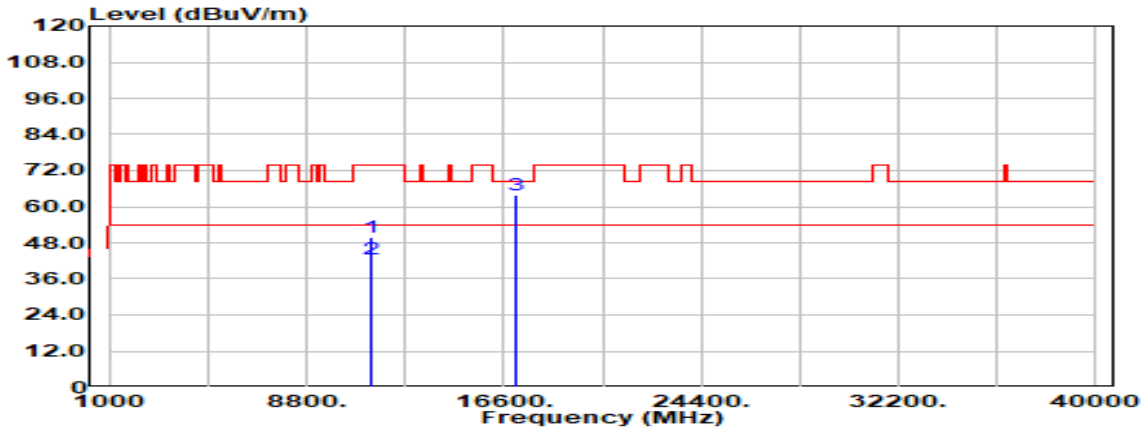
Test Mode	IEEE 802.11ax HE80 / 5690 MHz	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak & Average		

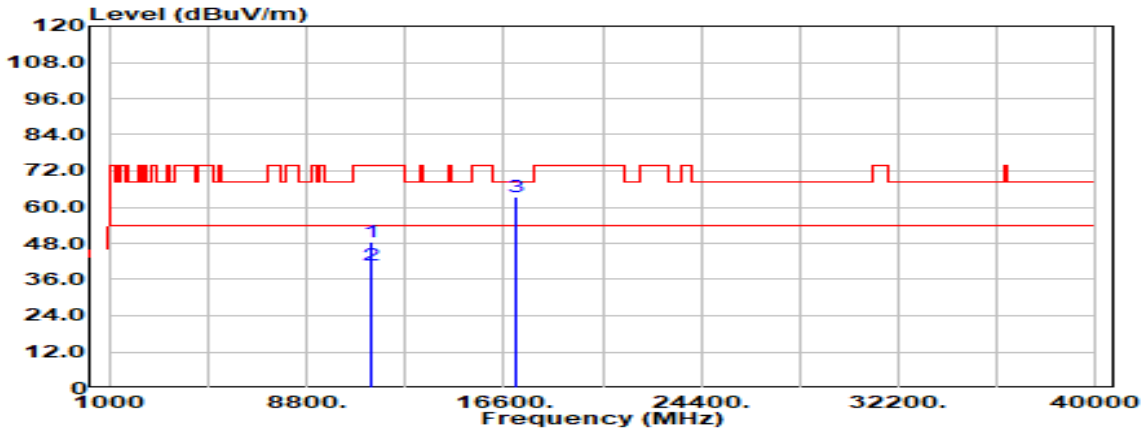


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11380.000	Peak	30.38	19.53	49.91	74.00	-24.09
11380.000	Average	22.92	19.53	42.45	54.00	-11.55
17070.000	Peak	32.57	31.30	63.87	68.20	-4.33
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE80 / 5690 MHz	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak & Average		



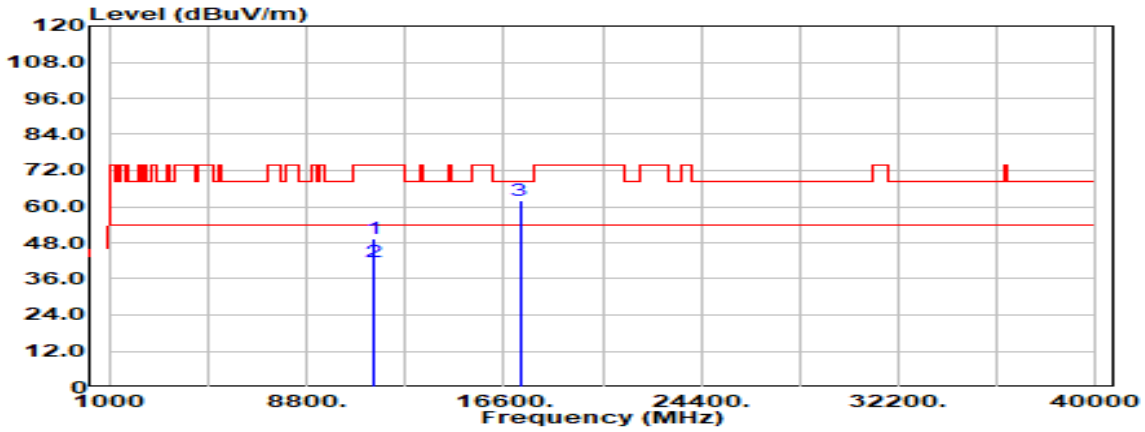
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11380.000	Peak	29.11	19.53	48.64	74.00	-25.36
11380.000	Average	21.44	19.53	40.97	54.00	-13.03
17070.000	Peak	31.98	31.30	63.28	68.20	-4.92
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Data for UNII-3

Test Mode	IEEE 802.11ac VHT20 / 5745 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

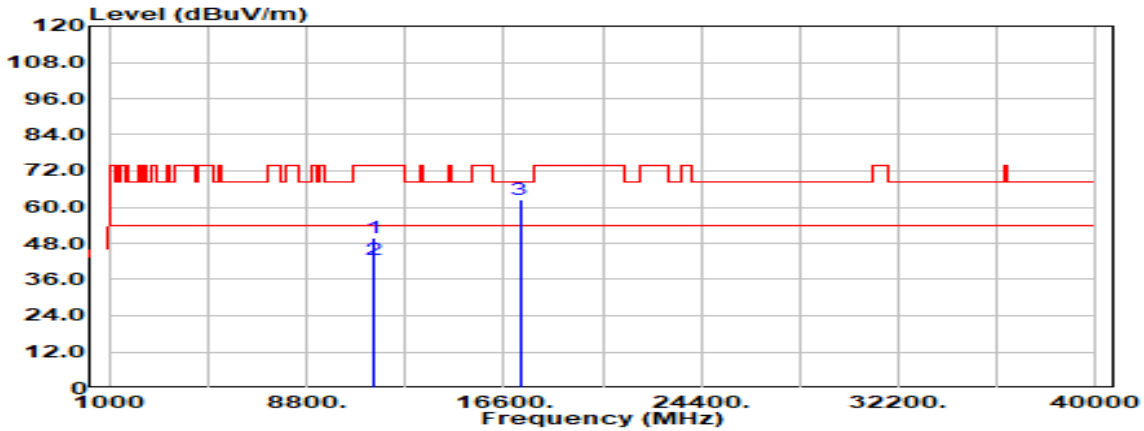


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11490.000	Peak	29.82	19.70	49.51	74.00	-24.49
11490.000	Average	22.12	19.70	41.82	54.00	-12.18
17235.000	Peak	31.95	30.01	61.96	68.20	-6.24
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT20 / 5745 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

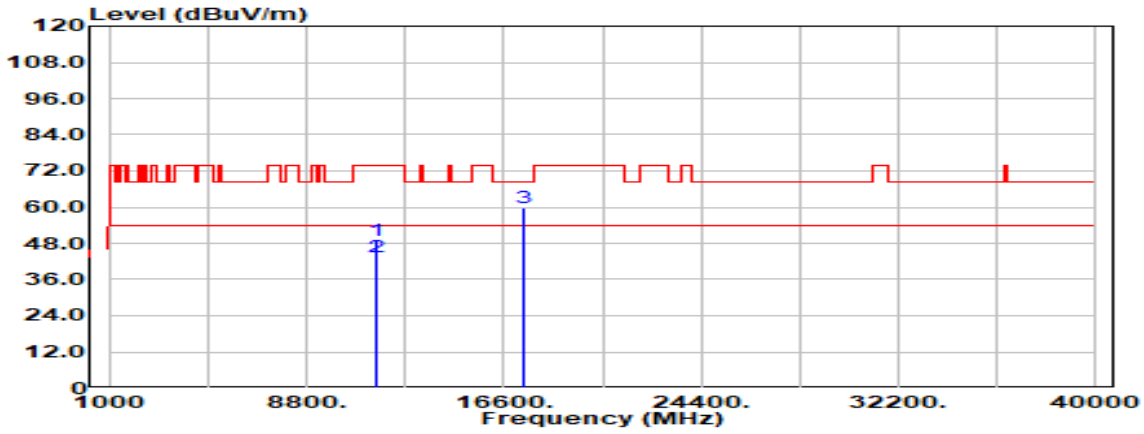


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11490.000	Peak	30.16	19.70	49.86	74.00	-24.14
11490.000	Average	23.01	19.70	42.71	54.00	-11.29
17235.000	Peak	32.32	30.01	62.33	68.20	-5.87
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT20 / 5785 MHz	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak & Average		

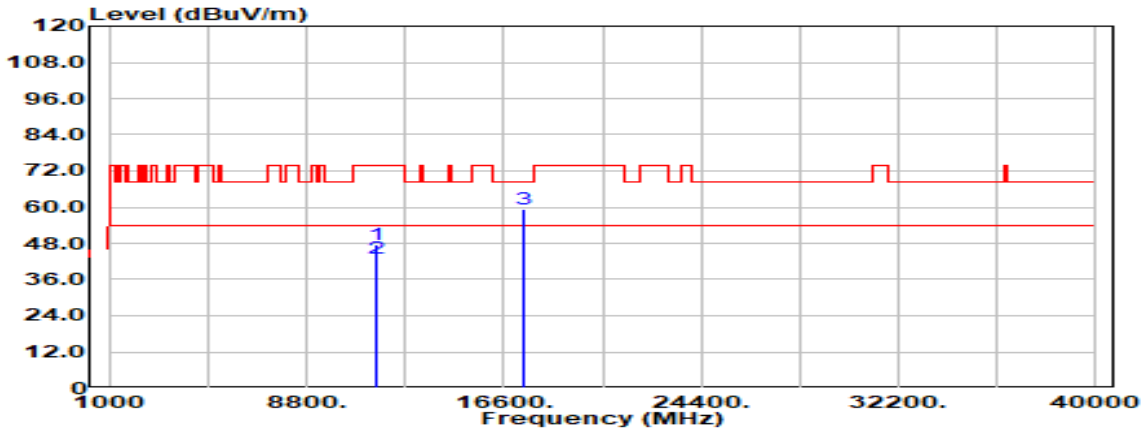


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11570.000	Peak	28.87	19.83	48.70	74.00	-25.30
11570.000	Average	23.84	19.83	43.67	54.00	-10.33
17355.000	Peak	30.44	29.33	59.77	68.20	-8.43
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT20 / 5785 MHz	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak & Average		

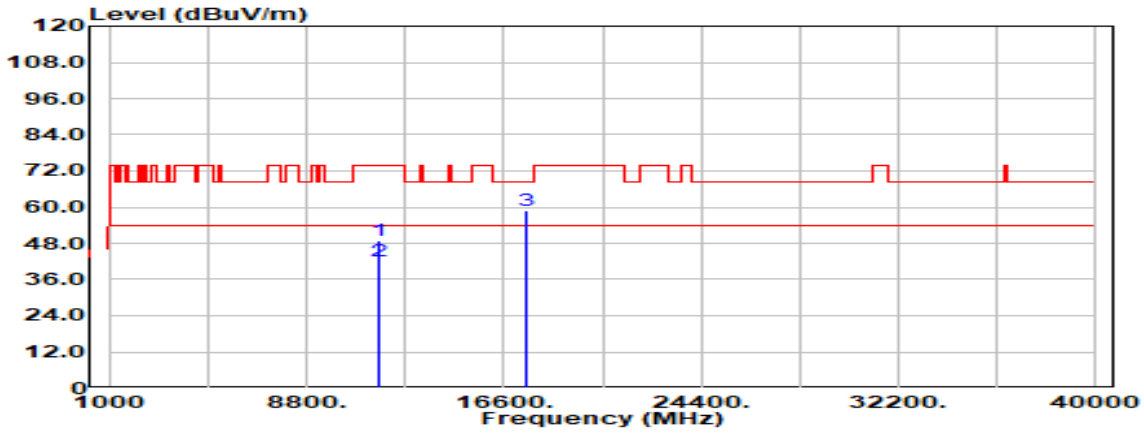


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11570.000	Peak	27.75	19.83	47.58	74.00	-26.42
11570.000	Average	23.34	19.83	43.17	54.00	-10.83
17355.000	Peak	30.10	29.33	59.43	68.20	-8.77
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT20 / 5825 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

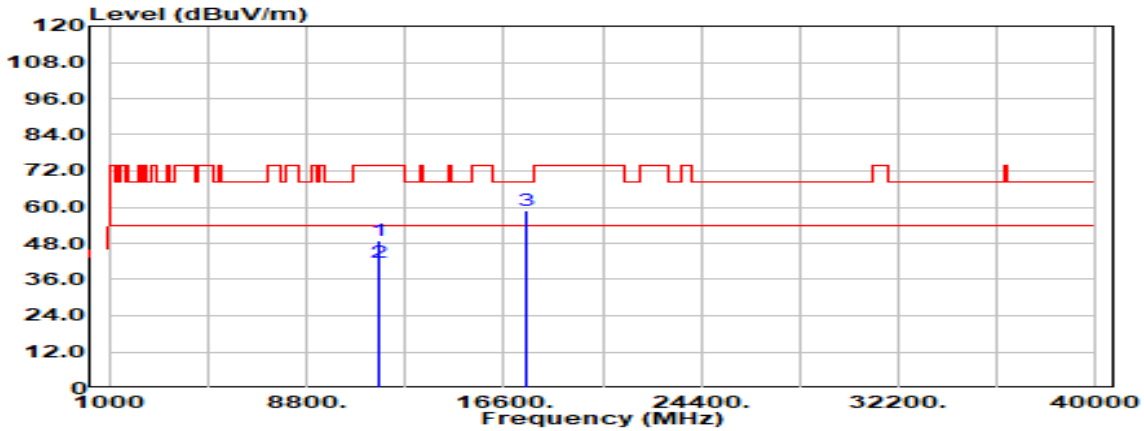


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11650.000	Peak	29.19	19.90	49.09	74.00	-24.91
11650.000	Average	22.15	19.90	42.05	54.00	-11.95
17475.000	Peak	29.87	29.11	58.97	68.20	-9.23
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT20 / 5825 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

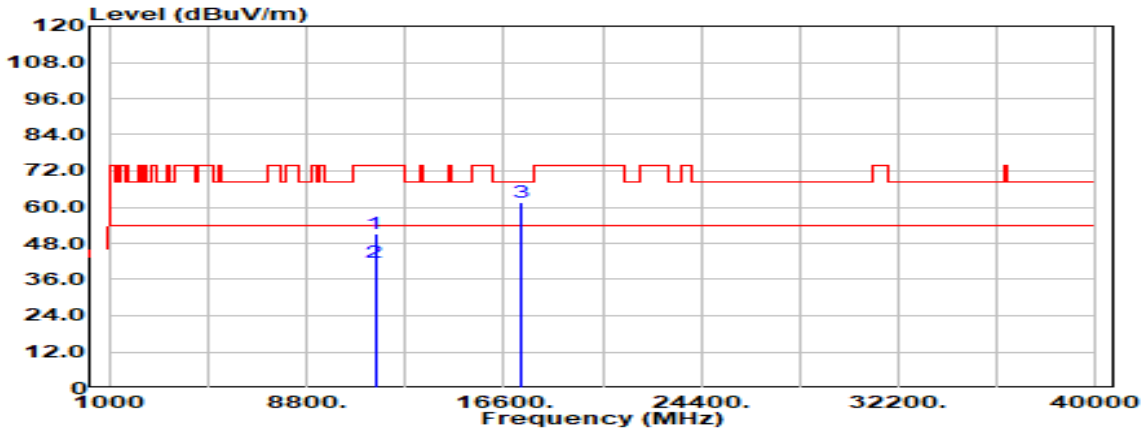


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11650.000	Peak	29.15	19.90	49.05	74.00	-24.95
11650.000	Average	21.84	19.90	41.74	54.00	-12.26
17475.000	Peak	29.60	29.11	58.70	68.20	-9.50
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT40 / 5755 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

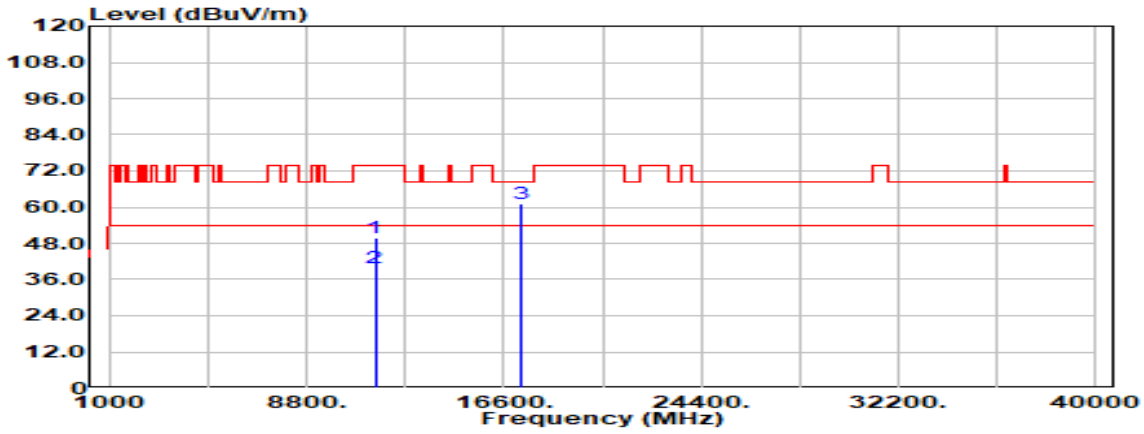


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11510.000	Peak	31.23	19.73	50.96	74.00	-23.04
11510.000	Average	21.73	19.73	41.46	54.00	-12.54
17265.000	Peak	31.67	29.80	61.47	68.20	-6.73
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT40 / 5755 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

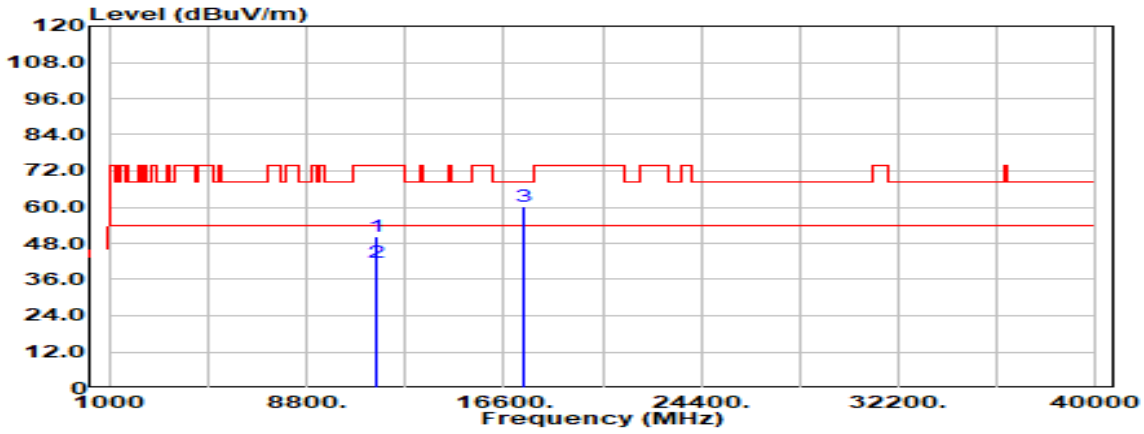


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11510.000	Peak	29.97	19.73	49.69	74.00	-24.31
11510.000	Average	20.14	19.73	39.87	54.00	-14.13
17265.000	Peak	31.18	29.80	60.99	68.20	-7.21
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT40 / 5795 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

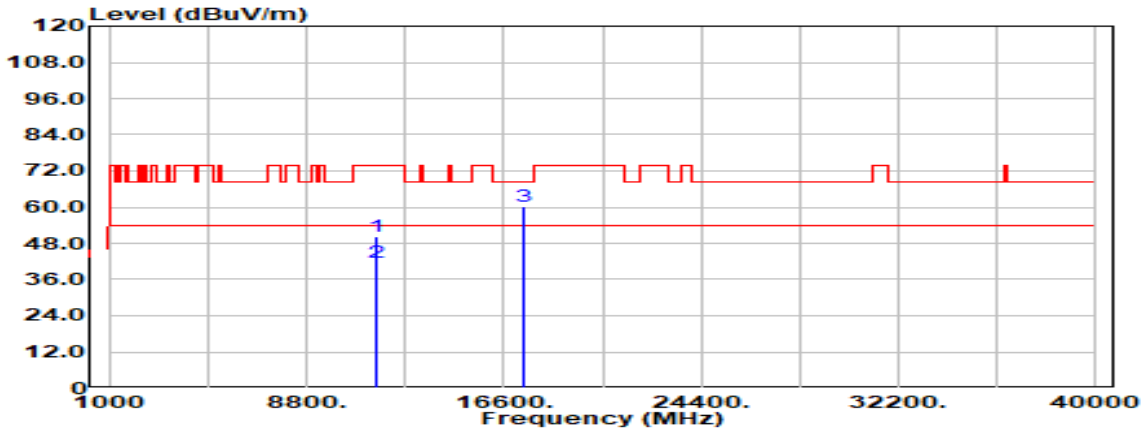


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11590.000	Peak	30.20	19.86	50.07	74.00	-23.93
11590.000	Average	21.62	19.86	41.48	54.00	-12.52
17385.000	Peak	30.83	29.24	60.06	68.20	-8.14
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT40 / 5795 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

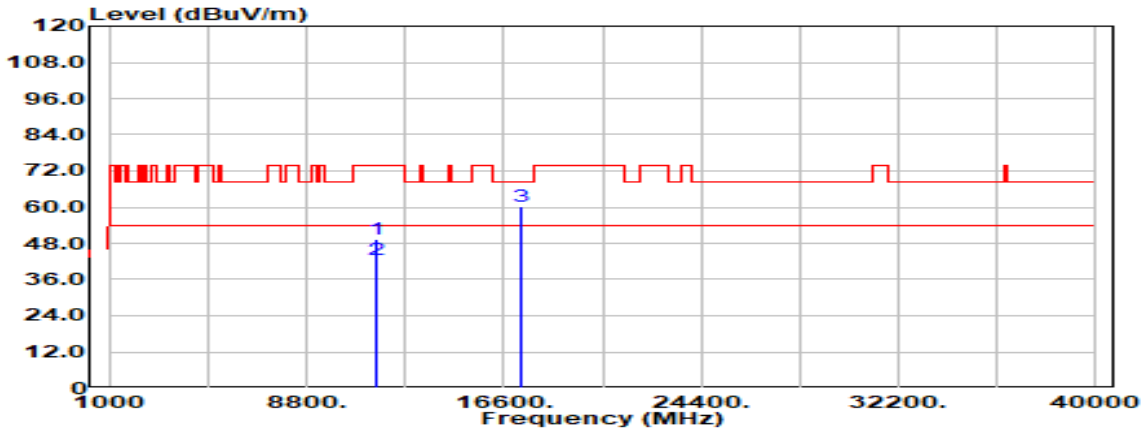


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11590.000	Peak	30.23	19.86	50.09	74.00	-23.91
11590.000	Average	21.60	19.86	41.46	54.00	-12.54
17385.000	Peak	30.79	29.24	60.02	68.20	-8.18
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

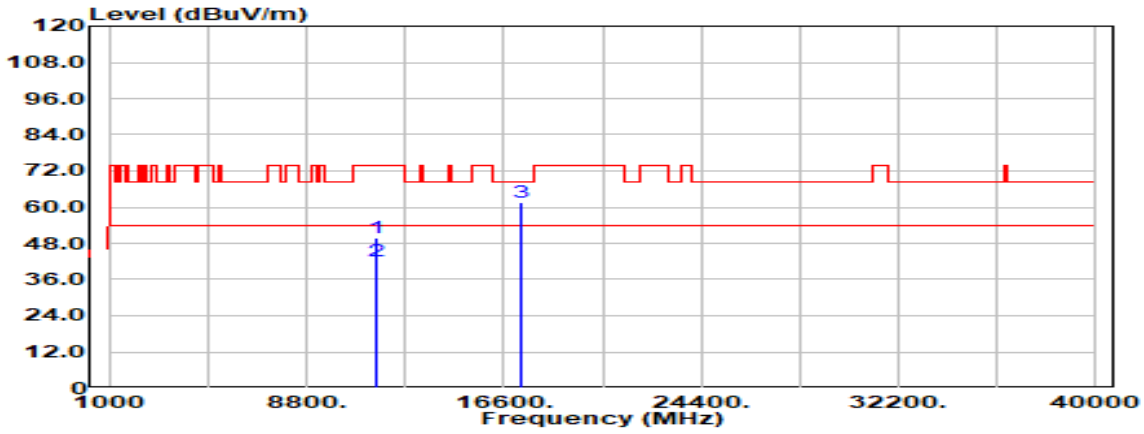


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11550.000	Peak	29.36	19.80	49.16	74.00	-24.84
11550.000	Average	22.55	19.80	42.35	54.00	-11.65
17325.000	Peak	30.80	29.48	60.28	68.20	-7.92
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ac VHT80 / 5775 MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

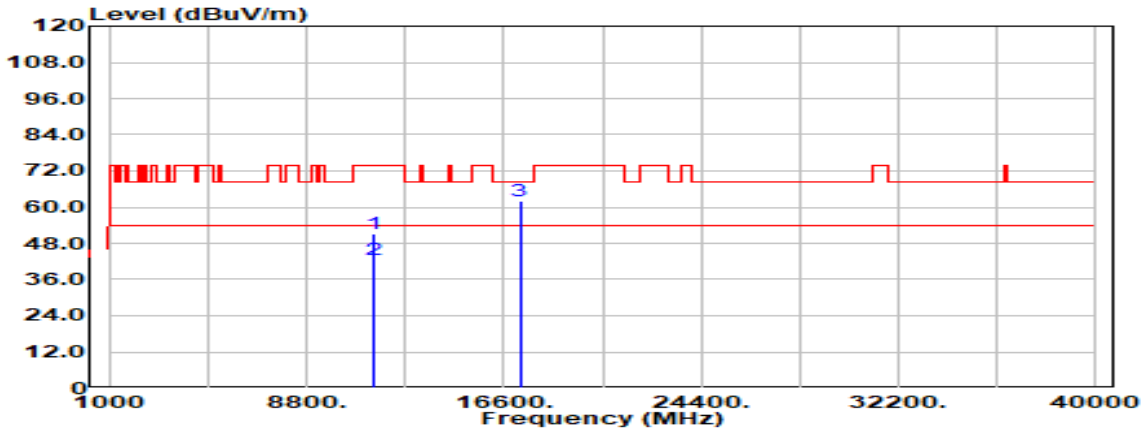


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11550.000	Peak	29.84	19.80	49.64	74.00	-24.36
11550.000	Average	22.49	19.80	42.29	54.00	-11.71
17325.000	Peak	31.92	29.48	61.40	68.20	-6.80
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE20 / 5745MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

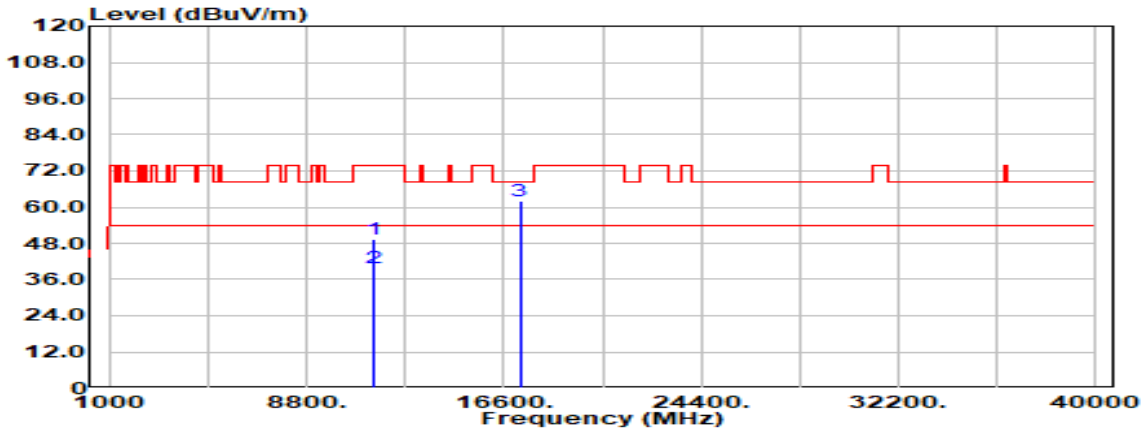


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11490.000	Peak	31.64	19.70	51.34	74.00	-22.66
11490.000	Average	22.68	19.70	42.38	54.00	-11.62
17235.000	Peak	31.98	30.01	61.99	68.20	-6.21
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE20 / 5745MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

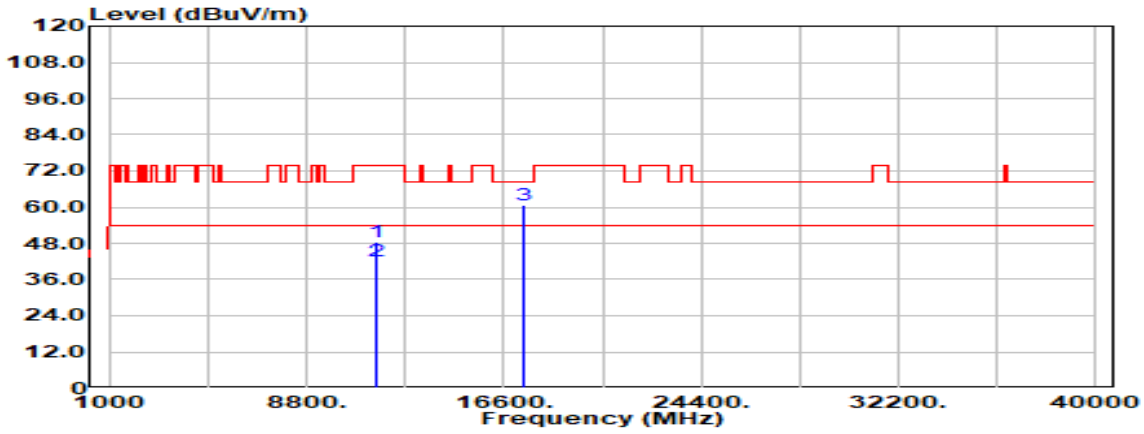


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11490.000	Peak	29.62	19.70	49.31	74.00	-24.69
11490.000	Average	20.36	19.70	40.06	54.00	-13.94
17235.000	Peak	32.20	30.01	62.21	68.20	-5.99
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE20 / 5785MHz_	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak & Average		

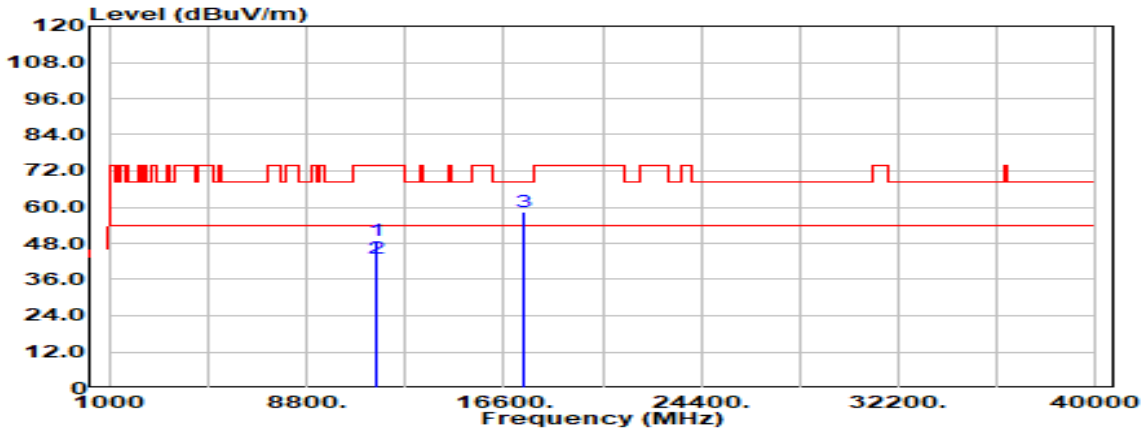


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11570.000	Peak	28.79	19.83	48.62	74.00	-25.38
11570.000	Average	22.19	19.83	42.02	54.00	-11.98
17355.000	Peak	31.15	29.33	60.49	68.20	-7.71
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE20 / 5785MHz	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak & Average		

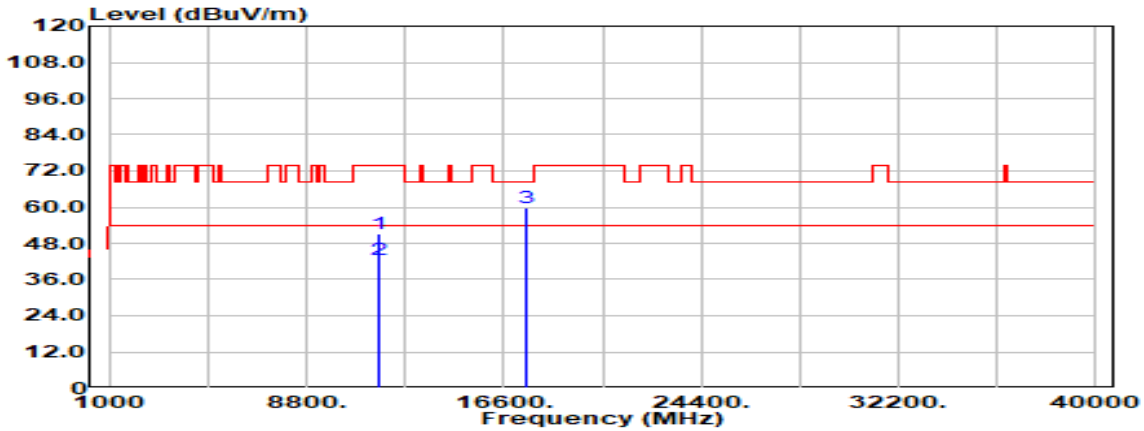


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11570.000	Peak	28.93	19.83	48.76	74.00	-25.24
11570.000	Average	23.22	19.83	43.05	54.00	-10.95
17355.000	Peak	29.06	29.33	58.39	68.20	-9.81
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE20 / 5825MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

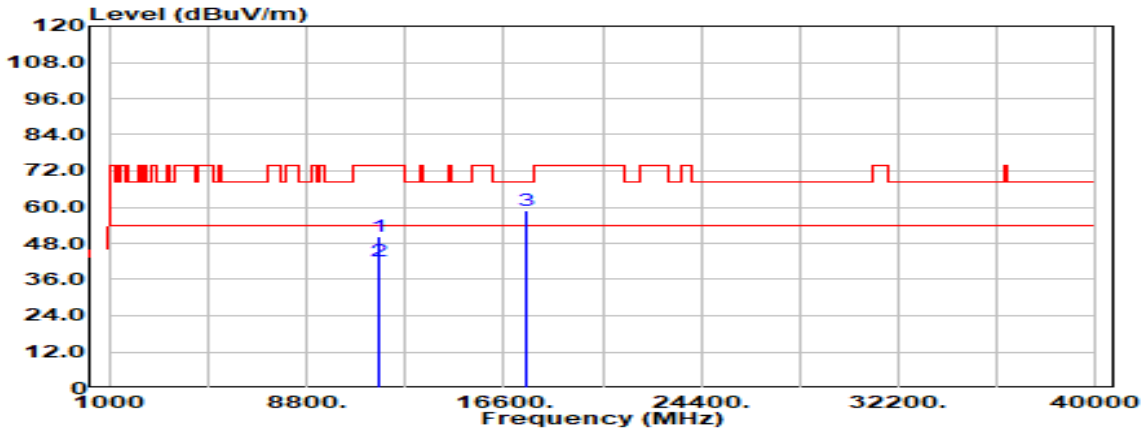


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11650.000	Peak	31.25	19.90	51.15	74.00	-22.85
11650.000	Average	22.48	19.90	42.38	54.00	-11.62
17475.000	Peak	30.80	29.11	59.91	68.20	-8.29
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE20 / 5825MHz_	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

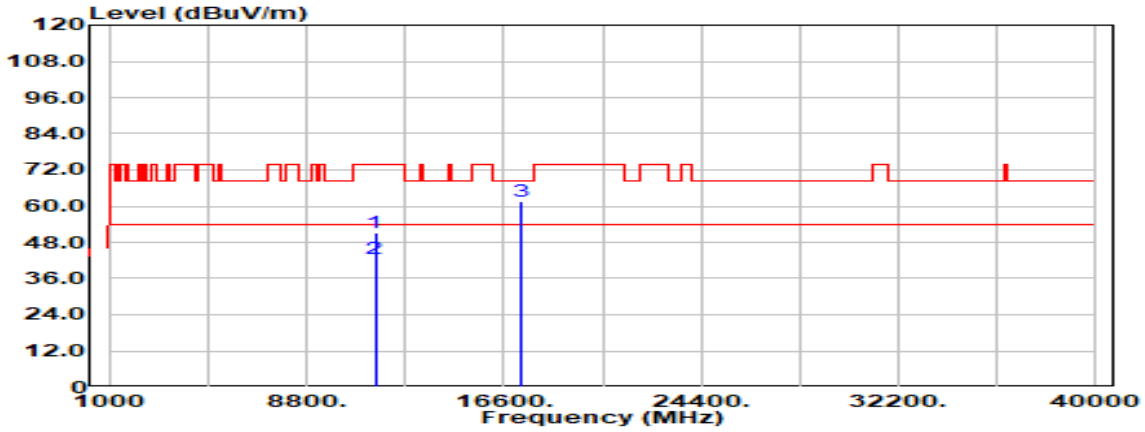


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11650.000	Peak	30.25	19.90	50.15	74.00	-23.85
11650.000	Average	22.03	19.90	41.93	54.00	-12.07
17475.000	Peak	29.90	29.11	59.01	68.20	-9.19
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE40 / 5755MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

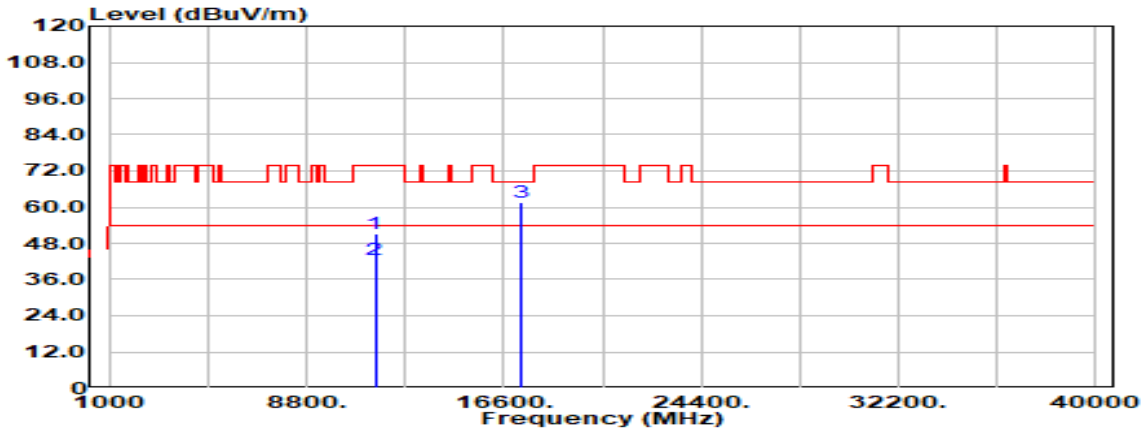


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11510.000	Peak	31.37	19.73	51.10	74.00	-22.90
11510.000	Average	22.72	19.73	42.45	54.00	-11.55
17265.000	Peak	31.62	29.80	61.43	68.20	-6.77
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE40 / 5755MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

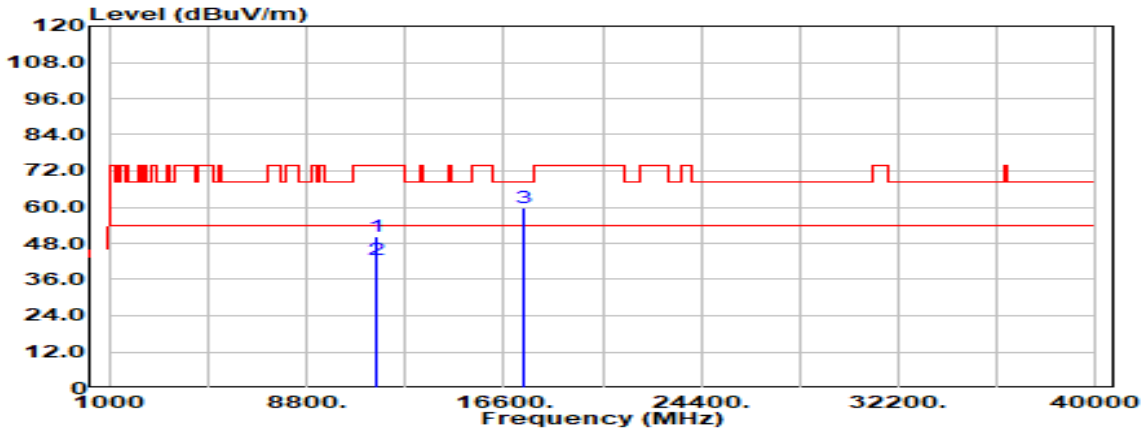


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11510.000	Peak	31.38	19.73	51.11	74.00	-22.89
11510.000	Average	22.71	19.73	42.44	54.00	-11.56
17265.000	Peak	31.60	29.80	61.40	68.20	-6.80
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE40 / 5795MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Vertical	Test Engineer	Czerny Lin
Detector	Peak & Average		

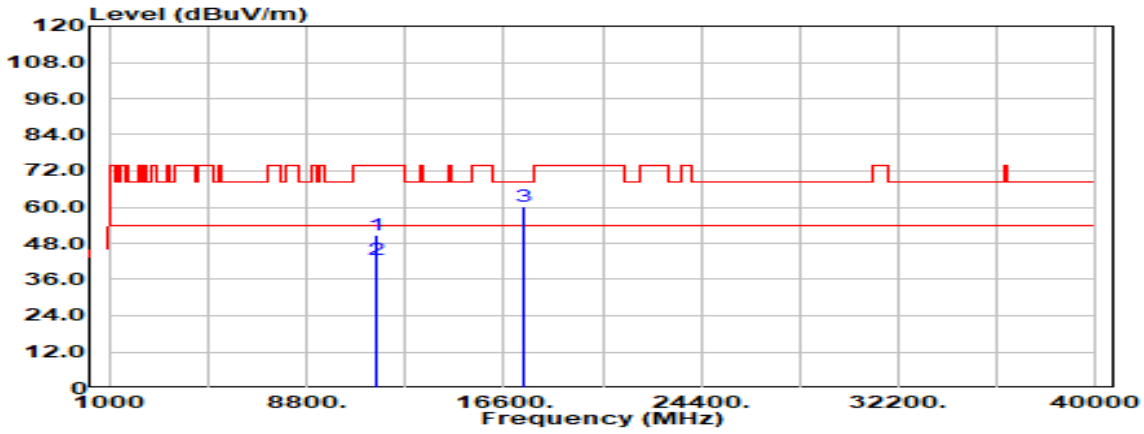


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11590.000	Peak	30.52	19.86	50.38	74.00	-23.62
11590.000	Average	22.72	19.86	42.58	54.00	-11.42
17385.000	Peak	30.31	29.24	59.55	68.20	-8.65
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE40 / 5795MHz	Temp/Hum	19.9(℃)/ 61%RH
Test Item	Harmonic	Test Date	April 3, 2022
Polarize	Horizontal	Test Engineer	Czerny Lin
Detector	Peak & Average		

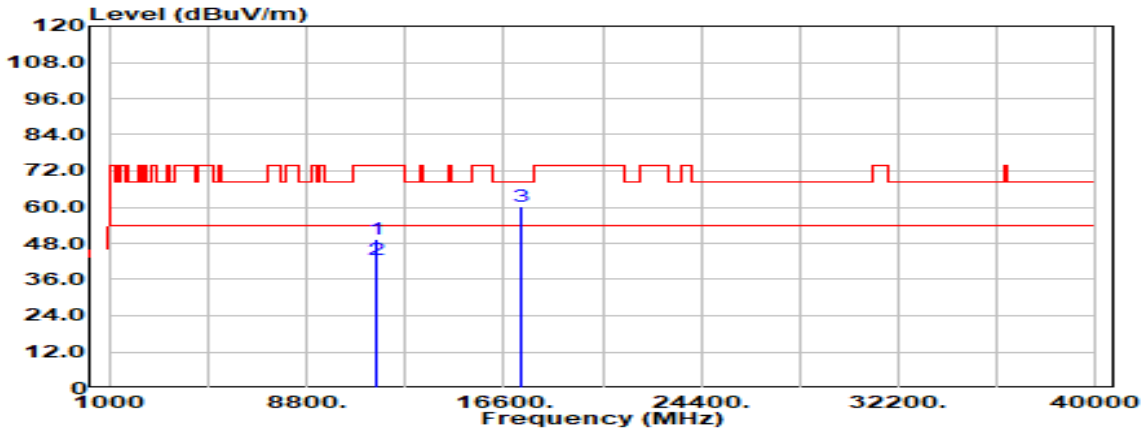


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11590.000	Peak	30.79	19.86	50.65	74.00	-23.35
11590.000	Average	22.53	19.86	42.39	54.00	-11.61
17385.000	Peak	31.16	29.24	60.40	68.20	-7.80
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE80 / 5775 MHz	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak & Average		

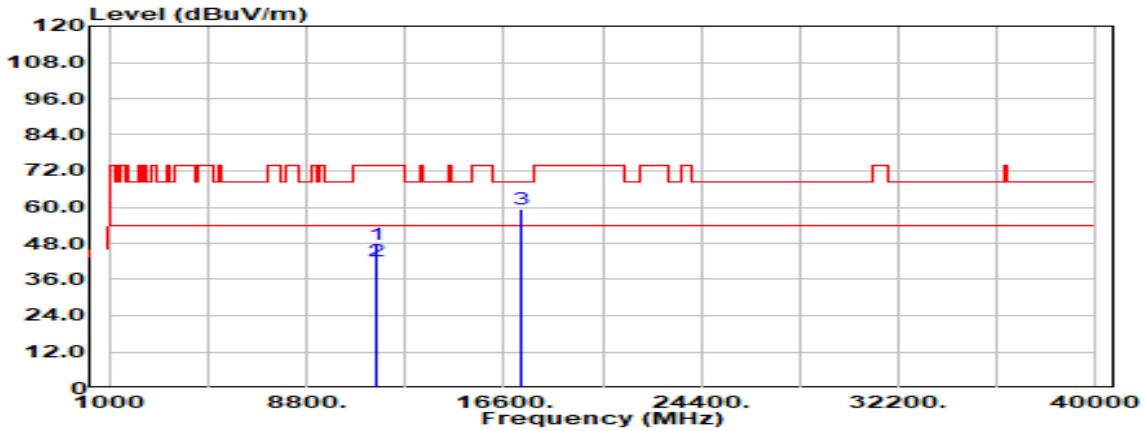


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11550.000	Peak	29.64	19.80	49.44	74.00	-24.56
11550.000	Average	22.62	19.80	42.42	54.00	-11.58
17325.000	Peak	30.94	29.48	60.42	68.20	-7.78
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11ax HE80 / 5775MHz	Temp/Hum	21.1(℃)/ 51%RH
Test Item	Harmonic	Test Date	April 8, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak & Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
11550.000	Peak	27.70	19.80	47.50	74.00	-26.50
11550.000	Average	22.48	19.80	42.28	54.00	-11.72
17325.000	Peak	29.80	29.48	59.27	68.20	-8.93
N/A						

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

5. DYNAMIC FREQUENCY SELECTION FOR SLAVE

5.1 TEST LIMIT

FCC according to §15.407 (h), KDB 905462 D02 "compliance measurement procedures for unlicensed-national information infrastructure devices operating in the 5250-5350 MHz and 5470-5725 MHz bands incorporating dynamic frequency selection". and KDB 905462 D03 " U-NII client devices without radar detection capability.

IC according RSS-247 section 6.3, and it harmonized with FCC Part 15 DFS rules.

The EIRP refer section 4.3 output power measurement in this report.

Table 1: Applicability of DFS requirements prior to use of a channel

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

Table 2: Applicability of DFS requirements during normal operation

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

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

Table 3: Interference Threshold values, Master or Client incorporating In-Service

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

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second 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.	

Table 5 – Short Pulse Radar Test Waveforms

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

Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.

Table 6 – Long Pulse Radar Test Signal

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 7 – Frequency Hopping Radar Test Signal

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

5.2 TEST PROCEDURE

Overview Of EUT With Respect To §15.407 (H) Requirements

The firmware installed in the EUT during testing was:

Firmware Rev: 1.00.03

The EUT operates over the 5250-5350 MHz range as a Client Device that does not have radar detection capability.

The EUT uses one transmitter connected to two 50-ohm coaxial antenna ports via a diversity switch. Only one antenna port is connected to the test system since the EUT has one antenna only.

The Slave device associated with the EUT during these tests does not have radar detection capability.

WLAN traffic is generated by streaming the video file TestFile.mp2 “6 ½ Magic Hours” from the Master to the Slave in full motion video mode using the media player with the V2.61 Codec package.

The EUT utilizes the 802.11a architecture, with a nominal channel bandwidth of 20 MHz.

The rated output power of the Master unit is < 23dBm (EIRP). Therefore the required interference threshold level is -62 dBm. After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is –62 + 5 = -57dBm.

The calibrated conducted DFS Detection Threshold level is set to -57 dBm. The tested level is lower than the required level hence it provides margin to the limit.

Manufacturer’s Statement Regarding Uniform Channel Spreading

The end product implements an automatic channel selection feature at startup such that operation commences on channels distributed across the entire set of allowed 5GHz channels. This feature will ensure uniform spreading is achieved while avoiding non-allowed channels due to prior radar events.

TEST AND MEASUREMENT SYSTEM

System Overview

The measurement system is based on a conducted test method.

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

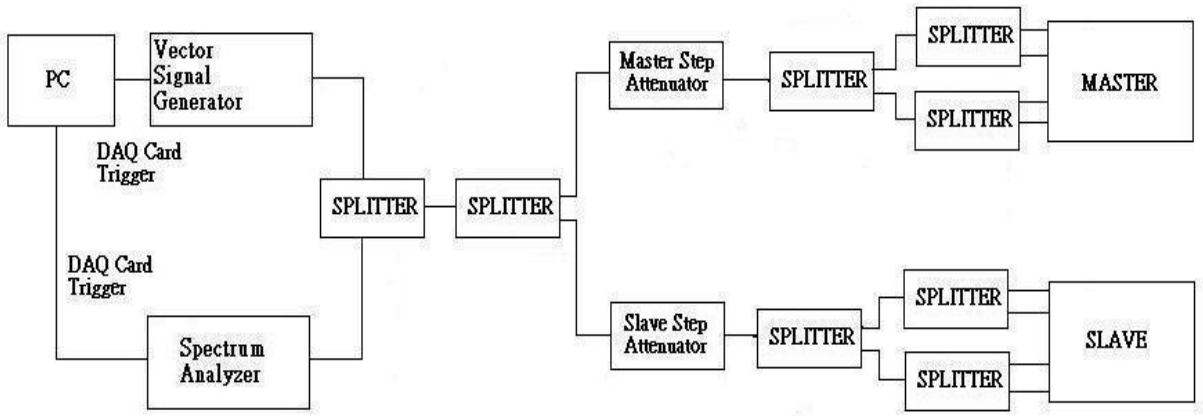
The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from FL to FH for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer set to display 8001 bins on the horizontal axis. The time-domain resolution is 2 msec / bin with a 16 second sweep time, meeting the 10 second short pulse reporting criteria. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold. The time-domain resolution is 3 msec / bin with a 24 second sweep time, meeting the 22 second long pulse reporting criteria and allowing a minimum of 10 seconds after the end of the long pulse waveform.

Should multiple RF ports be utilized for the Master and/or Slave devices (for example, for diversity or MIMO implementations), 50 ohm termination would be removed from the splitter so that connection can be established between splitter and the Master and/or Slave devices.

Conducted Method System Block Diagram



System Calibration

Connect the spectrum analyzer to the test system in place of the master device. Set the signal generator to CW mode. Adjust the amplitude of the signal generator to yield a measured level of –62 dBm on the spectrum analyzer.

Without changing any of the instrument settings, reconnect the spectrum analyzer to the Common port of the Spectrum Analyzer Combiner/Divider and connect a 50 ohm load to the Master Device port of the test system.

Measure the amplitude and calculate the difference from –62 dBm. Adjust the Reference Level Offset of the spectrum analyzer to this difference. Confirm that the signal is displayed at –62 dBm. Readjust the RBW and VBW to 3 MHz, set the span to 10 MHz, and confirm that the signal is still displayed at –62 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –62 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

Set the signal generator to produce a radar waveform, trigger a burst manually and measure the level on the spectrum analyzer. Readjust the amplitude of the signal generator as required so that the peak level of the waveform is at a displayed level equal to the required or desired interference detection threshold. Separate signal generator amplitude settings are determined as required for each radar type.

Adjustment Of Displayed Traffic Level

Establish a link between the Master and Slave, adjusting the Link Step Attenuator as needed to provide a suitable received level at the Master and Slave devices. Stream the video test file to generate WLAN traffic. Confirm that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold. Confirm that the displayed traffic is from the Master Device. For Master Device testing confirm that the displayed traffic does not include Slave Device traffic. For Slave Device testing confirm that the displayed traffic does not include Master Device traffic.

If a different setting of the Master Step Attenuator is required to meet the above conditions, perform a new System Calibration for the new Master Step Attenuator setting.

Channel Loading

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

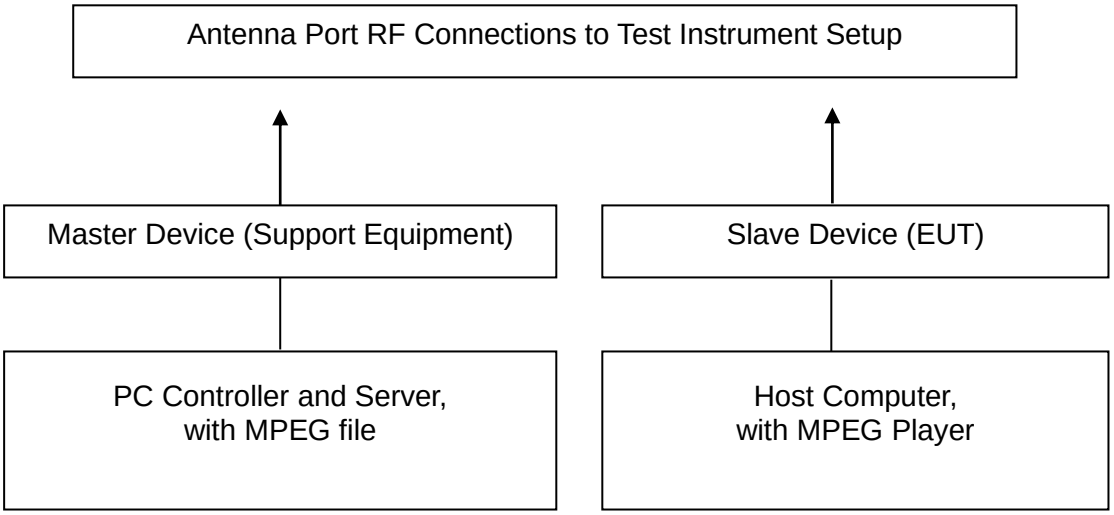
a) The data file must be of a type that is typical for the device (i.e., MPEG-2, MPEG-4, WAV, MP3, MP4, AVI, etc.) and must generally be transmitting in a streaming mode.

b) Software to ping the client is permitted to simulate data transfer but must have random ping intervals.

c) Timing plots are required with calculations demonstrating a minimum channel loading of approximately 17% or greater. For example, channel loading can be estimated by setting the spectrum analyzer for zero span and approximate the Time On/ (Time On + Off Time). This can be done with any appropriate channel BW and modulation type.

d) Unicast or Multicast protocols are preferable but other protocols may be used. The appropriate protocol used must be described in the test procedures.

5.3 TEST SETUP



5.4 TEST RESULT

Temperature:	20.0 ~ 25.0℃	**Test date:**	April 14 ~ June 22, 2022
Humidity:	48 ~ 65% RH	**Tested by:**	Jerry Chang

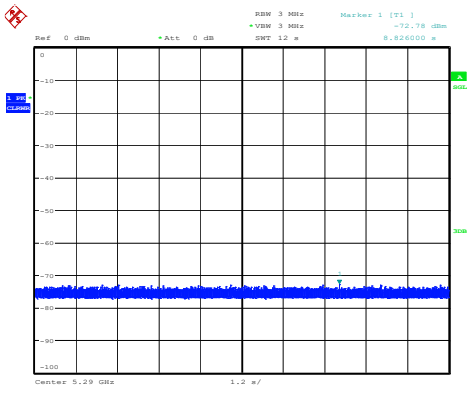
IEEE 802.11ac VHT 80 MHz Channel Loading	
5290	**5530**
	

Note: During the monitoring period of 100ms, the packet flow exceeds 17%

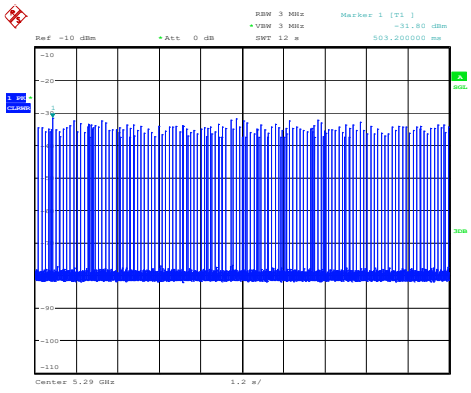
U-NII-2a

IEEE 802.11ac VHT 80 MHz at 5290 MHz

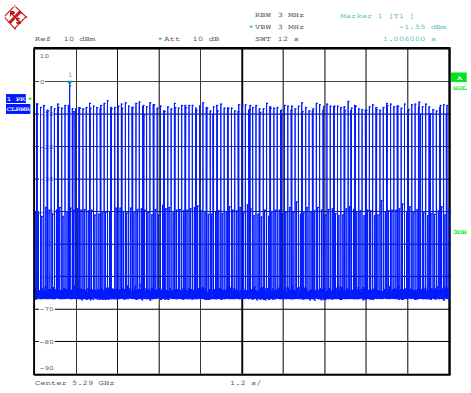
Noise Floor



Companion Level (Master Level)

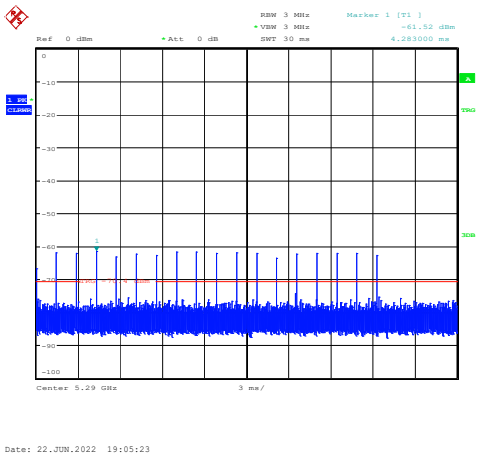


EUT Level (Slave Level)



Radar Waveforms

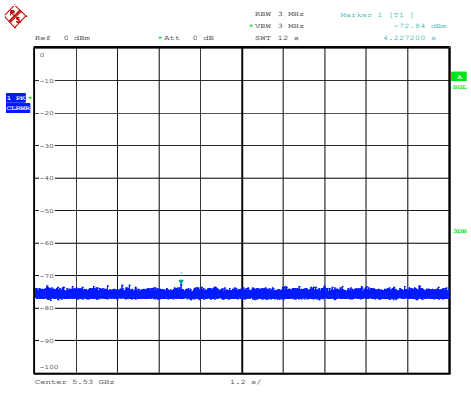
Sample of short Pluse Radar Type 0



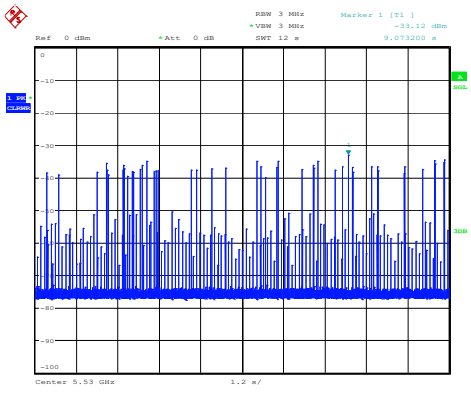
U-NII-2c

IEEE 802.11ac VHT 80 MHz at 5530 MHz

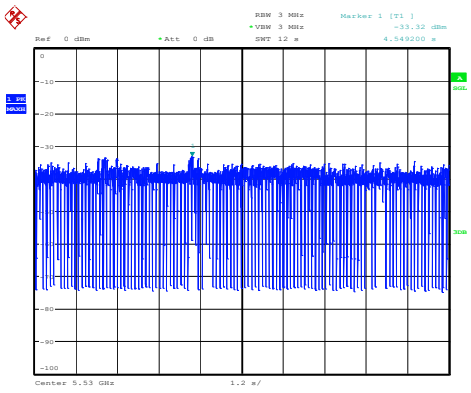
Noise Floor



Companion Level (Master Level)

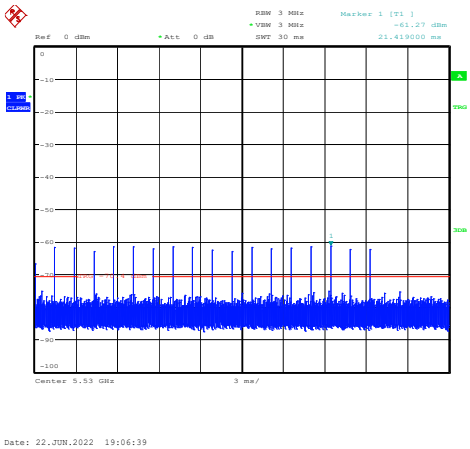


EUT Level (Slave Level)



Radar Waveforms

Sample of short Pluse Radar Type 0



TEST CHANNEL AND METHOD

All tests were performed at a channel center frequency of 5290 MHz and 5530 MHz utilizing a conducted test method.

CHANNEL MOVE TIME AND CHANNEL CLOSING TRANSMISSION TIME

GENERAL REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =

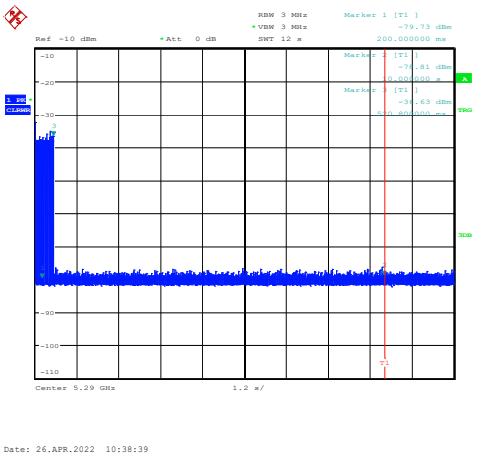
(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated

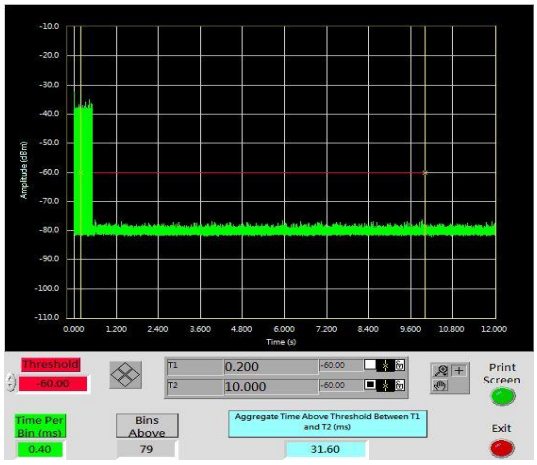
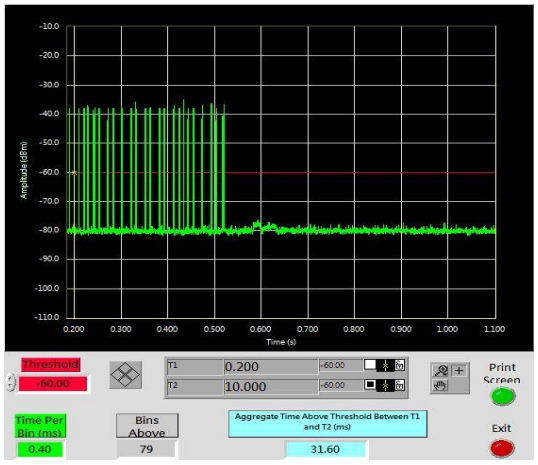
Begins at (Reference Marker + 200 msec) and

Ends no earlier than (Reference Marker + 10 sec).

U-NII-2a

IEEE 802.11ac VHT 80 MHz at 5290	
Type 0_Channel Move Time	
	

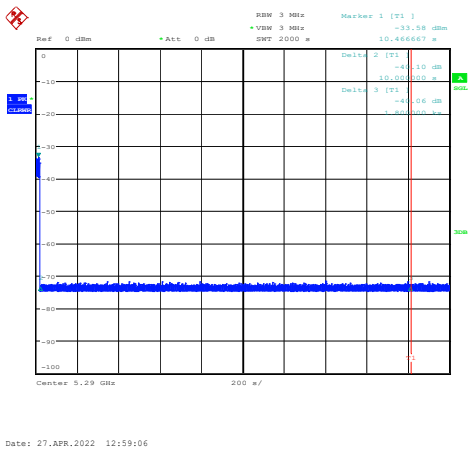
Channel Move Time (s)	Limit (s)
0.5208	10

IEEE 802.11ac VHT 80 MHz at 5290	
Type 0_Channel closing transmisssion time	**Type 0_Channel closing transmisssion time-caculate**
	

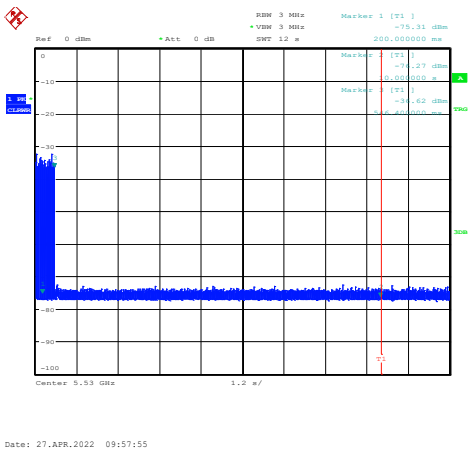
Channel closing transmission time (ms)	Limit (ms)	Margin (ms)
11.60	60	-48.4

IEEE 802.11ac VHT 80 MHz at 5290

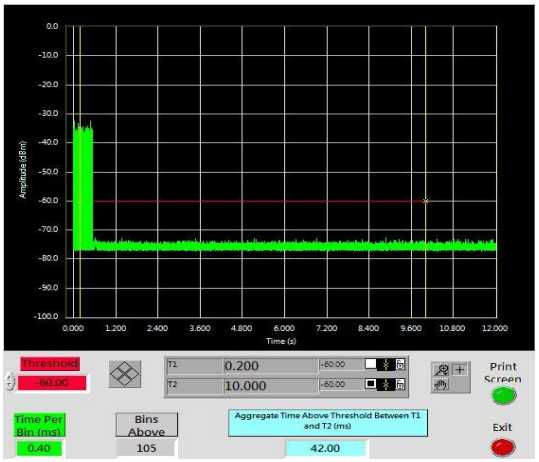
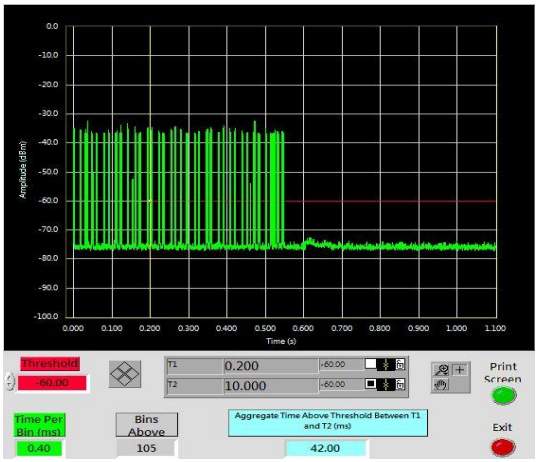
non- occupancy period



U-NII-2c

IEEE 802.11ac VHT 80 MHz at 5530	
Type 0_Channel Move Time	
	

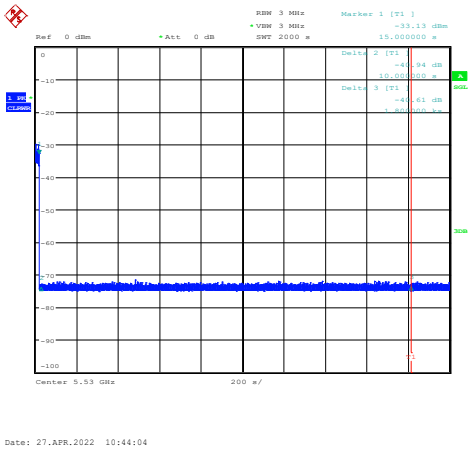
Channel Move Time (s)	Limit (s)
0.5464	10

IEEE 802.11ac VHT 80 MHz at 5530	
Type 0_Channel closing transmisssion time	**Type 0_Channel closing transmisssion time-caculate**
	

Channel closing transmission time (ms)	Limit (ms)	Margin (ms)
42	60	-18

IEEE 802.11ac VHT 80 MHz at 5530

non- occupancy period



6. DYNAMIC FREQUENCY SELECTION FOR MASTER

TEST PROCEDURE

According to FCC 47 CFR Part 15 Subpart E (Section 15.407),
KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02,
KDB 905462 D04 Operational Modes for DFS Testing New Rules v01
EUT is considered as a master device.

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

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

Table 2: Applicability of DFS requirements during normal operation

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

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

6.1 DFS DETECTION THRESHOLDS

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

Table 3: DFS Detection Thresholds for Master Devices

Maximum Transmit Power	Value (see notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. **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. **Note 3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

6.2 DFS RESPONSE REQUIREMENT

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

Table 4: DFS Response Requirement Values

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

6.3 RADAR TEST WAVEFORMS

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

6.3.1 Short Pulse Radar Test Waveforms

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

Table 5 – Short Pulse Radar Test Waveforms

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

Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a
Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms.

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

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

Table 5a - Pulse Repetition Intervals Values for Test A

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

6.3.2 Long Pulse Radar Test Waveform

Table 6 – Long Pulse Radar Test Waveforms

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

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse radar test signal. If more than 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.
Each waveform is defined as follows:
Note: The center frequency for each of the 30 trials of the Bin 5 radar shall be randomly selected within 80% of the Occupied Bandwidth.

(1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
(2) There are a total of 8 to 20 Bursts in the 12 second period, with the number of Bursts being randomly chosen. This number is Burst_Count.
(3) Each Burst consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each Burst within the 12 second sequence may have a different number of pulses.
(4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a Burst will have the same pulse width. Pulses in different Bursts may have different pulse widths.
(5) Each pulse has a linear frequency modulated chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a **transmission period** will have the same chirp width. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz
(6) If more than one pulse is present in a Burst, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a Burst, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
(7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to Burst_Count. Each interval is of length (12,000,000 / Burst_Count) microseconds. Each interval contains one Burst. The start time for the Burst, relative to the beginning of the interval, is between 1 and [(12,000,000 / Burst_Count) – (Total Burst Length) + (One Random PRI Interval)] microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each Burst is chosen independently.

A representative example of a Long Pulse radar test waveform:

(1) The total test signal length is 12 seconds.
(2) 8 Bursts are randomly generated for the Burst_Count.
(3) Burst 1 has 2 randomly generated pulses.
(4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
(5) The PRI is randomly selected to be at 1213 microseconds.
(6) Bursts 2 through 8 are generated using steps 3 – 5.
(7) Each Burst is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, Burst 1 is randomly generated (1 to 1,500,000 minus the total Burst 1 length + 1 random PRI interval) at the 325,001 microsecond step. Bursts 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. Burst 2 falls in the 1,500,001 – 3,000,000 microsecond range).

6.3.3 Frequency Hopping Radar Test Waveform

Table 7 – Frequency Hopping Radar Test Signal

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

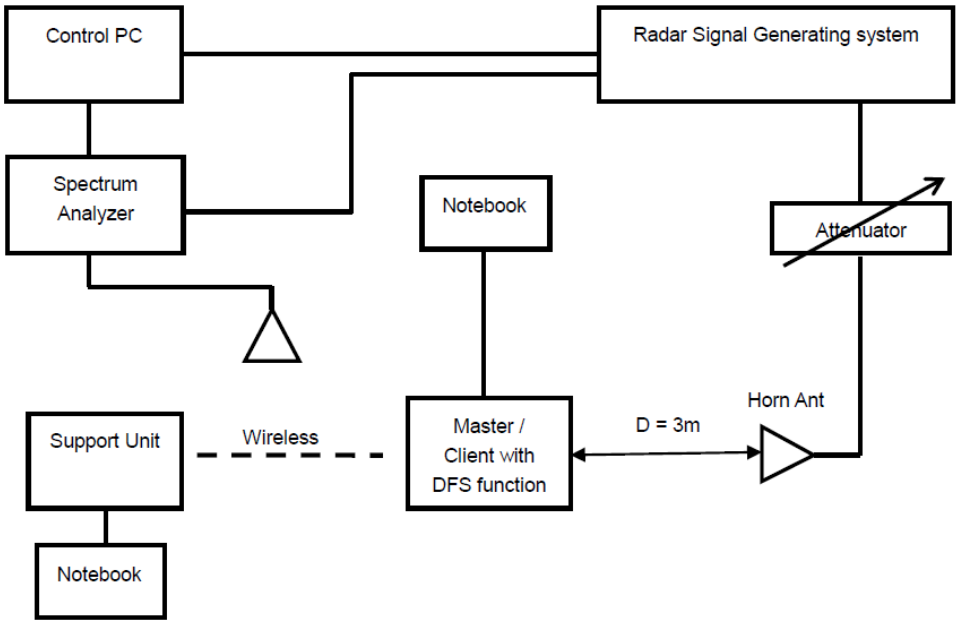
For the Frequency Hopping Radar Type, the same Burst parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:
The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250 – 5724 MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

6.4 CALIBRATION SETUP AND DFS TEST SETUP CONFIGURATION

6.4.1 Radiated Test Setup Configuration

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

Radiated Setup Configuration of Master mode



Channel Loading

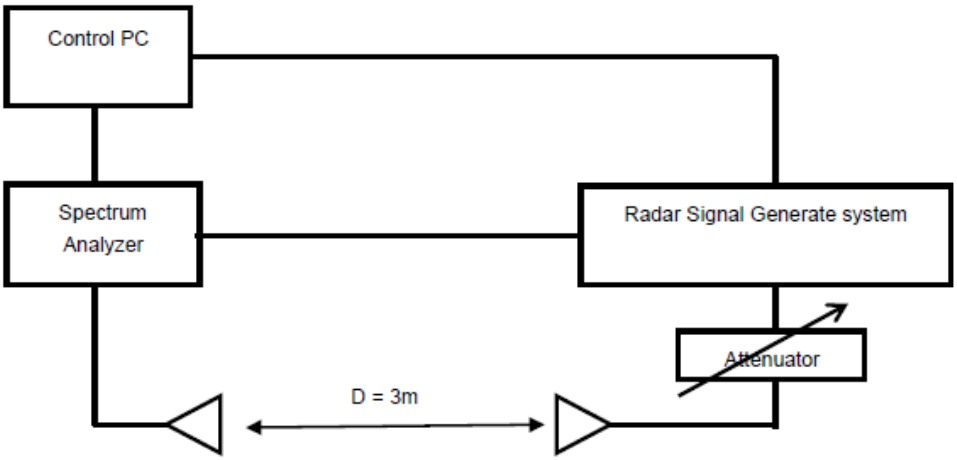
System testing will be performed with channel-loading using means appropriate to the data types that are used by the unlicensed device. The following requirements apply:

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

6.4.2 Calibation of Radar Waveform

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

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



6.4.3 Radar Waveform Calibration Result

Temperature: 20.0 ~ 25.0℃ **Test date:** April 14 ~ June 22, 2022

Humidity: 48 ~ 65% RH **Tested by:** Jerry Chang

< Channel Bandwidth 20MHz / 5300MHz >

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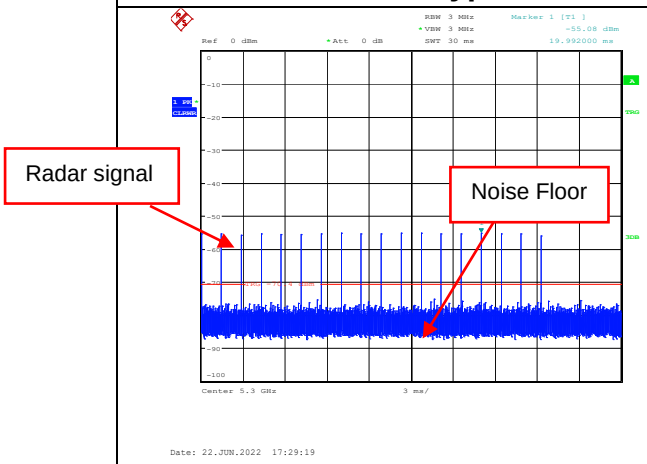	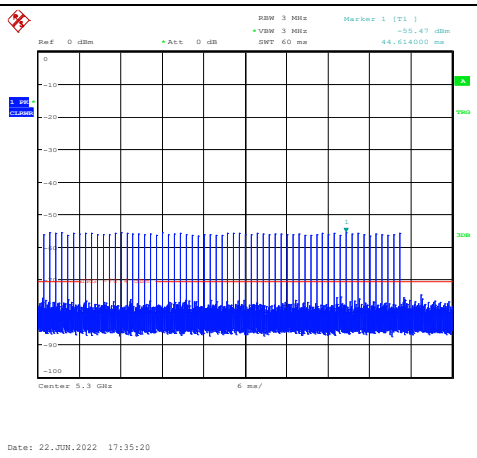
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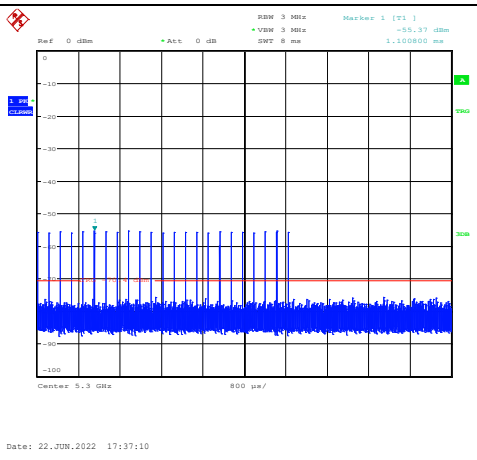	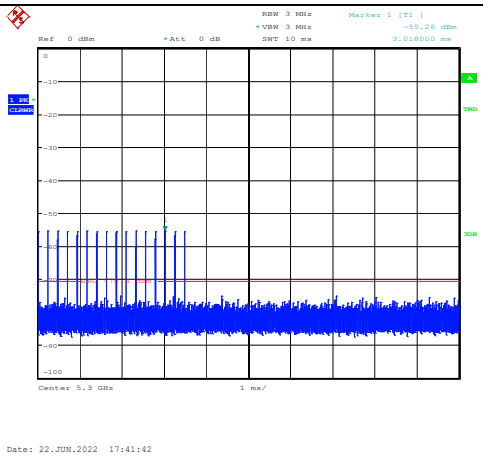

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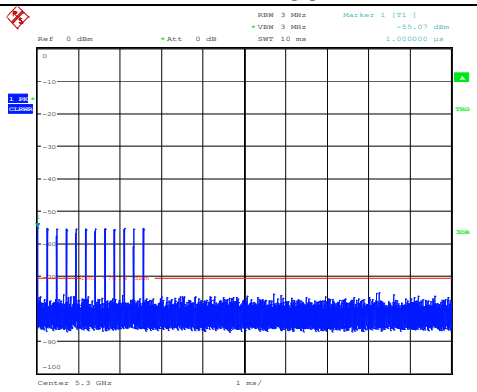	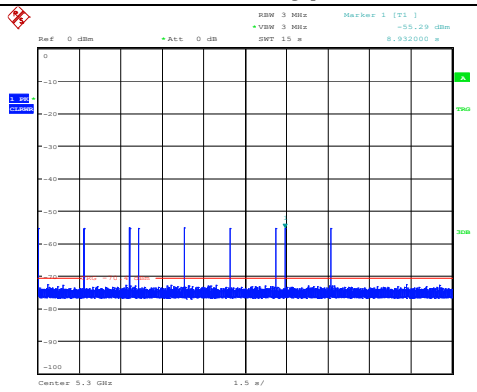
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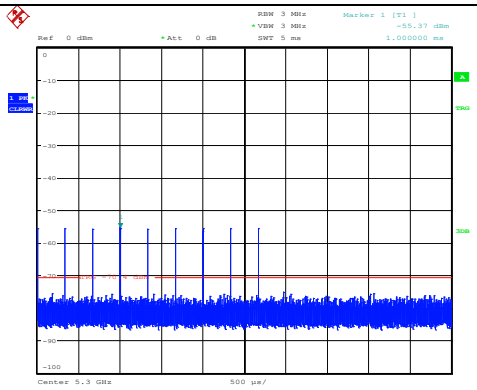	

< Channel Bandwidth 40MHz / 5310MHz >

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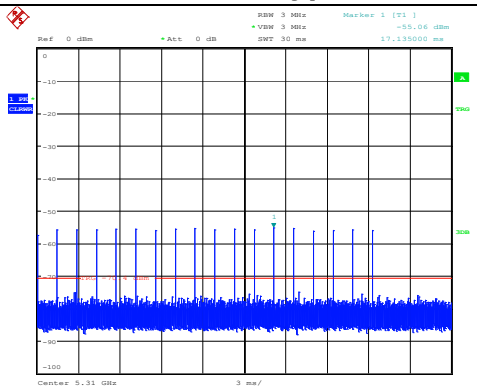	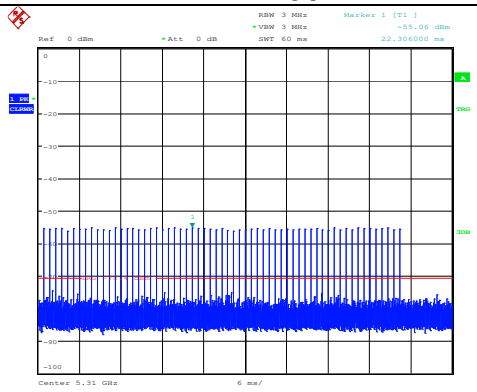
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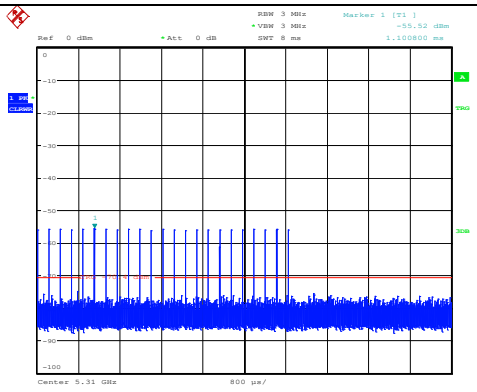	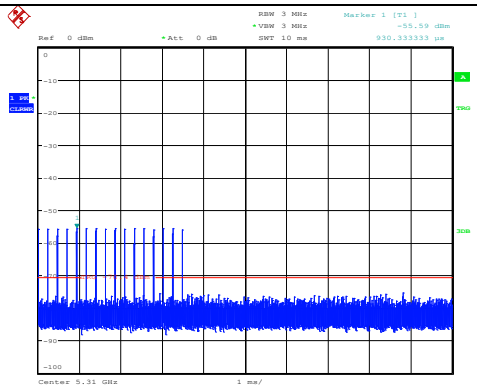

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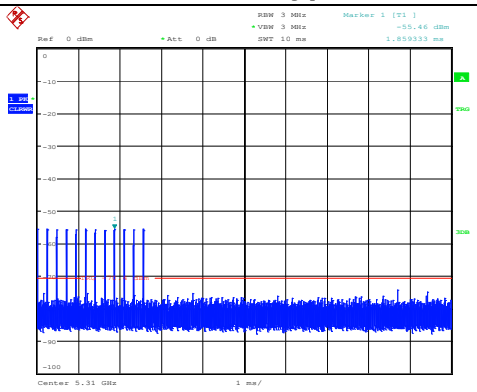	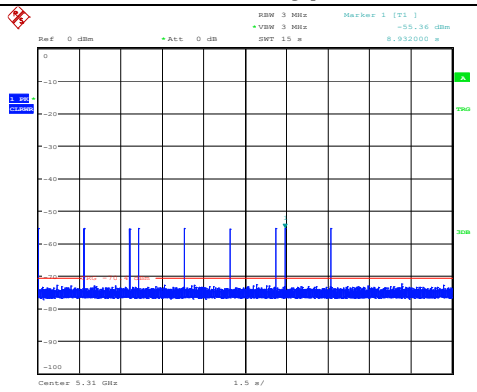
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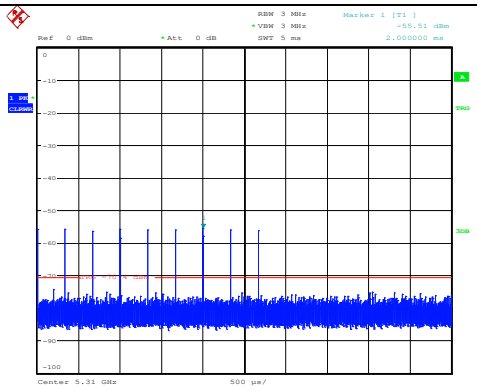	

< Channel Bandwidth 80MHz / 5290MHz >

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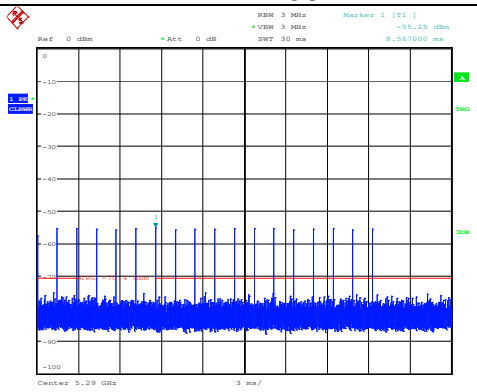	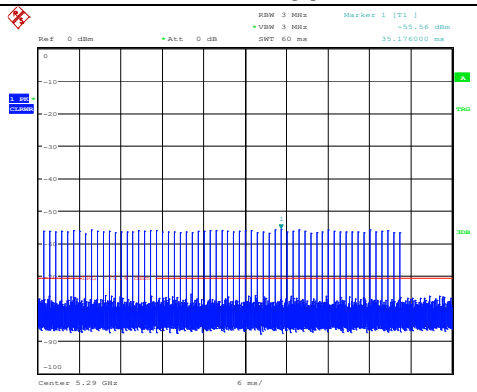
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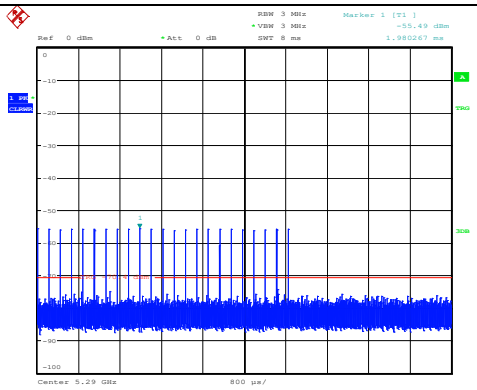	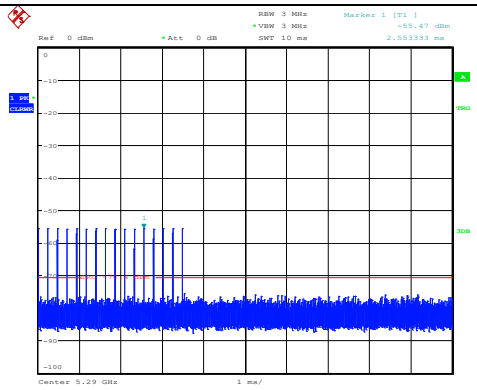

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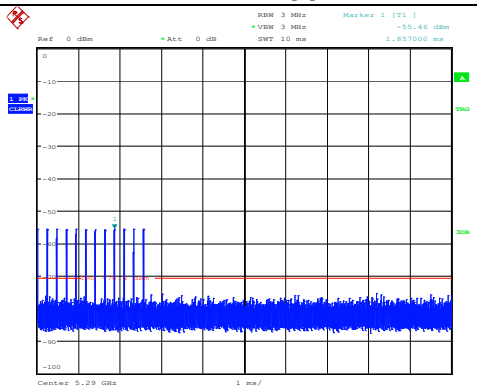	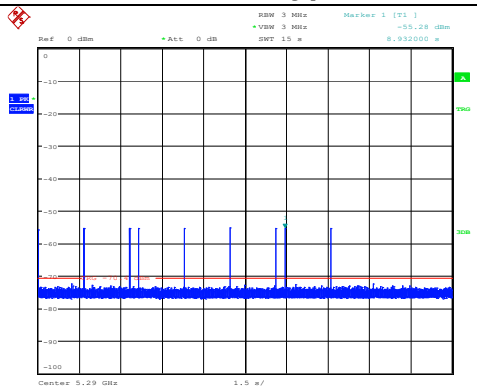
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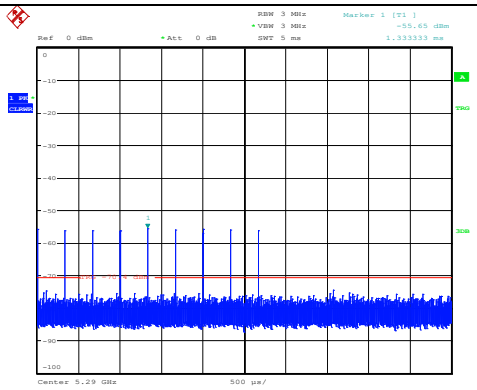	

< Channel Bandwidth 20MHz / 5500MHz >

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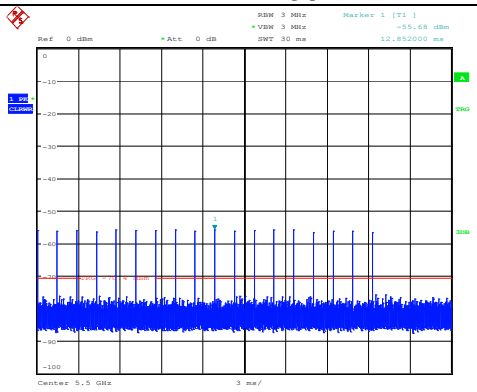	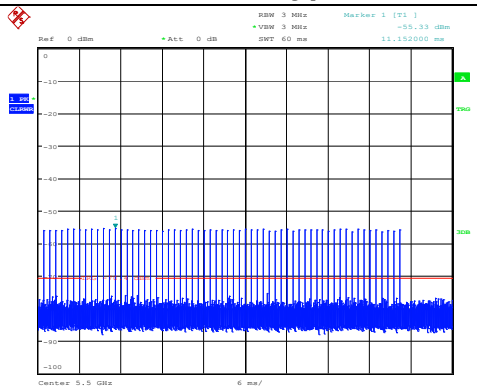
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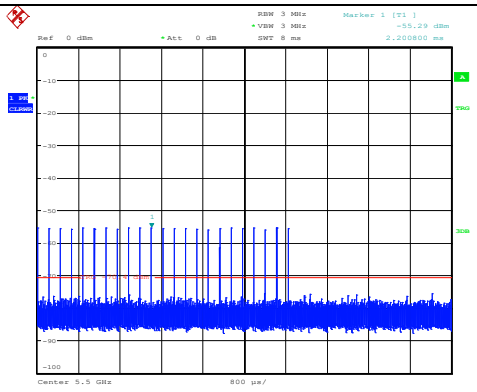	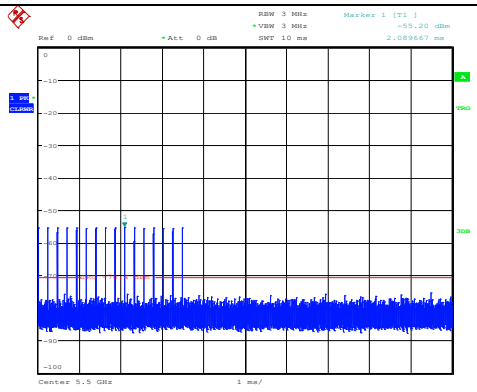

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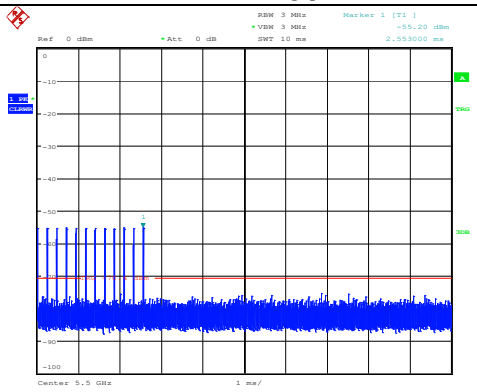	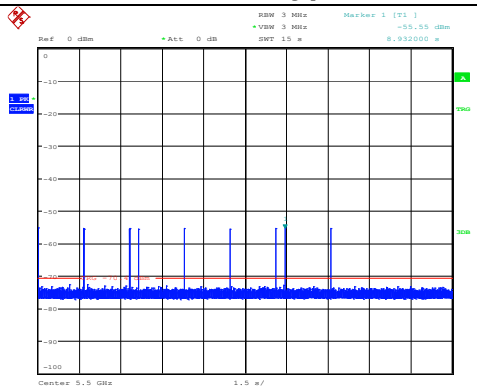
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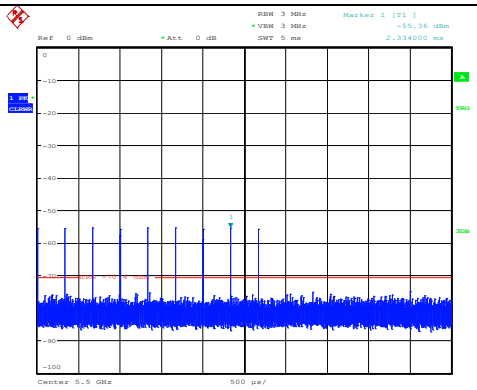	

< Channel Bandwidth 40MHz / 5510MHz >

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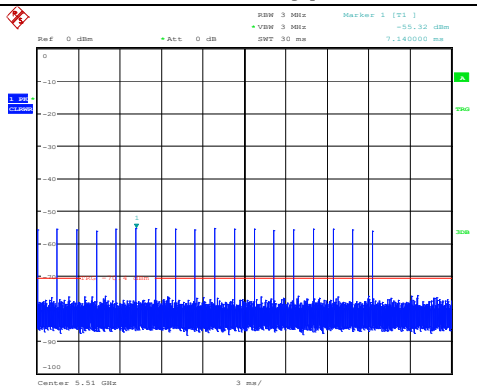	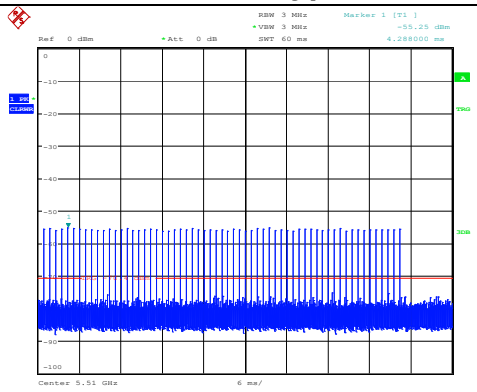
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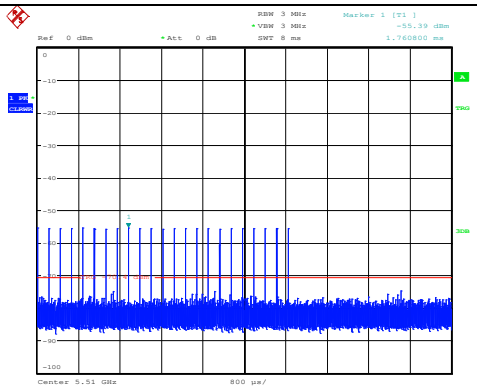	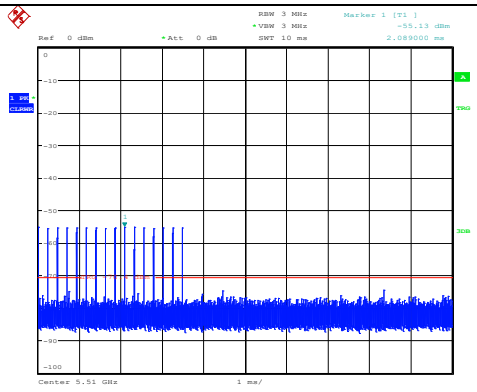

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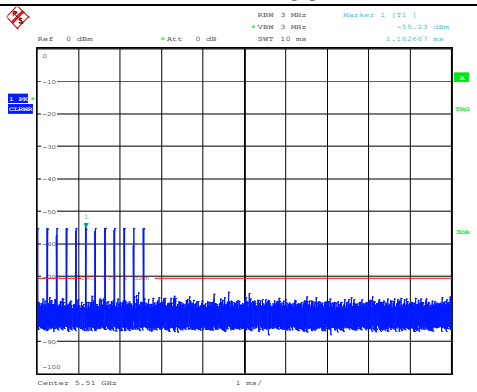	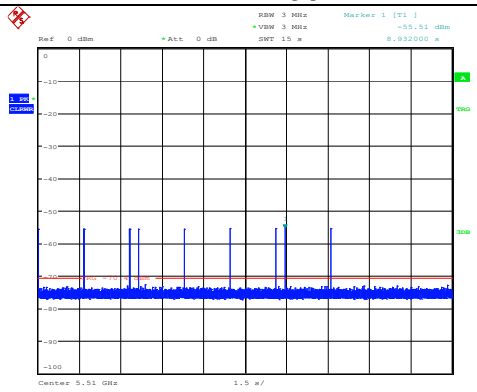
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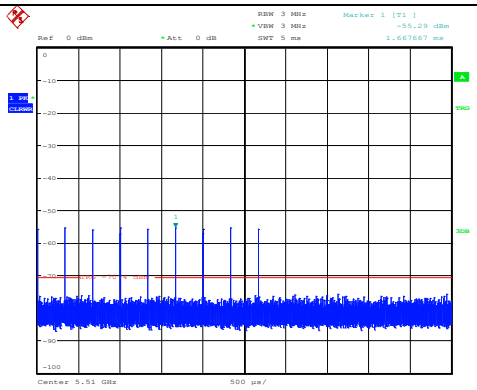
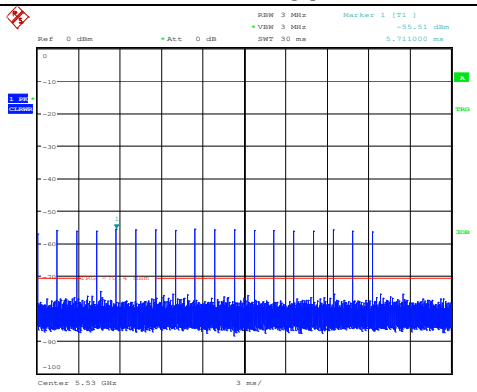
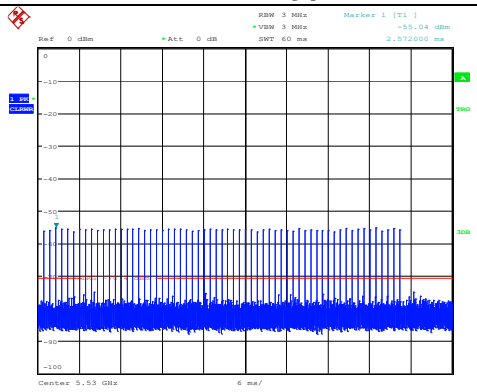
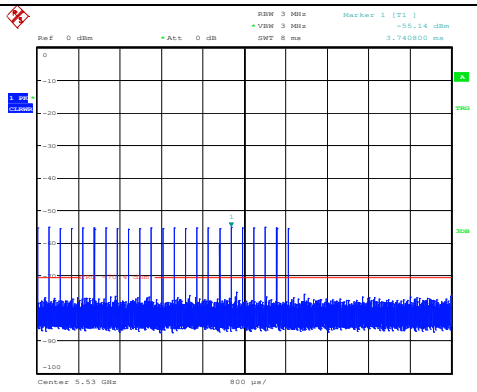
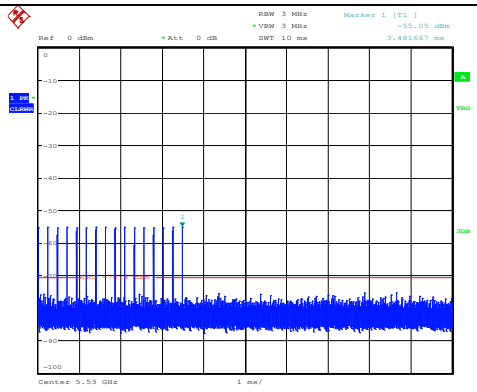
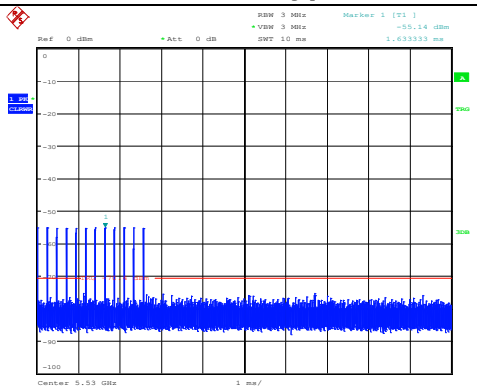
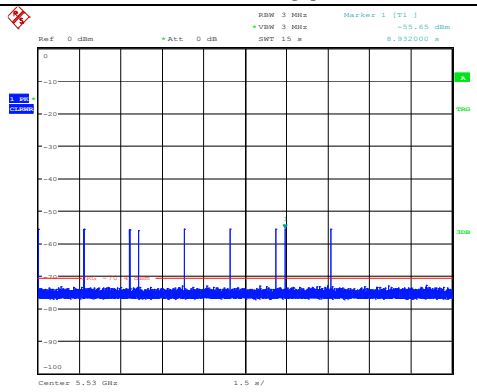
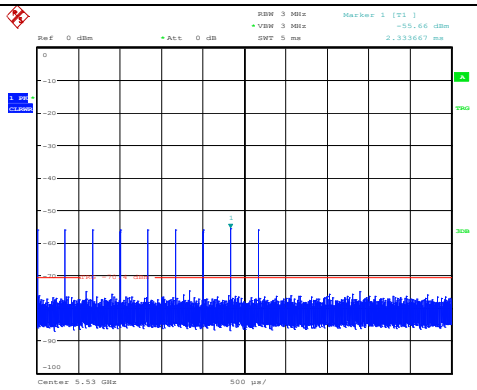
	

< Channel Bandwidth 80MHz / 5530MHz >

Radar Type 0	Radar Type 1
	
Radar Type 2	**Radar Type 3**
	

Radar Type 4	Radar Type 5
	
Radar Type 6	
	

6.5 U-NII DETECTION BANDWIDTH (7.8.1)

6.5.1 Limit of U-NII Detection Bandwidth

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

6.5.2 Test Procedure

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

2. Set the EUT up as a standalone device (no associated Client or Master, as appropriate) and no traffic. Frame based systems will be set to a talk/listen ratio reflecting the worst case (maximum) that is user configurable during this test.

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

4. Starting at the center frequency of the EUT operating Channel, increase the radar frequency in 5 MHz steps, repeating the above test sequence, until the detection rate falls below the U-NII Detection Bandwidth criterion specified in report Table 4. Repeat this measurement in 1MHz steps at frequencies 5 MHz below where the detection rate begins to fall. Record the highest frequency (denote as F_H) at which detection is greater than or equal to the U-NII Detection Bandwidth criterion. Recording the detection rate at frequencies above FH is not required to demonstrate compliance.

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

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

6.5.3 Result of U-NII Detection Bandwidth

Channel Bandwidth 20MHz / 5300 MHz

CH60_5300MHz												Radar type 0
Frequency (MHz)	Trial Number (Detection = Y, No Detection = N)										Detection Rate (%)	F_H/F_L
	1	2	3	4	5	6	7	8	9	10		
5290	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_L
5295	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5300	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5305	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5310	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_H
Detection Bandwidth = F_H - F_L = 5310 - 5290 = 20MHz												
EUT 99% Bandwidth = 16.440 MHz												

Channel Bandwidth 20MHz / 5500 MHz

CH100_5500MHz												Radar type 0
Frequency (MHz)	Trial Number (Detection = Y, No Detection = N)										Detection Rate (%)	F_H/F_L
	1	2	3	4	5	6	7	8	9	10		
5490	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_L
5495	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5500	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5505	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5510	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_H
Detection Bandwidth = F_H - F_L = 5510 - 5490 = 20MHz												
EUT 99% Bandwidth = 16.450 MHz												

Channel Bandwidth 40MHz / 5310 MHz

CH102_5310MHz												Radar type 0
Frequency (MHz)	Trial Number (Detection = Y, No Detection = N)										Detection Rate (%)	F_H/F_L
	1	2	3	4	5	6	7	8	9	10		
5290	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_L
5295	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5300	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5305	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5310	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5315	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5320	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5325	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5330	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_H
Detection Bandwidth = F_H - F_L = 5330 - 5290 = 40MHz												
EUT 99% Bandwidth = 35.788 MHz												

Channel Bandwidth 40MHz / 5510 MHz

CH102_5510MHz												Radar type 0
Frequency (MHz)	Trial Number (Detection = Y, No Detection = N)										Detection Rate (%)	F_H/F_L
	1	2	3	4	5	6	7	8	9	10		
5490	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_L
5495	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5500	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5505	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5510	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5515	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5520	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5525	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5530	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_H
Detection Bandwidth = F_H - F_L = 5530 - 5490 = 40MHz												
EUT 99% Bandwidth = 35.826 MHz												

Channel Bandwidth 80MHz / 5290 MHz

CH106_5290MHz												Radar type 0
Frequency (MHz)	Trial Number (Detection = Y, No Detection = N)										Detection Rate (%)	F_H/F_L
	1	2	3	4	5	6	7	8	9	10		
5250	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_L
5255	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5260	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5265	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5270	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5275	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5280	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5285	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5290	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5295	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5300	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5305	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5310	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5315	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5320	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5325	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5330	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_H
Detection Bandwidth = F_H - F_L = 5330 - 5250 = 80MHz												
EUT 99% Bandwidth = 75.054MHz												

Channel Bandwidth 80MHz / 5530 MHz

CH106_5530MHz												Radar type 0
Frequency (MHz)	Trial Number (Detection = Y, No Detection = N)										Detection Rate (%)	F_H/F_L
	1	2	3	4	5	6	7	8	9	10		
5490	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_L
5495	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5500	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5505	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5510	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5515	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5520	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5525	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5530	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5535	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5540	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5545	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5550	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5555	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5560	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5565	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	
5570	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%	F_H
Detection Bandwidth = F_H - F_L = 5570 - 5490 = 80MHz												
EUT 99% Bandwidth = 75.040MHz												

6.6 CHANNEL AVAILABILITY CHECK (7.8.2)

6.6.1 Limit of Channel Availability Check

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

6.6.2 Test Procedure

6.6.2.1 Initial Channel Availability Check Time

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

1. The U-NII devices will be powered on and be instructed to operate on the appropriate U-NII Channel that must incorporate DFS functions. At the same time the EUT is powered on, the spectrum analyzer will be set to zero span modes with a 3 MHz RBW and 3 MHz VBW on the Channel occupied by the radar (Ch_r) with a 2.5 minute sweep time. The spectrum analyzer's sweep will be started at the same time power is applied to the U-NII device.
2. The EUT should not transmit any beacon or data transmissions until at least 1 minute after the completion of the power-on cycle

6.6.2.2 Radar Burst at the Beginning of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1 dB occurs at the beginning of the Channel Availability Check Time. This is illustrated in Figure 15.

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

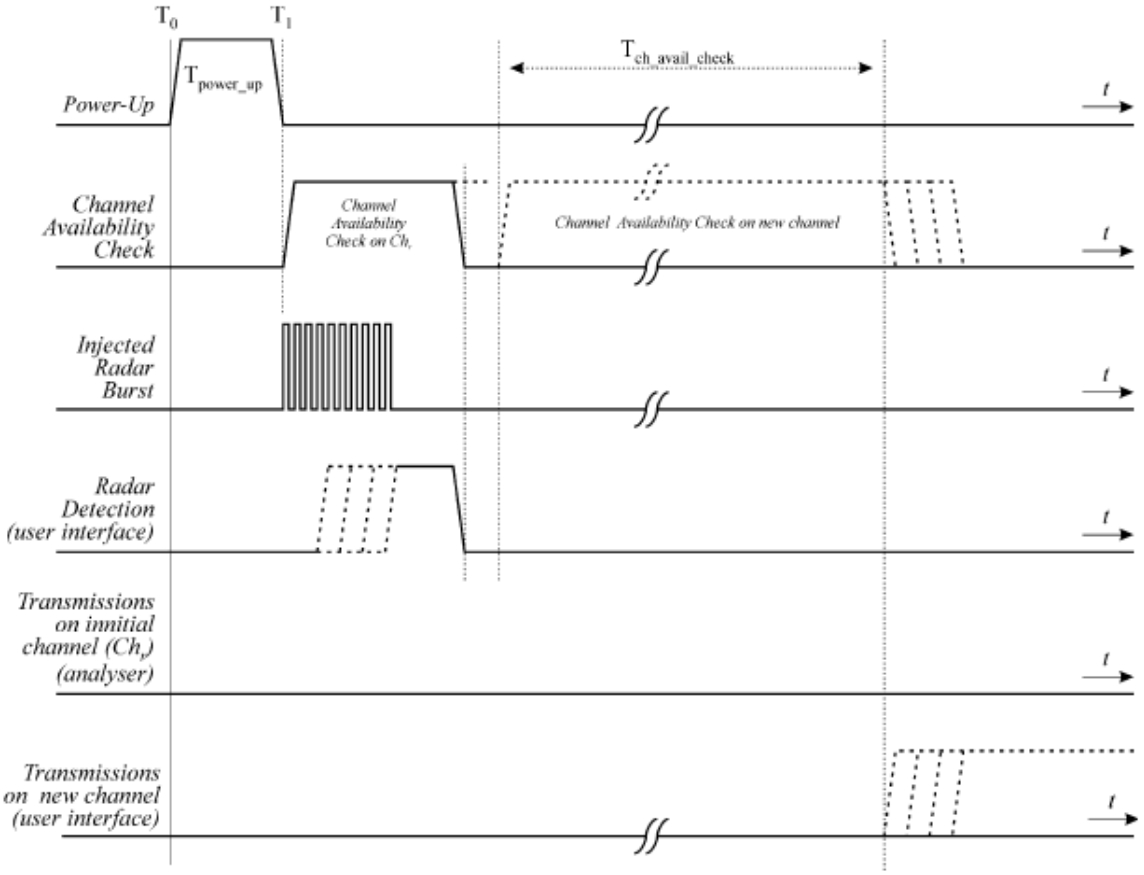


Figure 15: Example of timing for radar testing at the beginning of the Channel Availability Check Time

6.6.2.3 Radar Burst at the End of the Channel Availability Check Time

The steps below define the procedure to verify successful radar detection on the test Channel during a period equal to the Channel Availability Check Time and avoidance of operation on that Channel when a radar Burst with a level equal to the DFS Detection Threshold + 1dB occurs at the end of the Channel Availability Check Time. This is illustrated in Figure 16.

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

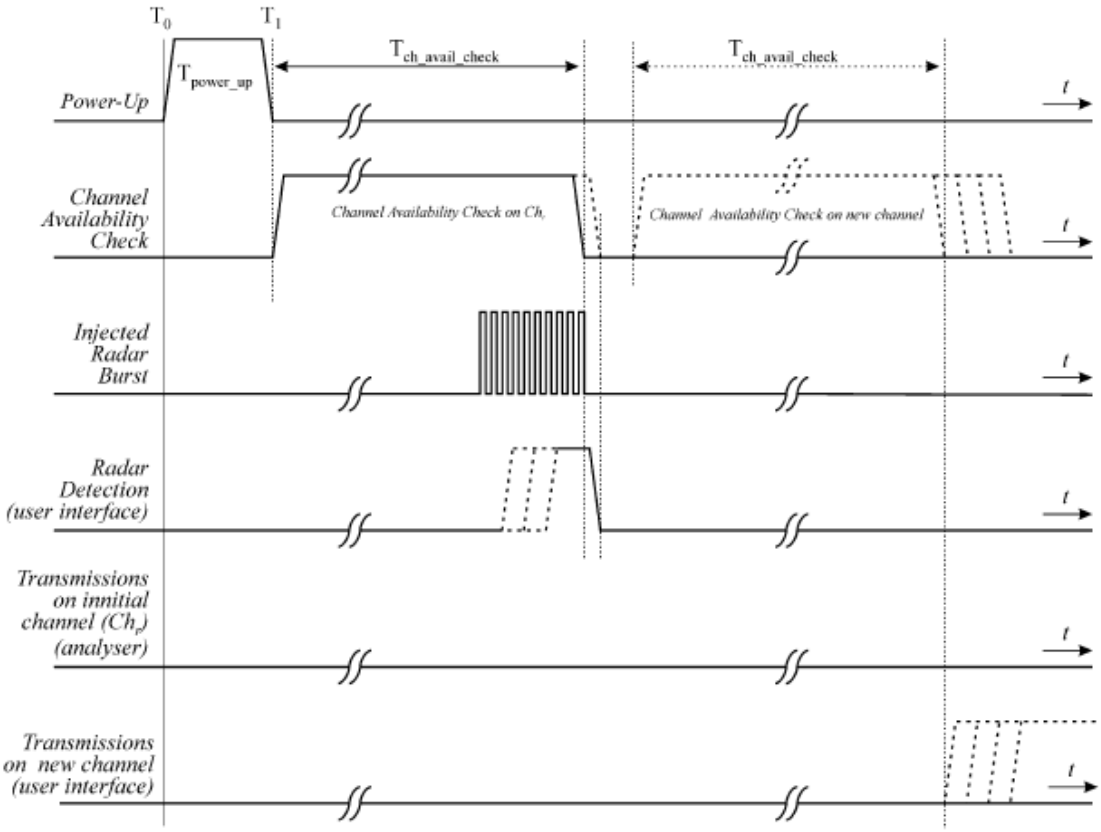
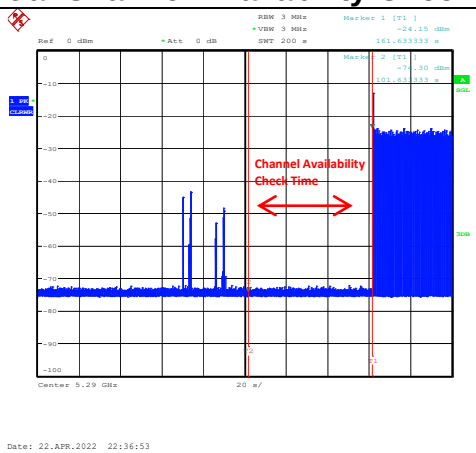
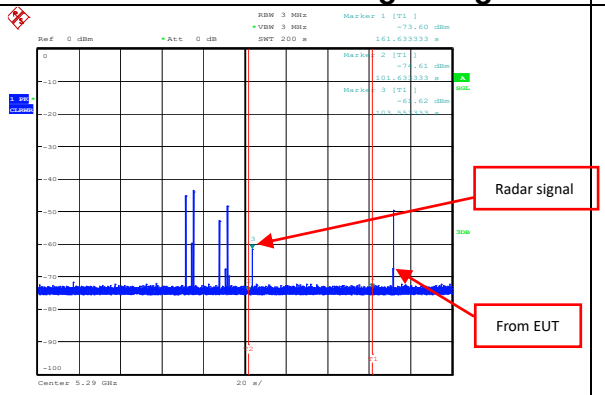
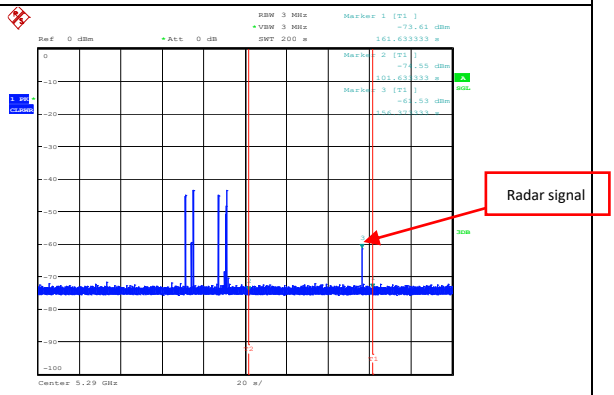


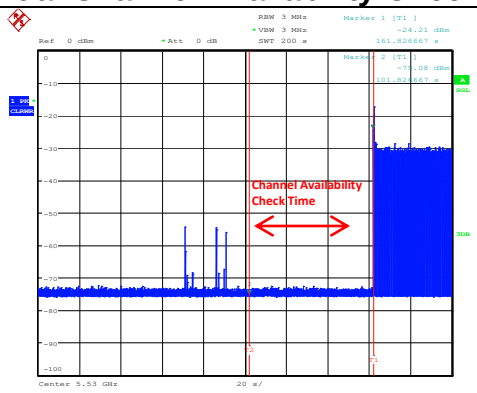
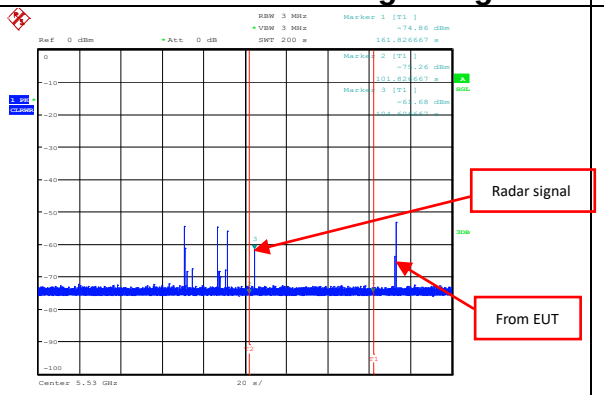
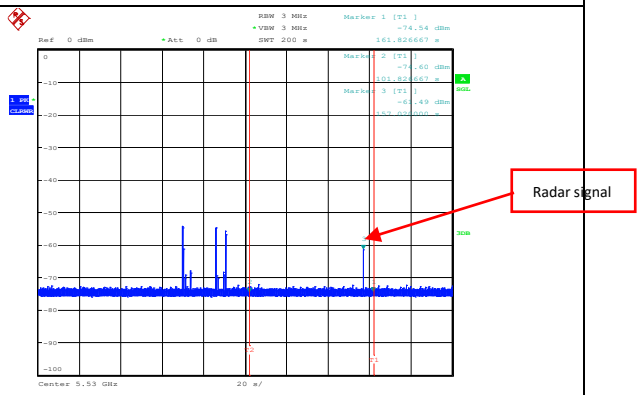
Figure 16: Example of timing for radar testing towards the end of the Channel Availability Check Time

6.6.3 Result of Channel Availability Check

Channel Bandwidth 80MHz / 5290MHz

EUT Power up and Initial Channel Availability Check Time	
	
Radar Type 0 Radar Burst at the Beginning	**Radar Type 0 Radar Burst at the End**
	

Channel Bandwidth 80MHz / 5530MHz

EUT Power up and Initial Channel Availability Check Time	
	
Radar Type 0 Radar Burst at the Beginning	**Radar Type 0 Radar Burst at the End**
	

6.7 IN-SERVICE MONITORING: CHANNEL MOVE TIME, CHANNEL CLOSING TRANSMISSION TIME AND NON-OCCUPANCY PERIOD (7.8.3)

6.7.1 Limit of In-Service Monitoring

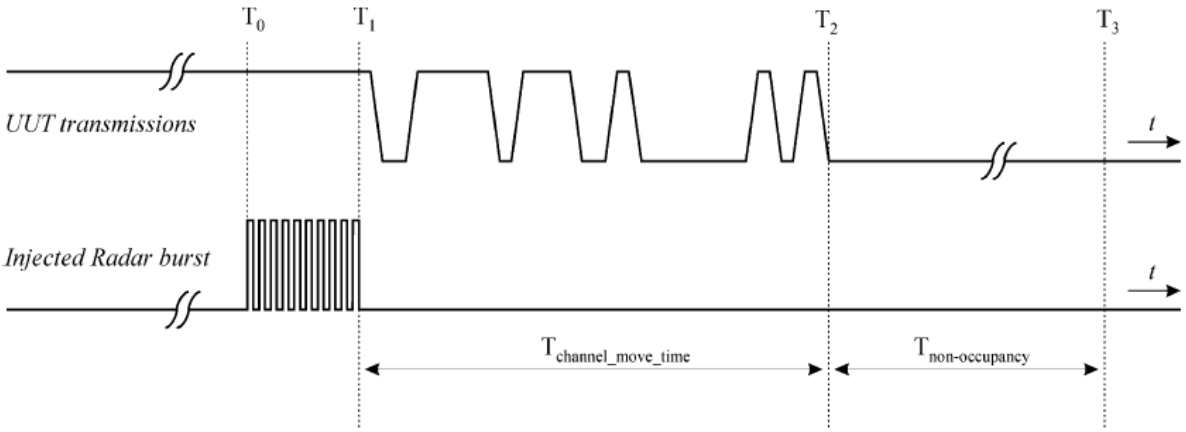
The EUT has In-Service Monitoring function to continuously monitor the radar signals, If radar is detected, it must leave the channel (Shutdown). The Channel Move Time to cease all transmissions on the current Channel upon detection of a Radar Waveform above the DFS Detection Threshold within **10 sec**.

The total duration of Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required facilitating Channel changes (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

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

6.7.2 Test Procedures

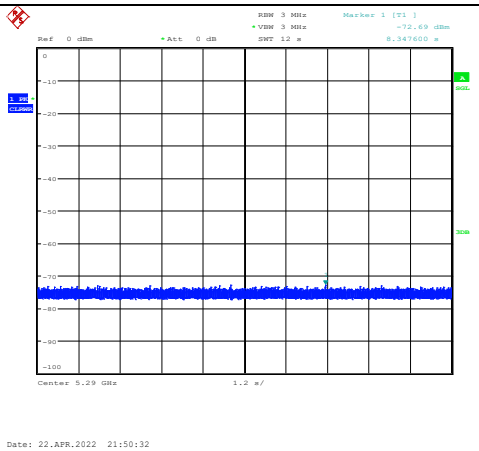
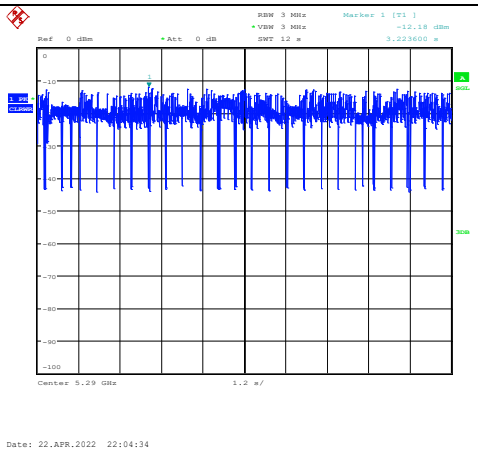
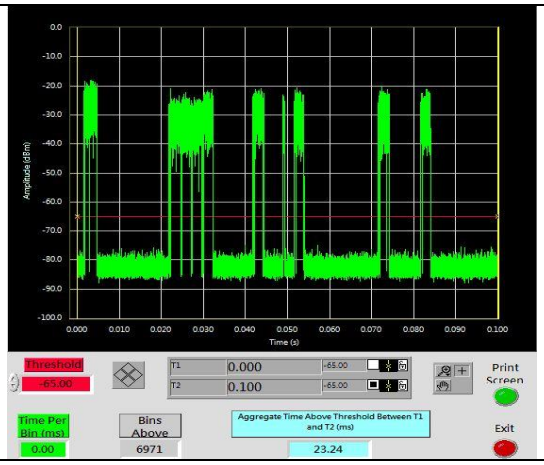
1. One frequency will be chosen from the Operating Channels of the EUT within the 5250-5350 MHz or 5470-5725 MHz bands. For 802.11 devices, the test frequency must contain control signals. This can be verified by disabling channel loading and monitoring the spectrum analyzer. If no control signals are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



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

Channel Bandwidth 80MHz / 5290MHz

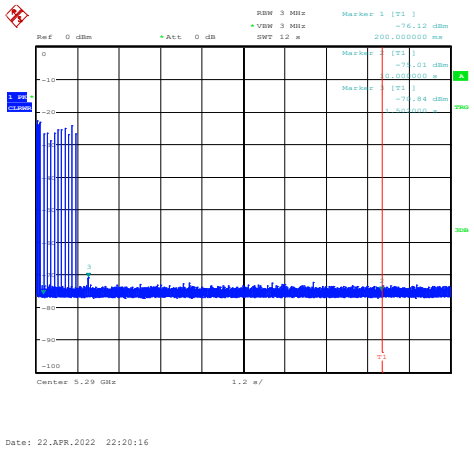
Data Traffic Channel Loading and Noise Floor Plots

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

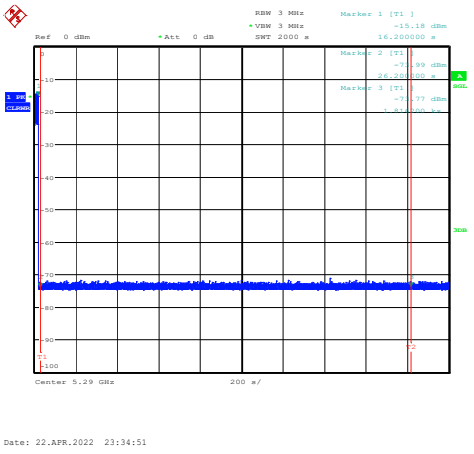
Channel Bandwidth 80MHz / 5290MHz

	Test Result	Limit
Channel Move Time	1.5020s	<10s
Channel closing transmission time	8.40 ms	60 ms

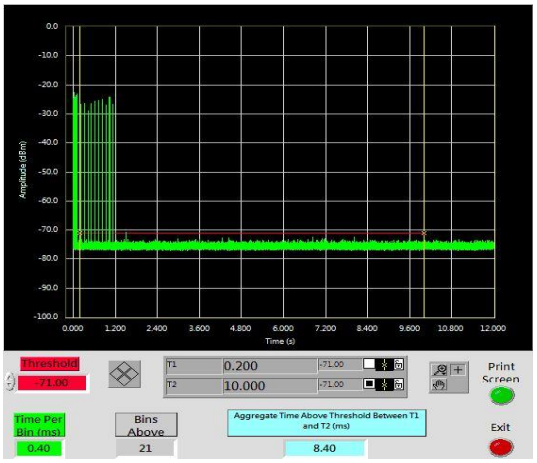
Channel Move Time



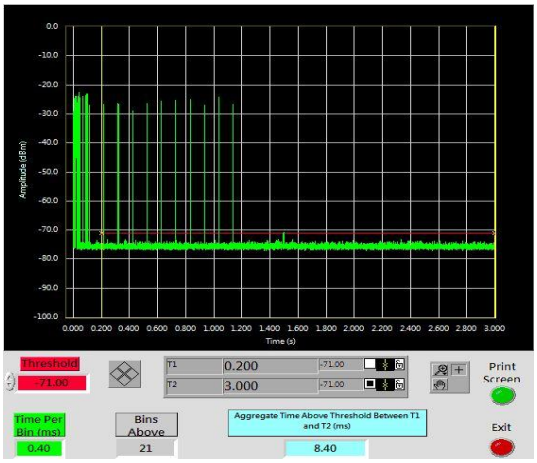
Non-Occupancy Period



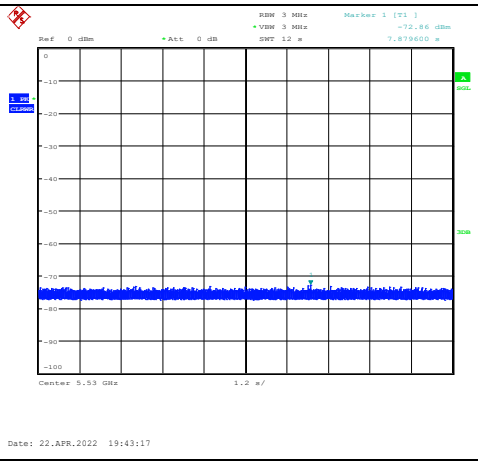
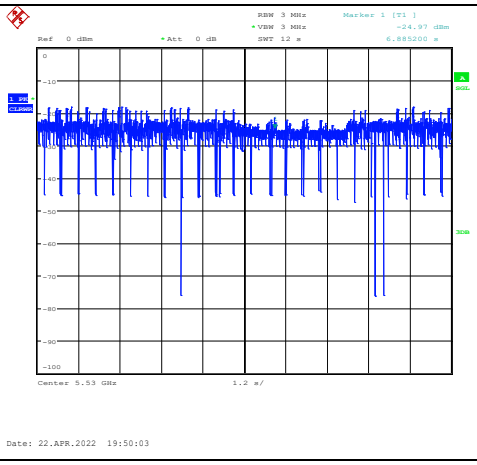
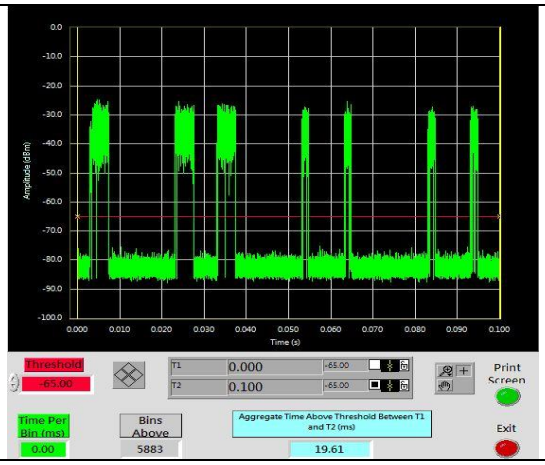
Channel Closing Transmission Time



Channel Closing Transmission Time

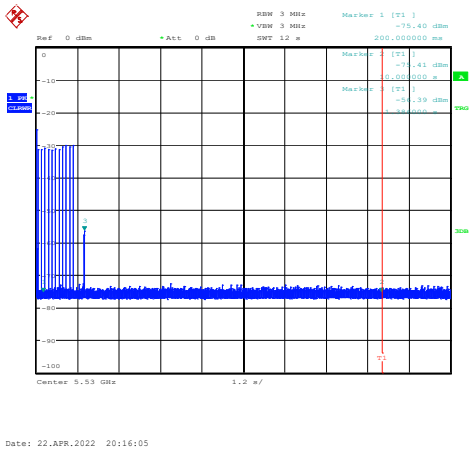
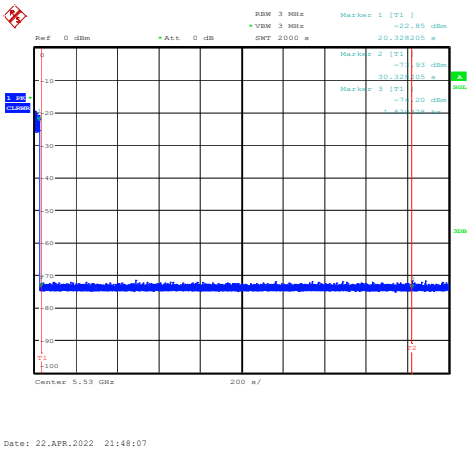
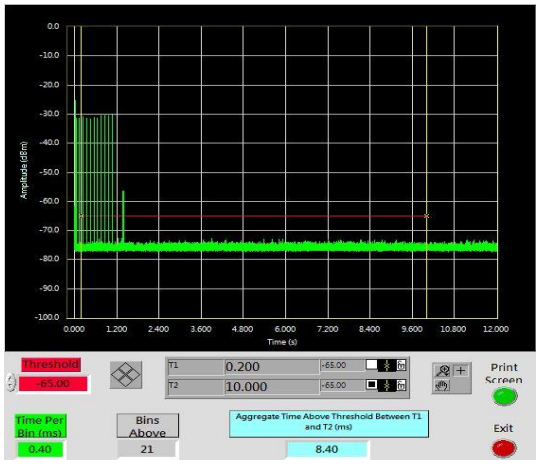
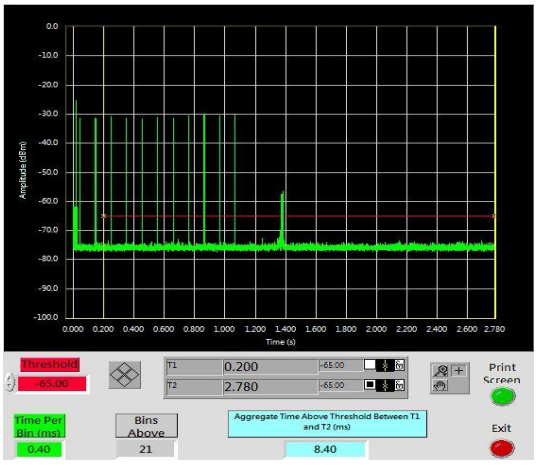


Channel Bandwidth 80MHz / 5530MHz
Data Traffic Channel Loading and Noise Floor Plots

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

Channel Bandwidth 80MHz / 5530MHz

	Test Result	Limit
Channel Move Time	1.3860s	<10s
Channel closing transmission time	8.40 ms	60 ms

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

6.8 STATISTICAL PERFORMANCE CHECK (7.8.4)

6.8.1 Limit of Statistical Performance Check

Short Pulse Radar Test

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

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

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

$$\frac{P_d1 + P_d2 + P_d3 + P_d4}{4}$$

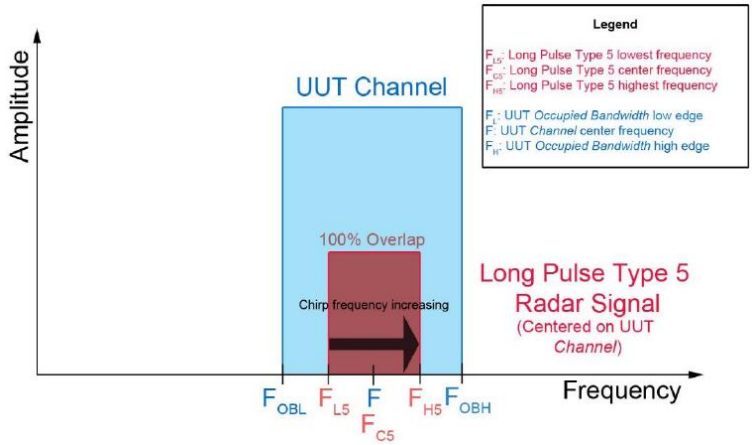
The minimum number of trails, minimum percentage of successful detection and the aggregate minimum percentage of successful detection are found in Table 5.

Long Pulse Radar Test

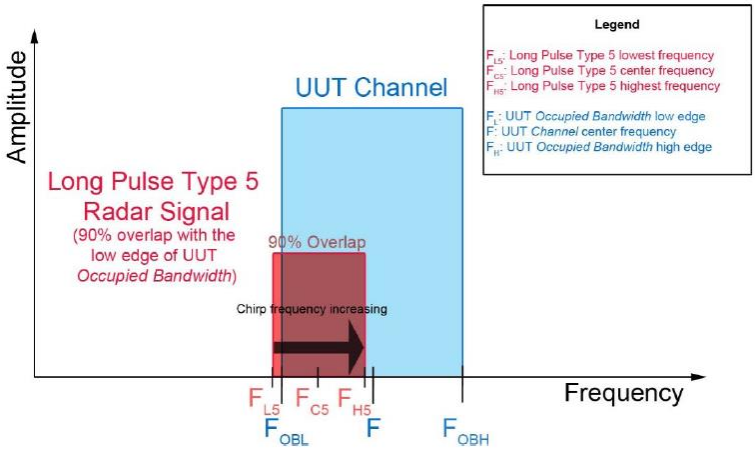
Statistical data will be gathered to determine the ability of the device to detect the Long Pulse Radar Type 5 found in Table 6. The device can utilize a test mode to demonstrate when detection occurs to prevent the need to reset the device between trials.

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

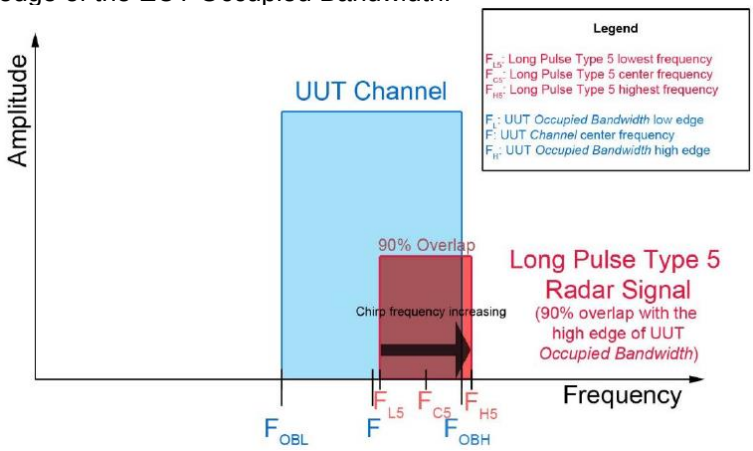
(a) The Channel center frequency.



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



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



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

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

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

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

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

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

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

Frequency Hopping Radar Test

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

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

6.8.2 Test Procedures

1. One frequency will be chosen from the Operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands.
2. In case the UUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will associate with the UUT (Master). For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.
3. The TCP protocol unicast data stream was generated by the LanTest software with at least 17% activity ratio over any 100ms period.
4. At time T0 the Radar Waveform generator sends a Burst of pulses for each of the Radar Types 1-6 at DFS Detection Threshold levels on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
5. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Radar Types 1-4 and 6 to ensure detection occurs.
6. Observe the transmissions of the EUT at the end of the Burst on the Operating Channel for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs.

Channel Bandwidth 20MHz/ 5300MHz

Short Pulse Radar Type	Minimum Number of Trials	Detection(%)		Minmum Percentage of Successful Detection(%)	Pass/Fail
1	30	73.33		60	Pass
2	30	80		60	Pass
3	30	93.33		60	Pass
4	30	83.33		60	Pass
Aggregate (Radar Types 1-4)	120	82.4975		80	Pass
Long Pulse Radar Type	**Minimum Number of Trials**	**Each Detection(%)**	**Total Detection(%)**	**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
5	Center:10	80	90.00	80	Pass
	Low Edge:10	100			
	High Edge:10	90			
Frequency Hopping Radar Type	**Minimum Number of Trials**	**Detection(%)**		**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
6	30	86.67		70	Pass

Channel Bandwidth 40MHz/ 5310MHz

Short Pulse Radar Type	Minimum Number of Trials	Detection(%)		Minmum Percentage of Successful Detection(%)	Pass/Fail
1	30	80		60	Pass
2	30	83.33		60	Pass
3	30	80		60	Pass
4	30	86.67		60	Pass
Aggregate (Radar Types 1-4)	120	82.5		80	Pass
Long Pulse Radar Type	**Minimum Number of Trials**	**Each Detection(%)**	**Total Detection(%)**	**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
5	Center:10	70	86.67	80	Pass
	Low Edge:10	100			
	High Edge:10	90			
Frequency Hopping Radar Type	**Minimum Number of Trials**	**Detection(%)**		**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
6	30	100		70	Pass

Channel Bandwidth 80MHz/ 5290MHz

Short Pulse Radar Type	Minimum Number of Trials	Detection(%)		Minmum Percentage of Successful Detection(%)	Pass/Fail
1	30	80		60	Pass
2	30	86.67		60	Pass
3	30	80		60	Pass
4	30	76.67		60	Pass
Aggregate (Radar Types 1-4)	120	80.835		80	Pass
Long Pulse Radar Type	**Minimum Number of Trials**	**Each Detection(%)**	**Total Detection(%)**	**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
5	Center:10	90	86.67	80	Pass
	Low Edge:10	90			
	High Edge:10	80			
Frequency Hopping Radar Type	**Minimum Number of Trials**	**Detection(%)**		**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
6	30	100		70	Pass

Channel Bandwidth 20MHz/ 5500MHz

Short Pulse Radar Type	Minimum Number of Trials	Detection(%)		Minmum Percentage of Successful Detection(%)	Pass/Fail
1	30	63.33		60	Pass
2	30	90		60	Pass
3	30	93.33		60	Pass
4	30	80		60	Pass
Aggregate (Radar Types 1-4)	120	81.665		80	Pass
Long Pulse Radar Type	**Minimum Number of Trials**	**Each Detection(%)**	**Total Detection(%)**	**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
5	Center:10	80	83.33	80	Pass
	Low Edge:10	100			
	High Edge:10	70			
Frequency Hopping Radar Type	**Minimum Number of Trials**	**Detection(%)**		**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
6	30	86.67		70	Pass

Channel Bandwidth 40MHz/ 5510MHz

Short Pulse Radar Type	Minimum Number of Trials	Detection(%)		Minmum Percentage of Successful Detection(%)	Pass/Fail
1	30	100		60	Pass
2	30	86.67		60	Pass
3	30	90		60	Pass
4	30	70		60	Pass
Aggregate (Radar Types 1-4)	120	86.6675		80	Pass
Long Pulse Radar Type	**Minimum Number of Trials**	**Each Detection(%)**	**Total Detection(%)**	**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
5	Center:10	90	93.33	80	Pass
	Low Edge:10	90			
	High Edge:10	100			
Frequency Hopping Radar Type	**Minimum Number of Trials**	**Detection(%)**		**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
6	30	100		70	Pass

Channel Bandwidth 80MHz/ 5530MHz

Short Pulse Radar Type	Minimum Number of Trials	Detection(%)		Minmum Percentage of Successful Detection(%)	Pass/Fail
1	30	93.33		60	Pass
2	30	80		60	Pass
3	30	83.33		60	Pass
4	30	83.33		60	Pass
Aggregate (Radar Types 1-4)	120	84.9975		80	Pass
Long Pulse Radar Type	**Minimum Number of Trials**	**Each Detection(%)**	**Total Detection(%)**	**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
5	Center:10	90	93.33	80	Pass
	Low Edge:10	100			
	High Edge:10	90			
Frequency Hopping Radar Type	**Minimum Number of Trials**	**Detection(%)**		**Minmum Percentage of Successful Detection(%)**	**Pass/Fail**
6	30	100		70	Pass

-- End of Test Report –

7. APPENDIX I RADAR TEST WAVEFORMS

< Channel Bandwidth 20MHz / 5300MHz >

Short Pulse Radar Test Waveforms

Radar Type 1

Trial	VSG Freqency (MHz)	Pulse Repetition Frequency Number (1 to 23)	Pulse Repetition Frequency (Pulses Per Second)	PRI (msec)	Test A/B A/B	Successful Detection (Yes/No)
1	5300	12	1355	738	A	Yes
2	5300	15	1253.1	798	A	Yes
3	5300	14	1285.3	778	A	Yes
4	5300	23	326.2	3066	A	Yes
5	5300	2	1858.7	538	A	Yes
6	5300	6	1618.1	618	A	Yes
7	5300	11	1392.8	718	A	No
8	5300	20	1113.6	898	A	No
9	5300	1	1930.5	518	A	No
10	5300	10	1432.7	698	A	Yes
11	5300	13	1319.3	758	A	Yes
12	5300	7	1567.4	638	A	Yes
13	5300	3	1792.1	558	A	Yes
14	5300	5	1672.2	598	A	No
15	5300	22	1066.1	938	A	Yes
16	5300	-	934.6	1070	B	Yes
17	5300	-	709.2	1410	B	Yes
18	5300	-	348.3	2871	B	Yes
19	5300	-	380.1	2631	B	Yes
20	5300	-	513.6	1947	B	Yes
21	5300	-	631.7	1583	B	Yes
22	5300	10	1432.7	698	B	No
23	5300	-	464	2155	B	No
24	5300	-	327.1	3057	B	Yes
25	5300	-	1697.8	589	B	No
26	5300	-	659.2	1517	B	Yes
27	5300	-	419.6	2383	B	Yes
28	5300	-	568.8	1758	B	No
29	5300	-	512	1953	B	Yes
30	5300	-	1477.1	677	B	Yes

Radar Type 2

Trial	VSG Freqency (MHz)	Number Pulses per Burst (23-29)	Pulse Width (1-5)	PRI (150-230)	Successful Detection
			(μs)	(μs)	(Yes/No)
1	5300	24	1.8	179	No
2	5300	25	2.6	150	Yes
3	5300	26	3.2	173	Yes
4	5300	26	3.1	194	Yes
5	5300	28	3.9	207	Yes
6	5300	27	3.5	227	Yes
7	5300	24	1.6	226	Yes
8	5300	28	4.1	220	Yes
9	5300	28	4.2	195	Yes
10	5300	25	2.7	210	Yes
11	5300	23	1.4	211	Yes
12	5300	28	4.4	203	Yes
13	5300	26	3.1	190	No
14	5300	29	4.7	160	No
15	5300	25	2.2	193	Yes
16	5300	27	3.5	181	Yes
17	5300	26	3	161	Yes
18	5300	28	4	204	Yes
19	5300	24	1.8	175	Yes
20	5300	25	2.7	209	Yes
21	5300	25	2.6	200	Yes
22	5300	23	1.5	152	Yes
23	5300	23	1	177	No
24	5300	29	5	222	Yes
25	5300	24	1.6	151	Yes
26	5300	23	1.4	216	Yes
27	5300	29	4.8	217	Yes
28	5300	27	3.6	198	Yes
29	5300	24	2	192	No
30	5300	26	2.8	196	No

Radar Type 3

Trial	VSG Freqency (MHz)	Number Pulses per Burst (16-18)	Pulse Width (6-10)	PRI (200-500)	Successful Detection
			(μs)	(μs)	(Yes/No)
1	5300	16	6.8	207	Yes
2	5300	17	7.6	294	Yes
3	5300	17	8.2	387	Yes
4	5300	17	8.1	493	Yes
5	5300	18	8.9	465	Yes
6	5300	17	8.5	398	Yes
7	5300	16	6.6	308	Yes
8	5300	18	9.1	255	Yes
9	5300	18	9.2	353	Yes
10	5300	17	7.7	337	No
11	5300	16	6.4	322	Yes
12	5300	18	9.4	396	Yes
13	5300	17	8.1	264	Yes
14	5300	18	9.7	412	No
15	5300	16	7.2	446	Yes
16	5300	17	8.5	300	Yes
17	5300	17	8	474	Yes
18	5300	18	9	499	Yes
19	5300	16	6.8	497	Yes
20	5300	17	7.7	256	Yes
21	5300	17	7.6	476	Yes
22	5300	16	6.5	208	Yes
23	5300	16	6	381	Yes
24	5300	18	10	334	Yes
25	5300	16	6.6	217	Yes
26	5300	16	6.4	344	Yes
27	5300	18	9.8	479	Yes
28	5300	17	8.6	341	Yes
29	5300	16	7	271	Yes
30	5300	17	7.8	206	Yes

Radar Type 4

Trial	VSG Freqency (MHz)	Number Pulses per Burst (12-16)	Pulse Width (11-20)	PRI (200-500)	Successful Detection
			(μs)	(μs)	(Yes/No)
1	5300	13	12.8	207	Yes
2	5300	13	14.5	294	No
3	5300	14	16	387	Yes
4	5300	14	15.8	493	Yes
5	5300	15	17.5	465	Yes
6	5300	15	16.6	398	Yes
7	5300	12	12.4	308	Yes
8	5300	15	18	255	Yes
9	5300	15	18.1	353	Yes
10	5300	14	14.8	337	No
11	5300	12	11.9	322	Yes
12	5300	16	18.6	396	Yes
13	5300	14	15.8	264	Yes
14	5300	16	19.2	412	Yes
15	5300	13	13.8	446	Yes
16	5300	15	16.7	300	Yes
17	5300	14	15.5	474	No
18	5300	15	17.8	499	Yes
19	5300	13	12.8	497	Yes
20	5300	14	14.8	256	Yes
21	5300	13	14.5	476	Yes
22	5300	12	12.1	208	Yes
23	5300	12	11	381	Yes
24	5300	16	19.9	334	No
25	5300	12	12.4	217	Yes
26	5300	12	12	344	Yes
27	5300	16	19.5	479	Yes
28	5300	15	16.8	341	Yes
29	5300	13	13.3	271	No
30	5300	14	15.1	206	Yes

Long Pulse Radar Test Waveforms

Radar Type 5_Trial 1

Trial Number:	1			VSG Freqency(MHz):		5300
Number of Bursts in Trial:	10			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	60.3	8			538543
2	2	69.5	8	1830.5		828299
3	2	77.7	8	1419.3		1118893
4	2	76.4	8	1591.6		211834
5	3	85.8	8	1869.2	1709.2	501332
6	2	81	8	1043		792758
7	1	58	8			1083979
8	3	88.9	8	939.1	1611.1	176037
9	3	89.1	8	1684.9	1707.9	465820
10	2	71.1	8	1358.9		756612

Radar Type 5_Trial 2

Trial Number:	2			VSG Freqency(MHz):		5300
Number of Bursts in Trial:	13			Successful Detection:		No
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	55.2	11			806494
2	3	91.8	11	1489.2	1099.2	107844
3	2	76.7	11	1409.3		330945
4	3	95.3	11	1016.7	1753.7	553296
5	1	65.4	11			778762
6	2	81.7	11	1542.3		80412
7	2	75.2	11	1769.8		303483
8	3	87.5	11	1404.5	1049.5	526172
9	1	60.3	11			751174
10	2	71.4	11	1741.6		52925
11	2	69.8	11	1090.2		276131
12	1	56.1	11			500009
13	1	50.1	11			723735

Radar Type 5_Trial 3

Trial Number:	3	VSG Freqency(MHz):	5300
Number of Bursts in Trial:	15	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	99.5	13	1850.5	1039.5	22027
2	1	57.9	13			215887
3	1	55.7	13			409202
4	3	96.8	13	1656.2	1075.2	600997
5	2	82.3	13	1813.7		794417
6	1	63	13			191860
7	2	72.9	13	1744.1		384799
8	2	73.6	13	1095.4		578443
9	3	98.7	13	1215.3	1744.3	769416
10	1	54.7	13			168149
11	1	56.1	13			361951
12	3	98.9	13	1869.1	1819.1	552729
13	1	52.7	13			749349
14	2	68.1	13	1745.9		143814
15	2	77.8	13	1338.2		337066

Radar Type 5_Trial 4

Trial Number:	4			VSG Freqency(MHz):		5300
Number of Bursts in Trial:	14			Successful Detection:		No
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	57.2	13			569325
2	2	75.6	13	1575.4		775162
3	2	81	13	1531		128658
4	1	52.5	13			336636
5	3	89.9	13	1277.1	1257.1	542392
6	3	86.9	13	1187.1	1805.1	749101
7	1	52	13			103445
8	1	62	13			310922
9	3	90.2	13	1883.8	1803.8	516399
10	2	69.2	13	1860.8		724362
11	2	79	13	1173		77733
12	3	100	13	1251	1114	284388
13	1	55.8	13			492830
14	2	80.6	13	951.4		699190

Radar Type 5_Trial 5

Trial Number:	5	VSG Freqency(MHz):	5300
Number of Bursts in Trial:	17	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	85.7	16	1314.3	1193.3	42889
2	1	61.6	16			213927
3	1	51.1	16			384581
4	1	54.1	16			555549
5	2	69.4	16	1043.6		21967
6	2	78.2	16	1725.8		192453
7	2	68.4	16	1914.6		362610
8	2	80	16	1229		533883
9	3	84.3	16	979.7	1616.7	952
10	2	75.7	16	1470.3		171434
11	2	75.9	16	981.1		341872
12	1	66.2	16			513554
13	3	97.5	16	1455.5	914.5	681380
14	1	56.6	16			150837
15	3	87.1	16	1445.9	1500.9	320207
16	2	70.5	16	1115.5		491765
17	3	96.4	16	1473.6	1669.6	660569

Radar Type 5_Trial 6

Trial Number:	6	VSG Freqency(MHz):	5300
Number of Bursts in Trial:	16	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	62.7	14			137777
2	1	63.6	14			319266
3	3	97.4	14	1565.6	1777.6	498425
4	2	80.2	14	1083.8		681125
5	3	84.7	14	1073.3	1835.3	114946
6	3	90.4	14	1061.6	1319.6	296092
7	2	67.2	14	1074.8		477719
8	1	66.3	14			660122
9	1	63.2	14			93092
10	3	97.4	14	1100.6	1374.6	273677
11	3	96	14	931	1801	454414
12	1	65.6	14			637544
13	2	77.5	14	970.5		70640
14	1	53.2	14			252200
15	1	63	14			434077
16	2	67	14	1854		613796

Radar Type 5_Trial 7

Trial Number:	7			VSG Freqency(MHz):		5300
Number of Bursts in Trial:	10			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	93.1	7	1042.9	1307.9	77308
2	1	62.9	7			368047
3	3	93.2	7	1510.8	1762.8	657047
4	1	55	7			949670
5	3	94.7	7	1539.3	1405.3	41570
6	2	83.3	7	1870.7		331911
7	3	89.9	7	1215.1	1290.1	621584
8	1	59.4	7			913757
9	2	77.2	7	1589.8		5860
10	3	91.4	7	1671.6	1355.6	295755

Radar Type 5_Trial 8

Trial Number:	8	VSG Freqency(MHz):	5300
Number of Bursts in Trial:	18	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	55.3	17			325819
2	2	76.7	17	1344.3		486546
3	2	73.7	17	1159.3		646985
4	3	89.5	17	1437.5	1600.5	144101
5	3	95.5	17	1021.5	1000.5	304844
6	2	75	17	1354		466269
7	2	69.7	17	1678.3		627013
8	2	72.8	17	1149.2		124567
9	1	66.3	17			286174
10	3	86.4	17	1349.6	1285.6	445610
11	1	58.4	17			608571
12	1	50.3	17			104936
13	1	51	17			266211
14	2	71.2	17	1060.8		426863
15	3	83.9	17	1809.1	1265.1	585966
16	3	87.9	17	1795.1	1473.1	84661
17	1	56.2	17			246288
18	2	80.9	17	1444.1		406728

Radar Type 5_Trial 9

Trial Number:	9	VSG Freqency(MHz):	5300
Number of Bursts in Trial:	18	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	72.5	17	1638.5		567587
2	1	64.4	17			65243
3	1	56.7	17			226653
4	2	72.4	17	1211.6		386854
5	1	62.8	17			549277
6	3	99.2	17	1255.8	979.8	45204
7	1	54.4	17			206739
8	3	93.7	17	1153.3	1131.3	366489
9	3	93.9	17	1786.1	1903.1	526010
10	1	65.4	17			25477
11	1	51.7	17			186792
12	2	79.4	17	1146.6		347747
13	2	73.7	17	1183.3		508768
14	3	88	17	1033	1507	5585
15	1	53	17			166965
16	3	93.4	17	1754.6	909.6	326849
17	3	85.1	17	1255.9	1436.9	487576
18	3	90.5	17	1820.5	1148.5	647431

Radar Type 5_Trial 10

Trial Number:	10	VSG Freqency(MHz):	5300
Number of Bursts in Trial:	13	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	92.6	11	1765.4	1163.4	203047
2	2	73.8	11	1127.2		426564
3	1	51.8	11			650424
4	2	70.9	11	1603.1		872337
5	3	95.9	11	1116.1	1651.1	175564
6	1	54.6	11			399735
7	3	87	11	985	1545	621241
8	2	76.6	11	1475.4		845725
9	1	58.5	11			148608
10	3	92.7	11	1870.3	1171.3	370846
11	1	61.9	11			595965
12	2	72	11	1401		817779
13	2	71.1	11	1483.9		121000

Radar Type 5_Trial 11

Trial Number:	11	VSG Freqency(MHz):	5302.4
Number of Bursts in Trial:	9	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	56.7	6			497985
2	2	77.1	6	1406.9		820077
3	1	59	6			1144207
4	3	86.9	6	1452.1	1736.1	135001
5	1	62.8	6			458152
6	3	84.6	6	1082.4	1682.4	779607
7	2	82.9	6	1021.1		1103250
8	1	63.9	6			95517
9	2	74.6	6	1017.4		418110

Radar Type 5_Trial 12

Trial Number:	12			VSG Freqency(MHz):		5307.2
Number of Bursts in Trial:	18			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	85.1	18	1253.9	1479.9	368765
2	1	51.8	18			531770
3	2	81.2	18	1326.8		27767
4	1	54.2	18			189105
5	2	71.1	18	1156.9		349766
6	3	86.9	18	1845.1	1544.1	509100
7	1	62.6	18			7956
8	2	70.5	18	1708.5		168958
9	3	97.4	18	1407.6	1523.6	328985
10	1	57.6	18			491831
11	3	86.2	18	1463.8	1223.8	650183
12	3	93.5	18	913.5	1297.5	148972
13	3	95.3	18	1628.7	1149.7	309510
14	2	82.4	18	1821.6		470738
15	2	79	18	1596		631978
16	1	51.5	18			129602
17	2	68.5	18	1510.5		290167
18	1	52.1	18			452204

Radar Type 5_Trial 13

Trial Number:	13			VSG Freqency(MHz):		5305.2
Number of Bursts in Trial:	14			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	85.5	13	1289.5	1182.5	786957
2	3	86.2	13	1694.8	1499.8	140536
3	3	90.6	13	1729.4	1682.4	347250
4	1	61.7	13			556343
5	2	81.8	13	1305.2		762767
6	2	71.9	13	975.1		115418
7	3	94.3	13	1061.7	1031.7	322215
8	3	95	13	1199	907	529176
9	1	52.2	13			738231
10	1	64.7	13			89983
11	1	51	13			297476
12	3	90.2	13	1280.8	980.8	503460
13	1	58.8	13			712290
14	1	52.2	13			64373

Radar Type 5_Trial 14

Trial Number:	14	VSG Freqency(MHz):	5307.6
Number of Bursts in Trial:	19	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	76.6	19	1788.4		199563
2	2	68	19	1503		352112
3	3	88.8	19	1295.2	1178.2	503930
4	1	50	19			28613
5	3	89.8	19	1315.2	1718.2	180411
6	3	91.6	19	1443.4	1264.4	332647
7	3	83.5	19	1070.5	1907.5	484651
8	1	50	19			9764
9	1	64	19			162593
10	3	88.1	19	1164.9	1115.9	314251
11	3	95.4	19	1559.6	1715.6	465523
12	1	54.2	19			620657
13	3	85.8	19	1598.2	1754.2	143067
14	2	77.7	19	1334.3		296121
15	1	61.4	19			449337
16	3	94.7	19	1104.3	1685.3	599518
17	2	80	19	1576		124639
18	3	85.4	19	1360.6	1174.6	276456
19	3	94.3	19	1736.7	1346.7	428543

Radar Type 5_Trial 15

Trial Number:	15			VSG Freqency(MHz):		5303.6
Number of Bursts in Trial:	12			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	82.4	9	1295.6		923549
2	3	97.4	9	1695.6	1174.6	167590
3	2	77.7	9	1626.3		409776
4	3	84	9	1323	1065	650874
5	2	73.4	9	1305.6		893302
6	2	70	9	1873		138088
7	1	59.3	9			380600
8	1	60	9			622900
9	2	76.2	9	1468.8		863489
10	3	84.7	9	1698.3	1118.3	108158
11	3	98	9	907	1485	349615
12	2	69.4	9	1124.6		591916

Radar Type 5_Trial 16

Trial Number:	16			VSG Freqency(MHz):		5306
Number of Bursts in Trial:	16			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	57.1	15			625859
2	3	98.9	15	1662.1	1562.1	58668
3	3	84	15	1364	937	239835
4	2	66.9	15	1563.1		421044
5	2	77.3	15	1045.7		603045
6	3	93.7	15	1736.3	1418.3	36469
7	2	78.9	15	1698.1		217690
8	1	61.8	15			399498
9	2	77	15	1436		580247
10	2	68.6	15	1747.4		14212
11	3	85.5	15	1609.5	1442.5	194834
12	2	72.2	15	1251.8		376784
13	1	52.4	15			558534
14	1	66.3	15			740350
15	2	77.5	15	1025.5		173232
16	3	86.1	15	1705.9	1272.9	353562

Radar Type 5_Trial 17

Trial Number:	17			VSG Freqency(MHz):		5305.2
Number of Bursts in Trial:	14			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	66.6	13			613143
2	3	83.5	13	1347.5	1728.5	817452
3	1	57.5	13			172616
4	3	84.7	13	1193.3	1164.3	379303
5	1	65.7	13			587468
6	3	95.9	13	1094.1	1070.1	793142
7	2	76.4	13	1666.6		146878
8	1	54.8	13			354776
9	3	98.9	13	1164.1	1890.1	559894
10	3	84.1	13	1155.9	1490.9	766733
11	1	65.3	13			121614
12	2	80	13	966		328497
13	2	80.4	13	1063.6		535626
14	2	81.6	13	1376.4		742641

Radar Type 5_Trial 18

Trial Number:	18			VSG Freqency(MHz):		5306.4
Number of Bursts in Trial:	17			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	57.3	16			78985
2	1	65.4	16			249930
3	1	66	16			420478
4	2	68.7	16	1224.3		590201
5	3	88.2	16	1508.8	922.8	57770
6	1	55.4	16			228721
7	1	51.8	16			399563
8	1	60.8	16			570677
9	3	84.2	16	1410.8	1429.8	36799
10	1	51	16			207708
11	1	51.1	16			378849
12	2	73.5	16	1767.5		547642
13	2	67.3	16	1637.7		15861
14	1	63.8	16			186727
15	1	61.9	16			357464
16	1	55.5	16			528536
17	2	81.5	16	1097.5		698215

Radar Type 5_Trial 19

Trial Number:	19			VSG Freqency(MHz):		5303.2
Number of Bursts in Trial:	10			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	57	8			282015
2	3	92.6	8	1172.4	1362.4	571527
3	2	73.2	8	1026.8		862775
4	3	93.5	8	1195.5	1626.5	1151333
5	3	92.7	8	1643.3	1594.3	245413
6	2	77.1	8	1344.9		535975
7	1	63.2	8			827530
8	1	53.6	8			1118562
9	1	61.2	8			210236
10	2	72.4	8	1265.6		500259

Radar Type 5_Trial 20

Trial Number:	20			VSG Freqency(MHz):		5304.4
Number of Bursts in Trial:	13			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	79.1	11	1528.9		607823
2	2	68	11	1097		830939
3	3	93.3	11	1194.7	1586.7	133703
4	2	78.3	11	1748.7		357014
5	3	98.9	11	1547.1	1901.1	578602
6	2	81.4	11	1342.6		803148
7	3	95.4	11	927.6	1736.6	106332
8	1	61.2	11			330202
9	2	70.1	11	1438.9		552614
10	1	56.1	11			777117
11	3	83.8	11	960.2	1507.2	78918
12	2	78.1	11	1848.9		302142
13	2	72	11	1096		525336

Radar Type 5_Trial 21

Trial Number:	21			VSG Freqency(MHz):		5295.6
Number of Bursts in Trial:	13			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	84.3	11	1260.7	1217.7	747422
2	1	55.7	11			51603
3	3	99.3	11	1881.7	978.7	274322
4	1	56.5	11			498535
5	3	83.6	11	1662.4	1157.4	719442
6	3	92.3	11	1120.7	1396.7	23989
7	2	78.6	11	1540.4		247219
8	1	62.6	11			471050
9	3	93	11	1444	1596	692109
10	3	93.4	11	1846.6	1878.6	914389
11	1	52.5	11			220150
12	1	58.3	11			443625
13	3	87.5	11	1158.5	1892.5	664565

Radar Type 5_Trial 22

Trial Number:	22			VSG Freqency(MHz):		5297.6
Number of Bursts in Trial:	9			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	57.2	6			1286779
2	3	88.1	6	1675.9	1081.9	277551
3	1	64.7	6			601369
4	3	88.3	6	1072.7	1603.7	922524
5	1	52.8	6			1247270
6	1	65	6			238429
7	2	76.9	6	1784.1		560723
8	2	83.1	6	1521.9		883506
9	2	72.7	6	1894.3		1205655

Radar Type 5_Trial 23

Trial Number:	23	VSG Freqency(MHz):	5298
Number of Bursts in Trial:	8	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	92.8	5	1087.2	1741.2	223099
2	3	91	5	1498	985	586014
3	2	72.7	5	1608.3		949446
4	1	52.2	5			1313681
5	3	92.1	5	1859.9	945.9	178359
6	2	71.9	5	1651.1		541575
7	1	52.5	5			905877
8	3	91.8	5	1493.2	933.2	1266631

Radar Type 5_Trial 24

Trial Number:	24			VSG Freqency(MHz):		5292
Number of Bursts in Trial:	20			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	99.4	20	936.6	1059.6	53272
2	3	97.7	20	1730.3	1724.3	197486
3	2	78.9	20	1256.1		343109
4	2	70.5	20	1557.5		488023
5	3	89	20	1588	1306	35472
6	3	87.7	20	1065.3	1060.3	180037
7	3	93.4	20	1196.6	928.6	324626
8	2	70.5	20	1369.5		470208
9	2	79.7	20	1182.3		17714
10	1	61.4	20			162822
11	2	82.7	20	1315.3		307487
12	1	59.7	20			453480
13	3	86.2	20	1060.8	1849.8	595311
14	2	74.7	20	1261.3		144664
15	3	90.7	20	1542.3	1733.3	288611
16	2	70	20	1189		434299
17	1	61.3	20			580783
18	2	74.2	20	985.8		127005
19	1	57.2	20			272382
20	3	96.6	20	1457.4	1185.4	415803

Radar Type 5_Trial 25

Trial Number:	25			VSG Freqency(MHz):		5297.2
Number of Bursts in Trial:	10			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	81.8	7	1636.2		1125033
2	1	53.3	7			218776
3	2	68.7	7	1427.3		508915
4	1	51.1	7			799943
5	3	89	7	1111	1426	1087997
6	1	61.5	7			182965
7	1	62.9	7			473603
8	1	58.3	7			764302
9	3	83.9	7	1782.1	1701.1	1051452
10	2	81.4	7	1307.6		146972

Radar Type 5_Trial 26

Trial Number:	26			VSG Freqency(MHz):		5297.6
Number of Bursts in Trial:	9			Successful Detection:		No
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	50.1	6			486680
2	1	56.6	6			809523
3	1	60.1	6			1132714
4	1	51.1	6			123763
5	3	94	6	1483	1296	445662
6	1	54.8	6			770020
7	2	79.4	6	1138.6		1091763
8	2	67	6	1652		83893
9	2	68.2	6	994.8		406603

Radar Type 5_Trial 27

Trial Number:	27	VSG Freqency(MHz):	5292.4
Number of Bursts in Trial:	20	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	50.4	19			328148
2	2	71.4	19	1262.6		471887
3	2	67.8	19	1898.2		19791
4	2	73.2	19	1101.8		164828
5	1	53.6	19			310377
6	3	94.3	19	1759.7	1126.7	452609
7	2	73.4	19	1864.6		1976
8	3	86.5	19	1728.5	1298.5	146346
9	2	68.1	19	1629.9		291562
10	1	50.2	19			437167
11	1	52.6	19			582705
12	3	90.9	19	1794.1	1755.1	128542
13	2	67.8	19	1087.2		273980
14	1	64.6	19			419269
15	1	56	19			564253
16	1	60	19			111356
17	3	96.1	19	1081.9	1842.9	255090
18	2	79	19	1739		400330
19	2	77.7	19	1538.3		545725
20	2	81.5	19	1279.5		93284

Radar Type 5_Trial 28

Trial Number:	28	VSG Freqency(MHz):	5294
Number of Bursts in Trial:	16	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	77.4	15	1452.6		297835
2	2	74.7	15	1512.3		478727
3	3	85	15	1017	1324	659587
4	3	86.7	15	1340.3	1755.3	94098
5	3	98.3	15	1358.7	978.7	275186
6	1	61.2	15			457719
7	2	76	15	1859		637709
8	3	99.6	15	1484.4	1266.4	71965
9	3	85	15	1392	1753	252763
10	2	80.7	15	1151.3		434307
11	3	85.8	15	954.2	1190.2	614725
12	3	90.6	15	954.4	1653.4	49657
13	3	94.4	15	1354.6	1670.6	230510
14	1	56	15			412734
15	1	56.8	15			594572
16	2	75.2	15	1270.8		27447

Radar Type 5_Trial 29

Trial Number:	29	VSG Freqency(MHz):	5296.4
Number of Bursts in Trial:	11	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	64	9			304285
2	2	80.2	9	1390.8		567815
3	1	65.1	9			832279
4	1	56.9	9			7467
5	1	65.6	9			271677
6	2	75	9	1381		535128
7	3	94.9	9	1357.1	964.1	798432
8	1	58	9			1064572
9	2	81.2	9	1723.8		238648
10	3	90.5	9	1363.5	1285.5	502084
11	2	82.4	9	1400.6		766515

Radar Type 5_Trial 30

Trial Number:	30	VSG Freqency(MHz):	5295.2
Number of Bursts in Trial:	13	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	92.1	12	1619.9	1656.9	869159
2	1	54.1	12			174833
3	3	91.2	12	1085.8	1256.8	397236
4	3	98	12	1584	1867	619250
5	2	75.9	12	1151.1		843845
6	1	51.7	12			147199
7	3	85.5	12	1517.5	1640.5	369401
8	3	90.8	12	1207.2	1025.2	592633
9	2	75.7	12	1663.3		816162
10	3	86.4	12	1301.6	1591.6	119320
11	2	81.1	12	1036.9		342935
12	2	74.9	12	1726.1		565891
13	3	92.5	12	988.5	1580.5	788224

Frequency Hopping Radar Test Waveforms

Radar Type 6

Trial	Pulse Width	PRI	Pulses per Hop	Hopping Rate	Hopping Sequence Length	Successful Detection
	(μ sec)	(μ sec)		(kHz)	(msec)	(Yes/No)
1	1	333	9	0.333	300	Yes
2	1	333	9	0.333	300	Yes
3	1	333	9	0.333	300	Yes
4	1	333	9	0.333	300	Yes
5	1	333	9	0.333	300	Yes
6	1	333	9	0.333	300	Yes
7	1	333	9	0.333	300	Yes
8	1	333	9	0.333	300	No
9	1	333	9	0.333	300	Yes
10	1	333	9	0.333	300	Yes
11	1	333	9	0.333	300	Yes
12	1	333	9	0.333	300	Yes
13	1	333	9	0.333	300	Yes
14	1	333	9	0.333	300	Yes
15	1	333	9	0.333	300	Yes
16	1	333	9	0.333	300	Yes
17	1	333	9	0.333	300	Yes
18	1	333	9	0.333	300	No
19	1	333	9	0.333	300	Yes
20	1	333	9	0.333	300	No
21	1	333	9	0.333	300	Yes
22	1	333	9	0.333	300	Yes
23	1	333	9	0.333	300	Yes
24	1	333	9	0.333	300	Yes
25	1	333	9	0.333	300	Yes
26	1	333	9	0.333	300	Yes
27	1	333	9	0.333	300	Yes
28	1	333	9	0.333	300	Yes
29	1	333	9	0.333	300	No
30	1	333	9	0.333	300	Yes

< Channel Bandwidth 40MHz / 5310MHz >

Short Pulse Radar Test Waveforms

Radar Type 1

Trial	VSG Freqency (MHz)	Pulse Repetition Frequency Number (1 to 23)	Pulse Repetition Frequency (Pulses Per Second)	PRI (msec)	Test A/B A/B	Successful Detection (Yes/No)
1	5310	18	1165.5	858	A	Yes
2	5310	5	1672.2	598	A	No
3	5310	10	1432.7	698	A	Yes
4	5310	12	1355	738	A	Yes
5	5310	4	1730.1	578	A	Yes
6	5310	3	1792.1	558	A	Yes
7	5310	19	1139	878	A	Yes
8	5310	13	1319.3	758	A	Yes
9	5310	17	1193.3	838	A	Yes
10	5310	2	1858.7	538	A	No
11	5310	20	1113.6	898	A	No
12	5310	11	1392.8	718	A	Yes
13	5310	9	1474.9	678	A	Yes
14	5310	1	1930.5	518	A	Yes
15	5310	7	1567.4	638	A	Yes
16	5310	-	813	1230	B	Yes
17	5310	-	585.1	1709	B	Yes
18	5310	-	684.5	1461	B	Yes
19	5310	-	795.5	1257	B	No
20	5310	-	1029.9	971	B	Yes
21	5310	-	784.9	1274	B	Yes
22	5310	-	489.7	2042	B	Yes
23	5310	-	401.8	2489	B	Yes
24	5310	-	428.4	2334	B	Yes
25	5310	-	686.3	1457	B	Yes
26	5310	-	1538.5	650	B	No
27	5310	-	377.4	2650	B	Yes
28	5310	-	1201.9	832	B	Yes
29	5310	-	456	2193	B	No
30	5310	-	555.9	1799	B	Yes

Radar Type 2

Trial	VSG Freqency (MHz)	Number Pulses per Burst (23-29)	Pulse Width (1-5)	PRI (150-230)	Successful Detection
			(μs)	(μs)	(Yes/No)
1	5310	23	1.5	220	Yes
2	5310	25	2.5	155	No
3	5310	27	3.5	210	Yes
4	5310	25	2.3	156	Yes
5	5310	29	4.7	153	No
6	5310	25	2.4	165	No
7	5310	28	4.1	218	Yes
8	5310	29	4.8	212	Yes
9	5310	29	4.7	199	Yes
10	5310	24	1.6	205	Yes
11	5310	25	2.6	186	Yes
12	5310	24	2	208	Yes
13	5310	27	3.5	188	Yes
14	5310	28	4.4	179	Yes
15	5310	26	3.2	229	Yes
16	5310	27	3.6	183	Yes
17	5310	26	2.8	181	Yes
18	5310	29	4.7	180	Yes
19	5310	24	1.6	226	Yes
20	5310	26	3.1	184	Yes
21	5310	26	2.8	189	Yes
22	5310	24	1.6	167	Yes
23	5310	26	3.1	157	Yes
24	5310	25	2.7	227	Yes
25	5310	27	3.8	221	Yes
26	5310	25	2.4	202	No
27	5310	27	3.4	171	Yes
28	5310	23	1	182	Yes
29	5310	23	1.3	197	No
30	5310	24	1.7	194	Yes

Radar Type 3

Trial	VSG Freqency (MHz)	Number Pulses per Burst (16-18)	Pulse Width (6-10)	PRI (200-500)	Successful Detection
			(μs)	(μs)	(Yes/No)
1	5310	16	6.5	232	No
2	5310	17	7.5	239	Yes
3	5310	17	8.5	372	Yes
4	5310	16	7.3	382	Yes
5	5310	18	9.7	489	Yes
6	5310	17	7.4	451	Yes
7	5310	18	9.1	204	Yes
8	5310	18	9.8	314	Yes
9	5310	18	9.7	225	No
10	5310	16	6.6	228	Yes
11	5310	17	7.6	463	Yes
12	5310	16	7	365	Yes
13	5310	17	8.5	211	Yes
14	5310	18	9.4	325	Yes
15	5310	17	8.2	474	Yes
16	5310	17	8.6	400	Yes
17	5310	17	7.8	468	Yes
18	5310	18	9.7	202	No
19	5310	16	6.6	410	Yes
20	5310	17	8.1	439	Yes
21	5310	17	7.8	409	Yes
22	5310	16	6.6	261	No
23	5310	17	8.1	475	Yes
24	5310	17	7.7	333	Yes
25	5310	18	8.8	216	No
26	5310	17	7.4	260	Yes
27	5310	17	8.4	363	Yes
28	5310	16	6	452	Yes
29	5310	16	6.3	272	Yes
30	5310	16	6.7	268	No

Radar Type 4

Trial	VSG Freqency (MHz)	Number Pulses per Burst (12-16)	Pulse Width (11-20)	PRI (200-500)	Successful Detection
			(μs)	(μs)	(Yes/No)
1	5310	12	12.2	232	Yes
2	5310	13	14.5	239	Yes
3	5310	15	16.5	372	Yes
4	5310	13	13.9	382	Yes
5	5310	16	19.2	489	Yes
6	5310	13	14.1	451	Yes
7	5310	15	18	204	Yes
8	5310	16	19.4	314	Yes
9	5310	16	19.3	225	Yes
10	5310	12	12.4	228	Yes
11	5310	14	14.7	463	Yes
12	5310	13	13.3	365	Yes
13	5310	15	16.6	211	Yes
14	5310	16	18.5	325	Yes
15	5310	14	15.9	474	Yes
16	5310	15	16.9	400	No
17	5310	14	15.1	468	Yes
18	5310	16	19.2	202	Yes
19	5310	12	12.5	410	Yes
20	5310	14	15.6	439	Yes
21	5310	14	15	409	Yes
22	5310	12	12.3	261	No
23	5310	14	15.8	475	Yes
24	5310	14	14.8	333	Yes
25	5310	15	17.3	216	No
26	5310	13	14.2	260	Yes
27	5310	14	16.3	363	Yes
28	5310	12	11	452	Yes
29	5310	12	11.6	272	No
30	5310	12	12.7	268	Yes

Long Pulse Radar Test Waveforms

Radar Type 5_Trial 1

Trial Number:	1	VSG Freqency(MHz):	5310
Number of Bursts in Trial:	9	Successful Detection:	No

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	56.8	7			505791
2	2	69.3	7	1325.7		827892
3	2	80.5	7	1003.5		1150939
4	1	66.1	7			142835
5	3	95.5	7	1398.5	1176.5	464917
6	2	67.2	7	1488.8		787881
7	3	88.7	7	1674.3	1078.3	1109444
8	3	96.5	7	1157.5	1705.5	102804
9	3	95.7	7	1814.3	1790.3	424833

Radar Type 5_Trial 2

Trial Number:	2	VSG Freqency(MHz):	5310
Number of Bursts in Trial:	13	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	1	57.8	11			518559
2	2	70.7	11	1260.3		740770
3	1	62.7	11			43804
4	2	81.1	11	1853.9		266682
5	3	91.6	11	1182.4	1597.4	489248
6	2	77.3	11	1722.7		712574
7	2	82.7	11	1825.3		16221
8	2	72.7	11	1514.3		239312
9	3	95.2	11	1113.8	1399.8	462008
10	1	58.4	11			687000
11	2	75.6	11	1253.4		909259
12	2	72	11	1240		211897
13	1	57.6	11			435781

Radar Type 5_Trial 3

Trial Number:	3			VSG Freqency(MHz):		5310
Number of Bursts in Trial:	15			Successful Detection:		Yes
Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	76.6	14	1083.4		570628
2	2	71	14	1356		763437
3	3	84.9	14	1333.1	1609.1	159379
4	2	67.9	14	975.1		353429
5	2	79.7	14	1051.3		546819
6	1	50.5	14			741113
7	1	53.6	14			136172
8	1	59.6	14			329765
9	1	66.5	14			523306
10	3	92.7	14	1566.3	1761.3	713583
11	3	97.9	14	1227.1	952.1	111937
12	2	75.9	14	1762.1		305154
13	1	54.4	14			499561
14	3	87.8	14	1494.2	1300.2	691134
15	3	92.7	14	1263.3	1112.3	88160

Radar Type 5_Trial 4

Trial Number:	4	VSG Freqency(MHz):	5310
Number of Bursts in Trial:	12	Successful Detection:	No

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	85.8	10	1669.2	1410.2	351791
2	2	79.1	10	1699.9		594029
3	1	61.1	10			837158
4	1	54.1	10			80802
5	3	86.9	10	1127.1	923.1	322391
6	2	82.5	10	1687.5		563973
7	1	54.6	10			807675
8	3	88.1	10	1002.9	1691.9	50815
9	3	87.2	10	1736.8	1625.8	292220
10	2	71.4	10	1335.6		534558
11	2	69.2	10	1510.8		775987
12	1	66.4	10			21153

Radar Type 5_Trial 5

Trial Number:	5	VSG Freqency(MHz):	5310
Number of Bursts in Trial:	19	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	2	77.4	19	1011.6		165995
2	2	71	19	1222		318441
3	1	56.5	19			471624
4	1	57.7	19			624176
5	3	93.4	19	1545.6	1810.6	146546
6	2	75	19	953		299659
7	3	99.3	19	1336.7	1215.7	451332
8	3	92.8	19	1885.2	1205.2	602340
9	1	59.5	19			128500
10	2	81.3	19	1747.7		280671
11	2	77.6	19	1643.4		432946
12	3	87.6	19	1699.4	999.4	584139
13	3	88.2	19	1783.8	1110.8	109116
14	3	92.8	19	1199.2	1610.2	261386
15	3	86	19	1886	986	413437
16	3	91.4	19	1775.6	1318.6	565228
17	2	78.1	19	1597.9		90631
18	1	64.8	19			243625
19	1	55.2	19			396629

Radar Type 5_Trial 6

Trial Number:	6	VSG Freqency(MHz):	5310
Number of Bursts in Trial:	12	Successful Detection:	Yes

Burst (8-20)	Number Pulses per Burst (1-3)	Pulse Width (50-100)	Chirp Width (5-20)	Pulse 1-to-2 Spacing	Pulse 2-to-3 Spacing	Starting Location Within Interval
		(μ sec)	(MHz)	(μ sec)	(μ sec)	(μ sec)
1	3	87.2	10	1563.8	1839.8	867122
2	3	89.6	10	1341.4	1512.4	113816
3	3	90	10	947	1541	355467
4	3	86.9	10	1057.1	1487.1	596574
5	1	66	10			840937
6	3	97.4	10	1336.6	1454.6	84105
7	2	71.5	10	1171.5		325946
8	3	85.2	10	996.8	948.8	567402
9	2	75.1	10	1758.9		809271
10	2	72	10	1085		54426
11	2	82.9	10	1306.1		296377
12	3	97.7	10	1308.3	1844.3	537126