DFS TEST REPORT

REPORT NO.:	RF111114C06C-1
MODEL NO.:	VPR-1
FCC ID:	X3XVPR-1
RECEIVED:	Jun. 28, 2012
TESTED:	Aug. 29 ~ Aug. 30, 2012
ISSUED:	Sep. 04, 2012

APPLICANT:	ELMO COMPANY, LIMITED
ADDRESS:	6-14, MEIZEN-CHO, MIZUHO-KU NAGOYA, 467-8567, JAPAN
ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF111114C06C-1	Original release	Sep. 04, 2012

1. CERTIFICATION

PRODUCT: VP Receiver

MODEL: VPR-1

BRAND: ELMO

APPLICANT: ELMO COMPANY, LIMITED

TESTED: Aug. 29 ~ Aug. 30, 2012

TEST SAMPLE: ENGINEERING SAMPLE

Standards: **FCC Part 15, Subpart E (Section 15.407)**
FCC 06-96

The above equipment (Model: VPR-1) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , DATE : Sep. 04, 2012

Pettie Chen / Senior Specialist

APPROVED BY : _____ , DATE : Sep. 04, 2012

Gary Chang / Technical Manager

2. EUT INFORMATION

2.1   OPERATING FREQUENCY BANDS AND MODE OF EUT

Table 1: Operating frequency bands and mode of EUT.

Operational Mode	Operating Frequency Range	
	5250~5350MHz	5470~5725MHz
Master	✓	✓

The EUT has disabled the 5600 ~ 5650 MHz band

2.2   EUT SOFTWARE AND FIRMWARE VERSION

Table 2: The EUT software/firmware version.

Product	Model No.	Software/Firmware Version
VP Receiver	VPR-1	APP:1.0.0.3 SDK:2.0.59 MAC:4.2.24.15

2.3   DESCRIPTION OF AVAILABLE ANTENNAS TO THE EUT

Table 3: Antenna list

Ant NO.	Antenna Type	Operation Frequency Range(MHz)	Max. Gain(dBi)
1	Printed	5250~5350	2
1	Printed	5470~5725	2

2.4 EUT MAXIMUM AND MINIMUM CONDUCTED POWER

TABLE 4: THE MEASURED CONDUCTED OUTPUT POWER

Channel bandwidth (36MHz)

ANT NO.	FREQUENCY BAND (MHz)	MAX. POWER		MIN. POWER	
		OUTPUT POWER(dBm)	OUTPUT POWER(mW)	OUTPUT POWER(dBm)	OUTPUT POWER(mW)
1	5250~5350	14.08	25.593	8.08	6.427
1	5470~5725	14.07	25.527	8.07	6.412

2.5 EUT MAXIMUM AND MINIMUM E.I.R.P. POWER

TABLE 5: THE E.I.R.P OUTPUT POWER LIST

Channel bandwidth (36MHz)

ANT NO.	FREQUENCY BAND (MHz)	MAX. POWER		MIN. POWER	
		OUTPUT POWER(dBm)	OUTPUT POWER(mW)	OUTPUT POWER(dBm)	OUTPUT POWER(mW)
1	5250~5350	16.08	40.551	10.08	10.186
1	5470~5725	16.07	40.458	10.07	10.162

3. U-NII DFS RULE REQUIREMENTS

3.1 WORKING MODES AND REQUIRED TEST ITEMS

The manufacturer shall state whether the EUT is capable of operating as a Master and/or a Client. If the EUT is capable of operating in more than one operating mode then each operating mode shall be tested separately. See tables 1 and 2 for the applicability of DFS requirements for each of the operational modes.

Table 6: Applicability of DFS requirements prior to use a channel

Requirement	Operational Mode		
	Master	Client without radar detection	Client with radar detection
Non-Occupancy Period	✓	Not required	✓
DFS Detection Threshold	✓	Not required	✓
Channel Availability Check Time	✓	Not required	Not required
Uniform Spreading	✓	Not required	Not required
U-NII Detection Bandwidth	✓	Not required	✓

Table 7: Applicability of DFS requirements during normal operation.

Requirement	Operational Mode		
	Master	Client without radar detection	Client with radar detection
DFS Detection Threshold	✓	Not required	✓
Channel Closing Transmission Time	✓	✓	✓
Channel Move Time	✓	✓	✓
U-NII Detection Bandwidth	✓	Not required	✓

3.2 TEST LIMITS AND RADAR SIGNAL PARAMETERS

DETECTION THRESHOLD VALUES

Table 8: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Maximum Transmit Power	Value (See Notes 1 and 2)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 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.	

Table 9: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 80% of the UNII 99% transmission power bandwidth. See Note 3.
Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows: • For the Short Pulse Radar Test Signals this instant is the end of the Burst. • For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated. • For the Long Pulse Radar Test Signal this instant is the end of the 12 second period defining the Radar Waveform. **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 1 is used and for each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

PARAMETERS OF DFS TEST SIGNALS

Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Table 10: Short Pulse Radar Test Waveforms.

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
1	1	1428	18	60%	30
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

Table 11: Long Pulse Radar Test Waveform

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

Table 12: Frequency Hopping Radar Test Waveform

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

4. TEST & SUPPORT EQUIPMENT LIST

4.1　TEST INSTRUMENTS

Table 1: Test instruments list.

DESCRIPTION & MANUFACTURER	MODEL NO.	BRAND	CALIBRATED UNTIL
R&S Spectrum analyzer	FSP40	R&S	2013/01/29
Signal generator	8645A	Agilent	2013/06/10
Oscilloscope	TDS 5104	Tektronix	2013/03/04
Control PC	Pavilion a320d	HP	--

4.2　DESCRIPTION OF SUPPORT UNITS

TABLE 2: SUPPORT UNIT INFORMATION.

No.	Product	Brand	Model No.	FCC ID
1	WHDI Tx Module	ELMO	WMTA-155AN	X3XWMTA-155

Note: This device was functioned as a □Master ■Slave device during the DFS test.

5. TEST PROCEDURE

5.1 ADT DFS MEASUREMENT SYSTEM:

A complete ADT DFS Measurement System consists of two subsystems: (1) the Radar Signal Generating Subsystem and (2) the Traffic Monitoring Subsystem. The control PC is necessary for generating the Radar waveforms in Table 10, 11 and 12. The traffic monitoring subsystem is specified to the type of unit under test (EUT).

Conducted setup configuration of ADT DFS Measurement System
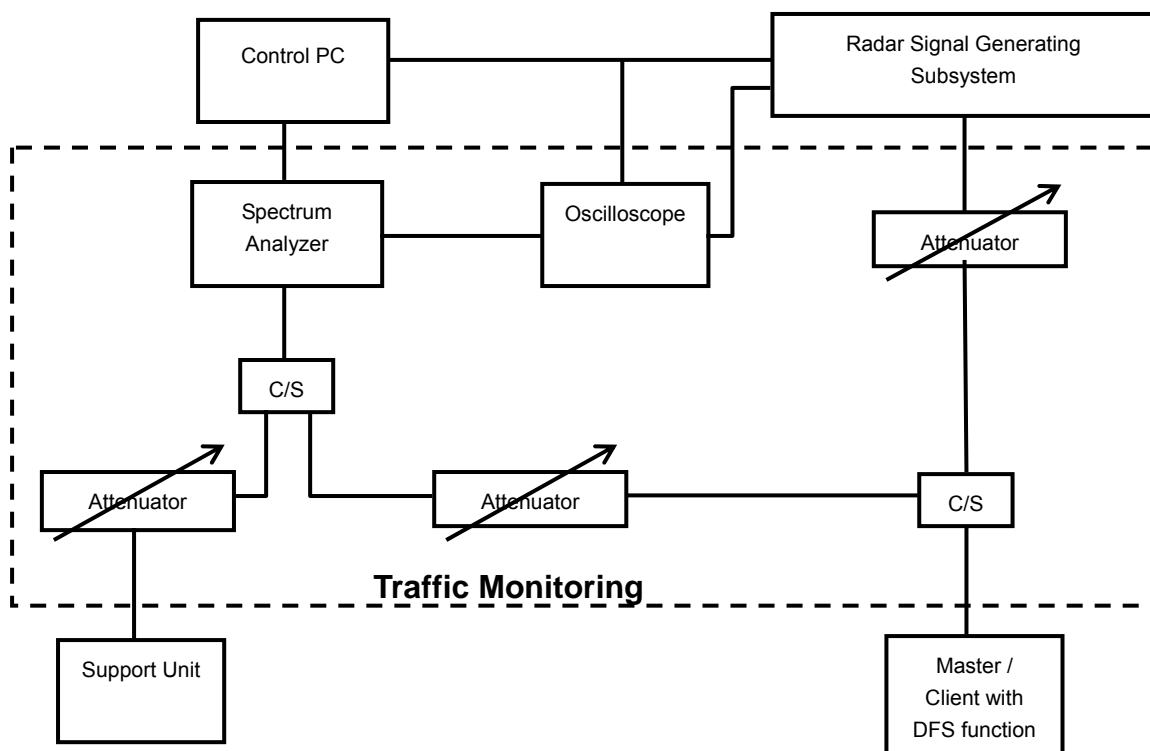
The test transmission will always be from the Master Device to the Client Device. While the Client device is set up to associate with the Master device and play the MPEG file ($6\frac{1}{2}$ Magic Hours) from Master device, the designated MPEG test file and instructions are located at: http://ntiacsd.ntia.doc.gov/dfs/.

5.2   CALIBRATION OF DFS DETECTION THRESHOLD LEVEL:

The measured channel is 5510MHz, The radar signal was the same as transmitted channels, and injected into the antenna port of AP (master) or Client Device with Radar Detection, measured the channel closing transmission time and channel move time. The Master minimum antenna gain is 2dBi, and required detection threshold is -60dBm.

Conducted setup configuration of Calibration of DFS Detection Threshold Level
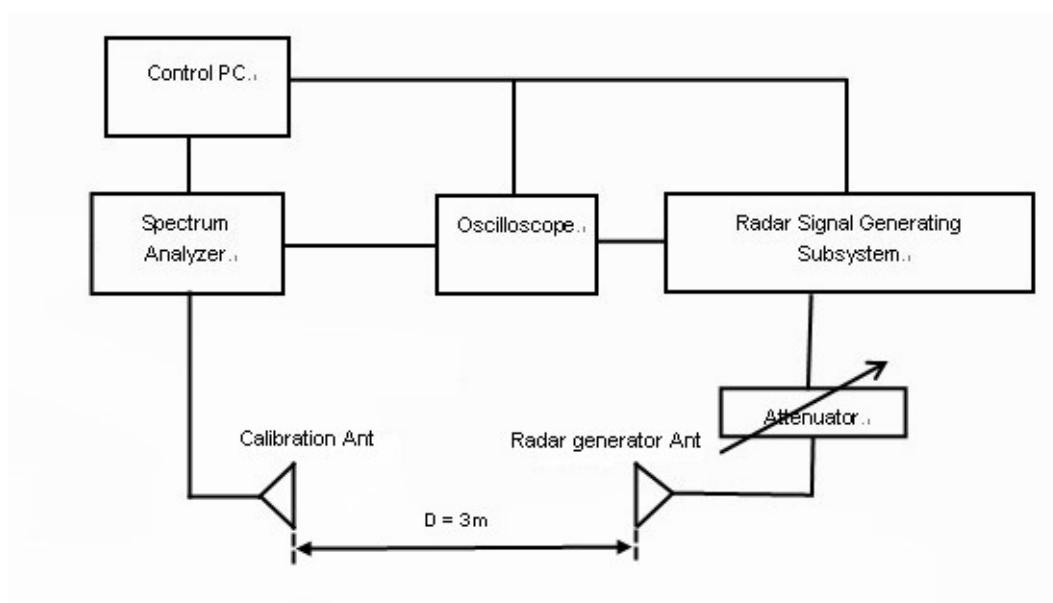
5.3 DEVIATION FROM TEST STANDARD

No deviation.

5.4 CONDUCTED TEST SETUP CONFIGURATION

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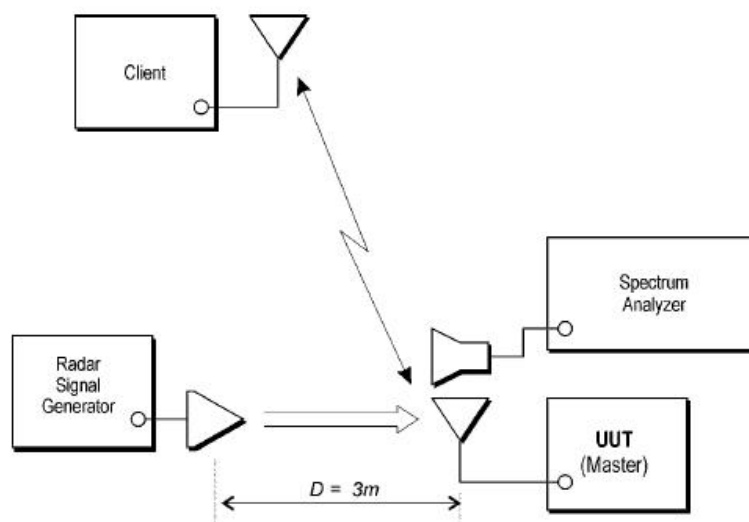
The EUT is a U-NII Device operating in Master mode. The radar test signals are injected into the Master Device.

6. TEST RESULTS

6.1   SUMMARY OF TEST RESULT

Clause	Test Parameter	Remarks	Pass/Fail
15.407	DFS Detection Threshold	Applicable	Pass
15.407	U-NII Detection Bandwidth	Applicable	Pass
15.407	Channel Availability Check Time	Applicable	Pass
15.407	Channel Move Time	Applicable	Pass
15.407	Channel Closing Transmission Time	Applicable	Pass
15.407	Non-Occupancy Period	Applicable	Pass
15.407	Uniform Spreading	Applicable	Pass

6.2   DETELED TEST RESULTS

6.2.1 TEST MODE: DEVICE OPERATING IN MASTER MODE.

Master with injection at the Master. (Radar Test Waveforms are injected into the Master.

6.2.2 DFS DETECTION THRESHOLD

For a detection threshold level of –62dBm and the Master minimum antenna gain is 2dBi, and required detection threshold is -60dBm (= -62dBm +2dBi). The conducted radar burst level is set to -60dBm.

Radar Signal 1

RBW 3 MHz   Marker 1 [T1]
VBW 10 MHz   -60.33 dBm
Ref -10 dBm   * Att 0 dB   SWT 20 ms   1.200000 ms

Radar signal

TRG -66.3 dBm

Noise Floor

Center 5.51 GHz   2 ms/

Radar Signal 2

RBW 3 MHz   Marker 1 [T1]
VBW 10 MHz   -60.36 dBm
Ref -10 dBm   * Att 0 dB   SWT 20 ms   2.600000 ms

Radar signal

TRG -66.3 dBm

Noise Floor

Center 5.51 GHz   2 ms/

Radar Signal 3

RBW 3 MHz   Marker 1 [T1]
VBW 10 MHz   -60.05 dBm
Ref -10 dBm   *Att 0 dB   SWT 20 ms   320.000000 µs

Radar signal

TRG -66.3 dBm

Noise Floor

Center 5.51 GHz   2 ms/

Radar Signal 4

RBW 3 MHz   Marker 1 [T1]
VBW 10 MHz   -60.36 dBm
Ref -10 dBm   *Att 0 dB   SWT 20 s   7.033000 s

Radar signal

Noise Floor

Center 5.51 GHz   2 s/

Radar Signal 5

Single Burst of Radar Signal 5
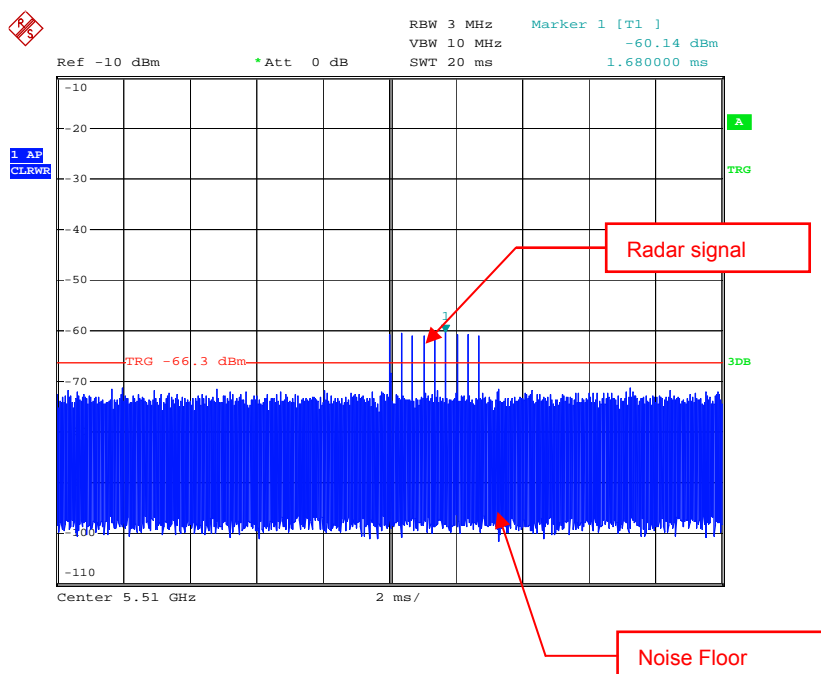
Radar Signal 6

6.2.3 U-NII DETECTION BANDWIDTH

Channel bandwidth (36MHz)
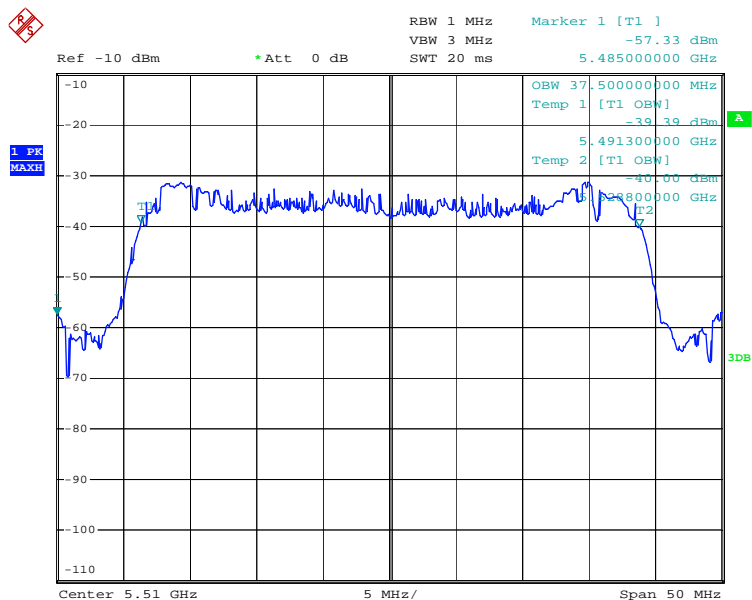
U-NII 99% Channel bandwidth

Detection Bandwidth Test - Channel bandwidth (36MHz)											
EUT Frequency: 5510MHz											
EUT 99% Power bandwidth: 37.5MHz											
Detection bandwidth limit (80% of EUT 99% Power bandwidth): 30MHz											
Detection bandwidth (5528(FH) – 5493(FL)) : 35MHz											
Test Result : PASS											
Radar Frequency (MHz)	Trial Number / Detection										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5492	N	N	N	N	N	N	N	N	N	N	0
5493(FL)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5494	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5495	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5496	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5497	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5498	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5499	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5500	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5501	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5502	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5503	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5504	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5505	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5506	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5507	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5508	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5509	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5510	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5511	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5512	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5513	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5514	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5515	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5516	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5517	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5518	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5519	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5520	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5521	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5522	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5523	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5524	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5525	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5526	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5528(FH)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
5529	N	N	N	N	N	N	N	N	N	N	0

6.2.4 CHANNEL AVAILABILITY CHECK TIME

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

Timing of Radar Signal	Observation	
	EUT	Spectrum Analyzer
Within 1 to 6 second	Detected	No transmissions
Within 54 to 60 second	Detected	No transmissions

Initial Channel Availability Check Time
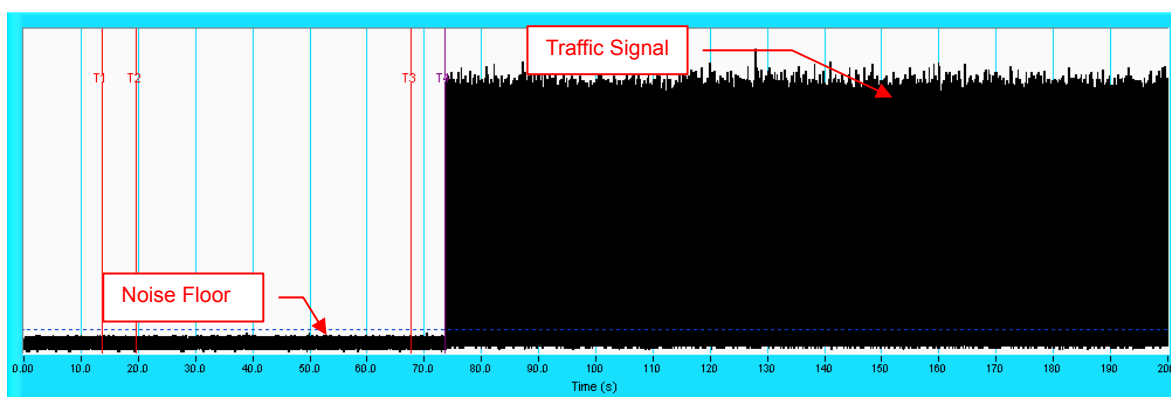
NOTE: T1 denotes the end of power-up time period is 14 second. T4 denotes the end of Channel Availability Check time is 74second. Channel Availability Check time is equal to (T4 – T1) 60 seconds.

Radar Burst at the Beginning of the Channel Availability Check Time
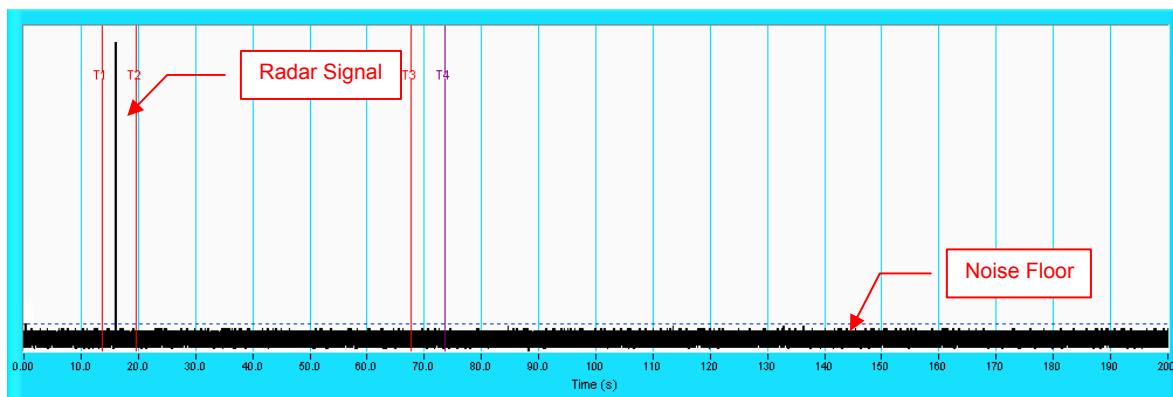
NOTE: T1 denotes the end of power up time period is 14 second. T2 denotes 20 second, the radar burst was commenced within a 6 second window starting from the end of power-up sequence. T4 denotes the 74 second.

Radar Burst at the End of the Channel Availability Check Time
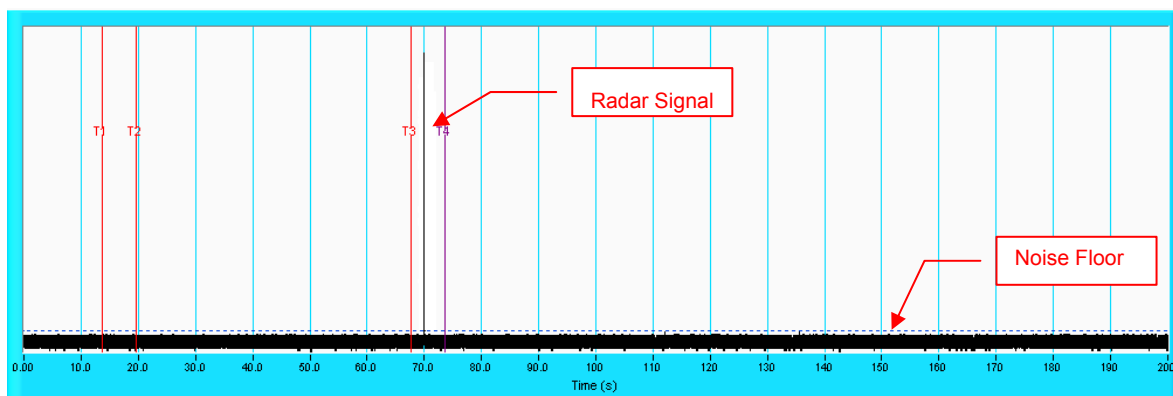
NOTE: T1 denotes the end of power up time period is 14 second. T3 denotes 68 second and radar burst was commenced within 54th second to 60th second window starting from the end of power-up sequence. T4 denotes the 74 second.

6.2.5 CHANNEL CLOSING TRANSMISSION AND CHANNEL MOVE TIME

Wireless Traffic Loading

Channel bandwidth (36MHz)
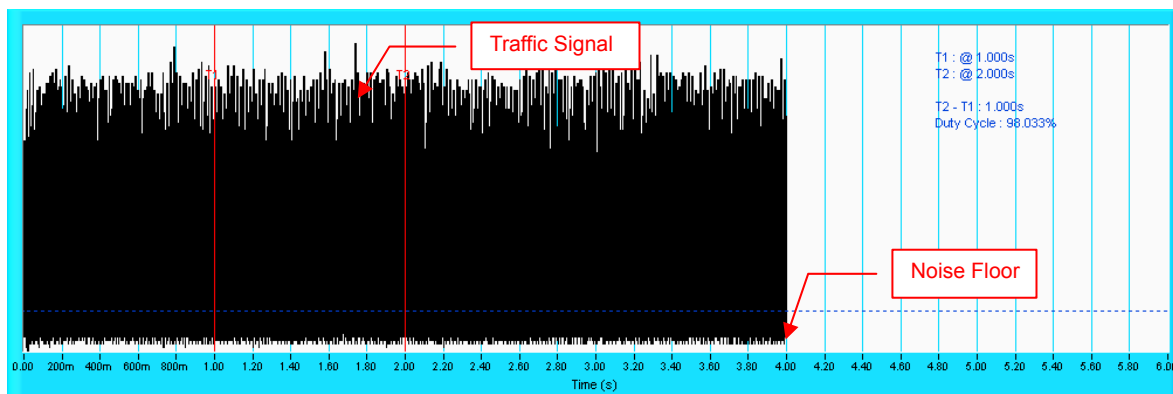
Channel bandwidth (36MHz)

Table 1: Short Pulse Radar Test Waveforms.

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Number of Trials(Times)	Percentage of Successful Detection (%)
1	1	1428	18	30	93.3
2	1-5	150-230	23-29	30	96.7
3	6-10	200-500	16-18	30	96.7
4	11-20	200-500	12-16	30	96.7
Aggregate (Radar Types 1-4)				120	95.85

Table 2: Long Pulse Radar Test Waveform

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

Table 3: Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Number of Trials(Times)	Percentage of Successful Detection (%)
6	1	333	9	0.333	300	30	100

The Detailed Radar pattern and Statistical Performance showed in Annex A.

Radar signal 1

Channel bandwidth (36MHz)
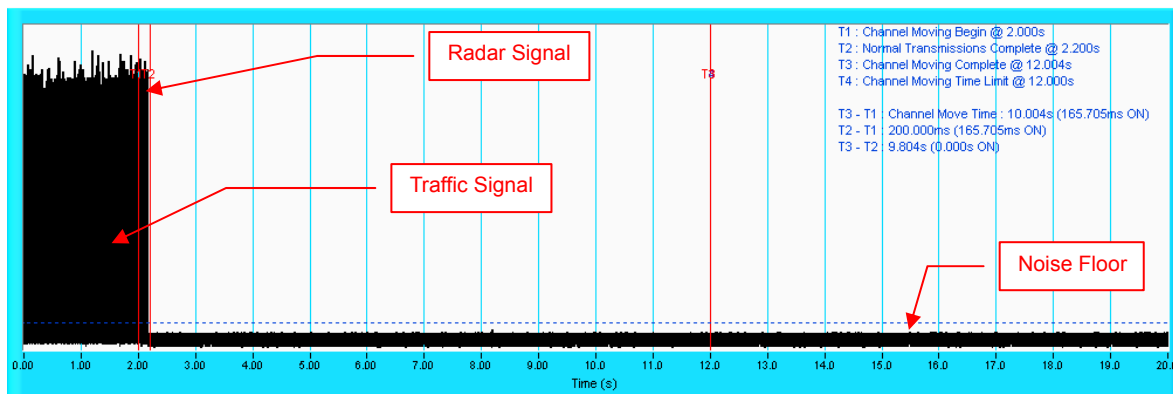
NOTE: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.
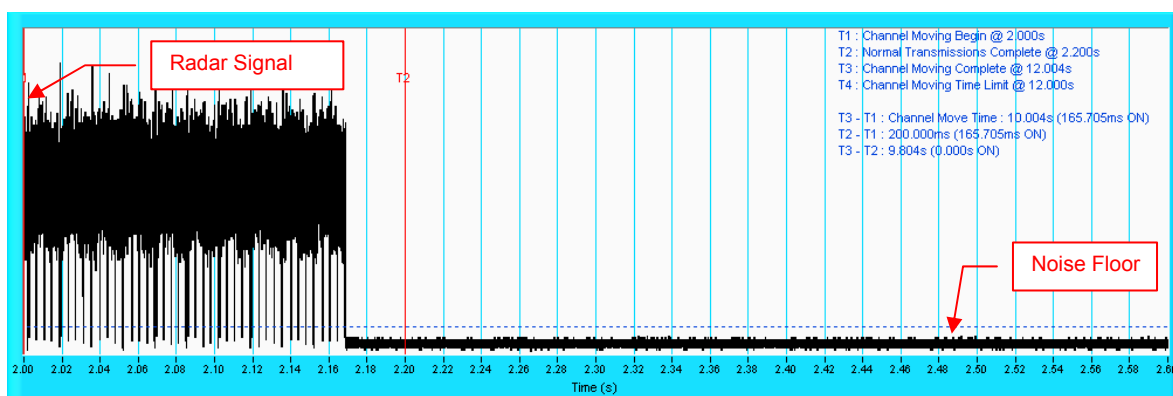
NOTE: Room-in of the first 600ms after radar signal applied.

Radar signal 2

Channel bandwidth (36MHz)
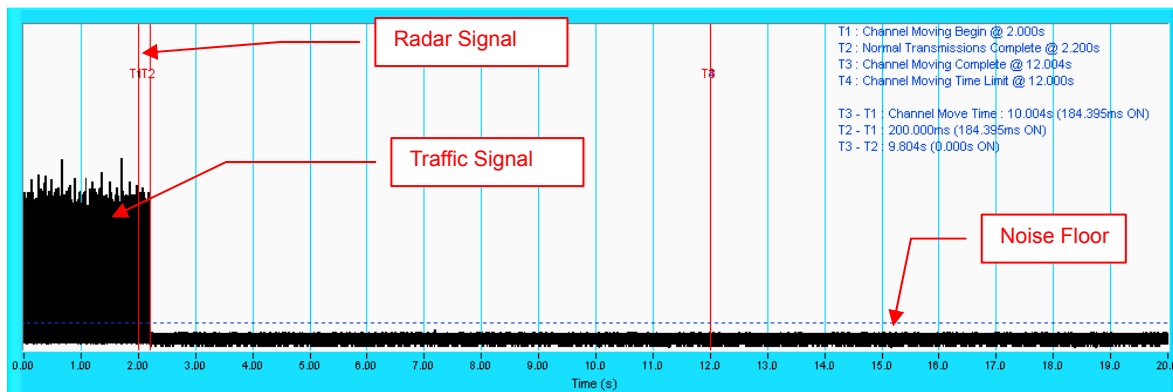
NOTE: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.
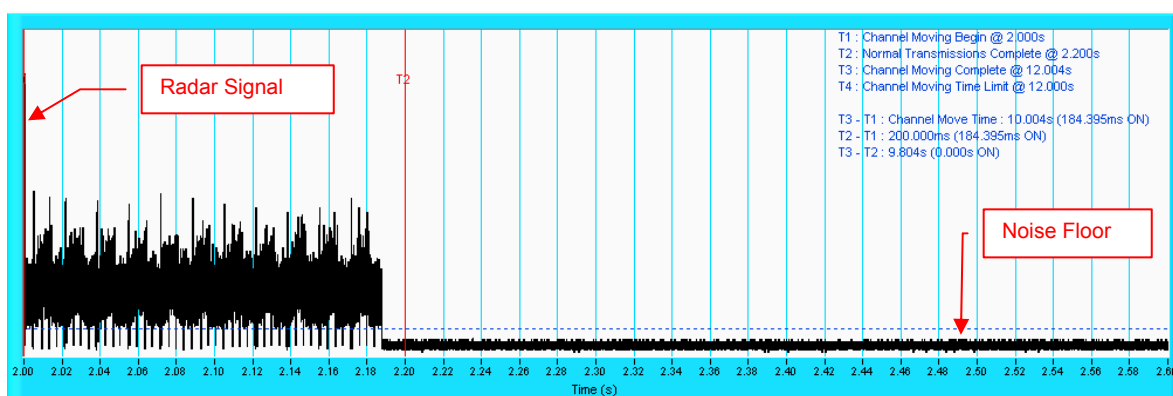
NOTE: Room-in of the first 600ms after radar signal applied.

Radar signal 3

Channel bandwidth (36MHz)
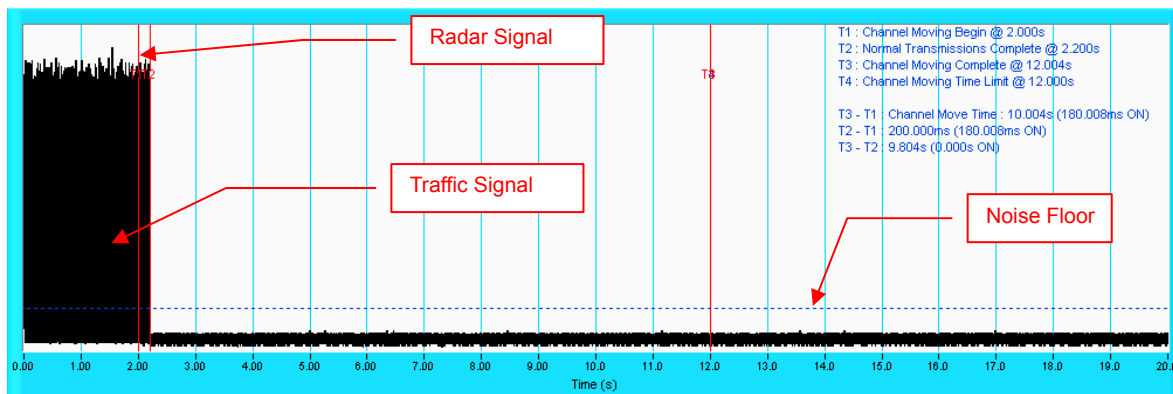
NOTE: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.
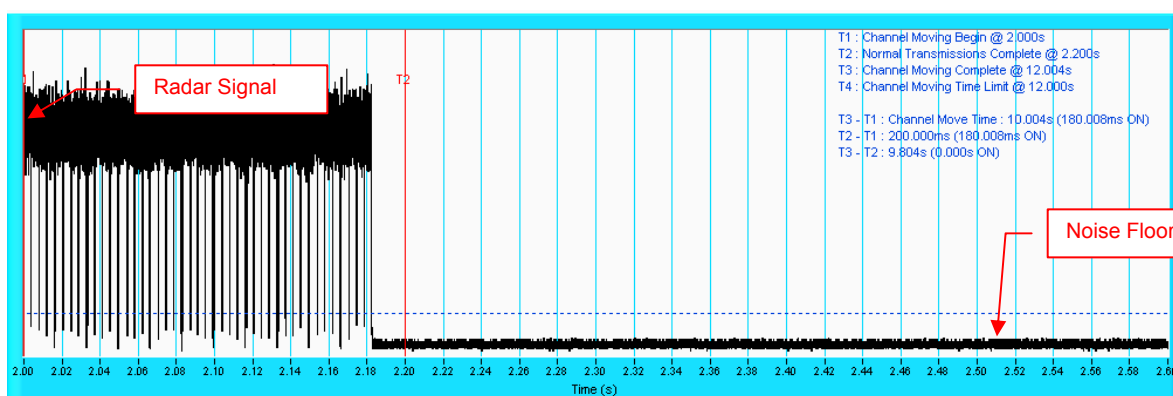
NOTE: Room-in of the first 600ms after radar signal applied.

Radar signal 4

Channel bandwidth (36MHz)
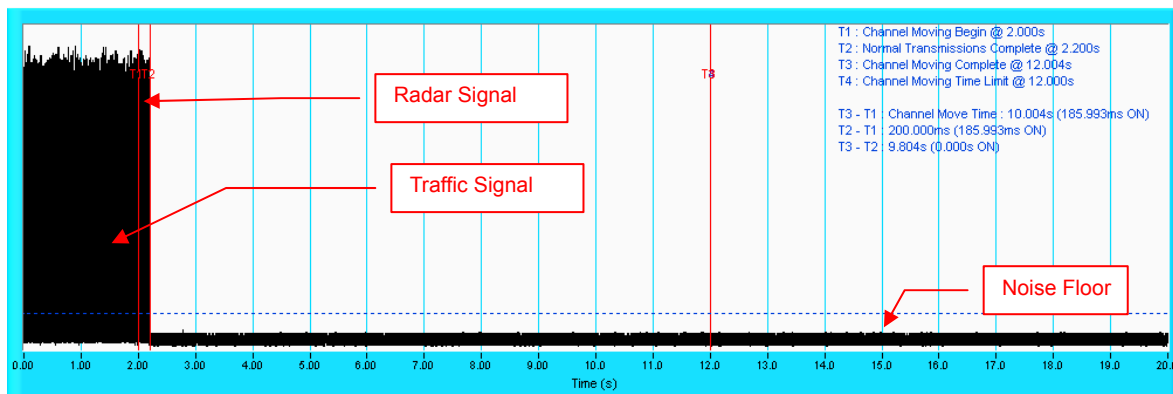
NOTE: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.
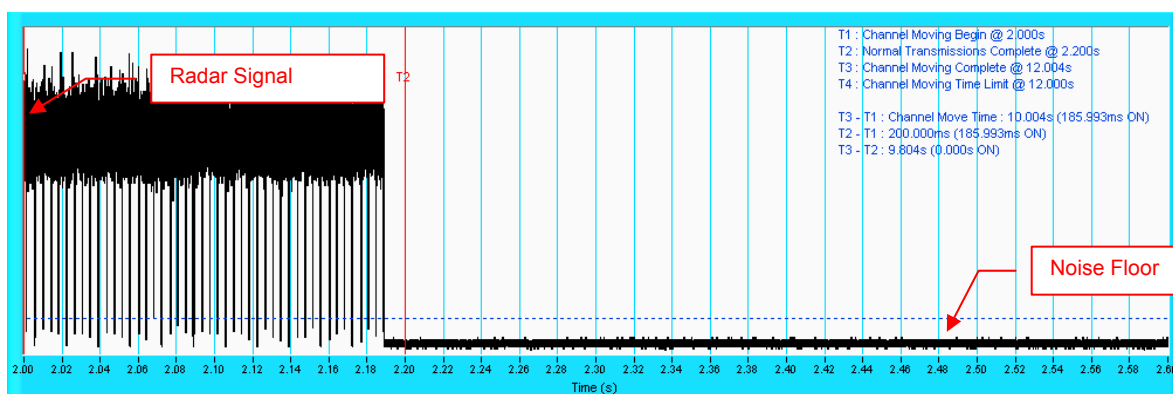
NOTE: Room-in of the first 600ms after radar signal applied.

Radar signal 5

Channel bandwidth (36MHz)
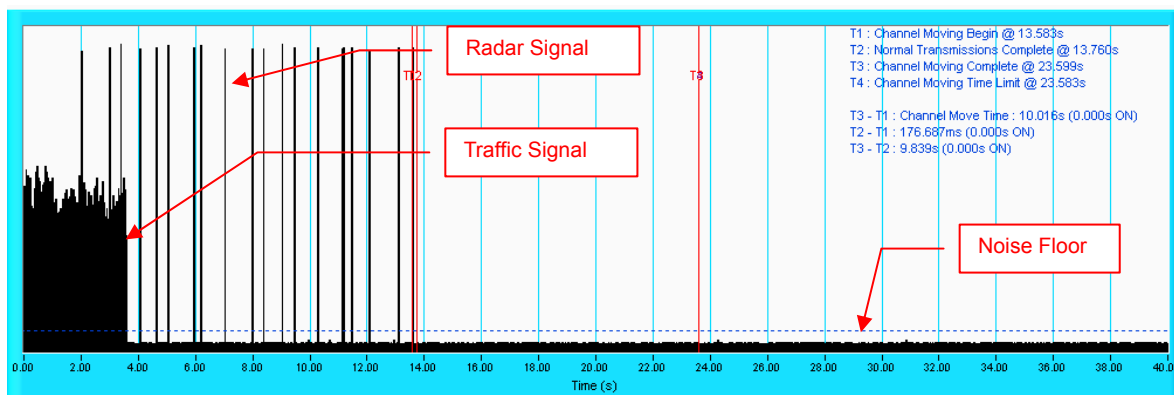
T1 : Channel Moving Begin @ 13.583s
T2 : Normal Transmissions Complete @ 13.760s
T3 : Channel Moving Complete @ 23.599s
T4 : Channel Moving Time Limit @ 23.583s

T3 - T1 : Channel Move Time : 10.016s (0.000s ON)
T2 - T1 : 176.687ms (0.000s ON)
T3 - T2 : 9.839s (0.000s ON)

NOTE: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.

T1 : Channel Moving Begin @ 13.583s
T2 : Normal Transmissions Complete @ 13.760s
T3 : Channel Moving Complete @ 23.599s
T4 : Channel Moving Time Limit @ 23.583s

T3 - T1 : Channel Move Time : 10.016s (0.000s ON)
T2 - T1 : 176.687ms (0.000s ON)
T3 - T2 : 9.839s (0.000s ON)
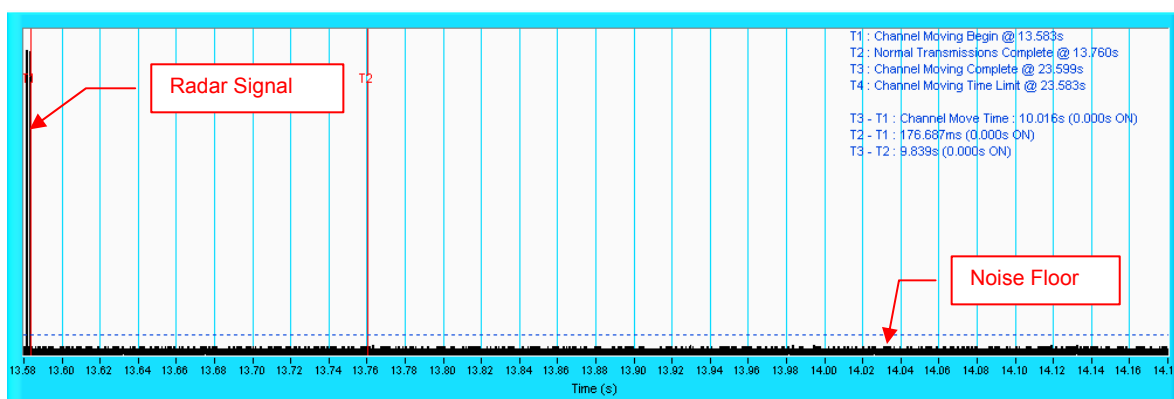
NOTE: Room-in of the first 600ms after radar signal applied.

Radar signal 6

Channel bandwidth (36MHz)
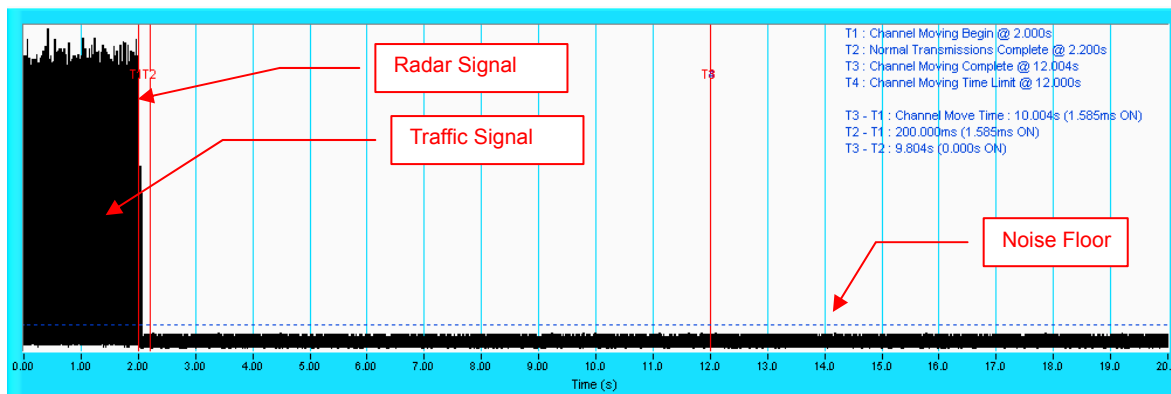
NOTE: T1 denotes the start of Channel Move Time upon the end of the last Radar burst. T2 denotes the data transmission time of 200ms from T1. T3 denotes the end of Channel Move Time. T4 denotes the 10 second from T1 to observe the aggregate duration of transmissions.
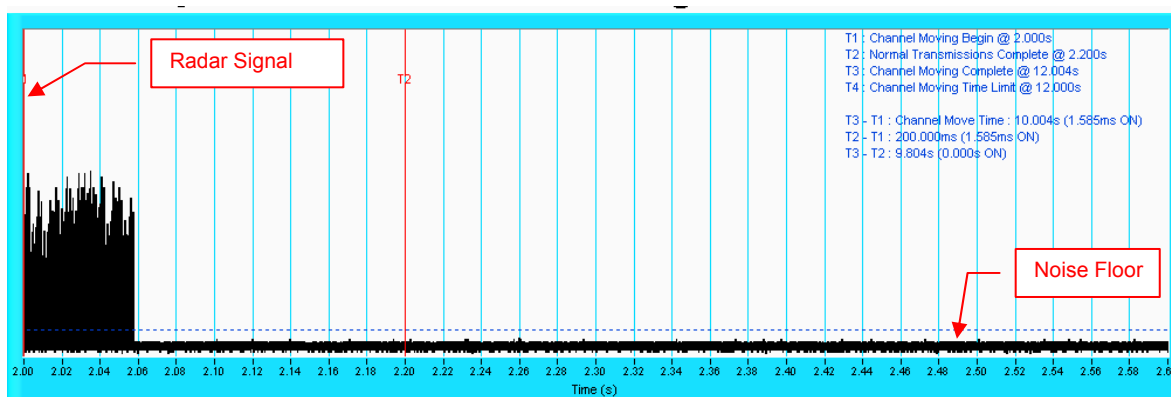
NOTE: Room-in of the first 600ms after radar signal applied.

6.2.6 NON-OCCUPANCY PERIOD

Associate test:

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

1) EUT (Client) links with master on 5510MHz.

Waveform of EUT links up with Master
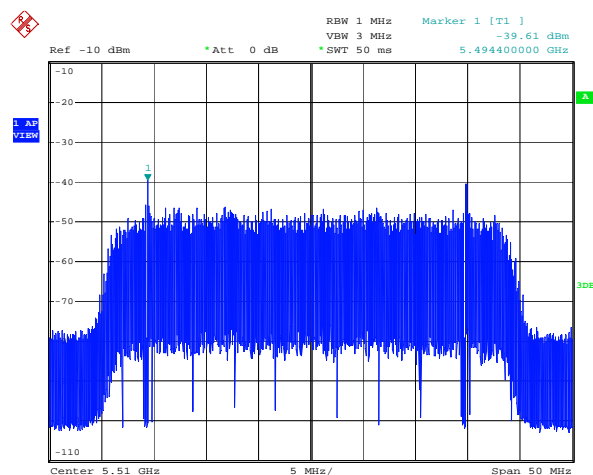
2) Client plays specified files via master.

Waveform of transmission
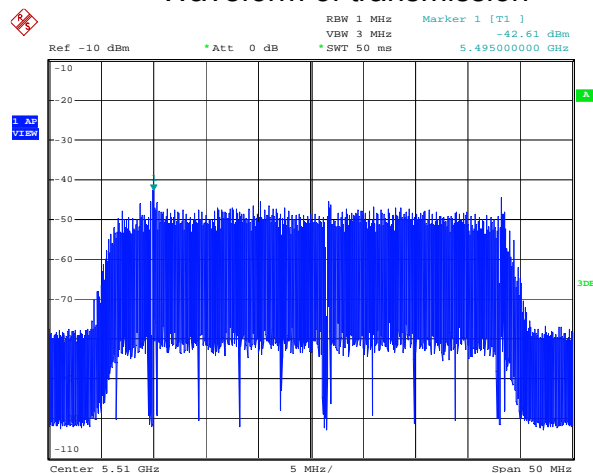
3) Radar signal 1~6 are applied to the Master device and WiFi traffic signal stop immediately. Radar signal applied to the master and traffic stopped as described in section 6.2.5.

4) 5510MHz has been monitored in 30 minutes period. In this period, no any transmission occurs.

Plot of 30minutes period

802.11an (40MHz)
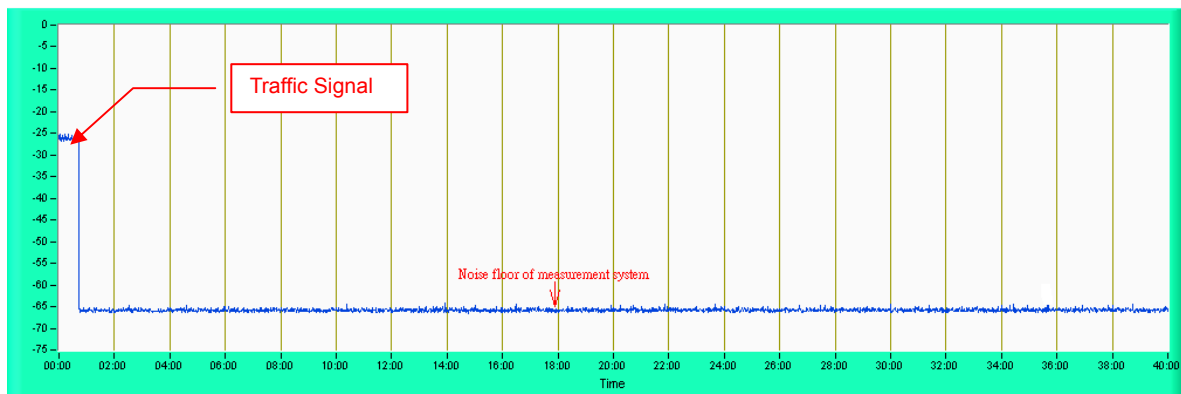
NOTE: Test setup are shown on Test set up photo.pdf

6.2.7 UNIFORM SPREADING

The intention of the uniform spreading is to provide, on aggregate, a uniform loading of the spectrum. The EUT using the DFS bands 5250 to 5350MHz and 5470 to 5725 MHz channels so that the probability of selecting a given channel shall be the same for all channels.
The EUT will select channel by random mode and mark this channel after detecting radar signal, so that will select unused channel by random mode.

6.2.8 TRANSMIT POWER CONTROL (TPC)

According to FCC 15.407(h)(1) the TPC mechanism is not required for system with an E.I.R.P. of less 500mW

7. TESTING LABORATORIES INFORMATION

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Annex-A

Annex A.1: The Detailed Radar pattern and Statistical Performance Channel bandwidth (36MHz)

Type 1 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	18	1.0u	1.428m	Yes
2	18	1.0u	1.428m	Yes
3	18	1.0u	1.428m	Yes
4	18	1.0u	1.428m	Yes
5	18	1.0u	1.428m	No
6	18	1.0u	1.428m	Yes
7	18	1.0u	1.428m	Yes
8	18	1.0u	1.428m	Yes
9	18	1.0u	1.428m	No
10	18	1.0u	1.428m	Yes
11	18	1.0u	1.428m	Yes
12	18	1.0u	1.428m	Yes
13	18	1.0u	1.428m	Yes
14	18	1.0u	1.428m	Yes
15	18	1.0u	1.428m	Yes
16	18	1.0u	1.428m	Yes
17	18	1.0u	1.428m	Yes
18	18	1.0u	1.428m	Yes
19	18	1.0u	1.428m	Yes
20	18	1.0u	1.428m	Yes
21	18	1.0u	1.428m	Yes
22	18	1.0u	1.428m	Yes
23	18	1.0u	1.428m	Yes
24	18	1.0u	1.428m	Yes
25	18	1.0u	1.428m	Yes
26	18	1.0u	1.428m	Yes
27	18	1.0u	1.428m	Yes
28	18	1.0u	1.428m	Yes
29	18	1.0u	1.428m	Yes
30	18	1.0u	1.428m	Yes
				Detection Rate: 93.3 %

Type 2 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	29	4.5u	198.0u	Yes
2	23	4.9u	214.0u	Yes
3	27	4.6u	156.0u	No
4	24	2.7u	180.0u	Yes
5	29	2.5u	150.0u	Yes
6	25	4.8u	151.0u	Yes
7	23	2.5u	179.0u	Yes
8	26	4.2u	189.0u	Yes
9	24	3.1u	171.0u	Yes
10	23	4.7u	185.0u	Yes
11	26	4.2u	168.0u	Yes
12	23	3.5u	173.0u	Yes
13	25	1.6u	229.0u	Yes
14	24	3.1u	225.0u	Yes
15	24	3.1u	157.0u	Yes
16	26	2.7u	200.0u	Yes
17	27	4.3u	176.0u	Yes
18	28	3.7u	162.0u	Yes
19	28	1.7u	151.0u	Yes
20	25	4.6u	189.0u	Yes
21	23	4.5u	172.0u	Yes
22	26	3.0u	177.0u	Yes
23	27	2.0u	215.0u	Yes
24	26	4.1u	228.0u	Yes
25	23	1.4u	193.0u	Yes
26	27	4.8u	203.0u	Yes
27	27	1.3u	164.0u	Yes
28	24	2.3u	171.0u	Yes
29	26	4.6u	226.0u	Yes
30	29	2.7u	206.0u	Yes
				Detection Rate: 96.7 %

Type 3 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	17	6.8u	385.0u	Yes
2	18	9.5u	488.0u	Yes
3	16	9.8u	279.0u	Yes
4	17	6.7u	330.0u	Yes
5	17	9.8u	229.0u	Yes
6	17	6.7u	438.0u	Yes
7	16	6.1u	281.0u	Yes
8	17	9.7u	396.0u	Yes
9	17	9.4u	315.0u	Yes
10	17	8.0u	257.0u	Yes
11	16	9.8u	380.0u	Yes
12	17	9.3u	388.0u	Yes
13	17	7.0u	498.0u	Yes
14	18	9.5u	405.0u	Yes
15	18	6.2u	465.0u	Yes
16	17	6.4u	213.0u	Yes
17	16	8.7u	415.0u	Yes
18	18	9.6u	231.0u	Yes
19	18	7.7u	243.0u	Yes
20	17	6.8u	340.0u	Yes
21	17	6.5u	330.0u	Yes
22	17	9.9u	224.0u	Yes
23	17	9.9u	370.0u	Yes
24	16	9.5u	430.0u	Yes
25	17	7.9u	216.0u	Yes
26	17	7.0u	479.0u	Yes
27	18	8.9u	228.0u	Yes
28	16	8.8u	464.0u	Yes
29	18	9.3u	313.0u	Yes
30	17	7.2u	330.0u	No
				Detection Rate: 96.7 %

Type 4 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	16	16.5u	270.0u	Yes
2	12	18.3u	227.0u	Yes
3	13	15.4u	436.0u	Yes
4	13	13.1u	483.0u	Yes
5	13	11.9u	479.0u	Yes
6	15	13.1u	424.0u	Yes
7	15	17.3u	219.0u	Yes
8	14	16.6u	476.0u	Yes
9	15	13.6u	414.0u	Yes
10	15	19.9u	214.0u	Yes
11	13	12.3u	371.0u	Yes
12	13	17.7u	404.0u	Yes
13	14	13.3u	335.0u	Yes
14	15	19.4u	487.0u	Yes
15	14	18.1u	459.0u	Yes
16	16	16.7u	487.0u	Yes
17	13	17.3u	336.0u	Yes
18	14	18.6u	385.0u	Yes
19	12	15.9u	305.0u	Yes
20	15	12.9u	294.0u	Yes
21	15	12.4u	445.0u	Yes
22	15	18.2u	309.0u	Yes
23	13	19.0u	435.0u	Yes
24	14	17.2u	480.0u	Yes
25	13	12.6u	480.0u	No
26	13	15.7u	493.0u	Yes
27	14	11.8u	476.0u	Yes
28	13	15.7u	203.0u	Yes
29	14	13.5u	320.0u	Yes
30	13	11.8u	200.0u	Yes
				Detection Rate: 96.7 %

Type 5 Radar Statistical Performances		
Trial #	Test Signal Name	Detection
1	LP_Signal_01	Yes
2	LP_Signal_02	Yes
3	LP_Signal_03	Yes
4	LP_Signal_04	Yes
5	LP_Signal_05	Yes
6	LP_Signal_06	Yes
7	LP_Signal_07	Yes
8	LP_Signal_08	Yes
9	LP_Signal_09	Yes
10	LP_Signal_10	Yes
11	LP_Signal_11	Yes
12	LP_Signal_12	Yes
13	LP_Signal_13	Yes
14	LP_Signal_14	Yes
15	LP_Signal_15	Yes
16	LP_Signal_16	Yes
17	LP_Signal_17	Yes
18	LP_Signal_18	Yes
19	LP_Signal_19	Yes
20	LP_Signal_20	Yes
21	LP_Signal_21	Yes
22	LP_Signal_22	Yes
23	LP_Signal_23	Yes
24	LP_Signal_24	Yes
25	LP_Signal_25	Yes
26	LP_Signal_26	Yes
27	LP_Signal_27	Yes
28	LP_Signal_28	Yes
29	LP_Signal_29	Yes
30	LP_Signal_30	Yes
		Detection Rate: 100.0 %

The Long Pulse Radar pattern showed in Annex A.2

Type 6 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	9	1.0u	333.0u	Yes
2	9	1.0u	333.0u	Yes
3	9	1.0u	333.0u	Yes
4	9	1.0u	333.0u	Yes
5	9	1.0u	333.0u	Yes
6	9	1.0u	333.0u	Yes
7	9	1.0u	333.0u	Yes
8	9	1.0u	333.0u	Yes
9	9	1.0u	333.0u	Yes
10	9	1.0u	333.0u	Yes
11	9	1.0u	333.0u	Yes
12	9	1.0u	333.0u	Yes
13	9	1.0u	333.0u	Yes
14	9	1.0u	333.0u	Yes
15	9	1.0u	333.0u	Yes
16	9	1.0u	333.0u	Yes
17	9	1.0u	333.0u	Yes
18	9	1.0u	333.0u	Yes
19	9	1.0u	333.0u	Yes
20	9	1.0u	333.0u	Yes
21	9	1.0u	333.0u	Yes
22	9	1.0u	333.0u	Yes
23	9	1.0u	333.0u	Yes
24	9	1.0u	333.0u	Yes
25	9	1.0u	333.0u	Yes
26	9	1.0u	333.0u	Yes
27	9	1.0u	333.0u	Yes
28	9	1.0u	333.0u	Yes
29	9	1.0u	333.0u	Yes
30	9	1.0u	333.0u	Yes
				Detection Rate: 100.0 %

The Frequency Hopping Radar pattern showed in Annex A.3

Annex-A2: The Long Pulse Radar Pattern
Channel bandwidth (36MHz)

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_01

Number of Bursts in Trial: 12

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	13M	50.2u	1.872m	-	712.3m
2	2	13M	68.5u	1.759m	-	962.6m
3	3	14M	85.6u	1.015m	1.630m	721.7m
4	2	8M	70.4u	953.6u	-	914.8m
5	1	15M	51.1u	-	-	277.4m
6	2	10M	50.4u	1.118m	-	526.3m
7	2	15M	78.8u	1.921m	-	666.0m
8	1	17M	66.9u	-	-	36.96m
9	2	7M	94.1u	1.624m	-	230.0m
10	3	17M	62.0u	1.782m	1.806m	350.4m
11	2	17M	64.8u	1.645m	-	848.3m
12	1	17M	69.9u	-	-	330.1m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_02

Number of Bursts in Trial: 10

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	10M	76.2u	1.711m	-	256.0m
2	2	8M	53.1u	1.937m	-	352.2m
3	2	15M	79.4u	1.444m	-	159.2m
4	2	12M	69.9u	938.1u	-	110.9m
5	2	11M	81.7u	1.384m	-	1.166
6	3	7M	94.0u	1.899m	953.0u	688.5m
7	2	6M	93.5u	946.5u	-	562.1m
8	2	9M	94.4u	1.270m	-	316.3m
9	2	14M	87.8u	1.695m	-	657.9m
10	3	19M	85.3u	1.469m	1.768m	1.137

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_03

Number of Bursts in Trial: 19

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	8M	85.3u	1.641m	-	565.4m
2	1	8M	81.9u	-	-	135.9m
3	3	7M	52.1u	1.020m	1.148m	219.5m
4	3	9M	56.3u	1.665m	1.826m	385.7m
5	2	9M	57.8u	1.642m	-	549.4m
6	1	18M	93.3u	-	-	272.6m
7	3	11M	75.5u	1.465m	1.567m	220.7m
8	3	13M	97.5u	1.215m	1.835m	260.1m
9	3	5M	100.0u	956.0u	1.673m	395.8m
10	2	11M	95.9u	1.491m	-	215.5m
11	2	9M	67.7u	1.916m	-	214.6m
12	1	11M	84.2u	-	-	88.96m
13	2	13M	62.8u	1.719m	-	551.5m
14	2	13M	51.2u	1.880m	-	539.9m
15	1	11M	55.1u	-	-	256.5m
16	3	9M	69.0u	1.650m	1.819m	424.7m
17	2	14M	84.2u	1.669m	-	57.18m
18	1	16M	69.5u	-	-	30.38m
19	3	17M	76.7u	1.579m	1.262m	597.8m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_04

Number of Bursts in Trial: 14

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	3	8M	59.4u	975.6u	987.6u	774.3m
2	2	6M	74.8u	1.137m	-	233.5m
3	2	17M	58.4u	1.477m	-	386.4m
4	3	10M	77.0u	1.472m	1.541m	773.2m
5	1	6M	74.5u	-	-	207.1m
6	3	16M	51.9u	1.760m	1.828m	345.7m
7	2	8M	61.4u	1.688m	-	292.2m

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
8	2	17M	85.4u	1.812m	-	225.9m
9	2	20M	92.1u	1.863m	-	218.0m
10	2	6M	75.8u	964.2u	-	107.3m
11	2	18M	82.6u	1.474m	-	47.49m
12	1	7M	79.2u	-	-	769.7m
13	2	7M	65.4u	1.592m	-	36.45m
14	2	10M	93.9u	930.1u	-	544.9m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_05
Number of Bursts in Trial: 15

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	10M	85.9u	1.812m	-	190.2m
2	2	9M	71.3u	1.243m	-	57.58m
3	1	19M	59.6u	-	-	678.5m
4	2	19M	97.0u	1.363m	-	680.2m
5	2	12M	84.2u	1.463m	-	494.2m
6	3	9M	87.3u	1.365m	1.771m	563.4m
7	3	19M	50.3u	1.598m	1.219m	425.8m
8	2	19M	98.4u	1.694m	-	51.99m
9	2	17M	86.9u	1.064m	-	18.50m
10	2	13M	82.0u	1.145m	-	626.7m
11	2	7M	87.7u	1.477m	-	252.0m
12	3	13M	73.3u	1.299m	1.357m	111.9m
13	3	18M	54.8u	1.609m	1.770m	68.49m
14	1	5M	68.4u	-	-	441.8m
15	1	14M	73.8u	-	-	491.1m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_06
Number of Bursts in Trial: 15

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	17M	80.9u	1.027m	-	117.4m
2	2	15M	94.9u	1.801m	-	26.81m
3	1	10M	98.1u	-	-	577.0m

4	2	12M	60.7u	1.660m	-	37.69m
5	3	14M	71.2u	1.863m	1.433m	792.3m
6	1	14M	58.4u	-	-	60.84m
7	3	9M	74.0u	1.124m	990.0u	217.0m
8	1	20M	57.6u	-	-	698.4m
9	2	8M	56.0u	1.166m	-	165.8m
10	1	7M	85.7u	-	-	45.15m
11	1	9M	58.1u	-	-	456.7m
12	3	7M	53.7u	1.676m	1.231m	367.2m
13	1	11M	67.6u	-	-	630.4m
14	3	16M	86.8u	1.882m	919.2u	680.5m
15	1	14M	89.6u	-	-	590.9m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_07

Number of Bursts in Trial: 18

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	1	12M	94.8u	-	-	164.6m
2	2	16M	93.4u	1.123m	-	151.6m
3	2	13M	89.2u	1.445m	-	29.01m
4	2	9M	55.2u	1.020m	-	24.16m
5	2	17M	94.7u	1.295m	-	31.72m
6	2	9M	74.7u	1.914m	-	229.7m
7	2	5M	51.3u	1.034m	-	285.0m
8	2	11M	79.0u	1.413m	-	610.2m
9	2	19M	94.7u	1.140m	-	483.1m
10	1	11M	96.9u	-	-	128.8m
11	1	11M	69.8u	-	-	40.08m
12	3	19M	91.0u	1.227m	1.106m	235.8m
13	2	15M	97.2u	1.575m	-	287.5m
14	2	5M	88.4u	1.147m	-	77.54m
15	3	10M	54.5u	1.614m	1.736m	98.89m
16	1	16M	95.0u	-	-	384.9m
17	3	6M	51.9u	1.201m	1.807m	105.3m
18	1	9M	55.9u	-	-	63.12m

Long Pulse Radar Test Signal						
Test Signal Name: LP_Signal_08						
Number of Bursts in Trial: 18						
Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	20M	58.5u	1.935m	-	454.7m
2	1	5M	81.9u	-	-	135.0m
3	2	19M	74.4u	1.247m	-	381.2m
4	2	19M	53.9u	1.255m	-	198.0m
5	2	17M	94.2u	1.714m	-	325.0m
6	1	12M	54.5u	-	-	430.9m
7	2	14M	78.8u	1.752m	-	151.6m
8	3	16M	94.5u	1.707m	1.868m	87.94m
9	1	15M	80.8u	-	-	302.8m
10	2	15M	80.5u	1.327m	-	175.0m
11	2	8M	80.8u	1.275m	-	3.638m
12	2	12M	99.1u	1.554m	-	417.7m
13	2	14M	56.7u	1.896m	-	609.4m
14	2	14M	80.1u	1.364m	-	516.2m
15	3	14M	98.6u	1.365m	1.069m	187.5m
16	2	19M	76.8u	1.566m	-	395.1m
17	1	10M	61.6u	-	-	149.8m
18	3	15M	92.7u	1.583m	1.600m	482.2m

Long Pulse Radar Test Signal						
Test Signal Name: LP_Signal_09						
Number of Bursts in Trial: 9						
Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	1	12M	78.3u	-	-	240.5m
2	3	14M	50.1u	1.558m	1.621m	298.4m
3	1	19M	55.2u	-	-	1.152
4	2	19M	54.3u	1.912m	-	759.5m
5	3	17M	95.3u	1.416m	1.239m	704.6m
6	2	11M	50.7u	1.003m	-	988.2m
7	2	17M	57.1u	1.016m	-	23.17m
8	2	12M	84.7u	1.385m	-	1.287

| 9 | 2 | 20M | 62.8u | 1.253m | - | 622.8m |

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_10
Number of Bursts in Trial: 20

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	13M	62.5u	945.5u	-	256.0m
2	3	6M	86.3u	1.039m	1.576m	167.9m
3	1	13M	58.3u	-	-	390.6m
4	2	13M	71.4u	1.603m	-	108.7m
5	3	8M	73.6u	1.777m	1.118m	61.86m
6	2	10M	57.3u	1.383m	-	204.8m
7	2	8M	70.5u	1.669m	-	89.90m
8	1	10M	65.0u	-	-	242.4m
9	2	10M	91.4u	1.369m	-	281.9m
10	3	12M	86.0u	1.443m	1.836m	147.0m
11	3	14M	61.2u	1.145m	947.8u	190.9m
12	3	11M	66.0u	946.0u	1.478m	467.2m
13	3	10M	97.7u	1.244m	1.293m	6.039m
14	1	19M	59.3u	-	-	488.3m
15	3	6M	84.8u	1.416m	936.2u	147.3m
16	3	17M	63.6u	1.169m	1.053m	279.3m
17	3	17M	84.6u	1.269m	951.4u	399.3m
18	2	7M	70.2u	976.8u	-	358.1m
19	2	7M	56.1u	1.318m	-	532.7m
20	1	19M	97.4u	-	-	167.0m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_11
Number of Bursts in Trial: 10

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	1	9M	77.6u	-	-	125.9m
2	2	15M	97.5u	1.083m	-	551.2m
3	2	13M	97.4u	1.606m	-	40.12m
4	2	9M	86.0u	1.262m	-	563.6m

5	3	13M	53.4u	1.038m	1.140m	62.32m
6	2	12M	71.2u	1.540m	-	973.4m
7	1	14M	53.2u	-	-	710.6m
8	2	13M	82.4u	1.391m	-	732.0m
9	2	19M	50.3u	1.225m	-	1.015
10	2	10M	98.2u	998.8u	-	86.06m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_12
Number of Bursts in Trial: 11

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	14M	52.7u	1.702m	-	127.5m
2	2	18M	95.4u	1.242m	-	1.078
3	2	10M	81.3u	1.462m	-	609.7m
4	1	9M	90.1u	-	-	415.9m
5	2	7M	71.7u	1.599m	-	610.7m
6	1	20M	77.6u	-	-	126.5m
7	2	9M	60.8u	1.751m	-	696.7m
8	3	20M	91.0u	1.794m	1.807m	425.5m
9	2	9M	63.5u	1.470m	-	130.0m
10	2	16M	72.0u	1.131m	-	78.63m
11	2	15M	76.3u	1.589m	-	412.9m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_13
Number of Bursts in Trial: 17

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	14M	57.7u	1.127m	-	319.6m
2	2	9M	81.8u	1.210m	-	102.3m
3	1	13M	91.7u	-	-	228.5m
4	2	11M	66.7u	1.571m	-	402.6m
5	3	12M	76.2u	1.311m	1.482m	483.5m
6	2	18M	62.8u	1.489m	-	695.8m
7	1	8M	99.2u	-	-	468.1m
8	1	11M	84.1u	-	-	534.0m

9	2	12M	73.2u	1.923m	-	441.5m
10	1	19M	91.9u	-	-	458.6m
11	2	7M	70.6u	1.356m	-	348.4m
12	1	7M	95.9u	-	-	662.3m
13	2	19M	65.9u	1.106m	-	500.5m
14	2	15M	92.3u	1.315m	-	167.8m
15	2	17M	69.0u	1.072m	-	524.2m
16	3	12M	84.7u	1.401m	1.277m	302.5m
17	3	12M	50.2u	1.330m	1.237m	563.2m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_14
Number of Bursts in Trial: 14

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	18M	79.0u	1.331m	-	120.9m
2	2	14M	98.3u	1.341m	-	258.5m
3	2	8M	90.0u	1.492m	-	253.7m
4	2	16M	63.0u	1.736m	-	660.2m
5	2	18M	52.7u	1.925m	-	237.1m
6	1	17M	57.0u	-	-	783.0m
7	2	6M	75.0u	1.376m	-	484.6m
8	3	10M	79.1u	1.313m	1.729m	608.3m
9	2	6M	72.4u	1.879m	-	632.5m
10	2	14M	85.3u	1.436m	-	840.2m
11	2	6M	87.9u	1.526m	-	222.8m
12	1	14M	78.2u	-	-	710.5m
13	1	19M	84.9u	-	-	488.7m
14	3	11M	63.2u	959.8u	1.342m	850.2m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_15
Number of Bursts in Trial: 18

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	3	10M	90.3u	1.371m	1.086m	147.6m
2	2	18M	59.7u	1.195m	-	356.1m

3	2	13M	90.5u	1.898m	-	392.1m
4	2	16M	97.3u	1.543m	-	14.63m
5	2	9M	94.9u	1.414m	-	235.3m
6	3	10M	88.4u	1.431m	1.567m	56.44m
7	2	17M	84.8u	1.623m	-	582.9m
8	1	10M	51.2u	-	-	478.3m
9	3	7M	77.6u	1.151m	1.125m	308.4m
10	1	17M	87.9u	-	-	28.08m
11	2	7M	85.2u	1.267m	-	316.2m
12	1	14M	89.5u	-	-	553.2m
13	1	9M	68.8u	-	-	433.3m
14	2	5M	57.4u	1.606m	-	520.0m
15	3	14M	85.6u	1.043m	940.4u	185.3m
16	2	16M	68.5u	1.200m	-	565.6m
17	1	16M	61.0u	-	-	142.0m
18	1	12M	77.0u	-	-	272.2m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_16

Number of Bursts in Trial: 13

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	1	10M	72.7u	-	-	41.21m
2	2	8M	92.9u	1.690m	-	888.4m
3	2	7M	61.7u	1.671m	-	778.9m
4	3	15M	64.9u	1.040m	1.218m	343.8m
5	1	18M	66.1u	-	-	210.0m
6	3	6M	87.2u	1.272m	1.219m	233.4m
7	2	12M	58.0u	1.811m	-	252.2m
8	2	6M	62.1u	1.492m	-	470.4m
9	1	11M	93.5u	-	-	25.10m
10	2	16M	82.1u	1.586m	-	459.3m
11	2	12M	97.9u	1.281m	-	641.0m
12	2	5M	85.1u	1.502m	-	472.0m
13	2	19M	89.8u	1.007m	-	84.75m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_17
Number of Bursts in Trial: 14

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	6M	90.2u	1.359m	-	582.1m
2	3	16M	93.5u	1.552m	1.781m	707.9m
3	1	16M	60.9u	-	-	742.6m
4	3	10M	79.9u	1.053m	1.755m	337.5m
5	3	5M	85.2u	1.313m	1.313m	223.0m
6	2	18M	57.1u	1.724m	-	216.2m
7	2	19M	59.6u	1.854m	-	386.0m
8	2	5M	90.2u	1.476m	-	268.1m
9	3	10M	51.5u	1.939m	1.246m	301.3m
10	1	15M	82.1u	-	-	306.3m
11	2	15M	69.3u	1.899m	-	434.2m
12	1	16M	68.3u	-	-	742.7m
13	2	13M	83.4u	1.163m	-	611.4m
14	3	19M	50.9u	1.830m	1.523m	36.07m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_18
Number of Bursts in Trial: 15

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	12M	78.2u	1.161m	-	345.7m
2	1	18M	62.5u	-	-	339.4m
3	2	18M	90.0u	1.078m	-	791.1m
4	2	13M	91.7u	1.098m	-	575.1m
5	3	17M	96.1u	1.474m	1.800m	467.3m
6	1	8M	77.3u	-	-	534.9m
7	3	7M	70.2u	1.007m	1.227m	5.853m
8	1	19M	63.6u	-	-	680.0m
9	3	16M	69.5u	1.426m	1.628m	430.9m
10	2	16M	74.7u	1.123m	-	326.3m
11	2	15M	83.9u	1.266m	-	1.208m

12	3	17M	53.2u	1.566m	1.386m	247.6m
13	3	15M	56.2u	1.737m	1.064m	793.9m
14	2	14M	54.7u	1.851m	-	457.5m
15	3	14M	75.8u	1.000m	1.610m	66.15m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_19
Number of Bursts in Trial: 9

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	3	7M	60.9u	1.635m	1.078m	441.3m
2	2	19M	50.5u	1.421m	-	74.18m
3	1	15M	74.0u	-	-	779.1m
4	3	12M	65.3u	1.618m	1.920m	346.4m
5	3	19M	72.3u	1.545m	973.7u	303.8m
6	2	17M	65.9u	1.291m	-	968.9m
7	2	14M	99.9u	1.242m	-	93.47m
8	2	16M	59.3u	1.604m	-	1.149
9	2	18M	92.1u	1.352m	-	745.2m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_20
Number of Bursts in Trial: 14

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	9M	83.4u	1.801m	-	596.8m
2	1	17M	96.2u	-	-	241.2m
3	2	17M	77.6u	1.426m	-	110.9m
4	3	11M	94.4u	1.245m	1.059m	771.4m
5	1	16M	63.5u	-	-	230.6m
6	1	7M	72.2u	-	-	160.1m
7	2	18M	94.9u	1.538m	-	155.1m
8	2	15M	86.5u	1.774m	-	754.1m
9	2	17M	68.5u	1.606m	-	533.6m
10	2	19M	56.5u	1.022m	-	574.8m
11	2	12M	84.7u	1.112m	-	626.7m
12	1	7M	71.9u	-	-	609.0m

| 13 | 2 | 19M | 53.7u | 1.792m | - | 835.3m |
| 14 | 3 | 11M | 91.5u | 1.357m | 1.332m | 78.59m |

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_21
Number of Bursts in Trial: 16

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	12M	64.5u	968.5u	-	36.64m
2	1	14M	92.5u	-	-	19.04m
3	2	14M	84.7u	1.029m	-	508.1m
4	1	16M	78.8u	-	-	585.1m
5	2	16M	51.1u	1.324m	-	92.78m
6	3	12M	97.8u	1.345m	1.075m	435.5m
7	1	16M	93.8u	-	-	407.2m
8	3	17M	89.7u	1.501m	1.428m	339.0m
9	3	19M	84.1u	1.154m	1.511m	68.91m
10	3	6M	65.0u	1.144m	1.114m	646.7m
11	1	12M	70.5u	-	-	645.7m
12	1	18M	70.9u	-	-	380.0m
13	1	8M	75.0u	-	-	499.1m
14	3	15M	58.8u	1.748m	989.2u	61.02m
15	2	17M	97.8u	1.625m	-	63.34m
16	3	16M	81.7u	1.386m	1.216m	343.0m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_22
Number of Bursts in Trial: 14

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	18M	55.7u	1.120m	-	134.7m
2	3	16M	74.7u	1.567m	1.549m	677.1m
3	2	12M	99.4u	1.108m	-	618.4m
4	3	5M	81.5u	1.890m	1.695m	617.5m
5	3	20M	60.1u	1.413m	1.483m	670.4m
6	3	17M	56.6u	958.4u	1.903m	829.8m
7	3	10M	52.0u	1.403m	1.837m	655.5m

8	1	6M	55.4u	-	-	720.7m
9	2	18M	67.7u	1.393m	-	691.7m
10	2	19M	65.9u	1.505m	-	753.3m
11	2	6M	79.6u	1.476m	-	793.0m
12	1	5M	70.7u	-	-	134.8m
13	1	19M	59.8u	-	-	572.1m
14	3	7M	85.5u	1.115m	1.113m	614.5m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_23
Number of Bursts in Trial: 19

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	18M	65.3u	1.021m	-	284.4m
2	3	16M	85.0u	937.0u	1.907m	198.1m
3	3	7M	82.7u	965.3u	1.377m	276.4m
4	3	8M	65.6u	969.4u	1.589m	418.3m
5	2	19M	98.5u	1.750m	-	319.6m
6	1	12M	75.0u	-	-	223.2m
7	2	5M	60.0u	1.784m	-	502.6m
8	2	10M	70.1u	952.9u	-	184.4m
9	3	7M	57.9u	1.636m	1.258m	408.1m
10	3	19M	74.6u	1.096m	1.722m	317.7m
11	2	17M	60.5u	1.417m	-	299.6m
12	2	12M	80.3u	1.468m	-	10.48m
13	2	14M	64.5u	1.044m	-	550.2m
14	1	20M	65.8u	-	-	609.8m
15	2	13M	82.9u	1.260m	-	475.0m
16	2	17M	62.1u	1.153m	-	502.1m
17	3	14M	96.0u	1.066m	1.245m	239.7m
18	2	17M	62.7u	1.546m	-	87.49m
19	2	6M	73.6u	1.557m	-	313.2m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_24
Number of Bursts in Trial: 10

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	17M	92.6u	985.4u	-	573.3m
2	2	15M	69.6u	1.135m	-	765.1m
3	1	12M	76.5u	-	-	230.2m
4	2	9M	78.9u	1.181m	-	604.1m
5	2	13M	74.5u	938.5u	-	543.6m
6	2	7M	96.3u	1.624m	-	734.2m
7	2	11M	80.7u	1.434m	-	1.054
8	1	9M	50.0u	-	-	1.136
9	1	16M	84.2u	-	-	756.7m
10	1	9M	56.9u	-	-	394.2m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_25
Number of Bursts in Trial: 12

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	19M	80.8u	1.332m	-	818.5m
2	2	5M	96.8u	1.592m	-	607.9m
3	1	19M	78.8u	-	-	883.3m
4	1	11M	93.6u	-	-	591.1m
5	2	19M	70.3u	1.911m	-	299.2m
6	3	10M	69.7u	1.165m	1.049m	826.1m
7	1	15M	87.9u	-	-	192.1m
8	2	15M	69.6u	933.4u	-	561.7m
9	2	16M	96.7u	1.755m	-	867.5m
10	3	7M	72.1u	1.666m	1.709m	407.4m
11	1	12M	76.5u	-	-	449.9m
12	2	16M	68.4u	1.812m	-	478.5m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_26
Number of Bursts in Trial: 18

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	6M	53.0u	1.826m	-	176.5m
2	2	5M	60.2u	1.039m	-	320.8m
3	1	7M	65.8u	-	-	198.2m
4	2	18M	83.7u	1.562m	-	308.4m
5	3	8M	83.6u	1.119m	1.173m	228.4m
6	2	9M	67.5u	1.778m	-	292.0m
7	3	17M	86.2u	1.610m	1.297m	194.7m
8	2	17M	53.0u	1.301m	-	368.3m
9	2	20M	60.6u	1.058m	-	491.2m
10	2	14M	89.8u	1.893m	-	442.5m
11	3	10M	68.7u	1.074m	1.316m	597.8m
12	2	12M	68.3u	1.085m	-	194.0m
13	2	10M	67.6u	1.039m	-	296.1m
14	2	14M	50.7u	1.771m	-	97.69m
15	3	7M	99.2u	1.437m	1.093m	72.95m
16	1	7M	74.5u	-	-	498.0m
17	2	6M	62.6u	960.4u	-	411.5m
18	2	20M	99.3u	1.205m	-	303.1m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_27
Number of Bursts in Trial: 16

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	5M	75.2u	1.350m	-	393.6m
2	3	20M	100.0u	1.421m	1.095m	96.65m
3	1	12M	58.8u	-	-	206.6m
4	1	10M	74.2u	-	-	581.0m
5	1	11M	51.9u	-	-	151.3m
6	2	8M	58.5u	1.293m	-	41.25m
7	2	18M	59.9u	1.909m	-	630.1m

8	1	20M	54.5u	-	-	310.5m
9	2	17M	81.2u	1.648m	-	480.1m
10	2	8M	68.6u	990.4u	-	173.4m
11	3	12M	55.5u	1.007m	1.017m	746.0m
12	2	11M	57.7u	1.506m	-	424.8m
13	2	11M	62.2u	1.475m	-	68.22m
14	1	10M	55.5u	-	-	37.80m
15	2	18M	73.4u	1.363m	-	683.7m
16	2	17M	85.5u	1.119m	-	741.9m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_28
Number of Bursts in Trial: 12

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	16M	53.9u	1.937m	-	378.0m
2	2	12M	84.2u	1.300m	-	248.4m
3	2	16M	79.8u	1.122m	-	177.1m
4	1	17M	90.1u	-	-	264.8m
5	3	19M	56.4u	1.596m	1.575m	252.0m
6	2	6M	50.4u	1.608m	-	676.1m
7	3	10M	92.9u	1.491m	1.754m	406.0m
8	1	6M	67.6u	-	-	727.0m
9	2	17M	55.3u	1.016m	-	827.3m
10	1	7M	86.8u	-	-	303.8m
11	1	11M	53.1u	-	-	387.1m
12	2	11M	89.3u	1.095m	-	160.0m

Long Pulse Radar Test Signal
Test Signal Name: LP_Signal_29
Number of Bursts in Trial: 13

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	9M	74.7u	1.742m	-	207.6m
2	3	9M	58.0u	1.540m	1.037m	342.8m
3	3	5M	87.7u	1.070m	1.134m	636.0m
4	1	17M	67.2u	-	-	372.4m

5	3	14M	83.8u	1.203m	1.119m	706.1m
6	1	18M	61.2u	-	-	519.8m
7	2	20M	65.1u	1.006m	-	346.0m
8	2	11M	80.8u	1.325m	-	497.5m
9	1	10M	93.1u	-	-	703.7m
10	1	12M	89.3u	-	-	62.04m
11	2	7M	89.4u	1.441m	-	137.7m
12	2	18M	85.6u	1.906m	-	385.1m
13	3	12M	98.2u	1.468m	1.342m	510.8m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_30

Number of Bursts in Trial: 15

Burst	Pulses per Burst	Chrip (Hz)	Pulse Width (s)	Pulse 1 to 2 Spacing (s)	Pulse 2 to 3 Spacing (s)	Start Location (s)
1	2	19M	84.6u	1.602m	-	227.9m
2	2	13M	66.5u	970.5u	-	521.2m
3	1	16M	62.8u	-	-	720.9m
4	2	11M	59.0u	1.080m	-	418.4m
5	2	13M	54.1u	1.827m	-	42.25m
6	2	19M	80.9u	1.476m	-	273.1m
7	1	10M	71.4u	-	-	18.89m
8	2	16M	98.1u	1.122m	-	155.1m
9	2	7M	97.8u	1.368m	-	743.4m
10	2	19M	68.2u	1.816m	-	762.6m
11	2	13M	65.1u	1.910m	-	276.8m
12	2	10M	65.2u	983.8u	-	472.8m
13	1	11M	92.0u	-	-	317.3m
14	1	6M	81.1u	-	-	112.3m
15	2	9M	86.2u	1.050m	-	422.7m

Annex-A3 : The Frequency Hopping Radar Pattern

Channel bandwidth (36MHz)

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_01							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.639G	2	5.358G	3	5.636G	4	5.399G
5	5.290G	6	5.431G	7	5.541G	8	5.679G
9	5.690G	10	5.453G	11	5.675G	12	5.540G
13	5.703G	14	5.645G	15	5.434G	16	5.647G
17	5.625G	18	5.404G	19	5.693G	20	5.458G
21	5.568G	22	5.635G	23	5.587G	24	5.381G
25	5.448G	26	5.706G	27	5.373G	28	5.618G
29	5.614G	30	5.608G	31	5.724G	32	5.682G
33	5.361G	34	5.573G	35	5.461G	36	5.485G
37	5.590G	38	5.657G	39	5.403G	40	5.377G
41	5.546G	42	5.333G	43	5.684G	44	5.518G
45	5.277G	46	5.270G	47	5.312G	48	5.624G
49	5.694G	50	5.578G	51	5.417G	52	5.524G
53	5.542G	54	5.472G	55	5.406G	56	5.418G
57	5.280G	58	5.572G	59	5.501G	60	5.286G
61	5.671G	62	5.615G	63	5.353G	64	5.581G
65	5.692G	66	5.709G	67	5.402G	68	5.638G
69	5.606G	70	5.544G	71	5.368G	72	5.259G
73	5.483G	74	5.714G	75	5.708G	76	5.717G
77	5.283G	78	5.531G	79	5.334G	80	5.330G
81	5.630G	82	5.287G	83	5.445G	84	5.349G
85	5.424G	86	5.564G	87	5.719G	88	5.344G
89	5.595G	90	5.553G	91	5.517G	92	5.659G
93	5.354G	94	5.415G	95	5.326G	96	5.316G
97	5.580G	98	5.328G	99	5.389G	100	5.456G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_02							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.707G	2	5.582G	3	5.591G	4	5.349G
5	5.361G	6	5.716G	7	5.297G	8	5.597G
9	5.490G	10	5.706G	11	5.687G	12	5.511G
13	5.454G	14	5.419G	15	5.275G	16	5.254G
17	5.425G	18	5.586G	19	5.400G	20	5.705G
21	5.679G	22	5.566G	23	5.343G	24	5.364G
25	5.640G	26	5.309G	27	5.629G	28	5.587G
29	5.615G	30	5.508G	31	5.452G	32	5.263G
33	5.394G	34	5.362G	35	5.595G	36	5.598G
37	5.432G	38	5.466G	39	5.579G	40	5.344G
41	5.278G	42	5.723G	43	5.287G	44	5.323G
45	5.433G	46	5.688G	47	5.545G	48	5.408G
49	5.266G	50	5.346G	51	5.366G	52	5.286G
53	5.683G	54	5.670G	55	5.534G	56	5.449G
57	5.514G	58	5.641G	59	5.303G	60	5.469G
61	5.316G	62	5.372G	63	5.367G	64	5.333G
65	5.289G	66	5.561G	67	5.505G	68	5.302G
69	5.710G	70	5.558G	71	5.480G	72	5.381G
73	5.658G	74	5.569G	75	5.264G	76	5.686G
77	5.471G	78	5.533G	79	5.503G	80	5.516G
81	5.268G	82	5.453G	83	5.406G	84	5.390G
85	5.650G	86	5.581G	87	5.498G	88	5.351G
89	5.602G	90	5.644G	91	5.684G	92	5.391G
93	5.532G	94	5.524G	95	5.654G	96	5.667G
97	5.298G	98	5.601G	99	5.626G	100	5.518G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_03							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.585G	2	5.465G	3	5.657G	4	5.473G
5	5.398G	6	5.492G	7	5.544G	8	5.706G
9	5.448G	10	5.332G	11	5.467G	12	5.331G
13	5.502G	14	5.571G	15	5.526G	16	5.251G

17	5.342G	18	5.528G	19	5.268G	20	5.508G
21	5.324G	22	5.425G	23	5.532G	24	5.715G
25	5.674G	26	5.436G	27	5.343G	28	5.624G
29	5.408G	30	5.261G	31	5.362G	32	5.495G
33	5.262G	34	5.281G	35	5.361G	36	5.684G
37	5.583G	38	5.575G	39	5.325G	40	5.326G
41	5.499G	42	5.723G	43	5.381G	44	5.336G
45	5.335G	46	5.357G	47	5.666G	48	5.287G
49	5.720G	50	5.640G	51	5.494G	52	5.654G
53	5.407G	54	5.303G	55	5.534G	56	5.567G
57	5.457G	58	5.613G	59	5.318G	60	5.451G
61	5.405G	62	5.370G	63	5.660G	64	5.633G
65	5.537G	66	5.669G	67	5.434G	68	5.513G
69	5.572G	70	5.400G	71	5.510G	72	5.402G
73	5.519G	74	5.493G	75	5.662G	76	5.547G
77	5.634G	78	5.474G	79	5.724G	80	5.353G
81	5.445G	82	5.509G	83	5.348G	84	5.594G
85	5.559G	86	5.314G	87	5.546G	88	5.390G
89	5.558G	90	5.392G	91	5.696G	92	5.581G
93	5.540G	94	5.389G	95	5.604G	96	5.690G
97	5.625G	98	5.310G	99	5.582G	100	5.386G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_04							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.304G	2	5.492G	3	5.633G	4	5.377G
5	5.359G	6	5.349G	7	5.485G	8	5.462G
9	5.481G	10	5.607G	11	5.413G	12	5.545G
13	5.391G	14	5.715G	15	5.400G	16	5.648G
17	5.548G	18	5.373G	19	5.395G	20	5.333G
21	5.331G	22	5.547G	23	5.699G	24	5.313G
25	5.658G	26	5.714G	27	5.504G	28	5.282G
29	5.301G	30	5.334G	31	5.561G	32	5.505G
33	5.631G	34	5.637G	35	5.432G	36	5.475G
37	5.478G	38	5.422G	39	5.599G	40	5.634G
41	5.526G	42	5.590G	43	5.638G	44	5.256G
45	5.711G	46	5.355G	47	5.661G	48	5.619G

49	5.651G	50	5.593G	51	5.558G	52	5.513G
53	5.488G	54	5.396G	55	5.254G	56	5.467G
57	5.484G	58	5.330G	59	5.329G	60	5.443G
61	5.549G	62	5.350G	63	5.418G	64	5.617G
65	5.559G	66	5.553G	67	5.518G	68	5.574G
69	5.332G	70	5.285G	71	5.392G	72	5.348G
73	5.385G	74	5.595G	75	5.544G	76	5.660G
77	5.602G	78	5.453G	79	5.557G	80	5.284G
81	5.445G	82	5.563G	83	5.556G	84	5.312G
85	5.639G	86	5.621G	87	5.387G	88	5.410G
89	5.683G	90	5.676G	91	5.366G	92	5.572G
93	5.380G	94	5.454G	95	5.429G	96	5.724G
97	5.262G	98	5.286G	99	5.287G	100	5.393G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_05							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.662G	2	5.491G	3	5.556G	4	5.613G
5	5.611G	6	5.280G	7	5.692G	8	5.266G
9	5.330G	10	5.312G	11	5.574G	12	5.644G
13	5.274G	14	5.523G	15	5.628G	16	5.560G
17	5.481G	18	5.432G	19	5.539G	20	5.511G
21	5.461G	22	5.360G	23	5.306G	24	5.437G
25	5.658G	26	5.250G	27	5.295G	28	5.448G
29	5.357G	30	5.452G	31	5.483G	32	5.717G
33	5.582G	34	5.504G	35	5.424G	36	5.503G
37	5.710G	38	5.593G	39	5.642G	40	5.489G
41	5.500G	42	5.477G	43	5.530G	44	5.467G
45	5.515G	46	5.474G	47	5.719G	48	5.576G
49	5.722G	50	5.653G	51	5.411G	52	5.535G
53	5.711G	54	5.537G	55	5.393G	56	5.374G
57	5.540G	58	5.618G	59	5.716G	60	5.623G
61	5.428G	62	5.458G	63	5.625G	64	5.387G
65	5.385G	66	5.706G	67	5.436G	68	5.603G
69	5.356G	70	5.287G	71	5.444G	72	5.279G
73	5.619G	74	5.545G	75	5.257G	76	5.492G
77	5.324G	78	5.696G	79	5.314G	80	5.657G

81	5.254G	82	5.506G	83	5.559G	84	5.445G
85	5.281G	86	5.348G	87	5.369G	88	5.286G
89	5.289G	90	5.366G	91	5.358G	92	5.594G
93	5.633G	94	5.425G	95	5.697G	96	5.338G
97	5.630G	98	5.599G	99	5.690G	100	5.431G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_06							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.508G	2	5.640G	3	5.281G	4	5.400G
5	5.610G	6	5.444G	7	5.517G	8	5.709G
9	5.630G	10	5.651G	11	5.464G	12	5.606G
13	5.267G	14	5.442G	15	5.386G	16	5.481G
17	5.705G	18	5.413G	19	5.356G	20	5.460G
21	5.317G	22	5.562G	23	5.344G	24	5.255G
25	5.571G	26	5.582G	27	5.300G	28	5.494G
29	5.693G	30	5.256G	31	5.642G	32	5.396G
33	5.613G	34	5.583G	35	5.467G	36	5.371G
37	5.436G	38	5.520G	39	5.669G	40	5.514G
41	5.554G	42	5.385G	43	5.453G	44	5.577G
45	5.412G	46	5.457G	47	5.410G	48	5.314G
49	5.549G	50	5.572G	51	5.446G	52	5.259G
53	5.563G	54	5.450G	55	5.684G	56	5.649G
57	5.389G	58	5.565G	59	5.570G	60	5.404G
61	5.346G	62	5.347G	63	5.618G	64	5.612G
65	5.592G	66	5.631G	67	5.433G	68	5.525G
69	5.633G	70	5.323G	71	5.290G	72	5.357G
73	5.264G	74	5.620G	75	5.541G	76	5.416G
77	5.261G	78	5.428G	79	5.551G	80	5.327G
81	5.717G	82	5.408G	83	5.431G	84	5.529G
85	5.315G	86	5.505G	87	5.560G	88	5.567G
89	5.576G	90	5.380G	91	5.661G	92	5.447G
93	5.585G	94	5.636G	95	5.258G	96	5.359G
97	5.593G	98	5.415G	99	5.602G	100	5.679G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_07							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.399G	2	5.271G	3	5.603G	4	5.324G
5	5.283G	6	5.600G	7	5.346G	8	5.418G
9	5.577G	10	5.667G	11	5.573G	12	5.327G
13	5.425G	14	5.353G	15	5.617G	16	5.532G
17	5.589G	18	5.470G	19	5.333G	20	5.579G
21	5.636G	22	5.542G	23	5.369G	24	5.275G
25	5.318G	26	5.455G	27	5.606G	28	5.391G
29	5.518G	30	5.437G	31	5.398G	32	5.380G
33	5.270G	34	5.551G	35	5.303G	36	5.558G
37	5.624G	38	5.686G	39	5.591G	40	5.430G
41	5.257G	42	5.604G	43	5.575G	44	5.523G
45	5.699G	46	5.410G	47	5.358G	48	5.359G
49	5.656G	50	5.485G	51	5.511G	52	5.481G
53	5.276G	54	5.297G	55	5.393G	56	5.698G
57	5.300G	58	5.557G	59	5.684G	60	5.464G
61	5.614G	62	5.367G	63	5.609G	64	5.375G
65	5.401G	66	5.289G	67	5.632G	68	5.515G
69	5.412G	70	5.540G	71	5.285G	72	5.321G
73	5.582G	74	5.384G	75	5.319G	76	5.377G
77	5.435G	78	5.528G	79	5.373G	80	5.354G
81	5.471G	82	5.541G	83	5.692G	84	5.292G
85	5.291G	86	5.546G	87	5.480G	88	5.269G
89	5.477G	90	5.484G	91	5.593G	92	5.519G
93	5.702G	94	5.413G	95	5.522G	96	5.657G
97	5.521G	98	5.586G	99	5.389G	100	5.714G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_08							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.724G	2	5.608G	3	5.509G	4	5.712G
5	5.713G	6	5.364G	7	5.577G	8	5.631G
9	5.629G	10	5.411G	11	5.261G	12	5.674G
13	5.391G	14	5.691G	15	5.309G	16	5.682G
17	5.567G	18	5.512G	19	5.518G	20	5.666G
21	5.332G	22	5.350G	23	5.387G	24	5.565G
25	5.511G	26	5.318G	27	5.721G	28	5.402G
29	5.678G	30	5.308G	31	5.543G	32	5.710G
33	5.429G	34	5.415G	35	5.645G	36	5.581G
37	5.480G	38	5.329G	39	5.290G	40	5.709G
41	5.514G	42	5.470G	43	5.352G	44	5.585G
45	5.583G	46	5.294G	47	5.667G	48	5.324G
49	5.481G	50	5.263G	51	5.522G	52	5.568G
53	5.562G	54	5.304G	55	5.595G	56	5.670G
57	5.380G	58	5.684G	59	5.453G	60	5.544G
61	5.327G	62	5.442G	63	5.488G	64	5.337G
65	5.378G	66	5.353G	67	5.502G	68	5.367G
69	5.338G	70	5.649G	71	5.718G	72	5.621G
73	5.449G	74	5.298G	75	5.432G	76	5.250G
77	5.611G	78	5.680G	79	5.310G	80	5.660G
81	5.484G	82	5.359G	83	5.560G	84	5.279G
85	5.633G	86	5.357G	87	5.345G	88	5.365G
89	5.356G	90	5.572G	91	5.612G	92	5.598G
93	5.634G	94	5.644G	95	5.390G	96	5.433G
97	5.452G	98	5.624G	99	5.505G	100	5.322G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_09							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.267G	2	5.363G	3	5.602G	4	5.659G
5	5.401G	6	5.533G	7	5.658G	8	5.277G
9	5.450G	10	5.664G	11	5.501G	12	5.587G
13	5.586G	14	5.466G	15	5.413G	16	5.291G
17	5.366G	18	5.520G	19	5.378G	20	5.414G
21	5.448G	22	5.444G	23	5.278G	24	5.473G
25	5.678G	26	5.573G	27	5.591G	28	5.353G
29	5.685G	30	5.562G	31	5.540G	32	5.250G
33	5.693G	34	5.619G	35	5.595G	36	5.392G
37	5.255G	38	5.628G	39	5.704G	40	5.543G
41	5.421G	42	5.502G	43	5.417G	44	5.416G
45	5.458G	46	5.647G	47	5.445G	48	5.674G
49	5.405G	50	5.322G	51	5.654G	52	5.612G
53	5.715G	54	5.694G	55	5.457G	56	5.359G
57	5.265G	58	5.313G	59	5.284G	60	5.624G
61	5.669G	62	5.361G	63	5.495G	64	5.682G
65	5.649G	66	5.529G	67	5.476G	68	5.298G
69	5.273G	70	5.344G	71	5.283G	72	5.272G
73	5.474G	74	5.449G	75	5.506G	76	5.465G
77	5.435G	78	5.434G	79	5.324G	80	5.258G
81	5.330G	82	5.710G	83	5.308G	84	5.599G
85	5.623G	86	5.660G	87	5.348G	88	5.720G
89	5.607G	90	5.442G	91	5.262G	92	5.420G
93	5.279G	94	5.568G	95	5.519G	96	5.490G
97	5.478G	98	5.554G	99	5.460G	100	5.722G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_10							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.266G	2	5.570G	3	5.719G	4	5.723G
5	5.703G	6	5.593G	7	5.290G	8	5.357G
9	5.673G	10	5.584G	11	5.461G	12	5.615G
13	5.589G	14	5.407G	15	5.591G	16	5.692G
17	5.427G	18	5.255G	19	5.406G	20	5.481G
21	5.371G	22	5.342G	23	5.288G	24	5.336G
25	5.361G	26	5.634G	27	5.402G	28	5.669G
29	5.356G	30	5.569G	31	5.428G	32	5.548G
33	5.597G	34	5.327G	35	5.671G	36	5.718G
37	5.556G	38	5.471G	39	5.641G	40	5.464G
41	5.286G	42	5.573G	43	5.601G	44	5.443G
45	5.496G	46	5.465G	47	5.268G	48	5.717G
49	5.254G	50	5.707G	51	5.316G	52	5.467G
53	5.619G	54	5.621G	55	5.457G	56	5.285G
57	5.468G	58	5.608G	59	5.279G	60	5.653G
61	5.532G	62	5.521G	63	5.581G	64	5.480G
65	5.307G	66	5.700G	67	5.418G	68	5.667G
69	5.508G	70	5.256G	71	5.617G	72	5.531G
73	5.698G	74	5.322G	75	5.455G	76	5.505G
77	5.665G	78	5.697G	79	5.283G	80	5.412G
81	5.529G	82	5.253G	83	5.713G	84	5.449G
85	5.559G	86	5.482G	87	5.442G	88	5.724G
89	5.403G	90	5.502G	91	5.714G	92	5.369G
93	5.334G	94	5.344G	95	5.284G	96	5.486G
97	5.680G	98	5.600G	99	5.487G	100	5.320G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_11							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.544G	2	5.459G	3	5.279G	4	5.604G
5	5.482G	6	5.474G	7	5.407G	8	5.536G
9	5.310G	10	5.660G	11	5.250G	12	5.579G
13	5.493G	14	5.259G	15	5.353G	16	5.450G
17	5.487G	18	5.479G	19	5.723G	20	5.588G
21	5.374G	22	5.573G	23	5.488G	24	5.444G
25	5.429G	26	5.485G	27	5.456G	28	5.392G
29	5.524G	30	5.522G	31	5.649G	32	5.335G
33	5.413G	34	5.587G	35	5.401G	36	5.394G
37	5.476G	38	5.372G	39	5.421G	40	5.696G
41	5.282G	42	5.380G	43	5.519G	44	5.281G
45	5.445G	46	5.550G	47	5.376G	48	5.545G
49	5.294G	50	5.427G	51	5.285G	52	5.539G
53	5.695G	54	5.557G	55	5.451G	56	5.387G
57	5.486G	58	5.498G	59	5.352G	60	5.591G
61	5.513G	62	5.278G	63	5.307G	64	5.439G
65	5.512G	66	5.636G	67	5.506G	68	5.642G
69	5.420G	70	5.593G	71	5.361G	72	5.437G
73	5.295G	74	5.616G	75	5.564G	76	5.258G
77	5.306G	78	5.296G	79	5.325G	80	5.581G
81	5.635G	82	5.330G	83	5.600G	84	5.409G
85	5.718G	86	5.683G	87	5.336G	88	5.680G
89	5.359G	90	5.423G	91	5.350G	92	5.277G
93	5.408G	94	5.302G	95	5.693G	96	5.449G
97	5.483G	98	5.531G	99	5.634G	100	5.305G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_12							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.494G	2	5.641G	3	5.383G	4	5.320G
5	5.526G	6	5.461G	7	5.279G	8	5.464G
9	5.381G	10	5.550G	11	5.614G	12	5.552G
13	5.342G	14	5.668G	15	5.528G	16	5.670G
17	5.427G	18	5.455G	19	5.555G	20	5.459G
21	5.686G	22	5.719G	23	5.270G	24	5.546G
25	5.454G	26	5.264G	27	5.579G	28	5.317G
29	5.554G	30	5.488G	31	5.470G	32	5.252G
33	5.378G	34	5.712G	35	5.696G	36	5.366G
37	5.302G	38	5.539G	39	5.346G	40	5.349G
41	5.495G	42	5.536G	43	5.521G	44	5.281G
45	5.630G	46	5.469G	47	5.618G	48	5.513G
49	5.298G	50	5.610G	51	5.509G	52	5.275G
53	5.680G	54	5.451G	55	5.501G	56	5.482G
57	5.524G	58	5.575G	59	5.639G	60	5.450G
61	5.429G	62	5.398G	63	5.433G	64	5.498G
65	5.365G	66	5.585G	67	5.308G	68	5.547G
69	5.667G	70	5.615G	71	5.519G	72	5.456G
73	5.652G	74	5.400G	75	5.629G	76	5.363G
77	5.541G	78	5.262G	79	5.577G	80	5.261G
81	5.599G	82	5.297G	83	5.289G	84	5.705G
85	5.606G	86	5.511G	87	5.596G	88	5.698G
89	5.417G	90	5.713G	91	5.564G	92	5.623G
93	5.402G	94	5.636G	95	5.408G	96	5.503G
97	5.478G	98	5.271G	99	5.540G	100	5.591G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_13							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.490G	2	5.627G	3	5.290G	4	5.551G
5	5.366G	6	5.717G	7	5.399G	8	5.422G
9	5.279G	10	5.541G	11	5.353G	12	5.254G
13	5.432G	14	5.477G	15	5.618G	16	5.272G
17	5.284G	18	5.621G	19	5.488G	20	5.694G
21	5.273G	22	5.253G	23	5.693G	24	5.378G
25	5.404G	26	5.319G	27	5.259G	28	5.590G
29	5.414G	30	5.584G	31	5.722G	32	5.439G
33	5.615G	34	5.639G	35	5.355G	36	5.692G
37	5.365G	38	5.593G	39	5.525G	40	5.258G
41	5.425G	42	5.631G	43	5.302G	44	5.610G
45	5.332G	46	5.570G	47	5.318G	48	5.451G
49	5.310G	50	5.397G	51	5.686G	52	5.522G
53	5.466G	54	5.280G	55	5.609G	56	5.577G
57	5.533G	58	5.604G	59	5.475G	60	5.552G
61	5.597G	62	5.316G	63	5.645G	64	5.333G
65	5.5579G	66	5.628G	67	5.296G	68	5.512G
69	5.651G	70	5.655G	71	5.660G	72	5.608G
73	5.716G	74	5.567G	75	5.724G	76	5.697G
77	5.723G	78	5.527G	79	5.699G	80	5.393G
81	5.681G	82	5.5589G	83	5.674G	84	5.520G
85	5.400G	86	5.390G	87	5.500G	88	5.702G
89	5.647G	90	5.295G	91	5.538G	92	5.661G
93	5.288G	94	5.696G	95	5.501G	96	5.348G
97	5.268G	98	5.521G	99	5.710G	100	5.396G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_14							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.366G	2	5.385G	3	5.528G	4	5.353G
5	5.692G	6	5.489G	7	5.398G	8	5.505G
9	5.558G	10	5.658G	11	5.324G	12	5.413G
13	5.321G	14	5.593G	15	5.343G	16	5.438G
17	5.477G	18	5.330G	19	5.673G	20	5.323G
21	5.403G	22	5.691G	23	5.662G	24	5.359G
25	5.299G	26	5.271G	27	5.648G	28	5.333G
29	5.556G	30	5.675G	31	5.315G	32	5.255G
33	5.470G	34	5.267G	35	5.457G	36	5.499G
37	5.529G	38	5.687G	39	5.435G	40	5.371G
41	5.313G	42	5.329G	43	5.684G	44	5.354G
45	5.485G	46	5.379G	47	5.534G	48	5.316G
49	5.710G	50	5.699G	51	5.592G	52	5.468G
53	5.420G	54	5.331G	55	5.407G	56	5.544G
57	5.506G	58	5.637G	59	5.539G	60	5.352G
61	5.419G	62	5.347G	63	5.338G	64	5.602G
65	5.561G	66	5.450G	67	5.549G	68	5.360G
69	5.650G	70	5.286G	71	5.557G	72	5.298G
73	5.654G	74	5.294G	75	5.625G	76	5.392G
77	5.364G	78	5.292G	79	5.551G	80	5.437G
81	5.595G	82	5.280G	83	5.542G	84	5.390G
85	5.328G	86	5.474G	87	5.575G	88	5.410G
89	5.290G	90	5.574G	91	5.572G	92	5.514G
93	5.597G	94	5.464G	95	5.697G	96	5.630G
97	5.282G	98	5.356G	99	5.547G	100	5.649G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_15							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.550G	2	5.298G	3	5.322G	4	5.639G
5	5.705G	6	5.274G	7	5.562G	8	5.506G
9	5.444G	10	5.373G	11	5.401G	12	5.473G
13	5.480G	14	5.711G	15	5.540G	16	5.465G
17	5.668G	18	5.595G	19	5.318G	20	5.471G
21	5.489G	22	5.485G	23	5.671G	24	5.672G
25	5.442G	26	5.636G	27	5.522G	28	5.690G
29	5.510G	30	5.681G	31	5.290G	32	5.526G
33	5.717G	34	5.467G	35	5.635G	36	5.723G
37	5.389G	38	5.646G	39	5.582G	40	5.452G
41	5.362G	42	5.394G	43	5.643G	44	5.667G
45	5.538G	46	5.411G	47	5.533G	48	5.675G
49	5.657G	50	5.628G	51	5.256G	52	5.434G
53	5.601G	54	5.384G	55	5.351G	56	5.292G
57	5.476G	58	5.674G	59	5.478G	60	5.428G
61	5.604G	62	5.380G	63	5.469G	64	5.370G
65	5.599G	66	5.300G	67	5.493G	68	5.695G
69	5.521G	70	5.663G	71	5.537G	72	5.673G
73	5.280G	74	5.268G	75	5.408G	76	5.712G
77	5.661G	78	5.556G	79	5.458G	80	5.284G
81	5.686G	82	5.591G	83	5.330G	84	5.417G
85	5.354G	86	5.313G	87	5.688G	88	5.645G
89	5.472G	90	5.670G	91	5.255G	92	5.575G
93	5.716G	94	5.448G	95	5.343G	96	5.402G
97	5.666G	98	5.621G	99	5.487G	100	5.532G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_16							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.322G	2	5.344G	3	5.282G	4	5.257G
5	5.515G	6	5.435G	7	5.397G	8	5.663G
9	5.535G	10	5.546G	11	5.400G	12	5.592G
13	5.536G	14	5.649G	15	5.714G	16	5.701G
17	5.289G	18	5.722G	19	5.309G	20	5.305G
21	5.263G	22	5.279G	23	5.387G	24	5.560G
25	5.423G	26	5.635G	27	5.324G	28	5.365G
29	5.666G	30	5.568G	31	5.541G	32	5.689G
33	5.408G	34	5.290G	35	5.258G	36	5.376G
37	5.412G	38	5.364G	39	5.712G	40	5.587G
41	5.576G	42	5.331G	43	5.581G	44	5.497G
45	5.600G	46	5.377G	47	5.522G	48	5.554G
49	5.683G	50	5.419G	51	5.521G	52	5.395G
53	5.507G	54	5.550G	55	5.623G	56	5.685G
57	5.552G	58	5.329G	59	5.388G	60	5.618G
61	5.482G	62	5.402G	63	5.634G	64	5.334G
65	5.627G	66	5.544G	67	5.694G	68	5.559G
69	5.448G	70	5.609G	71	5.667G	72	5.487G
73	5.510G	74	5.526G	75	5.424G	76	5.268G
77	5.447G	78	5.446G	79	5.495G	80	5.422G
81	5.687G	82	5.470G	83	5.450G	84	5.684G
85	5.368G	86	5.505G	87	5.628G	88	5.484G
89	5.617G	90	5.543G	91	5.693G	92	5.481G
93	5.527G	94	5.511G	95	5.512G	96	5.321G
97	5.577G	98	5.335G	99	5.445G	100	5.496G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_17							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.531G	2	5.307G	3	5.687G	4	5.524G
5	5.689G	6	5.664G	7	5.294G	8	5.589G
9	5.656G	10	5.586G	11	5.270G	12	5.533G
13	5.352G	14	5.678G	15	5.606G	16	5.511G
17	5.710G	18	5.709G	19	5.721G	20	5.280G
21	5.319G	22	5.669G	23	5.265G	24	5.693G
25	5.716G	26	5.556G	27	5.551G	28	5.326G
29	5.560G	30	5.381G	31	5.374G	32	5.263G
33	5.449G	34	5.681G	35	5.289G	36	5.419G
37	5.683G	38	5.705G	39	5.464G	40	5.675G
41	5.648G	42	5.418G	43	5.717G	44	5.691G
45	5.528G	46	5.642G	47	5.254G	48	5.277G
49	5.371G	50	5.715G	51	5.391G	52	5.364G
53	5.271G	54	5.663G	55	5.575G	56	5.417G
57	5.295G	58	5.633G	59	5.652G	60	5.403G
61	5.361G	62	5.463G	63	5.424G	64	5.385G
65	5.718G	66	5.421G	67	5.428G	68	5.672G
69	5.273G	70	5.548G	71	5.576G	72	5.387G
73	5.610G	74	5.343G	75	5.359G	76	5.433G
77	5.557G	78	5.325G	79	5.334G	80	5.723G
81	5.580G	82	5.257G	83	5.544G	84	5.284G
85	5.545G	86	5.300G	87	5.613G	88	5.690G
89	5.612G	90	5.703G	91	5.478G	92	5.724G
93	5.619G	94	5.523G	95	5.574G	96	5.562G
97	5.530G	98	5.540G	99	5.651G	100	5.488G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_18							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.667G	2	5.657G	3	5.577G	4	5.645G
5	5.252G	6	5.602G	7	5.374G	8	5.721G
9	5.724G	10	5.637G	11	5.686G	12	5.274G
13	5.589G	14	5.428G	15	5.550G	16	5.604G
17	5.454G	18	5.456G	19	5.257G	20	5.348G
21	5.614G	22	5.323G	23	5.443G	24	5.658G
25	5.272G	26	5.433G	27	5.367G	28	5.330G
29	5.307G	30	5.662G	31	5.256G	32	5.558G
33	5.429G	34	5.534G	35	5.300G	36	5.282G
37	5.269G	38	5.451G	39	5.473G	40	5.377G
41	5.268G	42	5.470G	43	5.314G	44	5.693G
45	5.292G	46	5.324G	47	5.656G	48	5.526G
49	5.390G	50	5.381G	51	5.326G	52	5.414G
53	5.678G	54	5.369G	55	5.688G	56	5.652G
57	5.309G	58	5.382G	59	5.398G	60	5.555G
61	5.312G	62	5.595G	63	5.599G	64	5.328G
65	5.356G	66	5.648G	67	5.511G	68	5.392G
69	5.364G	70	5.567G	71	5.478G	72	5.275G
73	5.674G	74	5.267G	75	5.592G	76	5.546G
77	5.541G	78	5.278G	79	5.332G	80	5.442G
81	5.586G	82	5.418G	83	5.410G	84	5.676G
85	5.689G	86	5.523G	87	5.691G	88	5.641G
89	5.713G	90	5.258G	91	5.666G	92	5.422G
93	5.636G	94	5.453G	95	5.699G	96	5.466G
97	5.361G	98	5.565G	99	5.331G	100	5.486G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_19							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.498G	2	5.585G	3	5.607G	4	5.558G
5	5.291G	6	5.566G	7	5.583G	8	5.391G
9	5.329G	10	5.521G	11	5.596G	12	5.702G
13	5.383G	14	5.449G	15	5.519G	16	5.640G
17	5.387G	18	5.319G	19	5.586G	20	5.671G
21	5.363G	22	5.508G	23	5.281G	24	5.472G
25	5.334G	26	5.694G	27	5.259G	28	5.429G
29	5.468G	30	5.526G	31	5.663G	32	5.396G
33	5.490G	34	5.284G	35	5.589G	36	5.495G
37	5.324G	38	5.619G	39	5.668G	40	5.364G
41	5.365G	42	5.576G	43	5.660G	44	5.539G
45	5.437G	46	5.428G	47	5.532G	48	5.336G
49	5.643G	50	5.307G	51	5.314G	52	5.665G
53	5.609G	54	5.648G	55	5.624G	56	5.682G
57	5.344G	58	5.410G	59	5.545G	60	5.341G
61	5.549G	62	5.330G	63	5.254G	64	5.715G
65	5.309G	66	5.458G	67	5.479G	68	5.417G
69	5.280G	70	5.292G	71	5.385G	72	5.392G
73	5.301G	74	5.504G	75	5.357G	76	5.654G
77	5.345G	78	5.286G	79	5.496G	80	5.569G
81	5.520G	82	5.629G	83	5.409G	84	5.535G
85	5.399G	86	5.312G	87	5.693G	88	5.367G
89	5.299G	90	5.486G	91	5.722G	92	5.358G
93	5.469G	94	5.515G	95	5.381G	96	5.460G
97	5.622G	98	5.503G	99	5.499G	100	5.269G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_20							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.583G	2	5.545G	3	5.687G	4	5.724G
5	5.452G	6	5.590G	7	5.357G	8	5.622G
9	5.715G	10	5.298G	11	5.594G	12	5.371G
13	5.327G	14	5.577G	15	5.658G	16	5.517G
17	5.591G	18	5.387G	19	5.625G	20	5.697G
21	5.550G	22	5.557G	23	5.261G	24	5.642G
25	5.709G	26	5.661G	27	5.524G	28	5.530G
29	5.483G	30	5.344G	31	5.652G	32	5.639G
33	5.693G	34	5.460G	35	5.526G	36	5.406G
37	5.518G	38	5.536G	39	5.675G	40	5.547G
41	5.412G	42	5.511G	43	5.256G	44	5.273G
45	5.428G	46	5.396G	47	5.657G	48	5.627G
49	5.673G	50	5.631G	51	5.305G	52	5.418G
53	5.292G	54	5.416G	55	5.466G	56	5.584G
57	5.571G	58	5.660G	59	5.696G	60	5.522G
61	5.303G	62	5.651G	63	5.683G	64	5.646G
65	5.458G	66	5.276G	67	5.549G	68	5.529G
69	5.569G	70	5.472G	71	5.560G	72	5.266G
73	5.610G	74	5.384G	75	5.308G	76	5.443G
77	5.314G	78	5.290G	79	5.426G	80	5.640G
81	5.618G	82	5.397G	83	5.671G	84	5.682G
85	5.381G	86	5.574G	87	5.555G	88	5.501G
89	5.341G	90	5.611G	91	5.400G	92	5.566G
93	5.271G	94	5.389G	95	5.708G	96	5.665G
97	5.415G	98	5.333G	99	5.490G	100	5.614G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_21							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.294G	2	5.333G	3	5.351G	4	5.325G
5	5.389G	6	5.577G	7	5.274G	8	5.606G
9	5.319G	10	5.329G	11	5.267G	12	5.430G
13	5.519G	14	5.352G	15	5.306G	16	5.324G
17	5.461G	18	5.255G	19	5.590G	20	5.693G
21	5.252G	22	5.701G	23	5.523G	24	5.665G
25	5.696G	26	5.269G	27	5.567G	28	5.574G
29	5.662G	30	5.429G	31	5.667G	32	5.402G
33	5.403G	34	5.367G	35	5.609G	36	5.279G
37	5.408G	38	5.327G	39	5.361G	40	5.629G
41	5.646G	42	5.520G	43	5.583G	44	5.580G
45	5.369G	46	5.711G	47	5.623G	48	5.470G
49	5.524G	50	5.535G	51	5.357G	52	5.516G
53	5.565G	54	5.663G	55	5.286G	56	5.547G
57	5.530G	58	5.494G	59	5.548G	60	5.370G
61	5.562G	62	5.404G	63	5.398G	64	5.615G
65	5.406G	66	5.468G	67	5.712G	68	5.650G
69	5.707G	70	5.651G	71	5.479G	72	5.447G
73	5.438G	74	5.399G	75	5.381G	76	5.561G
77	5.472G	78	5.266G	79	5.721G	80	5.709G
81	5.588G	82	5.368G	83	5.401G	84	5.261G
85	5.356G	86	5.664G	87	5.418G	88	5.391G
89	5.392G	90	5.288G	91	5.635G	92	5.409G
93	5.502G	94	5.507G	95	5.521G	96	5.551G
97	5.336G	98	5.522G	99	5.293G	100	5.601G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_22							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.460G	2	5.424G	3	5.431G	4	5.547G
5	5.609G	6	5.723G	7	5.386G	8	5.357G
9	5.541G	10	5.709G	11	5.602G	12	5.342G
13	5.351G	14	5.610G	15	5.642G	16	5.473G
17	5.397G	18	5.330G	19	5.489G	20	5.641G
21	5.668G	22	5.382G	23	5.374G	24	5.721G
25	5.681G	26	5.429G	27	5.532G	28	5.581G
29	5.275G	30	5.719G	31	5.327G	32	5.649G
33	5.314G	34	5.516G	35	5.422G	36	5.451G
37	5.454G	38	5.312G	39	5.484G	40	5.303G
41	5.262G	42	5.337G	43	5.324G	44	5.685G
45	5.348G	46	5.406G	47	5.468G	48	5.538G
49	5.250G	50	5.691G	51	5.279G	52	5.465G
53	5.274G	54	5.404G	55	5.563G	56	5.616G
57	5.523G	58	5.690G	59	5.267G	60	5.623G
61	5.496G	62	5.670G	63	5.273G	64	5.628G
65	5.320G	66	5.470G	67	5.601G	68	5.257G
69	5.674G	70	5.415G	71	5.343G	72	5.459G
73	5.551G	74	5.514G	75	5.456G	76	5.646G
77	5.595G	78	5.659G	79	5.644G	80	5.390G
81	5.298G	82	5.309G	83	5.722G	84	5.620G
85	5.607G	86	5.648G	87	5.253G	88	5.461G
89	5.678G	90	5.453G	91	5.367G	92	5.352G
93	5.350G	94	5.413G	95	5.569G	96	5.428G
97	5.391G	98	5.622G	99	5.626G	100	5.501G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_23							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.671G	2	5.474G	3	5.401G	4	5.271G
5	5.361G	6	5.496G	7	5.588G	8	5.607G
9	5.448G	10	5.380G	11	5.656G	12	5.564G
13	5.686G	14	5.555G	15	5.510G	16	5.696G
17	5.551G	18	5.505G	19	5.355G	20	5.446G
21	5.390G	22	5.449G	23	5.724G	24	5.487G
25	5.308G	26	5.666G	27	5.273G	28	5.669G
29	5.682G	30	5.483G	31	5.586G	32	5.650G
33	5.571G	34	5.649G	35	5.270G	36	5.269G
37	5.347G	38	5.654G	39	5.385G	40	5.506G
41	5.719G	42	5.415G	43	5.645G	44	5.652G
45	5.362G	46	5.272G	47	5.688G	48	5.537G
49	5.576G	50	5.371G	51	5.557G	52	5.391G
53	5.378G	54	5.525G	55	5.511G	56	5.517G
57	5.616G	58	5.414G	59	5.387G	60	5.659G
61	5.412G	62	5.602G	63	5.538G	64	5.677G
65	5.547G	66	5.490G	67	5.678G	68	5.486G
69	5.580G	70	5.439G	71	5.456G	72	5.521G
73	5.431G	74	5.333G	75	5.336G	76	5.299G
77	5.657G	78	5.542G	79	5.363G	80	5.500G
81	5.400G	82	5.257G	83	5.458G	84	5.482G
85	5.644G	86	5.704G	87	5.435G	88	5.629G
89	5.476G	90	5.384G	91	5.720G	92	5.675G
93	5.504G	94	5.342G	95	5.341G	96	5.587G
97	5.279G	98	5.529G	99	5.635G	100	5.594G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_24							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.651G	2	5.289G	3	5.536G	4	5.279G
5	5.468G	6	5.567G	7	5.557G	8	5.564G
9	5.366G	10	5.291G	11	5.711G	12	5.668G
13	5.569G	14	5.662G	15	5.475G	16	5.361G
17	5.690G	18	5.498G	19	5.406G	20	5.673G
21	5.520G	22	5.541G	23	5.501G	24	5.355G
25	5.566G	26	5.414G	27	5.670G	28	5.338G
29	5.609G	30	5.681G	31	5.576G	32	5.299G
33	5.652G	34	5.368G	35	5.301G	36	5.611G
37	5.317G	38	5.385G	39	5.251G	40	5.561G
41	5.292G	42	5.563G	43	5.365G	44	5.266G
45	5.591G	46	5.409G	47	5.272G	48	5.459G
49	5.399G	50	5.426G	51	5.271G	52	5.587G
53	5.706G	54	5.315G	55	5.259G	56	5.432G
57	5.657G	58	5.521G	59	5.538G	60	5.265G
61	5.718G	62	5.322G	63	5.606G	64	5.454G
65	5.666G	66	5.295G	67	5.697G	68	5.669G
69	5.422G	70	5.457G	71	5.492G	72	5.702G
73	5.424G	74	5.608G	75	5.695G	76	5.337G
77	5.722G	78	5.323G	79	5.377G	80	5.310G
81	5.710G	82	5.497G	83	5.629G	84	5.698G
85	5.700G	86	5.682G	87	5.523G	88	5.618G
89	5.387G	90	5.551G	91	5.373G	92	5.642G
93	5.622G	94	5.326G	95	5.534G	96	5.568G
97	5.344G	98	5.352G	99	5.671G	100	5.639G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_25							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.394G	2	5.494G	3	5.505G	4	5.503G
5	5.259G	6	5.369G	7	5.306G	8	5.561G
9	5.320G	10	5.521G	11	5.303G	12	5.579G
13	5.301G	14	5.721G	15	5.427G	16	5.466G
17	5.337G	18	5.668G	19	5.445G	20	5.526G
21	5.304G	22	5.695G	23	5.631G	24	5.438G
25	5.349G	26	5.476G	27	5.658G	28	5.604G
29	5.682G	30	5.654G	31	5.464G	32	5.694G
33	5.715G	34	5.292G	35	5.310G	36	5.647G
37	5.279G	38	5.589G	39	5.393G	40	5.273G
41	5.487G	42	5.455G	43	5.456G	44	5.641G
45	5.643G	46	5.672G	47	5.666G	48	5.361G
49	5.376G	50	5.626G	51	5.401G	52	5.400G
53	5.399G	54	5.659G	55	5.370G	56	5.439G
57	5.576G	58	5.452G	59	5.696G	60	5.500G
61	5.432G	62	5.684G	63	5.281G	64	5.501G
65	5.425G	66	5.318G	67	5.449G	68	5.403G
69	5.461G	70	5.661G	71	5.321G	72	5.260G
73	5.617G	74	5.365G	75	5.252G	76	5.522G
77	5.412G	78	5.373G	79	5.435G	80	5.539G
81	5.502G	82	5.568G	83	5.678G	84	5.462G
85	5.603G	86	5.592G	87	5.670G	88	5.518G
89	5.484G	90	5.342G	91	5.429G	92	5.357G
93	5.434G	94	5.563G	95	5.451G	96	5.430G
97	5.590G	98	5.540G	99	5.718G	100	5.698G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_26							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.362G	2	5.413G	3	5.367G	4	5.298G
5	5.547G	6	5.336G	7	5.481G	8	5.590G
9	5.548G	10	5.423G	11	5.414G	12	5.569G
13	5.502G	14	5.258G	15	5.505G	16	5.510G
17	5.523G	18	5.512G	19	5.507G	20	5.651G
21	5.360G	22	5.447G	23	5.563G	24	5.687G
25	5.536G	26	5.706G	27	5.603G	28	5.606G
29	5.286G	30	5.511G	31	5.513G	32	5.262G
33	5.350G	34	5.373G	35	5.641G	36	5.281G
37	5.366G	38	5.619G	39	5.681G	40	5.630G
41	5.279G	42	5.669G	43	5.528G	44	5.526G
45	5.682G	46	5.689G	47	5.598G	48	5.492G
49	5.599G	50	5.351G	51	5.560G	52	5.390G
53	5.285G	54	5.589G	55	5.580G	56	5.267G
57	5.579G	58	5.394G	59	5.415G	60	5.549G
61	5.576G	62	5.703G	63	5.265G	64	5.386G
65	5.457G	66	5.564G	67	5.515G	68	5.335G
69	5.289G	70	5.468G	71	5.620G	72	5.527G
73	5.595G	74	5.495G	75	5.347G	76	5.453G
77	5.323G	78	5.319G	79	5.501G	80	5.530G
81	5.310G	82	5.455G	83	5.300G	84	5.626G
85	5.546G	86	5.396G	87	5.276G	88	5.572G
89	5.584G	90	5.491G	91	5.421G	92	5.277G
93	5.450G	94	5.446G	95	5.402G	96	5.632G
97	5.389G	98	5.359G	99	5.420G	100	5.397G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_27							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.439G	2	5.537G	3	5.638G	4	5.366G
5	5.367G	6	5.526G	7	5.432G	8	5.658G
9	5.323G	10	5.469G	11	5.334G	12	5.413G
13	5.266G	14	5.531G	15	5.305G	16	5.480G
17	5.603G	18	5.430G	19	5.723G	20	5.326G
21	5.623G	22	5.631G	23	5.319G	24	5.417G
25	5.656G	26	5.437G	27	5.479G	28	5.611G
29	5.470G	30	5.372G	31	5.529G	32	5.669G
33	5.492G	34	5.588G	35	5.347G	36	5.513G
37	5.604G	38	5.724G	39	5.563G	40	5.360G
41	5.571G	42	5.324G	43	5.502G	44	5.694G
45	5.423G	46	5.444G	47	5.390G	48	5.434G
49	5.269G	50	5.522G	51	5.271G	52	5.560G
53	5.624G	54	5.308G	55	5.587G	56	5.608G
57	5.703G	58	5.705G	59	5.427G	60	5.712G
61	5.275G	62	5.641G	63	5.550G	64	5.622G
65	5.676G	66	5.335G	67	5.507G	68	5.378G
69	5.557G	70	5.343G	71	5.337G	72	5.267G
73	5.409G	74	5.313G	75	5.457G	76	5.436G
77	5.256G	78	5.568G	79	5.541G	80	5.620G
81	5.576G	82	5.722G	83	5.542G	84	5.374G
85	5.618G	86	5.328G	87	5.315G	88	5.509G
89	5.380G	90	5.520G	91	5.497G	92	5.701G
93	5.683G	94	5.562G	95	5.352G	96	5.259G
97	5.298G	98	5.309G	99	5.311G	100	5.575G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_28							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.317G	2	5.530G	3	5.287G	4	5.541G
5	5.302G	6	5.626G	7	5.250G	8	5.264G
9	5.320G	10	5.701G	11	5.454G	12	5.267G
13	5.308G	14	5.397G	15	5.640G	16	5.633G
17	5.645G	18	5.311G	19	5.688G	20	5.296G
21	5.674G	22	5.644G	23	5.290G	24	5.432G
25	5.408G	26	5.266G	27	5.391G	28	5.371G
29	5.332G	30	5.402G	31	5.611G	32	5.582G
33	5.369G	34	5.665G	35	5.609G	36	5.436G
37	5.566G	38	5.501G	39	5.462G	40	5.485G
41	5.467G	42	5.619G	43	5.709G	44	5.324G
45	5.366G	46	5.334G	47	5.581G	48	5.289G
49	5.520G	50	5.538G	51	5.415G	52	5.655G
53	5.365G	54	5.417G	55	5.543G	56	5.379G
57	5.355G	58	5.393G	59	5.428G	60	5.316G
61	5.516G	62	5.263G	63	5.497G	64	5.669G
65	5.526G	66	5.551G	67	5.559G	68	5.683G
69	5.723G	70	5.679G	71	5.398G	72	5.714G
73	5.659G	74	5.572G	75	5.458G	76	5.275G
77	5.597G	78	5.304G	79	5.531G	80	5.592G
81	5.574G	82	5.376G	83	5.518G	84	5.608G
85	5.706G	86	5.563G	87	5.514G	88	5.307G
89	5.553G	90	5.292G	91	5.557G	92	5.318G
93	5.675G	94	5.648G	95	5.588G	96	5.362G
97	5.489G	98	5.413G	99	5.705G	100	5.638G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_29							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.454G	2	5.343G	3	5.532G	4	5.601G
5	5.674G	6	5.318G	7	5.527G	8	5.260G
9	5.462G	10	5.468G	11	5.528G	12	5.624G
13	5.675G	14	5.637G	15	5.530G	16	5.662G
17	5.618G	18	5.345G	19	5.531G	20	5.263G
21	5.581G	22	5.261G	23	5.400G	24	5.365G
25	5.490G	26	5.707G	27	5.489G	28	5.593G
29	5.544G	30	5.285G	31	5.423G	32	5.712G
33	5.381G	34	5.316G	35	5.461G	36	5.378G
37	5.457G	38	5.439G	39	5.579G	40	5.636G
41	5.448G	42	5.353G	43	5.312G	44	5.377G
45	5.495G	46	5.523G	47	5.525G	48	5.450G
49	5.615G	50	5.604G	51	5.705G	52	5.380G
53	5.564G	54	5.290G	55	5.505G	56	5.426G
57	5.297G	58	5.456G	59	5.605G	60	5.398G
61	5.310G	62	5.317G	63	5.397G	64	5.551G
65	5.371G	66	5.548G	67	5.262G	68	5.713G
69	5.399G	70	5.587G	71	5.427G	72	5.686G
73	5.281G	74	5.412G	75	5.499G	76	5.362G
77	5.483G	78	5.596G	79	5.603G	80	5.688G
81	5.391G	82	5.614G	83	5.256G	84	5.336G
85	5.451G	86	5.714G	87	5.280G	88	5.649G
89	5.304G	90	5.375G	91	5.582G	92	5.325G
93	5.699G	94	5.692G	95	5.591G	96	5.680G
97	5.251G	98	5.477G	99	5.623G	100	5.585G

Hopping Frequency Sequence Name: HOP_FREQ_SEQ_30							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.269G	2	5.693G	3	5.377G	4	5.665G
5	5.509G	6	5.390G	7	5.279G	8	5.461G
9	5.534G	10	5.464G	11	5.405G	12	5.294G
13	5.308G	14	5.539G	15	5.572G	16	5.569G
17	5.497G	18	5.614G	19	5.703G	20	5.620G
21	5.296G	22	5.266G	23	5.575G	24	5.468G
25	5.255G	26	5.347G	27	5.684G	28	5.360G
29	5.496G	30	5.593G	31	5.473G	32	5.371G
33	5.284G	34	5.548G	35	5.370G	36	5.557G
37	5.429G	38	5.301G	39	5.486G	40	5.358G
41	5.521G	42	5.304G	43	5.689G	44	5.649G
45	5.449G	46	5.696G	47	5.374G	48	5.403G
49	5.363G	50	5.594G	51	5.265G	52	5.715G
53	5.264G	54	5.688G	55	5.258G	56	5.365G
57	5.585G	58	5.402G	59	5.619G	60	5.352G
61	5.685G	62	5.466G	63	5.536G	64	5.506G
65	5.528G	66	5.477G	67	5.380G	68	5.709G
69	5.424G	70	5.356G	71	5.367G	72	5.700G
73	5.416G	74	5.491G	75	5.415G	76	5.250G
77	5.401G	78	5.648G	79	5.616G	80	5.404G
81	5.523G	82	5.681G	83	5.635G	84	5.570G
85	5.637G	86	5.702G	87	5.407G	88	5.482G
89	5.493G	90	5.658G	91	5.551G	92	5.300G
93	5.456G	94	5.638G	95	5.529G	96	5.353G
97	5.297G	98	5.317G	99	5.600G	100	5.411G