HEADQUARTERS: 914 WEST PATAPSCO AVENUE • BALTIMORE, MARYLAND 21230 • PHONE (410) 354-3300 • FAX (410) 354-3313

8/7/2024
US Tech
3505 Francis Circle
Alpharetta, GA 30004
USA

Dear George Yang,

Enclosed is the EMC Wireless test report for compliance testing of the US Tech ISM43340-M4G-L44-C as tested to the requirements of FCC Part 15 E and RSS-247 Issue 3 Dynamic Frequency Selection Criteria for Intentional Radiators.

Thank you for using the services of Eurofins MET Labs. If you have any questions regarding these results or if MET can be of further service to you, please feel free to contact me.

Sincerely yours,
EUROFINS MET LABS

Nancy LaBrecque
Documentation Department

Reference: WIRA131371-FCC407 RSS247 DFS Rev 2

Dynamic Frequency Selection
Test Report

for the

US Tech
ISM43340-M4G-L44-C

Tested under
FCC Part 15 E and RSS-247 Issue 3 Dynamic Frequency Selection Criteria
For Intentional Radiators

Bryan Taylor, Wireless Team Lead
Electromagnetic Compatibility Lab

Nancy LaBrecque
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules Part 15.247 under normal use and maintenance.

Matthew Hinojosa
EMC Manager, Austin Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	7/2/2024	Initial Issue.
1	8/7/2024	Customer Requested Changes.
2	8/7/2024	Customer Requested Changes.

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List of Terms and Abbreviations

AC	**A**lternating **C**urrent
ACF	**A**ntenna **C**orrection **F**actor
Cal	**Cal**ibration
d	**M**easurement **D**istance
dB	**D**eci**b**els
dBµA	**D**eci**b**els above one **micro**amp
dBµV	**D**eci**b**els above one **micro**volt
dBµA/m	**D**eci**b**els above one **micro**amp **per m**eter
dBµV/m	**D**eci**b**els above one **micro**volt **per m**eter
DC	**D**irect **C**urrent
E	**E**lectric Field
DSL	**D**igital **S**ubscriber **L**ine
ESD	**E**lectro**s**tatic **D**ischarge
EUT	**E**quipment **U**nder **T**est
f	**F**requency
FCC	**F**ederal **C**ommunications **C**ommission
GRP	**G**round **R**eference **P**lane
H	Magnetic Field
HCP	**H**orizontal **C**oupling **P**lane
Hz	**H**ert**z**
IEC	**I**nternational **E**lectrotechnical **C**ommission
kHz	**k**ilo**h**ert**z**
kPa	**k**ilo**pa**scal
kV	**k**ilo**v**olt
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**h**ertz
µH	**microh**enry
µ	**microf**arad
µs	**micros**econds
NEBS	**N**etwork **E**quipment-**B**uilding **S**ystem
PRF	**P**ulse **R**epetition **F**requency
RF	**R**adio **F**requency
RMS	**R**oot-**M**ean-**S**quare
TWT	**T**raveling **W**ave **T**ube
V/m	**V**olts **per m**eter
VCP	**V**ertical **C**oupling **P**lane

I. Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the US Tech. ISM43340-M4G-L44-Cwith the requirements of FCC Part 15 E and RSS-247 Issue 3 Dynamic Frequency Selection Criteria. US Tech should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the ISM43340-M4G-L44-Chas been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15 E and RSS-247 Issue 3 Dynamic Frequency Selection Criteria, in accordance with US Tech. purchase order number 4236. All tests were conducted using measurement procedures ANSI C63.10-2013 and FCC KDB 905462 D02.

FCC Reference	ISED Reference	Measurement Proceedure	Description	Results
15.40 (h)(2)	RSS-247 (6.3)	FCC KDB 905462 D02	U-NII Detection Bandwidth	Not Applicable[1]
15.407(h)(2)(ii)	RSS-247 (6.3)	FCC KDB 905462 D02	Channel Availability Check Time	Not Applicable[1]
15.407(h)(2)(ii-iii)	RSS-247 (6.3)	FCC KDB 905462 D02	Channel Move Time	Compliant
15.407(h)(2)	RSS-247 (6.3)	FCC KDB 905462 D02	Non-Occupancy Period	Compliant

Figure 1. Executive Summary

[1] These tests are not applicable to client only devices without radar detection.

II. Equipment Configuration

A. Overview

Eurofins MET Labs was contracted by US Tech. to perform testing on the ISM43340-M4G-L44-C under US Tech.'s purchase order number 4236.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the US Tech ISM43340-M4G-L44-C.

The results obtained relate only to the item(s) tested.

Model(s) Tested:	ISM43340-M4G-L44-C	
Model(s) Covered:	ISM43340-M4G-L44-C	
FCC ID:	O7P-341	
IC ID:	10147A-341	
EUT Specifications:	Primary Power: 3.3VDC	
	Frequency Range: DC	
	Type of Modulations:	OFDM
	Equipment Code:	NII
	EUT Frequency Ranges:	U-NII-2A: 5250 - 5350 MHz U-NII-2C: 5470 – 5725 MHz
	Antenna Gain (declared by US Tech)	3.3dBi (per information provided by US Tech)
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35º C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Evaluated by:	Bryan Taylor	
Report Date(s):	8/7/2024	

Figure 2. EUT Summary Table

B. References

CFR 47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices (UNII)
RSS-247, Issue 3, August 2023	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
RSS-GEN, Issue 5, March 2019	General Requirements and Information for the Certification of Radio Apparatus
ISO/IEC 17025:2017	General Requirements for the Competence of Testing and Calibration Laboratories
ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
905462 DO2 UNII DFS Compliance Procedures New Rules v02	Compliance Measurement Procedures for Unlicensed-National Information Infrastructure Devices Operating in the 5250-5350 MHz and 5470-5725 MHz Bands Incorporating Dynamic Frequency Selection

Figure 3. References

C. Test Site

All testing was performed at Eurofins MET Labs, 13501 McCallen Pass, Austin, TX 78753. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

ISED Lab Info:
CAB Identifier: US0004
Company Number: 2043D

FCC Lab Info:
Designation Number: US1127

D. Measurement Uncertainty

Test Method	Typical Expanded Uncertainty	K	Confidence Level
RF Frequencies	±4.52 Hz	2	95%
RF Power Conducted Emissions	±2.97 dB	2	95%
RF Power Radiated Emissions	±2.95 dB	2	95%

Figure 4. Uncertainty Calculations Summary

E. Description of Test Sample

The US Tech ISM43340-M4G-L44-C is a wireless radio module supporting 802.11a/n and operation in the 5GHz DTS bands with 20 MHz channel bandwidth. Photos of the test sample appear in the exhibits below.

Figure 5. Test Sample Top Side

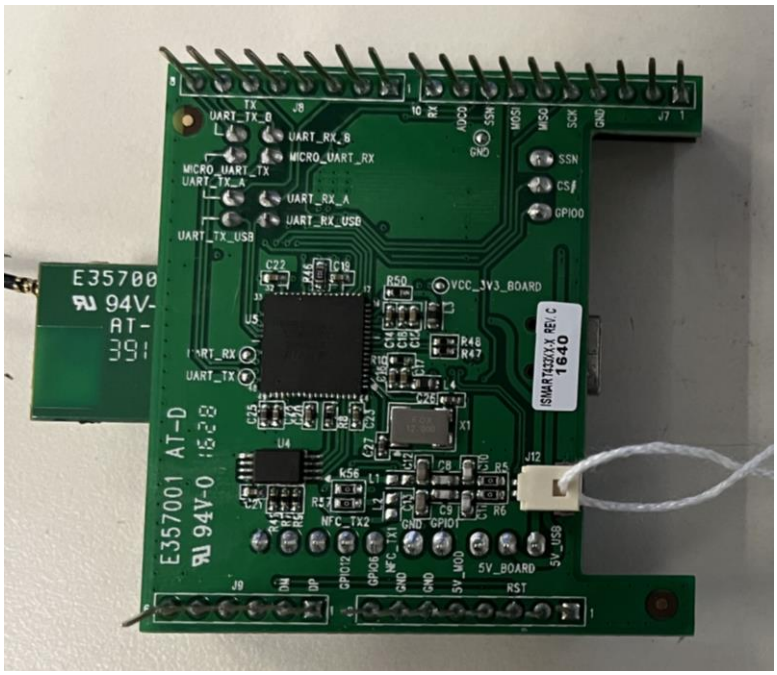

Figure 6. Test Sample Bottom Side

F. Equipment Configuration

During the DFS testing the ISM43340-M4G-L44-Cwas connected via a conducted cabled path to a certified master device. Data was streamed from the master device to the ISM43340-M4G-L44-C

G. Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

Name/Description	Manufacturer	Model Number	Customer Supplied Calibration Data
Laptop	HP	14-dq0xxx	N/A

Figure 7. Support Equipment

Name / Description	Manufacturer	Model Number	FCCID
Dual and Gigabit Router (Master Device)	Asus	AX6000	FCCID: MSQ-RTAXHP00

Figure 8. Master Device

H. Ports and Cabling Information

Port Name on EUT	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded? (Y/N)	Termination Box ID & Port Name
USB	USB	1	1m	1m	Yes	Laptop
Antenna Port	SMA Cable	1	1m	1m	Yes	Master Device

Figure 9. Ports and Cabling Information

I. Mode of Operation

During the DFS testing the ISM43340-M4G-L44-C was connected via a conducted cabled path to a certified master device. Data was streamed from the master device to the ISM43340-M4G-L44-C

J. Method of Monitoring EUT Operation

A spectrum analyzer was used to confirm proper transmitter operation.

K. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

L. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to US Tech upon completion of testing.

III. Dynamic Frequency Selection Requirements and Radar Waveform Description

A. DFS Requirements

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

Figure 10. Applicability of DFS Requirements Prior to Use of a Channel

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

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

Figure 11. Applicability of DFS Requirements During Normal Operation

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.	

Figure 12. DFS Detection Thresholds for Master or Client Devices Incorporating DFS

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.	

Figure 13. DFS Response Requirement Values

B. 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.

Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot 10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$	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.					

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 Type1, 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.

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

Figure 14. Pulse Repetition Intervals Values for Test A

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Number of Pulses per Bursts	Number of Bursts	Minimum Percentage of Successful Detection	Minimum 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:

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 FM chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a Burst will have the same chirp width. Pulses in different Bursts may have different chirp widths. The chirp is centered on the pulse. For example, with 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).

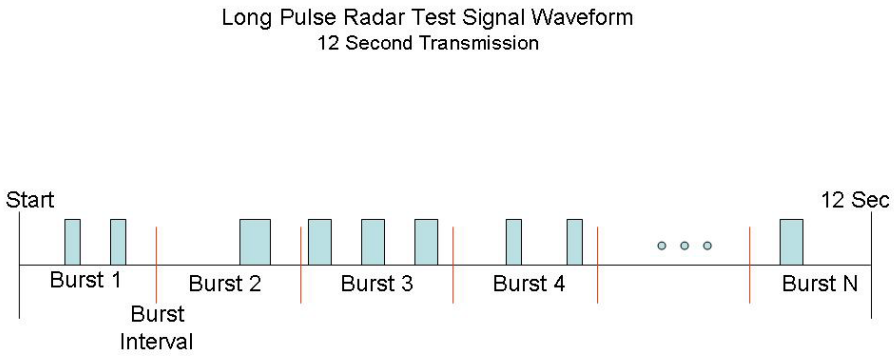

Figure 15. Long Pulse Radar Test Signal Waveform

Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	.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 selected1 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.

C. Radar Waveform Calibration

Calibration of the DFS test was done using a conducted method. The signal generator was set to CW mode and the spectrum analyzer was used as the level setting device. The spectrum analyzer amplitude offset was adjusted to compensate for the cable loss, power splitters, and attenuators so that it reflected the amplitude at the antenna port of the master device. The signal generator amplitude was adjusted until the amplitude on the spectrum analyzer was -64dBm (the level at the master device antenna terminal). The signal generator was then set to generate the radar waveform which was verified on the spectrum analyzer.

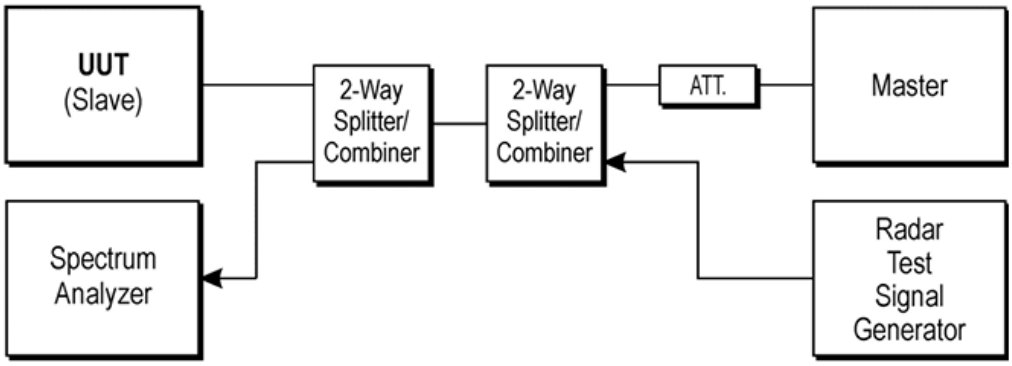

Figure 16. Block Diagram of Test Configuration

IV. DFS Test Procedure and Test Results

A. DFS Test Setup

1. A spectrum analyzer is used as a monitor to verify that the Unit Under Test (EUT) has vacated the Channel within the Channel Closing Transmission Time and Channel Move Time, and does not transmit on a Channel during the Non-Occupancy Period after the detection and subsequent Channel move. It is also used to monitor EUT transmissions during the Channel Availability Check Time.
2. The test setup, which consists of test equipment and equipment under test (EUT), is diagrammed in Figure 17.

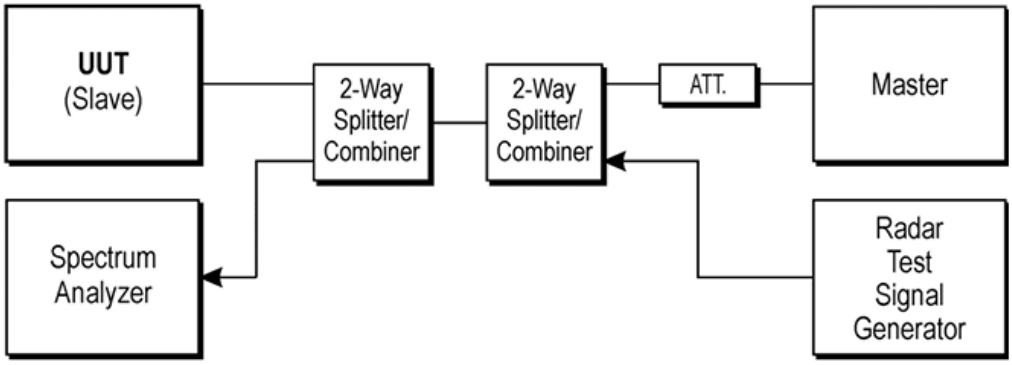

Figure 17. Test Setup Diagram

B. In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time, and Non-Occupancy Period

Test Requirements:

§15.407(h)(2)(iii) Channel Move Time. After a radar's presence is detected, all transmissions shall cease on the operating channel within 10 seconds. Transmissions during this period shall consist of normal traffic for a maximum of 200 ms after detection of the radar signal. In addition, intermittent management and control signals can be sent during the remaining time to facilitate vacating the operating channel.

§15.407(h)(2)(iv) Non-occupancy Period. A channel that has been flagged as containing a radar system, either by a channel availability check or in-service monitoring, is subject to a non-occupancy period of at least 30 minutes. The non-occupancy period starts at the time when the radar system is detected.

RSS-247 (6.3.2)(i) In-Service Monitoring: an LE-LAN device shall be able to monitor the operating channel to check that a co-channel radar has not moved or started operation within range of the LE-LAN device. During in-service monitoring, the LE-LAN radar detection function continuously searches for radar signals between normal LE-LAN transmissions.

RSS-247 (6.3.2)(iii) Channel move Time: after a radar signal is detected, the device shall cease all transmissions on the operating channel within 10 seconds.

RSS-247 (6.3.2)(iv) Channel closing transmission time: is comprised of 200 ms 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 ms) over the remaining 10-second period of the channel move time.

RSS-247 (6.3.2(v) Non-occupancy period: a channel that has been flagged as containing a radar signal, either by a channel availability check or in-service monitoring, is subject to a 30-minute non-occupancy period where the channel cannot be used by the LE-LAN device. The non-occupancy period starts from the time that the radar signal is detected.

Test Procedure:

A link was established between the master device and the test sample. The vector signal generator was used to generate radar type 0 for the testing since the sample is client only without radar detection. The radar pulses were adjusted to a level of -64dBm at the antenna of the master device. Traffic loading was provided by transferring the data file from the master to the test sample. The spectrum analyzer was configured to record approximately 15 seconds in order to see any transmissions occurring after the introduction of the radar signal. After the initial radar burst the channel is monitored for at least 30 minutes to capture any transmissions or becons that may occur for the non-occupancy period.

Test Results: The EUT was compliant with the requirements of this section. The channel move time was less than 10 seconds and only intermittent control signals were observed. After the channel was vacated it remained vacant other than intermittent control signals for at least 30 minutes. The channel closing time was faster than the radar pulse and met the 200mS time constraints.

Test Engineer(s): Bryan Taylor

Test Date(s): 6/18/2024 - 6/21/2024

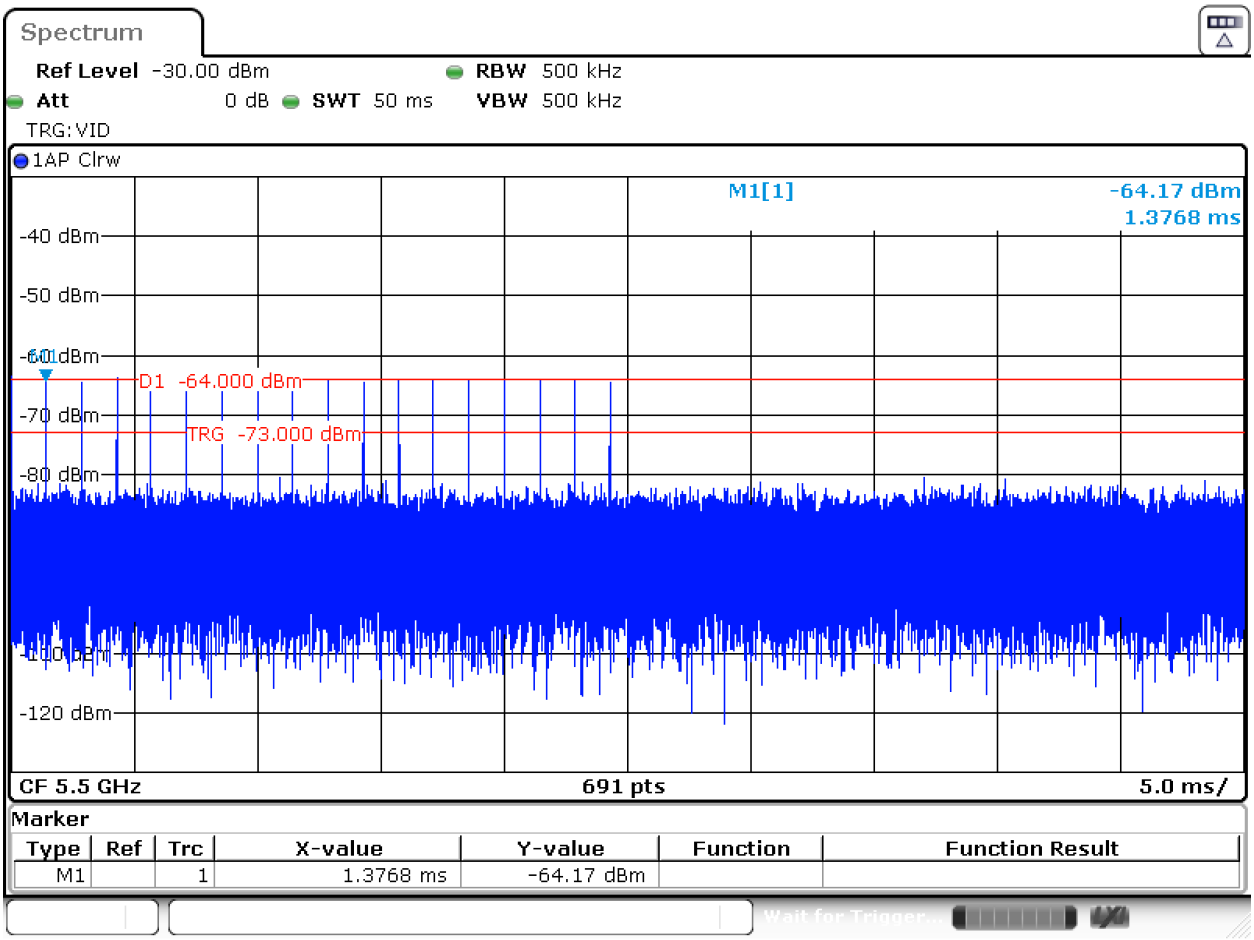

Figure 18. Radar Signal Pulses 5.5GHz (Type 0)

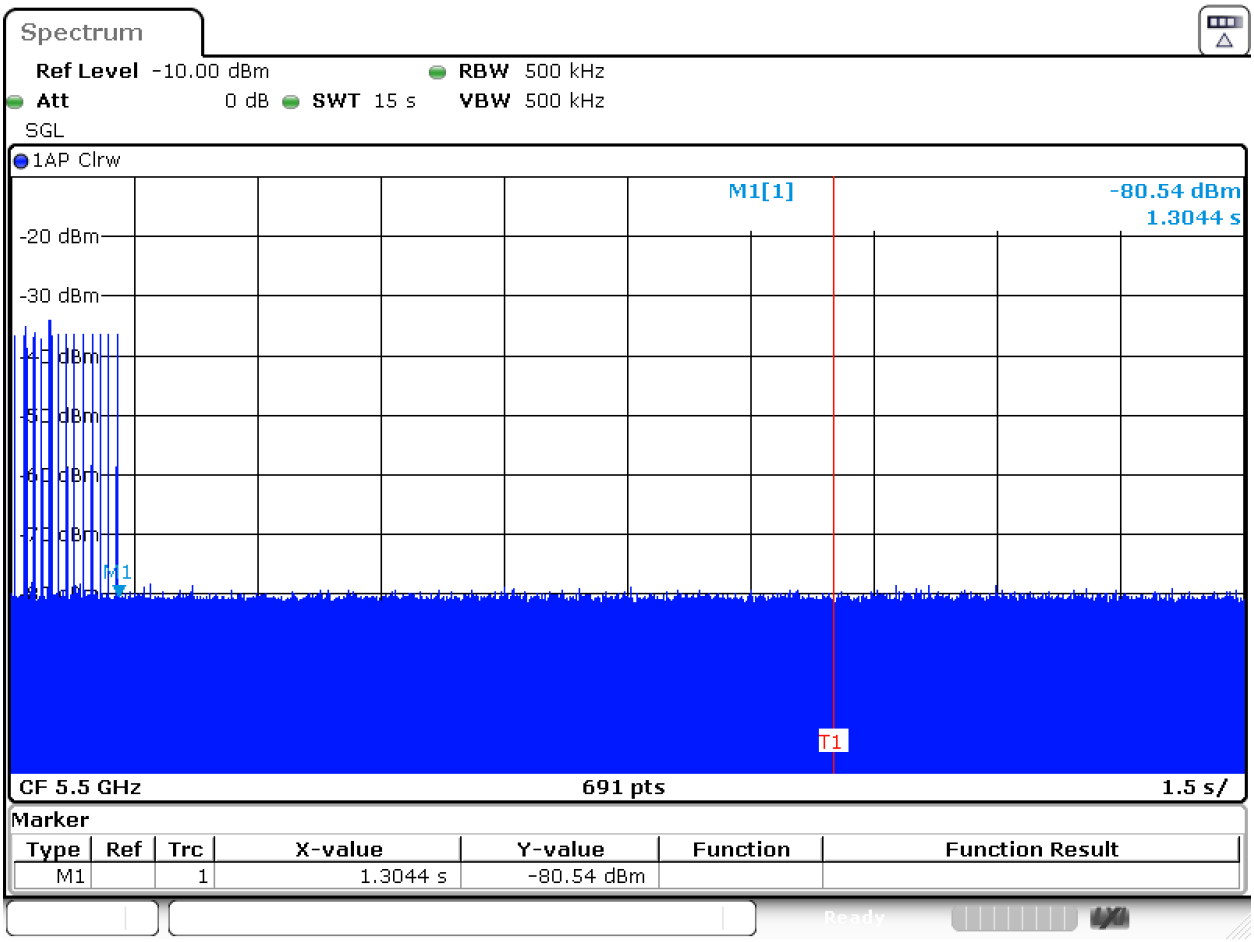

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Figure 19. Channel Move Time, 5.5 GHz

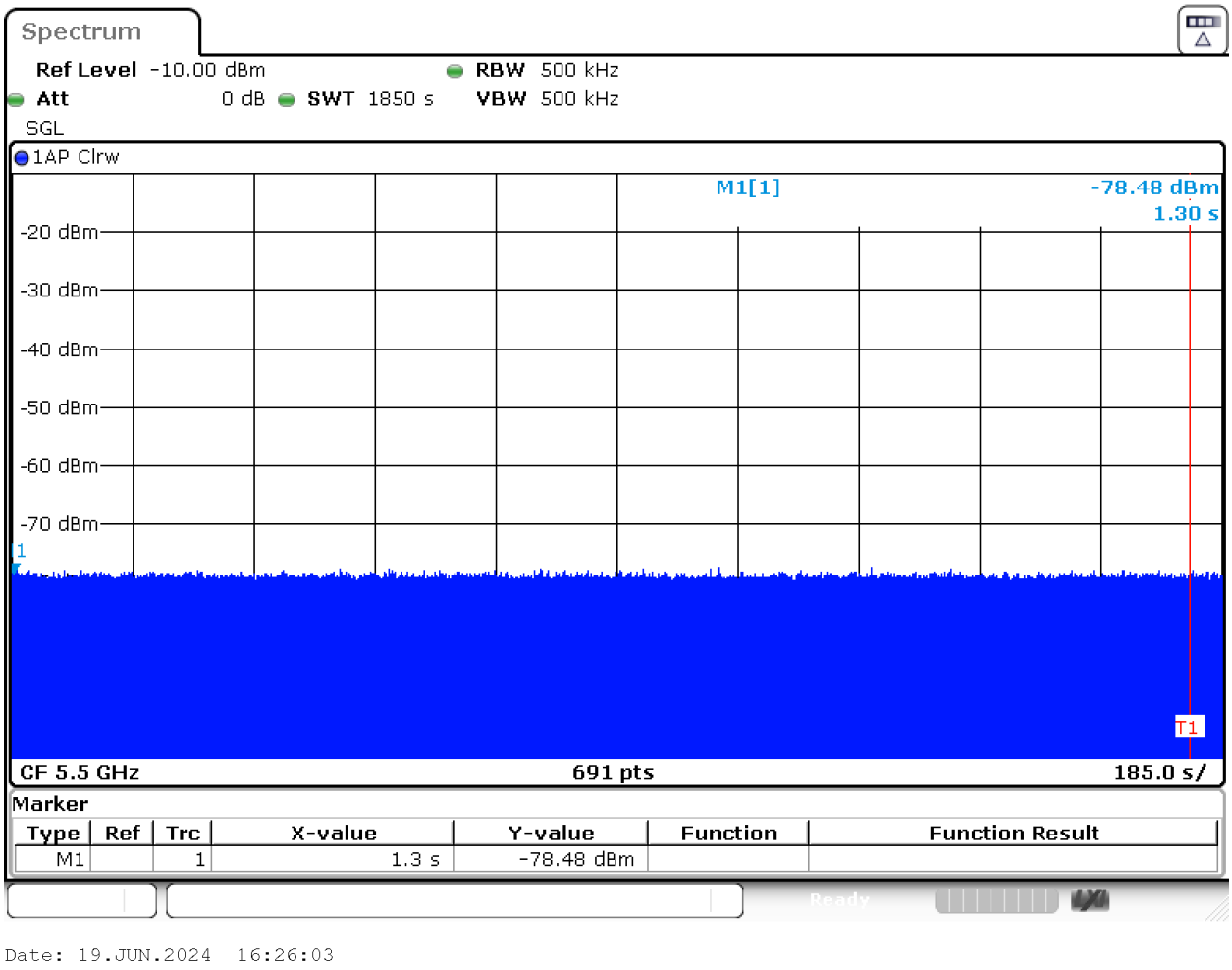

Figure 20. Non-occupancy period, 5.5 GHz

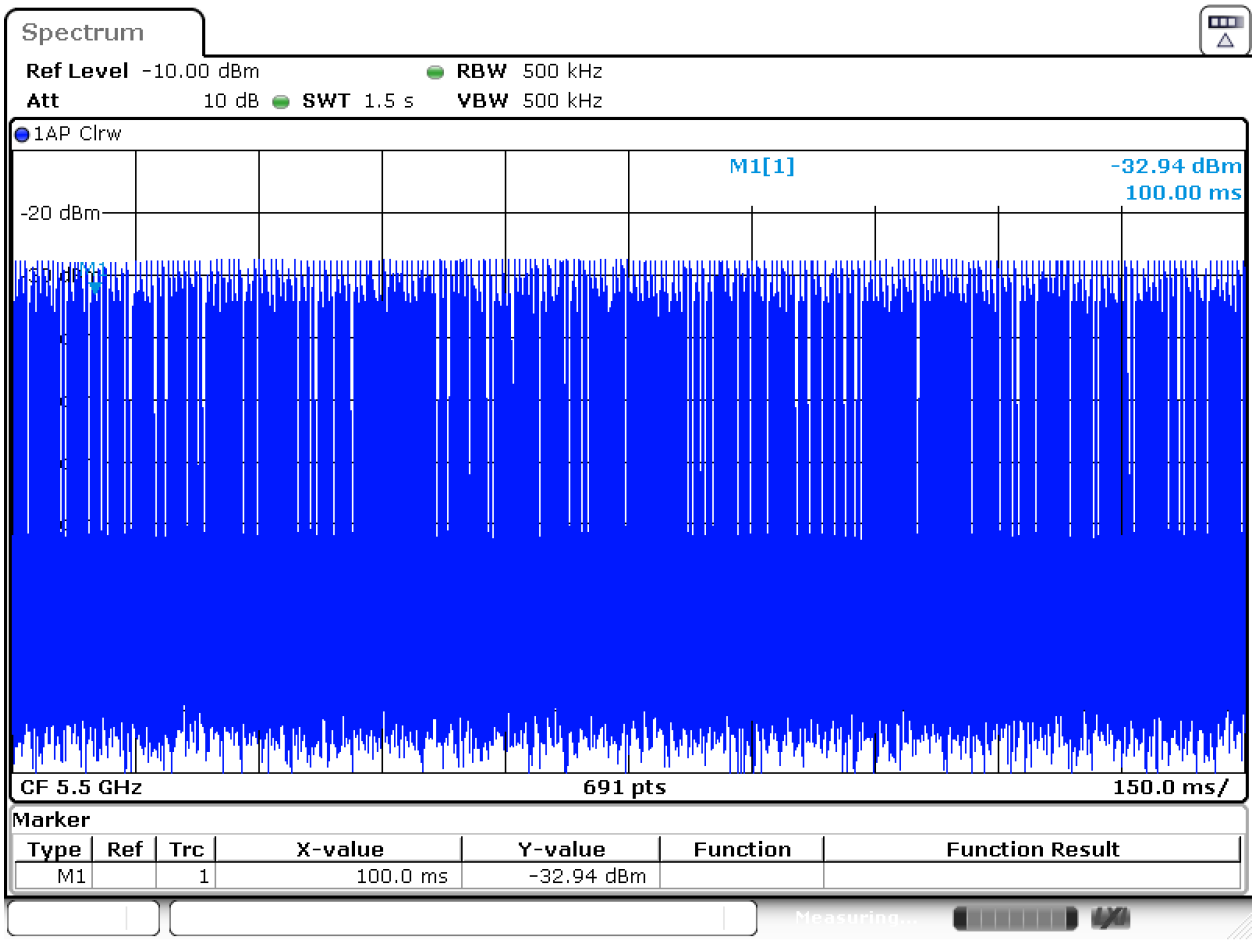

Figure 21. WLAN Channel Traffic During Test, 5.5GHz

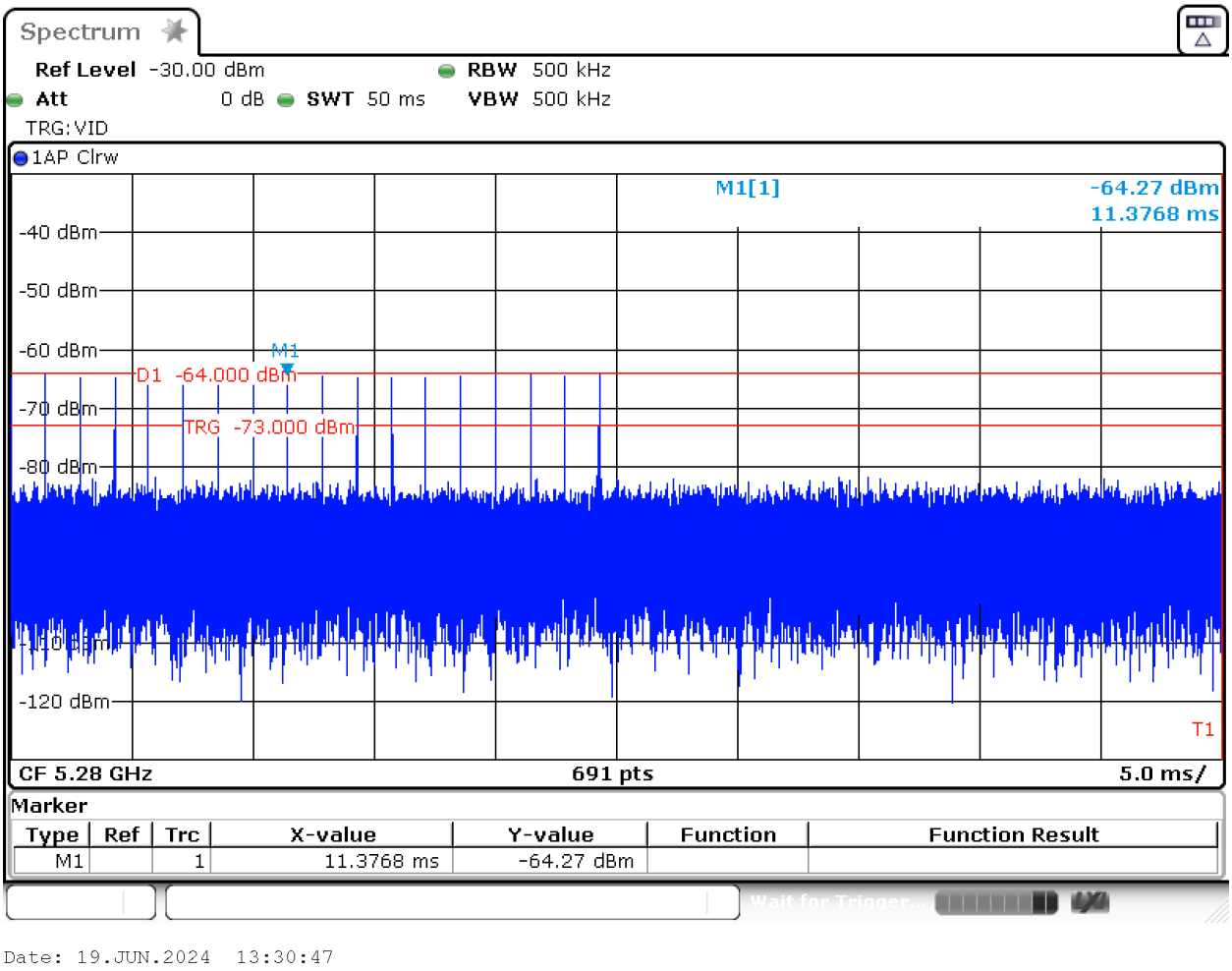

Figure 22. Radar Signal Pulses 5.28GHz (Type 0)

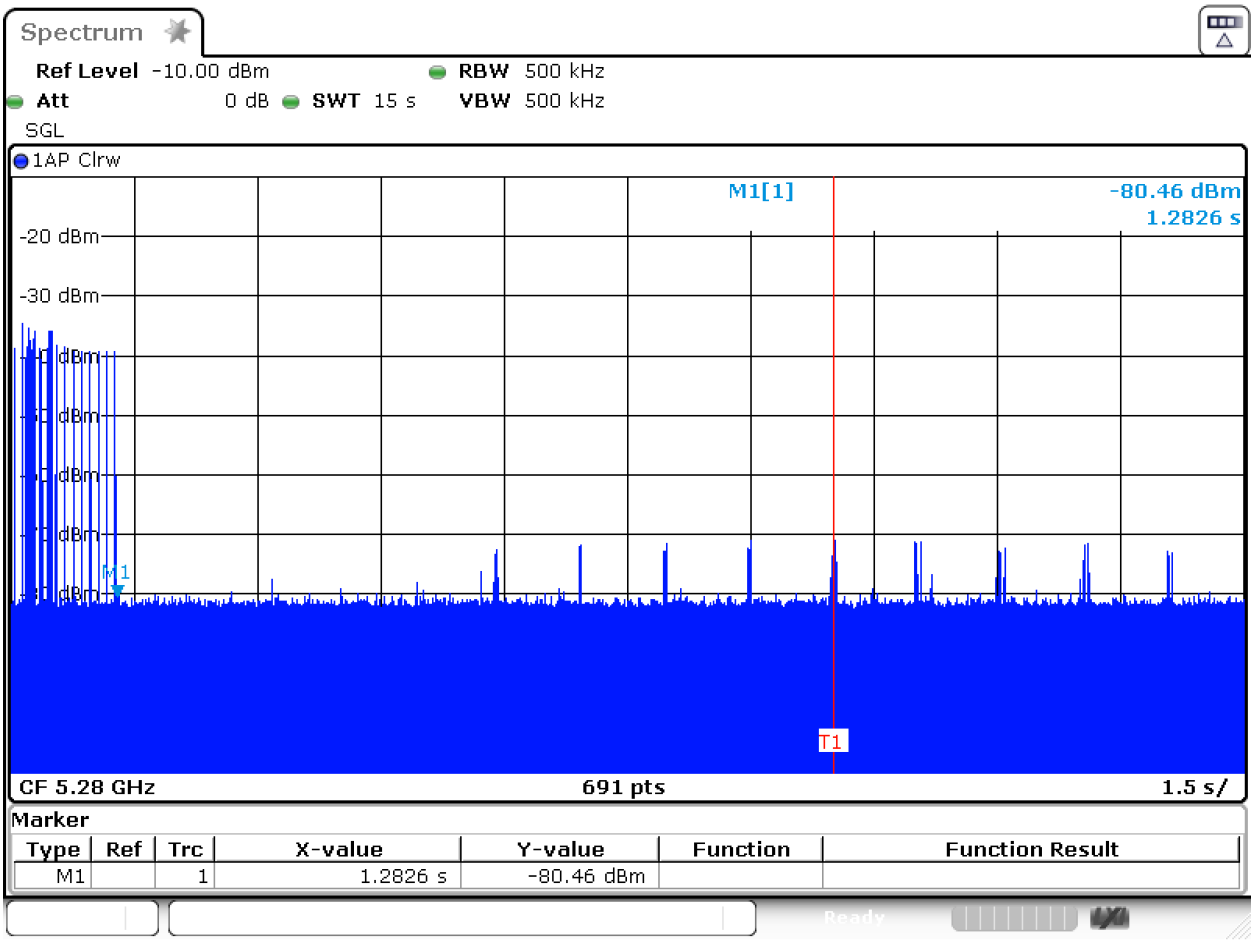

Figure 23. Channel Move Time, 5.28GHz

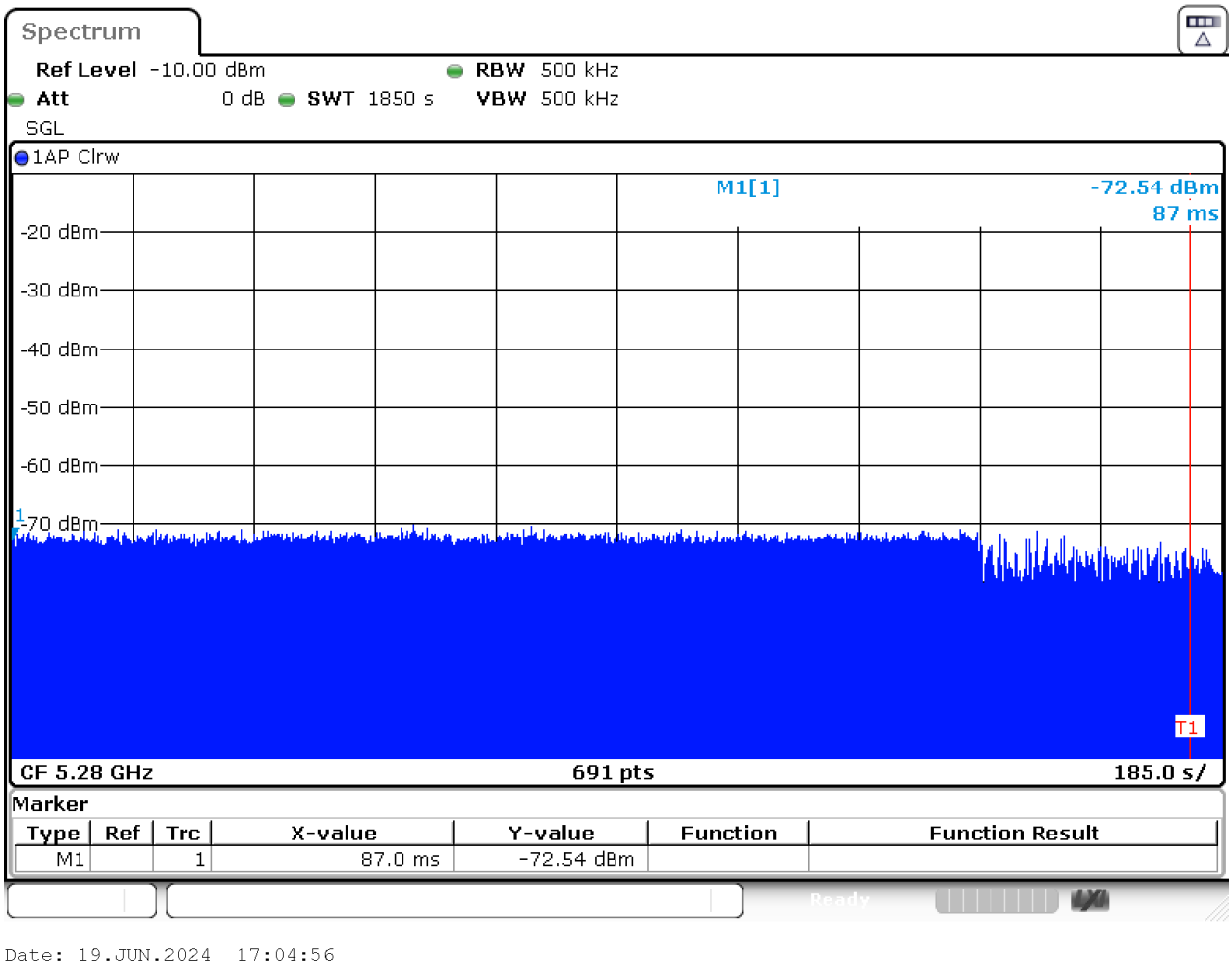

Figure 24. Non-occupancy period, 5.28GHz

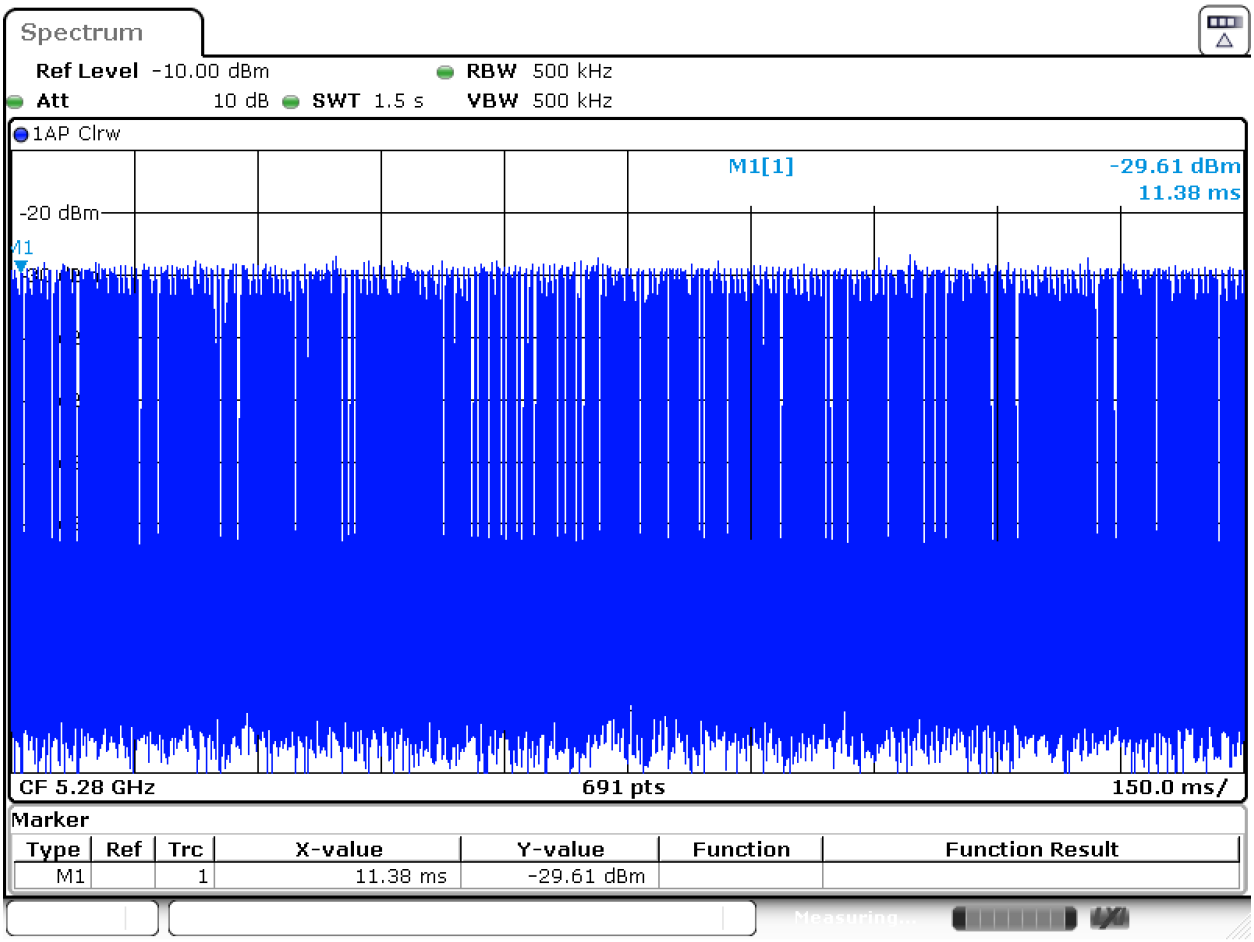

Figure 25. WLAN Channel Traffic During Test, 5.28GHz

Test Setup Photographs:

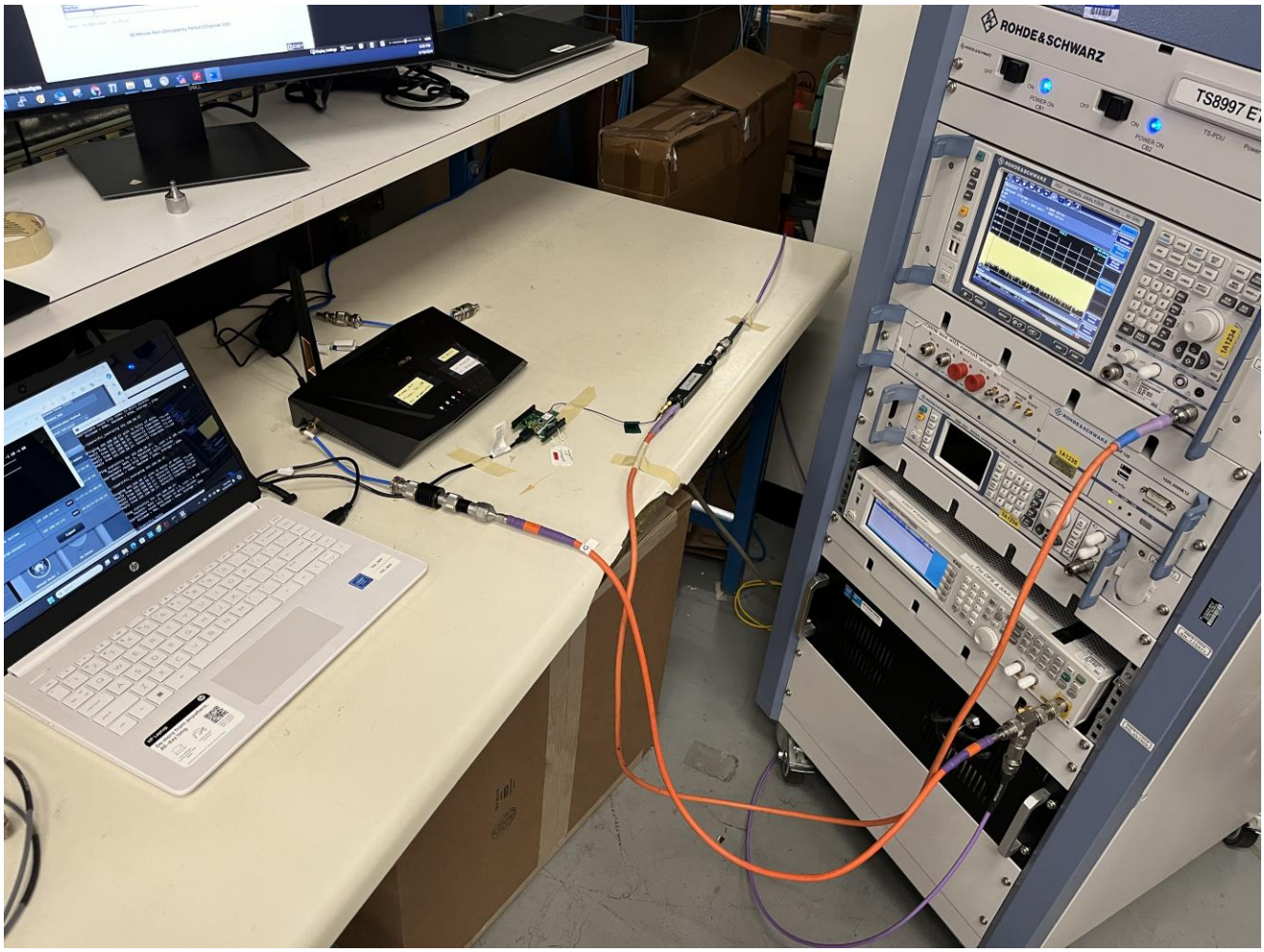

Figure 26. Dynamic Frequency Selection Test Setup

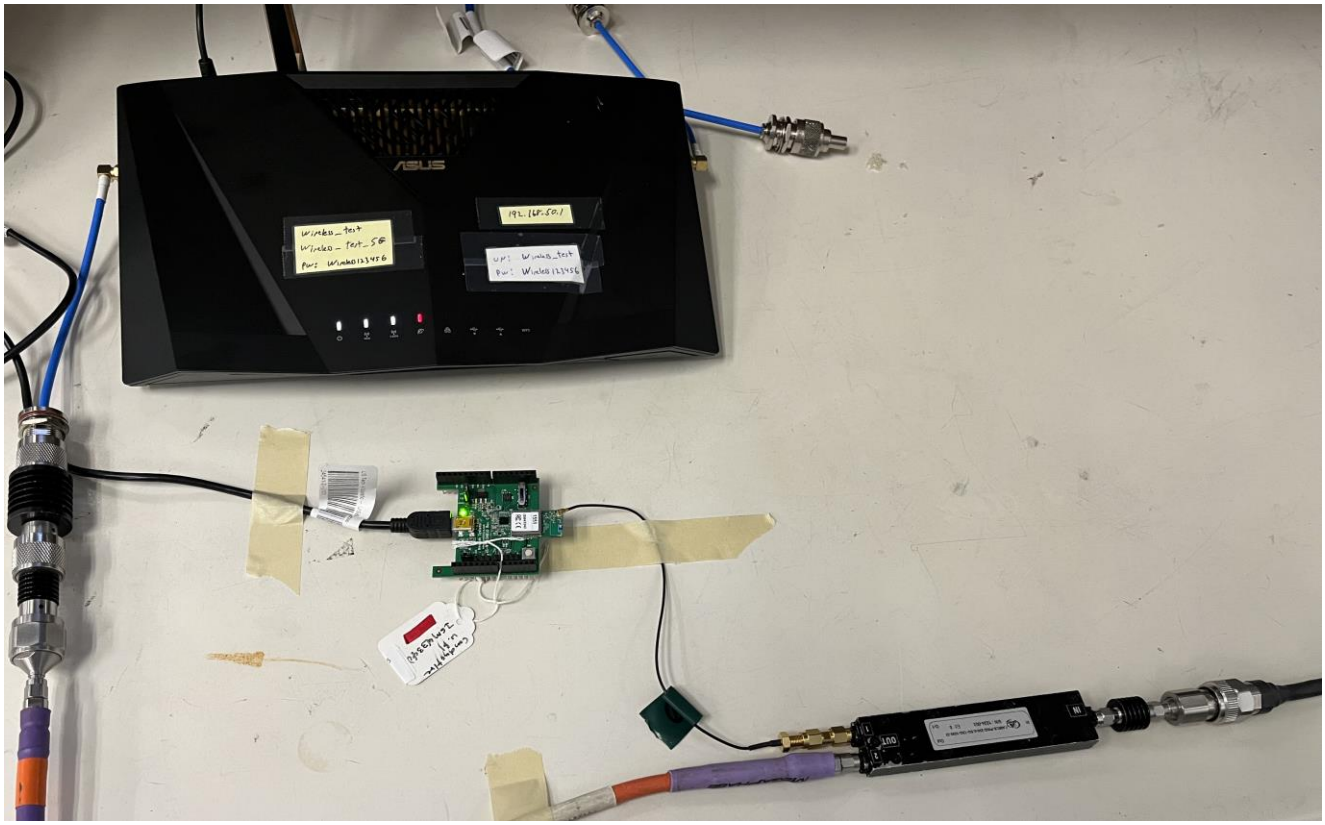

Figure 27. Dynamic Frequency Selection Test Setup

IV. Test Equipment

Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

MET Asset #	Description	Manufacturer	Model	Last Cal Date	Cal Due Date
1A1234	Signal Analyzer	Rohde & Schwarz	FSV40	1/23/2023	1/23/2025
1S3905	Vector Signal Generator	Keysight	N5172B	1/23/2023	1/23/2025
None	Power Divider	Weinschel	1506A	Verify at Time of Use	Verify at Time of Use
None	Power Divider	MCS	AAMCS-PWD-2W-0.5G-13G-10W-Sf	Verify at Time of Use	Verify at Time of Use
1A1230	Step Attenuator	JFW	SA37100SMA	Verify at Time of Use	Verify at Time of Use

Figure 28. Test Equipment List

End of Report

