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DFS TEST REPORT (Accessory mode)

REPORT NO.: RF140430E05B-2

MODEL NO.: 1653

FCC ID: C3K1653

RECEIVED: Apr 30, 2014

TESTED: Aug 01, 2014

ISSUED: Sep. 02, 2014

APPLICANT: Microsoft Corporation

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140430E05B-2	Original release	Sep. 02, 2014

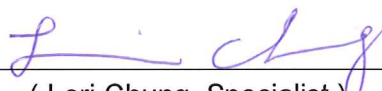


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1 CERTIFICATION

PRODUCT: 802.11a/b/g/n 2T2R dual-band wireless LAN radio
BRAND NAME: Microsoft
MODEL NO.: 1653
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Microsoft Corporation
TESTED: Aug 01, 2014
STANDARDS: FCC Part 15, Subpart E (Section 15.407)
FCC KDB 905462 D02 v01

The above equipment (Model: 1653) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and was in 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. 02, 2014
(Lori Chung, Specialist)

APPROVED BY :  , **DATE:** Sep. 02, 2014
(May Chen, 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	✓	✓

2.2 EUT SOFTWARE AND FIRMWARE VERSION

TABLE 2: THE EUT SOFTWARE/FIRMWARE VERSION

No.	Product	Model No.	Software/Firmware Version
1	802.11a/b/g/n 2T2R dual-band wireless LAN radio	1653	0.2.12.0 (xb_rel_1408(xhddk).140702-1516)

2.3 DESCRIPTION OF AVAILABLE ANTENNAS TO THE EUT

TABLE 3: ANTENNA LIST

Accessory Radio							
Ant. No.	Brand	Model	Ant. Gain(dBi) <including cable loss>	Frequency range (GHz ~ GHz)	Ant. Type	Connector Type	Cable Length (mm)
1	Microsoft	NA	2.2	2.4~2.5	PCB	i-PEX	295
	Microsoft	NA	3.14	5.15~5.85	PCB	i-PEX	295
Network Radio							
Ant. No.	Transmitter Circuit	Brand	Model	Ant. Gain(dBi) <including cable loss>	Frequency range (GHz ~ GHz)	Ant. Type	Connector Type
1	Chain (0)	Microsoft	NA	4.79	2.4~2.5	PCB	NA
				3.49	5.15~5.85		
2	Chain (1)	Microsoft	NA	1.87	2.4~2.5	PCB	NA
				2.63	5.15~5.85		

2.4 EUT MAXIMUM CONDUCTED POWER

TABLE 4: THE MEASURED CONDUCTED OUTPUT POWER

IEEE 802.11a

Frequency Band(MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350MHz	15.23	33.343
5470~5725MHz	15.53	35.727

IEEE 802.11n (HT20)

Frequency Band(MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350MHz	15.33	34.119
5470~5725MHz	15.64	36.644

2.5 EUT MAXIMUM EIRP POWER

TABLE 5: THE EIRP OUTPUT POWER LIST

IEEE 802.11a

Frequency Band(MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350MHz	18.37	68.708
5470~5725MHz	18.67	73.620

IEEE 802.11n (HT20)

Frequency Band(MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350MHz	18.47	70.307
5470~5725MHz	18.78	75.510

2.6 TRANSMIT POWER CONTROL (TPC) MECHANISM

U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an EIRP of less than 500 mW.

Maximum EIRP of this device is 75.510mW which less than 500mW, therefore TPC function is not required.

2.7 STATEMENT OF MAUNFACTURER

Manufacturer statement confirming that information regarding the parameters of the detected Radar Waveforms is not available to the end user.

3 U-NII DFS RULE REQUIREMENTS

3.1 WORKING MODES AND REQUIRED TEST ITEMS

The manufacturer shall state whether the UUT is capable of operating as a Master and/or a Client. If the UUT is capable of operating in more than one operating mode then each operating mode shall be tested separately. See tables 6 and 7 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
U-NII Detection Bandwidth	✓	Not required	✓

TABLE 7: APPLICABILITY OF DFS REQUIREMENTS DURING NORMAL OPERATION

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

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

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, 2, and 3)
EIRP $\geq$ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

**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 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.	

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
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 ----- 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	Roundup $\left\{ \frac{1}{360} \cdot \frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{SEC}}} \right\}$	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
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

**A D T****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

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4 TEST & SUPPORT EQUIPMENT LIST

4.1 TEST INSTRUMENTS

TABLE 13: TEST INSTRUMENTS LIST

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSW8	101497	Aug. 07, 2013	Aug. 06, 2014
Vector Signal Generator R&S	SMJ100A	101878	Aug. 13, 2013	Aug. 12, 2014
Spectrum analyzer R&S	FSP40	100039	Mar. 03, 2014	Mar. 02, 2015
Signal generator Agilent	8645A	3546A00769	July 02, 2014	July 01, 2015
Oscilloscope Tektronix	TDS 5104	B051449	Mar. 20, 2014	Mar. 19, 2015

4.2 DESCRIPTION OF SUPPORT UNITS

TABLE 14: SUPPORT UNIT INFORMATION

No.	Product	Brand	Model No.	FCC ID	Spec.
1	Wireless Slave Device	Microsoft	1537	C3K1537	

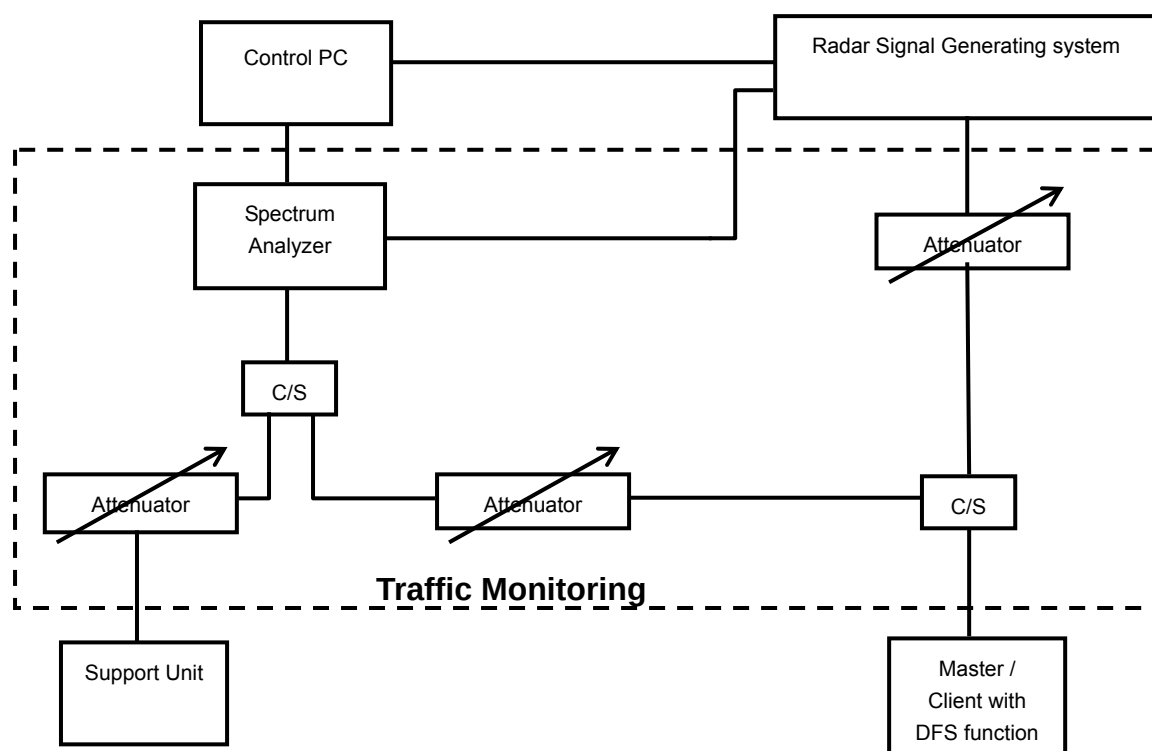
NOTE: This device was functioned as a ☐ Master ☒ Slave device during the DFS test.

5 TEST PROCEDURE

5.1 BVADT 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 (UUT).

CONDUCTED SETUP CONFIGURATION OF ADT DFS MEASUREMENT SYSTEM



Channel Loading

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

a)	The data file must be of a type that is typical for the device (i.e., MPEG-2, MPEG-4, WAV, MP3, MP4, AVI, etc.) and must generally be transmitting in a streaming mode.	
b)	Software to ping the client is permitted to simulate data transfer but must have random ping intervals.	
c)	Timing plots are required with calculations demonstrating a minimum channel loading of approximately 17% or greater.	✓
d)	Unicast or Multicast protocols are preferable but other protocols may be used. The appropriate protocol used must be described in the test procedures.	

The measured channel is 5500MHz in 20MHz. 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 antenna net gain is 3.14dBi and required detection threshold is -57.86 dBm (= -62 + 3.14+1). The calibrated conducted detection threshold level is set to -57.86 dBm.

```

graph TD
    PC[Control PC] --- SA[Spectrum Analyzer]
    PC --- RSGS[Radar Signal Generating Subsystem]
    SA --- RSGS
    RSGS --- A1[Attenuator]
    A1 --- CS1[C/S]
    CS1 --- A2[Attenuator]
    A2 --- L1[50Ω Load Terminator]
    SA --- L2[50Ω Load Terminator]

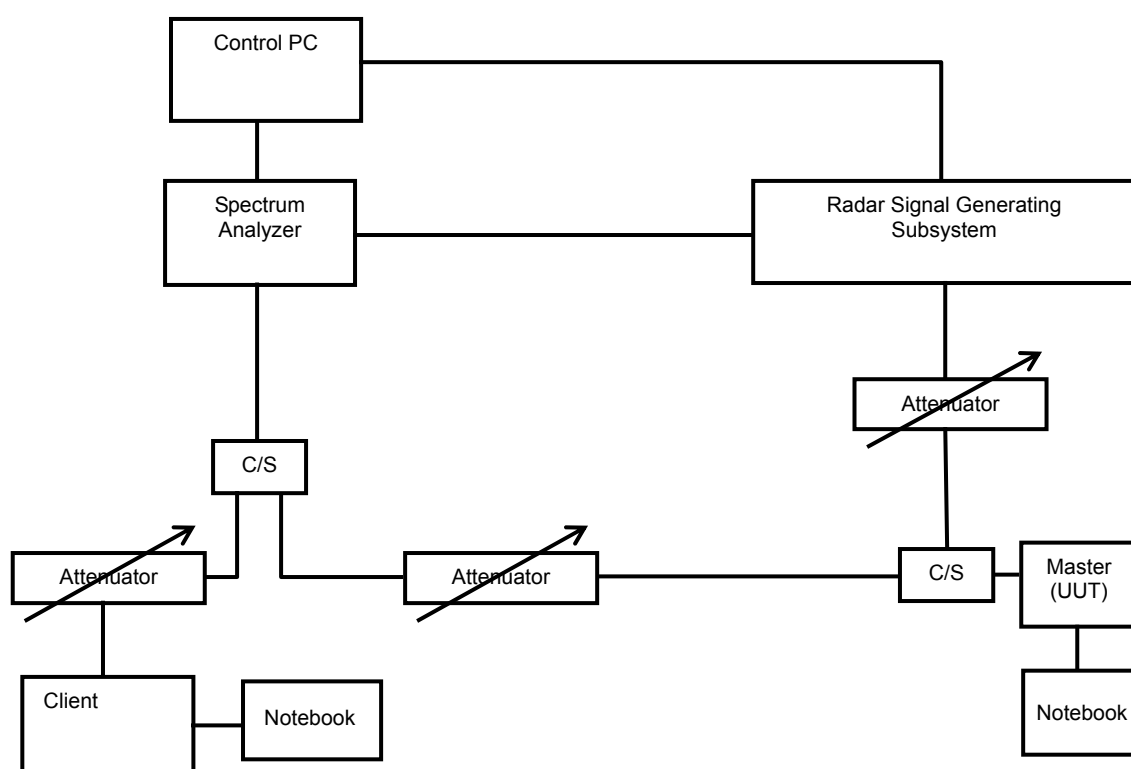
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5.3 DEVIATION FROM TEST STANDARD

No deviation.

5.4 CONDUCTED TEST SETUP CONFIGURATION

5.4.1 MASTER MODE



The UUT 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

6.1.1 MASTER MODE

Clause	Test Parameter	Remarks	Pass/Fail
15.407	DFS Detection Threshold	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	U-NII Detection Bandwidth	Applicable	Pass
15.407	Non-Co-Channel test	Applicable	Pass

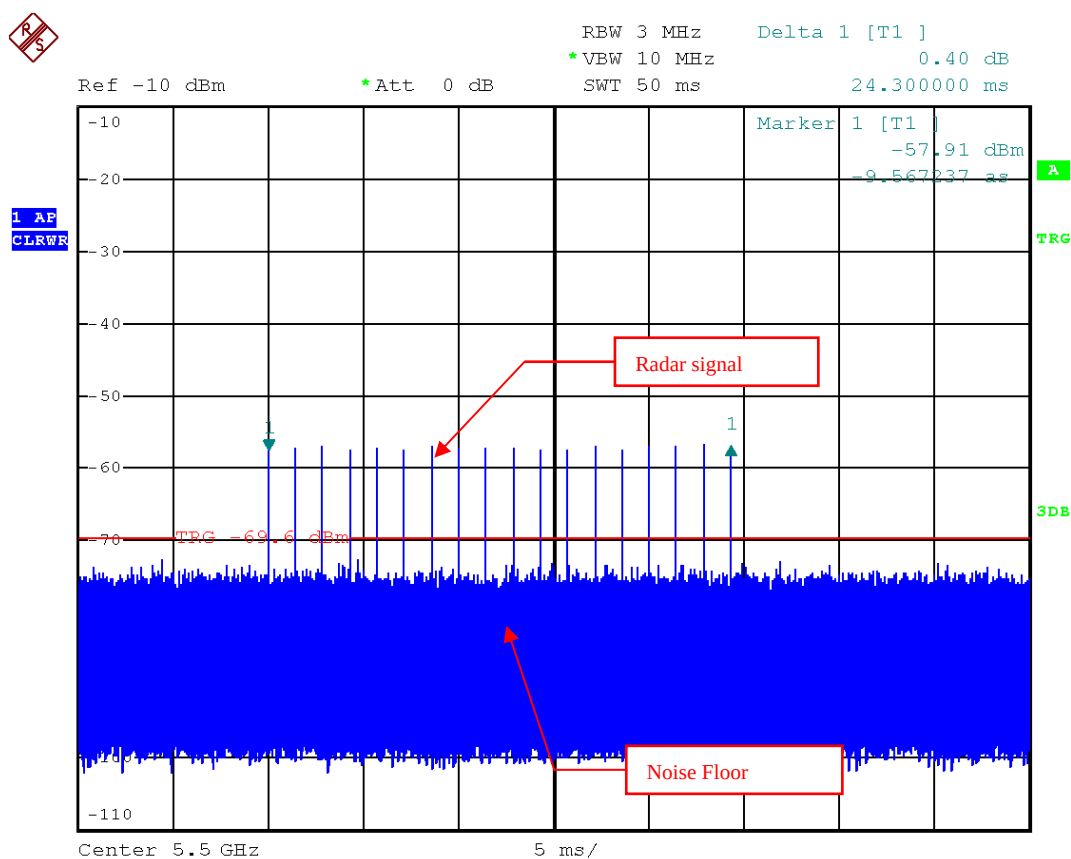
6.2 DETAILED TEST RESULTS

6.2.1 TEST MODE: DEVICE OPERATING IN MASTER MODE

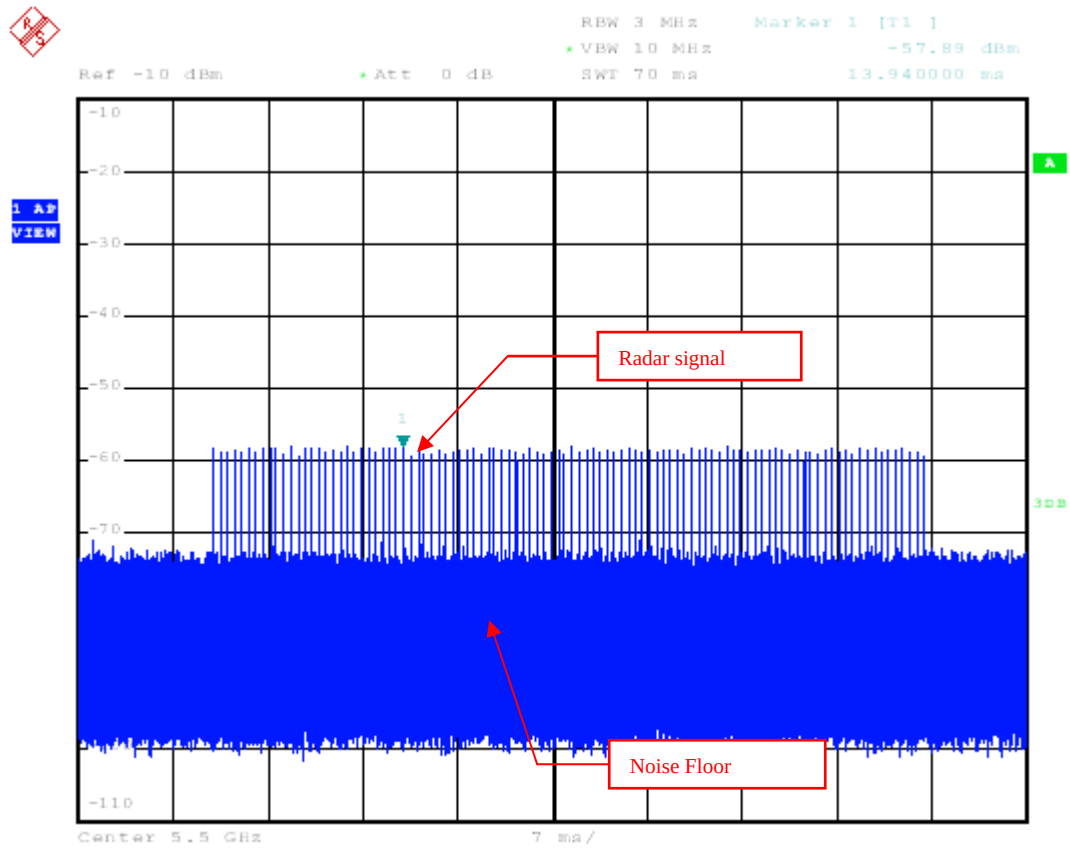
The radar test signals are injected into the Master Device.

6.2.1.1 DFS DETECTION THRESHOLD

The required detection threshold is -57.86 dBm ($= -62 + 3.14 + 1$). The conducted radar burst level is set to -57.86 dBm.



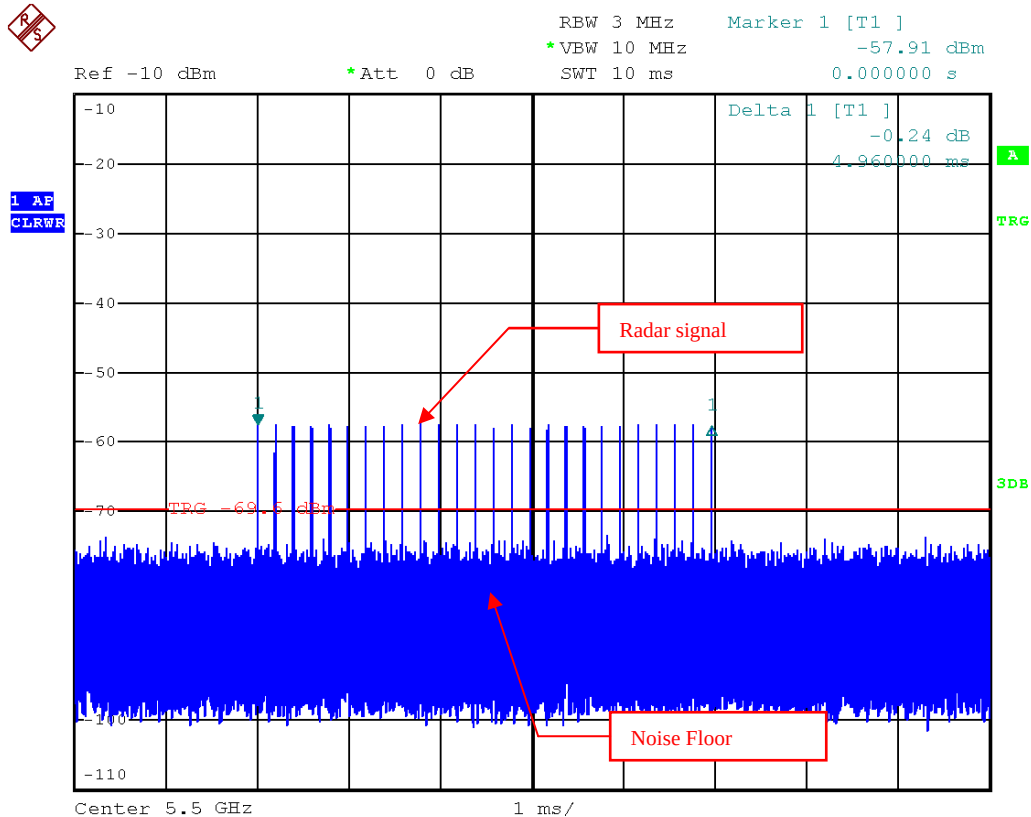
Radar Signal 0



Radar Signal 1



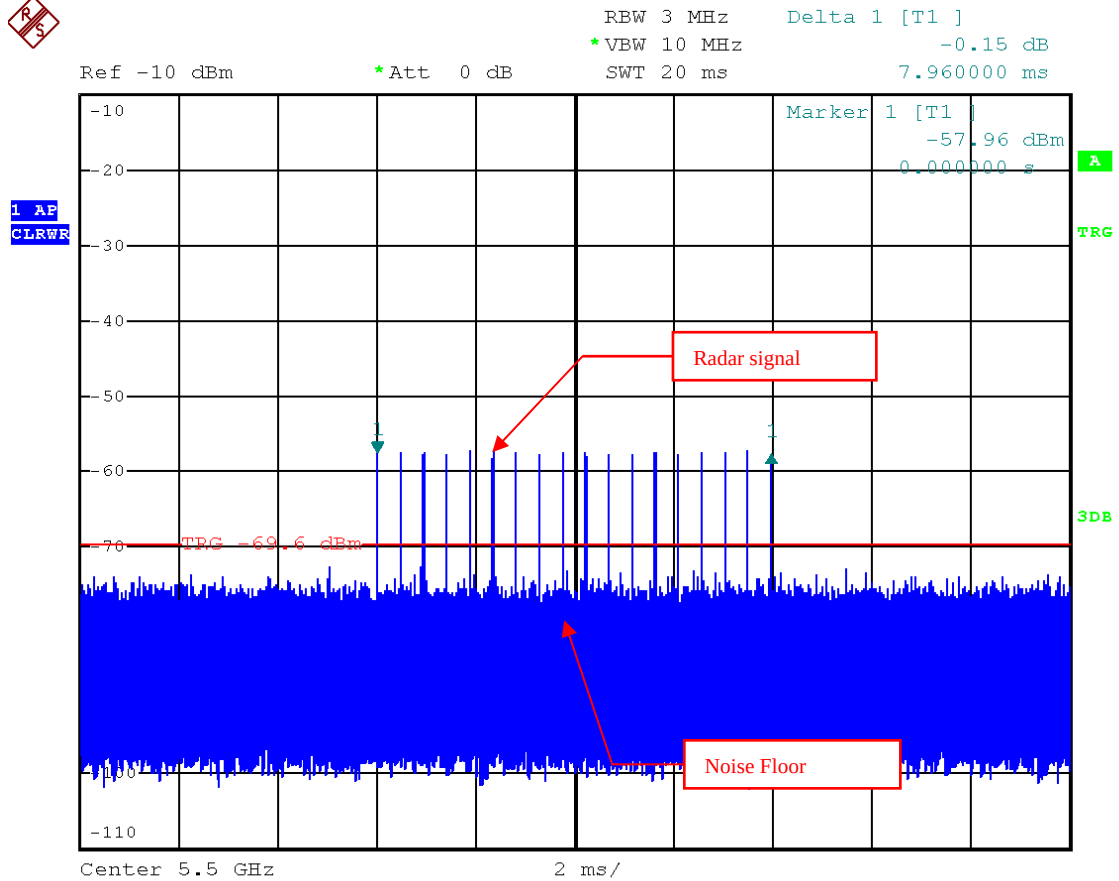
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Radar Signal 2



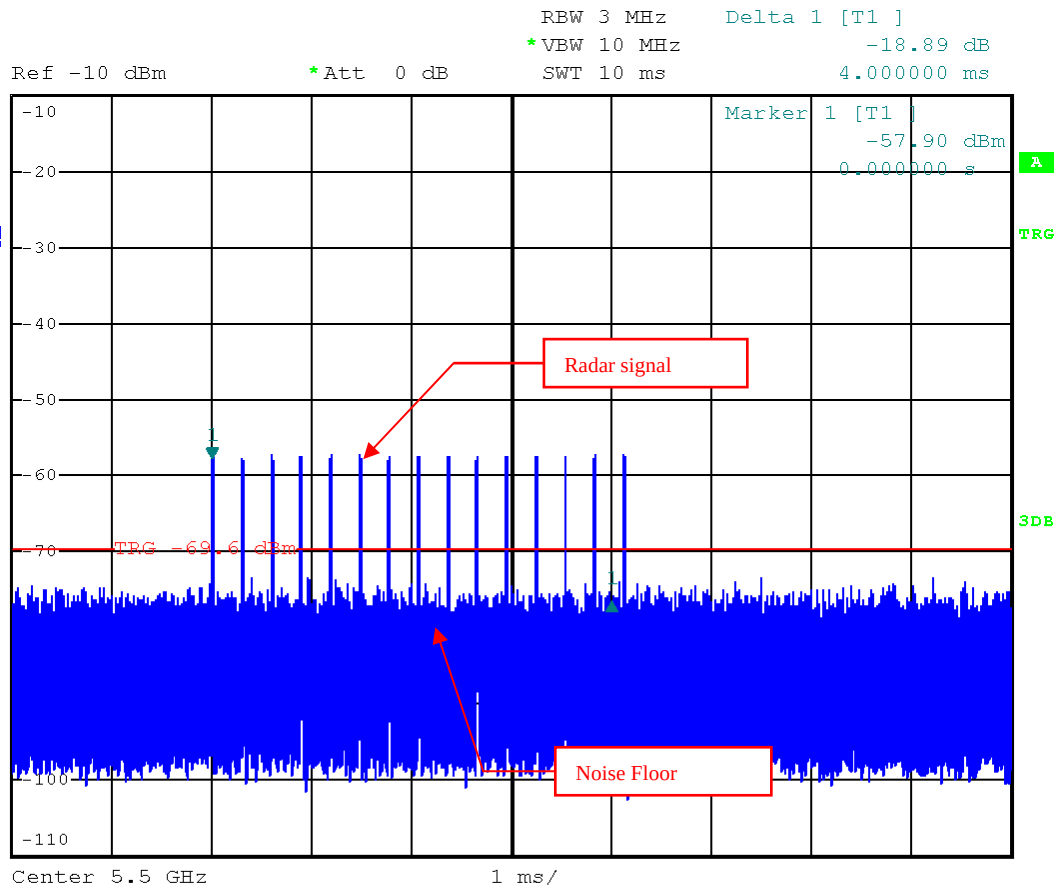
A D T



Radar Signal 3



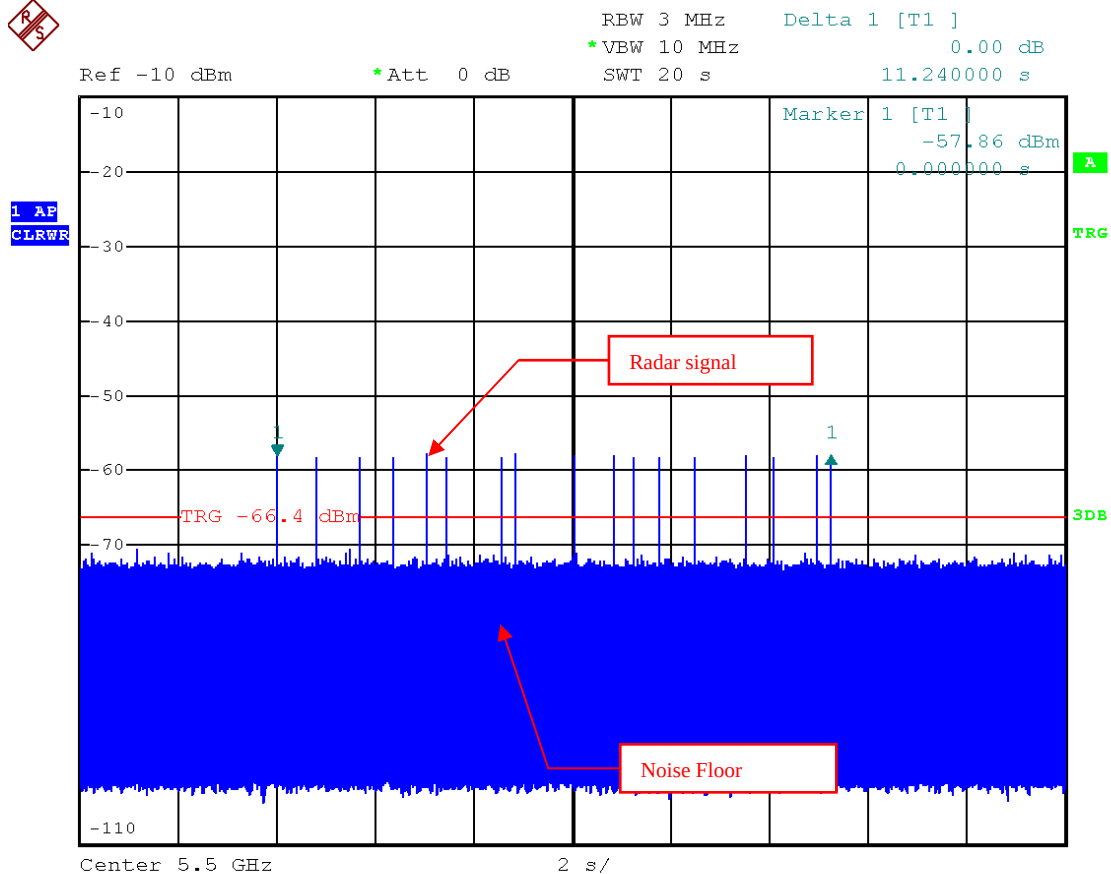
1 AP
CLRWR



Radar Signal 4



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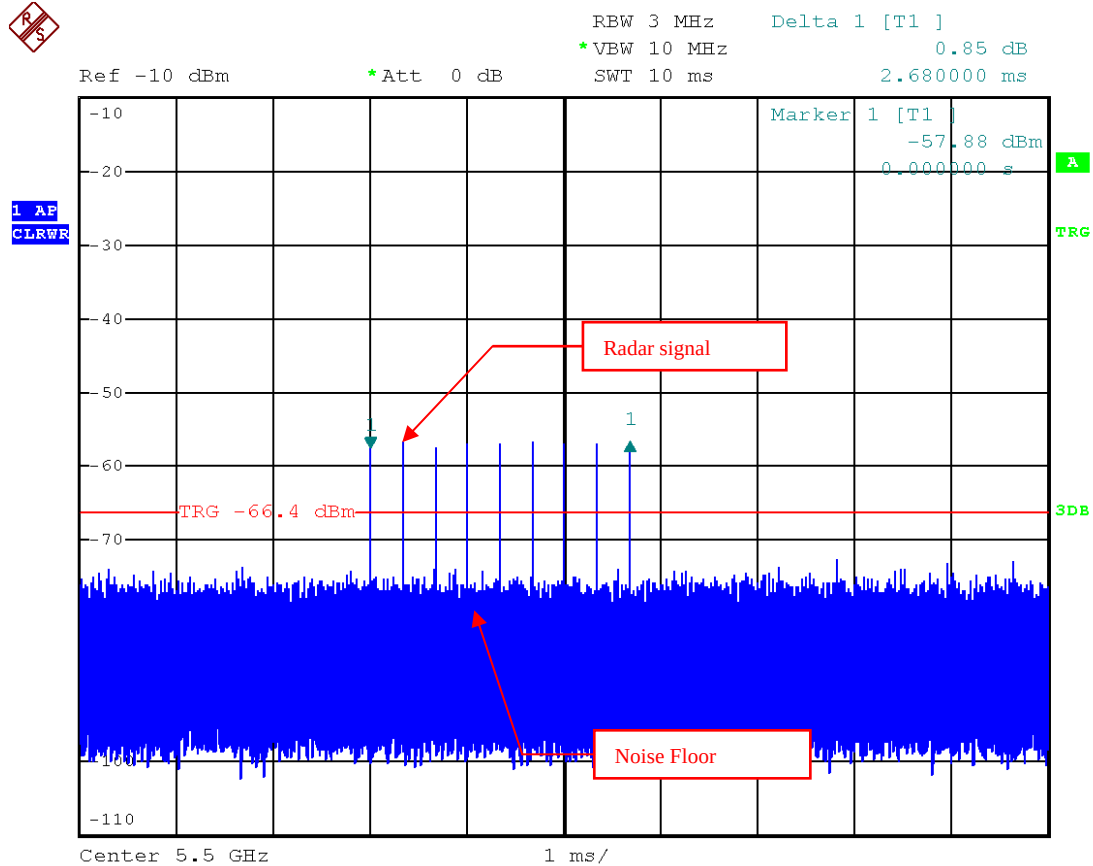
Radar Signal 5



Single Burst of Radar Signal 5



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Radar Signal 6

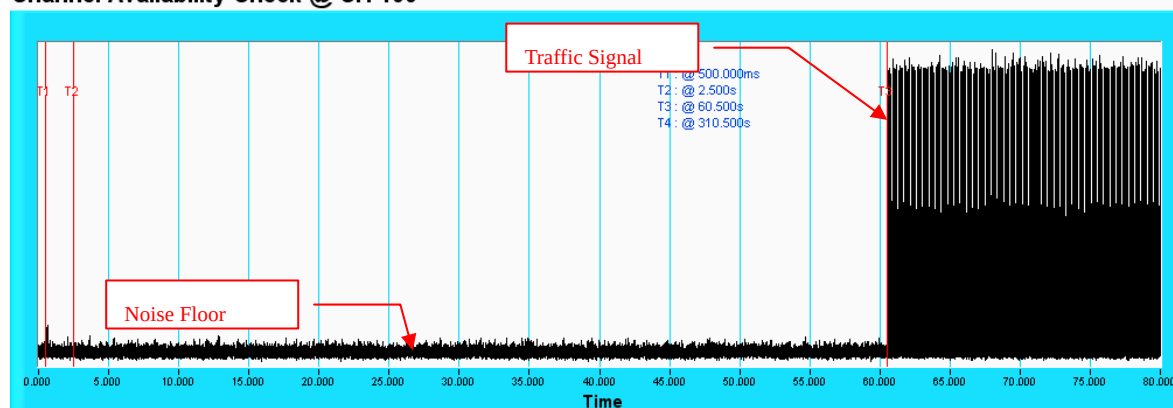
6.2.1.2 CHANNEL AVAILABILITY CHECK TIME

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

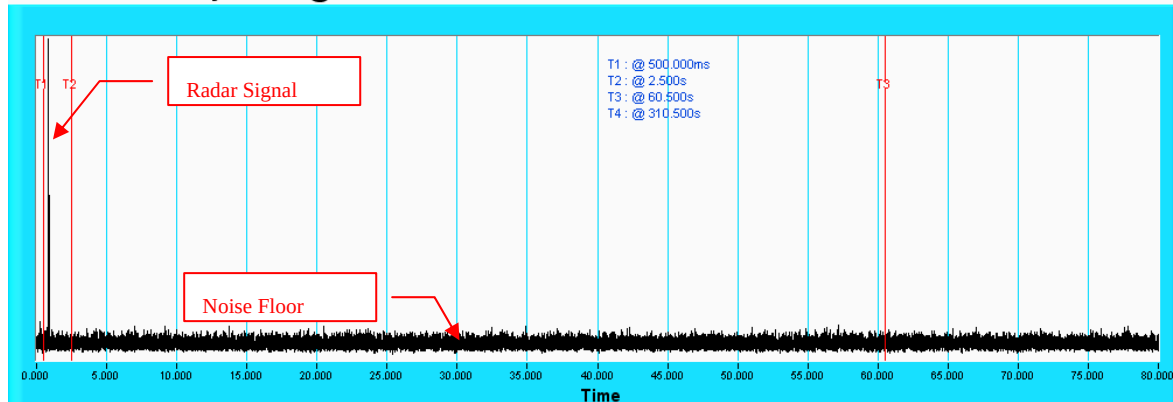
Channel Availability Check @ CH 100



NOTE: T1 denotes the end of power-up time period is 0.5th second. T3 denotes the end of Channel Availability Check time is 60.5th second. Channel Availability Check time is equal to (T3 – T1) 60 seconds.

Radar Burst at the Beginning of the Channel Availability Check Time

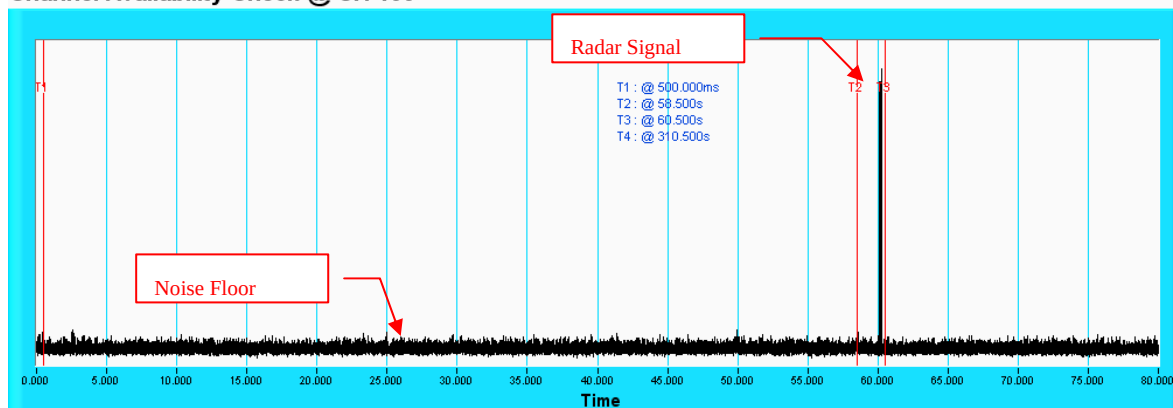
Channel Availability Check @ CH 100



NOTE: T1 denotes the end of power up time period is 0.5th second. T3 denotes 60.5th second and the radar burst was commenced within a 6 second window starting from the end of power-up sequence.

Radar Burst at the End of the Channel Availability Check Time

Channel Availability Check @ CH 100



NOTE: T1 denotes the end of power up time period is 0.5th second. T3 denotes 60.5th second and the radar burst was commenced within 54th second to 60th second window starting from the end of power-up sequence.

6.2.1.3 CHANNEL CLOSING TRANSMISSION AND CHANNEL MOVE TIME

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TABLE 15: SHORT PULSE RADAR TEST WAVEFORMS

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Number of Trials(Time s)	Percentage of Successful Detection (%)
1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a ----- Test B: 15 unique PRI values randomly selected within the range of 518-3066 μ sec, with a minimum increment of 1 μ sec, excluding PRI values selected in Test A	$\text{Roundup} \left\{ \frac{\left(\frac{1}{360} \right)}{\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{SEC}}}} \right\}$	18	30	83.33
2	1-5	150-230	23-29	30	80.00
3	6-10	200-500	16-18	30	80.00
4	11-20	200-500	12-16	30	83.33
Aggregate (Radar Types 1-4)				120	81.67

**A D T****TABLE 16: 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	83.33

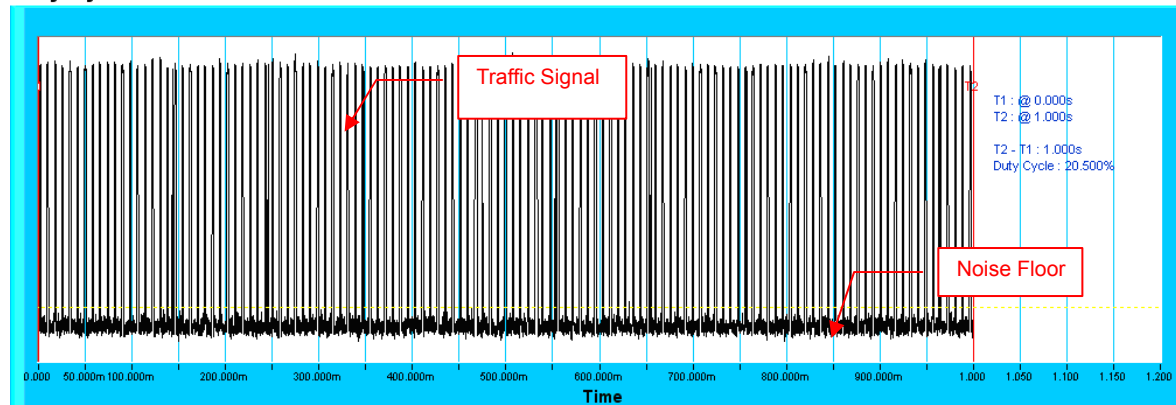
TABLE 17: FREQUENCY HOPPING RADAR TEST WAVEFORM

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	70

Wireless Traffic Loading

802.11n (HT20)

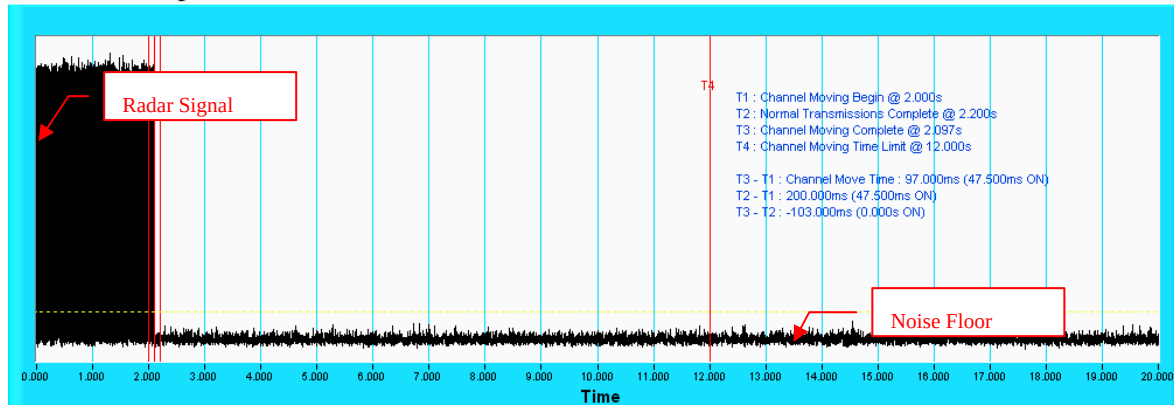
Duty Cycle



NOTE: T1 denotes the start of duty cycle period is 0th second. T2 denotes the end of duty cycle period is 1th second. T2 – T1= 1 seconds. Duty Cycle = 20.5%

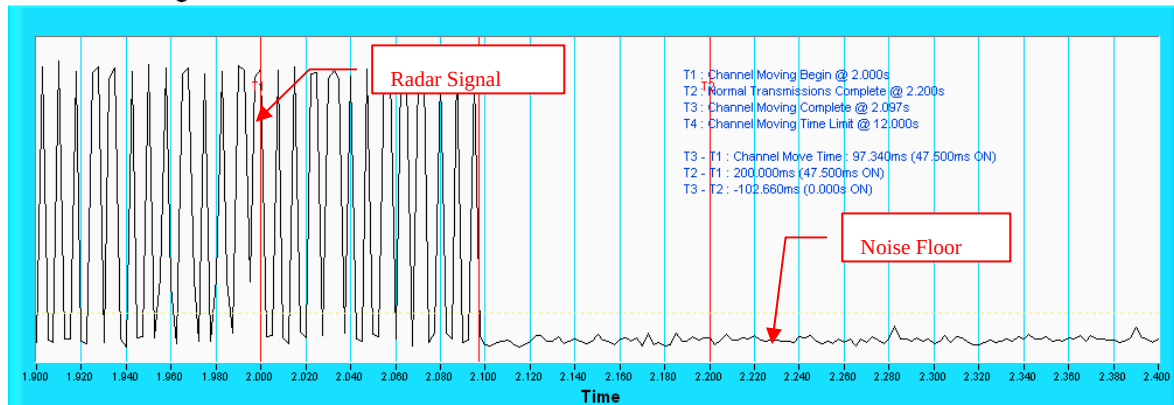
Radar signal 0

Channel Closing Transmission Time & Channel Move Time



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.

Channel Closing Transmission Time & Channel Move Time



NOTE: An expanded plot for the device vacates the channel in the required 500ms.

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Type 1 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	102	1u	518u	Yes
2	99	1u	538u	Yes
3	95	1u	558u	Yes
4	92	1u	578u	Yes
5	89	1u	598u	No
6	86	1u	618u	No
7	83	1u	638u	Yes
8	81	1u	658u	Yes
9	78	1u	678u	Yes
10	76	1u	698u	Yes
11	74	1u	718u	Yes
12	72	1u	738u	Yes
13	70	1u	758u	Yes
14	68	1u	778u	No
15	67	1u	798u	Yes
16	46	1u	1152u	Yes
17	39	1u	1365u	No
18	34	1u	1577u	Yes
19	30	1u	1790u	Yes
20	27	1u	2002u	Yes
21	24	1u	2215u	Yes
22	22	1u	2428u	Yes
23	20	1u	2640u	Yes
24	19	1u	2853u	Yes
25	18	1u	3065u	Yes
26	61	1u	875u	Yes
27	59	1u	895u	Yes
28	58	1u	915u	Yes
29	57	1u	935u	Yes
30	56	1u	955u	No
Detection Rate: 83.33 %				



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Type 2 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	27	3.4u	227u	No
2	27	1u	162u	Yes
3	26	4.1u	208u	Yes
4	27	4.4u	194u	Yes
5	24	3.6u	186u	No
6	24	3.6u	167u	Yes
7	23	1.5u	188u	Yes
8	27	4.3u	209u	No
9	28	1.8u	165u	Yes
10	27	2.2u	195u	Yes
11	23	2.7u	162u	Yes
12	28	4.1u	206u	No
13	26	4.7u	188u	No
14	26	5u	223u	Yes
15	25	1.4u	184u	Yes
16	26	1u	174u	Yes
17	23	4.5u	212u	Yes
18	29	2u	209u	Yes
19	24	3.4u	230u	Yes
20	23	4.7u	217u	No
21	24	2.6u	162u	Yes
22	28	5u	168u	Yes
23	27	1.5u	210u	Yes
24	25	2.4u	166u	Yes
25	28	2.6u	190u	Yes
26	25	1.6u	172u	Yes
27	27	2.7u	184u	Yes
28	25	2.2u	169u	Yes
29	29	2.5u	213u	Yes
30	24	4.5u	214u	Yes
Detection Rate: 80 %				

802.11n (HT20)

Type 3 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	17	9.4u	221u	Yes
2	18	6.8u	393u	Yes
3	16	8.2u	377u	Yes
4	16	9.5u	244u	Yes
5	16	6.5u	325u	Yes
6	18	7.5u	450u	Yes
7	17	6.7u	454u	Yes
8	18	8.2u	213u	Yes
9	16	8.3u	403u	No
10	16	9.7u	304u	Yes
11	16	9.6u	496u	Yes
12	18	8.6u	427u	Yes
13	18	6.6u	466u	Yes
14	16	9.3u	251u	Yes
15	18	10u	254u	Yes
16	17	6.1u	222u	Yes
17	16	7.3u	237u	Yes
18	18	7.9u	415u	Yes
19	17	8.6u	422u	Yes
20	16	9.4u	434u	Yes
21	18	7.7u	366u	No
22	16	6u	235u	No
23	17	7.9u	274u	Yes
24	17	6.3u	242u	Yes
25	17	8.8u	486u	No
26	17	6.4u	252u	No
27	17	9.5u	426u	Yes
28	18	8.8u	221u	Yes
29	16	7.6u	393u	Yes
30	18	9.8u	381u	No
Detection Rate: 80.0 %				



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802.11n (HT20)

Type 4 Radar Statistical Performances				
Trial #	Pulses per Burst	Pulse Width (s)	PRI (s)	Detection
1	14	17.7u	231u	Yes
2	12	12.9u	336u	Yes
3	15	14.2u	290u	Yes
4	13	13.6u	261u	Yes
5	14	17.4u	484u	Yes
6	13	13.8u	352u	Yes
7	12	19.5u	316u	Yes
8	13	17.9u	440u	Yes
9	14	13.1u	500u	Yes
10	16	17.3u	451u	Yes
11	15	13.1u	306u	Yes
12	14	16.6u	259u	Yes
13	16	18.1u	336u	No
14	14	11u	467u	Yes
15	14	12.6u	446u	Yes
16	13	15.5u	382u	Yes
17	13	19.4u	236u	Yes
18	15	11.1u	339u	Yes
19	13	14.9u	435u	Yes
20	15	15u	457u	Yes
21	13	15u	233u	Yes
22	14	13.4u	464u	Yes
23	13	19.3u	294u	Yes
24	14	18.5u	296u	Yes
25	15	14.3u	412u	No
26	16	14.3u	456u	Yes
27	16	19.6u	275u	No
28	13	15.8u	283u	Yes
29	13	14.6u	365u	No
30	14	19.3u	323u	No
Detection Rate: 83.33 %				



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802.11n (HT20)

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	No
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	No
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	No
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	No
30	LP_Signal_30	No
		Detection Rate: 83.33 %

The Long Pulse Radar pattern shown in Annex B.1



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802.11n (HT20)

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	No
4	9	1.0u	333.0u	Yes
5	9	1.0u	333.0u	Yes
6	9	1.0u	333.0u	No
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	No
12	9	1.0u	333.0u	No
13	9	1.0u	333.0u	Yes
14	9	1.0u	333.0u	No
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	No
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	No
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	No
30	9	1.0u	333.0u	No
Detection Rate: 70 %				



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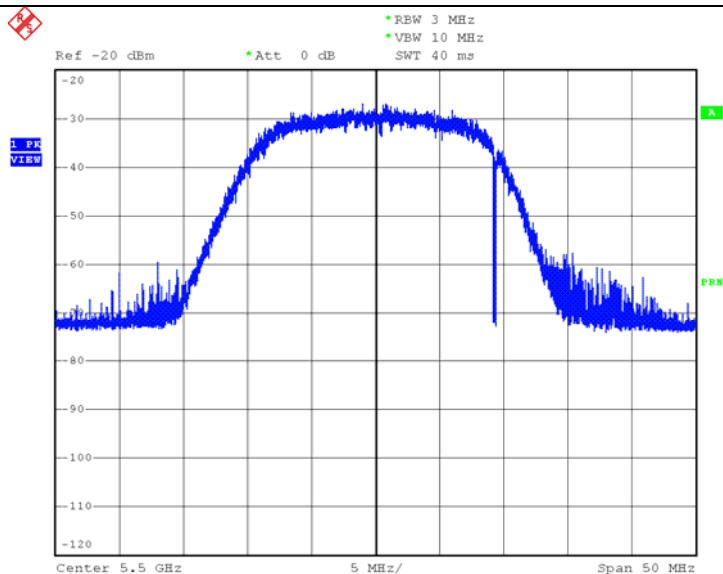
802.11n (HT20)

Type 6 Radar Statistical Performances		
Trial #	Hopping Frequency Sequence Name	Detection
1	HOP_FREQ_SEQ_01	Yes
2	HOP_FREQ_SEQ_02	No
3	HOP_FREQ_SEQ_03	Yes
4	HOP_FREQ_SEQ_04	No
5	HOP_FREQ_SEQ_05	Yes
6	HOP_FREQ_SEQ_06	Yes
7	HOP_FREQ_SEQ_07	Yes
8	HOP_FREQ_SEQ_08	No
9	HOP_FREQ_SEQ_09	No
10	HOP_FREQ_SEQ_10	Yes
11	HOP_FREQ_SEQ_11	Yes
12	HOP_FREQ_SEQ_12	Yes
13	HOP_FREQ_SEQ_13	Yes
14	HOP_FREQ_SEQ_14	Yes
15	HOP_FREQ_SEQ_15	No
16	HOP_FREQ_SEQ_16	Yes
17	HOP_FREQ_SEQ_17	No
18	HOP_FREQ_SEQ_18	Yes
19	HOP_FREQ_SEQ_19	Yes
20	HOP_FREQ_SEQ_20	Yes
21	HOP_FREQ_SEQ_21	Yes
22	HOP_FREQ_SEQ_22	Yes
23	HOP_FREQ_SEQ_23	No
24	HOP_FREQ_SEQ_24	Yes
25	HOP_FREQ_SEQ_25	Yes
26	HOP_FREQ_SEQ_26	Yes
27	HOP_FREQ_SEQ_27	Yes
28	HOP_FREQ_SEQ_28	Yes
29	HOP_FREQ_SEQ_29	No
30	HOP_FREQ_SEQ_30	No
		Detection Rate: 70 %

The Frequency Hopping Radar pattern shown in Annex B.2

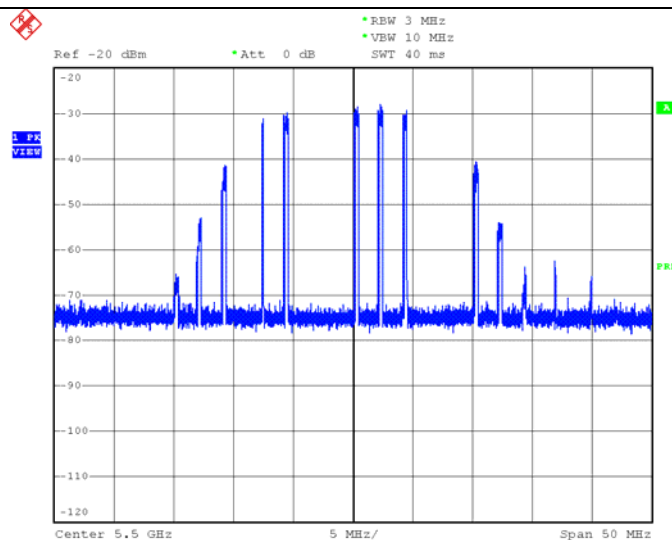
6.2.1.4 NON- OCCUPANCY PERIOD

1) Test results demonstrating an associated client link is established with the master on a test frequency.



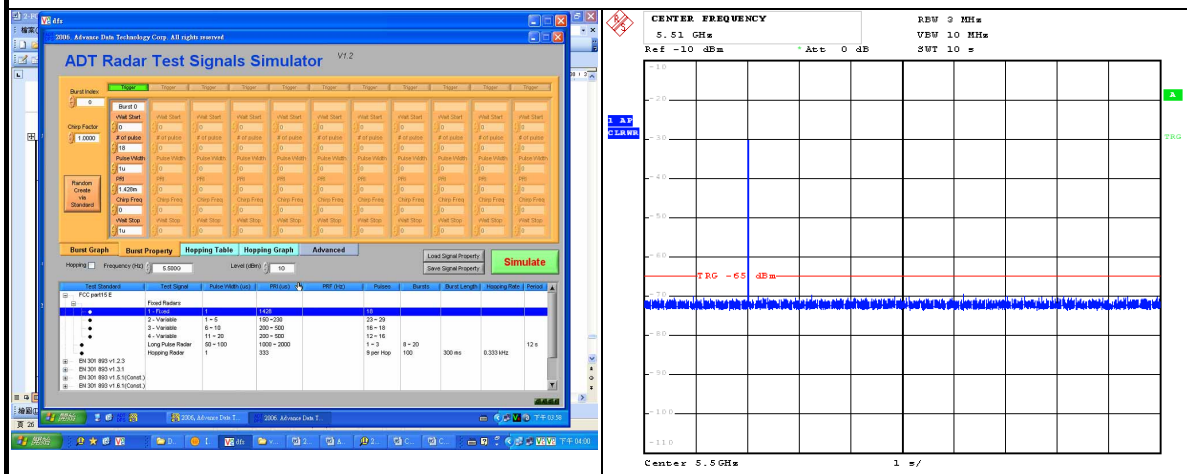
EUT (master) links with Client on 5500MHz

2) The master and DFS-certified client device are associated, and system testing will be performed with channel-loading using means appropriate to the data types for a non-occupancy period test.



Client using appropriate to the data types via master.

3). The device transmits one type of radar as specified in the DFS Order.

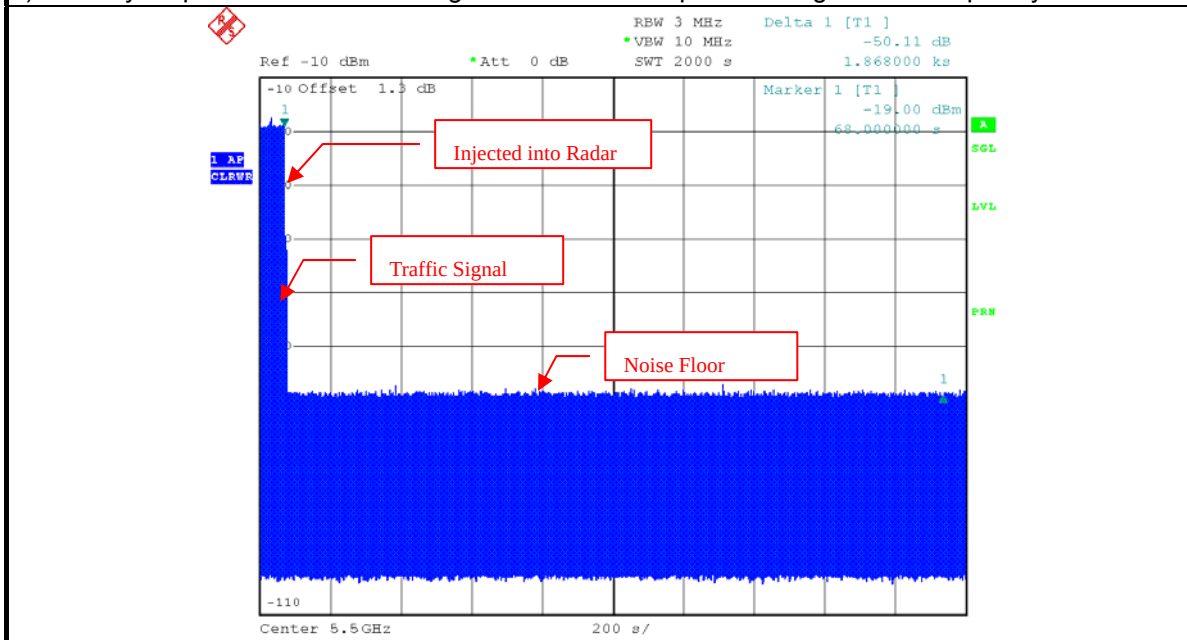


Radar 0 is used to test during DFS testing.

4) The test frequency has been monitored to ensure no transmission of any type has occurred for 30 minutes;

Note: If the client moves with the master, the device is considered compliant if nothing appears in the client non-occupancy period test. For devices that shut down (rather than moving channels), no beacons should appear;

5) An analyzer plot that contains a single 30-minute sweep on the original test frequency.

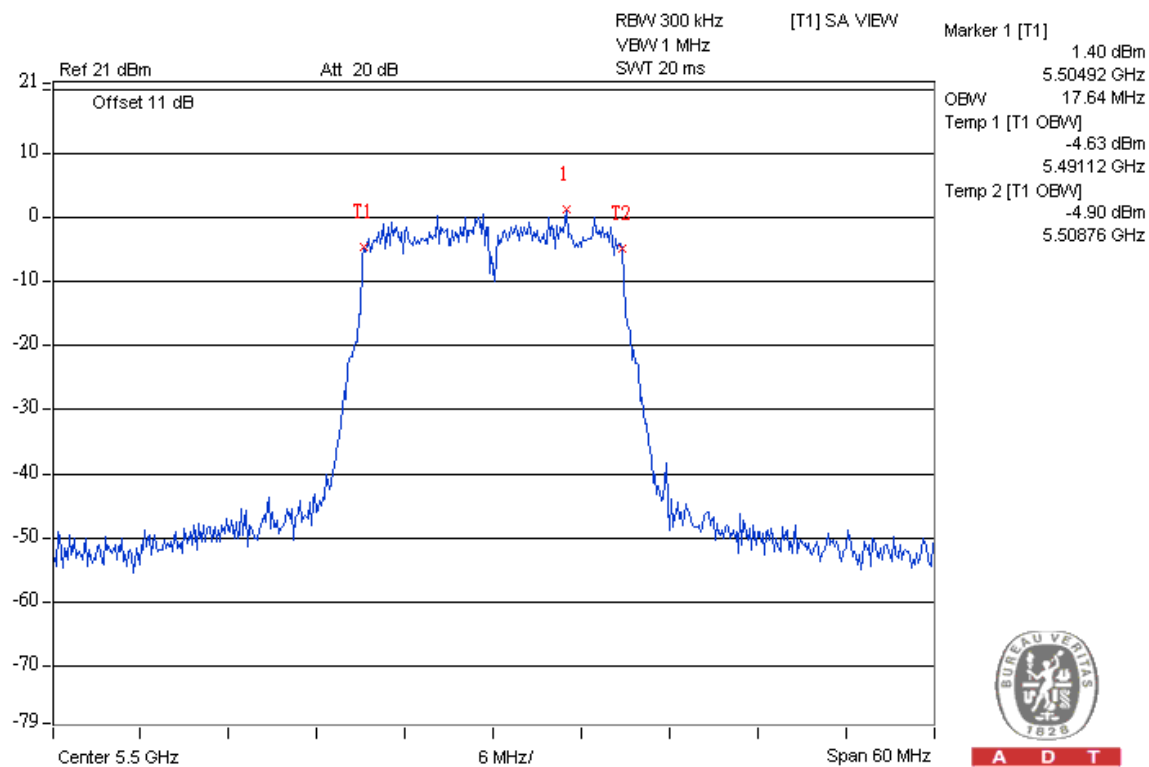




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6.2.1.5 U-NII DETECTION BANDWIDTH

802.11n (HT20)



U-NII 99% Channel bandwidth

802.11n (HT20)

Detection Bandwidth Test											
EUT Frequency: 5.500GHz											
EUT 99% Power bandwidth: 17.64MHz											
Detection bandwidth limit (100% of EUT 99% Power bandwidth): 17.64MHz											
Detection Bandwidth (FH - FL): 18.00MHz											
Test Result : PASS											
Radar Frequency (Hz)	Trial Number / Detection										Detection Rate (%)
	1	2	3	4	5	6	7	8	9	10	
5.490G	No	No	No	No	No	No	No	No	No	No	0
5.491G(FL)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	90
5.492G	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90
5.493G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.494G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.495G	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90
5.496G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.497G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.498G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.49G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.500G	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90
5.501G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.502G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.503G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.504G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.505G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.506G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100
5.507G	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	90
5.508G	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	90
5.509G(FH)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	90
5.510G	No	No	No	No	No	No	No	No	No	No	0



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6.2.1.6 NON-CO-CHANNEL TEST

The UUT was investigated after radar was detected the channel and made sure no co-channel operation with radars.



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7 INFORMATION ON THE TESTING LABORATORIES

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:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:

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Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.



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8 APPENDIX-A

Modifications or adding components during the test

No any modifications are made to the EUT by the lab during the test.

9 APPENDIX-B

RADAR TEST SIGNAL

B.1 The Long Pulse Radar Pattern

Long Pulse Radar Test Signal						
Test Signal Name: LP_Signal_01						
Number of Bursts in Trial: 8						
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	59.1u	1.759m		388m
2	3	15M	52.7u	0.954m	1.704m	968m
3	1	13M	74.1u			411m
4	2	15M	54.5u	0.989m		431m
5	2	13M	94.6u	0.943m		1187m
6	1	13M	60u			232m
7	1	14M	62.5u			718m
8	3	13M	53u	1.849m	1.501m	292m

Long Pulse Radar Test Signal						
Test Signal Name: LP_Signal_02						
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	14M	56.9u			605m
2	2	14M	93.5u	1.328m		609m
3	3	9M	97.8u	0.953m	0.932m	1259m
4	1	13M	99.4u			1253m
5	1	13M	57u			1064m
6	2	12M	71.2u	1.393m		110m
7	1	20M	96.1u			768m
8	1	7M	57.9u			83m
9	2	15M	86.1u	0.932m		336m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_03

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	3	9M	79.8u	1.491m	1.415m	848m
2	3	9M	60.9u	1.101m	0.958m	173m
3	1	7M	56.6u			499m
4	2	18M	78.1u	1.616m		254m
5	3	10M	57.8u	1.325m	1.941m	575m
6	2	10M	64.1u	1.276m		835m
7	3	14M	79.3u	1.616m	1.29m	456m
8	2	9M	54.4u	1.865m		997m
9	2	19M	57.8u	1.048m		827m
10	2	18M	99.7u	1.511m		660m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_04

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	1	18M	59.2u			783m
2	3	8M	67.3u	0.961m	1.467m	695m
3	1	15M	83.5u			789m
4	3	14M	92.4u	1.868m	1.569m	399m
5	2	7M	76.3u	0.983m		429m
6	2	6M	80.3u	1.181m		636m
7	2	15M	85.4u	1.562m		1049m
8	1	18M	66.4u			889m
9	1	6M	91.8u			268m
10	1	13M	62.3u			717m
11	1	8M	69u			991m



Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_05

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	1	14M	52.5u			442m
2	1	13M	98u			425m
3	2	12M	76.5u	1.277m		338m
4	2	14M	99.4u	0.936m		346m
5	2	14M	65.7u	1.212m		378m
6	2	15M	83.2u	1.009m		378m
7	2	7M	61.2u	1.395m		195m
8	2	15M	64.9u	1.211m		822m
9	2	15M	51.2u	1.6m		685m
10	2	19M	81u	1.204m		506m
11	1	19M	66.7u			388m
12	3	13M	61.3u	0.98m	1.208m	820m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_06

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	17M	81.2u	1.044m		294m
2	2	15M	51.3u	1.248m		175m
3	2	13M	54.4u	1.602m		58m
4	1	8M	71.6u			16m
5	1	9M	95.9u			320m
6	3	6M	77.5u	1.146m	1.279m	426m
7	1	18M	69u			137m
8	2	10M	58.5u	1.793m		607m
9	3	14M	59u	1.775m	1.878m	184m
10	1	5M	65.7u			900m
11	3	7M	57.1u	1.862m	1.413m	426m
12	2	14M	71.3u	1.159m		872m
13	3	17M	96.4u	1.476m	1.741m	144m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_07

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	1	5M	57.3u			184m
2	2	15M	76.4u	1.04m		738m
3	3	6M	75.7u	1.584m	1.334m	326m
4	2	14M	68.1u	1.539m		61m
5	2	14M	77.9u	1.778m		325m
6	2	10M	60.6u	1.487m		80m
7	1	20M	88.6u			679m
8	2	14M	75.4u	1.346m		1m
9	1	15M	97.4u			437m
10	2	20M	68u	1.875m		782m
11	2	14M	85.4u	1.34m		763m
12	1	9M	70.8u			281m
13	1	11M	63.8u			246m
14	3	15M	82.6u	1.232m	1.246m	420m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_08

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	5M	82.2u	1.916m		19m
2	1	10M	91.3u			512m
3	1	5M	63.8u			258m
4	2	20M	50.6u	1.868m		353m
5	1	20M	60.4u			142m
6	3	19M	65.9u	1.389m	1.486m	769m
7	2	9M	53.3u	1.745m		743m
8	2	13M	78.9u	1.805m		501m
9	2	18M	96.3u	0.999m		264m
10	2	9M	57.7u	1.469m		758m
11	1	20M	63.9u			595m
12	2	9M	79.6u	1.694m		457m
13	3	5M	63.9u	1.575m	1.3m	500m
14	3	5M	78u	1.361m	1.843m	496m
15	3	8M	83.1u	1.192m	1.901m	432m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_09

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	1	10M	95.4u			362m
2	3	9M	81.1u	1.052m	1.537m	421m
3	3	19M	96u	0.905m	0.947m	517m
4	2	11M	76.7u	1.755m		491m
5	1	8M	51.1u			383m
6	1	14M	60.8u			416m
7	1	5M	79.9u			222m
8	2	7M	56.9u	1.039m		168m
9	3	13M	78u	1.307m	1.36m	445m
10	1	11M	74.9u			136m
11	3	15M	55.5u	1.227m	1.147m	315m
12	3	9M	93.7u	1.425m	1.763m	477m
13	3	9M	61.6u	1.759m	1.525m	288m
14	3	19M	60.6u	1.247m	1.646m	364m
15	2	12M	73.5u	0.991m		554m
16	2	5M	57.4u	1.785m		695m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_10

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	1	13M	54.6u			291m
2	2	5M	54.5u	1.615m		449m
3	1	5M	75.8u			36m
4	3	13M	50.8u	1.032m	0.954m	24m
5	1	19M	71.1u			581m
6	2	14M	66u	0.966m		512m
7	1	13M	91.1u			6m
8	2	17M	57.3u	1.699m		492m
9	3	19M	96.8u	1.86m	1.39m	596m
10	1	6M	87.5u			80m
11	1	11M	57.3u			86m
12	3	9M	100u	1.413m	1.044m	652m
13	2	12M	62.6u	1.364m		577m
14	2	18M	96.3u	1.097m		182m
15	3	20M	76.4u	1.45m	1.753m	509m
16	2	9M	99.8u	1.441m		157m
17	1	19M	60.3u			64m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_11

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	14M	62.3u	1.777m		437m
2	3	7M	92.6u	1.299m	1.499m	471m
3	2	8M	69.5u	1.588m		381m
4	3	13M	84.6u	1.775m	0.922m	254m
5	2	12M	67.8u	1.16m		177m
6	2	5M	86.1u	1.036m		290m
7	1	13M	91.1u			246m
8	1	5M	66.4u			89m
9	3	13M	81u	1.753m	1.162m	400m
10	1	18M	67.9u			363m
11	2	10M	86u	1.422m		179m
12	2	11M	71.7u	0.991m		506m
13	3	10M	64.7u	1.261m	1.43m	54m
14	1	8M	61.1u			400m
15	1	13M	60.7u			491m
16	2	17M	73.3u	1.198m		612m
17	3	15M	88.5u	1.527m	1.141m	654m
18	3	18M	74u	1.579m	1.677m	532m



A D T

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_12

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	3	14M	64.8u	1.875m	1.02m	249m
2	1	13M	66.1u			1m
3	3	13M	91.9u	1.095m	1.219m	332m
4	1	18M	67.9u			350m
5	1	8M	93.3u			40m
6	1	13M	77.5u			310m
7	1	6M	95.7u			326m
8	1	13M	77.7u			601m
9	2	5M	72.4u	0.973m		304m
10	1	13M	89.3u			389m
11	3	19M	53.4u	1.824m	1.439m	137m
12	3	13M	68.8u	1.496m	1.861m	267m
13	1	10M	69.4u			559m
14	2	17M	95.1u	1.84m		461m
15	2	14M	79.5u	1.302m		455m
16	1	13M	63.3u			214m
17	2	12M	66.5u	1.088m		71m
18	2	14M	61.9u	1.022m		519m
19	2	11M	57.3u	0.995m		619m



A D T

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_13

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	1	13M	74.8u			273m
2	2	5M	57.4u	1.139m		527m
3	1	19M	62.7u			413m
4	1	10M	95u			351m
5	1	6M	63.3u			141m
6	2	18M	58.5u	1.245m		65m
7	1	11M	96.6u			372m
8	1	5M	93.1u			160m
9	3	13M	66u	1.101m	1.28m	68m
10	2	6M	83.8u	1.019m		306m
11	2	10M	99.1u	1.148m		262m
12	2	6M	86.1u	1.704m		112m
13	1	15M	60.2u			19m
14	2	7M	93.5u	1.012m		102m
15	1	7M	68.3u			518m
16	3	13M	56.5u	1.182m	1.183m	154m
17	2	15M	52u	1.9m		157m
18	3	13M	55.6u	1.464m	1.407m	135m
19	2	13M	75.5u	1.058m		518m
20	2	17M	76.4u	1.769m		586m



A D T

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_14

Number of Bursts in Trial: 8

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	18M	87.1u	1.847m	1.188m	1057m
2	1	9M	92.6u			349m
3	2	11M	86.1u	1.4m		1242m
4	1	7M	78.1u			907m
5	2	14M	75.2u	1.578m		429m
6	1	10M	60.3u			320m
7	2	20M	68.3u	1.097m		724m
8	2	11M	91.7u	1.076m		1426m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_15

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	3	19M	79.7u	1.401m	1.726m	1070m
2	2	8M	72.9u	1.152m		885m
3	2	14M	83.4u	1.81m		431m
4	1	13M	65.8u			542m
5	3	15M	59.9u	0.975m	1.34m	814m
6	2	11M	68.3u	1.039m	0m	785m
7	3	5M	59.5u	1.776m	1.442m	477m
8	1	19M	90.2u			297m
9	2	11M	57.1u	1.937m		849m
10	2	18M	90.3u	1.601m		163m

**A D T****Long Pulse Radar Test Signal**

Test Signal Name: LP_Signal_16

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	8M	70.7u	0.987m		456m
2	2	18M	55.7u	1.521m		905m
3	3	11M	55.3u	1.51m	1.132m	632m
4	2	13M	53.2u	1.216m		987m
5	3	8M	77.9u	1.431m	1.17m	22m
6	1	8M	53.9u			238m
7	2	14M	73.5u	1.735m		139m
8	3	6M	100u	1.625m	1.183m	807m
9	1	13M	75.3u			204m
10	3	19M	64.2u	1.658m	1.218m	313m
11	2	7M	75.1u	1.151m		977m
12	2	20M	54.3u	0.952m		771m

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	19M	90.2u	1.208m		447m
2	1	8M	70.5u			310m
3	1	7M	98.4u			390m
4	1	20M	77.1u			124m
5	3	7M	94.6u	0.954m	1.612m	548m
6	3	13M	77.5u	1.29m	1.731m	362m
7	3	10M	80.5u	1.179m	1.262m	211m
8	1	10M	55.8u			605m
9	1	13M	53u			121m
10	2	19M	83.7u	1.887m		278m
11	2	11M	98.7u	1.005m		650m
12	2	10M	58.8u	1.866m		279m
13	3	11M	64u	1.574m	1.623m	387m
14	2	20M	94.6u	1.516m		127m



A D T

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_18

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	3	12M	50u	1.449m	1.508m	116m
2	2	15M	80.7u	1.756m		726m
3	1	13M	73.6u			535m
4	1	7M	74.9u			427m
5	3	17M	50.2u	1.191m	1.117m	225m
6	1	8M	85.5u			152m
7	3	18M	92.4u	1.238m	1.624m	296m
8	3	19M	77.5u	1.184m	1.67m	192m
9	3	19M	81.5u	1.772m	1.179m	67m
10	1	5M	69.8u			94m
11	3	11M	70.4u	1.475m	1.415m	519m
12	2	20M	64.5u	1.548m		115m
13	1	14M	88.4u			134m
14	2	13M	71.9u	1.173m		378m
15	2	17M	89.9u	1.501m		390m
16	1	11M	93.1u			672m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_19

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	7M	83.3u	1.027m		473m
2	2	8M	83.8u	1.235m		19m
3	2	13M	96.3u	1.074m		159m
4	1	9M	83.8u			367m
5	2	13M	89.4u	1.901m		47m
6	2	6M	57.5u	1.488m		485m
7	2	15M	70.9u	1.364m		296m
8	1	9M	73.9u			546m
9	2	13M	74.8u	1.409m		83m
10	2	8M	64.6u	1.457m		75m
11	3	11M	97.7u	1.79m	1.027m	258m
12	2	5M	64.5u	1.597m		336m
13	2	20M	71.6u	0.936m		342m
14	1	5M	69.9u			372m
15	2	5M	74.4u	1.229m		19m
16	2	13M	59.7u	1.818m		67m
17	3	15M	58.8u	1.553m	1.809m	567m
18	2	20M	97.3u	1.39m		381m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_20

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	1	10M	56.6u			542m
2	1	6M	61.6u			384m
3	3	8M	97.5u	1.135m	1.695m	153m
4	2	6M	73.3u	1.349m		238m
5	1	9M	96.3u			532m
6	2	7M	98.4u	1.154m		580m
7	2	20M	82.1u	1.496m		537m
8	2	11M	99.2u	1.673m		504m
9	1	20M	92.8u			559m
10	1	13M	74.3u			323m
11	1	17M	73.7u			
12	2	10M	61.8u	1.481m		312m
13	1	17M	59.6u			344m
14	2	5M	97.3u	1.255m		203m
15	1	15M	77.1u			244m
16	3	12M	73.9u	1.406m	1.447m	391m
17	2	13M	83.5u	1.143m		401m
18	3	6M	86.7u	1.195m	0.973m	512m
19	1	6M	93.1u			108m
20	1	15M	50.6u			135m



Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_21

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	2	5M	76.8u	1.83m		63m
2	2	7M	85.5u	1.836m		474m
3	1	12M	52.4u			1319m
4	1	6M	70.1u			748m
5	2	13M	65.5u	1.558m		197m
6	3	19M	68.9u	1.742m	1.849m	634m
7	2	13M	75.4u	1.896m		563m
8	3	6M	55.9u	0.973m	1.273m	1047m
9	1	13M	59.2u			1277m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_22

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	3	17M	55.4u	1.013m	1.262m	59m
2	1	15M	85.5u			631m
3	2	20M	74.1u	1.853m		685m
4	1	14M	68.2u			677m
5	2	14M	87.3u	1.314m		567m
6	2	20M	65.9u	1.071m		448m
7	2	19M	93.2u	1.339m		602m
8	2	15M	99.3u	1.313m		133m
9	2	18M	65.9u	0.985m		1002m
10	1	13M	64.6u			343m
11	2	14M	57.6u	1.412m		96m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_23

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	15M	58.1u	1.75m		82m
2	3	9M	68.5u	1.552m	1.481m	119m
3	3	8M	94.1u	1.51m	1.493m	325m
4	3	19M	53.6u	1.027m	1.489m	677m
5	2	19M	60.8u	1.227m		897m
6	1	6M	64.6u			746m
7	1	12M	85.7u			783m
8	2	10M	52.1u	1.087m		283m
9	3	13M	82.9u	1.309m	1.865m	144m
10	2	17M	89u	1.62m		176m
11	2	10M	89.9u	1.489m		569m
12	2	5M	91.3u	1.561m		707m
13	2	11M	55.7u	1.237m		678m

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_24

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	20M	74.1u	0.941m		202m
2	1	7M	70.6u			666m
3	1	10M	52.4u			733m
4	3	8M	96.8u	1.497m	1.771m	575m
5	1	14M	70.1u			225m
6	2	10M	82.8u	1.612m		113m
7	2	18M	80.8u	1.03m		551m
8	3	6M	76.4u	0.958m	1.191m	206m
9	2	20M	74.7u	1.094m		639m
10	2	13M	74.7u	1.655m		564m
11	3	8M	58.5u	1.335m	1.439m	430m
12	2	11M	93.5u	1.454m		632m
13	2	10M	70.5u	1.169m		679m
14	1	5M	92.1u			708m
15	1	13M	72.6u			548m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_25

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	1	18M	59.8u			315m
2	1	12M	53.6u			685m
3	3	18M	78.7u	0.931m	1.083m	714m
4	2	10M	66.2u	1.173m		285m
5	2	8M	56.1u	1.552m		641m
6	3	9M	87.6u	1.221m	1.291m	411m
7	2	12M	67.7u	1.808m		43m
8	1	19M	63.3u			732m
9	2	15M	99.9u	1.764m		11m
10	3	20M	78.6u	0.934m	1.324m	203m
11	2	15M	69.8u	1.276m		537m
12	2	7M	68u	0.958m		657m
13	2	13M	70.8u	1.76m		317m
14	2	19M	78.7u	1.441m		460m
15	2	13M	92.5u	1.189m		570m
16	2	6M	57.3u	1.275m		195m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_26

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	13M	87u	0.939m		384m
2	1	17M	67.7u			144m
3	2	8M	63.7u	1.328m		246m
4	2	5M	86u	1.437m		676m
5	2	11M	86.2u	0.953m		277m
6	1	13M	73.1u			389m
7	3	7M	61.2u	1.536m	1.434m	549m
8	1	13M	98.6u			352m
9	2	10M	90.8u	1.273m		229m
10	2	12M	70.6u	1.466m		43m
11	2	8M	53.7u	1.485m		296m
12	3	13M	51.4u	1.554m	1.9m	657m
13	2	14M	75.2u	1.505m		339m
14	1	19M	71.6u			413m
15	1	10M	94.8u			436m
16	1	20M	91.4u			400m
17	2	20M	80.2u	1.244m		385m



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Long Pulse Radar Test Signal						
Test Signal Name: LP_Signal_27						
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	12M	80.9u	1.883m	1.573m	53m
2	3	15M	94.1u	1.682m	1.577m	101m
3	2	5M	96.4u	1.442m		40m
4	2	8M	96.6u	1.552m		173m
5	2	7M	90.1u	1.038m		597m
6	3	20M	78.7u	1.911m	1.856m	612m
7	1	12M	81.1u			610m
8	2	11M	66.1u	1.693m		67m
9	2	6M	85.8u	1.827m		193m
10	2	14M	50.7u	1.124m		107m
11	1	5M	85.3u			565m
12	3	5M	75u	1.169m	1.563m	128m
13	2	18M	58.4u	1.869m		53m
14	3	20M	66.5u	1.476m	1.54m	487m
15	2	15M	96.5u	1.597m		537m
16	1	14M	81.1u			612m
17	1	19M	98.7u			435m
18	1	20M	51.8u			628m



A D T

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_28

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	56.2u	1.863m		511m
2	2	6M	64.4u	1.234m		620m
3	1	10M	83.3u			613m
4	1	9M	99.3u			476m
5	2	20M	80.1u	1.615m		584m
6	2	13M	82u	0.971m		467m
7	2	10M	79.6u	0.949m		430m
8	2	13M	69.5u	1.26m		357m
9	3	20M	92u	1.801m	0.995m	165m
10	2	9M	97.1u	1.74m		456m
11	2	8M	98.9u	1.427m		17m
12	3	18M	77.9u	1.797m	1.319m	269m
13	1	18M	90.4u			203m
14	3	5M	90u	1.897m	1.544m	295m
15	2	15M	67.1u	1.31m		554m
16	3	10M	71.9u	1.63m	1.633m	66m
17	3	18M	61.1u	1.256m	1.263m	573m
18	2	13M	95.9u	1.803m		215m
19	3	18M	88u	0.99m	1.152m	234m



A D T

Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_29

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	3	13M	54.7u	0.986m	1.475m	121m
2	1	14M	91.8u			109m
3	3	6M	72.8u	1.282m	1.174m	476m
4	2	13M	79.2u	1.821m		425m
5	3	10M	52.3u	1.232m	1.89m	225m
6	1	20M	70u			222m
7	2	19M	55.9u	1.901m		452m
8	3	13M	83.7u	1.2m	1.221m	152m
9	1	13M	83.4u			397m
10	3	18M	67u	1.698m	1.315m	142m
11	3	14M	65.1u	1.5m	1.212m	272m
12	1	11M	54.1u			570m
13	1	11M	73.2u			12m
14	2	14M	73.1u	1.336m		149m
15	2	8M	75.3u	1.18m		103m
16	2	20M	50.3u	1.197m		183m
17	2	13M	81.3u	0.969m		368m
18	1	20M	97.9u			332m
19	2	14M	91.2u	1.048m		57m
20	2	12M	62.1u	1.604m		89m



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Long Pulse Radar Test Signal

Test Signal Name: LP_Signal_30

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	13M	74.4u			277m
2	2	12M	84.2u	1.131m		832m
3	2	11M	55.9u	1.24m		790m
4	1	11M	64.7u			190m
5	2	13M	60.4u	0.949m		519m
6	2	9M	66u	1.046m		375m
7	2	5M	63.8u	1.721m		240m
8	1	10M	87.3u			583m
9	2	14M	97.6u	1.473m		548m
10	1	17M	99u			896m
11	1	12M	65.5u			246m
12	1	10M	57.5u			464m
13	2	12M	88.2u	1.403m		878m



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_01							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.536G	2	5.635G	3	5.620G	4	5.290G
5	5.608G	6	5.415G	7	5.664G	8	5.477G
9	5.427G	10	5.447G	11	5.714G	12	5.279G
13	5.711G	14	5.510G	15	5.464G	16	5.314G
17	5.526G	18	5.549G	19	5.401G	20	5.704G
21	5.505G	22	5.626G	23	5.504G	24	5.270G
25	5.382G	26	5.615G	27	5.497G	28	5.561G
29	5.689G	30	5.655G	31	5.562G	32	5.276G
33	5.522G	34	5.672G	35	5.557G	36	5.450G
37	5.430G	38	5.495G	39	5.428G	40	5.399G
41	5.605G	42	5.537G	43	5.666G	44	5.342G
45	5.532G	46	5.329G	47	5.278G	48	5.307G
49	5.319G	50	5.335G	51	5.476G	52	5.453G
53	5.661G	54	5.535G	55	5.433G	56	5.306G
57	5.347G	58	5.588G	59	5.657G	60	5.592G
61	5.601G	62	5.627G	63	5.394G	64	5.681G
65	5.439G	66	5.515G	67	5.432G	68	5.392G
69	5.416G	70	5.479G	71	5.489G	72	5.292G
73	5.440G	74	5.410G	75	5.506G	76	5.484G
77	5.258G	78	5.513G	79	5.310G	80	5.569G
81	5.669G	82	5.269G	83	5.694G	84	5.294G
85	5.375G	86	5.509G	87	5.318G	88	5.502G
89	5.687G	90	5.610G	91	5.465G	92	5.429G
93	5.693G	94	5.500G	95	5.302G	96	5.649G
97	5.544G	98	5.645G	99	5.459G	100	5.299G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_02							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.382G	2	5.466G	3	5.593G	4	5.671G
5	5.461G	6	5.313G	7	5.562G	8	5.471G
9	5.565G	10	5.270G	11	5.437G	12	5.694G
13	5.617G	14	5.414G	15	5.322G	16	5.600G
17	5.649G	18	5.705G	19	5.548G	20	5.352G
21	5.710G	22	5.646G	23	5.512G	24	5.423G
25	5.328G	26	5.370G	27	5.637G	28	5.280G
29	5.700G	30	5.284G	31	5.422G	32	5.657G
33	5.675G	34	5.357G	35	5.287G	36	5.547G
37	5.525G	38	5.407G	39	5.709G	40	5.327G
41	5.655G	42	5.334G	43	5.346G	44	5.454G
45	5.395G	46	5.505G	47	5.647G	48	5.595G
49	5.415G	50	5.615G	51	5.650G	52	5.631G
53	5.274G	54	5.622G	55	5.504G	56	5.295G
57	5.266G	58	5.301G	59	5.470G	60	5.329G
61	5.438G	62	5.316G	63	5.588G	64	5.673G
65	5.277G	66	5.381G	67	5.291G	68	5.451G
69	5.714G	70	5.336G	71	5.262G	72	5.587G
73	5.497G	74	5.263G	75	5.353G	76	5.477G
77	5.429G	78	5.518G	79	5.307G	80	5.638G
81	5.366G	82	5.433G	83	5.399G	84	5.483G
85	5.691G	86	5.281G	87	5.324G	88	5.680G
89	5.446G	90	5.648G	91	5.335G	92	5.670G
93	5.367G	94	5.376G	95	5.711G	96	5.358G
97	5.640G	98	5.392G	99	5.723G	100	5.706G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_03							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.540G	2	5.474G	3	5.628G	4	5.645G
5	5.565G	6	5.307G	7	5.279G	8	5.434G
9	5.428G	10	5.667G	11	5.384G	12	5.550G
13	5.303G	14	5.293G	15	5.691G	16	5.305G
17	5.706G	18	5.409G	19	5.500G	20	5.253G
21	5.265G	22	5.686G	23	5.559G	24	5.422G
25	5.651G	26	5.612G	27	5.287G	28	5.322G
29	5.400G	30	5.624G	31	5.472G	32	5.451G
33	5.435G	34	5.630G	35	5.350G	36	5.701G
37	5.260G	38	5.273G	39	5.548G	40	5.399G
41	5.406G	42	5.670G	43	5.456G	44	5.390G
45	5.416G	46	5.345G	47	5.549G	48	5.581G
49	5.353G	50	5.433G	51	5.258G	52	5.555G
53	5.388G	54	5.695G	55	5.539G	56	5.595G
57	5.455G	58	5.393G	59	5.713G	60	5.484G
61	5.679G	62	5.698G	63	5.266G	64	5.270G
65	5.501G	66	5.326G	67	5.556G	68	5.620G
69	5.538G	70	5.690G	71	5.671G	72	5.566G
73	5.544G	74	5.300G	75	5.308G	76	5.632G
77	5.482G	78	5.527G	79	5.361G	80	5.359G
81	5.634G	82	5.297G	83	5.534G	84	5.473G
85	5.277G	86	5.344G	87	5.674G	88	5.310G
89	5.589G	90	5.286G	91	5.453G	92	5.711G
93	5.334G	94	5.692G	95	5.717G	96	5.250G
97	5.354G	98	5.448G	99	5.639G	100	5.460G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_04							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.341G	2	5.312G	3	5.363G	4	5.435G
5	5.606G	6	5.387G	7	5.487G	8	5.678G
9	5.647G	10	5.292G	11	5.270G	12	5.251G
13	5.609G	14	5.572G	15	5.322G	16	5.653G
17	5.584G	18	5.279G	19	5.420G	20	5.369G
21	5.534G	22	5.461G	23	5.523G	24	5.674G
25	5.380G	26	5.469G	27	5.268G	28	5.308G
29	5.282G	30	5.368G	31	5.365G	32	5.300G
33	5.527G	34	5.271G	35	5.456G	36	5.352G
37	5.319G	38	5.290G	39	5.708G	40	5.381G
41	5.506G	42	5.482G	43	5.309G	44	5.479G
45	5.614G	46	5.578G	47	5.687G	48	5.371G
49	5.490G	50	5.338G	51	5.320G	52	5.484G
53	5.255G	54	5.531G	55	5.447G	56	5.513G
57	5.549G	58	5.302G	59	5.525G	60	5.557G
61	5.680G	62	5.540G	63	5.672G	64	5.621G
65	5.465G	66	5.613G	67	5.710G	68	5.561G
69	5.305G	70	5.294G	71	5.462G	72	5.343G
73	5.478G	74	5.288G	75	5.321G	76	5.610G
77	5.569G	78	5.332G	79	5.570G	80	5.535G
81	5.351G	82	5.652G	83	5.598G	84	5.417G
85	5.375G	86	5.533G	87	5.668G	88	5.386G
89	5.284G	90	5.551G	91	5.515G	92	5.264G
93	5.654G	94	5.617G	95	5.390G	96	5.641G
97	5.437G	98	5.357G	99	5.374G	100	5.555G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_05							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.484G	2	5.630G	3	5.702G	4	5.367G
5	5.260G	6	5.335G	7	5.520G	8	5.347G
9	5.646G	10	5.708G	11	5.282G	12	5.315G
13	5.515G	14	5.268G	15	5.540G	16	5.311G
17	5.631G	18	5.303G	19	5.658G	20	5.527G
21	5.455G	22	5.700G	23	5.657G	24	5.256G
25	5.609G	26	5.423G	27	5.326G	28	5.684G
29	5.644G	30	5.586G	31	5.454G	32	5.543G
33	5.595G	34	5.421G	35	5.472G	36	5.349G
37	5.687G	38	5.375G	39	5.650G	40	5.322G
41	5.634G	42	5.415G	43	5.490G	44	5.358G
45	5.704G	46	5.555G	47	5.541G	48	5.403G
49	5.502G	50	5.696G	51	5.587G	52	5.431G
53	5.692G	54	5.400G	55	5.350G	56	5.589G
57	5.312G	58	5.458G	59	5.366G	60	5.691G
61	5.623G	62	5.614G	63	5.336G	64	5.625G
65	5.284G	66	5.343G	67	5.296G	68	5.433G
69	5.307G	70	5.356G	71	5.558G	72	5.514G
73	5.576G	74	5.420G	75	5.408G	76	5.505G
77	5.422G	78	5.474G	79	5.706G	80	5.471G
81	5.550G	82	5.560G	83	5.354G	84	5.680G
85	5.265G	86	5.666G	87	5.641G	88	5.709G
89	5.564G	90	5.352G	91	5.383G	92	5.526G
93	5.468G	94	5.578G	95	5.671G	96	5.562G
97	5.273G	98	5.718G	99	5.719G	100	5.645G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_06							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.280G	2	5.710G	3	5.604G	4	5.327G
5	5.290G	6	5.424G	7	5.680G	8	5.373G
9	5.613G	10	5.399G	11	5.534G	12	5.433G
13	5.293G	14	5.669G	15	5.495G	16	5.362G
17	5.634G	18	5.319G	19	5.487G	20	5.532G
21	5.647G	22	5.385G	23	5.348G	24	5.485G
25	5.263G	26	5.593G	27	5.390G	28	5.405G
29	5.285G	30	5.688G	31	5.295G	32	5.607G
33	5.294G	34	5.512G	35	5.724G	36	5.430G
37	5.658G	38	5.629G	39	5.465G	40	5.332G
41	5.712G	42	5.254G	43	5.356G	44	5.365G
45	5.407G	46	5.685G	47	5.635G	48	5.538G
49	5.421G	50	5.609G	51	5.612G	52	5.591G
53	5.417G	54	5.681G	55	5.529G	56	5.570G
57	5.569G	58	5.676G	59	5.502G	60	5.589G
61	5.665G	62	5.602G	63	5.655G	64	5.392G
65	5.462G	66	5.603G	67	5.592G	68	5.428G
69	5.403G	70	5.262G	71	5.296G	72	5.704G
73	5.473G	74	5.513G	75	5.703G	76	5.329G
77	5.578G	78	5.558G	79	5.667G	80	5.398G
81	5.605G	82	5.443G	83	5.470G	84	5.625G
85	5.402G	86	5.256G	87	5.427G	88	5.516G
89	5.559G	90	5.638G	91	5.272G	92	5.599G
93	5.674G	94	5.395G	95	5.503G	96	5.615G
97	5.623G	98	5.388G	99	5.539G	100	5.582G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_07							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.640G	2	5.699G	3	5.356G	4	5.443G
5	5.256G	6	5.506G	7	5.593G	8	5.305G
9	5.311G	10	5.670G	11	5.509G	12	5.622G
13	5.501G	14	5.698G	15	5.286G	16	5.682G
17	5.603G	18	5.687G	19	5.632G	20	5.380G
21	5.695G	22	5.426G	23	5.439G	24	5.341G
25	5.289G	26	5.415G	27	5.691G	28	5.532G
29	5.452G	30	5.574G	31	5.689G	32	5.697G
33	5.643G	34	5.339G	35	5.570G	36	5.274G
37	5.372G	38	5.468G	39	5.298G	40	5.464G
41	5.373G	42	5.314G	43	5.334G	44	5.342G
45	5.431G	46	5.616G	47	5.719G	48	5.459G
49	5.528G	50	5.572G	51	5.322G	52	5.410G
53	5.589G	54	5.590G	55	5.319G	56	5.626G
57	5.615G	58	5.646G	59	5.293G	60	5.255G
61	5.497G	62	5.557G	63	5.511G	64	5.617G
65	5.463G	66	5.420G	67	5.525G	68	5.614G
69	5.425G	70	5.444G	71	5.266G	72	5.594G
73	5.688G	74	5.641G	75	5.517G	76	5.345G
77	5.564G	78	5.664G	79	5.534G	80	5.607G
81	5.628G	82	5.549G	83	5.349G	84	5.422G
85	5.531G	86	5.437G	87	5.315G	88	5.325G
89	5.669G	90	5.300G	91	5.515G	92	5.385G
93	5.514G	94	5.610G	95	5.335G	96	5.351G
97	5.671G	98	5.522G	99	5.344G	100	5.438G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_08							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.579G	2	5.482G	3	5.287G	4	5.436G
5	5.291G	6	5.463G	7	5.362G	8	5.380G
9	5.598G	10	5.697G	11	5.361G	12	5.717G
13	5.310G	14	5.571G	15	5.559G	16	5.471G
17	5.491G	18	5.544G	19	5.377G	20	5.647G
21	5.528G	22	5.651G	23	5.298G	24	5.290G
25	5.438G	26	5.627G	27	5.384G	28	5.628G
29	5.673G	30	5.613G	31	5.490G	32	5.375G
33	5.641G	34	5.257G	35	5.332G	36	5.568G
37	5.653G	38	5.262G	39	5.658G	40	5.558G
41	5.313G	42	5.404G	43	5.418G	44	5.594G
45	5.386G	46	5.360G	47	5.363G	48	5.622G
49	5.650G	50	5.609G	51	5.519G	52	5.359G
53	5.707G	54	5.546G	55	5.566G	56	5.413G
57	5.325G	58	5.314G	59	5.345G	60	5.633G
61	5.460G	62	5.277G	63	5.353G	64	5.718G
65	5.588G	66	5.340G	67	5.643G	68	5.531G
69	5.445G	70	5.323G	71	5.254G	72	5.417G
73	5.659G	74	5.481G	75	5.280G	76	5.542G
77	5.535G	78	5.348G	79	5.506G	80	5.589G
81	5.397G	82	5.455G	83	5.602G	84	5.611G
85	5.304G	86	5.549G	87	5.642G	88	5.454G
89	5.402G	90	5.615G	91	5.570G	92	5.318G
93	5.461G	94	5.693G	95	5.403G	96	5.660G
97	5.686G	98	5.474G	99	5.442G	100	5.666G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_09							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.645G	2	5.685G	3	5.327G	4	5.446G
5	5.533G	6	5.634G	7	5.266G	8	5.338G
9	5.554G	10	5.714G	11	5.268G	12	5.580G
13	5.422G	14	5.452G	15	5.719G	16	5.363G
17	5.434G	18	5.688G	19	5.574G	20	5.557G
21	5.475G	22	5.283G	23	5.632G	24	5.252G
25	5.345G	26	5.401G	27	5.284G	28	5.535G
29	5.362G	30	5.612G	31	5.640G	32	5.667G
33	5.426G	34	5.421G	35	5.440G	36	5.581G
37	5.558G	38	5.297G	39	5.432G	40	5.534G
41	5.672G	42	5.532G	43	5.304G	44	5.433G
45	5.333G	46	5.584G	47	5.425G	48	5.722G
49	5.502G	50	5.474G	51	5.395G	52	5.388G
53	5.499G	54	5.564G	55	5.594G	56	5.430G
57	5.699G	58	5.583G	59	5.604G	60	5.608G
61	5.337G	62	5.616G	63	5.318G	64	5.263G
65	5.273G	66	5.280G	67	5.661G	68	5.294G
69	5.615G	70	5.308G	71	5.586G	72	5.679G
73	5.620G	74	5.285G	75	5.442G	76	5.638G
77	5.309G	78	5.671G	79	5.445G	80	5.723G
81	5.259G	82	5.326G	83	5.621G	84	5.516G
85	5.553G	86	5.530G	87	5.716G	88	5.601G
89	5.540G	90	5.288G	91	5.453G	92	5.342G
93	5.276G	94	5.700G	95	5.548G	96	5.680G
97	5.687G	98	5.469G	99	5.481G	100	5.692G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_10							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.721G	2	5.610G	3	5.380G	4	5.474G
5	5.270G	6	5.444G	7	5.451G	8	5.678G
9	5.466G	10	5.416G	11	5.360G	12	5.659G
13	5.673G	14	5.412G	15	5.402G	16	5.413G
17	5.328G	18	5.560G	19	5.281G	20	5.312G
21	5.501G	22	5.722G	23	5.470G	24	5.316G
25	5.581G	26	5.479G	27	5.571G	28	5.615G
29	5.376G	30	5.467G	31	5.498G	32	5.703G
33	5.717G	34	5.264G	35	5.629G	36	5.318G
37	5.655G	38	5.478G	39	5.715G	40	5.599G
41	5.554G	42	5.390G	43	5.694G	44	5.545G
45	5.549G	46	5.426G	47	5.477G	48	5.381G
49	5.462G	50	5.525G	51	5.647G	52	5.258G
53	5.298G	54	5.335G	55	5.605G	56	5.292G
57	5.645G	58	5.362G	59	5.674G	60	5.280G
61	5.308G	62	5.496G	63	5.619G	64	5.375G
65	5.620G	66	5.475G	67	5.698G	68	5.266G
69	5.681G	70	5.602G	71	5.329G	72	5.260G
73	5.704G	74	5.484G	75	5.519G	76	5.584G
77	5.598G	78	5.465G	79	5.434G	80	5.614G
81	5.296G	82	5.393G	83	5.379G	84	5.677G
85	5.274G	86	5.520G	87	5.689G	88	5.425G
89	5.356G	90	5.370G	91	5.596G	92	5.587G
93	5.714G	94	5.625G	95	5.254G	96	5.407G
97	5.497G	98	5.309G	99	5.283G	100	5.456G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_11							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.619G	2	5.570G	3	5.614G	4	5.326G
5	5.724G	6	5.500G	7	5.264G	8	5.439G
9	5.684G	10	5.380G	11	5.442G	12	5.554G
13	5.272G	14	5.474G	15	5.527G	16	5.404G
17	5.714G	18	5.487G	19	5.529G	20	5.483G
21	5.252G	22	5.600G	23	5.275G	24	5.521G
25	5.657G	26	5.435G	27	5.531G	28	5.429G
29	5.605G	30	5.622G	31	5.575G	32	5.396G
33	5.460G	34	5.420G	35	5.640G	36	5.698G
37	5.593G	38	5.473G	39	5.621G	40	5.713G
41	5.544G	42	5.520G	43	5.413G	44	5.366G
45	5.660G	46	5.611G	47	5.543G	48	5.708G
49	5.302G	50	5.291G	51	5.299G	52	5.635G
53	5.572G	54	5.515G	55	5.689G	56	5.309G
57	5.567G	58	5.560G	59	5.410G	60	5.318G
61	5.585G	62	5.577G	63	5.334G	64	5.322G
65	5.350G	66	5.556G	67	5.581G	68	5.383G
69	5.604G	70	5.288G	71	5.423G	72	5.564G
73	5.312G	74	5.261G	75	5.648G	76	5.391G
77	5.371G	78	5.615G	79	5.418G	80	5.337G
81	5.323G	82	5.279G	83	5.565G	84	5.682G
85	5.591G	86	5.400G	87	5.421G	88	5.308G
89	5.306G	90	5.458G	91	5.613G	92	5.283G
93	5.374G	94	5.546G	95	5.319G	96	5.649G
97	5.618G	98	5.262G	99	5.459G	100	5.451G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_12							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.487G	2	5.395G	3	5.319G	4	5.272G
5	5.623G	6	5.533G	7	5.572G	8	5.705G
9	5.551G	10	5.441G	11	5.689G	12	5.434G
13	5.268G	14	5.519G	15	5.613G	16	5.398G
17	5.444G	18	5.372G	19	5.310G	20	5.468G
21	5.362G	22	5.571G	23	5.495G	24	5.264G
25	5.289G	26	5.600G	27	5.717G	28	5.250G
29	5.316G	30	5.399G	31	5.347G	32	5.383G
33	5.448G	34	5.527G	35	5.666G	36	5.361G
37	5.446G	38	5.267G	39	5.377G	40	5.320G
41	5.606G	42	5.704G	43	5.391G	44	5.540G
45	5.355G	46	5.311G	47	5.721G	48	5.431G
49	5.277G	50	5.294G	51	5.648G	52	5.644G
53	5.260G	54	5.619G	55	5.549G	56	5.367G
57	5.429G	58	5.420G	59	5.458G	60	5.694G
61	5.610G	62	5.525G	63	5.673G	64	5.451G
65	5.664G	66	5.484G	67	5.651G	68	5.449G
69	5.674G	70	5.301G	71	5.552G	72	5.639G
73	5.386G	74	5.514G	75	5.624G	76	5.342G
77	5.530G	78	5.510G	79	5.702G	80	5.579G
81	5.373G	82	5.356G	83	5.563G	84	5.566G
85	5.568G	86	5.375G	87	5.334G	88	5.662G
89	5.291G	90	5.491G	91	5.365G	92	5.454G
93	5.450G	94	5.348G	95	5.442G	96	5.481G
97	5.561G	98	5.476G	99	5.471G	100	5.423G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_13							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.628G	2	5.272G	3	5.608G	4	5.426G
5	5.394G	6	5.350G	7	5.358G	8	5.352G
9	5.253G	10	5.539G	11	5.385G	12	5.485G
13	5.545G	14	5.637G	15	5.546G	16	5.690G
17	5.555G	18	5.616G	19	5.618G	20	5.577G
21	5.312G	22	5.504G	23	5.357G	24	5.643G
25	5.724G	26	5.471G	27	5.336G	28	5.554G
29	5.672G	30	5.700G	31	5.380G	32	5.638G
33	5.344G	34	5.473G	35	5.655G	36	5.482G
37	5.547G	38	5.479G	39	5.486G	40	5.675G
41	5.367G	42	5.362G	43	5.342G	44	5.645G
45	5.378G	46	5.561G	47	5.501G	48	5.524G
49	5.711G	50	5.281G	51	5.506G	52	5.338G
53	5.662G	54	5.454G	55	5.654G	56	5.559G
57	5.595G	58	5.268G	59	5.326G	60	5.365G
61	5.497G	62	5.421G	63	5.290G	64	5.405G
65	5.277G	66	5.514G	67	5.404G	68	5.407G
69	5.439G	70	5.694G	71	5.558G	72	5.615G
73	5.606G	74	5.403G	75	5.710G	76	5.719G
77	5.518G	78	5.291G	79	5.443G	80	5.620G
81	5.310G	82	5.572G	83	5.354G	84	5.261G
85	5.674G	86	5.582G	87	5.410G	88	5.462G
89	5.353G	90	5.714G	91	5.627G	92	5.476G
93	5.635G	94	5.653G	95	5.576G	96	5.422G
97	5.251G	98	5.487G	99	5.446G	100	5.401G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_14							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.404G	2	5.434G	3	5.475G	4	5.629G
5	5.291G	6	5.271G	7	5.658G	8	5.432G
9	5.495G	10	5.677G	11	5.447G	12	5.652G
13	5.683G	14	5.566G	15	5.635G	16	5.252G
17	5.396G	18	5.606G	19	5.267G	20	5.695G
21	5.425G	22	5.474G	23	5.690G	24	5.392G
25	5.421G	26	5.530G	27	5.536G	28	5.479G
29	5.331G	30	5.411G	31	5.385G	32	5.574G
33	5.588G	34	5.448G	35	5.715G	36	5.581G
37	5.533G	38	5.381G	39	5.319G	40	5.547G
41	5.579G	42	5.655G	43	5.370G	44	5.282G
45	5.688G	46	5.723G	47	5.720G	48	5.646G
49	5.560G	50	5.283G	51	5.621G	52	5.388G
53	5.371G	54	5.382G	55	5.562G	56	5.276G
57	5.706G	58	5.559G	59	5.471G	60	5.488G
61	5.420G	62	5.360G	63	5.504G	64	5.320G
65	5.304G	66	5.611G	67	5.589G	68	5.650G
69	5.345G	70	5.387G	71	5.431G	72	5.614G
73	5.346G	74	5.397G	75	5.687G	76	5.686G
77	5.558G	78	5.592G	79	5.299G	80	5.573G
81	5.615G	82	5.657G	83	5.429G	84	5.297G
85	5.424G	86	5.272G	87	5.572G	88	5.292G
89	5.582G	90	5.521G	91	5.349G	92	5.693G
93	5.369G	94	5.561G	95	5.596G	96	5.684G
97	5.490G	98	5.494G	99	5.531G	100	5.668G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_15							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.438G	2	5.317G	3	5.286G	4	5.554G
5	5.689G	6	5.271G	7	5.675G	8	5.713G
9	5.536G	10	5.432G	11	5.712G	12	5.367G
13	5.528G	14	5.690G	15	5.650G	16	5.571G
17	5.685G	18	5.558G	19	5.665G	20	5.303G
21	5.299G	22	5.445G	23	5.502G	24	5.696G
25	5.334G	26	5.391G	27	5.396G	28	5.411G
29	5.581G	30	5.402G	31	5.629G	32	5.319G
33	5.530G	34	5.681G	35	5.588G	36	5.322G
37	5.360G	38	5.275G	39	5.589G	40	5.265G
41	5.637G	42	5.544G	43	5.673G	44	5.259G
45	5.424G	46	5.425G	47	5.337G	48	5.524G
49	5.428G	50	5.283G	51	5.376G	52	5.639G
53	5.612G	54	5.521G	55	5.342G	56	5.574G
57	5.267G	58	5.380G	59	5.383G	60	5.529G
61	5.709G	62	5.476G	63	5.475G	64	5.282G
65	5.340G	66	5.511G	67	5.627G	68	5.534G
69	5.593G	70	5.330G	71	5.251G	72	5.489G
73	5.250G	74	5.372G	75	5.708G	76	5.653G
77	5.368G	78	5.723G	79	5.584G	80	5.522G
81	5.671G	82	5.617G	83	5.720G	84	5.644G
85	5.623G	86	5.467G	87	5.422G	88	5.366G
89	5.613G	90	5.356G	91	5.278G	92	5.318G
93	5.703G	94	5.658G	95	5.620G	96	5.500G
97	5.261G	98	5.587G	99	5.656G	100	5.614G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_16							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.504G	2	5.530G	3	5.321G	4	5.665G
5	5.717G	6	5.335G	7	5.616G	8	5.703G
9	5.287G	10	5.327G	11	5.260G	12	5.332G
13	5.356G	14	5.686G	15	5.670G	16	5.705G
17	5.689G	18	5.446G	19	5.666G	20	5.556G
21	5.545G	22	5.441G	23	5.372G	24	5.576G
25	5.563G	26	5.696G	27	5.325G	28	5.250G
29	5.380G	30	5.296G	31	5.289G	32	5.320G
33	5.553G	34	5.453G	35	5.501G	36	5.268G
37	5.519G	38	5.655G	39	5.592G	40	5.656G
41	5.414G	42	5.681G	43	5.293G	44	5.534G
45	5.685G	46	5.370G	47	5.390G	48	5.511G
49	5.707G	50	5.303G	51	5.615G	52	5.676G
53	5.457G	54	5.437G	55	5.393G	56	5.354G
57	5.513G	58	5.311G	59	5.273G	60	5.605G
61	5.586G	62	5.699G	63	5.646G	64	5.677G
65	5.644G	66	5.607G	67	5.349G	68	5.643G
69	5.471G	70	5.280G	71	5.353G	72	5.673G
73	5.312G	74	5.540G	75	5.401G	76	5.552G
77	5.323G	78	5.668G	79	5.503G	80	5.294G
81	5.336G	82	5.474G	83	5.463G	84	5.647G
85	5.386G	86	5.345G	87	5.362G	88	5.282G
89	5.608G	90	5.613G	91	5.351G	92	5.628G
93	5.621G	94	5.279G	95	5.304G	96	5.498G
97	5.291G	98	5.559G	99	5.524G	100	5.394G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_17							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.466G	2	5.716G	3	5.311G	4	5.545G
5	5.295G	6	5.640G	7	5.603G	8	5.518G
9	5.252G	10	5.552G	11	5.301G	12	5.374G
13	5.719G	14	5.404G	15	5.556G	16	5.326G
17	5.350G	18	5.275G	19	5.393G	20	5.650G
21	5.265G	22	5.464G	23	5.305G	24	5.616G
25	5.696G	26	5.264G	27	5.486G	28	5.717G
29	5.586G	30	5.564G	31	5.383G	32	5.693G
33	5.420G	34	5.663G	35	5.262G	36	5.626G
37	5.723G	38	5.306G	39	5.479G	40	5.523G
41	5.577G	42	5.551G	43	5.715G	44	5.597G
45	5.524G	46	5.346G	47	5.573G	48	5.366G
49	5.468G	50	5.334G	51	5.538G	52	5.250G
53	5.521G	54	5.473G	55	5.652G	56	5.401G
57	5.712G	58	5.618G	59	5.615G	60	5.534G
61	5.392G	62	5.554G	63	5.425G	64	5.529G
65	5.482G	66	5.497G	67	5.422G	68	5.609G
69	5.409G	70	5.639G	71	5.471G	72	5.515G
73	5.297G	74	5.659G	75	5.677G	76	5.386G
77	5.428G	78	5.413G	79	5.325G	80	5.291G
81	5.699G	82	5.369G	83	5.679G	84	5.258G
85	5.339G	86	5.394G	87	5.271G	88	5.331G
89	5.280G	90	5.432G	91	5.614G	92	5.484G
93	5.520G	94	5.499G	95	5.541G	96	5.665G
97	5.310G	98	5.343G	99	5.546G	100	5.344G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_18							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.684G	2	5.324G	3	5.257G	4	5.446G
5	5.250G	6	5.669G	7	5.578G	8	5.318G
9	5.254G	10	5.668G	11	5.624G	12	5.467G
13	5.603G	14	5.273G	15	5.626G	16	5.352G
17	5.610G	18	5.685G	19	5.629G	20	5.326G
21	5.522G	22	5.387G	23	5.673G	24	5.331G
25	5.375G	26	5.266G	27	5.695G	28	5.713G
29	5.325G	30	5.332G	31	5.401G	32	5.463G
33	5.672G	34	5.292G	35	5.520G	36	5.574G
37	5.484G	38	5.291G	39	5.444G	40	5.665G
41	5.470G	42	5.551G	43	5.554G	44	5.528G
45	5.523G	46	5.376G	47	5.270G	48	5.443G
49	5.293G	50	5.415G	51	5.702G	52	5.259G
53	5.504G	54	5.362G	55	5.562G	56	5.704G
57	5.533G	58	5.584G	59	5.544G	60	5.386G
61	5.261G	62	5.426G	63	5.274G	64	5.281G
65	5.654G	66	5.425G	67	5.499G	68	5.478G
69	5.348G	70	5.550G	71	5.617G	72	5.570G
73	5.260G	74	5.646G	75	5.380G	76	5.351G
77	5.524G	78	5.265G	79	5.329G	80	5.399G
81	5.595G	82	5.452G	83	5.558G	84	5.621G
85	5.653G	86	5.500G	87	5.458G	88	5.286G
89	5.667G	90	5.473G	91	5.620G	92	5.283G
93	5.535G	94	5.518G	95	5.365G	96	5.678G
97	5.633G	98	5.262G	99	5.459G	100	5.716G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_19							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.280G	2	5.331G	3	5.609G	4	5.620G
5	5.445G	6	5.553G	7	5.399G	8	5.361G
9	5.265G	10	5.723G	11	5.413G	12	5.336G
13	5.475G	14	5.472G	15	5.532G	16	5.501G
17	5.633G	18	5.506G	19	5.672G	20	5.634G
21	5.709G	22	5.701G	23	5.407G	24	5.277G
25	5.572G	26	5.693G	27	5.565G	28	5.312G
29	5.307G	30	5.495G	31	5.533G	32	5.481G
33	5.423G	34	5.530G	35	5.311G	36	5.430G
37	5.618G	38	5.310G	39	5.405G	40	5.346G
41	5.357G	42	5.351G	43	5.353G	44	5.521G
45	5.595G	46	5.424G	47	5.510G	48	5.488G
49	5.267G	50	5.452G	51	5.296G	52	5.313G
53	5.327G	54	5.339G	55	5.466G	56	5.252G
57	5.561G	58	5.559G	59	5.409G	60	5.453G
61	5.429G	62	5.715G	63	5.410G	64	5.635G
65	5.538G	66	5.381G	67	5.451G	68	5.554G
69	5.660G	70	5.363G	71	5.392G	72	5.509G
73	5.678G	74	5.348G	75	5.587G	76	5.341G
77	5.627G	78	5.326G	79	5.271G	80	5.675G
81	5.324G	82	5.401G	83	5.724G	84	5.266G
85	5.712G	86	5.714G	87	5.717G	88	5.343G
89	5.270G	90	5.360G	91	5.325G	92	5.547G
93	5.642G	94	5.606G	95	5.722G	96	5.301G
97	5.274G	98	5.662G	99	5.335G	100	5.615G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_20							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.563G	2	5.439G	3	5.332G	4	5.663G
5	5.417G	6	5.294G	7	5.291G	8	5.695G
9	5.501G	10	5.699G	11	5.339G	12	5.423G
13	5.380G	14	5.710G	15	5.331G	16	5.334G
17	5.255G	18	5.647G	19	5.512G	20	5.634G
21	5.650G	22	5.315G	23	5.398G	24	5.482G
25	5.660G	26	5.524G	27	5.298G	28	5.325G
29	5.687G	30	5.307G	31	5.630G	32	5.519G
33	5.677G	34	5.518G	35	5.438G	36	5.464G
37	5.264G	38	5.680G	39	5.324G	40	5.302G
41	5.427G	42	5.567G	43	5.480G	44	5.602G
45	5.707G	46	5.490G	47	5.684G	48	5.576G
49	5.495G	50	5.669G	51	5.287G	52	5.678G
53	5.445G	54	5.666G	55	5.316G	56	5.321G
57	5.403G	58	5.460G	59	5.579G	60	5.274G
61	5.429G	62	5.328G	63	5.521G	64	5.304G
65	5.356G	66	5.381G	67	5.511G	68	5.659G
69	5.617G	70	5.649G	71	5.370G	72	5.308G
73	5.323G	74	5.545G	75	5.320G	76	5.401G
77	5.483G	78	5.463G	79	5.682G	80	5.596G
81	5.622G	82	5.415G	83	5.571G	84	5.278G
85	5.431G	86	5.487G	87	5.671G	88	5.335G
89	5.668G	90	5.275G	91	5.430G	92	5.715G
93	5.384G	94	5.683G	95	5.639G	96	5.533G
97	5.477G	98	5.544G	99	5.306G	100	5.290G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_21							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.299G	2	5.542G	3	5.284G	4	5.679G
5	5.670G	6	5.627G	7	5.669G	8	5.390G
9	5.545G	10	5.685G	11	5.470G	12	5.359G
13	5.261G	14	5.389G	15	5.346G	16	5.468G
17	5.404G	18	5.530G	19	5.391G	20	5.348G
21	5.445G	22	5.632G	23	5.638G	24	5.603G
25	5.268G	26	5.439G	27	5.421G	28	5.658G
29	5.715G	30	5.462G	31	5.573G	32	5.461G
33	5.560G	34	5.610G	35	5.494G	36	5.392G
37	5.521G	38	5.525G	39	5.704G	40	5.451G
41	5.398G	42	5.403G	43	5.402G	44	5.312G
45	5.672G	46	5.585G	47	5.524G	48	5.552G
49	5.589G	50	5.457G	51	5.310G	52	5.254G
53	5.503G	54	5.353G	55	5.405G	56	5.288G
57	5.309G	58	5.450G	59	5.374G	60	5.372G
61	5.396G	62	5.314G	63	5.580G	64	5.397G
65	5.400G	66	5.265G	67	5.703G	68	5.298G
69	5.437G	70	5.584G	71	5.570G	72	5.534G
73	5.690G	74	5.641G	75	5.707G	76	5.546G
77	5.566G	78	5.379G	79	5.476G	80	5.256G
81	5.295G	82	5.356G	83	5.605G	84	5.698G
85	5.619G	86	5.717G	87	5.557G	88	5.434G
89	5.512G	90	5.283G	91	5.431G	92	5.564G
93	5.338G	94	5.376G	95	5.591G	96	5.316G
97	5.351G	98	5.424G	99	5.582G	100	5.624G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_22							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.687G	2	5.568G	3	5.343G	4	5.304G
5	5.374G	6	5.371G	7	5.380G	8	5.305G
9	5.294G	10	5.298G	11	5.503G	12	5.621G
13	5.720G	14	5.409G	15	5.363G	16	5.515G
17	5.681G	18	5.495G	19	5.513G	20	5.333G
21	5.431G	22	5.388G	23	5.396G	24	5.682G
25	5.565G	26	5.494G	27	5.580G	28	5.440G
29	5.273G	30	5.341G	31	5.663G	32	5.379G
33	5.705G	34	5.546G	35	5.324G	36	5.582G
37	5.685G	38	5.697G	39	5.327G	40	5.334G
41	5.323G	42	5.611G	43	5.512G	44	5.553G
45	5.401G	46	5.325G	47	5.283G	48	5.436G
49	5.397G	50	5.437G	51	5.521G	52	5.619G
53	5.373G	54	5.642G	55	5.464G	56	5.460G
57	5.597G	58	5.286G	59	5.264G	60	5.320G
61	5.362G	62	5.497G	63	5.326G	64	5.609G
65	5.634G	66	5.356G	67	5.433G	68	5.604G
69	5.252G	70	5.596G	71	5.479G	72	5.353G
73	5.612G	74	5.312G	75	5.394G	76	5.337G
77	5.620G	78	5.306G	79	5.463G	80	5.419G
81	5.357G	82	5.284G	83	5.554G	84	5.465G
85	5.402G	86	5.646G	87	5.267G	88	5.355G
89	5.352G	90	5.713G	91	5.691G	92	5.311G
93	5.537G	94	5.617G	95	5.370G	96	5.669G
97	5.266G	98	5.633G	99	5.331G	100	5.566G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_23							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.658G	2	5.602G	3	5.393G	4	5.595G
5	5.346G	6	5.545G	7	5.288G	8	5.636G
9	5.389G	10	5.470G	11	5.538G	12	5.449G
13	5.504G	14	5.284G	15	5.593G	16	5.353G
17	5.280G	18	5.513G	19	5.601G	20	5.499G
21	5.699G	22	5.675G	23	5.275G	24	5.298G
25	5.431G	26	5.315G	27	5.531G	28	5.713G
29	5.598G	30	5.524G	31	5.522G	32	5.679G
33	5.361G	34	5.527G	35	5.445G	36	5.468G
37	5.447G	38	5.323G	39	5.600G	40	5.568G
41	5.281G	42	5.624G	43	5.459G	44	5.520G
45	5.625G	46	5.293G	47	5.397G	48	5.462G
49	5.649G	50	5.503G	51	5.519G	52	5.706G
53	5.547G	54	5.563G	55	5.497G	56	5.619G
57	5.683G	58	5.695G	59	5.647G	60	5.517G
61	5.476G	62	5.661G	63	5.640G	64	5.390G
65	5.347G	66	5.327G	67	5.364G	68	5.554G
69	5.656G	70	5.622G	71	5.392G	72	5.460G
73	5.433G	74	5.333G	75	5.304G	76	5.573G
77	5.565G	78	5.646G	79	5.332G	80	5.596G
81	5.495G	82	5.555G	83	5.511G	84	5.496G
85	5.461G	86	5.429G	87	5.263G	88	5.686G
89	5.317G	90	5.344G	91	5.523G	92	5.343G
93	5.724G	94	5.643G	95	5.319G	96	5.365G
97	5.269G	98	5.268G	99	5.336G	100	5.377G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_24							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.307G	2	5.279G	3	5.614G	4	5.484G
5	5.648G	6	5.304G	7	5.417G	8	5.302G
9	5.584G	10	5.323G	11	5.331G	12	5.600G
13	5.480G	14	5.617G	15	5.305G	16	5.368G
17	5.691G	18	5.486G	19	5.622G	20	5.487G
21	5.449G	22	5.710G	23	5.578G	24	5.353G
25	5.521G	26	5.525G	27	5.575G	28	5.412G
29	5.716G	30	5.518G	31	5.409G	32	5.513G
33	5.560G	34	5.345G	35	5.616G	36	5.694G
37	5.398G	38	5.265G	39	5.300G	40	5.504G
41	5.659G	42	5.545G	43	5.524G	44	5.588G
45	5.468G	46	5.501G	47	5.251G	48	5.341G
49	5.377G	50	5.626G	51	5.358G	52	5.385G
53	5.687G	54	5.695G	55	5.479G	56	5.724G
57	5.392G	58	5.705G	59	5.420G	60	5.569G
61	5.713G	62	5.366G	63	5.721G	64	5.354G
65	5.635G	66	5.407G	67	5.437G	68	5.481G
69	5.317G	70	5.568G	71	5.662G	72	5.294G
73	5.534G	74	5.557G	75	5.704G	76	5.643G
77	5.297G	78	5.546G	79	5.632G	80	5.292G
81	5.590G	82	5.284G	83	5.706G	84	5.390G
85	5.451G	86	5.565G	87	5.275G	88	5.510G
89	5.423G	90	5.441G	91	5.611G	92	5.326G
93	5.701G	94	5.642G	95	5.424G	96	5.255G
97	5.261G	98	5.436G	99	5.322G	100	5.278G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_25							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.424G	2	5.721G	3	5.678G	4	5.363G
5	5.623G	6	5.563G	7	5.612G	8	5.442G
9	5.425G	10	5.654G	11	5.527G	12	5.450G
13	5.452G	14	5.269G	15	5.626G	16	5.532G
17	5.426G	18	5.707G	19	5.292G	20	5.387G
21	5.318G	22	5.580G	23	5.591G	24	5.495G
25	5.358G	26	5.309G	27	5.485G	28	5.709G
29	5.263G	30	5.489G	31	5.348G	32	5.673G
33	5.639G	34	5.692G	35	5.405G	36	5.675G
37	5.657G	38	5.659G	39	5.514G	40	5.501G
41	5.337G	42	5.383G	43	5.261G	44	5.581G
45	5.339G	46	5.404G	47	5.528G	48	5.332G
49	5.250G	50	5.458G	51	5.299G	52	5.427G
53	5.477G	54	5.399G	55	5.589G	56	5.336G
57	5.595G	58	5.720G	59	5.669G	60	5.279G
61	5.282G	62	5.544G	63	5.310G	64	5.324G
65	5.559G	66	5.257G	67	5.524G	68	5.436G
69	5.593G	70	5.697G	71	5.417G	72	5.603G
73	5.592G	74	5.597G	75	5.583G	76	5.400G
77	5.680G	78	5.396G	79	5.694G	80	5.661G
81	5.394G	82	5.472G	83	5.407G	84	5.475G
85	5.479G	86	5.420G	87	5.453G	88	5.430G
89	5.630G	90	5.643G	91	5.329G	92	5.414G
93	5.552G	94	5.354G	95	5.461G	96	5.308G
97	5.393G	98	5.557G	99	5.359G	100	5.691G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_26							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.649G	2	5.327G	3	5.609G	4	5.466G
5	5.682G	6	5.447G	7	5.712G	8	5.394G
9	5.574G	10	5.616G	11	5.681G	12	5.467G
13	5.461G	14	5.684G	15	5.343G	16	5.362G
17	5.702G	18	5.685G	19	5.622G	20	5.721G
21	5.562G	22	5.709G	23	5.570G	24	5.687G
25	5.509G	26	5.605G	27	5.644G	28	5.611G
29	5.417G	30	5.536G	31	5.288G	32	5.500G
33	5.522G	34	5.463G	35	5.600G	36	5.586G
37	5.669G	38	5.590G	39	5.338G	40	5.264G
41	5.626G	42	5.615G	43	5.358G	44	5.543G
45	5.287G	46	5.341G	47	5.567G	48	5.454G
49	5.695G	50	5.550G	51	5.348G	52	5.645G
53	5.253G	54	5.563G	55	5.445G	56	5.584G
57	5.582G	58	5.323G	59	5.328G	60	5.347G
61	5.469G	62	5.675G	63	5.715G	64	5.625G
65	5.510G	66	5.373G	67	5.314G	68	5.386G
69	5.521G	70	5.448G	71	5.664G	72	5.322G
73	5.335G	74	5.371G	75	5.266G	76	5.276G
77	5.482G	78	5.477G	79	5.275G	80	5.613G
81	5.583G	82	5.515G	83	5.544G	84	5.551G
85	5.491G	86	5.272G	87	5.319G	88	5.331G
89	5.285G	90	5.653G	91	5.690G	92	5.474G
93	5.674G	94	5.547G	95	5.462G	96	5.516G
97	5.619G	98	5.385G	99	5.542G	100	5.665G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_27							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.369G	2	5.719G	3	5.544G	4	5.683G
5	5.671G	6	5.585G	7	5.578G	8	5.549G
9	5.669G	10	5.366G	11	5.334G	12	5.587G
13	5.450G	14	5.417G	15	5.378G	16	5.297G
17	5.588G	18	5.531G	19	5.711G	20	5.703G
21	5.636G	22	5.505G	23	5.426G	24	5.634G
25	5.564G	26	5.629G	27	5.382G	28	5.626G
29	5.358G	30	5.494G	31	5.491G	32	5.398G
33	5.433G	34	5.523G	35	5.330G	36	5.545G
37	5.596G	38	5.428G	39	5.503G	40	5.568G
41	5.617G	42	5.690G	43	5.477G	44	5.393G
45	5.290G	46	5.408G	47	5.381G	48	5.361G
49	5.287G	50	5.469G	51	5.569G	52	5.279G
53	5.457G	54	5.293G	55	5.486G	56	5.323G
57	5.314G	58	5.383G	59	5.455G	60	5.614G
61	5.574G	62	5.554G	63	5.597G	64	5.516G
65	5.547G	66	5.349G	67	5.713G	68	5.679G
69	5.501G	70	5.509G	71	5.627G	72	5.284G
73	5.343G	74	5.389G	75	5.628G	76	5.258G
77	5.436G	78	5.340G	79	5.651G	80	5.594G
81	5.406G	82	5.604G	83	5.660G	84	5.648G
85	5.394G	86	5.586G	87	5.705G	88	5.276G
89	5.684G	90	5.484G	91	5.618G	92	5.485G
93	5.327G	94	5.698G	95	5.311G	96	5.422G
97	5.268G	98	5.487G	99	5.595G	100	5.252G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_28							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.521G	2	5.476G	3	5.341G	4	5.577G
5	5.416G	6	5.502G	7	5.456G	8	5.404G
9	5.617G	10	5.658G	11	5.719G	12	5.312G
13	5.410G	14	5.261G	15	5.423G	16	5.339G
17	5.488G	18	5.516G	19	5.602G	20	5.673G
21	5.723G	22	5.450G	23	5.522G	24	5.395G
25	5.317G	26	5.479G	27	5.509G	28	5.600G
29	5.299G	30	5.495G	31	5.644G	32	5.282G
33	5.680G	34	5.342G	35	5.561G	36	5.661G
37	5.265G	38	5.722G	39	5.274G	40	5.345G
41	5.530G	42	5.397G	43	5.412G	44	5.674G
45	5.623G	46	5.515G	47	5.458G	48	5.358G
49	5.461G	50	5.504G	51	5.354G	52	5.660G
53	5.542G	54	5.457G	55	5.374G	56	5.378G
57	5.590G	58	5.647G	59	5.427G	60	5.631G
61	5.566G	62	5.524G	63	5.611G	64	5.421G
65	5.637G	66	5.491G	67	5.626G	68	5.460G
69	5.364G	70	5.548G	71	5.608G	72	5.639G
73	5.393G	74	5.291G	75	5.704G	76	5.538G
77	5.487G	78	5.592G	79	5.336G	80	5.451G
81	5.384G	82	5.567G	83	5.250G	84	5.691G
85	5.694G	86	5.638G	87	5.573G	88	5.465G
89	5.643G	90	5.713G	91	5.613G	92	5.267G
93	5.472G	94	5.361G	95	5.383G	96	5.609G
97	5.252G	98	5.527G	99	5.288G	100	5.263G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_29							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.709G	2	5.409G	3	5.424G	4	5.707G
5	5.358G	6	5.423G	7	5.458G	8	5.420G
9	5.668G	10	5.691G	11	5.515G	12	5.723G
13	5.346G	14	5.379G	15	5.541G	16	5.653G
17	5.393G	18	5.619G	19	5.383G	20	5.250G
21	5.595G	22	5.681G	23	5.699G	24	5.607G
25	5.674G	26	5.575G	27	5.363G	28	5.695G
29	5.649G	30	5.255G	31	5.351G	32	5.398G
33	5.454G	34	5.253G	35	5.646G	36	5.361G
37	5.295G	38	5.352G	39	5.298G	40	5.382G
41	5.485G	42	5.407G	43	5.614G	44	5.317G
45	5.627G	46	5.523G	47	5.319G	48	5.612G
49	5.673G	50	5.348G	51	5.479G	52	5.305G
53	5.349G	54	5.526G	55	5.626G	56	5.498G
57	5.320G	58	5.401G	59	5.688G	60	5.414G
61	5.582G	62	5.274G	63	5.417G	64	5.413G
65	5.603G	66	5.457G	67	5.442G	68	5.684G
69	5.462G	70	5.294G	71	5.370G	72	5.499G
73	5.309G	74	5.672G	75	5.290G	76	5.616G
77	5.426G	78	5.610G	79	5.456G	80	5.486G
81	5.588G	82	5.651G	83	5.568G	84	5.522G
85	5.315G	86	5.459G	87	5.525G	88	5.427G
89	5.693G	90	5.384G	91	5.369G	92	5.338G
93	5.385G	94	5.321G	95	5.416G	96	5.667G
97	5.545G	98	5.637G	99	5.584G	100	5.410G



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Hopping Frequency Sequence Name: HOP_FREQ_SEQ_30							
SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)	SEQ#	Frequency (Hz)
1	5.482G	2	5.355G	3	5.283G	4	5.717G
5	5.250G	6	5.684G	7	5.657G	8	5.724G
9	5.272G	10	5.356G	11	5.417G	12	5.581G
13	5.333G	14	5.497G	15	5.626G	16	5.533G
17	5.380G	18	5.603G	19	5.629G	20	5.551G
21	5.419G	22	5.636G	23	5.324G	24	5.714G
25	5.654G	26	5.402G	27	5.251G	28	5.518G
29	5.611G	30	5.353G	31	5.305G	32	5.357G
33	5.447G	34	5.685G	35	5.409G	36	5.292G
37	5.274G	38	5.258G	39	5.529G	40	5.263G
41	5.466G	42	5.671G	43	5.454G	44	5.377G
45	5.420G	46	5.649G	47	5.604G	48	5.561G
49	5.288G	50	5.366G	51	5.681G	52	5.370G
53	5.675G	54	5.291G	55	5.381G	56	5.330G
57	5.588G	58	5.616G	59	5.573G	60	5.295G
61	5.277G	62	5.367G	63	5.535G	64	5.514G
65	5.487G	66	5.449G	67	5.554G	68	5.411G
69	5.421G	70	5.484G	71	5.441G	72	5.483G
73	5.540G	74	5.541G	75	5.530G	76	5.612G
77	5.602G	78	5.298G	79	5.397G	80	5.408G
81	5.595G	82	5.708G	83	5.691G	84	5.299G
85	5.281G	86	5.360G	87	5.495G	88	5.703G
89	5.712G	90	5.332G	91	5.608G	92	5.473G
93	5.369G	94	5.617G	95	5.697G	96	5.560G
97	5.439G	98	5.542G	99	5.565G	100	5.633G

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