

Element Materials Technology

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



PART 22 MEASUREMENT REPORT

Applicant Name:

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

Date of Testing: 10/01/2023 - 02/13/2024 Test Report Issue Date: 3/22/2024 Test Site/Location: Element Materials Technology Morgan Hill, CA, USA Test Report Serial No.: 1C23311270066-07.BCG

FCC ID: Applicant Name:

BCGA2899

Apple Inc.

Application Type: Model: EUT Type: FCC Classification: FCC Rule Part: Test Procedure(s):

Certification A2899, A2900 Tablet Device PCS Licensed Transmitter (PCB) 22 ANSI C63.26-2015, TIA-603-E-2016, KDB 971168 D01 v03r01

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 §2.947. 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.

RJ Ortanez Executive Vice President

Prepared by: WKR000006193

Reviewed by: WKR0000005805



FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 1 of 100
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 1 of 109
	·	•	V2.2 08/24/2023



TABLE OF CONTENTS

1.0	INTRO	DDUCTION	5
	1.1	Scope	5
	1.2	Element Materials Technology Test Location	5
	1.3	Test Facility / Accreditations	5
2.0	PRO	DUCT INFORMATION	6
	2.1	Equipment Description	6
	2.2	Device Capabilities	6
	2.3	Antenna Description	7
	2.4	Test Support Equipment	7
	2.5	Test Configuration	8
	2.6	Software and Firmware	8
	2.7	EMI Suppression Device(s)/Modifications	8
3.0	DESC	RIPTION OF TESTS	9
	3.1	Measurement Procedure	9
	3.2	Radiated Spurious Emissions	9
4.0	MEAS	SUREMENT UNCERTAINTY	10
5.0	TEST	EQUIPMENT CALIBRATION DATA	11
6.0	SAMF	PLE CALCULATIONS	12
7.0	TEST	RESULTS	13
	7.1	Summary	13
	7.2	Occupied Bandwidth	14
	7.3	Spurious and Harmonic Emissions at Antenna Terminal	36
	7.4	Band Edge Emissions at Antenna Terminal	58
	7.5	Radiated Power (ERP)	78
	7.6	Radiated Spurious Emissions	90
	7.7	Frequency Stability / Temperature Variation	. 105
8.0	CON	CLUSION	.109

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 2 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 2 01 109
			V2 2 08/24/2023



.

PART 22 MEASUREMENT REPORT



					Ef	Emission	
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	Max. Power [W]	Max. Power [dBm]	Emission Designator
WCDMA850	5 MHz	Spread Spectrum	826.4 - 846.6	4.1787	0.140	21.45	4M18F9W
		QPSK	824.7 - 848.3	1.1031	0.131	21.16	1M10G7W
	1.4 MHz	16QAM	824.7 - 848.3	1.1083	0.108	20.33	1M11D7W
		64QAM	824.7 - 848.3	1.1127	0.085	19.30	1M11D7W
		256QAM	824.7 - 848.3	1.1046	0.044	16.40	1M10D7W
		QPSK	825.5 - 847.5	2.7149	0.129	21.10	2M71G7W
	2 MI I-	16QAM	825.5 - 847.5	2.7094	0.114	20.57	2M71D7W
	3 MHz	64QAM	825.5 - 847.5	2.7109	0.086	19.35	2M71D7W
Dand 5		256QAM	825.5 - 847.5	2.7120	0.042	16.24	2M71D7W
Band 5		QPSK	826.5 - 846.5	4.5271	0.136	21.33	4M53G7W
		16QAM	826.5 - 846.5	4.5301	0.114	20.55	4M53D7W
	5 MHz	64QAM	826.5 - 846.5	4.5296	0.087	19.40	4M53D7W
		256QAM	826.5 - 846.5	4.5435	0.042	16.27	4M54D7W
		QPSK	829.0 - 844.0	9.0214	0.129	21.12	9M02G7W
	10 MHz	16QAM	829.0 - 844.0	9.0124	0.112	20.51	9M01D7W
		64QAM	829.0 - 844.0	9.0202	0.086	19.32	9M02D7W
		256QAM	829.0 - 844.0	9.0057	0.043	16.34	9M01D7W
		QPSK	824.7 - 848.3	1.1031	0.140	21.45	1M10G7W
	4 4 MIL-	16QAM	824.7 - 848.3	1.1083	0.120	20.79	1M11D7W
	1.4 MHz	64QAM	824.7 - 848.3	1.1127	0.092	19.65	1M11D7W
		256QAM	824.7 - 848.3	1.1046	0.047	16.71	1M10D7W
	3 MHz	QPSK	825.5 - 847.5	2.7149	0.140	21.45	2M71G7W
		16QAM	825.5 - 847.5	2.7094	0.120	20.78	2M71D7W
		64QAM	825.5 - 847.5	2.7109	0.093	19.68	2M71D7W
David 00		256QAM	825.5 - 847.5	2.7120	0.047	16.70	2M71D7W
Band 26		QPSK	826.5 - 846.5	4.5271	0.140	21.45	4M53G7W
		16QAM	826.5 - 846.5	4.5301	0.122	20.88	4M53D7W
	5 MHz	64QAM	826.5 - 846.5	4.5296	0.097	19.86	4M53D7W
		256QAM	826.5 - 846.5	4.5435	0.046	16.59	4M54D7W
		QPSK	829.0 - 844.0	9.0214	0.140	21.45	9M02G7W
	10 MU-	16QAM	829.0 - 844.0	9.0124	0.121	20.84	9M01D7W
	10 MHz	64QAM	829.0 - 844.0	9.0202	0.095	19.80	9M02D7W
		256QAM	829.0 - 844.0	9.0057	0.045	16.58	9M01D7W
		QPSK	829.0 - 844.0	18.8692	0.138	21.39	18M9G7W
		16QAM	829.0 - 844.0	18.8892	0.083	19.17	18M9D7W
ULCA Band 5	10 + 10 MHz	64QAM	829.0 - 844.0	18.8884	0.083	19.20	18M9D7W
		256QAM	829.0 - 844.0	18.8731	0.052	17.12	18M9D7W

EUT Overview

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 3 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 5 01 109
			1/2 2 08/24/2023



					EI	RP	Emission
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	OBW [MHz]	Max. Power	Max. Power	Designator
					[W]	[dBm]	-
		π/2 BPSK	826.5 - 846.5	4.4677	0.137	21.38	4M47G7W
		QPSK	826.5 - 846.5	4.4740	0.140	21.45	4M47G7W
	5 MHz	16QAM	826.5 - 846.5	4.4779	0.118	20.72	4M48D7W
		64QAM	826.5 - 846.5	4.4773	0.079	18.96	4M48D7W
		256QAM	826.5 - 846.5	4.4690	0.050	16.95	4M47D7W
		π/2 BPSK	829.0 - 844.0	8.9311	0.137	21.36	8M93G7W
		QPSK	829.0 - 844.0	9.2958	0.139	21.42	9M30G7W
	10 MHz	16QAM	829.0 - 844.0	9.3149	0.110	20.43	9M31D7W
		64QAM	829.0 - 844.0	9.2958	0.075	18.73	9M30D7W
NR Band n5		256QAM	829.0 - 844.0	9.2582	0.050	17.01	9M26D7W
NIX Dand ho		π/2 BPSK	831.5 - 841.5	13.4350	0.140	21.45	13M4G7W
		QPSK	831.5 - 841.5	14.0601	0.140	21.45	14M1G7W
	15 MHz	16QAM	831.5 - 841.5	14.0855	0.124	20.95	14M1D7W
		64QAM	831.5 - 841.5	14.1302	0.083	19.19	14M1D7W
		256QAM	831.5 - 841.5	14.1143	0.052	17.14	14M1D7W
		π/2 BPSK	834.0 - 839.0	17.8906	0.138	21.41	17M9G7W
	20 MHz	QPSK	834.0 - 839.0	18.9375	0.140	21.45	18M9G7W
		16QAM	834.0 - 839.0	18.9053	0.119	20.74	18M9D7W
		64QAM	834.0 - 839.0	18.8983	0.085	19.29	18M9D7W
		256QAM	834.0 - 839.0	18.8932	0.053	17.26	18M9D7W
		π/2 BPSK	826.5 - 846.5	4.4677	0.138	21.39	4M47G7W
		QPSK	826.5 - 846.5	4.4740	0.138	21.41	4M47G7W
	5 MHz	16QAM	826.5 - 846.5	4.4779	0.115	20.61	4M48D7W
		64QAM	826.5 - 846.5	4.4773	0.090	19.52	4M48D7W
		256QAM	826.5 - 846.5	4.4690	0.052	17.13	4M47D7W
		π/2 BPSK	829.0 - 844.0	8.9311	0.137	21.38	8M93G7W
		QPSK	829.0 - 844.0	9.2958	0.136	21.35	9M30G7W
	10 MHz	16QAM	829.0 - 844.0	9.3149	0.117	20.69	9M31D7W
		64QAM	829.0 - 844.0	9.2958	0.084	19.23	9M30D7W
ND Dand #00		256QAM	829.0 - 844.0	9.2582	0.052	17.16	9M26D7W
NR Band n26		π/2 BPSK	831.5 - 841.5	13.4350	0.139	21.43	13M4G7W
		QPSK	831.5 - 841.5	14.0601	0.140	21.45	14M1G7W
	15 MHz	16QAM	831.5 - 841.5	14.0855	0.117	20.70	14M1D7W
		64QAM	831.5 - 841.5	14.1302	0.084	19.26	14M1D7W
		256QAM	831.5 - 841.5	14.1143	0.053	17.27	14M1D7W
		π/2 BPSK	834.0 - 839.0	17.8906	0.139	21.44	17M9G7W
		QPSK	834.0 - 839.0	18.9375	0.140	21.45	18M9G7W
	20 MHz	16QAM	834.0 - 839.0	18.9053	0.116	20.63	18M9D7W
		64QAM	834.0 - 839.0	18.8983	0.084	19.22	18M9D7W
		256QAM	834.0 - 839.0	18.8932	0.053	17.24	18M9D7W
			FUT Overview				

EUT Overview

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 4 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 4 01 109
			V2.2 08/24/2023



1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 Element Materials Technology 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

- 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 Materials Technology 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 Mutal Recognition Agreements (MRAs).

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 5 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 5 01 109
		·	V2.2 08/24/2023



2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Apple Tablet Device FCC ID: BCGA2899**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 22.

Test Device Serial No.: MV3WTWWGT4, VGTVQGM9J9, RX5LQRFQ9Q, DLXGYV0005D0000FH3, DLXGYV0002L0000FH3

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, 802.11a/ax WIFI 6E, 802.15.4, Bluetooth (1x, EDR, LE1M, LE2M, HDR4, HDR8), NB UNII (1x, HDR4, HDR8), WPT

This device supports BT Beamforming

This device supports simultaneous transmission operations, which allows for multiple transmitters to transmit simultaneously on the same antenna. The table below shows all configurations possible.

		Wifi 2GHz	Bluetooth	Thread	Wifi 5GHz	Wifi 6GHz	NB UNII	LTE/FR1 NR	LTE/FR1 NR
Antenna	Simultaneous Tx Config	802.11 b/g/n/ax	BDR, EDR, HDR4/8, LE1/2M	802.15.4	802.11 a/n/ac/ax	802.11 a/ax	BDR, HDR4/8	MB/HB	UHB
Antenna 3b	Config 1	X	X	X	√	X	X	\checkmark	X
Antenna 3b	Config 2	×	X	X	X	~	X	\checkmark	X
Antenna 3b	Config 3	×	X	X	X	X	✓	\checkmark	X
Antenna 3a	Config 4	\checkmark	X	X	X	X	X	X	√
Antenna 3a	Config 5	×	~	X	X	X	X	X	√
Antenna 3a	Config 6	X	X	\checkmark	X	X	X	X	√
Antenna 1a	Config 7	~	X	X	X	X	X	X	√
Antenna 1a	Config 8	X	\checkmark	X	X	X	X	X	√
Antenna 1a	Config 9	×	X	✓	X	X	X	X	√
Antenna 1b	Config 10	X	X	X	√	X	X	√	X
Antenna 1b	Config 11	X	X	X	X	√	X	√	X
Antenna 1b	Config 12	X	X	X	X	X	1	√	X

Table 2-1. Simultaneous Transmission Configurations

✓ = Support; × = Not Support

Note:

All the above simultaneous transmission configurations have been tested and the worst case configuration was found to be Config 8 and reported in RF Bluetooth and RF FCC Part 96 reports.

Specific 2.4GHz Wi-Fi antenna that can only transmit simultaneously with 2.4GHz Bluetooth antenna is listed in the SAR test report. For BT (2.4GHz) in connected mode and Wi-Fi (2.4GHz) - Wi-Fi max power will not exceed minimum of (13.5dBm, SAR max cap, Reg max cap) power. For BT (2.4GHz) in disconnected mode and Wi-Fi (2.4GHz) - BT will be using iPA only and Wi-Fi max power will not exceed minimum of (SAR max cap, Reg max cap) power. Bluetooth can simultaneously transmit with IEEE 802.11a/n/ac/ax 5/6 GHz on separate antenna.

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 6 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 6 01 109
			1/2 2 08/24/2023



2.3 Antenna Description

The following antenna gains provided by the manufacturer were used for testing.

Band	Antenna Gain [dBi]			
Dana	Antenna 4	Antenna 2		
WCDMA 850				
LTE Band 26/5	-2.1	-2.1		
NR Band n26/5				

Table 2-2. Highest Antenna Gain

2.4 Test Support Equipment

1	Apple MacBook Pro	Model:	A2141	S/N:	C02H604EQ05D
	w/AC/DC Adapter	Model:	A2166	S/N:	C4H042705ZNPM0WA6
2	Apple USB-C Cable	Model:	Spartan	S/N:	GXK1336018XKTR024
3	USB-C Cable	Model:	A246C	S/N:	DWH80115BK826GV19
	w/ AC Adapter	Model:	A2305	S/N:	C4H95160004PF4F4V
4	DC Power Supply	Model:	KPS3010D	S/N:	N/A
5	Apple Pencil	Model:	A2538	S/N:	KJ26TCFXJW
	Talal	0 0 Teet	Support Ec		4

 Table 2-3. Test Support Equipment

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 7 of 100
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 7 of 109
			V2 2 08/24/2023



2.5 Test Configuration

The EUT was tested per the guidance of ANSI C63.26 2015, TIA-603-E-2016 and KDB 971168 D01 v03r01. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

For emissions from 1GHz – 18GHz, low, mid, and high channels were tested with highest power and worst case configuration. The emissions below 1GHz were tested with the highest transmitting power and the worst case channel.

The EUT was manipulated through three orthogonal planes of X-orientation (flatbed), Y-orientation (landscape), and Z-orientation (portrait) during the testing. Only the worst case emissions were reported in this test report.

2.6 Software and Firmware

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

2.7 EMI Suppression Device(s)/Modifications

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

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 8 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage o of 109
			1/2 2 08/24/2023



3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the documents titled "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015 and TIA-603-E-2016) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

Deviation from Measurement Procedure......None

3.2 Radiated Spurious Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

For radiated spurious emissions measurements and calculations, conversion method is used per the formulas in KDB 971168 Section 5.8.4. Field Strength (EIRP) is calculated using the following formulas:

 $E_{[dB\muV/m]} =$ Measured amplitude level_[dBm] + 107 + Cable Loss_[dB] + Antenna Factor_[dB/m] And EIRP_[dBm] = $E_{[dB\muV/m]}$ + 20logD - 104.8; where D is the measurement distance in meters.

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014.

Per KDB 414788 D01 v01r01, radiated emission test sites other than open-field test sites (e.g., shielded anechoic chambers), may be employed for emission measurements below 30MHz if characterized so that the measurements correspond to those obtained at an open-field test site. To determine test site equivalency, a reference sample transmitting at 149kHz was measured on an open field test site (asphalt with no ground plane) and then measured in the 3m semi-anechoic chamber. A calibrated 60cm loop antenna was used while the reference device was rotated through the X, Y and Z axis in order to capture the worst case level. A maximum deviation of 2.77dB at 149kHz was measured when comparing the 3 meter semi-anechoic chamber to the open field site.

Radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI C63.26-2015 and TIA-603-E-2016.

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 9 of 109	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 9 01 109	
			1/2 2 08/24/2023	



4.0 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.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	2.07
Radiated Disturbance (<30MHz)	4.12
Radiated Disturbance (30MHz-1GHz)	4.85
Radiated Disturbance (1-18GHz)	5.08
Radiated Disturbance (>18GHz)	4.59

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 10 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 10 01 109
			V2.2 08/24/2023



5.0 TEST EQUIPMENT CALIBRATION DATA

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	Serial Number
Agilent Technologies	N9030A	3Hz-44GHz PXA Signal Analyzer	6/21/2023	Annual	6/21/2024	MY49430244
ESPEC	SU-241	Tabletop Temperature Chamber	11/17/2023	Annual	11/17/2024	92009574
ETS-Lindgren	3117	Double Ridged Guide Antenna (1-18 GHz)	3/30/2023	Annual	3/30/2024	00218555
Keysight Technology	N9040B	UXA Signal Analyzer	11/5/2023	Annual	11/5/2024	MY57213068
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz - 18GHz)	8/31/2023	Annual	8/31/2024	100052
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	5/11/2023	Annual	5/11/2024	101619
Rohde & Schwarz	ESW44	EMI Test Receiver	6/6/2023	Annual	6/6/2024	101668
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz - 8GHz)	6/22/2023	Annual	6/22/2024	102356
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	11/30/2023	Annual	11/30/2024	161616
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	12/27/2023	Annual	12/27/2024	164715
Rohde & Schwarz	TS-PR1840	Pre-Amplifier (18GHz - 40GHz)	6/2/2023	Annual	6/2/2024	100050
Rohde & Schwarz	HFH2-Z2	Loop Antenna	5/1/2023	Annual	5/1/2024	100519
Rohde & Schwarz	FSW43	Signal Analyzer (2Hz-43.5GHz)	7/13/2023	Annual	7/13/2024	101261
Schwarzbeck	VULB 9162	Bilog Antenna (30MHz - 6GHz)	4/17/2023	Annual	4/17/2024	00304

Table 5-1. Test Equipment

Notes:

1. 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: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 11 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 11 01 109
	·		V2.2 08/24/2023



6.0 SAMPLE CALCULATIONS

Emission Designator

WCDMA Emission Designator

Emission Designator = 4M16F9W WCDMA BW = 4.16 MHz F = Frequency Modulation 9 = Composite Digital Info W = Combination (Audio/Data)

π/2 BPSK / QPSK Modulation

Emission Designator = 8M62G7W BW = 8.62 MHz G = Phase Modulation 7 = Quantized/Digital Info W = Combination of Any

QAM Modulation

Emission Designator = 8M45D7W BW = 8.45 MHz D = Amplitude/Angle Modulated 7 = Quantized/Digital Info W = Combination of Any

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.50 dBm so this harmonic was 25.50 dBm -(-24.80) = 50.3 dBc.

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 12 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 12 01 109
			1/2 2 08/24/2022



7.0 TEST RESULTS

7.1 Summary

Company Name:	<u>Apple Inc.</u>
FCC ID:	<u>BCGA2899</u>
FCC Classification:	PCS Licensed Transmitter (PCB)
Mode(s):	WCDMA/LTE/NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
	Occupied Bandwidth	2.1049	N/A	N/A	Section 7.2
	Conducted Band Edge / Spurious Emissions	2.1051, 22.917(a)	-13 dBm at Band Edge and for all out-of-band emissions	PASS	Sections 7.3, 7.4
CONDUCTED	Transmitter Conducted Output Power	2.1046	N/A	N/A	See RF Exposure Report
	Effective Radiated Power	22.913(a)(5)	< 7 Watts max. ERP	PASS	Section 7.5
	Frequency Stability	2.1055, 22.355	±2.5 ppm	PASS	Section 7.7
RADIATED	Radiated Spurious Emissions	2.1053, 22.917(a)	-13 dBm for all out-of-band emissions	PASS	Section 7.6

Table 7-1. Summary of Test Results

Notes:

- 1. All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2. The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3. All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
- All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is Element EMC Software Tool v1.1.

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 12 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 13 of 109	
			V2.2 08/24/2023	



7.2 Occupied Bandwidth §2.1049

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data were reported.

Test Procedure Used

KDB 971168 D01 v03r01 - Section 4.2

Test Settings

- 1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5% of the expected OBW
- 3. VBW \ge 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within 1 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

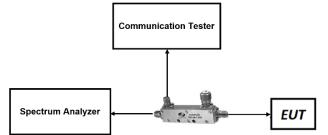


Figure 7-1. Test Instrument & Measurement Setup

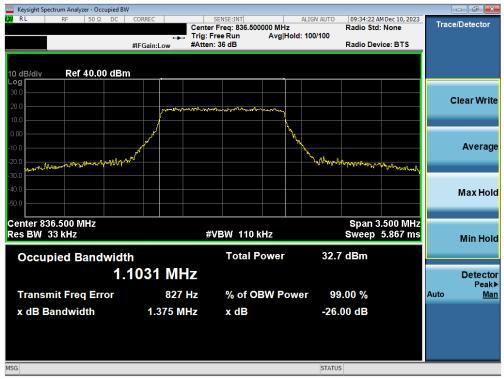
Test Notes

None.

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dege 14 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 14 of 109	
			1/2 2 08/24/2023	



LTE Band 26/5



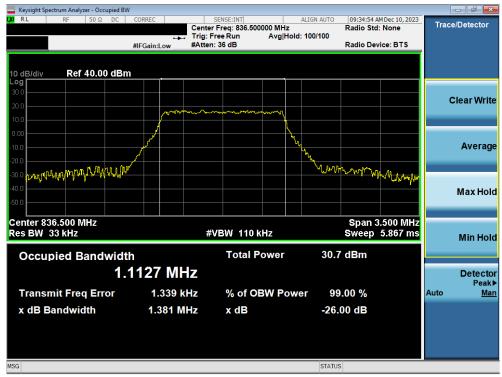
Plot 7-1. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-2. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 15 of 109	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 15 01 109	
		•	V2.2 08/24/2023	





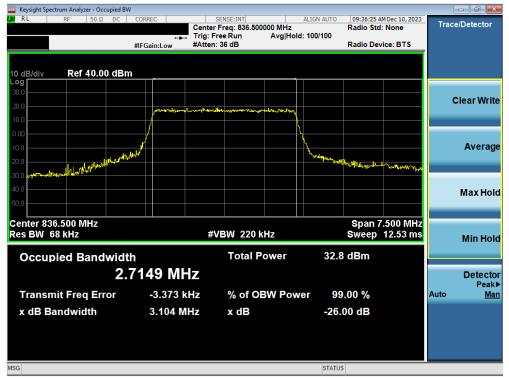
Plot 7-3. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz 64-QAM - Full RB Configuration)



Plot 7-4. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz 256-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 16 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 10 01 109
			V/2 2 08/24/2023





Plot 7-5. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz QPSK - Full RB Configuration)



Plot 7-6. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz 16-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 17 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 17 01 109
			V/2 2 08/24/2023



🔤 Keysight Sp	pectrum Anal	yzer - Oco	upied BW											
LXI RL	RF	50 Ω	DC	CORREC			NSE:INT		AL	IGN AUTO		M Dec 10, 2023	Tro	ce/Detector
							req: 836.500				Radio Std	: None	Ira	ce/Delector
					→ →			Avg Hol	d: 1	00/100				
				#IFGain:	Low	#Atten: 3	6 ab				Radio Dev	ICE: DIS		
10 dB/div	Bot	F 4 0 0	0 dBm											
Log	Re	40.0	у цып				1							
30.0														
														Clear Write
20.0						www.	و دارم میل	A. 1. 1. 1. 1.						cical mile
10.0					(Production of the	and a station of the	on a star water and a second	And the classical sector						
0.00									۲					
-10.0				1					-\					Average
-20.0	alantika, katika ji sha	al day he	. Malling							July she line	alandahas as			
	White Add 1.	and the state	A de de se	Υ II						a Room Artis	and dealers of the	Minuman		
-30.0														
-40.0														Max Hold
-50.0														Max Holu
-50.0													_	
Center 8	26 500										0	SOO BALL		
		VIEZ				-44) (1		-11-				.500 MHz		
Res BW	68 KHZ					#VE	3W 220 H	(HZ			sweep	12.53 ms		Min Hold
Occu	pied E	Band	width	า			Total P	ower		30.9	dBm			
			2	7400										
			Z .	109	MH	Z								Detector
_		_			704						00.0/			Peak▶
Irans	mit Fre	eq Err	or		784 I	HZ	% of O	BW Pow	/er	. 99	.00 %		Auto	<u>Man</u>
v dB E	Bandwi	dth		3 (058 MI	7	x dB			-26 (00 dB			
	Janawi	uun		0.0	550 MI	12	X UD			-201				
MSG										STATUS				

Plot 7-7. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz 64-QAM - Full RB Configuration)



Plot 7-8. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz 256-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 18 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage to 01 109
			V2 2 08/24/2023



Keysight Spectrum Analyzer - Occupied BV						- F	x
LX/RL RF 50Ω DC	CORREC	SENSE:INT enter Freg: 836.500	ALIGN AUT	09:37:42 AME Radio Std: N		Trace/Detect	or
		rig: Free Run Atten: 36 dB	Avg Hold: 100/100	Radio Devic	PTC		
	#IFGain:Low #	Atten: 36 dB		Radio Devic	e: D13		
10 dB/div Ref 40.00 dBr	n						
30.0						Clear W	luita
20.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	manna manna	m			Clearw	me
10.0							
0.00							
-10.0						Aver	age
-20.0			ww	and the second s	Among an A		
-30.0							
-40.0						MaxH	lold
-50.0							_
Center 836.500 MHz				Span 12	.50 MHz		
Res BW 120 kHz		#VBW 390 k	Hz		p 1 ms	Min H	lold
		Total P	ower 24	2.5 dBm			
Occupied Bandwidt			ower 5/	2.5 0.6111			
4.	5271 MHz					Dete	ctor eak▶
Transmit Freq Error	-5.476 kHz	% of OE	3W Power	99.00 %			ak.⊳ <u>Man</u>
x dB Bandwidth	5.187 MHz	x dB	-2	6.00 dB			
	5.107 1012		-2	0.00 00			
MSG			ST	ATUS			
			017				

Plot 7-9. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz QPSK - Full RB Configuration)



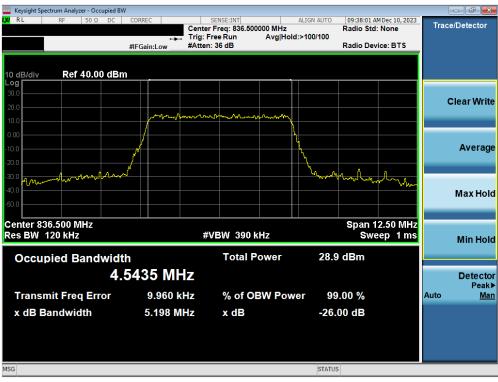
Plot 7-10. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz 16-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 19 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 19 01 109
			1/2 2 08/24/2023



Keysight Spectrum Analyzer - Occupied	d BW						- 6 💌
LX/ RL RF 50 Ω DC		SENSE:INT	ALIGN AUTO		MDec 10, 2023	Turner	/Detector
		ter Freq: 836.500000 MHz		Radio Std:	None	Trace	Detector
			old:>100/100				
	#IFGain:Low #Att	ten: 36 dB		Radio Dev	ICE: BTS		
10 dB/div Ref 40.00 dl	Bm		•				
Log						_	
30.0							lear Write
20.0							lear write
10.0	howen	monorman	V			_	
10.0			N.				
0.00			<u> </u>				
-10.0			L L				Average
			6				Average
-20.0	/W/~W/		- Journa Willia	ᢞᡃᡟᡶ᠕ᠬᠬᡐᡗᡁᡗᡳᢩᠬ	has all a s		
-20.0					And All all all		
-40.0							Max Hold
-50.0							
Center 836.500 MHz				Span 1	2.50 MHz		
Res BW 120 kHz		#VBW 390 kHz			ep 1 ms		
Res Bay 120 KHZ		#VDVV JSV KIIZ		0.990	сртпа		Min Hold
		Total Power	20.0	dBm			
Occupied Bandwi	dth	Total Power	30.9	aBM			
	4.5296 MHz						Detector
-	4.9290 IVINZ						Detector
Tana and it Far a Farma	500 H-	0/ - CODW/ D		00.0/		A	Peak▶
Transmit Freq Error	-598 Hz	% of OBW Pov	wer 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	5.109 MHz	x dB	-26	00 dB			
	5.109 MHZ	A UB	-20.				
MSG			STATUS	;			

Plot 7-11. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz 64-QAM - Full RB Configuration)



Plot 7-12. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz 256-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 20 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 20 01 109
			\/2 2 08/24/2023



Keysight Spectrum	n Analyzer - Oce	cupied BW									- • • •
LXI RL F	RF 50 Ω	DC COF	RREC		NSE:INT		ALIGN AUTO		M Dec 10, 2023	Trac	e/Detector
					req: 836.500			Radio Std	: None	Trac	erDetector
			· · · ·	Trig: Fre #Atten: 3		AvgiHoid	I: 100/100	Radio Dev	dee: BTS		
		#IF	Gain:Low	#Atten. a				Raulo Dev	nce. BT3		
10 dB/div	Ref 40.0	0 dBm									
Log											
30.0											
20.0											Clear Write
			panolus	www.man	Marine Constrainty	mmm					
10.0			1			t i i i i i i i i i i i i i i i i i i i					
0.00			/								
-10.0		ļ ,					l,				Average
		. h marked					Murryn				, tronuge
-20.0	monter	ray life and					10 Ion	With the Bright of the state of	mundung		
-30.0									`		
-40.0											
											Max Hold
-50.0											
	A 5.411										
Center 836.5									5.00 MHz		
Res BW 240	KHZ			#VE	3W 750 k	HZ		SW	eep 1 ms		Min Hold
					_						
Occupie	d Band	width			Total P	ower	32.	ə dBm			
		0 02	14 MI	7							Detector
		J.UZ									Detector Peak▶
Transmit	Freq Err	or	3.733	(Hz	% of O	3W Pow	er 99	9.00 %		Auto	Man
x dB Ban	dwidth		10.01 N		x dB		26	00 dB			
	awiatri		10.01 N	INZ	хив		-20				
										_	
										_	
										_	
MSG							STATU	S			

Plot 7-13. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz QPSK - Full RB Configuration)



Plot 7-14. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz 16-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 21 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 21 01 109
			1/2 2 08/24/2023



Keysight Spectrum Analyzer - Occupied BW					- ē 💌
LX RL RF 50Ω DC	CORREC	SENSE:INT		39:01 AM Dec 10, 2023	Trace/Detector
		ter Freq: 836.500000 MHz		o Std: None	Trace/Delector
		:FreeRun Avg H en:36dB	old: 100/100	o Device: BTS	
,	#IFGain:Low #Att	en. 30 dB	Rau	o Device. B 13	
10 dB/div Ref 40.00 dBm					
Log					
30.0					
20.0					Clear Write
	monorm	www.www.www.	4		
10.0					
0.00	/		<u>- </u>		
-10.0					Average
-10.0	Lawel .		an march		, worage
-20.0				my marked poly and the	
-10.0 -20.0 -30.0					
-40.0					
					Max Hold
-50.0					
Center 836.50 MHz			sp	an 25.00 MHz	
Res BW 240 kHz		#VBW 750 kHz		Sweep 1 ms	Min Hold
Occupied Bandwidt	h	Total Power	31.3 dBi	n	
9.0	0202 MHz				Detector
9.0					Detector Peak▶
Transmit Freq Error	1.072 kHz	% of OBW Po	wer 99.00	2/0	Peak≱ Auto Man
x dB Bandwidth	9.990 MHz	x dB	-26.00 d	В	
MSG			STATUS		

Plot 7-15. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz 64-QAM - Full RB Configuration)



Plot 7-16. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz 256-QAM - Full RB Configuration)

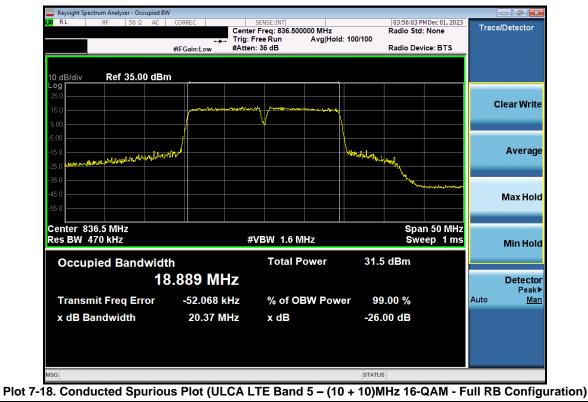
FCC ID: BCGA2899	element	element PART 22 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Page 22 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 22 01 109
			V/2 2 08/24/2023



ULCA – LTE Band 5



Plot 7-17. Conducted Spurious Plot (ULCA LTE Band 5 – (10 + 10)MHz QPSK - Full RB Configuration)



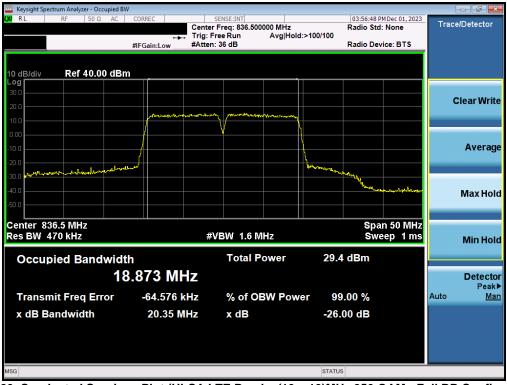
FCC ID: BCGA2899	element 🤤	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 23 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 23 01 109

V2.2 08/24/2023





Plot 7-19. Conducted Spurious Plot (ULCA LTE Band – (10 + 10)MHz 64-QAM - Full RB Configuration)



Plot 7-20. Conducted Spurious Plot (ULCA LTE Band - (10 + 10)MHz 256-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 24 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 24 01 109
			1/2 2 08/24/2022



NR Band n26/n5



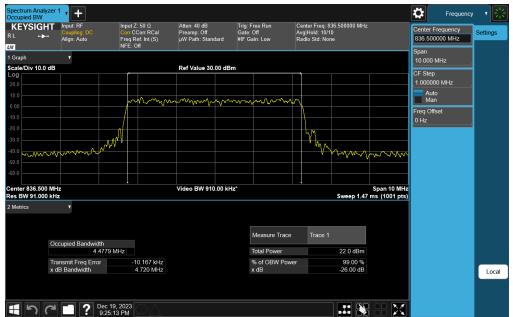
Plot 7-21. Occupied Bandwidth Plot (NR Band n26 - 5MHz n5 DFT-s-OFDM π/2 BPSK - Full RB Configuration)



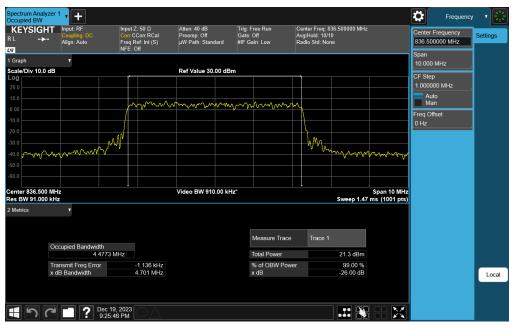
Plot 7-22. Occupied Bandwidth Plot (NR Band n26/n5 - 5MHz CP-OFDM QPSK - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 25 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 25 of 109	
	·		V2.2 08/24/2023	





Plot 7-23. Occupied Bandwidth Plot (NR Band n26/n5 - 5MHz CP-OFDM 16-QAM - Full RB Configuration)



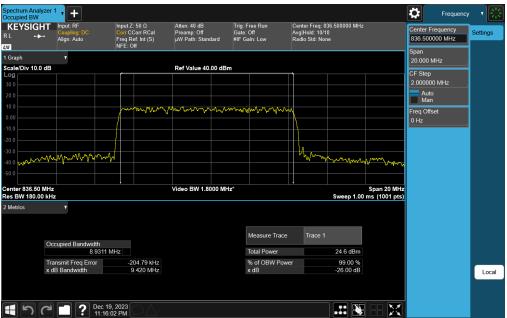
Plot 7-24. Occupied Bandwidth Plot (NR Band n26/n5 - 5MHz CP-OFDM 64-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 26 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 26 of 109	
			V2.2 08/24/2023	





Plot 7-25. Occupied Bandwidth Plot (NR Band n26/n5 - 5MHz CP-OFDM 256-QAM - Full RB Configuration)



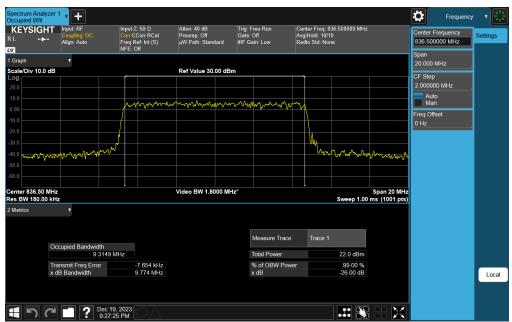
Plot 7-26. Occupied Bandwidth Plot (NR Band n26/n5 - 10MHz DFT-s-OFDM π/2 BPSK - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 27 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 27 01 109
		*	V2 2 08/24/2023





Plot 7-27. Occupied Bandwidth Plot (NR Band n26/n5 - 10MHz CP-OFDM QPSK - Full RB Configuration)



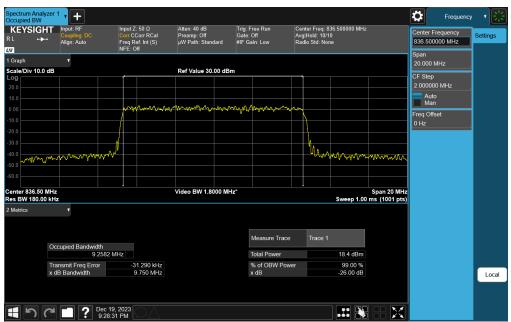
Plot 7-28. Occupied Bandwidth Plot (NR Band n26/n5 - 10MHz CP-OFDM 16-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 28 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 28 of 109	
	·		V2.2 08/24/2023	



	HT Input: RF Coupling: DC Align: Auto	Input Ζ: 50 Ω Corr CCorr RCal Freq Ref: Int (S) NFE: Off	Atten: 40 dB Preamp: Off μW Path: Standard	Trig: Free Run Gate: Off #IF Gain: Low	Center Fre Avg Hold: Radio Std			Center Frequency 836.500000 MHz	Settings
Graph	v							Span 20.000 MHz	
ale/Div 10	0.0 dB		Ref Value 30.00 d	Bm				CF Step	
								2.000000 MHz	
		mmmmmm	mann	www.m.m	0.00-			Auto Man	
								Freq Offset	
.0								0 Hz	
0.0									
.0 .0 Afrato	manning	\sim			M	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mamaa		
0.0									
nter 836.5			Video BW 1.8000 M				Span 20 MHz		
s BW 180.			Video BW 1.8000 N			Sweep 1.00	ms (1001 pts)		
Vietrics	,			Measure Tra	ice Trad	ce 1			
				Total Power		21.5 dBm			
	Occupied Bandwidth			Total Power		21.5 dBm 99.00 %			
	9.2958			% of OBM/ P	ower				
		MHz -11.890 kHz 9.787 MHz		% of OBW P x dB	ower	-26.00 dB			Loca
	9.2958 Transmit Freq Error	-11.890 kHz			ower				Loca

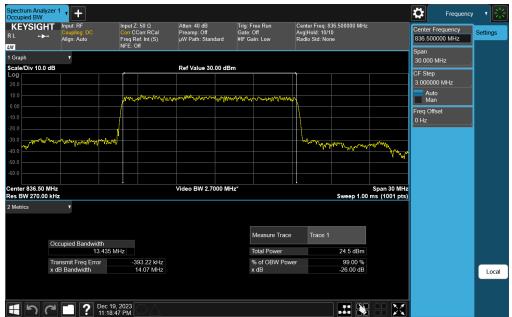
Plot 7-29. Occupied Bandwidth Plot (NR Band n26/n5 - 10MHz CP-OFDM 64-QAM - Full RB Configuration)



Plot 7-30. Occupied Bandwidth Plot (NR Band n26/n5 - 10MHz CP-OFDM 256-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 29 of 109	
			V2.2 08/24/2023	





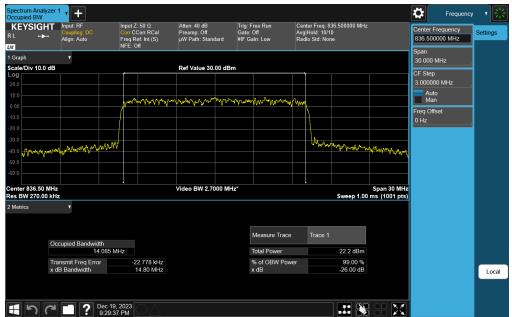
Plot 7-31. Occupied Bandwidth Plot (NR Band n26/n5 - 15MHz DFT-s-OFDM π/2 BPSK - Full RB Configuration)



Plot 7-32. Occupied Bandwidth Plot (NR Band n26/n5 - 15MHz CP-OFDM QPSK - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Bogo 20 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 30 of 109	
	·		V2.2 08/24/2023	





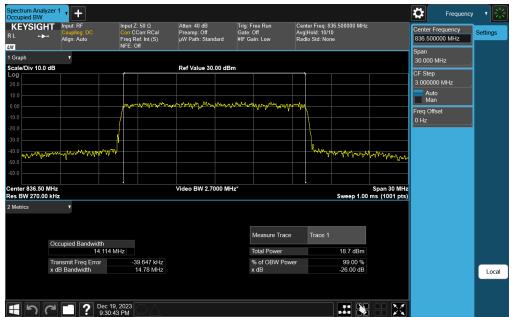
Plot 7-33. Occupied Bandwidth Plot (NR Band n26/n5 - 15MHz CP-OFDM 16-QAM - Full RB Configuration)



Plot 7-34. Occupied Bandwidth Plot (NR Band n26/n5 - 15MHz CP-OFDM 64-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Daga 21 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 31 of 109	
	-		V2.2 08/24/2023	





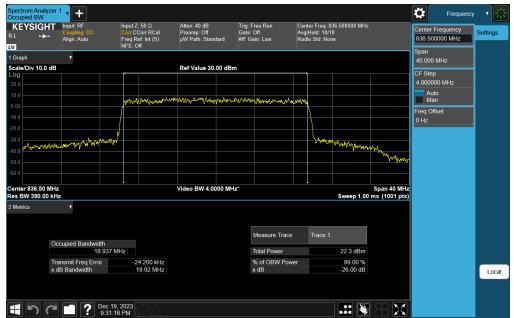
Plot 7-35. Occupied Bandwidth Plot (NR Band n26/n5 - 15MHz CP-OFDM 256-QAM - Full RB Configuration)



Plot 7-36. Occupied Bandwidth Plot (NR Band n26/n5 - 20MHz DFT-s-OFDM π/2 BPSK - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 22 of 100
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 32 of 109
			V2.2 08/24/2023





Plot 7-37. Occupied Bandwidth Plot (NR Band n26/n5 - 20MHz CP-OFDM QPSK - Full RB Configuration)



Plot 7-38. Occupied Bandwidth Plot (NR Band n26/n5 - 20MHz CP-OFDM 16-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	element PART 22 MEASUREMENT REPORT		
Test Report S/N:	Test Dates:	EUT Type:	Dogo 22 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 33 of 109	
			V2.2 08/24/2023	





Plot 7-39. Occupied Bandwidth Plot (NR Band n26/n5 - 20MHz CP-OFDM 64-QAM - Full RB Configuration)



Plot 7-40. Occupied Bandwidth Plot (NR Band n26/n5 - 20MHz CP-OFDM 256-QAM - Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 34 of 109	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 34 01 109	
	-	·	V2.2 08/24/2023	



WCDMA Cell

ectrum Analy ccupied BW KEYSIGH	IT Input: RF	Input Ζ: 50 Ω Corr CCorr RCal Freq Ref: Int (S)	Atten: 36 dB Preamp: Off μW Path: Standard	Trig: Free Run Gate: Off #IF Gain: Low	Center Freq: 836.600000 M Avg Hold: 100/100 Radio Std: None	ИНz	Select Trace Trace 1	• 🛃
1		NFE: Off					Trace Type	Trace
Graph cale/Div 10.0	dB.		Ref Value 40.00 dE	lm			Clear / Write	Control
og							Trace Average	Math
								Detector
0.0		~~		m			Max Hold	Trace
.00							Min Hold	Function
		/						Advance
	monorm	man		\			Restart Max Hold	
0.0						mannon	View/Blank	
							 Active 	
							View	
enter 836.600 es BW 150.00		i	#Video BW 910.00 P	(Hz	Sweep 1	Span 15 MHz .00 ms (1001 pts)	Blank	
Metrics	•						Background	
				Measure Trac	e Trace 1			
	Occupied Bandwidth							
	4.178 Transmit Freq Error	2.690 kHz		Total Power % of OBW Po	33.3 dE wer 99.00			
	x dB Bandwidth	4.763 MHz		x dB	-26.00			Loca
	∼ 2 Feb	07, 2024						

Plot 7-41. Occupied Bandwidth Plot (WCDMA, Ch. 4183)

FCC ID: BCGA2899	element	element PART 22 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Page 35 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 55 01 109
			\/2 2 08/24/2023



7.3 Spurious and Harmonic Emissions at Antenna Terminal §2.1051, 22.917(a)

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data were reported.

The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v03r01 - Section 6.0

Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to 10GHz (separated into at least two plots per channel)
- 2. Detector = RMS
- 3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 4. Sweep time = auto couple
- 5. The trace was allowed to stabilize
- 6. Please see test notes below for RBW and VBW settings

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

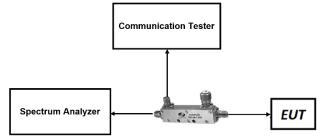


Figure 7-2. Test Instrument & Measurement Setup

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 36 of 109	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 30 01 109	
			\/2 2 08/24/2023	



Test Notes

- Per Part 22, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
- 2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.
- 3. Uplink carrier aggregation conducted spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. The worst case (highest) powers were found while operating with QPSK modulation with both carriers set to transmit using 1RB.
- 4. Uplink carrier aggregation inter-band emission was investigated and found to not be the worst case

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 37 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 37 01 109
	·		V2 2 08/24/2023



LTE Band 26/5

MultiView	- Spectrum								
Ref Level 20			V 100 kHz						
Att			V 100 kHz Moo	la Cuissa					
TDF "CABLES"	20 00 344 I	15.9 ms - VDY	Y 300 KHZ 14100	le sweep					
Frequency S	Sweep								•1Rm Viev
								M1[1]	-57.13 dB
									771.2780 M
									77127001
10 dBm									
									M1
0 dBm -	8 1 A	7	S.	and the state of the second sectories	and the party of t			Contractor Children of the	produce produce and the
		weither aller distances have a	dates dis enclusione distante	a hangalaha darimiki	والمؤاف المعاقبان ألر وأقلع الأمريقاء		السبط والبالاست الاياط بالملاط	in the selling and the first of south	فتطريقه والمتركب وماريط أنتج
0 dBm	and there are a draw								
9.95 MHz			15863 p	ts		79.31 MHz/			823.05 M
Marker Pea	k List								
No	X-Valu	e	Y-Va	ilue	No	X-Valu	e	Y-Va	alue
1	771.278000		-57.126		6	229.362000		-61.129	
	543.793000 MHz		-58.032 dBm			195.465000 MHz		-61.161 dBm	
	822.175000 MHz		-58.109		8	82.772000		-61.313	dBm
4 5	593.739000		-59.089			122.019000	MHz	-61.519	dBm
2	320.957000	MINZ	-60.722	авт					
									29.12.20

22:08:46 29.12.2023

Plot 7-42. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

									
MultiView	Spectrun	n							-
Ref Level 20.0	0 dBm	● RBW	/ 100 kHz						
 Att TDF "CABLES" 	30 dB SWT	3.03 ms 🗢 VBW	300 kHz Mo	de Sweep					
1 Frequency Sw	eep								●1Rm View
								M1[1]	
10 dBm									937.4460 MHz
0 dBm									
-10 dBm									
-20 dBm									
-30 dBm									
-40 dBm									
-50 dBm									
					M1				
Variation and indianal Appla	niaan falanana halat	Al manufactory of the second of the	propriate and the second s	the contraction of the sector	ndwww.www.www.ityding	un physical and the second	depterited attension of players	under literation of the section of the	any tang hip and here and
-70 dBm									
51									52
848.95 MHz			3023 pt	is	15	5.11 MHz/			1.00005 GHz
2 Marker Peak I									
No 1	X-Valu 937,446000		۲-۷ ۵ 58.423-	dBm	No	X-Valu	e	Y-Va	ue
-	5011110000		001.120	30111					
						*	Measuring		29.12.2023 22:09:03

22:09:03 29.12.2023

Plot 7-43. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 38 of 109	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 38 01 109	
			V2.2 08/24/2023	



									*
MultiView	Spectrum								
Ref Level 0.0	00 dBm	● RBW	1 MHz						
 Att TDF "CABLES" 	30 db SWT 3	6.1 ms 🗢 VBW	3 MHz Mode S	Sweep					
1 Frequency S	Sweep								o1Rm View
								M1[1]	-44.33 dBm 9.693270 GHz
-10 dBm-									
-20 dBm									
-30 dBm									
-40 dBm									M1
-50 dBm									
and the second s	A REAL PROPERTY OF THE REAL PR	and the second se	South the second	a dub temperatura	Contraction of the local division of the loc				
-60 dBm									
-70 dBm									
-80 dBm									
-90 dBm S1									
999.5 MHz			18003 p	ts	90	00.1 MHz/			10.0005 GHz
2 Marker Pea									
No	X-Value		Y-Va		No	X-Valu	e	Y-Va	lue
1	9.693270 0	GHz	-44.333	dBm		4.984030 (δHz	-47.609	dBm
	*					~	Measuring		29.12.2023 22:09:20

22:09:21 29.12.2023

Plot 7-44. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

	-		•						
MultiView	Spectrum								-
Ref Level 20.0 Att TDF "CABLES"			₩ 100 kHz ₩ 300 kHz Mod	le Sweep					
1 Frequency Sw	veep								o1Rm View
								M1[1]	-56.77 dBm
10 dBm									776.1280 MHz
TO GBM									
0 dBm									
o ubm									
-10 dBm-									
-10 UBIII									
-20 dBm-									
20 0011									
-30 dBm-									
-30 UBM-									
10 10									
-40 dBm									
-50 dBm									M1
						2 4	. 6	Z. 5	1
-60 dBm Marketallijske Specieval of	ماروحول بالبانية والترابي والمرابل	Philippe and an inglished as	a de la companya de La companya de la comp	interesting and the application					
الريبالمطرفن أرافط والاطلاطة	والمأولولين بتنا وتصدأ ومعادرها	a state of the second state of the second states of the second states of the second states of the second states	فمنتقر والمتعالية والمشرعة والمراجع					a dana a ta data	
-70 dBm									
51									
29.95 MHz			15883 pi	s	79	.41 MHz/			824.05 MHz
2 Marker Peak									
No	X-Valu		Y-Va		No	X-Valu		Y-Va	
1 2	776.128000 572.641000		-56.770 -58.532		6	637.287000 696.283000		-59.158 -59.218	
23	822.625000		-58,560		8	253.661000		-59.218	
	580.890000	MHz	-58.668	dBm	9	291.209000	MHz	-61.205	dBm
5	734.531000	MHz	-58.803	dBm	10	195.715000	MHz	-61.221	dBm
	*					~	Measuring		29.12.2023 22:10:25

22:10:25 29.12.2023

Plot 7-45. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

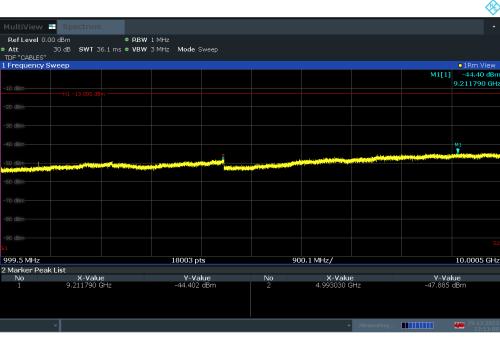
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 39 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 39 01 109
	•		V2.2 08/24/2023



									~~
MultiView	Spectrum								
Ref Level 20.	00 dBm	• RBW	100 kHz						
Att TDF "CABLES"	30 dB SWT	3.03 ms 🗢 VBW	300 kHz Mod	e Sweep					
1 Frequency St	weep								●1Rm View
								M1[1]	
10 dBm									872.3670 MHz
0 dBm									
-10 dBm		m							
-20 dBm									
-30 dBm									
SO USII									
-40 dBm-									
-50 dBm-									
	M1				2				
home to be have been to	wany Myster May Mary Mary	entranski fortalinska og på	nut had a ship have been been been been been been been be	which which the fills a speared	high states to be a substance of the second	appelalite and a prime	y will a production of the state of the	Prostingthe water	and the set of the set
									· • •
-70 dBm									52
51									
848.95 MHz			3023 pt	s	15	5.11 MHz/			1.00005 GHz
2 Marker Peak									
No	X-Valu	e	Y-Va		No	X-Valu		Y-Val	
1 2	872.367000 924.550000		-58.193 -58.301	dBm		996.376000	MHZ	-59.089	aBm
						~	Measurinq		29.12.2023
									22:10:42

22:10:42 29.12.2023

Plot 7-46. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



22:11:00 29.12.2023

Plot 7-47. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 40 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 40 01 109
	·	-	V2 2 08/24/2023



									~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
MultiView	Spectru	m							
Ref Level 20	.00 dBm	● RB	₩ 100 kHz						
Att TDF "CABLES"	30 dB <b>SW</b>	15.9 ms 🗢 VBN	<b>V</b> 300 kHz Moo	<b>le</b> Sweep					
1 Frequency S	weep								●1Rm View
								M1[1]	-56.90 dBm
10 dBm									781.3780 MHz
20 0011									
0 dBm-									
-10 dBm									
	H1 -13.000								
-20 dBm									
-30 dBm									
-40 dBm									
-50 dBm									
									M1
60 dBm	7	A construction of the second second		القابير فانتقاده الانتقاديان	Property in the shift in the second		and the second second	a biline : Day of States and A results	PROPERTY OF A
A PROPERTY OF A		Longen de parts de carde	trana abata Managarata Mala	Halthe posts and the ball	وبالافاقات والماصلة فليعتك إي		والمراجع والمالية والمالية والمراجعة	and the local participation of the later of	a the product of the second
-70 dBm									
S1									
29.95 MHz			15883 p	ts	7	9.41 MHz/			824.05 MHz
2 Marker Peak	< List					,			
No	X-Va		Y-Va		No	X-Valu		Y-Va	
1	781.37800		-56.898		6	192.715000		-60.941	
2 3	548.24200 808.37600		-58.207 -58.340		7	149.217000 37.725000		-60.963 -61.329	
4	621.18800	0 MHz	-58.540	dBm	9	115.070000		-61.340	
5	493.34600		-59.255						
	*						Measuring		29.12.2023 22:11:33

22:11:33 29.12.2023

Plot 7-48. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

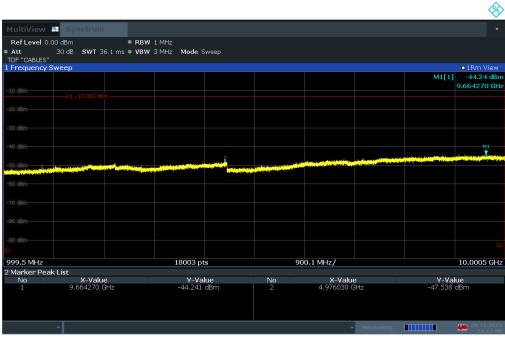
MultiView	Spectrum								
Ref Level 2	:0.00 dBm	RBW	100 kHz						
<ul> <li>Att</li> </ul>		3.03 ms 🗢 VBW	300 kHz Mod	e Sweep					
TDF "CABLES" 1 Frequency									●1Rm View
Trequency	эмеер							M1[1]	-47.10 dBm
									849.0250 MHz
10 dBm									
0.10.0									
0 dBm									
-10 dBm									
-20 dBm									
-30 dBm									
-40 dBm M1									
-50 dBm									
-50 UBM-									
Actin Adamanda	which as the second sheet	lead from thinks would be	an ana ka dhi sa 🖡 a	the floor of the set of the	A an A Model on the	an orth de avantation.	the other hand to be an	d a trade to a state	2
on hillselandedeel	walther the second s	adadhandhath a san ha	tindindez (NM) við se 1946	anda Namaki kina kita	lite Adama industry well.	a habilasina dala destitua da sa tamb	and a fact of a second s	adde and a fall film an	and a stand of the second s
-70 dBm									
51									
848.95 MHz			3023 pt	S	15	5.11 MHz/			1.00005 GHz
2 Marker Pe									
No	X-Value		Y-Va	lue	No	X-Valu		Y-Va	
	849.025000	MHZ	-47.103	dBm		999.475000	MHZ	-59.345	dBm
						~	Measuring		29.12.2023 22·11·50
									22:11:50

22:11:51 29.12.2023

Plot 7-49. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 41 of 100
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 41 of 109
		-	V2 2 08/24/2023





22:12:08 29.12.2023

Plot 7-50. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

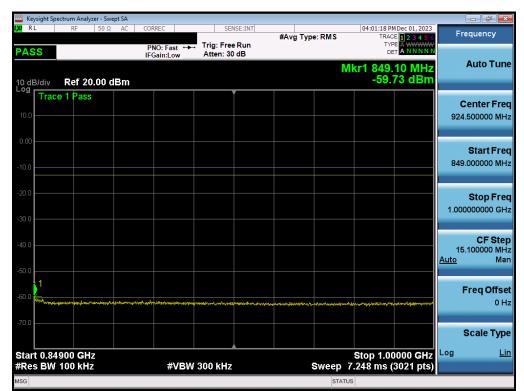
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 42 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 42 01 109
			V2 2 08/24/2023



## **ULCA LTE Band 5**



Plot 7-51. Conducted Spurious Plot (ULCA LTE Band 5 – (10 + 10)MHz QPSK – PCC 1/49 SCC 1/0 - Low Channel)



Plot 7-52. Conducted Spurious Plot (ULCA LTE Band 5 - (10 + 10)MHz QPSK - PCC 1/49 SCC 1/0 - Low Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 43 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 43 01 109
			V2.2 08/24/2023





Plot 7-53. Conducted Spurious Plot (ULCA LTE Band 5 - (10 + 10)MHz QPSK - PCC 1/49 SCC 1/0 - Low Channel)



Plot 7-54. Conducted Spurious Plot (ULCA LTE Band 5 – (10 + 10)MHz QPSK – PCC 1/49 SCC 1/0 - Mid Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 44 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 44 01 109
L			V2.2 08/24/2023



	ectrum Analyze										
LXIRL	RF	50 Ω AC	CORREC	SEI	ISE:INT	#Avg Typ	e: RMS		HDec 01, 2023	Freque	ency
PASS			PNO: Fast ↔ IFGain:Low	Trig: Free Atten: 30				DE			_
10 dB/div	Ref 20.	00 dBm					N	/kr1 849. -56.	00 MHz 64 dBm	Aut	o Tune
Log Trac	e 1 Pass			Ì						Cent	er Freq
10.0											DOO MHz
0.00											
											<b>rt Freq</b>
-10.0										849.000	
-20.0										Sto	op Freq
-30.0										1.000000	
00.0										-	F Step
-40.0										15.100	DOO MHz Man
-50.0										<u>Auto</u>	wan
-60.0										Fred	Offset
-00.0	- and the second se	harterter berener	ware warden and the second	and the second states and the second s	****	erselenterselenterstersterste	interneting the second s	anter a second and the	dinantanya man		0 Hz
-70.0										Sca	Іе Туре
								044-14-0			Lin
Start 0.84 #Res BW			#VBI	№ 300 kHz			Sweep	Stop 1.00 7.248 ms (	0000 GHz 3021 pts)	209	<u></u>
MSG							STAT	us			

Plot 7-55. Conducted Spurious Plot (ULCA LTE Band 5 - (10 + 10)MHz QPSK - PCC 1/49 SCC 1/0 - Mid Channel)



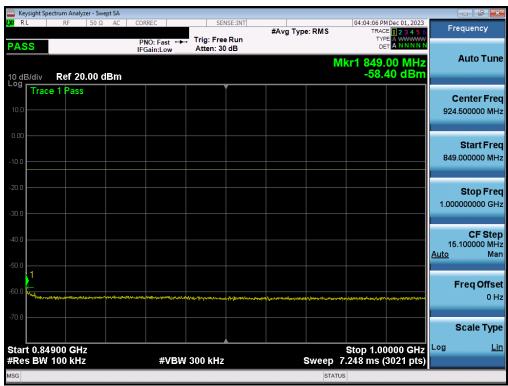
Plot 7-56. Conducted Spurious Plot (ULCA LTE Band 5 - (10 + 10)MHz QPSK - PCC 1/49 SCC 1/0 - Mid Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 45 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 45 01 109
			\/2 2 08/24/2023



		ctrum Analyzer									_	
l <b>XI</b> R	L	RF	50Ω AC	CORREC	SEI	ISE:INT	#Avg Typ	e: RMS		Dec 01, 2023	Fr	equency
PAS	S			PNO: Fast ↔ IFGain:Low	Atten: 30		• //		TYP			
10 di Log	3/div	Ref 20.0	00 dBm					M	kr1 820. -60.	55 MHz 04 dBm		Auto Tune
10.0	Trace	e 1 Pass										<b>Center Freq</b> .000000 MHz
0.00											30	Start Freq .000000 MHz
-20.0											824	<b>Stop Freq</b> .000000 MHz
-40.0											79 <u>Auto</u>	<b>CF Step</b> .400000 MHz Man
-50.0 -60.0										1	•	Freq Offset 0 Hz
-70.0												Scale Type
	t 30.0 s BW	MHz 100 kHz		#VBV	V 300 kHz		S	weep 38	8 Stop 11 ms (1	24.0 MHz 5881 pts)	Log	<u>Lin</u>
MSG								STATUS	5			

Plot 7-57. Conducted Spurious Plot (ULCA LTE Band 5 - (10 + 10)MHz QPSK - PCC 1/0 SCC 1/49 - High Channel)



Plot 7-58. Conducted Spurious Plot (ULCA LTE Band 5 - (10 + 10)MHz QPSK - PCC 1/0 SCC 1/49 - High Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 46 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 40 01 109
		-	V2 2 08/24/2023





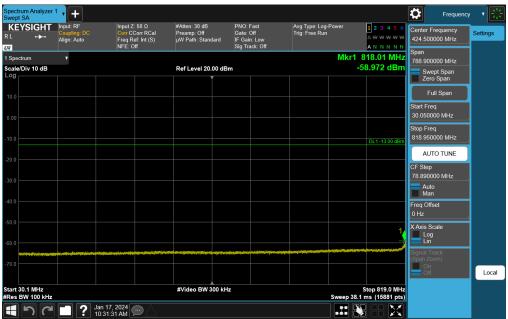
Plot 7-59. Conducted Spurious Plot (ULCA LTE Band 5 – (10 + 10)MHz QPSK – PCC 1/0 SCC 1/49 - High Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 47 of 109	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 47 of 109	
			V2 2 08/24/2023	

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



## NR Band n26/n5



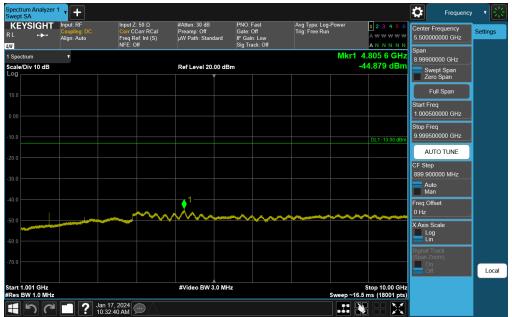
Plot 7-60. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



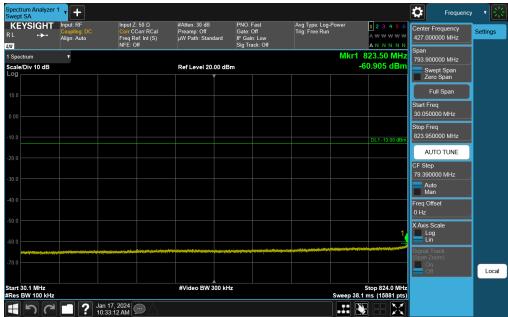
Plot 7-61. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 48 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 40 01 109
	·	·	V2.2 08/24/2023





Plot 7-62. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-63. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 49 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 49 01 109
		·	\/2 2 08/24/2023





Plot 7-64. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-65. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 50 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 50 01 109
			1/2 2 08/24/2023





Plot 7-66. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-67. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 51 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 51 01 109
			\/2 2 08/24/2023





Plot 7-68. Conducted Spurious Plot (NR Band n26/n5 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 52 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 52 01 109
			V2.2 08/24/2023



# WCDMA Cell

EYSIGHT Input: RF Coupling: Align: Aut PASS		orrRCal Prea Int(S) μW		PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	#Avg Type: Power (RMS) Trig: Free Run	1 2 3 4 5 6 A \\ \\ \\ \\ \\ \\ \\ \\ A N N N N N N	Center Frequency 426.500000 MHz Span	Setting
ectrum v le/Div 10 dB		Ref	Level 20.00 dBm			822.85 MHz 35.606 dBm	793.000000 MHz	
Trace 1 Pass			Ĭ				Zero Span Full Span	
							Start Freq 30.000000 MHz	
							Stop Freq 823.000000 MHz	
							AUTO TUNE	
							CF Step 79.300000 MHz Auto	
							Man Freq Offset	
							0 Hz X Axis Scale Log	
a lagensi dapana kang panari grad pila Alipebbe		And the state of the second	n de seule d				Lin Signal Track	
							(Span Zoom) On Off	Lo
t 30.0 MHz s BW 100 kHz	Peb 07, 2024 11:30:56 PM		deo BW 300 kHz			Stop 823.0 MHz ms (15861 pts)		

Plot 7-69. Conducted Spurious Plot (WCDMA Ch. 4132)



Plot 7-70. Conducted Spurious Plot (WCDMA Ch. 4132)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 53 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 55 01 109
	·		V2.2 08/24/2023





Plot 7-71. Conducted Spurious Plot (WCDMA Ch. 4132)

Spectru Swept S	m Analyzer 1						Frequency	<b>,</b> 米
RL	SIGHT Input: RF Coupling: DC Align: Auto PASS	Input Ζ: 50 Ω Corr CCorr RCal Freq Ref: Int (S) NFE: Off	#Atten: 30 dB Preamp: Off μW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	#Avg Type: Power (RMS) Trig: Free Run	1 2 3 4 5 6 A₩₩₩₩₩ A N N N N N	Center Frequency 427.000000 MHz Span	Settings
	rum v Div 10 dB		Ref Level 12.35 dB	m		823.20 MHz 56.350 dBm	794.000000 MHz	
Log	Trace 1 Pass		Ĭ				Zero Span	
2.35 —							Full Span Start Freq	
-7.65							30.000000 MHz Stop Freq	
-17.7 —							824.000000 MHz	
-27.7 —							AUTO TUNE CF Step	
-37.7 —							79.400000 MHz	
-47.7 —						1/	Man Freq Offset	
-57.7 —							0 Hz X Axis Scale	
-67.7			And is sufficient of the special state of the sufficient special states				Log Lin	
-77.7							Signal Track (Span Zoom) On	
Start 30	).0 MHz		#Video BW 300 kH	z		Stop 824.0 MHz	Off	Local
	W 100 kHz					1 ms (15881 pts)		
	って . ? !	eb 07, 2024 💬 🛆						

Plot 7-72. Conducted Spurious Plot (WCDMA Ch. 4183)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 54 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 54 01 109
			V2.2 08/24/2023



KEYSIGHT     Input: RF       L     Imput: RF       Align: Auto	Input Z: 50 Ω Corr CCorr RCal Freq Ref: Int (S) NFE: Off	Atten: 30 dB Preamp: Off μW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	#Avg Type: Power (RMS) Trig: Free Run	1 2 3 4 5 6 A₩₩₩₩₩ A N N N N N	Center Frequency 924.500000 MHz Span	Settings
Spectrum v ale/Div 10 dB		Ref Level 20.00 dE	lm		849.05 MHz 54.639 dBm	151.000000 MHz Swept Span	
Trace 1 Pass						Zero Span Full Span	
						Start Freq 849.000000 MHz	
						Stop Freq 1.000000000 GHz	
						AUTO TUNE	
						CF Step 15.100000 MHz	
0.0						Auto Man	
						Freq Offset 0 Hz	
0.0 1						X Axis Scale Log Lin	
0.0	ין איז	anter in an Landerpforger system i des mande	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	there and the second	*****	Signal Track (Span Zoom)	
						On Off	Loca
art 0.84900 GHz es BW 100 kHz		#Video BW 300 kH	łz		top 1.00000 GHz 25 ms (3021 pts)		

Plot 7-73. Conducted Spurious Plot (WCDMA Ch. 4183)



Plot 7-74. Conducted Spurious Plot (WCDMA Ch. 4183)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 55 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 55 01 109
	·		V2.2 08/24/2023



KEYSIGHT Input: RF Coupling: DC Align: Auto	Input Ζ: 50 Ω Corr CCorr RCal Freq Ref: Int (S) NFE: Off	Atten: 30 dB Preamp: Off μW Path: Standard	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	#Avg Type: Power (RMS) Trig: Free Run	1 2 3 4 5 6 A \vee vee vee vee A N N N N N N	Center Frequency 427.000000 MHz Span	Settings
spectrum v ale/Div 10 dB		Ref Level 20.00 dB	m		823.70 MHz 61.195 dBm	794.000000 MHz	
g Trace 1 Pass		Ĭ				Zero Span Full Span	
0						Start Freq 30.000000 MHz	1
						Stop Freq 824.000000 MHz	
0						AUTO TUNE	
0						CF Step 79.400000 MHz	
						Auto Man	
						Freq Offset 0 Hz	
0					1	X Axis Scale Log Lin	1
		nad his gate sector to decompting all another				Signal Track (Span Zoom)	
						On Off	Loc
rt 30.0 MHz es BW 100 kHz		#Video BW 300 kH	z	Sweep 38.7	Stop 824.0 MHz ms (15881 pts)		

Plot 7-75. Conducted Spurious Plot (WCDMA Ch. 4233)

Spect Swep	trum Analyzer 1 t SA	• +								Frequency	· • 😤
RL		Input: RF Coupling: DC Align: Auto		orr RCal f: Int (S)	Atten: 30 dB Preamp: Off μW Path: Standa	PNO:Fast Gate:Off ard IF Gain:Low Sig Track:O		ower (RMS)	1 2 3 4 5 6 A₩₩₩₩₩ A N N N N N	Center Frequency 925.000000 MHz	Settings
1 Spe	ctrum /Div 10 dB				Ref Level 20.0				850.20 MHz 26.444 dBm	Span 150.000000 MHz	
Log	Trace 1 F	ass			Ref Level 20.0			-		Swept Span Zero Span	
10.0										Full Span	
0.00										Start Freq 850.000000 MHz	
-10.0										Stop Freq 1.000000000 GHz	
-20.0										AUTO TUNE	
-30.0										CF Step 15.000000 MHz	
	Ч									Auto Man	
-40.0										Freq Offset 0 Hz	
-50.0	N N									X Axis Scale Log Lin	1
+60.0	furtheren	an ta the state of	ajartukan ay bang tingkan miya ang tang tang	handarfindadarda		and a state of the second s	an a	an a		Signal Track (Span Zoom)	
-70.0										On Off	Local
	0.85000 GHz BW 100 kHz				#Video BW 30	00 kHz			op 1.00000 GHz 0 ms (3001 pts)		
	50	<b>?</b>	Feb 07, 2024 11:39:25 PM								

Plot 7-76. Conducted Spurious Plot (WCDMA Ch. 4233)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 56 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 50 01 109
1		·	V2.2 08/24/2023





Plot 7-77. Conducted Spurious Plot (WCDMA Ch. 4233)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 57 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 57 OF 109
			V2.2 08/24/2023



## 7.4 Band Edge Emissions at Antenna Terminal

§2.1051, 22.917(a)

#### **Test Overview**

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data was reported.

# The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{[Watts]})$ , where P is the transmitter power in Watts.

#### Test Procedure Used

KDB 971168 D01 v03r01 - Section 6.0

#### Test Settings

- 1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW > 1% of the emission bandwidth
- 4. VBW  $\geq$  3 x RBW
- 5. Detector = RMS
- 6. Number of sweep points  $\geq 2 \times \text{Span/RBW}$
- 7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize

#### Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

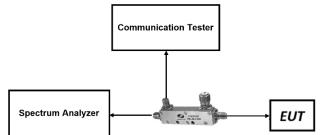


Figure 7-3. Test Instrument & Measurement Setup

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 58 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 56 01 109
	·	·	V2.2 08/24/2023



#### Test Notes

- Per 22.917(b), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
- 2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

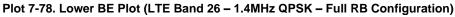
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 59 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 59 01 109
			\/2 2 08/24/2023

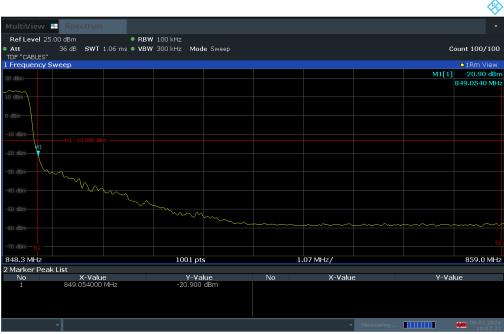


# LTE Band 26

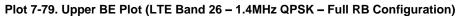
Ref Level 25	.00 dBm	• RBW 100 kHz						
Att	36 dB <b>SWT</b> 1.06 ms		de Sweep					ount 100/10
IDF "CABLES"								
Frequency S	weep							01Rm View
							M1[1]	-20.58 dB 823.9460 MI
								823.9400 Mi
10 dBm								
20 dBm								¥
								~
							~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
							1	
50 dBm					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
				\sim				
50 dBm				~~-				
314.0 MHz		1001 p		1	07 MHz/			824.7 M
Marker Peal	List	1001 p		1.				02 17 14
No	X-Value	Y-Va	alue	No	X-Value	;	Y-Va	ue
	823.946000 MHz	-20.582	dBm					

19:06:24 06.01.2024





19:07:28 06.01.2024



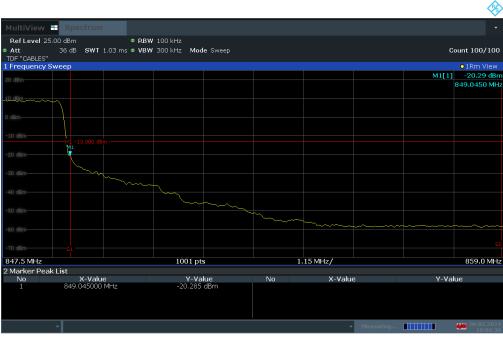
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 60 of 109	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 60 01 109	
			V2.2 08/24/2023	



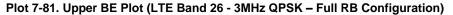
MultiView	Spectrum						•
Ref Level 25	.00 dBm •	RBW 100 kHz					
Att TDF "CABLES"		VBW 300 kHz Mode Sweep					Count 100/100
1 Frequency S	Sweep						•1Rm View
20 dBm			M1	[1]			-20.64 dBr
							823.9550 MH
LO dBm							
							m
						M	
						<u>Ť</u>	
						~~~	
					~~~~		
-50 dBm		· ····································					
60 dBm							
814.0 MHz		1001 pts		1.15 MHz/			825.5 MH
2 Marker Peal	k l ist	1001 pts		1113 (4) 127			02010 141
No	X-Value	Y-Value	No	X-Value		Y-1	√alue
	823.955000 MHz	-20.645 dBm					
			1				
							06.01.202

19:08:04 06.01.2024

Plot 7-80. Lower BE Plot (LTE Band 26 - 3MHz QPSK - Full RB Configuration)



19:08:36 06.01.2024

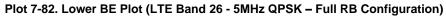


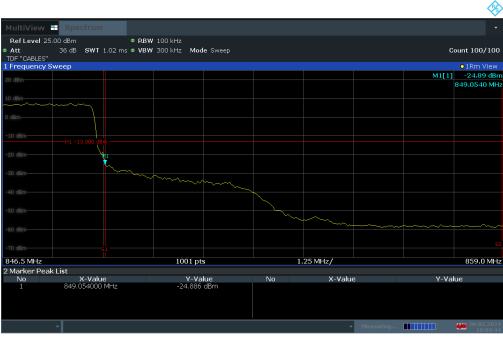
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 61 of 100	
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 61 of 109	
			V2.2 08/24/2023	



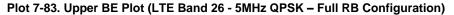
MultiView	Spectrum								
Ref Level 25.	.00 dBm	RBW	100 kHz						
 Att 	36 dB SWT 1	1.02 ms 💿 VBW	300 kHz 🛛	Mode Sweep				с	ount 100/100
TDF "CABLES"									
1 Frequency S	weep								●1Rm View
20 dBm								M1[1]	-25.45 dBm 823.8960 MHz
									823.8960 MHZ
10 dBm									
0 dBm									
-10 dBm-									
-20 dBm							M1	/	
-30 dBm									
-30 ubii							~~~~		
-40 dBm					~~~~~				
		- ~							
-Suden	m								
-60 dBm									
sī70 dBm									
814.0 MHz			1001	1 pts	1	.25 MHz/			826.5 MHz
2 Marker Peak	list				^	120			
No	X-Value			-Value	No	X-Valu	e	Y-Va	lue
1	823.896000	MHz	-25.	454 dBm					
	*					~	Measuring		06.01.2024 19:09:11

19:09:12 06.01.2024





19:09:45 06.01.2024

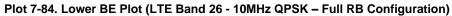


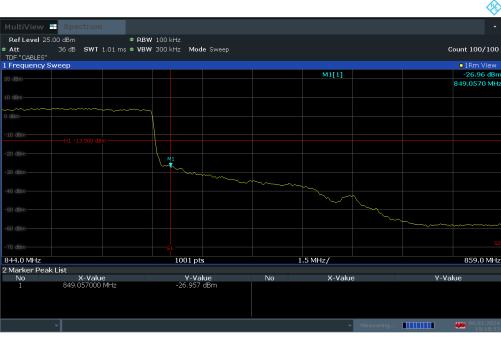
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 62 of 100
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 62 of 109
			V2.2 08/24/2023



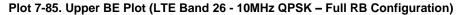
MultiView	Spectrum				•
Ref Level 25	5.00 dBm • 1	RBW 100 kHz			
Att	36 dB SWT 1.01 ms 🗢 '	VBW 300 kHz Mode Sweep			Count 100/100
TDF "CABLES"					
1 Frequency :	Sweep				• 1Rm View M1[1] -27.46 dBn
					823.9430 MH
					020101001011
0 dBm					
-10 dBm					
				/	
				M1	
			_		
-50 dBm	Ť				
-60 dBm					
814.0 MHz		1001 pts		1.5 MHz/	829.0 MH
2 Marker Pea	ak List				025101
No	X-Value	Y-Value	No	X-Value	Y-Value
	823.943000 MHz	-27.462 dBm			
					06.01.202
				• Measurin	g 06.01.2024 19:10:20

19:10:21 06.01.2024





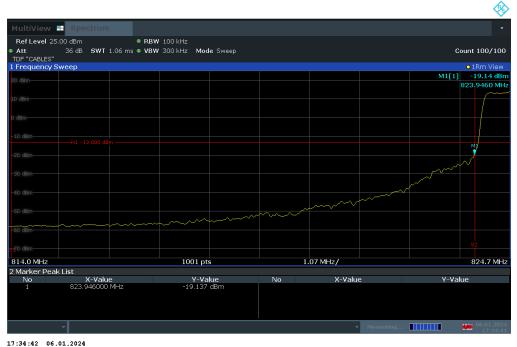
19:10:54 06.01.2024

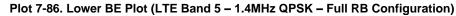


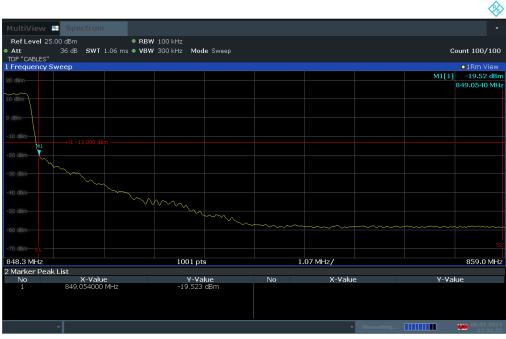
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 62 of 100
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Page 63 of 109
	·		V2.2 08/24/2023



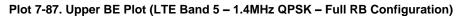
LTE Band 5







17:35:56 06.01.2024

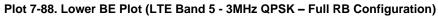


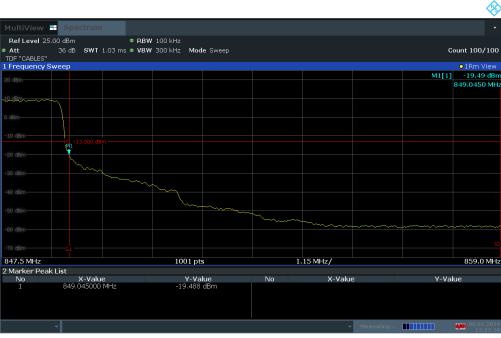
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 64 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 64 01 109
		·	V2.2 08/24/2023



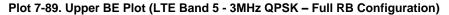
								(*)
MultiView	Spectrum							•
Ref Level 25	00 dBm	• RBW 100 kHz						
 Att TDF "CABLES" 	36 dB SWT 1.03 ms	• VBW 300 kHz M	ode Sweep				C	ount 100/100
1 Frequency S	weep							o1Rm View
20 dBm							M1[1]	
								823.9550 MHz
10 dBm								
0 dBm								
-10 dBm								
-20 dBm							MZ	
-20 UBII								
-30 dBm							_~~~	
						مستنهبه	Ĩ	
-40 dBm						~~~		
-50 dBm		~~~						
-60 dBm								
OO ODIII								
570 dBm-								
814.0 MHz		1001	nte	1	.15 MHz/			825.5 MHz
2 Marker Peak	liet	1001	<i>p</i> c3		110 11112/			02010 11112
No	X-Value	γ-1	√alue	No	X-Value	e	Y-Va	lue
1	823.955000 MHz	-22.12	23 dBm					
								06.01.2024 17:36:45
	Ň.				~	Measuring		17:36:45

17:36:46 06.01.2024





17:37:19 06.01.2024

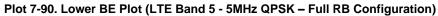


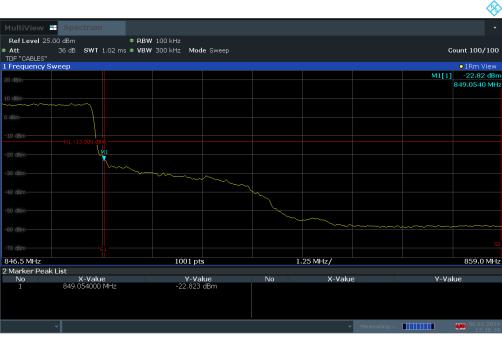
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 65 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 65 01 109
			V2.2 08/24/2023



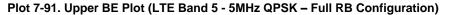
								(*)
MultiView	Spectrum							•
Ref Level 25.0	0 dBm	• RBW 100 kHz						
	36 dB SWT 1.02 ms	• VBW 300 kHz Mod	e Sweep					Count 100/100
TDF "CABLES"								
1 Frequency Sw	reep							●1Rm View
20 dBm				M1[1]				-24.12 dBm 823.9460 MHz
								823.9460 MHZ
10 dBm-								
0 dBm								
-10 dBm								
-20 dBm						M1	/	
-30 dBm								
-30 gBW-								
-40 dBm								
io dom			~~~~					
-50_dBa								
-60 dBm								
51 70 dBm								
814.0 MHz		1001 pts			25 MHz/			826.5 MHz
2 Marker Peak L	iet	1001 pt.	,		2.5 1411 127			02013 14112
No	X-Value	Y-Va	lue	No	X-Value	e	Y-V;	alue
1	823.946000 MHz	-24.116	dBm					
	-				~	Measuring		06.01.2024 17:38:05

17:38:06 06.01.2024





17:38:38 06.01.2024

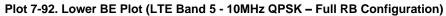


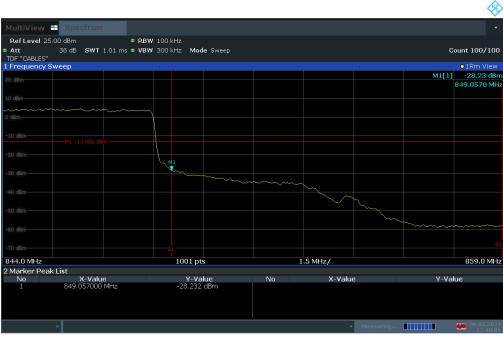
FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 66 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage to UL 109
			V2.2 08/24/2023



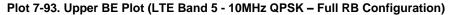
IPrevent OIRM View IPrevent OIRM View IPrevent OIRM View OIRM View <th col<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th>	<th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								
Att 36 dB SWT 1.01 ms * VBW 300 kHz Mode Sweep • Entru Vew 10F "CABLES" • Infin View • Infin View • Infin View • Infin View 20 dam • Infin View 10 dam • Infin View 10 dam • Infin View • I	MultiView	- Spectrum						•	
Att 36 dB SWT 1.01 ms * VBW 300 kHz Mode Sweep • Entru Vew 10F "CABLES" • Infin View • Infin View • Infin View • Infin View 20 dam • Infin View 10 dam • Infin View 10 dam • Infin View • I	Ref Level 25	5.00 dBm	BBW 100 kHz						
1 Frequency Sweep 0 IBm View 20 IBm M1[1] -27.90 IBm 20 IBm 1 1 27.90 IBm 10 IBm 1 1 1 27.90 IBm 10 IBm 1 1 1 1 1 10 IBm 1 1 1 1 1 1 20 IBm 1 1 1 1 1 1 1 20 IBm 1	Att		ms 🔹 VBW 300 kHz	Mode Sweep				Count 100/100	
20 dBm 10 dBm									
20 dBm 20 dBm <td>1 Frequency S</td> <td>Sweep</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1 Frequency S	Sweep							
0 dBm -10 dBm -10 dBm -20 d							MI	823.9130 MHz	
0 dBm -10 dBm -10 dBm -20 d									
-10 dim +11 +13.000 dim +13.0000 dim +13.00000 dim +13.00000 dim +13.00000 dim +13.0000000 dim +13.0000000 dim +13.00000000000000000000000000									
20 dBm 20 dBm 30 dBm 30 dBm 40 dBm 40 dBm 50 dBm 50 dBm 50 dBm 52 80 dBm 52 814.0 MHz 1001 pts 1 823.91 3000 MHz -27.899 dBm									
20 dBm 20 dBm 30 dBm 30 dBm 40 dBm 40 dBm 50 dBm 50 dBm 50 dBm 52 80 dBm 52 814.0 MHz 1001 pts 1 823.91 3000 MHz -27.899 dBm	-10 dBm								
30 dBm 40 dBm 40 dBm 40 dBm 50 dBm 50 dBm 50 dBm 52 814.0 MHz 1001 pts 1001 pts 1.5 MHz/ 829.0 MHz 20 dBm 1 823.913000 MHz -27.899 dBm									
-30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -52 -60 dBm -52 -70 dBm -52 -70 dBm -77.899 dBm -77.899 dBm -77.899 dBm									
40 dBm 50 dBm 50 dBm 60 dBm 814.0 MHz 1001 pts 1.5 MHz/ 829.0 MHz 1 823.913000 MHz 27.899 dBm 1 823.913000 MHz 1 823.913000 MHz									
50 dBm 60 dBm 60 dBm 814.0 MHz 1001 pts 1.5 MHz/ 829.0 MHz 2 Marker Peak List No X-Value V-Value V-Value V-Value V-Value U-Value									
60 dBm. 60 dBm. 52 52 gr0 dBm. 52 52 52 814.0 MHz 1001 pts 1.5 MHz/ 829.0 MHz 2 Marker Peak List No X-Value Y-Value No X-Value Y-Value Y-Value 1 823.913000 MHz -27.899 dBm 1									
60 dBm. 60 dBm. 52 52 gr0 dBm. 52 52 52 814.0 MHz 1001 pts 1.5 MHz/ 829.0 MHz 2 Marker Peak List No X-Value Y-Value No X-Value Y-Value Y-Value 1 823.913000 MHz -27.899 dBm 1		1° I							
Yo dim. 52 814.0 MHz 1001 pts 1.5 MHz/ 829.0 MHz 2 Marker Peak List .5 .5 .5 No X-Value Y-Value Y-Value 1 823.913000 MHz -27.899 dBm Y-Value Y-Value									
814.0 MHz 1001 pts 1.5 MHz/ 829.0 MHz 2 Marker Peak List									
814.0 MHz 1001 pts 1.5 MHz/ 829.0 MHz 2 Marker Peak List									
2 Marker Peak List No X-Value No X-Value V-Value 1 823.913000 MHz -27.899 dBm									
No X-Value V-Value No X-Value Y-Value 1 823.913000 MHz -27.899 dBm			100	1 pts		1.5 MHz/		829.0 MHz	
1 823.913000 MHz -27.899 dBm				/ Value	Nie	V Value		Value	
		x-value 823.913000_MHz			NO	X-value	¥-	value	
 ✓ Measuring ✓ Measuring ✓ 06.01.2024 17:39:28 									
 ✓ Measuring ✓ Measuring ✓ 06.01.2024 17:39:28 									
▼ Measuring ₩ 10.01.2024									
							Measuring	06.01.2024	

17:39:29 06.01.2024





17:40:02 06.01.2024

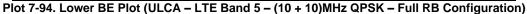


FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 67 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 67 01 109
<u></u>	-		V2.2 08/24/2023



ULCA - LTE Band 5







Plot 7-95. Upper BE Plot (ULCA – LTE Band 5 - (10 + 10)MHz QPSK – Full RB Configuration)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 68 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Faye 00 01 109

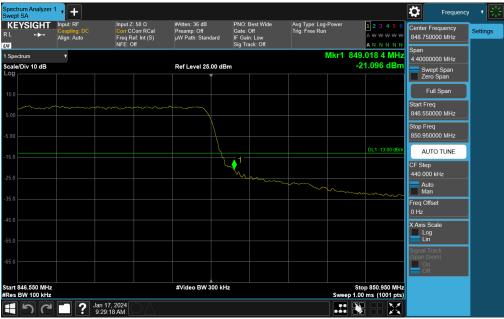
V2.2 08/24/2023 otocopying and microfilm, without



NR Band n26



Plot 7-96. Lower BE Plot (NR Band n26 DFT-s-OFDM QPSK – 5.0MHz - Full RB)



Plot 7-97. Upper BE Plot (NR Band n26 DFT-s-OFDM QPSK – 5.0MHz - Full RB)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 69 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 09 01 109
	·	·	V2.2 08/24/2023





Plot 7-98. Lower BE Plot (NR Band n26 DFT-s-OFDM QPSK – 10.0MHz - Full RB)



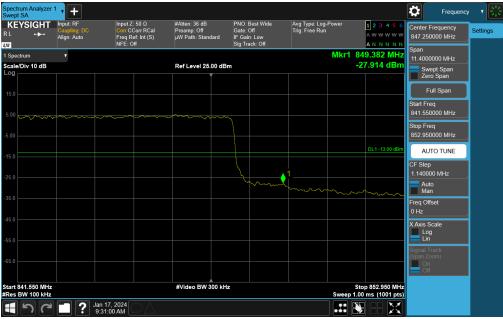
Plot 7-99. Upper BE Plot (NR Band n26 DFT-s-OFDM QPSK – 10.0MHz - Full RB)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 70 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 70 01 109
			V2.2 08/24/2023





Plot 7-100. Lower BE Plot (NR Band n26 DFT-s-OFDM QPSK - 15.0MHz - Full RB)



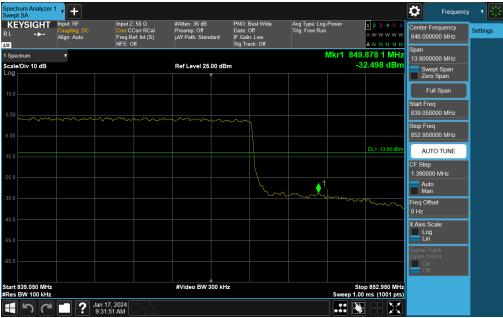
Plot 7-101. Upper BE Plot (NR Band n26 DFT-s-OFDM QPSK – 15.0MHz - Full RB)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 71 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage / 1 01 109
	·		V2.2 08/24/2023





Plot 7-102. Lower BE Plot (NR Band n26 DFT-s-OFDM QPSK - 20.0MHz - Full RB)



Plot 7-103. Upper BE Plot (NR Band n26 DFT-s-OFDM QPSK – 20.0MHz - Full RB)

FCC ID: BCGA2899	element	PART 22 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 72 of 109
1C23311270066-07.BCG	10/01/2023 - 02/13/2024	Tablet Device	Fage 72 01 109
			V2.2 08/24/2023