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

1/22/2025

HP Inc.
Samah Othman
1501 Page Mill Road
Palo Alto, CA 94304

Dear Samah Othman,

Enclosed is the EMC Wireless test report for compliance testing of the HP, Inc. model PATX-STX-32R as tested to the DFS Requirements from FCC 15.407 and RSS-247 Issue 3 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: WIRA133332 – FCC-IC-DFS_R3

# Dynamic Frequency Selection
# Test Report

for the

HP Inc.
PATX-STX-32R

**Tested under**
DFS Requirements from FCC 15.407 and RSS-247 Issue 3
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 |
|---|---|---|
| ∅ | 11/1/2024 | Initial Issue. |
| 1 | 11/6/2024 | Customer requested corrections. |
| 2 | 11/6/2024 | Customer requested corrections. |
| 3 | 1/22/2025 | Reviewer comments |

# Table of Contents

# List of Figures

# 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 HP, Inc. model PATX-STX-32R with the requirements of DFS Requirements from FCC 15.407 and RSS-247 Issue 3. HP, Inc. should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the model PATX-STX-32R has been **permanently** discontinued.

## B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with DFS Requirements from FCC 15.407 and RSS-247 Issue 3, in accordance with HP, Inc. purchase order number 9100374440. 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[2] |
| 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 detetection.

# II. Equipment Configuration

# A. Overview

Eurofins MET Labs was contracted by HP, Inc. to perform testing on the model PATX-STX-32R under HP, Inc.'s purchase order number 9100374440.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the HP, Inc. model PATX-STX-32R.

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

| | | |
|---|---|---|
| **Product Marketing Name Tested:** | Poly Studio X32 | |
| **Product Marketing Name Included by Similarity:** | Poly Studio V32<br>(Note: this is a software depopulated version of the Poly Studio X32) | |
| **Model Number Tested:** | PATX-STX-32R | |
| **FCCID:** | M72-STX32R | |
| **ICID:** | 1849C-STX32R | |
| **EUT Specifications:** | Primary Power:<br>100 – 230VAC | |
| | Frequency Range: 50Hz / 60Hz | |
| | Type of Modulations: | OFDM |
| | Equipment Code: | NII |
| | EUT Frequency Ranges: | U-NII-2A: 5250 - 5350 MHz<br>U-NII-2C: 5470 – 5725 MHz |
| | Antenna Gain (declared by HP, Inc.) | 3.73dBi (Antenna Path 1)<br>3.83dBi (Antenna Path 2)<br>Directional Gain = $10\log[(10^{(3.8/20)} + 10^{(3.5/20)})^2]/2$ = 6.79dBi<br><br>Note: the array gain was calculated per KDB 662911 D01 Section F.2.d.(i) for correlated signals with unequal antenna gains. |
| **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):** | 1/22/2025 | |

| Description | Model Number | Part Number | Serial Number | Rev # |
|---|---|---|---|---|
| POE injector Delta | ADH-65AR F | N.A. | MEQD4710028 | N.A. |
| Poly Studio X32 (conducted radio system) | PATX-STX-32R | 2201-88325-001 | 8Y243585D826G1 | N.A. |
| Poly Studio X32 (Radiated radio system) | PATX-STX-32R | 2201-88325-001 | 8Y243585D826G1 | N.A. |

**Figure 2. EUT List**

## 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 HP Inc. model PATX-STX-32R (marketed as Poly Studio X32), is a video conferencing bar designed to act as a Video endpoint over LAN network. The device is powered by either direct POE from the local network OR via a supplied POE Midspan injector. The top-level model the PATX-STX-32R contains 2.4GHz / 5GHz Wi-Fi (6) and Bluetooth radio interfaces.

## F. Equipment Configuration

During the DFS testing the model PATX-STX-32R was connected via a conducted cabled path to a certified master device. Data was streamed from the master device to the model PATX-STX-32R.

## 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 |
|---|---|---|---|
| 4k Monitors | hp | 1B9T0AA | N/A |
| 4k Monitors | hp | 1B9T0AA | N/A |
| 4KMonitor | LG | 24UD58-B | N/A |
| BT Remote | Poly/ Remotec | BW7640UN | N/A |
| USB keyboard | hp | KU-0316 | N/A |
| USB mouse | hp | 672652-001 | N/A |
| Laptop for content and pings | Dell | XPS 14 | N/A |
| Router Cisco gigabit router | Cisco | RN042G | N/A |
| WIFI access point Cisco AIR Lap | Cisco | 1142N-A-K9 | N/A |
| Poly Studio X30 | Poly | P018 | N/A |

**Figure 5. Support Equipment**

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

**Figure 6. 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 |
|---|---|---|---|---|---|---|
| HDMI cable | HDMI | | 6FT | | Yes | 4k Monitor |
| LAN cable | Cat 6 | | | | Yes | To POE Injector |
| HDMI cables | HDMI | | 6FT | | No | 4k Monitor |
| HDMI cables | HDMI | | 6FT | | No | Laptop |

**Figure 7. Ports and Cabling Information**

## I. Mode of Operation

During the DFS testing the model PATX-STX-32R was connected via a conducted cabled path to a certified master device. Data was streamed from the master device to the model PATX-STX-32R. The test sample and the DFS master device were configured to operate in their normal mode using the widest bandwidth supported by the test sample (80MHz).

| Operating Mode | Transmission Bandwidth | Channel Loading | Channel Frequencies Tested |
|---|---|---|---|
| 802.11ax (Normal Operating Mode) | 80MHz | 52% | 5500MHz |

**Table 1. Operating Mode Parameters**

## 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 HP, Inc. 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 8. 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 9. 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 10. 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<br>See Note 1. |
| *Channel Closing Transmission Time* | 200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period.<br>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 11. 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 | $\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$ | 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 12. 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).

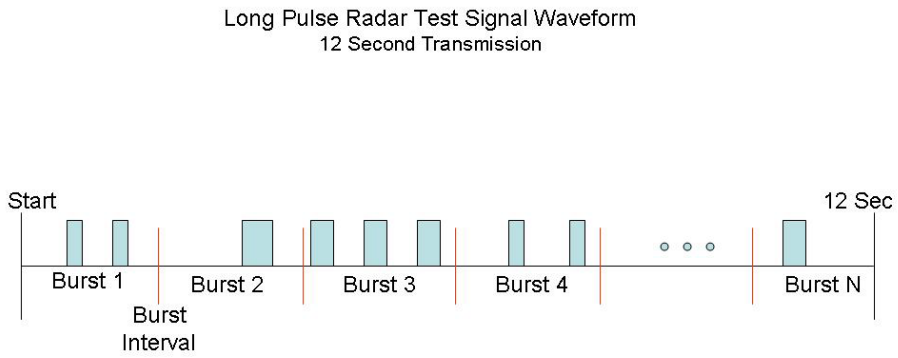



**Figure 13. Long Pulse Radar Test Signal Waveform**

**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.

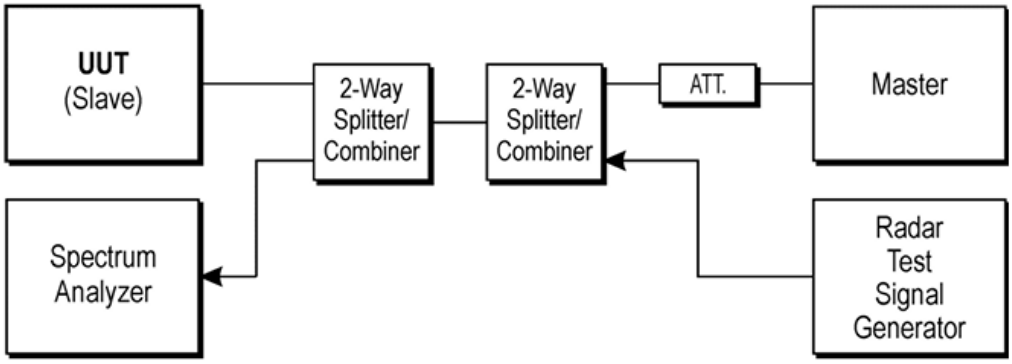



**Figure 14. Block Diagram of Test Configuration**

# 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 15.

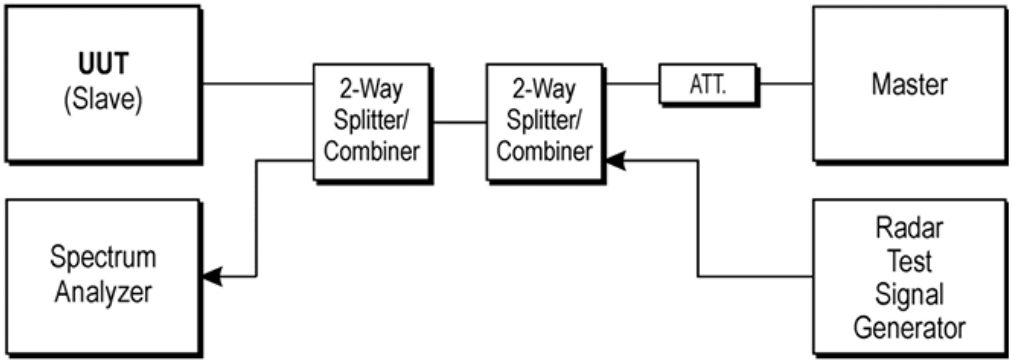



**Figure 15. Test Setup Diagram**

## 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.

**Test Engineer(s):** Bryan Taylor

**Test Date(s):** 09/28/2024

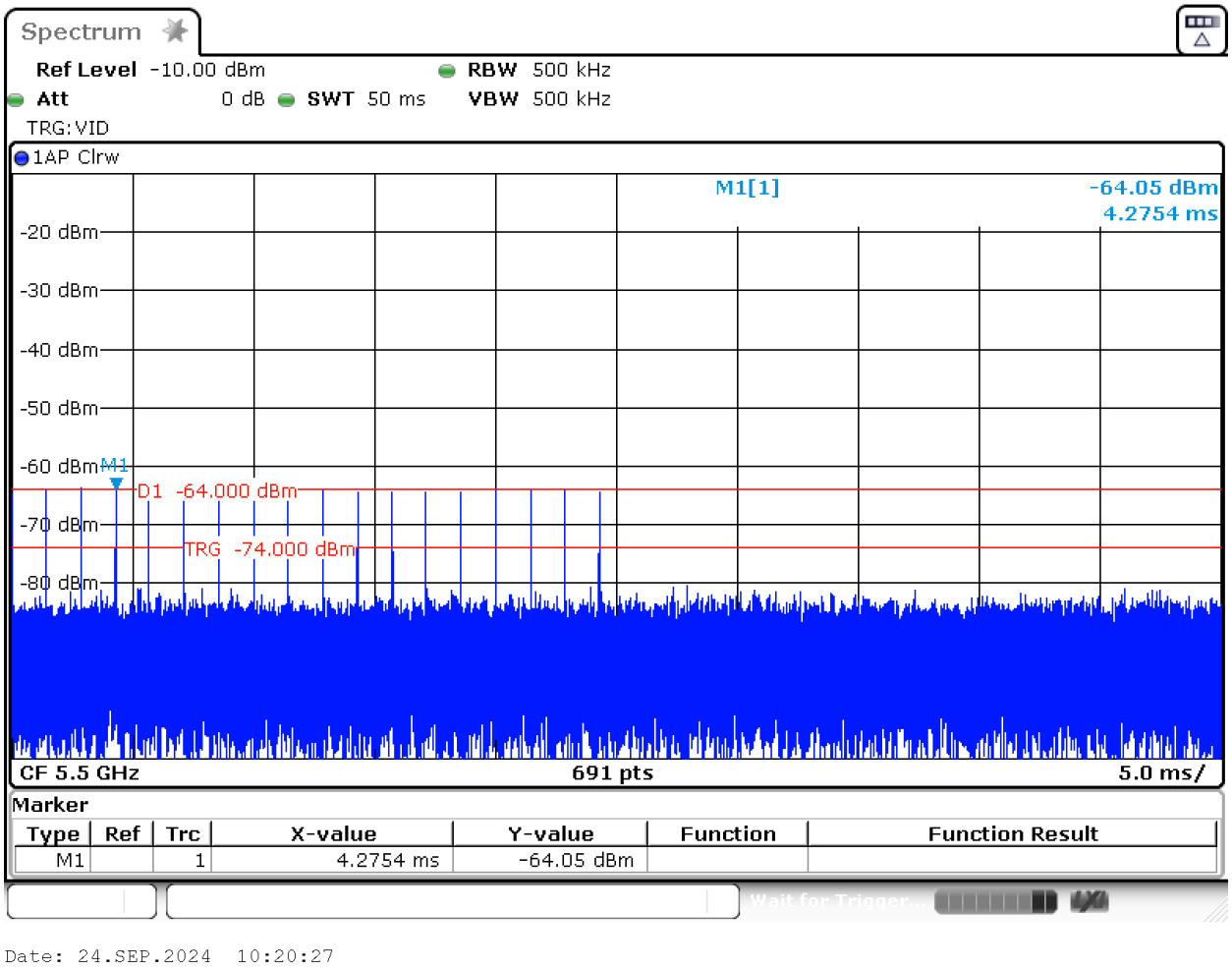
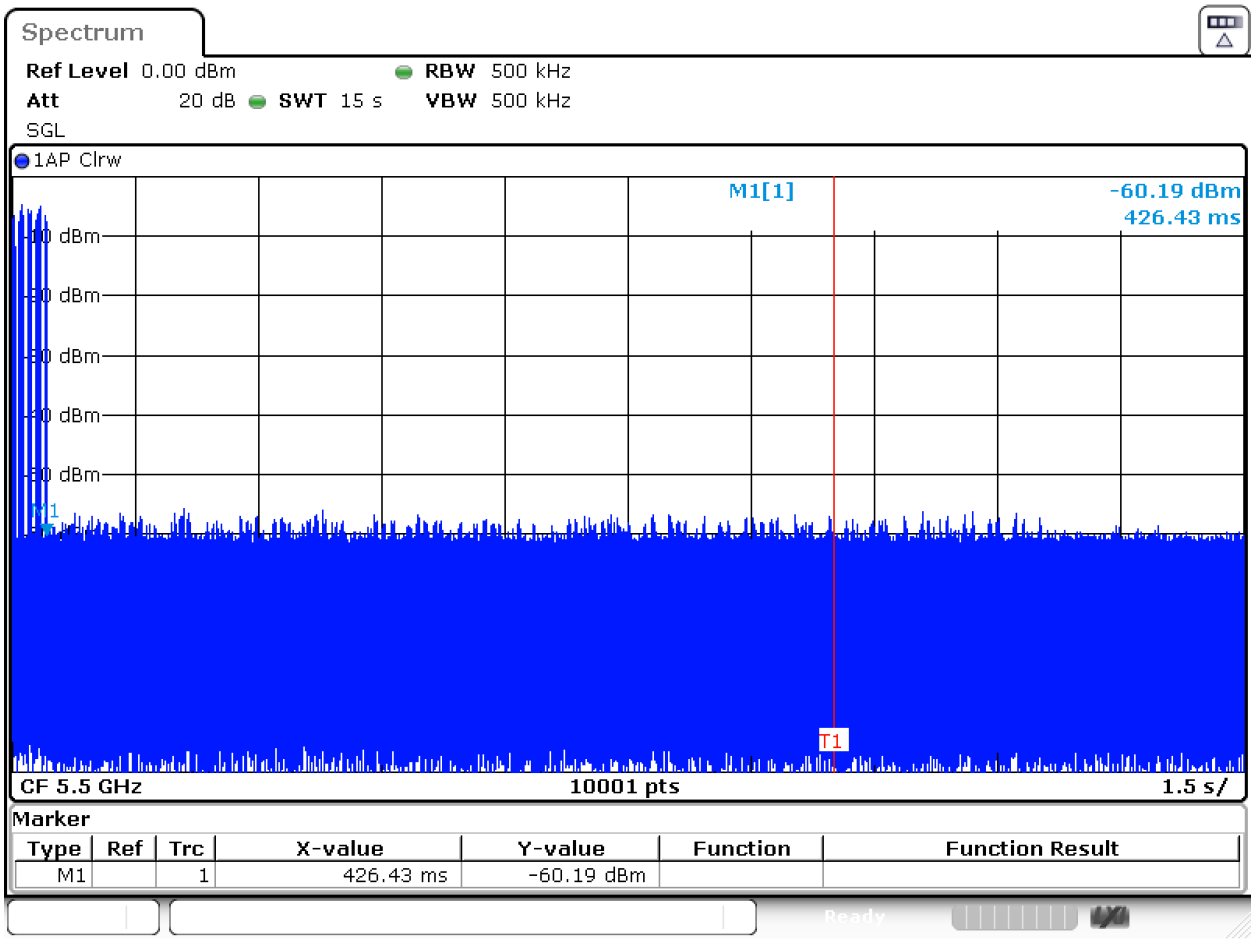



**Figure 16. Radar Signal Pulses Channel 100 (Type 0)[2]**

[2] The radar detection threshold from table 3 of KDB905462 D02 is -64dBm assuming a 0dBi receive antenna. -64dBm is the amplitude level of the radar pulses used during this test. The test sample used an antenna with a higher gain than 0dBi and the radar pulses were not offset by this antenna gain. Therefore the radar pulses used were lower than they should be and therefore represent a worse case and more difficult test for the Poly Studio X32.




Date: 24.SEP.2024 14:04:58

Transmission End Time at 426mS and meets the 10 Second channel move time requirement.
Channel closing time was 8.64mS and meets the 60mS requirement.

**Figure 17. Channel Move Time, 5.5 GHz**

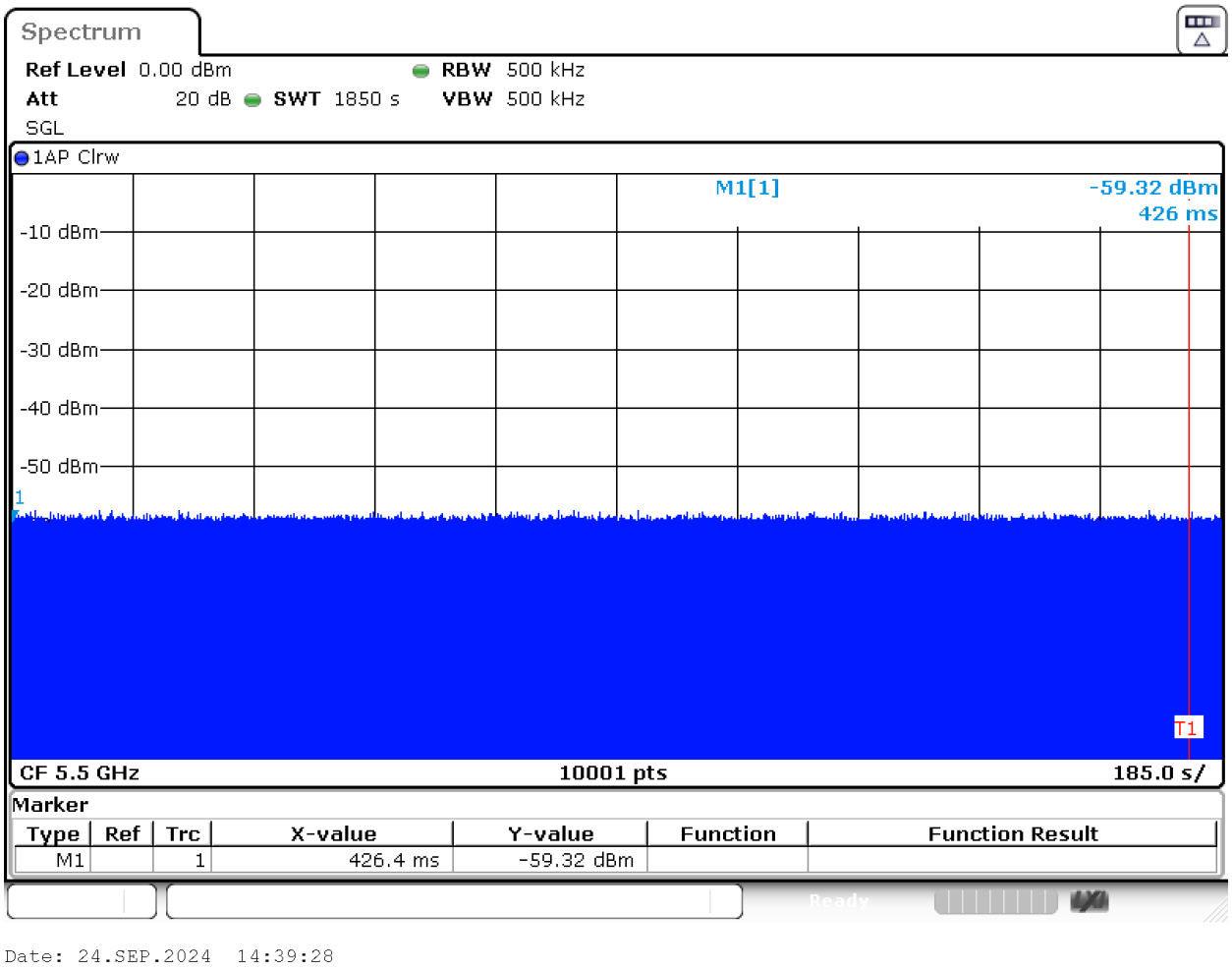
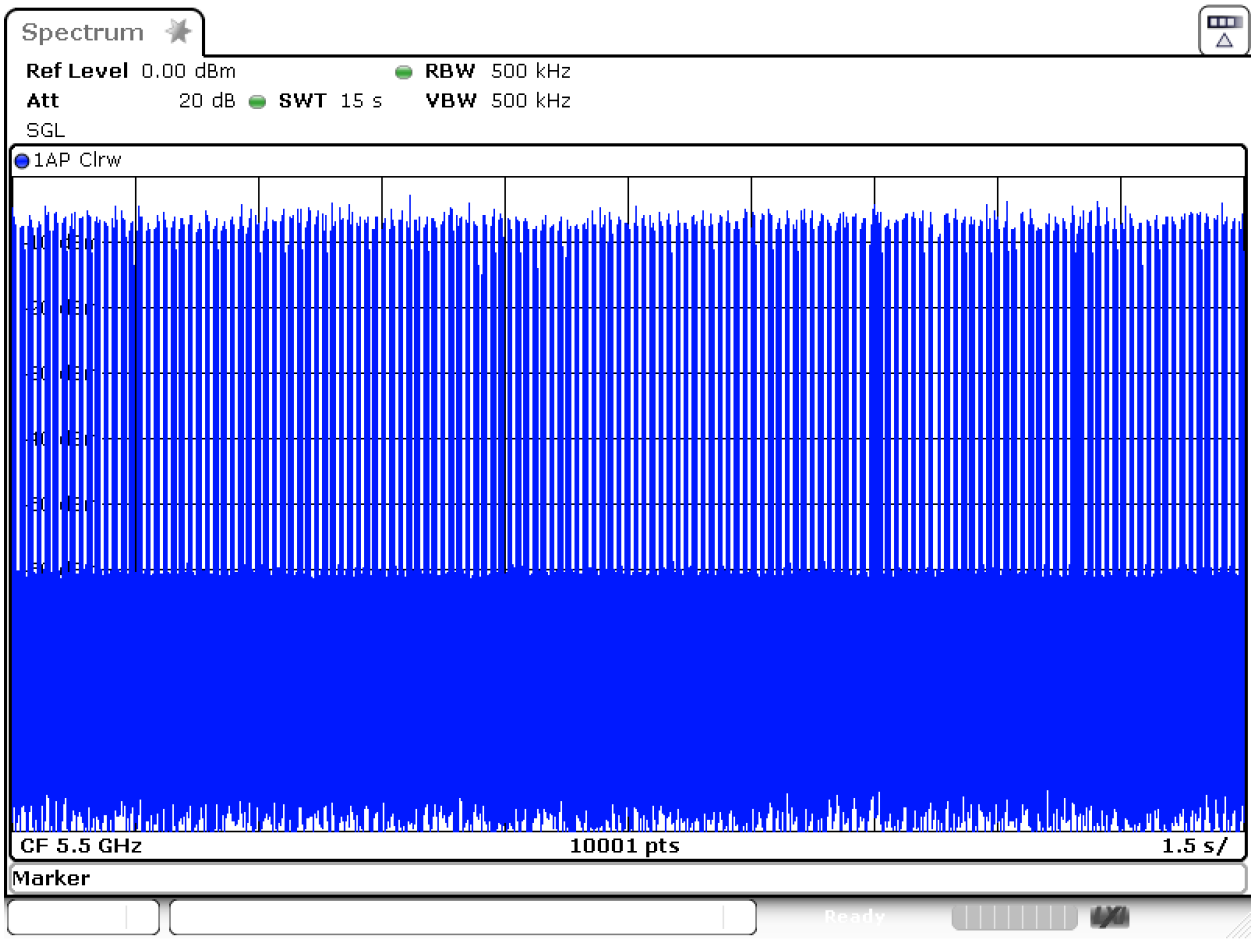



**Figure 18. Non-occupancy period, 5.5 GHz**




Date: 24.SEP.2024 14:01:37

Channel Loading was approximately 52% which meets the 17% or greater criteria required by KDB905462 D02.

**Figure 19. WLAN Channel Traffic During Test**

# 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 20. Test Equipment List**

# End of Report