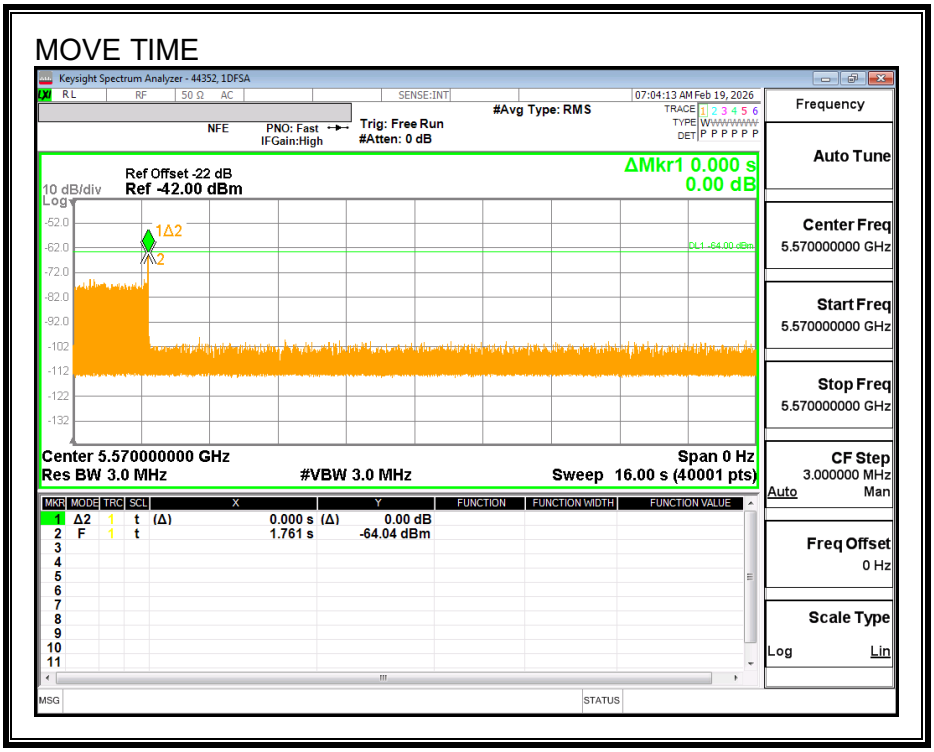
MOVE TIME



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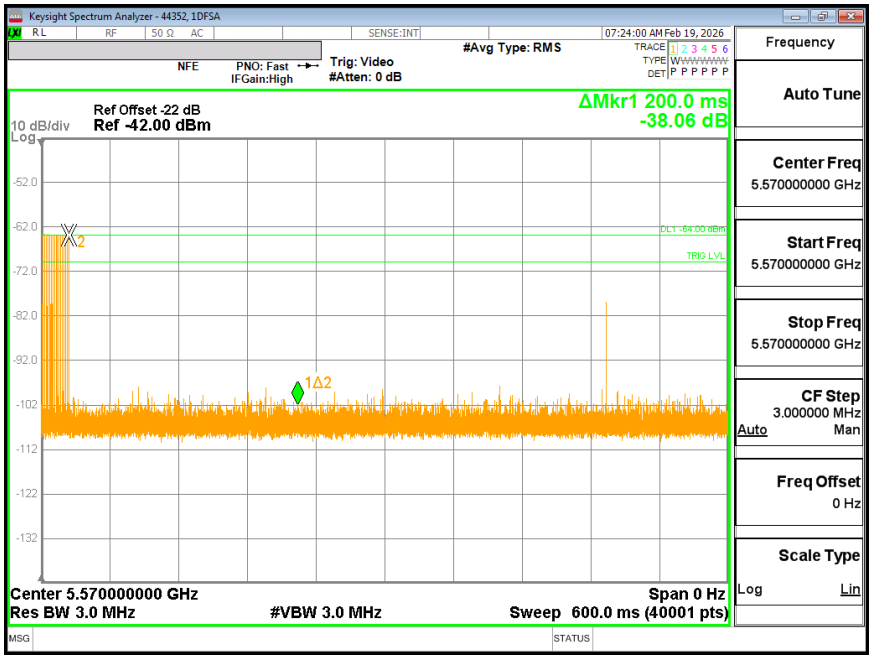
CHANNEL CLOSING TIME

CLOSING TIME



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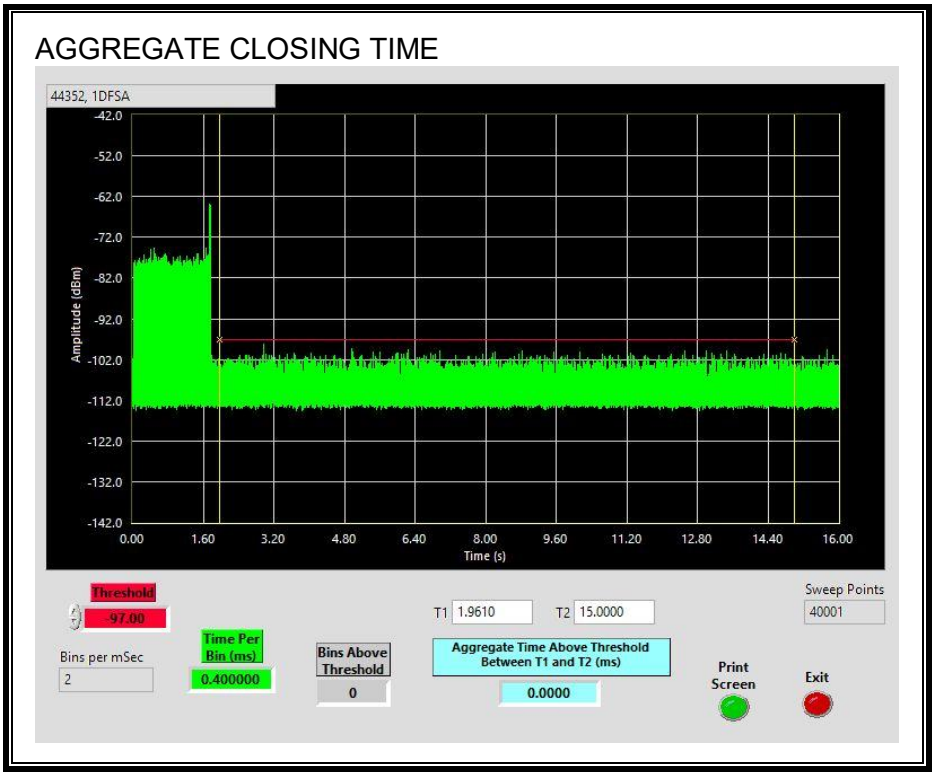
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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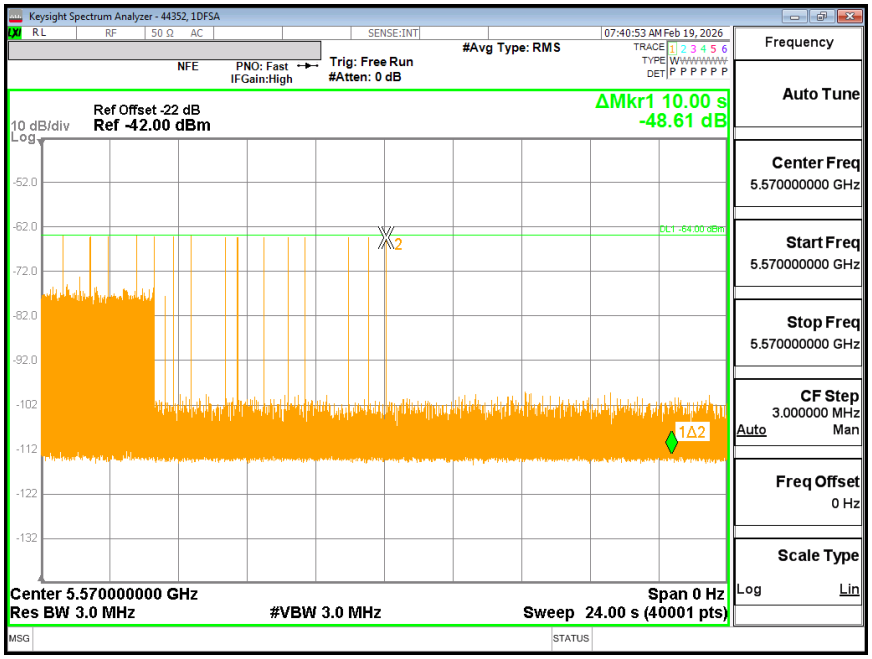
LONG PULSE CHANNEL MOVE TIME

The traffic ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME FOR LONG PULSE RADAR



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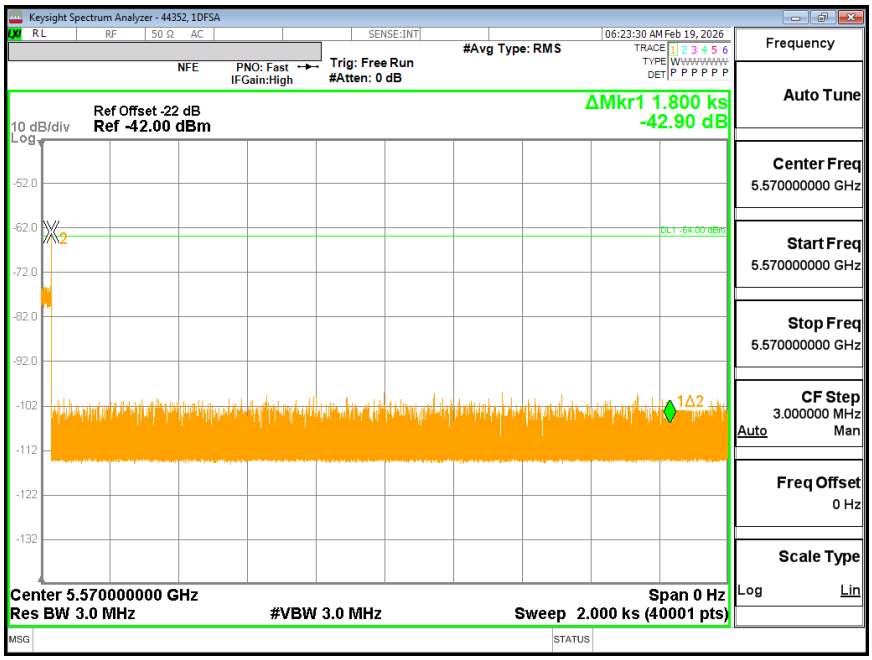
6.5.6. NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

NON-OCCUPANCY PERIOD



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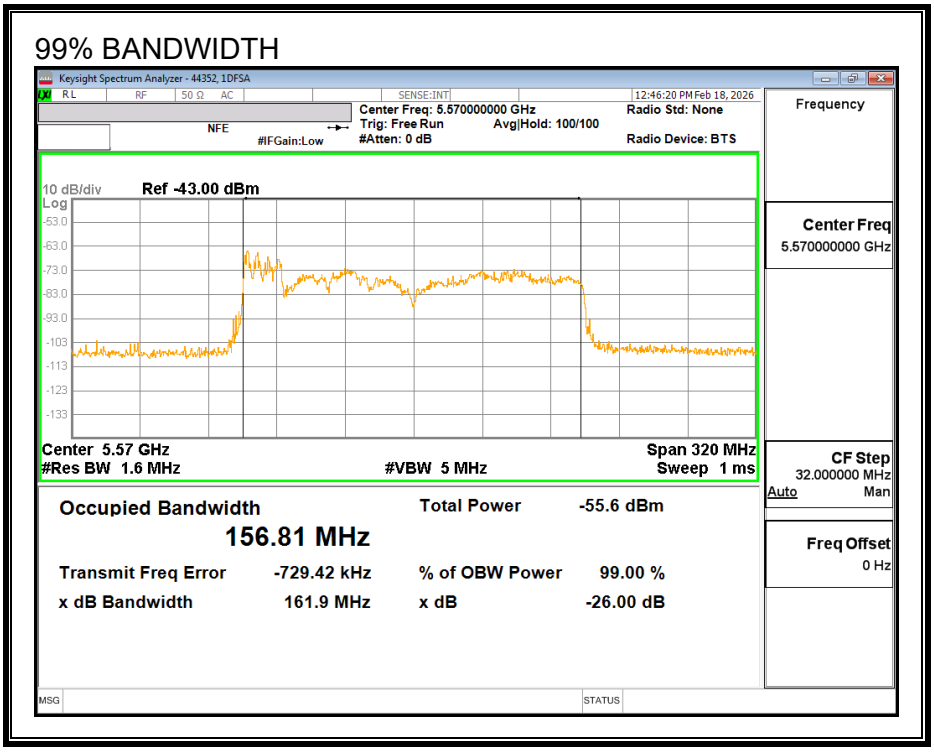
6.5.7. DETECTION BANDWIDTH

REFERENCE PLOT OF 99% POWER BANDWIDTH



RESULTS

F_L (MHz)	F_H (MHz)	Detection Bandwidth (MHz)	Applicable 99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (%)	Minimum Limit (%)
5490	5650	160	156.81	102.0	100

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DETECTION BANDWIDTH PROBABILITY

DETECTION BANDWIDTH PROBABILITY RESULTS

Detection Bandwidth Test Results				
FCC Type 0 Waveform: 1 us Pulse Width, 1428 us PRI, 18 Pulses per Burst				
Frequency (MHz)	Number of Trials	Number Detected	Detection (%)	Mark
5489	1	0	0	
5490	10	10	100	FL
5495	10	10	100	
5500	10	10	100	
5505	10	10	100	
5510	10	10	100	
5515	10	10	100	
5520	10	10	100	
5525	10	10	100	
5530	10	10	100	
5535	10	10	100	
5540	10	10	100	
5545	10	10	100	
5550	10	10	100	
5555	10	10	100	
5560	10	10	100	
5565	10	10	100	
5570	10	10	100	
5575	10	10	100	
5580	10	10	100	
5585	10	10	100	
5590	10	10	100	
5595	10	10	100	
5600	10	10	100	
5605	10	10	100	
5610	10	10	100	
5615	10	10	100	
5620	10	10	100	
5625	10	10	100	
5630	10	10	100	
5635	10	10	100	
5640	10	10	100	
5645	10	10	100	
5650	10	10	100	FH
5651	1	0	0	

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6.5.8. IN-SERVICE MONITORING

RESULTS

FCC Radar Test Summary

Signal Type	Number of Trials	Detection (%)	Limit (%)	Pass/Fail	Detection Bandwidth FL	Detection Bandwidth FH	OBW	Test Location	Employee Number	In-Service Monitoring Version
FCC Short Pulse Type 1	30	100.00	60	Pass	5490	5650	156.81	1DFS1	44352	v2023.11.3
FCC Short Pulse Type 2	30	100.00	60	Pass	5490	5650	156.81	1DFS1	44352	v2023.11.3
FCC Short Pulse Type 3	30	83.33	60	Pass	5490	5650	156.81	1DFS1	44352	v2023.11.3
FCC Short Pulse Type 4	30	93.33	60	Pass	5490	5650	156.81	1DFS1	44352	v2023.11.3
Aggregate		94.17	80	Pass						
FCC Long Pulse Type 5	30	100.00	80	Pass	5490	5650	156.81	1DFS1	44352	v2023.11.3
FCC Hopping Type 6	161	98.76	70	Pass	5490	5650		1DFS1	44352	v2023.11.3

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TYPE 1 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 1						
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Test (A/B)	Frequency (MHz)	Successful Detection (Yes/No)
1001	1	3066	18	A	5589	Yes
1002	1	938	57	A	5531	Yes
1003	1	638	83	A	5532	Yes
1004	1	878	61	A	5511	Yes
1005	1	558	95	A	5623	Yes
1006	1	738	72	A	5518	Yes
1007	1	678	78	A	5526	Yes
1008	1	618	86	A	5634	Yes
1009	1	898	59	A	5492	Yes
1010	1	538	99	A	5516	Yes
1011	1	578	92	A	5542	Yes
1012	1	518	102	A	5507	Yes
1013	1	658	81	A	5502	Yes
1014	1	758	70	A	5626	Yes
1015	1	918	58	A	5637	Yes
1016	1	984	54	B	5496	Yes
1017	1	810	66	B	5632	Yes
1018	1	1637	33	B	5543	Yes
1019	1	1593	34	B	5622	Yes
1020	1	1355	39	B	5620	Yes
1021	1	1440	37	B	5510	Yes
1022	1	1331	40	B	5547	Yes
1023	1	2899	19	B	5588	Yes
1024	1	1725	31	B	5632	Yes
1025	1	875	61	B	5498	Yes
1026	1	2379	23	B	5574	Yes
1027	1	1658	32	B	5502	Yes
1028	1	2096	26	B	5525	Yes
1029	1	2858	19	B	5568	Yes
1030	1	2073	26	B	5532	Yes

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TYPE 2 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 2					
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Frequency (MHz)	Successful Detection (Yes/No)
2001	3.4	177	24	5518	Yes
2002	3.4	158	26	5519	Yes
2003	1.1	150	27	5562	Yes
2004	3.5	173	29	5526	Yes
2005	1.5	212	23	5649	Yes
2006	4.1	202	29	5504	Yes
2007	4.4	164	24	5625	Yes
2008	1.2	158	23	5508	Yes
2009	3.7	205	29	5496	Yes
2010	2.9	164	28	5494	Yes
2011	1.5	178	27	5540	Yes
2012	4.9	223	24	5511	Yes
2013	1.8	159	27	5495	Yes
2014	3.6	208	24	5559	Yes
2015	4.8	191	28	5492	Yes
2016	2.6	207	25	5613	Yes
2017	2.1	194	29	5591	Yes
2018	4.3	214	24	5636	Yes
2019	4	205	25	5602	Yes
2020	2.2	191	26	5644	Yes
2021	4.3	187	28	5497	Yes
2022	5	176	27	5541	Yes
2023	3.1	219	28	5531	Yes
2024	4	213	28	5596	Yes
2025	2.4	222	26	5539	Yes
2026	1.6	220	26	5606	Yes
2027	4.3	152	25	5521	Yes
2028	3.6	197	29	5558	Yes
2029	2.7	214	25	5537	Yes
2030	2.3	225	29	5588	Yes

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TYPE 3 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 3					
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Frequency (MHz)	Successful Detection (Yes/No)
3001	8.1	300	17	5519	Yes
3002	5.4	347	16	5511	No
3003	9.9	309	17	5573	Yes
3004	7.5	369	17	5559	Yes
3005	7.1	343	18	5521	Yes
3006	10	298	16	5572	Yes
3007	7.5	285	17	5528	Yes
3008	8.3	253	16	5635	Yes
3009	6.1	386	17	5507	Yes
3010	7.2	367	17	5644	Yes
3011	5.1	395	16	5503	No
3012	9.2	388	18	5638	Yes
3013	5.1	429	17	5619	No
3014	6.7	317	17	5516	Yes
3015	5.5	371	16	5618	Yes
3016	5	405	17	5577	No
3017	6.5	472	16	5549	Yes
3018	8.9	268	18	5556	Yes
3019	8.2	480	18	5609	Yes
3020	5.9	289	16	5619	Yes
3021	5.5	264	18	5641	No
3022	8.4	470	17	5598	Yes
3023	5.9	457	16	5577	Yes
3024	6.7	425	18	5571	Yes
3025	9.6	307	16	5567	Yes
3026	5.5	420	17	5530	Yes
3027	8.6	315	18	5521	Yes
3028	7.6	442	17	5495	Yes
3029	8.6	349	16	5563	Yes
3030	7.8	489	18	5567	Yes

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TYPE 4 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 4					
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Frequency (MHz)	Successful Detection (Yes/No)
4001	17.9	291	15	5634	Yes
4002	16.9	326	13	5588	Yes
4003	15.1	392	16	5547	Yes
4004	14.6	440	16	5495	Yes
4005	13.3	401	14	5502	Yes
4006	18.6	461	15	5632	Yes
4007	17.9	435	13	5582	Yes
4008	19	390	12	5495	Yes
4009	18.7	377	16	5564	Yes
4010	10.3	345	15	5553	Yes
4011	15.9	478	14	5631	Yes
4012	18	341	13	5495	Yes
4013	19.4	487	15	5575	Yes
4014	12	363	12	5541	No
4015	13.9	270	16	5552	Yes
4016	12.3	409	14	5499	Yes
4017	14.8	345	14	5537	Yes
4018	13.7	498	16	5642	Yes
4019	11.9	313	14	5551	Yes
4020	11.4	360	15	5629	Yes
4021	10.1	322	13	5571	Yes
4022	15.4	382	14	5586	No
4023	14.7	356	12	5532	Yes
4024	15.8	311	16	5601	Yes
4025	15.5	431	12	5563	Yes
4026	17.2	399	13	5603	Yes
4027	12.7	399	12	5544	Yes
4028	14.8	262	12	5550	Yes
4029	16.2	407	13	5584	Yes
4030	18.9	283	15	5597	Yes

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TYPE 5 DETECTION PROBABILITY

Data Sheet for FCC Long Pulse Radar Type 5		
Trial	Frequency (MHz)	Successful Detection (Yes/No)
1	5570	Yes
2	5570	Yes
3	5570	Yes
4	5570	Yes
5	5570	Yes
6	5570	Yes
7	5570	Yes
8	5570	Yes
9	5570	Yes
10	5570	Yes
11	5498	Yes
12	5495	Yes
13	5497	Yes
14	5500	Yes
15	5499	Yes
16	5497	Yes
17	5496	Yes
18	5494	Yes
19	5496	Yes
20	5494	Yes
21	5646	Yes
22	5644	Yes
23	5643	Yes
24	5646	Yes
25	5640	Yes
26	5644	Yes
27	5643	Yes
28	5646	Yes
29	5644	Yes
30	5646	Yes

Note: The Type 5 randomized parameters tested are located in Appendix A.

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TYPE 6 DETECTION PROBABILITY

Data Sheet for FCC Hopping Radar Type 6				
1 us Pulse Width, 333 us PRI, 9 Pulses per Burst, 1 Burst per Hop				
NTIA August 2005 Hopping Sequence				
Trial	Starting Index Within Sequence	Signal Generator Frequency (MHz)	Hops within Detection BW	Successful Detection (Yes/No)
1	609	5490	35	Yes
2	1084	5491	37	Yes
3	1559	5492	30	Yes
4	2034	5493	35	Yes
5	2509	5494	30	Yes
6	2984	5495	32	Yes
7	3459	5496	31	Yes
8	3934	5497	33	Yes
9	4409	5498	24	Yes
10	4884	5499	32	Yes
11	5359	5500	34	Yes
12	5834	5501	39	Yes
13	6309	5502	29	Yes
14	6784	5503	29	Yes
15	7259	5504	29	Yes
16	7734	5505	36	Yes
17	8209	5506	29	Yes
18	8684	5507	40	Yes
19	9159	5508	34	Yes
20	9634	5509	41	Yes
21	10109	5510	36	Yes
22	10584	5511	31	Yes
23	11059	5512	33	Yes
24	11534	5513	33	Yes
25	12009	5514	36	Yes
26	12484	5515	35	Yes
27	12959	5516	27	Yes
28	13434	5517	43	Yes
29	13909	5518	30	Yes
30	14384	5519	26	Yes
31	14859	5520	31	Yes
32	15334	5521	35	Yes
33	15809	5522	36	Yes
34	16284	5523	34	Yes

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TYPE 6 DETECTION PROBABILITY (CONTINUED)

35	16759	5524	39	Yes
36	17234	5525	26	Yes
37	17709	5526	33	Yes
38	18184	5527	35	Yes
39	18659	5528	38	Yes
40	19134	5529	36	Yes
41	19609	5530	40	Yes
42	20084	5531	35	Yes
43	20559	5532	36	Yes
44	21034	5533	32	Yes
45	21509	5534	30	Yes
46	21984	5535	33	Yes
47	22459	5536	33	Yes
48	22934	5537	33	Yes
49	23409	5538	32	Yes
50	23884	5539	30	Yes
51	24359	5540	34	Yes
52	24834	5541	28	Yes
53	25309	5542	34	Yes
54	25784	5543	29	Yes
55	26259	5544	46	Yes
56	26734	5545	30	Yes
57	27209	5546	35	Yes
58	27684	5547	33	Yes
59	28159	5548	30	Yes
60	28634	5549	30	Yes
61	29109	5550	37	Yes
62	29584	5551	32	Yes
63	30059	5552	26	Yes
64	30534	5553	27	Yes
65	31009	5554	33	Yes
66	31484	5555	33	Yes
67	31959	5556	41	Yes
68	32434	5557	24	Yes
69	32909	5558	39	Yes
70	33384	5559	32	Yes
71	33859	5560	26	Yes
72	34334	5561	28	Yes
73	34809	5562	32	Yes
74	35284	5563	34	Yes

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TYPE 6 DETECTION PROBABILITY (CONTINUED)

75	35759	5564	35	Yes
76	36234	5565	29	Yes
77	36709	5566	33	Yes
78	37184	5567	40	Yes
79	37659	5568	32	Yes
80	38134	5569	29	Yes
81	38609	5570	31	Yes
82	39084	5571	40	Yes
83	39559	5572	26	Yes
84	40034	5573	31	Yes
85	40509	5574	25	Yes
86	40984	5575	33	Yes
87	41459	5576	40	Yes
88	41934	5577	41	Yes
89	42409	5578	34	Yes
90	42884	5579	34	Yes
91	43359	5580	31	Yes
92	43834	5581	37	Yes
93	44309	5582	36	Yes
94	44784	5583	36	Yes
95	45259	5584	33	Yes
96	45734	5585	32	Yes
97	46209	5586	34	Yes
98	46684	5587	34	Yes
99	47159	5588	41	Yes
100	47634	5589	31	Yes
101	48109	5590	33	Yes
102	48584	5591	30	Yes
103	49059	5592	36	Yes
104	49534	5593	41	Yes
105	50009	5594	36	Yes
106	50484	5595	38	Yes
107	50959	5596	37	Yes
108	51434	5597	38	Yes
109	51909	5598	26	Yes
110	52384	5599	32	Yes
111	52859	5600	42	Yes
112	53334	5601	34	Yes
113	53809	5602	30	Yes
114	54284	5603	26	Yes
115	54759	5604	35	Yes
116	55234	5605	34	Yes
117	55709	5606	29	No
118	56184	5607	38	Yes

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TYPE 6 DETECTION PROBABILITY (CONTINUED)

119	56659	5608	32	Yes
120	57134	5609	31	Yes
121	57609	5610	30	Yes
122	58084	5611	35	Yes
123	58559	5612	40	Yes
124	59034	5613	33	Yes
125	59509	5614	29	Yes
126	59984	5615	34	Yes
127	60459	5616	31	Yes
128	60934	5617	35	Yes
129	61409	5618	33	Yes
130	61884	5619	27	Yes
131	62359	5620	35	Yes
132	62834	5621	33	Yes
133	63309	5622	33	Yes
134	63784	5623	31	Yes
135	64259	5624	28	Yes
136	64734	5625	38	Yes
137	65209	5626	32	Yes
138	148	5627	38	Yes
139	623	5628	40	Yes
140	1098	5629	35	Yes
141	1573	5630	35	Yes
142	2048	5631	32	Yes
143	2523	5632	34	Yes
144	2998	5633	35	Yes
145	3473	5634	31	Yes
146	3948	5635	27	Yes
147	4423	5636	28	Yes
148	4898	5637	32	Yes
149	5373	5638	34	Yes
150	5848	5639	40	Yes
151	6323	5640	27	Yes
152	6798	5641	30	Yes
153	7273	5642	32	Yes
154	7748	5643	36	Yes
155	8223	5644	33	Yes
156	8698	5645	38	Yes
157	9173	5646	31	Yes
158	9648	5647	40	Yes
159	10123	5648	37	No
160	10598	5649	32	Yes
161	11073	5650	34	Yes

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6.6. MASTER DEVICE CONFIGURATION RESULTS FOR 160 MHz BANDWIDTH ISED

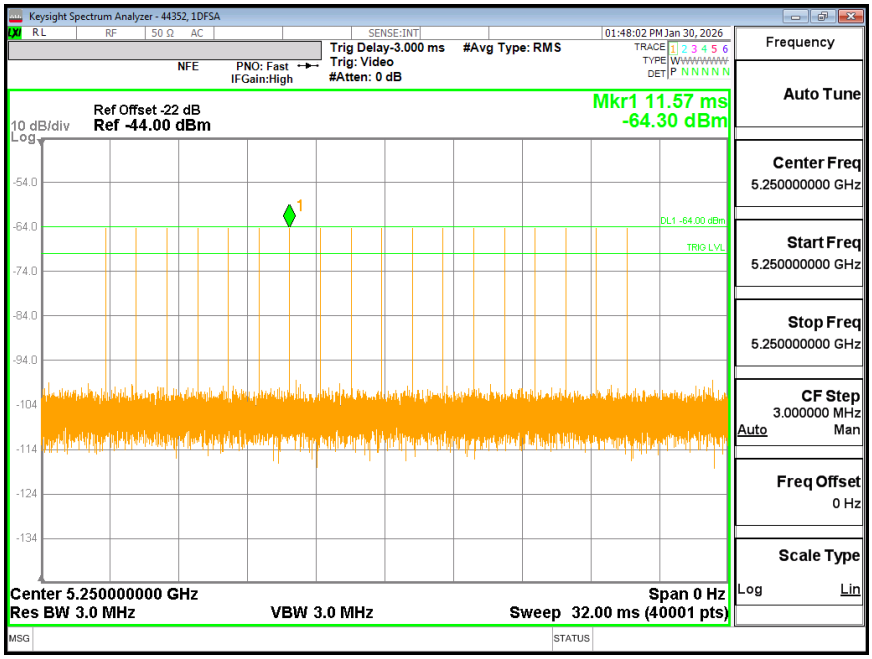
6.6.1. TEST CHANNEL

All tests were performed with the EUT set to a channel center frequency of 5250 MHz.

6.6.2. RADAR WAVEFORMS AND TRAFFIC

RADAR WAVEFORMS

SHORT PULSE RADAR TYPE 0



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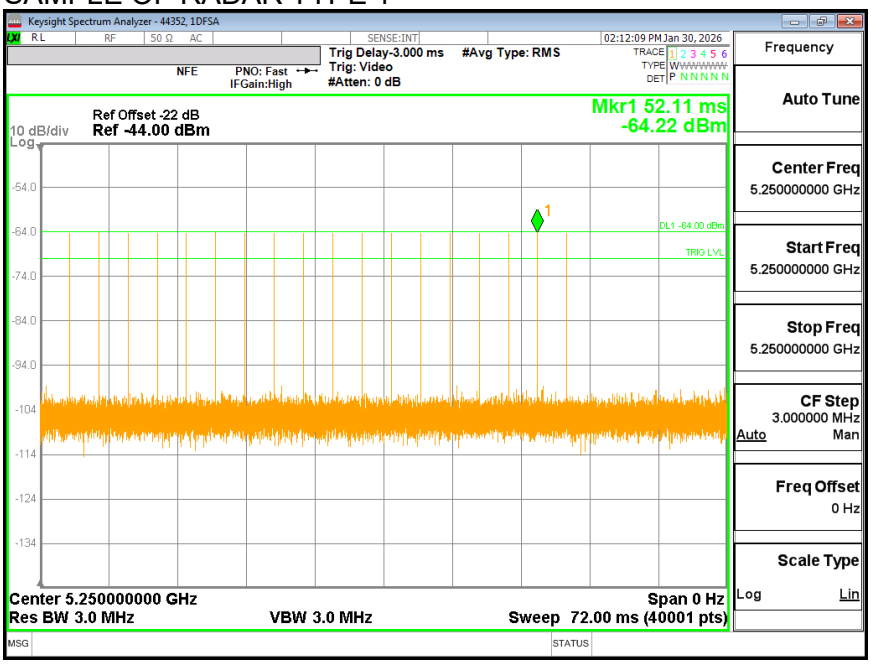
SAMPLE OF RADAR TYPE 1



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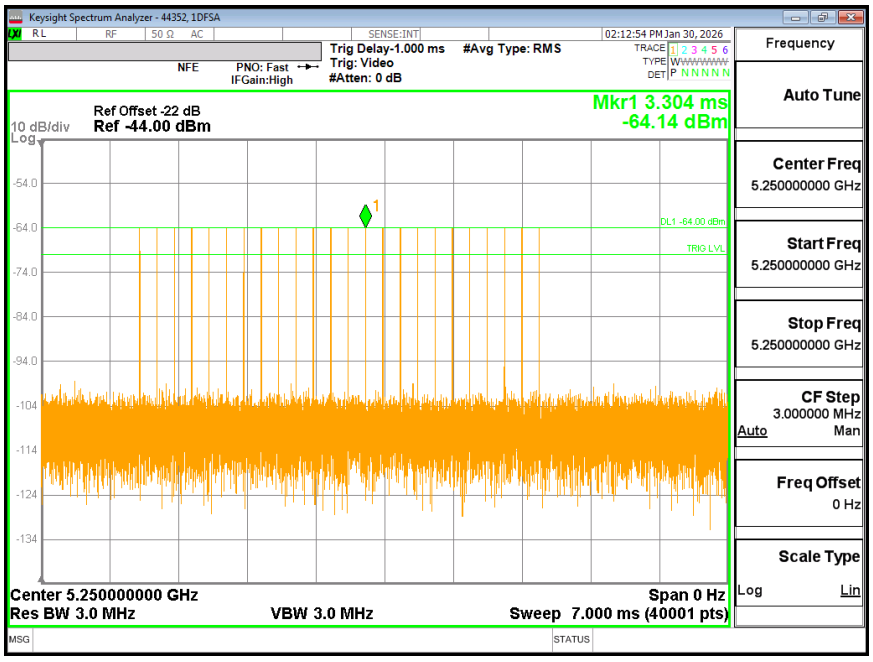
SAMPLE OF RADAR TYPE 2



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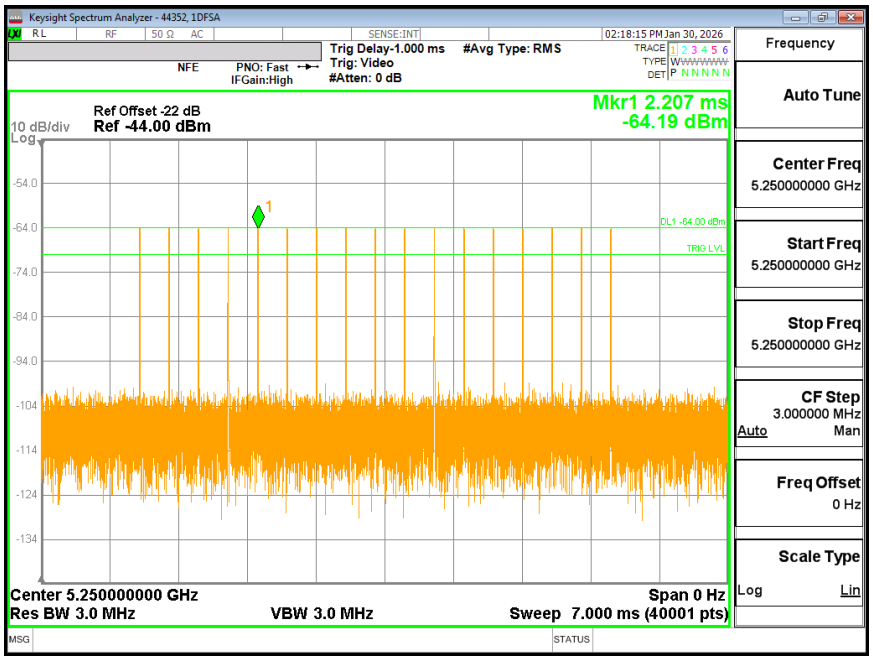
SAMPLE OF RADAR TYPE 3



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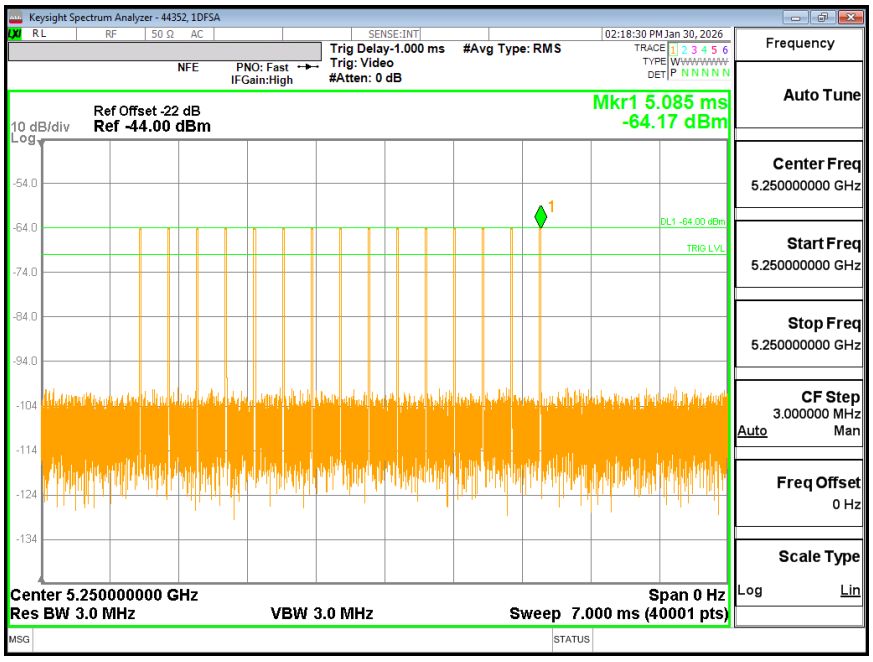
SAMPLE OF RADAR TYPE 4



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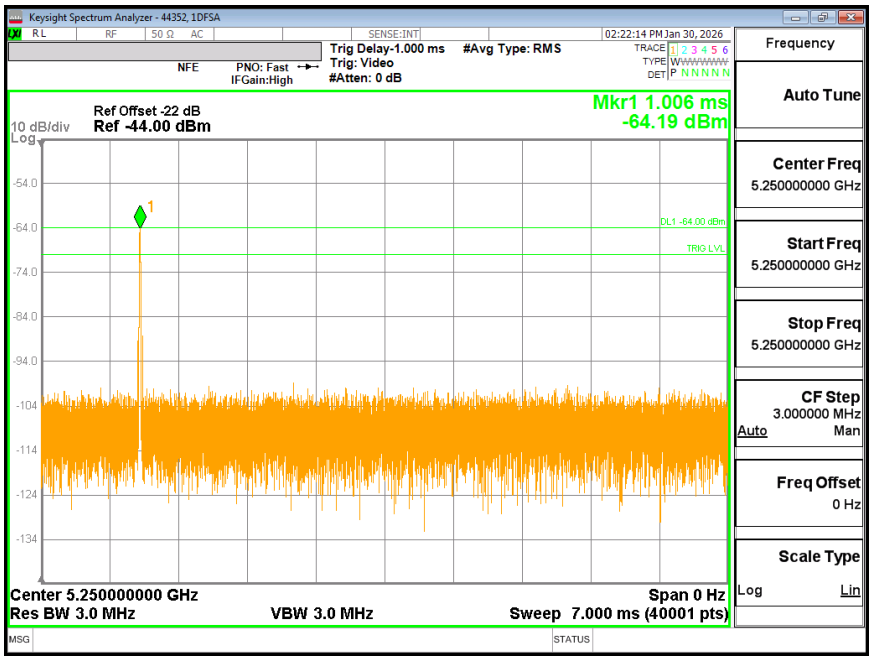
SAMPLE OF SINGLE BURST OF RADAR TYPE 5



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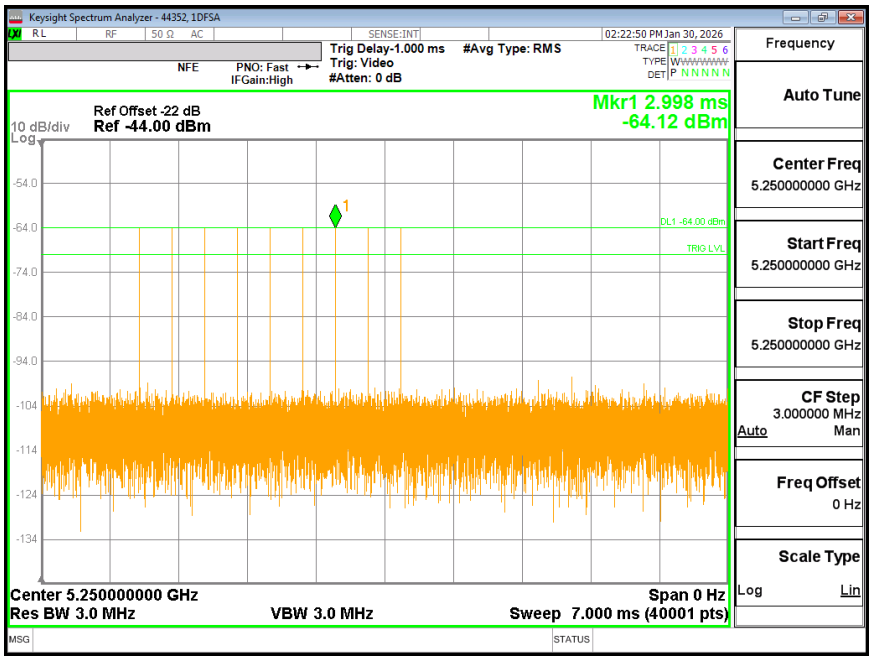
SINGLE BURST OF RADAR TYPE 6



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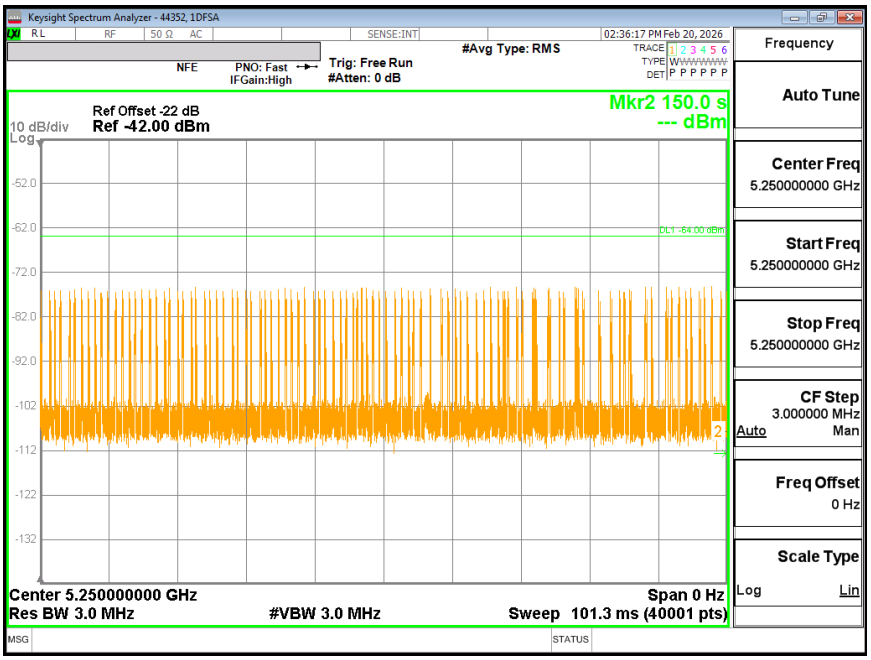
TRAFFIC

TRAFFIC



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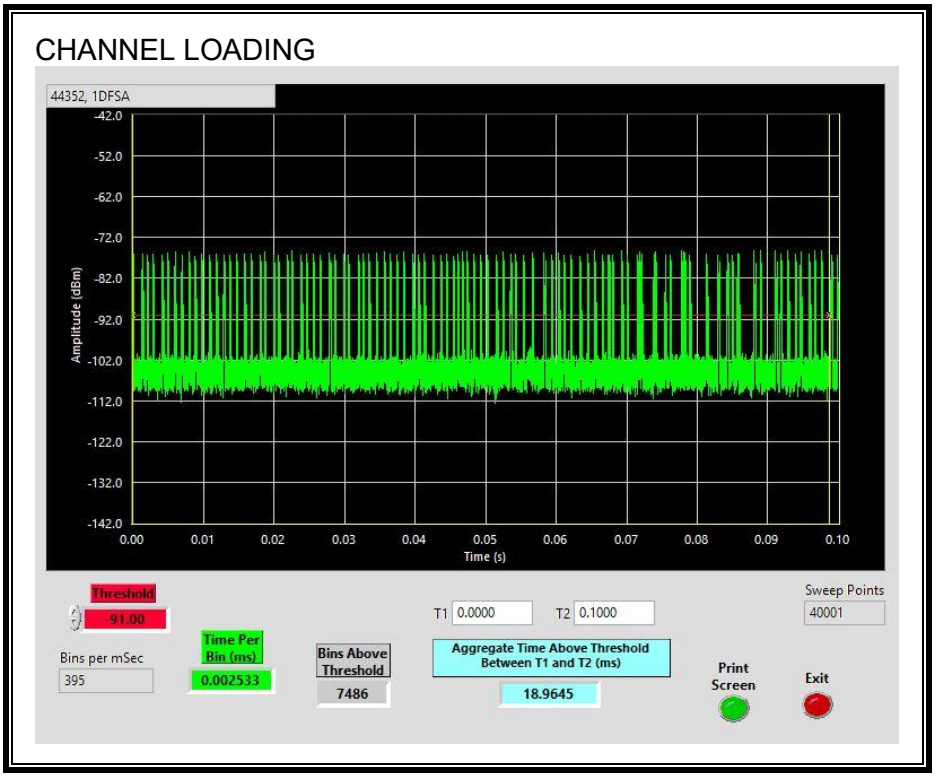
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 18.9645%.

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6.6.3. CHANNEL AVAILABILITY CHECK TIME

PROCEDURE TO DETERMINE INITIAL POWER-UP CYCLE TIME

A link was established on channel then a software command was issued to the EUT to restart radio. The time from the cessation of traffic to the re-initialization of traffic was measured as the time required for the EUT to complete the total power-up cycle. The time to complete the initial power-up period is 60 seconds less than this total power-up time.

PROCEDURE FOR TIMING OF RADAR BURST

A link was established on channel then a software command was issued to the EUT to restart radio. A radar signal was triggered within 0 to 6 seconds after the initial power-up period, and transmissions on the channel were monitored on the spectrum analyzer.

The Non-Occupancy list was cleared. A link was established on channel then a software command was issued to the EUT to restart radio. A radar signal was triggered within 54 to 60 seconds after the initial power-up period, and transmissions on the channel were monitored on the spectrum analyzer.

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QUANTITATIVE RESULTS

No Radar Triggered

Timing of Reboot (sec)	Timing of Start of Traffic (sec)	Total Power-up Cycle Time (sec)	Initial Power-up Cycle Time (sec)
15.47	90.63	75.2	15.2

Radar Near Beginning of CAC

Timing of Reboot (sec)	Timing of Radar Burst (sec)	Radar Relative to Reboot (sec)	Radar Relative to Start of CAC (sec)
15.46	31.85	16.4	1.2

Radar Near End of CAC

Timing of Reboot (sec)	Timing of Radar Burst (sec)	Radar Relative to Reboot (sec)	Radar Relative to Start of CAC (sec)
15.68	89.33	73.7	58.5

QUALITATIVE RESULTS

Timing of Radar Burst	Display on Control Computer	Spectrum Analyzer Display
No Radar Triggered	EUT marks Channel as active	Transmissions begin on channel after completion of the initial power-up cycle and the CAC
Within 0 to 6 second window	EUT indicates radar detected	No transmissions on channel
Within 54 to 60 second window	EUT indicates radar detected	No transmissions on channel

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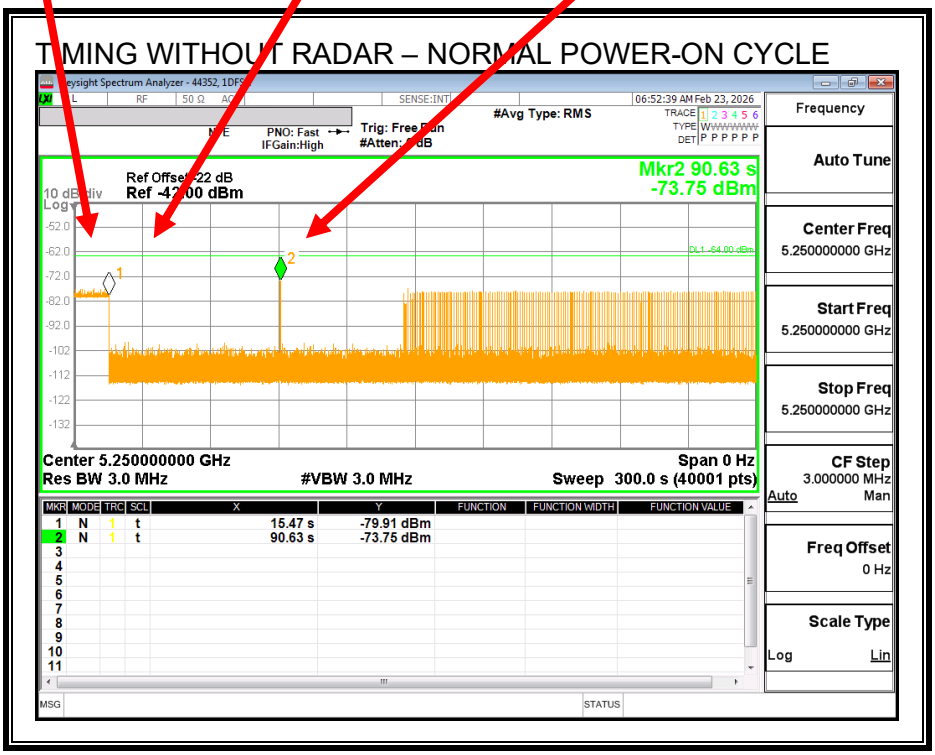
TIMING WITHOUT RADAR DURING CAC

AP is rebooted
Traffic ceases
Start of Initial Power-up cycle

End of Initial Power-up cycle
Start of CAC

End of CAC
Traffic is Initiated



Transmissions begin on channel after completion of the initial power-up cycle and the CAC.

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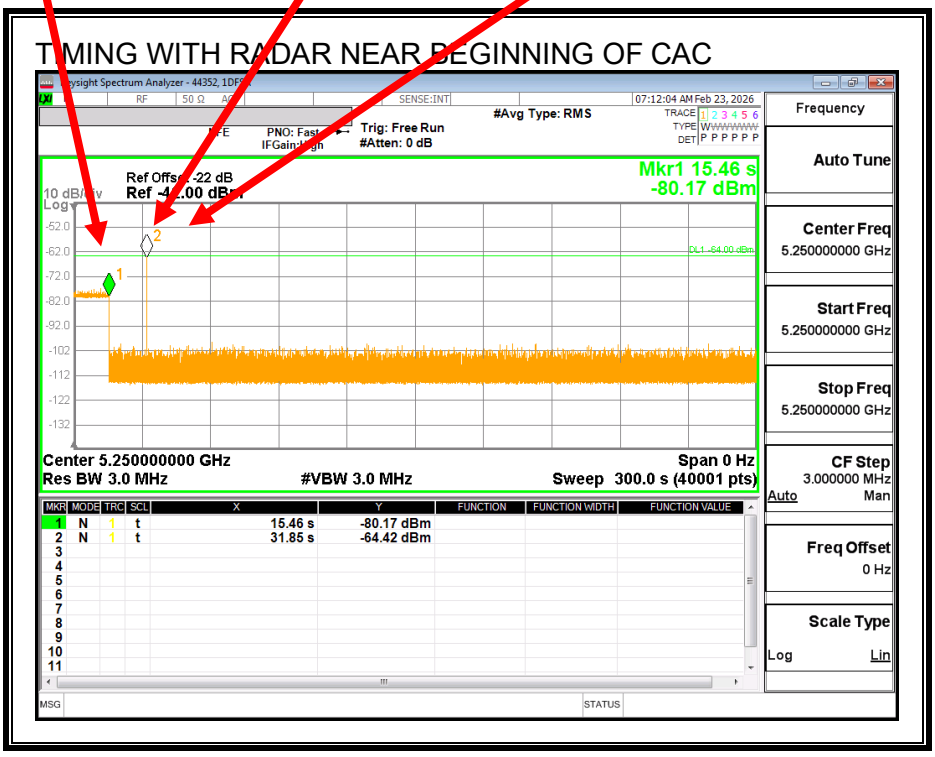
TIMING WITH RADAR NEAR BEGINNING OF CAC

AP is rebooted
Traffic ceases
Start of Initial Power-up cycle

End of Initial Power-up cycle
Start of CAC

Radar Signal Applied



No EUT transmissions were observed after the radar signal.

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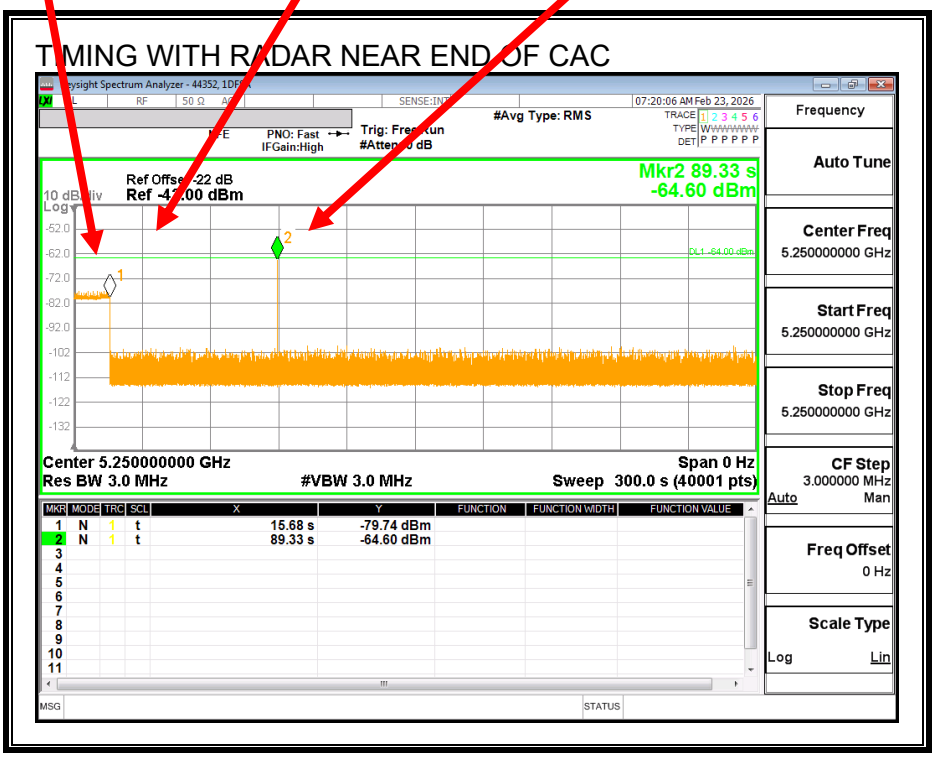
TIMING WITH RADAR NEAR END OF CAC

AP is rebooted
Traffic ceases
Start of Initial Power-up cycle

End of Initial Power-up cycle
Start of CAC

Radar Signal Applied



No EUT transmissions were observed after the radar signal.

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6.6.4. OVERLAPPING CHANNEL TESTS

RESULTS

The channel spacing is not less than the channel bandwidth therefore the EUT does not have an overlapping channel plan.

These tests are not applicable.

6.6.5. MOVE AND CLOSING TIME

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.5128	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.4	60

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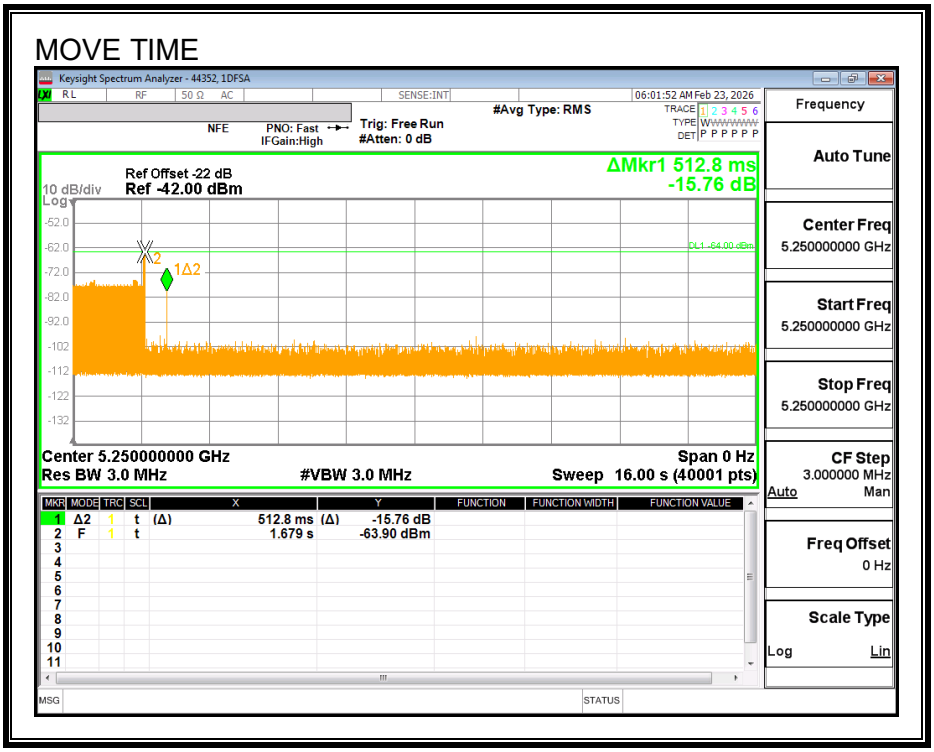
MOVE TIME



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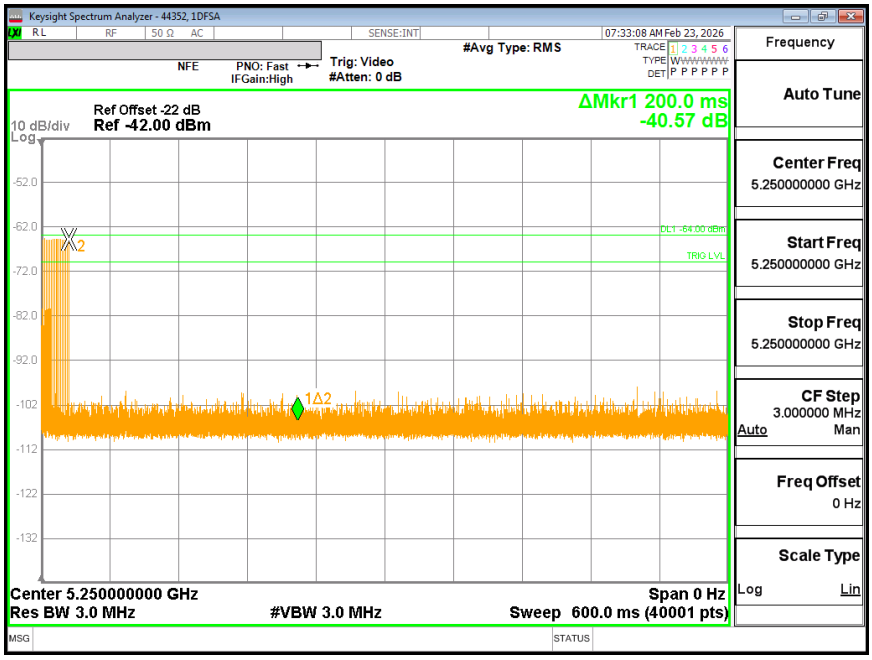
CHANNEL CLOSING TIME

CLOSING TIME



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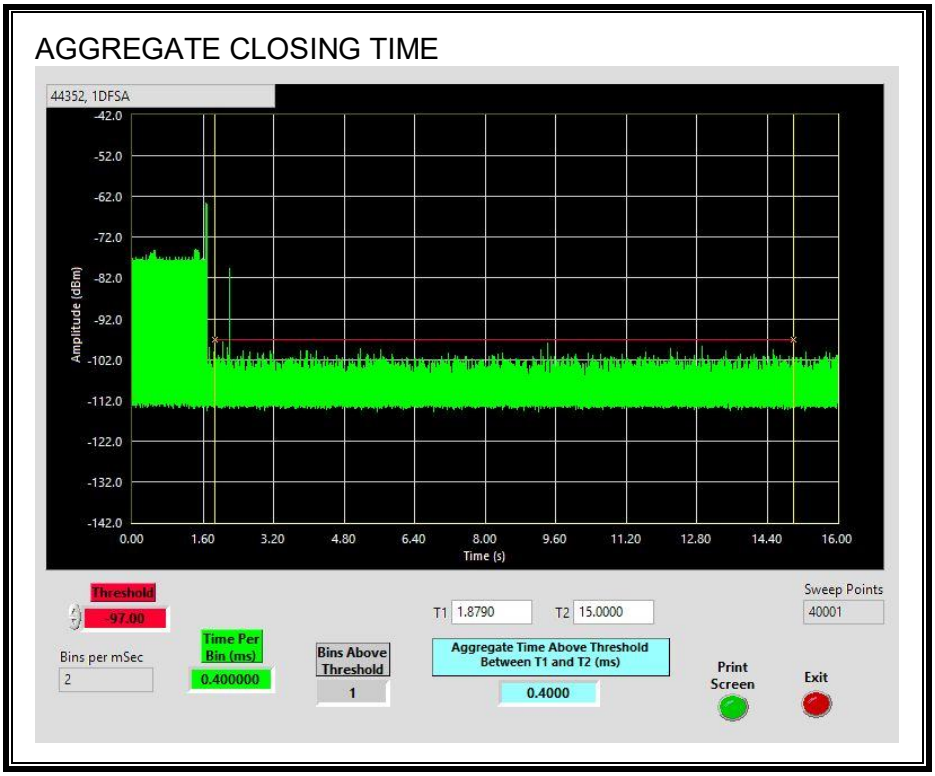
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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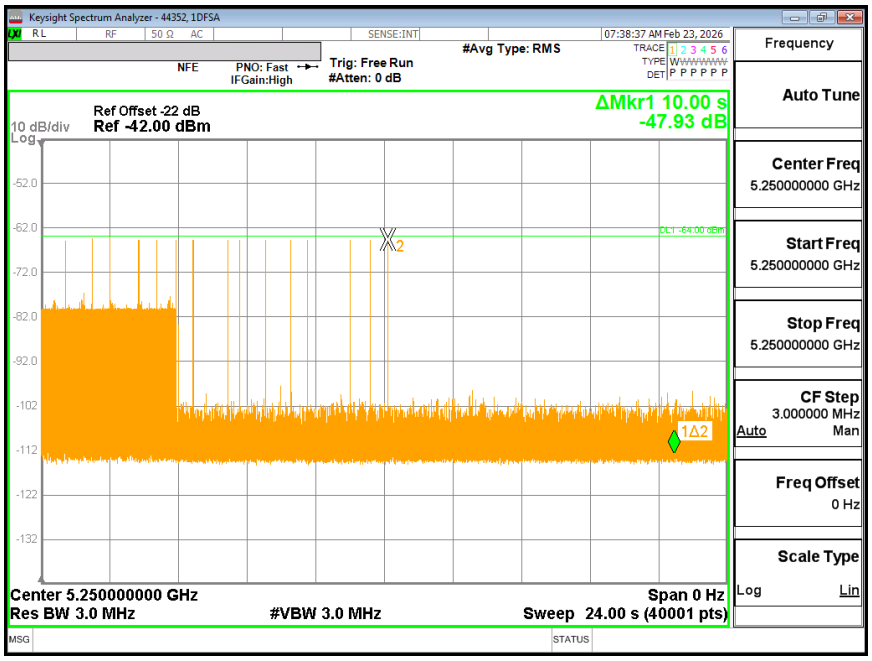
LONG PULSE CHANNEL MOVE TIME

The traffic ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME FOR LONG PULSE RADAR



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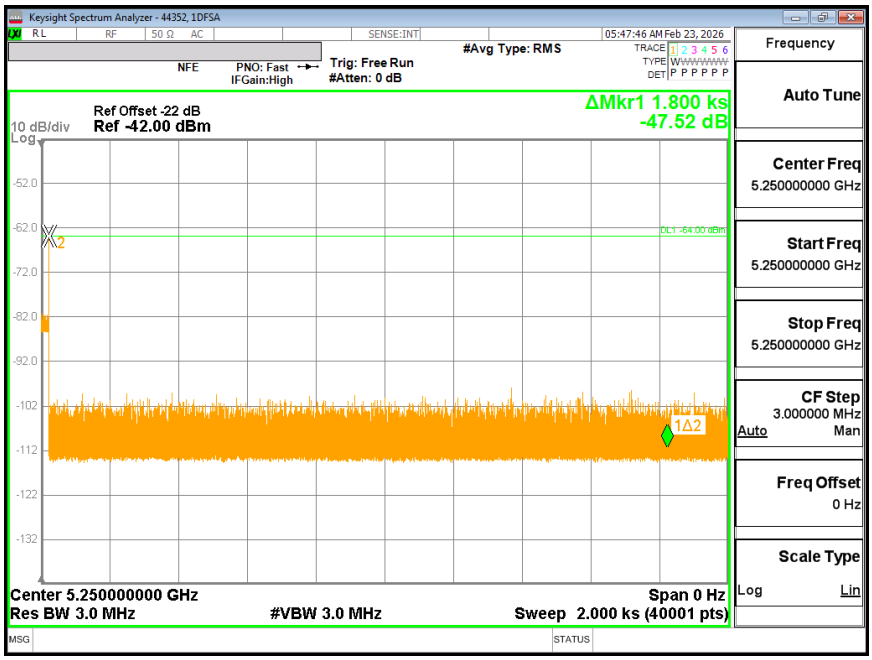
6.6.6. NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

NON-OCCUPANCY PERIOD



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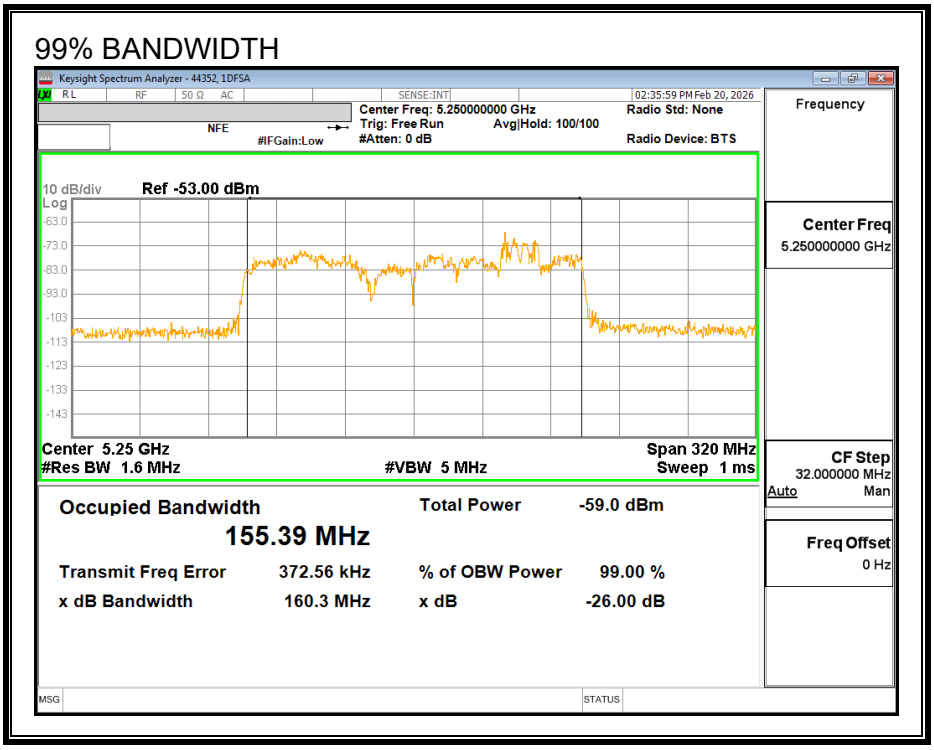
6.6.7. DETECTION BANDWIDTH

REFERENCE PLOT OF 99% POWER BANDWIDTH



RESULTS

F_L (MHz)	F_H (MHz)	Detection Bandwidth (MHz)	Applicable 99% Power Bandwidth (MHz)	Ratio of Detection BW to 99% Power BW (%)	Minimum Limit (%)
5250	5330	80	77.695	103.0	100

Note: Channels that occupy frequencies below the 5250 MHz to 5350 MHz band are not subject to the requirements related to DFS. Therefore, only the portion of the 99% power Bandwidth residing in the 5250 MHz to 5350 MHz band has been taken into consideration for the Detection Bandwidth requirement.

Applicable 99% Power Bandwidth = (Measured 99% Power Bandwidth)/2

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DETECTION BANDWIDTH PROBABILITY

DETECTION BANDWIDTH PROBABILITY RESULTS

Detection Bandwidth Test Results				
FCC Type 0 Waveform: 1 us Pulse Width, 1428 us PRI, 18 Pulses per Burst				
Frequency (MHz)	Number of Trials	Number Detected	Detection (%)	Mark
5249	1	0	0	
5250	10	10	100	FL
5255	10	10	100	
5260	10	10	100	
5265	10	10	100	
5270	10	10	100	
5275	10	10	100	
5280	10	10	100	
5285	10	10	100	
5290	10	10	100	
5295	10	10	100	
5300	10	10	100	
5305	10	10	100	
5310	10	10	100	
5315	10	10	100	
5320	10	10	100	
5325	10	10	100	
5330	10	10	100	FH
5331	1	0	0	

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6.6.8. IN-SERVICE MONITORING

RESULTS

FCC Radar Test Summary

Signal Type	Number of Trials	Detection (%)	Limit (%)	Pass/Fail	Detection Bandwidth FL	Detection Bandwidth FH	OBW	Test Location	Employee Number	In-Service Monitoring Version
FCC Short Pulse Type 1	30	100.00	60	Pass	5250	5330	77.69	1DFSA	44352	v2023.11.3
FCC Short Pulse Type 2	30	100.00	60	Pass	5250	5330	77.69	1DFSA	44352	v2023.11.3
FCC Short Pulse Type 3	30	83.33	60	Pass	5250	5330	77.69	1DFSA	44352	v2023.11.3
FCC Short Pulse Type 4	30	86.67	60	Pass	5250	5330	77.69	1DFSA	44352	v2023.11.3
Aggregate		92.50	80	Pass						
FCC Long Pulse Type 5	30	100.00	80	Pass	5250	5330	77.69	1DFSA	44352	v2023.11.3
FCC Hopping Type 6	81	100.00	70	Pass	5250	5330		1DFSA	44352	v2023.11.3

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TYPE 1 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 1						
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Test (A/B)	Frequency (MHz)	Successful Detection (Yes/No)
1001	1	3066	18	A	5291	Yes
1002	1	938	57	A	5298	Yes
1003	1	638	83	A	5280	Yes
1004	1	878	61	A	5276	Yes
1005	1	558	95	A	5298	Yes
1006	1	738	72	A	5251	Yes
1007	1	678	78	A	5292	Yes
1008	1	618	86	A	5272	Yes
1009	1	898	59	A	5310	Yes
1010	1	538	99	A	5300	Yes
1011	1	578	92	A	5307	Yes
1012	1	518	102	A	5250	Yes
1013	1	658	81	A	5267	Yes
1014	1	758	70	A	5270	Yes
1015	1	918	58	A	5252	Yes
1016	1	984	54	B	5298	Yes
1017	1	810	66	B	5283	Yes
1018	1	1637	33	B	5311	Yes
1019	1	1593	34	B	5296	Yes
1020	1	1355	39	B	5267	Yes
1021	1	1440	37	B	5324	Yes
1022	1	1331	40	B	5307	Yes
1023	1	2899	19	B	5276	Yes
1024	1	1725	31	B	5311	Yes
1025	1	875	61	B	5259	Yes
1026	1	2379	23	B	5317	Yes
1027	1	1658	32	B	5321	Yes
1028	1	2096	26	B	5285	Yes
1029	1	2858	19	B	5253	Yes
1030	1	2073	26	B	5330	Yes

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TYPE 2 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 2					
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Frequency (MHz)	Successful Detection (Yes/No)
2001	3.4	177	24	5291	Yes
2002	3.4	158	26	5311	Yes
2003	1.1	150	27	5321	Yes
2004	3.5	173	29	5303	Yes
2005	1.5	212	23	5287	Yes
2006	4.1	202	29	5283	Yes
2007	4.4	164	24	5281	Yes
2008	1.2	158	23	5317	Yes
2009	3.7	205	29	5277	Yes
2010	2.9	164	28	5300	Yes
2011	1.5	178	27	5308	Yes
2012	4.9	223	24	5313	Yes
2013	1.8	159	27	5251	Yes
2014	3.6	208	24	5329	Yes
2015	4.8	191	28	5305	Yes
2016	2.6	207	25	5324	Yes
2017	2.1	194	29	5260	Yes
2018	4.3	214	24	5321	Yes
2019	4	205	25	5270	Yes
2020	2.2	191	26	5313	Yes
2021	4.3	187	28	5290	Yes
2022	5	176	27	5263	Yes
2023	3.1	219	28	5310	Yes
2024	4	213	28	5280	Yes
2025	2.4	222	26	5280	Yes
2026	1.6	220	26	5311	Yes
2027	4.3	152	25	5305	Yes
2028	3.6	197	29	5289	Yes
2029	2.7	214	25	5315	Yes
2030	2.3	225	29	5279	Yes

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TYPE 3 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 3					
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Frequency (MHz)	Successful Detection (Yes/No)
3001	8.1	300	17	5266	Yes
3002	5.4	347	16	5270	Yes
3003	9.9	309	17	5293	Yes
3004	7.5	369	17	5315	Yes
3005	7.1	343	18	5281	Yes
3006	10	298	16	5272	Yes
3007	7.5	285	17	5277	Yes
3008	8.3	253	16	5305	Yes
3009	6.1	386	17	5267	Yes
3010	7.2	367	17	5257	Yes
3011	5.1	395	16	5278	No
3012	9.2	388	18	5306	Yes
3013	5.1	429	17	5319	No
3014	6.7	317	17	5290	Yes
3015	5.5	371	16	5297	Yes
3016	5	405	17	5253	No
3017	6.5	472	16	5254	Yes
3018	8.9	268	18	5319	Yes
3019	8.2	480	18	5267	Yes
3020	5.9	289	16	5269	Yes
3021	5.5	264	18	5285	Yes
3022	8.4	470	17	5314	Yes
3023	5.9	457	16	5260	Yes
3024	6.7	425	18	5330	Yes
3025	9.6	307	16	5257	Yes
3026	5.5	420	17	5327	No
3027	8.6	315	18	5306	No
3028	7.6	442	17	5283	Yes
3029	8.6	349	16	5316	Yes
3030	7.8	489	18	5286	Yes

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TYPE 4 DETECTION PROBABILITY

Data Sheet for FCC Short Pulse Radar Type 4					
Waveform	Pulse Width (us)	PRI (us)	Pulses Per Burst	Frequency (MHz)	Successful Detection (Yes/No)
4001	17.9	291	15	5297	Yes
4002	16.9	326	13	5298	Yes
4003	15.1	392	16	5301	Yes
4004	14.6	440	16	5312	Yes
4005	13.3	401	14	5319	Yes
4006	18.6	461	15	5300	Yes
4007	17.9	435	13	5255	Yes
4008	19	390	12	5281	Yes
4009	18.7	377	16	5284	Yes
4010	10.3	345	15	5261	Yes
4011	15.9	478	14	5251	Yes
4012	18	341	13	5322	No
4013	19.4	487	15	5324	Yes
4014	12	363	12	5266	Yes
4015	13.9	270	16	5327	Yes
4016	12.3	409	14	5313	Yes
4017	14.8	345	14	5317	Yes
4018	13.7	498	16	5264	Yes
4019	11.9	313	14	5302	Yes
4020	11.4	360	15	5311	Yes
4021	10.1	322	13	5324	No
4022	15.4	382	14	5279	No
4023	14.7	356	12	5262	Yes
4024	15.8	311	16	5316	Yes
4025	15.5	431	12	5270	No
4026	17.2	399	13	5286	Yes
4027	12.7	399	12	5318	Yes
4028	14.8	262	12	5297	Yes
4029	16.2	407	13	5304	Yes
4030	18.9	283	15	5295	Yes

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TYPE 5 DETECTION PROBABILITY

Data Sheet for FCC Long Pulse Radar Type 5		
Trial	Frequency (MHz)	Successful Detection (Yes/No)
1	5290	Yes
2	5290	Yes
3	5290	Yes
4	5290	Yes
5	5290	Yes
6	5290	Yes
7	5290	Yes
8	5290	Yes
9	5290	Yes
10	5290	Yes
11	5258	Yes
12	5254	Yes
13	5256	Yes
14	5259	Yes
15	5259	Yes
16	5257	Yes
17	5255	Yes
18	5254	Yes
19	5256	Yes
20	5254	Yes
21	5326	Yes
22	5325	Yes
23	5324	Yes
24	5326	Yes
25	5320	Yes
26	5324	Yes
27	5324	Yes
28	5326	Yes
29	5324	Yes
30	5326	Yes

Note: The Type 5 randomized parameters tested are located in Appendix A.

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TYPE 6 DETECTION PROBABILITY

Data Sheet for FCC Hopping Radar Type 6				
1 us Pulse Width, 333 us PRI, 9 Pulses per Burst, 1 Burst per Hop				
NTIA August 2005 Hopping Sequence				
Trial	Starting Index Within Sequence	Signal Generator Frequency (MHz)	Hops within Detection BW	Successful Detection (Yes/No)
1	822	5250	23	Yes
2	1297	5251	23	Yes
3	1772	5252	15	Yes
4	2247	5253	18	Yes
5	2722	5254	23	Yes
6	3197	5255	16	Yes
7	3672	5256	8	Yes
8	4147	5257	16	Yes
9	4622	5258	14	Yes
10	5097	5259	18	Yes
11	5572	5260	21	Yes
12	6047	5261	25	Yes
13	6522	5262	18	Yes
14	6997	5263	20	Yes
15	7472	5264	15	Yes
16	7947	5265	20	Yes
17	8422	5266	19	Yes
18	8897	5267	17	Yes
19	9372	5268	11	Yes
20	9847	5269	18	Yes
21	10322	5270	17	Yes
22	10797	5271	15	Yes
23	11272	5272	15	Yes
24	11747	5273	17	Yes
25	12222	5274	21	Yes
26	12697	5275	14	Yes
27	13172	5276	16	Yes
28	13647	5277	13	Yes
29	14122	5278	14	Yes
30	14597	5279	15	Yes
31	15072	5280	15	Yes
32	15547	5281	11	Yes
33	16022	5282	17	Yes
34	16497	5283	20	Yes
35	16972	5284	17	Yes
36	17447	5285	18	Yes
37	17922	5286	19	Yes
38	18397	5287	15	Yes

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TYPE 6 DETECTION PROBABILITY (CONTINUED)

39	18872	5288	20	Yes
40	19347	5289	11	Yes
41	19822	5290	19	Yes
42	20297	5291	11	Yes
43	20772	5292	16	Yes
44	21247	5293	15	Yes
45	21722	5294	17	Yes
46	22197	5295	19	Yes
47	22672	5296	18	Yes
48	23147	5297	18	Yes
49	23622	5298	19	Yes
50	24097	5299	12	Yes
51	24572	5300	10	Yes
52	25047	5301	17	Yes
53	25522	5302	19	Yes
54	25997	5303	16	Yes
55	26472	5304	21	Yes
56	26947	5305	19	Yes
57	27422	5306	18	Yes
58	27897	5307	16	Yes
59	28372	5308	20	Yes
60	28847	5309	18	Yes
61	29322	5310	18	Yes
62	29797	5311	10	Yes
63	30272	5312	23	Yes
64	30747	5313	23	Yes
65	31222	5314	14	Yes
66	31697	5315	15	Yes
67	32172	5316	20	Yes
68	32647	5317	14	Yes
69	33122	5318	16	Yes
70	33597	5319	21	Yes
71	34072	5320	14	Yes
72	34547	5321	16	Yes
73	35022	5322	14	Yes
74	35497	5323	18	Yes
75	35972	5324	14	Yes
76	36447	5325	15	Yes
77	36922	5326	20	Yes
78	37397	5327	17	Yes
79	37872	5328	21	Yes
80	38347	5329	17	Yes
81	38822	5330	18	Yes

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6.7. BRIDGE MODE RESULTS

Per KDB 905462 D02, Section 5.1 (footnote 2):

Networks Access Points with Bridge and/or MESH modes of operation are permitted to operate in the DFS bands but must employ a DFS function. The functionality of the Bridge mode as specified in §15.403(a) must be validated in the DFS test report. Devices operating as relays where they act as master and client must also employ DFS function for the master. The method used to validate the functionality must be documented and validation data must be documented. Bridge mode can be validated by performing a test statistical performance check (Section 7.8.4) on any one of the radar types. This is an abbreviated test to verify DFS functionality. MESH mode operational methodology must be submitted in the application for certification for evaluation by the FCC.

This device does not support Bridge Mode therefore this test was not performed.

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6.8. APPLICABLE TESTS FOR CLIENT DEVICE CONFIGURATION

6.8.1. APPLICABILITY OF MASTER DEVICE CONFIGURATION TEST RESULTS

The EUT is identical for the two configurations: Master Device, and Client with Radar Detection. Therefore, the performance of the EUT in the Client Device configuration, when the Client detects a radar signal, is represented by the above tests of the Master Device Configuration.

6.8.2. ADDITIONAL APPLICABLE TESTS OF CLIENT DEVICE

Per KDB 905462 D02 section 5.1.2, clause c):

“If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply”.

Therefore, the following two test conditions must be performed to demonstrate compliance:

Channel shutdown tests to measure the performance of the Client Device configuration, in response to the detection of a radar signal by the Master Device, are applicable.

Channel shutdown tests to measure the performance of the Master Device configuration, in response to the detection of a radar signal by the Client Device, are applicable.

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6.9. CLIENT DEVICE CONFIGURATION RESULTS FOR 80 MHz BANDWIDTH

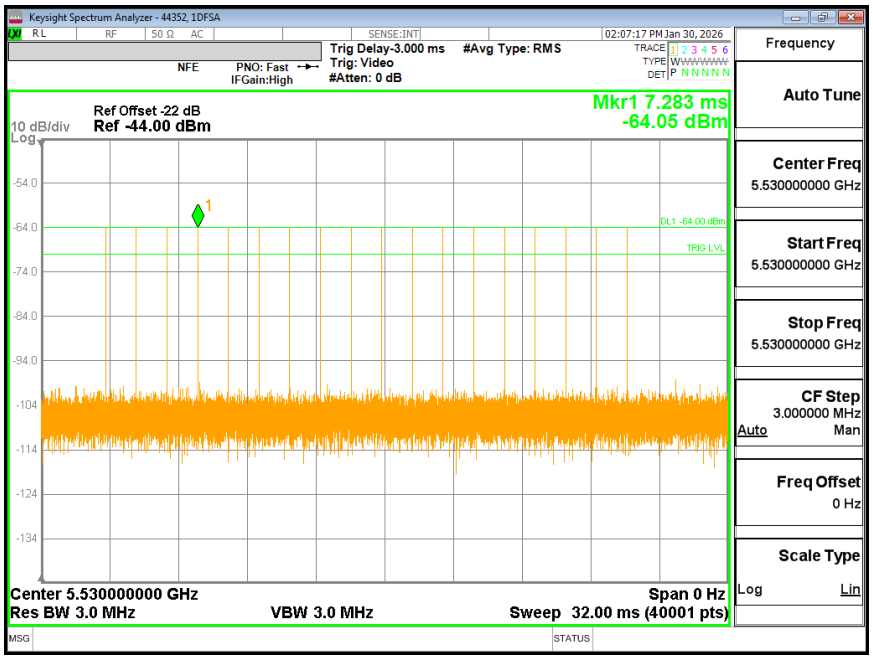
6.9.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5530 MHz.

6.9.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SAMPLE OF RADAR TYPE 0 AT RADAR DETECTION DEVICE



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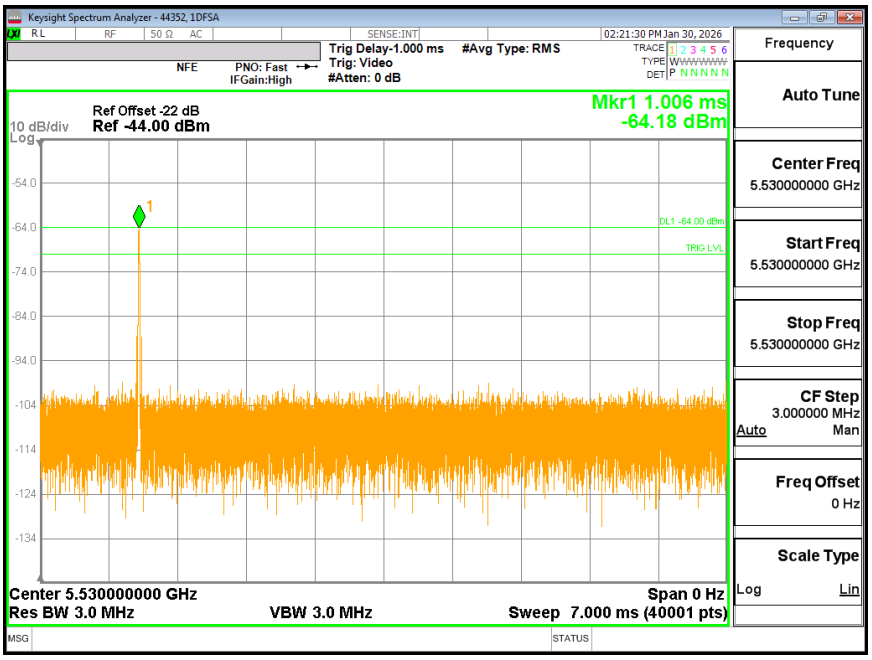
SAMPLE OF SINGLE BURST OF RADAR TYPE 5



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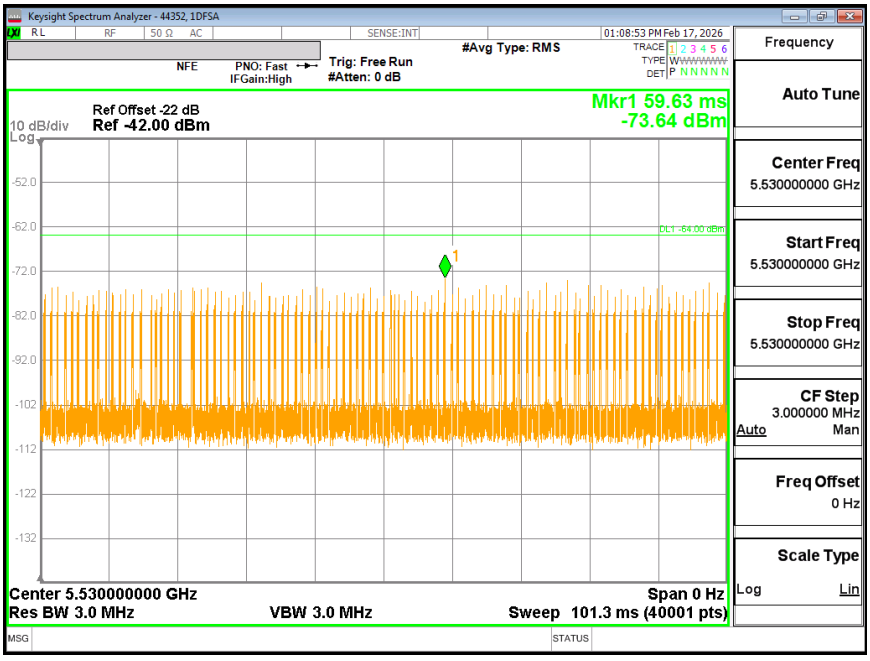
TRAFFIC

MASTER TRAFFIC



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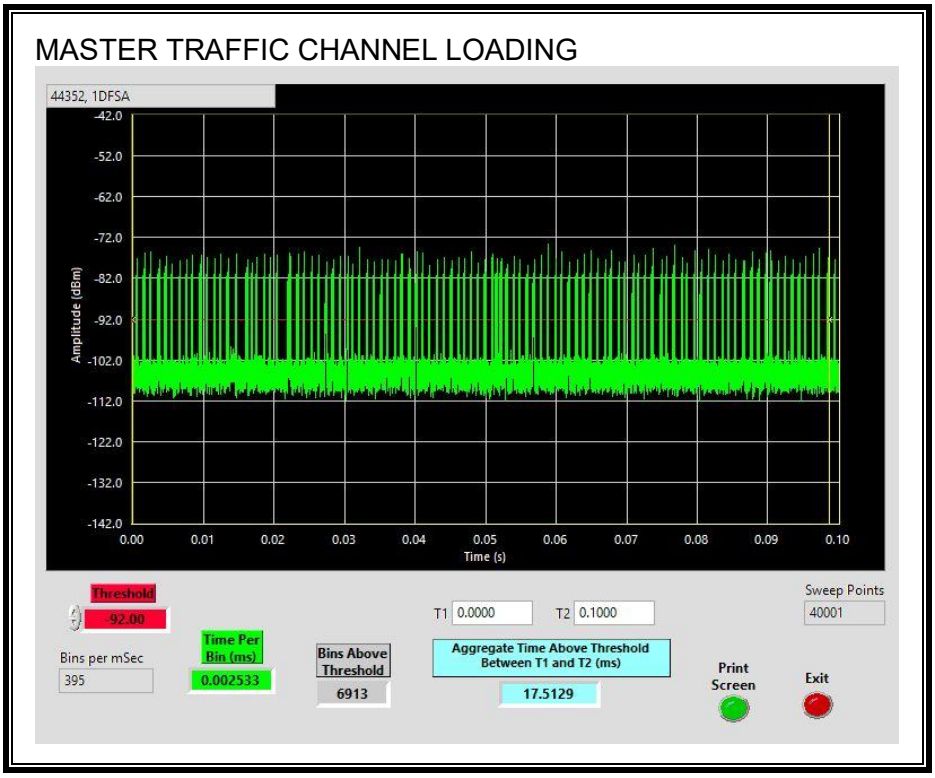
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 17.5129%.

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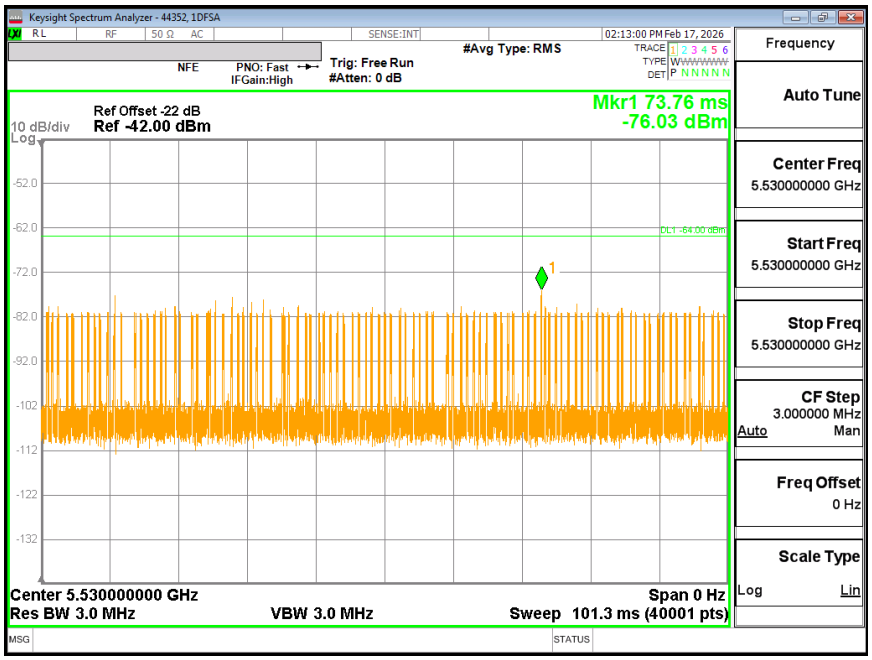
TRAFFIC

CLIENT TRAFFIC



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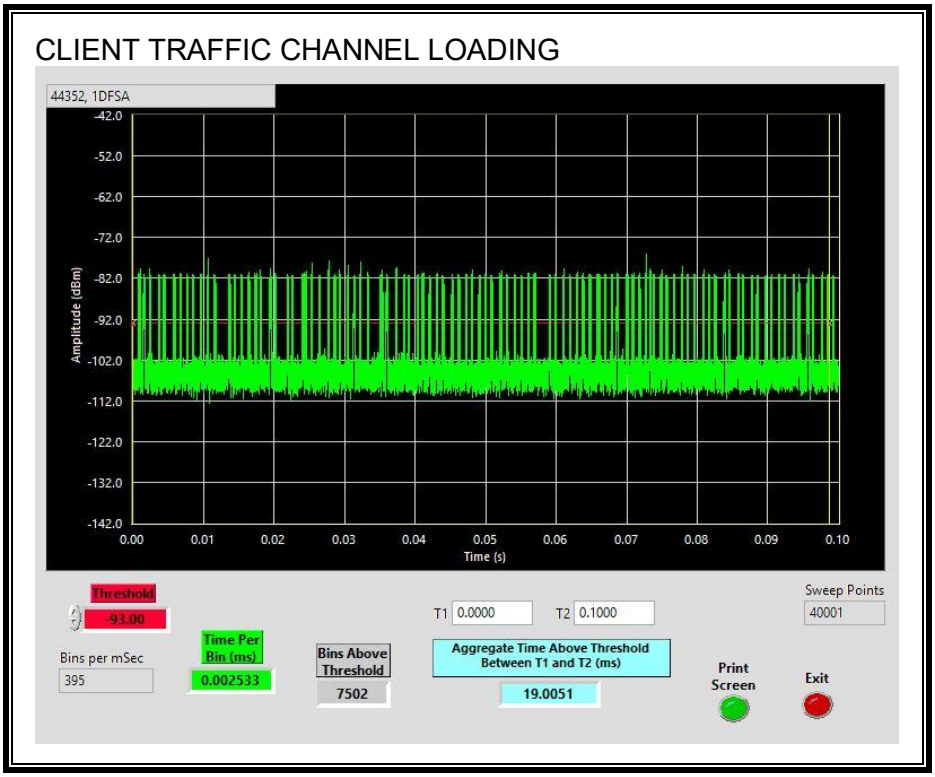
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 19.0051%.

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6.9.3. MOVE AND CLOSING TIME OF CLIENT DEVICE IN RESPONSE TO DETECTION BY MASTER DEVICE

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.556	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
1.2	60

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MOVE TIME

MOVE TIME

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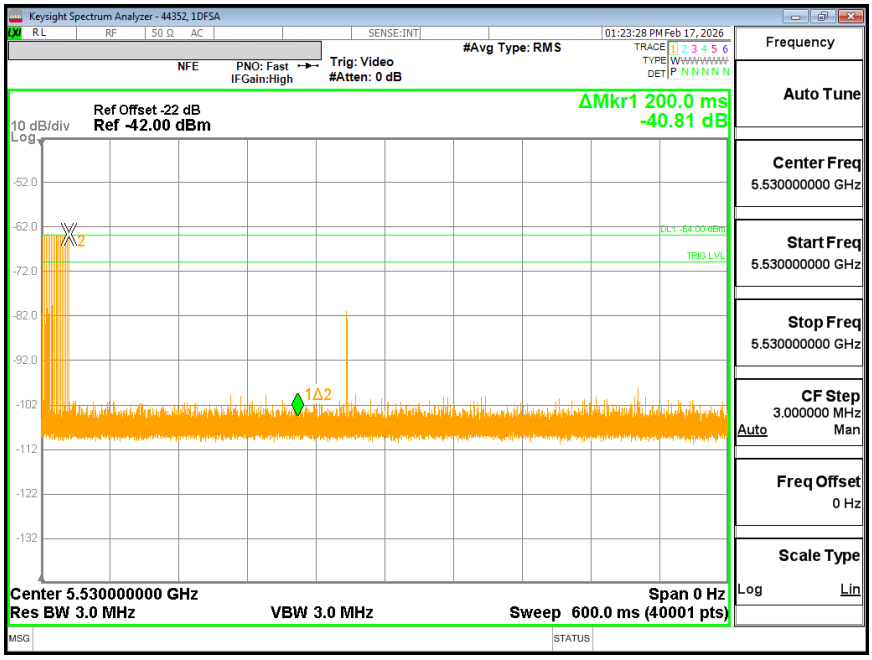
CHANNEL CLOSING TIME

CLOSING TIME



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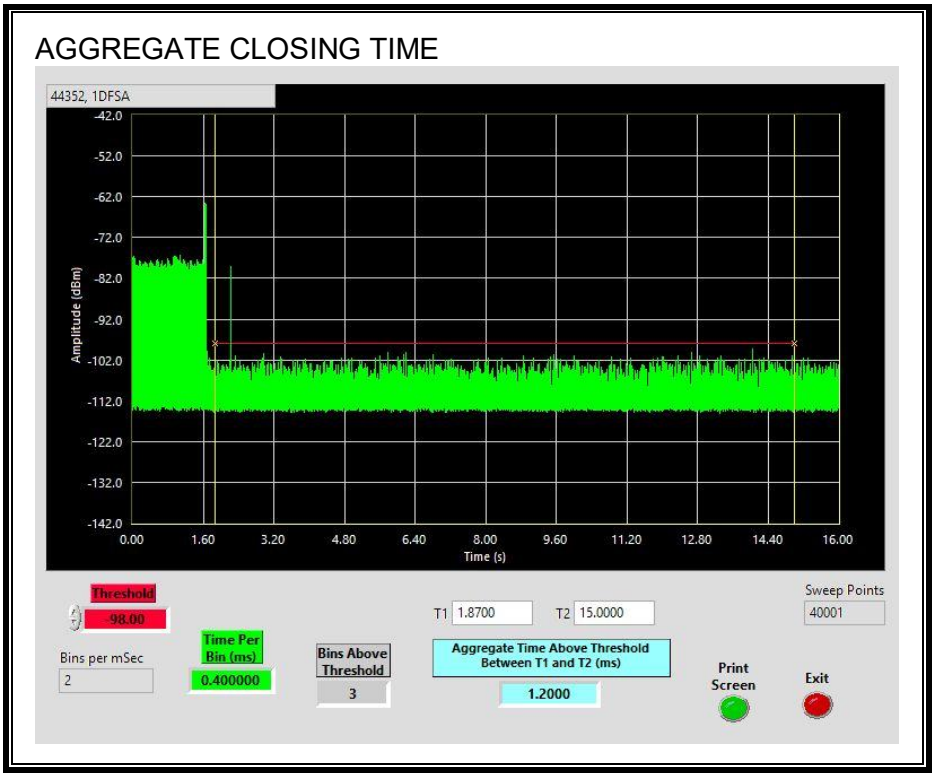
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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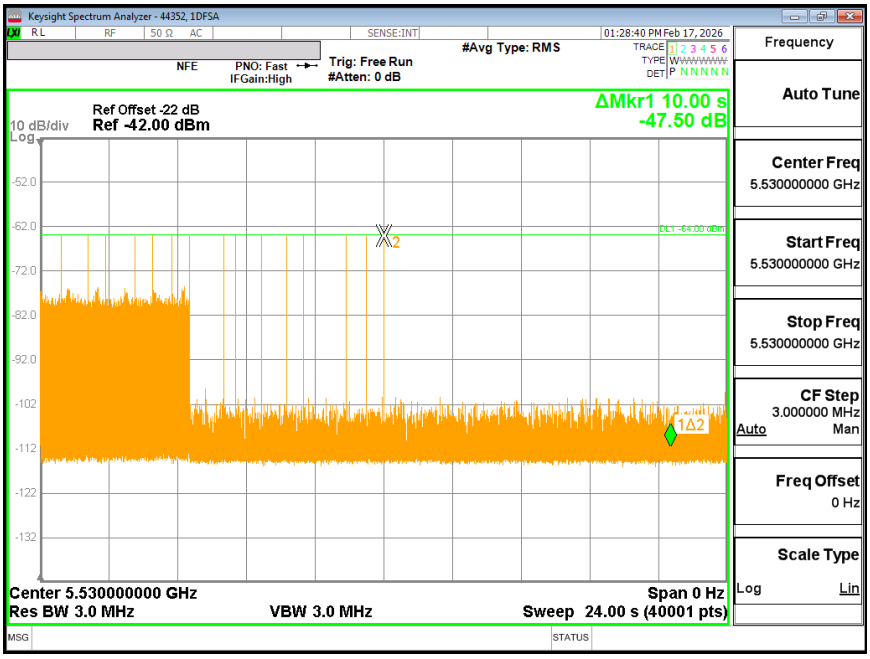
LONG PULSE CHANNEL MOVE TIME

The traffic ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME FOR LONG PULSE RADAR



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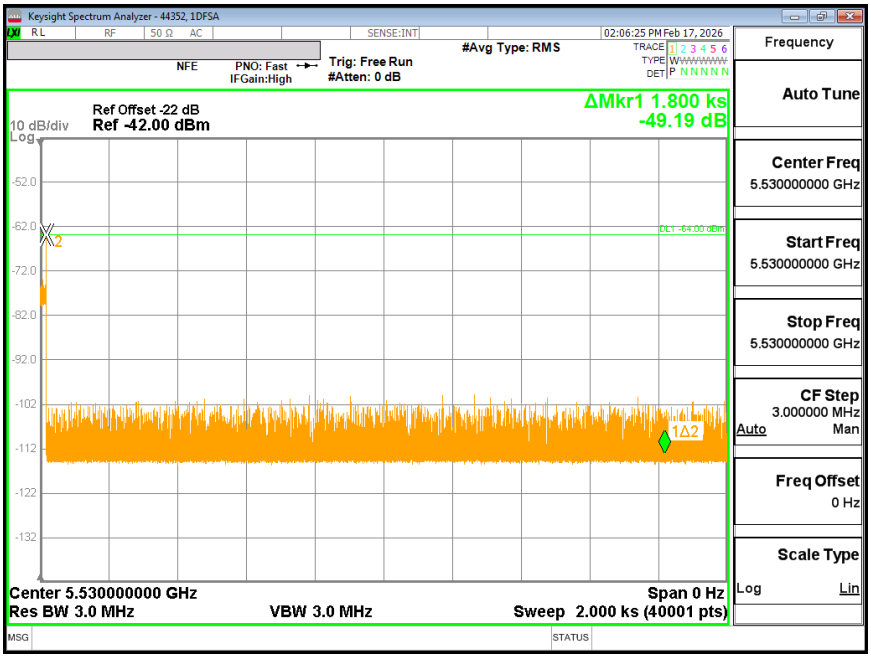
6.9.4. NON-OCCUPANCY PERIOD OF CLIENT IN RESPONSE TO DETECTION BY MASTER DEVICE

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

30-MINUTE NON-OCCUPANCY PERIOD



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6.9.5. MOVE AND CLOSING TIME OF MASTER DEVICE IN RESPONSE TO DETECTION BY CLIENT DEVICE

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.000	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

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MOVE TIME

MOVE TIME

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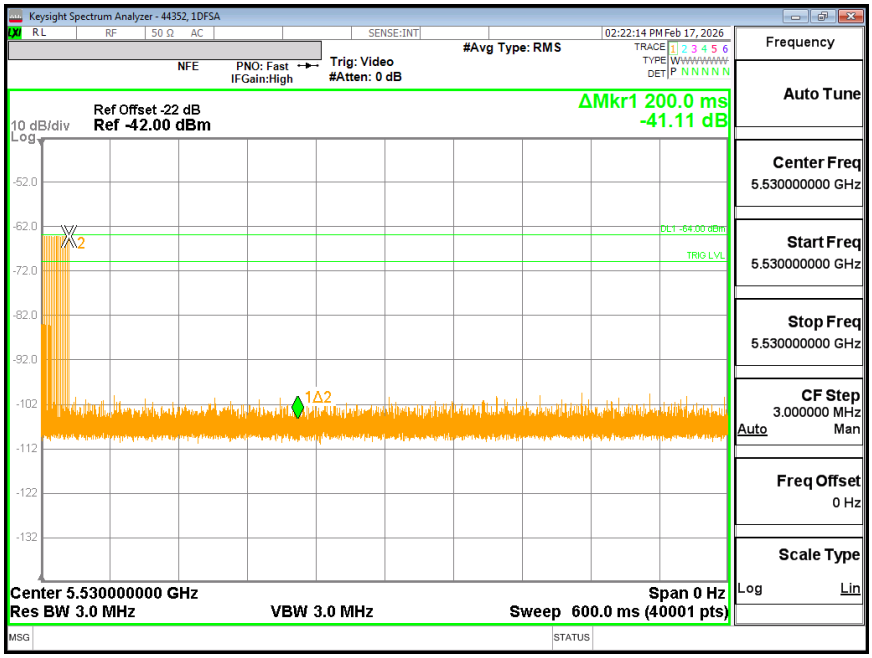
CHANNEL CLOSING TIME

CLOSING TIME



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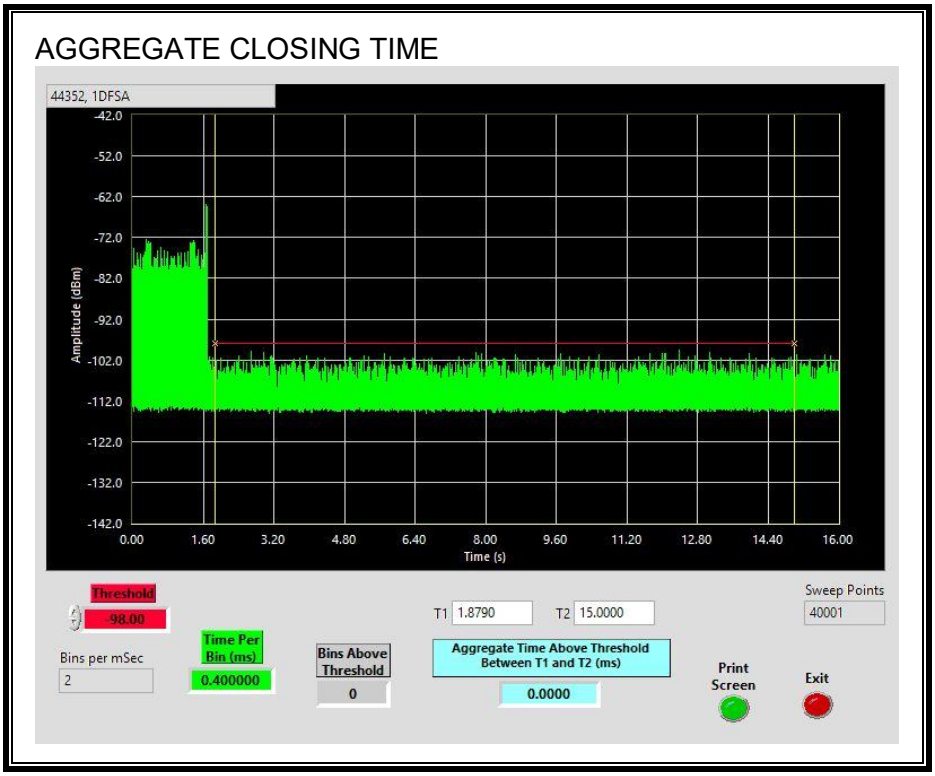
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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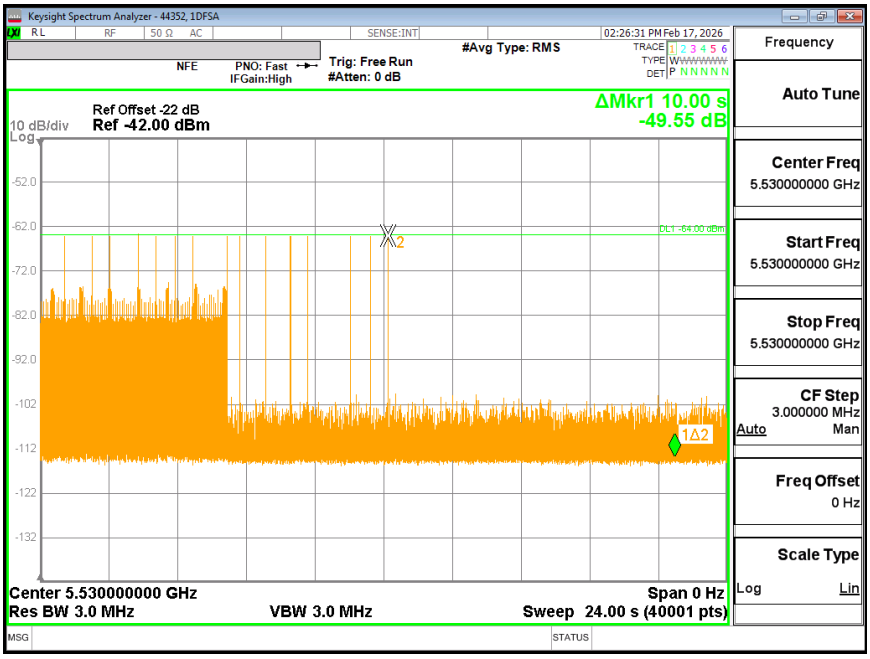
LONG PULSE CHANNEL MOVE TIME

The traffic ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME FOR LONG PULSE RADAR



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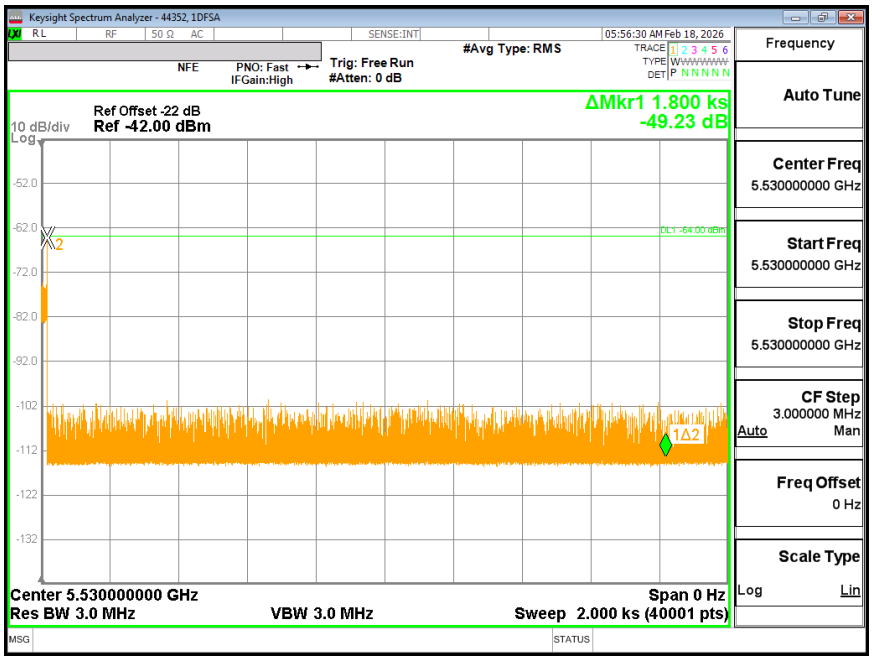
6.9.6. NON-OCCUPANCY PERIOD OF MASTER DEVICE IN RESPONSE TO DETECTION BY CLIENT DEVICE

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time. After the 30-minute non-occupancy period the Master & Client Device performed a new CAC, then resumed transmissions upon detecting no radar during this CAC period.

NON-OCCUPANCY PERIOD



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6.10. CLIENT DEVICE CONFIGURATION RESULTS FOR 160 MHz BANDWIDTH

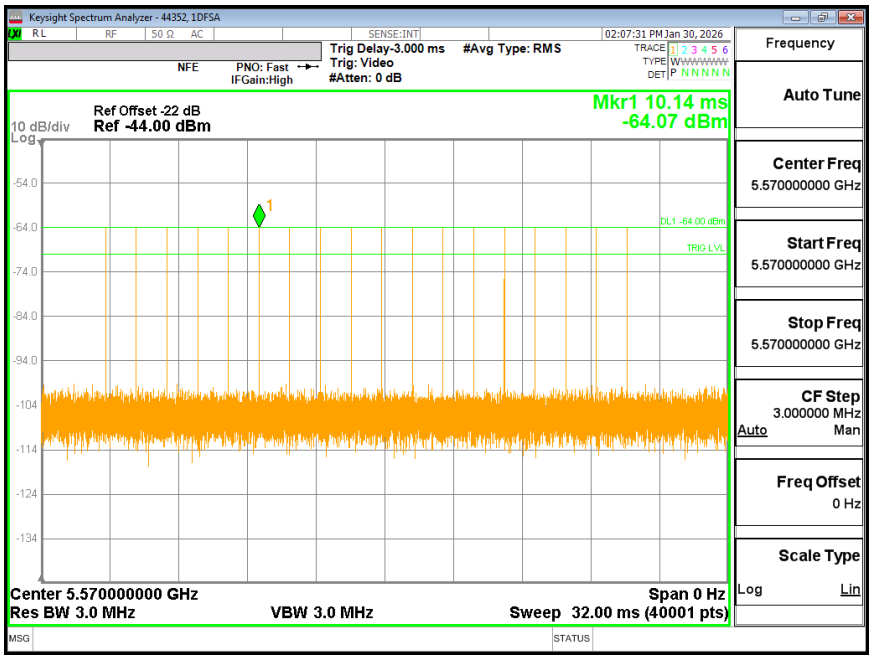
6.10.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5570 MHz.

6.10.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SAMPLE OF RADAR TYPE 0 AT RADAR DETECTION DEVICE



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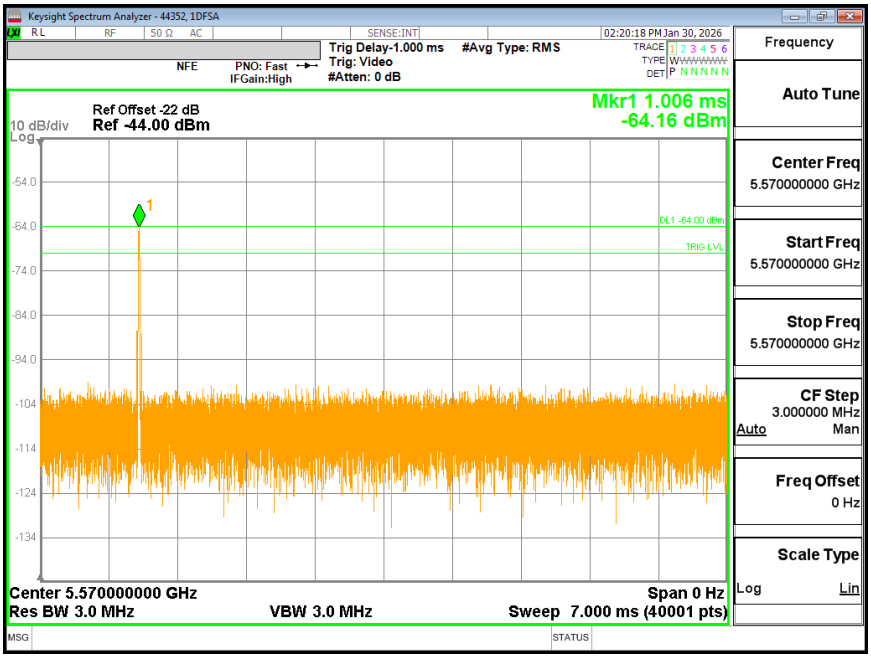
SAMPLE OF SINGLE BURST OF RADAR TYPE 5



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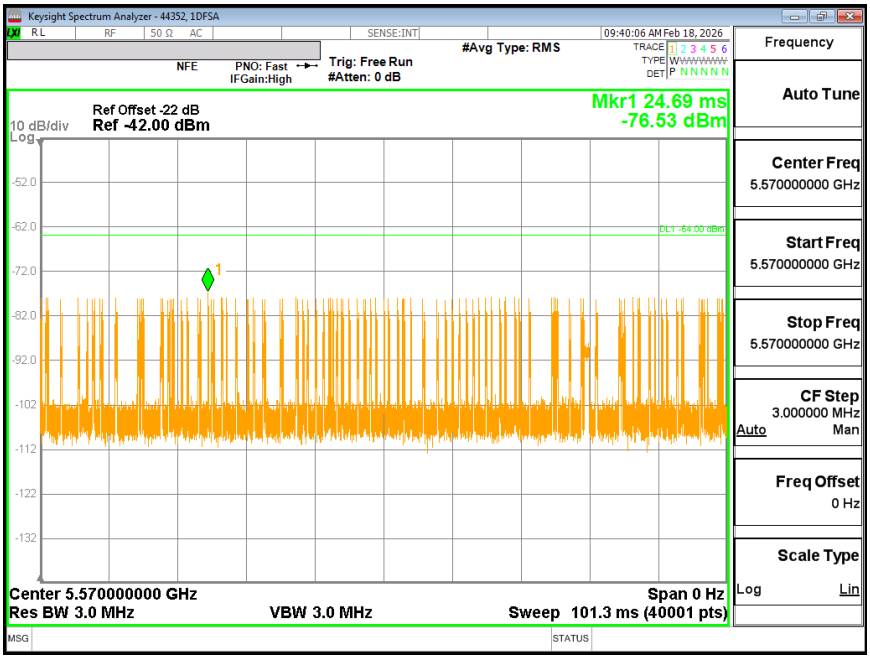
TRAFFIC

MASTER TRAFFIC



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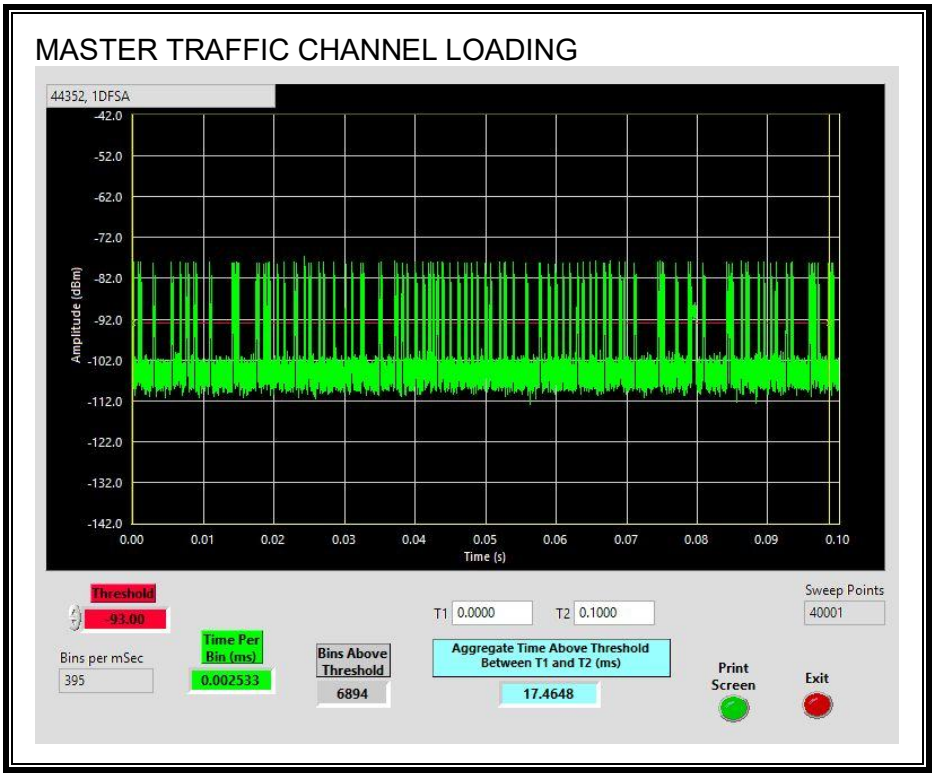
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 17.4648%.

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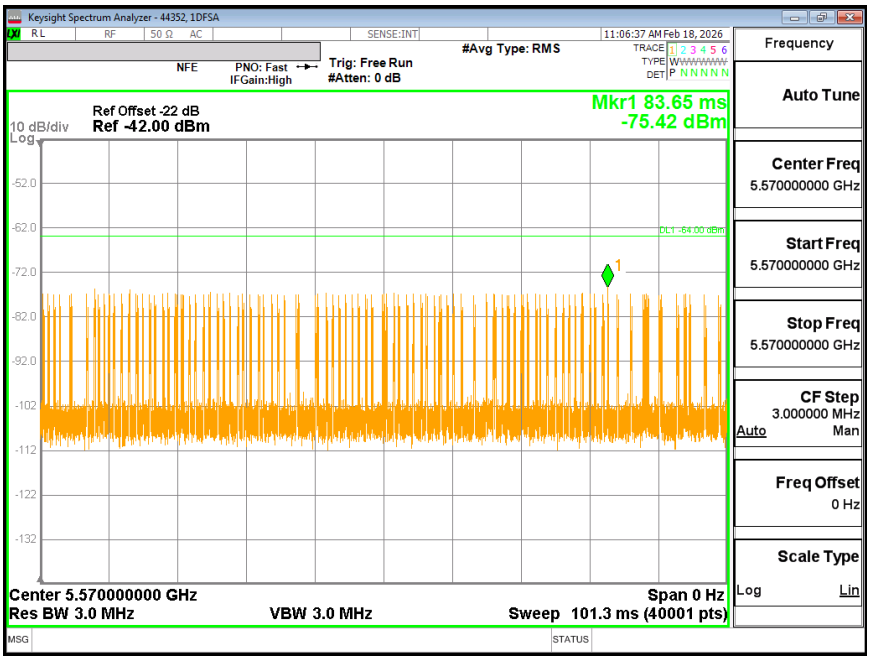
TRAFFIC

CLIENT TRAFFIC



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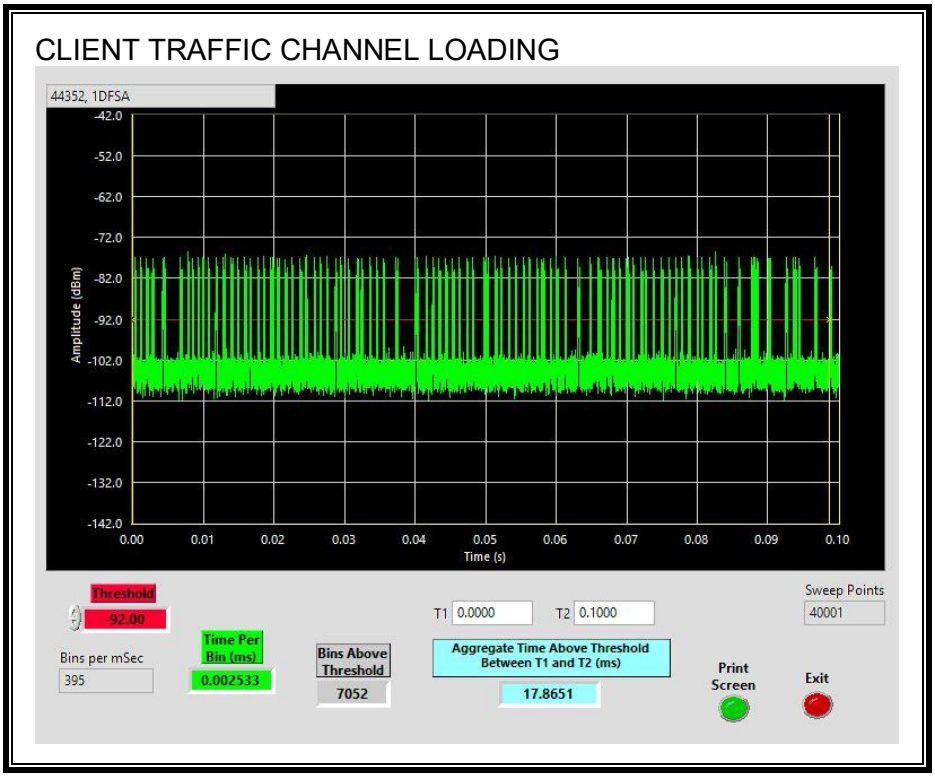
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 17.8651%.

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6.10.3. MOVE AND CLOSING TIME OF CLIENT DEVICE IN RESPONSE TO DETECTION BY MASTER DEVICE

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0	60

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MOVE TIME

MOVE TIME

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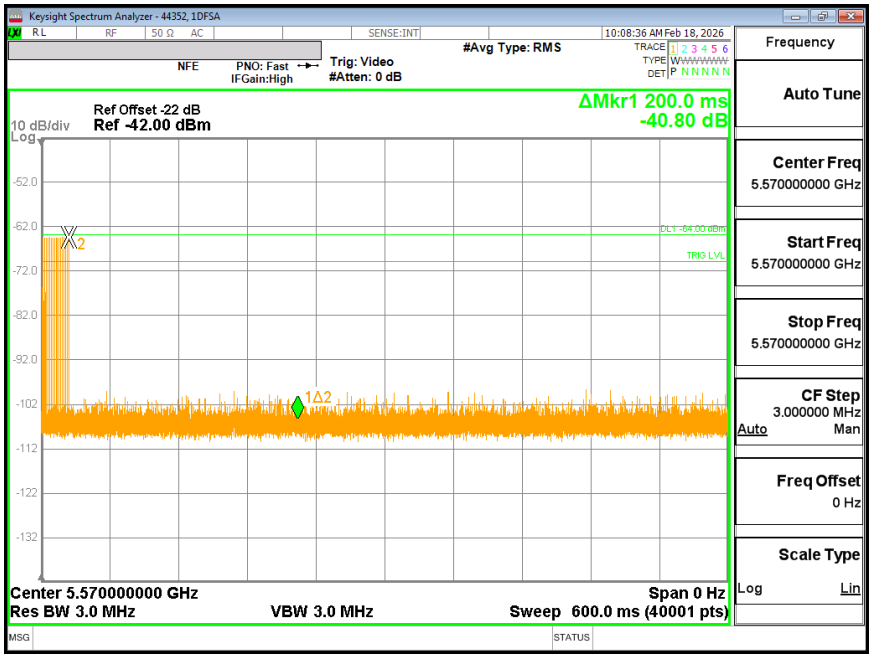
CHANNEL CLOSING TIME

CLOSING TIME



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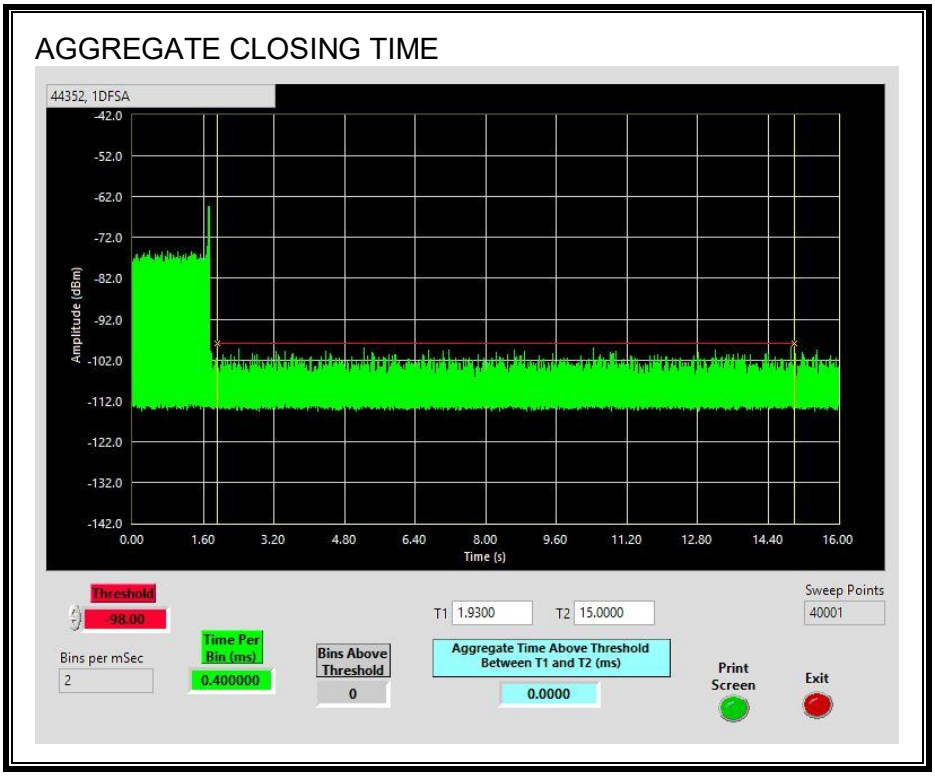
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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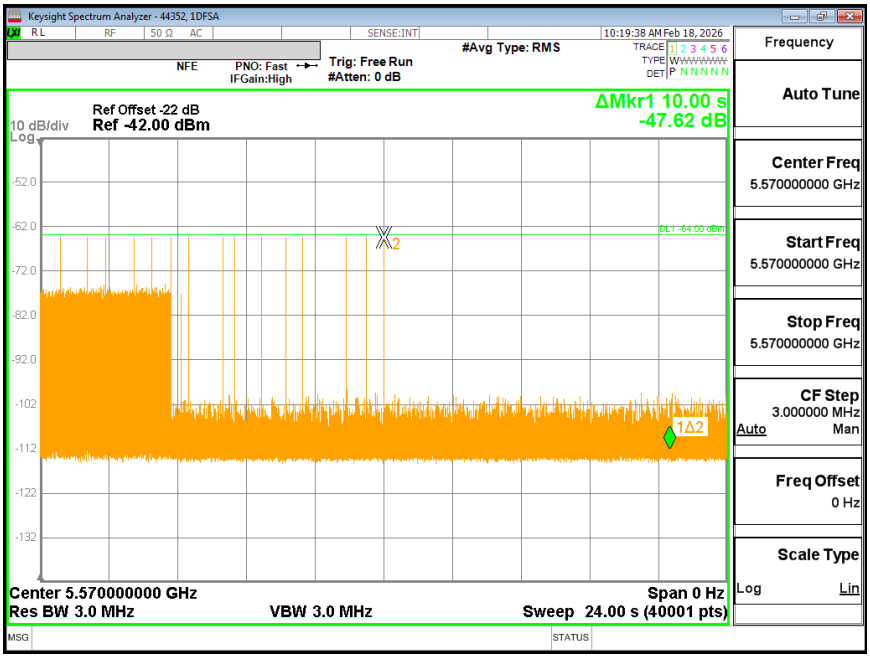
LONG PULSE CHANNEL MOVE TIME

The traffic ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME FOR LONG PULSE RADAR



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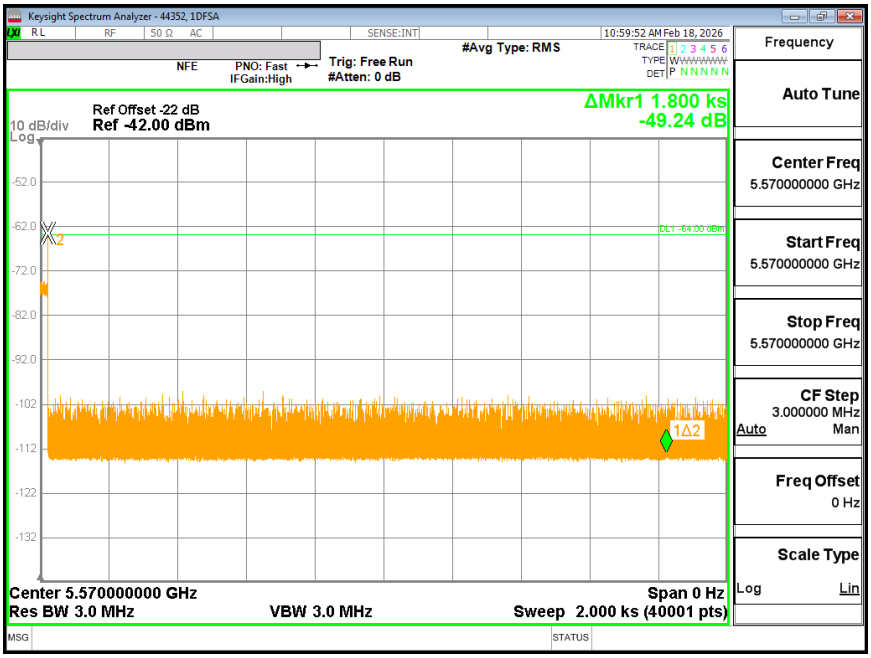
6.10.4. NON-OCCUPANCY PERIOD OF CLIENT IN RESPONSE TO DETECTION BY MASTER DEVICE

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

30-MINUTE NON-OCCUPANCY PERIOD



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6.10.5. MOVE AND CLOSING TIME OF MASTER DEVICE IN RESPONSE TO DETECTION BY CLIENT DEVICE

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0	60

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MOVE TIME

MOVE TIME

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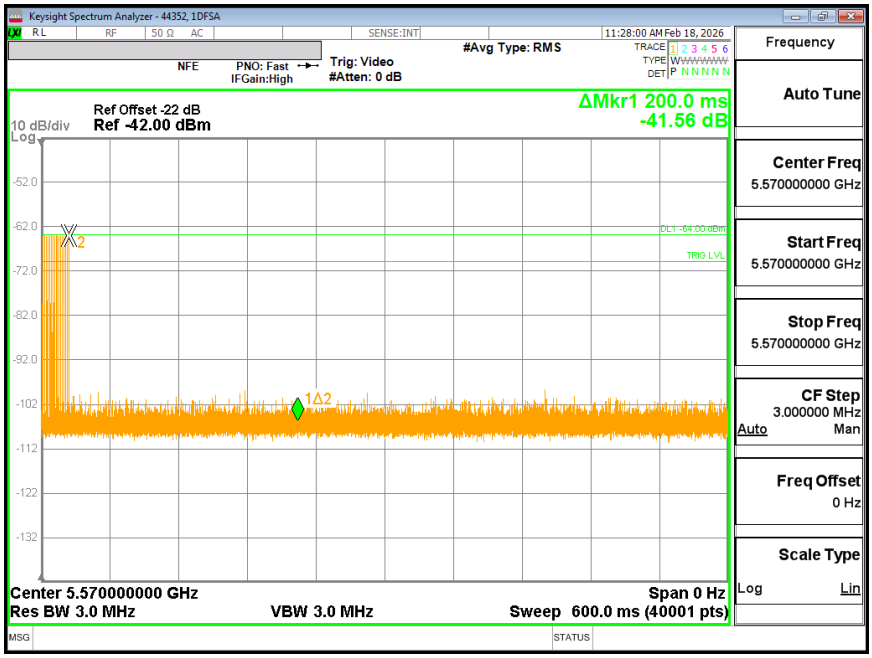
CHANNEL CLOSING TIME

CLOSING TIME



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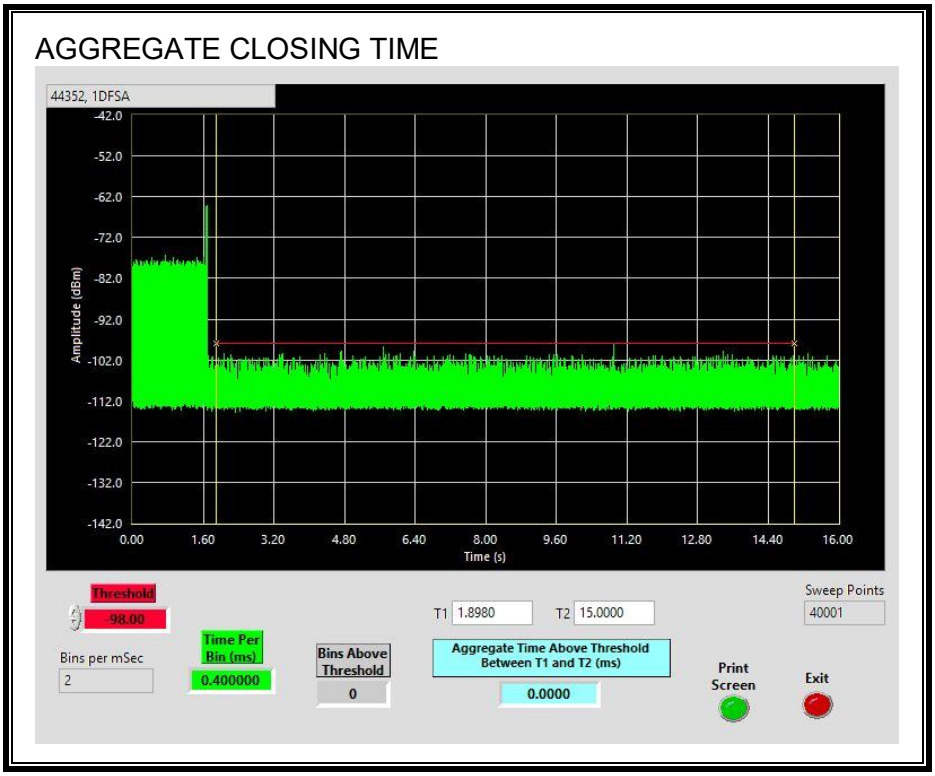
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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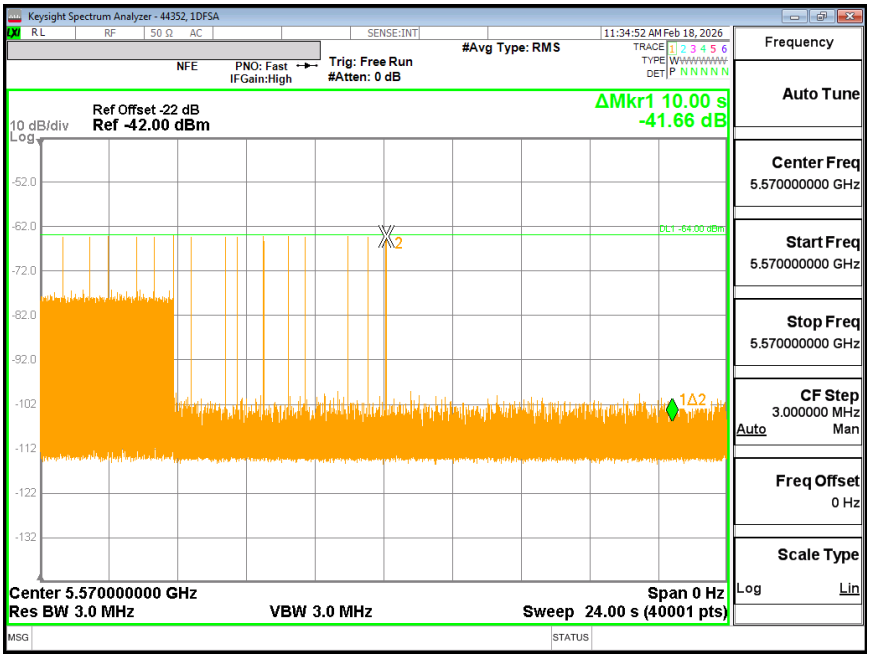
LONG PULSE CHANNEL MOVE TIME

The traffic ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME FOR LONG PULSE RADAR



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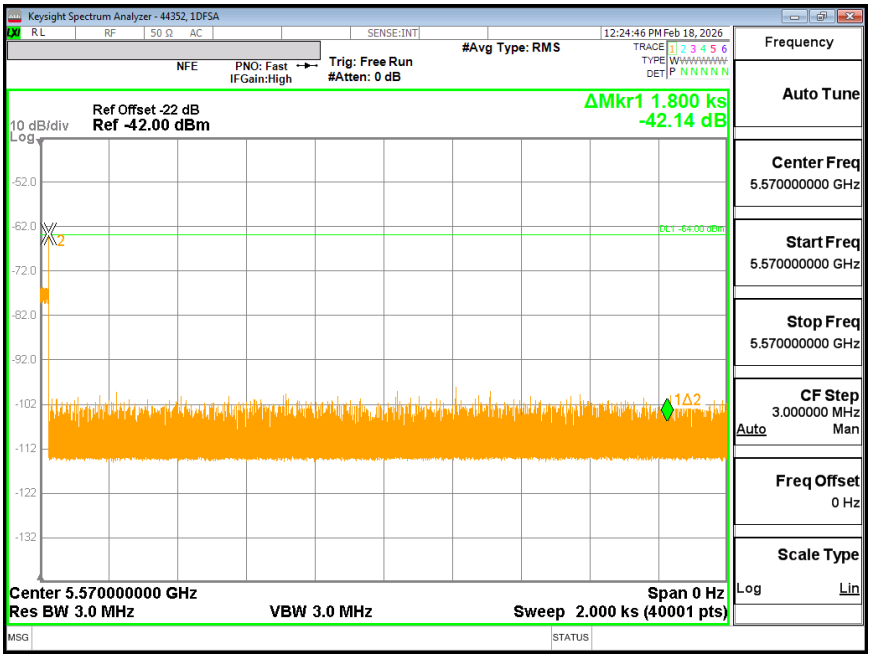
6.10.6. NON-OCCUPANCY PERIOD OF MASTER DEVICE IN RESPONSE TO DETECTION BY CLIENT DEVICE

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

NON-OCCUPANCY PERIOD



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6.11. CLIENT DEVICE CONFIGURATION RESULTS FOR 160 MHz BANDWIDTH

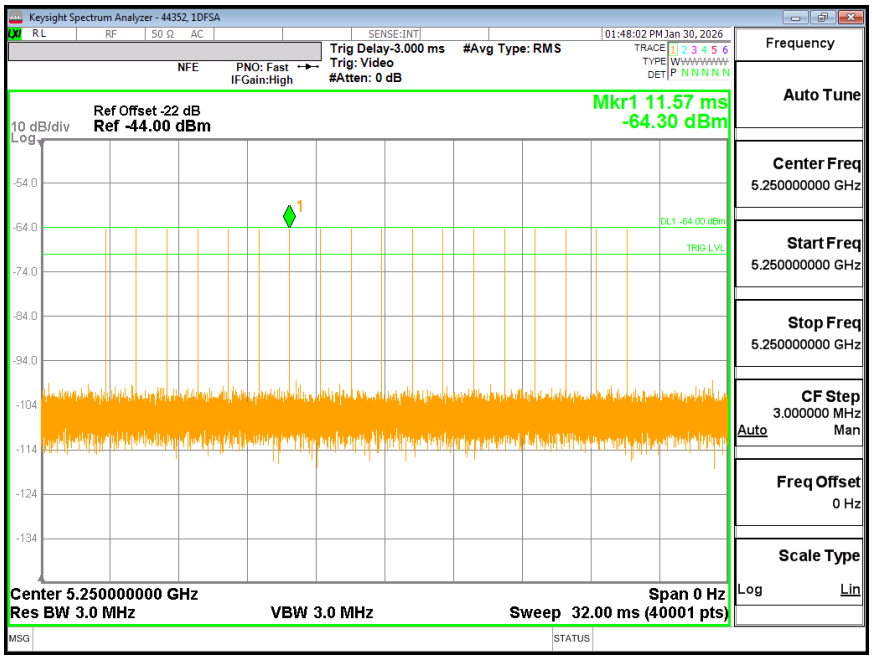
6.11.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5250 MHz.

6.11.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SAMPLE OF RADAR TYPE 0 AT RADAR DETECTION DEVICE



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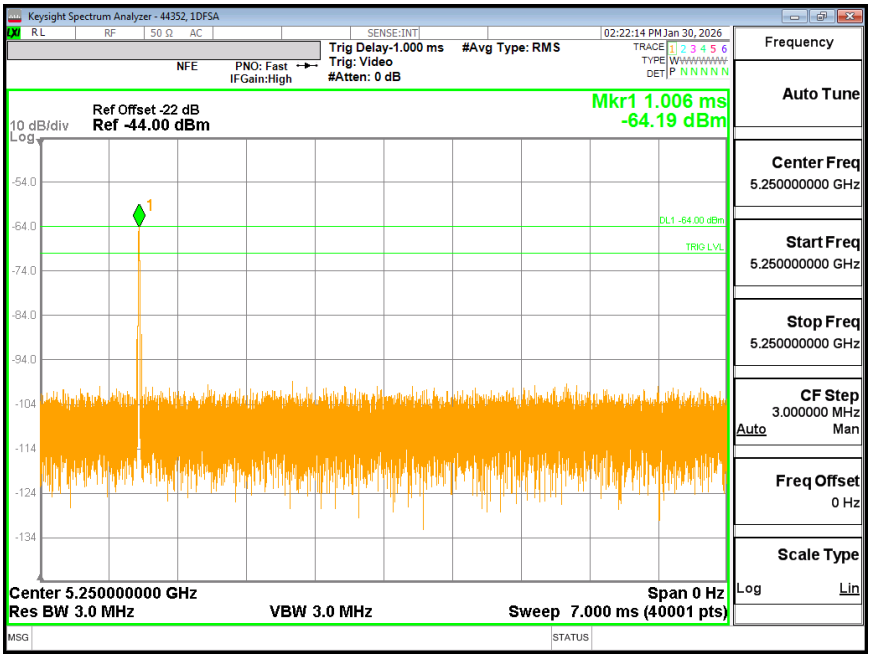
SAMPLE OF SINGLE BURST OF RADAR TYPE 5



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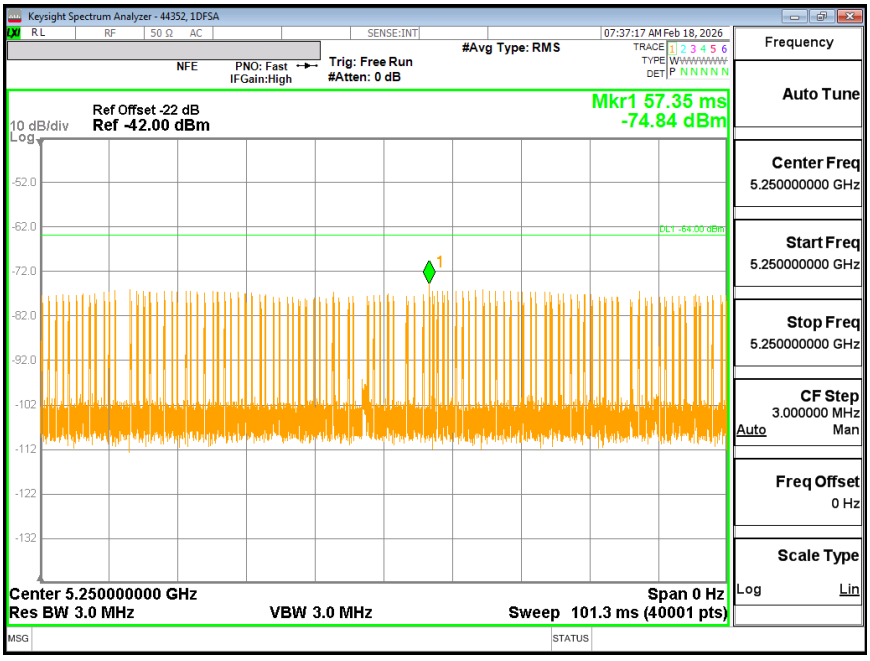
TRAFFIC

MASTER TRAFFIC



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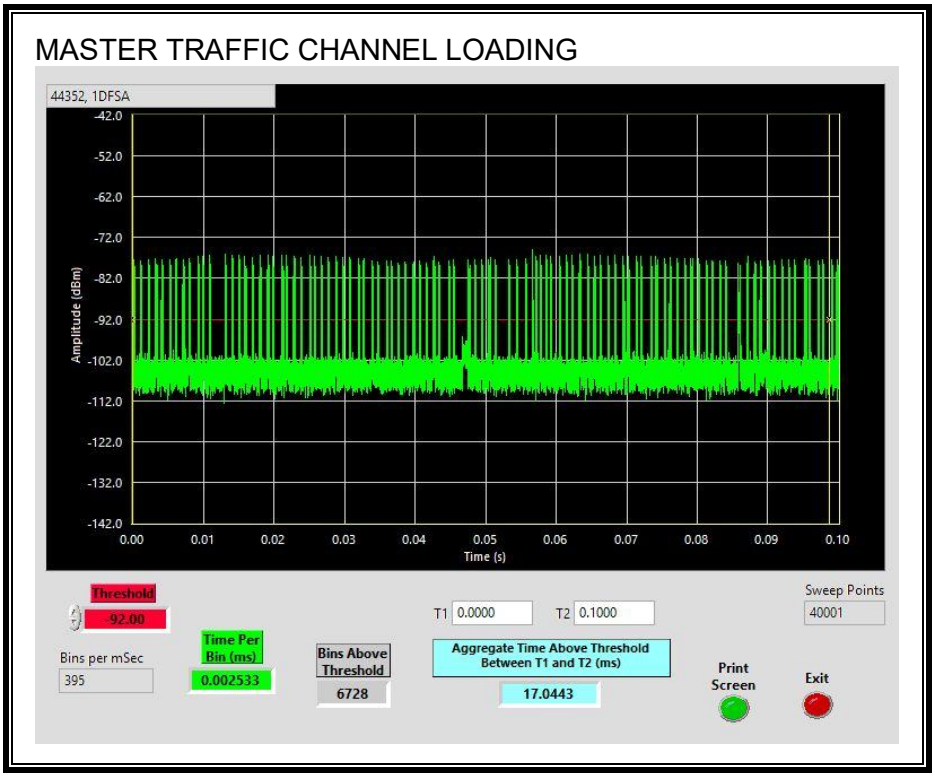
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 17.0443%.

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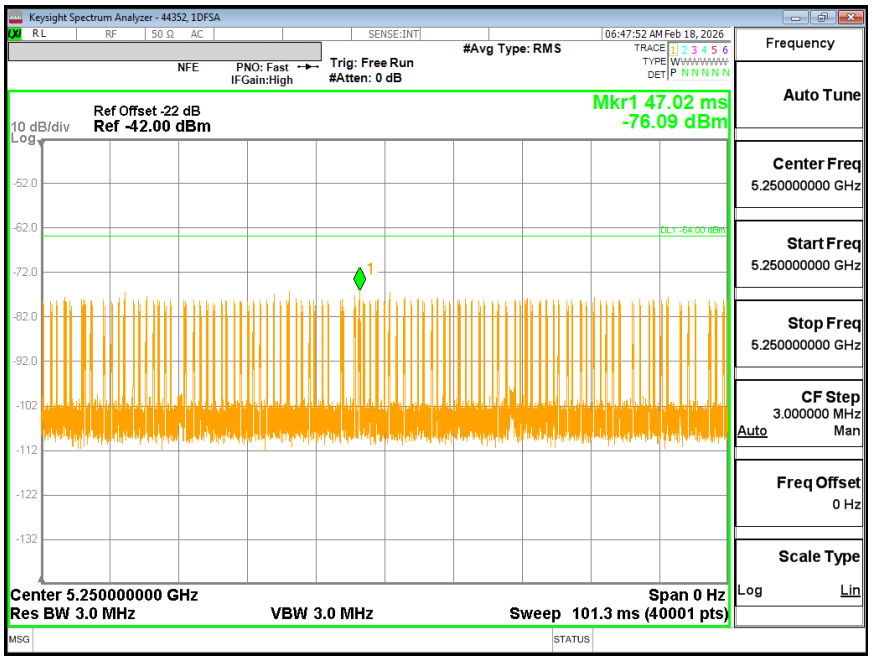
TRAFFIC

CLIENT TRAFFIC



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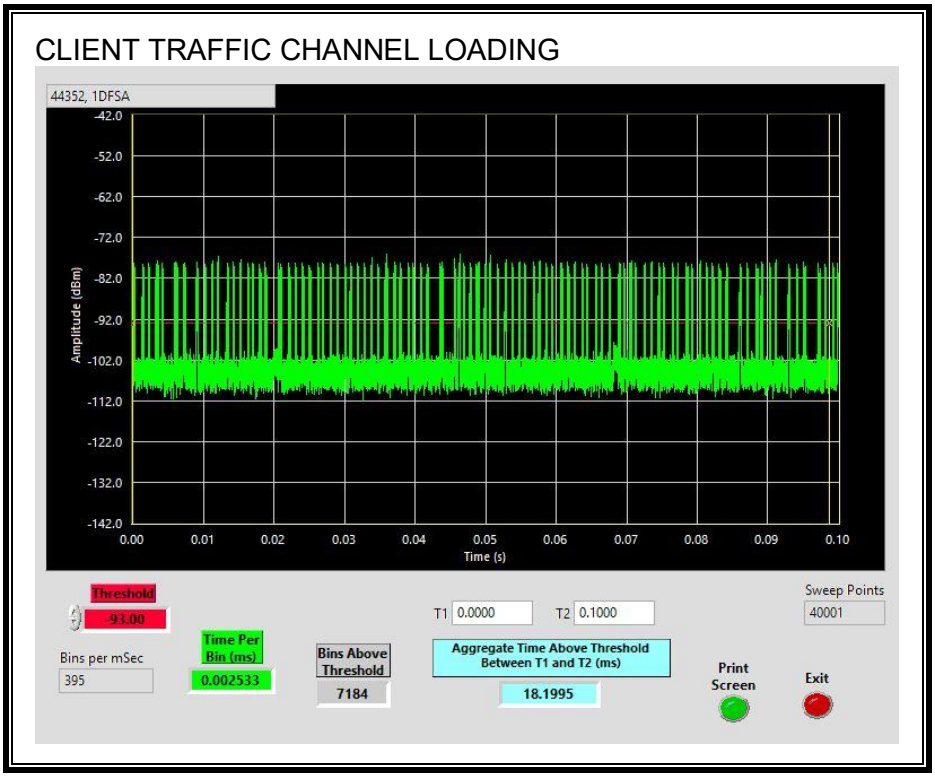
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 18.1995%.

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6.11.3. MOVE AND CLOSING TIME OF CLIENT DEVICE IN RESPONSE TO DETECTION BY MASTER DEVICE

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.27	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.4	60

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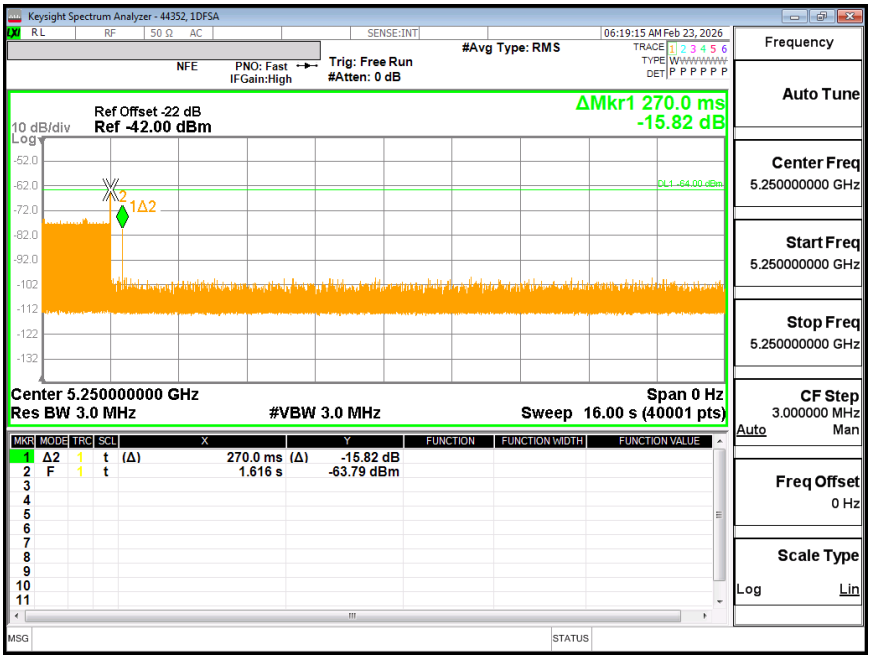
MOVE TIME

MOVE TIME



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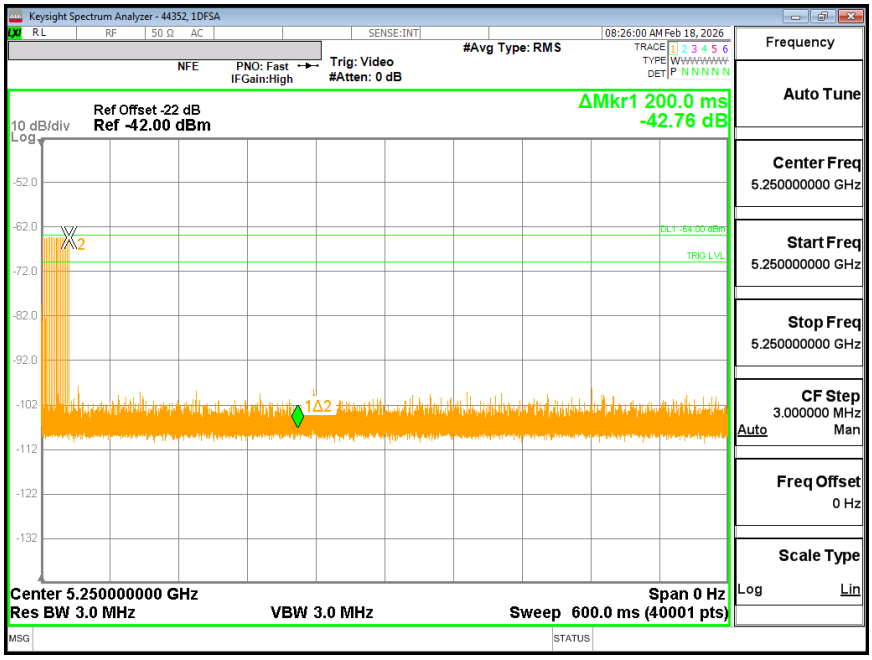
CHANNEL CLOSING TIME

CLOSING TIME



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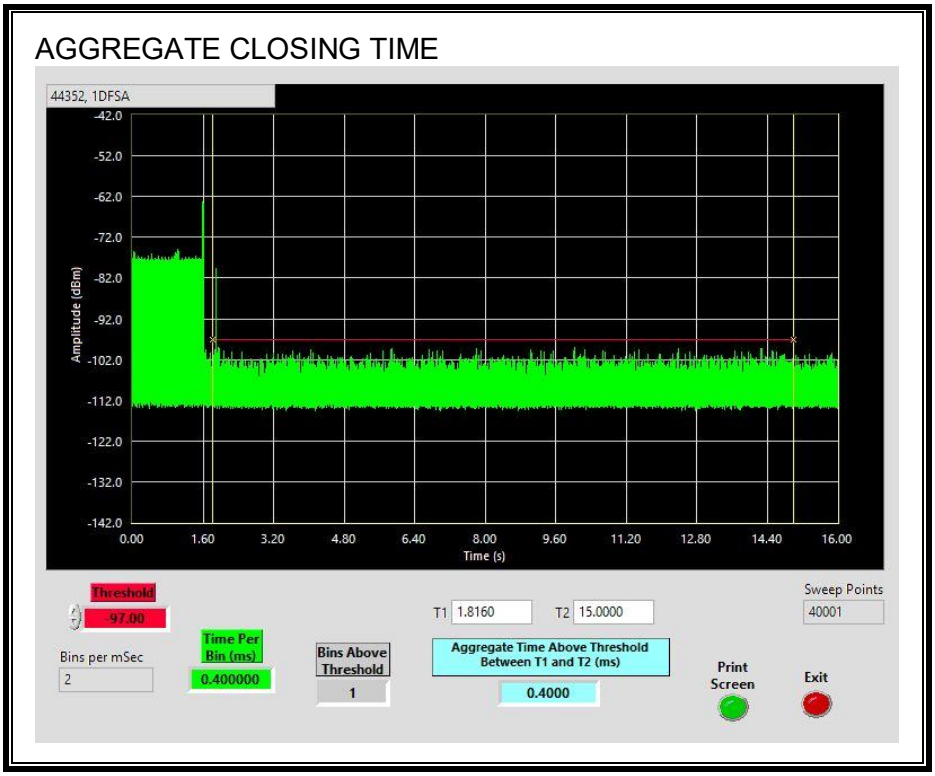
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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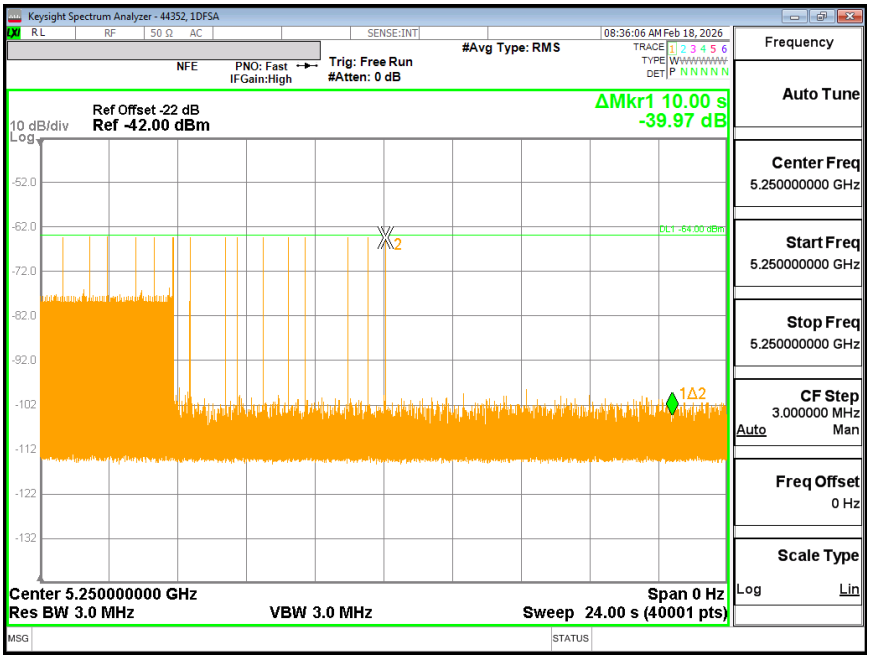
LONG PULSE CHANNEL MOVE TIME

The traffic ceases prior to 10 seconds after the end of the radar waveform.

MOVE TIME FOR LONG PULSE RADAR



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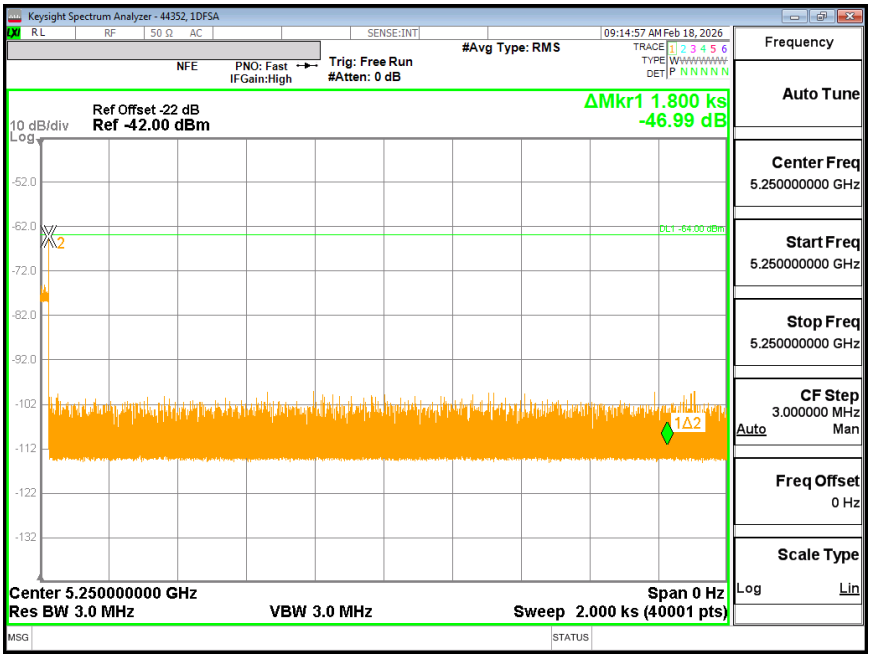
6.11.4. NON-OCCUPANCY PERIOD OF CLIENT IN RESPONSE TO DETECTION BY MASTER DEVICE

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.

30-MINUTE NON-OCCUPANCY PERIOD



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6.11.5. MOVE AND CLOSING TIME OF MASTER DEVICE IN RESPONSE TO DETECTION BY CLIENT DEVICE

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).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.0116	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0	60

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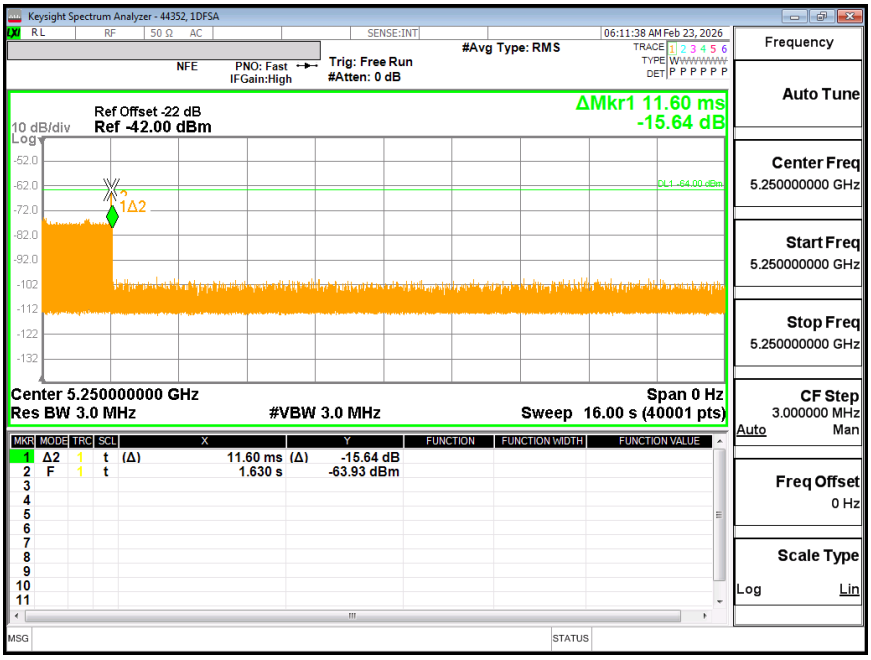
MOVE TIME

MOVE TIME



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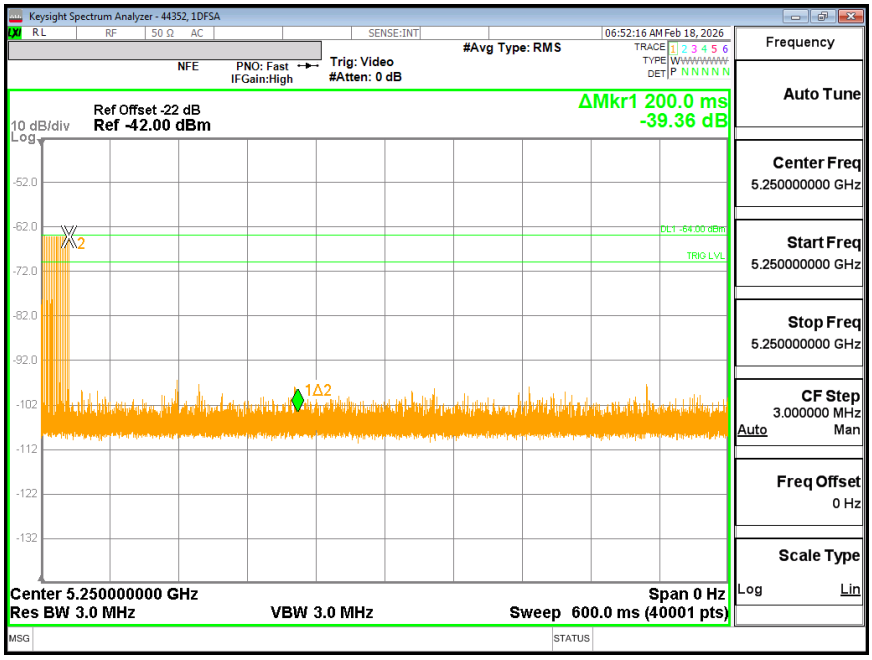
CHANNEL CLOSING TIME

CLOSING TIME



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