Report on the Radio Testing

For

Extreme Networks, Inc

on

AP5050D

Report no. TRA-059373-47-02A

8 December 2022

Report Number: TRA-059373-47-02A
Issue: A

REPORT ON THE RADIO TESTING OF A
Extreme Networks, Inc
AP5050D
WITH RESPECT TO SPECIFICATION
DFS requirements of FCC 47CFR15E

TEST DATE: 9th November - 7th December 2022

Written by:  Digitally signed by D Winstanley
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J Charters
Lab Manager

Date: 8 December 2022

1 Revision Record

Issue Number	*Issue Date*	*Revision History*
A	8 December 2022	Original

2 Summary

TEST REPORT NUMBER:	TRA-059373-47-02A
WORKS ORDER NUMBER:	TRA-059373-00
PURPOSE OF TEST:	Testing of radio frequency equipment per the relevant authorization procedure of chapter 47 of CFR (code of federal regulations) Part 2, subpart J.
TEST SPECIFICATION:	47CFR15.407(h)
EQUIPMENT UNDER TEST (EUT):	AP5050D
FCC IDENTIFIER:	QXO-AP5050
EUT SERIAL NUMBER:	WM032212-31140
MANUFACTURER/AGENT:	Extreme Networks, Inc
ADDRESS:	2121 RDU Center Drive, Morrisville, North Carolina, United States, 27560
CLIENT CONTACT:	Timothy Wakeley ☎ +19167121474 ✉ tiwakeley@extremenetworks.com
TEST DATE:	9th November - 7th December 2022
TESTED BY:	D Winstanley Element

2.1 Test Summary

Test Method and Description	*Requirement Clause* *47CFR15*	*Applicable to this equipment*	*Result / Note*
TPC and DFS	15.407(h)	☒	*Pass*
U-NII detection bandwidth	15.407(h)(2)	☒	*Pass*
CAC	15.407(h)(2)(ii)	☒	*Pass*
In-service monitoring	15.407(h)(2)(iii) & 15.407(h)(2)(iv)	☒	*Pass*
Statistical performance check	-	☒	*Pass*

Notes:

The results contained in this report relate only to the items tested, in the condition at time of test, and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

The apparatus was set-up and exercised using the configurations, modes of operation and arrangements defined in this report only. Any modifications made are identified in Section 8 of this report.

Particular operating modes, apparatus monitoring methods and performance criteria required by the standards tested to have been performed except where identified in Section 5.2 of this test report (Deviations from Test Standards).

3 Contents

4 Introduction

This report TRA-059373-47-02A presents the results of the Radio testing on an Extreme Networks, Inc, AP5050D to specification 47CFR15 Radio Frequency Devices.

The testing was carried out for Extreme Networks, In by Element, at the address detailed below.

☐ Element Hull
Unit E
South Orbital Trading Park
Hedon Road
Hull
HU9 1NJ
UK

☒ Element Skelmersdale
Unit 1
Pendle Place
Skelmersdale
West Lancashire
WN8 9PN
UK

This report details the configuration of the equipment, the test methods used and any relevant modifications where appropriate.

FCC Site Listing:
The test laboratory is accredited for the above sites under the following US-UK MRA, Designation numbers.

Element Hull	UK2007
Element Skelmersdale	UK2020

ISED Registration Numbers:

Element Hull	3483A
Element North West	3930B

The test site requirements of ANSI C63.4-2014 are met up to 1GHz.
The test site SVSWR requirements of CISPR 16-1-4:2010 are met over the frequency range 1 GHz to 18 GHz.

5 Test Specifications

5.1 Normative References

- FCC 47 CFR Ch. I – Part 15 – Radio Frequency Devices.
- FCC KDB Publication 905462 D02 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.

5.2 Deviations from Test Standards

There were no deviations from the test standard.

6 Glossary of Terms

§	denotes a section reference from the standard, not this document
AC	Alternating Current
ANSI	American National Standards Institute
BW	bandwidth
C	Celsius
CAC	Channel Availability Check
CFR	Code of Federal Regulations
CW	Continuous Wave
dB	decibel
dBm	dB relative to 1 milliwatt
DC	Direct Current
DFS	Dynamic Frequency Selection
DSSS	Direct Sequence Spread Spectrum
EIRP	Equivalent Isotropically Radiated Power
ERP	Effective Radiated Power
EUT	Equipment Under Test
FCC	Federal Communications Commission
FHSS	Frequency Hopping Spread Spectrum
Hz	hertz
IC	Industry Canada (now ISED)
ISED	Innovation, Science and Economic Development Canada
ITU	International Telecommunication Union
LBT	Listen Before Talk
LE-LAN	Licence-Exempt Local Area Network
m	metre
max	maximum
MIMO	Multiple Input and Multiple Output
min	minimum
MRA	Mutual Recognition Agreement
N/A	Not Applicable
PCB	Printed Circuit Board
PDF	Portable Document Format
Pt-mpt	Point-to-multipoint
Pt-pt	Point-to-point
PSD	Power Spectral Density
RF	Radio Frequency
RH	Relative Humidity
RMS	Root Mean Square
Rx	receiver
s	second
SVSWR	Site Voltage Standing Wave Ratio
TPC	Transmitter Power Control
Tx	transmitter
UKAS	United Kingdom Accreditation Service
U-NII	Unlicensed-National Information Infrastructure
V	volt
W	watt
Ω	ohm

7 Equipment Under Test

7.1 EUT Identification

- Name: AP5050D
- Serial Number: WM032212-31140
- Model Number: AP5050U-WW
- Software Revision: 10.5r2
- Build Level / Revision Number: 1

7.2 System Equipment

Equipment listed below forms part of the overall test setup and is required for equipment functionality and/or monitoring during testing. The compliance levels achieved in this report relate only to the EUT and not items given in the following list.

Element provided support equipment

Element PC for control and command
Element PC for Data

Manufacturer provided support equipment

Equipment POE
Manufacturer Tenda
Sample S6

Equipment Network Switch
Manufacturer Netgear
Sample S7

7.3 EUT Mode of Operation

7.3.1 Transmission

The mode of operation for Tx tests was as follows…

The EUT was controlled Via a USB- Serial interface to send a set of commands provided by the manufacturer.
The operating parameters of the radio under test including the operating bandwidth, operating channel were set by the commands provided by the manufacturer.

7.4 EUT Radio Frequency Parameters

7.4.1 General

Frequency of operation:	5150 MHz – 5250 MHz; 5250 MHz – 5350 MHz 5470 MHz – 5725 MHz; 5725 MHz – 5850 MHz
Modulation type(s):	OFDM
Occupied channel bandwidth(s):	WiFi 0 – 20MHz / 40 MHz / 80 MHz WiFi 1 – 20MHz / 40 MHz / 80 MHz / 160 MHz
Nominal Supply Voltage:	48 Vdc POE

7.4.2 Antennas

Type:	Integral Antennas
Impedance:	50 Ohms
Polarisation:	Omni
Connector type:	U-FL
Mounting:	Internal Panel Mounted

Band	Radio / Antenna Gain	
	Wifi 0 (Scanning Radio)	WiFi 1 (Radio 2)
U-NII2-A	1.2	0.4
U-NII2-C	2.4	0.1

7.4.3 Product specific declarations

Multiple antenna configuration(s), e.g. MIMO:	WiFi 0 – 2 x 2 MIMO WiFi 1 – 4 x 4 MIMO
Fixed pt-pt operations (yes/no):	No

DFS Parameters:	
Antenna used for testing:	Integrated Antennas
Antenna port impedance:	50 ohms
Channel loading / test file:	>17%
U-NII channel bandwidths:	20 MHz, 40 MHz, 80 MHz, 160 MHz
Client/Master (select one)	Master

7.5 EUT Description

The EUT is a wireless access point for use in stadiums and other arenas with large crowds.

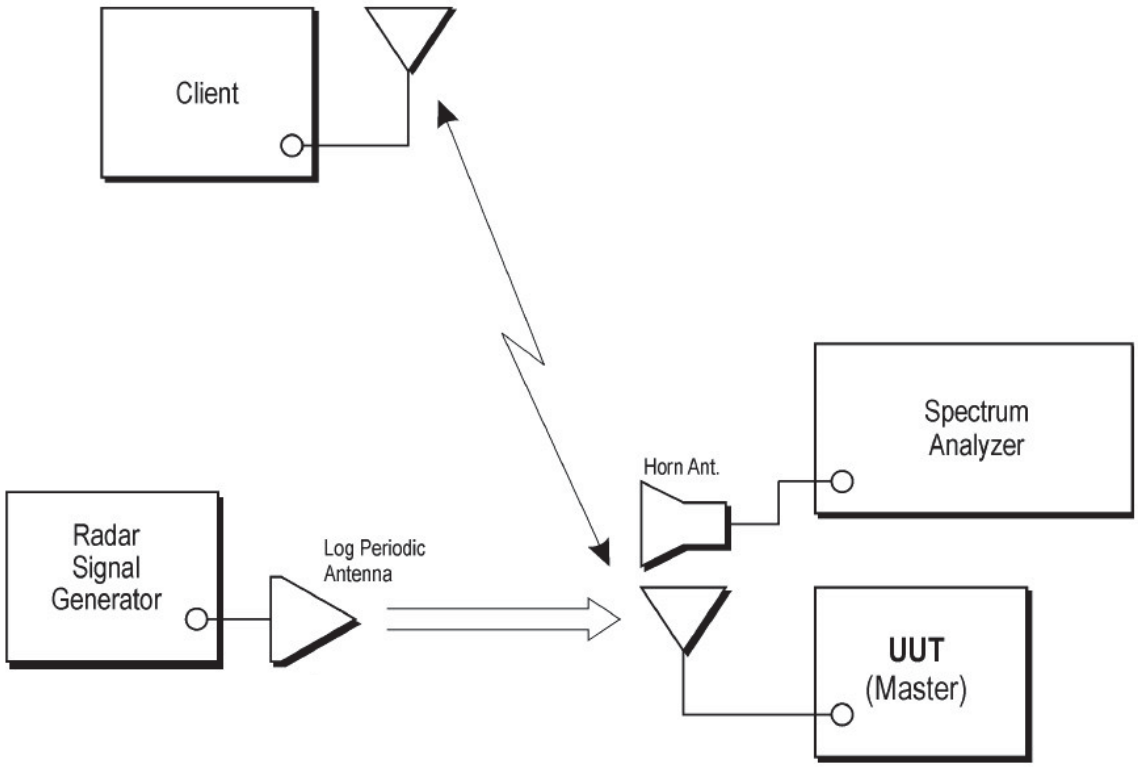
8 Modifications

No modifications were performed during this assessment.

9 EUT Test Setup

9.1 Block Diagram

The following diagram shows basic EUT interconnections:



10 General Technical Parameters

10.1 Normal Conditions

The E U T was tested under the normal environmental conditions of the test laboratory, except where otherwise stated. The normal power source applied was 48 Vdc From POE.

10.2 Varying Test Conditions

No varying test conditions were used during these tests.

11 Dynamic Frequency Selection (DFS)

11.1 General

An U-NII network will employ a Dynamic Frequency Selection (DFS) function to detect interference from radar systems (radar detection) and to avoid co-channel operation with these systems.
Within the context of the operation of the DFS function, a U-NII device will operate in either *Master Mode* or *Client Mode*. U-NII devices operating in *Client Mode* can only operate in a network controlled by a U-NII device operating in *Master Mode.*

11.2 Test Parameters

Test Location:	Element Skelmersdale
Test Chamber:	Radio Chamber SK03
Test Standard and Clause:	KDB 905462 D02, Clause 7.8
EUT Tested Channel Bandwidths:	WiFi 0 20 MHz, 40 MHz, 80 MHz WiFi 1 20 MHz, 40 MHz, 80 MHz , 160 MHz
EUT Test Channel Loading:	>17%
EUT Output Power Setting:	Max.
EUT Tested Modes:	Master
Deviations From Standard:	None
Temperature Extreme Environment Test Range:	N/A
Voltage Extreme Environment Test Range:	N/A

Environmental Conditions (Normal Environment)

Temperature: 22 °C	Usually: +15 ºC to +35 ºC
Humidity: 35 %RH	Usually: 20%RH to 75%RH

11.3 Test Equipment

Equipment Description	*Manufacturer*	*Equipment Type*	*Element No*	*Due For Calibration*
Spectrum Analyser	R&S	FSW 43	U728	2023-04-26
1-18GHz Horn	EMCO	3115	L139	2024-07-01
1-18GHz Horn	EMCO	3115	U223	2023-12-13
Radio Chamber - PP	Rainford EMC	ATS	REF940	2023-11-06
Signal Generator	R&S	SMW200A	111178*	In Use$

* Denotes Serial Number of Loan test equipment
$ Used for radiated measurement – level calibrated in use

Test Limits

Refer to individual tests for applicable tables, as defined below.

Table 3: Interference threshold values

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

Table 4: DFS requirement values

Parameter	*Value*
Non-Occupancy Period	Min. 30 minutes
Channel Availability Check Time	60 s
Channel Move Time	10 s (see note 1).
Channel Closing Transmission Time	200 ms + an aggregate of 60 ms over remaining 10 s period (see notes 1 & 2).
U-NII Detection Bandwidth	Min. 100 % of the U-NII 99% transmission power bandwidth (see note 3).
Maximum Off-Channel CAC Time	4 hours (see note 2)
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 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) during the remainder of the 10 s 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 %. Measurements are performed with no data traffic.	

Table 5: Short pulse radar test signals

Radar type	*Pulse width (µs)*	*PRI (µs)*	*Number of pulses*	*Min. % of successful detection*	*Min. 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	Roundup: 1/360 x 19.10^6/PRI	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 µs, with a minimum increment of 1 µs, 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 detection bandwidth test, channel move time and channel closing time tests.					

Table 5a: Pulse repetition intervals for test A

Pulse repetition frequency number	*Pulse repetition frequency (pulses / s)*	*Pulse repetition interval (μs)*
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

Table 6: Long pulse radar test signal

Radar type	*Pulse width (μs)*	*Chirp width (MHz)*	*PRI (μs)*	*Number of pulses per burst*	*Number of bursts*	*Min. % of successful detection*	*Min. number of trials*
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7: Frequency hopping radar test signal

Radar type	*Pulse width (μs)*	*PRI (μs)*	*Pulses per hop*	*Hopping rate (kHz)*	*Hopping sequence length (ms)*	*Min. % of successful detection*	*Min. number of trials*
6	1	333	9	0.333	300	70%	30

11.4 Test Method

With the EUT setup as per section 9 of this report and connected as per Figure i, the wanted signal (Gen A) was set to establish a reliable link (approx. 10 dB above receiver threshold). The interfering signal (Gen B) was then introduced at the specified Radar Detection Threshold level, plus 1dB.

[1] Conducted method

Received power was measured at the antenna port. For multiple port devices, equal splitting was employed to ensure the same level was received at each antenna port.

[2] Radiated method

Received power was measured at the centre of the EUT.

12 U-NII Detection Bandwidth

12.1 Definition

Detection bandwidth.
That part of the
Emission bandwidth.
For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

12.2 Additional Test Parameters

EUT Test Channels, Ch_r.	WiFi 0 – 5500 MHz, 5510 MHz, 5530 MHz WiFi 1 – 5500 MHz, 5590 MHz, 5530 MHz, 5540 MHz
EUT Operating Channels / Bandwidths: (all bandwidths must be tested)	WiFi 0 – 20 MHz, 40 MHz, 8 0MHz WiFi 1 – 20 MHz, 40 MHz, 8 0MHz, 160 MHz

Test Limits
U– NII devices operating with any part of its 26 dB emission bandwidth in the 5.25–5.35 GHz and 5.47–5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems.
The device must sense for radar signals at 100 percent of its emission bandwidth.

12.3 Test Method

The EUT was switched on without an associated client/master and no traffic and set to channel, Ch_r. The interferer (Gen B) was set to the same frequency, Ch_r, and radar test signal # 0, of table 5 (at the threshold level). The interferer was present for one burst only and the EUT was observed for radar detections. The test signal and observations were repeated a further 9 times as recorded in the results.

This test was repeated in 5 MHz, then 1 MHz, increments of the interferer to find the upper and lower points where the detection rate fell below the requirement.

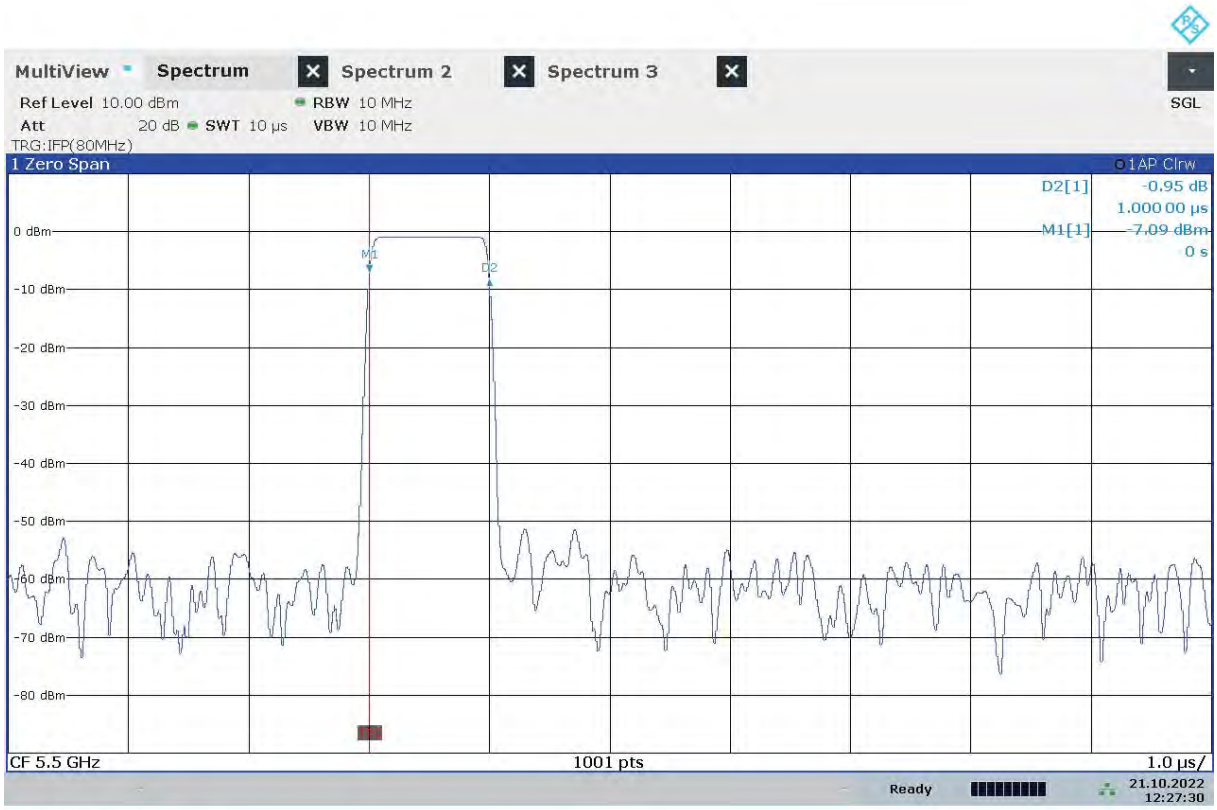
12.4 Test Equipment

Equipment Description	*Manufacturer*	*Equipment Type*	*Element No*	*Last Cal Calibration*	*Calibration Period*	*Due For Calibration*
Spectrum Analyser	R&S	FSW 43	U728	2022-04-26	12	2023-04-26
1-18GHz Horn	EMCO	3115	L139	2022-07-01	24	2024-07-01
1-18GHz Horn	EMCO	3115	U223	2021-12-13	24	2023-12-13
Radio Chamber - PP	Rainford EMC	ATS	REF940	2021-11-06	24	2023-11-06
Signal Generator	R&S	SMW200A	111178*	Radiated level calibrated in use		

* Denotes Serial Number of Loan test equipment

12.5 Test Results – WiFi 0

Radar Pulse Parameters



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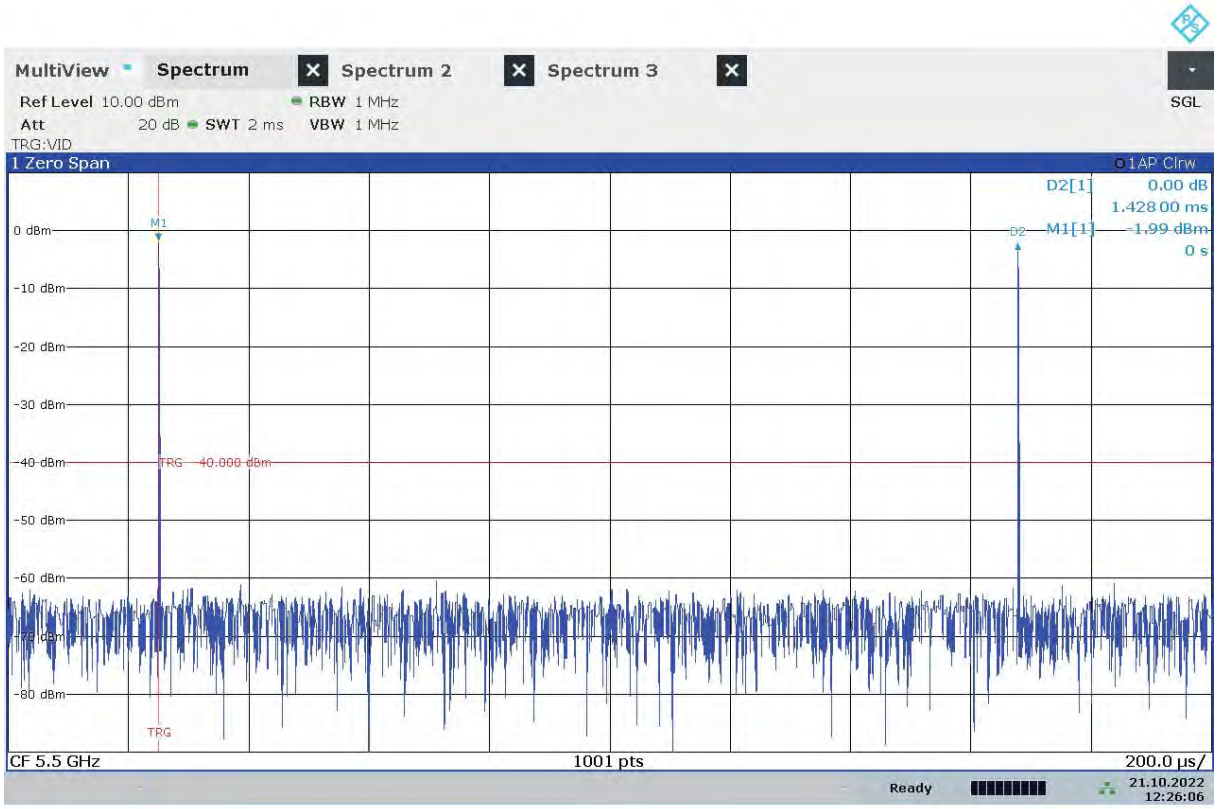

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EUT Channel: 5500 MHz; Bandwidth:20 MHz;			
Radar test signal #0			
Test Frequency (MHz)	Number of bursts	% detected	Requirement
Ch_r	10	100	90%
Ch_r+ 5	10	100	90%
Ch_r+ 9	10	100	90%
Ch_r- 5	10	100	90%
Ch_r- 9	10	100	90%

F_H (MHz)	F_L (MHz)	U-NII Detection Bandwidth (MHz)	Result
5491	5509	18	PASS

EUT Channel: 5510 MHz; Bandwidth:40 MHz;			
Radar test signal #0			
Test Frequency (MHz)	Number of bursts	% detected	Requirement
Ch_r	10	100	90%
Ch_r+ 5	10	100	90%
Ch_r+ 10	10	100	90%
Ch_r+ 15	10	100	90%
Ch_r+ 19	10	100	90%
Ch_r- 5	10	100	90%
Ch_r- 10	10	100	90%
Ch_r- 15	10	100	90%
Ch_r- 19	10	100	90%

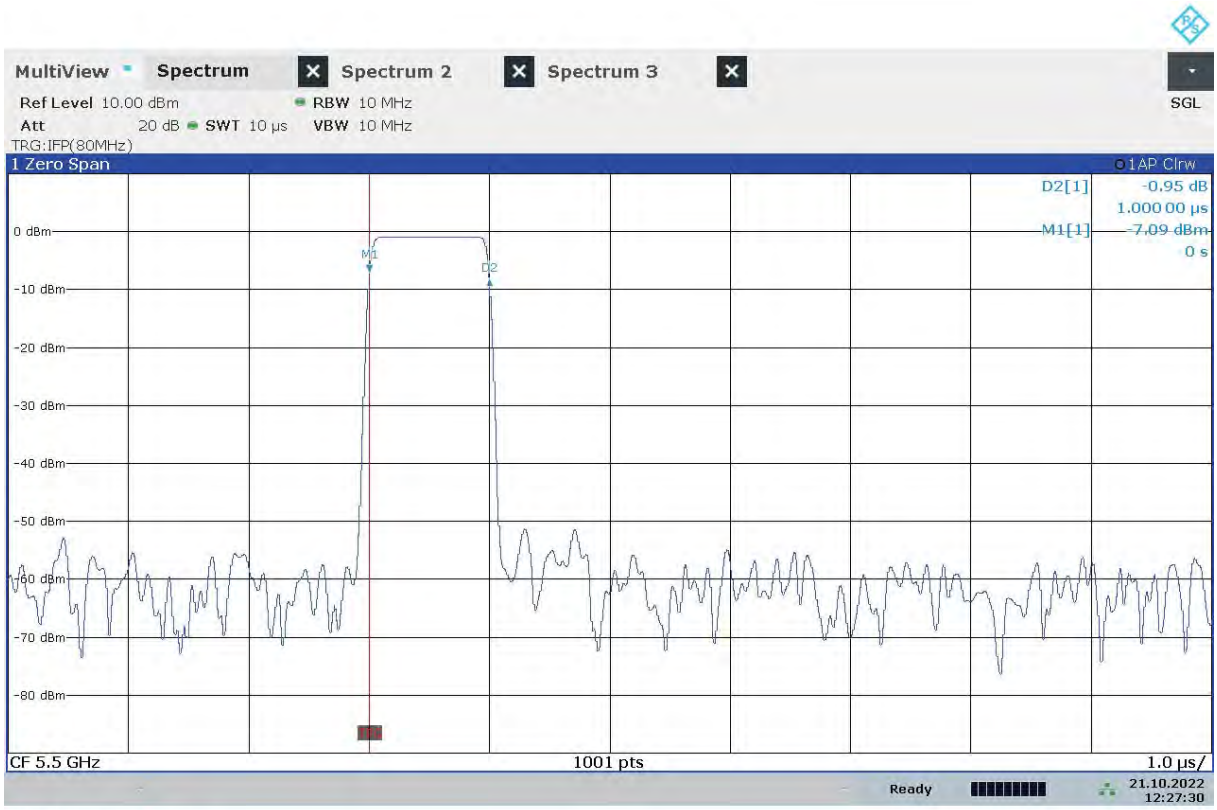
F_H (MHz)	F_L (MHz)	U-NII Detection Bandwidth (MHz)	Result
5491	5529	38	PASS

EUT Channel: 5530 MHz; Bandwidth:80 MHz;			
Radar test signal #0			
Test Frequency (MHz)	**Number of bursts**	**% detected**	**Requirement**
Ch_r	10	100	90%
Ch_r+ 5	10	100	90%
Ch_r+ 10	10	100	90%
Ch_r+ 15	10	100	90%
Ch_r+ 20	10	100	90%
Ch_r+ 24	10	100	90%
Ch_r+ 30	10	100	90%
Ch_r+ 35	10	100	90%
Ch_r+ 39	10	100	90%
Ch_r- 5	10	100	90%
Ch_r- 10	10	100	90%
Ch_r- 15	10	100	90%
Ch_r- 20	10	100	90%
Ch_r- 25	10	100	90%
Ch_r- 30	10	100	90%
Ch_r- 35	10	100	90%
Ch_r- 39	10	100	90%

F_H (MHz)	**F_L (MHz)**	**U-NII Detection Bandwidth (MHz)**	**Result**
5491	5569	78	PASS

12.6 Test Results – WiFi 1

Radar Pulse Parameters



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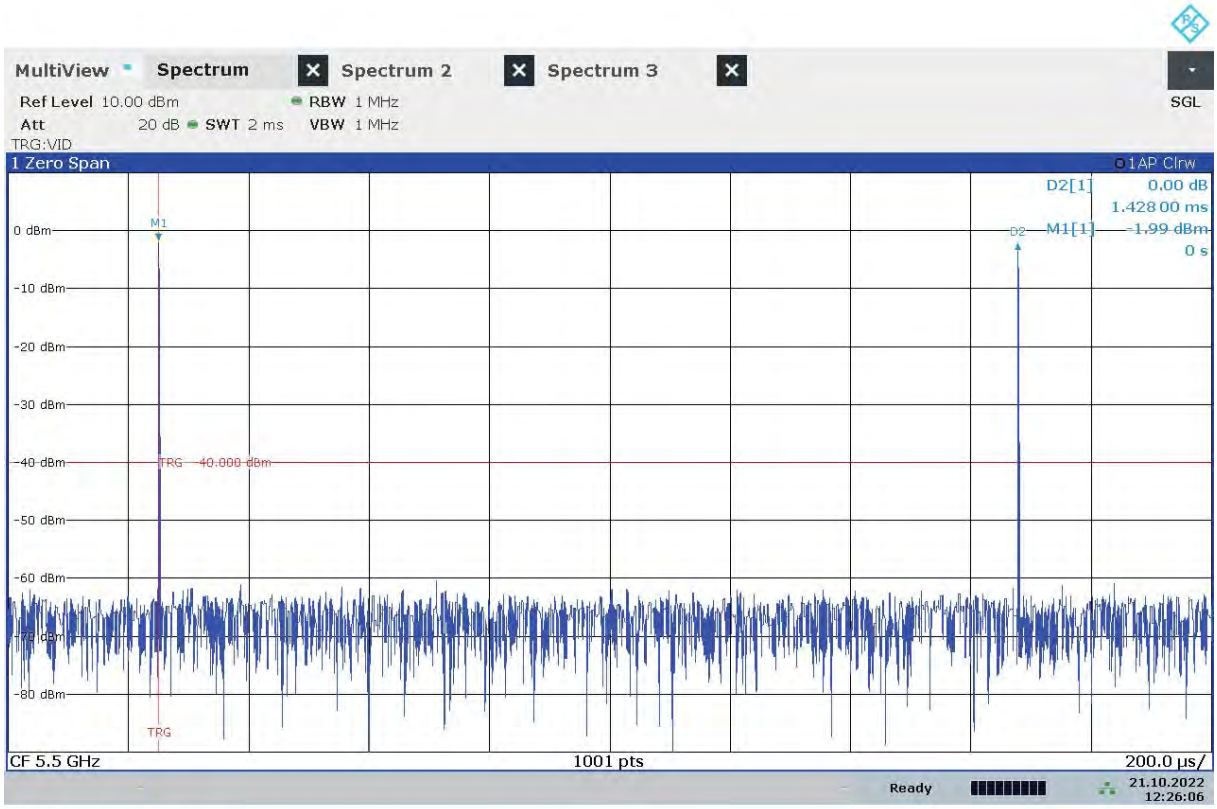

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EUT Channel: 5500 MHz; Bandwidth:20 MHz;			
Radar test signal #0			
Test Frequency (MHz)	Number of bursts	% detected	Requirement
Ch_r	10	100	90%
Ch_r+ 5	10	100	90%
Ch_r+ 9	10	100	90%
Ch_r- 5	10	100	90%
Ch_r- 9	10	100	90%

F_H (MHz)	F_L (MHz)	U-NII Detection Bandwidth (MHz)	Result
5491	5509	18	PASS

EUT Channel: 5510 MHz; Bandwidth:40 MHz;			
Radar test signal #0			
Test Frequency (MHz)	Number of bursts	% detected	Requirement
Ch_r	10	100	90%
Ch_r+ 5	10	100	90%
Ch_r+ 10	10	100	90%
Ch_r+ 15	10	100	90%
Ch_r+ 19	10	100	90%
Ch_r- 5	10	100	90%
Ch_r- 10	10	100	90%
Ch_r- 15	10	100	90%
Ch_r- 19	10	90	90%

F_H (MHz)	F_L (MHz)	U-NII Detection Bandwidth (MHz)	Result
5491	5529	98	PASS

EUT Channel: 5530 MHz; Bandwidth:80 MHz;			
Radar test signal #0			
Test Frequency (MHz)	**Number of bursts**	**% detected**	**Requirement**
Ch_r	10	100	90%
Ch_r+ 5	10	100	90%
Ch_r+ 10	10	100	90%
Ch_r+ 15	10	100	90%
Ch_r+ 20	10	100	90%
Ch_r+ 24	10	100	90%
Ch_r+ 30	10	100	90%
Ch_r+ 35	10	100	90%
Ch_r+ 39	10	100	90%
Ch_r- 5	10	100	90%
Ch_r- 10	10	100	90%
Ch_r- 15	10	100	90%
Ch_r- 20	10	100	90%
Ch_r- 25	10	100	90%
Ch_r- 30	10	100	90%
Ch_r- 35	10	100	90%
Ch_r- 39	10	100	90%

F_H (MHz)	**F_L (MHz)**	**U-NII Detection Bandwidth (MHz)**	**Result**
5491	5569	78	PASS

EUT Channel: 5570 MHz; Bandwidth:160 MHz;			
Radar test signal #0			
Test Frequency (MHz)	Number of bursts	% detected	Requirement
Ch_r	10	100	90%
Ch_r+ 5	10	100	90%
Ch_r+ 10	10	100	90%
Ch_r+ 15	10	100	90%
Ch_r+ 20	10	100	90%
Ch_r+ 24	10	100	90%
Ch_r+ 30	10	100	90%
Ch_r+ 35	10	100	90%
Ch_r+ 40	10	100	90%
Ch_r+ 45	10	100	90%
Ch_r+ 50	10	100	90%
Ch_r+ 55	10	100	90%
Ch_r+ 60	10	100	90%
Ch_r+ 65	10	100	90%
Ch_r+ 70	10	90	90%
Ch_r+ 75	10	100	90%
Ch_r+ 79	10	100	90%
Ch_r- 5	10	100	90%
Ch_r- 10	10	90	90%
Ch_r- 15	10	100	90%
Ch_r- 20	10	100	90%
Ch_r- 25	10	100	90%
Ch_r- 30	10	100	90%
Ch_r- 35	10	100	90%
Ch_r- 40	10	100	90%
Ch_r- 45	10	100	90%
Ch_r- 50	10	100	90%
Ch_r- 55	10	90	90%
Ch_r- 60	10	100	90%
Ch_r- 65	10	100	90%
Ch_r- 70	10	100	90%
Ch_r- 75	10	100	90%
Ch_r- 79	10	100	90%

F_H (MHz)	F_L (MHz)	U-NII Detection Bandwidth (MHz)	Result
5491	5649	158	PASS

13 Channel Availability Check

13.1 Definition

The *Channel Availability Check (CAC)* is defined as a mechanism by which an U-NII device checks channels for the presence of radar signals. This mechanism is used for identifying *Available Channels*.

There shall be no transmissions by the U-NII device on the channels being checked during the initial CAC process.

If no radars have been detected on a channel, then that channel becomes an *Available Channel.*

13.2 Additional Test Parameters

EUT Channels At Switch On:	WiFi 0 – 5500 MHz, 5510 MHz, 5530 MHz WiFi 1 – 5500 MHz, 5510 MHz, 5530 MHz, 5540 MHz
EUT CAC Channel Bandwidths:	WiFi 0 – 20 MHz, 40 MHz, 80 MHz WiFi 1 – 20 MHz, 40 MHz, 80 MHz, 160 MHz

Test Limits
The U–NII device may start using the channel if no radar signal with a power level greater than the interference threshold values (listed in table 3) is detected within 60 seconds.

13.3 Test Method

[1] Length of CAC.
The EUT channel was selected, then switched off. The spectrum analyser was set to time domain (zero span) with sufficient bandwidth to capture all intentional emissions from the EUT. The EUT was then switched on and the analyser Elemente synchronised to the moment when the power-up sequence was completed. The length of the CAC is the time difference between the completion of the power-up sequence and the initiation of transmission on the selected channel.

[2] Radar detection.
The interferer (Gen B) was set to one of the signal types of table 5 at the reference level of table 3, increased by 1dB and muted. The EUT channel was selected, then switched off. The spectrum analyser was set to time domain (zero span) with sufficient bandwidth to capture all intentional emissions from the EUT. The EUT was then switched on and upon completion of the power-up sequence, the interferer (Gen B) was unmuted for a single burst. The spectrum analyser was monitored to ensure no transmissions occurred.

The test was repeated, but with a delay of approx. 54s prior to unmuting the interferer.

13.4 Test Equipment

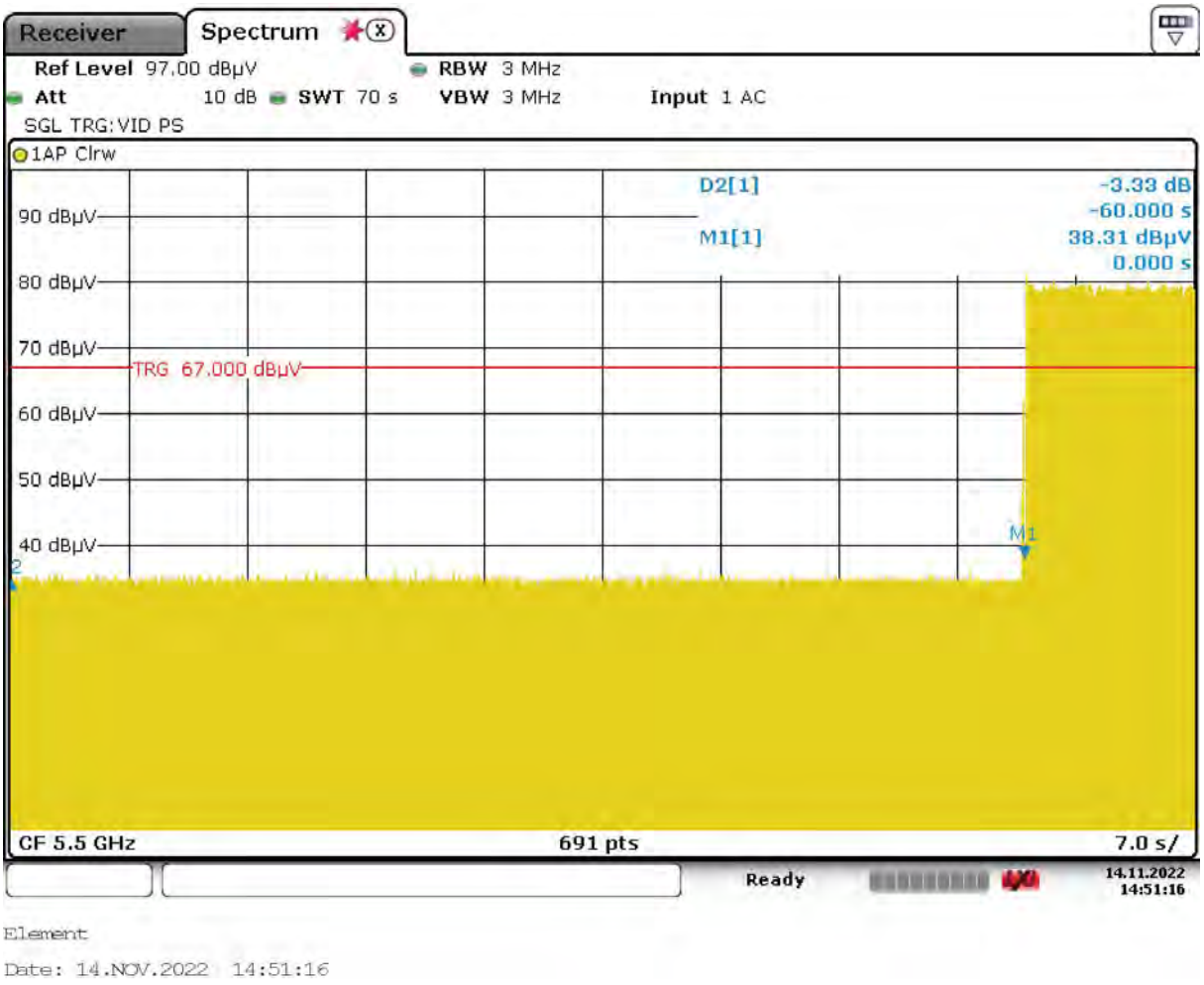
Equipment Description	*Manufacturer*	*Equipment Type*	*Element No*	*Last Cal Calibration*	*Calibration Period*	*Due For Calibration*
Spectrum Analyser	R&S	FSW 43	U728	2022-04-26	12	2023-04-26
1-18GHz Horn	EMCO	3115	L139	2022-07-01	24	2024-07-01
1-18GHz Horn	EMCO	3115	U223	2021-12-13	24	2023-12-13
Radio Chamber - PP	Rainford EMC	ATS	REF940	2021-11-06	24	2023-11-06
Signal Generator	R&S	SMW200A	111178*	Radiated level calibrated in use		

* Denotes Serial Number of Loan test equipment

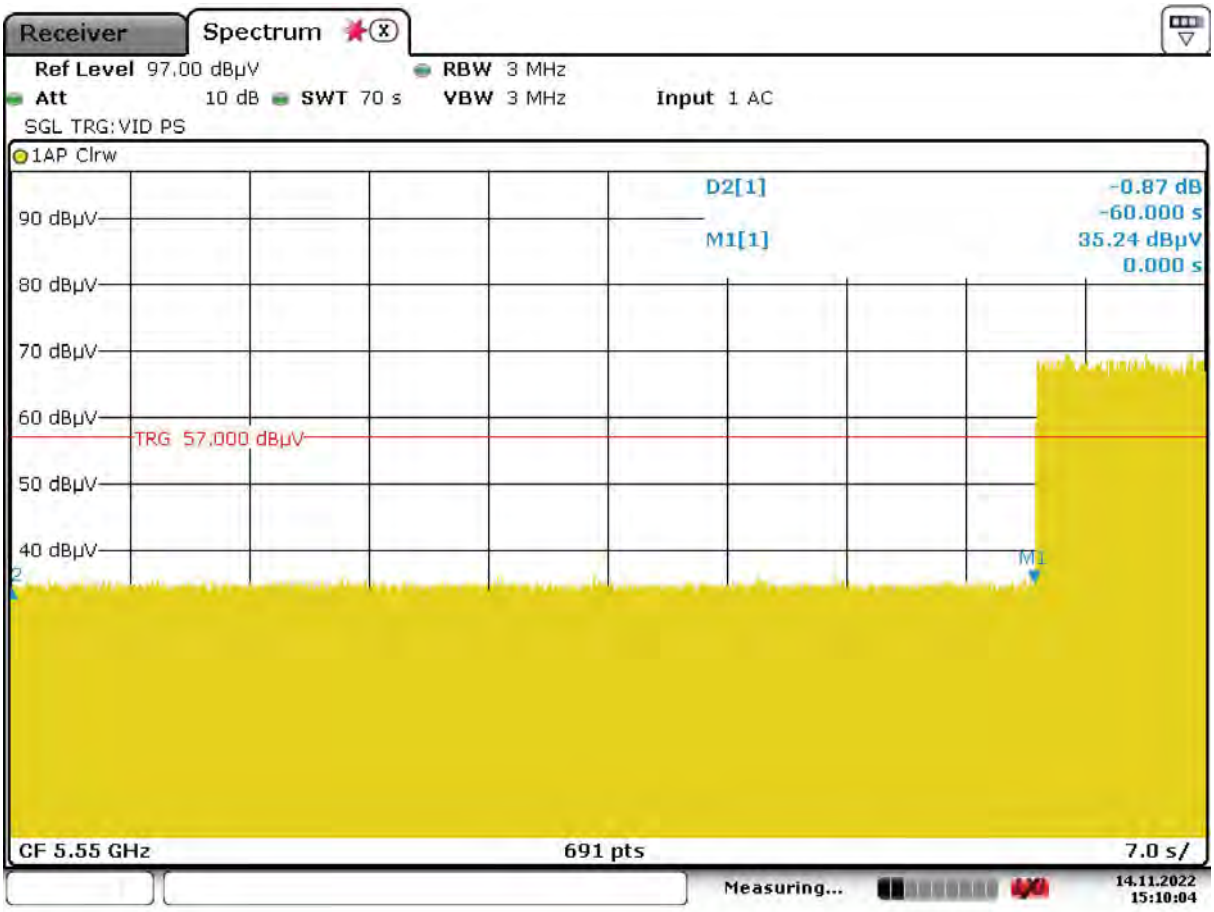
13.5 Test Results – WiFi 0

[1] Length of CAC

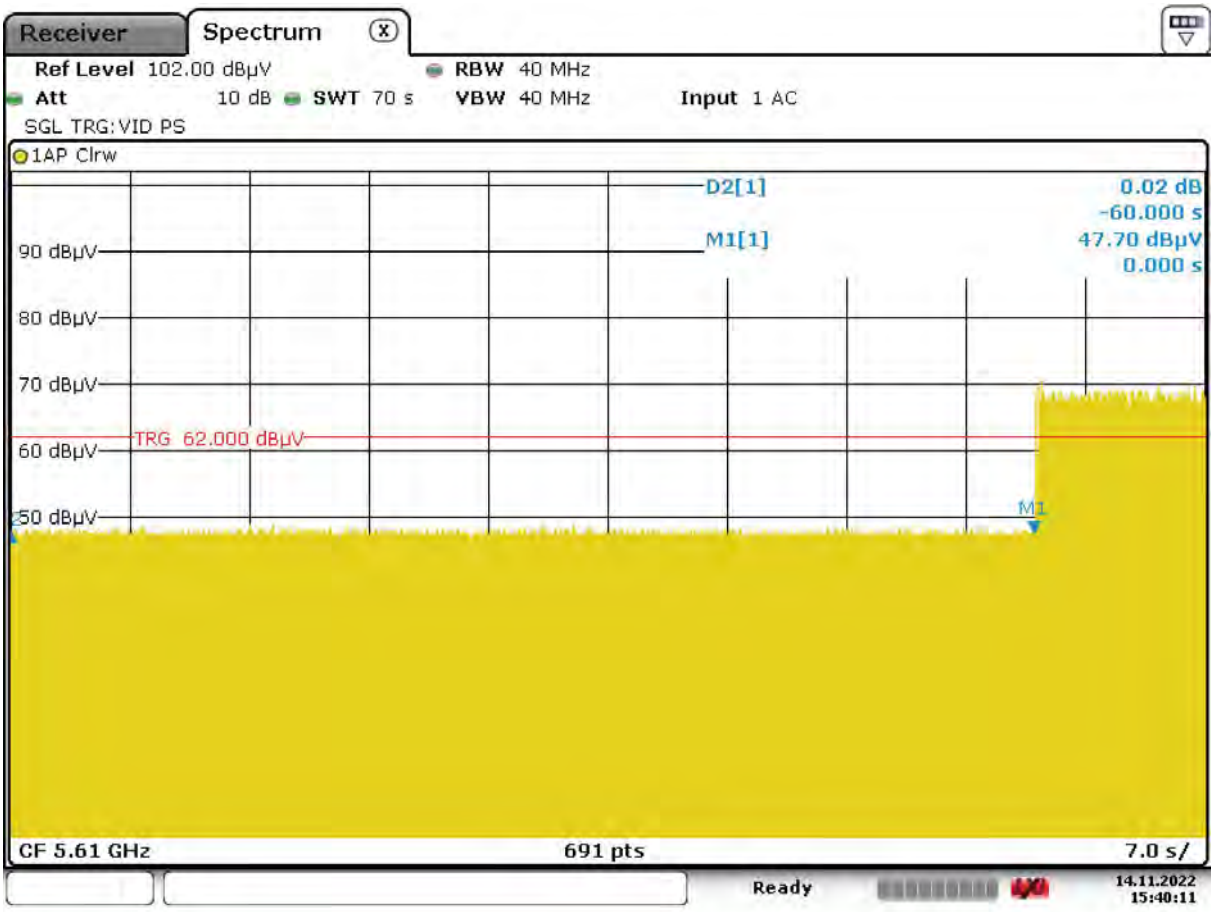
Wi Fi 0					
Monitoring Frequency (MHz)	***Channel Bandwidth (MHz)***	***Channel Number***	***CAC length (s)***	***EUT transmissions during CAC***	***Result***
5500	20	100	> 60s	None	PASS
5510	40	102	> 60s	None	PASS
5530	80	106	> 60s	None	PASS



20 MHz – Channel 100



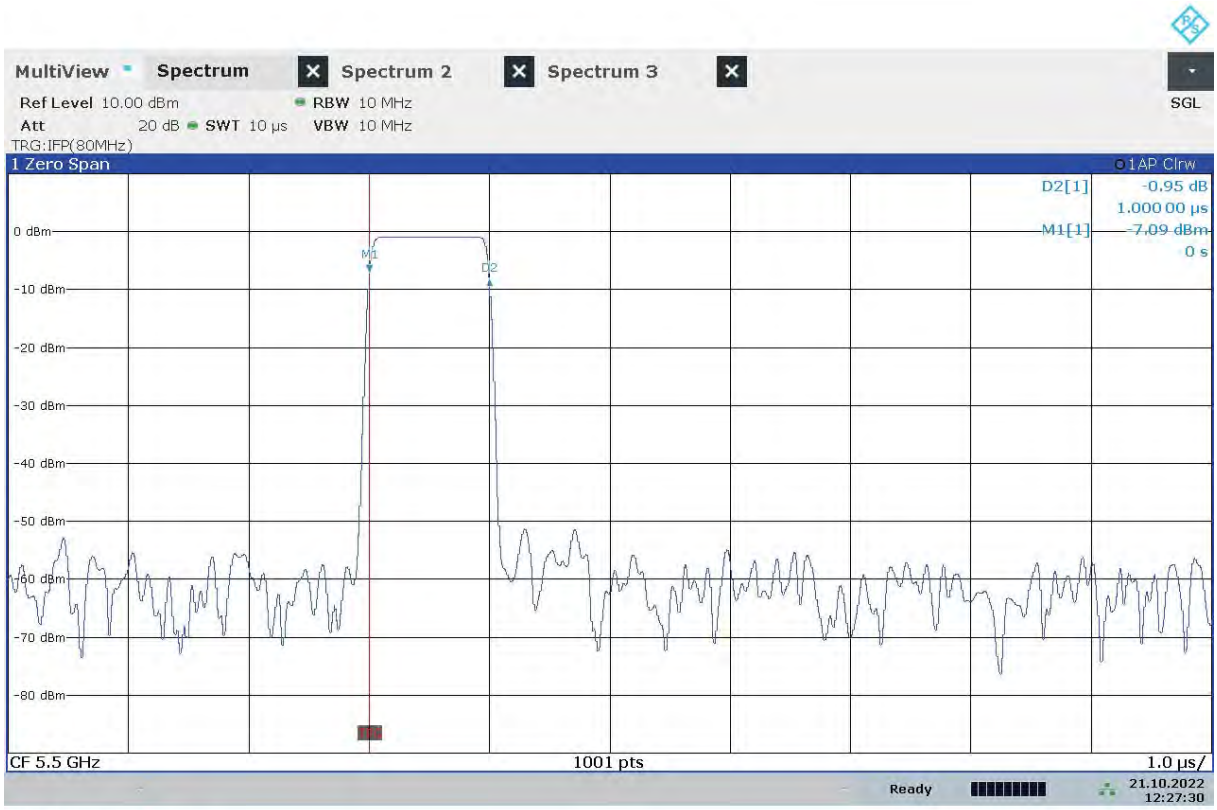
40 MHz – Channel 102



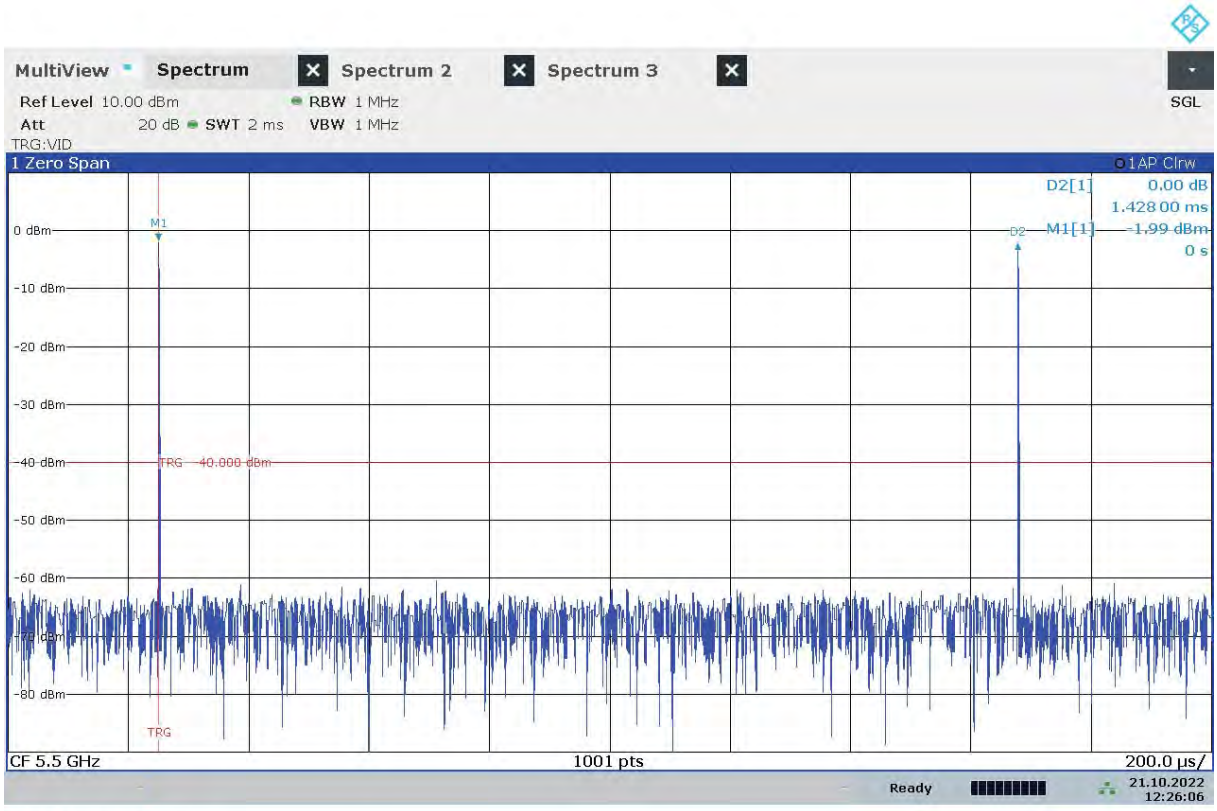
80 MHz Channel 106

[2] Radar detection

Radar Pulse Parameters

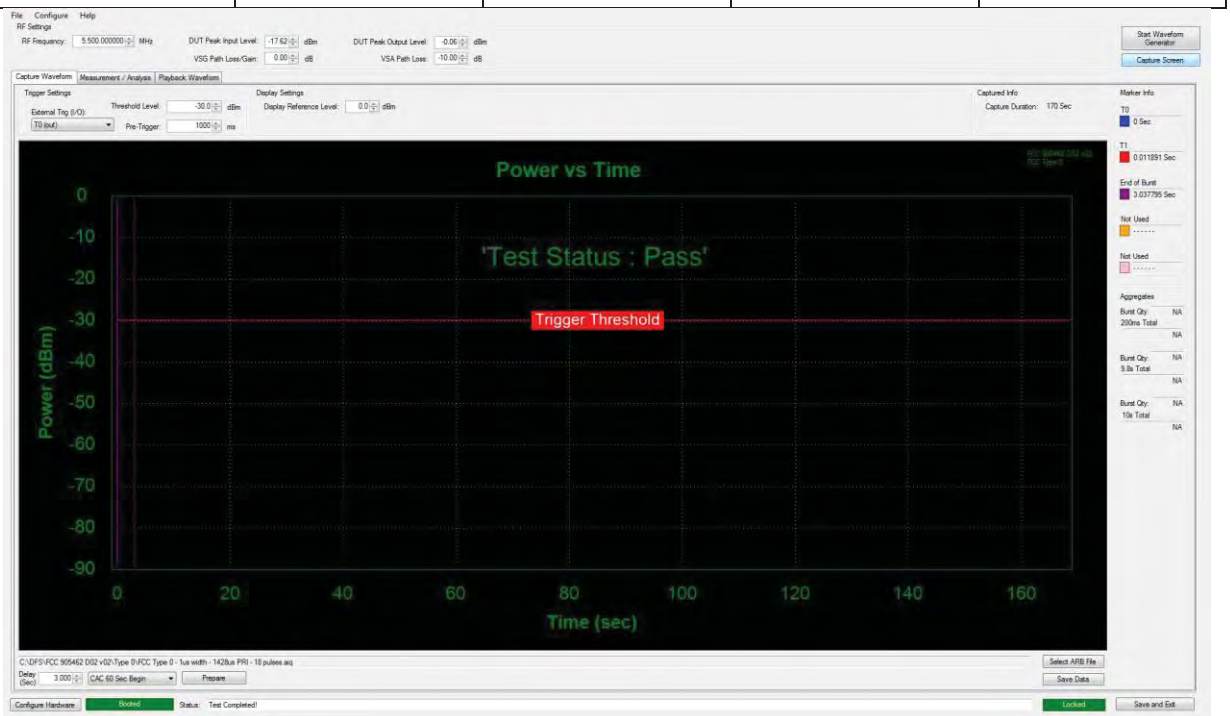


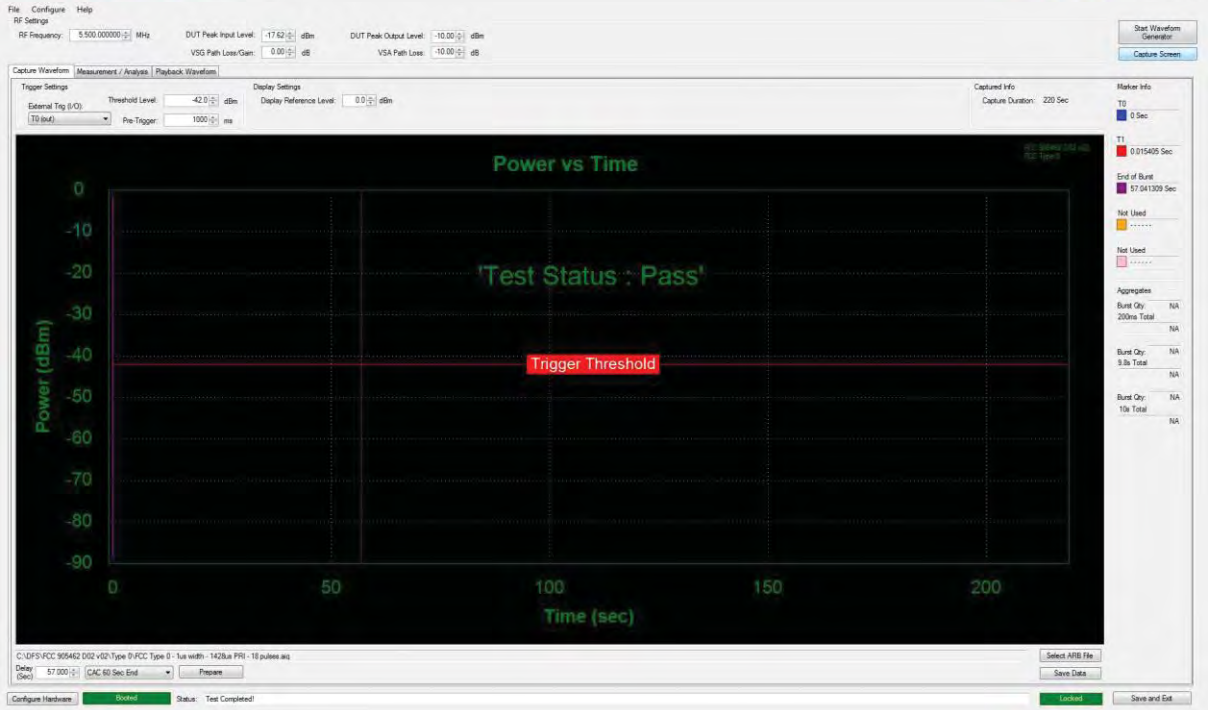
12:27:30 21.10.2022



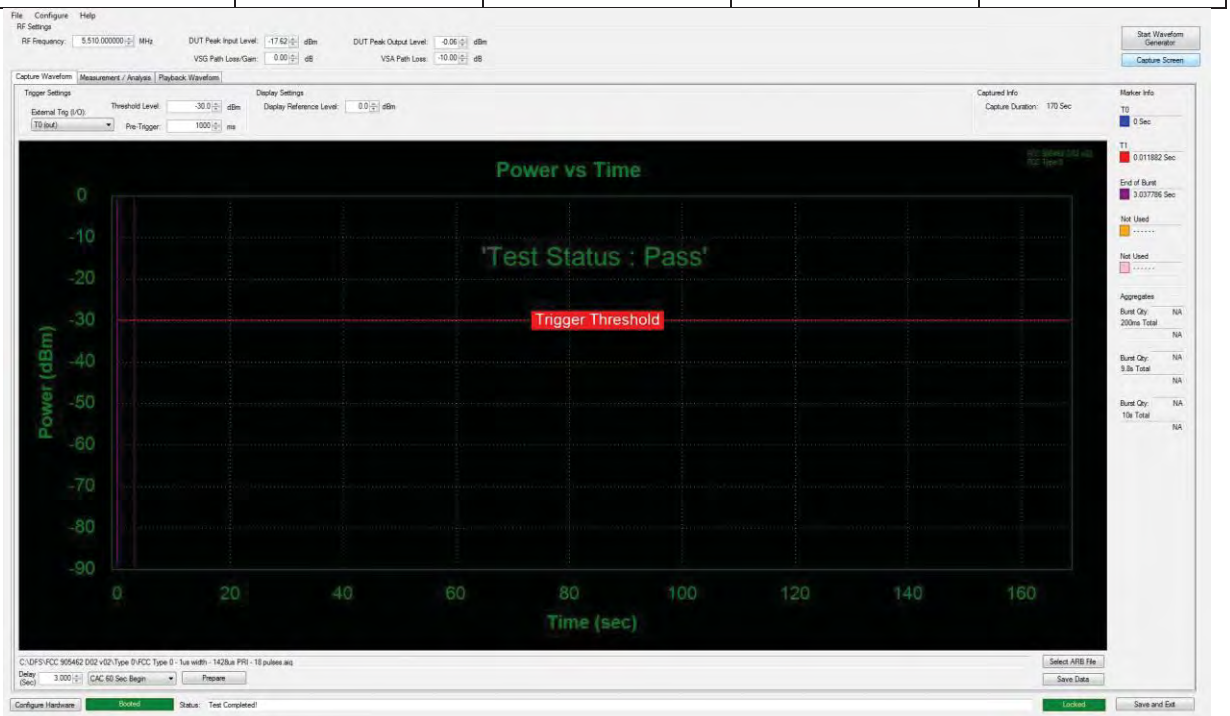
12:26:06 21.10.2022

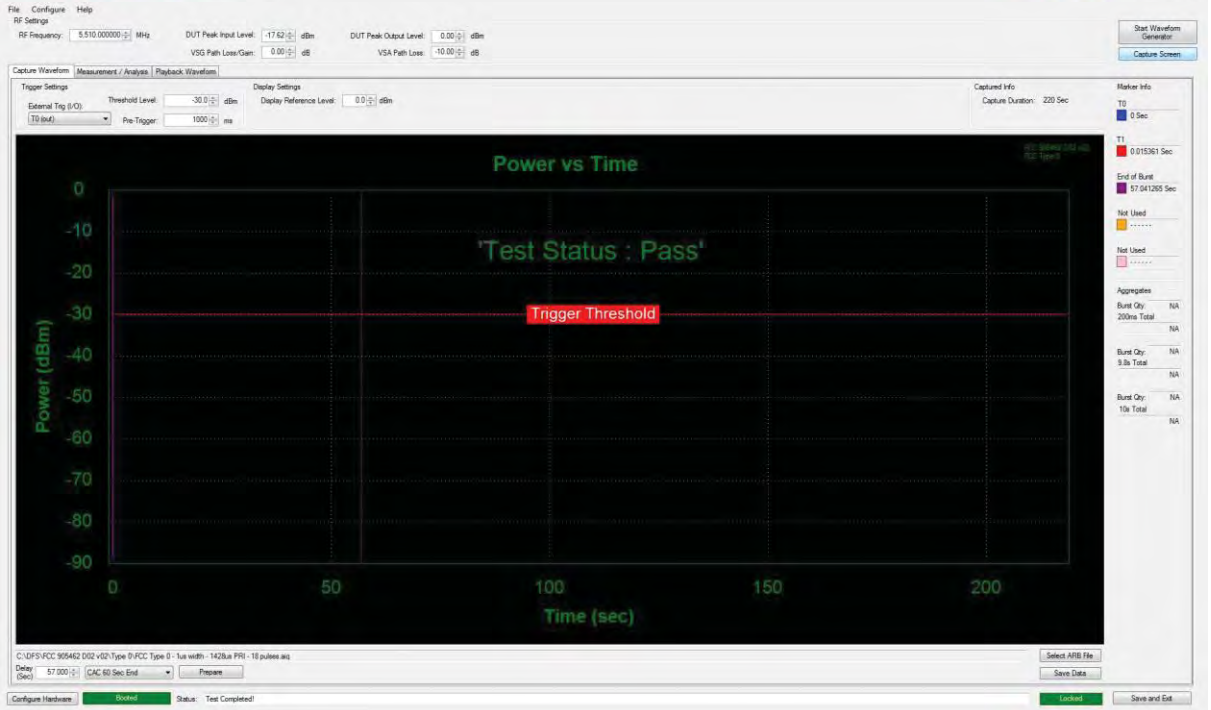
Channel: 5500 MHz; Bandwidth: 20 MHz; Interference level: -62 dBm				
Time of injection (s)	***Radar test signal #***	***Pulse width (µs)***	***PRI (µs)***	***EUT transmits (Yes/No)***
T1 + 3	0	1	1429	No
T1 + 57	0	1	1429	No



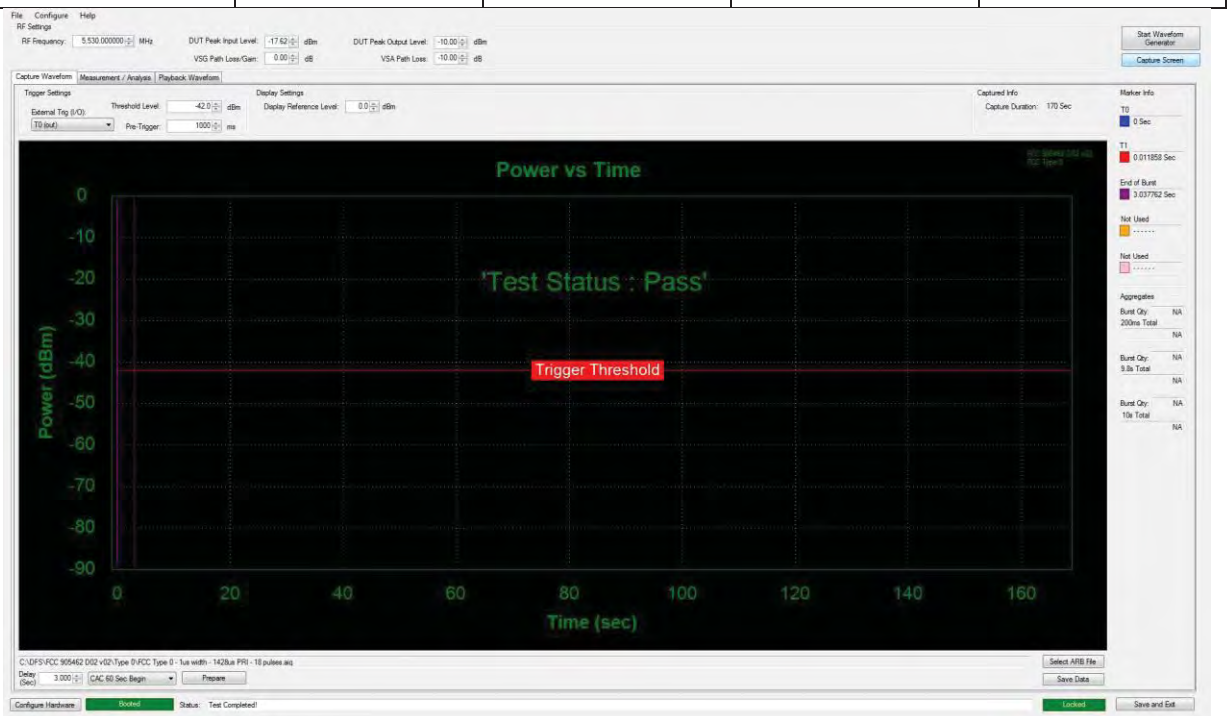


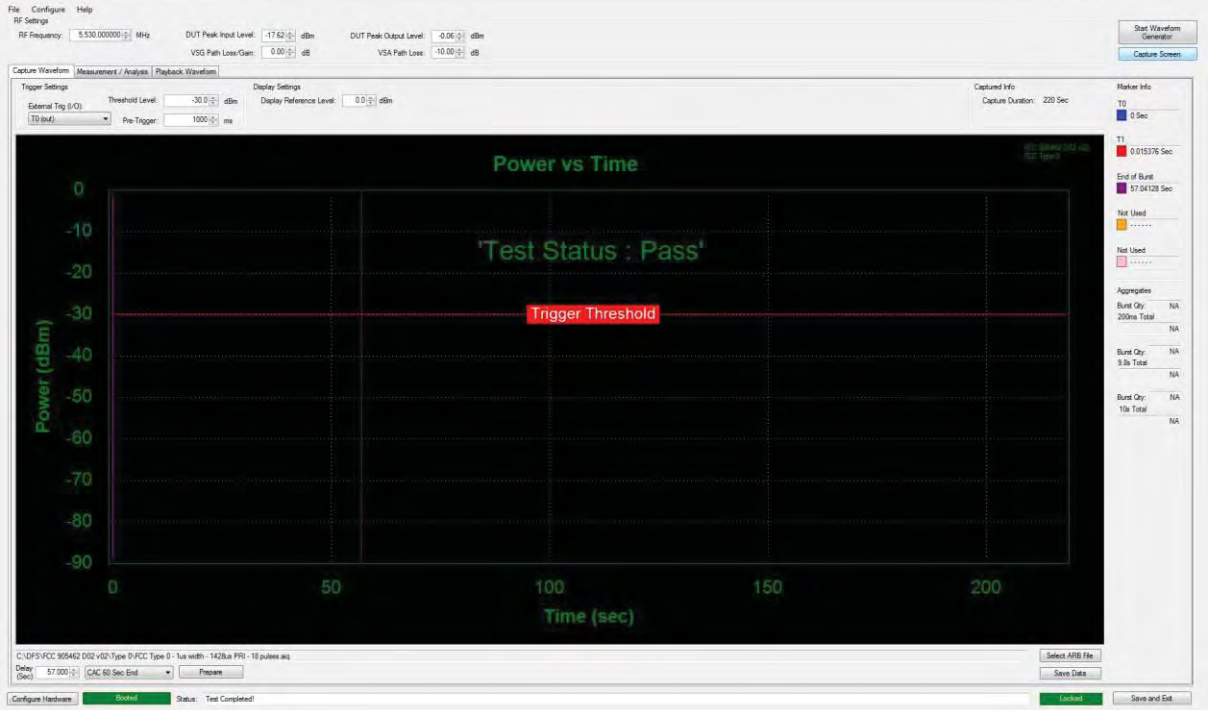
Channel: 5510 MHz; Bandwidth: 40 MHz; Interference level: -62 dBm				
Time of injection (s)	***Radar test signal #***	***Pulse width (µs)***	***PRI (µs)***	***EUT transmits (Yes/No)***
T1 + 3	0	1	1429	No
T1 + 57	0	1	1429	No





Channel: 5530 MHz; Bandwidth: 80 MHz; Interference level: -62 dBm				
Time of injection (s)	Radar test signal #	Pulse width (µs)	PRI (µs)	EUT transmits (Yes/No)
T1 + 3	0	1	1429	No
T1 + 57	0	1	1429	No

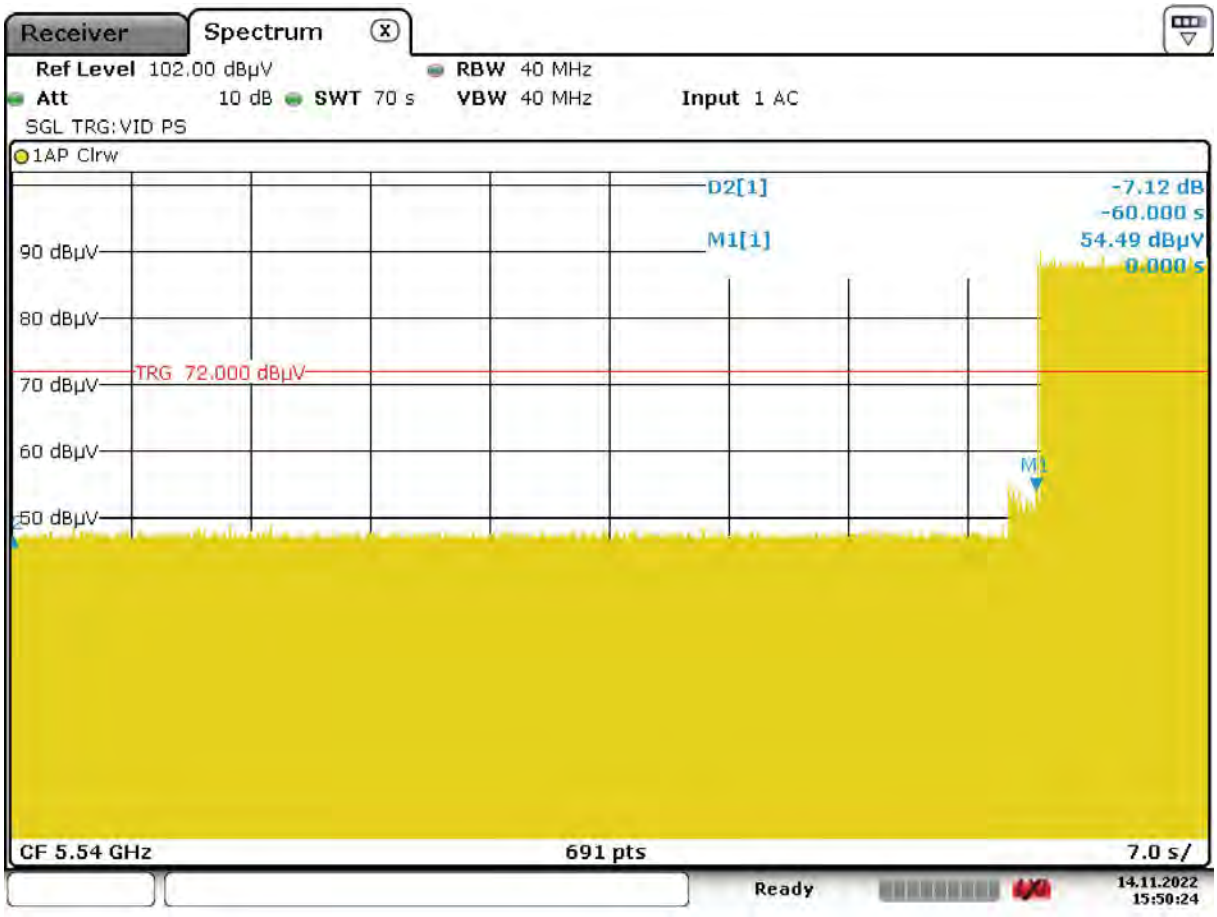




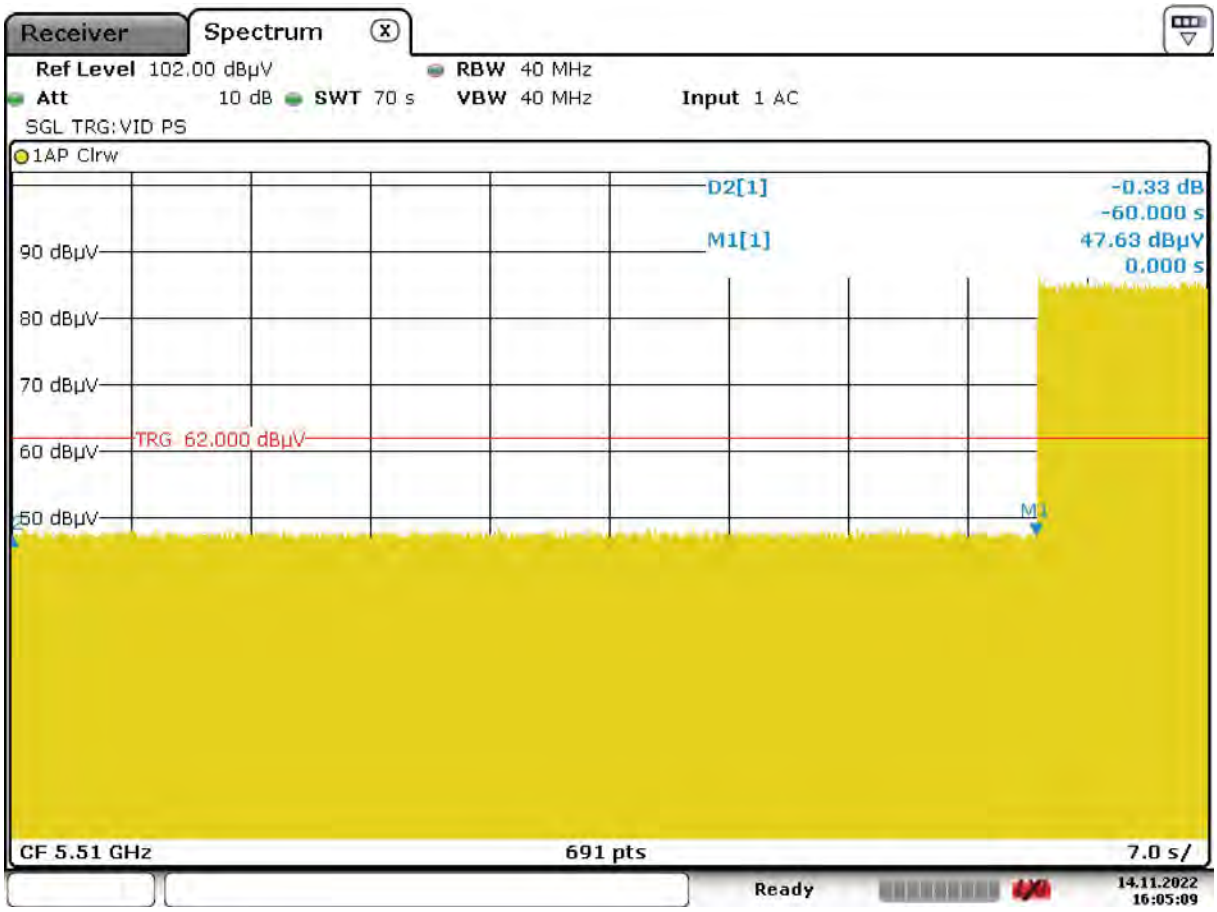
13.6 Test Results – WiFi 1

[3] Length of CAC

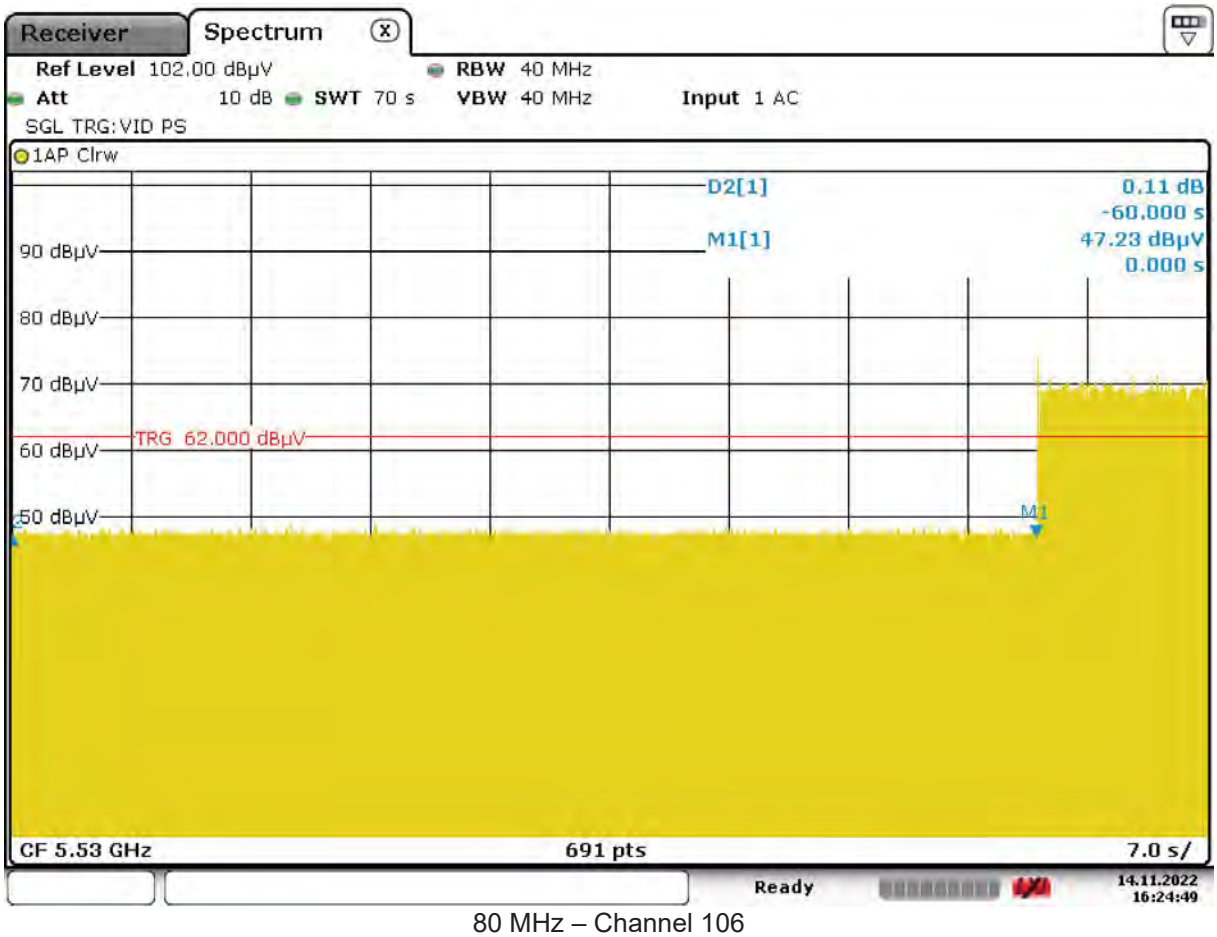
Wi Fi 0					
Monitoring Frequency (MHz)	***Channel Bandwidth (MHz)***	***Channel Number***	***CAC length (s)***	***EUT transmissions during CAC***	***Result***
5500	20	100	> 60s	None	PASS
5510	40	118	> 60s	None	PASS
5530	80	106	> 60s	None	PASS
5540	160	114	> 60s	None	PASS



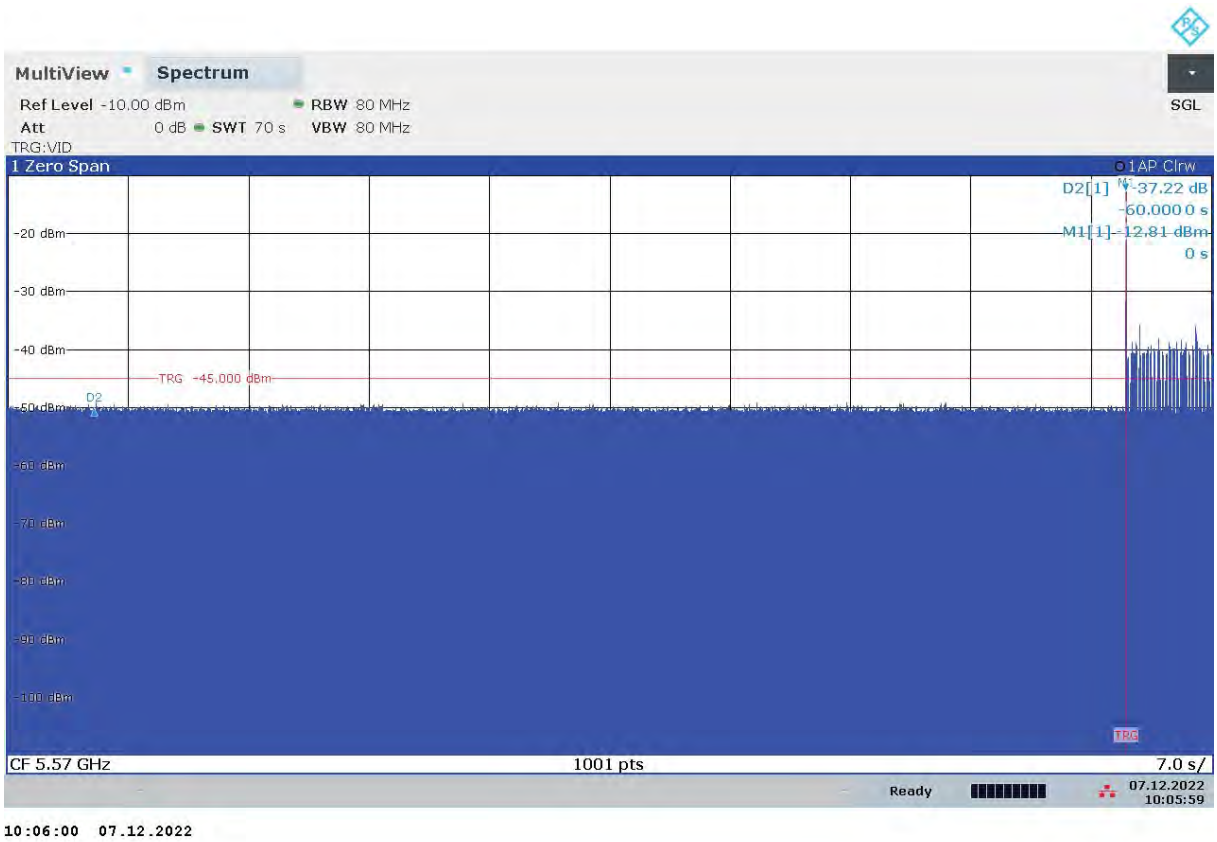
20 MHz – Channel 100



40 MHz – Channel 102



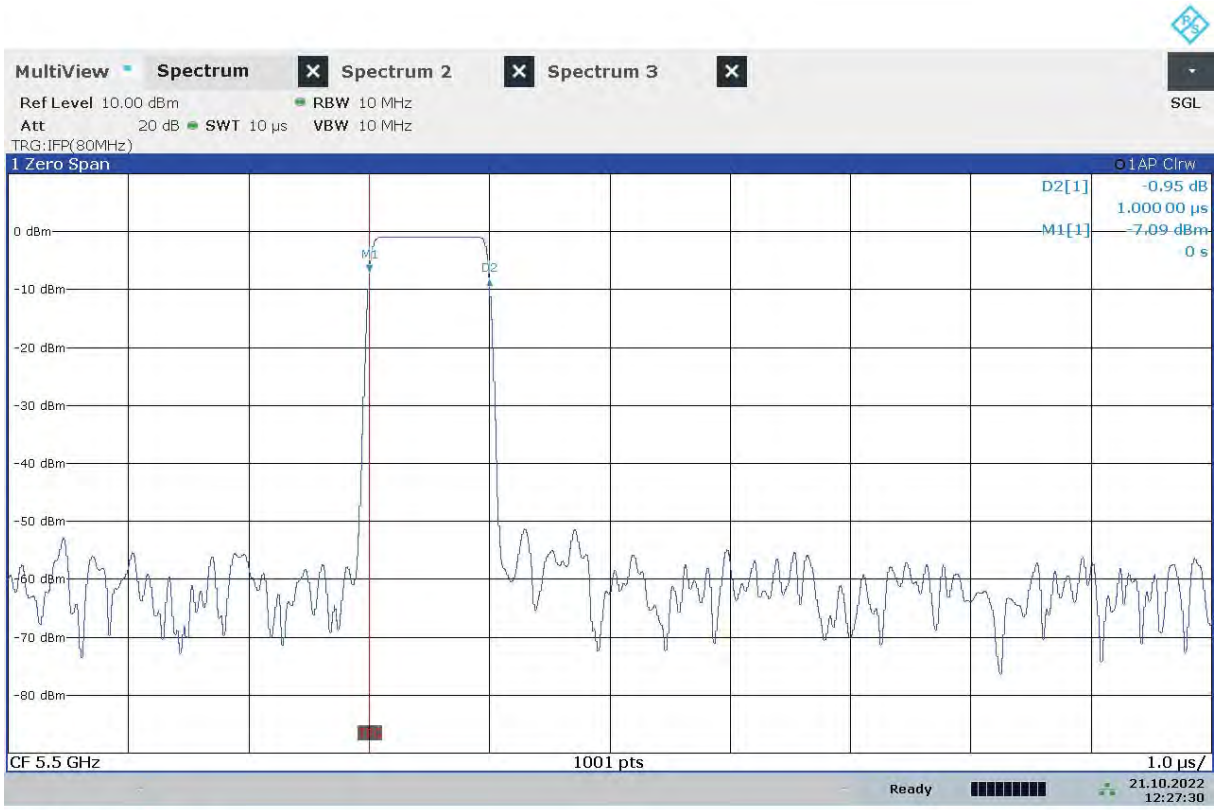
80 MHz – Channel 106



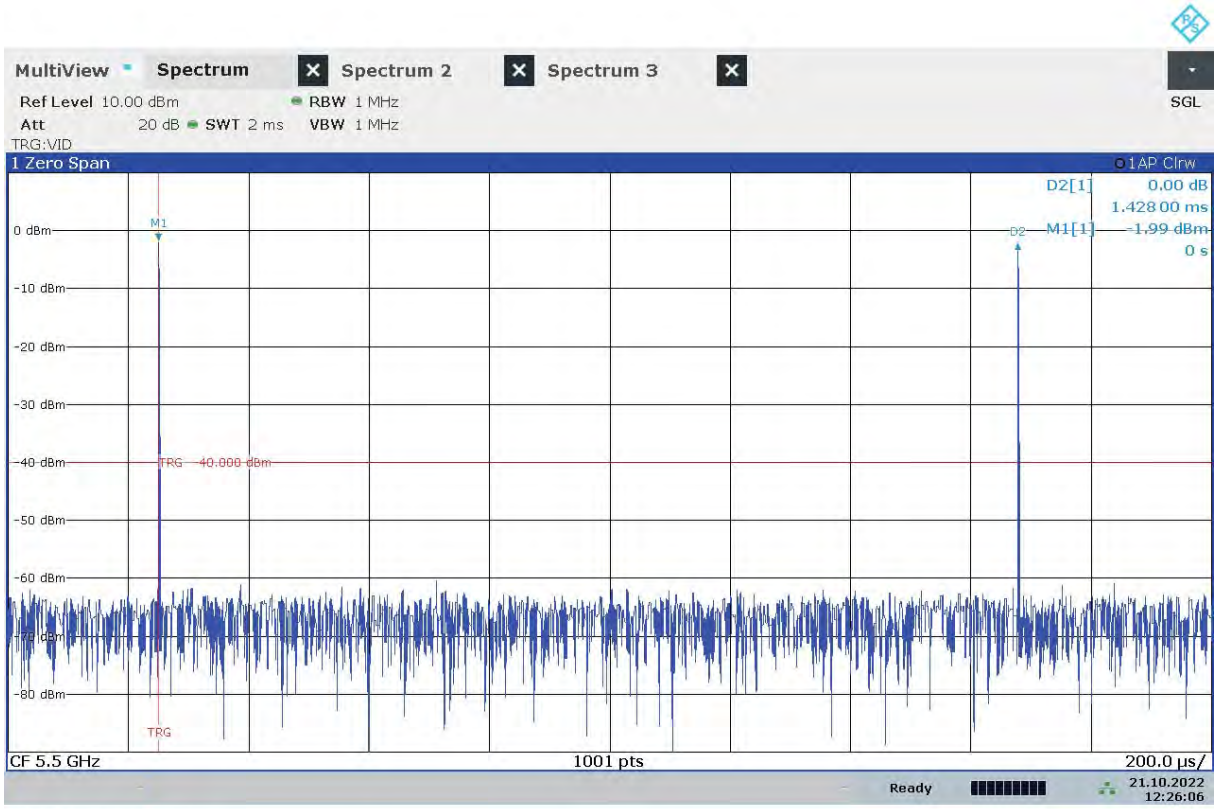
10:06:00 07.12.2022

160 MHz – Channel 114

Radar Pulse Parameters



12:27:30 21.10.2022

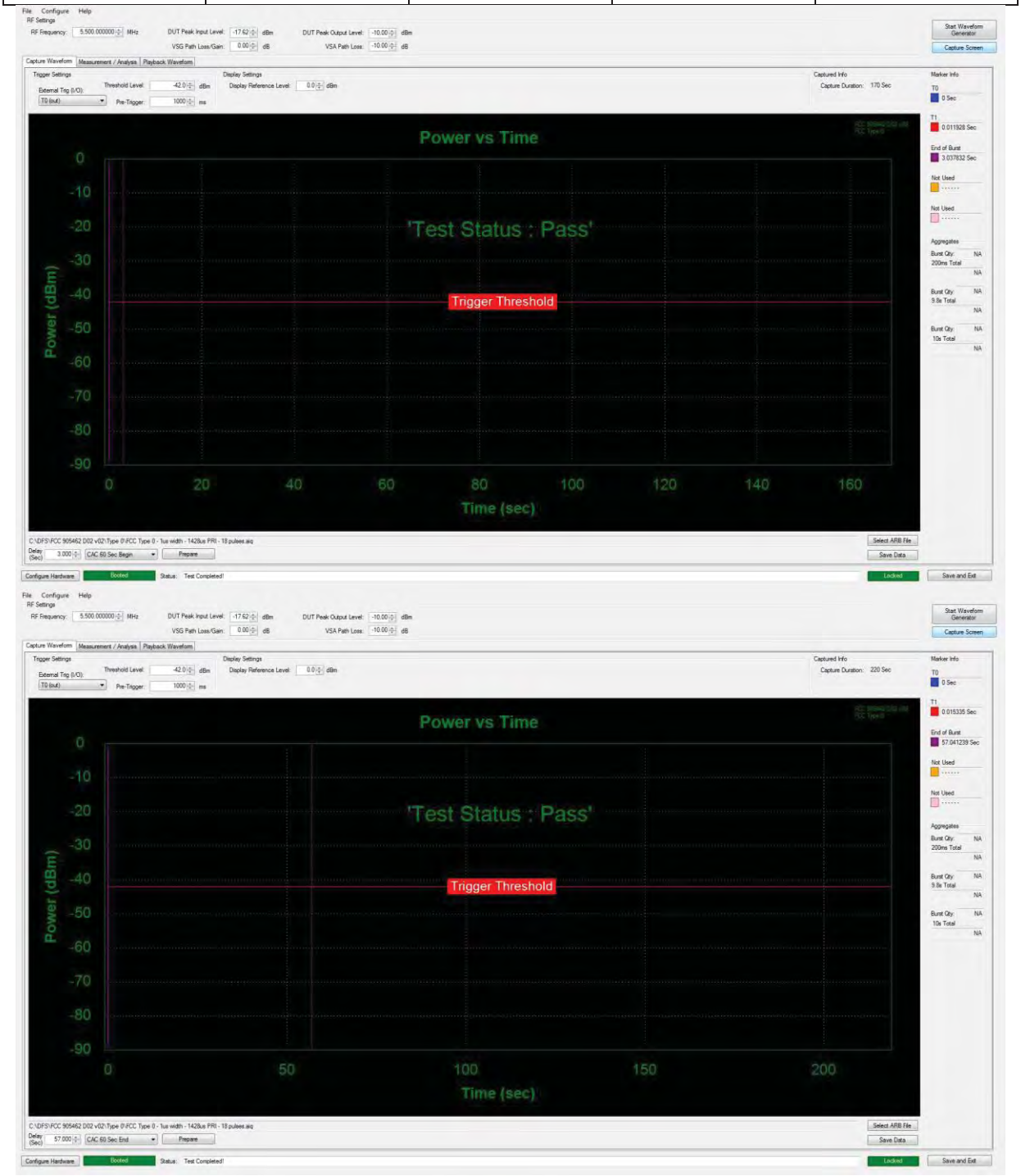


12:26:06 21.10.2022

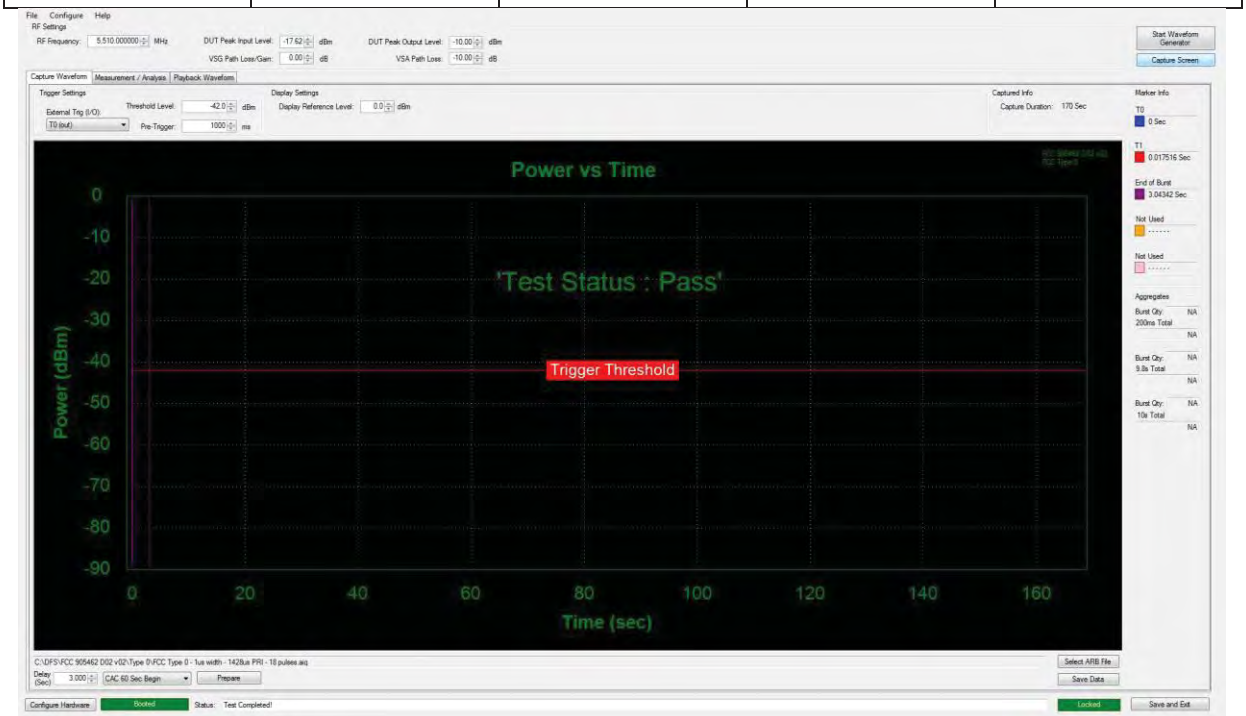
]

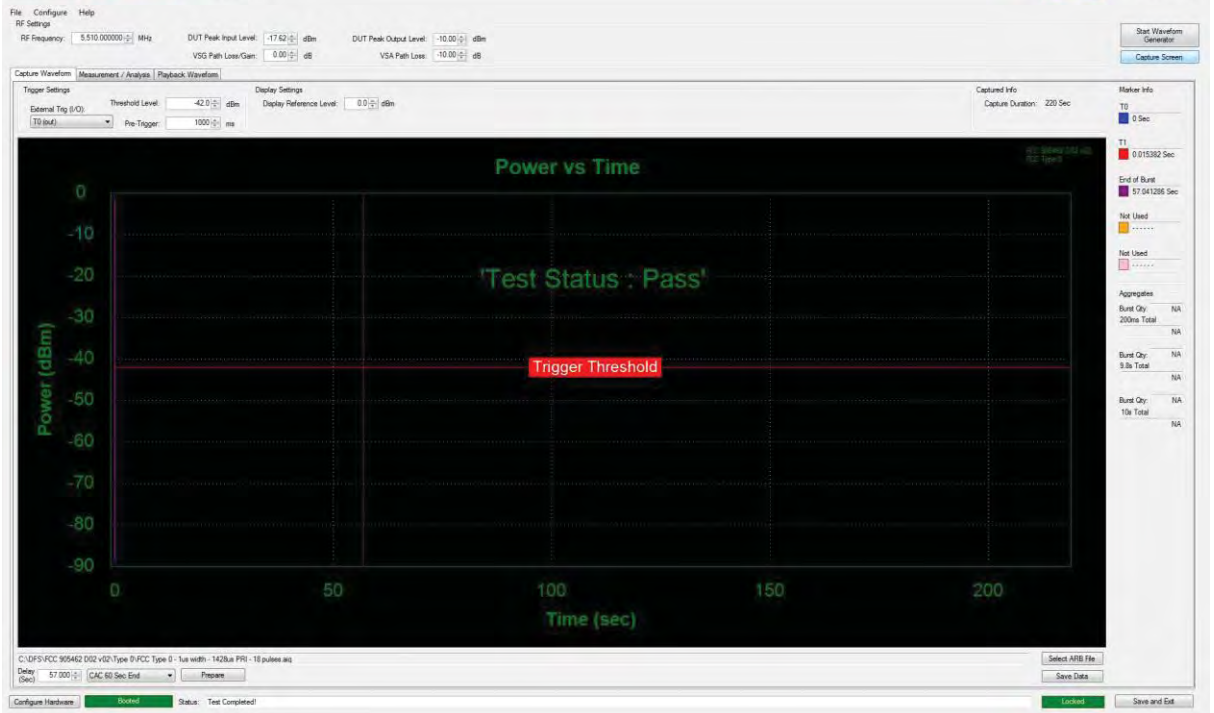
[4] Radar detection

Channel: 5500 MHz; Bandwidth: 20 MHz; Interference level: -62 dBm				
Time of injection (s)	***Radar test signal #***	***Pulse width (µs)***	***PRI (µs)***	***EUT transmits (Yes/No)***
T1 + 3	0	1	1429	No
T1 + 57	0	1	1429	No

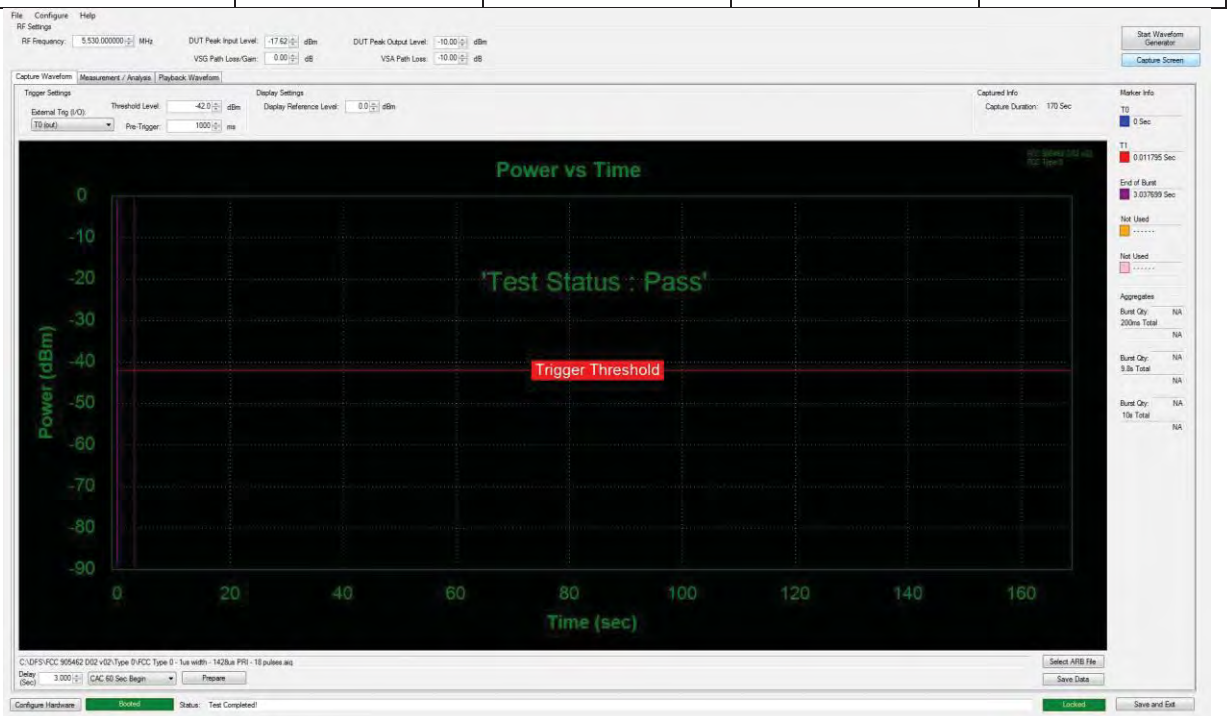


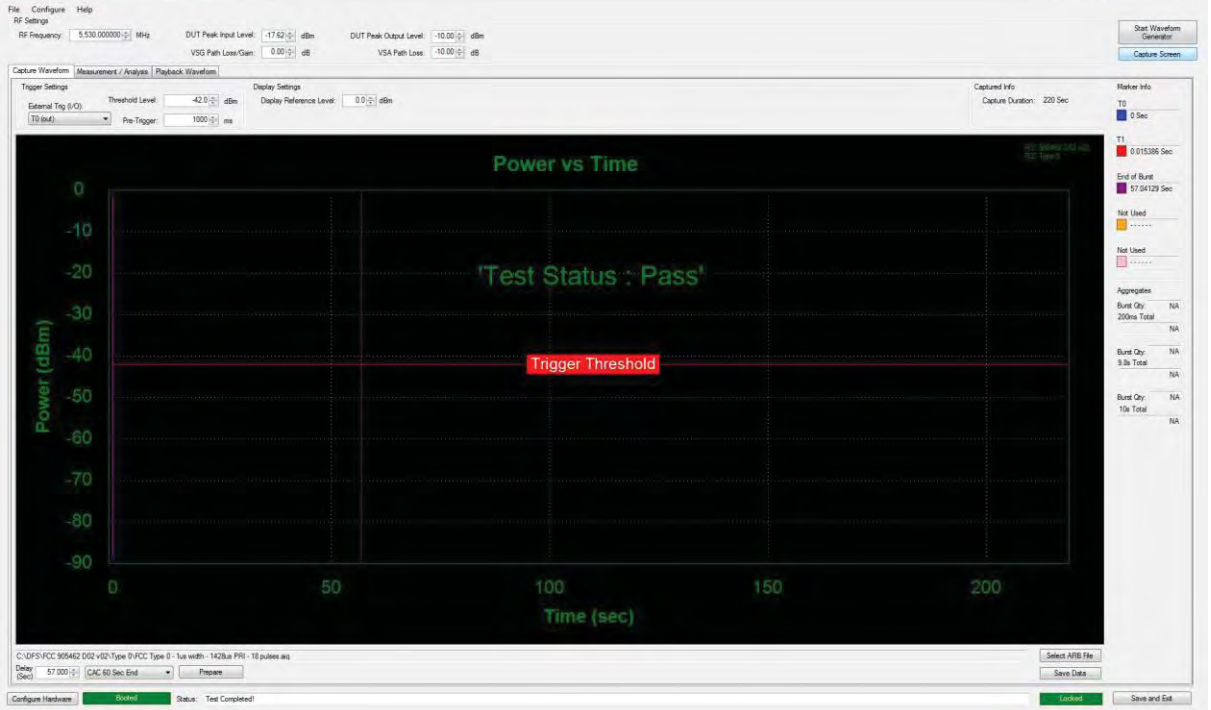
Channel: 5510 MHz; Bandwidth: 40 MHz; Interference level: -62 dBm				
Time of injection (s)	Radar test signal #	Pulse width (µs)	PRI (µs)	EUT transmits (Yes/No)
T1 + 3	0	1	1429	No
T1 + 57	0	1	1429	No



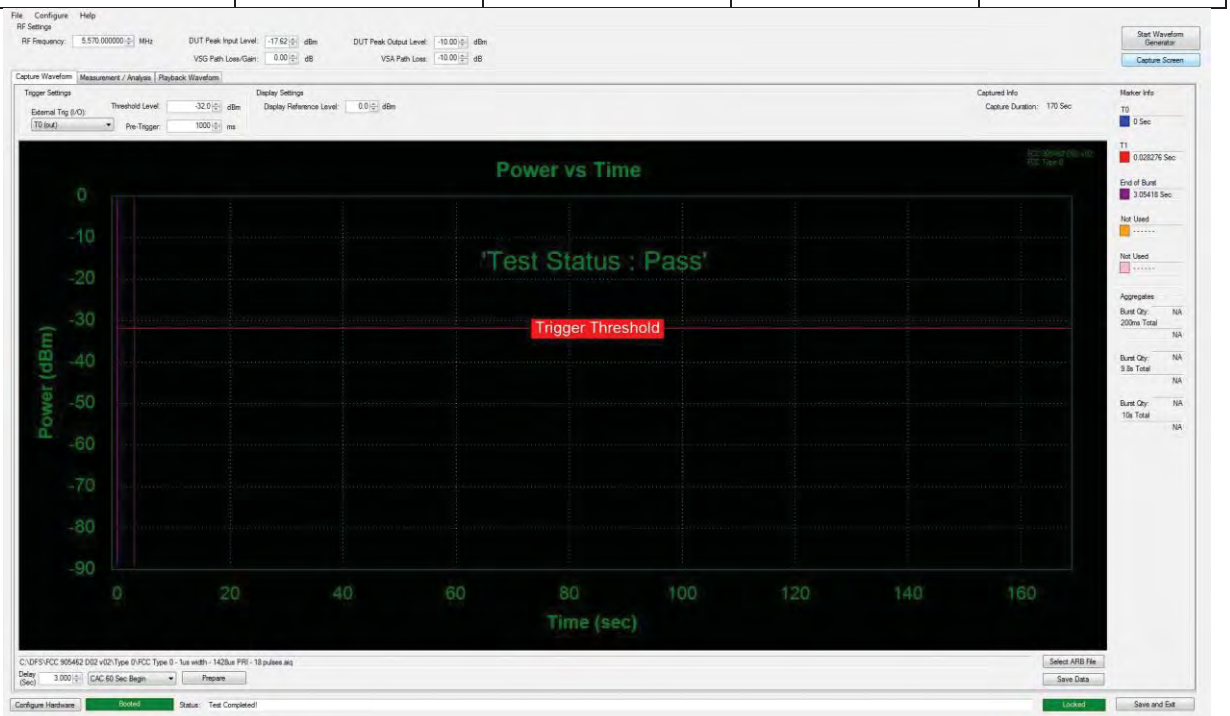


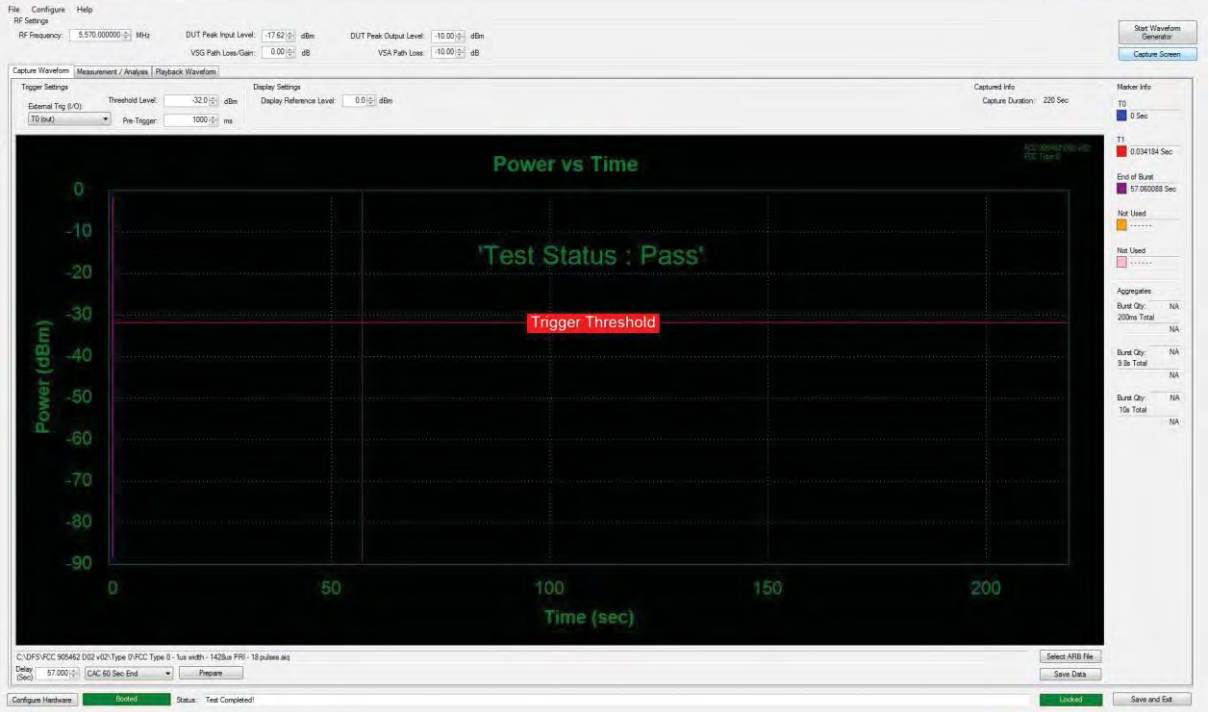
Channel: 5530 MHz; Bandwidth: 80 MHz; Interference level: -62 dBm				
Time of injection (s)	***Radar test signal #***	***Pulse width (µs)***	***PRI (µs)***	***EUT transmits (Yes/No)***
T1 + 3	0	1	1429	No
T1 + 57	0	1	1429	No





Channel: 5570 MHz; Bandwidth: 160 MHz; Interference level: -62 dBm				
Time of injection (s)	Radar test signal #	Pulse width (µs)	PRI (µs)	EUT transmits (Yes/No)
T1 + 3	0	1	1429	No
T1 + 57	0	1	1429	No





14 In-Service Monitoring

14.1 Definition

14.1.1 Channel Closing

The *Channel Closing* is defined as the process initiated by the U-NII device on an *Operating Channel* after a radar signal has been detected during the *In-Service Monitoring* on that channel.

The master device shall instruct all associated slave devices to stop transmitting on this channel, which they shall do within the *Channel Move Time*.

Slave devices with a Radar Interference Detection function, shall stop their own transmissions on an *Operating Channel* within the *Channel Move Time* upon detecting a radar signal within this channel.

The aggregate duration of all transmissions of the U-NII device on this channel during the *Channel Move Time* shall be limited to the *Channel Closing Transmission Time.* The aggregate duration of all transmissions shall not include quiet periods in-between transmissions.

For equipment having simultaneous transmissions on multiple (adjacent or non-adjacent) operating channels, only the channel(s) containing the frequency on which radar was detected is subject to the *Channel Closing* requirement. The equipment is allowed to continue transmissions on other *Operating Channels*.

14.1.2 Non-Occupancy Period

The *Non-Occupancy Period* is defined as the time during which the U-NII device shall not make any transmissions on a channel after a radar signal was detected on that channel.

For equipment having simultaneous transmissions on multiple (adjacent or non-adjacent) operating channels, only the channel(s) containing the frequency on which radar was detected is subject to the *Non-Occupancy Period* requirement. The equipment is allowed to continue transmissions on other *Operating Channels*.

After the *Non-Occupancy Period*, the channel needs to be identified again as an *Available Channel* before the U-NII device may start transmitting again on this channel.

14.2 Additional Test Parameters

EUT Test Channels, Ch_r.	WiFi 0 – 5500 MHz, 5510 MHz, 5530 MHz WiFi 1 – 5500 MHz, 5510 MHz, 5530 MHz, 5590 MHz
EUT Operating Channels / Bandwidths:	WiFi 0 – 20 MHz, 40 MHz, 80 MHz WiFi 1 – 20 MHz, 40 MHz, 80 MHz, 160 MHz
Master Uniform Spreading:	Disabled

Test Limits

The *Channel Move Time* shall not exceed the limit defined in table 4.

The *Channel Closing Transmission Time* shall not exceed the limit defined in table 4.

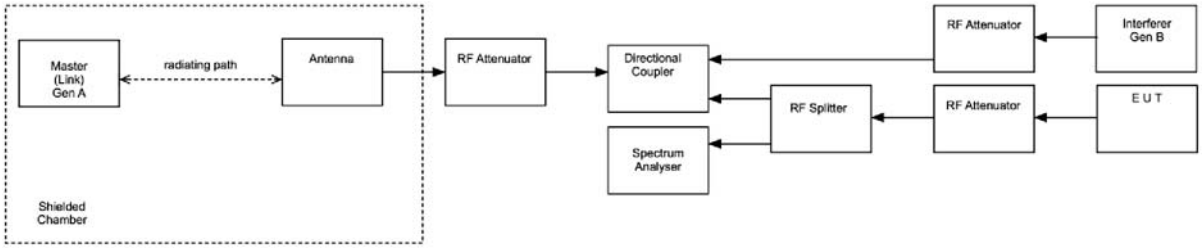
The *Non-Occupancy Period* shall not be less than the value defined in table 4.

14.3 Test Method

The EUT channel for both data and control signals, Ch_r, was selected, then transmissions to the paired device commenced. The interferer (Gen B) was set to the same frequency, Ch_r, and a radar test signal of table 5 (to appear at the Master at the threshold level + 1dB) then muted. The spectrum analyser was set to time domain (zero span) with sufficient bandwidth to capture all intentional emissions from the EUT. The analyser was then synchronised to the switching of the interferer – the interferer (Gen B) level was unmuted for a single burst. Transmissions from the EUT continued to be observed for a further 30 min.

Note, the set-up of figure ii was required to test slave mode, where the master is not the EUT.

Figure ii Test Setup

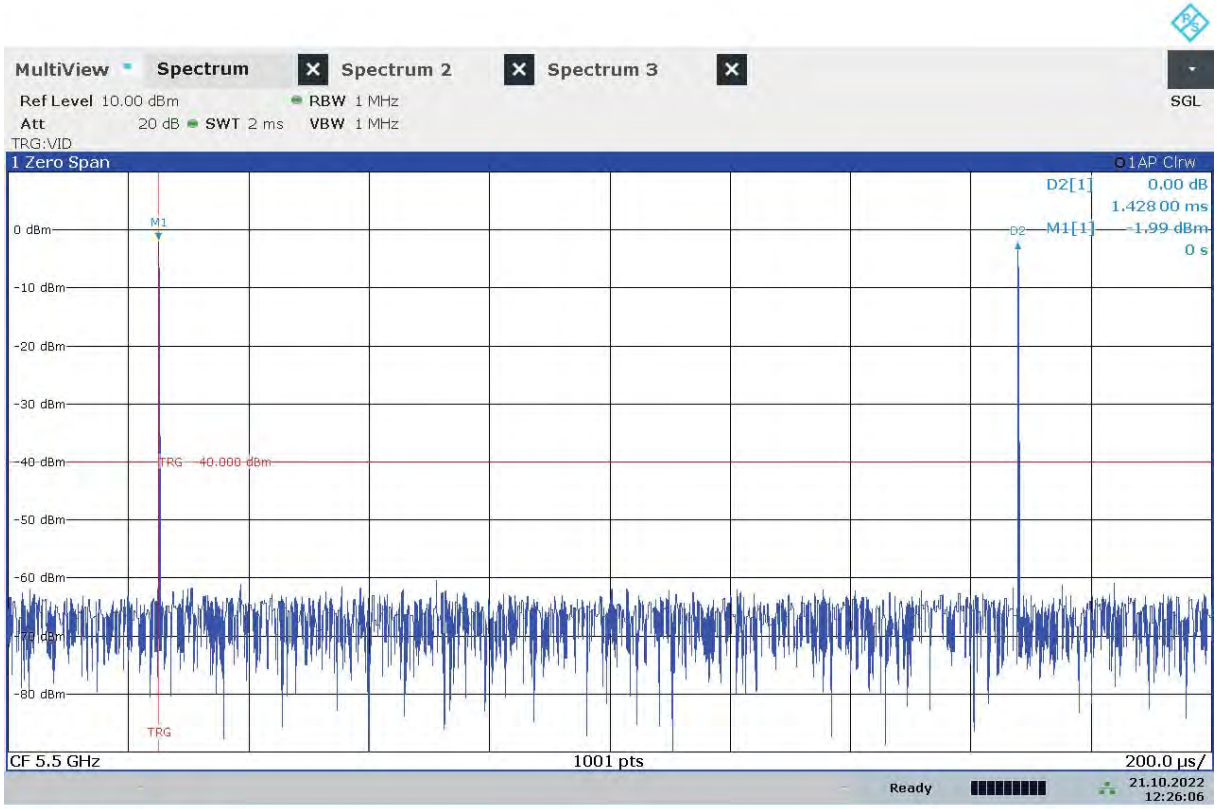


14.4 Test Equipment

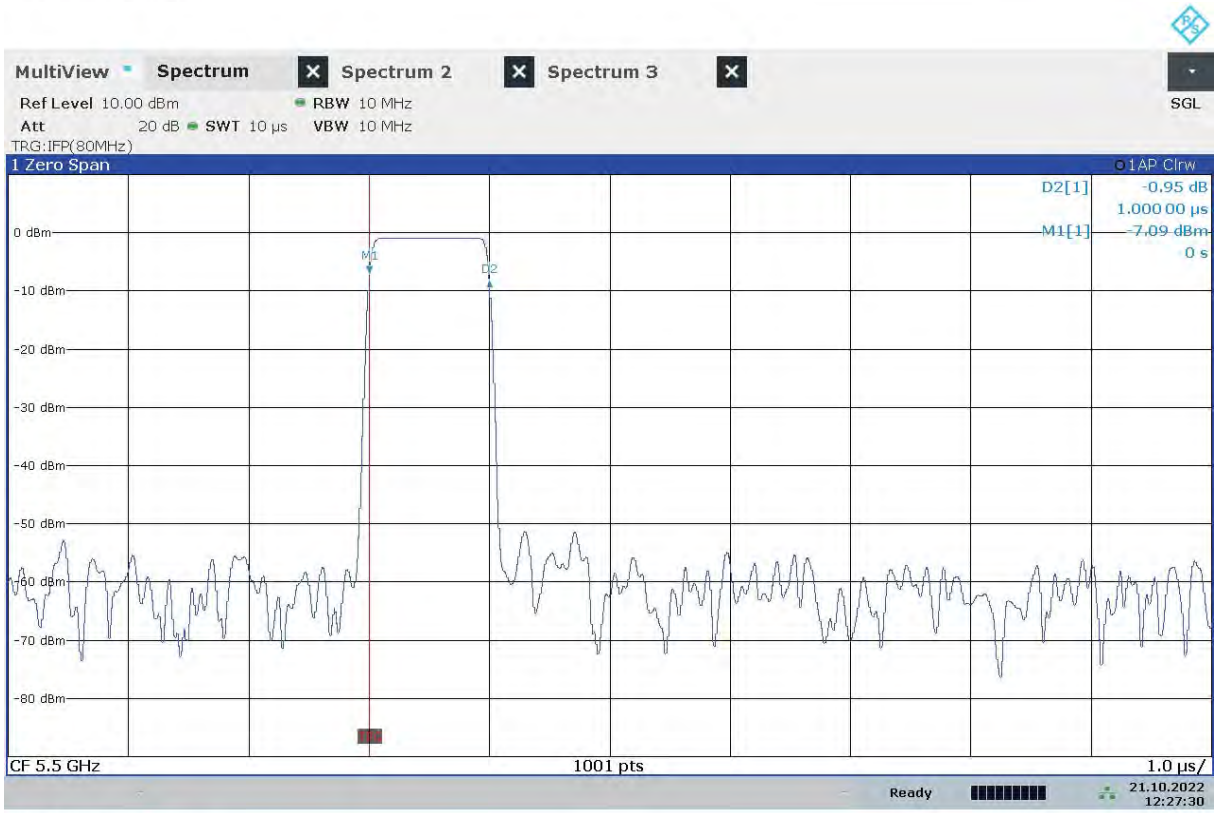
Equipment Description	*Manufacturer*	*Equipment Type*	*Element No*	*Last Cal Calibration*	*Calibration Period*	*Due For Calibration*
Spectrum Analyser	R&S	FSU46	REF910	2021-12-22	12	2022-12-22
Spectrum Analyser	R&S	FSW 43	U728	2022-04-26	12	2023-04-26
1-18GHz Horn	EMCO	3115	L139	2022-07-01	24	2024-07-01
1-18GHz Horn	EMCO	3115	U223	2021-12-13	24	2023-12-13
Radio Chamber - PP	Rainford EMC	ATS	REF940	2021-11-06	24	2023-11-06
Signal Generator	R&S	SMW200A	111178*	Radiated level calibrated in use		

* Denotes Serial Number of Loan test equipment

14.5 Test Results – Wi Fi 0

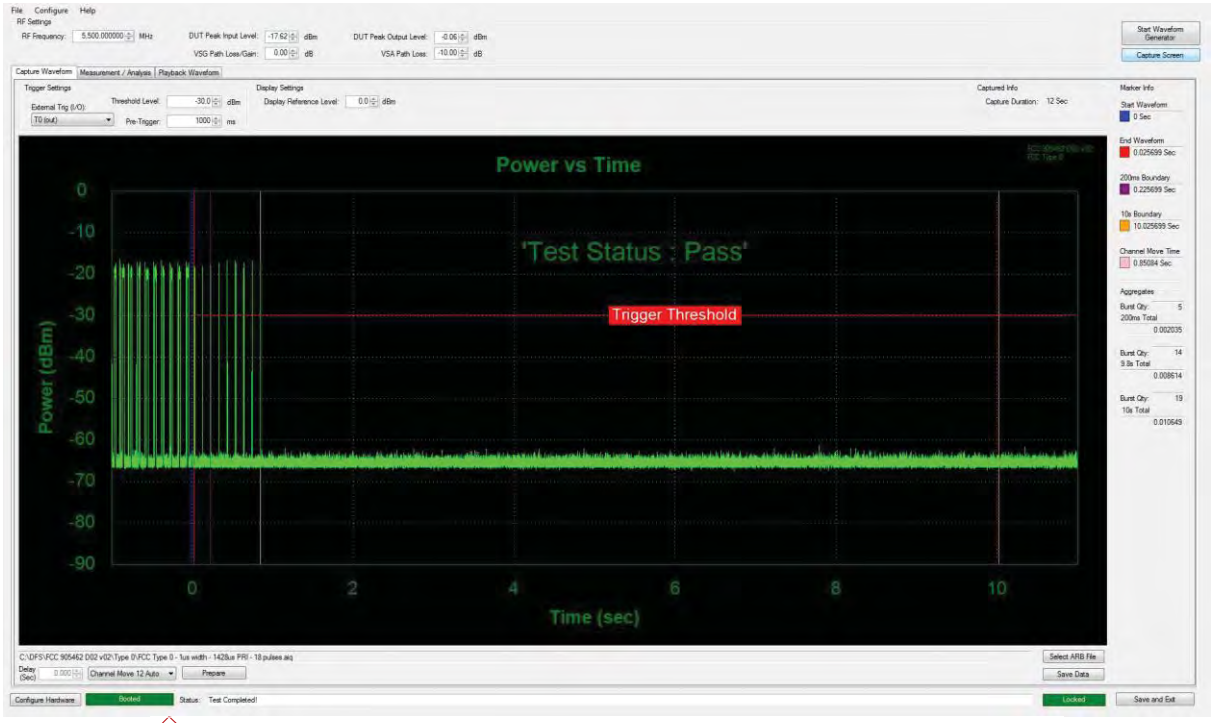


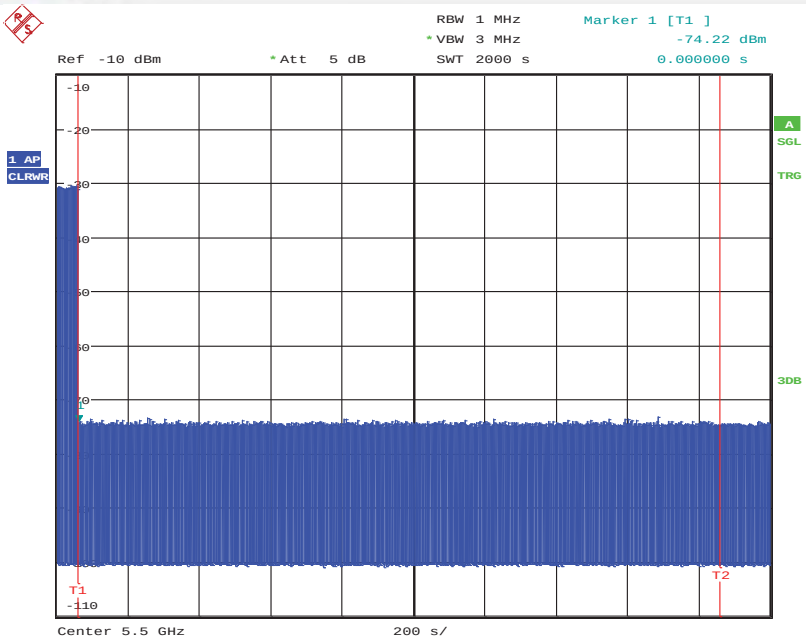
12:26:06 21.10.2022



12:27:30 21.10.2022

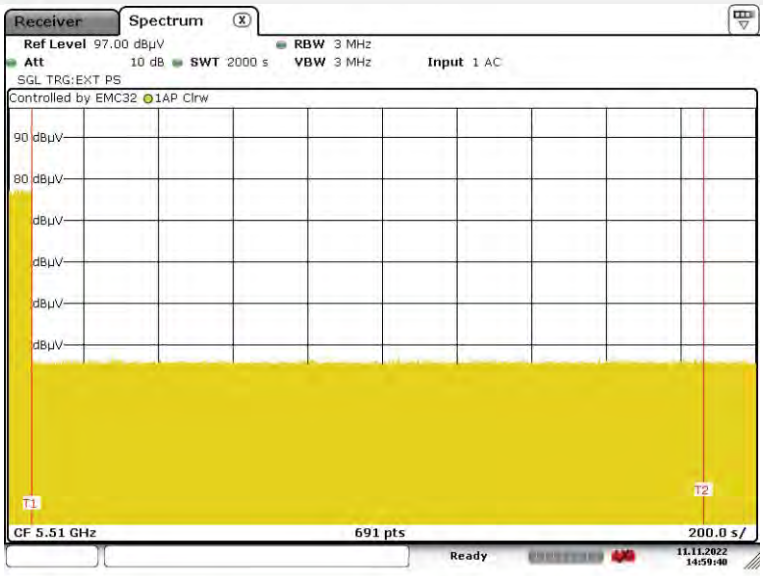
WiFi 0 ; Channel Bandwidth: 20 MHz					
Channel (MHz)	***Interference level (dBm)***	***Channel move time (s)***	***Channel Closing Transmission Time (s)***	***Transmissions during non-occupancy period***	***Result***
5500	-63	0.85084	0.010649	None	PASS





Date: 10.JAN.2003 23:52:47

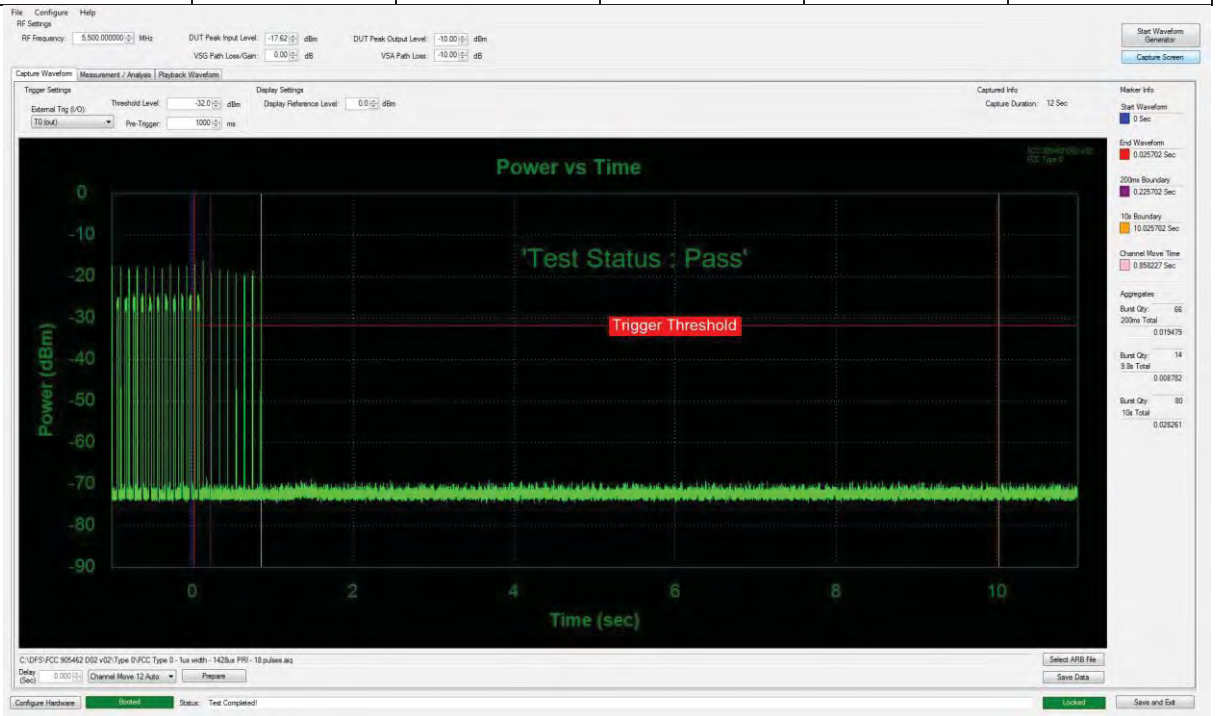
WiFi 0 ; Channel Bandwidth: 40 MHz					
Channel (MHz)	***Interference level (dBm)***	***Channel move time (s)***	***Channel Closing Transmission Time (s)***	***Transmissions during non-occupancy period***	***Result***
5510	-63	0.933483	0.026624	None	PASS

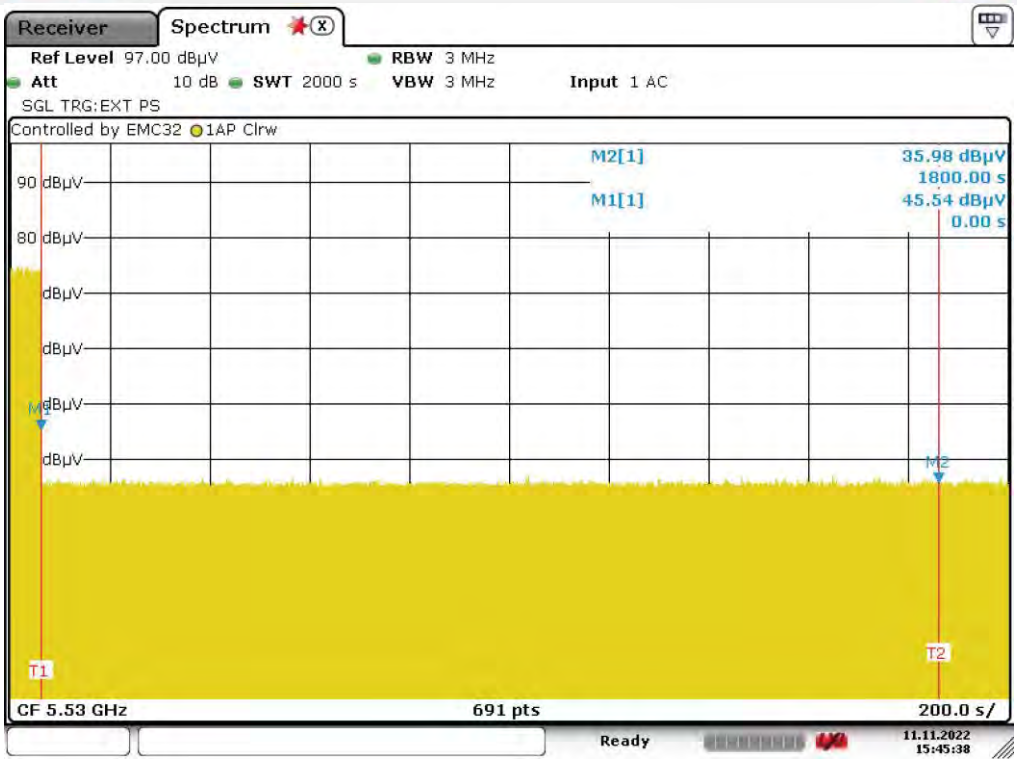


Element

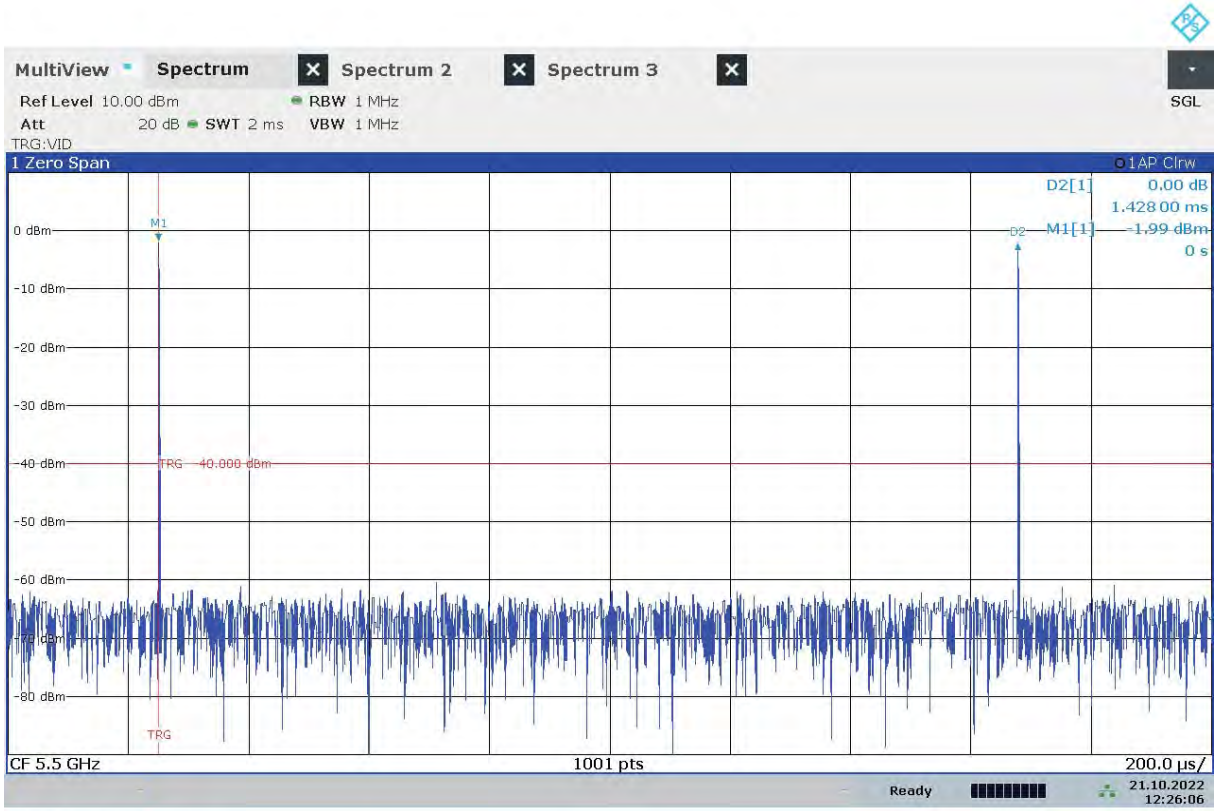
Date: 11.NOV.2022 14:59:40

WiFi 0 ; Channel Bandwidth: 80 MHz					
Channel (MHz)	***Interference level (dBm)***	***Channel move time (s)***	***Channel Closing Transmission Time (s)***	***Transmissions during non-occupancy period***	***Result***
5530	-63	0.858227	0.02861	None	PASS

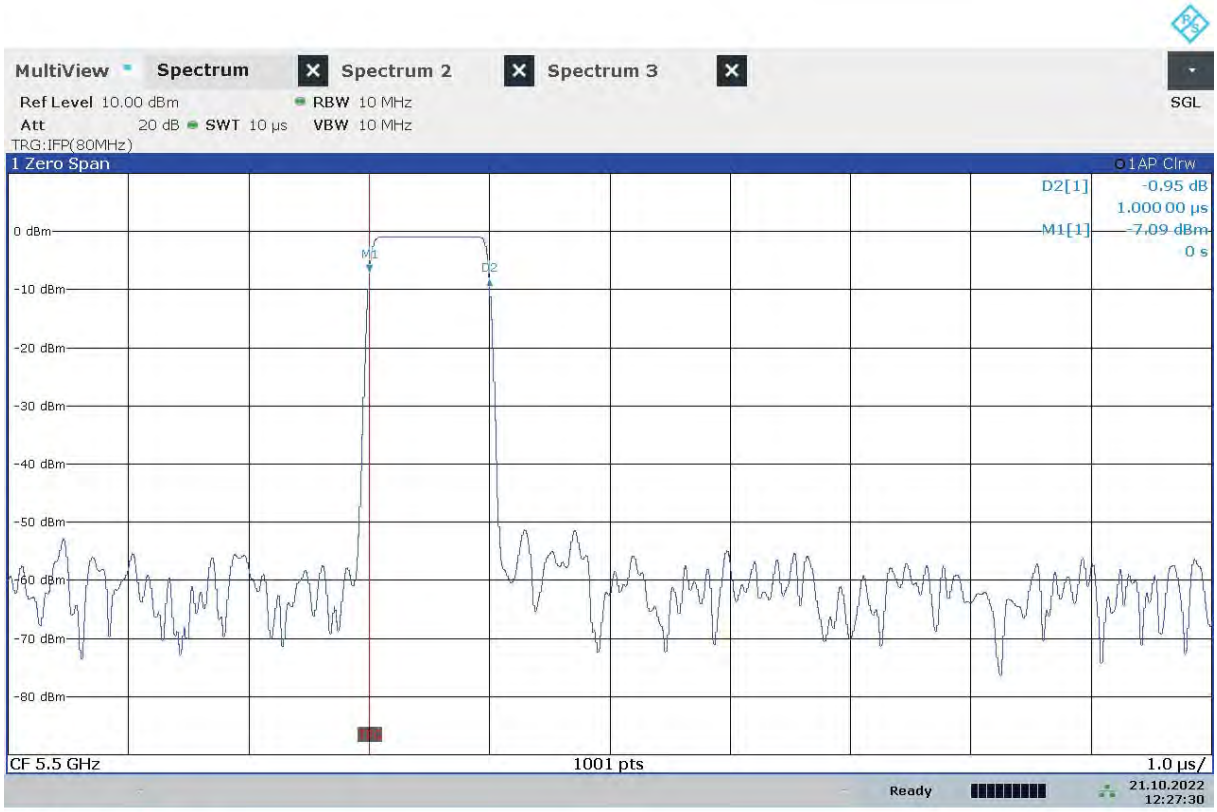




14.6 Test Results – Wi Fi 1

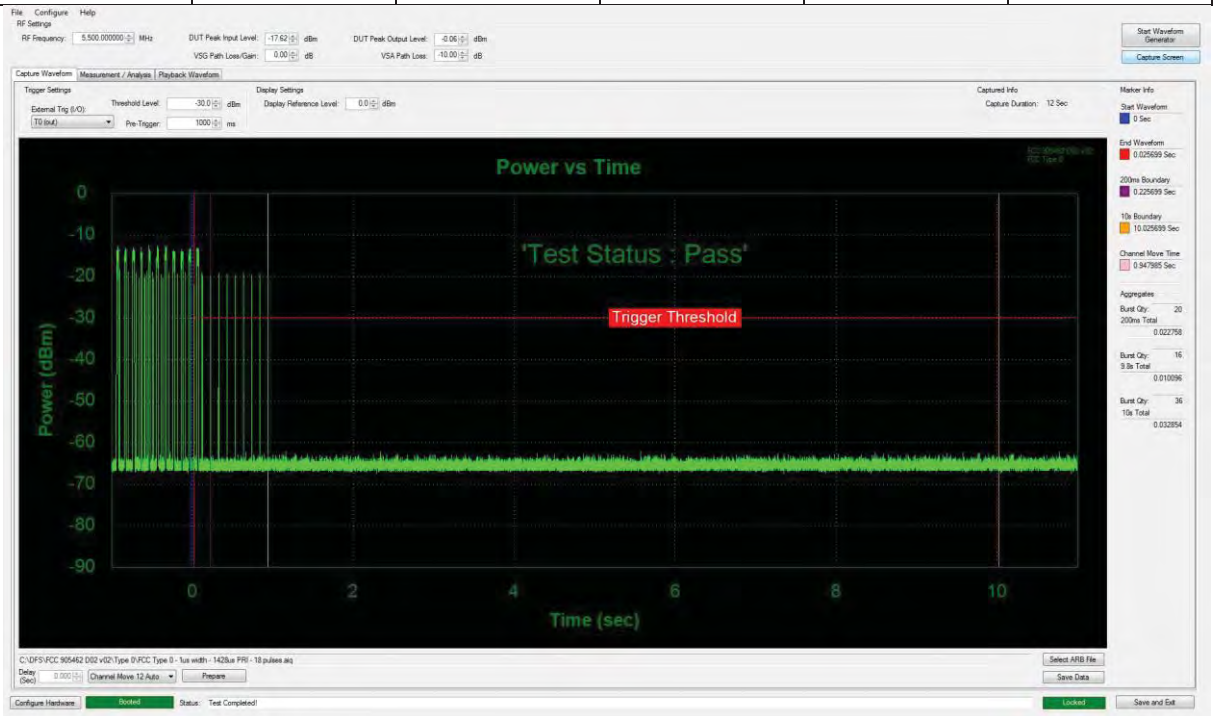


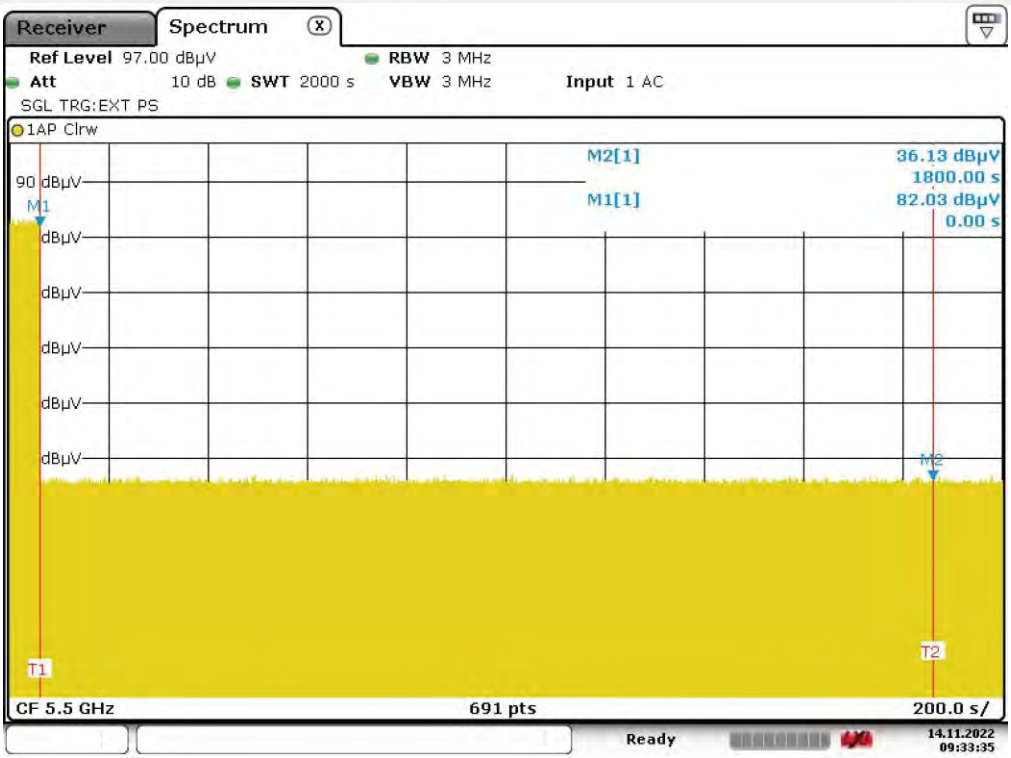
12:26:06 21.10.2022



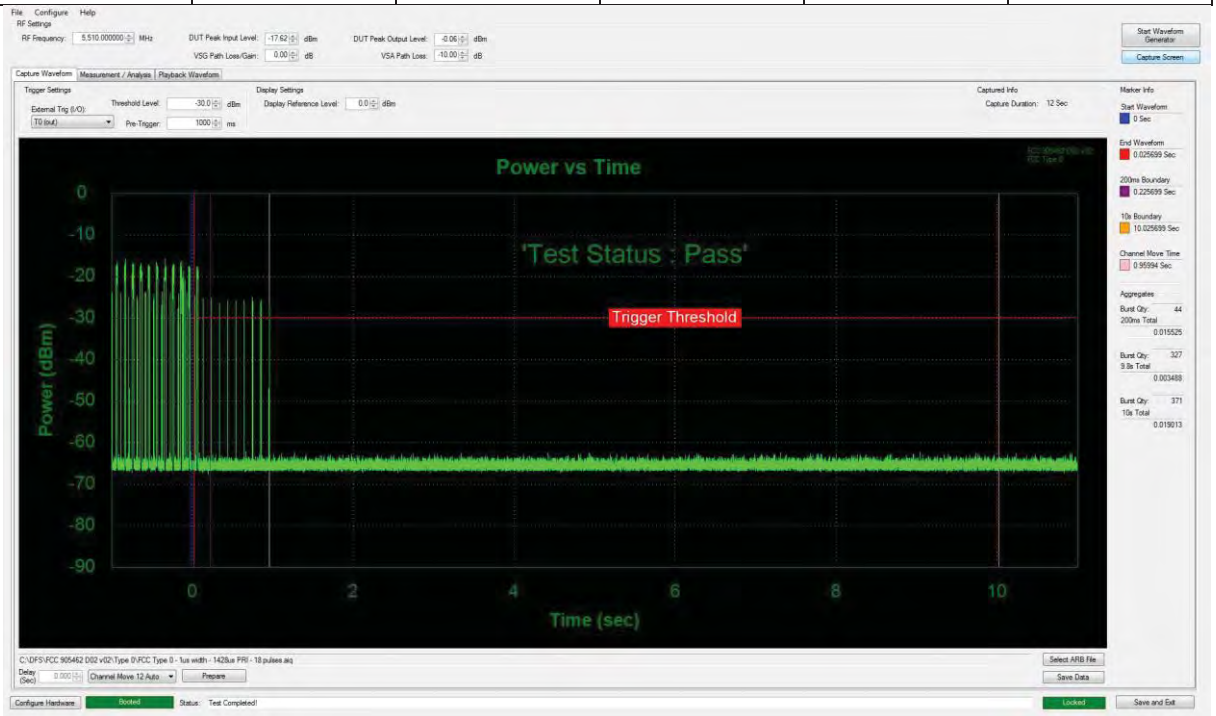
12:27:30 21.10.2022

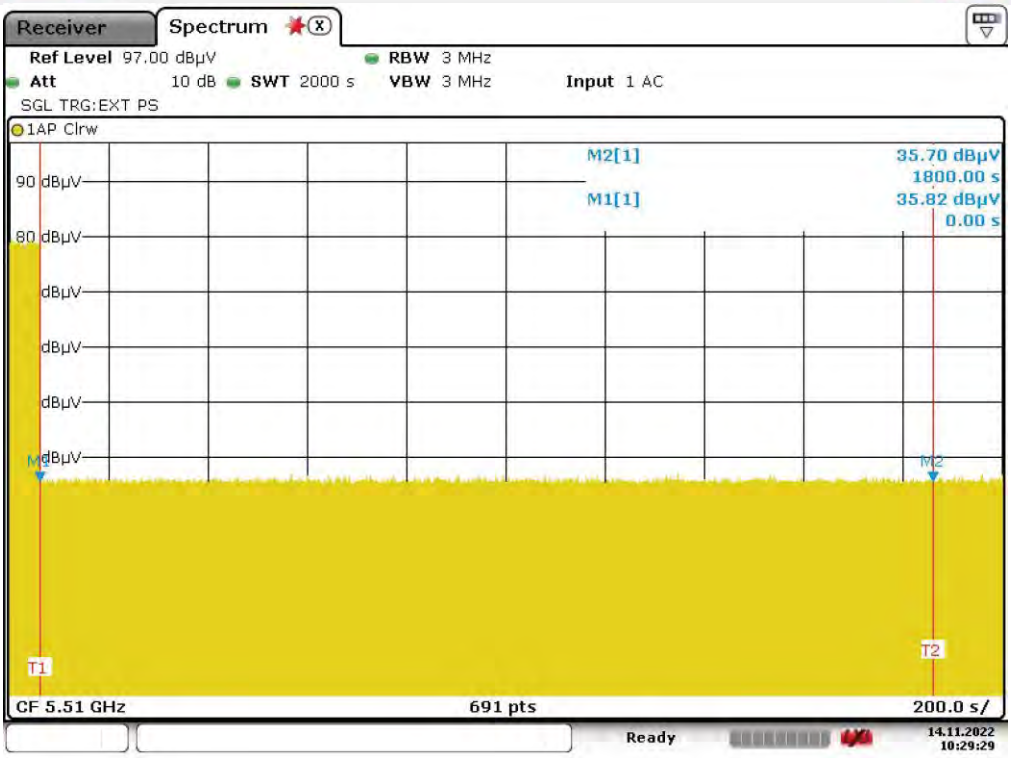
WiFi 1 ; Channel Bandwidth: 20 MHz					
Channel (MHz)	***Interference level (dBm)***	***Channel move time (s)***	***Channel Closing Transmission Time (s)***	***Transmissions during non-occupancy period***	***Result***
5500	-63	0.947985	0.032854	None	PASS



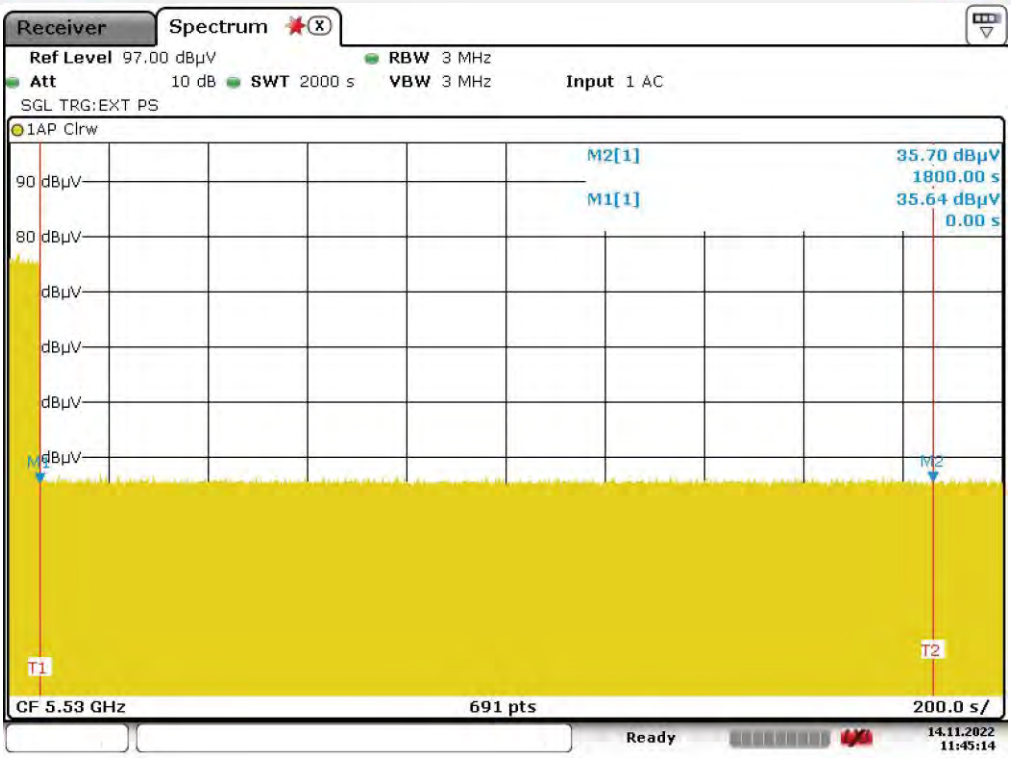


WiFi 1 ; Channel Bandwidth: 40 MHz					
Channel (MHz)	***Interference level (dBm)***	***Channel move time (s)***	***Channel Closing Transmission Time (s)***	***Transmissions during non-occupancy period***	***Result***
5510	-63			None	PASS

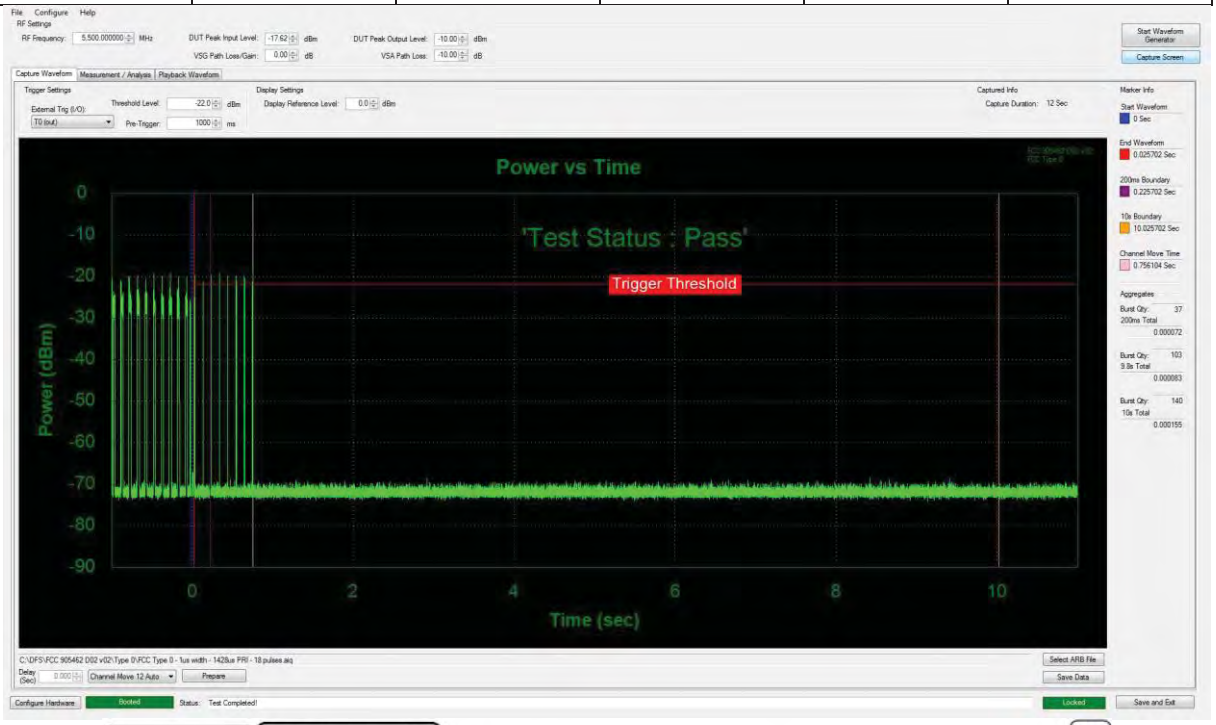


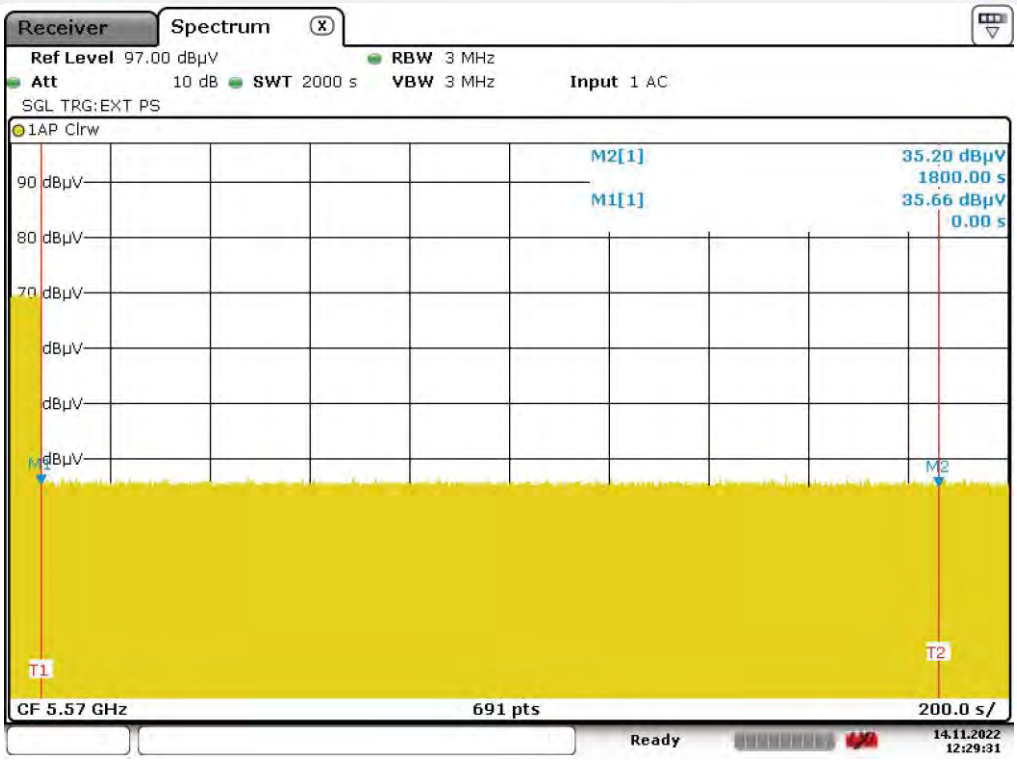


WiFi 1 ; Channel Bandwidth: 80 MHz					
Channel (MHz)	***Interference level (dBm)***	***Channel move time (s)***	***Channel Closing Transmission Time (s)***	***Transmissions during non-occupancy period***	***Result***
5530	-63	0.808463	0.000462	None	PASS



WiFi 1 ; Channel Bandwidth: 160 MHz					
Channel (MHz)	***Interference level (dBm)***	***Channel move time (s)***	***Channel Closing Transmission Time (s)***	***Transmissions during non-occupancy period***	***Result***
5570	-63	0.756104	0.000155	None	PASS





15 Statistical Performance Check

15.1 Definition

The *In-Service Monitoring* is defined as the process by which a U-NII device monitors each *Operating Channel* for the presence of radar signals.

15.2 Additional Test Parameters

EUT Test Channels, Ch_r.	WiFi 0 – 5500 MHz, 5510 MHz, 5530 MHz WiFi 1 – 5500 MHz, 5510 MHz, 5530 MHz, 5590 MHz
EUT Operating Channels / Bandwidths:	WiFi 0 – 20 MHz, 40 MHz, 80 MHz WiFi 1 – 20 MHz, 40 MHz, 80 MHz, 160 MHz

Test Limits

The *In-Service Monitoring* shall be used to monitor each *Operating Channel*.

The *In-Service-Monitoring* shall start immediately after the U-NII device has started transmissions on a channel.

During the *In-Service Monitoring*, the U-NII device shall be capable of detecting any of the radar test signals that fall within the ranges given by tables 5-7 with a level above the *Radar Detection Threshold* defined in table 3.

The minimum required detection probability associated with a given radar test signal is defined in tables 5-7.

15.3 Test Method

The EUT channel for both data and control signals, Ch_r, was selected, then transmissions to the paired device commenced. The interferer (Gen B) was set to the same frequency, Ch_r, and a radar test signal of table 5-7 (to appear at the Master at the threshold level + 1dB). The interferer was present for one burst only and the EUT was observed for radar detections.

15.4 Test Equipment

Equipment Description	*Manufacturer*	*Equipment Type*	*Element No*	*Last Cal Calibration*	*Calibration Period*	*Due For Calibration*
Spectrum Analyser	R&S	FSW 43	U728	2022-04-26	12	2023-04-26
1-18GHz Horn	EMCO	3115	L139	2022-07-01	24	2024-07-01
1-18GHz Horn	EMCO	3115	U223	2021-12-13	24	2023-12-13
Radio Chamber - PP	Rainford EMC	ATS	REF940	2021-11-06	24	2023-11-06
Signal Generator	R&S	SMW200A	111178*	Radiated level calibrated in use		

15.5 Test Results – WiFi 0

Summary *Channel 5500 MHz; Bandwidth 20 MHz*				
Radar Type	***Number of trials***	***% successful***	***Limit (%)***	***Result***
1	30	90.0	60	PASS
2	30	80.0	60	PASS
3	30	83.3	60	PASS
4	30	70.0	60	PASS
1-4	120	80.8	80	PASS
5	30	96.7	80	PASS
6	30	93.3	70	PASS

Channel 5500 MHz; Bandwidth 20 MHz						
Pulse Type	***1***	***2***	***3***	***4***	***5***	***6***
Test #	***Detected (Y/N)***					
1	N	Y	Y	N	Y	Y
2	Y	Y	N	Y	Y	Y
3	Y	N	Y	Y	Y	Y
4	N	N	N	Y	Y	Y
5	Y	Y	Y	N	Y	Y
6	Y	Y	Y	Y	Y	Y
7	Y	Y	N	Y	Y	Y
8	Y	Y	Y	N	Y	Y
9	Y	Y	Y	Y	Y	Y
10	Y	Y	Y	Y	Y	Y
11	Y	Y	N	Y	Y	Y
12	Y	Y	Y	Y	Y	Y
13	Y	Y	Y	Y	Y	N
14	Y	Y	Y	N	Y	Y
15	Y	Y	Y	Y	Y	Y
16	Y	Y	Y	Y	Y	Y
17	Y	Y	Y	Y	Y	N
18	Y	Y	Y	N	Y	Y
19	Y	Y	Y	N	Y	Y
20	Y	Y	Y	Y	Y	Y
21	Y	Y	Y	Y	Y	Y
22	Y	Y	Y	Y	Y	Y
23	Y	Y	Y	Y	Y	Y
24	Y	N	Y	Y	Y	Y
25	Y	N	Y	N	Y	Y
26	Y	Y	Y	Y	Y	Y
27	Y	Y	Y	Y	Y	Y
28	Y	N	Y	N	N	Y
29	Y	Y	Y	N	Y	Y
30	N	N	N	Y	Y	Y

Summary Channel 5510 MHz; Bandwidth 40 MHz				
Radar Type	**Number of trials**	**% successful**	**Limit (%)**	**Result**
1	30	100.0	60	PASS
2	30	90.0	60	PASS
3	30	70.0	60	PASS
4	30	73.3	60	PASS
1-4	120	83.3	80	PASS
5	30	83.3	80	PASS
6	30	96.7	70	PASS

Channel 5510 MHz; Bandwidth 40 MHz						
Pulse Type	**1**	**2**	**3**	**4**	**5**	**6**
Test #	**Detected (Y/N)**					
1	Y	Y	N	Y	N	Y
2	Y	Y	Y	Y	Y	Y
3	Y	Y	N	Y	Y	Y
4	Y	Y	N	N	Y	Y
5	Y	Y	Y	Y	Y	Y
6	Y	Y	Y	Y	Y	Y
7	Y	Y	Y	Y	Y	Y
8	Y	Y	Y	Y	Y	Y
9	Y	Y	Y	Y	Y	Y
10	Y	N	Y	N	Y	Y
11	Y	Y	Y	Y	Y	Y
12	Y	Y	Y	Y	Y	Y
13	Y	Y	Y	N	N	Y
14	Y	Y	N	Y	N	Y
15	Y	Y	N	Y	Y	Y
16	Y	Y	Y	N	Y	Y
17	Y	Y	Y	Y	N	Y
18	Y	Y	Y	Y	Y	Y
19	Y	Y	N	N	Y	Y
20	Y	Y	Y	N	Y	Y
21	Y	N	N	Y	Y	Y
22	Y	Y	Y	Y	Y	Y
23	Y	Y	Y	Y	Y	Y
24	Y	Y	Y	Y	Y	Y
25	Y	Y	N	Y	Y	Y
26	Y	Y	Y	Y	N	Y
27	Y	Y	Y	N	Y	Y
28	Y	N	Y	Y	Y	Y
29	Y	Y	Y	N	Y	N
30	Y	Y	N	Y	Y	Y

Summary Channel 5530 MHz; Bandwidth 80 MHz				
Radar Type	**Number of trials**	**% successful**	**Limit (%)**	**Result**
1	30	100.0	60	PASS
2	30	83.3	60	PASS
3	30	80.0	60	PASS
4	30	66.7	60	PASS
1-4	120	82.5	80	PASS
5	30	86.7	80	PASS
6	30	96.7	70	PASS

Channel 5530 MHz; Bandwidth 80 MHz						
Pulse Type	**1**	**2**	**3**	**4**	**5**	**6**
Test #	**Detected (Y/N)**					
1	Y	N	Y	N	Y	Y
2	Y	Y	Y	Y	Y	Y
3	Y	Y	Y	Y	Y	Y
4	Y	Y	Y	Y	Y	Y
5	Y	Y	Y	Y	Y	Y
6	Y	Y	N	Y	Y	Y
7	Y	Y	Y	Y	Y	Y
8	Y	Y	Y	N	Y	Y
9	Y	Y	N	Y	Y	Y
10	Y	Y	Y	Y	Y	Y
11	Y	Y	Y	Y	Y	Y
12	Y	Y	Y	Y	Y	Y
13	Y	Y	Y	Y	Y	N
14	Y	N	Y	Y	Y	Y
15	Y	N	Y	Y	Y	Y
16	Y	Y	Y	N	Y	Y
17	Y	Y	Y	Y	Y	Y
18	Y	Y	Y	N	Y	Y
19	Y	Y	N	N	Y	Y
20	Y	Y	Y	N	N	Y
21	Y	Y	Y	Y	N	Y
22	Y	Y	Y	Y	Y	Y
23	Y	Y	N	N	Y	Y
24	Y	Y	N	N	Y	Y
25	Y	Y	N	Y	Y	Y
26	Y	N	Y	Y	N	Y
27	Y	Y	Y	Y	N	Y
28	Y	Y	Y	N	Y	Y
29	Y	Y	Y	N	Y	Y
30	Y	N	Y	Y	Y	Y

15.6 Test Results – WiFi 1

Summary *Channel 5500 MHz; Bandwidth 20 MHz*				
Radar Type	***Number of trials***	***% successful***	***Limit (%)***	***Result***
1	30	96.7	60	PASS
2	30	80.0	60	PASS
3	30	80.0	60	PASS
4	30	80.0	60	PASS
1-4	120	84.2	80	PASS
5	30	93.3	80	PASS
6	30	80.0	70	PASS

Channel 5500 MHz; Bandwidth 20 MHz						
Pulse Type	***1***	***2***	***3***	***4***	***5***	***6***
Test #	***Detected (Y/N)***					
1	Y	N	N	Y	N	Y
2	Y	Y	Y	Y	Y	Y
3	Y	Y	Y	Y	Y	Y
4	Y	Y	Y	Y	Y	Y
5	Y	Y	Y	Y	Y	N
6	Y	Y	Y	Y	Y	Y
7	Y	Y	Y	N	Y	Y
8	Y	Y	Y	Y	Y	N
9	Y	Y	N	Y	Y	Y
10	Y	Y	Y	Y	Y	Y
11	Y	N	Y	Y	Y	Y
12	Y	Y	Y	Y	Y	N
13	Y	Y	Y	N	Y	N
14	Y	Y	Y	Y	Y	Y
15	Y	Y	Y	Y	Y	Y
16	Y	Y	Y	Y	Y	Y
17	N	Y	Y	N	Y	N
18	Y	Y	N	N	Y	Y
19	Y	Y	N	Y	Y	Y
20	Y	Y	Y	Y	Y	Y
21	Y	N	Y	Y	N	Y
22	Y	Y	Y	Y	Y	Y
23	Y	Y	Y	N	Y	Y
24	Y	N	Y	Y	Y	Y
25	Y	Y	N	Y	Y	Y
26	Y	N	Y	N	Y	Y
27	Y	Y	N	Y	Y	Y
28	Y	Y	Y	Y	Y	Y
29	Y	N	Y	Y	Y	N
30	Y	Y	Y	Y	Y	Y

Summary Channel 5510 MHz; Bandwidth 40 MHz				
Radar Type	**Number of trials**	**% successful**	**Limit (%)**	**Result**
1	30	100.0	60	PASS
2	30	80.0	60	PASS
3	30	83.3	60	PASS
4	30	80.0	60	PASS
1-4	N/A	85.8	80	PASS
5	30	86.7	80	PASS
6	30	96.7	70	PASS

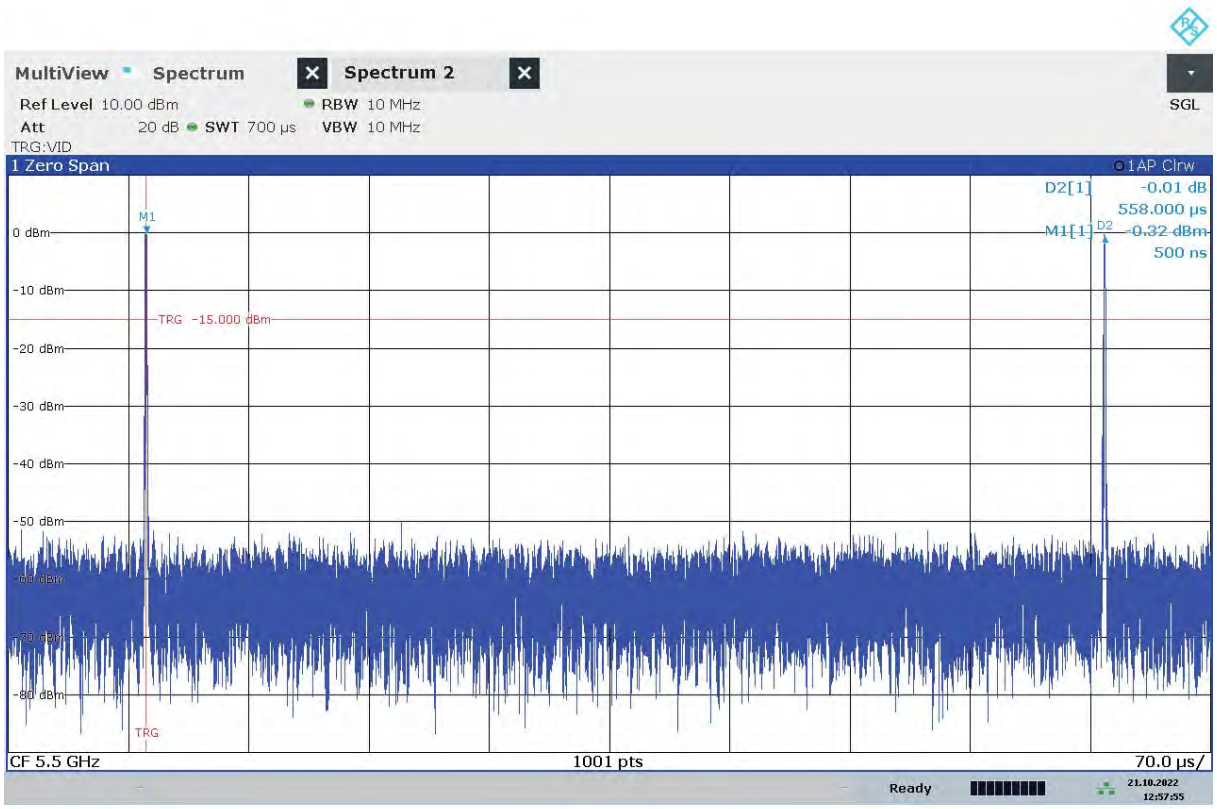
Channel 5510 MHz; Bandwidth 40 MHz						
Pulse Type	**1**	**2**	**3**	**4**	**5**	**6**
Test #	**Detected (Y/N)**					
1	Y	Y	N	N	Y	Y
2	Y	Y	N	Y	Y	Y
3	Y	Y	Y	Y	Y	Y
4	Y	Y	Y	Y	Y	Y
5	Y	Y	Y	Y	Y	Y
6	Y	Y	Y	Y	Y	Y
7	Y	Y	Y	Y	Y	Y
8	Y	Y	N	N	N	Y
9	Y	Y	Y	Y	Y	Y
10	Y	Y	Y	N	Y	Y
11	Y	Y	Y	Y	N	Y
12	Y	Y	Y	N	Y	Y
13	Y	Y	Y	Y	Y	Y
14	Y	N	Y	Y	N	Y
15	Y	Y	Y	Y	Y	Y
16	Y	Y	N	Y	Y	Y
17	Y	Y	Y	Y	Y	Y
18	Y	Y	Y	Y	Y	Y
19	Y	N	Y	Y	Y	Y
20	Y	Y	Y	Y	Y	Y
21	Y	N	Y	N	Y	Y
22	Y	N	Y	Y	Y	Y
23	Y	Y	Y	Y	Y	N
24	Y	Y	Y	Y	Y	Y
25	Y	Y	Y	Y	Y	Y
26	Y	Y	Y	Y	N	Y
27	Y	Y	N	Y	Y	Y
28	Y	N	Y	N	Y	Y
29	Y	Y	Y	Y	Y	Y
30	Y	N	Y	Y	Y	Y

Summary Channel 5530 MHz; Bandwidth 80 MHz				
Radar Type	**Number of trials**	**% successful**	**Limit (%)**	**Result**
1	30	93.3	60	PASS
2	30	63.3	60	PASS
3	30	80.0	60	PASS
4	30	76.7	60	PASS
1-4	120	78.3	80	PASS
5	30	90.0	80	PASS
6	30	100.0	70	PASS

Channel 5530 MHz; Bandwidth 80 MHz						
Pulse Type	**1**	**2**	**3**	**4**	**5**	**6**
Test #	**Detected (Y/N)**					
1	N	N	Y	N	N	Y
2	Y	N	Y	N	Y	Y
3	N	N	Y	Y	Y	Y
4	Y	N	Y	Y	Y	Y
5	Y	Y	Y	Y	Y	Y
6	Y	N	Y	N	N	Y
7	Y	Y	Y	Y	Y	Y
8	Y	Y	N	Y	Y	Y
9	Y	Y	N	Y	Y	Y
10	Y	Y	Y	Y	Y	Y
11	Y	N	Y	Y	N	Y
12	Y	N	Y	Y	Y	Y
13	Y	Y	Y	Y	Y	Y
14	Y	N	Y	Y	Y	Y
15	Y	Y	Y	Y	Y	Y
16	Y	Y	Y	Y	Y	Y
17	Y	Y	Y	Y	Y	Y
18	Y	Y	N	Y	Y	Y
19	Y	Y	Y	Y	Y	Y
20	Y	Y	Y	Y	Y	Y
21	Y	N	Y	Y	Y	Y
22	Y	Y	N	N	Y	Y
23	Y	Y	N	N	Y	Y
24	Y	Y	Y	N	Y	Y
25	Y	Y	N	Y	Y	Y
26	Y	N	Y	Y	Y	Y
27	Y	N	Y	Y	Y	Y
28	Y	Y	Y	Y	Y	Y
29	Y	Y	Y	Y	Y	Y
30	Y	Y	Y	N	Y	Y

Summary Channel 5590 MHz; Bandwidth 160 MHz				
Radar Type	**Number of trials**	**% successful**	**Limit (%)**	**Result**
1	30	96.7	60	PASS
2	30	90.0	60	PASS
3	30	70.0	60	PASS
4	30	86.7	60	PASS
1-4	N/A	85.9	80	PASS
5	30	80.0	80	PASS
6	30	100.0	70	PASS

Channel 5590 MHz; Bandwidth 160 MHz						
Pulse Type	**1**	**2**	**3**	**4**	**5**	**6**
Test #	**Detected (Y/N)**					
1	Y	Y	Y	N	N	Y
2	Y	Y	N	Y	N	Y
3	Y	Y	N	Y	Y	Y
4	Y	Y	Y	N	Y	Y
5	Y	Y	Y	N	Y	Y
6	Y	Y	Y	Y	Y	Y
7	Y	Y	N	Y	Y	Y
8	Y	Y	Y	Y	Y	Y
9	Y	Y	Y	Y	Y	Y
10	Y	Y	N	Y	Y	Y
11	Y	Y	Y	Y	N	Y
12	Y	Y	Y	Y	Y	Y
13	Y	N	N	Y	Y	Y
14	Y	N	Y	Y	N	Y
15	Y	Y	N	Y	Y	Y
16	Y	Y	Y	Y	Y	Y
17	Y	Y	Y	Y	Y	Y
18	Y	Y	Y	Y	Y	Y
19	Y	Y	N	Y	Y	Y
20	Y	Y	Y	Y	Y	Y
21	Y	N	Y	Y	Y	Y
22	Y	Y	Y	Y	N	Y
23	Y	Y	N	Y	Y	Y
24	Y	Y	Y	Y	Y	Y
25	Y	Y	Y	Y	Y	Y
26	Y	Y	Y	Y	Y	Y
27	N	Y	Y	Y	Y	Y
28	Y	Y	Y	Y	Y	Y
29	Y	Y	N	Y	Y	Y



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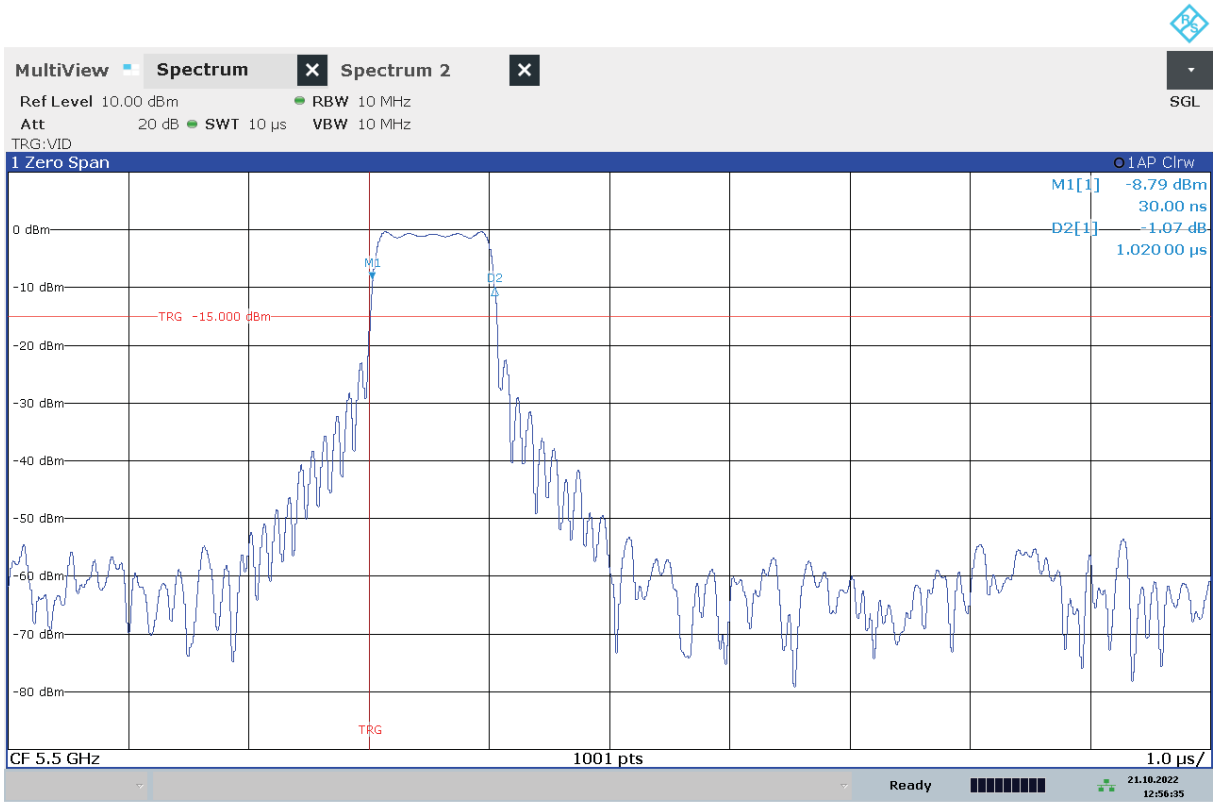

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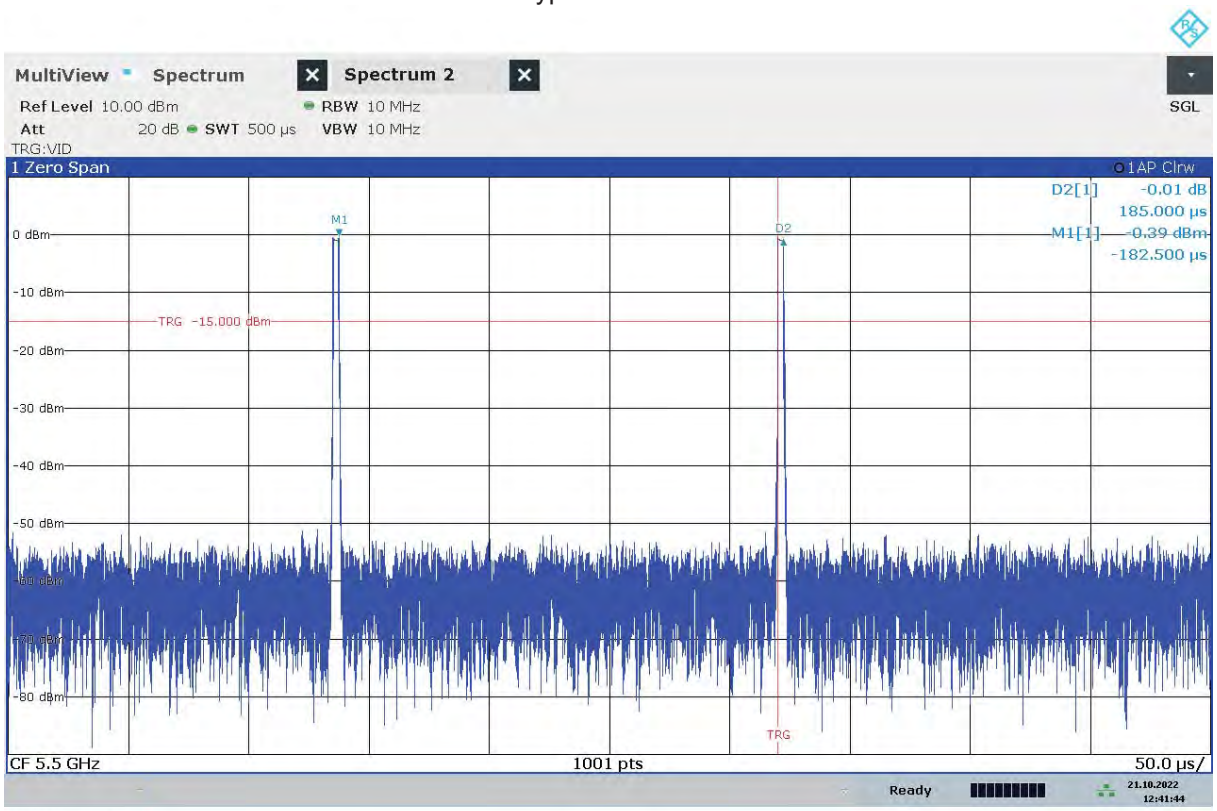
Type 1 Pulses			
Test #	***Number of pulses***	***Pulse width (µs)***	***PRI (µs)***
1	95	1	558
2	67	1	798
3	76	1	698
4	83	1	638
5	78	1	678
6	70	1	758
7	57	1	938
8	68	1	778
9	65	1	818
10	92	1	578
11	61	1	878
12	63	1	838
13	98	1	538
14	62	1	858
15	59	1	898
16	88	1	600
17	21	1	2562
18	18	1	2972
19	46	1	1169
20	20	1	2711
21	30	1	1784
22	25	1	2114
23	52	1	1018
24	24	1	2269
25	56	1	942
26	26	1	2092
27	29	1	1827
28	49	1	1092
29	19	1	2912
30	20	1	2724

Radar Type 2 Pulse – Test 1



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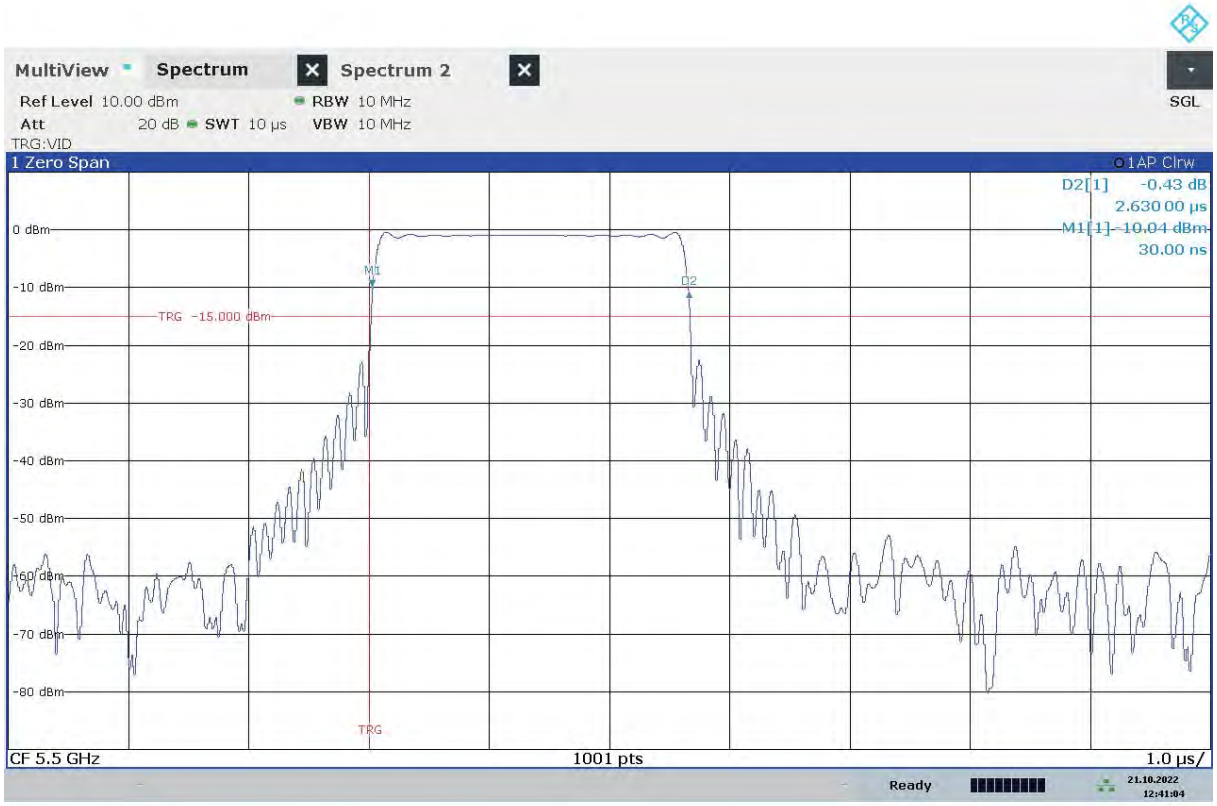

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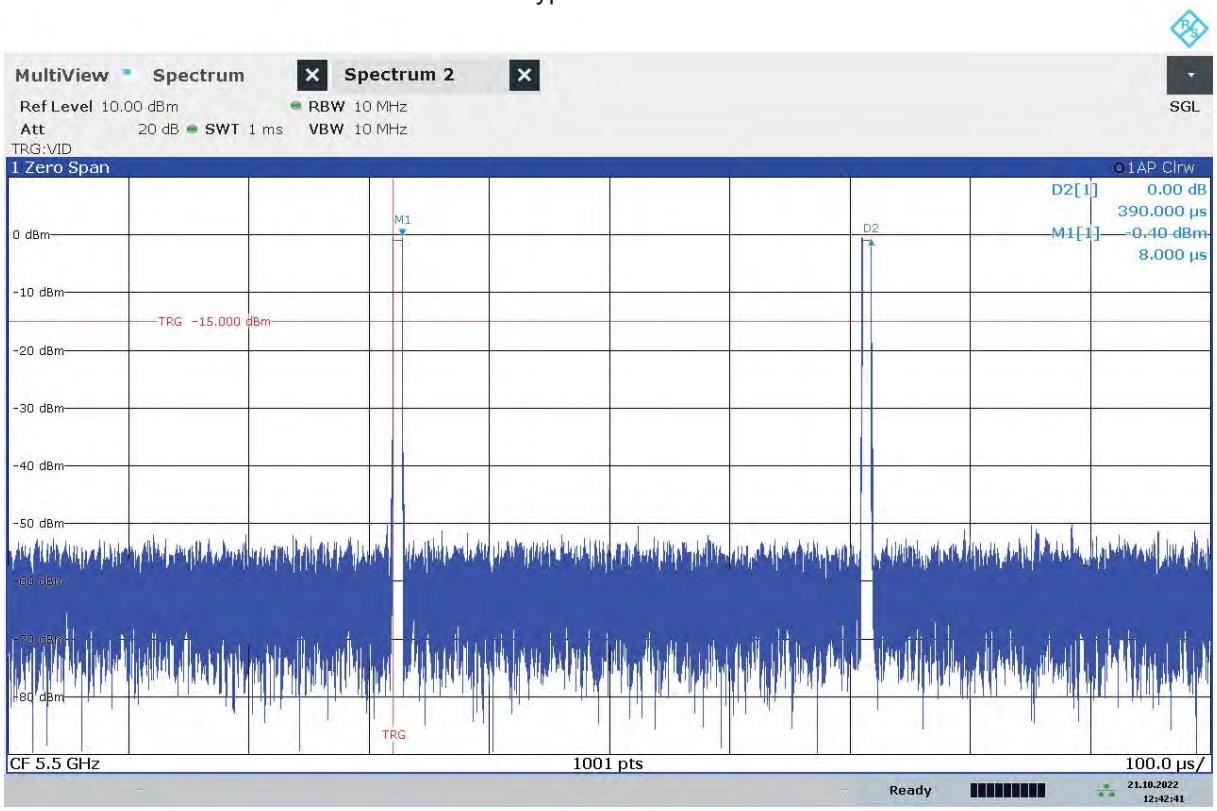
Type 2 Pulses			
Test #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**
1	28	2.6	185
2	27	1.9	181
3	24	4.5	188
4	28	2.9	156
5	29	1.6	228
6	23	4.9	178
7	26	1	208
8	25	1.9	168
9	24	2.6	216
10	29	2.5	174
11	26	2.8	224
12	28	3.1	229
13	29	1	210
14	24	1.3	201
15	28	4.2	170
16	24	3.3	167
17	23	2.5	171
18	23	3.1	179
19	27	3.6	151
20	27	4.2	172
21	27	2.8	163
22	28	3.2	216
23	27	1.6	150
24	28	3.5	160
25	25	4.2	158
26	26	1.2	203
27	27	1.2	163
28	28	1.1	192
29	26	4	210
30	24	2.9	220

Radar Type 3 Pulse – Test 1



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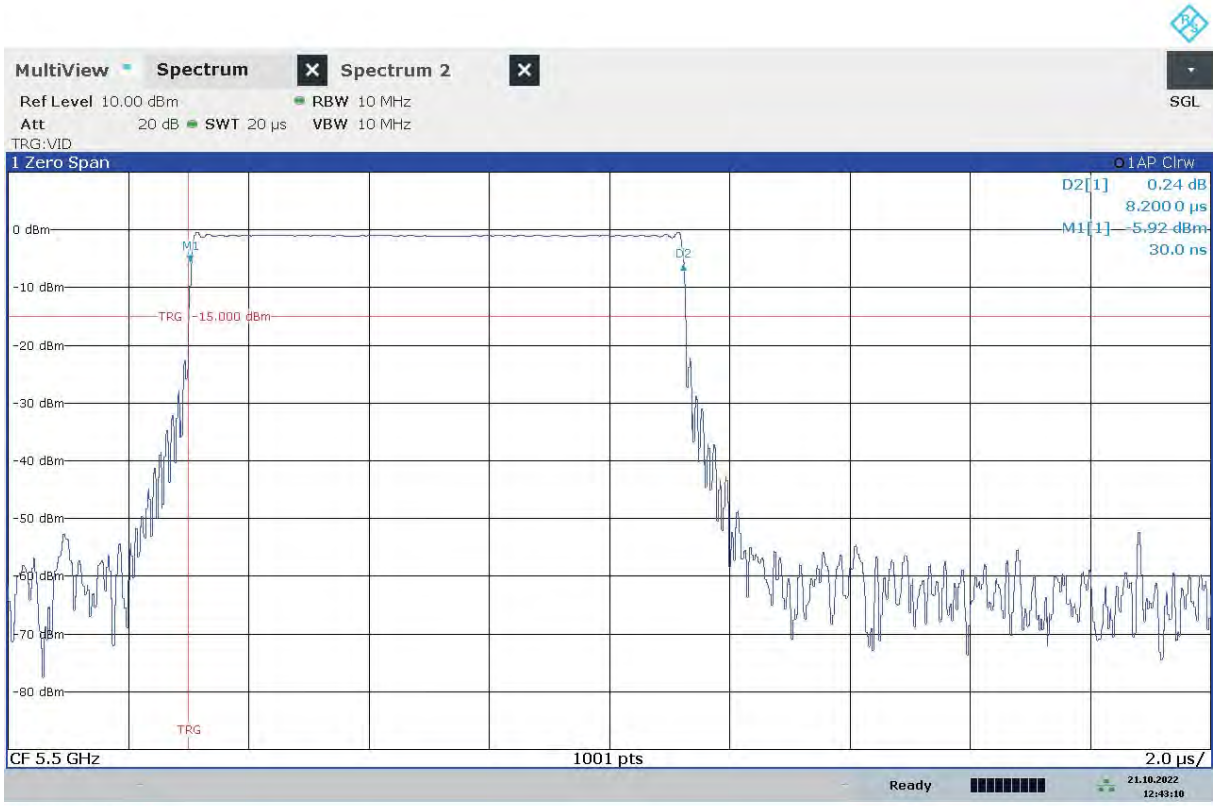

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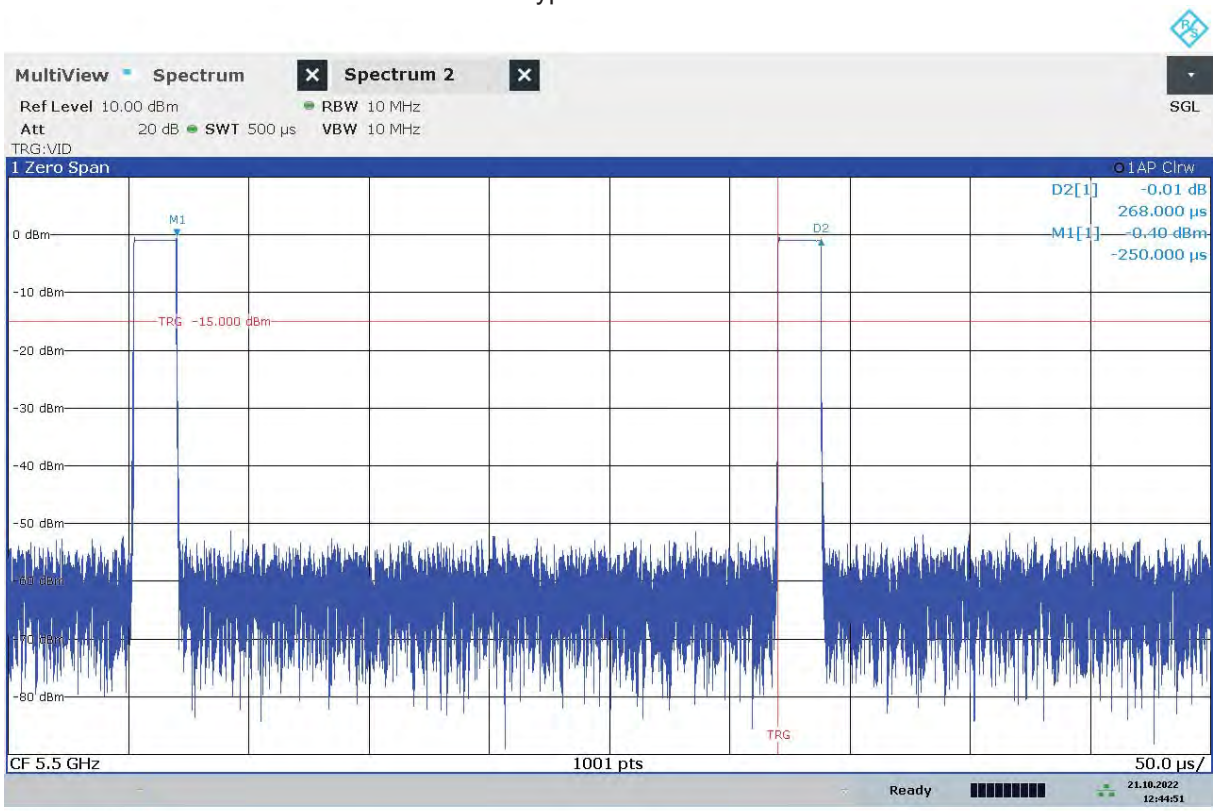
Type 3 Pulses			
Test #	**Number of Pulses per Burst**	**Pulse Width (µsec)**	**PRI (µs)**
1	16	8.2	390
2	17	6.1	370
3	17	7.5	477
4	16	8	370
5	16	9	312
6	17	6.9	310
7	17	9.9	214
8	16	8.8	412
9	17	6.4	224
10	16	6.8	445
11	18	9.2	466
12	18	9.5	485
13	17	7.9	212
14	16	8.8	378
15	17	8.2	293
16	16	9.3	333
17	17	7.5	220
18	17	8.5	496
19	17	8.2	272
20	17	8.8	491
21	17	6.2	321
22	18	6.9	318
23	17	6.4	256
24	16	9.6	437
25	17	8.6	346
26	16	7.8	374
27	17	8.8	222
28	17	9.8	328
29	18	7.7	316
30	17	6.5	250

Radar Type 4 Pulse – Test 1



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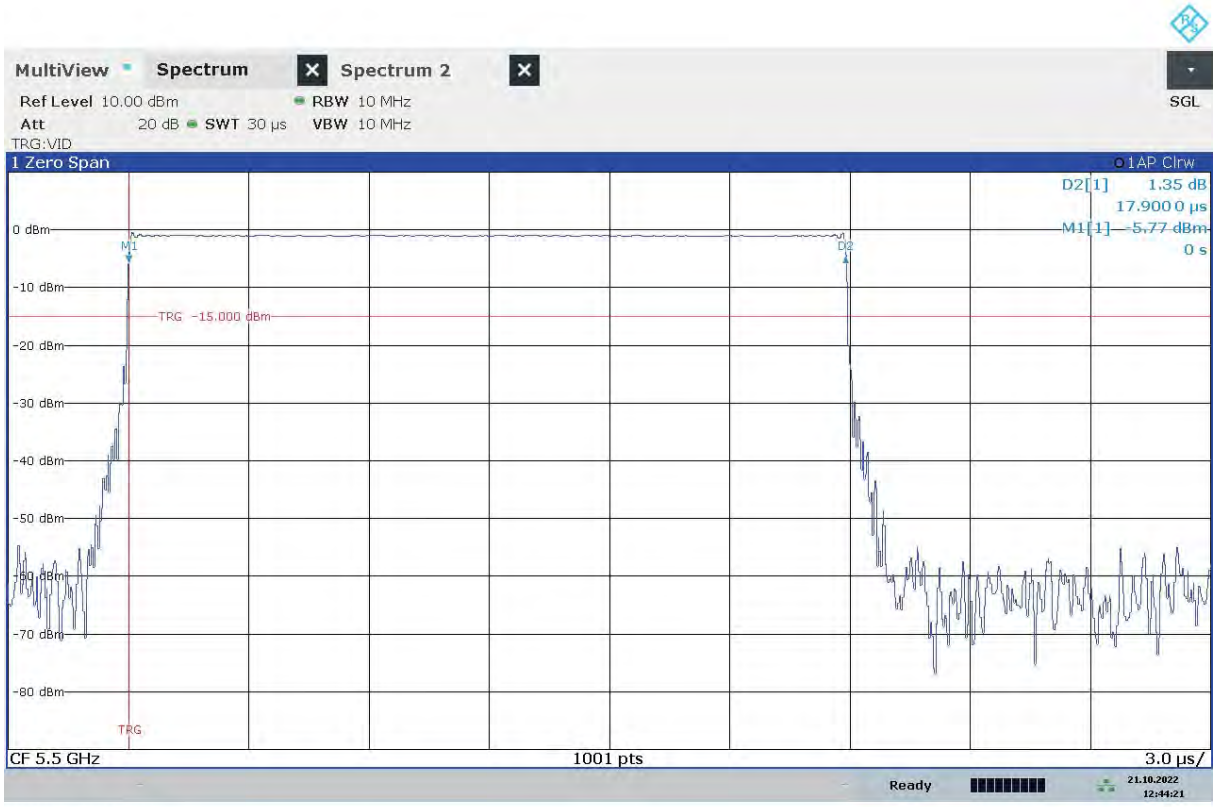

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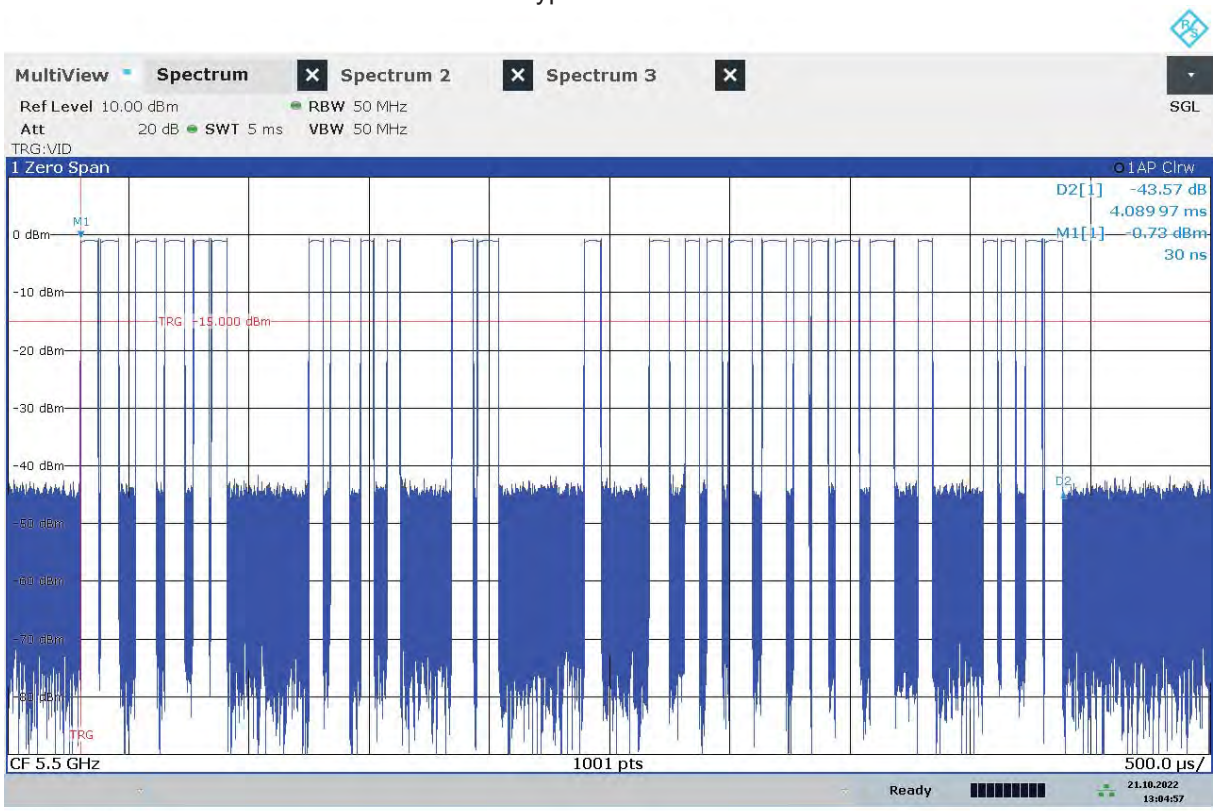
Type 4 Pulses			
Test #	**Number of Pulses per Burst**	**Pulse Width (μsec)**	**PRI (μs)**
1	14	17.9	268
2	15	15.3	246
3	15	12	345
4	15	16.3	224
5	15	19.1	356
6	13	16.5	312
7	15	13.6	383
8	14	15.4	287
9	14	19.7	325
10	16	16	442
11	15	13.3	204
12	15	17.2	321
13	15	15.9	373
14	13	13.2	321
15	12	17.8	266
16	14	19.8	444
17	15	19	482
18	14	19.3	363
19	13	11.4	424
20	15	18.5	302
21	13	18.3	421
22	15	13.8	467
23	16	13.7	400
24	14	15.8	447
25	16	16	286
26	13	17.3	441
27	15	18.5	492
28	15	16.3	329
29	15	13.3	230
30	12	17.2	455

Radar Type 5 Pulse – Trial 1



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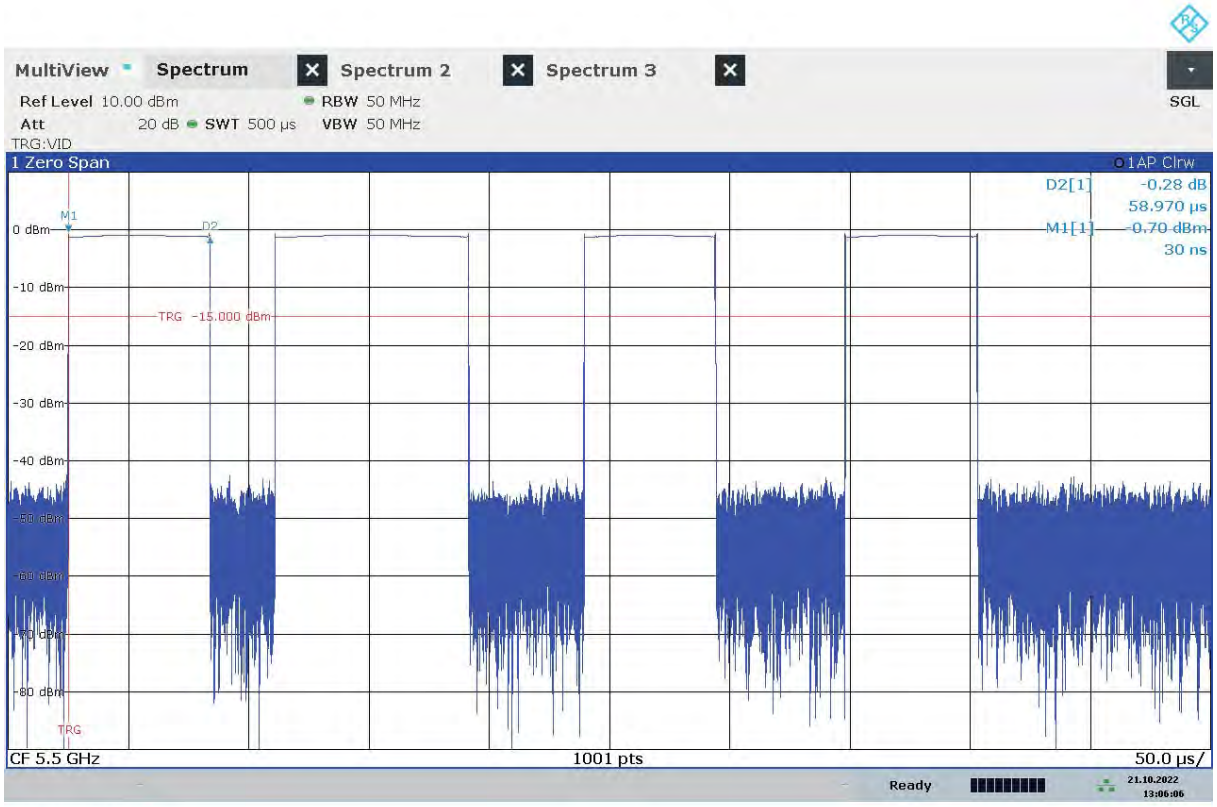

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Radar Type 5; Trial 1							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	87.5	13			428.861
2	2	2	62.6	13	1549		344.5
3	3	2	99.3	13	1541		363.25
4	4	2	68.3	13	1643		753.49
5	5	2	97.1	13	1647		120.65
6	6	3	59.3	13	1976	1409	608.89
7	7	2	71.9	13	1098		752.11
8	8	2	76	13	1408		65.25
9	9	2	86	13	1125		720.68
10	10	2	64.1	13	1441		237.43
11	11	1	58.8	13			720.03
12	12	1	80.3	13			614.04
13	13	2	54.7	13	1188		546.2
14	14	2	88.1	13	1199		763.1
15	15	1	70.1	13			399.4

Radar Type 5; Trial 2							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	84.8	6			632.516
2	2	2	87.6	6	1543		99.139
3	3	2	80.5	6	1603		263.574
4	4	2	50.4	6	1930		216.861
5	5	1	53.9	6			404.999
6	6	3	90.6	6	1333	1524	647.566
7	7	2	83	6	1827		47.023
8	8	2	78.9	6	1419		95.89
9	9	2	97.7	6	1921		130.137
10	10	3	75.6	6	1116	1205	761.914
11	11	1	89.8	6			605.201
12	12	2	84.9	6	1357		230.749
13	13	2	82.3	6	1203		724.086
14	14	1	92.3	6			706.943

Radar Type 5; Trial 3							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	96.1	6	1437		290.124
2	2	2	68.5	6	1867		374.671
3	3	2	55.4	6	1964		159.482
4	4	3	71.9	6	1525	1003	460.263
5	5	1	56.7	6			505.084
6	6	2	64.8	6	1845		171.595
7	7	3	60.1	6	1827	1641	313.366
8	8	1	54.2	6			273.977
9	9	2	91.8	6	1663		406.778
10	10	2	55.2	6	1826		370.129
11	11	2	90.3	6	1407		72.181
12	12	1	93.8	6			456.432
13	13	2	86.9	6	1516		9.653
14	14	2	58.9	6	1129		220.304
15	15	3	54.4	6	1466	1736	328.915
16	16	2	82.1	6	1399		445.086
17	17	2	95.9	6	1806		3.637
18	18	1	73.6	6			56.658
19	19	3	89.3	6	1538	1730	468.479

Radar Type 5; Trial 4							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	98.4	15			102.5
2	2	1	97.8	15			413.963
3	3	3	88.6	15	1608	1702	279.967
4	4	3	76.7	15	1482	1351	651.34
5	5	2	77.3	15	1880		504.613
6	6	1	99.1	15			23.397
7	7	1	74.1	15			65.89
8	8	2	96.2	15	1453		501.123
9	9	3	70.5	15	1515	1998	590.177
10	10	2	85	15	1852		393.28
11	11	3	59.8	15	1671	1155	427.473
12	12	2	57.3	15	1112		321.757
13	13	2	55.2	15	1659		440.37
14	14	2	55.3	15	1153		56.013
15	15	1	88.7	15			140.667
16	16	2	61.9	15	1553		505.9
17	17	1	92.8	15			345.433
18	18	2	92.3	15	1704		645.167

Radar Type 5; Trial 5							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	90	7	1636		515.04
2	2	1	99.1	7			45.688
3	3	3	85.6	7	1591	1132	717.14
4	4	3	50	7	1754	1740	341.32
5	5	2	95.3	7	1326		221.78
6	6	2	85.9	7	1276		703.73
7	7	1	78.3	7			253.23
8	8	2	80.2	7	1735		440.6
9	9	3	51.1	7	1914	1922	468.74
10	10	2	56.5	7	1430		238.63
11	11	2	66.4	7	1714		166.27
12	12	3	75.9	7	1400	1866	322.07
13	13	3	71.4	7	1399	1423	298.88
14	14	3	66.6	7	1131	1701	464.1
15	15	3	88.3	7	1254	1163	478.7
16	16	2	98.1	7	1008		59.6

Radar Type 5; Trial 6							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	2	90	7	1636		515.04
2	2	1	99.1	7			45.688
3	3	3	85.6	7	1591	1132	717.14
4	4	3	50	7	1754	1740	341.32
5	5	2	95.3	7	1326		221.78
6	6	2	85.9	7	1276		703.73
7	7	1	78.3	7			253.23
8	8	2	80.2	7	1735		440.6
9	9	3	51.1	7	1914	1922	468.74
10	10	2	56.5	7	1430		238.63
11	11	2	66.4	7	1714		166.27
12	12	3	75.9	7	1400	1866	322.07
13	13	3	71.4	7	1399	1423	298.88
14	14	3	66.6	7	1131	1701	464.1
15	15	3	88.3	7	1254	1163	478.7
16	16	2	98.1	7	1008		59.6

Radar Type 5; Trial 7							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	2	98.5	18	1112		287.998
2	2	2	93.5	18	1724		729.981
3	3	2	64.8	18	1396		972.882
4	4	3	79.8	18	1310	1002	111.833
5	5	2	77.8	18	1211		843.754
6	6	2	84.2	18	1374		224.275
7	7	3	96	18	1905	1850	371.415
8	8	3	96.1	18	1518	1268	315.836
9	9	3	77.4	18	1027	1509	532.977
10	10	2	88.2	18	1424		702.118
11	11	3	73.9	18	1315	1319	304.609

Radar Type 5; Trial 8							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	64.2	19	1727		736.125
2	2	1	72.7	19			769.391
3	3	3	51.9	19	1783	1519	930.022
4	4	2	84.7	19	1231		650.423
5	5	1	56.5	19			716.014
6	6	1	56.8	19			613.485
7	7	1	81.4	19			463.585
8	8	1	75.4	19			723.576
9	9	3	99.5	19	1518	1237	210.567
10	10	2	50.1	19	1991		765.318
11	11	2	54.4	19	1675		300.609

Radar Type 5; Trial 9							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	59.5	14			407.049
2	2	1	87	14			631.503
3	3	1	82.8	14			621.887
4	4	3	86.7	14	1154	1100	519.07
5	5	2	80.3	14	1809		586.463
6	6	2	68.8	14	1823		364.747
7	7	2	96	14	1145		607.57
8	8	2	69	14	1356		630.143
9	9	3	95.6	14	1220	1356	471.627
10	10	2	57.3	14	1522		153.29
11	11	3	56.9	14	1924	1819	378.983
12	12	2	89.6	14	1771		349.887
13	13	2	65.6	14	1617		636.02
14	14	3	72.3	14	1612	1936	211.013
15	15	2	74.3	14	1262		329.497
16	16	3	98.7	14	1490	1865	261.7
17	17	3	78.4	14	1505	1483	259.133
18	18	2	54.4	14	1336		473.967

Radar Type 5; Trial 10							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	2	96.2	8	1054		984.236
2	2	2	83.7	8	1373		26.151
3	3	1	81	8			604.062
4	4	1	56.8	8			883.193
5	5	3	94.6	8	1019	1548	657.184
6	6	2	62.3	8	1766		423.735
7	7	3	94.6	8	1455	1938	728.965
8	8	2	61.7	8	1533		853.686
9	9	3	88.9	8	1372	1101	754.077
10	10	1	81.9	8			32.498
11	11	2	66	8	1341		984.509

Radar Type 5; Trial 11							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	1	93.9	9			192.758
2	2	2	50.1	9	1149		15.551
3	3	2	51.9	9	1095		93.512
4	4	1	83.4	9			189.113
5	5	2	86.5	9	1336		499.674
6	6	1	92.4	9			906.485
7	7	2	81.3	9	1329		208.285
8	8	2	54.7	9	1006		933.956
9	9	2	83.9	9	1601		224.097
10	10	2	86.8	9	1797		1043.818
11	11	1	98.6	9			915.609

Radar Type 5; Trial 12							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	3	99.1	11	1533	1611	76.17
2	2	1	64.9	11			690.92
3	3	2	98.4	11	1369		552.2
4	4	2	95.3	11	1377		436.3
5	5	2	51.8	11	1707		418.55
6	6	2	72.9	11	1058		830.5
7	7	3	98.4	11	1106	1367	1262.6
8	8	3	90.5	11	1670	1265	1448.7

Radar Type 5; Trial 13							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	70.2	13	1259		462.836
2	2	3	76.8	13	1103	1837	75.611
3	3	3	60.8	13	1299	1283	405.062
4	4	2	87.2	13	1396		195.153
5	5	3	59.1	13	1394	1784	264.184
6	6	3	75.8	13	1800	1428	465.845
7	7	1	83.4	13			1063.785
8	8	2	73.1	13	1625		751.226
9	9	2	65	13	1345		855.337
10	10	2	55.3	13	1160		537.818
11	11	2	95.8	13	1931		344.409

Radar Type 5; Trial 14							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	2	90.1	5	1217		14.038
2	2	2	85.6	5	1640		337.727
3	3	2	92.9	5	1190		283.083
4	4	3	89.1	5	1774	1484	942.24
5	5	1	84.7	5			37.117
6	6	2	52.9	5	1381		623.323
7	7	2	51.8	5	1784		541.85
8	8	1	60.2	5			764.967
9	9	3	91.6	5	1053	1720	823.933

Radar Type 5; Trial 15							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	1	99.7	10			437.957
2	2	2	74.5	10	1876		103.241
3	3	1	68	10			525.56
4	4	1	93.1	10			173.42
5	5	2	58	10	1832		504.38
6	6	1	77.3	10			326.28
7	7	3	84.9	10	1605	1165	15
8	8	2	75.7	10	1049		626.49
9	9	2	98.9	10	1065		562.73
10	10	2	77.7	10	1941		709.48
11	11	2	75	10	1704		256.04
12	12	2	56.2	10	1420		475.2
13	13	2	60.8	10	1531		736.1
14	14	1	91.8	10			188.5
15	15	2	66.6	10	1909		606.1

Radar Type 5; Trial 16							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	74.4	5	1961		497.738
2	2	2	64.6	5	1869		93.137
3	3	3	94.2	5	1335	1820	151.75
4	4	3	77.6	5	1884	1092	126.07
5	5	1	99	5			48.71
6	6	1	67.5	5			13.78
7	7	3	61	5	1310	1554	16.89
8	8	3	74	5	1466	1968	87.92
9	9	3	61	5	1896	1015	70.43
10	10	2	94.4	5	1430		389.6
11	11	3	73.1	5	1621	1871	85.13
12	12	3	59.2	5	1866	1337	153.88
13	13	3	65.6	5	1139	1189	553.69
14	14	2	70.8	5	1395		200.73
15	15	2	63.1	5	1565		160.15
16	16	3	92.5	5	1651	1094	100.61

Radar Type 5; Trial 17							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	87.8	16			870.813
2	2	2	92.8	16	1542		916.041
3	3	1	79.4	16			289.172
4	4	1	68.9	16			603.623
5	5	1	70.8	16			296.044
6	6	3	76.7	16	1748	1927	884.515
7	7	3	92.5	16	1208	1847	148.885
8	8	1	57.1	16			874.996
9	9	2	87.8	16	1582		889.147
10	10	2	99.4	16	1202		372.018
11	11	1	63.7	16			170.809

Radar Type 5; Trial 18							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	82.5	17	1560		90.809
2	2	3	59.3	17	1967	1968	796.44
3	3	3	52.9	17	1279	1450	361.92
4	4	3	68.1	17	1078	1349	214.33
5	5	2	83.1	17	1918		567.55
6	6	3	54.7	17	1414	1913	940.46
7	7	2	94.6	17	1607		277.98
8	8	2	99.9	17	1886		550.22
9	9	2	60.3	17	1260		177.25
10	10	3	69	17	1987	1484	121.8

Radar Type 5; Trial 19							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	73.2	11			259.574
2	2	3	87.3	11	1044	1289	269.987
3	3	3	54.6	11	1556	1147	1171.043
4	4	2	56	11	1600		351.24
5	5	1	87	11			1027.197
6	6	1	99.6	11			427.803
7	7	2	57	11	1426		963.55
8	8	1	69.3	11			248.657
9	9	2	81.9	11	1592		1195.933

Radar Type 5; Trial 20							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	3	88	15	1377	1233	511.8
2	2	1	93.8	15			247.038
3	3	1	59.3	15			189.36
4	4	2	68.1	15	1382		427.6
5	5	2	50.6	15	1048		506.27
6	6	1	85.5	15			467.55
7	7	2	50.7	15	1073		641.07
8	8	1	65	15			480.25
9	9	2	73.2	15	1447		447.57
10	10	2	72.4	15	1414		425.79
11	11	3	64.5	15	1017	1149	697.05
12	12	3	53.7	15	1128	1668	709.55
13	13	3	98.7	15	1063	1688	259.49
14	14	2	50.1	15	1096		355.9
15	15	3	58	15	1549	1783	724.5
16	16	2	90.3	15	1325		239.1

Radar Type 5; Trial 21							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	95.1	12			305.573
2	2	1	76.2	12			62.348
3	3	1	91.1	12			736.514
4	4	3	63.4	12	1983	1161	689.991
5	5	2	52.2	12	1500		659.369
6	6	2	68.2	12	1979		0.796
7	7	1	85.8	12			727.063
8	8	2	90.8	12	1010		320.29
9	9	3	70.3	12	1044	1515	133.227
10	10	1	52.5	12			309.844
11	11	1	81.7	12			811.621
12	12	2	76.9	12	1155		643.629
13	13	1	82.8	12			170.286
14	14	2	99.4	12	1587		455.643

Radar Type 5; Trial 22							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	3	89.4	16	1790	1635	252.915
2	2	2	52.6	16	1424		150.833
3	3	2	78	16	1375		571.505
4	4	2	53	16	1052		338.303
5	5	2	82.1	16	1517		10.521
6	6	2	69.1	16	1124		314.708
7	7	2	89.9	16	1763		117.856
8	8	3	98.8	16	1839	1401	363.334
9	9	1	77.2	16			200.491
10	10	2	59.9	16	1886		204.099
11	11	2	92.6	16	1334		637.386
12	12	2	73.8	16	1619		386.334
13	13	2	86.7	16	1250		228.242
14	14	2	56.7	16	1969		196.719
15	15	1	70.2	16			406.447
16	16	2	83.3	16	1448		35.565
17	17	1	76.5	16			77.282

Radar Type 5; Trial 23							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	51.1	6	1280		661.129
2	2	3	54.3	6	1933	1045	316.248
3	3	3	61.9	6	1288	1340	25.125
4	4	2	81.3	6	1414		5.393
5	5	2	61.6	6	1213		296.191
6	6	2	98.4	6	1547		522.728
7	7	1	77.3	6			422.496
8	8	3	52.7	6	1713	1981	561.204
9	9	3	56	6	1916	1248	62.291
10	10	2	65	6	1757		444.779
11	11	1	89.1	6			580.466
12	12	3	66.7	6	1803	1608	653.364
13	13	1	52.8	6			484.642
14	14	3	68.6	6	1067	1626	695.899
15	15	3	93.6	6	1872	1753	312.347
16	16	1	61.5	6			116.165
	17	3	88.9	6	1196	1816	169.082

Radar Type 5; Trial 24							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	3	97.8	19	1687	1937	118.588
2	2	1	74.8	19			163.604
3	3	1	93.7	19			216.69
4	4	1	70.2	19			623.04
5	5	2	79.3	19	1228		277.68
6	6	3	74.6	19	1858	1004	639.78
7	7	2	94.2	19	1314		740.42
8	8	2	71.8	19	1651		58.7
9	9	1	79.9	19			141.5
10	10	3	51.5	19	1572	1360	158.83
11	11	2	69.6	19	1944		672.68
12	12	2	53	19	1272		593.06
13	13	1	77.9	19			10.69
14	14	2	82.8	19	1199		654.6
15	15	3	67.6	19	1211	1974	361.1
16	16	2	81.3	19	1198		273.7

Radar Type 5; Trial 25							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	2	69.5	9	1794		763.277
2	2	1	70.4	9			671.117
3	3	1	58.6	9			217.194
4	4	3	79.5	9	1937	1845	7.461
5	5	2	76.9	9	1322		146.169
6	6	2	60.6	9	1015		277.436
7	7	3	82.5	9	1717	1377	623.973
8	8	2	69.7	9	1158		135.4
9	9	2	51	9	1491		652.887
10	10	3	89.3	9	1364	1591	612.544
11	11	2	56	9	1008		412.421
12	12	3	70	9	1431	1826	549.929
13	13	2	62.2	9	1334		492.486
14	14	1	78.5	9			811.943

Radar Type 5; Trial 26							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	2	85.1	16	1712		654.035
2	2	1	56.7	16			902.437
3	3	2	53	16	1034		826.343
4	4	2	77.9	16	1528		424.12
5	5	1	69.3	16			1175.717
6	6	3	84.6	16	1948	1850	262.153
7	7	1	60.1	16			793.85
8	8	1	75.6	16			605.527
9	9	3	59.5	16	1323	1508	233.933

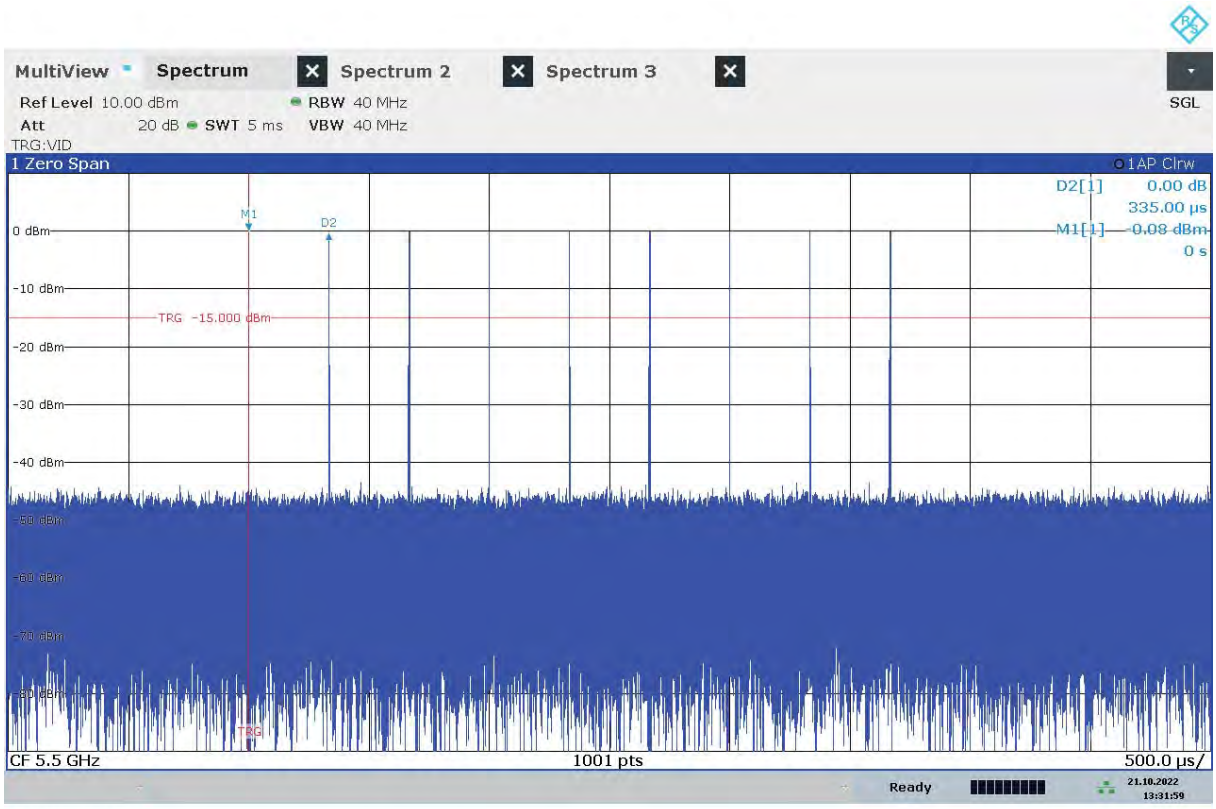
Radar Type 5; Trial 27							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	2	86.7	8	1096		183.291
2	2	3	50.9	8	1067	1421	570.71
3	3	2	65	8	1600		189.88
4	4	2	93.3	8	1074		81.29
5	5	2	51.7	8	1853		43.6
6	6	2	55	8	1348		502.6
7	7	1	65.9	8			491.33
8	8	1	80.1	8			848.5
9	9	3	54.6	8	1986	1770	1116.2
10	10	2	69.9	8	1710		1122
11	1	2	86.7	8	1096		183.291
12	2	3	50.9	8	1067	1421	570.71
13	3	2	65	8	1600		189.88
14	4	2	93.3	8	1074		81.29

Radar Type 5; Trial 28							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	3	99.9	15	1686	1690	810.127
2	2	2	87.5	15	1520		586.84
3	3	2	73.4	15	1003		238.11
4	4	3	64.7	15	1979	1890	533.93
5	5	3	75.3	15	1960	1181	271.21
6	6	2	57.5	15	1639		356.98
7	7	2	73.7	15	1190		607.59
8	8	2	87.9	15	1070		734.92
9	9	1	65	15			684.6
10	10	1	54.6	15			782.52
11	11	2	80.3	15	1954		972.8
12	12	1	62.6	15			828.9

Radar Type 5; Trial 29							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (μsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (μsec)**	**Pulse 2-to-3 PRI (μsec)**	**Start Location Within Interval (msec)**
1	1	2	57.5	16	1734		605.458
2	2	3	76.2	16	1079	1045	255.455
3	3	2	50.5	16	1839		546.002
4	4	2	80.9	16	1382		445.703
5	5	3	56.8	16	1362	1822	262.794
6	6	2	55.6	16	1985		624.595
7	7	2	93.2	16	1564		39.036
8	8	2	89.5	16	1680		288.787
9	9	2	50	16	1954		113.958
10	10	1	98.1	16			33.959
11	11	2	70.5	16	1321		408.021
12	12	2	50.4	16	1755		524.772
13	13	2	87.3	16	1075		208.823
14	14	2	51.3	16	1391		224.624
15	15	3	66.5	16	1252	1993	48.425
16	16	2	73.1	16	1092		70.216
17	17	1	94.5	16			602.537
18	18	3	95.6	16	1945	1021	373.558
19	19	1	88.9	16			567.779

Radar Type 5; Trial 30							
Test #	**Burst**	**Number of Pulses**	**Pulse Width (µsec)**	**Chirp Width (MHz)**	**Pulse 1-to-2 PRI (µsec)**	**Pulse 2-to-3 PRI (µsec)**	**Start Location Within Interval (msec)**
1	1	1	60.4	7			354.994
2	2	2	70.1	7	1129		914.327
3	3	2	82.3	7	1265		31.353
4	4	2	70.7	7	1107		144.01
5	5	3	61.1	7	1830	1883	759.677
6	6	2	96.7	7	1801		1023.573
7	7	3	62.5	7	1192	1615	566.64
8	8	1	72.2	7			644.667
9	9	2	76.7	7	1069		1158.133

Radar Type 6 Pulse



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Type 6 Pulses			
Test #	**Number of Pulses per Burst**	**Pulse Width (μsec)**	**PRI (μs)**
1	9	1	333
2	9	1	333
3	9	1	333
4	9	1	333
5	9	1	333
6	9	1	333
7	9	1	333
8	9	1	333
9	9	1	333
10	9	1	333
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18	9	1	333
19	9	1	333
20	9	1	333
21	9	1	333
22	9	1	333
23	9	1	333
24	9	1	333
25	9	1	333
26	9	1	333
27	9	1	333
28	9	1	333
29	9	1	333
30	9	1	333

16 Measurement Uncertainty

Radio Testing – General Uncertainty Schedule

All statements of uncertainty are expanded standard uncertainty using a coverage factor of 1.96 to give a 95 % confidence where no required test level exists.

Test/Measurement	Budget Number	MU
Conducted RF Power, Power Spectral Density, Adjacent Channel Power and Spurious emissions		
Absolute RF power (via antenna connecter) Dare RPR3006W Power Head	MU4001	**0.9 dB**
Carrier Power and PSD - Spectrum Analysers	MU4004	**0.9 dB**
Adjacent Channel Power	MU4002	**1.9 dB**
Transmitter conducted spurious emissions	MU4041	**0.9 dB**
Conducted power and spurious emissions 40 GHz to 50 GHz	MU4042	**2.4 dB**
Conducted power and spurious emissions 50 GHz to 75 GHz	MU4043	**2.5 dB**
Conducted power and spurious emissions 75 GHz to 110 GHz	MU4044	**2.4 dB**
Radiated RF Power and Spurious emissions ERP and EIRP		
Effective Radiated Power Reverb Chamber	MU4020	**3.7 dB**
Effective Radiated Power	MU4021	**4.7 dB**
TRP Emissions 30 MHz to 1 GHz using CBL6111 or CBL6112 Bilog Antenna	MU4046	**5.3 dB**
TRP Emissions 1 GHz to 18 GHz using HL050 Log Periodic Antenna	MU4047	**5.1 dB**
TRP Emissions 18 GHz to 26.5 GHz using Standard Gain Horn	MU4048	**2.7 dB**
TRP Emissions 26.5 GHz to 40 GHz using Standard Gain Horn	MU4049	**2.7 dB**
Spurious Emissions Electric and Magnetic Field		
Radiated Spurious Emissions 30 MHz to 1 GHz	MU4037	**4.7 dB**
Radiated Spurious Emissions 1-18 GHz	MU4032	**4.5 dB**
E Field Emissions 18GHz to 26 GHz	MU4024	**3.2 dB**
E Field Emissions 26GHz to 40 GHz	MU4025	**3.3 dB**
E Field Emissions 40GHz to 50 GHz	MU4026	**3.5 dB**
E Field Emissions 50GHz to 75 GHz	MU4027	**3.6 dB**
E Field Emissions 75GHz to 110 GHz	MU4028	**3.6 dB**
Radiated Magnetic Field Emissions	MU4031	**2.3 dB**
Frequency Measurements		
Frequency Deviation	MU4022	**0.316 kHz**
Frequency error using CMTA test set	MU4023	**113.441 Hz**
Frequency error using GPS locked frequency source	MU4045	**0.0413 ppm**
Bandwidth/Spectral Mask Measurements		
Channel Bandwidth	MU4005	**3.87 %**
Transmitter Mask Amplitude	MU4039	**1.3 dB**
Transmitter Mask Frequency	MU4040	**2.59 %**
Time Domain Measurements		
Transmission Time	MU4038	**4.40 %**
Dynamic Frequency Selection (DFS) Parameters)		
DFS Analyser - Measurement Time	MU4006	**679 µs**
DFS Generator - Frequency Error	MU4007	**92 Hz**
DFS Threshold Conducted	MU4008	**1.3 dB**
DFS Threshold Radiated	MU4009	**3.2 dB**

Test/Measurement	Budget Number	MU
Receiver Parameters		
EN300328 Receiver Blocking	MU4010	**1.1 dB**
EN301893 Receiver Blocking	MU4011	**1.1 dB**
EN303340 Adjacent Channel Selectivity	MU4012	**1.1 dB**
EN303340 Overloading	MU4013	**1.1 dB**
EN303340 Receiver Blocking	MU4014	**1.1 dB**
EN303340 Receiver Sensitivity	MU4015	**0.9 dB**
EN303372-1 Image Rejection	MU4016	**1.4 dB**
EN303372-1 Receiver Blocking	MU4017	**1.1 dB**
EN303372-2 Adjacent Channel Selectivity	MU4018	**1.1 dB**
EN303372-2 Dynamic Range	MU4019	**0.9 dB**
Receiver Blocking Talk Mode Conducted	MU4033	**1.2 dB**
Receiver Blocking Talk Mode- radiated	MU4034	**3.4 dB**
Rx Blocking, listen mode, blocking level	MU4035	**3.2 dB**
Rx Blocking, listen mode, radiated Threshold Measurement	MU4036	**3.4 dB**
Adjacent Sub Band Selectivity	MU4003	**4.2 dB**