FCC Part 15.407

DYNAMIC FREQUENCY SELECTION

TEST REPORT

For

AirTies Wireless Networks

Mithat Uluünlü Sokak No 23, Esentepe, Şişli, ISTANBULI, 34394 Turkey

FCC ID: Z3WAIR7430

Report Type	**Original Report**
Product Type:	**UHD Wireless Set-Top Box**
Report Number :	**RLK1810008-00E**
Report Date :	**2019/06/07**
Reviewed By:	**Jerry Chang**
Prepared By: **Bay Area Compliance Laboratories Corp.(Taiwan)** **70, Lane 169, Sec. 2, Datong Road, Xizhi Dist.,** **New Taipei City 22183, Taiwan, R.O.C.** **Tel: +886 (2)2647 6898 Fax: +886 (2) 2647 6895** **www.bacl.com.tw**	

***Note**: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Taiwan)*

Revision History

Revision	Report Number	Issue Date	Description	Author/Revised by
1.0	RLK1810008-00E	2019/06/07	Original Report	Himiko Chen

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	**AirTies Wireless Networks** Mithat Uluünlü Sokak No 23, Esentepe, Şişli, ISTANBULI, 34394 Turkey
Manufacturer	**XAVi Technologies Corp.** 3F-1, No. 27, Puding Rd., Hsinchu City 300, Taiwan
Brand(Trade) Name	**AirTies**
Product (Equipment)	**UHD Wireless Set-Top Box**
Model Name	**Air7430**
EUT Function	IEEE 802.11 an(HT20/HT40) + ac(VHT20/VHT40/VHT80) Note: A mode non-Beamforming and ac only Beamforming mode. Without TDWR.
Frequency Range	UNII-2a: 5250 MHz ~ 5350 MHz UNII-2c: 5470 MHz ~ 5725 MHz
Number of Channels	**For UNII-2a** IEEE 802.11a/n HT20/ac VHT20: 4 Channels IEEE 802.11n HT40/ac VHT40: 2 Channels IEEE 802.11ac VHT80: 1 Channels **For UNII-2c:** IEEE 802.11a/n HT20/ac VHT20: 9 Channels IEEE 802.11n HT40/ac VHT40: 4 Channels IEEE 802.11ac VHT80: 1 Channels
Operation Mode	☒Master ☐Bridge ☐Hotspot ☒Mesh (Client without radar detection) ☐Client with radar detection ☐Client without radar detection
TPC Function	☒With TPC ☐Without TPC
Received Date	Oct. 26, 2018
Date of Test	Apr. 22, 2019 ~ Jun. 03, 2019
Software / Firmware Version	9.14.4.0
OS Version	Linux Air 7430 4.1.20-1.12-svn51446
Power-up Cycle (VHT80)	41.7 Sec.
Communication Mode	IP Based (Load Based), throughput with 17% up loading to FCC.
Related Submittal(s)/Grant(s)	**FCC Part 15.247 DSS with FCC ID : Z3WAIR7430** **FCC Part 15.247 DTS with FCC ID : Z3WAIR7430**

**All measurement and test data in this report was gathered from production sample serial number: 1803009 (Assigned by BACL, Taiwan).*

1.2 Operation Condition of EUT

Power Operation (Voltage Range)	☒ AC 120V/60Hz ☒ Adapter *Brand Name: MOSO* *Model: MSA-C2000IS12.0-24Y-US* *I/P: 100-240Vac,0.7A* *O/P: 12Vdc,2A* ☐ By Power Core

1.3 Objective

The Objective of this Test Report was to document the compliance of the AirTies Wireless Networks Appliance (Model: Air7430) to the requirements of the following Standards:

-Part 2, Subpart J, Part 15 Subparts A and Part 15 Subparts E of the Federal Communication Commission's rules.

-KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02

- ANSI C63.10-2013 of t American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

1.4 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Taiwan) to collect test data is located on

☒ 70, Lane 169, Sec. 2, Datong Road, Xizhi Dist., New Taipei City 22183, Taiwan, R.O.C.

☒ 68-3, Lane 169, Sec. 2, Datong Road, Xizhi Dist., New Taipei City 22183, Taiwan, R.O.C.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database. The FCC Registration No.: 974454. Designation No.: TW3180

2 System Test Configuration

2.1 Description of Test Configuration

The system was configured for testing in testing mode which was provided by manufacturer.

No special accessory, No modification was made to the EUT and No special equipment used during test.

The test was performed under: DOS command, which was provided by the manufacturer.

2.2 Support Equipment and External Cable List

Description	Manufacturer	Model Number	Serial Number
Notebook PC	SONY	PCG-1Q7P	282193817000023
Notebook PC	APPLE	A1706	N/A
Notebook PC	LENOVO	80WK	PF17KU77
USB DONGLE	LB-LINK	BL-WDN600	N/A

No.	Cable Description	Length (m)	From	To
1	RJ45 Cable	Non-shielded	EUT	Monitor

2.3 Description of EUT

The maximum conducted output power including tune up tolerance of EUT is 21dBm, antenna gain is 9.44 dBi, the Maximum E.I.R.P = 30.44 dBm, Therefore the required interference threshold level is -64 dBm. The calibrated radiated DFS detection threshold level was set to -64 dBm.

WLAN traffic is generated by streaming the video file TestFile.mpg, this file is used by IP and Frame based systems for loading the test channel during the In-service compliance testing of the U-NII device. The file is streamed from the Access Point to the Client in full motion video mode using the media player with the V2.61 Codec package.

2.4 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
MXG Vector Signal Generator	Keysight	N5182B	MY53051691	2018/11/25	2019/11/24
MXG X-Series Microwave Analog Signal Generator	Keysight	N5183B	MY53270771	2018/11/25	2019/11/24
EXA Signal Analyzer	Keysight	N9010A	MY55370253	2018/11/26	2019/11/25
Horn Antenna	ETS-Lindgren	3115	00085775	2018/07/12	2019/07/11
Horn Antenna	ETS-Lindgren	3115	00109141	2018/06/15	2019/06/14
ETSI Certification of Regulations Test Solution	World Pallas	ETSI Test System v1.02.23	KYLK-01	N.C.R	N.C.R
Software	BACL	DFS Aggregate v.1	DFSA-01	N.C.R	N.C.R

***Statement of Traceability:** The testing equipment's listed above have finished the calibration by Electronics Testing Center, Taiwan (ETC) or other laboratories which were accredited by TAF or equivalent organizations. The calibration result could be traceable to the International System of Units (SI).*

3 Summary of Test Results

The following result table represents the list of measurements required under the CFR §47 Part 15.407(h), and KDB: 905462 D02 UNII DFS Compliance Procedures New Rules v02

Test Item	Description of Test	Result
Detection Bandwidth	UNII Detection Bandwidth	Compliance
Performance Requirements Check	Initial Channel Availability Check Time (CAC)	Compliance
	Radar Burst at the Beginning of the CAC	Compliance
	Radar Burst at the End of the CAC	Compliance
In-Service Monitoring	Channel Move Time	Compliance
	Channel Closing Transmission Time	Compliance
	Non-Occupancy Period	Compliance
Radar Detection	Statistical Performance Check	Compliance

4 Applicable Standards and Test Requirements

4.1 DFS Requirement

According to §15.407(h) and KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02.

- Applicability of DFS Requirement Prior to Use of a Channel as below,

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

- Applicability of DFS Requirement during normal operation as below,

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

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

- DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection as below,

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. **Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. **Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

- DFS Response Requirement Values as below,

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

- Short Pulse Radar Test Waveforms as below,

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	Roundup $\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{PRI_{\mu sec}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

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

For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 usec is selected, the number of pulses would be $\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{3066}\right)\right\} = \text{Roundup}\{17.2\} = 18.$

- Pulse Repetition Intervals Values for Test A as below,

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

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

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

- Long Pulse Radar Test Waveform as below,

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

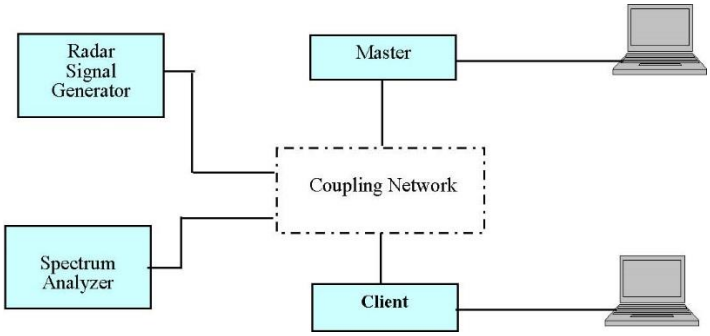
- Frequency Hopping Radar Test Waveform as below,

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

4.2 DFS Measurement System and Block Diagram

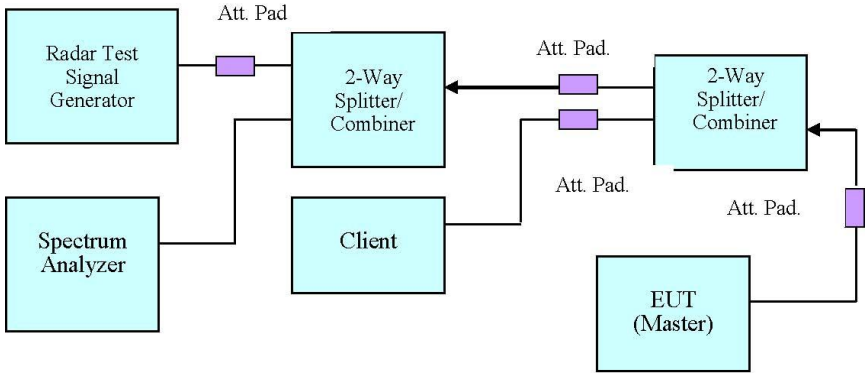
DFS measurement system consists of two subsystems:

(1) The radar signal generating subsystem. (2) The traffic monitoring subsystem.

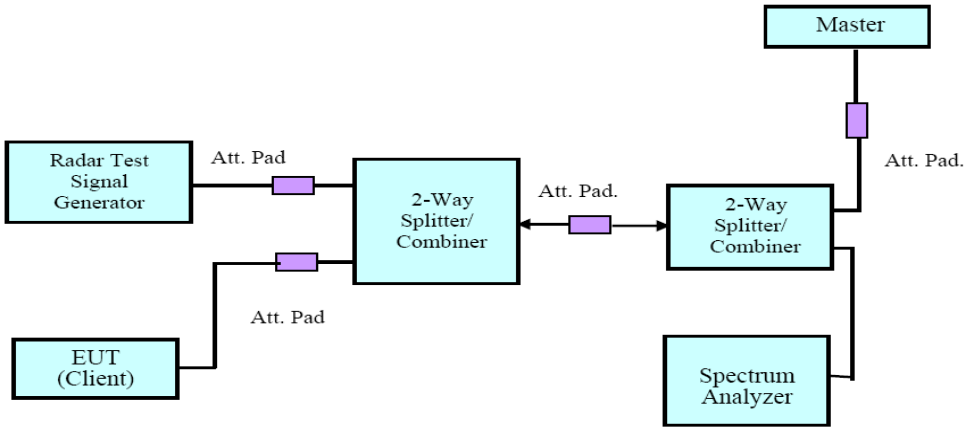


4.3 Conducted Method of DFS Measurement

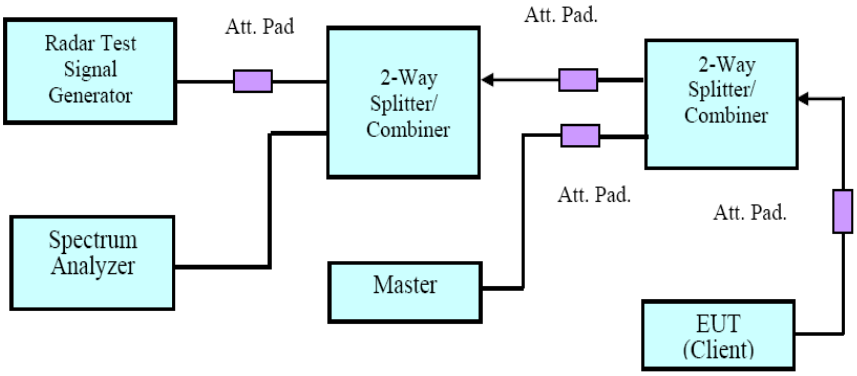
- **Setup for Master with injection at the Master**



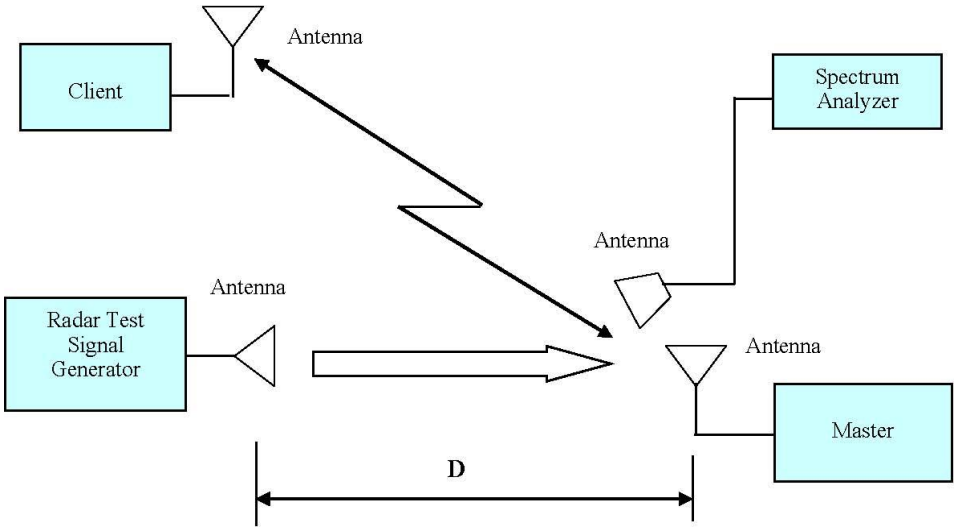
- **Setup for Client with injection at the Master**



- **Setup for Client with injection at the Client**



4.4 Radiated Method of DFS Measurement

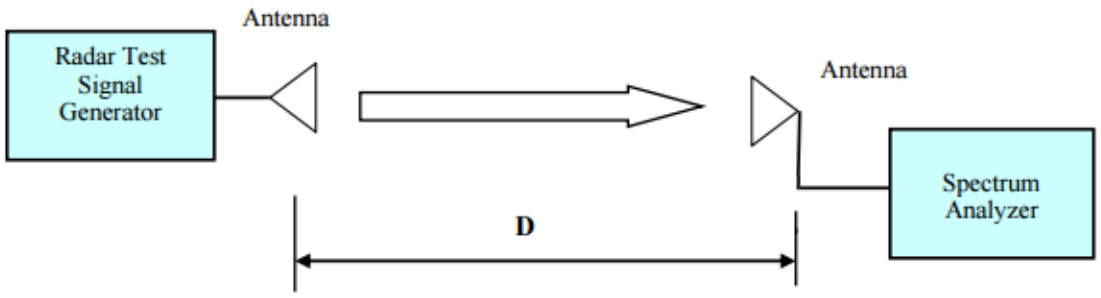


4.5 Radiated Method of DFS Measurement

A spectrum analyzer is used as a monitor verifies that the EUT status including Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the diction and Channel move. It is also used to monitor EUT transmissions during the Channel Availability Check Time

5 Radar Waveform Calibration

5.1 Block Diagram of Radiation Calibration

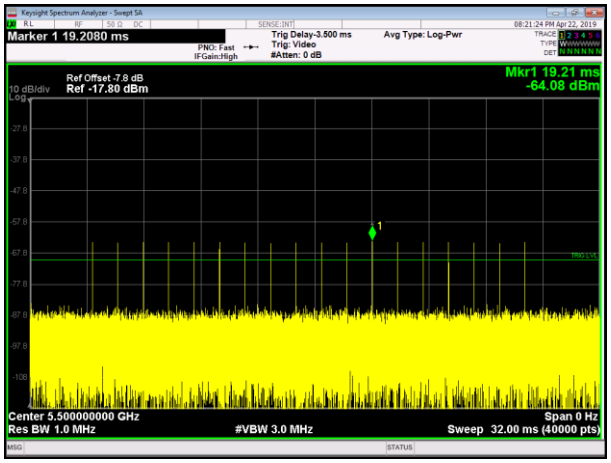
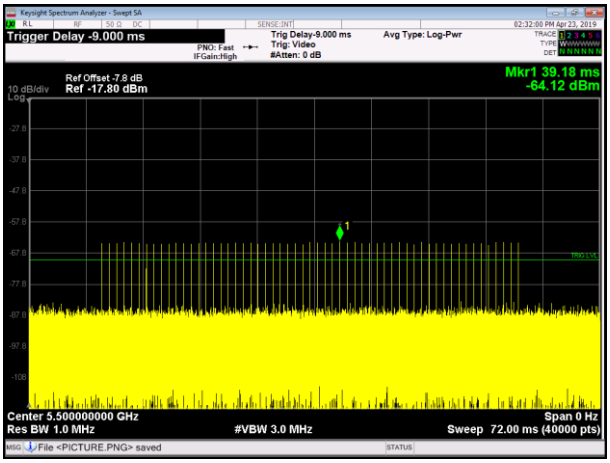


5.2 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	45-55 %
ATM Pressure:	1020 hPa	**Test Engineer:**	Ethan Shao
Test Date:	2019-04-22 to 2019-06-03		

5.3 Test Data and Plot

- **5500 MHz**

Radar Type 0	Radar Type 1
	
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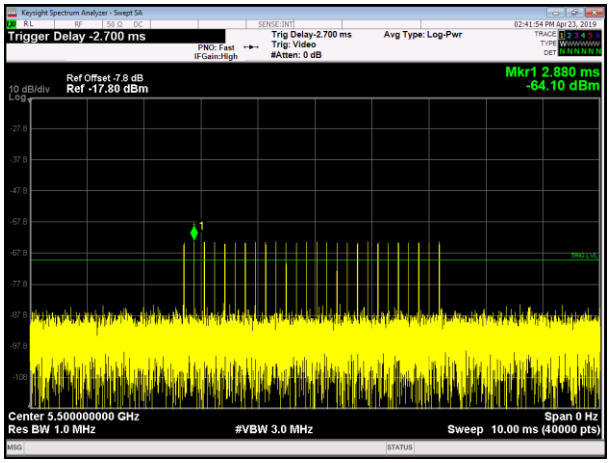	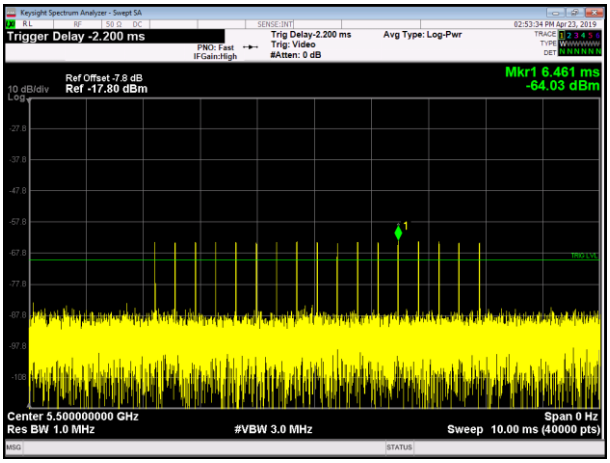

- **5500 MHz**

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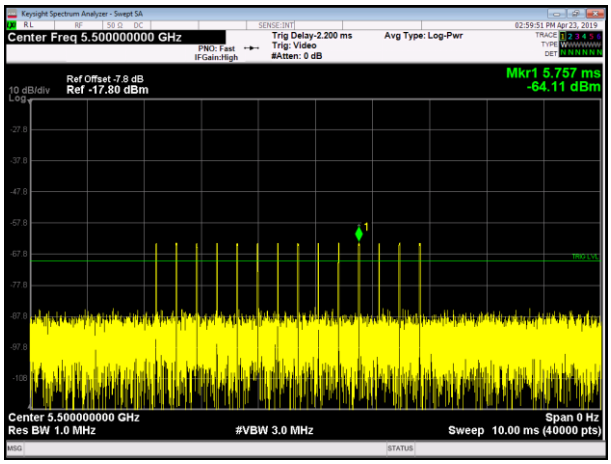	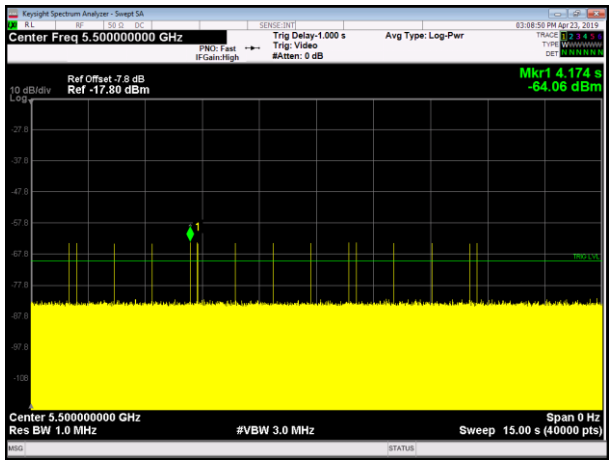
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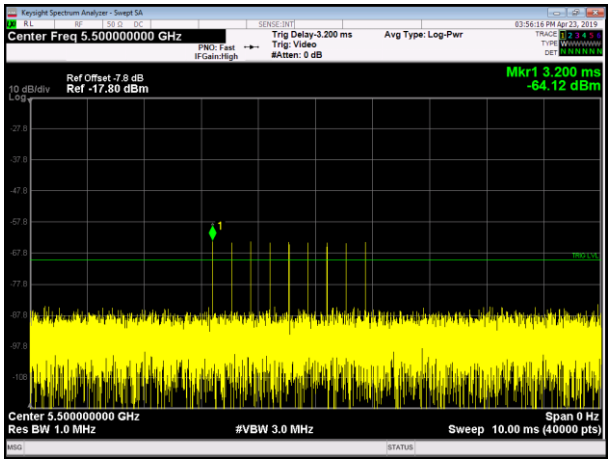	-

- **5510 MHz**

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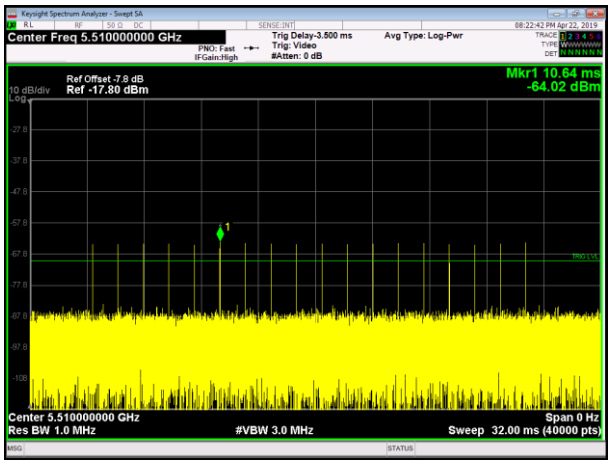	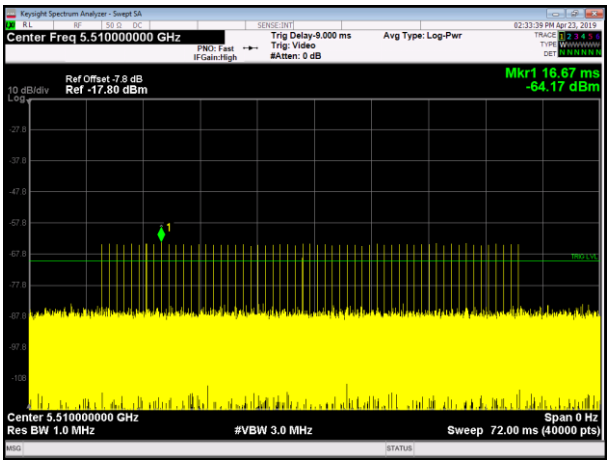
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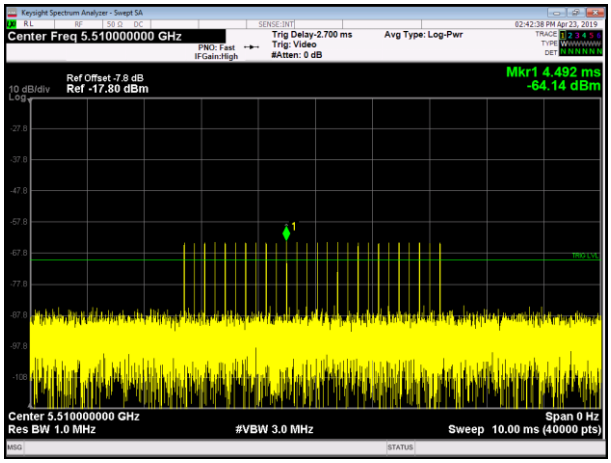
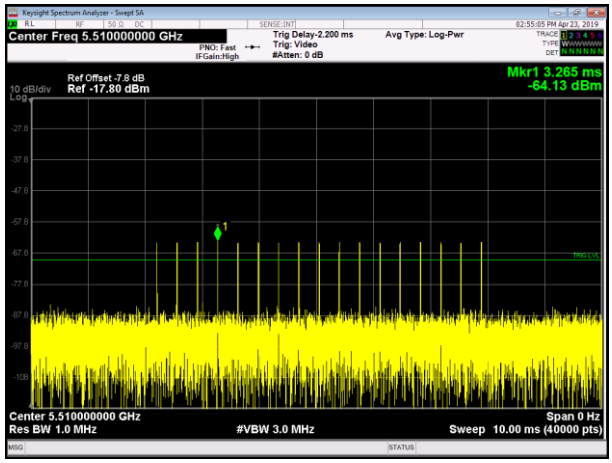
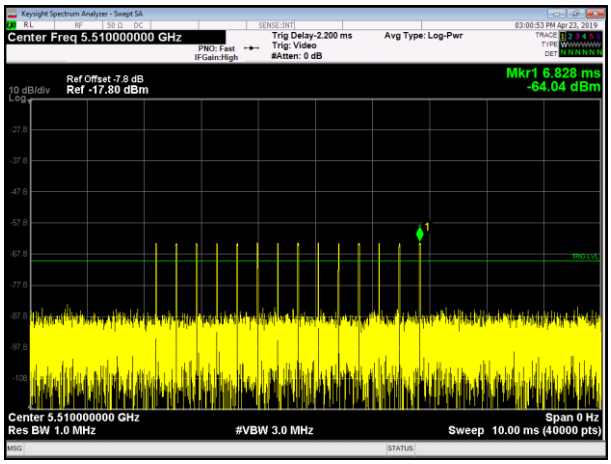
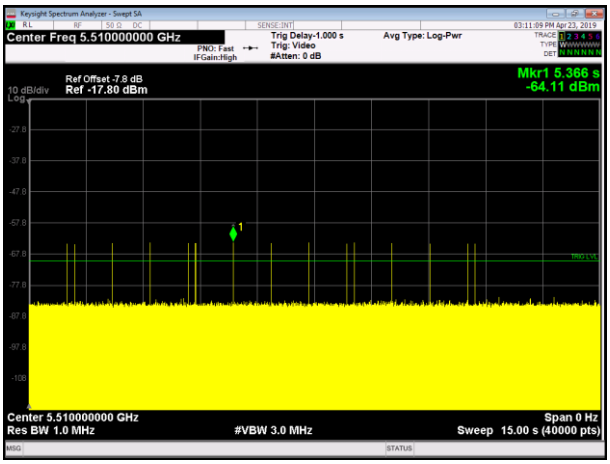
	

- **5510 MHz**

Radar Type 4	Radar Type 5
	
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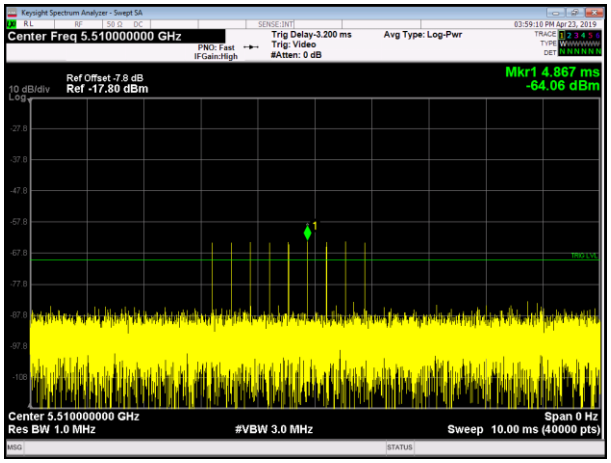	-

- **5530 MHz**

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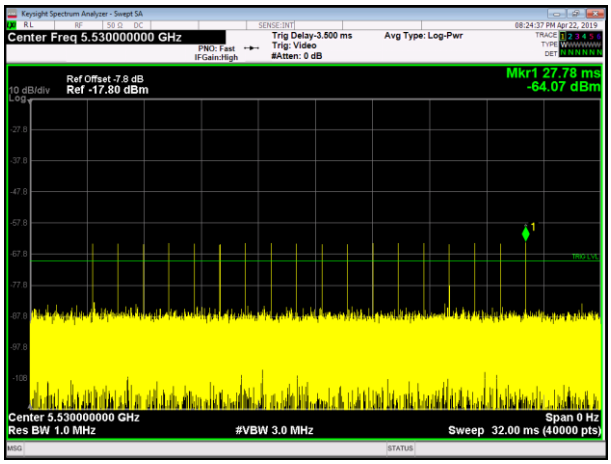	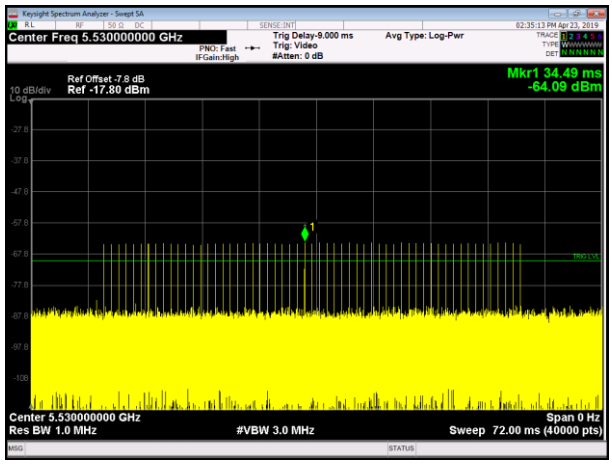
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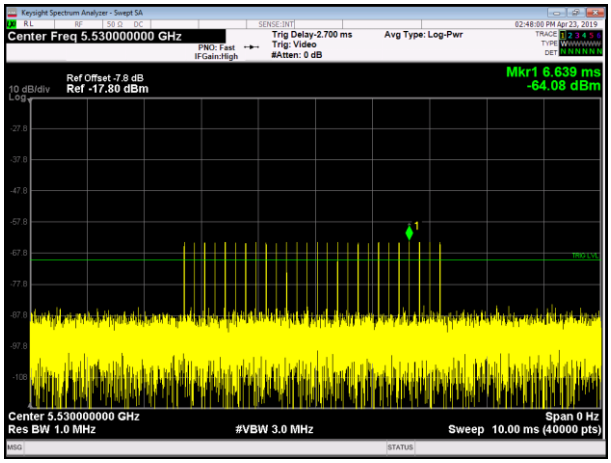
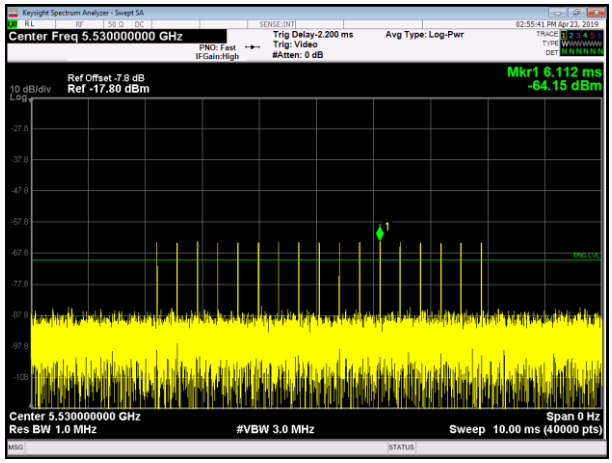
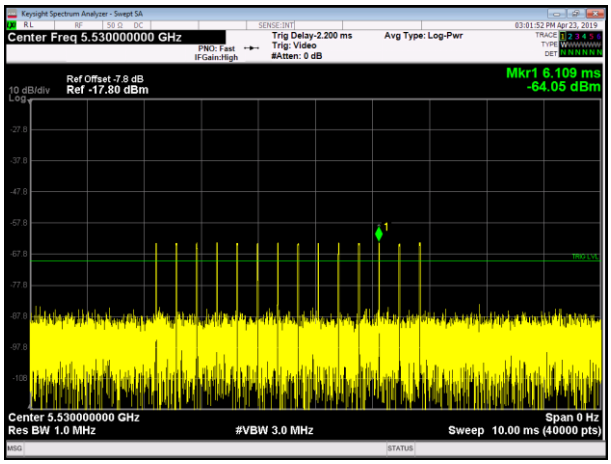
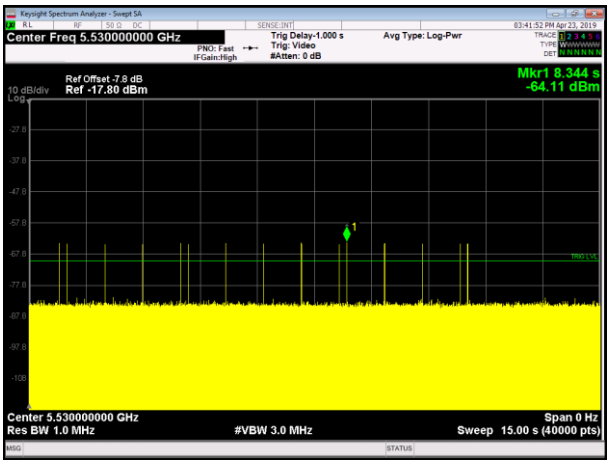
	

- **5530 MHz**

Radar Type 4	Radar Type 5
	
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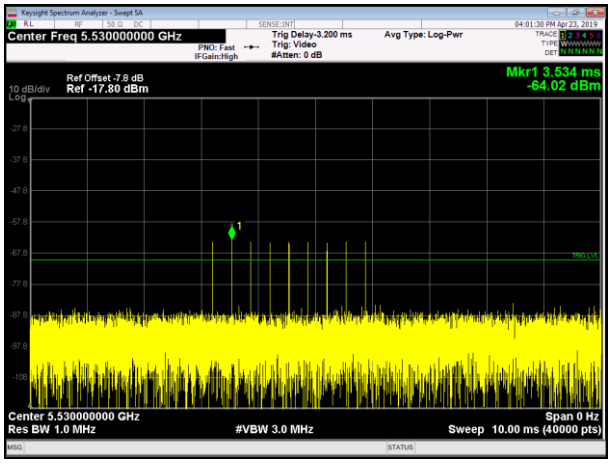
	-

6 Channel Availability Check Time (CAC)

6.1 Test Procedure

1) With link established on channel, apply a radar signal within 0~6 seconds after the initial power-up period; monitor the transmissions on channel from the spectrum analyzer.
2) Reboot EUT, with a link established on channel, apply a radar signal within 54~60 seconds after the initial power-up period, and monitor the transmission on channel from the spectrum analyzer.

EUT Initial power-up Cycle Time

Test Frequency (MHz)	EUT initial Power-up cycle (Second)
5530	41.7

Result:

Timing of Radar Burst	Spectrum Analyzer Display
No Radar Triggered	Transmission begin after power-up cycle +60 seconds CAC
Within 6 seconds of the CAC starting	No transmission
Within the last 6 seconds of the CAC	No transmission

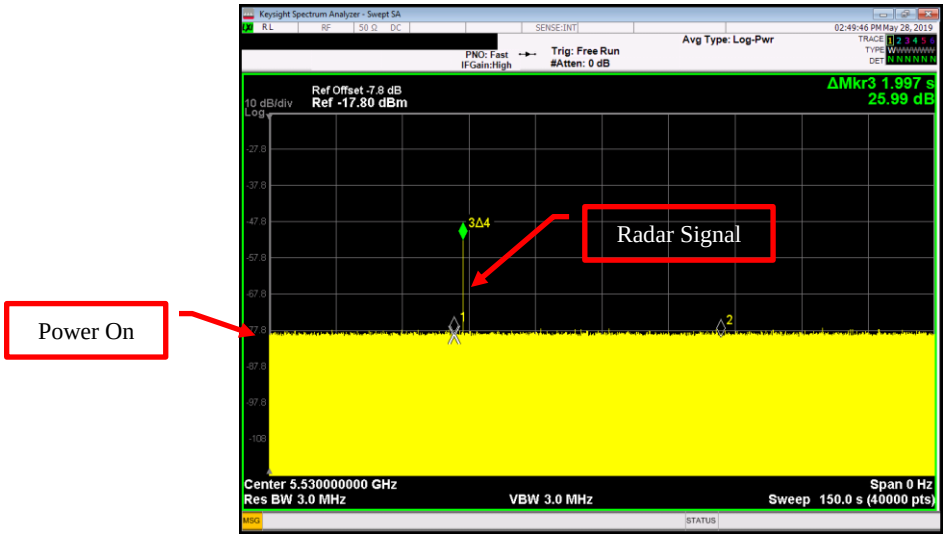
6.2 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	40-50 %
ATM Pressure:	1020 hPa	**Test Engineer:**	Ethan Shao
Test Date:	2019-04-22 to 2019-06-03		

6.3 Test Data and Test Plot

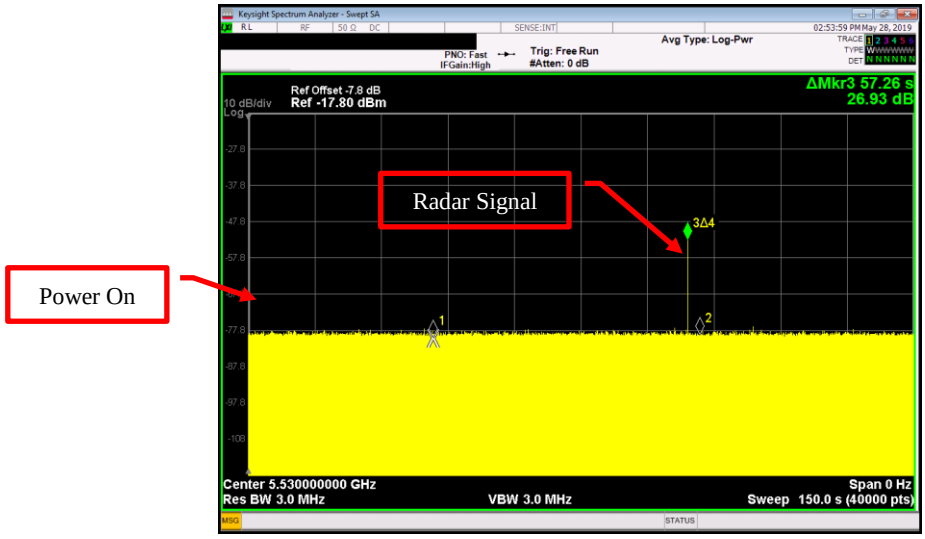
Channel Availability Check Time Result					
Modulation Mode	**Freq. (MHz)**	**Radar Type Signal**	**Beginning CAC of Timing of radar burst (sec)**	**End CAC of Timing of radar burst (sec)**	**DFS Triggered (Yes/No)**
VHT80	5530	0	0 ~ 6	54 ~ 60	Yes

Beginning of the Channel Availability Check Time



Mkr1: The end of the power-up time, and radar pulse was adding in 6 sec after the end of the Power-up time, ΔMkr3k: Time of the radar pulse join

End of the Channel Availability Check Time



Mkr1: The end of the power-up time, and radar pulse is added from the end of the Power-up time 54 seconds to 60 seconds, ΔMkr3k: Time of the radar pulse join.

Result: Pass

7 Channel Move Time and Channel Closing Transmission Time

7.1 Test Procedure

Perform type 0 short pulse radar waveform, repeat using a long pulse radar type5 waveform.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = N*Dwell Time

N is the number of spectrum analyzer bins showing a device transmission Dwell Time is the dwell time per bin (i.e. Dwell Time = S/B, S is the sweep time and B is the number of bin, i.e. 8192)

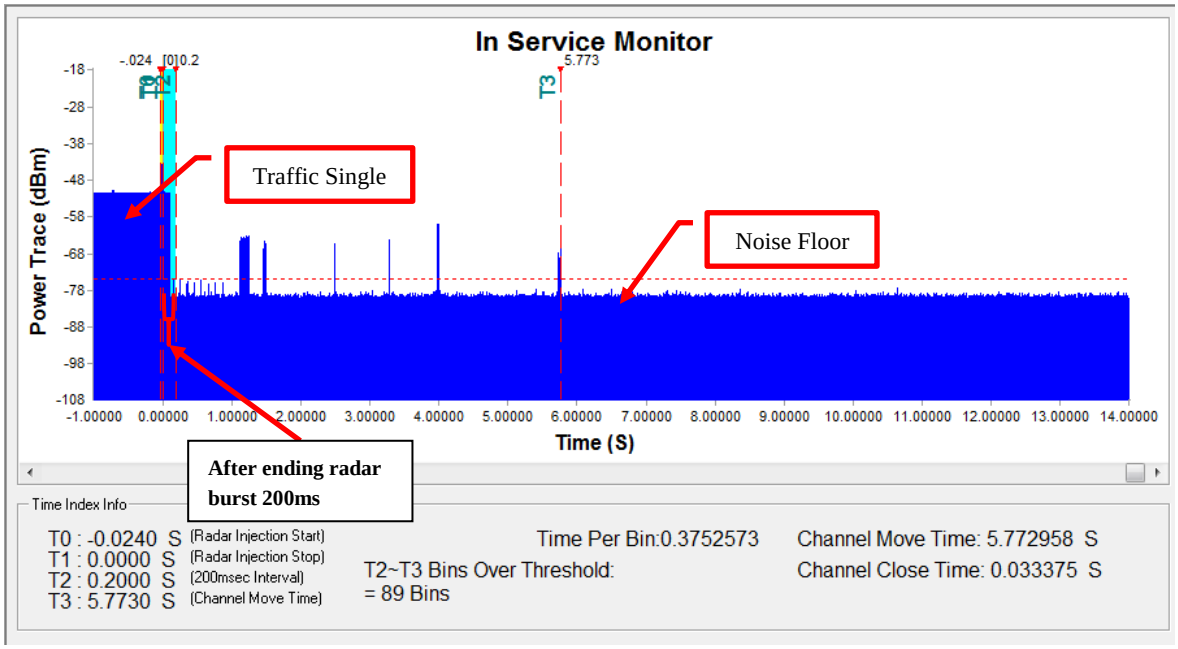
7.2 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	40-50 %
ATM Pressure:	1020 hPa	**Test Engineer:**	Ethan Shao
Test Date:	2019-04-22 to 2019-06-03		

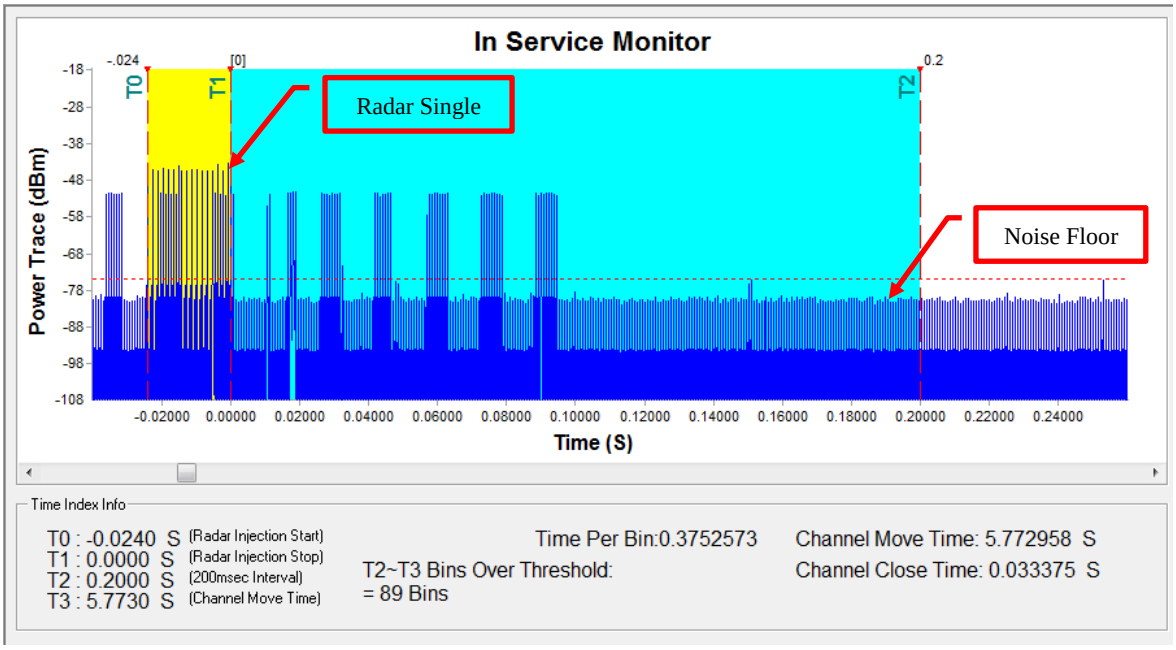
7.3 Test Data and Test Plot

Frequency (MHz)	Bandwidth (MHz)	Radar Type	Results
5530	80	Type 0	Compliant

Channel Closing Transmission Time & Channel Move Time Result							
Modulation Mode	Freq. (MHz)	Radar Type	Channel Closing Transmission Time			Channel Move Time	
			Time 0~0.2s	Time 0.2s~10s	Limit	Movie Time in 0s-10s	Limit
VHT80	5530	0	200 ms	33.37 ms	200 ms + 60 ms	5.77 s	10 s
Total 40000 point in 0 ~ 15.01s							



Zoom-in



8 Non-Occupancy Period

8.1 Test Procedure

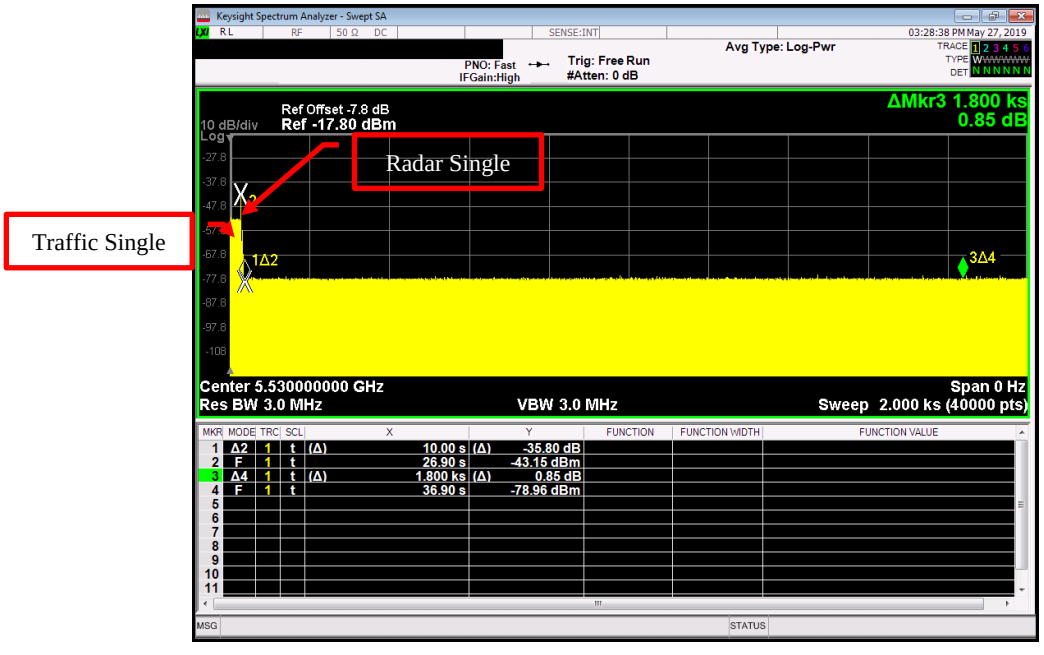
Measure the EUT for more than 30 minutes following the channel close/move time to very that the EUT does not resume any transmissions on this channel. Provide one plot to demonstrate no transmission on the channel for the non-occupancy period (30 minutes observation time)

8.2 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	40-50 %
ATM Pressure:	1020 hPa	**Test Engineer:**	Ethan Shao
Test Date:	2019-04-22 to 2019-06-03		

8.3 Test Data and Test Plot

Non-Occupancy Period Result				
Modulation Mode	**Freq. (MHz)**	**Non-Occupancy Period**		
		Measured	**Limit**	**Result**
VHT80	5530	2 Ks	30 min	PASS



9 Detection Bandwidth

9.1 Test Procedure

Performed with Type 0 radar waveforms

Starting at the center frequency of the UUT operating Channel, increase the radar frequency in 5 MHz steps, repeating the above test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion specified in Table 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 FH) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies above FH is not required to demonstrate compliance.
Starting at the center frequency of the UUT 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 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 FL) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies below FL is not required to demonstrate compliance.

The U-NII Detection Bandwidth is calculated as follows:
U-NII Detection Bandwidth = FH – FL

The U-NII Detection Bandwidth must meet the U-NII Detection Bandwidth criterion specified in Table 4. Otherwise, the UUT does not comply with DFS requirements. This is essential to ensure that the UUT is capable of detecting Radar Waveforms across the same frequency spectrum that contains the significant energy from the system. In the case that the U-NII Detection Bandwidth is greater than or equal to the 99 percent power bandwidth for the measured FH and FL, the test can be truncated and the U-NII Detection Bandwidth can be reported as the measured FH and FL.

9.2 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	40-50 %
ATM Pressure:	1020 hPa	**Test Engineer:**	Ethan Shao
Test Date:	2019-04-22 to 2019-06-03		

9.3 Test Data and Test Plot

Frequency (MHz)	Bandwidth Systems (MHz)	F_L (MHz)	F_H (MHz)	Detection Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Minimum Limit	Result
5500	20	5490	5509	19	17.79	90%	Compliance
5510	40	5491	5529	38	36.21	90%	Compliance
5530	80	5491	5569	78	75.85	90%	Compliance

Results of Detection Bandwidth:

EUT Frequency (MHz)		5500										
Channel Bandwidth (MHz)		20										
Radar Frequency (MHz)		Trial Number (1=Detection, 0= No Detection)										Detection Rate (%)
		1	2	3	4	5	6	7	8	9	10	
5489		0	0	0	0	0	0	0	0	0	0	0%
5490	FL	1	1	1	1	1	1	1	1	1	1	100%
5491		1	1	1	1	1	1	1	1	1	1	100%
5492		1	1	1	1	1	1	1	1	1	1	100%
5493		1	1	1	1	1	1	1	1	1	1	100%
5494		1	1	1	1	1	1	1	1	1	1	100%
5495		1	1	1	1	1	1	1	1	1	1	100%
5500	FC	1	1	1	1	1	1	1	1	0	1	90%
5505		1	1	1	1	1	1	1	1	1	1	100%
5506		1	1	1	1	1	1	1	1	1	1	100%
5507		1	1	1	1	1	1	1	1	1	1	100%
5508		1	1	1	1	1	1	1	1	1	1	100%
5509	FH	1	1	1	1	1	1	1	1	1	1	100%
5510		0	0	0	0	0	0	0	0	0	0	0%
FH to FL Test result Limit ≧ 90%												Pass

UNII Detection Bandwidth Minimum 100% of the U- NII 99% transmission power bandwidth.

- *Detection Bandwidth (MHz) = 5509 - 5490 = 19*

EUT Frequency (MHz)		5510										
Channel Bandwidth (MHz)		40										
Radar Frequency (MHz)		Trial Number (1=Detection, 0= No Detection)										Detection Rate (%)
		1	2	3	4	5	6	7	8	9	10	
5490		0	0	0	0	0	0	0	0	0	0	0%
5491	FL	1	1	1	1	1	1	1	1	1	1	100%
5492		1	1	1	1	1	1	1	1	1	1	100%
5493		1	1	1	1	1	1	1	1	1	1	100%
5494		1	1	1	1	1	1	1	1	1	1	100%
5495		1	1	1	1	1	1	1	1	1	1	100%
5500		1	1	1	1	1	1	1	1	1	1	100%
5505		1	1	1	1	1	1	1	1	1	1	100%
5510	FC	1	1	1	1	1	1	1	1	1	1	100%
5515		1	1	1	1	1	1	1	1	1	1	100%
5520		1	1	1	1	1	1	0	1	1	1	90%
5525		1	1	1	1	1	1	1	1	1	1	100%
5526		1	1	1	1	1	1	1	1	1	1	100%
5527		1	1	1	1	1	1	1	1	1	1	100%
5528		1	1	1	1	1	1	1	1	1	1	100%
5529	FH	1	1	1	1	1	1	1	1	1	1	100%
5530		0	0	0	0	0	0	0	0	0	0	0%
FH to FL Test result Limit ≧ 90%												Pass

UNII Detection Bandwidth Minimum 100% of the U- NII 99% transmission power bandwidth.

- *Detection Bandwidth (MHz) = 5529 - 5491 = 38*

EUT Frequency (MHz)		5530										
Channel Bandwidth (MHz)		80										
Radar Frequency (MHz)		Trial Number (1=Detection, 0= No Detection)										Detection Rate (%)
		1	2	3	4	5	6	7	8	9	10	
5490		0	0	0	0	0	0	0	0	0	0	0%
5491	FL	1	1	1	1	1	1	1	1	1	1	100%
5492		1	1	1	1	1	1	1	1	1	1	100%
5493		1	1	1	1	1	1	1	1	1	1	100%
5494		1	1	1	1	1	1	1	1	1	1	100%
5495		1	1	1	1	1	1	1	1	1	1	100%
5500		1	1	1	1	1	1	1	1	1	1	100%
5505		1	1	1	1	1	1	1	1	1	1	100%
5510		1	1	1	1	1	1	1	1	1	1	100%
5515		1	1	1	1	1	1	1	1	1	1	100%
5520		1	1	1	1	1	1	1	1	1	1	100%
5525		1	1	1	1	1	1	1	1	1	1	100%
5530	FC	1	1	1	1	1	1	1	1	1	0	90%
5535		1	1	1	1	1	1	1	1	1	1	100%
5540		1	1	1	1	1	1	1	1	1	1	100%
5545		1	1	1	1	1	1	1	1	1	1	100%
5550		1	1	1	1	0	1	1	1	1	1	90%
5555		1	1	1	1	1	1	1	1	1	1	100%
5560		1	1	1	1	1	1	1	1	0	1	90%
5565		1	1	1	1	1	1	1	1	1	1	100%
5566		1	1	1	0	1	1	1	1	1	1	90%
5567		1	1	1	1	1	1	1	1	1	1	100%
5568		1	1	1	1	1	1	1	1	1	1	100%
5569	FH	1	1	1	1	1	1	1	1	1	1	100%
5570		0	0	0	0	0	0	0	0	0	0	0%
FH to FL Test result Limit ≧ 90%												Pass

UNII Detection Bandwidth Minimum 100% of the U- NII 99% transmission power bandwidth.

- *Detection Bandwidth (MHz) = 5569 - 5491 = 78*

10 Statistical Performance Check

10.1 Test Procedure

The steps below define the procedure to determine the minimum percentage of successful detection requirements found in Tables 5-7 when a radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

a) One frequency will be chosen from the Operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands.

b) In case the UUT is a U-NII device operating as a Client Device (with or without Radar Detection), a U-NII device operating as a Master Device will be used to allow the UUT (Client device) to Associate with the Master Device. 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). In both cases for conducted tests, the Radar Waveform generator will be connected to the Master Device. 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.

c) Stream the channel loading test file from the Master Device to the Client Device on the test Channel for the entire period of the test.

d) At time T0 the Radar Waveform generator sends the individual waveform for each of the Radar Types 1- 6 in Tables 5-7, 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.

e) Observe the transmissions of the UUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Radar Type 0 to ensure detection occurs.

f) Observe the transmissions of the UUT 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.

g) In case the UUT is a U-NII device operating as a Client Device with In-Service Monitoring, perform steps a) to f).

10.2 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	40-50 %
ATM Pressure:	1020 hPa	**Test Engineer:**	Ethan Shao
Test Date:	2019-04-22 to 2019-06-03		

10.3 Test Data and Test Plot

20MHz Bandwidth

Radar Signal Type	Waveform/Trial Number	Detection (%)	Limit (%)	Pass/Fail
Type 1	30	90.00%	60%	Pass
Type 2	30	93.33%	60%	Pass
Type 3	30	96.67%	60%	Pass
Type 4	30	76.67%	60%	Pass
Aggregate (Type1 to 4)	120	89.17%	80%	Pass
Type 5	30	86.67%	80%	Pass
Type 6	30	96.67%	70%	Pass

40MHz Bandwidth

Radar Signal Type	Waveform/Trial Number	Detection (%)	Limit (%)	Pass/Fail
Type 1	30	93.33%	60%	Pass
Type 2	30	90.00%	60%	Pass
Type 3	30	76.67%	60%	Pass
Type 4	30	76.67%	60%	Pass
Aggregate (Type1 to 4)	120	84.17%	80%	Pass
Type 5	30	86.67%	80%	Pass
Type 6	30	100.00%	70%	Pass

80MHz Bandwidth

Radar Signal Type	Waveform/Trial Number	Detection (%)	Limit (%)	Pass/Fail
Type 1	30	93.33%	60%	Pass
Type 2	30	83.33%	60%	Pass
Type 3	30	76.67%	60%	Pass
Type 4	30	73.33%	60%	Pass
Aggregate (Type1 to 4)	120	81.67%	80%	Pass
Type 5	30	90.00%	80%	Pass
Type 6	30	96.67%	70%	Pass

- **5500 MHz**

Radar Type 1 Statistical Performance

Trial #	Fc (MHz)	Pulse Repetition Frequency Number	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)
1	5500	22	1066.1	938	1
2	5500	10	1432.7	698	1
3	5500	6	1618.1	618	1
4	5500	2	1858.7	538	1
5	5500	19	1139	878	1
6	5500	23	326.2	3066	1
7	5500	7	1567.4	638	1
8	5500	21	1089.3	918	1
9	5500	17	1193.3	838	1
10	5500	18	1165.5	858	1
11	5500	15	1253.1	798	1
12	5500	11	1392.8	718	1
13	5500	4	1730.1	578	1
14	5500	5	1672.2	598	1
15	5500	3	1792.1	558	1
16	5500	-	394.3	2536	0
17	5500	-	1035.2	966	1
18	5500	-	1209.2	827	1
19	5500	-	399.8	2501	1
20	5500	-	385.4	2595	0
21	5500	-	897.7	1114	1
22	5500	-	768	1302	1
23	5500	-	328.4	3045	1
24	5500	-	615.8	1624	1
25	5500	-	347.5	2878	0
26	5500	-	973.7	1027	1
27	5500	-	402.4	2485	1
28	5500	-	625	1600	1
29	5500	-	853.2	1172	1
30	5500	-	849.6	1177	1
Detection Percentage: 90.00 % (>60%)					

Radar Type 2 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (µS)	PRI (µs)	Detection (1:yes; 0:no)
1	5500	26	3.2	179	1
2	5500	23	1.1	207	1
3	5500	24	2.1	230	0
4	5500	29	4.8	200	1
5	5500	28	3.9	214	1
6	5500	26	2.9	222	1
7	5500	26	3.2	204	1
8	5500	25	2.5	192	1
9	5500	26	3.1	164	1
10	5500	23	1.2	156	0
11	5500	27	3.9	210	1
12	5500	29	4.6	201	1
13	5500	26	3.2	162	1
14	5500	25	2.2	197	1
15	5500	29	4.5	163	1
16	5500	26	3	203	1
17	5500	29	5	168	1
18	5500	25	2.4	217	1
19	5500	26	2.9	191	1
20	5500	25	2.3	166	1
21	5500	27	3.7	150	1
22	5500	25	2.2	176	1
23	5500	29	4.9	195	1
24	5500	26	2.9	202	1
25	5500	25	2.5	178	1
26	5500	23	1.1	206	1
27	5500	27	3.8	155	1
28	5500	29	4.7	157	1
29	5500	25	2.4	224	1
30	5500	28	4.2	159	1
Detection Percentage: 93.33 % (>60%)					

Radar Type 3 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)
1	5500	17	8.2	355	1
2	5500	16	6.1	487	1
3	5500	16	7.1	344	1
4	5500	18	9.8	288	1
5	5500	18	8.9	230	1
6	5500	17	7.9	432	1
7	5500	17	8.2	207	1
8	5500	17	7.5	443	1
9	5500	17	8.1	439	1
10	5500	16	6.2	223	1
11	5500	18	8.9	208	1
12	5500	18	9.6	463	1
13	5500	17	8.2	441	1
14	5500	16	7.2	323	1
15	5500	18	9.5	297	0
16	5500	17	8	412	1
17	5500	18	10	324	1
18	5500	17	7.4	271	1
19	5500	17	7.9	349	1
20	5500	16	7.3	409	1
21	5500	18	8.7	373	1
22	5500	16	7.2	254	1
23	5500	18	9.9	274	1
24	5500	17	7.9	278	1
25	5500	17	7.5	317	1
26	5500	16	6.1	260	1
27	5500	18	8.8	211	1
28	5500	18	9.7	272	1
29	5500	17	7.4	264	1
30	5500	18	9.2	284	1
Detection Percentage: 96.67 % (>60%)					

Radar Type 4 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (µS)	PRI (µs)	Detection (1:yes; 0:no)
1	5500	12	11.3	487	0
2	5500	13	13.5	344	1
3	5500	16	19.4	288	1
4	5500	15	17.5	230	0
5	5500	14	15.3	432	0
6	5500	14	15.9	207	0
7	5500	13	14.3	443	1
8	5500	14	15.8	439	1
9	5500	12	11.5	223	1
10	5500	15	17.4	208	1
11	5500	16	19	463	0
12	5500	14	16	441	1
13	5500	13	13.8	323	1
14	5500	16	18.9	297	1
15	5500	14	15.5	412	1
16	5500	16	19.9	324	1
17	5500	13	14.1	271	1
18	5500	14	15.2	349	0
19	5500	13	13.8	409	0
20	5500	15	17.1	373	1
21	5500	13	13.8	254	1
22	5500	16	19.8	274	1
23	5500	14	15.3	278	1
24	5500	13	14.5	317	1
25	5500	12	11.3	260	1
26	5500	15	17.3	211	1
27	5500	16	19.2	272	1
28	5500	13	14.2	264	1
29	5500	15	18.2	284	1
30	5500	12	11.3	487	1
Detection Percentage: 76.67 % (>60%)					

Radar Type 5 Statistical Performance

Trial #	Chirp Center Frequency (MHz)	Test Signal Name	Detection (1:yes; 0:no)
1	5500	Long_Pulse_No.01*	1
2	5500	Long_Pulse_No.02*	1
3	5500	Long_Pulse_No.03*	0
4	5500	Long_Pulse_No.04*	1
5	5500	Long_Pulse_No.05*	1
6	5500	Long_Pulse_No.06*	1
7	5500	Long_Pulse_No.07*	1
8	5500	Long_Pulse_No.08*	1
9	5500	Long_Pulse_No.09*	1
10	5500	Long_Pulse_No.10*	0
11	5497	Long_Pulse_No.11*	1
12	5499	Long_Pulse_No.12*	1
13	5496	Long_Pulse_No.13*	1
14	5495	Long_Pulse_No.14*	1
15	5498	Long_Pulse_No.15*	1
16	5496	Long_Pulse_No.16*	1
17	5499	Long_Pulse_No.17*	1
18	5495	Long_Pulse_No.18*	1
19	5496	Long_Pulse_No.19*	0
20	5495	Long_Pulse_No.20*	1
21	5503	Long_Pulse_No.21*	1
22	5505	Long_Pulse_No.22*	1
23	5501	Long_Pulse_No.23*	1
24	5504	Long_Pulse_No.24*	0
25	5505	Long_Pulse_No.25*	1
26	5507	Long_Pulse_No.26*	1
27	5503	Long_Pulse_No.27*	1
28	5501	Long_Pulse_No.28*	1
29	5505	Long_Pulse_No.29*	1
30	5502	Long_Pulse_No.30*	1
Detection Percentage: 86.67 % (>60%)			

- *Note*

  **: please refer to Appendix A*

Radar Type 6 Statistical Performance

Trial #	Fc (MHz)	Pulse /Burst	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)	Hopping Sequence Name
1	5500	9	1	333	1	Hopping_List_No.01*
2	5500	9	1	333	1	Hopping_List_No.02*
3	5500	9	1	333	1	Hopping_List_No.03*
4	5500	9	1	333	1	Hopping_List_No.04*
5	5500	9	1	333	1	Hopping_List_No.05*
6	5500	9	1	333	0	Hopping_List_No.06*
7	5500	9	1	333	1	Hopping_List_No.07*
8	5500	9	1	333	1	Hopping_List_No.08*
9	5500	9	1	333	1	Hopping_List_No.09*
10	5500	9	1	333	1	Hopping_List_No.10*
11	5500	9	1	333	1	Hopping_List_No.11*
12	5500	9	1	333	1	Hopping_List_No.12*
13	5500	9	1	333	1	Hopping_List_No.13*
14	5500	9	1	333	1	Hopping_List_No.14*
15	5500	9	1	333	1	Hopping_List_No.15*
16	5500	9	1	333	1	Hopping_List_No.16*
17	5500	9	1	333	1	Hopping_List_No.17*
18	5500	9	1	333	1	Hopping_List_No.18*
19	5500	9	1	333	1	Hopping_List_No.19*
20	5500	9	1	333	1	Hopping_List_No.20*
21	5500	9	1	333	1	Hopping_List_No.21*
22	5500	9	1	333	1	Hopping_List_No.22*
23	5500	9	1	333	1	Hopping_List_No.23*
24	5500	9	1	333	1	Hopping_List_No.24*
25	5500	9	1	333	1	Hopping_List_No.25*
26	5500	9	1	333	1	Hopping_List_No.26*
27	5500	9	1	333	1	Hopping_List_No.27*
28	5500	9	1	333	1	Hopping_List_No.28*
29	5500	9	1	333	1	Hopping_List_No.29*
30	5500	9	1	333	1	Hopping_List_No.30*
Detection Percentage: 96.67 % (>60%)						

- *Note*

  **: please refer to Appendix A*

- **5510 MHz**

Radar Type 1 Statistical Performance

Trial #	Fc (MHz)	Pulse Repetition Frequency Number	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)
1	5510	22	1066.1	938	1
2	5510	10	1432.7	698	1
3	5510	6	1618.1	618	1
4	5510	2	1858.7	538	1
5	5510	19	1139	878	1
6	5510	23	326.2	3066	1
7	5510	7	1567.4	638	1
8	5510	21	1089.3	918	1
9	5510	17	1193.3	838	1
10	5510	18	1165.5	858	1
11	5510	15	1253.1	798	1
12	5510	11	1392.8	718	1
13	5510	4	1730.1	578	1
14	5510	5	1672.2	598	1
15	5510	3	1792.1	558	1
16	5510	-	394.3	2536	1
17	5510	-	1035.2	966	1
18	5510	-	1209.2	827	1
19	5510	-	399.8	2501	1
20	5510	-	385.4	2595	1
21	5510	-	897.7	1114	1
22	5510	-	768	1302	1
23	5510	-	328.4	3045	0
24	5510	-	615.8	1624	0
25	5510	-	347.5	2878	1
26	5510	-	973.7	1027	1
27	5510	-	402.4	2485	1
28	5510	-	625	1600	1
29	5510	-	853.2	1172	1
30	5510	-	849.6	1177	1
Detection Percentage: 93.33 % (>60%)					

Radar Type 2 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (µS)	PRI (µs)	Detection (1:yes; 0:no)
1	5510	26	3.2	179	1
2	5510	23	1.1	207	1
3	5510	24	2.1	230	1
4	5510	29	4.8	200	1
5	5510	28	3.9	214	1
6	5510	26	2.9	222	1
7	5510	26	3.2	204	1
8	5510	25	2.5	192	1
9	5510	26	3.1	164	1
10	5510	23	1.2	156	1
11	5510	27	3.9	210	1
12	5510	29	4.6	201	1
13	5510	26	3.2	162	0
14	5510	25	2.2	197	1
15	5510	29	4.5	163	0
16	5510	26	3	203	1
17	5510	29	5	168	1
18	5510	25	2.4	217	1
19	5510	26	2.9	191	1
20	5510	25	2.3	166	1
21	5510	27	3.7	150	0
22	5510	25	2.2	176	1
23	5510	29	4.9	195	1
24	5510	26	2.9	202	1
25	5510	25	2.5	178	1
26	5510	23	1.1	206	1
27	5510	27	3.8	155	1
28	5510	29	4.7	157	1
29	5510	25	2.4	224	1
30	5510	28	4.2	159	1
Detection Percentage: 90.00 % (>60%)					

Radar Type 3 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (µS)	PRI (µs)	Detection (1:yes; 0:no)
1	5510	26	3.2	179	1
2	5510	23	1.1	207	1
3	5510	24	2.1	230	1
4	5510	29	4.8	200	1
5	5510	28	3.9	214	1
6	5510	26	2.9	222	1
7	5510	26	3.2	204	1
8	5510	25	2.5	192	1
9	5510	26	3.1	164	1
10	5510	23	1.2	156	1
11	5510	27	3.9	210	1
12	5510	29	4.6	201	1
13	5510	26	3.2	162	0
14	5510	25	2.2	197	1
15	5510	29	4.5	163	0
16	5510	26	3	203	1
17	5510	29	5	168	1
18	5510	25	2.4	217	1
19	5510	26	2.9	191	1
20	5510	25	2.3	166	1
21	5510	27	3.7	150	0
22	5510	25	2.2	176	1
23	5510	29	4.9	195	1
24	5510	26	2.9	202	1
25	5510	25	2.5	178	1
26	5510	23	1.1	206	1
27	5510	27	3.8	155	1
28	5510	29	4.7	157	1
29	5510	25	2.4	224	1
30	5510	28	4.2	159	1
Detection Percentage: 90.00 % (>60%)					

Radar Type 4 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (µS)	PRI (µs)	Detection (1:yes; 0:no)
1	5510	14	16	355	1
2	5510	12	11.3	487	0
3	5510	13	13.5	344	1
4	5510	16	19.4	288	1
5	5510	15	17.5	230	1
6	5510	14	15.3	432	1
7	5510	14	15.9	207	1
8	5510	13	14.3	443	1
9	5510	14	15.8	439	1
10	5510	12	11.5	223	1
11	5510	15	17.4	208	1
12	5510	16	19	463	1
13	5510	14	16	441	0
14	5510	13	13.8	323	1
15	5510	16	18.9	297	0
16	5510	14	15.5	412	1
17	5510	16	19.9	324	1
18	5510	13	14.1	271	0
19	5510	14	15.2	349	1
20	5510	13	13.8	409	1
21	5510	15	17.1	373	1
22	5510	13	13.8	254	0
23	5510	16	19.8	274	1
24	5510	14	15.3	278	1
25	5510	13	14.5	317	0
26	5510	12	11.3	260	0
27	5510	15	17.3	211	1
28	5510	16	19.2	272	1
29	5510	13	14.2	264	1
30	5510	15	18.2	284	1
Detection Percentage: 76.67 % (>60%)					

Radar Type 5 Statistical Performance

Trial #	Chirp Center Frequency (MHz)	Test Signal Name	Detection (1:yes; 0:no)
1	5510	Long_Pulse_No.01*	1
2	5510	Long_Pulse_No.02*	1
3	5510	Long_Pulse_No.03*	1
4	5510	Long_Pulse_No.04*	1
5	5510	Long_Pulse_No.05*	1
6	5510	Long_Pulse_No.06*	0
7	5510	Long_Pulse_No.07*	1
8	5510	Long_Pulse_No.08*	1
9	5510	Long_Pulse_No.09*	1
10	5510	Long_Pulse_No.10*	0
11	5498	Long_Pulse_No.11*	1
12	5499	Long_Pulse_No.12*	1
13	5497	Long_Pulse_No.13*	1
14	5496	Long_Pulse_No.14*	0
15	5499	Long_Pulse_No.15*	1
16	5497	Long_Pulse_No.16*	1
17	5500	Long_Pulse_No.17*	1
18	5496	Long_Pulse_No.18*	1
19	5497	Long_Pulse_No.19*	1
20	5496	Long_Pulse_No.20*	1
21	5522	Long_Pulse_No.21*	1
22	5525	Long_Pulse_No.22*	1
23	5520	Long_Pulse_No.23*	1
24	5523	Long_Pulse_No.24*	1
25	5524	Long_Pulse_No.25*	1
26	5526	Long_Pulse_No.26*	1
27	5522	Long_Pulse_No.27*	0
28	5521	Long_Pulse_No.28*	1
29	5524	Long_Pulse_No.29*	1
30	5521	Long_Pulse_No.30*	1
Detection Percentage: 86.67 % (>60%)			

- *Note*

  **: please refer to Appendix A*

Radar Type 6 Statistical Performance

Trial #	Fc (MHz)	Pulse /Burst	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)	Hopping Sequence (GHz)
1	5510	9	1	333	1	Hopping_List_No.01*
2	5510	9	1	333	1	Hopping_List_No.02*
3	5510	9	1	333	1	Hopping_List_No.03*
4	5510	9	1	333	1	Hopping_List_No.04*
5	5510	9	1	333	1	Hopping_List_No.05*
6	5510	9	1	333	1	Hopping_List_No.06*
7	5510	9	1	333	1	Hopping_List_No.07*
8	5510	9	1	333	1	Hopping_List_No.08*
9	5510	9	1	333	1	Hopping_List_No.09*
10	5510	9	1	333	1	Hopping_List_No.10*
11	5510	9	1	333	1	Hopping_List_No.11*
12	5510	9	1	333	1	Hopping_List_No.12*
13	5510	9	1	333	1	Hopping_List_No.13*
14	5510	9	1	333	1	Hopping_List_No.14*
15	5510	9	1	333	1	Hopping_List_No.15*
16	5510	9	1	333	1	Hopping_List_No.16*
17	5510	9	1	333	1	Hopping_List_No.17*
18	5510	9	1	333	1	Hopping_List_No.18*
19	5510	9	1	333	1	Hopping_List_No.19*
20	5510	9	1	333	1	Hopping_List_No.20*
21	5510	9	1	333	1	Hopping_List_No.21*
22	5510	9	1	333	1	Hopping_List_No.22*
23	5510	9	1	333	1	Hopping_List_No.23*
24	5510	9	1	333	1	Hopping_List_No.24*
25	5510	9	1	333	1	Hopping_List_No.25*
26	5510	9	1	333	1	Hopping_List_No.26*
27	5510	9	1	333	1	Hopping_List_No.27*
28	5510	9	1	333	1	Hopping_List_No.28*
29	5510	9	1	333	1	Hopping_List_No.29*
30	5510	9	1	333	1	Hopping_List_No.30*
Detection Percentage: 100.00 % (>60%)						

- *Note*

  **: please refer to Appendix A*

- **5530 MHz**

Radar Type 1 Statistical Performance

Trial #	Fc (MHz)	Pulse Repetition Frequency Number	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)
1	5530	22	1066.1	938	1
2	5530	10	1432.7	698	1
3	5530	6	1618.1	618	1
4	5530	2	1858.7	538	1
5	5530	19	1139	878	1
6	5530	23	326.2	3066	1
7	5530	7	1567.4	638	1
8	5530	21	1089.3	918	1
9	5530	17	1193.3	838	1
10	5530	18	1165.5	858	1
11	5530	15	1253.1	798	1
12	5530	11	1392.8	718	1
13	5530	4	1730.1	578	1
14	5530	5	1672.2	598	1
15	5530	3	1792.1	558	1
16	5530	-	394.3	2536	0
17	5530	-	1035.2	966	1
18	5530	-	1209.2	827	1
19	5530	-	399.8	2501	1
20	5530	-	385.4	2595	1
21	5530	-	897.7	1114	1
22	5530	-	768	1302	1
23	5530	-	328.4	3045	1
24	5530	-	615.8	1624	1
25	5530	-	347.5	2878	0
26	5530	-	973.7	1027	1
27	5530	-	402.4	2485	1
28	5530	-	625	1600	1
29	5530	-	853.2	1172	1
30	5530	-	849.6	1177	1
Detection Percentage: 93.33 % (>60%)					

Radar Type 2 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (µS)	PRI (µs)	Detection (1:yes; 0:no)
1	5530	26	3.2	179	0
2	5530	23	1.1	207	1
3	5530	24	2.1	230	1
4	5530	29	4.8	200	1
5	5530	28	3.9	214	1
6	5530	26	2.9	222	1
7	5530	26	3.2	204	1
8	5530	25	2.5	192	1
9	5530	26	3.1	164	1
10	5530	23	1.2	156	0
11	5530	27	3.9	210	1
12	5530	29	4.6	201	1
13	5530	26	3.2	162	1
14	5530	25	2.2	197	1
15	5530	29	4.5	163	1
16	5530	26	3	203	1
17	5530	29	5	168	1
18	5530	25	2.4	217	0
19	5530	26	2.9	191	1
20	5530	25	2.3	166	1
21	5530	27	3.7	150	1
22	5530	25	2.2	176	1
23	5530	29	4.9	195	0
24	5530	26	2.9	202	1
25	5530	25	2.5	178	1
26	5530	23	1.1	206	1
27	5530	27	3.8	155	1
28	5530	29	4.7	157	0
29	5530	25	2.4	224	1
30	5530	28	4.2	159	1
Detection Percentage: 83.33 % (>60%)					

Radar Type 3 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)
1	5530	17	8.2	355	1
2	5530	16	6.1	487	1
3	5530	16	7.1	344	1
4	5530	18	9.8	288	1
5	5530	18	8.9	230	0
6	5530	17	7.9	432	1
7	5530	17	8.2	207	1
8	5530	17	7.5	443	1
9	5530	17	8.1	439	1
10	5530	16	6.2	223	1
11	5530	18	8.9	208	1
12	5530	18	9.6	463	0
13	5530	17	8.2	441	1
14	5530	16	7.2	323	1
15	5530	18	9.5	297	1
16	5530	17	8	412	0
17	5530	18	10	324	0
18	5530	17	7.4	271	1
19	5530	17	7.9	349	1
20	5530	16	7.3	409	1
21	5530	18	8.7	373	1
22	5530	16	7.2	254	0
23	5530	18	9.9	274	1
24	5530	17	7.9	278	0
25	5530	17	7.5	317	0
26	5530	16	6.1	260	1
27	5530	18	8.8	211	1
28	5530	18	9.7	272	1
29	5530	17	7.4	264	1
30	5530	18	9.2	284	1
Detection Percentage: 76.67% (>60%)					

Radar Type 4 Statistical Performance

Trial #	Fc (MHz)	Pulse/Burst	Pulse Width (µS)	PRI (µs)	Detection (1:yes; 0:no)
1	5530	14	16	355	1
2	5530	12	11.3	487	0
3	5530	13	13.5	344	1
4	5530	16	19.4	288	1
5	5530	15	17.5	230	1
6	5530	14	15.3	432	0
7	5530	14	15.9	207	1
8	5530	13	14.3	443	0
9	5530	14	15.8	439	1
10	5530	12	11.5	223	0
11	5530	15	17.4	208	1
12	5530	16	19	463	0
13	5530	14	16	441	1
14	5530	13	13.8	323	1
15	5530	16	18.9	297	1
16	5530	14	15.5	412	0
17	5530	16	19.9	324	1
18	5530	13	14.1	271	1
19	5530	14	15.2	349	1
20	5530	13	13.8	409	1
21	5530	15	17.1	373	1
22	5530	13	13.8	254	1
23	5530	16	19.8	274	1
24	5530	14	15.3	278	1
25	5530	13	14.5	317	1
26	5530	12	11.3	260	1
27	5530	15	17.3	211	0
28	5530	16	19.2	272	0
29	5530	13	14.2	264	1
30	5530	15	18.2	284	1
Detection Percentage: 73.33 % (>60%)					

Radar Type 5 Statistical Performance

Trial #	Chirp Center Frequency (MHz)	Test Signal Name	Detection (1:yes; 0:no)
1	5530	Long_Pulse_No.01*	1
2	5530	Long_Pulse_No.02*	0
3	5530	Long_Pulse_No.03*	1
4	5530	Long_Pulse_No.04*	1
5	5530	Long_Pulse_No.05*	1
6	5530	Long_Pulse_No.06*	1
7	5530	Long_Pulse_No.07*	1
8	5530	Long_Pulse_No.08*	0
9	5530	Long_Pulse_No.09*	1
10	5530	Long_Pulse_No.10*	0
11	5499	Long_Pulse_No.11*	1
12	5500	Long_Pulse_No.12*	1
13	5498	Long_Pulse_No.13*	1
14	5496	Long_Pulse_No.14*	1
15	5500	Long_Pulse_No.15*	1
16	5497	Long_Pulse_No.16*	1
17	5500	Long_Pulse_No.17*	1
18	5496	Long_Pulse_No.18*	1
19	5497	Long_Pulse_No.19*	1
20	5496	Long_Pulse_No.20*	1
21	5562	Long_Pulse_No.21*	1
22	5564	Long_Pulse_No.22*	1
23	5560	Long_Pulse_No.23*	1
24	5563	Long_Pulse_No.24*	1
25	5563	Long_Pulse_No.25*	1
26	5566	Long_Pulse_No.26*	1
27	5561	Long_Pulse_No.27*	1
28	5560	Long_Pulse_No.28*	1
29	5564	Long_Pulse_No.29*	1
30	5561	Long_Pulse_No.30*	1
Detection Percentage: 90.00 % (>60%)			

- *Note*

  **: please refer to Appendix A*

Radar Type 6 Statistical Performance

Trial #	Fc (MHz)	Pulse /Burst	Pulse Width (μS)	PRI (μs)	Detection (1:yes; 0:no)	Hopping Sequence (GHz)
1	5530	9	1	333	1	Hopping_List_No.01*
2	5530	9	1	333	1	Hopping_List_No.02*
3	5530	9	1	333	1	Hopping_List_No.03*
4	5530	9	1	333	1	Hopping_List_No.04*
5	5530	9	1	333	1	Hopping_List_No.05*
6	5530	9	1	333	1	Hopping_List_No.06*
7	5530	9	1	333	1	Hopping_List_No.07*
8	5530	9	1	333	1	Hopping_List_No.08*
9	5530	9	1	333	1	Hopping_List_No.09*
10	5530	9	1	333	1	Hopping_List_No.10*
11	5530	9	1	333	1	Hopping_List_No.11*
12	5530	9	1	333	1	Hopping_List_No.12*
13	5530	9	1	333	1	Hopping_List_No.13*
14	5530	9	1	333	1	Hopping_List_No.14*
15	5530	9	1	333	1	Hopping_List_No.15*
16	5530	9	1	333	1	Hopping_List_No.16*
17	5530	9	1	333	1	Hopping_List_No.17*
18	5530	9	1	333	1	Hopping_List_No.18*
19	5530	9	1	333	1	Hopping_List_No.19*
20	5530	9	1	333	1	Hopping_List_No.20*
21	5530	9	1	333	1	Hopping_List_No.21*
22	5530	9	1	333	1	Hopping_List_No.22*
23	5530	9	1	333	0	Hopping_List_No.23*
24	5530	9	1	333	1	Hopping_List_No.24*
25	5530	9	1	333	1	Hopping_List_No.25*
26	5530	9	1	333	1	Hopping_List_No.26*
27	5530	9	1	333	1	Hopping_List_No.27*
28	5530	9	1	333	1	Hopping_List_No.28*
29	5530	9	1	333	1	Hopping_List_No.29*
30	5530	9	1	333	1	Hopping_List_No.30*
Detection Percentage: 96.67 % (>60%)						

- *Note*

  **: please refer to Appendix A*

11 Appendix A- Radar Test Signal Table

Radar Type 5:

Trial Number:			1			
Number of Bursts in Trial:			15			
Test Signal Name:			Long_Pluse_No.01			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	2	77.8	13.0	1665.0	1477.0	636185
2	1	51.9	13.0	1074.0	-	32674
3	1	63.8	13.0	1584.0	-	226294
4	3	96.6	13.0	1682.0	1786.0	417976
5	3	85.9	13.0	1795.0	1215.0	611152
6	2	73.7	13.0	1198.0	1549.0	8789
7	2	77.2	13.0	1837.0	1819.0	201917
8	2	68.4	13.0	1587.0	1114.0	395530
9	2	76.7	13.0	2000.0	1155.0	588564
10	1	53.2	13.0	1147.0	-	783794
11	3	85.7	13.0	1433.0	1695.0	177933
12	3	94.3	13.0	1670.0	1426.0	370624
13	2	77.6	13.0	1294.0	1671.0	564893
14	1	65.7	13.0	1512.0	-	759583
15	3	93.5	13.0	1444.0	1130.0	154262

Trial Number:			2			
Number of Bursts in Trial:			8			
Test Signal Name:			Long_Pluse_No.02			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval(µsec)
1	2	75.0	5.0	1880.0	1527.0	653020
2	3	99.4	5.0	1401.0	1262.0	1015643
3	2	67.4	5.0	1531.0	1403.0	1379398
4	2	73.6	5.0	1449.0	1041.0	245489
5	1	65.9	5.0	1432.0	-	609113
6	3	83.8	5.0	1356.0	1292.0	970852
7	1	65.5	5.0	1543.0	-	1335913
8	3	98.6	5.0	1548.0	1796.0	200406

Trial Number:			3			
Number of Bursts in Trial:			11			
Test Signal Name:			Long_Pluse_No.03			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval(µsec)
1	2	73.8	9.0	1806.0	1538.0	409565
2	2	69.5	9.0	1117.0	1649.0	673692
3	1	51.9	9.0	1651.0	-	938562
4	3	84.6	9.0	1976.0	1032.0	113209
5	3	95.4	9.0	1060.0	1903.0	376726
6	2	68.0	9.0	1368.0	1351.0	641212
7	3	89.6	9.0	1338.0	1514.0	903714
8	2	81.9	9.0	1022.0	1689.0	80863
9	3	88.3	9.0	1810.0	1330.0	344067
10	1	53.7	9.0	1597.0	-	609331
11	3	91.3	9.0	1961.0	1106.0	871542

Trial Number:			4			
Number of Bursts in Trial:			20			
Test Signal Name:			Long_Pluse_No.04			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval (µsec)
1	2	68.1	19.0	1339.0	1355.0	26541
2	1	58.7	19.0	1251.0	-	171821
3	2	75.3	19.0	1136.0	1640.0	316229
4	1	56.4	19.0	1753.0	-	461864
5	3	99.7	19.0	1196.0	1708.0	8677
6	1	57.7	19.0	1013.0	-	153995
7	1	59.5	19.0	1072.0	-	299238
8	2	80.0	19.0	1482.0	1369.0	443177
9	2	82.0	19.0	1993.0	1197.0	587671
10	2	82.8	19.0	1883.0	1005.0	135674
11	3	88.0	19.0	1061.0	1928.0	279928
12	3	93.2	19.0	1207.0	1907.0	424279
13	2	70.4	19.0	1526.0	1360.0	570132
14	3	95.3	19.0	1171.0	1955.0	117439
15	2	81.9	19.0	1690.0	1545.0	262502
16	3	98.5	19.0	1975.0	1169.0	406573
17	1	65.0	19.0	1767.0	-	553328
18	3	85.4	19.0	1011.0	1637.0	99799
19	3	91.6	19.0	1878.0	1445.0	244095
20	2	67.3	19.0	1091.0	1218.0	390012

Trial Number:			5			
Number of Bursts in Trial:			17			
Test Signal Name:			Long_Pluse_No.05			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval(µsec)**
1	2	67.9	16.0	1320.0	1133.0	629614
2	1	62.3	16.0	1957.0	-	96856
3	1	53.3	16.0	1592.0	-	267719
4	3	90.0	16.0	1900.0	1153.0	436784
5	2	77.1	16.0	1166.0	1646.0	608289
6	3	83.9	16.0	1278.0	1232.0	75610
7	3	89.1	16.0	1240.0	1384.0	245638
8	2	81.8	16.0	1833.0	1676.0	416355
9	1	50.3	16.0	1075.0	-	588736
10	3	87.1	16.0	1116.0	1996.0	54571
11	2	71.3	16.0	1225.0	1815.0	225175
12	3	97.5	16.0	1884.0	1465.0	394825
13	3	90.6	16.0	1561.0	1040.0	565361
14	3	86.3	16.0	1596.0	1183.0	33643
15	3	97.6	16.0	1365.0	1073.0	203957
16	3	84.7	16.0	1021.0	1718.0	373812
17	3	99.7	16.0	1150.0	1244.0	544060

Trial Number:			6			
Number of Bursts in Trial:			14			
Test Signal Name:			Long_Pluse_No.06			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval (µsec)
1	3	92.9	12.0	1085.0	1564.0	15438
2	2	67.7	12.0	1744.0	1747.0	222486
3	1	65.8	12.0	1092.0	-	430731
4	1	56.3	12.0	1851.0	-	637784
5	1	53.7	12.0	1727.0	-	845342
6	3	83.5	12.0	1679.0	1930.0	196720
7	1	65.8	12.0	1519.0	-	404955
8	3	85.9	12.0	1134.0	1034.0	610711
9	2	76.3	12.0	1606.0	1926.0	818057
10	2	81.5	12.0	1891.0	1714.0	171459
11	3	89.4	12.0	1310.0	1594.0	377969
12	1	63.4	12.0	1568.0	-	586875
13	2	69.6	12.0	1307.0	1925.0	792834
14	2	74.5	12.0	1264.0	1846.0	146044

Trial Number:			7			
Number of Bursts in Trial:			15			
Test Signal Name:			Long_Pluse_No.07			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval(µsec)**
1	3	96.6	13.0	1182.0	1609.0	329022
2	3	96.7	13.0	1829.0	1799.0	521718
3	3	86.5	13.0	1923.0	1396.0	714222
4	2	73.3	13.0	1908.0	1318.0	112450
5	1	55.8	13.0	1688.0	-	306283
6	1	55.4	13.0	1145.0	-	500239
7	3	85.3	13.0	1336.0	1504.0	690932
8	2	79.4	13.0	1344.0	1893.0	88645
9	1	65.7	13.0	1476.0	-	282508
10	2	68.6	13.0	1008.0	1028.0	475842
11	2	77.7	13.0	1972.0	1835.0	667887
12	2	79.6	13.0	1882.0	1331.0	64845
13	3	94.9	13.0	1830.0	1070.0	257755
14	1	61.4	13.0	1451.0	-	452335
15	3	90.6	13.0	1233.0	1562.0	643395

Trial Number:			8			
Number of Bursts in Trial:			12			
Test Signal Name:			Long_Pluse_No.08			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	1	52.6	10.0	1210.0	-	51446
2	3	84.1	10.0	1314.0	1725.0	292696
3	3	97.7	10.0	1139.0	1868.0	533989
4	3	97.3	10.0	1341.0	1446.0	775564
5	3	98.8	10.0	1544.0	1386.0	21542
6	2	72.2	10.0	1771.0	1184.0	263385
7	2	67.6	10.0	1175.0	1027.0	505581
8	2	75.7	10.0	1026.0	1871.0	747058
9	1	60.9	10.0	1798.0	-	989976
10	1	64.2	10.0	1138.0	-	234024
11	2	78.8	10.0	1784.0	1604.0	475207
12	3	87.5	10.0	1511.0	1712.0	715825

Trial Number:			9			
Number of Bursts in Trial:			14			
Test Signal Name:			Long_Pluse_No.09			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval (µsec)
1	1	54.1	13.0	1415.0	-	823112
2	1	50.7	13.0	1221.0	-	174965
3	1	52.3	13.0	1974.0	-	382216
4	3	99.8	13.0	1558.0	1696.0	587395
5	2	68.4	13.0	1014.0	1099.0	796897
6	2	80.8	13.0	1736.0	1505.0	149042
7	1	62.5	13.0	1778.0	-	356750
8	2	74.8	13.0	1149.0	1204.0	563824
9	1	50.8	13.0	1049.0	-	772314
10	1	54.0	13.0	1417.0	-	123796
11	1	63.0	13.0	1730.0	-	331215
12	3	91.8	13.0	1143.0	1270.0	537402
13	2	79.3	13.0	1274.0	1992.0	744805
14	1	64.3	13.0	1937.0	-	98172

Trial Number:			10			
Number of Bursts in Trial:			8			
Test Signal Name:			Long_Pluse_No.10			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval (µsec)
1	1	63.4	6.0	1415.0	1043.0	-
2	1	52.0	6.0	1221.0	1863.0	-
3	3	97.2	6.0	1974.0	1973.0	1605
4	2	78.7	6.0	1558.0	1466.0	1743
5	2	74.2	6.0	1014.0	1280.0	1219
6	3	88.7	6.0	1736.0	1293.0	1934
7	1	54.3	6.0	1778.0	1991.0	-
8	3	95.4	6.0	1937.0	1580.0	1555

Trial Number:			11			
Number of Bursts in Trial:			17			
Test Signal Name:			Long_Pluse_No.11			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	2	73.7	16.0	1208.0	1497.0	209249
2	3	97.4	16.0	1942.0	1754.0	378386
3	3	91.7	16.0	1999.0	1702.0	548411
4	1	66.2	16.0	1393.0	-	17733
5	2	70.8	16.0	1968.0	1821.0	187952
6	1	52.3	16.0	1740.0	-	359277
7	2	78.9	16.0	1308.0	1984.0	528886
8	2	70.9	16.0	1050.0	1358.0	700166
9	2	75.6	16.0	1437.0	1430.0	167197
10	1	59.1	16.0	1697.0	-	338262
11	2	77.0	16.0	1397.0	1304.0	508324
12	2	67.9	16.0	1803.0	1083.0	678689
13	2	81.2	16.0	1720.0	1932.0	146031
14	2	78.7	16.0	1247.0	1121.0	316923
15	1	63.3	16.0	1634.0	-	488056
16	2	68.9	16.0	1849.0	1423.0	657326
17	1	59.3	16.0	1093.0	-	125509

Trial Number:			12			
Number of Bursts in Trial:			19			
Test Signal Name:			Long_Pluse_No.12			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	3	98.9	19.0	1381.0	1680.0	263736
2	2	82.3	19.0	1716.0	1855.0	416459
3	3	86.7	19.0	1211.0	1400.0	567902
4	3	89.7	19.0	1861.0	1068.0	92979
5	3	98.6	19.0	1507.0	1194.0	245155
6	2	71.1	19.0	1921.0	1789.0	397609
7	1	55.9	19.0	1947.0	-	551431
8	2	67.9	19.0	1350.0	1372.0	74413
9	3	84.4	19.0	1203.0	1107.0	226559
10	1	58.8	19.0	1715.0	-	380056
11	1	65.6	19.0	1017.0	-	533408
12	2	78.5	19.0	1911.0	1704.0	55547
13	2	82.3	19.0	1845.0	1686.0	207876
14	3	90.1	19.0	1938.0	1071.0	359771
15	3	90.2	19.0	1989.0	1089.0	511297
16	2	83.1	19.0	1943.0	1406.0	36803
17	1	58.8	19.0	1742.0	-	189652
18	2	77.0	19.0	1187.0	1657.0	341809
19	1	55.0	19.0	1012.0	-	495737

Trial Number:			13			
Number of Bursts in Trial:			15			
Test Signal Name:			Long_Pluse_No.13			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	1	58.1	13.0	1929.0	-	22911
2	1	52.1	13.0	1910.0	-	216473
3	1	59.9	13.0	1971.0	-	410004
4	1	60.2	13.0	1812.0	-	603671
5	3	95.9	13.0	1399.0	1906.0	794160
6	2	79.9	13.0	1626.0	1859.0	192251
7	2	78.5	13.0	1238.0	1917.0	385590
8	1	53.8	13.0	1763.0	-	579862
9	1	64.7	13.0	1800.0	-	773423
10	1	61.4	13.0	1390.0	-	168898
11	2	83.2	13.0	1692.0	1858.0	361606
12	3	84.7	13.0	1533.0	1677.0	553866
13	3	88.7	13.0	1703.0	1528.0	747241
14	2	78.3	13.0	1258.0	1951.0	144710
15	2	69.3	13.0	1731.0	1717.0	337856

Trial Number:			14			
Number of Bursts in Trial:			12			
Test Signal Name:			Long_Pluse_No.14			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	2	75.3	10.0	1994.0	1612.0	664275
2	1	56.3	10.0	1456.0	-	907886
3	2	67.7	10.0	1617.0	1185.0	151316
4	1	55.6	10.0	1337.0	-	393746
5	2	75.2	10.0	1421.0	1267.0	635093
6	2	76.3	10.0	1359.0	1305.0	876993
7	3	85.7	10.0	1547.0	1362.0	121278
8	3	98.4	10.0	1873.0	1550.0	362696
9	3	86.4	10.0	1779.0	1439.0	604342
10	3	93.6	10.0	1059.0	1031.0	846453
11	1	63.3	10.0	1328.0	-	91871
12	3	92.4	10.0	1412.0	1673.0	333050

Trial Number:			15			
Number of Bursts in Trial:			19			
Test Signal Name:			Long_Pluse_No.15			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	3	93.3	18.0	1983.0	1912.0	361323
2	2	69.1	18.0	1102.0	1794.0	515261
3	3	86.9	18.0	1044.0	1152.0	39025
4	3	84.9	18.0	1894.0	1948.0	190900
5	2	72.3	18.0	1094.0	1916.0	343941
6	1	51.7	18.0	1447.0	-	497624
7	1	58.3	18.0	1429.0	-	20319
8	1	60.8	18.0	1979.0	-	172999
9	1	57.1	18.0	1641.0	-	325872
10	3	88.9	18.0	1886.0	1964.0	475841
11	2	72.0	18.0	1909.0	1297.0	1489
12	3	90.9	18.0	1261.0	1566.0	153647
13	1	59.8	18.0	1552.0	-	307096
14	2	70.0	18.0	1759.0	1291.0	458804
15	2	67.2	18.0	1625.0	1881.0	610798
16	3	91.2	18.0	1382.0	1832.0	134759
17	1	56.5	18.0	1483.0	-	288306
18	1	51.2	18.0	1237.0	-	441296
19	2	74.1	18.0	1471.0	1245.0	592780

Trial Number:			16			
Number of Bursts in Trial:			14			
Test Signal Name:			Long_Pluse_No.16			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	2	76.9	12.0	1110.0	1140.0	158286
2	1	50.2	12.0	1316.0	-	366024
3	1	62.9	12.0	1520.0	-	573452
4	1	64.7	12.0	1902.0	-	780619
5	3	83.8	12.0	1410.0	1097.0	132455
6	1	65.4	12.0	1944.0	-	340207
7	1	53.2	12.0	1024.0	-	548208
8	1	51.7	12.0	1603.0	-	755333
9	2	78.7	12.0	1804.0	1168.0	107117
10	2	72.4	12.0	1030.0	1343.0	314500
11	1	53.8	12.0	1327.0	-	522447
12	2	73.6	12.0	1524.0	1553.0	728517
13	2	66.7	12.0	1722.0	1122.0	81611
14	2	82.5	12.0	1404.0	1019.0	288948

Trial Number:			17			
Number of Bursts in Trial:			20			
Test Signal Name:			Long_Pluse_No.17			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	3	87.6	20.0	1565.0	1055.0	345766
2	3	85.2	20.0	1735.0	1541.0	490019
3	3	84.8	20.0	1534.0	1889.0	39073
4	2	77.9	20.0	1749.0	1460.0	183923
5	2	76.5	20.0	1518.0	1485.0	328777
6	1	60.9	20.0	1540.0	-	474728
7	2	83.0	20.0	1080.0	1010.0	21394
8	2	80.4	20.0	1824.0	1752.0	165992
9	2	67.5	20.0	1764.0	1181.0	310973
10	1	62.1	20.0	1495.0	-	456884
11	3	86.4	20.0	1773.0	1966.0	3515
12	3	84.3	20.0	1593.0	1188.0	147928
13	2	76.9	20.0	1226.0	1537.0	293225
14	3	95.8	20.0	1192.0	1298.0	436922
15	1	55.2	20.0	1644.0	-	584015
16	1	59.0	20.0	1402.0	-	130832
17	3	94.5	20.0	1296.0	1700.0	274684
18	3	91.9	20.0	1970.0	1978.0	418579
19	3	85.2	20.0	1732.0	1551.0	563464
20	2	69.5	20.0	1038.0	1224.0	112787

Trial Number:			18			
Number of Bursts in Trial:			12			
Test Signal Name:			Long_Pluse_No.18			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	3	86.4	10.0	1259.0	1918.0	429224
2	3	92.2	10.0	1598.0	1719.0	670241
3	2	80.4	10.0	1816.0	1899.0	912880
4	1	54.3	10.0	1335.0	-	158603
5	1	53.1	10.0	1303.0	-	400824
6	2	69.4	10.0	1503.0	1546.0	641915
7	2	69.1	10.0	1279.0	1639.0	883823
8	3	100.0	10.0	1375.0	1438.0	128373
9	2	79.6	10.0	1239.0	1705.0	370379
10	3	88.4	10.0	1374.0	1579.0	611194
11	1	53.3	10.0	1016.0	-	855665
12	1	65.3	10.0	1709.0	-	98897

Trial Number:			19			
Number of Bursts in Trial:			14			
Test Signal Name:			Long_Pluse_No.19			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	1	55.3	12.0	1920.0	-	292143
2	1	58.3	12.0	1797.0	-	499633
3	2	72.3	12.0	1610.0	1039.0	706377
4	3	84.8	12.0	1131.0	1761.0	58989
5	2	82.5	12.0	1875.0	1431.0	266161
6	1	63.3	12.0	1095.0	-	474469
7	2	80.0	12.0	1119.0	1913.0	680544
8	3	90.3	12.0	1660.0	1853.0	33519
9	3	91.1	12.0	1539.0	1783.0	240319
10	3	96.6	12.0	1525.0	1036.0	447400
11	2	82.7	12.0	1710.0	1990.0	654516
12	1	50.7	12.0	1234.0	-	8083
13	2	78.4	12.0	1047.0	1109.0	215435
14	3	99.5	12.0	1299.0	1965.0	421325

Trial Number:			20			
Number of Bursts in Trial:			12			
Test Signal Name:			Long_Pluse_No.20			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	3	88.6	10.0	1501.0	1067.0	733725
2	1	57.4	10.0	1723.0	-	977882
3	3	96.6	10.0	1086.0	1658.0	221197
4	2	69.7	10.0	1751.0	1945.0	462915
5	2	77.9	10.0	1642.0	1317.0	705071
6	1	62.0	10.0	1866.0	-	947923
7	3	88.4	10.0	1997.0	1077.0	191373
8	3	97.3	10.0	1790.0	1896.0	432561
9	3	96.2	10.0	1391.0	1787.0	674004
10	3	95.4	10.0	1020.0	1892.0	915842
11	1	54.8	10.0	1084.0	-	162176
12	2	80.4	10.0	1850.0	1436.0	403553

Trial Number:			21			
Number of Bursts in Trial:			16			
Test Signal Name:			Long_Pluse_No.21			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	2	74.7	15.0	1619.0	1611.0	483470
2	1	57.1	15.0	1560.0	-	666072
3	3	91.9	15.0	1392.0	1475.0	98810
4	2	83.1	15.0	1809.0	1772.0	279914
5	1	50.7	15.0	1003.0	-	462536
6	2	79.2	15.0	1574.0	1600.0	642324
7	1	58.7	15.0	1186.0	-	76831
8	2	71.0	15.0	1521.0	1567.0	257785
9	2	79.0	15.0	1777.0	1960.0	438554
10	2	68.5	15.0	1284.0	1428.0	620397
11	2	73.5	15.0	1904.0	1352.0	54310
12	2	70.5	15.0	1864.0	1115.0	235506
13	2	76.6	15.0	1045.0	1300.0	417036
14	2	81.2	15.0	1160.0	1675.0	597974
15	1	61.8	15.0	1277.0	-	32086
16	3	94.9	15.0	1450.0	1206.0	212751

Trial Number:			22			
Number of Bursts in Trial:			12			
Test Signal Name:			Long_Pluse_No.22			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	2	78.5	9.0	1653.0	1698.0	526149
2	3	89.8	9.0	1174.0	1962.0	767135
3	1	59.4	9.0	1982.0	-	12955
4	2	79.6	9.0	1633.0	1890.0	254612
5	2	76.0	9.0	1112.0	1811.0	496588
6	1	53.6	9.0	1144.0	-	739728
7	2	80.9	9.0	1220.0	1053.0	980872
8	1	61.6	9.0	1724.0	-	225249
9	1	53.4	9.0	1901.0	-	467279
10	1	59.9	9.0	1379.0	-	709720
11	1	60.4	9.0	1453.0	-	951847
12	3	91.4	9.0	1768.0	1726.0	194839

Trial Number:			23			
Number of Bursts in Trial:			20			
Test Signal Name:			Long_Pluse_No.23			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	2	77.0	20.0	1191.0	1363.0	261858
2	1	58.1	20.0	1248.0	-	407646
3	1	62.1	20.0	1836.0	-	552319
4	2	76.9	20.0	1334.0	1236.0	99107
5	2	80.0	20.0	1914.0	1852.0	243514
6	1	52.0	20.0	1701.0	-	389464
7	3	88.6	20.0	1693.0	1995.0	531093
8	2	72.9	20.0	1922.0	1387.0	81159
9	3	98.5	20.0	1839.0	1746.0	225245
10	1	57.9	20.0	1193.0	-	371906
11	3	95.9	20.0	1659.0	1870.0	514197
12	1	53.5	20.0	1162.0	-	63561
13	3	92.0	20.0	1745.0	1654.0	207510
14	1	57.3	20.0	1834.0	-	353638
15	2	70.5	20.0	1684.0	1586.0	497515
16	2	70.0	20.0	1042.0	1664.0	45553
17	3	84.0	20.0	1765.0	1630.0	189821
18	2	76.1	20.0	1557.0	1057.0	335330
19	3	93.2	20.0	1985.0	1018.0	478825
20	3	96.8	20.0	1760.0	1614.0	27594

Trial Number:			24			
Number of Bursts in Trial:			14			
Test Signal Name:			Long_Pluse_No.24			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	1	50.1	12.0	1841.0	-	247117
2	3	93.5	12.0	1590.0	1081.0	453362
3	2	68.8	12.0	1707.0	1577.0	660875
4	1	56.3	12.0	1056.0	-	14140
5	3	86.0	12.0	1953.0	1108.0	220734
6	2	75.2	12.0	1572.0	1536.0	428367
7	1	54.4	12.0	1517.0	-	636681
8	2	71.1	12.0	1329.0	1243.0	843157
9	2	76.2	12.0	1940.0	1770.0	195585
10	2	80.2	12.0	1098.0	1209.0	403231
11	2	79.7	12.0	1588.0	1214.0	610202
12	3	90.9	12.0	1615.0	1862.0	815229
13	2	68.7	12.0	1377.0	1441.0	170267
14	2	67.4	12.0	1872.0	1313.0	377306

Trial Number:			25			
Number of Bursts in Trial:			13			
Test Signal Name:			Long_Pluse_No.25			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval (µsec)
1	3	94.0	11.0	1643.0	1748.0	628071
2	2	70.8	11.0	1177.0	1201.0	853391
3	1	56.3	11.0	1006.0	-	156223
4	3	96.7	11.0	1230.0	1163.0	378734
5	3	90.6	11.0	1217.0	1582.0	601331
6	2	74.5	11.0	1569.0	1281.0	825462
7	3	92.6	11.0	1065.0	1669.0	128265
8	3	89.0	11.0	1493.0	1135.0	351161
9	3	96.5	11.0	1607.0	1822.0	573425
10	2	70.5	11.0	1141.0	1178.0	798431
11	3	94.0	11.0	1009.0	1629.0	100737
12	1	55.8	11.0	1290.0	-	324661
13	3	87.7	11.0	1435.0	1963.0	546278

Trial Number:			26			
Number of Bursts in Trial:			8			
Test Signal Name:			Long_Pluse_No.26			
Burst	Number of Pulses	Pulse Width (µsec)	Chirp Width (MHz)	Pulse 1-to-2 Spacing (µsec)	Pulse 2-to-3 Spacing (µsec)	Starting Location Within Interval (µsec)
1	2	68.6	5.0	1306.0	1161.0	1253842
2	2	83.1	5.0	1420.0	1315.0	119486
3	1	60.9	5.0	1687.0	-	482958
4	2	77.7	5.0	1776.0	1158.0	845641
5	2	77.4	5.0	1793.0	1510.0	1208428
6	2	66.8	5.0	1576.0	1323.0	74748
7	1	63.7	5.0	1333.0	-	438300
8	3	91.2	5.0	1409.0	1681.0	800152

Trial Number:			27			
Number of Bursts in Trial:			17			
Test Signal Name:			Long_Pluse_No.27			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	3	83.6	16.0	1632.0	1195.0	545865
2	3	89.4	16.0	1173.0	1627.0	14067
3	1	55.8	16.0	1532.0	-	184953
4	3	90.9	16.0	1981.0	1554.0	353759
5	1	54.7	16.0	1825.0	-	526388
6	3	97.7	16.0	1734.0	1202.0	694806
7	2	67.5	16.0	1571.0	1434.0	163568
8	3	96.7	16.0	1589.0	1469.0	333410
9	2	68.3	16.0	1750.0	1954.0	504006
10	2	78.3	16.0	1591.0	1082.0	675297
11	1	55.0	16.0	1427.0	-	142890
12	3	84.9	16.0	1129.0	1936.0	312479
13	2	74.6	16.0	1959.0	1856.0	482953
14	1	63.3	16.0	1885.0	-	655022
15	3	99.8	16.0	1035.0	1515.0	121457
16	1	63.6	16.0	1647.0	-	292606
17	3	87.3	16.0	1931.0	1051.0	461322

Trial Number:			28			
Number of Bursts in Trial:			19			
Test Signal Name:			Long_Pluse_No.28			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	3	85.6	19.0	1946.0	1078.0	565136
2	2	68.6	19.0	1029.0	1780.0	89970
3	1	54.2	19.0	1111.0	-	243121
4	1	61.2	19.0	1104.0	-	396034
5	3	97.1	19.0	1157.0	1969.0	546225
6	3	98.3	19.0	1142.0	1699.0	70998
7	1	62.4	19.0	1655.0	-	224093
8	2	80.2	19.0	1126.0	1769.0	376127
9	3	87.5	19.0	1216.0	1448.0	527806
10	3	85.8	19.0	1847.0	1348.0	52247
11	3	88.1	19.0	1023.0	1124.0	204582
12	1	65.3	19.0	1848.0	-	357941
13	1	52.5	19.0	1470.0	-	510977
14	1	52.3	19.0	1312.0	-	33698
15	2	74.1	19.0	1915.0	1200.0	186023
16	1	54.9	19.0	1479.0	-	339327
17	2	76.2	19.0	1376.0	1502.0	491053
18	1	60.4	19.0	1758.0	-	14858
19	2	81.5	19.0	1491.0	1103.0	167387

Trial Number:			29			
Number of Bursts in Trial:			12			
Test Signal Name:			Long_Pluse_No.29			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval (µsec)**
1	1	50.5	10.0	1857.0	-	507709
2	1	55.7	10.0	1246.0	-	750249
3	3	85.8	10.0	1774.0	1002.0	989003
4	2	76.9	10.0	1125.0	1474.0	235634
5	2	75.1	10.0	1254.0	1052.0	477675
6	3	92.3	10.0	1180.0	1486.0	718312
7	2	78.1	10.0	1301.0	1757.0	960895
8	3	92.2	10.0	1898.0	1252.0	205370
9	3	89.0	10.0	1260.0	1706.0	446940
10	2	70.9	10.0	1578.0	1620.0	689225
11	1	63.1	10.0	1782.0	-	932305
12	1	55.3	10.0	1522.0	-	176231

Trial Number:			30			
Number of Bursts in Trial:			18			
Test Signal Name:			Long_Pluse_No.30			
Burst	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 Spacing (µsec)**	**Pulse 2-to-3 Spacing (µsec)**	**Starting Location Within Interval(µsec)**
1	3	83.4	17.0	1454.0	1205.0	277485
2	3	97.3	17.0	1319.0	1826.0	437880
3	3	90.4	17.0	1079.0	1986.0	598445
4	3	91.8	17.0	1563.0	1151.0	97088
5	3	98.2	17.0	1876.0	1977.0	257251
6	1	59.5	17.0	1952.0	-	419893
7	2	80.0	17.0	1253.0	1137.0	580724
8	3	86.5	17.0	1054.0	1128.0	77366
9	3	91.1	17.0	1105.0	1599.0	238032
10	3	93.5	17.0	1867.0	1373.0	398605
11	1	60.7	17.0	1033.0	-	562025
12	2	67.2	17.0	1288.0	1405.0	57684
13	1	61.8	17.0	1585.0	-	219083
14	2	79.4	17.0	1933.0	1667.0	379234
15	2	81.4	17.0	1096.0	1464.0	540896
16	1	65.7	17.0	1496.0	-	37916
17	2	76.0	17.0	1733.0	1255.0	198794
18	2	81.0	17.0	1326.0	1668.0	359754

Radar Type 6

Hopping_List_No.01					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5364	5717	5334	5705	5549
5	5312	5260	5635	5503	5570
10	5347	5508	5292	5447	5588
15	5621	5638	5296	5482	5455
20	5636	5593	5434	5306	5411
25	5556	5378	5478	5432	5341
30	5438	5294	5496	5285	5327
35	5293	5502	5277	5403	5330
40	5612	5720	5544	5615	5561
45	5676	5704	5366	5290	5387
50	5278	5723	5383	5368	5263
55	5630	5375	5718	5281	5604
60	5453	5509	5479	5400	5262
65	5354	5467	5545	5466	5611
70	5715	5402	5568	5641	5396
75	5567	5557	5674	5359	5392
80	5313	5537	5258	5475	5272
85	5388	5474	5555	5410	5355
90	5517	5382	5386	5664	5697
95	5721	5268	5489	5706	5525

Hopping_List_No.02					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5619	5578	5270	5294	5354
5	5660	5710	5666	5399	5656
10	5297	5333	5642	5609	5709
15	5668	5527	5647	5547	5284
20	5375	5395	5384	5444	5705
25	5584	5536	5480	5658	5453
30	5403	5576	5588	5641	5465
35	5674	5580	5623	5559	5627
40	5553	5704	5673	5633	5724
45	5373	5348	5331	5513	5637
50	5544	5314	5585	5697	5257
55	5672	5471	5423	5424	5638
60	5644	5345	5569	5655	5413
65	5271	5415	5550	5371	5335
70	5382	5416	5533	5706	5558
75	5535	5692	5256	5436	5716
80	5385	5669	5458	5349	5456
85	5336	5634	5703	5352	5280
90	5506	5313	5690	5326	5631
95	5628	5546	5289	5490	5590

Hopping_List_No.03					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5302	5342	5681	5455	5611
5	5493	5682	5310	5257	5606
10	5587	5561	5374	5362	5630
15	5322	5320	5502	5475	5364
20	5555	5353	5316	5387	5357
25	5332	5654	5312	5262	5409
30	5522	5547	5410	5618	5253
35	5311	5683	5556	5470	5258
40	5537	5398	5710	5491	5469
45	5670	5465	5704	5456	5406
50	5384	5400	5513	5720	5365
55	5296	5276	5641	5445	5626
60	5564	5620	5395	5334	5290
65	5401	5578	5359	5569	5586
70	5282	5649	5407	5368	5647
75	5643	5509	5592	5675	5678
80	5581	5275	5381	5512	5600
85	5304	5382	5389	5458	5666
90	5419	5642	5350	5526	5519
95	5709	5692	5418	5653	5354

Hopping_List_No.04					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5557	5581	5617	5616	5356
5	5535	5704	5385	5420	5338
10	5518	5350	5415	5651	5313
15	5447	5605	5520	5653	5563
20	5519	5257	5476	5330	5598
25	5506	5515	5366	5443	5661
30	5533	5367	5358	5502	5606
35	5347	5647	5266	5411	5451
40	5334	5332	5709	5667	5394
45	5684	5539	5464	5437	5665
50	5389	5421	5416	5574	5488
55	5536	5580	5279	5439	5324
60	5499	5710	5708	5404	5305
65	5295	5525	5589	5359	5452
70	5576	5272	5492	5388	5551
75	5547	5323	5724	5256	5721
80	5293	5379	5584	5361	5508
85	5479	5693	5341	5655	5715
90	5629	5494	5401	5637	5423
95	5280	5316	5662	5281	5649

Hopping_List_No.05					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5337	5345	5553	5302	5673
5	5577	5629	5460	5583	5642
10	5352	5614	5456	5655	5672
15	5401	5574	5611	5565	5370
20	5571	5588	5295	5468	5303
25	5486	5358	5718	5470	5380
30	5703	5422	5324	5573	5654
35	5426	5263	5634	5661	5462
40	5648	5498	5270	5474	5664
45	5701	5622	5425	5490	5552
50	5265	5597	5467	5300	5432
55	5724	5437	5469	5258	5715
60	5453	5277	5637	5705	5348
65	5593	5262	5561	5251	5255
70	5275	5341	5364	5510	5516
75	5346	5712	5504	5549	5356
80	5527	5376	5264	5447	5442
85	5454	5658	5428	5544	5374
90	5343	5663	5478	5689	5384
95	5372	5707	5274	5292	5466

Hopping_List_No.06					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5592	5584	5489	5463	5418
5	5619	5651	5535	5271	5374
10	5283	5500	5594	5375	5693
15	5604	5714	5610	5562	5482
20	5279	5711	5557	5276	5277
25	5307	5446	5574	5414	5270
30	5408	5281	5691	5428	5624
35	5625	5354	5430	5339	5376
40	5487	5581	5683	5617	5630
45	5644	5705	5483	5342	5519
50	5298	5518	5563	5598	5437
55	5391	5659	5455	5686	5582
60	5697	5469	5628	5294	5319
65	5597	5631	5521	5436	5423
70	5278	5665	5340	5485	5466
75	5438	5315	5275	5614	5330
80	5520	5590	5596	5264	5289
85	5405	5646	5526	5346	5676
90	5267	5539	5349	5600	5258
95	5671	5533	5345	5587	5523

Hopping_List_No.07					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5372	5348	5425	5624	5260
5	5283	5576	5610	5434	5581
10	5689	5289	5635	5570	5714
15	5577	5256	5342	5558	5279
20	5490	5652	5549	5724	5640
25	5634	5552	5300	5448	5409
30	5297	5713	5431	5580	5444
35	5667	5445	5701	5492	5290
40	5326	5286	5621	5382	5280
45	5559	5313	5541	5499	5704
50	5395	5474	5569	5274	5421
55	5698	5625	5345	5374	5657
60	5711	5519	5642	5301	5454
65	5715	5520	5536	5366	5413
70	5414	5378	5417	5316	5428
75	5357	5586	5484	5296	5430
80	5627	5684	5653	5273	5606
85	5465	5363	5491	5352	5355
90	5518	5631	5688	5588	5329
95	5485	5502	5590	5390	5531

Hopping_List_No.08					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5530	5587	5361	5310	5480
5	5325	5598	5685	5500	5410
10	5523	5553	5676	5290	5260
15	5568	5383	5445	5603	5471
20	5498	5514	5690	5638	5697
25	5431	5583	5280	5404	5482
30	5451	5661	5670	5646	5354
35	5642	5331	5633	5594	5267
40	5301	5640	5369	5559	5622
45	5277	5391	5507	5396	5502
50	5552	5494	5271	5650	5620
55	5363	5719	5545	5338	5299
60	5564	5628	5268	5684	5608
65	5283	5343	5584	5572	5673
70	5683	5517	5492	5381	5266
75	5292	5387	5326	5706	5627
80	5682	5262	5367	5276	5716
85	5270	5511	5428	5458	5359
90	5351	5600	5285	5394	5571
95	5400	5265	5327	5643	5313

Hopping_List_No.09					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5310	5351	5297	5374	5322
5	5367	5523	5285	5663	5617
10	5454	5342	5717	5485	5281
15	5656	5510	5548	5648	5409
20	5680	5631	5630	5670	5319
25	5435	5483	5508	5516	5493
30	5647	5627	5386	5506	5462
35	5470	5724	5390	5420	5690
40	5576	5452	5497	5387	5274
45	5320	5487	5479	5560	5605
50	5381	5622	5671	5445	5489
55	5526	5253	5279	5502	5397
60	5629	5440	5678	5704	5544
65	5533	5608	5408	5478	5655
70	5481	5590	5268	5346	5673
75	5254	5295	5258	5459	5372
80	5623	5401	5267	5706	5545
85	5488	5650	5324	5305	5373
90	5559	5464	5660	5344	5698
95	5394	5378	5363	5321	5311

Hopping_List_No.10					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5565	5590	5708	5535	5542
5	5409	5545	5360	5351	5349
10	5288	5606	5283	5583	5302
15	5269	5637	5554	5693	5380
20	5417	5274	5572	5719	5643
25	5682	5287	5686	5612	5550
30	5632	5536	5584	5504	5280
35	5660	5512	5340	5661	5573
40	5604	5415	5435	5530	5271
45	5627	5467	5562	5618	5658
50	5646	5401	5527	5722	5541
55	5268	5336	5714	5372	5473
60	5526	5539	5574	5369	5650
65	5367	5482	5547	5715	5370
70	5598	5252	5464	5484	5439
75	5622	5305	5642	5374	5341
80	5711	5385	5404	5264	5523
85	5448	5326	5451	5270	5667
90	5356	5621	5303	5724	5470
95	5639	5386	5361	5278	5378

Hopping_List_No.11					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5345	5354	5644	5696	5384
5	5548	5470	5435	5514	5653
10	5694	5492	5324	5303	5323
15	5357	5667	5657	5641	5572
20	5425	5440	5610	5711	5616
25	5473	5414	5338	5584	5674
30	5541	5719	5432	5480	5651
35	5431	5457	5348	5615	5254
40	5715	5373	5295	5365	5556
45	5447	5645	5579	5533	5277
50	5703	5298	5252	5566	5280
55	5330	5636	5562	5403	5444
60	5655	5704	5519	5676	5427
65	5596	5568	5583	5450	5640
70	5304	5421	5547	5288	5598
75	5264	5494	5484	5695	5488
80	5495	5660	5293	5527	5639
85	5718	5351	5643	5511	5462
90	5632	5310	5394	5501	5476
95	5576	5327	5378	5333	5362

Hopping_List_No.12					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5503	5593	5580	5382	5604
5	5590	5492	5510	5385	5625
10	5281	5365	5498	5344	5348
15	5319	5285	5686	5386	5336
20	5509	5551	5325	5589	5361
25	5563	5520	5442	5618	5716
30	5411	5459	5681	5300	5315
35	5522	5350	5501	5529	5568
40	5323	5689	5535	5362	5485
45	5427	5253	5637	5667	5628
50	5404	5349	5341	5389	5602
55	5518	5277	5697	5415	5309
60	5394	5464	5508	5639	5391
65	5380	5282	5532	5582	5493
70	5533	5587	5515	5574	5698
75	5483	5614	5530	5676	5265
80	5605	5441	5360	5636	5438
85	5351	5474	5654	5500	5642
90	5321	5579	5482	5610	5684
95	5388	5443	5547	5581	5527

Hopping_List_No.13					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5283	5357	5516	5543	5446
5	5632	5417	5585	5268	5592
10	5459	5545	5406	5693	5365
15	5436	5388	5256	5578	5344
20	5675	5492	5317	5562	5627
25	5512	5723	5546	5652	5380
30	5300	5455	5674	5358	5498
35	5454	5710	5621	5654	5443
40	5504	5678	5359	5407	5336
45	5695	5720	5685	5580	5400
50	5430	5687	5706	5544	5467
55	5419	5289	5438	5559	5506
60	5340	5554	5329	5558	5327
65	5385	5662	5519	5590	5364
70	5550	5657	5355	5259	5673
75	5420	5618	5697	5524	5275
80	5633	5254	5424	5534	5274
85	5465	5315	5415	5269	5488
90	5547	5566	5616	5509	5427
95	5445	5560	5636	5347	5432

Hopping_List_No.14					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5538	5596	5452	5704	5666
5	5674	5439	5660	5431	5324
10	5390	5334	5544	5413	5386
15	5524	5573	5491	5301	5295
20	5352	5269	5530	5406	5535
25	5515	5364	5451	5650	5686
30	5422	5664	5412	5317	5607
35	5318	5496	5326	5417	5429
40	5454	5343	5489	5565	5443
45	5356	5721	5387	5419	5656
50	5298	5475	5283	5281	5519
55	5393	5498	5657	5713	5260
60	5470	5724	5647	5477	5531
65	5278	5594	5597	5663	5259
70	5505	5690	5688	5526	5282
75	5719	5638	5672	5253	5478
80	5338	5630	5450	5632	5266
85	5497	5466	5333	5366	5339
90	5434	5591	5581	5351	5250
95	5411	5442	5264	5545	5527

Hopping_List_No.15					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5318	5360	5388	5390	5508
5	5338	5364	5260	5594	5628
10	5321	5598	5585	5511	5407
15	5612	5700	5497	5724	5487
20	5263	5435	5471	5398	5306
25	5691	5654	5279	5720	5464
30	5650	5369	5532	5284	5516
35	5635	5417	5310	5582	5368
40	5657	5669	5503	5683	5353
45	5553	5270	5502	5714	5351
50	5362	5634	5457	5608	5711
55	5337	5607	5452	5372	5706
60	5599	5414	5396	5576	5303
65	5574	5616	5702	5533	5534
70	5489	5466	5428	5588	5693
75	5537	5478	5293	5402	5387
80	5716	5449	5266	5259	5377
85	5401	5627	5645	5632	5583
90	5557	5561	5298	5320	5339
95	5597	5518	5708	5262	5543

Hopping_List_No.16					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5573	5599	5324	5551	5253
5	5380	5386	5335	5660	5360
10	5630	5484	5626	5706	5428
15	5603	5255	5600	5294	5679
20	5271	5504	5412	5487	5481
25	5669	5640	5382	5480	5279
30	5506	5539	5326	5272	5533
35	5336	5299	5508	5581	5260
40	5282	5496	5277	5441	5448
45	5447	5482	5250	5585	5297
50	5404	5627	5510	5633	5553
55	5319	5534	5659	5320	5406
60	5562	5351	5677	5579	5438
65	5408	5604	5520	5342	5651
70	5569	5366	5284	5647	5500
75	5574	5318	5289	5381	5437
80	5522	5530	5697	5701	5376
85	5515	5444	5561	5624	5365
90	5535	5278	5641	5371	5587
95	5357	5552	5493	5560	5608

Hopping_List_No.17					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5256	5460	5260	5615	5570
5	5422	5311	5410	5348	5567
10	5561	5273	5667	5426	5449
15	5691	5382	5703	5339	5396
20	5279	5670	5353	5479	5454
25	5557	5492	5488	5584	5313
30	5645	5525	5283	5487	5685
35	5534	5341	5599	5377	5413
40	5671	5335	5360	5379	5591
45	5444	5411	5705	5668	5258
50	5457	5514	5289	5334	5604
55	5408	5357	5603	5263	5655
60	5548	5551	5269	5383	5715
65	5527	5466	5640	5600	5508
70	5576	5651	5450	5669	5560
75	5321	5613	5609	5642	5678
80	5478	5486	5296	5608	5624
85	5524	5438	5364	5580	5470
90	5606	5325	5555	5489	5375
95	5480	5674	5663	5282	5573

Hopping_List_No.18					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5511	5699	5671	5301	5315
5	5464	5333	5485	5396	5492
10	5537	5708	5621	5470	5304
15	5509	5331	5287	5588	5665
20	5264	5391	5568	5427	5348
25	5441	5691	5688	5347	5687
30	5414	5715	5605	5459	5354
35	5480	5312	5648	5663	5682
40	5271	5540	5317	5356	5718
45	5685	5276	5316	5413	5640
50	5510	5655	5497	5558	5450
55	5599	5692	5370	5367	5522
60	5434	5328	5547	5353	5412
65	5366	5549	5544	5408	5446
70	5253	5266	5546	5421	5462
75	5355	5481	5719	5659	5633
80	5499	5552	5297	5521	5280
85	5438	5681	5543	5565	5474
90	5279	5608	5375	5619	5712
95	5523	5257	5541	5507	5261

Hopping_List_No.19					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5291	5463	5607	5462	5632
5	5603	5258	5560	5674	5326
10	5274	5341	5491	5392	5636
15	5434	5332	5305	5673	5430
20	5400	5711	5293	5419	5317
25	5381	5254	5303	5672	5345
30	5611	5649	5619	5403	5541
35	5596	5585	5623	5633	5438
40	5647	5665	5359	5374	5466
45	5666	5516	5589	5706	5586
50	5394	5312	5646	5661	5493
55	5543	5599	5273	5476	5276
60	5455	5664	5498	5580	5618
65	5338	5531	5435	5629	5424
70	5311	5309	5314	5450	5310
75	5290	5640	5410	5609	5333
80	5461	5275	5518	5572	5620
85	5506	5282	5342	5330	5573
90	5718	5557	5517	5601	5708
95	5298	5525	5405	5304	5682

Hopping_List_No.20					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5546	5702	5543	5623	5377
5	5645	5280	5635	5265	5335
10	5257	5590	5315	5439	5512
15	5383	5288	5440	5594	5681
20	5596	5273	5649	5373	5502
25	5620	5622	5518	5415	5393
30	5289	5629	5560	5385	5372
35	5283	5494	5337	5510	5424
40	5706	5571	5361	5435	5479
45	5442	5519	5456	5392	5290
50	5282	5297	5679	5716	5500
55	5600	5275	5464	5672	5308
60	5577	5401	5390	5447	5450
65	5608	5334	5507	5615	5524
70	5285	5322	5430	5433	5621
75	5662	5719	5589	5528	5515
80	5292	5462	5566	5307	5284
85	5296	5474	5724	5399	5710
90	5250	5353	5509	5303	5597
95	5407	5428	5562	5678	5300

Hopping_List_No.21					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5704	5466	5479	5309	5597
5	5687	5680	5710	5428	5639
10	5566	5379	5356	5634	5533
15	5471	5318	5543	5422	5311
20	5592	5665	5641	5443	5390
25	5569	5350	5622	5449	5435
30	5653	5586	5300	5537	5667
35	5325	5585	5608	5269	5521
40	5263	5314	5509	5504	5529
45	5408	5528	5525	5393	5572
50	5343	5646	5333	5386	5502
55	5660	5688	5554	5465	5677
60	5338	5326	5454	5260	5615
65	5403	5347	5591	5396	5555
70	5515	5579	5601	5527	5387
75	5261	5707	5291	5550	5602
80	5439	5257	5370	5692	5498
85	5512	5487	5719	5401	5650
90	5335	5402	5255	5659	5722
95	5364	5493	5676	5510	5700

Hopping_List_No.22					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5484	5705	5415	5470	5439
5	5351	5702	5310	5591	5371
10	5497	5265	5494	5354	5554
15	5559	5445	5646	5370	5503
20	5600	5356	5252	5255	5416
25	5656	5421	5456	5251	5483
30	5477	5542	5543	5418	5311
35	5390	5464	5676	5501	5422
40	5435	5674	5447	5269	5526
45	5337	5508	5608	5451	5625
50	5522	5642	5384	5475	5703
55	5507	5401	5655	5496	5309
60	5455	5619	5680	5326	5414
65	5345	5492	5295	5318	5273
70	5587	5530	5711	5615	5666
75	5638	5670	5622	5583	5691
80	5367	5626	5381	5561	5412
85	5682	5718	5589	5286	5289
90	5553	5314	5329	5261	5465
95	5541	5463	5574	5671	5458

Hopping_List_No.23					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5264	5469	5351	5631	5659
5	5393	5627	5385	5279	5578
10	5428	5529	5535	5549	5575
15	5647	5572	5274	5415	5695
20	5608	5425	5668	5722	5389
25	5544	5370	5355	5517	5616
30	5528	5500	5633	5463	5685
35	5603	5292	5297	5349	5513
40	5577	5509	5523	5644	5488
45	5691	5412	5678	5495	5398
50	5343	5435	5564	5526	5451
55	5589	5462	5315	5280	5584
60	5309	5625	5336	5615	5294
65	5530	5702	5565	5596	5345
70	5670	5630	5560	5591	5607
75	5693	5468	5477	5407	5545
80	5721	5409	5402	5525	5552
85	5381	5483	5340	5326	5609
90	5494	5364	5499	5423	5465
95	5518	5558	5569	5716	5718

Hopping_List_No.24					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5519	5708	5287	5695	5501
5	5435	5649	5460	5442	5407
10	5262	5318	5576	5269	5596
15	5638	5699	5377	5412	5591
20	5706	5336	5362	5432	5697
25	5387	5556	5454	5658	5417
30	5457	5373	5712	5408	5645
35	5480	5568	5350	5360	5352
40	5660	5323	5652	5520	5573
45	5468	5299	5470	5634	5285
50	5274	5486	5275	5349	5298
55	5680	5416	5463	5512	5251
60	5713	5474	5667	5683	5453
65	5282	5438	5718	5566	5534
70	5399	5514	5656	5633	5409
75	5567	5584	5338	5545	5623
80	5490	5663	5612	5309	5406
85	5694	5525	5499	5448	5294
90	5574	5332	5659	5370	5436
95	5477	5415	5542	5467	5319

Hopping_List_No.25					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5299	5472	5698	5381	5721
5	5477	5574	5535	5508	5614
10	5668	5582	5617	5367	5251
15	5351	5383	5505	5604	5527
20	5660	5647	5328	5335	5549
25	5590	5488	5700	5403	5414
30	5588	5389	5703	5309	5571
35	5364	5503	5274	5666	5365
40	5261	5417	5517	5405	5448
45	5382	5528	5687	5695	5537
50	5717	5393	5370	5653	5331
55	5600	5270	5639	5612	5515
60	5376	5667	5269	5252	5677
65	5586	5642	5258	5636	5543
70	5458	5479	5623	5400	5444
75	5301	5372	5428	5341	5575
80	5290	5316	5345	5347	5627
85	5349	5470	5565	5432	5628
90	5676	5447	5672	5552	5468
95	5469	5359	5321	5325	5678

Hopping_List_No.26					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5457	5711	5634	5542	5563
5	5616	5596	5610	5671	5346
10	5599	5371	5658	5562	5638
15	5339	5381	5486	5453	5321
20	5535	5351	5588	5417	5308
25	5586	5498	5318	5289	5522
30	5364	5292	5706	5426	5448
35	5662	5257	5656	5663	5505
40	5674	5657	5514	5334	5428
45	5465	5489	5265	5437	5404
50	5396	5373	5564	5581	5324
55	5368	5625	5571	5399	5329
60	5557	5347	5677	5271	5462
65	5541	5576	5383	5280	5250
70	5261	5485	5519	5502	5578
75	5525	5604	5652	5613	5700
80	5435	5400	5609	5331	5635
85	5385	5281	5299	5595	5350
90	5382	5407	5695	5546	5683
95	5607	5263	5655	5550	5459

Hopping_List_No.27					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5712	5475	5570	5703	5308
5	5658	5521	5685	5359	5650
10	5433	5257	5699	5282	5659
15	5427	5508	5589	5498	5610
20	5446	5420	5626	5409	5281
25	5377	5350	5424	5393	5556
30	5406	5656	5328	5315	5721
35	5587	5278	5528	5431	5674
40	5441	5531	5515	5422	5608
45	5263	5408	5548	5547	5318
50	5324	5280	5572	5639	5542
55	5671	5294	5558	5347	5494
60	5502	5654	5600	5692	5663
65	5662	5577	5311	5414	5661
70	5352	5711	5361	5334	5398
75	5461	5289	5698	5668	5585
80	5429	5723	5481	5629	5595
85	5300	5329	5331	5597	5598
90	5624	5368	5645	5679	5485
95	5707	5563	5591	5636	5537

Hopping_List_No.28					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5492	5714	5506	5389	5625
5	5700	5543	5285	5522	5382
10	5364	5521	5265	5477	5680
15	5418	5635	5692	5327	5454
20	5586	5567	5498	5254	5299
25	5627	5594	5590	5448	5642
30	5661	5564	5541	5629	5369
35	5324	5584	5588	5280	5614
40	5453	5565	5605	5570	5291
45	5631	5371	5589	5534	5273
50	5690	5494	5355	5482	5707
55	5641	5513	5657	5659	5544
60	5486	5426	5638	5611	5516
65	5618	5684	5464	5697	5658
70	5374	5420	5258	5721	5566
75	5681	5358	5262	5696	5297
80	5621	5709	5439	5672	5304
85	5616	5368	5491	5475	5341
90	5580	5318	5281	5380	5519
95	5537	5362	5645	5524	5325

Hopping_List_No.29					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5272	5478	5539	5550	5370
5	5267	5565	5360	5588	5589
10	5295	5310	5306	5672	5701
15	5506	5287	5320	5491	5519
20	5462	5655	5508	5490	5702
25	5531	5626	5355	5698	5624
30	5717	5401	5716	5264	5293
35	5557	5692	5262	5502	5594
40	5319	5391	5330	5602	5499
45	5271	5336	5663	5424	5476
50	5410	5449	5266	5342	5317
55	5299	5670	5564	5463	5460
60	5387	5311	5349	5489	5415
65	5252	5681	5687	5560	5552
70	5353	5576	5593	5683	5464
75	5507	5350	5379	5605	5366
80	5382	5547	5361	5371	5518
85	5385	5721	5294	5341	5612
90	5378	5621	5389	5457	5292
95	5534	5497	5412	5374	5597

Hopping_List_No.30					
Frequency List (MHz)	**0**	**1**	**2**	**3**	**4**
0	5430	5717	5475	5711	5687
5	5406	5490	5435	5276	5321
10	5604	5574	5444	5295	5722
15	5594	5414	5326	5536	5373
20	5346	5546	5579	5675	5419
25	5478	5558	5327	5658	5629
30	5420	5674	5519	5559	5432
35	5648	5488	5512	5513	5433
40	5402	5329	5570	5599	5331
45	5251	5624	5477	5266	5286
50	5625	5317	5431	5518	5621
55	5653	5279	5358	5343	5514
60	5434	5650	5627	5413	5509
65	5491	5660	5371	5545	5665
70	5291	5467	5259	5338	5486
75	5428	5528	5613	5481	5299
80	5549	5309	5612	5695	5681
85	5581	5422	5540	5386	5699
90	5503	5446	5256	5462	5640
95	5427	5377	5487	5398	5307

******* END OF REPORT *******