

Element Materials Technology

(formerly PCTEST) 18855 Adams Court, Morgan Hill, CA 95037 USA Tel. 408.538.5600 http://www.Element.com



MEASUREMENT REPORT FCC PART 15.407 / ISED RSS-247 DFS

Applicant Name:

Apple Inc. One Apple Park Way Cupertino, CA 95014 **United States**

Date of Testing: 11/29/23-3/15/24 **Test Report Issue Date:** 4/4/2024 **Test Site/Location:** Element Materials Technology, Morgan Hill, CA, USA **Test Report Serial No.:** 1C2311270069-10.BCG

BCGA2925

579C-A2925

APPLICANT:

FCC ID:

IC:

Apple Inc.

Application Type:	Certification
Model/HVIN:	A2925
EUT Type:	Client Only Device, No Radar Detection Capability
Max. RF Output Power:	178.238 mW (22.51 dBm) Conducted
	(802.11n UNII Band 2A)
	198.609 mW (22.98 dBm) Conducted
	(802.11n UNII Band 2C)
Frequency Range:	5250 – 5350 MHz (UNII-2A Band)
	5470 – 5725 MHz (UNII-2C Band)
FCC Classification:	Unlicensed National Information Infrastructure (UNII)
FCC Rule Part(s):	Part 15 Subpart E (15.407)
ISED Specification:	RSS-247 Issue 3
Test Procedure(s):	KDB 905462 D02 v02

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 905462 D02 v02 Compliance Measurement Procedures for Unlicensed-National Information Infrastructure Devices Operating in the 5.25 - 5.35 GHz and 5.47 - 5.725 GHz Bands Incorporating Dynamic Frequency Selection. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

R] Ortanez **Executive Vice President**

Prepared by: WKR0000010733

Reviewed by: WKR0000005913



FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 1 of 40
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 1 of 42

V 10.5 12/15/2021



TABLE OF CONTENTS

1.0	INTRO	DDUCTION	. 3
	1.1	SCOPE	
	1.2	ELEMENT TEST LOCATION	. 3
	1.3	TEST FACILITY / ACCREDITATIONS	. 3
2.0	PROD	DUCT INFORMATION	. 4
	2.1	EQUIPMENT DESCRIPTION	
	2.2	DEVICE CAPABILITIES	
	2.3	ANTENNA DESCRIPTION	-
	2.4	TEST SUPPORT EQUIPMENT	
	2.5	MASTER PARAMETERS	
	2.6	SOFTWARE AND FIRMWARE	
	2.0	EMI SUPPRESSION DEVICE(S)/MODIFICATIONS	0. 6
3.0		RIPTION OF TESTS	
3.0		EVALUATION PROCEDURE	
	3.1		
4.0	3.2	ENVIRONMENTAL CONDITIONS	
4.0		NNA REQUIREMENTS	
5.0			
6.0		EQUIPMENT CALIBRATION DATA	
7.0	DESC	RIPTION OF DYNAMIC FREQUENCY SELECTION TEST	11
	7.1	APPLICABILITY	
		7.1.1 MASTER DEVICES:	
		7.1.2 CLIENT DEVICES:	12
	7.2	DFS DETECTION THRESHOLD VALUES	
	7.3	DFS RESPONSE REQUIREMENTS	14
	7.4	PARAMETERS OF DFS TEST SIGNALS	
	7.5	SYSTEM OVERVIEW AND PROCEDURE	
	7.6	SYSTEM CALIBRATION:	
8.0		COMMUNICATION MODES	
9.0		RESULTS	
3.0	9.1	SUMMARY	
	9.1 9.2	CHANNEL LOADING	
	9.2	9.2.1 CHANNEL LOADING MODE 1:	
		9.2.2 CHANNEL LOADING MODE 2:	
		9.2.3 CHANNEL LOADING MODE 3:	
		9.2.4 CHANNEL LOADING MODE 4:	
	9.3	CHANNEL MOVE/ CLOSING TRANSMISSION TIME	
	010	9.3.1 CHANNEL MOVE/ CLOSING TRANSMISSION TIME MODE 1:	
		9.3.2 CHANNEL MOVE/ CLOSING TRANSMISSION TIME MODE 2:	
		9.3.3 CHANNEL MOVE/ CLOSING TRANSMISSION TIME MODE 3:	
		9.3.4 CHANNEL MOVE/ CLOSING TRANSMISSION TIME MODE 4:	36
	9.4	NON-OCCUPANCY PERIOD	37
		9.4.1 NON-OCCUPANCY PERIOD (30 MINUTES) MODE 1:	
		9.4.2 NON-OCCUPANCY PERIOD (30 MINUTES) MODE 2:	39
		9.4.3 NON-OCCUPANCY PERIOD (30 MINUTES) MODE 3:	
		9.4.4 NON-OCCUPANCY PERIOD (30 MINUTES) MODE 4:	
10.0	CONC	CLUSION	42

Test Report S/N· Test Dates: FIIT Type:	FCC ID: BCGA2925 IC: 579C-A2925	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test bates. Let Type.	Test Report S/N:	Test Dates:	EUT Type:	Dega 2 of 42
1C2311270069-10.BCG 11/29/23-3/15/24 Tablet Device Page 2 of 42	1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	raye 2 01 42



1.0 INTRODUCTION

1.1 Scope

This report has been prepared to demonstrate compliance with the requirements for Dynamic Frequency Selection (DFS) as stated in KDB 905462 D02 v02. As of July 20, 2007, all devices operating in the 5250 – 5350 MHz and/or the 5470 – 5725 MHz bands (excluding 5600-5650MHz for ISED Canada) must comply with the DFS requirements.

1.2 Element Test Location

These measurement tests were conducted at the Element Materials Technology facility located at 18855 Adams Court, Morgan Hill, CA 95037. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

Measurements were performed at Element Materials Technology located in Morgan Hill, CA 95037, U.S.A.

- Element Materials Technology is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.02 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Materials Technology facility is a registered (22831) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreements (MRAs).

FCC ID: BCGA2925 IC: 579C-A2925	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 3 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	V 40 5 40/45/2024



2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID: BCGA2925, IC: 579C-A2925**. The test data contained in this report pertains only to the emissions due to the EUT's UNII transmitter. As the EUT does not have radar detection capability it was evaluated as a Client Only Device. All test results reported herein are applicable to the sample selected for testing.

Mode of Operation:

Master Device	
Client Device (No radar detection)	\square
Client Device with Radar Detection	

Test Device Serial No.: Y415XMP2L9

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 4 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 4 of 42



2.2 **Device Capabilities**

This device contains the following capabilities:

802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, Bluetooth (1x, EDR, LE1M, LE2M, HDR4, HDR8), 802.11a/ax WIFI 6E, NB UNII (1x, HDR4, HDR8), WPT, 802.15.4

This device supports BT Beamforming.

Channel puncturing function is not supported for this device.

	Band 1		Band 2A		Band 2C		Band 3
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
36	5180	52	5260	100	5500	149	5745
:	:	:	:	:	:	:	:
42	5210	56	5280	116	5580	157	5785
:	:	:	:	:	:	:	:
48	5240	64	5320	144	5720	165	5825
	Table 2-1 902 11	a / 902 11	n / 902 11ac / 902 1	1-1 /201	(Hz) Eroguopov / C	annol ()porations

Table 2-1. 802.11a / 802.11n / 802.11ac / 802.11ax (20MHz) Frequency / Channel Operations

	Band 1		Band 2A			Band 2C		Band 3
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)		Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
38	5190	54	5270		102	5510	151	5755
:	:	:	:		:	:	:	:
46	5230	62	5310		110	5550	159	5795
				_				

Table 2-2. 802.11n / 802.11ac / 802.11ax (40MHz BW) Frequency / Channel Operations

142

138

5710

5690

	Band 1	_	Band 2A			Band 2C	Band 3		
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)		Ch.	Frequency (MHz)		Ch.	Frequency (MHz)
42	5210	58	5290		106	5530		155	5775
					:	:			

Table 2-3. 802.11ac / 802.11ax (80MHz BW) Frequency / Channel Operations

	Band 1	_	Band 2A Band 2C				_	
Ch.	Frequency (MHz)		Ch.	Frequency (MHz)		Ch.	Frequency (MHz)	
50	5250		50	5250		114	5570	
								-

Table 2-4. 802.11ac / 802.11ax (160MHz BW) Frequency / Channel Operations

ment (certification)	Technical Manager
EUT Type:	Dage 5 of 42
24 Tablet Device	Page 5 of 42
	EUT Type:



2.3 Antenna Description

Following antenna gains provided by manufacturer were used for the testing.

	Antenna Gain (dBi)			
Frequency [GHz]	Antenna WF5b	Antenna WF8	Antenna WF7	
5.150 - 5.250	1.5	2.3	-2.0	
5.250 - 5.350	1.0	2.5	-1.9	
5.470 - 5.725	0.6	2.2	1.3	
5.725 - 5.850	1.1	2.2	2.0	

Table 2-5. Highest Antenna Gain

2.4 Test Support Equipment

The following equipment was used in support of the DFS testing.

Device	Manufacturer	Model	Description	S/N:	FCC ID:
		A1521	Access Point	C86L3BA8FJ1R	BCGA1521
Master	Master Apple	MacBook Air	Controller	C02P41RZG086	QDS- BRCM1072
Netgea	Netgear	RAXE500	Access Point	6JX215GA10A5	PY320300508
	Apple	Apple TV	Controller	C0754033HHFP	BCGA1625
Client		MacBook Air	Controller	C02P41RZG086	QDS- BRCM1072
		Spartan	USB-C Cable	000MKTR02U	N/A
	Dell	U24177HJ	Monitor Display	0RXP1N-74261- 71Q-0APL-A01	N/A

Table 2-6. Test Support Equipment List

2.5 Master Parameters

Parameters of Master:				
Minimum Antenna Gain	1.4 dBi			
EIRP Level:	>23 dBm			
Access Point Software Version	7.7.9			

 Table 2-7. Parameters of Master

2.6 Software and Firmware

The test was done with firmware version 21E8197 installed on the EUT.

2.7 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

FCC ID: BCGA2925 IC: 579C-A2925	element MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 6 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 6 of 42



3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in KDB 905462 D02 v02 were used in the measurement of the EUT. Radiated test methodology was used for the DFS evaluation procedure of the EUT. No deviations to the test procedure and test methods occurred during the evaluation of the EUT.

Deviation from measurement procedure.....None

3.2 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega Z of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 7 of 42
			V 10.5 12/15/2021



4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antennas of the EUT are permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT complies with the requirement of §15.203.

FCC ID: BCGA2925 IC: 579C-A2925	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 8 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	N 40 5 40/15/0004



5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.23-2012. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty	
Time	± 0.02%	

FCC ID: BCGA2925 IC: 579C-A2925	element MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 0 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 9 of 42

V 10.5 12/15/2021



TEST EQUIPMENT CALIBRATION DATA 6.0

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal. Date	Cal. Interval	Cal. Due Date	Serial No.
Aeroflex	3025C	PXI RF Synthesizer	03/06/2023	Biennial	03/06/2025	302570726
Aeroflex	3035C	PXI RF Digitizer	03/06/2023	Biennial	03/06/2025	303570427
ETS-Lindgren	3117	Double Ridged Guide Antenna (1-18 GHz)	03/30/2023	Annual	03/30/2024	00218555
Keysight Technology	N9040B	UXA Signal Analyzer	03/10/2023	Annual	03/10/2024	MY57212015
Rohde & Schwarz	TC-TA18	Vivaldi Antenna	8/02/2023	Annual	8/02/2024	101063

Table 6-1. Test Equipment List

Note:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

FCC ID: BCGA2925 IC: 579C-A2925	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 10 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	



7.0 DESCRIPTION OF DYNAMIC FREQUENCY SELECTION TEST

7.1 Applicability

The following table from KDB 905462 D02 v02 lists the applicable requirements for the DFS testing. The device evaluated in this report is considered a client device without radar detection capability.

	Operational Mode			
Requirement	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 7-1. DFS Applicability

	Operational Mode			
Requirement	Master	Client Without Radar Detection	Client with Radar Detection	
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	

Table 7-2. DFS Applicability During Normal Operation

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.

Table 7-3. Additional Requirement for Devices with Multiple Bandwidth Modes

FCC ID: BCGA2925 IC: 579C-A2925	elemen	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 44 of 40
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 11 of 42
	•		V 10.5 12/15/2021



Per KDB 905462 D02 v02 the operational behavior and individual DFS requirements associated with these modes are as follows:

7.1.1 Master Devices:

- a) The Master Device will use DFS in order to detect Radar Waveforms with received signal strength above the DFS Detection Threshold in the 5250 5350 MHz and 5470 5725 MHz bands. DFS is not required in the 5150 5250 MHz or 5725 5850 MHz bands.
- b) Before initiating a network on a Channel, the Master Device will perform a Channel Availability Check for a specified time duration (Channel Availability Check Time) to ensure that there is no radar system operating on the Channel, using DFS described under subsection a) above.
- c) The Master Device initiates a U-NII network by transmitting control signals that will enable other U-NII devices to Associate with the Master Device.
- d) During normal operation, the Master Device will monitor the Channel (In-Service Monitoring) to ensure that there is no radar system operating on the Channel, using DFS described under a).
- e) If the Master Device has detected a Radar Waveform during In-Service Monitoring as described under d), the Operating Channel of the U-NII network is no longer an Available Channel. The Master Device will instruct all associated Client Device(s) to stop transmitting on this Channel within the Channel Move Time. The transmissions during the Channel Move Time will be limited to the Channel Closing Transmission Time.
- f) Once the Master Device has detected a Radar Waveform it will not utilize the Channel for the duration of the Non-Occupancy Period.
- g) If the Master Device delegates the In-Service Monitoring to a Client Device, then the combination will be tested to the requirements described under d) through f) above.

7.1.2 Client Devices:

- a) A Client Device will not transmit before having received appropriate control signals from a Master Device.
- b) A Client Device will stop all its transmissions whenever instructed by a Master Device to which it is associated and will meet the Channel Move Time and Channel Closing Transmission Time requirements. The Client Device will not resume any transmissions until it has again received control signals from a Master Device.
- c) If a Client Device is performing In-Service Monitoring and detects a Radar Waveform above the DFS Detection Threshold, it will inform the Master Device. This is equivalent to the Master Device detecting the Radar Waveform and d) through f) of section 5.1.1 apply.
- d) Irrespective of Client Device or Master Device detection the Channel Move Time and Channel Closing Transmission Time requirements remain the same.
- e) The client test frequency must be monitored to ensure no transmission of any type has occurred for 30 minutes. Note: If the client moves with the master, the device is considered compliant if nothing appears in the client nonoccupancy period test. For devices that shutdown (rather than moving channels), no beacons should appear.

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 10 of 10
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 12 of 42
<u></u>	•	•	V 10.5 12/15/2021



7.2 DFS Detection Threshold Values

The DFS detection thresholds are defined for Master devices and Client Devices with In-service monitoring. These detection thresholds are listed in the following table.

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive an	ntenna.

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 3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.

Table 7-4: Detection Thresholds for Master Devices and Client Devices with Radar Detection

IC: 579C-A2925	element MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N: Test Dates: EUT Ty	vpe:	Daga 12 of 12
1C2311270069-10.BCG 11/29/23-3/15/24 Tablet I	Device	Page 13 of 42



7.3 DFS Response Requirements

DFS response requirements for Master and Client Devices are listed in the following table.

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note1
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Note 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U- NII 99% transmission power bandwidth. See Note 3.

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

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

frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

Table 7-5: DFS Response Requirements

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 14 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	



7.4 Parameters of DFS Test Signals

As the EUT is a Client Device with no Radar Detection only one type radar pulse is required for the testing. Radar Pulse type 0 was used in the evaluation of the Client device for the purpose of measuring the Channel Move Time and the Channel Closing Transmission Time. Table 7-6 lists the parameters for the Short Pulse Radar Waveforms. A plot of the Radar Pulse Type 0 used for testing is included in Section 7.6 of this report.

Radar Type	Pulse Width (µsec)	PRI Number of Pulses		Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
		Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$Roundup\left\{\frac{1}{360},\frac{19.10^6}{PRI_{\mu sec}}\right\}$		
1	1	Test B: 15 unique PRI values randomly selected within the range of 518-3066 µsec, with a minimum increment of 1 µsec, excluding PRI values selected in Test A		60%	30
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
Aggrega	Aggregate (Radar Types 1-4)				120

Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.

Table 7-6: Parameters for Short Pulse Radar Waveforms

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

Table 7-7. Parameters for Long Pulse Radar Waveforms

FCC ID: BCGA2925 IC: 579C-A2925	element MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 15 of 12
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 15 of 42
			V/ 10 E 10/1E/2021



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

Table 7-8. Parameters for Frequency Hopping Radar Waveforms

FCC ID: BCGA2925 IC: 579C-A2925	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 16 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Faye 10 UI 42
			V/ 10 5 12/15/2021



7.5 System Overview and Procedure

DFS Test Setup per KDB 905462 D02 V02:

Radiated DFS Test Setup	\square
Conducted DFS Test Setup	

KDB 905462 D02 v02 describes radiated test setup and conducted test setup. DFS testing was performed using radiated test setup, as seen in Figure 7-1 below. One channel was selected in Band UNII-2C, between 5470-5725 MHz, for testing.

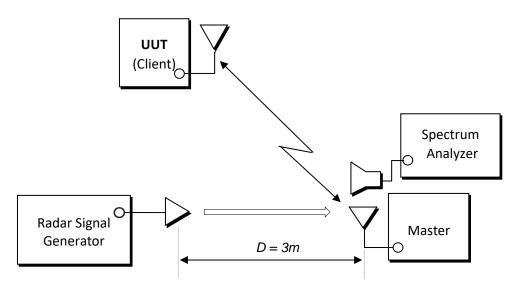


Figure 7-1. Radiated Test Setup for DFS

- 1. The "Aeroflex PXI DFS Radar Simulator and Analyzer Test Suite" is setup to provide a simulated radar pulse at the frequency that the Master and Client are operating. A Type 0 radar pulse was used.
- 2. The Client Device (EUT) is set up per the diagram in Figure 7-1 and communications between the Master device and the Client is established.
- 3. The FCC video test file is streamed from the Master to the Client to properly load the network.
- 4. The "Aeroflex PXI DFS Radar Simulator and Analyzer Test Suite" is set to record and display 12 seconds of time, starting from where the simulated radar is generated. This time domain plot captures any transmissions occurring up to and after 10 seconds. Aggregate time is computed to ensure compliance. (Note: the channel may be different since the Master and Client have changed channels due to the detection of the initial radar pulse.)
- 5. After the initial radar burst the channel is monitored for 30 minutes to ensure no transmissions or beacons occur. A second monitoring setup is used to verify that the Master and Client have both moved to different channels.

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 17 of 10
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 17 of 42
			V/ 10 5 12/15/2021



please contact ct.info@element.com.

7.6 System Calibration:

The following equipment setup was used to calibrate the Radar Waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process, there were no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) mode at the frequency of the Radar Waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3MHz.

The signal generator amplitude is adjusted so that the power level measured at the spectrum analyzer is equal to the DFS detection threshold -64 dBm. The required radiated threshold at the antenna port is -64dBm + 0dBi + 1dB = -63 dBm (Section 7.2).

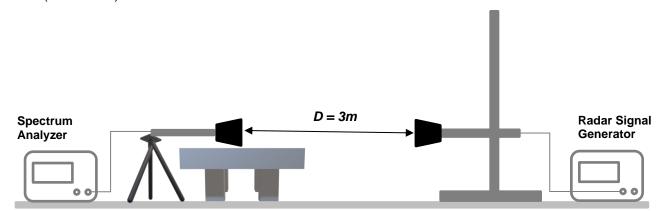


Figure 7-2. Radar Waveform Calibration

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 19 of 12
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 18 of 42
	•	-	V 10.5 12/15/2021



Radar Waveform Calibration Plot:

The radiated plots of the Radar Pulse Signals (Type 0) are given below after performing the system calibration as described in Section 7.6.

Short Pulse Radar Type 0:

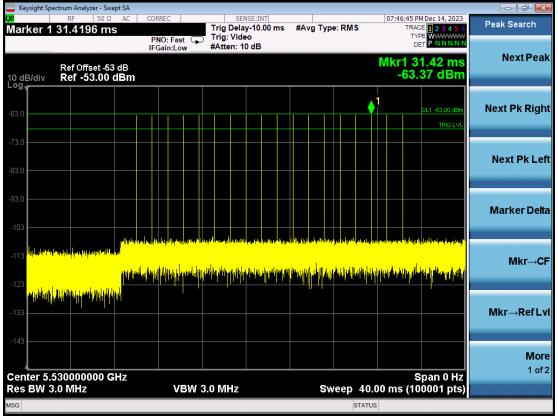


Figure 7-3. 5530MHz – Radar Pulse Type 0 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 10 of 12
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 19 of 42
			V/ 10 5 12/15/2021



🔤 Keysight Spectrum Analyzer - Swept SA					- F ×
₩ RF 50 Ω AC Center Freq 5.570000000	CORREC GHz	SENSE:INT Trig Delay-10.00 ms	#Avg Type: RMS	11:42:13 PM Dec 14, 2023 TRACE 1 2 3 4 5 6	Save State
Ref Offset -53 dB	PNO: Fast	Trig: Video #Atten: 10 dB		Mkr1 31.42 ms -63.36 dBm	To File
10 dB/div Ref -53.00 dBm				0L1 -63.00 dBm TRIG LVL	Edit Register Names
-73.0					Register 1 Last: 6/29/2023 2:09:22 PM
-93.0					Register 2 Last: 6/29/2023 3:35:04 PM
		n n feldett får falla falla skal	^e nte ^{de} en al proception de la constante de la c		Register 3 Last: 7/3/2023 11:12:01 AM
-133					Register 4 Last: 12/14/2023 7:30:46 PM
Center 5.570000000 GHz Res BW 3.0 MHz	VBW 3.	.0 MHz	Sweep 40	Span 0 Hz .00 ms (100001 pts)	More 1 of 3
MSG			STATU	IS	

Figure 7-4. 5570MHz – Radar Pulse Type 0 (160MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 42	
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 20 of 42	



8.0 EUT COMMUNICATION MODES

The EUT was tested in 4 different test configurations,

Mode 1: Client Mode

Mode 2: Client to Client

Mode 3: Peer to Peer (EUT)

Mode 4: Peer to Peer (Apple TV)

Mode 1: Client Mode

Client is connected to Master (AP) via WLAN network and plays a video test file "6 ½ Magic Hours" in a Server (Laptop). This Server is connected to the Master (AP) via ethernet cable. The Vivaldi antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

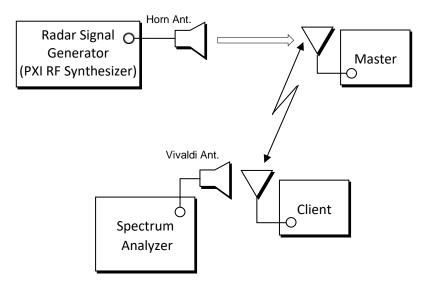


Figure 8-1. Test Setup (Mode 1)

FCC ID: BCGA2925 IC: 579C-A2925	element MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 21 of 42	
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 21 of 42	



Mode 2: Client-to-Client Communications Mode

Client plays the video test file that is streamed to generate WLAN while linked to Master and streamed the video through Apple TV to Monitor display. The Vivaldi antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

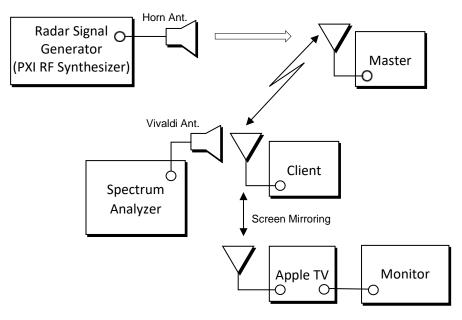


Figure 8-2. Test Setup (Mode 2)

FCC ID: BCGA2925 IC: 579C-A2925	element	element MEASUREMENT REPORT (CERTIFICATION)		
Test Report S/N:	Test Dates:	EUT Type:	Dage 22 of 42	
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 22 of 42	



Mode 3: Peer-to-Peer (EUT) Communications Mode

Generate and inject additional transmission:

- 1. Client and Apple TV must be linked to the Master.
- 2. Client plays video that is saved within its internal storage and begin mirroring screen via Apple TV.
- 3. Connect the Apple TV and Client to the support laptop and initiate additional transmission using iPerf.
- 4. After the additional transmission is injected, the Client must be disconnected to the Master.
- 5. Client stops and re-start mirroring screen.

Client plays video that is saved within its internal storage and streamed through Apple TV to the Monitor display. The receive antenna/ monitoring antenna is placed near the EUT. Additional data traffic was sent from the EUT (Client) to Apple TV (Server) using iPerf. The Vivaldi antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

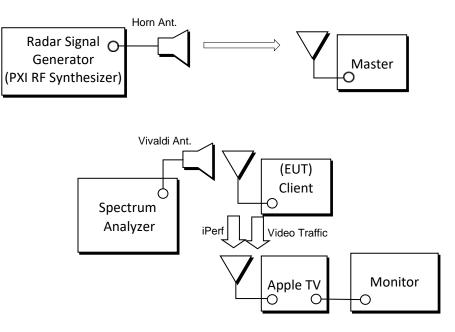


Figure 8-3. Test Setup (Mode 3)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dega 22 of 42	
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 23 of 42	



Mode 4: Peer-to-Peer (Apple TV) Communications Mode

Generate and inject additional transmission:

- 1. Client and Apple TV must be linked to the Master.
- 2. Client plays video that is saved within its internal storage and begin mirroring screen via Apple TV.
- 3. Connect the Apple TV and Client to the support laptop and initiate additional transmission using iPerf.
- 4. After the additional transmission is injected, the Client must be disconnected to the Master.
- 5. Client stops and re-start mirroring screen.

Client plays video that is saved within its internal storage and streamed through Apple TV to the Monitor display. The receive antenna/ monitoring antenna is placed near the Apple TV. Additional data traffic was sent from the Apple TV (Client) to the EUT (Server) using iPerf. The Vivaldi antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

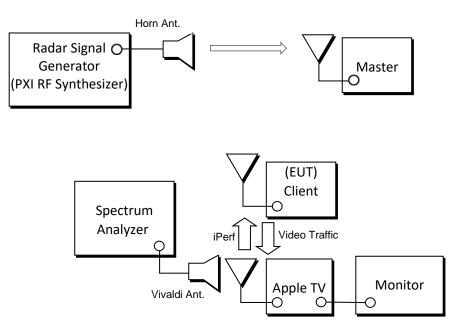


Figure 8-4. Test Setup (Mode 4)

In summary, for Modes 1 and Mode 2, Client is linked to the Master, and for Modes 3 and Mode 4, Client is not linked to the Master.

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 24 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 24 of 42
		•	V 10.5 12/15/2021



9.0 TEST RESULTS

9.1 Summary

Company Name:	Apple Inc.
FCC ID:	<u>BCGA2925</u>
IC:	<u>579C-A2925</u>
FCC Classification:	Unlicensed National Information Infrastructure (UNII)

			Меа	sured		
	Mode	Parameter	80MHz Bandwidth	160MHz Bandwidth	Limit	Result
		Channel Move Time	0.076 s	0.025 s	10 seconds	Pass
	1 Client Mode	Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	< 200ms + 0.000 ms (aggregate)	200 ms + aggregate of 60ms over remaining 10 second period	Pass
ada)		Non- Occupancy Period	Monitored for 30 minutes with no client transmission	Monitored for 30 minutes with no client transmission	30 Minutes	Pass
Cana		Channel Move Time	0.117 s	N/A	10 seconds	Pass
Client to	2 Client to Client	Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	N/A	200 ms + aggregate of 60ms over remaining 10 second period	Pass
5725 MHz 0MHz for 1 2C Band	Client C Band C Band	Non- Occupancy Period	Monitored for 30 minutes with no client transmission	N/A	30 Minutes	Pass
- 5 6501 1- 2		Channel Move Time	0.174 s	N/A	10 seconds	Pass
5470 – 5725 MHz (excluding 5600-5650MHz for ISED Canada) UNII – 2C Band	3 Peer to Peer	Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	N/A	200 ms + aggregate of 60ms over remaining 10 second period	Pass
luding	(EUT) N O P	Non- Occupancy Period	Monitored for 30 minutes with no client transmission	N/A	30 Minutes	Pass
ехс		Channel Move Time	0.092 s	N/A	10 seconds	Pass
	4 Peer to Peer	Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	N/A	200 ms + aggregate of 60ms over remaining 10 second period	Pass
	(Apple TV)	Non- Occupancy Period	Monitored for 30 minutes with no client transmission	N/A	30 Minutes	Pass

Table 9-1. Summary of Test Results

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 25 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 25 of 42



Notes:

- 1) The EUT was found to be compliant with the requirements for DFS as required for a Client Device per Part 15.407(h), RSS-247 and KDB 905462 D02 v02.
- 2) Automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The list is given below,
 - DFS threshold count v1.1
 - DFS Radar Simulator and Analyzer v2.8 (Aeroflex Inc.)
 - iPerf Software

FCC ID: BCGA2925 IC: 579C-A2925	element	element MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dage 26 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 26 of 42
			V/ 10 5 12/15/2021



Channel Loading 9.2

9.2.1 Channel Loading Mode 1:

Channel Loading Notes:

Per KDB 905462 D02 v02, timing plots are required with calculations demonstrating a minimum channel loading of approximately 17% or greater. Channel loading can be estimated by setting the spectrum analyzer for zero span and approximate the transmission time.

🔤 Ke	ysight Spe		nalyzer - Sw										
(X) Cer	ter Fi	RF reg 5	50 Ω	AC	CORREC GH7	SE	NSE:INT	#Avg Typ	e: RMS		M Feb 06, 2024	F	requency
e ch		roq o	.00000	50000	PNO: Fast IFGain:Low	Trig: Fre #Atten: 1		• ,.		TY			
10 di Log,	B/div		Offset -5 -53.00										Auto Tune
-63.0											DL1 -63.00 dBm		Center Freq
												5.5	30000000 GHz
-73.0													Start Freq
-83.0	und mut	un all grand	(depender))	allin n had	<mark>liti an aiste a shirista</mark>	where the second se	alathi da ann an a	tanto (Hoos Handed) (Ka	. Antoni Phylosophie	hadina ta Maranga da B	undepleten neutler	5.5	30000000 GHz
-93.0													Stop Freq
-103												5.53	30000000 GHz
-113	and related	desile a succession of the second	an tan tan tan tan tan tan tan tan tan t	ta des metro (contro d	a de sea dans ser el bite e dal taré mai	jamis a dala serainak dalam ta	- Maralana tanah mat	lattas beles a biferen della anticarante	. Aldın şələrilmis. A	hill off other later of the second	in a little of the larger latter work.		CF Step 3.000000 MHz
-123												<u>Auto</u>	Man
-133													Freq Offset
-143													0 Hz
-143													Scale Type
	ter 5.4 BW 3		00000 (GHz	\/B\	V 3.0 MHz			Swoon	s 16.00 s (3	pan 0 Hz	Log	<u>Lin</u>
MSG	DVV J	.o ivii	12		VBV	v 5.0 Winz			Sweep	-	2001 pts)		

Figure 9-1. 5530MHz - Channel Loading - Mode 1 (80MHz)

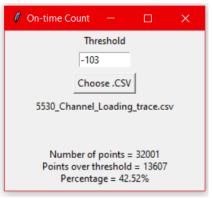


Figure 9-2. 5530MHz - Channel Loading Calculation - Mode 1 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	element MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dage 27 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 27 of 42



		CORREC	SENSE:INT	#Avg Type:		OM Feb 05, 2024	Frequency
enter Freq	5.570000000	PNO: Fast ++ IFGain:Low	- Trig: Free Run #Atten: 10 dB	#Avg Type.	T	PE WWWWWW DET P NNNNN	
	f Offset -53 dB ef -53.00 dBm						Auto Tur
63.0 						DL1 -63.00 dBm	Center Fre
							5.570000000 GI
3.0							Start Fr 5.570000000 G
33.0							5.57000000 G
13.0 			hand a still of a post linear and an a				Stop Fr 5.570000000 G
103							5.57000000 G
	de las avaitaint constant las avaitaint	and a state of the second states of the second stat	منظا فتحصر ستظنف فجرها فبطب تحص كالترابة ا	والمتعادية والمتعادية والمتعادية والمتعادية والمتعاد	ومقسبا المناسحة ومنبأ جأن وإستاد رحدقانا محكمتك من	Statement of the back of the	
113							CF Ste 3.000000 MI
						Au	3.000000 MI
123						Au	3.000000 M <u>to</u> M Freq Offs
113							3.000000 MI
123						Span 0 Hz Lo	3.00000 M <u>to</u> M Freq Offs 0 Scale Ty

Figure 9-3. 5570MHz - Channel Loading - Mode 1 (160MHz)



Figure 9-4. 5570MHz - Channel Loading Calculation - Mode 1 (160MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	element MEASUREMENT REPORT (CERTIFICATION)		
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 42	
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 28 of 42	
			V/ 10 5 12/15/2021	



9.2.2 Channel Loading Mode 2:

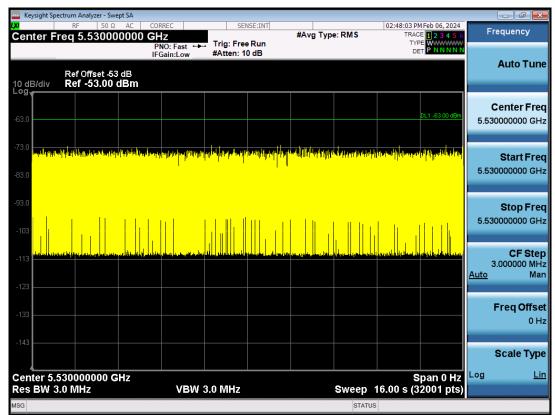


Figure 9-5. 5530MHz - Channel Loading - Mode 2 (80MHz)

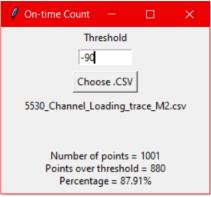


Figure 9-6. 5530MHz - Channel Loading Calculation - Mode 2 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	element MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 29 of 42
			V 10 5 12/15/2021



9.2.3 Channel Loading Mode 3:

Keysight Spectrum Analyzer - Swept SA					
Center Freq 5.530000000		ENSE:INT #Avg Typ ee Run	DE: RMS TR.	PM Feb 06, 2024 ACE 1 2 3 4 5 6 YPE WWWWWW	Frequency
Ref Offset -53 dB 10 dB/div Ref -53.00 dBm	IFGain:Low #Atten:			DET PNNNNN	Auto Tune
-63.0				DL1 -63.00 dBm	Center Freq 5.530000000 GHz
-73.0	gg <mark>lif], ar se in far stare des televisies (1971).</mark>	^{an} Menutus prastry up hang plantas padan	a gibet yete bie og fell par ling den som og fører predet.	dina jang kanganaka sa kapangak	Start Freq 5.530000000 GHz
-93.0					Stop Freq 5.530000000 GHz
-113 automational productions data and better		an a	a, e la de de construir de la de la defensione de la deservi-		CF Step 3.000000 MHz <u>Auto</u> Man
-123					Freq Offset 0 Hz
Center 5.530000000 GHz				Span 0 Hz	Scale Type
Res BW 3.0 MHz	VBW 3.0 MHz		Sweep 16.00 s	Span V HZ	

Figure 9-7. 5530MHz - Channel Loading - Mode 3 (80MHz)

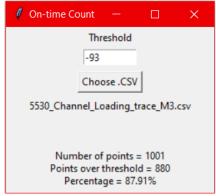


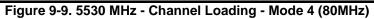
Figure 9-8. 5530MHz - Channel Loading Calculation - Mode 3 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 30 of 42
			V 10 5 12/15/2021



9.2.4 Channel Loading Mode 4:

Keysight Sp	ectrum Analyzer - Swept SA								
Center F	RF 50 Ω AC	O GHz	SENSE:I	#Avg	Type: RMS	03:09:29 PM Fe TRACE	eb 06, 2024 1 2 3 4 5 6 WWWWWW	Fn	equency
		PNO: Fast 🖵 IFGain:Low	#Atten: 10 dE			DET	PNNNNN		Auto Tune
10 dB/div Log	Ref Offset -53 dB Ref -53.00 dBm								Autorune
							1 -63.00 dBm	c	enter Freq
-63.0							1 -63.00 dBm	5.530	0000000 GHz
-73.0									Start Freq
-83.0	aling para ta kana dan kana para ta kana para	a. 14 bit and take with two second terms	al to set to a weble toward of 1.14	. an malakili da a sita da	وروابيا للققام وبالتلبان	tion and stilling the state	कर्ता ^{हिन्दु} देवस्ती क्रि	5.530	0000000 GHz
-93.0	an to other to one different restances	and a second by the structure from	na na na ha na ha na hadha	le transmission de la tradición de tradición de la tradición de la tradición de la tradición de la tradición de	na na shina sa sa sana ang sa sa sa sa				
0.0.0								5.530	Stop Freq 0000000 GHz
-103				1 1					
-113	<mark>an kan di sebagai kan kan kan kan kan kan kan kan kan kan</mark>	and a state of the second	neter at the second second	a sub-states in an anna	an hatala an a shara a shara yi	net also, a se al estas alter al estas a se al estas a			CF Step .000000 MHz
-123								<u>Auto</u>	Man
-133								F	Freq Offset
									0 Hz
-143								;	Scale Type
Center 5.	530000000 GHz			,	<u>, </u>	Spa	an 0 Hz	Log	Lin
Res BW		VBW 3	3.0 MHz		Sweep	16.00 s (320	001 pts)		
мsg 🕕 File	<5530_Channel_Load	ding_M3.png> sav	/ed		STATU	s			



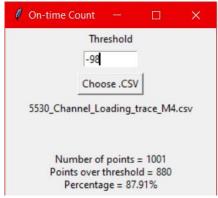


Figure 9-10. 5530MHz - Channel Loading Calculation - Mode 4 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	element MEASUREMENT REPORT (CERTIFICATION)	
Test Report S/N:	Test Dates:	EUT Type:	Dage 21 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 31 of 42
			V/ 10 5 12/15/2021



9.3 Channel Move/ Closing Transmission Time

9.3.1 Channel Move/ Closing Transmission Time Mode 1:

<u>Result</u>

Parameter	Measu	Limits	
	80MHz Bandwidth	160MHz Bandwidth	
Channel Move Time	.076 s	.025 s	10 seconds
Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	< 200ms + 0.000 ms (aggregate)	200 ms + aggregate of 60ms over remaining 10 second period

Notes:

- 1. The pulses shown in the plots below have been determined to be from the Master AP.
- 2. Marker Info and Aggregate time results are shown on the right side of the plots below.

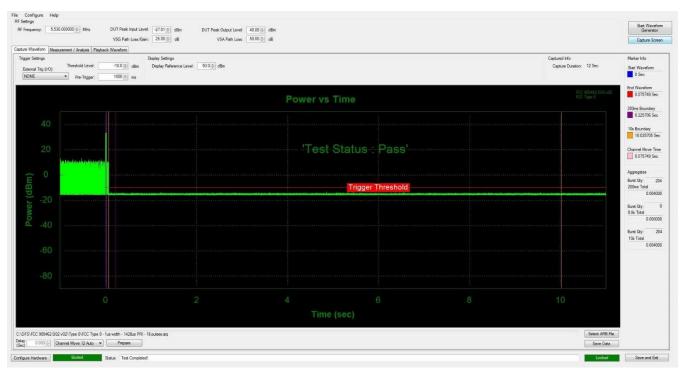


Figure 9-11. 5530MHz - Channel Move/ Closing Transmission Time - Mode 1 (80 MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dega 22 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 32 of 42
			V/ 10 5 12/15/2021



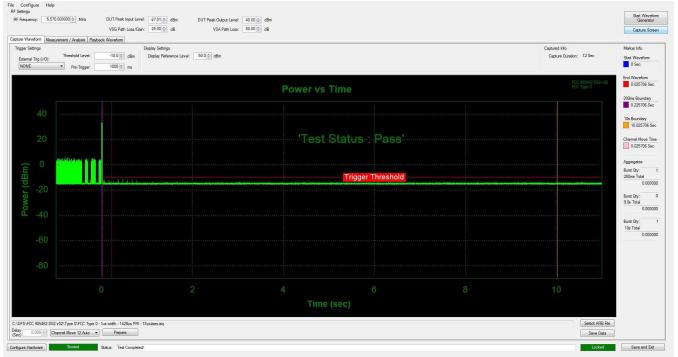


Figure 9-12. 5570MHz - Channel Move/ Closing Transmission Time - Mode 1 (160 MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 22 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 33 of 42
			V/ 10 E 12/1E/2021



9.3.2 Channel Move/ Closing Transmission Time Mode 2:

Result:

Parameter	Measurement 80MHz Bandwidth	Limits
Channel Move Time	.117 s	10 seconds
Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	200 ms + aggregate of 60ms over remaining 10 second period

Notes:

- 1. The pulses shown in the plots below have been determined to be from the Master AP.
- 2. Marker Info and Aggregate time results are shown on the right side of the plots below.

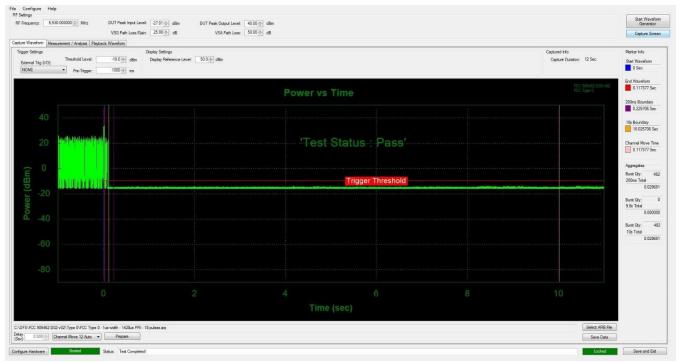


Figure 9-13. 5530MHz - Channel Move/ Closing Transmission Time - Mode 2 (80 MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: T	Fest Dates:	EUT Type:	Dage 24 of 42
1C2311270069-10.BCG 11	1/29/23-3/15/24	Tablet Device	Page 34 of 42



9.3.3 Channel Move/ Closing Transmission Time Mode 3:

Result:

Parameter	Measurement 80MHz Bandwidth	Limits
Channel Move Time	.174 s	10 seconds
Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	200 ms + aggregate of 60ms over remaining 10 second period

Notes:

- 1. The pulses shown in the plots below have been determined to be from the Master AP.
- 2. Marker Info and Aggregate time results are shown on the right side of the plots below.

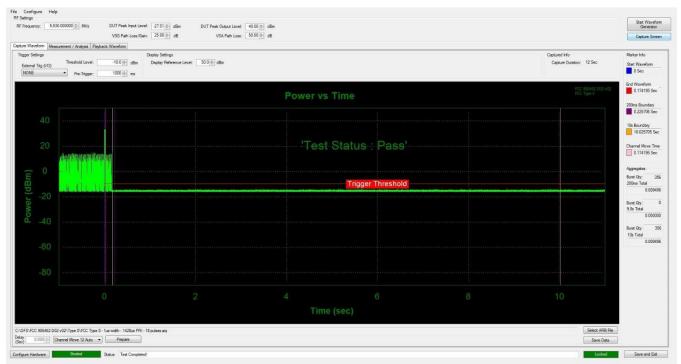


Figure 9-14. 5530MHz - Channel Move/ Closing Transmission Time - Mode 3 (80 MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: Test	Dates:	EUT Type:	Dage 25 of 42
1C2311270069-10.BCG 11/29	/23-3/15/24	Tablet Device	Page 35 of 42



9.3.4 Channel Move/ Closing Transmission Time Mode 4:

Result:

Parameter	Measurement 80MHz Bandwidth	Limits
Channel Move Time	.092 s	10 seconds
Channel Closing Transmission Time	< 200ms + 0.000 ms (aggregate)	200 ms + aggregate of 60ms over remaining 10 second period

Notes:

- 1. The pulses shown in the plots below have been determined to be from the Master AP.
- 2. Marker Info and Aggregate time results are shown on the right side of the plots below.



Figure 9-15. 5530MHz - Channel Move/ Closing Transmission Time - Mode 4 (80 MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 26 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 36 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	V 10 5 12/15/2



9.4 Non-Occupancy Period

9.4.1 Non-Occupancy Period (30 Minutes) Mode 1:

Notes:

1. No frequency transmission detected during the Non-Occupancy Period of 30 minutes monitoring.

🔤 Keysight Spectrum Analyzer - Swept SA					
KM RF 50 Ω AC	CORREC	SENSE:INT	#Avg Type: RMS Avg Hold: 1/1	01:14:46 PM Dec 21, 2023 TRACE 1 2 3 4 5 6 TYPE M WWWWW	Frequency
Ref Offset -53 dB 10 dB/div Ref -53.00 dBm		#Atten: 10 dB		DET P NNNNN	Auto Tune
-63.0				DL1 -63.00 dBm	Center Freq 5.53000000 GHz
-73.0					Start Freq 5.530000000 GHz
-93.0					Stop Freq 5.530000000 GHz
-113			pafra administration and a stabilized administration of the second state of the second state of the second state		CF Step 3.000000 MHz <u>Auto</u> Man
-133					Freq Offset 0 Hz
-143					Scale Type
Center 5.530000000 GHz Res BW 3.0 MHz	#VBW 3	B.0 MHz	Sweep 2	Span 0 Hz .000 ks (32001 pts)	Log <u>Lin</u>
MSG			STATU	S	

Figure 9-16. 5530MHz - Non-Occupancy Period (30 Minutes) - Mode 1 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 27 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 37 of 42
		l de la constante de	V 10 5 12/15/2021



🛄 Keysight Spe	ectrum Analyzer - Swept SA					
<mark>LXI</mark>	RF 50 Ω AC	CORREC	SENSE:INT	#Avg Type: RMS	12:28:48 PM Dec 21, 2023 TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 10 dB	Avg Hold: 1/1		Auto Tune
10 dB/div Log	Ref Offset -53 dB Ref -53.00 dBm	1				
-63.0					DL1 -63.00 dBm	Center Freq 5.570000000 GHz
-73.0 -83.0						Start Freq 5.570000000 GHz
-93.0						Stop Freq 5.570000000 GHz
-113	vol s en des terres en estas la silva autori	eter en		der on two sciences and an order of the transmission of the science of the scienc	e da mana kandika sa kana kana kana kana kana kana kana	CF Step 3.000000 MHz <u>Auto</u> Man
-123						Freq Offset 0 Hz
-143						Scale Type
Center 5. Res BW 3	570000000 GHz .0 MHz	#VBW	3.0 MHz	Sweep 2	Span 0 Hz 2.000 ks (32001 pts)	Log <u>Lin</u>
MSG				STATU	IS	

Figure 9-17. 5570MHz - Non-Occupancy Period (30 Minutes) - Mode 1 (160MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 29 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 38 of 42
			V 10 5 12/15/2021



9.4.2 Non-Occupancy Period (30 Minutes) Mode 2:

Notes:

1. No frequency transmission detected during the Non-Occupancy Period of 30 minutes monitoring.

Keysight Sp	ectrum Analyzer - Swept SA					
Center F	RF 50 Ω AC req 5.530000000	GHz	SENSE:INT	#Avg Type: RMS	06:25:46 PM Jan 11, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWWW	Frequency
		PNO: Fast Irig: F IFGain:Low #Atten	ree Run : 10 dB	Avg Hold: 1/100		
	Ref Offset -53 dB					Auto Tune
10 dB/div Log	Ref -53.00 dBm					
-63.0					DL1 -63.00 dBm	Center Freq
-63.0						5.530000000 GHz
-73.0						01 J 5
-83.0						Start Freq 5.53000000 GHz
-03.0						
-93.0						Stop Freq
-103						5.53000000 GHz
		and a material state of the sta	an and a set of a set of the set	and the state of the		
-113						CF Step 3.000000 MHz
-123						<u>Auto</u> Man
.20						Freq Offset
-133						0 Hz
-143						
						Scale Type
	530000000 GHz				Opari v Hz	Log <u>Lin</u>
Res BW 3	3.0 MHz	VBW 50 MHz		Sweep	2.000 ks (32001 pts)	
MSG	E '	5500MU- No. 0		STAT		

Figure 9-18. 5530MHz - Non-Occupancy Period (30 Minutes) - Mode 2 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 20 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 39 of 42
			V/ 10 5 12/15/2021



9.4.3 Non-Occupancy Period (30 Minutes) Mode 3:

Notes:

1. No frequency transmission detected during the Non-Occupancy Period of 30 minutes monitoring.

🔤 Keysight Sp	ectrum Analyzer - Swept SA					
<mark>IXI</mark> Center F	RF 50 Ω AC		SENSE:INT	#Avg Type: RMS	01:33:02 AM Dec 29, 2023 TRACE 1 2 3 4 5 6	Frequency
	100 5.55000000	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 10 dB	Avg Hold: 1/1	TYPE MWWWW DET PNNNN	Auto Tune
10 dB/div Log	Ref Offset -53 dB Ref -53.00 dBm					
-63.0					DL1 -63.00 dBm	Center Freq
						5.530000000 GHz
-73.0						Start Freq
-83.0						5.530000000 GHz
-93.0						Stop Freq
-103		alared to the state of a state of a		al non a tent constant a state se a t		5.530000000 GHz
-113						CF Step 3.000000 MHz
-123						<u>Auto</u> Man
-133						Freq Offset
-143						0 Hz
						Scale Type
Center 5. Res BW 3	530000000 GHz 3.0 MHz	#VBW :	3.0 MHz	Sweep 2	Span 0 Hz .000 ks (32001 pts)	Log <u>Lin</u>
MSG				STATU	S	

Figure 9-19. 5530MHz - Non-Occupancy Period (30 Minutes) - Mode 3 (80MHz)

FCC ID: BCGA2925 IC: 579C-A2925	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 40 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Page 40 of 42
	•	•	V 10 5 12/15/2021



9.4.4 Non-Occupancy Period (30 Minutes) Mode 4:

Notes:

1. No frequency transmission detected during the Non-Occupancy Period of 30 minutes monitoring.

Keysight Sp	ectrum Analyzer - Swept SA						
Center F	RF 50 Ω AC req 5.53000000	PNO: Fast +	SENSE:INT	#Avg Type: RMS Avg Hold: 1/1	12:48:17 AM Jan 08, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P N N N N N	Frequency	
10 dB/div	Ref Offset -53 dB Ref -53.00 dBn	IFGain:Low	Atten: 10 dB		ber	Auto Tune	
-63.0					DL1 -63.00 dBm	Center Freq 5.530000000 GHz	
-73.0						Start Freq 5.530000000 GHz	
-93.0 						Stop Freq 5.530000000 GHz	
-113			dee gegender oor - wele te school of the second			CF Step 3.000000 MHz <u>Auto</u> Man	
-133						Freq Offset 0 Hz	
-143						Scale Type	
Center 5. Res BW 3	530000000 GHz 8.0 MHz	#VBW	3.0 MHz	Sweep 2	Span 0 Hz .000 ks (32001 pts)	Log <u>Lin</u>	
MSG	MSG STATUS						

Figure 9-20. 5530MHz - Non-Occupancy Period (30 Minutes) - Mode 4 (80MHz)

FCC ID: BCGA2925	element MEASUREMENT REPORT		Approved by:
IC: 579C-A2925	(CERTIFICATION)		Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 41 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	
1C2311270009-10.BCG	11/29/23-3/13/24	Tablet Device	V 40 5 40/45/2024



10.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA2925**, **IC: 579C-A2925** is in compliance with the DFS requirements for a Client Device without radar detection in accordance with Part 15.407 of the FCC Rules and RSS-247 of the Innovation, Science and Economic Development Canada Rules.

FCC ID: BCGA2925 IC: 579C-A2925	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 42 of 42
1C2311270069-10.BCG	11/29/23-3/15/24	Tablet Device	Fage 42 01 42
			V/ 10 5 12/15/2021