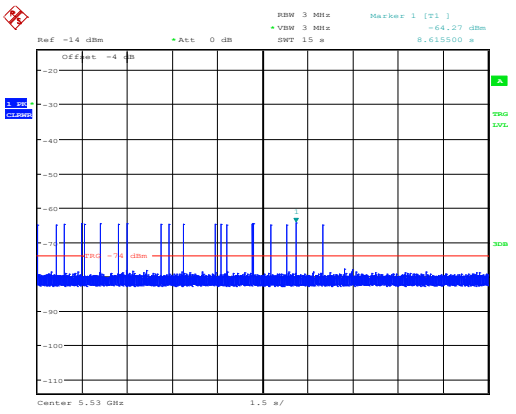
## < Channel Bandwidth 40MHz / 5510MHz >

| Radar Type 0 | Radar Type 1 |
|---|---|
|  |  |
| Date: 16.JAN.2017 14:19:26 | Date: 16.JAN.2017 14:34:17 |
| **Radar Type 2** | **Radar Type 3** |
|  |  |
| Date: 16.JAN.2017 14:46:24 | Date: 16.JAN.2017 15:00:14 |
| **Radar Type 4** | **Radar Type 5** |
|  |  |
| Date: 16.JAN.2017 15:13:04 | Date: 16.JAN.2017 15:32:43 |

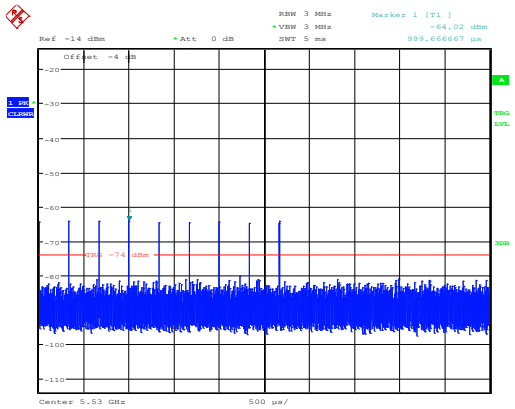
## Radar Type 6


RBW 3 MHz
VBW 3 MHz
SWT 5 ms
Marker 1 [T1 ]
-64.18 dBm
1.998167 ms
Ref -14 dBm
Att 0 dB
Offset -4 dB
TRG -74 dBm
Center 5.51 GHz
500 µs/
Date: 16.JAN.2017 16:01:31

## < Channel Bandwidth 80MHz / 5530MHz >

| Radar Type 0 | Radar Type 1 |
|---|---|
|  |  |
| Date: 16.JAN.2017 14:22:18 | Date: 16.JAN.2017 14:37:36 |
| **Radar Type 2** | **Radar Type 3** |
|  |  |
| Date: 16.JAN.2017 14:48:31 | Date: 16.JAN.2017 15:01:36 |
| **Radar Type 4** | **Radar Type 5** |
|  |  |
| Date: 16.JAN.2017 15:13:35 | Date: 16.JAN.2017 15:33:24 |

## Radar Type 6


RBW 3 MHz
VBW 3 MHz
SWT 5 ms
Marker 1 [T1 ]
-64.02 dBm
999.666667 µs
Ref -14 dBm
Att 0 dB
Offset -4 dB
TRG LVL
-74 dBm
Center 5.53 GHz
500 µs/
Date: 16.JAN.2017 16:02:39

# 5.2 U-NII Detection Bandwidth (7.8.1)

## 5.2.1 Limit of U-NII Detection Bandwidth

The U-NII Detection Bandwidth shall contain minimum 100% of the 99% power bandwidth. During the U-NII Detection Bandwidth detection test, radar type 0 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.

## 5.2.2 Test Procedure

1. Adjust the equipment to produce a single burst of the Short Pulse Radar Type 0 at the center frequency of the EUT Operating Channel at the specified DFS Detection Threshold level.

2. Set the EUT up as a standalone 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.

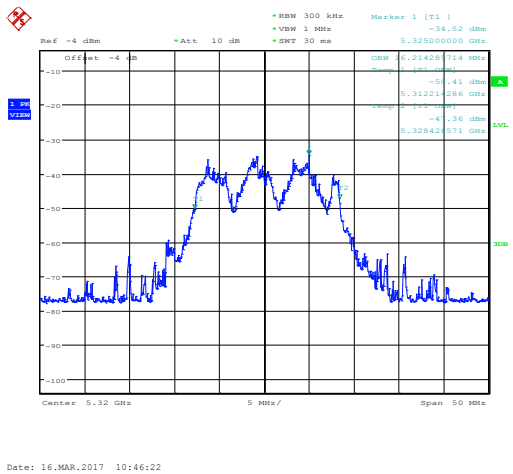
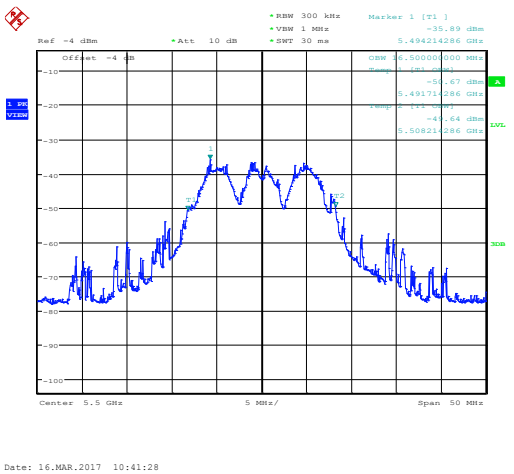
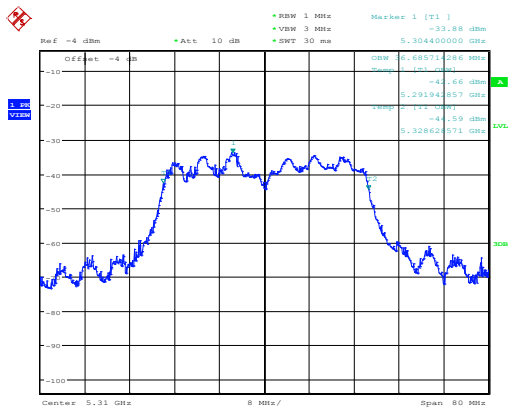
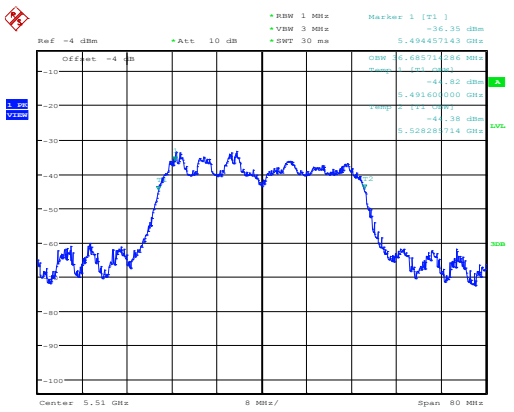
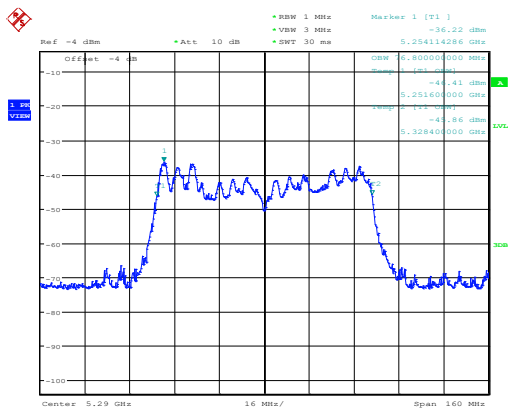
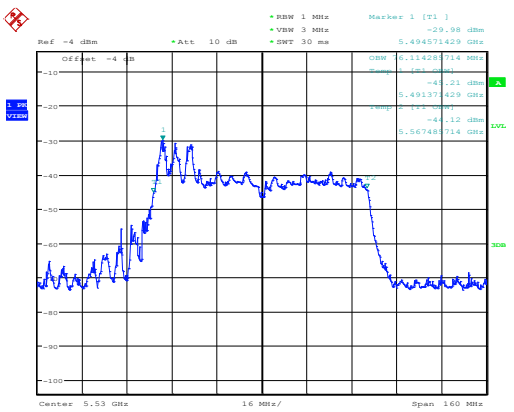
3. Generate a single radar burst, and note the response of the EUT. Repeat for a minimum of 10 trials. The EUT must detect the Radar Waveform using the specified U-NII Detection Bandwidth criterion.

4. Starting at the center frequency of the EUT 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 report Table 4. Repeat this measurement in 1MHz steps at frequencies 5 MHz below where the detection rate begins to fall. Record the highest frequency (denote as $F_H$) 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.

5. Starting at the center frequency of the EUT operating Channel, decrease 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 report Table 4. Repeat this measurement in 1MHz steps at frequencies 5 MHz above where the detection rate begins to fall. Record the lowest frequency (denote as $F_L$) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies below $F_L$ is not required to demonstrate compliance.

6. The U-NII Detection Bandwidth is calculated as follows:
*U-NII Detection Bandwidth* = $F_H - F_L$

## 5.2.3 Result of U-NII Detection Bandwidth

| Channel Bandwidth 20MHz/ 5320MHz | Channel Bandwidth 20MHz/ 5500MHz |
|---|---|
|  |  |
| Date: 16.MAR.2017 10:46:22 | Date: 16.MAR.2017 10:41:28 |
| **Channel Bandwidth 40MHz/ 5310MHz** | **Channel Bandwidth 40MHz/ 5510MHz** |
|  |  |
| Date: 16.MAR.2017 10:32:04 | Date: 16.MAR.2017 10:23:10 |
| **Channel Bandwidth 80MHz/ 5290MHz** | **Channel Bandwidth 80MHz/ 5530MHz** |
|  |  |
| Date: 16.MAR.2017 10:06:20 | Date: 16.MAR.2017 10:15:10 |

**Channel Bandwidth 20MHz/ 5320MHz**

| CH64_5320MHz | | | | | | | | | | | Radar type 0 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Trial Number (Detection = Y, No Detection = N) | | | | | | | | | | Detection Rate (%) | $F_H/F_L$ |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 5310 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_L$ |
| 5315 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5320 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5325 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5330 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_H$ |
| Detection Bandwidth = $F_H$ - $F_L$ = 5330 - 5310 = 20MHz | | | | | | | | | | | | |
| EUT 99% Bandwidth = 16.214MHz | | | | | | | | | | | | |

**Channel Bandwidth 20MHz/ 5500MHz**

| CH100_5500MHz | | | | | | | | | | | Radar type 0 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Trial Number (Detection = Y, No Detection = N) | | | | | | | | | | Detection Rate (%) | $F_H/F_L$ |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 5490 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_L$ |
| 5495 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5500 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5505 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5510 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_H$ |
| Detection Bandwidth = $F_H$ - $F_L$ = 5510 - 5490 = 20MHz | | | | | | | | | | | | |
| EUT 99% Bandwidth = 16.5MHz | | | | | | | | | | | | |

**Channel Bandwidth 40MHz/ 5310MHz**

| CH62_5310MHz | | | | | | | | | | | Radar type 0 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Trial Number (Detection = Y, No Detection = N) | | | | | | | | | | Detection Rate (%) | $F_H/F_L$ |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 5290 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_L$ |
| 5295 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5300 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5305 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5310 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5315 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5320 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5325 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5330 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_H$ |
| Detection Bandwidth = $F_H$ - $F_L$ = 5330 - 5290 = 40MHz | | | | | | | | | | | | |
| EUT 99% Bandwidth = 36.685MHz | | | | | | | | | | | | |

**Channel Bandwidth 40MHz/ 5510MHz**

| CH102_5510MHz | | | | | | | | | | | Radar type 0 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Trial Number (Detection = Y, No Detection = N) | | | | | | | | | | Detection Rate (%) | $F_H/F_L$ |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 5490 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_L$ |
| 5495 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5500 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5505 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5510 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5515 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5520 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5525 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5530 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_H$ |
| Detection Bandwidth = $F_H$ - $F_L$ = 5530 - 5490 = 40MHz | | | | | | | | | | | | |
| EUT 99% Bandwidth = 36.685MHz | | | | | | | | | | | | |

**Channel Bandwidth 80MHz/ 5290MHz**

| CH102_5510MHz | | | | | | | | | | | Radar type 0 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Trial Number (Detection = Y, No Detection = N) | | | | | | | | | | Detection Rate (%) | $F_H/F_L$ |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 5250 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_L$ |
| 5255 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5260 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5265 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5270 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5275 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5280 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5285 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5290 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5295 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5300 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5305 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5310 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5315 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5320 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5325 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5330 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_H$ |
| Detection Bandwidth = $F_H$ - $F_L$ = 5330 - 5250 = 80MHz | | | | | | | | | | | | |
| EUT 99% Bandwidth = 76.8MHz | | | | | | | | | | | | |

**Channel Bandwidth 80MHz/ 5530MHz**

| CH102_5510MHz | | | | | | | | | | | Radar type 0 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Trial Number (Detection = Y, No Detection = N) | | | | | | | | | | Detection Rate (%) | $F_H/F_L$ |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 5490 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_L$ |
| 5495 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5500 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5505 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5510 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5515 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5520 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5525 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5530 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5535 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5540 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5545 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5550 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5555 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5560 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5565 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | |
| 5570 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 100% | $F_H$ |
| Detection Bandwidth = $F_H$ - $F_L$ = 5570 - 5290 = 80MHz | | | | | | | | | | | | |
| EUT 99% Bandwidth = 76.114MHz | | | | | | | | | | | | |

# 5.3 Channel Availability Check (7.8.2)

## 5.3.1 Limit of Channel Availability Check

The Initial Channel Availability Check Time tests that the EUT does not emit beacon, control, or data signals on the test Channel until the power-up sequence has been completed and the U-NII device checks for Radar Waveforms for **one minute** on the test Channel.

## 5.3.2 Test Procedure

### 5.3.2.1 Initial Channel Availability Check Time

This test does not use any radar waveforms and only needs to be performed one time.

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 modes with a 3 MHz RBW and 3 MHz VBW on the Channel occupied by the radar ($Ch_r$) 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

### 5.3.2.2 Radar Burst at the Beginning of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test 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. This is illustrated in Figure 15.

1. The Radar Waveform generator and EUT are connected using the applicable test setup and the power of the EUT is switched off.
2. The EUT is powered on at $T_0$. $T_1$ denotes the instant when the EUT has completed its power-up sequence (Tpower_up). The Channel Availability Check Time commences on $Ch_r$ at instant $T_1$ and will end no sooner than $T_1$ + Tch_avail_check.
3. A single Burst of one of the Short Pulse Radar Types 0-4 will commence within a 6 second window starting at $T_1$. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
4. Visual indication or measured results on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of Chr for EUT emissions will continue for 2.5 minutes after the radar Burst has been generated.
5. Verify that during the 2.5 minute measurement window no EUT transmissions occurred on $Ch_r$. The Channel Availability Check results will be recorded.

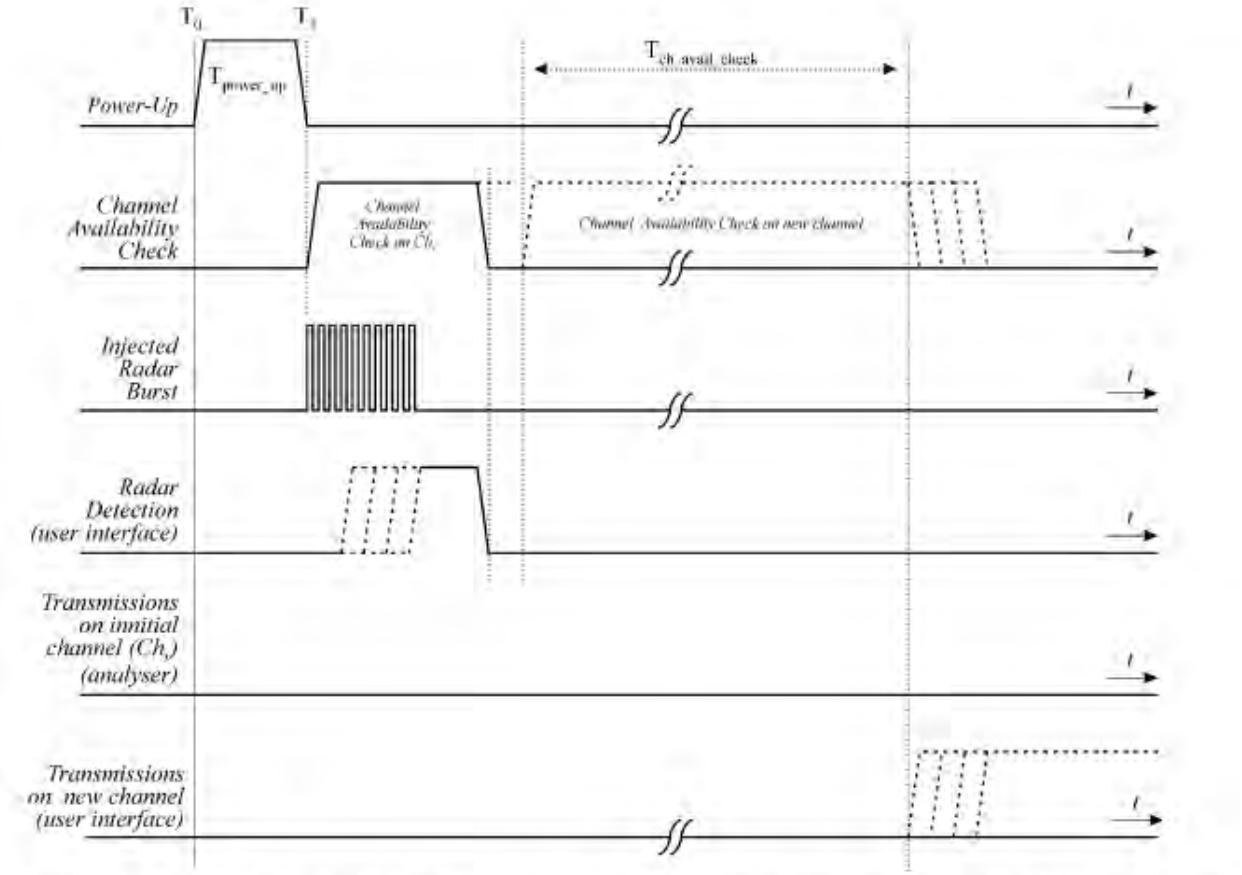



*Figure 15: Example of timing for radar testing at the beginning of the Channel Availability Check Time*

### 5.3.2.3 Radar Burst at the End of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test 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 + 1dB occurs at the end of the Channel Availability Check Time. This is illustrated in Figure 16.

1. The Radar Waveform generator and EUT are connected using the applicable test setup and the power of the EUT is switched off.
2. The EUT is powered on at T0. T1 denotes the instant when the EUT has completed its power-up sequence (Tpower_up). The Channel Availability Check Time commences on Chr at instant T1 and will end no sooner than T1 + Tch_avail_check.
3. A single Burst of one of the Short Pulse Radar Types 1-4 will commence within a 6 second window starting at T1 + 54 seconds. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
4. Visual indication or measured results on the EUT of successful detection of the radar Burst will be recorded and reported. Observation of Chr for EUT emissions will continue for 2.5 minutes after the radar Burst has been generated.
5. Verify that during the 2.5 minute measurement window no EUT transmissions occurred on Chr. The Channel Availability Check results will be recorded.

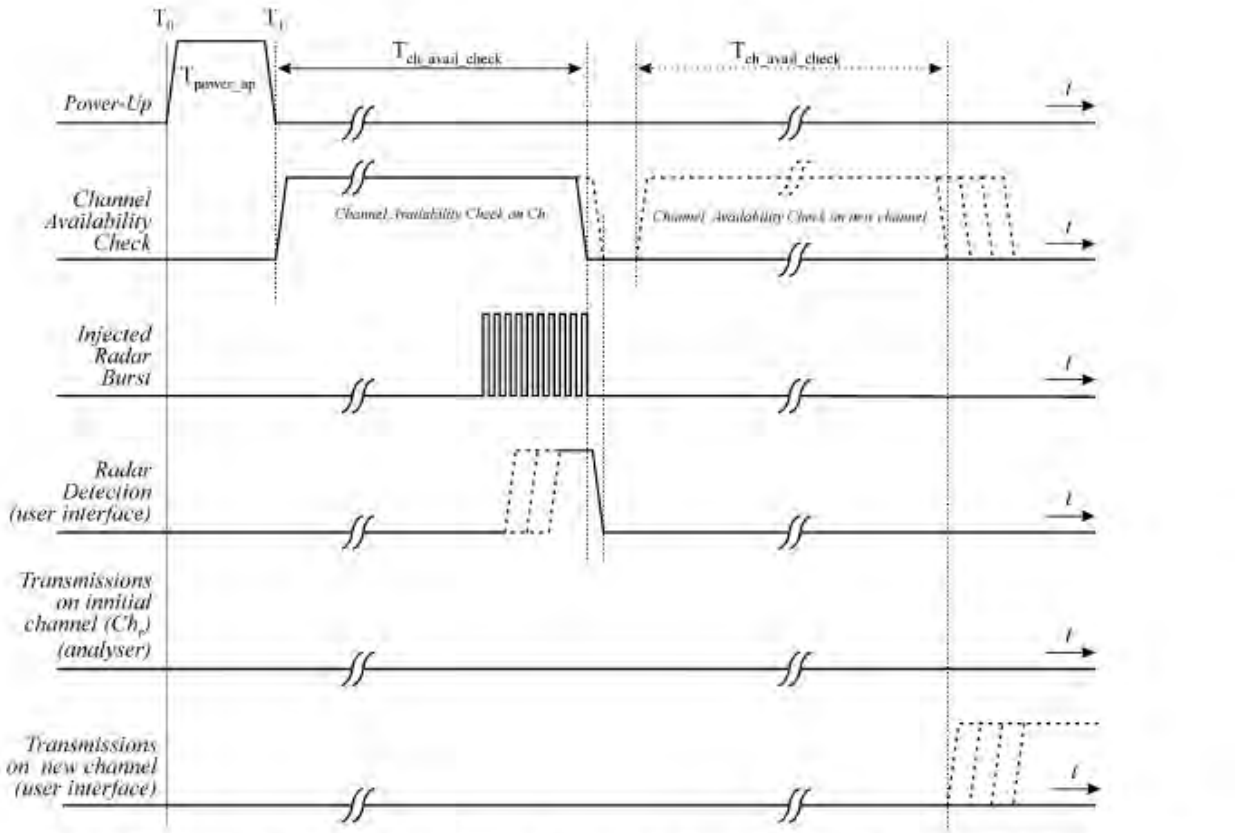
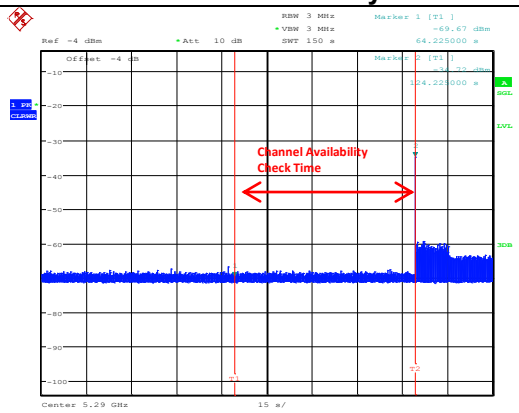



*Figure 16: Example of timing for radar testing towards the end of the Channel Availability Check Time*

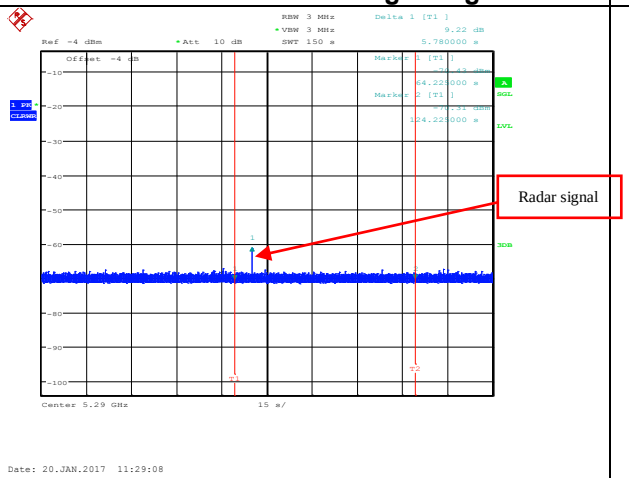
## 5.3.3 Result of Channel Availability Check

**Channel Bandwidth 80MHz / 5290MHz**

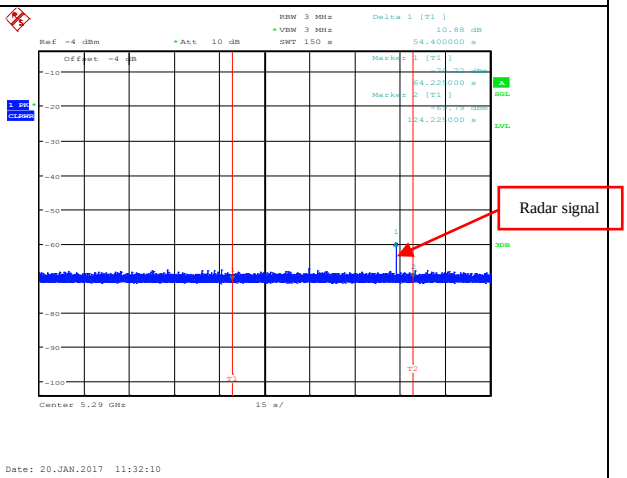
**EUT Power up and Initial Channel Availability Check Time**



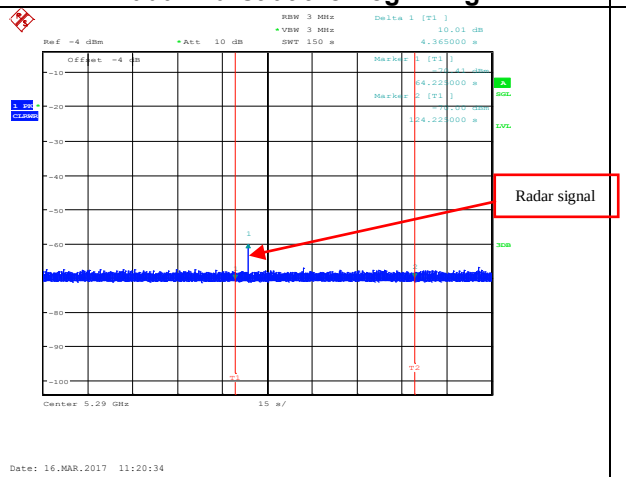

**Radar Type 0 Radar Burst at the Beginning**



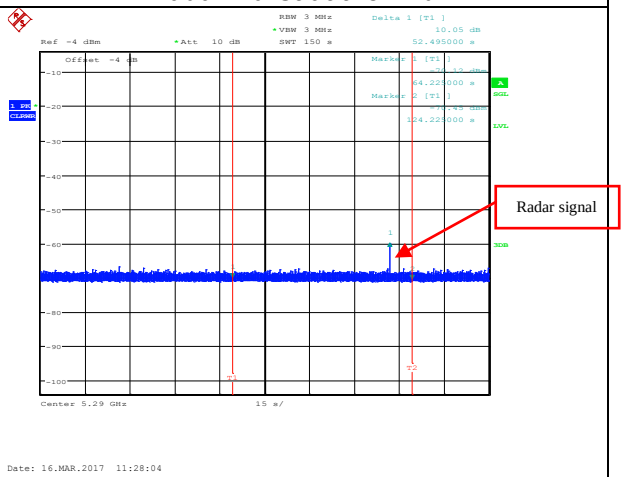

**Radar Type 0 Radar Burst at the End**



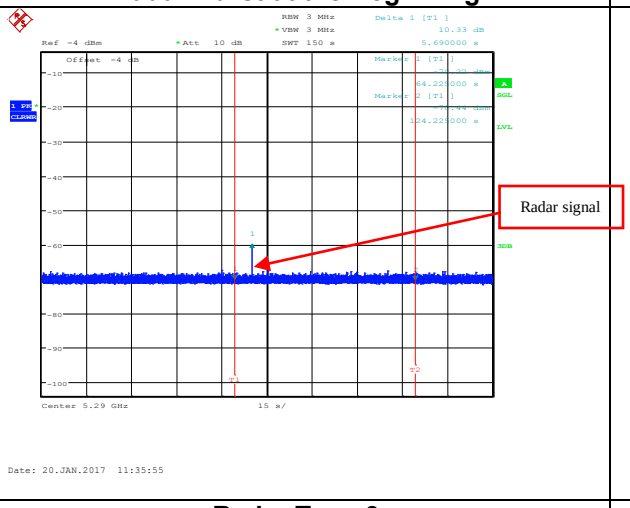

**Radar Type 1 Radar Burst at the Beginning**



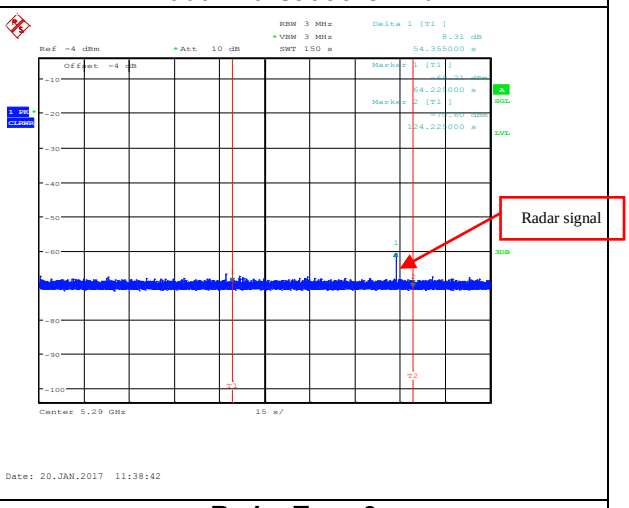

**Radar Type 1 Radar Burst at the End**



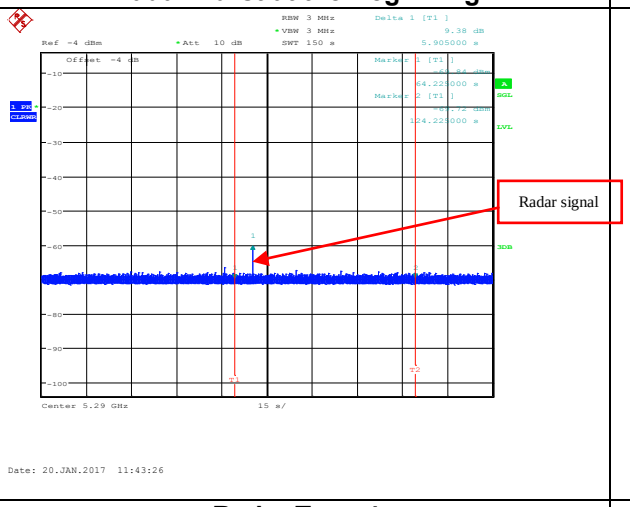
## Radar Type 2
## Radar Burst at the Beginning



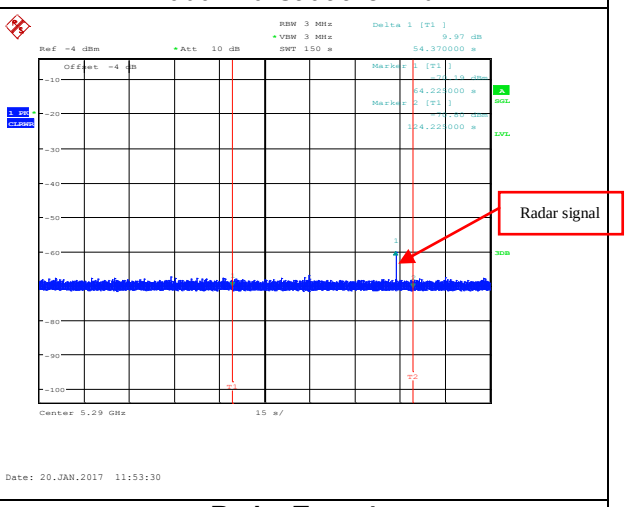

## Radar Type 2
## Radar Burst at the End



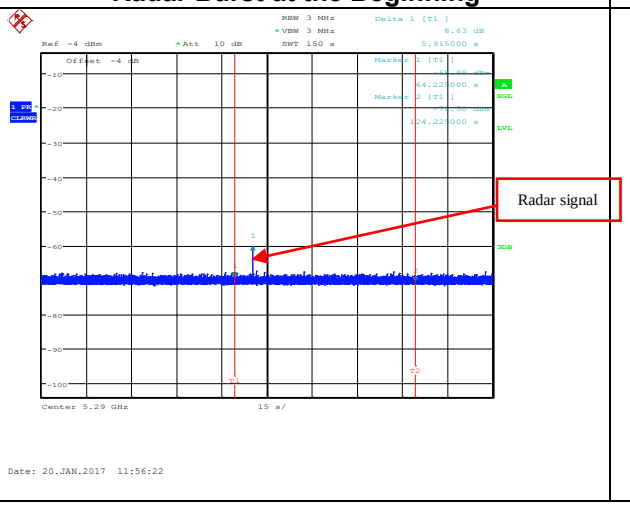

## Radar Type 3
## Radar Burst at the Beginning



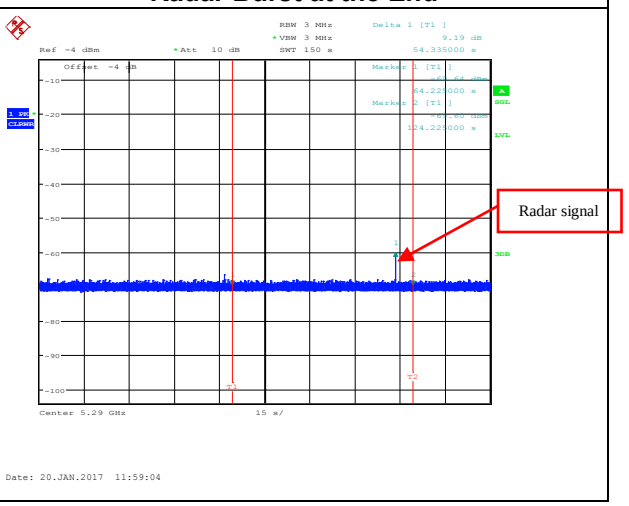

## Radar Type 3
## Radar Burst at the End




## Radar Type 4
## Radar Burst at the Beginning

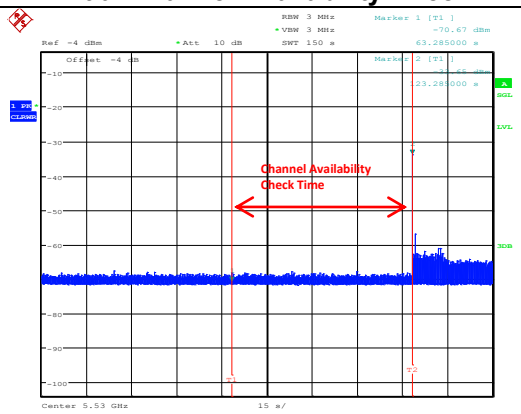



## Radar Type 4
## Radar Burst at the End

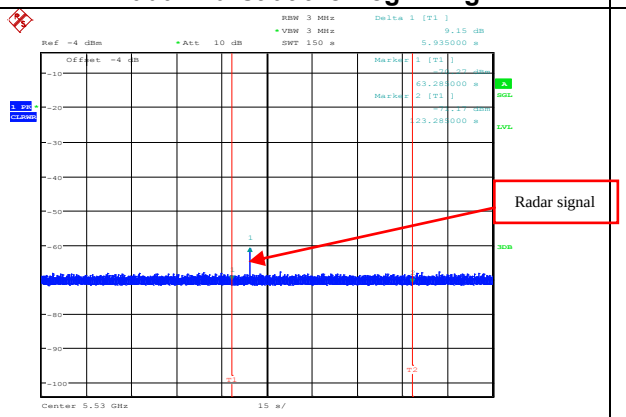


## Channel Bandwidth 80MHz / 5530MHz

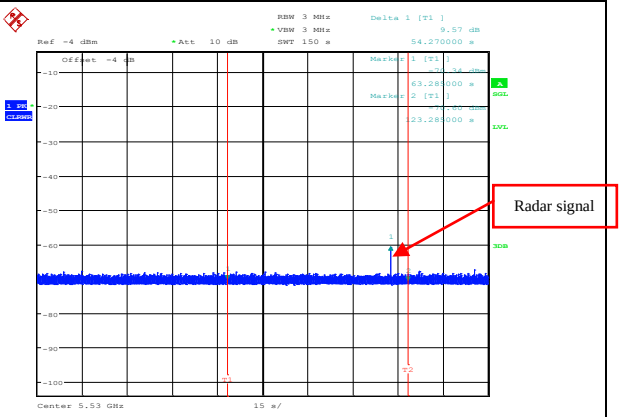
### EUT Power up and Initial Channel Availability Check Time



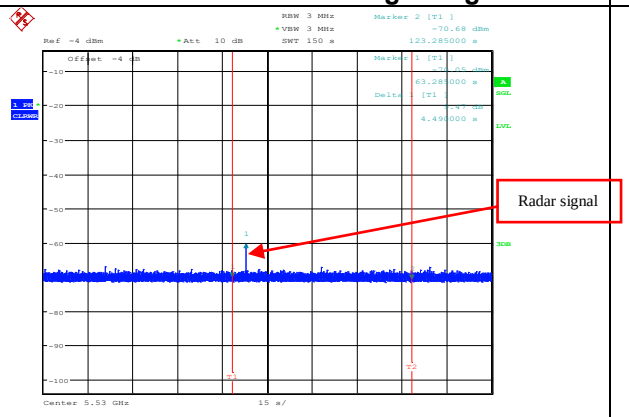

### Radar Type 0 Radar Burst at the Beginning



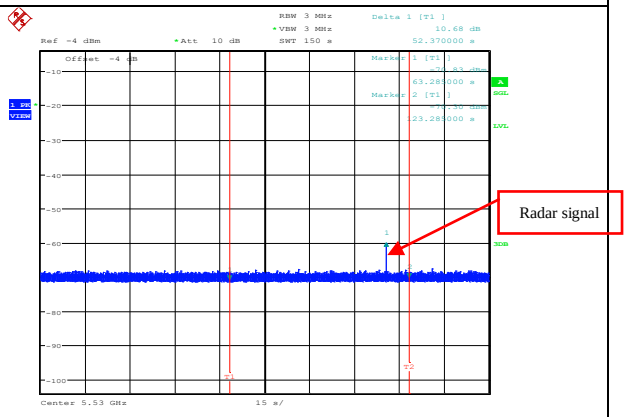

### Radar Type 0 Radar Burst at the End



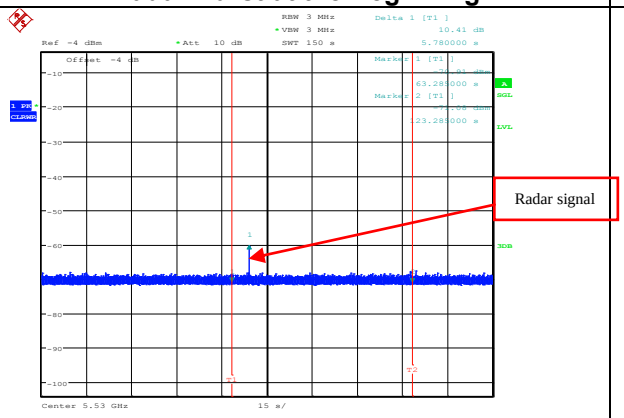

### Radar Type 1 Radar Burst at the Beginning




### Radar Type 1 Radar Burst at the End

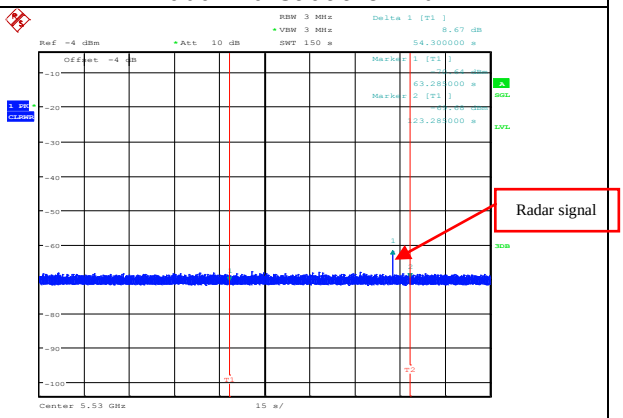


## Radar Type 2
## Radar Burst at the Beginning



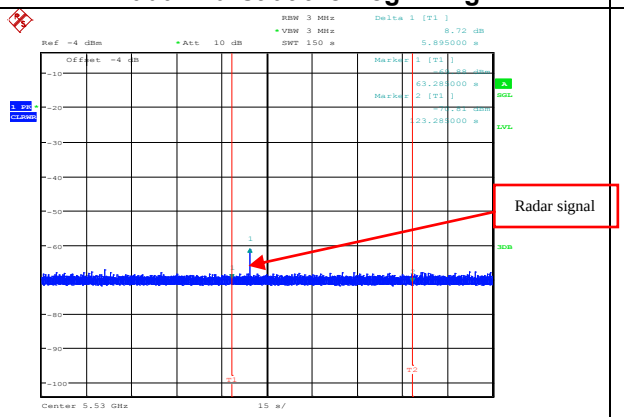

Date: 20.JAN.2017 13:45:00

## Radar Type 2
## Radar Burst at the End



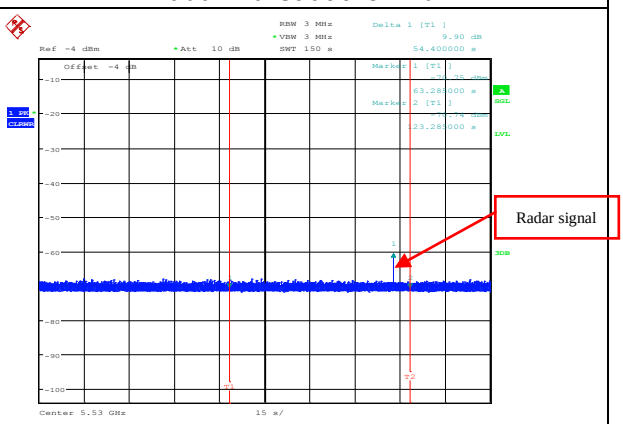

Date: 20.JAN.2017 13:47:45

## Radar Type 3
## Radar Burst at the Beginning



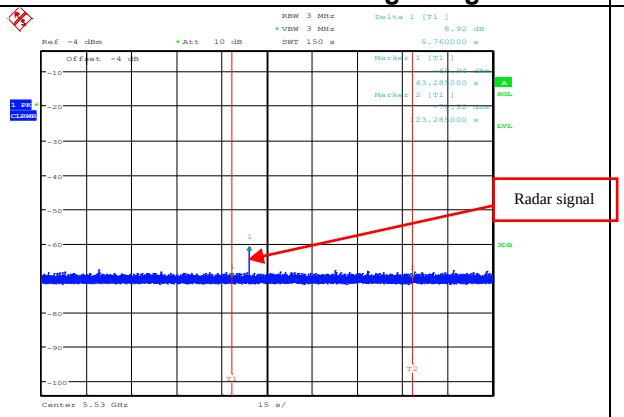

Date: 20.JAN.2017 13:50:42

## Radar Type 3
## Radar Burst at the End



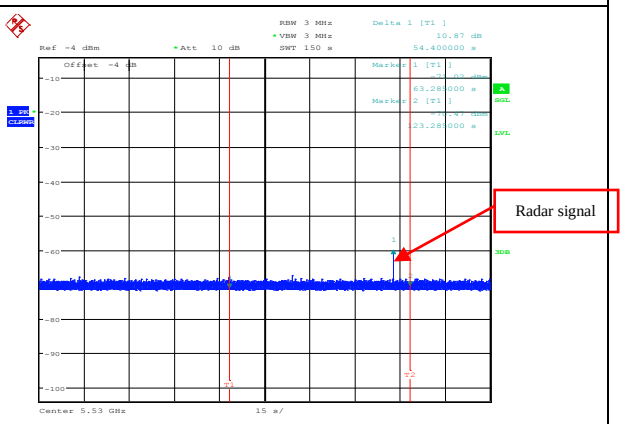

Date: 20.JAN.2017 13:53:25

## Radar Type 4
## Radar Burst at the Beginning




Date: 20.JAN.2017 13:56:20

## Radar Type 4
## Radar Burst at the End




Date: 20.JAN.2017 14:11:46

# 5.4 In-Service Monitoring: Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period (7.8.3)

## 5.4.1 Limit of In-Service Monitoring

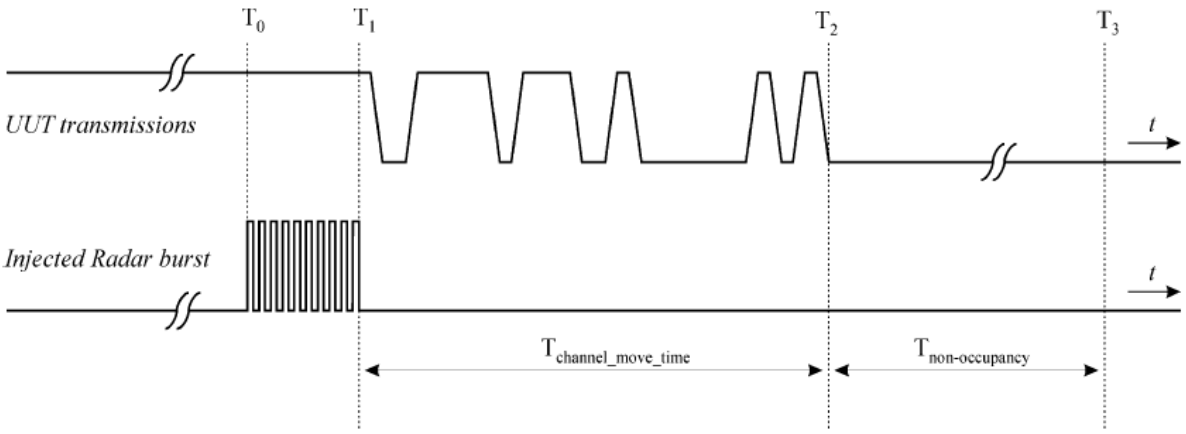
The EUT has In-Service Monitoring function to continuously monitor the radar signals, If radar is detected, it must leave the channel (Shutdown). The Channel Move Time to cease all transmissions on the current Channel upon detection of a Radar Waveform above the DFS Detection Threshold within **10 sec**.

The total duration of Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating Channel changes (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.

Non-Occupancy Period time is **30 minute** during which a Channel will not be utilized after a Radar Waveform is detected on that Channel

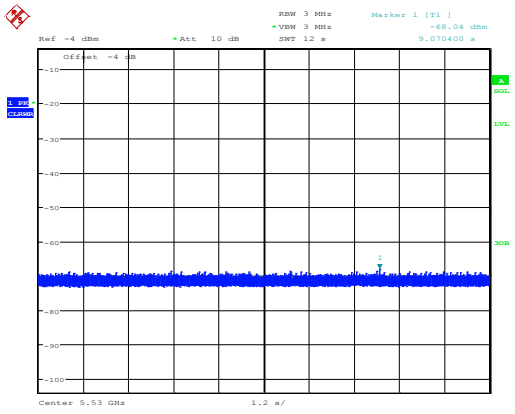
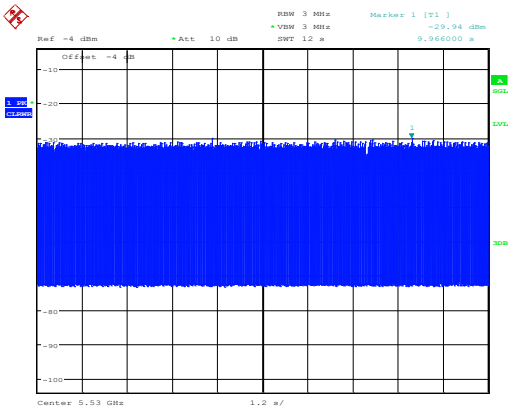
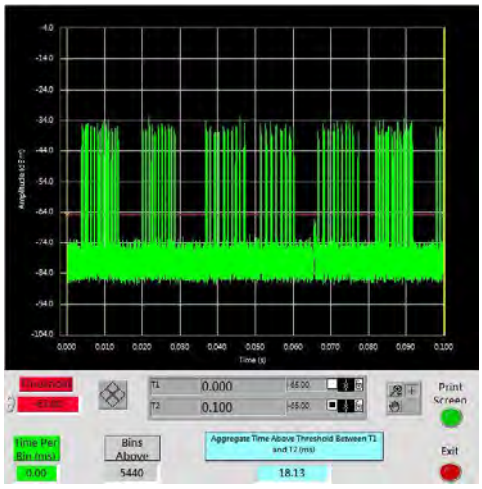
## 5.4.2 Test Procedures

1. One frequency will be chosen from the Operating Channels of the EUT within the 5250-5350 MHz or 5470-5725 MHz bands. For 802.11 devices, the test frequency must contain control signals. This can be verified by disabling channel loading and monitoring the spectrum analyzer. If no control signals are detected, another frequency must be selected within the emission bandwidth where control signals are detected.
2. In case the EUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will associate with the EUT (Master). For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.
3. The TCP protocol unicast data stream was generated by the LanTest software with at least 17% activity ratio over any 100ms period.
4. Timing plots are reported 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).
5. At time T0 the Radar Waveform generator sends a Burst of pulses for one of the Radar Type 0 in Table 5 at levels defined in Table 3, on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
6. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the EUT during the observation time (Channel Move Time). Measure and record the Channel Move Time and Channel Closing Transmission Time if radar detection occurs.
7. When operating as a Master Device, monitor the UUT for more than 30 minutes following instant $T_2$ to verify that the EUT does not resume any transmissions on this Channel. Perform this test once and record the measurement result.

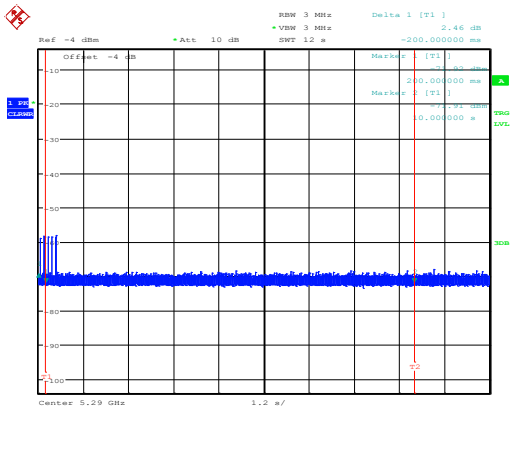
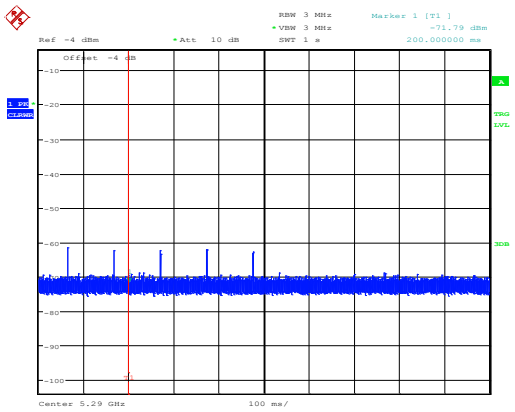
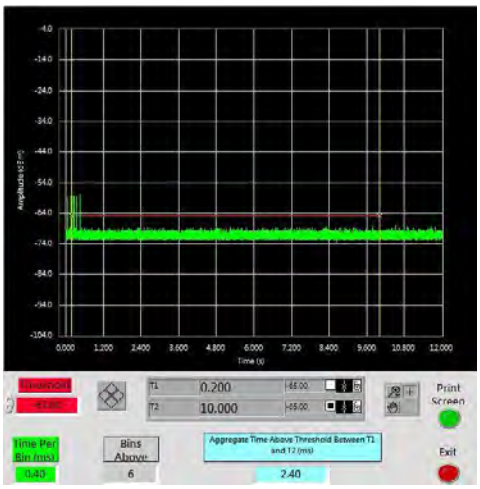
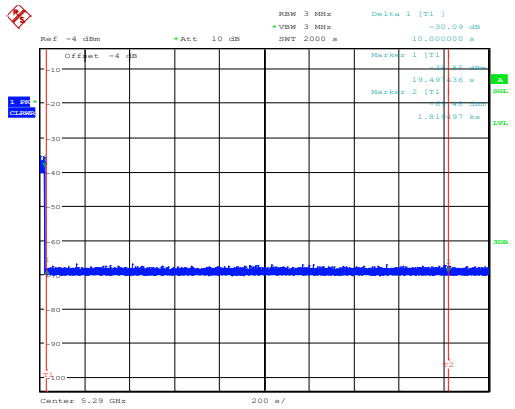


## 5.4.3 Result of Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

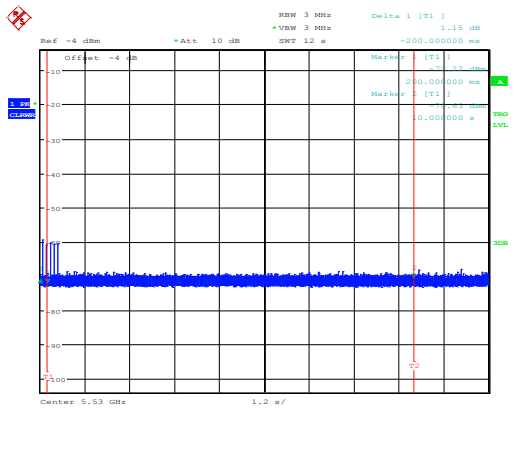
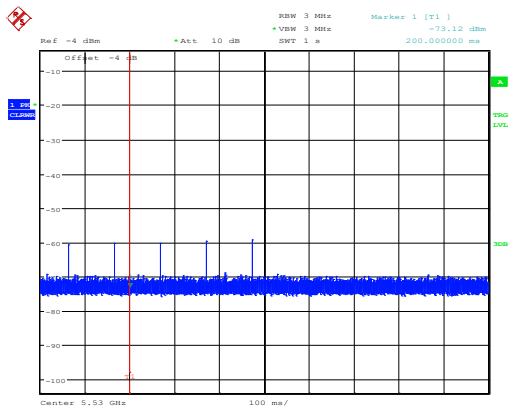
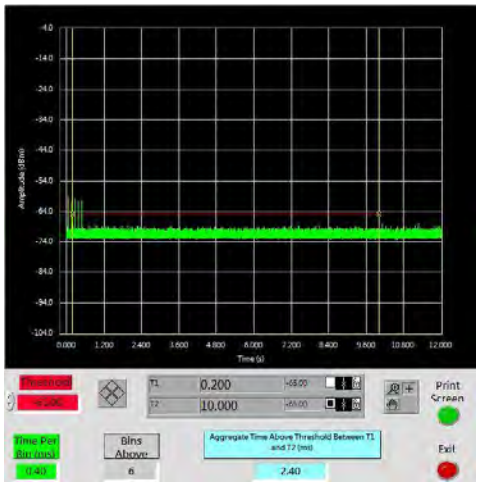
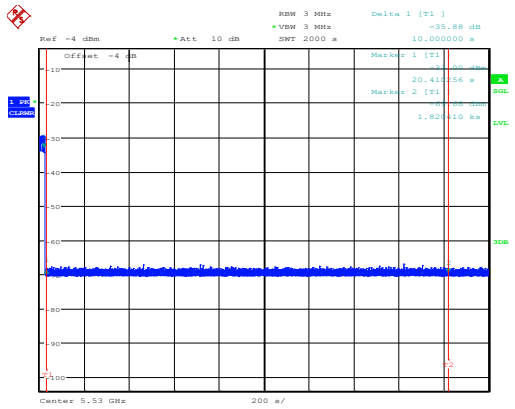
**Data Traffic Channel Loading and Noise Floor Plots**

| Noise Floor (No transmission) | EUT data traffic (Master) |
|---|---|
|  |  |
| **Channel Loading > 17% (Master)** | |
|  | |

## Channel Bandwidth 80MHz / 5290MHz

| Channel Move Time | |
|---|---|
|  | |
| **Channel Closing Transmission Time** | **Channel Closing Transmission Time** |
|  |  |
| **Non-Occupancy Period** | |
|  | |

## Channel Bandwidth 80MHz / 5530MHz

| Channel Move Time | |
|---|---|
|  | |
| **Channel Closing Transmission Time** | **Channel Closing Transmission Time** |
|  |  |
| **Non-Occupancy Period** | |
|  | |

# 5.5 Statistical Performance Check (7.8.4)

## 5.5.1 Limit of Statistical Performance Check

***Short Pulse Radar Test***

Once the performance requirements check is complete, statistical data will be gathered, to determine the ability of the device to detect the radar test waveforms (Short Pulse Radar Types 1-4) found in Table 5. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trials. The percentage of successful detection is calculated by:

$$\frac{TotalWaveformDetections}{TotalWaveformTriaals} \times 100 = \text{Percentage of Successful Detection } \textit{Radar Waveform } N = P_d N$$

In addition an aggregate minimum percentage of successful detection across all Short Pulse Radar Types 1-4 is required and is calculated as follows:

$$\frac{P_d 1 + P_d 2 + P_d 3 + P_d 4}{4}$$

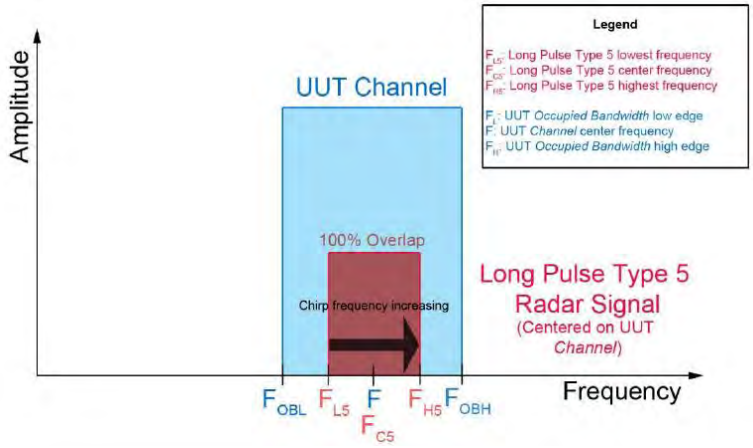
The minimum number of trails, minimum percentage of successful detection and the aggregate minimum percentage of successful detection are found in Table 5.

## Long Pulse Radar Test

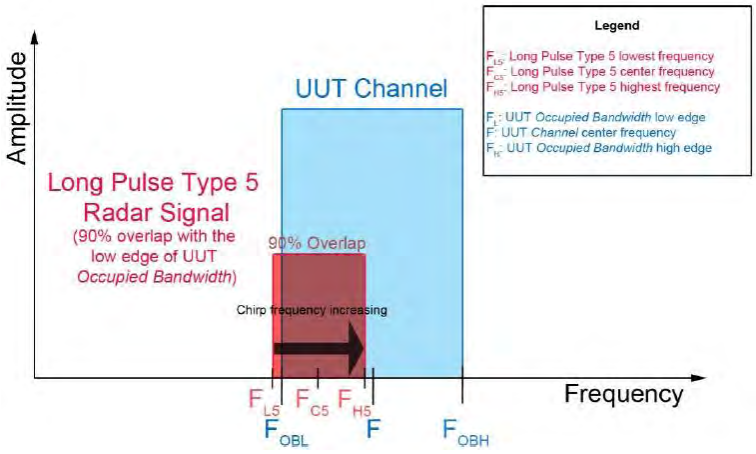
Statistical data will be gathered to determine the ability of the device to detect the Long Pulse Radar Type 5 found in Table 6. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trials.

Three subsets of trials will be performed with a minimum of ten trials per subset. The subset of trials differ in where the Long Pulse Type 5 Signal is tuned in frequency:

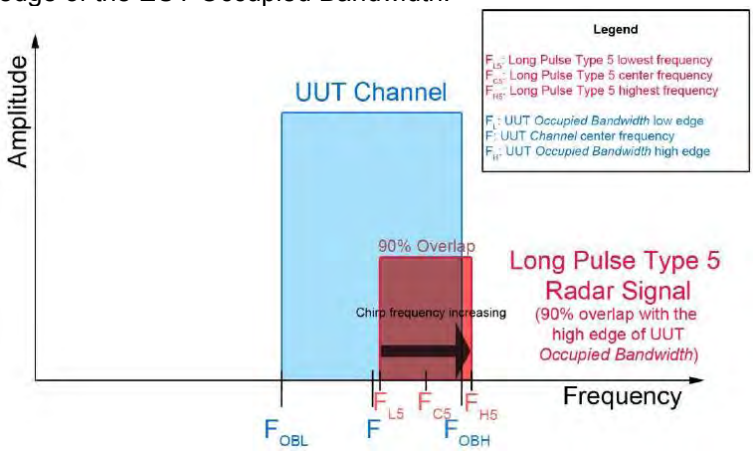
(a) The Channel center frequency.




(b) Tuned frequencies such that 90% of the Long Pulse Type 5 frequency modulation is within the low edge of the EUT Occupied Bandwidth.




(c) Tuned frequencies such that 90% of the Long Pulse Type 5 frequency modulation is within the high edge of the EUT Occupied Bandwidth.



For subset case 1: the center frequency of the signal generator will remain fixed at the center of the UUT Channel.

For subset case 2: to retain 90% frequency overlap between the radar signal and the UUT Occupied Bandwidth, the center frequency of the signal generator will vary for each of the ten trials in subset case 2. The center frequency of the signal generator for each trial is calculated by:

*$F_L$ + (0.4* Chirp Width [in MHz])*

For subset case 3: to retain 90% frequency overlap between the radar signal and the UUT *Occupied Bandwidth*, the center frequency of the signal generator will vary for each of the ten trials in subset case 3. The center frequency of the signal generator for each trial is calculated by:

*$F_H$ - (0.4* Chirp Width [in MHz])*

The percentage of successful detection is calculated by dividing the sum of the detections for the three subsets by the sum of trials for the three subsets:

$$\frac{TotalWaveformDetections}{TotalWaveformTriaals}\times 100$$

## ***Frequency Hopping Radar Test***

Statistical data will be gathered to determine the ability of the device to detect the Frequency Hopping radar test signal (radar type 6) found in Table 7. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trial runs. The probability of successful detection is calculated by:

$$\frac{TotalWaveformDetections}{TotalWaveformTriaals} \times 100$$

### 5.5.2 Test Procedures

1. One frequency will be chosen from the Operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands.
2. In case the UUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will associate with the UUT (Master). For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.
3. The TCP protocol unicast data stream was generated by the LanTest software with at least 17% activity ratio over any 100ms period.
4. At time T0 the Radar Waveform generator sends a Burst of pulses for each of the Radar Types 1-6 at DFS Detection Threshold levels on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
5. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Radar Types 1-4 and 6 to ensure detection occurs.
6. 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.

**Channel Bandwidth 20MHz/ 5320MHz**

| Detection = Y, No Detection = N | | | | | | |
|---|---|---|---|---|---|---|
| **Trial Number** | **Type 1** | **Type 2** | **Type 3** | **Type 4** | **Type 5** | **Type 6** |
| **1** | Y | Y | Y | Y | Y | Y |
| **2** | Y | Y | Y | Y | Y | Y |
| **3** | Y | Y | Y | Y | Y | Y |
| **4** | Y | **N** | Y | Y | Y | Y |
| **5** | Y | Y | **N** | Y | Y | Y |
| **6** | Y | Y | Y | Y | **N** | Y |
| **7** | Y | Y | Y | Y | Y | Y |
| **8** | Y | Y | **N** | Y | Y | Y |
| **9** | Y | Y | Y | **N** | Y | Y |
| **10** | Y | **N** | Y | Y | Y | Y |
| **11** | Y | Y | Y | Y | Y | Y |
| **12** | **N** | Y | Y | Y | Y | Y |
| **13** | Y | Y | Y | Y | Y | Y |
| **14** | Y | Y | Y | **N** | Y | Y |
| **15** | Y | Y | Y | Y | Y | Y |
| **16** | Y | Y | **N** | Y | Y | Y |
| **17** | Y | Y | Y | Y | Y | Y |
| **18** | Y | **N** | Y | **N** | Y | **N** |
| **19** | Y | Y | Y | Y | **N** | Y |
| **20** | Y | Y | **Y** | Y | Y | Y |
| **21** | Y | Y | Y | Y | Y | Y |
| **22** | Y | Y | Y | Y | Y | Y |
| **23** | Y | Y | **N** | Y | Y | Y |
| **24** | **N** | Y | Y | Y | Y | Y |
| **25** | Y | Y | Y | Y | Y | **N** |
| **26** | Y | **N** | Y | Y | Y | Y |
| **27** | Y | Y | Y | Y | Y | Y |
| **28** | Y | Y | **N** | **N** | Y | Y |
| **29** | Y | Y | Y | Y | Y | Y |
| **30** | **N** | Y | Y | Y | Y | Y |
| **Number of Successful Detections** | **27** | **26** | **25** | **26** | **28** | **28** |
| **Percentage of Successful Detection (%)** | **90.00%** | **86.67%** | **83.33%** | **86.67%** | **93.33%** | **93.33%** |
| **Limit(%)** | ≧60% | ≧60% | ≧60% | ≧60% | ≧80% | ≧70% |
| **Average Probability of Radar Type 1~4 (%)** | | | **86.67 % (≧80%)** | | | |

**Channel Bandwidth 40MHz/ 5310MHz**

| Detection = Y, No Detection = N | | | | | | |
|---|---|---|---|---|---|---|
| **Trial Number** | **Type 1** | **Type 2** | **Type 3** | **Type 4** | **Type 5** | **Type 6** |
| **1** | Y | Y | **N** | Y | Y | Y |
| **2** | Y | Y | Y | Y | Y | Y |
| **3** | Y | Y | Y | Y | Y | Y |
| **4** | Y | Y | Y | Y | Y | Y |
| **5** | Y | Y | Y | Y | Y | Y |
| **6** | **N** | Y | Y | Y | Y | Y |
| **7** | Y | Y | Y | Y | Y | Y |
| **8** | Y | **N** | Y | Y | Y | Y |
| **9** | Y | Y | **N** | Y | Y | Y |
| **10** | Y | Y | Y | Y | Y | Y |
| **11** | Y | Y | Y | Y | Y | Y |
| **12** | **N** | **N** | Y | Y | **N** | Y |
| **13** | Y | **N** | Y | Y | Y | Y |
| **14** | Y | Y | **N** | Y | Y | Y |
| **15** | Y | Y | Y | Y | Y | Y |
| **16** | Y | Y | **N** | Y | Y | Y |
| **17** | Y | **N** | Y | **N** | Y | Y |
| **18** | Y | Y | **N** | Y | Y | Y |
| **19** | Y | Y | Y | Y | Y | Y |
| **20** | Y | Y | **N** | Y | Y | Y |
| **21** | **N** | **N** | **N** | Y | **N** | Y |
| **22** | Y | Y | Y | Y | Y | Y |
| **23** | Y | Y | Y | Y | Y | Y |
| **24** | Y | Y | Y | Y | Y | Y |
| **25** | Y | Y | **N** | Y | Y | Y |
| **26** | Y | Y | Y | Y | Y | Y |
| **27** | Y | **N** | Y | Y | Y | Y |
| **28** | Y | Y | Y | Y | Y | Y |
| **29** | **N** | Y | **N** | Y | Y | Y |
| **30** | Y | Y | **N** | Y | Y | Y |
| **Number of Successful Detections** | **26** | **24** | **20** | **29** | **28** | **30** |
| **Percentage of Successful Detection (%)** | **86.67%** | **80.00%** | **66.67%** | **96.67%** | **93.33%** | **100.00%** |
| **Limit(%)** | ≧60% | ≧60% | ≧60% | ≧60% | ≧80% | ≧70% |
| **Average Probability of Radar Type 1~4 (%)** | | | **82.50 % (≧80%)** | | | |

**Channel Bandwidth 80MHz/ 5290MHz**

| Detection = Y, No Detection = N | | | | | | |
|---|---|---|---|---|---|---|
| **Trial Number** | **Type 1** | **Type 2** | **Type 3** | **Type 4** | **Type 5** | **Type 6** |
| **1** | Y | Y | Y | Y | Y | Y |
| **2** | Y | Y | Y | Y | Y | Y |
| **3** | Y | Y | Y | Y | Y | Y |
| **4** | Y | Y | Y | Y | Y | Y |
| **5** | Y | Y | Y | Y | Y | Y |
| **6** | Y | Y | Y | Y | Y | Y |
| **7** | Y | Y | Y | Y | Y | Y |
| **8** | Y | Y | Y | Y | Y | Y |
| **9** | Y | Y | Y | Y | Y | Y |
| **10** | Y | Y | Y | Y | Y | Y |
| **11** | Y | Y | Y | Y | Y | Y |
| **12** | Y | Y | Y | Y | Y | Y |
| **13** | Y | Y | Y | Y | Y | Y |
| **14** | Y | Y | Y | Y | Y | Y |
| **15** | Y | Y | Y | Y | Y | Y |
| **16** | Y | Y | Y | **N** | Y | Y |
| **17** | Y | Y | Y | Y | Y | Y |
| **18** | Y | Y | Y | Y | Y | Y |
| **19** | Y | Y | Y | Y | Y | Y |
| **20** | Y | Y | Y | Y | Y | Y |
| **21** | Y | Y | Y | Y | Y | Y |
| **22** | Y | Y | Y | Y | Y | Y |
| **23** | Y | Y | Y | Y | Y | Y |
| **24** | Y | Y | Y | Y | Y | Y |
| **25** | Y | Y | Y | Y | Y | Y |
| **26** | Y | Y | Y | Y | Y | Y |
| **27** | Y | Y | Y | Y | Y | Y |
| **28** | Y | Y | Y | Y | Y | Y |
| **29** | Y | Y | Y | Y | Y | Y |
| **30** | Y | Y | Y | Y | Y | Y |
| **Number of Successful Detections** | **30** | **30** | **30** | **29** | **30** | **30** |
| **Percentage of Successful Detection (%)** | **100.00%** | **100.00%** | **100.00%** | **96.67%** | **100.00%** | **100.00%** |
| **Limit(%)** | ≧60% | ≧60% | ≧60% | ≧60% | ≧80% | ≧70% |
| **Average Probability of Radar Type 1~4 (%)** | | | **99.17 % (≧80%)** | | | |

**Channel Bandwidth 20MHz/ 5500MHz**

| Detection = Y, No Detection = N | | | | | | |
|---|---|---|---|---|---|---|
| **Trial Number** | **Type 1** | **Type 2** | **Type 3** | **Type 4** | **Type 5** | **Type 6** |
| **1** | Y | Y | Y | Y | Y | Y |
| **2** | Y | Y | Y | Y | Y | Y |
| **3** | Y | Y | Y | Y | Y | Y |
| **4** | Y | **N** | Y | Y | Y | Y |
| **5** | Y | Y | Y | Y | Y | Y |
| **6** | Y | Y | Y | Y | Y | Y |
| **7** | Y | Y | Y | Y | Y | Y |
| **8** | Y | Y | Y | Y | Y | Y |
| **9** | Y | Y | Y | Y | Y | Y |
| **10** | Y | Y | Y | Y | Y | Y |
| **11** | Y | Y | Y | Y | Y | Y |
| **12** | Y | Y | Y | Y | Y | **N** |
| **13** | Y | Y | Y | Y | Y | Y |
| **14** | Y | Y | Y | Y | Y | Y |
| **15** | Y | Y | Y | Y | Y | Y |
| **16** | Y | Y | Y | Y | Y | Y |
| **17** | Y | Y | Y | Y | Y | Y |
| **18** | Y | Y | Y | Y | Y | Y |
| **19** | Y | Y | Y | Y | Y | Y |
| **20** | Y | Y | Y | Y | Y | Y |
| **21** | Y | Y | Y | Y | Y | Y |
| **22** | Y | Y | Y | Y | Y | Y |
| **23** | Y | Y | Y | Y | Y | Y |
| **24** | Y | Y | Y | Y | Y | Y |
| **25** | Y | Y | Y | **N** | Y | Y |
| **26** | Y | Y | Y | Y | Y | Y |
| **27** | Y | Y | Y | Y | Y | Y |
| **28** | **N** | Y | Y | Y | Y | Y |
| **29** | Y | Y | Y | Y | Y | Y |
| **30** | Y | Y | Y | Y | Y | Y |
| **Number of Successful Detections** | **29** | **29** | **30** | **29** | **30** | **29** |
| **Percentage of Successful Detection (%)** | **96.67%** | **96.67%** | **100.00%** | **96.67%** | **100.00%** | **96.67%** |
| **Limit(%)** | ≧60% | ≧60% | ≧60% | ≧60% | ≧80% | ≧70% |
| **Average Probability of Radar Type 1~4 (%)** | | | **97.50 % (≧80%)** | | | |

**Channel Bandwidth 40MHz/ 5510MHz**

| Detection = Y, No Detection = N | | | | | | |
|---|---|---|---|---|---|---|
| **Trial Number** | **Type 1** | **Type 2** | **Type 3** | **Type 4** | **Type 5** | **Type 6** |
| **1** | Y | Y | **N** | Y | Y | Y |
| **2** | **N** | Y | Y | Y | Y | Y |
| **3** | Y | Y | Y | **N** | Y | Y |
| **4** | Y | Y | Y | Y | Y | Y |
| **5** | Y | Y | Y | Y | Y | Y |
| **6** | Y | Y | Y | Y | Y | Y |
| **7** | Y | Y | Y | Y | Y | Y |
| **8** | Y | Y | Y | Y | Y | Y |
| **9** | Y | Y | Y | Y | Y | Y |
| **10** | Y | Y | Y | Y | Y | Y |
| **11** | Y | Y | Y | **N** | Y | Y |
| **12** | Y | Y | Y | Y | Y | Y |
| **13** | Y | Y | Y | Y | Y | Y |
| **14** | Y | Y | Y | Y | Y | Y |
| **15** | Y | Y | Y | Y | Y | Y |
| **16** | Y | Y | Y | Y | Y | Y |
| **17** | Y | Y | Y | Y | Y | Y |
| **18** | Y | **N** | Y | Y | Y | Y |
| **19** | Y | Y | Y | Y | Y | Y |
| **20** | Y | Y | Y | Y | Y | Y |
| **21** | Y | Y | Y | Y | Y | Y |
| **22** | Y | **N** | Y | Y | Y | Y |
| **23** | Y | Y | Y | **N** | Y | Y |
| **24** | Y | Y | Y | Y | Y | Y |
| **25** | Y | Y | Y | Y | Y | Y |
| **26** | Y | Y | Y | Y | Y | Y |
| **27** | Y | Y | Y | Y | Y | Y |
| **28** | Y | Y | Y | Y | Y | Y |
| **29** | Y | Y | Y | Y | Y | Y |
| **30** | Y | Y | Y | Y | Y | Y |
| **Number of Successful Detections** | **29** | **28** | **29** | **27** | **30** | **30** |
| **Percentage of Successful Detection (%)** | **96.67%** | **93.33%** | **96.67%** | **90.00%** | **100.00%** | **100.00%** |
| **Limit(%)** | ≧60% | ≧60% | ≧60% | ≧60% | ≧80% | ≧70% |
| **Average Probability of Radar Type 1~4 (%)** | | | **94.17 % (≧80%)** | | | |

**Channel Bandwidth 80MHz/ 5530MHz**

| Detection = Y, No Detection = N | | | | | | |
|---|---|---|---|---|---|---|
| **Trial Number** | **Type 1** | **Type 2** | **Type 3** | **Type 4** | **Type 5** | **Type 6** |
| **1** | Y | Y | Y | Y | Y | Y |
| **2** | Y | Y | Y | Y | Y | Y |
| **3** | Y | Y | Y | Y | Y | Y |
| **4** | Y | Y | Y | Y | Y | Y |
| **5** | Y | Y | Y | Y | Y | Y |
| **6** | Y | Y | Y | Y | Y | Y |
| **7** | Y | **N** | Y | Y | Y | Y |
| **8** | Y | Y | Y | Y | Y | Y |
| **9** | Y | Y | Y | Y | Y | Y |
| **10** | Y | Y | Y | Y | Y | Y |
| **11** | Y | Y | Y | Y | Y | Y |
| **12** | Y | Y | Y | Y | Y | Y |
| **13** | Y | Y | Y | Y | Y | Y |
| **14** | Y | Y | Y | Y | Y | Y |
| **15** | Y | Y | Y | Y | Y | Y |
| **16** | Y | Y | **N** | Y | Y | Y |
| **17** | Y | Y | Y | Y | **N** | Y |
| **18** | Y | Y | Y | Y | Y | Y |
| **19** | Y | Y | Y | Y | Y | Y |
| **20** | Y | Y | Y | Y | Y | Y |
| **21** | Y | Y | Y | Y | Y | Y |
| **22** | Y | Y | Y | Y | Y | Y |
| **23** | Y | Y | Y | **N** | Y | Y |
| **24** | Y | Y | Y | Y | Y | Y |
| **25** | **N** | Y | Y | Y | Y | Y |
| **26** | Y | Y | Y | Y | Y | Y |
| **27** | Y | Y | Y | Y | Y | Y |
| **28** | Y | Y | Y | Y | Y | Y |
| **29** | Y | Y | Y | Y | **N** | Y |
| **30** | Y | Y | Y | Y | Y | Y |
| **Number of Successful Detections** | **29** | **29** | **29** | **29** | **28** | **30** |
| **Percentage of Successful Detection (%)** | **96.67%** | **96.67%** | **96.67%** | **96.67%** | **93.33%** | **100.00%** |
| **Limit(%)** | ≧60% | ≧60% | ≧60% | ≧60% | ≧80% | ≧70% |
| **Average Probability of Radar Type 1~4 (%)** | | | **96.67 % (≧80%)** | | | |

# 6. Measurement Equipment List & Calibration Status

| Name of Equipment | Manufacturer | Type/Model | Serial Number | Calibration Date | Calibration Due |
|---|---|---|---|---|---|
| Vector Signal Generator | R&S | SMU200A | 102239 | 2017/3/13 | 2018/3/12 |
| Spectrum Analyzer | R&S | FSU | 200114 | 2016/7/28 | 2017/7/27 |
| Horn Antenna | ETS Lindgren | 3117 | 00055165 | 2016/2/24 | 2017/2/23 |
| Horn Antenna | ETS Lindgren | 3117 | 00055165 | 2017/2/20 | 2018/2/19 |
| Horn Antenna | TRC | HA-0502 | 6 | 2016/3/24 | 2017/3/23 |

# APPENDIX I Radar Test Waveforms

## *Short Pulse Radar Test Waveforms*

**Radar Type 1**

| Trial # | Number of Pulses per Burst | Pulse Width (μsec) | PRI (μs) | Pulse Repetition Frequency Number |
|---|---|---|---|---|
| 1 | 74 | 1 | 718 | 11 |
| 2 | 81 | 1 | 658 | 8 |
| 3 | 92 | 1 | 578 | 4 |
| 4 | 70 | 1 | 758 | 13 |
| 5 | 62 | 1 | 858 | 18 |
| 6 | 63 | 1 | 838 | 17 |
| 7 | 67 | 1 | 798 | 15 |
| 8 | 61 | 1 | 878 | 19 |
| 9 | 68 | 1 | 778 | 14 |
| 10 | 83 | 1 | 638 | 7 |
| 11 | 76 | 1 | 698 | 10 |
| 12 | 65 | 1 | 818 | 16 |
| 13 | 102 | 1 | 518 | 1 |
| 14 | 78 | 1 | 678 | 9 |
| 15 | 72 | 1 | 738 | 12 |
| 16 | 50 | 1 | 1059 | |
| 17 | 34 | 1 | 1561 | |
| 18 | 86 | 1 | 617 | |
| 19 | 83 | 1 | 641 | |
| 20 | 25 | 1 | 2116 | |
| 21 | 59 | 1 | 902 | |
| 22 | 21 | 1 | 2550 | |
| 23 | 25 | 1 | 2147 | |
| 24 | 20 | 1 | 2678 | |
| 25 | 57 | 1 | 931 | |
| 26 | 93 | 1 | 571 | |
| 27 | 27 | 1 | 2007 | |
| 28 | 19 | 1 | 2781 | |
| 29 | 26 | 1 | 2060 | |
| 30 | 20 | 1 | 2757 | |

**Radar Type 2**

| Trial # | Number of Pulses per Burst | Pulse Width (µsec) | PRI (µs) |
|---|---|---|---|
| 1 | 27 | 4.2 | 206 |
| 2 | 28 | 4.3 | 211 |
| 3 | 27 | 1.7 | 208 |
| 4 | 27 | 3.6 | 227 |
| 5 | 24 | 1.5 | 171 |
| 6 | 23 | 1.5 | 195 |
| 7 | 24 | 4.5 | 166 |
| 8 | 26 | 1.7 | 225 |
| 9 | 28 | 3.4 | 222 |
| 10 | 27 | 1.6 | 203 |
| 11 | 29 | 3 | 226 |
| 12 | 27 | 4.4 | 186 |
| 13 | 25 | 2.7 | 150 |
| 14 | 27 | 4.3 | 188 |
| 15 | 27 | 4 | 163 |
| 16 | 25 | 3.1 | 186 |
| 17 | 27 | 4 | 170 |
| 18 | 25 | 1.9 | 155 |
| 19 | 24 | 1.7 | 180 |
| 20 | 26 | 3.7 | 213 |
| 21 | 24 | 3.2 | 194 |
| 22 | 25 | 2.7 | 196 |
| 23 | 29 | 2.2 | 155 |
| 24 | 24 | 4.8 | 230 |
| 25 | 26 | 4.1 | 156 |
| 26 | 28 | 3.5 | 209 |
| 27 | 24 | 1.5 | 161 |
| 28 | 26 | 3.5 | 210 |
| 29 | 26 | 1.6 | 210 |
| 30 | 23 | 4.2 | 161 |

**Radar Type 3**

| Trial # | Number of Pulses per Burst | Pulse Width (µsec) | PRI (µs) |
|---|---|---|---|
| 1 | 18 | 8 | 464 |
| 2 | 18 | 7.7 | 355 |
| 3 | 18 | 9.9 | 368 |
| 4 | 18 | 6.7 | 324 |
| 5 | 18 | 7.6 | 483 |
| 6 | 17 | 7.7 | 332 |
| 7 | 16 | 7 | 208 |
| 8 | 18 | 9 | 459 |
| 9 | 17 | 7.5 | 262 |
| 10 | 16 | 9.8 | 203 |
| 11 | 16 | 8.4 | 357 |
| 12 | 16 | 7.8 | 355 |
| 13 | 16 | 9.1 | 317 |
| 14 | 17 | 8.9 | 278 |
| 15 | 17 | 6.7 | 454 |
| 16 | 17 | 6.1 | 403 |
| 17 | 17 | 8.6 | 405 |
| 18 | 17 | 6.4 | 474 |
| 19 | 18 | 7.3 | 237 |
| 20 | 18 | 9.8 | 286 |
| 21 | 16 | 8.3 | 427 |
| 22 | 17 | 9.3 | 215 |
| 23 | 18 | 8.1 | 218 |
| 24 | 17 | 9.6 | 289 |
| 25 | 18 | 8.4 | 490 |
| 26 | 17 | 9.3 | 431 |
| 27 | 18 | 7.5 | 429 |
| 28 | 16 | 6.6 | 471 |
| 29 | 16 | 8.5 | 434 |
| 30 | 17 | 7 | 455 |

**Radar Type 4**

| Trial # | Number of Pulses per Burst | Pulse Width (µsec) | PRI (µs) |
|---|---|---|---|
| 1 | 15 | 14.6 | 308 |
| 2 | 16 | 14.8 | 436 |
| 3 | 14 | 16.1 | 366 |
| 4 | 15 | 14.6 | 389 |
| 5 | 14 | 11.7 | 388 |
| 6 | 14 | 13.4 | 391 |
| 7 | 14 | 18.5 | 466 |
| 8 | 14 | 17.5 | 272 |
| 9 | 15 | 16.4 | 338 |
| 10 | 14 | 16.6 | 439 |
| 11 | 14 | 14.2 | 383 |
| 12 | 13 | 13.4 | 438 |
| 13 | 15 | 19 | 325 |
| 14 | 13 | 11.8 | 256 |
| 15 | 13 | 19.2 | 449 |
| 16 | 15 | 12.3 | 338 |
| 17 | 15 | 15.5 | 399 |
| 18 | 13 | 11.6 | 411 |
| 19 | 15 | 17.2 | 482 |
| 20 | 13 | 16.9 | 366 |
| 21 | 14 | 13.2 | 416 |
| 22 | 14 | 14.1 | 290 |
| 23 | 12 | 15.1 | 220 |
| 24 | 14 | 16 | 494 |
| 25 | 13 | 12.9 | 381 |
| 26 | 16 | 12.8 | 325 |
| 27 | 13 | 20 | 208 |
| 28 | 13 | 16.7 | 335 |
| 29 | 12 | 18.7 | 323 |
| 30 | 12 | 17.1 | 206 |

## *Long Pulse Radar Test Waveforms*

**Radar Type 5_Overview**

| Trial # | Mininum Chirp Widtg(MHz) | Subset |
|---|---|---|
| 1 | 6 | 1 |
| 2 | 20 | 1 |
| 3 | 16 | 1 |
| 4 | 19 | 1 |
| 5 | 17 | 1 |
| 6 | 8 | 1 |
| 7 | 11 | 1 |
| 8 | 20 | 1 |
| 9 | 20 | 1 |
| 10 | 5 | 1 |
| 11 | 16 | 2 |
| 12 | 12 | 2 |
| 13 | 15 | 2 |
| 14 | 18 | 2 |
| 15 | 17 | 2 |
| 16 | 17 | 2 |
| 17 | 15 | 2 |
| 18 | 10 | 2 |
| 19 | 17 | 2 |
| 20 | 15 | 2 |
| 21 | 6 | 3 |
| 22 | 5 | 3 |
| 23 | 13 | 3 |
| 24 | 6 | 3 |
| 25 | 10 | 3 |
| 26 | 6 | 3 |
| 27 | 15 | 3 |
| 28 | 9 | 3 |
| 29 | 10 | 3 |
| 30 | 18 | 3 |

**Radar Type 5_Trial 1**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 1 | 89.1 | 6 | | | 143.451 |
| 2 | 2 | 75.4 | 6 | 1044 | | 183.48 |
| 3 | 1 | 55.9 | 6 | | | 395.92 |
| 4 | 2 | 55.6 | 6 | 1512 | | 380.99 |
| 5 | 3 | 56.5 | 6 | 1380 | 1910 | 425.16 |
| 6 | 2 | 87.8 | 6 | 1518 | | 356.51 |
| 7 | 1 | 96.9 | 6 | | | 370.63 |
| 8 | 3 | 81.3 | 6 | 1515 | 1227 | 57.3 |
| 9 | 3 | 71.5 | 6 | 1689 | 1096 | 572.14 |
| 10 | 3 | 62.9 | 6 | 1419 | 1021 | 232.74 |
| 11 | 2 | 61.7 | 6 | 1953 | | 113.57 |
| 12 | 3 | 90.3 | 6 | 1304 | 1810 | 586.14 |
| 13 | 3 | 73.6 | 6 | 1386 | 1020 | 160.84 |
| 14 | 1 | 99 | 6 | | | 309.64 |
| 15 | 2 | 52.7 | 6 | 1977 | | 572.51 |
| 16 | 3 | 86.2 | 6 | 1857 | 1807 | 4.68 |
| 17 | 2 | 97.6 | 6 | 1146 | | 567.4 |
| 18 | 1 | 60 | 6 | | | 502.7 |
| 19 | 2 | 86.7 | 6 | 1030 | | 225.2 |
| 20 | 2 | 56.3 | 6 | 1935 | | 500.7 |

**Radar Type 5_Trial 2**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 70.7 | 20 | 1579 | | 850.754 |
| 2 | 3 | 71.5 | 20 | 1752 | 1714 | 703.213 |
| 3 | 1 | 56.9 | 20 | | | 18.346 |
| 4 | 2 | 94 | 20 | 1140 | | 26.369 |
| 5 | 2 | 92.9 | 20 | 1658 | | 726.882 |
| 6 | 2 | 65.9 | 20 | 1542 | | 29.005 |
| 7 | 1 | 96.3 | 20 | | | 693.368 |
| 8 | 3 | 65.8 | 20 | 1717 | 1018 | 222.222 |
| 9 | 2 | 78.9 | 20 | 1565 | | 153.515 |
| 10 | 2 | 86.3 | 20 | 1741 | | 704.578 |
| 11 | 2 | 99.7 | 20 | 1651 | | 421.861 |
| 12 | 1 | 53 | 20 | | | 741.154 |
| 13 | 1 | 94.7 | 20 | | | 441.877 |

**Radar Type 5_Trial 3**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 85.4 | 16 | 1856 | | 1206.45 |
| 2 | 1 | 95.1 | 16 | | | 1337.13 |
| 3 | 3 | 91.4 | 16 | 1506 | 1952 | 29.33 |
| 4 | 2 | 53.2 | 16 | 1446 | | 512.14 |
| 5 | 2 | 71.6 | 16 | 1356 | | 1030.58 |
| 6 | 2 | 68.8 | 16 | 1630 | | 143.72 |
| 7 | 3 | 94.5 | 16 | 1385 | 1278 | 303.64 |
| 8 | 1 | 64.8 | 16 | | | 714.6 |

**Radar Type 5_Trial 4**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 54.1 | 19 | 1433 | | 773.19 |
| 2 | 2 | 65.2 | 19 | 1315 | | 16.561 |
| 3 | 2 | 76 | 19 | 1850 | | 756.934 |
| 4 | 2 | 66.3 | 19 | 1522 | | 295.481 |
| 5 | 3 | 94.4 | 19 | 1347 | 1548 | 468.899 |
| 6 | 1 | 81 | 19 | | | 638.996 |
| 7 | 3 | 70.4 | 19 | 1057 | 1715 | 700.653 |
| 8 | 1 | 78.7 | 19 | | | 822.25 |
| 9 | 1 | 79.4 | 19 | | | 426.627 |
| 10 | 3 | 82.8 | 19 | 1171 | 1808 | 130.014 |
| 11 | 1 | 76.5 | 19 | | | 141.791 |
| 12 | 2 | 84.1 | 19 | 1706 | | 247.389 |
| 13 | 1 | 79.6 | 19 | | | 7.786 |
| 14 | 2 | 76.3 | 19 | 1493 | | 641.143 |

**Radar Type 5_Trial 5**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 3 | 98.5 | 17 | 1759 | 1733 | 715.993 |
| 2 | 2 | 86.5 | 17 | 1787 | | 613.51 |
| 3 | 1 | 89.9 | 17 | | | 438.4 |
| 4 | 2 | 91 | 17 | 1607 | | 219.56 |
| 5 | 2 | 57.8 | 17 | 1130 | | 1055.79 |
| 6 | 3 | 80.2 | 17 | 1648 | 1087 | 695.92 |
| 7 | 2 | 53.2 | 17 | 1928 | | 1172.21 |
| 8 | 2 | 89 | 17 | 1135 | | 769.54 |
| 9 | 3 | 66.9 | 17 | 1976 | 1746 | 21.63 |
| 10 | 3 | 85.7 | 17 | 1807 | 1076 | 747.7 |

**Radar Type 5_Trial 6**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 3 | 68.6 | 8 | 1699 | 1380 | 711.668 |
| 2 | 3 | 57.2 | 8 | 1434 | 1792 | 48.659 |
| 3 | 2 | 76.2 | 8 | 1489 | | 508.424 |
| 4 | 1 | 89.7 | 8 | | | 377.951 |
| 5 | 3 | 89.1 | 8 | 1724 | 1326 | 412.329 |
| 6 | 1 | 58.6 | 8 | | | 675.746 |
| 7 | 1 | 52.4 | 8 | | | 518.333 |
| 8 | 3 | 95.1 | 8 | 1536 | 1046 | 108.06 |
| 9 | 1 | 70.8 | 8 | | | 698.737 |
| 10 | 2 | 92.9 | 8 | 1250 | | 303.014 |
| 11 | 2 | 82.8 | 8 | 1771 | | 166.061 |
| 12 | 3 | 54 | 8 | 1222 | 1244 | 798.029 |
| 13 | 2 | 89.7 | 8 | 1791 | | 219.986 |
| 14 | 2 | 53.3 | 8 | 1410 | | 550.143 |

**Radar Type 5_Trial 7**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 50.3 | 11 | 1368 | | 683.429 |
| 2 | 3 | 58.4 | 11 | 1060 | 1379 | 386.718 |
| 3 | 3 | 87 | 11 | 1974 | 1785 | 45.285 |
| 4 | 2 | 52.2 | 11 | 1145 | | 264.393 |
| 5 | 3 | 63.6 | 11 | 1017 | 1851 | 70.101 |
| 6 | 2 | 89.2 | 11 | 1077 | | 674.608 |
| 7 | 1 | 57.4 | 11 | | | 693.326 |
| 8 | 1 | 93.9 | 11 | | | 134.394 |
| 9 | 1 | 73.6 | 11 | | | 599.581 |
| 10 | 2 | 81.6 | 11 | 1934 | | 109.569 |
| 11 | 3 | 89.8 | 11 | 1325 | 1644 | 420.396 |
| 12 | 3 | 55.7 | 11 | 1653 | 1111 | 351.654 |
| 13 | 2 | 71.3 | 11 | 1668 | | 60.662 |
| 14 | 2 | 92 | 11 | 1437 | | 440.119 |
| 15 | 1 | 95.8 | 11 | | | 216.747 |
| 16 | 2 | 97.8 | 11 | 1522 | | 487.565 |
| 17 | 2 | 78.5 | 11 | 1141 | | 189.682 |

**Radar Type 5_Trial 8**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 87.2 | 20 | 1499 | | 1084.13 |
| 2 | 2 | 78.6 | 20 | 1907 | | 1024.88 |
| 3 | 1 | 83.9 | 20 | | | 870.04 |
| 4 | 2 | 59.9 | 20 | 1698 | | 222.22 |
| 5 | 2 | 74.7 | 20 | 1020 | | 430.23 |
| 6 | 3 | 93 | 20 | 1771 | 1729 | 306.53 |
| 7 | 2 | 79.1 | 20 | 1070 | | 420.49 |
| 8 | 2 | 59.9 | 20 | 1615 | | 554.17 |
| 9 | 1 | 87.4 | 20 | | | 1147.9 |
| 10 | 1 | 89.7 | 20 | | | 467.2 |

**Radar Type 5_Trial 9**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 1 | 67.3 | 20 | | | 968.756 |
| 2 | 2 | 50.8 | 20 | 1358 | | 803.12 |
| 3 | 2 | 82.9 | 20 | 1481 | | 964.01 |
| 4 | 2 | 86.1 | 20 | 1331 | | 524.69 |
| 5 | 1 | 73.8 | 20 | | | 811.52 |
| 6 | 2 | 79.1 | 20 | 1052 | | 681.53 |
| 7 | 1 | 86.7 | 20 | | | 624.35 |
| 8 | 3 | 75 | 20 | 1205 | 1057 | 116.45 |
| 9 | 1 | 75 | 20 | | | 760.45 |
| 10 | 2 | 65.1 | 20 | 1539 | | 869.7 |
| 11 | 3 | 75 | 20 | 1954 | 1458 | 670.3 |
| 12 | 1 | 61.6 | 20 | | | 642.6 |

**Radar Type 5_Trial 10**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 86.7 | 5 | 1847 | | 578.801 |
| 2 | 2 | 57.9 | 5 | 1816 | | 466.901 |
| 3 | 2 | 65.9 | 5 | 1157 | | 502.102 |
| 4 | 3 | 55.7 | 5 | 1698 | 1941 | 334.833 |
| 5 | 3 | 88.6 | 5 | 1524 | 1518 | 230.574 |
| 6 | 1 | 54.5 | 5 | | | 454.175 |
| 7 | 3 | 58.1 | 5 | 1610 | 1814 | 97.906 |
| 8 | 1 | 60.3 | 5 | | | 273.187 |
| 9 | 3 | 84.8 | 5 | 1578 | 1096 | 207.048 |
| 10 | 1 | 96.1 | 5 | | | 135.789 |
| 11 | 2 | 66.1 | 5 | 1523 | | 325.681 |
| 12 | 2 | 67.6 | 5 | 1004 | | 25.772 |
| 13 | 2 | 77 | 5 | 1906 | | 56.053 |
| 14 | 2 | 51.9 | 5 | 1396 | | 104.244 |
| 15 | 3 | 99.9 | 5 | 1878 | 1100 | 315.645 |
| 16 | 2 | 64.7 | 5 | 1288 | | 400.406 |
| 17 | 1 | 51.3 | 5 | | | 404.537 |
| 18 | 2 | 57.5 | 5 | 1101 | | 81.458 |
| 19 | 2 | 90.1 | 5 | 1778 | | 412.179 |

**Radar Type 5_Trial 11**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 96.5 | 16 | 1947 | | 385.424 |
| 2 | 2 | 87.6 | 16 | 1973 | | 685.403 |
| 3 | 1 | 65.2 | 16 | | | 329.436 |
| 4 | 3 | 89.4 | 16 | 1143 | 1159 | 796.029 |
| 5 | 2 | 82.7 | 16 | 1577 | | 78.112 |
| 6 | 1 | 97.4 | 16 | | | 273.195 |
| 7 | 3 | 59.5 | 16 | 1604 | 1623 | 387.608 |
| 8 | 2 | 92.6 | 16 | 1720 | | 620.982 |
| 9 | 3 | 79.5 | 16 | 1689 | 1006 | 445.985 |
| 10 | 3 | 97.5 | 16 | 1629 | 1347 | 775.018 |
| 11 | 2 | 62.3 | 16 | 1587 | | 437.261 |
| 12 | 2 | 59.7 | 16 | 1877 | | 806.754 |
| 13 | 1 | 73.7 | 16 | | | 629.277 |

**Radar Type 5_Trial 12**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 1 | 85.1 | 12 | | | 247.665 |
| 2 | 3 | 68.9 | 12 | 1666 | 1887 | 459.51 |
| 3 | 2 | 67.1 | 12 | 1625 | | 620.2 |
| 4 | 1 | 61.9 | 12 | | | 700.38 |
| 5 | 3 | 56.4 | 12 | 1128 | 1290 | 386.13 |
| 6 | 3 | 63.2 | 12 | 1915 | 1876 | 289.9 |
| 7 | 2 | 91.9 | 12 | 1888 | | 207.6 |
| 8 | 3 | 67.4 | 12 | 1044 | 1176 | 428.97 |
| 9 | 2 | 67.7 | 12 | 1984 | | 62.03 |
| 10 | 3 | 73.4 | 12 | 1945 | 1035 | 315.32 |
| 11 | 1 | 72.7 | 12 | | | 215.73 |
| 12 | 2 | 79.3 | 12 | 1616 | | 159.92 |
| 13 | 2 | 62.9 | 12 | 1501 | | 748.8 |
| 14 | 2 | 78.5 | 12 | 1562 | | 748.6 |
| 15 | 2 | 87.2 | 12 | 1253 | | 757.5 |

**Radar Type 5_Trial 13**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 3 | 73.8 | 15 | 1097 | 1453 | 403.781 |
| 2 | 1 | 60.7 | 15 | | | 323.162 |
| 3 | 1 | 55.7 | 15 | | | 275.352 |
| 4 | 2 | 96.6 | 15 | 1915 | | 620.593 |
| 5 | 2 | 61.2 | 15 | 1186 | | 105.944 |
| 6 | 1 | 94.1 | 15 | | | 379.695 |
| 7 | 2 | 63.3 | 15 | 1083 | | 126.266 |
| 8 | 3 | 82.9 | 15 | 1545 | 1651 | 49.357 |
| 9 | 3 | 57.3 | 15 | 1565 | 1923 | 14.658 |
| 10 | 2 | 65.5 | 15 | 1125 | | 308.239 |
| 11 | 2 | 65.9 | 15 | 1658 | | 468.951 |
| 12 | 2 | 76.6 | 15 | 1034 | | 528.732 |
| 13 | 2 | 56.1 | 15 | 1605 | | 165.403 |
| 14 | 2 | 54.6 | 15 | 1564 | | 96.444 |
| 15 | 2 | 90.2 | 15 | 1799 | | 380.975 |
| 16 | 1 | 97.9 | 15 | | | 296.766 |
| 17 | 2 | 57.7 | 15 | 1088 | | 518.737 |
| 18 | 2 | 57.2 | 15 | 1920 | | 49.658 |
| 19 | 2 | 67 | 15 | 1195 | | 72.279 |

**Radar Type 5_Trial 14**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 88.3 | 18 | 1083 | | 956.305 |
| 2 | 3 | 59.5 | 18 | 1054 | 1846 | 626.04 |
| 3 | 3 | 82.8 | 18 | 1651 | 1422 | 598.17 |
| 4 | 3 | 77.1 | 18 | 1483 | 1069 | 775.83 |
| 5 | 3 | 62.8 | 18 | 1774 | 1267 | 560.76 |
| 6 | 2 | 80.3 | 18 | 1906 | | 1379.58 |
| 7 | 3 | 84.9 | 18 | 1410 | 1861 | 1277.1 |
| 8 | 2 | 88.2 | 18 | 1449 | | 1064 |

**Radar Type 5_Trial 15**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 98 | 17 | 1466 | | 965.962 |
| 2 | 3 | 69.5 | 17 | 1276 | 1293 | 570.787 |
| 3 | 2 | 95.8 | 17 | 1967 | | 581.853 |
| 4 | 2 | 84.4 | 17 | 1490 | | 756.06 |
| 5 | 3 | 76.2 | 17 | 1764 | 1878 | 270.547 |
| 6 | 3 | 68.6 | 17 | 1750 | 1290 | 1219.413 |
| 7 | 2 | 54.6 | 17 | 1823 | | 491.45 |
| 8 | 3 | 84.9 | 17 | 1529 | 1646 | 224.217 |
| 9 | 2 | 71.6 | 17 | 1149 | | 876.733 |

**Radar Type 5_Trial 16**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 1 | 94.3 | 17 | | | 432.948 |
| 2 | 3 | 62.7 | 17 | 1926 | 1663 | 676.8 |
| 3 | 3 | 61.5 | 17 | 1490 | 1730 | 138.38 |
| 4 | 2 | 52.7 | 17 | 1542 | | 61.95 |
| 5 | 2 | 63.1 | 17 | 1247 | | 355.57 |
| 6 | 1 | 84.3 | 17 | | | 786.45 |
| 7 | 1 | 84.1 | 17 | | | 552.16 |
| 8 | 3 | 68.8 | 17 | 1344 | 1521 | 55.51 |
| 9 | 2 | 60.6 | 17 | 1024 | | 405.26 |
| 10 | 2 | 64.3 | 17 | 1577 | | 111.85 |
| 11 | 2 | 96.9 | 17 | 1217 | | 266.07 |
| 12 | 2 | 55.6 | 17 | 1253 | | 501.81 |
| 13 | 2 | 51.3 | 17 | 1946 | | 106.23 |
| 14 | 3 | 58.2 | 17 | 1029 | 1182 | 337.1 |
| 15 | 1 | 68.1 | 17 | | | 62.1 |

**Radar Type 5_Trial 17**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 77.2 | 15 | 1914 | | 126.908 |
| 2 | 2 | 55.4 | 15 | 1807 | | 16.838 |
| 3 | 3 | 69.1 | 15 | 1607 | 1203 | 64.982 |
| 4 | 2 | 85.5 | 15 | 1809 | | 566.673 |
| 5 | 1 | 87.6 | 15 | | | 106.344 |
| 6 | 2 | 58.6 | 15 | 1126 | | 315.575 |
| 7 | 2 | 81 | 15 | 1821 | | 443.556 |
| 8 | 2 | 56.7 | 15 | 1611 | | 524.767 |
| 9 | 1 | 91.6 | 15 | | | 104.578 |
| 10 | 3 | 90.9 | 15 | 1615 | 1122 | 216.069 |
| 11 | 3 | 60.6 | 15 | 1376 | 1235 | 53.581 |
| 12 | 2 | 90.8 | 15 | 1761 | | 327.552 |
| 13 | 2 | 86.9 | 15 | 1724 | | 189.263 |
| 14 | 3 | 96.8 | 15 | 1861 | 1510 | 530.624 |
| 15 | 3 | 91.6 | 15 | 1739 | 1235 | 403.295 |
| 16 | 3 | 52.4 | 15 | 1077 | 1925 | 494.146 |
| 17 | 2 | 56.7 | 15 | 1028 | | 343.537 |
| 18 | 1 | 90 | 15 | | | 470.858 |
| 19 | 2 | 69.6 | 15 | 1108 | | 100.379 |

**Radar Type 5_Trial 18**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 3 | 53.5 | 10 | 1656 | 1194 | 450.476 |
| 2 | 3 | 75.6 | 10 | 1840 | 1419 | 517.658 |
| 3 | 2 | 75.2 | 10 | 1116 | | 147.585 |
| 4 | 3 | 85.2 | 10 | 1062 | 1090 | 548.773 |
| 5 | 2 | 94.9 | 10 | 1724 | | 602.521 |
| 6 | 3 | 96.1 | 10 | 1648 | 1118 | 223.698 |
| 7 | 1 | 72.3 | 10 | | | 535.266 |
| 8 | 2 | 90 | 10 | 1180 | | 426.914 |
| 9 | 1 | 58.1 | 10 | | | 189.831 |
| 10 | 2 | 73.4 | 10 | 1170 | | 263.569 |
| 11 | 3 | 58.1 | 10 | 1838 | 1889 | 637.566 |
| 12 | 2 | 68 | 10 | 1267 | | 88.544 |
| 13 | 1 | 73.6 | 10 | | | 330.682 |
| 14 | 2 | 85 | 10 | 1437 | | 574.079 |
| 15 | 2 | 66.3 | 10 | 1877 | | 586.247 |
| 16 | 2 | 70.2 | 10 | 1189 | | 576.465 |
| 17 | 2 | 76.5 | 10 | 1020 | | 236.982 |

**Radar Type 5_Trial 19**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 92.2 | 17 | 1710 | | 345.794 |
| 2 | 1 | 75.4 | 17 | | | 771.311 |
| 3 | 1 | 94.5 | 17 | | | 751.092 |
| 4 | 1 | 53.1 | 17 | | | 176.193 |
| 5 | 2 | 95.5 | 17 | 1129 | | 1026.934 |
| 6 | 3 | 84.9 | 17 | 1009 | 1245 | 528.475 |
| 7 | 2 | 76.3 | 17 | 1398 | | 792.895 |
| 8 | 2 | 81.3 | 17 | 1557 | | 518.596 |
| 9 | 2 | 58.6 | 17 | 1102 | | 583.307 |
| 10 | 2 | 67.5 | 17 | 1210 | | 264.818 |
| 11 | 1 | 55.1 | 17 | | | 715.909 |

**Radar Type 5_Trial 20**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 1 | 95.2 | 15 | | | 944.866 |
| 2 | 2 | 76.9 | 15 | 1068 | | 750.307 |
| 3 | 1 | 81.7 | 15 | | | 327.373 |
| 4 | 1 | 89.2 | 15 | | | 41.46 |
| 5 | 3 | 63.9 | 15 | 1319 | 1393 | 828.937 |
| 6 | 2 | 91.9 | 15 | 1208 | | 990.413 |
| 7 | 3 | 74.9 | 15 | 1558 | 1608 | 615.77 |
| 8 | 2 | 97 | 15 | 1381 | | 407.177 |
| 9 | 3 | 67.6 | 15 | 1195 | 1312 | 275.433 |

**Radar Type 5_Trial 21**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 97.1 | 6 | 1836 | | 418.429 |
| 2 | 3 | 50.5 | 6 | 1622 | 1504 | 487.871 |
| 3 | 1 | 81 | 6 | | | 498.132 |
| 4 | 2 | 69.8 | 6 | 1633 | | 595.973 |
| 5 | 3 | 80.4 | 6 | 1164 | 1725 | 312.954 |
| 6 | 2 | 94.9 | 6 | 1241 | | 240.325 |
| 7 | 3 | 92.1 | 6 | 1089 | 1838 | 488.076 |
| 8 | 2 | 90.3 | 6 | 1695 | | 125.107 |
| 9 | 3 | 78.6 | 6 | 1200 | 1446 | 117.788 |
| 10 | 1 | 97.7 | 6 | | | 208.639 |
| 11 | 2 | 85.3 | 6 | 1899 | | 393.361 |
| 12 | 3 | 79.6 | 6 | 1702 | 1248 | 253.362 |
| 13 | 2 | 71.1 | 6 | 1748 | | 438.873 |
| 14 | 1 | 76.9 | 6 | | | 432.464 |
| 15 | 3 | 99.8 | 6 | 1266 | 1314 | 299.735 |
| 16 | 1 | 50.2 | 6 | | | 607.516 |
| 17 | 2 | 65.7 | 6 | 1108 | | 143.337 |
| 18 | 2 | 95.3 | 6 | 1578 | | 189.358 |
| 19 | 3 | 76.3 | 6 | 1417 | 1911 | 577.879 |

**Radar Type 5_Trial 22**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 61.2 | 5 | 1227 | | 146.867 |
| 2 | 1 | 58.1 | 5 | | | 596.248 |
| 3 | 3 | 98.6 | 5 | 1958 | 1035 | 411.435 |
| 4 | 2 | 86.4 | 5 | 1527 | | 372.123 |
| 5 | 2 | 62.2 | 5 | 1986 | | 88.901 |
| 6 | 2 | 78.4 | 5 | 1320 | | 642.518 |
| 7 | 2 | 62.6 | 5 | 1518 | | 402.336 |
| 8 | 3 | 77.1 | 5 | 1424 | 1792 | 53.234 |
| 9 | 2 | 51.2 | 5 | 1513 | | 500.651 |
| 10 | 3 | 88.4 | 5 | 1876 | 1766 | 373.229 |
| 11 | 1 | 67.2 | 5 | | | 412.926 |
| 12 | 1 | 89.2 | 5 | | | 670.544 |
| 13 | 2 | 77.2 | 5 | 1592 | | 563.112 |
| 14 | 2 | 87.1 | 5 | 1959 | | 176.929 |
| 15 | 1 | 69.3 | 5 | | | 181.047 |
| 16 | 2 | 56.5 | 5 | 1734 | | 569.765 |
| 17 | 3 | 75.7 | 5 | 1786 | 1807 | 121.682 |

**Radar Type 5_Trial 23**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 70.4 | 13 | 1847 | | 1170.35 |
| 2 | 2 | 62.8 | 13 | 1400 | | 921.447 |
| 3 | 1 | 56.2 | 13 | | | 553.463 |
| 4 | 1 | 57.1 | 13 | | | 209.04 |
| 5 | 2 | 77.1 | 13 | 1664 | | 564.467 |
| 6 | 2 | 52.6 | 13 | 1999 | | 652.523 |
| 7 | 3 | 63.5 | 13 | 1651 | 1941 | 1241.41 |
| 8 | 3 | 55.3 | 13 | 1100 | 1143 | 756.767 |
| 9 | 1 | 58.4 | 13 | | | 17.033 |

**Radar Type 5_Trial 24**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 3 | 56.3 | 6 | 1290 | 1203 | 395.957 |
| 2 | 2 | 88.3 | 6 | 1384 | | 395.161 |
| 3 | 3 | 60 | 6 | 1931 | 1970 | 539.252 |
| 4 | 3 | 57.8 | 6 | 1749 | 1785 | 397.173 |
| 5 | 3 | 79.2 | 6 | 1525 | 1636 | 306.114 |
| 6 | 1 | 65.4 | 6 | | | 147.275 |
| 7 | 2 | 89.4 | 6 | 1486 | | 74.796 |
| 8 | 1 | 84.3 | 6 | | | 136.757 |
| 9 | 2 | 56.1 | 6 | 1778 | | 584.398 |
| 10 | 1 | 86.5 | 6 | | | 19.179 |
| 11 | 1 | 54.2 | 6 | | | 418.521 |
| 12 | 2 | 74.4 | 6 | 1691 | | 310.342 |
| 13 | 2 | 97.2 | 6 | 1598 | | 456.523 |
| 14 | 2 | 92.5 | 6 | 1715 | | 117.794 |
| 15 | 2 | 68 | 6 | 1740 | | 619.105 |
| 16 | 2 | 69.1 | 6 | 1635 | | 291.906 |
| 17 | 2 | 56.9 | 6 | 1521 | | 406.537 |
| 18 | 3 | 97.2 | 6 | 1542 | 1228 | 324.058 |
| 19 | 2 | 82.2 | 6 | 1648 | | 178.179 |

**Radar Type 5_Trial 25**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 3 | 84.9 | 10 | 1650 | 1754 | 816.585 |
| 2 | 3 | 62.7 | 10 | 1492 | 1393 | 312.897 |
| 3 | 1 | 84.9 | 10 | | | 408.594 |
| 4 | 3 | 89.1 | 10 | 1609 | 1391 | 554.271 |
| 5 | 1 | 79.3 | 10 | | | 698.099 |
| 6 | 2 | 77.4 | 10 | 1624 | | 142.756 |
| 7 | 2 | 67.6 | 10 | 1246 | | 4.563 |
| 8 | 1 | 74 | 10 | | | 31.61 |
| 9 | 2 | 98.8 | 10 | 1592 | | 335.277 |
| 10 | 2 | 50.9 | 10 | 1904 | | 794.584 |
| 11 | 1 | 78.2 | 10 | | | 377.121 |
| 12 | 3 | 92.9 | 10 | 1349 | 1652 | 230.889 |
| 13 | 2 | 72.7 | 10 | 1422 | | 175.586 |
| 14 | 1 | 64.2 | 10 | | | 765.443 |

**Radar Type 5_Trial 26**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 3 | 64.3 | 6 | 1472 | 1973 | 825.28 |
| 2 | 1 | 55.4 | 6 | | | 711.537 |
| 3 | 3 | 96.9 | 6 | 1332 | 1912 | 416.234 |
| 4 | 2 | 86 | 6 | 1691 | | 149.561 |
| 5 | 1 | 59 | 6 | | | 671.039 |
| 6 | 1 | 69.8 | 6 | | | 678.396 |
| 7 | 3 | 80.2 | 6 | 1474 | 1053 | 716.833 |
| 8 | 1 | 96.7 | 6 | | | 359.06 |
| 9 | 3 | 62.9 | 6 | 1755 | 1332 | 443.057 |
| 10 | 3 | 75.2 | 6 | 1050 | 1625 | 198.524 |
| 11 | 2 | 94.7 | 6 | 1248 | | 239.631 |
| 12 | 2 | 78.5 | 6 | 1719 | | 435.419 |
| 13 | 3 | 89.6 | 6 | 1016 | 1025 | 486.486 |
| 14 | 2 | 81.7 | 6 | 1654 | | 399.543 |

**Radar Type 5_Trial 27**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 1 | 86.9 | 15 | | | 161.26 |
| 2 | 2 | 79.4 | 15 | 1099 | | 1.903 |
| 3 | 1 | 89.2 | 15 | | | 6.592 |
| 4 | 1 | 62.1 | 15 | | | 367.383 |
| 5 | 2 | 80.5 | 15 | 1972 | | 330.874 |
| 6 | 1 | 70.8 | 15 | | | 591.935 |
| 7 | 3 | 67.9 | 15 | 1999 | 1889 | 277.726 |
| 8 | 3 | 94.8 | 15 | 1502 | 1184 | 52.607 |
| 9 | 1 | 56 | 15 | | | 4.128 |
| 10 | 2 | 52.7 | 15 | 1562 | | 13.329 |
| 11 | 2 | 76.4 | 15 | 1061 | | 457.011 |
| 12 | 2 | 82.5 | 15 | 1035 | | 15.212 |
| 13 | 2 | 69.5 | 15 | 1766 | | 372.113 |
| 14 | 1 | 96.2 | 15 | | | 347.724 |
| 15 | 3 | 63.2 | 15 | 1070 | 1769 | 35.385 |
| 16 | 2 | 86.9 | 15 | 1478 | | 536.016 |
| 17 | 2 | 95.7 | 15 | 1895 | | 503.237 |
| 18 | 2 | 62.4 | 15 | 1668 | | 241.758 |
| 19 | 2 | 69 | 15 | 1477 | | 129.079 |

**Radar Type 5_Trial 28**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 75.2 | 9 | 1670 | | 547.729 |
| 2 | 2 | 78.3 | 9 | 1412 | | 625.83 |
| 3 | 1 | 67 | 9 | | | 364.13 |
| 4 | 2 | 96.5 | 9 | 1648 | | 576.07 |
| 5 | 2 | 55.8 | 9 | 1687 | | 564.38 |
| 6 | 2 | 66.7 | 9 | 1064 | | 752.54 |
| 7 | 2 | 55.5 | 9 | 1499 | | 547.88 |
| 8 | 3 | 73.6 | 9 | 1098 | 1331 | 50.9 |
| 9 | 2 | 84.8 | 9 | 1336 | | 345.4 |
| 10 | 3 | 61.1 | 9 | 1282 | 1920 | 106.13 |
| 11 | 2 | 85.6 | 9 | 1107 | | 83.73 |
| 12 | 2 | 62.9 | 9 | 1525 | | 397.37 |
| 13 | 2 | 57.4 | 9 | 1992 | | 726.7 |
| 14 | 2 | 77.9 | 9 | 1072 | | 125.9 |
| 15 | 2 | 86.7 | 9 | 1831 | | 437.8 |

**Radar Type 5_Trial 29**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 2 | 67.1 | 10 | 1055 | | 481.345 |
| 2 | 3 | 50 | 10 | 1213 | 1643 | 632.52 |
| 3 | 2 | 76.8 | 10 | 1334 | | 672.44 |
| 4 | 2 | 99.3 | 10 | 1324 | | 695.39 |
| 5 | 2 | 68.3 | 10 | 1866 | | 577.63 |
| 6 | 2 | 70.3 | 10 | 1652 | | 792.52 |
| 7 | 2 | 64.4 | 10 | 1001 | | 83.8 |
| 8 | 1 | 95.8 | 10 | | | 107.83 |
| 9 | 2 | 99.7 | 10 | 1003 | | 626.97 |
| 10 | 2 | 78.9 | 10 | 1527 | | 608.2 |
| 11 | 3 | 66.9 | 10 | 1852 | 1607 | 473.19 |
| 12 | 2 | 88.1 | 10 | 1510 | | 772.21 |
| 13 | 2 | 82.1 | 10 | 1445 | | 80.27 |
| 14 | 2 | 95 | 10 | 1235 | | 344.5 |
| 15 | 3 | 73.9 | 10 | 1507 | 1808 | 714.3 |

**Radar Type 5_Trial 30**

| Burst | Number of Pulses | Pulse Width (µsec) | Chirp Width (MHz) | Pulse 1-to-2 PRI (µsec) | Pulse 2-to-3 PRI (µsec) | Start Location Within Interval (msec) |
|---|---|---|---|---|---|---|
| 1 | 1 | 58 | 18 | | | 469.686 |
| 2 | 1 | 57 | 18 | | | 450.96 |
| 3 | 2 | 82.1 | 18 | 1982 | | 873.85 |
| 4 | 2 | 97.6 | 18 | 1472 | | 202.25 |
| 5 | 3 | 98.3 | 18 | 1707 | 1314 | 347.85 |
| 6 | 1 | 53.3 | 18 | | | 157.42 |
| 7 | 3 | 56.5 | 18 | 1764 | 1440 | 351.24 |
| 8 | 2 | 96.2 | 18 | 1326 | | 863.14 |
| 9 | 2 | 52.6 | 18 | 1987 | | 48.25 |
| 10 | 3 | 97.8 | 18 | 1403 | 1958 | 718.08 |
| 11 | 2 | 64 | 18 | 1960 | | 589.5 |
| 12 | 2 | 73.1 | 18 | 1789 | | 945.7 |

## *Frequency Hopping Radar Test Waveforms*

**Radar Type 6_Trial 1**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.660 | 5.466 | 5.403 | 5.556 | 5.706 | 5.272 | 5.313 | 5.443 | 5.505 | 5.548 |
| 2 | 5.421 | 5.292 | 5.493 | 5.324 | 5.641 | 5.285 | 5.542 | 5.571 | 5.695 | 5.439 |
| 3 | 5.566 | 5.413 | 5.516 | 5.399 | 5.588 | 5.690 | 5.299 | 5.642 | 5.380 | 5.303 |
| 4 | 5.559 | 5.681 | 5.298 | 5.640 | 5.392 | 5.699 | 5.444 | 5.339 | 5.491 | 5.310 |
| 5 | 5.685 | 5.315 | 5.266 | 5.381 | 5.633 | 5.348 | 5.503 | 5.480 | 5.442 | 5.602 |
| 6 | 5.473 | 5.404 | 5.330 | 5.562 | 5.688 | 5.397 | 5.325 | 5.423 | 5.558 | 5.333 |
| 7 | 5.295 | 5.306 | 5.398 | 5.312 | 5.604 | 5.323 | 5.341 | 5.628 | 5.692 | 5.483 |
| 8 | 5.487 | 5.630 | 5.408 | 5.481 | 5.609 | 5.490 | 5.568 | 5.646 | 5.463 | 5.658 |
| 9 | 5.576 | 5.309 | 5.541 | 5.406 | 5.538 | 5.582 | 5.663 | 5.250 | 5.351 | 5.385 |
| 10 | 5.433 | 5.307 | 5.636 | 5.482 | 5.596 | 5.257 | 5.479 | 5.617 | 5.531 | 5.457 |

**Radar Type 6_Trial 2**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.404 | 5.673 | 5.496 | 5.300 | 5.619 | 5.393 | 5.663 | 5.334 | 5.310 | 5.568 |
| 2 | 5.601 | 5.538 | 5.659 | 5.539 | 5.425 | 5.363 | 5.282 | 5.433 | 5.301 | 5.556 |
| 3 | 5.359 | 5.405 | 5.452 | 5.490 | 5.480 | 5.434 | 5.307 | 5.329 | 5.295 | 5.364 |
| 4 | 5.375 | 5.508 | 5.472 | 5.605 | 5.474 | 5.372 | 5.645 | 5.335 | 5.297 | 5.595 |
| 5 | 5.621 | 5.694 | 5.477 | 5.627 | 5.718 | 5.436 | 5.628 | 5.709 | 5.279 | 5.411 |
| 6 | 5.544 | 5.642 | 5.346 | 5.686 | 5.592 | 5.580 | 5.367 | 5.700 | 5.475 | 5.294 |
| 7 | 5.357 | 5.529 | 5.421 | 5.518 | 5.408 | 5.400 | 5.287 | 5.273 | 5.286 | 5.385 |
| 8 | 5.315 | 5.468 | 5.602 | 5.370 | 5.314 | 5.582 | 5.565 | 5.644 | 5.353 | 5.702 |
| 9 | 5.557 | 5.611 | 5.466 | 5.306 | 5.724 | 5.704 | 5.377 | 5.494 | 5.255 | 5.665 |
| 10 | 5.470 | 5.263 | 5.447 | 5.344 | 5.251 | 5.599 | 5.253 | 5.261 | 5.591 | 5.476 |

**Radar Type 6_Trial 3**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.293 | 5.250 | 5.340 | 5.552 | 5.484 | 5.464 | 5.280 | 5.611 | 5.627 | 5.283 |
| 2 | 5.639 | 5.674 | 5.420 | 5.447 | 5.267 | 5.593 | 5.500 | 5.290 | 5.353 | 5.586 |
| 3 | 5.258 | 5.511 | 5.680 | 5.608 | 5.548 | 5.330 | 5.264 | 5.376 | 5.448 | 5.339 |
| 4 | 5.382 | 5.616 | 5.529 | 5.565 | 5.541 | 5.533 | 5.367 | 5.491 | 5.399 | 5.479 |
| 5 | 5.413 | 5.378 | 5.506 | 5.691 | 5.308 | 5.494 | 5.287 | 5.374 | 5.415 | 5.686 |
| 6 | 5.477 | 5.590 | 5.309 | 5.636 | 5.630 | 5.719 | 5.295 | 5.472 | 5.620 | 5.564 |
| 7 | 5.482 | 5.655 | 5.503 | 5.662 | 5.496 | 5.568 | 5.701 | 5.342 | 5.381 | 5.251 |
| 8 | 5.326 | 5.344 | 5.537 | 5.254 | 5.315 | 5.266 | 5.285 | 5.517 | 5.403 | 5.625 |
| 9 | 5.508 | 5.462 | 5.313 | 5.501 | 5.659 | 5.397 | 5.598 | 5.534 | 5.602 | 5.470 |
| 10 | 5.350 | 5.582 | 5.302 | 5.336 | 5.554 | 5.518 | 5.314 | 5.424 | 5.261 | 5.260 |

**Radar Type 6_Trial 4**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.328 | 5.322 | 5.593 | 5.713 | 5.269 | 5.532 | 5.448 | 5.687 | 5.427 | 5.270 |
| 2 | 5.523 | 5.264 | 5.293 | 5.336 | 5.715 | 5.522 | 5.458 | 5.419 | 5.671 | 5.519 |
| 3 | 5.333 | 5.271 | 5.570 | 5.509 | 5.387 | 5.616 | 5.327 | 5.254 | 5.633 | 5.376 |
| 4 | 5.344 | 5.352 | 5.331 | 5.639 | 5.424 | 5.699 | 5.428 | 5.581 | 5.285 | 5.388 |
| 5 | 5.432 | 5.625 | 5.300 | 5.589 | 5.324 | 5.358 | 5.615 | 5.396 | 5.676 | 5.610 |
| 6 | 5.403 | 5.647 | 5.526 | 5.283 | 5.504 | 5.456 | 5.719 | 5.382 | 5.525 | 5.683 |
| 7 | 5.407 | 5.426 | 5.638 | 5.618 | 5.720 | 5.546 | 5.361 | 5.652 | 5.502 | 5.351 |
| 8 | 5.429 | 5.360 | 5.612 | 5.710 | 5.437 | 5.543 | 5.461 | 5.465 | 5.677 | 5.603 |
| 9 | 5.582 | 5.636 | 5.281 | 5.369 | 5.549 | 5.256 | 5.555 | 5.298 | 5.583 | 5.400 |
| 10 | 5.348 | 5.692 | 5.471 | 5.542 | 5.599 | 5.304 | 5.273 | 5.499 | 5.565 | 5.721 |

**Radar Type 6_Trial 5**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.673 | 5.701 | 5.514 | 5.442 | 5.655 | 5.477 | 5.502 | 5.649 | 5.325 | 5.445 |
| 2 | 5.432 | 5.536 | 5.704 | 5.644 | 5.307 | 5.349 | 5.429 | 5.634 | 5.651 | 5.386 |
| 3 | 5.653 | 5.444 | 5.451 | 5.363 | 5.684 | 5.592 | 5.588 | 5.535 | 5.700 | 5.441 |
| 4 | 5.507 | 5.364 | 5.255 | 5.357 | 5.647 | 5.664 | 5.365 | 5.324 | 5.629 | 5.698 |
| 5 | 5.573 | 5.687 | 5.654 | 5.390 | 5.319 | 5.561 | 5.635 | 5.352 | 5.696 | 5.401 |
| 6 | 5.331 | 5.550 | 5.420 | 5.557 | 5.559 | 5.417 | 5.489 | 5.569 | 5.504 | 5.288 |
| 7 | 5.603 | 5.642 | 5.641 | 5.484 | 5.370 | 5.475 | 5.269 | 5.328 | 5.600 | 5.301 |
| 8 | 5.611 | 5.546 | 5.311 | 5.678 | 5.335 | 5.606 | 5.299 | 5.659 | 5.462 | 5.405 |
| 9 | 5.338 | 5.344 | 5.541 | 5.252 | 5.483 | 5.595 | 5.648 | 5.289 | 5.521 | 5.615 |
| 10 | 5.702 | 5.446 | 5.459 | 5.433 | 5.374 | 5.565 | 5.542 | 5.699 | 5.623 | 5.487 |

**Radar Type 6_Trial 6**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.392 | 5.673 | 5.358 | 5.413 | 5.468 | 5.298 | 5.440 | 5.374 | 5.453 | 5.373 |
| 2 | 5.281 | 5.393 | 5.575 | 5.276 | 5.250 | 5.259 | 5.352 | 5.687 | 5.547 | 5.483 |
| 3 | 5.670 | 5.708 | 5.327 | 5.554 | 5.544 | 5.454 | 5.499 | 5.702 | 5.378 | 5.351 |
| 4 | 5.640 | 5.571 | 5.380 | 5.717 | 5.579 | 5.714 | 5.493 | 5.339 | 5.278 | 5.449 |
| 5 | 5.710 | 5.560 | 5.326 | 5.638 | 5.470 | 5.304 | 5.405 | 5.525 | 5.353 | 5.682 |
| 6 | 5.578 | 5.457 | 5.263 | 5.287 | 5.564 | 5.318 | 5.407 | 5.712 | 5.696 | 5.558 |
| 7 | 5.598 | 5.349 | 5.675 | 5.521 | 5.382 | 5.328 | 5.586 | 5.319 | 5.645 | 5.491 |
| 8 | 5.492 | 5.366 | 5.370 | 5.681 | 5.469 | 5.329 | 5.289 | 5.536 | 5.401 | 5.519 |
| 9 | 5.372 | 5.607 | 5.534 | 5.520 | 5.431 | 5.266 | 5.555 | 5.260 | 5.701 | 5.649 |
| 10 | 5.705 | 5.502 | 5.576 | 5.390 | 5.704 | 5.458 | 5.417 | 5.466 | 5.507 | 5.362 |

**Radar Type 6_Trial 7**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.614 | 5.478 | 5.509 | 5.717 | 5.482 | 5.493 | 5.400 | 5.532 | 5.302 | 5.586 |
| 2 | 5.447 | 5.466 | 5.263 | 5.591 | 5.716 | 5.572 | 5.557 | 5.288 | 5.414 | 5.562 |
| 3 | 5.628 | 5.513 | 5.337 | 5.708 | 5.511 | 5.313 | 5.262 | 5.483 | 5.665 | 5.626 |
| 4 | 5.287 | 5.627 | 5.442 | 5.578 | 5.340 | 5.384 | 5.365 | 5.526 | 5.334 | 5.406 |
| 5 | 5.324 | 5.486 | 5.389 | 5.450 | 5.679 | 5.534 | 5.281 | 5.301 | 5.674 | 5.601 |
| 6 | 5.510 | 5.341 | 5.719 | 5.685 | 5.677 | 5.300 | 5.694 | 5.377 | 5.723 | 5.690 |
| 7 | 5.283 | 5.397 | 5.336 | 5.538 | 5.440 | 5.353 | 5.278 | 5.521 | 5.622 | 5.571 |
| 8 | 5.425 | 5.317 | 5.508 | 5.284 | 5.405 | 5.550 | 5.632 | 5.630 | 5.471 | 5.407 |
| 9 | 5.598 | 5.260 | 5.589 | 5.332 | 5.609 | 5.704 | 5.581 | 5.697 | 5.479 | 5.279 |
| 10 | 5.525 | 5.517 | 5.427 | 5.316 | 5.559 | 5.590 | 5.502 | 5.678 | 5.327 | 5.413 |

**Radar Type 6_Trial 8**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.432 | 5.550 | 5.563 | 5.351 | 5.534 | 5.700 | 5.413 | 5.623 | 5.511 | 5.339 |
| 2 | 5.419 | 5.577 | 5.687 | 5.605 | 5.362 | 5.469 | 5.712 | 5.554 | 5.445 | 5.662 |
| 3 | 5.505 | 5.271 | 5.487 | 5.527 | 5.441 | 5.415 | 5.328 | 5.519 | 5.716 | 5.470 |
| 4 | 5.290 | 5.659 | 5.431 | 5.349 | 5.391 | 5.543 | 5.631 | 5.329 | 5.449 | 5.541 |
| 5 | 5.326 | 5.310 | 5.430 | 5.535 | 5.311 | 5.610 | 5.498 | 5.607 | 5.368 | 5.297 |
| 6 | 5.521 | 5.647 | 5.324 | 5.439 | 5.444 | 5.696 | 5.697 | 5.372 | 5.673 | 5.468 |
| 7 | 5.639 | 5.364 | 5.305 | 5.422 | 5.460 | 5.690 | 5.509 | 5.682 | 5.382 | 5.531 |
| 8 | 5.645 | 5.549 | 5.692 | 5.506 | 5.499 | 5.658 | 5.436 | 5.450 | 5.279 | 5.542 |
| 9 | 5.343 | 5.490 | 5.507 | 5.657 | 5.532 | 5.496 | 5.277 | 5.355 | 5.545 | 5.285 |
| 10 | 5.572 | 5.556 | 5.510 | 5.437 | 5.504 | 5.523 | 5.399 | 5.528 | 5.689 | 5.475 |

**Radar Type 6_Trial 9**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.713 | 5.519 | 5.380 | 5.417 | 5.399 | 5.272 | 5.415 | 5.299 | 5.486 | 5.654 |
| 2 | 5.393 | 5.450 | 5.693 | 5.328 | 5.579 | 5.715 | 5.344 | 5.714 | 5.407 | 5.556 |
| 3 | 5.622 | 5.677 | 5.313 | 5.384 | 5.637 | 5.475 | 5.470 | 5.643 | 5.645 | 5.596 |
| 4 | 5.326 | 5.577 | 5.485 | 5.361 | 5.651 | 5.490 | 5.542 | 5.686 | 5.614 | 5.266 |
| 5 | 5.319 | 5.275 | 5.503 | 5.394 | 5.404 | 5.649 | 5.559 | 5.511 | 5.457 | 5.663 |
| 6 | 5.512 | 5.343 | 5.392 | 5.432 | 5.270 | 5.717 | 5.476 | 5.491 | 5.569 | 5.389 |
| 7 | 5.540 | 5.681 | 5.354 | 5.462 | 5.597 | 5.712 | 5.611 | 5.666 | 5.315 | 5.335 |
| 8 | 5.684 | 5.604 | 5.694 | 5.561 | 5.423 | 5.544 | 5.459 | 5.499 | 5.277 | 5.673 |
| 9 | 5.718 | 5.372 | 5.662 | 5.271 | 5.437 | 5.454 | 5.310 | 5.408 | 5.661 | 5.697 |
| 10 | 5.688 | 5.721 | 5.528 | 5.554 | 5.573 | 5.253 | 5.436 | 5.469 | 5.560 | 5.633 |

**Radar Type 6_Trial 10**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.288 | 5.404 | 5.424 | 5.319 | 5.287 | 5.556 | 5.327 | 5.704 | 5.272 | 5.272 |
| 2 | 5.294 | 5.359 | 5.513 | 5.573 | 5.317 | 5.587 | 5.675 | 5.368 | 5.554 | 5.554 |
| 3 | 5.670 | 5.630 | 5.387 | 5.682 | 5.604 | 5.618 | 5.608 | 5.619 | 5.574 | 5.574 |
| 4 | 5.425 | 5.479 | 5.532 | 5.486 | 5.720 | 5.667 | 5.485 | 5.577 | 5.373 | 5.373 |
| 5 | 5.538 | 5.534 | 5.295 | 5.717 | 5.256 | 5.662 | 5.501 | 5.410 | 5.285 | 5.285 |
| 6 | 5.537 | 5.377 | 5.552 | 5.268 | 5.254 | 5.297 | 5.636 | 5.409 | 5.261 | 5.261 |
| 7 | 5.521 | 5.321 | 5.286 | 5.629 | 5.313 | 5.428 | 5.383 | 5.454 | 5.484 | 5.484 |
| 8 | 5.665 | 5.564 | 5.433 | 5.326 | 5.375 | 5.517 | 5.328 | 5.504 | 5.693 | 5.693 |
| 9 | 5.631 | 5.531 | 5.388 | 5.723 | 5.439 | 5.465 | 5.512 | 5.264 | 5.637 | 5.637 |
| 10 | 5.413 | 5.307 | 5.277 | 5.339 | 5.708 | 5.393 | 5.472 | 5.580 | 5.489 | 5.489 |

**Radar Type 6_Trial 11**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.676 | 5.406 | 5.365 | 5.313 | 5.670 | 5.460 | 5.295 | 5.570 | 5.603 | 5.298 |
| 2 | 5.453 | 5.318 | 5.681 | 5.703 | 5.583 | 5.326 | 5.281 | 5.642 | 5.262 | 5.574 |
| 3 | 5.661 | 5.544 | 5.335 | 5.376 | 5.312 | 5.591 | 5.590 | 5.364 | 5.260 | 5.678 |
| 4 | 5.631 | 5.499 | 5.500 | 5.492 | 5.288 | 5.449 | 5.484 | 5.296 | 5.526 | 5.643 |
| 5 | 5.573 | 5.304 | 5.402 | 5.424 | 5.388 | 5.557 | 5.625 | 5.593 | 5.600 | 5.363 |
| 6 | 5.398 | 5.677 | 5.300 | 5.329 | 5.429 | 5.606 | 5.401 | 5.415 | 5.608 | 5.251 |
| 7 | 5.581 | 5.715 | 5.588 | 5.419 | 5.321 | 5.355 | 5.680 | 5.359 | 5.381 | 5.575 |
| 8 | 5.319 | 5.347 | 5.462 | 5.533 | 5.264 | 5.504 | 5.267 | 5.432 | 5.614 | 5.421 |
| 9 | 5.490 | 5.358 | 5.696 | 5.664 | 5.303 | 5.309 | 5.532 | 5.476 | 5.666 | 5.472 |
| 10 | 5.378 | 5.408 | 5.416 | 5.626 | 5.627 | 5.390 | 5.522 | 5.310 | 5.668 | 5.520 |

**Radar Type 6_Trial 12**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.506 | 5.591 | 5.380 | 5.626 | 5.637 | 5.701 | 5.444 | 5.455 | 5.598 | 5.420 |
| 2 | 5.404 | 5.290 | 5.486 | 5.323 | 5.545 | 5.572 | 5.335 | 5.574 | 5.512 | 5.395 |
| 3 | 5.526 | 5.458 | 5.305 | 5.490 | 5.550 | 5.565 | 5.712 | 5.422 | 5.435 | 5.466 |
| 4 | 5.462 | 5.575 | 5.577 | 5.409 | 5.275 | 5.391 | 5.253 | 5.503 | 5.482 | 5.623 |
| 5 | 5.306 | 5.421 | 5.349 | 5.394 | 5.392 | 5.448 | 5.438 | 5.566 | 5.649 | 5.423 |
| 6 | 5.433 | 5.695 | 5.579 | 5.273 | 5.594 | 5.459 | 5.687 | 5.294 | 5.337 | 5.498 |
| 7 | 5.360 | 5.442 | 5.596 | 5.693 | 5.719 | 5.382 | 5.717 | 5.372 | 5.510 | 5.491 |
| 8 | 5.607 | 5.255 | 5.345 | 5.471 | 5.451 | 5.388 | 5.601 | 5.447 | 5.720 | 5.553 |
| 9 | 5.629 | 5.602 | 5.315 | 5.261 | 5.605 | 5.657 | 5.383 | 5.301 | 5.655 | 5.613 |
| 10 | 5.419 | 5.549 | 5.675 | 5.627 | 5.532 | 5.494 | 5.576 | 5.375 | 5.724 | 5.509 |

**Radar Type 6_Trial 13**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.300 | 5.419 | 5.383 | 5.685 | 5.316 | 5.289 | 5.258 | 5.324 | 5.362 | 5.414 |
| 2 | 5.698 | 5.582 | 5.609 | 5.635 | 5.257 | 5.280 | 5.331 | 5.518 | 5.365 | 5.253 |
| 3 | 5.348 | 5.296 | 5.431 | 5.599 | 5.673 | 5.490 | 5.623 | 5.716 | 5.464 | 5.637 |
| 4 | 5.415 | 5.271 | 5.264 | 5.651 | 5.275 | 5.387 | 5.591 | 5.587 | 5.603 | 5.294 |
| 5 | 5.485 | 5.507 | 5.663 | 5.717 | 5.600 | 5.313 | 5.627 | 5.460 | 5.668 | 5.450 |
| 6 | 5.475 | 5.347 | 5.550 | 5.417 | 5.697 | 5.453 | 5.519 | 5.489 | 5.532 | 5.611 |
| 7 | 5.503 | 5.568 | 5.291 | 5.323 | 5.506 | 5.678 | 5.422 | 5.544 | 5.549 | 5.653 |
| 8 | 5.484 | 5.584 | 5.309 | 5.400 | 5.579 | 5.371 | 5.670 | 5.445 | 5.454 | 5.594 |
| 9 | 5.413 | 5.448 | 5.405 | 5.597 | 5.336 | 5.474 | 5.662 | 5.567 | 5.423 | 5.525 |
| 10 | 5.605 | 5.378 | 5.369 | 5.477 | 5.517 | 5.440 | 5.505 | 5.689 | 5.683 | 5.471 |

**Radar Type 6_Trial 14**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.456 | 5.359 | 5.336 | 5.522 | 5.484 | 5.457 | 5.493 | 5.505 | 5.518 | 5.455 |
| 2 | 5.677 | 5.276 | 5.502 | 5.630 | 5.544 | 5.688 | 5.381 | 5.674 | 5.629 | 5.441 |
| 3 | 5.447 | 5.653 | 5.312 | 5.476 | 5.281 | 5.258 | 5.319 | 5.717 | 5.250 | 5.614 |
| 4 | 5.591 | 5.592 | 5.480 | 5.252 | 5.275 | 5.658 | 5.320 | 5.611 | 5.563 | 5.708 |
| 5 | 5.576 | 5.672 | 5.644 | 5.331 | 5.676 | 5.390 | 5.494 | 5.389 | 5.624 | 5.365 |
| 6 | 5.606 | 5.713 | 5.504 | 5.521 | 5.338 | 5.645 | 5.640 | 5.478 | 5.702 | 5.671 |
| 7 | 5.625 | 5.570 | 5.673 | 5.321 | 5.257 | 5.682 | 5.296 | 5.334 | 5.302 | 5.364 |
| 8 | 5.605 | 5.622 | 5.330 | 5.716 | 5.690 | 5.615 | 5.715 | 5.453 | 5.618 | 5.429 |
| 9 | 5.340 | 5.317 | 5.527 | 5.556 | 5.649 | 5.586 | 5.402 | 5.543 | 5.490 | 5.675 |
| 10 | 5.352 | 5.703 | 5.723 | 5.278 | 5.588 | 5.370 | 5.572 | 5.310 | 5.542 | 5.696 |

**Radar Type 6_Trial 15**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.621 | 5.599 | 5.321 | 5.630 | 5.281 | 5.635 | 5.625 | 5.610 | 5.418 | 5.588 |
| 2 | 5.435 | 5.453 | 5.535 | 5.319 | 5.302 | 5.347 | 5.421 | 5.681 | 5.661 | 5.328 |
| 3 | 5.663 | 5.648 | 5.670 | 5.495 | 5.552 | 5.272 | 5.656 | 5.672 | 5.391 | 5.587 |
| 4 | 5.346 | 5.292 | 5.467 | 5.377 | 5.301 | 5.477 | 5.716 | 5.358 | 5.578 | 5.570 |
| 5 | 5.378 | 5.256 | 5.274 | 5.671 | 5.250 | 5.482 | 5.541 | 5.596 | 5.580 | 5.268 |
| 6 | 5.503 | 5.614 | 5.442 | 5.704 | 5.698 | 5.517 | 5.611 | 5.409 | 5.423 | 5.449 |
| 7 | 5.295 | 5.574 | 5.344 | 5.430 | 5.536 | 5.558 | 5.696 | 5.469 | 5.624 | 5.283 |
| 8 | 5.266 | 5.666 | 5.397 | 5.633 | 5.583 | 5.445 | 5.323 | 5.438 | 5.547 | 5.705 |
| 9 | 5.466 | 5.413 | 5.331 | 5.510 | 5.251 | 5.411 | 5.439 | 5.465 | 5.526 | 5.398 |
| 10 | 5.446 | 5.559 | 5.498 | 5.350 | 5.374 | 5.304 | 5.506 | 5.345 | 5.589 | 5.499 |

**Radar Type 6_Trial 16**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.639 | 5.648 | 5.550 | 5.423 | 5.354 | 5.415 | 5.341 | 5.309 | 5.397 | 5.612 |
| 2 | 5.705 | 5.590 | 5.528 | 5.597 | 5.654 | 5.474 | 5.339 | 5.589 | 5.511 | 5.513 |
| 3 | 5.425 | 5.676 | 5.527 | 5.690 | 5.669 | 5.418 | 5.277 | 5.606 | 5.478 | 5.476 |
| 4 | 5.358 | 5.681 | 5.587 | 5.395 | 5.479 | 5.292 | 5.695 | 5.678 | 5.556 | 5.345 |
| 5 | 5.608 | 5.714 | 5.407 | 5.318 | 5.685 | 5.329 | 5.497 | 5.572 | 5.466 | 5.717 |
| 6 | 5.288 | 5.656 | 5.518 | 5.464 | 5.592 | 5.711 | 5.431 | 5.356 | 5.591 | 5.666 |
| 7 | 5.481 | 5.286 | 5.305 | 5.625 | 5.504 | 5.385 | 5.543 | 5.462 | 5.250 | 5.533 |
| 8 | 5.289 | 5.579 | 5.369 | 5.493 | 5.400 | 5.525 | 5.552 | 5.542 | 5.359 | 5.605 |
| 9 | 5.355 | 5.708 | 5.328 | 5.364 | 5.489 | 5.569 | 5.391 | 5.461 | 5.517 | 5.414 |
| 10 | 5.441 | 5.261 | 5.672 | 5.467 | 5.465 | 5.704 | 5.330 | 5.501 | 5.433 | 5.558 |

**Radar Type 6_Trial 17**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.567 | 5.668 | 5.331 | 5.484 | 5.599 | 5.637 | 5.289 | 5.627 | 5.721 | 5.689 |
| 2 | 5.693 | 5.339 | 5.373 | 5.333 | 5.541 | 5.667 | 5.322 | 5.557 | 5.285 | 5.722 |
| 3 | 5.663 | 5.563 | 5.644 | 5.283 | 5.315 | 5.275 | 5.264 | 5.658 | 5.279 | 5.338 |
| 4 | 5.308 | 5.328 | 5.524 | 5.718 | 5.546 | 5.433 | 5.442 | 5.307 | 5.311 | 5.527 |
| 5 | 5.281 | 5.355 | 5.405 | 5.486 | 5.523 | 5.374 | 5.598 | 5.535 | 5.345 | 5.469 |
| 6 | 5.515 | 5.719 | 5.451 | 5.269 | 5.614 | 5.503 | 5.559 | 5.600 | 5.487 | 5.525 |
| 7 | 5.455 | 5.379 | 5.564 | 5.554 | 5.656 | 5.715 | 5.702 | 5.321 | 5.571 | 5.720 |
| 8 | 5.293 | 5.623 | 5.502 | 5.295 | 5.387 | 5.344 | 5.621 | 5.577 | 5.259 | 5.402 |
| 9 | 5.368 | 5.570 | 5.553 | 5.560 | 5.530 | 5.263 | 5.471 | 5.655 | 5.371 | 5.346 |
| 10 | 5.680 | 5.545 | 5.290 | 5.357 | 5.585 | 5.616 | 5.652 | 5.507 | 5.692 | 5.420 |

**Radar Type 6_Trial 18**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.696 | 5.511 | 5.397 | 5.490 | 5.356 | 5.475 | 5.333 | 5.531 | 5.433 | 5.281 |
| 2 | 5.451 | 5.275 | 5.722 | 5.719 | 5.367 | 5.689 | 5.500 | 5.251 | 5.316 | 5.714 |
| 3 | 5.446 | 5.419 | 5.646 | 5.368 | 5.305 | 5.623 | 5.365 | 5.678 | 5.642 | 5.579 |
| 4 | 5.664 | 5.594 | 5.273 | 5.534 | 5.568 | 5.457 | 5.418 | 5.398 | 5.700 | 5.337 |
| 5 | 5.662 | 5.342 | 5.270 | 5.400 | 5.638 | 5.261 | 5.648 | 5.718 | 5.702 | 5.584 |
| 6 | 5.606 | 5.625 | 5.622 | 5.634 | 5.394 | 5.508 | 5.562 | 5.279 | 5.366 | 5.437 |
| 7 | 5.465 | 5.635 | 5.673 | 5.683 | 5.672 | 5.470 | 5.268 | 5.496 | 5.320 | 5.262 |
| 8 | 5.417 | 5.668 | 5.430 | 5.274 | 5.353 | 5.466 | 5.604 | 5.712 | 5.595 | 5.266 |
| 9 | 5.440 | 5.378 | 5.404 | 5.452 | 5.524 | 5.352 | 5.421 | 5.603 | 5.319 | 5.395 |
| 10 | 5.406 | 5.724 | 5.616 | 5.667 | 5.439 | 5.501 | 5.380 | 5.311 | 5.271 | 5.360 |

**Radar Type 6_Trial 19**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.497 | 5.458 | 5.410 | 5.548 | 5.326 | 5.598 | 5.387 | 5.695 | 5.545 | 5.520 |
| 2 | 5.257 | 5.684 | 5.423 | 5.486 | 5.450 | 5.576 | 5.475 | 5.611 | 5.538 | 5.572 |
| 3 | 5.630 | 5.661 | 5.690 | 5.718 | 5.552 | 5.696 | 5.253 | 5.348 | 5.369 | 5.355 |
| 4 | 5.626 | 5.513 | 5.639 | 5.583 | 5.409 | 5.459 | 5.644 | 5.419 | 5.435 | 5.721 |
| 5 | 5.418 | 5.701 | 5.259 | 5.493 | 5.637 | 5.477 | 5.438 | 5.272 | 5.503 | 5.541 |
| 6 | 5.694 | 5.693 | 5.592 | 5.263 | 5.282 | 5.261 | 5.516 | 5.252 | 5.390 | 5.568 |
| 7 | 5.650 | 5.266 | 5.464 | 5.405 | 5.627 | 5.436 | 5.289 | 5.710 | 5.462 | 5.712 |
| 8 | 5.547 | 5.421 | 5.720 | 5.640 | 5.658 | 5.566 | 5.331 | 5.605 | 5.251 | 5.555 |
| 9 | 5.388 | 5.303 | 5.260 | 5.648 | 5.679 | 5.673 | 5.524 | 5.460 | 5.527 | 5.655 |
| 10 | 5.476 | 5.269 | 5.529 | 5.632 | 5.434 | 5.500 | 5.340 | 5.669 | 5.607 | 5.623 |

**Radar Type 6_Trial 20**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.481 | 5.251 | 5.284 | 5.711 | 5.411 | 5.693 | 5.713 | 5.718 | 5.504 | 5.342 |
| 2 | 5.465 | 5.352 | 5.455 | 5.689 | 5.313 | 5.300 | 5.691 | 5.651 | 5.391 | 5.670 |
| 3 | 5.457 | 5.716 | 5.346 | 5.355 | 5.389 | 5.445 | 5.562 | 5.381 | 5.676 | 5.372 |
| 4 | 5.327 | 5.450 | 5.435 | 5.253 | 5.351 | 5.474 | 5.551 | 5.667 | 5.591 | 5.698 |
| 5 | 5.476 | 5.259 | 5.722 | 5.527 | 5.522 | 5.458 | 5.588 | 5.497 | 5.603 | 5.357 |
| 6 | 5.688 | 5.338 | 5.572 | 5.464 | 5.505 | 5.370 | 5.557 | 5.297 | 5.277 | 5.443 |
| 7 | 5.512 | 5.644 | 5.569 | 5.626 | 5.456 | 5.531 | 5.519 | 5.565 | 5.697 | 5.334 |
| 8 | 5.369 | 5.521 | 5.400 | 5.305 | 5.446 | 5.382 | 5.638 | 5.495 | 5.362 | 5.491 |
| 9 | 5.453 | 5.709 | 5.684 | 5.587 | 5.335 | 5.645 | 5.373 | 5.402 | 5.553 | 5.714 |
| 10 | 5.273 | 5.331 | 5.597 | 5.561 | 5.526 | 5.628 | 5.258 | 5.579 | 5.412 | 5.618 |

**Radar Type 6_Trial 21**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.376 | 5.374 | 5.581 | 5.616 | 5.568 | 5.644 | 5.558 | 5.328 | 5.441 | 5.696 |
| 2 | 5.266 | 5.712 | 5.295 | 5.336 | 5.596 | 5.577 | 5.487 | 5.582 | 5.533 | 5.672 |
| 3 | 5.522 | 5.461 | 5.530 | 5.541 | 5.408 | 5.529 | 5.435 | 5.609 | 5.515 | 5.422 |
| 4 | 5.714 | 5.599 | 5.259 | 5.379 | 5.286 | 5.421 | 5.444 | 5.553 | 5.396 | 5.356 |
| 5 | 5.440 | 5.571 | 5.507 | 5.397 | 5.319 | 5.439 | 5.473 | 5.462 | 5.615 | 5.594 |
| 6 | 5.489 | 5.426 | 5.323 | 5.641 | 5.630 | 5.702 | 5.656 | 5.498 | 5.431 | 5.436 |
| 7 | 5.639 | 5.606 | 5.310 | 5.661 | 5.583 | 5.329 | 5.273 | 5.433 | 5.314 | 5.275 |
| 8 | 5.678 | 5.340 | 5.593 | 5.564 | 5.565 | 5.680 | 5.718 | 5.321 | 5.348 | 5.663 |
| 9 | 5.618 | 5.297 | 5.326 | 5.667 | 5.288 | 5.253 | 5.720 | 5.502 | 5.455 | 5.562 |
| 10 | 5.674 | 5.494 | 5.681 | 5.598 | 5.622 | 5.698 | 5.587 | 5.411 | 5.303 | 5.518 |

**Radar Type 6_Trial 22**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.682 | 5.421 | 5.417 | 5.281 | 5.463 | 5.272 | 5.600 | 5.656 | 5.719 | 5.374 |
| 2 | 5.330 | 5.504 | 5.284 | 5.716 | 5.450 | 5.268 | 5.304 | 5.507 | 5.403 | 5.462 |
| 3 | 5.607 | 5.313 | 5.522 | 5.378 | 5.646 | 5.451 | 5.564 | 5.493 | 5.683 | 5.573 |
| 4 | 5.648 | 5.416 | 5.283 | 5.595 | 5.604 | 5.614 | 5.400 | 5.652 | 5.269 | 5.655 |
| 5 | 5.695 | 5.367 | 5.254 | 5.668 | 5.553 | 5.572 | 5.649 | 5.264 | 5.442 | 5.401 |
| 6 | 5.673 | 5.538 | 5.444 | 5.586 | 5.618 | 5.528 | 5.419 | 5.510 | 5.658 | 5.666 |
| 7 | 5.558 | 5.680 | 5.469 | 5.287 | 5.386 | 5.710 | 5.296 | 5.323 | 5.579 | 5.441 |
| 8 | 5.720 | 5.591 | 5.316 | 5.675 | 5.306 | 5.320 | 5.447 | 5.691 | 5.387 | 5.513 |
| 9 | 5.388 | 5.344 | 5.310 | 5.641 | 5.435 | 5.351 | 5.541 | 5.376 | 5.381 | 5.519 |
| 10 | 5.384 | 5.413 | 5.647 | 5.637 | 5.353 | 5.467 | 5.539 | 5.471 | 5.433 | 5.370 |

**Radar Type 6_Trial 23**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.271 | 5.571 | 5.365 | 5.315 | 5.567 | 5.364 | 5.509 | 5.655 | 5.288 | 5.336 |
| 2 | 5.625 | 5.312 | 5.261 | 5.421 | 5.613 | 5.502 | 5.493 | 5.702 | 5.551 | 5.686 |
| 3 | 5.302 | 5.563 | 5.480 | 5.649 | 5.470 | 5.499 | 5.500 | 5.471 | 5.292 | 5.277 |
| 4 | 5.432 | 5.688 | 5.362 | 5.586 | 5.699 | 5.555 | 5.310 | 5.441 | 5.265 | 5.473 |
| 5 | 5.718 | 5.607 | 5.376 | 5.534 | 5.434 | 5.355 | 5.258 | 5.689 | 5.326 | 5.476 |
| 6 | 5.263 | 5.444 | 5.478 | 5.314 | 5.371 | 5.700 | 5.453 | 5.590 | 5.333 | 5.707 |
| 7 | 5.714 | 5.490 | 5.286 | 5.462 | 5.633 | 5.461 | 5.539 | 5.367 | 5.704 | 5.379 |
| 8 | 5.482 | 5.488 | 5.516 | 5.665 | 5.378 | 5.610 | 5.651 | 5.438 | 5.408 | 5.295 |
| 9 | 5.715 | 5.396 | 5.526 | 5.701 | 5.664 | 5.667 | 5.561 | 5.363 | 5.587 | 5.313 |
| 10 | 5.585 | 5.619 | 5.418 | 5.712 | 5.656 | 5.270 | 5.635 | 5.351 | 5.608 | 5.264 |

**Radar Type 6_Trial 24**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.597 | 5.320 | 5.641 | 5.718 | 5.263 | 5.709 | 5.267 | 5.722 | 5.332 | 5.550 |
| 2 | 5.270 | 5.480 | 5.444 | 5.268 | 5.653 | 5.496 | 5.577 | 5.384 | 5.336 | 5.646 |
| 3 | 5.637 | 5.674 | 5.424 | 5.357 | 5.274 | 5.529 | 5.658 | 5.450 | 5.374 | 5.413 |
| 4 | 5.490 | 5.326 | 5.685 | 5.387 | 5.287 | 5.359 | 5.695 | 5.294 | 5.549 | 5.375 |
| 5 | 5.313 | 5.275 | 5.515 | 5.471 | 5.530 | 5.681 | 5.708 | 5.526 | 5.461 | 5.356 |
| 6 | 5.645 | 5.418 | 5.613 | 5.323 | 5.405 | 5.650 | 5.522 | 5.525 | 5.353 | 5.428 |
| 7 | 5.301 | 5.426 | 5.439 | 5.537 | 5.339 | 5.283 | 5.510 | 5.397 | 5.250 | 5.720 |
| 8 | 5.543 | 5.351 | 5.396 | 5.558 | 5.378 | 5.390 | 5.568 | 5.477 | 5.616 | 5.652 |
| 9 | 5.297 | 5.395 | 5.592 | 5.520 | 5.507 | 5.256 | 5.711 | 5.489 | 5.467 | 5.625 |
| 10 | 5.317 | 5.488 | 5.493 | 5.630 | 5.586 | 5.610 | 5.524 | 5.660 | 5.442 | 5.346 |

**Radar Type 6_Trial 25**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.668 | 5.631 | 5.329 | 5.504 | 5.259 | 5.416 | 5.475 | 5.470 | 5.513 | 5.332 |
| 2 | 5.501 | 5.615 | 5.525 | 5.682 | 5.308 | 5.576 | 5.567 | 5.680 | 5.657 | 5.604 |
| 3 | 5.313 | 5.382 | 5.272 | 5.595 | 5.469 | 5.575 | 5.421 | 5.352 | 5.355 | 5.271 |
| 4 | 5.354 | 5.561 | 5.623 | 5.720 | 5.371 | 5.568 | 5.493 | 5.496 | 5.545 | 5.333 |
| 5 | 5.302 | 5.334 | 5.258 | 5.538 | 5.316 | 5.452 | 5.291 | 5.467 | 5.539 | 5.499 |
| 6 | 5.534 | 5.520 | 5.274 | 5.613 | 5.276 | 5.301 | 5.507 | 5.579 | 5.260 | 5.303 |
| 7 | 5.718 | 5.360 | 5.512 | 5.610 | 5.722 | 5.571 | 5.697 | 5.646 | 5.453 | 5.268 |
| 8 | 5.331 | 5.429 | 5.647 | 5.592 | 5.373 | 5.451 | 5.257 | 5.367 | 5.450 | 5.266 |
| 9 | 5.456 | 5.637 | 5.254 | 5.665 | 5.630 | 5.465 | 5.585 | 5.511 | 5.253 | 5.684 |
| 10 | 5.343 | 5.408 | 5.509 | 5.362 | 5.378 | 5.564 | 5.472 | 5.454 | 5.582 | 5.405 |

**Radar Type 6_Trial 26**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.276 | 5.311 | 5.380 | 5.489 | 5.578 | 5.537 | 5.468 | 5.446 | 5.520 | 5.685 |
| 2 | 5.621 | 5.524 | 5.339 | 5.525 | 5.653 | 5.698 | 5.405 | 5.558 | 5.351 | 5.252 |
| 3 | 5.581 | 5.497 | 5.326 | 5.684 | 5.645 | 5.289 | 5.718 | 5.701 | 5.435 | 5.541 |
| 4 | 5.707 | 5.478 | 5.313 | 5.674 | 5.416 | 5.526 | 5.694 | 5.551 | 5.584 | 5.637 |
| 5 | 5.512 | 5.485 | 5.370 | 5.692 | 5.523 | 5.264 | 5.560 | 5.588 | 5.464 | 5.697 |
| 6 | 5.390 | 5.693 | 5.429 | 5.527 | 5.652 | 5.538 | 5.624 | 5.401 | 5.585 | 5.284 |
| 7 | 5.613 | 5.438 | 5.418 | 5.648 | 5.404 | 5.453 | 5.335 | 5.275 | 5.672 | 5.514 |
| 8 | 5.627 | 5.687 | 5.379 | 5.422 | 5.705 | 5.629 | 5.318 | 5.450 | 5.257 | 5.486 |
| 9 | 5.363 | 5.484 | 5.506 | 5.398 | 5.679 | 5.604 | 5.553 | 5.254 | 5.593 | 5.724 |
| 10 | 5.448 | 5.580 | 5.592 | 5.421 | 5.673 | 5.260 | 5.425 | 5.659 | 5.400 | 5.600 |

**Radar Type 6_Trial 27**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.385 | 5.610 | 5.472 | 5.586 | 5.438 | 5.577 | 5.321 | 5.397 | 5.647 | 5.663 |
| 2 | 5.256 | 5.284 | 5.518 | 5.532 | 5.422 | 5.278 | 5.645 | 5.285 | 5.678 | 5.499 |
| 3 | 5.270 | 5.263 | 5.528 | 5.585 | 5.633 | 5.254 | 5.439 | 5.454 | 5.634 | 5.598 |
| 4 | 5.542 | 5.333 | 5.419 | 5.462 | 5.576 | 5.691 | 5.544 | 5.381 | 5.489 | 5.295 |
| 5 | 5.546 | 5.427 | 5.435 | 5.708 | 5.382 | 5.531 | 5.561 | 5.311 | 5.660 | 5.682 |
| 6 | 5.399 | 5.464 | 5.405 | 5.478 | 5.570 | 5.600 | 5.298 | 5.592 | 5.490 | 5.394 |
| 7 | 5.354 | 5.564 | 5.411 | 5.547 | 5.294 | 5.266 | 5.650 | 5.331 | 5.594 | 5.604 |
| 8 | 5.273 | 5.406 | 5.407 | 5.701 | 5.388 | 5.477 | 5.710 | 5.702 | 5.515 | 5.643 |
| 9 | 5.555 | 5.483 | 5.680 | 5.459 | 5.690 | 5.700 | 5.465 | 5.658 | 5.724 | 5.632 |
| 10 | 5.395 | 5.482 | 5.379 | 5.339 | 5.314 | 5.627 | 5.606 | 5.348 | 5.672 | 5.582 |

**Radar Type 6_Trial 28**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.724 | 5.507 | 5.381 | 5.539 | 5.542 | 5.457 | 5.650 | 5.331 | 5.566 | 5.403 |
| 2 | 5.589 | 5.413 | 5.503 | 5.692 | 5.398 | 5.391 | 5.618 | 5.345 | 5.591 | 5.472 |
| 3 | 5.561 | 5.337 | 5.559 | 5.432 | 5.380 | 5.296 | 5.544 | 5.449 | 5.579 | 5.389 |
| 4 | 5.347 | 5.634 | 5.419 | 5.411 | 5.673 | 5.565 | 5.286 | 5.385 | 5.532 | 5.479 |
| 5 | 5.485 | 5.578 | 5.521 | 5.648 | 5.484 | 5.517 | 5.451 | 5.660 | 5.574 | 5.437 |
| 6 | 5.386 | 5.462 | 5.307 | 5.685 | 5.524 | 5.601 | 5.363 | 5.309 | 5.447 | 5.372 |
| 7 | 5.597 | 5.262 | 5.355 | 5.370 | 5.512 | 5.311 | 5.282 | 5.680 | 5.459 | 5.373 |
| 8 | 5.543 | 5.540 | 5.390 | 5.259 | 5.594 | 5.671 | 5.332 | 5.414 | 5.533 | 5.558 |
| 9 | 5.640 | 5.623 | 5.364 | 5.545 | 5.572 | 5.476 | 5.638 | 5.661 | 5.701 | 5.254 |
| 10 | 5.257 | 5.526 | 5.250 | 5.617 | 5.426 | 5.423 | 5.491 | 5.494 | 5.593 | 5.486 |

**Radar Type 6_Trial 29**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.544 | 5.708 | 5.644 | 5.654 | 5.678 | 5.373 | 5.693 | 5.361 | 5.308 | 5.718 |
| 2 | 5.326 | 5.338 | 5.482 | 5.523 | 5.412 | 5.329 | 5.652 | 5.608 | 5.454 | 5.645 |
| 3 | 5.448 | 5.586 | 5.711 | 5.295 | 5.350 | 5.384 | 5.618 | 5.316 | 5.581 | 5.302 |
| 4 | 5.381 | 5.610 | 5.499 | 5.536 | 5.436 | 5.283 | 5.615 | 5.680 | 5.346 | 5.279 |
| 5 | 5.470 | 5.477 | 5.672 | 5.641 | 5.439 | 5.513 | 5.582 | 5.604 | 5.613 | 5.687 |
| 6 | 5.694 | 5.684 | 5.410 | 5.474 | 5.364 | 5.390 | 5.701 | 5.585 | 5.337 | 5.685 |
| 7 | 5.427 | 5.720 | 5.311 | 5.709 | 5.343 | 5.369 | 5.532 | 5.656 | 5.383 | 5.275 |
| 8 | 5.455 | 5.465 | 5.259 | 5.396 | 5.508 | 5.280 | 5.406 | 5.570 | 5.723 | 5.593 |
| 9 | 5.534 | 5.459 | 5.303 | 5.719 | 5.441 | 5.575 | 5.256 | 5.699 | 5.375 | 5.670 |
| 10 | 5.475 | 5.548 | 5.367 | 5.576 | 5.288 | 5.460 | 5.566 | 5.637 | 5.567 | 5.517 |

**Radar Type 6_Trial 30**

| Frequency (GHz) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.399 | 5.318 | 5.647 | 5.663 | 5.490 | 5.608 | 5.556 | 5.585 | 5.415 | 5.643 |
| 2 | 5.300 | 5.285 | 5.323 | 5.540 | 5.480 | 5.639 | 5.724 | 5.278 | 5.344 | 5.400 |
| 3 | 5.570 | 5.499 | 5.491 | 5.263 | 5.341 | 5.511 | 5.670 | 5.485 | 5.654 | 5.610 |
| 4 | 5.312 | 5.666 | 5.281 | 5.637 | 5.487 | 5.584 | 5.710 | 5.398 | 5.641 | 5.374 |
| 5 | 5.299 | 5.372 | 5.653 | 5.337 | 5.432 | 5.265 | 5.512 | 5.550 | 5.405 | 5.369 |
| 6 | 5.333 | 5.335 | 5.455 | 5.373 | 5.464 | 5.704 | 5.303 | 5.386 | 5.684 | 5.503 |
| 7 | 5.456 | 5.388 | 5.367 | 5.305 | 5.531 | 5.428 | 5.414 | 5.317 | 5.527 | 5.526 |
| 8 | 5.711 | 5.651 | 5.573 | 5.276 | 5.250 | 5.532 | 5.291 | 5.677 | 5.418 | 5.705 |
| 9 | 5.590 | 5.679 | 5.463 | 5.506 | 5.259 | 5.258 | 5.282 | 5.719 | 5.419 | 5.691 |
| 10 | 5.301 | 5.454 | 5.433 | 5.404 | 5.600 | 5.553 | 5.519 | 5.387 | 5.385 | 5.575 |