

## DFS PORTION of FCC 47 CFR PART 15 SUBPART E DFS PORTION of ISED CANADA RSS-247 ISSUE 2

**CERTIFICATION TEST REPORT** 

FOR

**SMARTPHONE** 

MODEL NUMBER: A2651 (PARENT MODEL) A2893, A2894, A2895, A2896 (VARIANT MODELS)

FCC ID: BCG-E8141A (PARENT MODEL) BCG-E8154A, BCG-E8155A BCG-E8156A (VARIANT MODELS)

ISED ID: 579C-E8141A (PARENT MODEL) 579C-E8154A, 579C-E8155A, 579C-E8156A (VARIANT MODELS)

REPORT NUMBER: 14040866-E22V1

ISSUE DATE: JULY 12, 2022

Prepared for APPLE, INC. 1 APPLE PARK WAY CUPERTINO CA 95014, U.S.A

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## **Revision History**

Rev.	lssue Date	Revisions	Revised By
V1	07/12/22	Initial Issue	Douglas Anderson
V2	07/30/22	Address TCB question	Chin Pang

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Complies

# **1. ATTESTATION OF TEST RESULTS**

DFS Portion of ISED CANADA RSS-247 Issue 2

EUT DESCRIPTION: MODEL:	SMARTPHONE A2651 (PARENT MODEL)		
	A2893, A2894, A2895, A2896 (VARIANT MODELS)		
SERIAL NUMBER:	XJ7X7X3NGY		
DATE TESTED:	MAY 23 to 24, 2022		
APPLICABLE STANDARDS			
STANDARD TEST RESU			
SI	ANDAND		

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released For UL Verification Services Inc. By:

and the means

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Prepared By:

Dourks Conclusion

DOUG ANDERSON Test Engineer CONSUMER TECHNOLOGY DIVISION UL Verification Services Inc.

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# 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the DFS portion of FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC KDB 789033, KDB 905462 D02 and D03 and RSS-247 Issue 2.

# 3. SUMMARY OF TEST RESULTS

Requirement Description	Result	Remarks
DFS Portion of FCC 47 CFR PART 15 SUBPART E	Complies	
DFS Portion of ISED CANADA RSS-247 ISSUE 2	Complies	

# 4. REFERENCE DOCUMENTS

Measurements of transmitter parameters as referenced in this report and all other manufacturer's declarations relevant to the RF test requirements are documented in UL Verification Services report number 14040866-E5V2 & E6V2 FCC\_IC UNII Conducted Report".

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

# 5. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, Certificate Number 0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
	Building 1: 47173 Benicia Street,	US0104	2324A	550739
$\boxtimes$	Fremont, California, USA			
	Building 2: 47266 Benicia Street,	US0104	22541	550739
	Fremont, California, USA			
	Building 4: 47658 Kato Rd, Fremont,	US0104	2324B	550739
	California, USA			

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# 6. DECISION RULES AND MEASUREMENT UNCERTAINTY

## 6.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

# 6.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement).

# 7. MODEL DIFFERENCES

The manufacturer hereby declares that:

- All models use the same system, cellular and Wi-Fi/BT radio electrical schematics.
- Removal of FR2, LTE/NR and MSS bands in some models is done by de-population of directly related components.
- All models except reference model support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM).
- All models use the same Wi-Fi/BT chipset and radio module.
- All models use the same Applications Processor and PMU.
- All models run the same Baseband firmware and iOS software.

The characteristics listed above do not have any influence upon the DFS performance of the models covered by this report and therefore the DFS test results documented for Parent Model A2651 for may be applied as representative to Variant Models A2893, A2894, A2895 and A2896.

Additional spot check testing was also performed to confirm that the data presented in the report for Parent Model A2651 is representative for all the Variant Models A2893, A2894, A2895 and A2896 within the scope of this report.

# 8. DYNAMIC FREQUENCY SELECTION

## 8.1. OVERVIEW

## 8.1.1. LIMITS

#### INNOVATION, SCIENCE and ECONOMIC DEVELOPMENT CANADA (ISED)

ISED RSS-247 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-247 Issue 2

**Note:** For the band 5600–5650 MHz, no operation is permitted.

Until further notice, devices subject to this annex shall not be capable of transmitting in the band 5600–5650 MHz. This restriction is for the protection of Environment Canada weather radars operating in this band.

## FCC

§15.407 (h), FCC KDB 905462 D02 "COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION" and KDB 905462 D03 "U-NII CLIENT DEVICES WITHOUT RADAR DETECTION CAPABILITY".

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

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

#### Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode			
	Master	Client (without DFS)	Client (with DFS)	
DFS Detection Threshold	Yes	Not required	Yes	
Channel Closing Transmission Time	Yes	Yes	Yes	
Channel Move Time	Yes	Yes	Yes	
U-NII Detection Bandwidth	Yes	Not required	Yes	

Additional requirements for	Master Device or Client with	Client (without DFS)	
devices with multiple bandwidth modes	Radar DFS	(without DF3)	
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	
<b>Note:</b> 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 all 20 MHz channel blocks and a null frequency between the bonded 20 MHz channel blocks.			

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

Maximum Transmit Power	Value		
	(see notes)		
E.I.R.P. ≥ 200 milliwatt	-64 dBm		
E.I.R.P. < 200 milliwatt and	-62 dBm		
power spectral density < 10 dBm/MHz			
E.I.R.P. < 200 milliwatt that do not meet power spectral	-64 dBm		
density requirement			
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.			
<b>Note 3:</b> E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB			

**Note 3:** E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds +
	approx. 60 milliseconds
	over remaining 10 second
	period.
	(See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the U-
	NII 99% transmission
	power bandwidth.
	(See Note 3)

## Table 4: DFS Response requirement values

**Note 1:** Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

**Note 2:** The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10-second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

**Note 3:** During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

#### Table 5 – Short Pulse Radar Test Waveforms

Radar	Pulse	PRI	Pulses	Minimum	Minimum
Туре	Width (usec)	(usec)		Percentage of Successful	Trials
	(0300)			Detection	
0	1	1428	18	See Note 1	See Note
					1
1	1	Test A: 15 unique		60%	30
		PRI values randomly			
		selected from the list	Roundup:		
		of 23 PRI values in	{(1/360) x (19 x 10 <sup>6</sup> PRI <sub>usec</sub> )}		
		table 5a			
		Test B: 15 unique			
		PRI values randomly			
		selected within the			
		range of 518-3066			
		usec. With a			
		minimum increment			
		of 1 usec, 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 T		80%	120
			ld be used for the <i>Detection Ba</i>	ndwidth test, Ch	annel
Move T	<i>ime</i> , and	Channel Closing Time to	ests.		

Table 6 – Long Pulse Radar Test Signal

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

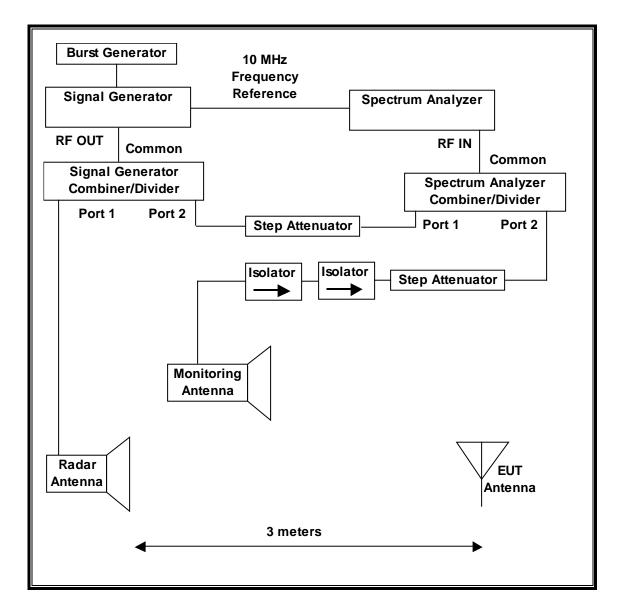
#### Table 7 – Frequency Hopping Radar Test Signal

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

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## 8.1.2. TEST AND MEASUREMENT SYSTEM

#### RADIATED METHOD SYSTEM BLOCK DIAGRAM



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#### SYSTEM OVERVIEW

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

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

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of KDB 905462 D02. The frequency of the signal generator is incremented in 1 MHz steps from  $F_L$  to  $F_H$  for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

#### SYSTEM CALIBRATION

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

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#### ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

#### TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	ID No.	Cal Due	
Spectrum Analyzer, PXA, 3Hz to 8.4GHz	Keysight	N9030A	150667	01/27/23	
Signal Generator, MXG X-Series RF Vector	Keysight	N5182B	215999	02/08/23	
Frequency Extender	Keysight	N5182BX	213906	12/29/22	

**Note:** An MGX series Signal Generator and separate external Frequency Extender module are shown in the preceding radiated system block diagram as a stand-alone Signal Generator.

## 8.1.3. TEST AND MEASUREMENT SOFTWARE

The following test and measurement software was utilized for the tests documented in this report:

TEST SOFTWARE LIST					
Name Version Test / Function					
Aggregate Time-PXA	3.1	Channel Loading and Aggregate Closing Time			
PXA Read	3.1	Signal Generator Screen Capture			
SGXProject.exe	1.7	Radar Waveform Generation and Download			

## 8.1.4. TEST ROOM ENVIRONMENT

The test room temperature and humidity shall be maintained within normal temperature of 15~35 °C and normal humidity 20~75% (relative humidity).

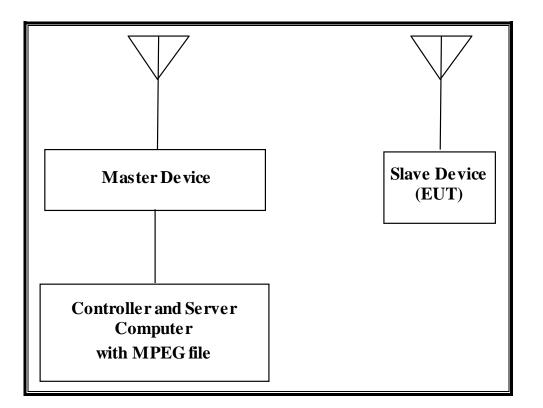
#### ENVIRONMENT CONDITION

Parameter	Value
Temperature	23.7 and 25.0 °C
Humidity	41 and 44 %

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## 8.1.5. SETUP OF EUT (CLIENT MODE)

#### RADIATED METHOD EUT TEST SETUP



#### SUPPORT EQUIPMENT

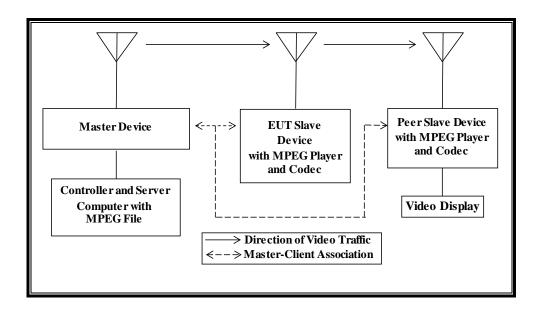
The following support equipment was utilized for the tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST					
Description	Manufacturer	Model	Serial Number	FCC ID	
802.11a/b/g/n/ac Wireless	Apple	A1521	C86PJ5RUFJ1R	BCGA1521	
Router (Master Device)					
Notebook PC	Apple	A1708	C02VQ6D6HV27	DoC	
(Controller/Server)					

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## 8.1.6. SETUP OF EUT (CLIENT TO CLIENT MODE)

#### RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE EUT



#### SUPPORT EQUIPMENT

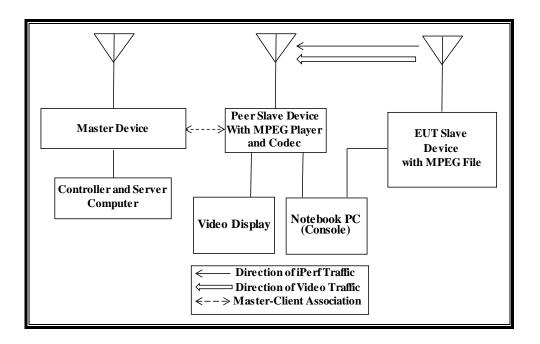
The following support equipment was utilized for the tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST					
Description	Manufacturer	Model	Serial Number	FCC ID	
802.11a/b/g/n/ac Wireless	Apple	A1521	C86PJ5RUFJ1R	BCGA1521	
Router (Master Device)					
Notebook PC	Apple	A1708	C02VQ6D6HV27	DoC	
(Controller/Server)					
Apple TV (Peer Slave Device)	Apple	A1842	C0HW3DN4J1WF	BCGA1842	
15" LCD TV (Video Display)	Polaroid	TLX-01511C	02006	DoC	

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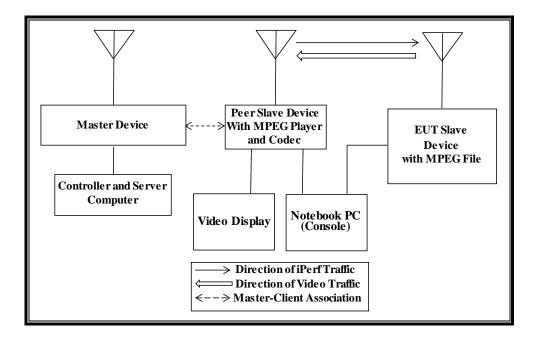
## 8.1.7. SETUP OF EUT (PEER TO PEER MODE)

#### RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE EUT



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#### RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE PEER SLAVE DEVICE)



#### SUPPORT EQUIPMENT

The following support equipment was utilized for the tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST						
Description	Manufacturer	Model	Serial Number	FCC ID		
802.11a/b/g/n/ac Wireless	Apple	A1521	C86PJ5RUFJ1R	BCGA1521		
Router (Master Device)						
Notebook PC	Apple	A1708	C02VQ6D6HV27	DoC		
(Controller/Server)						
Apple TV (Peer Slave Device)	Apple	A1842	DY3ZM2D5J1WF	BCGA1842		
Notebook PC (Peer Console)	Apple	A1708	C02VT5DTHV22	DoC		
15" LCD TV (Video Display)	Polaroid	TLX-01511C	02006	DoC		

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## 8.1.8. DESCRIPTION OF EUT

For FCC the EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

For ISED the EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges, excluding the 5600-5650 MHz range.

The EUT is a Slave Device without Radar Detection.

Slave EUT EIRP, maximum conducted output power, antenna assembly gain and TPC information can be found in the RF report referenced in section 4 of this report.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is -64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

Two antennas are utilized to meet the diversity and MIMO operational requirements.

The EUT uses two transmitter/receiver chains, each connected to an antenna to perform radiated tests.

In **Standard Client Mode** WLAN traffic that meets or exceeds the minimum required loading was generated by streaming the compressed version of the video test file "6 ½ Magic Hours" from the Master to the Slave using OPlayer media player.

In **Client to Client mode** WLAN traffic is generated by streaming the compressed version of the video test file "6 ½ Magic Hours" from the Master to the Slave and then on to the peer slave device in full motion video mode using OPlayer media player and embedded proprietary AirPlay software.

In **Peer to Peer mode while monitoring the EUT**, WLAN traffic is generated with the combination of streaming the compressed version of the video test file "6 ½ Magic Hours" from the EUT to the Peer Slave Device in full motion video mode using OPlayer media player and embedded proprietary AirPlay software and Iperf from the EUT to the Peer Slave Device.

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In **Peer to Peer mode while monitoring the Peer Slave Device**, WLAN traffic is generated with the combination of streaming the compressed version of the video test file "6 ½ Magic Hours" from the EUT to the Peer Slave Device in full motion video mode using OPlayer media player and embedded proprietary AirPlay software and Iperf from the Peer Slave Device to the EUT.

While performing **Peer to Peer Mode** testing only the Peer Slave Device is associated to the Master Device.

Peer to Peer Mode has been reviewed and approved as compliant with the DFS requirements for client devices by the FCC via KDB inquiry. The inquiry confirmed that the test cases used adequately demonstrate compliance with DFS requirements for client devices.

The EUT utilizes the 802.11a/b/g/n/ac/ax architecture. Three nominal channel bandwidths are implemented: 20 MHz, 40 MHz and 80 MHz.

The manufacturer declares that Channel Puncturing is not supported.

The software installed in the EUT is 20A282.

The software installed in the access point is revision 7.7.9.

#### UNIFORM CHANNEL SPREADING

This function is not required per KDB 905462.

#### **OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS**

The Master Device is an Apple, Inc. Access Point, FCC ID: BCGA1521. The minimum antenna gain for the Master Device is 1.4 dBi.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is -64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

The software installed in the access point is revision 7.7.9.

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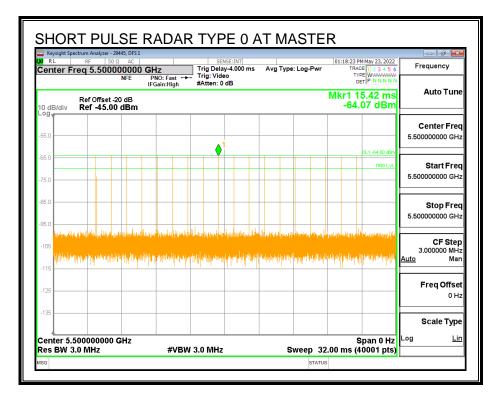
## 8.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

## 8.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5500 MHz.

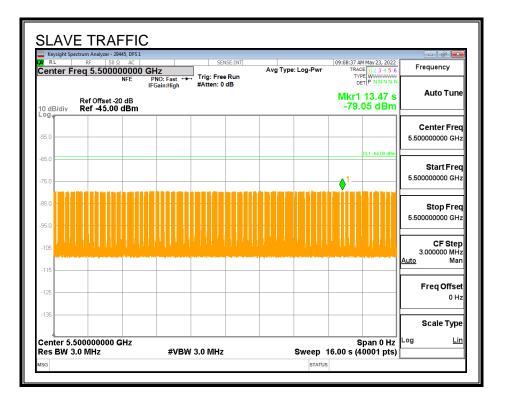
## 8.2.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM



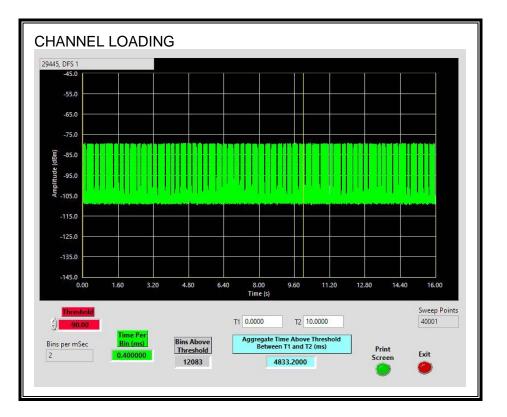
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#### TRAFFIC



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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 48.33%

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## 8.2.3. OVERLAPPING CHANNEL TESTS

#### **RESULTS**

These tests are not applicable.

## 8.2.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
0.1044	10

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

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#### MOVE TIME

	m Analyzer - 29445, DI					
	RF 50 Ω AC		SENSE:INT	Ava Type: Log-Pwr	09:18:26 AM May 23, 2022 TRACE 1 2 3 4 5 6	Frequency
center Fred	<b>5.500000 ן</b> NFE	DU GHZ PNO: Fast ← IFGain:High	Trig: Free Run #Atten: 0 dB	Avg Type. Log-Fwi	TYPE WWWWWW DET P N N N N N	
	tef Offset -20 dB tef -45.00 dB			Δ	Mkr1 104.4 ms -16.95 dB	Auto Tune
- <b>og</b>						
	×				DL1 -64.00 dBm	Center Free 5,50000000 GH
	^2 1∆2					5.50000000 GH
75.0	<b>&gt;</b>					
85.0						Start Free
95.0	dan saturda	haddealandana a	o fall talk a fall a successful	ellinine side, and data half of the	ويتقا باللالية المراجع	5.50000000 GH
-105	n sen a tine ken od v. Min	an that with the distribution of the	adination attact and databat do doctor	iki inata na akina kana kata ana jara t	ar on antrohik than the sources	
-115						Stop Free
-125						5.50000000 GH
-135						0.00000000000
Contor 5 50	0000000 GHz				Span 0 Hz	CF Ster
Res BW 3.0		#VB	N 3.0 MHz	Sweep 1	6.00 s (40001 pts)	3.000000 MH
MKR MODE TRC S		Х	Y EL	JNCTION FUNCTION WIDTH		<u>Auto</u> Mar
1 Δ2 1	t (Δ)	104.4 ms (Δ	) -16.95 dB			
2 F 1 3	t	1.514 s	-64.07 dBm			Freq Offse
4 5						0 H:
6					E	
7 8						Scale Type
9 10						
						Log Lir

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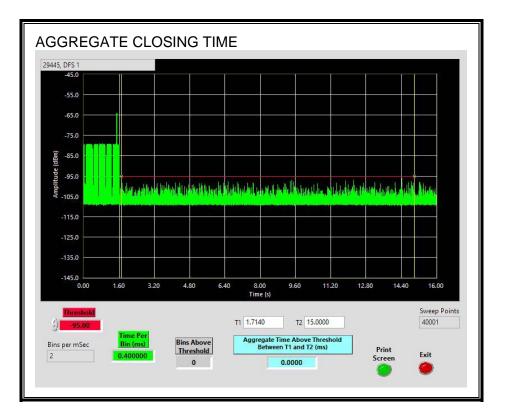
#### **CHANNEL CLOSING TIME**

Keysight Spectrum Analyzer - 29445, DFS 1 RL RF 50 Ω AC	SENSE		09:24:08 AM May 23, 2022	Frequency
Center Freq 5.50000000 C	PNO: Fast ↔ IFGain:High #Atten: 0 dE	Avg Type: Log-Pwi	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
Ref Offset -20 dB 0 dB/div <b>Ref -45.00 dBm</b>	5		∆Mkr1 200.0 ms -38.37 dB	Auto Tune
.og				Center Fred
55.0			DL1 -64.00 dBm	5.500000000 GHz
65.0 <b>2</b>			TRIG LVL	Start Fred
75.0				5.500000000 GHz
85.0 <b>111 114 114 114 114 114 114 114 114 11</b>				Stop Fred
95.0	142			5.50000000 GHz
A CONTRACTOR OF	laite in the part of the second s		ng kilomet karavai karava hitti Daga aray hitu. Ahiti Mandu di babah di arang mahaminikana	
-115				3.000000 MHz <u>Auto</u> Mar
				Freq Offset
-125				0 Hz
-135				Scale Type
Center 5.50000000 GHz			Span 0 Hz	Log <u>Lir</u>

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#### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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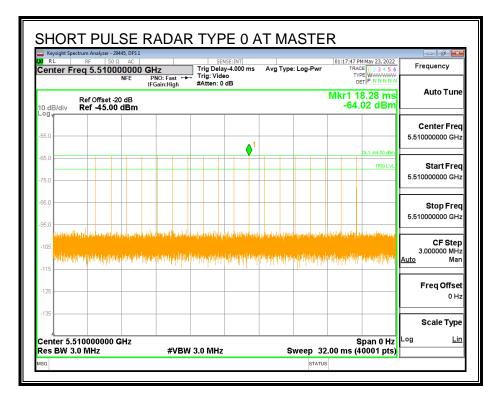
## 8.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

## 8.3.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5510 MHz.

## 8.3.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM



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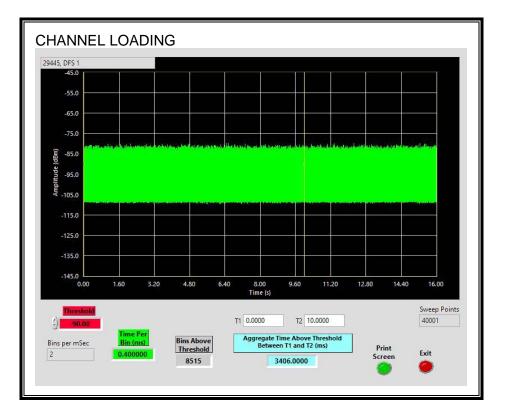
#### **TRAFFIC**

	RF 50 Ω	AC		0.51	VSE:INT					1
enter F	Freq 5.510000	000 GH				Avg Type	e: Log-Pwr	TR4	M May 23, 2022 CE 1 2 3 4 5 6	Frequency
	NF		NO: Fast 🔸	Trig: Free #Atten: 0				C		
0 dB/div	Ref Offset -20 d Ref -45.00 dE								6.563 s .58 dBm	Auto Tune
.og										Center Fred
55.0										5.510000000 GHz
65.0									DL1 -64.00 dBm	
00.0										Start Fred
75.0 85.0	ognfyn eitheniol yn troch i gren	idalaman (mi	in bit sy strike so by	-1 Helebiljsee	(Materiality equit	pakayan dari k	the get a get a data in the	st gidente overleget	rdenseettellene	5.51000000 GH2
85.0	. alfa alfa diala dia ang ang ang ang ang ang ang ang ang an	la kalen ya kana	in Physicia (1994)	a 1 ——— Herbahiljeree	ht a beeled people	gabayayaha pisada	Beglegalade	s - silandon av inde	iologoanet Lobinge	Stop Frec 5.51000000 GHz
85.0 95.0	Anfarathainhannainistea	la face for a supervision of the	na na pana kana ka	n 1	(phick and any particular sector)	nakaya, Anapita d	. Brigt garbeit	an galendez oor kjird	nden son keller op	Stop Fred
a thanks	n til fansk kulle kunnerski kuller	hina a para parina		1 the installer of	gydda boredd gwra y ysla	, , , , , , , , , , , , , , , , , , ,	. An		nden stæl Lifterne	Stop Frec 5.51000000 GHz CF Step
es.0 411496 95.0 -105				1 Her he helps, ee	() Mai Bara (II) ana pila				tolonscetivitene	Stop Frec 5.51000000 GHz CF Step 3.00000 MHz <u>Auto</u> Mar
85.0 <b>**1****</b> 95.0 •105				1 the based (es er						Stop Frec 5.510000000 GH2 CF Step 3.000000 MH2
es.0 411496 95.0 -105				1						Stop Frec 5.510000000 GHz 3.000000 MHz Auto Mar Freq Offset 0 Hz
1125				1						Stop Frec 5.51000000 GHz CF Step 3.00000 MHz <u>Auto</u> Mar Freq Offset

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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 34.06%

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## 8.3.3. OVERLAPPING CHANNEL TESTS

#### **RESULTS**

These tests are not applicable.

## 8.3.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
0.0952	10

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

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#### MOVE TIME

	pectrum Analyzer - 2						
enter	RF 50		SENSE	Avg T	/pe: Log-Pwr	09:36:34 AM May 23, 2022 TRACE 1 2 3 4 5 6	Frequency
	100 0.0100	NFE PNO: Fas IFGain:Hig				DET P N N N N	
I0 dB/div	Ref Offset ⊰ Ref -45.00				Δ	/kr1 95.20 ms -18.35 dB	Auto Tune
-og							
-65.0	×2					DL1 -64.00 dBm	Center Fred 5.51000000 GHz
75.0	102						3.51000000 GH
85.0							
95.0							Start Fred 5.510000000 GH;
-105	<b>Materia</b>	itte hornester the	multiplication	histhiadhphiladha	had he produte	Pelety Allman Witteland Liking	5.51000000 GH
-115							
-125							Stop Fred
-135							5.510000000 GH;
Contor 6	5.510000000	CU-7				Span 0 Hz	05.05-1
	3.0 MHz		/BW 3.0 MHz		Sweep 10	5.00 s (40001 pts)	CF Step 3.000000 MH
MKR MODE	TRC SCL	×	Y	FUNCTION	UNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
1 Δ2 2 F	1 t (Δ) 1 t	95.20 ms 1.545 s	(Δ) -18.35 dE -63.98 dBm				
3	· ·	1.040 S	-03.98 0.51				Freq Offset
4 5						E	0 H:
6 7							
8							Scale Type
10 11							Log <u>Lir</u>
4			III				

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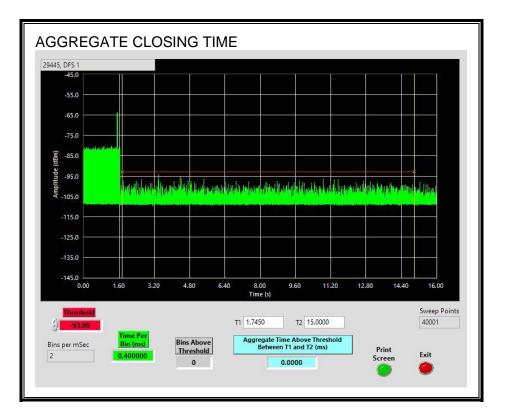
#### **CHANNEL CLOSING TIME**

Keysight Spectrum Analyzer - 29445, D RL RF 50 Ω A	C	SENSE:INT		09:42:40 AM May 23, 2022	Frequency
enter Freq 5.5100000	PNO: Fast +++ T	rig: Video Atten: 0 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	
Ref Offset -20 dE 0 dB/div Ref -45.00 dB	3		۵	Mkr1 200.0 ms -37.40 dB	Auto Tune
og					Center Fred
55.0					5.510000000 GHz
65.0 <b> </b>				DL1 -64.00 dBm	
75.0				TRIG LVL	Start Fred 5.510000000 GHz
					<b>Stop Frec</b> 5.510000000 GHz
····		In the other proceeded to	de la seconda parte de la compaña de la	and the lands and marks	
105 Marcana and and a second s	stephens with frances passifier without which y their enders	, dag gal daveli i al di secali di vitano.	ang daran baya barkanang dara kang sanakanang panakanang panakanang panakanang panakanang panakanang panakanang	sisht (juto in ma fikini dhafani ta statisi, i) gika	CF Step 3.000000 MHz <u>Auto</u> Mar
					Freq Offset
125					0 Hz
135					Scale Type
enter 5.510000000 GHz	· · · · ·			Span 0 Hz	Log <u>Lir</u>

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#### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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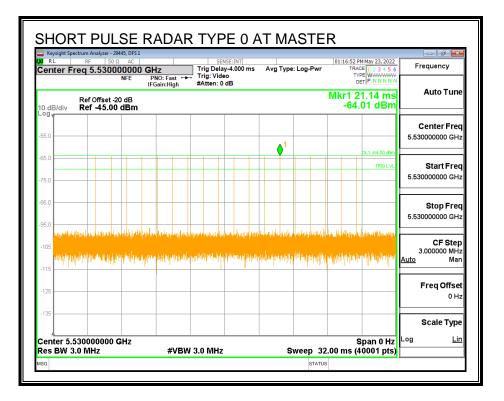
## 8.4. CLIENT MODE RESULTS FOR 80 MHz BANDWIDTH

## 8.4.1. TEST CHANNEL

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

## 8.4.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM



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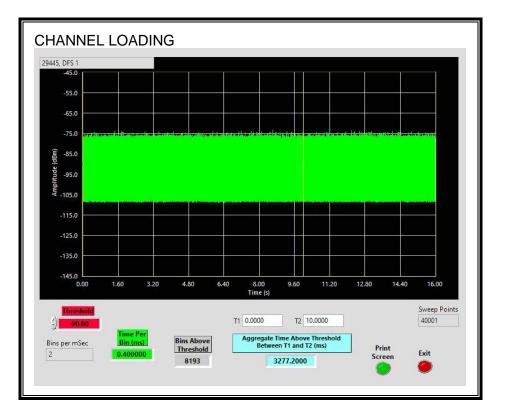
## **TRAFFIC**

X/RL	um Analyzer - 29445, DFS 1					
Center Fre	RF 50 Ω AC	GHz	SENSE:INT	Avg Type: Log-Pwr	09:52:52 AM May 23, 2022 TRACE 1 2 3 4 5 6	Frequency
	NFE	PNO: Fast	<sup>J</sup> Trig: Free Run #Atten: 0 dB		DET P NNNN	
I0 dB/div	Ref Offset -20 dB Ref -45.00 dBm				Mkr1 8.618 s -73.37 dBm	Auto Tune
-og						Center Freq
55.0						5.530000000 GHz
65.0					DL1 -64.00 dBm	
	elan haripatan an afaarimi	anallyant, oldragapter	unperiode and the state of the second s	() (क्षान्त्र) क्षान्त्र (क्षान्त्र) का जिल्ला क्षान्त्र का जिल्ला का जिल्ला का जिल्ला का जिल्ला का जिल्ला का ज	a til hjyr tylder og Gandelan Kyle (spi	<b>Start Freq</b> 5.530000000 GHz
85.0 95.0						<b>Stop Freq</b> 5.530000000 GHz
-105						CF Step 3.000000 MHz <u>Auto</u> Man
-115						Freq Offset
-125						0 Hz
						Scale Type
-135						

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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 32.77%

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# 8.4.3. OVERLAPPING CHANNEL TESTS

#### **RESULTS**

These tests are not applicable.

# 8.4.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
3.497	10

Aggregate Channel Closing Transmission Time	Limit
(msec)	(msec)
2.8	60

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#### MOVE TIME

RL RF 50 Ω enter Freg 5.53000	5, DFS 1				- 6 💌
	IFF PNO: Fast +++ Trig:	SENSE:INT Free Run en: 0 dB	vg Type: Log-Pwr	09:56:13 AM May 23, 2022 TRACE 1 2 3 4 5 6 TYPE WWWWWWW DET P N N N N N	Frequency
Ref Offset -20 0 dB/div Ref -45.00 (	dB	an. 0 dB		∆Mkr1 3.497 s -25.39 dB	Auto Tune
og					0 E
55.0 <b>2</b>				DL1 -64.00 dBm	Center Fred 5.530000000 GHz
35.0	↓ 1∆2				Start Fred
95.0 105	Silver many dispersive disperse	Plangaparaheran lab	- halling and a low of a	ndoogingt dynanyd	5.530000000 GH;
115					Stop Fred
125					5.530000000 GH
enter 5.530000000 G			0	Span 0 Hz	CF Step
es BW 3.0 MHz	#VBW 3.0 N	FUNCTIO	•	6.00 s (40001 pts)	3.000000 MH <u>Auto</u> Mar
1 Δ2 1 t (Δ)		5.39 dB 0 dBm			<b>F</b> 0 <i>f</i>
2 F 1 t					Freq Offse 0 Ha
3 4 5				=	
3 4				E	Scale Type

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#### **CHANNEL CLOSING TIME**

RL RF 50 Ω AC enter Freq 5.530000000 (	SENSE:IN	T Avg Type: Log-Pwr	09:59:47 AM May 23, 2022 TRACE 1 2 3 4 5 6	Frequency
NFE	PNO: Fast ↔ Trig: Video IFGain:High #Atten: 0 dB		DET P N N N N	
Ref Offset -20 dB		۵	Mkr1 200.0 ms -37.97 dB	Auto Tun
og				Center Fre
5.0				5.530000000 GH
5.0 <mark>2</mark>			DL1 -64.00 dBm	
5.0			TRIG LVL	Start Fre 5.530000000 GH
5.0				<b>Stop Fre</b> 5.530000000 GH
o.u		ويتحلوها فتحرائها فاستحاثا والعراقية ووريه أتأت	وعروبه فيستعرفه أعمر وحصائبه ستلام	
	southing of dates into growth support of solutions to the support of the south solution of the south south south			CF Ste 3.000000 MH <u>Auto</u> Ma
				FreqOffse
125				0 Н
135				Scale Typ
enter 5.530000000 GHz			Span 0 Hz	Log Li

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#### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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# 8.4.5. 30-MINUTE NON-OCCUPANCY PERIOD

#### RESULTS

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

Kej R			n Analyz RF	er - 2944 50 Ω	5, DFS 1 AC		-	9	ENSE:INT			10:40:39 /	M May 23, 2022	- # <u>*</u>
en	ter l	Freq	5.53	3000	0000 C	PNO:	Fast ↔		ee Run	Avg Typ	e: Log-Pwr	TRA T)	CE 1 2 3 4 5 6 PE WWWWWWW ET P N N N N N	Frequency
IFGain:High         #Atten: 0 dB         ΔMkr1 1.800 ks           0 dB/div         Ref Offset -20 dB         -18.04 dB           0 dB/div         Ref -45.00 dBm         -18.04 dB										Auto Tune				
														Center Free
5.0													DL1 -64.00 dBm	5.530000000 GH
5.0 5.0	Jue.													<b>Start Free</b> 5.530000000 GH
5.0 5.0														<b>Stop Fre</b> 5.530000000 GH
105		(h)hy	n ti	shelpel	nn III de	rhiv	MA	ala per la	n hjihann	ohrpyhilada	Antophal Al	kin		CF Stej 3.000000 MH <u>Auto</u> Ma
125														Freq Offse 0 H
135						_								Scale Type
en	ter 5	.530	0000	00 G	Hz								Span 0 Hz	Log <u>Li</u>

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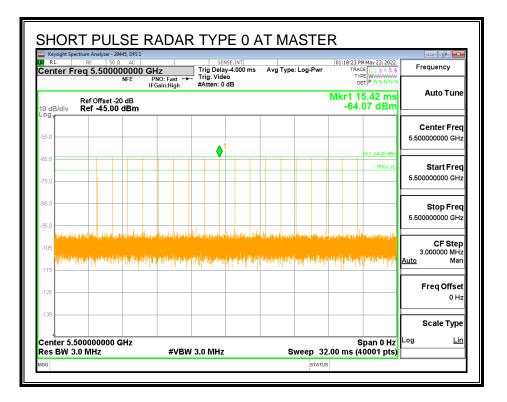
# 8.5. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 20 MHz BANDWIDTH

# 8.5.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5500 MHz.

# 8.5.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM



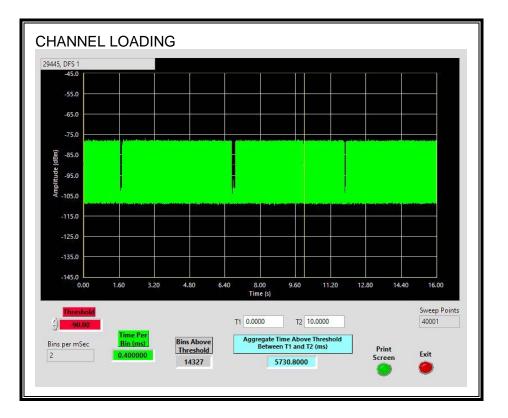
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#### **TRAFFIC**

Keysight Sp RL	RF 50 Ω AC		SENSE:INT		11-32	54 AM May 23, 2022	
	req 5.50000000	GHz PNO: Fast ↔	1	Avg Type: Log		TYPE WWAAAAAAAA	Frequency
	NFL	IFGain:High	#Atten: 0 dB			DET P NNNNN	Auto Tune
0 dB/div	Ref Offset -20 dB Ref -45.00 dBm					(r1 2.778 s 77.04 dBm	Auto Tune
.09							Center Fred
55.0							5.50000000 GHz
65.0						DL1 -64.00 dBm	
75.0	1						Start Fred 5.500000000 GHz
95.0							Stop Fred 5.50000000 GH2
-105		and Names, which we will be and the lower		ana in in in sum		and the of the product of the state	CF Step 3.000000 MHz
-115							<u>Auto</u> Mar
-125							Freq Offset 0 Hz
-135							Scale Type
	.500000000 GHz 3.0 MHz	<i>///</i> (5)4	3.0 MHz		40.00	Span 0 Hz s (40001 pts)	Log <u>Lir</u>

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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 57.3%

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# 8.5.3. OVERLAPPING CHANNEL TESTS

#### **RESULTS**

These tests are not applicable.

# 8.5.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
0.1108	10

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

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## MOVE TIME

	pectrum Analyzer - 2						_ <b>d</b> <del>_</del> ×
RL	RF 50			SENSE:INT	Avg Type: Log-Pwr	11:36:36 AM May 23, 2022 TRACE 1 2 3 4 5 6	Frequency
center l	Freq 5.5000			Frig: Free Run #Atten: 0 dB	Avg Type: Log-Pwr	TYPE WWWWWW DET P NNNN	
I0 dB/div	Ref Offset - Ref -45.00				L	∆Mkr1 110.8 ms -15.95 dB	Auto Tune
og							
-55.0	×/					DL1 -64.00 dBm	Center Free
65.0	102						5.50000000 GH
75.0	•••••						
85.0							Start Free
95.0						de de cara de la cara d	5.500000000 GH
-105	tern tern	na linna an tanàn am	hildalahi	lan kunder hildeligten	hitegelaabblaittihildeleere	THE WAY DEVELOPMENT OF A DEVELOPMENT	
-115							
-125							Stop Free
-135							5.50000000 GH
-135							
enter 5	.500000000	GHz				Span 0 Hz	CF Ster
tes BW	3.0 MHz		#VBW 3.	0 MHz	Sweep	16.00 s (40001 pts)	3.000000 MH
KR MODE	TRC SCL	х		Y FL	UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
<b>1</b> Δ2	1 t (Δ)	110.8 n	ns (Δ)	-15.95 dB			
2 F 3	1 t	1.614	s -	63.83 dBm			Freq Offse
4							0 H
5 6						E	
7 8							Scale Type
9							Scale Type
10							Log <u>Lir</u>
10							

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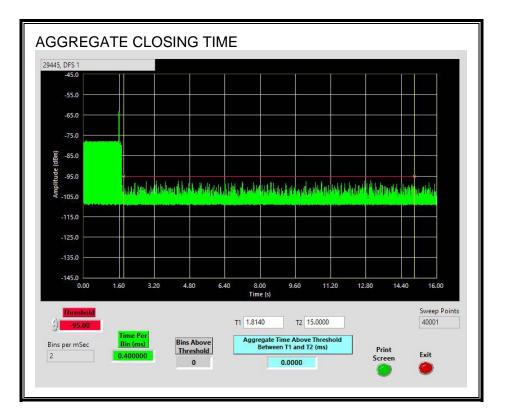
#### **CHANNEL CLOSING TIME**

Keysight Spectrum Analyz R L RF	50 Ω AC		SENSE:INT		11:40:10 AM May 23, 2022	Frequency			
enter Freq 5.5	NFE	PNO: East Trig	: Video ten: 0 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE WWWWW DET P N N N N N				
Ref Offset-20 dB         ΔMkr1 200.0 ms           0 dB/div         Ref -45.00 dBm         -37.18 dB									
og						Center Fred			
55.0						5.50000000 GH			
55.0 <b>11 X 2</b>					DL1 -64.00 dBm				
					TRIG LVL	Start Fred			
75.0						5.500000000 GHz			
85.0									
						Stop Fred 5.50000000 GHz			
25.0			وروابية والمتعادية والمتعادية	ship as an deat ship to part the gravely from one of	elissenten der dassettenssent				
				ne di kandelaman ku, an olahasi téngkal teknisi pina ku ten		CE Oton			
115									
125						Freq Offse 0 H:			
135						Scale Type			
enter 5.5000000	00 GHz				Span 0 Hz	Log <u>Lir</u>			

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#### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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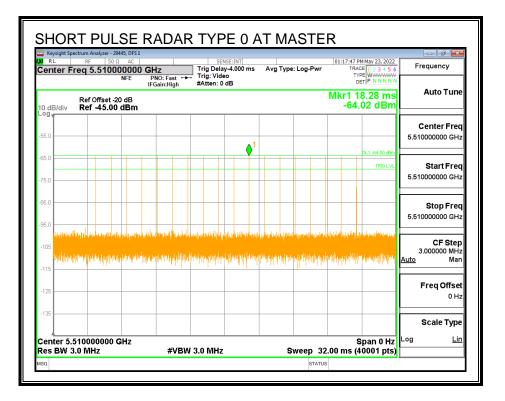
# 8.6. PEER TO PEER MODE EUT RESULTS FOR 40 MHz BANDWIDTH

## 8.6.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5510 MHz.

# 8.6.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM



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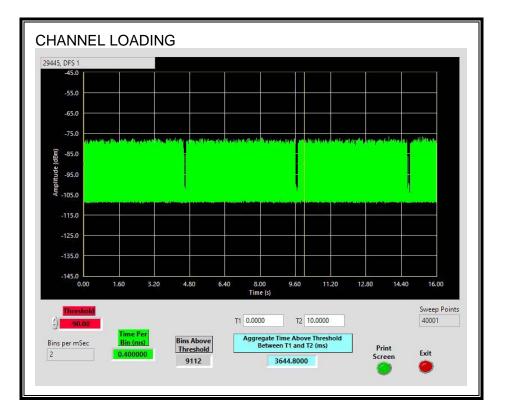
#### **TRAFFIC**

RL RL	Pectrum Analyzer - 29445, DFS 1 RF 50 Q AC	SENSE:INT		11-41-26	AM May 23, 2022	
	Freq 5.510000000		Avg Type: Log-	Pwr TRA	CE 1 2 3 4 5 6	Frequency
	NFE	rig: Free Run Atten: 0 dB		E		
I0 dB/div	Ref Offset -20 dB Ref -45.00 dBm				l 15.38 s .48 dBm	Auto Tune
.og						Center Freq
55.0						5.510000000 GHz
					DL1 -64.00 dBm	
65.0						Start Freq
75.0		 			<b>0</b> 1€	5.510000000 GHz
-85.0 -95.0						<b>Stop Freq</b> 5.510000000 GHz
-105						CF Step
-115		ice when the mercuric terms are not	h afri an internetione	history and the second state	Au	3.000000 MHz to Man
						Freq Offset
-125						0 Hz
-135						Scale Type
					Span 0 Hz Lo	
	.510000000 GHz				Span 0 Hz 🔽	y <u>LIII</u>

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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 36.44%

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# 8.6.3. OVERLAPPING CHANNEL TESTS

#### **RESULTS**

These tests are not applicable.

## 8.6.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
0.052	10

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

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#### MOVE TIME

	pectrum Analyzer - 29445							<b>d</b>
R Center I	RF 50 Ω Freq 5.510000		SENSE:IN	T Avg Type: I		1:44:58 AM May 23, 2022 TRACE 1 2 3 4 5 6		ency
Jeniter 1		FE PNO: Fast IFGain:Hig				DET P N N N N	N	
0 dB/div	Ref Offset -20 Ref -45.00 d				ΔM	kr1 52.00 ms -16.58 dB		o Tune
og								_
55.0	×					DL1 -64.00 dBm		er Fred
55.0	102						5.510000	000 GH
75.0								
85.0							Sta	art Fred
95.0	an tilen bei at	اسلام معالف استاللك	hall har has a she had a she fi	e tid sealth disclose tailaindare se	and the bare	elatoria di Alexadora da Indora	5.510000	000 GH:
105	e talantik orde orde d	A. Long of Math. and all-	tat din characteria a da t	second at the field of the	drama 18 hMulta.	anifantina a stasan tanih		
115							Sto	op Free
125							5.510000	
135								
enter 5	.510000000 GH	47				Span 0 Hz		F Ster
	3.0 MHz		BW 3.0 MHz	s	weep 16.0	00 s (40001 pts)	3.000	000 MH
KR MODE	TRC SCL	х	Y	FUNCTION FUNCT	TION WIDTH	FUNCTION VALUE	Auto	Mai
1 Δ2 2 F	1 t (Δ)	52.00 ms	(Δ) -16.58 dB -64.09 dBm				1	
2 F 3	1 t	1.579 s	-64.09 dBm				Fred	Offse
4 5						E		0 H
6								
7 8							Sca	Іе Туре
9							Log	Lir
10								

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#### **CHANNEL CLOSING TIME**

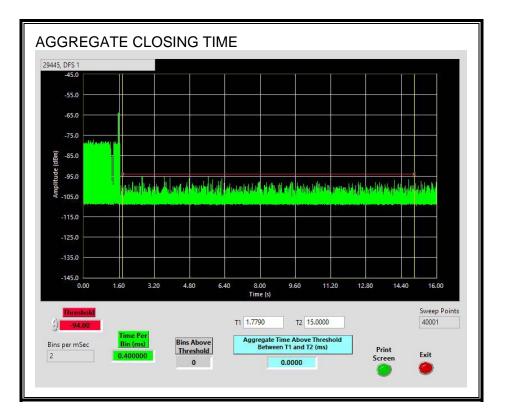
Keysight Spectrum Analyzer - 29445, DFS 1           R L         RF         50 Ω         AC	SENSE:INT		11:50:38 AM May 23, 2022	Frequency
enter Freq 5.510000000 NFE	GHz       PNO: Fast ↔ Trig: Video       IFGain:High       #Atten: 0 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE WWWWWWW DET P N N N N N	
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm	iroaningii <del>watten oʻdb</del>	Δ	Mkr1 200.0 ms -37.99 dB	Auto Tune
og				Center Fred
55.0				5.51000000 GH
6.0 <b></b>			DL1 -64.00 dBm	
			TRIG LVL	Start Free
75.0				5.510000000 GH
15.0				Oton Eros
				Stop Fred 5.510000000 GH;
25.0 <b></b>	nald to the Alar alter the worker	فتغال ومأو ليترا والوسا ويستانا والموالية وقلون معتنا فطر	and a second second states of the	
105 <mark>scalationalisticated patronalistication and a patronalistication of a scalar sector sector of a scalar </mark>	and the first of the state is the state of the			CF Step 3.000000 MH <u>Auto</u> Mar
115				
125				Freq Offse 0 Ha
135				Scale Type
enter 5.510000000 GHz			Span 0 Hz	Log <u>Lir</u>

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#### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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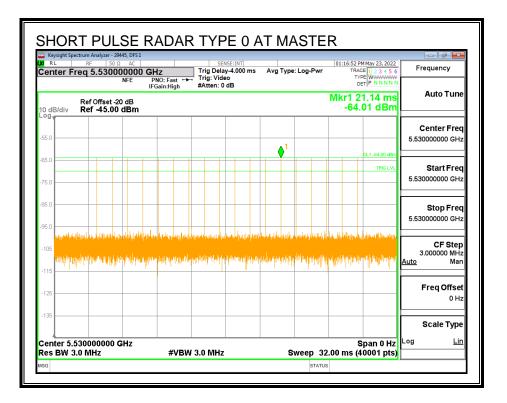
# 8.7. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 80 MHz BANDWIDTH

# 8.7.1. TEST CHANNEL

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

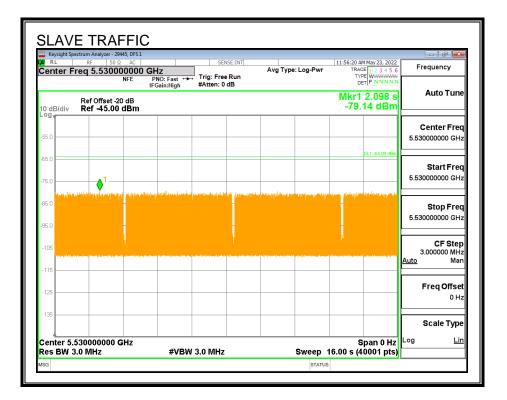
# 8.7.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM



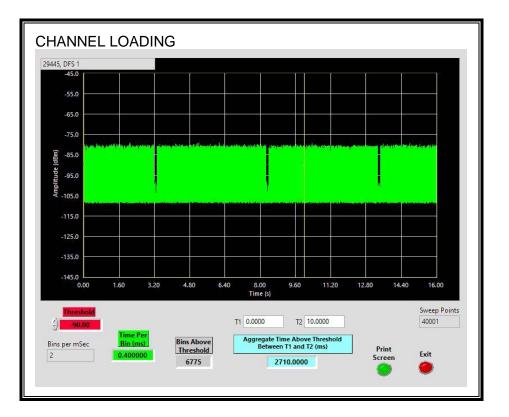
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#### **TRAFFIC**



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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 27.1%

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# 8.7.3. OVERLAPPING CHANNEL TESTS

#### **RESULTS**

These tests are not applicable.

# 8.7.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
4.095	10

Aggregate Channel Closing Transmission Time	Limit
(msec)	(msec)
2.000	60

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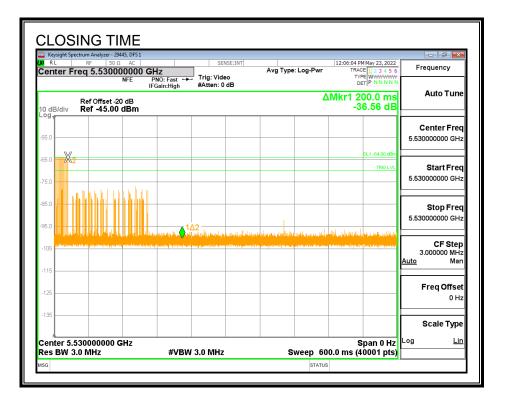
#### MOVE TIME

(RL Center	t Spectrum Analyzer - 29445, DF RF 50 Ω AC	51	SENSE:INT		12:01:53 PM May 23, 2022	
Jerner	Freq 5.53000000	00 GHz PNO: Fast ↔ IFGain:High		Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
10 dB/di	Ref Offset -20 dB v Ref -45.00 dBn	5	#Atten: 0 dB		ΔMkr1 4.095 s -29.07 dB	Auto Tune
-55.0						Center Fred
-65.0	×2				DL1 -64.00 dBm	5.530000000 GHz
	n an	10 1 minute of the second		newey <mark>director territoria tilana (</mark> mer	are all the first first and the	Start Fred 5.530000000 GHz
-115						Stop Fred 5.530000000 GHz
Center	5.530000000 GHz V 3.0 MHz	<		Sweep	Span 0 Hz 16.00 s (40001 pts) FUNCTION VALUE	CF Step 3.000000 MHz <u>Auto</u> Mar
	1 t (Δ) 1 t	4.095 s (Δ) 1.550 s	-29.07 dB -63.97 dBm			Freq Offset 0 Hz
1 Δ2 2 F 3 4 5					E	
1 Δ2 2 F 3 4					E	Scale Type

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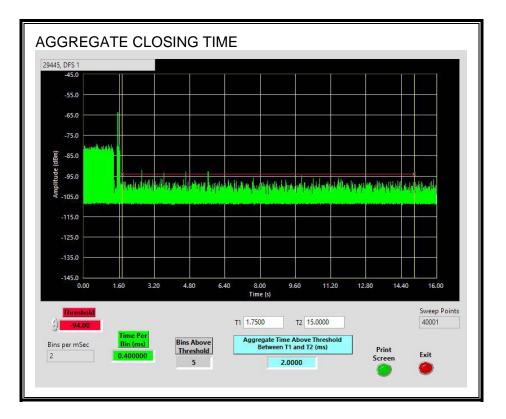
#### **CHANNEL CLOSING TIME**



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#### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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# 8.7.5. 30-MINUTE NON-OCCUPANCY PERIOD

#### **RESULTS**

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

Keys RL		um Analyzer - 29 RF 50 9			SEI	SE:INT				M May 23, 2022	
ent	er Fre	q 5.5300		<b>lz</b> NO:Fast ↔ Gain:High	Trig: Free #Atten: 0		Avg Type	: Log-Pwr	TY	CE 1 2 3 4 5 6 PE WWWWWW ET P NNNNN	Frequency
0 dB		Ref Offset -2 Ref -45.00	20 dB	Summign						1.800 ks 5.65 dB	Auto Tune
											Center Free
5.0										0L1 -64.00 dBm	5.530000000 GH
'5.0 '5.0											<b>Start Free</b> 5.530000000 GH
5.0 -	X2.										<b>Stop Fre</b> 5.530000000 GH
105	lehiji.	p hul Maral	y halfordan	n forhorfyllur	rallo de la com	lan inph	add differing	ar dhalandh	whenship		<b>CF Stej</b> 3.000000 MH <u>Auto</u> Ma
125 -											Freq Offse 0 H
135 -											Scale Type
ent	er 5.53	0000000	GHz							Span 0 Hz	Log <u>Li</u>

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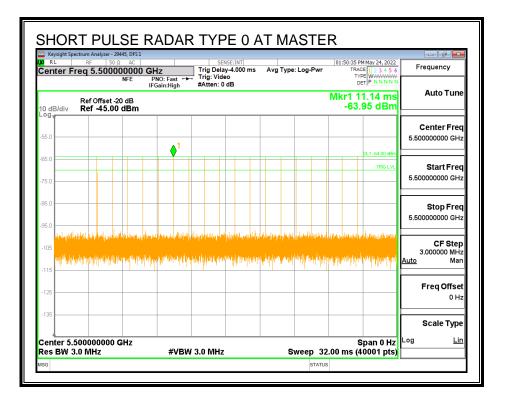
# 8.8. PEER TO PEER MODE EUT RESULTS FOR 20 MHz BANDWIDTH

# 8.8.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5500 MHz.

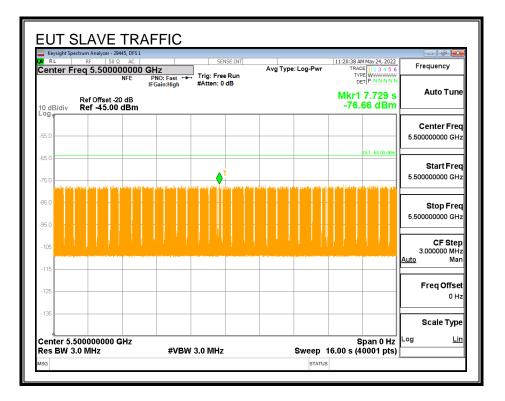
# 8.8.2. RADAR WAVEFORM AND TRAFFIC

#### RADAR WAVEFORM



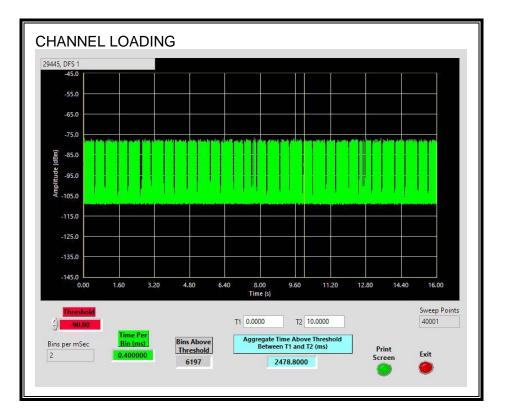
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#### **TRAFFIC**



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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 24.78%

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# 8.8.3. OVERLAPPING CHANNEL TESTS

#### **RESULTS**

These tests are not applicable.

# 8.8.4. MOVE AND CLOSING TIME

#### REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
0.148	10

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

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## MOVE TIME

	Spectrum Analyzer - 2944						
RL	RF 50 Ω Freq 5.50000		SENSE		pe: Log-Pwr	11:26:11 AM May 24, 2022 TRACE 1 2 3 4 5 6	
FUILEI		NFE PNO: Fast IFGain:Hig				DET P NNNN	Ń
0 dB/div	Ref Offset -20 Ref -45.00 (				ΔΙ	Wkr1 148.0 ms -17.46 dB	
-og							
	X					DL1 -64.00 dBm	Center Free 5.50000000 GH
65.0	Δ <sup>2</sup> 1Δ2						5.50000000 GH
75.0							
85.0							Start Free
95.0	ta debated a	an and the enclosed of the of	anna airteachtasa	المراجعة والمحافظة ومحافظة والمحافظة والمحاف	الأراء الأنسيان وريون	aldada ada ng di Unda	5.500000000 GH
-105	in a substitute	ana a naj danatana ana 'n	a caladatur a ta su		, that will be a state of the		
-115							Stop Free
125							5.500000000 GH
-135							
enter :	5.500000000 G	Hz				Span 0 Hz	CF Ster
les BW	3.0 MHz	#V	'BW 3.0 MHz		Sweep 1	6.00 s (40001 pts)	3.000000 MH
IKR MODE	TRC SCL	Х	Y	FUNCTION FI	UNCTION WIDTH	FUNCTION VALUE	Auto Mar
1 Δ2 2 F	1 t (Δ) 1 t	148.0 ms 1.565 s	(Δ) -17.46 dB -63.98 dBm				
3	· ·	1.000 3	-00.50 0.511				Freq Offse
4 5						E	0 H:
6 7							
8							Scale Type
9 10							Log Lir

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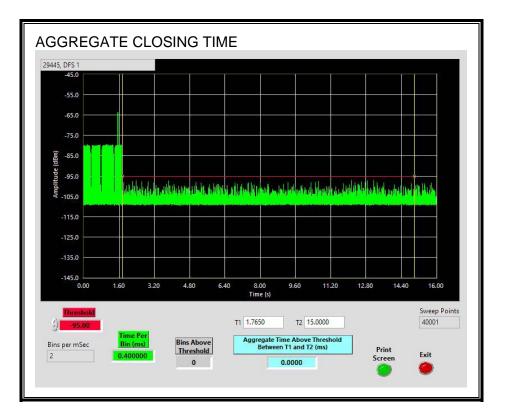
#### **CHANNEL CLOSING TIME**

Reysight Spectrum Analyzer - 29445, DFS :           RL         RF         50 Ω         AC           enter Freq 5.500000000         NFE	O GHz PNO: Fast ↔ Trig: Video	Avg Type: Log-Pwr	11:31:30 AM May 24, 2022 TRACE 1 2 3 4 5 6 TYPE WWWWWWW DET P N N N N	Frequency
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm	IFGain:High #Atten: 0 df		Mkr1 200.0 ms -37.27 dB	Auto Tune
<b>°g</b>				Center Fred 5,50000000 GH
66.0 <b></b>			DL1 -64.00 dBm	
75.0				Start Fred 5.500000000 GH:
35.0	102			Stop Frec 5.500000000 GH;
		terse filologia all'anti perterio terse providenza del presidente en la presidente del composito del composito del composito del composito del composito del composito del composi en la presidente del composito del composito del composito del composito del composito del composito del composi		CF Step 3.000000 MHz <u>Auto</u> Mar
125				Freq Offsel 0 Hz
135				Scale Type
enter 5.500000000 GHz			Span 0 Hz	Log <u>Lir</u>

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#### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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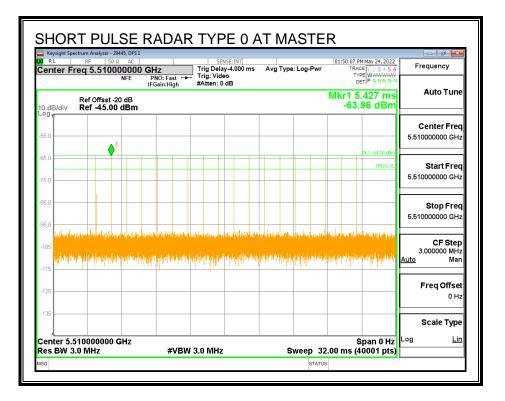
# 8.9. PEER TO PEER MODE EUT RESULTS FOR 40 MHz BANDWIDTH

# 8.9.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5510 MHz.

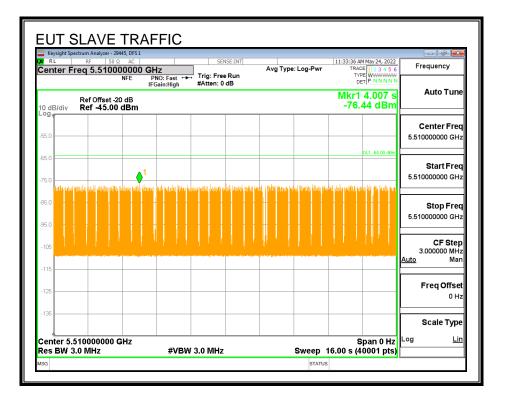
# 8.9.2. RADAR WAVEFORM AND TRAFFIC

## RADAR WAVEFORM



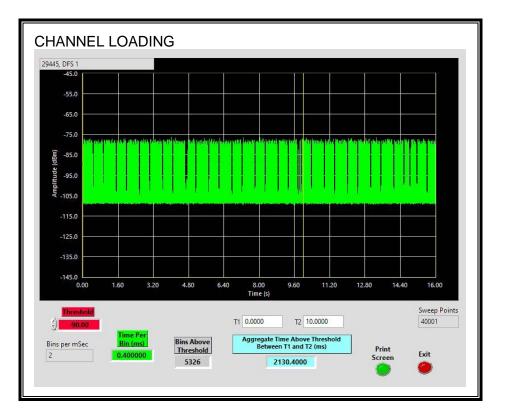
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#### TRAFFIC



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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 21.3%

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# 8.9.3. OVERLAPPING CHANNEL TESTS

## **RESULTS**

These tests are not applicable.

# 8.9.4. MOVE AND CLOSING TIME

## REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
6.100	10

Aggregate Channel Closing Transmission Time	Limit
(msec)	(msec)
0.400	60

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## MOVE TIME

	1			d <mark></mark>
enter Freq 5.51000000 NFE	PNO: Fast +++ Trig: Free R	Avg Type: I un	TYPE	ay 24, 2022 2 3 4 5 6 WWWWW P N N N N
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm	ii Guin.ingii	•	ΔMkr1 6	Auto Tuno
				Center Freq
56.0 <b>2</b>	<b>_</b> 100	)	DL1	-64.00 dBm 5.510000000 GHz
	Unpunping coording to go to the second s		hyrrollonogia (textud dom ag	5.510000000 GHz
115				Stop Freq 5.510000000 GHz
enter 5.510000000 GHz tes BW 3.0 MHz	#VBW 3.0 MHz		Spa weep 16.00 s (400	Auto Mar
1 Δ2 1 t (Δ) 2 F 1 t 3 4 5	6.100 s (Δ) -19.50 dB 1.563 s -63.99 dBm			Freq Offset
6 7				Scale Type
9				

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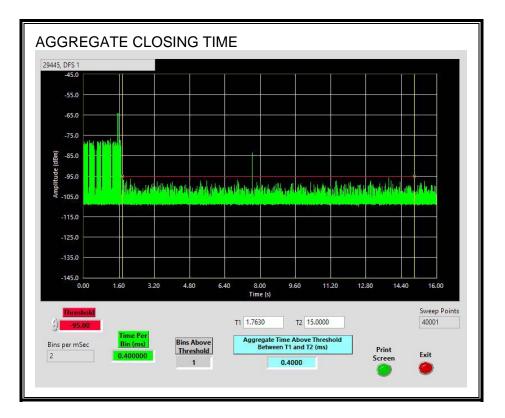
## **CHANNEL CLOSING TIME**

Keysight Spectrum Analyzer - 29445, DFS 1 R L RF 50 Ω AC	SENSE:INT		11:40:25 AM May 24, 2022	Frequency
Center Freq 5.510000000 NFE	BHZ PNO: Fast ↔ Trig: Video IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm		Δ١	Vkr1 200.0 ms -39.82 dB	Auto Tune
.og				Center Fred
55.0			DL1 -64.00 dBm	5.510000000 GHz
65.0 <b>2</b>			TRIG LVL	Start Fred
75.0				5.510000000 GHz
85.0				Stop Fred 5.510000000 GHz
95.0	untrinendialas y 1∆2 methas samellitylas s	the state of the second state of the second	lati dimanan an daharan dahar dahar	5.510000000 GHz
-105	a ka na ka na sa na s			CF Step 3.000000 MHz <u>Auto</u> Mar
-125				Freq Offsel 0 Hz
-135				Scale Type
Center 5.510000000 GHz Res BW 3.0 MHz	#VBW 3.0 MHz		Span 0 Hz .0 ms (40001 pts)	Log <u>Lir</u>

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# AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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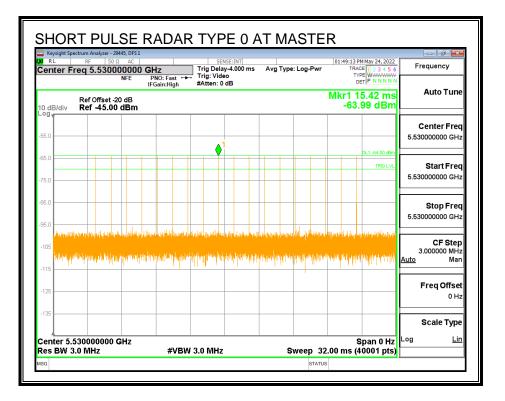
# 8.10. PEER TO PEER MODE EUT RESULTS FOR 80 MHz BANDWIDTH

# 8.10.1. TEST CHANNEL

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

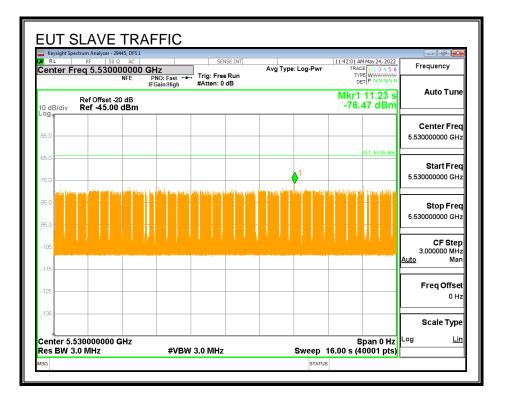
# 8.10.2. RADAR WAVEFORM AND TRAFFIC

## RADAR WAVEFORM



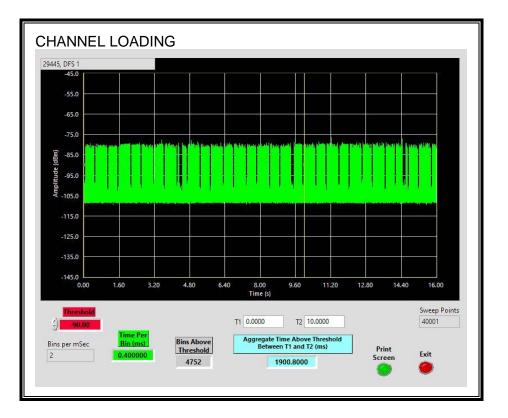
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## **TRAFFIC**



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## **CHANNEL LOADING**



The level of traffic loading on the channel by the EUT is 19.0%

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# 8.10.3. OVERLAPPING CHANNEL TESTS

## **RESULTS**

These tests are not applicable.

# 8.10.4. MOVE AND CLOSING TIME

## REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

## **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
0.1552	10

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

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# MOVE TIME

	oectrum Analyzer - 29445,						- đ <b>-</b>
RL	RF 50 Ω Fea 5.530000		SEN	ISE:INT	Avg Type: Log-Pwr	11:45:30 AM May 24, 2022 TRACE 1 2 3 4 5 (	
	NF			Run		DET P N N N N	N
0 dB/div	Ref Offset -20 c Ref -45.00 dl				L	∆Mkr1 155.2 ms -17.81 dB	
.og	10000	<u></u>					
55.0						DL1 -64.00 dBm	Center Free
55.0	2 102						5.530000000 GH
75.0	······································						
85.0							Start Free
95.0	out but with works	administration	ka analara di tasi mit	diffuence and the	and acceleration construction of	te des vite and a constant it, as the fail, did to b	5.530000000 GH
105	1 J. J. Manufacture	dan da na sa	The cheer of the	. Didia di contratico d	and it is a set of the set of the set	والمتلاط والمتحمط مقاربته	
115							Stop Free
125							5.530000000 GH
135							5.55000000 GH
	.530000000 GH	-				Onen A Ha	
	3.0 MHz		/BW 3.0 MHz		Sweep	Span 0 Hz (40001 pts) (16.00	
IKR MODE T		X	Y	FUNCTIO	•		Auto Mar
<b>1</b> Δ2	1 t (Δ)	155.2 ms	(Δ) -17.81	dB	PONCTION WIDTH	FUNCTION VALUE	
2 F 3	1 t	1.565 s	-64.16 dE	Bm			Freq Offse
4							он
5 6						E	
7							Scale Type
9							Genie Type
10							Log <u>Lir</u>
11							

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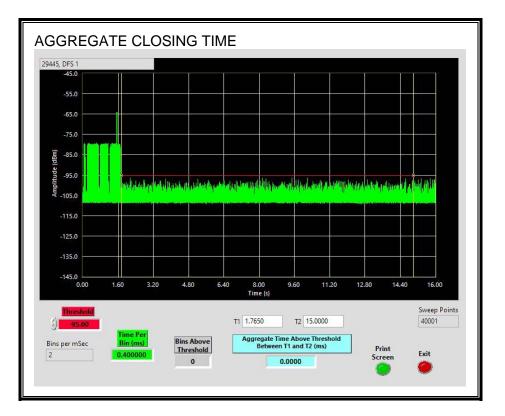
## **CHANNEL CLOSING TIME**

Keysight Spectrum Analyzer - 29445, DFS 1           RL         RF         50 Ω         AC	SENSE:II	ग Avg Type: Log-Pwr	11:49:01 AM May 24, 2022 TRACE 1 2 3 4 5 6	Frequency
enter Freq 5.530000000 NFE	PNO: Fast ↔ Trig: Video IFGain:High #Atten: 0 dB	Avg Type: Log-Pwr		
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm	in cumingi	۵	Mkr1 200.0 ms -37.92 dB	Auto Tune
og				Center Fred
55.0				5.530000000 GH;
55.0 <mark>- X</mark> 2			DL1 -64.00 dBm TRIG LVL	Otort From
75.0			TRIG LVL	Start Fred 5.530000000 GH;
35.0				Stop Fred
25.0				5.530000000 GH
		A A A A A A A A A A A A A A A A A A A	waataa faadhahaa adha	CF Step
	<u>195 den er hendende fan Withelde</u> , dan ste den en de	na sensa da Alempio ana di Landi 10, 20, 20 ana anti da Alempio da Sana da Alempio da Sana da Sana da Sana da S		3.000000 MH; <u>Auto</u> Mar
115				Erer Offer
125				Freq Offse 0 H:
135				Scale Type
enter 5.530000000 GHz			Span 0 Hz	Log <u>Lir</u>

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## AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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# 8.10.5. 30-MINUTE NON-OCCUPANCY PERIOD

## **RESULTS**

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

Key RL		rum Analyzer - RF 50	29445, DFS 1		SEI	SE:INT			12:24:22 P	May 24, 2022	_ đ <u>×</u>
ent	ter Fre	eq 5.530		IO: Fast 🔸	Trig: Free #Atten: 0		Avg Type	: Log-Pwr	TYP	E 1 2 3 4 5 6 E WWWWWWW T P N N N N N	Frequency
Ref Offset -20 dB								Auto Tune			
og											Center Free
5.0										DL1 -64.00 dBm	5.530000000 GH
5.0											Start Free 5.530000000 GH
5.0	X2										Stop Free
95.0				11						l.	5.530000000 GH
105	i tol Ma	hirathailt I	ahadaa faddadga	n hand h	pha philippe	din <mark>ja ali</mark> ki	n in the second second	(1 <sub>1</sub> 1)/km/l	hiphikudi	V	CF Stej 3.000000 MH <u>Auto</u> Ma
125											Freq Offse 0 H
135											Scale Type
enf	ter 5.53	30000000	GHz						s	pan 0 Hz	Log <u>Li</u>

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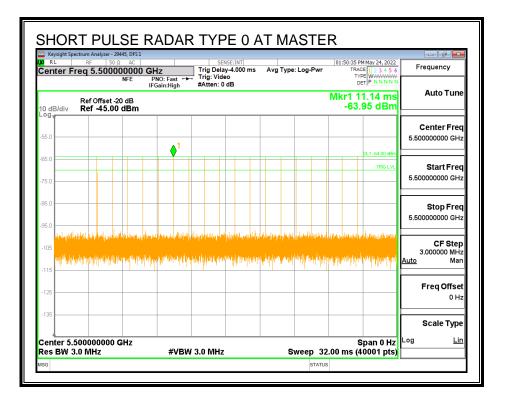
# 8.11. PEER TO PEER MODE PEER SLAVE DEVICE RESULTS FOR 20 MHz BANDWIDTH

# 8.11.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5500 MHz.

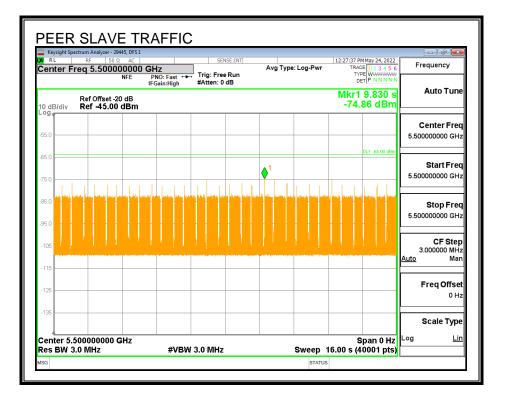
# 8.11.2. RADAR WAVEFORM AND TRAFFIC

## RADAR WAVEFORM



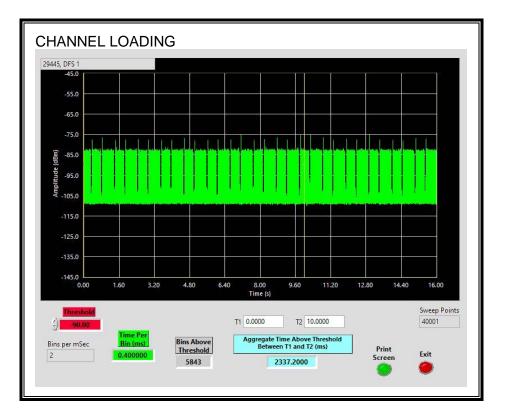
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#### TRAFFIC



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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the Peer Slave is 23.37%

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# 8.11.3. OVERLAPPING CHANNEL TESTS

## **RESULTS**

These tests are not applicable.

# 8.11.4. MOVE AND CLOSING TIME

## REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

## **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
0.0584	10

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

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## MOVE TIME

	ectrum Analyzer - 29445									- 6 💌
enter F	RF 50 Ω req 5.500000	AC 000 GHz		NSE:INT	Avg Type	: Log-Pwr	TRAC	M May 24, 2022	Free	quency
		FE PNO: Fast IFGain:High					TYF			
0 dB/div	Ref Offset -20 Ref -45.00 d					Δ		8.40 ms 8.73 dB		Auto Tune
-og										
65.0	×,-							DL1 -64.00 dBm		enter Fred 000000 GH;
75.0	Δ1Δ2 —								0.0000	
85.0										
95.0										Start Fred 000000 GHz
-105	unlativitativi	with the standard of the	undebiddiede	a she wanter	dhadalkiyala	hana talam	<b>Adhitatedy</b>	ndalahananan	0.0000	100000 GH
-115										
-125										Stop Free 000000 GH;
-135									5.5000	100000 GH
Center 5	500000000 GH	17					8	pan 0 Hz		CF Step
Res BW 3			BW 3.0 MHz	:		Sweep 1				ооооо мн
MKR MODE TH		Х	Y		CTION FUN	CTION WIDTH	FUNCTIO	DN VALUE	<u>Auto</u>	Mar
1 Δ2 1 2 F 1	t (Δ) t	58.40 ms 1.530 s	(Δ) -18.73 -64.29 d						_	
3									FI	req Offsei 0 Ha
5								E		0 H2
7										cale Type
8 9									3	cale Type
10									Log	Lir

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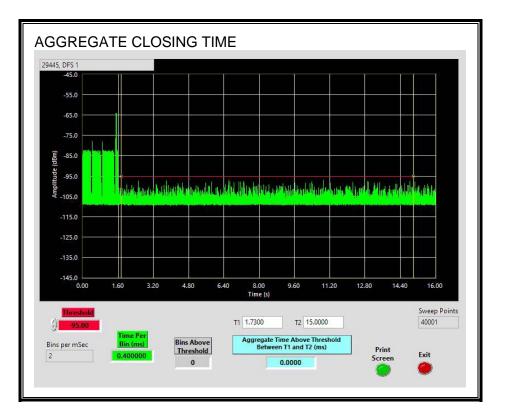
## **CHANNEL CLOSING TIME**

Keysight Spectrum Analyzer - 29445, DFS 1           RL         RF         50 Ω         AC           Center Freq 5.500000000         NFE	PNO: East +++ Trig: Video	Avg Type: Log-Pwr	12:33:53 PM May 24, 2022 TRACE 1 2 3 4 5 6 TYPE WWWWWWW	Frequency
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm	IFGain:High #Atten: 0 dB	ΔN	Ikr1 200.0 ms -37.56 dB	Auto Tune
<b>.og</b>				Center Freq 5.50000000 GHz
65.0 <b>2</b>			DL1 -64.00 dBm	
.75.0			TRIG LVL	Start Freq 5.50000000 GHz
85.0	102			<b>Stop Freq</b> 5.500000000 GHz
-105		landa ya kumi kuma ya kuni kuni ya kuni kuni ya kuni y Mana ya kuni ya Mana ya kuni ya		CF Step 3.000000 MHz <u>Auto</u> Man
-125				Freq Offsel 0 Hz
-135				Scale Type
Center 5.500000000 GHz			Span 0 Hz	Log <u>Lin</u>

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## AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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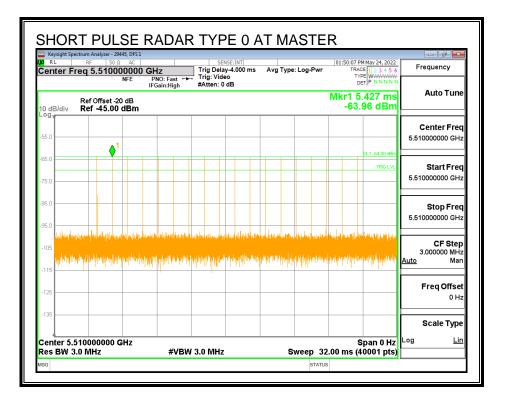
# 8.12. PEER TO PEER MODE PEER SLAVE DEVICE RESULTS FOR 40 MHz BANDWIDTH

# 8.12.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5510 MHz.

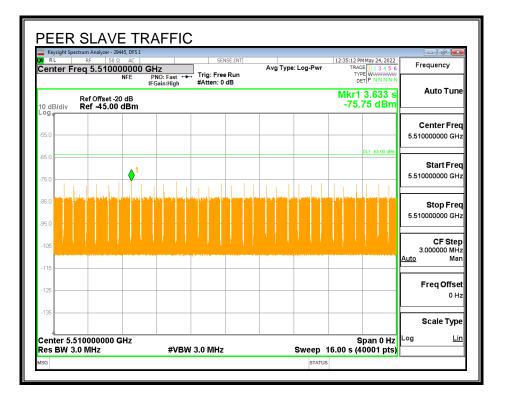
# 8.12.2. RADAR WAVEFORM AND TRAFFIC

## RADAR WAVEFORM



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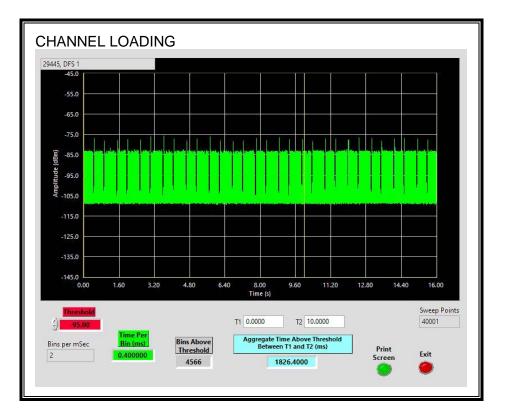
#### TRAFFIC



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#### **CHANNEL LOADING**



The level of traffic loading on the channel by the Peer Slave is 18.26%

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# 8.12.3. OVERLAPPING CHANNEL TESTS

## RESULTS

These tests are not applicable.

# 8.12.4. MOVE AND CLOSING TIME

## REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

## **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
4.159	10

Aggregate Channel Closing Transmission Time	Limit
(msec)	(msec)
28.0	60

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# MOVE TIME

	- 29445, DFS 1				
Center Freq 5.510	0 Ω AC 0000000 GHz NFE PNO: Fast ↔	SENSE:INT	Avg Type: Log-Pwr	12:40:17 PM May 24, 2022 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
Ref Offse		#Atten: 0 dB		ΔMkr1 4.159 s -23.92 dB	Auto Tune
- <b>og</b>					Center Freq
65.0 2				DL1 -64.00 dBm	5.510000000 GHz
85.0 95.0 95.0 95.0 95.0 95.0 95.0 95.0 9	uan kahisaan shara		hipertotransportprobability	lanovitelanoviteretanovite	Start Freq 5.510000000 GHz
-115					Stop Freq 5.510000000 GHz
Center 5.51000000 Res BW 3.0 MHz		3.0 MHz		Span 0 Hz 16.00 s (40001 pts) FUNCTION VALUE	CF Step 3.000000 MHz <u>Auto</u> Mar
1 Δ2 1 t (Δ) 2 F 1 t 3 4 5 6	4.159 s (Δ) 1.591 s	-23.92 dB -64.07 dBm		E	Freq Offset 0 Hz
					Scale Type
6 7 8 9					

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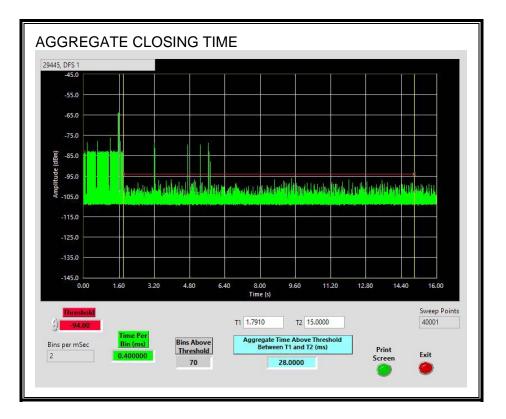
## **CHANNEL CLOSING TIME**

RL RF 50 Ω AC enter Freq 5.510000000 G	SENSE:INT	Avg Type: Log-Pwr	12:49:14 PM May 24, 2022 TRACE 1 2 3 4 5 6	Frequency
NFE F	NO: Fast +++ Trig: Video Gain:High #Atten: 0 dB		DET P NNNN	
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm		ΔΝ	/kr1 200.0 ms -37.75 dB	Auto Tune
og				Center Fred
5.0				5.51000000 GH
6.0 <b>2</b>			DL1 -64.00 dBm	
75.0				Start Free 5.510000000 GH;
95.0				<b>Stop Fred</b> 5.510000000 GH:
		histopetics, participate, 14000.	and a state base of the	0
105 <mark>Halferin en en</mark>	يو برنگار فيلوميني وري مريخ و رو برني و ر و رو برني و	n, hann i de sentide fasting it einer and her her her stelle en jaar sy ste	a belan na bahara tarah di se sisiki ta barakikan	CF Step 3.000000 MH <u>Auto</u> Mar
125				Freq Offse
135				Scale Type
				Log <u>Lir</u>

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## AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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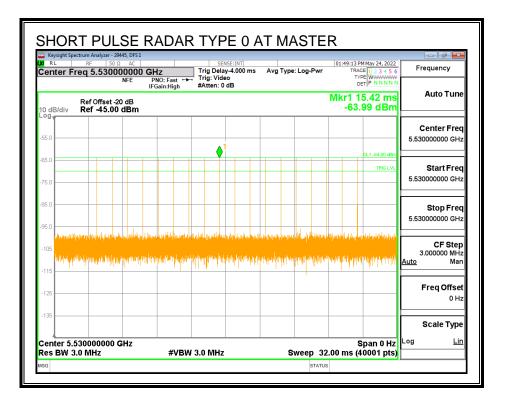
# 8.13. PEER TO PEER MODE PEER SLAVE DEVICE RESULTS FOR 80 MHz BANDWIDTH

# 8.13.1. TEST CHANNEL

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

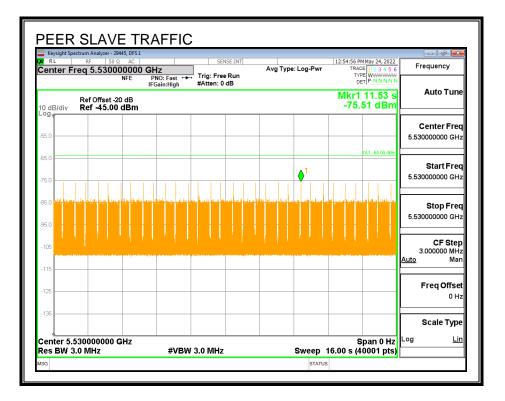
# 8.13.2. RADAR WAVEFORM AND TRAFFIC

## RADAR WAVEFORM



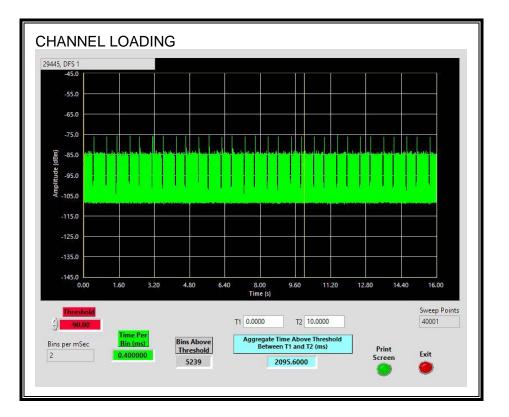
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## **TRAFFIC**



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## **CHANNEL LOADING**



The level of traffic loading on the channel by the Peer Slave is 20.95%

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# 8.13.3. OVERLAPPING CHANNEL TESTS

## **RESULTS**

These tests are not applicable.

# 8.13.4. MOVE AND CLOSING TIME

## REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time = (Number of analyzer bins showing transmission) \* (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

## **RESULTS**

Channel Move Time	Limit
(sec)	(sec)
4.042	10

Aggregate Channel Closing Transmission Time	Limit
(msec)	(msec)
16.8	60

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## MOVE TIME

	pectrum Analyzer - 29445,	DFS 1					- 0 - ×
RL	RF 50 Ω		SEN	SE:INT	a Type: Log-Pwr	01:02:24 PM May 24, 2022 TRACE 1 2 3 4 5 6	Frequency
enter	Freq 5.530000			Run	g Type. Log-F wi	TYPE WWWWWW DET P N N N N	
0 dB/div	Ref Offset -20 d Ref -45.00 dB					∆Mkr1 4.042 s -21.87 dB	Auto Tune
.og							Center Fred
55.0	<u>%</u>					DL1 -64.00 dBm	5.53000000 GH:
75.0			1Δ2				
85.0 <b>(</b> auto			•				Start Free
95.0	a marth adam		united a contracted of	instale di statement	nan mulphle altim	Managariah Adisotriti ya d	5.530000000 GH
105							
125							Stop Free
135							5.530000000 GH
enter 4	5.530000000 GH	7				Span 0 Hz	CF Ster
	3.0 MHz		'BW 3.0 MHz		Sweep	16.00 s (40001 pts)	3.000000 MH
	TRC SCL 1 t (Δ)	X 4.042 s	Υ (Δ) -21.87 c		FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2 F 3	1 t	1.586 s	-64.07 dB	m			Freq Offse
4 5						=	0 H:
6 7							1
8							Scale Type
10 11							Log <u>Lir</u>
						÷	

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## **CHANNEL CLOSING TIME**

Keysight Spectrum Analyzer - 29445, DFS           RL         RF         50 Ω         AC           enter Freq 5.53000000         NFE	D GHz PNO: Fast +++ Trig:	SENSE:INT A Video en: 0 dB	/g Type: Log-Pwr	01:05:38 PM May 24, 2022 TRACE 1 2 3 4 5 6 TYPE WWWWWWW DET P NNNN	Frequency
Ref Offset -20 dB 0 dB/div Ref -45.00 dBm	IFGain:High #Att		۵	Mkr1 200.0 ms -38.09 dB	Auto Tune
5.0					Center Free 5.530000000 GH
6.0 <b></b>				DL1 -64.00 dBm	
5.0				TRIG LVL	Start Free 5.530000000 GH
ж.о 					Stop Free 5.530000000 GH:
		na hypera la provinskom (na politika da	( negati pintena para presidena ( internet da anti-	l la general de la seconda de la constanti de seconda de la constante de la constante de la constante de la const Constante de la constante de la Constante de la constante de la	CF Step 3.000000 MH <u>Auto</u> Mar
125					Freq Offse 0 Hi
135					Scale Type
enter 5.530000000 GHz				Span 0 Hz	Log <u>Lir</u>

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## AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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# 8.13.5. 30-MINUTE NON-OCCUPANCY PERIOD

## **RESULTS**

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

RL		RF	llyzer - 2944 50 Ω	AC		SEI	ISE:INT	A	: Log-Pwr		M May 24, 2022	Frequency
en	ter Fi	eq 5.			<b>1Z</b> NO: Fast ↔ Gain:High	Trig: Free #Atten: 0		Avg Type	: Log-Pwr	TY	DE 1 2 3 4 5 6 PE WWWWWW ET P N N N N N	
0 dE	3/div		ffset -20 45.00 (								1.800 ks 0.48 dB	Auto Tun
	ĺ											Center Free
5.0											DL1 -64.00 dBm	5.530000000 GH
5.0 5.0												<b>Start Free</b> 5.530000000 GH:
5.0	×2											Stop Free 5.530000000 GH
105		(hyholio)	WWPhile	111pa  11	llul <sub>al</sub> lılır	(pa <sup>ll</sup> )Apteor	din rilipati y	N. Comp. Mark	mhalladhai	and diffe		CF Step 3.000000 MH <u>Auto</u> Mar
115												Freq Offse 0 H
135												Scale Type
ent	ter 5.5	30000	)000 G	H7						5	Span 0 Hz	Log <u>Li</u> i

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# 9. SETUP PHOTOS

Please refer to 14040866-EP1V1 for setup photos

# **END OF REPORT**

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