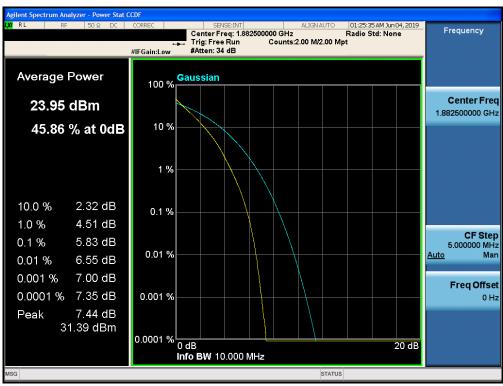




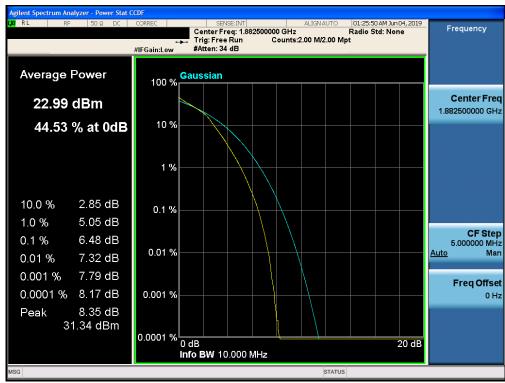
Plot 7-391. PAR Plot (Band 25 - 5.0MHz 64-QAM - Full RB Configuration)



Plot 7-392. PAR Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

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Plot 7-393. PAR Plot (Band 25 - 10.0MHz 16-QAM - Full RB Configuration)



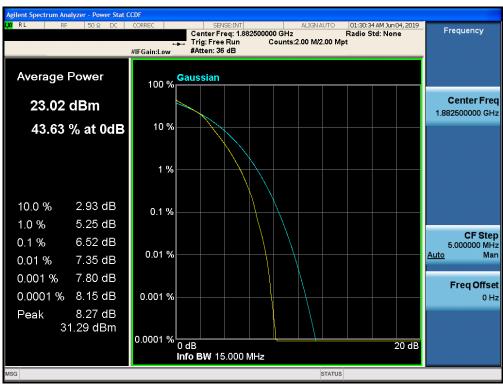
Plot 7-394. PAR Plot (Band 25 - 10.0MHz 64-QAM - Full RB Configuration)

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Plot 7-395. PAR Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



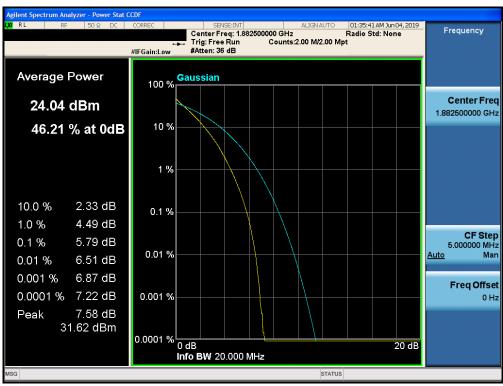
Plot 7-396. PAR Plot (Band 25 - 15.0MHz 16-QAM - Full RB Configuration)

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Plot 7-397. PAR Plot (Band 25 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-398. PAR Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

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Plot 7-399. PAR Plot (Band 25 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-400. PAR Plot (Band 25 - 20.0MHz 64-QAM - Full RB Configuration)

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# 7.6 Additional Maximum Power Reduction (A-MPR) §2.1046

### **Test Overview**

A-MPR is implemented in this device when operating at Power Class 2 in LTE Band 41 per the A-MPR specification in 3GPP TS 36.101. The conducted powers are shown herein to cover the different A-MPR levels specified in the standard. Conducted power measurements are performed to measure the average output power of the EUT. The averaging is to be performed only over duration of active transmissions at maximum output power level. The average measurements do not include averaging over periods when the transmitter is quiescent or when operating at reduced power level.

## **Test Procedure Used**

KDB 971168 D01 v03r01

#### **Test Setup**

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



Figure 7-5. Test Instrument & Measurement Setup

## **Test Notes**

None.

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Test Case	NS	MCC	MNC	Channel BW [MHz]	Channel Number	Channel Frequency [MHz]	Modulation	RB Size	RB Offset	MPR [dB]	A-MPR [dB]	Measured Power [dBm]	Lowest Typical Power [dBm]	Delta [dB]				
							QPSK			0		25.04	23.5	1.54				
1				5	39675	2498.5	16-QAM	1	0	≤ 1	≤3	23.99	22.5	1.49				
							64-QAM			≤ 2		23.20	21.5	1.70				
											QPSK			0		26.74	26.5	0.24
2				5	39675	2498.5	16-QAM	1	9	≤ 1	0	25.62	25.5	0.12				
							64-QAM			≤ 2		24.75	24.5	0.25				
_							QPSK	1	0	0	_	24.09	21.5	2.59				
3				10	39700	2501	16-QAM	1	0	≤ 1	≤ 5	23.22	20.5	2.72				
							64-QAM	1	0	≤ 2		22.07	19.5	2.57				
				40	20700	0504	QPSK	20	0	0		24.95	23.5	1.45				
4				10	39700	2501	16-QAM	20	0	≤ 1	≤ 2	23.92	22.5	1.42				
							64-QAM QPSK	20	0	≤ 2		22.94	21.5	1.44				
5				10	39700	2501	16-QAM	50 50	0	0 ≤1	≤3	23.95 22.90	22.5 21.5	1.45 1.40				
J					10	39700	2301	64-QAM	50	0	≤ 1 ≤ 2		21.89	20.5	1.39			
							QPSK	25	20	0		24.94	24.5	0.44				
6				10	39700	2501	16-QAM	25	20	≤ 1	≤ 1	23.94	23.5	0.44				
O				10	00700	2001	64-QAM	25	20	≤ 2	- '	22.91	22.5	0.41				
							QPSK	1	36	0		27.00	26.5	0.50				
7				10	39700	2501	16-QAM	1	36	≤ 1	0	26.32	25.5	0.82				
-							64-QAM	1	36	≤ 2		24.92	24.5	0.42				
							QPSK	1	0	0		24.06	21.5	2.56				
8				15	39725	2503.5	16-QAM	1	0	≤ 1	≤ 5	23.17	20.5	2.67				
						İ	64-QAM	1	0	≤ 2		22.02	19.5	2.52				
							QPSK	20	0	0		24.93	23.5	1.43				
9	01	312	530	15	39725	2503.5	16-QAM	20	0	≤ 1	≤ 2	23.90	22.5	1.40				
							64-QAM	20	0	≤ 2		22.92	21.5	1.42				
						2503.5	QPSK	75	0	0	≤ 4	22.96	21.5	1.46				
10				15	39725		16-QAM	75	0	≤ 1		21.92	20.5	1.42				
									64-QAM	75	0	≤ 2		20.89	19.5	1.39		
44				45	20705	2502.5	QPSK	50	15	0	- 2	24.98	22.5	2.48				
11				15	39725	2503.5	16-QAM 64-QAM	50 50	15 15	≤ 1 ≤ 2	≤3	23.94 22.91	21.5 20.5	2.44 2.41				
							QPSK	1	60	0		27.00	26.5	0.50				
12				15	39725	2503.5	16-QAM	1	60	≤ 1	0	26.22	25.5	0.72				
12				10	00720	2000.0	64-QAM	1	60	≤ 2	1	25.00	24.5	0.72				
							QPSK	1	0	0		23.97	21.5	2.47				
13				20	39750	2506	16-QAM	1	0	≤ 1	≤ 5	23.21	20.5	2.71				
							64-QAM	1	0	≤ 2		22.02	19.5	2.52				
							QPSK	20	0	0		24.96	23.5	1.46				
14				20	39750	2506	16-QAM	20	0	≤ 1	≤ 2	24.04	22.5	1.54				
							64-QAM	20	0	≤ 2		22.93	21.5	1.43				
							QPSK	100	0	0		22.96	21.5	1.46				
15				20	39750	2506	16-QAM	100	0	≤ 1	≤ 4	22.15	20.5	1.65				
							64-QAM	100	0	≤ 2		20.91	19.5	1.41				
							QPSK	75	24	0	1	24.99	22.5	2.49				
16				20	39750	2506	16-QAM	75	24	≤ 1	≤3	24.00	21.5	2.50				
							64-QAM	75	24	≤ 2		22.93	20.5	2.43				
4-					00750	0500	QPSK	1	77	0	_	27.00	26.5	0.50				
17				20	39750	2506	16-QAM	1	77	≤ 1	0	26.11	25.5	0.61				
							64-QAM	1	77	≤ 2		24.96	24.5	0.46				
						0	QPSK	_	_	0	1	25.16	23.5	1.66				
18	01	311	490	5	39675	2498.5	16-QAM	1	0	≤ 1	≤3	24.17	22.5	1.67				
							64-QAM			≤ 2		23.08	21.5	1.58				
				_			QPSK		_	0	4 _	26.81	26.5	0.31				
19	01	001	01	5	39675	2498.5	16-QAM	1	0	≤ 1	0	25.72	25.5	0.22				
							64-QAM			≤ 2		24.92	24.5	0.42				

**Table 7-7. A-MPR Conducted Power Measurements** 

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#### **Uplink Carrier Aggregation** 7.7 §27.53(m)

#### **Test Overview**

The EUT is set up to transmit two contiguous LTE channels. The power level of both carriers 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 its maximum duty cycle, 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.

For Band 38/41, the minimum permissible attenuation level of any spurious emission is 55 + 10 log<sub>10</sub>(P<sub>[Watts]</sub>).

## **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 at least 10 \* the fundamental frequency (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
- 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 7-6. Test Instrument & Measurement Setup

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#### Test Notes

- 1. Uplink carrier aggregation is only supported in this EUT while operating in Power Class 3.
- 2. Conducted power and spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device. The worst case (highest) powers were found while operating with QPSK modulation, as shown in Table 7-503 and 7-504 below, with both carriers set to transmit using 1RB.
- 3. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. 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.
- 4. All ports were tested and only the worst case data were reported.
- 5. Refer to Table 2-1 Section 2.3 of this test report for correlation between Antennas and Ports.

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## Port A

				PCC							scc				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B7	10	20800	2505	QPSK	1	49	LTE B7	20	20944	2519.4	QPSK	1	0	24.67
Max	LTE B7	15	20825	2507.5	QPSK	1	74	LTE B7	10	20945	2519.5	QPSK	1	0	25.00
Max	LTE B7	15	20825	2507.5	QPSK	1	74	LTE B7	15	20975	2522.5	QPSK	1	0	24.95
Max	LTE B7	15	20825	2507.5	QPSK	1	74	LTE B7	20	20996	2524.6	QPSK	1	0	24.86
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	10	20994	2524.4	QPSK	1	0	24.98
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	15	21021	2527.1	QPSK	1	0	24.90
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	20	21048	2529.8	QPSK	1	0	24.96
Max	LTE B7	10	21100	2535	QPSK	1	49	LTE B7	20	21244	2549.4	QPSK	1	0	25.00
Max	LTE B7	15	21100	2535	QPSK	1	74	LTE B7	10	21220	2547	QPSK	1	0	25.00
Max	LTE B7	15	21100	2535	QPSK	1	74	LTE B7	15	21250	2550	QPSK	1	0	24.91
Max	LTE B7	15	21100	2535	QPSK	1	74	LTE B7	20	21271	2552.1	QPSK	1	0	24.98
Max	LTE B7	20	21100	2535	QPSK	1	99	LTE B7	10	21244	2549.4	QPSK	1	0	25.00
Max	LTE B7	20	21100	2535	QPSK	1	99	LTE B7	15	21271	2552.1	QPSK	1	0	24.93
Max	LTE B7	20	21100	2535	QPSK	1	99	LTE B7	20	21298	2554.8	QPSK	1	0	25.00
Max	LTE B7	10	21400	2565	QPSK	1	0	LTE B7	20	21256	2550.6	QPSK	1	99	24.86
Max	LTE B7	15	21375	2562.5	QPSK	1	0	LTE B7	10	21255	2550.5	QPSK	1	49	25.00
Max	LTE B7	15	21375	2562.5	QPSK	1	0	LTE B7	15	21225	2547.5	QPSK	1	74	24.94
Max	LTE B7	15	21375	2562.5	QPSK	1	0	LTE B7	20	21204	2545.4	QPSK	1	99	24.71
Max	LTE B7	20	21350	2560	QPSK	1	0	LTE B7	10	21206	2545.6	QPSK	1	49	24.80
Max	LTE B7	20	21350	2560	QPSK	1	0	LTE B7	15	21179	2542.9	QPSK	1	74	24.74
Max	LTE B7	20	21350	2560	QPSK	1	0	LTE B7	20	21152	2540.2	QPSK	1	99	24.93

Table 7-8. Conducted Powers (B7 - PCC: RB Size 1 Offset Max SCC: RB Size 1 Offset 0)

FCC ID: BCGA2198	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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				PCC							scc				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B7	20	20850	2510	QPSK	1	0	LTE B7	20	21048	2529.8	QPSK	1	0	20.68
Max	LTE B7	20	20850	2510	16-QAM	1	0	LTE B7	20	21048	2529.8	16-QAM	1	0	21.02
Max	LTE B7	20	20850	2510	64-QAM	1	0	LTE B7	20	21048	2529.8	64-QAM	1	0	20.93
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	20	21048	2529.8	QPSK	1	99	20.01
Max	LTE B7	20	20850	2510	QPSK	1	0	LTE B7	20	21048	2529.8	QPSK	1	99	16.10
Max	LTE B7	20	20850	2510	QPSK	1	50	LTE B7	20	21048	2529.8	QPSK	1	50	20.64
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	20	21048	2529.8	QPSK	1	0	25.00
Max	LTE B7	20	20850	2510	QPSK	100	0	LTE B7	20	21048	2529.8	QPSK	100	0	22.69
Max	LTE B7	20	20850	2510	16-QAM	100	0	LTE B7	20	21048	2529.8	16-QAM	100	0	21.68
Max	LTE B7	20	20850	2510	64-QAM	100	0	LTE B7	20	21048	2529.8	64-QAM	100	0	21.62

Table 7-9. Conducted Powers (B7 with Various Combinations for 20MHz Channel Bandwidth)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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				PCC				scc							
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	5	39675	2498.5	QPSK	1	24	LTE B41	20	39792	2510.2	QPSK	1	0	24.67
Max	LTE B41	10	39700	2501	QPSK	1	49	LTE B41	15	39820	2513	QPSK	1	0	25.00
Max	LTE B41	10	39700	2501	QPSK	1	49	LTE B41	20	39844	2515.4	QPSK	1	0	24.98
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	10	39845	2515.5	QPSK	1	0	24.92
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	15	39875	2518.5	QPSK	1	0	24.94
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	20	39896	2520.6	QPSK	1	0	25.00
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	5	39867	2517.7	QPSK	1	0	24.92
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	10	39894	2520.4	QPSK	1	0	24.95
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	15	39921	2523.1	QPSK	1	0	25.00
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	24.90
Max	LTE B41	10	40620	2593	QPSK	1	49	LTE B41	15	40740	2605	QPSK	1	0	24.66
Max	LTE B41	10	40620	2593	QPSK	1	49	LTE B41	20	40764	2607.4	QPSK	1	0	24.73
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	10	40740	2605	QPSK	1	0	24.53
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	15	40770	2608	QPSK	1	0	24.58
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	20	40791	2610.1	QPSK	1	0	24.56
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	5	40737	2604.7	QPSK	1	0	24.65
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	10	40764	2607.4	QPSK	1	0	24.76
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	15	40791	2610.1	QPSK	1	0	24.71
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	24.84
Max	LTE B41	5	41565	2687.5	QPSK	1	0	LTE B41	20	41448	2675.8	QPSK	1	99	24.52
Max	LTE B41	10	41540	2685	QPSK	1	0	LTE B41	15	41420	2673	QPSK	1	74	24.74
Max	LTE B41	10	41540	2685	QPSK	1	0	LTE B41	20	41396	2670.6	QPSK	1	99	24.76
Max	LTE B41	15	41515	2682.5	QPSK	1	0	LTE B41	10	41395	2670.5	QPSK	1	49	24.83
Max	LTE B41	15	41515	2682.5	QPSK	1	0	LTE B41	15	41365	2667.5	QPSK	1	74	24.90
Max	LTE B41	15	41515	2682.5	QPSK	1	0	LTE B41	20	41344	2665.4	QPSK	1	99	24.81
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	5	41373	2668.3	QPSK	1	24	24.71
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	10	41346	2665.6	QPSK	1	49	24.76
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	15	41319	2662.9	QPSK	1	74	24.82
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	24.78

Table 7-10. Conducted Powers (B41 – PCC: RB Size 1 Offset Max SCC: RB Size 1 Offset 0)

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				PCC							scc				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	0	20.49
Max	LTE B41	20	39750	2506	16-QAM	1	0	LTE B41	20	39948	2525.8	16-QAM	1	0	20.67
Max	LTE B41	20	39750	2506	64-QAM	1	0	LTE B41	20	39948	2525.8	64-QAM	1	0	20.45
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	99	20.43
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	99	16.46
Max	LTE B41	20	39750	2506	QPSK	1	50	LTE B41	20	39948	2525.8	QPSK	1	50	20.47
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	25.00
Max	LTE B41	20	39750	2506	QPSK	100	0	LTE B41	20	39948	2525.8	QPSK	100	0	23.05
Max	LTE B41	20	39750	2506	16-QAM	100	0	LTE B41	20	39948	2525.8	16-QAM	100	0	22.07
Max	LTE B41	20	39750	2506	64-QAM	100	0	LTE B41	20	39948	2525.8	64-QAM	100	0	22.11

Table 7-11. Conducted Powers (B41 with Various Combinations for 20MHz Channel Bandwidth)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 220 of 244
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## Port B

				PCC							scc				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B7	10	20800	2505	QPSK	1	49	LTE B7	20	20944	2519.4	QPSK	1	0	22.75
Max	LTE B7	15	20825	2507.5	QPSK	1	74	LTE B7	10	20945	2519.5	QPSK	1	0	22.75
Max	LTE B7	15	20825	2507.5	QPSK	1	74	LTE B7	15	20975	2522.5	QPSK	1	0	22.75
Max	LTE B7	15	20825	2507.5	QPSK	1	74	LTE B7	20	20996	2524.6	QPSK	1	0	22.74
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	10	20994	2524.4	QPSK	1	0	22.57
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	15	21021	2527.1	QPSK	1	0	22.68
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	20	21048	2529.8	QPSK	1	0	22.73
Max	LTE B7	10	21100	2535	QPSK	1	49	LTE B7	20	21244	2549.4	QPSK	1	0	22.69
Max	LTE B7	15	21100	2535	QPSK	1	74	LTE B7	10	21220	2547	QPSK	1	0	22.45
Max	LTE B7	15	21100	2535	QPSK	1	74	LTE B7	15	21250	2550	QPSK	1	0	22.42
Max	LTE B7	15	21100	2535	QPSK	1	74	LTE B7	20	21271	2552.1	QPSK	1	0	22.56
Max	LTE B7	20	21100	2535	QPSK	1	99	LTE B7	10	21244	2549.4	QPSK	1	0	22.50
Max	LTE B7	20	21100	2535	QPSK	1	99	LTE B7	15	21271	2552.1	QPSK	1	0	22.56
Max	LTE B7	20	21100	2535	QPSK	1	99	LTE B7	20	21298	2554.8	QPSK	1	0	22.60
Max	LTE B7	10	21400	2565	QPSK	1	0	LTE B7	20	21256	2550.6	QPSK	1	99	22.59
Max	LTE B7	15	21375	2562.5	QPSK	1	0	LTE B7	10	21255	2550.5	QPSK	1	49	22.58
Max	LTE B7	15	21375	2562.5	QPSK	1	0	LTE B7	15	21225	2547.5	QPSK	1	74	22.63
Max	LTE B7	15	21375	2562.5	QPSK	1	0	LTE B7	20	21204	2545.4	QPSK	1	99	22.72
Max	LTE B7	20	21350	2560	QPSK	1	0	LTE B7	10	21206	2545.6	QPSK	1	49	22.51
Max	LTE B7	20	21350	2560	QPSK	1	0	LTE B7	15	21179	2542.9	QPSK	1	74	22.50
Max	LTE B7	20	21350	2560	QPSK	1	0	LTE B7	20	21152	2540.2	QPSK	1	99	22.51

Table 7-12. Conducted Powers (B7 – PCC: RB Size 1 Offset Max SCC: RB Size 1 Offset 0)

FCC ID: BCGA2198	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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				PCC							scc				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B7	20	20850	2510	QPSK	1	0	LTE B7	20	21048	2529.8	QPSK	1	0	18.24
Max	LTE B7	20	20850	2510	16-QAM	1	0	LTE B7	20	21048	2529.8	16-QAM	1	0	18.48
Max	LTE B7	20	20850	2510	64-QAM	1	0	LTE B7	20	21048	2529.8	64-QAM	1	0	18.50
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	20	21048	2529.8	QPSK	1	99	17.85
Max	LTE B7	20	20850	2510	QPSK	1	0	LTE B7	20	21048	2529.8	QPSK	1	99	13.86
Max	LTE B7	20	20850	2510	QPSK	1	50	LTE B7	20	21048	2529.8	QPSK	1	50	18.16
Max	LTE B7	20	20850	2510	QPSK	1	99	LTE B7	20	21048	2529.8	QPSK	1	0	22.75
Max	LTE B7	20	20850	2510	QPSK	100	0	LTE B7	20	21048	2529.8	QPSK	100	0	20.45
Max	LTE B7	20	20850	2510	16-QAM	100	0	LTE B7	20	21048	2529.8	16-QAM	100	0	19.49
Max	LTE B7	20	20850	2510	64-QAM	100	0	LTE B7	20	21048	2529.8	64-QAM	100	0	19.45

Table 7-13. Conducted Powers (B7 with Various Combinations for 20MHz Channel Bandwidth)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 240 of 241
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	PCC										scc				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	5	39675	2498.5	QPSK	1	24	LTE B41	20	39792	2510.2	QPSK	1	0	22.47
Max	LTE B41	10	39700	2501	QPSK	1	49	LTE B41	15	39820	2513	QPSK	1	0	22.54
Max	LTE B41	10	39700	2501	QPSK	1	49	LTE B41	20	39844	2515.4	QPSK	1	0	22.45
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	10	39845	2515.5	QPSK	1	0	22.40
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	15	39875	2518.5	QPSK	1	0	22.47
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	20	39896	2520.6	QPSK	1	0	22.55
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	5	39867	2517.7	QPSK	1	0	22.48
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	10	39894	2520.4	QPSK	1	0	22.47
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	15	39921	2523.1	QPSK	1	0	22.46
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	22.61
Max	LTE B41	10	40620	2593	QPSK	1	49	LTE B41	15	40740	2605	QPSK	1	0	22.27
Max	LTE B41	10	40620	2593	QPSK	1	49	LTE B41	20	40764	2607.4	QPSK	1	0	22.37
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	10	40740	2605	QPSK	1	0	22.26
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	15	40770	2608	QPSK	1	0	22.36
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	20	40791	2610.1	QPSK	1	0	22.36
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	5	40737	2604.7	QPSK	1	0	22.32
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	10	40764	2607.4	QPSK	1	0	22.29
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	15	40791	2610.1	QPSK	1	0	22.47
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	22.65
Max	LTE B41	5	41565	2687.5	QPSK	1	0	LTE B41	20	41448	2675.8	QPSK	1	99	22.34
Max	LTE B41	10	41540	2685	QPSK	1	0	LTE B41	15	41420	2673	QPSK	1	74	22.32
Max	LTE B41	10	41540	2685	QPSK	1	0	LTE B41	20	41396	2670.6	QPSK	1	99	22.31
Max	LTE B41	15	41515	2682.5	QPSK	1	0	LTE B41	10	41395	2670.5	QPSK	1	49	22.25
Max	LTE B41	15	41515	2682.5	QPSK	1	0	LTE B41	15	41365	2667.5	QPSK	1	74	22.27
Max	LTE B41	15	41515	2682.5	QPSK	1	0	LTE B41	20	41344	2665.4	QPSK	1	99	22.32
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	5	41373	2668.3	QPSK	1	24	22.25
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	10	41346	2665.6	QPSK	1	49	22.27
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	15	41319	2662.9	QPSK	1	74	22.26
Max	LTE B41	20	41490	2680	QPSK	1	0	LTE B41	20	41292	2660.2	QPSK	1	99	22.38

Table 7-14. Conducted Powers (B41 – PCC: RB Size 1 Offset Max SCC: RB Size 1 Offset 0)

FCC ID: BCGA2198	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 244 of 244
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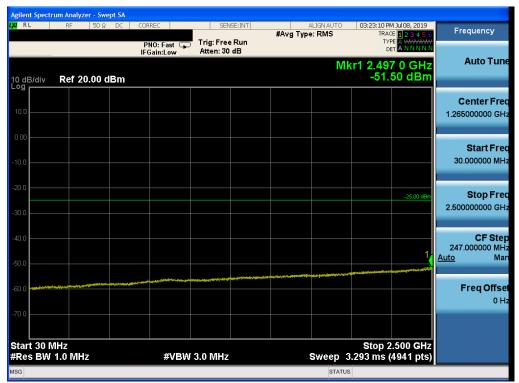
				PCC							scc				Power
Power State	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	0	17.94
Max	LTE B41	20	39750	2506	16-QAM	1	0	LTE B41	20	39948	2525.8	16-QAM	1	0	17.99
Max	LTE B41	20	39750	2506	64-QAM	1	0	LTE B41	20	39948	2525.8	64-QAM	1	0	17.95
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	99	17.88
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	99	13.90
Max	LTE B41	20	39750	2506	QPSK	1	50	LTE B41	20	39948	2525.8	QPSK	1	50	18.00
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	22.65
Max	LTE B41	20	39750	2506	QPSK	100	0	LTE B41	20	39948	2525.8	QPSK	100	0	20.41
Max	LTE B41	20	39750	2506	16-QAM	100	0	LTE B41	20	39948	2525.8	16-QAM	100	0	19.45
Max	LTE B41	20	39750	2506	64-QAM	100	0	LTE B41	20	39948	2525.8	64-QAM	100	0	19.39

Table 7-15. Conducted Powers (B41 with Various Combinations for 20MHz Channel Bandwidth)

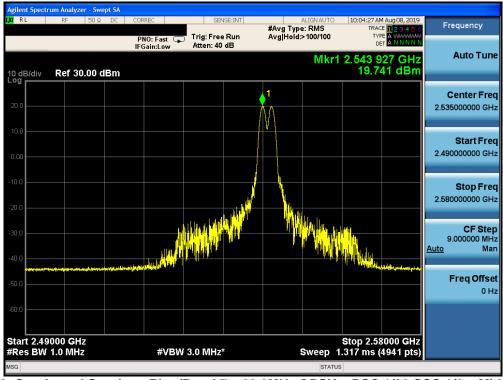
FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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#### Band 7



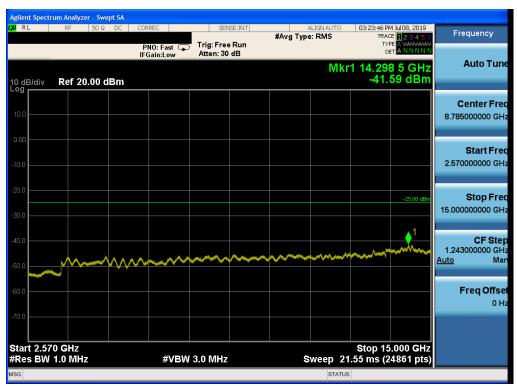
Plot 7-401. Conducted Spurious Plot (Band 7 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)



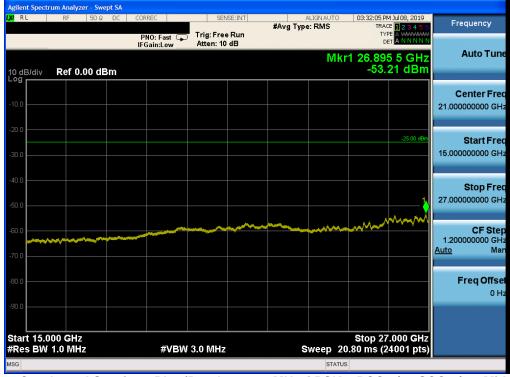
Plot 7-402. Conducted Spurious Plot (Band 7 - 20.0MHz QPSK - PCC 1/99 SCC 1/0 - Mid Channel)

FCC ID: BCGA2198	PCTEST:	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 243 of 341
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Plot 7-403. Conducted Spurious Plot (Band 7 - 20.0MHz QPSK - PCC 1/99 SCC 1/0 - Mid Channel)



Plot 7-404. Conducted Spurious Plot (Band 7 - 20.0MHz QPSK - PCC 1/99 SCC 1/0 - Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 244 of 241
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Table 7-405. Conducted Spurious Plot (Band 7 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

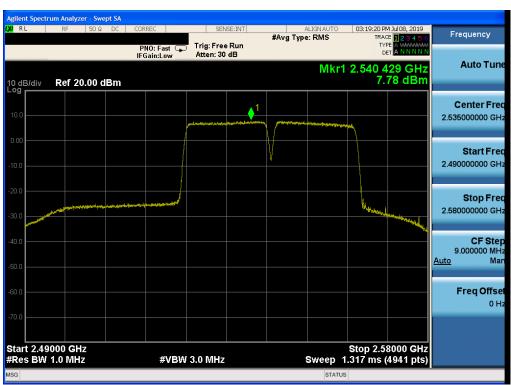


Table 7-406. Conducted Spurious Plot (Band 7 - 20.0MHz QPSK - PCC 100/0 SCC 100/0 - Mid Channel)

FCC ID: BCGA2198	PCTEST:	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 245 of 341
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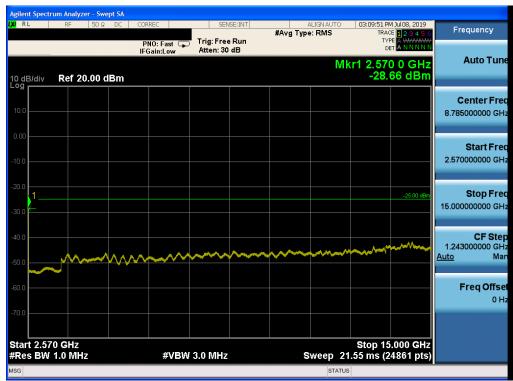


Table 7-407. Conducted Spurious Plot (Band 7 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)



Table 7-408. Conducted Spurious Plot (Band 7 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 246 of 241
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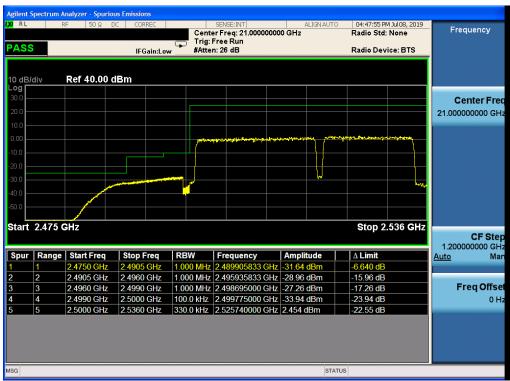


Table 7-409. Lower ACP Plot (Band 7 QPSK - PCC:15 MHz SCC:20 MHz - Full RB)



Table 7-410. Upper ACP Plot (Band 7 QPSK - PCC:15 MHz SCC:20 MHz - Full RB)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 247 of 241
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Table 7-411. Lower ACP Plot (Band 7 QPSK - PCC:20 MHz SCC:20 MHz - Full RB)

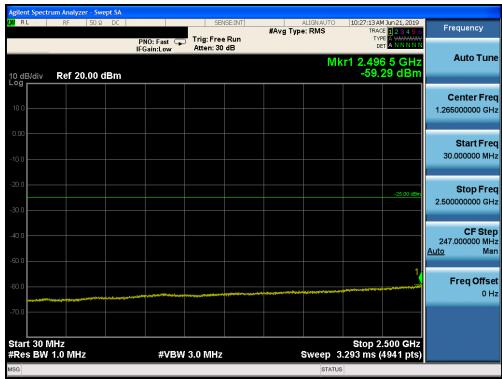


Table 7-412. Upper ACP Plot (Band 7 QPSK - PCC:20 MHz SCC:20 MHz - Full RB)

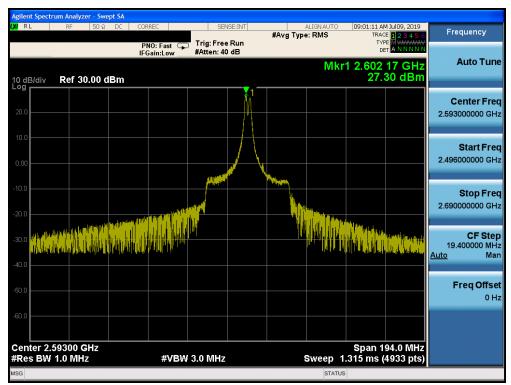
FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 249 of 241
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### Band 41



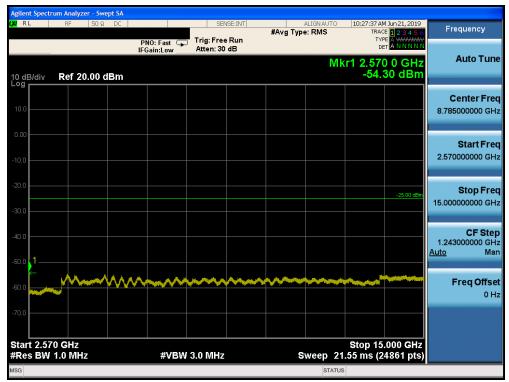
Plot 7-413. Conducted Spurious Plot (Band 41 - 20.0MHz QPSK - PCC 1/99 SCC 1/0 - Mid Channel)



Plot 7-414. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 240 of 241
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Plot 7-415. Conducted Spurious Plot (Band 41 - 20.0MHz QPSK - PCC 1/99 SCC 1/0 - Mid Channel)



Plot 7-416. Conducted Spurious Plot (Band 41 - 20.0MHz QPSK - PCC 1/99 SCC 1/0 - Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 250 of 241
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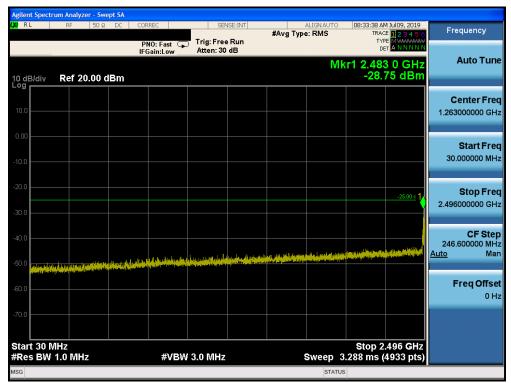


Table 7-417. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

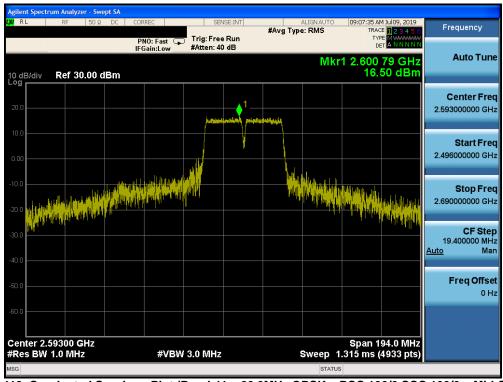


Table 7-418. Conducted Spurious Plot (Band 41 - 20.0MHz QPSK - PCC 100/0 SCC 100/0 - Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 251 of 241
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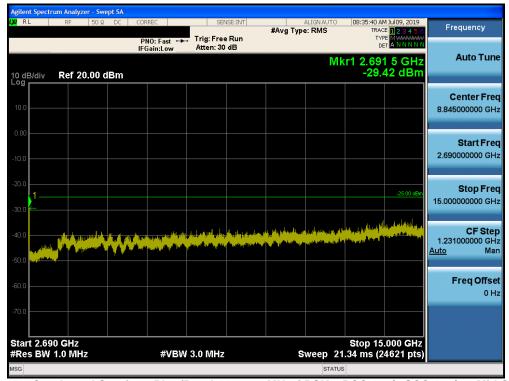


Table 7-419. Conducted Spurious Plot (Band 41 - 20.0MHz QPSK - PCC 100/0 SCC 100/0 - Mid Channel)

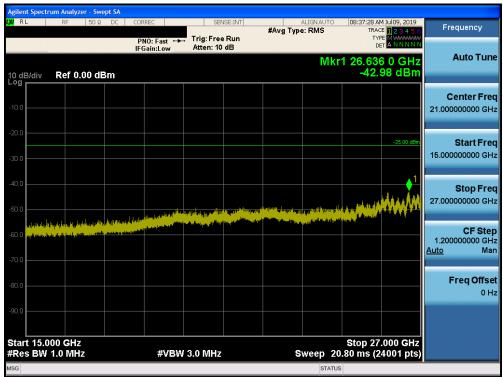


Table 7-420. Conducted Spurious Plot (Band 41 - 20.0MHz QPSK - PCC 100/0 SCC 100/0 - Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 252 of 341
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Table 7-421. Lower ACP Plot (Band 41 QPSK – PCC:15 MHz SCC:20 MHz – Full RB)



Table 7-422. Upper ACP Plot (Band 41 QPSK - PCC:15 MHz SCC:20 MHz - Full RB)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Table 7-423. Lower ACP Plot (Band 41 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)



Table 7-424. Upper ACP Plot (Band 41 QPSK - PCC:20 MHz SCC:20 MHz - Full RB)

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## 7.8 Radiated Power (ERP/EIRP)

## **Test Overview**

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

#### **Test Procedures Used**

KDB 971168 D01 v03r01 - Section 5.2.1

## **Test Settings**

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured is:

ERP/EIRP = PMeas - LC + GT

Where:

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm)

PMeas = measured transmitter output power or PSD, in dBW or dBm

LC = signal attenuation in the connecting cable between the transmitter and antenna in dB

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

#### **Test Setup**

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



Figure 7-7. ERP/EIRP Measurement Setup

#### **Test Notes**

- The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The
  worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and
  channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The Level (dBm) readings in the table were taken with a correction table loaded into the base station simulator. The correction table was used to account for the signal attenuation in the connecting cable between the transmitter and antenna.
- The Ant. Gains (GT) are listed in dBi.

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#### Port A Radiated Power (ERP/EIRP) 7.8.1

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
707.50	1.4	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
715.30	1.4	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
699.70	1.4	16-QAM	1/0	24.70	-0.80	21.75	0.150	34.77	-13.02	23.90	0.245	36.99	-13.09
699.70	1.4	64-QAM	3/2	23.75	-0.80	20.80	0.120	34.77	-13.97	22.95	0.197	36.99	-14.04
700.50	3	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
707.50	3	QPSK	1 / 14	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
714.50	3	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
700.50	3	16-QAM	1/0	24.70	-0.80	21.75	0.150	34.77	-13.02	23.90	0.245	36.99	-13.09
700.50	3	64-QAM	1/0	23.70	-0.80	20.75	0.119	34.77	-14.02	22.90	0.195	36.99	-14.09
701.50	5	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
707.50	5	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
713.50	5	QPSK	1 / 24	25.48	-0.80	22.53	0.179	34.77	-12.24	24.68	0.294	36.99	-12.31
707.50	5	16-QAM	1/0	24.71	-0.80	21.76	0.150	34.77	-13.01	23.91	0.246	36.99	-13.08
701.50	5	64-QAM	1 / 24	23.70	-0.80	20.75	0.119	34.77	-14.02	22.90	0.195	36.99	-14.09
704.00	10	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
707.50	10	QPSK	1 / 49	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
711.00	10	QPSK	1 / 49	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
711.00	10	16-QAM	1 / 49	24.70	-0.80	21.75	0.150	34.77	-13.02	23.90	0.245	36.99	-13.09
704.00	10	64-QAM	1/0	23.70	-0.80	20.75	0.119	34.77	-14.02	22.90	0.195	36.99	-14.09

## Table 7-16. ERP Data (Band 12)

							•		•				
Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
706.50	5	QPSK	1 / 24	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
710.00	5	QPSK	1 / 24	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
713.50	5	QPSK	1/0	25.38	-0.80	22.43	0.175	34.77	-12.34	24.58	0.287	36.99	-12.41
710.00	5	16-QAM	1 / 24	24.75	-0.80	21.80	0.151	34.77	-12.97	23.95	0.248	36.99	-13.04
710.00	5	64-QAM	1 / 24	23.70	-0.80	20.75	0.119	34.77	-14.02	22.90	0.195	36.99	-14.09
709.00	10	QPSK	1 / 49	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
710.00	10	QPSK	1 / 49	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
711.00	10	QPSK	1 / 49	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
710.00	10	16-QAM	1 / 49	24.70	-0.80	21.75	0.150	34.77	-13.02	23.90	0.245	36.99	-13.09
709.00	10	64-QAM	1 / 49	23.69	-0.80	20.74	0.119	34.77	-14.03	22.89	0.195	36.99	-14.10

## Table 7-17. ERP Data (Band 17)

FCC ID: BCGA2198	PCTEST: ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
782.00	5	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
784.50	5	QPSK	1 / 24	25.37	-0.80	22.42	0.175	34.77	-12.35	24.57	0.287	36.99	-12.42
779.50	5	16-QAM	1/0	24.72	-0.80	21.77	0.150	34.77	-13.00	23.92	0.247	36.99	-13.07
779.50	5	64-QAM	1/0	23.70	-0.80	20.75	0.119	34.77	-14.02	22.90	0.195	36.99	-14.09
782.00	10	QPSK	1/0	25.50	-0.80	22.55	0.180	34.77	-12.22	24.70	0.295	36.99	-12.29
782.00	10	16-QAM	1/0	24.70	-0.80	21.75	0.150	34.77	-13.02	23.90	0.245	36.99	-13.09
782.00	10	64-QAM	1/0	23.69	-0.80	20.74	0.119	34.77	-14.03	22.89	0.195	36.99	-14.10

## Table 7-18. ERP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	3/2	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	1.4	QPSK	3/2	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
848.30	1.4	QPSK	3/2	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
848.30	1.4	16-QAM	3/2	24.75	-0.80	21.80	0.151	38.45	-16.65	23.95	0.248	40.61	-16.66
848.30	1.4	64-QAM	3/2	23.75	-0.80	20.80	0.120	38.45	-17.65	22.95	0.197	40.61	-17.66
825.50	3	QPSK	1/0	25.48	-0.80	22.53	0.179	38.45	-15.92	24.68	0.294	40.61	-15.93
836.50	3	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
847.50	3	QPSK	1 / 14	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	3	16-QAM	1 / 14	24.75	-0.80	21.80	0.151	38.45	-16.65	23.95	0.248	40.61	-16.66
836.50	3	64-QAM	1 / 14	23.70	-0.80	20.75	0.119	38.45	-17.70	22.90	0.195	40.61	-17.71
826.50	5	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	5	QPSK	1 / 24	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
846.50	5	QPSK	1 / 24	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	5	16-QAM	1 / 24	24.70	-0.80	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
826.50	5	64-QAM	1/0	23.69	-0.80	20.74	0.119	38.45	-17.71	22.89	0.195	40.61	-17.72
829.00	10	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	10	QPSK	1 / 49	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
844.00	10	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	10	16-QAM	1 / 49	24.70	-0.80	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
844.00	10	64-QAM	1/0	23.70	-0.80	20.75	0.119	38.45	-17.70	22.90	0.195	40.61	-17.71

## Table 7-19. ERP Data (Band 5)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	3/2	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	1.4	QPSK	3/2	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
848.30	1.4	QPSK	1/5	25.48	-0.80	22.53	0.179	38.45	-15.92	24.68	0.294	40.61	-15.93
824.70	1.4	16-QAM	1/0	24.70	-0.80	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
848.30	1.4	64-QAM	3/2	23.71	-0.80	20.76	0.119	38.45	-17.69	22.91	0.195	40.61	-17.70
825.50	3	QPSK	1/0	25.47	-0.80	22.52	0.179	38.45	-15.93	24.67	0.293	40.61	-15.94
836.50	3	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
847.50	3	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
825.50	3	16-QAM	1 / 14	24.70	-0.80	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	3	64-QAM	1 / 14	23.70	-0.80	20.75	0.119	38.45	-17.70	22.90	0.195	40.61	-17.71
826.50	5	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	5	QPSK	1/0	25.49	-0.80	22.54	0.179	38.45	-15.91	24.69	0.294	40.61	-15.92
846.50	5	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
836.50	5	16-QAM	1/0	24.70	-0.80	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	5	64-QAM	1 / 24	23.70	-0.80	20.75	0.119	38.45	-17.70	22.90	0.195	40.61	-17.71
829.00	10	QPSK	1/0	25.49	-0.80	22.54	0.179	38.45	-15.91	24.69	0.294	40.61	-15.92
836.50	10	QPSK	1/0	25.50	-0.80	22.55	0.180	38.45	-15.90	24.70	0.295	40.61	-15.91
844.00	10	QPSK	1 / 49	25.47	-0.80	22.52	0.179	38.45	-15.93	24.67	0.293	40.61	-15.94
829.00	10	16-QAM	1/0	24.70	-0.80	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	10	64-QAM	1 / 49	23.70	-0.80	20.75	0.119	38.45	-17.70	22.90	0.195	40.61	-17.71

Table 7-20. ERP Data (Band 26)

FCC ID: BCGA2198	PETEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	1/5	25.46	1.40	26.86	0.485	30.00	-3.14
1732.50	1.4	QPSK	1/0	25.48	1.40	26.88	0.488	30.00	-3.12
1754.30	1.4	QPSK	1/5	25.50	1.40	26.90	0.490	30.00	-3.10
1732.50	1.4	16-QAM	1/5	24.69	1.40	26.09	0.406	30.00	-3.91
1754.30	1.4	64-QAM	3/2	23.71	1.40	25.11	0.324	30.00	-4.89
1711.50	3	QPSK	1/0	25.45	1.40	26.85	0.484	30.00	-3.15
1732.50	3	QPSK	1 / 14	25.44	1.40	26.84	0.483	30.00	-3.16
1753.50	3	QPSK	1 / 14	25.47	1.40	26.87	0.486	30.00	-3.13
1753.50	3	16-QAM	1/0	24.64	1.40	26.04	0.402	30.00	-3.96
1753.50	3	64-QAM	1 / 14	23.63	1.40	25.03	0.318	30.00	-4.97
1712.50	5	QPSK	1/0	25.47	1.40	26.87	0.486	30.00	-3.13
1732.50	5	QPSK	1 / 24	25.43	1.40	26.83	0.482	30.00	-3.17
1752.50	5	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1752.50	5	16-QAM	1/0	24.65	1.40	26.05	0.403	30.00	-3.95
1752.50	5	64-QAM	1 / 24	23.71	1.40	25.11	0.324	30.00	-4.89
1715.00	10	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1732.50	10	QPSK	1 / 49	25.50	1.40	26.90	0.490	30.00	-3.10
1750.00	10	QPSK	1/0	25.46	1.40	26.86	0.485	30.00	-3.14
1732.50	10	16-QAM	1 / 49	24.68	1.40	26.08	0.406	30.00	-3.92
1732.50	10	64-QAM	1 / 49	23.72	1.40	25.12	0.325	30.00	-4.88
1717.50	15	QPSK	1/0	25.48	1.40	26.88	0.488	30.00	-3.12
1732.50	15	QPSK	1 / 74	25.50	1.40	26.90	0.490	30.00	-3.10
1747.50	15	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1732.50	15	16-QAM	1 / 74	24.68	1.40	26.08	0.406	30.00	-3.92
1732.50	15	64-QAM	1 / 74	23.69	1.40	25.09	0.323	30.00	-4.91
1720.00	20	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1732.50	20	QPSK	1 / 99	25.50	1.40	26.90	0.490	30.00	-3.10
1745.00	20	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1745.00	20	16-QAM	1/0	24.64	1.40	26.04	0.402	30.00	-3.96
1732.50	20	64-QAM	1 / 99	23.61	1.40	25.01	0.317	30.00	-4.99

## Table 7-21. EIRP Data (Band 4)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	3/2	25.50	1.40	26.90	0.490	30.00	-3.10
1745.00	1.4	QPSK	3/2	25.49	1.40	26.89	0.489	30.00	-3.11
1779.30	1.4	QPSK	1/0	25.45	1.40	26.85	0.484	30.00	-3.15
1745.00	1.4	16-QAM	1/5	24.70	1.40	26.10	0.407	30.00	-3.90
1745.00	1.4	64-QAM	3/2	23.70	1.40	25.10	0.324	30.00	-4.90
1711.50	3	QPSK	1/0	25.48	1.40	26.88	0.488	30.00	-3.12
1745.00	3	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1778.50	3	QPSK	1/0	25.38	1.40	26.78	0.476	30.00	-3.22
1711.50	3	16-QAM	1/0	24.70	1.40	26.10	0.407	30.00	-3.90
1745.00	3	64-QAM	1/0	23.67	1.40	25.07	0.321	30.00	-4.93
1712.50	5	QPSK	1/0	25.44	1.40	26.84	0.483	30.00	-3.16
1745.00	5	QPSK	1/0	25.48	1.40	26.88	0.488	30.00	-3.12
1777.50	5	QPSK	1 / 24	25.48	1.40	26.88	0.488	30.00	-3.12
1745.00	5	16-QAM	1/0	24.70	1.40	26.10	0.407	30.00	-3.90
1745.00	5	64-QAM	1 / 24	23.70	1.40	25.10	0.324	30.00	-4.90
1715.00	10	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1745.00	10	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1775.00	10	QPSK	1/0	25.41	1.40	26.81	0.480	30.00	-3.19
1745.00	10	16-QAM	1/0	24.69	1.40	26.09	0.406	30.00	-3.91
1745.00	10	64-QAM	1/0	23.70	1.40	25.10	0.324	30.00	-4.90
1717.50	15	QPSK	1/0	25.48	1.40	26.88	0.488	30.00	-3.12
1745.00	15	QPSK	1/0	25.50	1.40	26.90	0.490	30.00	-3.10
1772.50	15	QPSK	1/0	25.42	1.40	26.82	0.481	30.00	-3.18
1745.00	15	16-QAM	1/0	24.70	1.40	26.10	0.407	30.00	-3.90
1745.00	15	64-QAM	1/0	23.70	1.40	25.10	0.324	30.00	-4.90
1720.00	20	QPSK	1 / 99	25.50	1.40	26.90	0.490	30.00	-3.10
1745.00	20	QPSK	1/0	25.48	1.40	26.88	0.488	30.00	-3.12
1770.00	20	QPSK	1/0	25.47	1.40	26.87	0.486	30.00	-3.13
1770.00	20	16-QAM	1 / 99	24.70	1.40	26.10	0.407	30.00	-3.90
1720.00	20	64-QAM	1/0	23.70	1.40	25.10	0.324	30.00	-4.90

## Table 7-22. EIRP Data (Band 66)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 260 of 241	
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	1/5	25.26	2.30	27.56	0.570	33.01	-5.45
1880.00	1.4	QPSK	1/5	25.21	2.30	27.51	0.564	33.01	-5.50
1909.30	1.4	QPSK	1/5	25.20	2.30	27.50	0.562	33.01	-5.51
1850.70	1.4	16-QAM	1/0	24.57	2.30	26.87	0.486	33.01	-6.14
1850.70	1.4	64-QAM	1/5	23.45	2.30	25.75	0.376	33.01	-7.26
1851.50	3	QPSK	1/0	25.18	2.30	27.48	0.560	33.01	-5.53
1880.00	3	QPSK	1 / 14	25.23	2.30	27.53	0.566	33.01	-5.48
1908.50	3	QPSK	1 / 14	25.15	2.30	27.45	0.556	33.01	-5.56
1851.50	3	16-QAM	1/0	24.49	2.30	26.79	0.477	33.01	-6.22
1851.50	3	64-QAM	1/0	23.37	2.30	25.67	0.369	33.01	-7.34
1852.50	5	QPSK	1/0	25.35	2.30	27.65	0.582	33.01	-5.36
1880.00	5	QPSK	1 / 24	25.25	2.30	27.55	0.569	33.01	-5.46
1907.50	5	QPSK	1 / 24	25.20	2.30	27.50	0.562	33.01	-5.51
1852.50	5	16-QAM	1 / 24	24.60	2.30	26.90	0.490	33.01	-6.11
1852.50	5	64-QAM	1/0	23.57	2.30	25.87	0.386	33.01	-7.14
1855.00	10	QPSK	1/0	25.27	2.30	27.57	0.572	33.01	-5.44
1880.00	10	QPSK	1 / 49	25.21	2.30	27.51	0.564	33.01	-5.50
1905.00	10	QPSK	1/0	25.20	2.30	27.50	0.563	33.01	-5.51
1855.00	10	16-QAM	1/0	24.46	2.30	26.76	0.475	33.01	-6.25
1855.00	10	64-QAM	1/0	23.49	2.30	25.79	0.379	33.01	-7.22
1857.50	15	QPSK	1/0	25.27	2.30	27.57	0.572	33.01	-5.44
1880.00	15	QPSK	1/0	25.20	2.30	27.50	0.562	33.01	-5.51
1902.50	15	QPSK	1/0	25.34	2.30	27.64	0.581	33.01	-5.37
1857.50	15	16-QAM	1/0	24.47	2.30	26.77	0.475	33.01	-6.24
1902.50	15	64-QAM	1/0	23.47	2.30	25.77	0.378	33.01	-7.24
1860.00	20	QPSK	1 / 99	25.20	2.30	27.50	0.563	33.01	-5.51
1880.00	20	QPSK	1/0	25.35	2.30	27.65	0.582	33.01	-5.36
1900.00	20	QPSK	1/0	25.21	2.30	27.51	0.564	33.01	-5.50
1880.00	20	16-QAM	1 / 99	24.67	2.30	26.97	0.498	33.01	-6.04
1860.00	20	64-QAM	1 / 99	23.70	2.30	26.00	0.398	33.01	-7.01

## Table 7-23. EIRP Data (Band 2)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Page 261 of 341	
1C1901280004-03.BCG	05/01/2019-08/08/2019	Tablet Device	raye 201 01 341	



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	1/0	25.28	2.30	27.58	0.573	33.01	-5.43
1882.50	1.4	QPSK	3/2	25.11	2.30	27.41	0.551	33.01	-5.60
1914.30	1.4	QPSK	1/0	25.19	2.30	27.49	0.561	33.01	-5.52
1850.70	1.4	16-QAM	1/0	24.62	2.30	26.92	0.492	33.01	-6.09
1850.70	1.4	64-QAM	1/5	23.51	2.30	25.81	0.381	33.01	-7.20
1851.50	3	QPSK	1/0	25.14	2.30	27.44	0.555	33.01	-5.57
1882.50	3	QPSK	1 / 14	25.03	2.30	27.33	0.541	33.01	-5.68
1913.50	3	QPSK	1 / 14	25.09	2.30	27.39	0.548	33.01	-5.62
1851.50	3	16-QAM	1/0	24.52	2.30	26.82	0.481	33.01	-6.19
1851.50	3	64-QAM	1 / 14	23.43	2.30	25.73	0.374	33.01	-7.28
1852.50	5	QPSK	1/0	25.32	2.30	27.62	0.578	33.01	-5.39
1882.50	5	QPSK	1 / 24	25.09	2.30	27.39	0.548	33.01	-5.62
1912.50	5	QPSK	1 / 24	25.13	2.30	27.43	0.553	33.01	-5.58
1852.50	5	16-QAM	1/0	24.61	2.30	26.91	0.491	33.01	-6.10
1852.50	5	64-QAM	1/0	23.66	2.30	25.96	0.394	33.01	-7.05
1855.00	10	QPSK	1/0	25.23	2.30	27.53	0.566	33.01	-5.48
1882.50	10	QPSK	1 / 49	25.22	2.30	27.52	0.565	33.01	-5.49
1910.00	10	QPSK	1 / 49	25.17	2.30	27.47	0.558	33.01	-5.54
1882.50	10	16-QAM	1 / 49	24.50	2.30	26.80	0.479	33.01	-6.21
1855.00	10	64-QAM	1/0	23.48	2.30	25.78	0.378	33.01	-7.23
1857.50	15	QPSK	1/0	25.20	2.30	27.50	0.562	33.01	-5.51
1882.50	15	QPSK	1 / 74	25.16	2.30	27.46	0.557	33.01	-5.55
1907.50	15	QPSK	1 / 74	25.15	2.30	27.45	0.556	33.01	-5.56
1907.50	15	16-QAM	1 / 74	24.56	2.30	26.86	0.485	33.01	-6.15
1907.50	15	64-QAM	1/0	23.53	2.30	25.83	0.383	33.01	-7.18
1860.00	20	QPSK	1 / 99	25.21	2.30	27.51	0.564	33.01	-5.50
1882.50	20	QPSK	1/0	25.29	2.30	27.59	0.574	33.01	-5.42
1905.00	20	QPSK	1 / 99	25.23	2.30	27.53	0.566	33.01	-5.48
1860.00	20	16-QAM	1 / 99	24.70	2.30	27.00	0.501	33.01	-6.01
1860.00	20	64-QAM	1/99	23.70	2.30	26.00	0.398	33.01	-7.01

### Table 7-24. EIRP Data (Band 25)

FCC ID: BCGA2198	PETEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 262 of 244
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2307.50	5	QPSK	1 / 24	21.70	1.40	23.10	0.204	23.98	-0.88
2312.50	5	QPSK	1/0	21.59	1.40	22.99	0.199	23.98	-0.99
2312.50	5	16-QAM	1/0	21.02	1.40	22.42	0.175	23.98	-1.56
2312.50	5	64-QAM	1/0	20.10	1.40	21.50	0.141	23.98	-2.48
2310.00	10	QPSK	1/0	21.60	1.40	23.00	0.200	23.98	-0.98
2310.00	10	16-QAM	1/0	21.10	1.40	22.50	0.178	23.98	-1.48
2310.00	10	64-QAM	1 / 49	19.98	1.40	21.38	0.137	23.98	-2.60

Table 7-25. EIRP Data (Band 30)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	1/0	25.50	1.40	26.90	0.490	33.01	-6.11
2535.00	5	QPSK	1 / 24	25.47	1.70	27.17	0.521	33.01	-5.84
2567.50	5	QPSK	1/0	25.19	1.70	26.89	0.489	33.01	-6.12
2535.00	5	16-QAM	1 / 24	24.70	1.70	26.40	0.437	33.01	-6.61
2535.00	5	64-QAM	1 / 24	23.70	1.70	25.40	0.347	33.01	-7.61
2505.00	10	QPSK	1 / 49	25.39	1.40	26.79	0.478	33.01	-6.22
2535.00	10	QPSK	1 / 49	25.48	1.70	27.18	0.522	33.01	-5.83
2565.00	10	QPSK	1/0	25.24	1.70	26.94	0.494	33.01	-6.07
2535.00	10	16-QAM	1 / 49	24.70	1.70	26.40	0.437	33.01	-6.61
2535.00	10	64-QAM	1 / 49	23.59	1.70	25.29	0.338	33.01	-7.72
2507.50	15	QPSK	1/0	25.35	1.40	26.75	0.473	33.01	-6.26
2535.00	15	QPSK	1 / 74	25.46	1.70	27.16	0.520	33.01	-5.85
2562.50	15	QPSK	1/0	25.25	1.70	26.95	0.495	33.01	-6.06
2535.00	15	16-QAM	1 / 74	24.68	1.70	26.38	0.435	33.01	-6.63
2535.00	15	64-QAM	1 / 74	23.62	1.70	25.32	0.340	33.01	-7.69
2510.00	20	QPSK	1 / 99	25.39	1.40	26.79	0.478	33.01	-6.22
2535.00	20	QPSK	1 / 99	25.50	1.70	27.20	0.525	33.01	-5.81
2560.00	20	QPSK	1/0	25.34	1.70	27.04	0.506	33.01	-5.97
2535.00	20	16-QAM	1 / 99	24.70	1.70	26.40	0.437	33.01	-6.61
2535.00	20	64-QAM	1 / 99	23.68	1.70	25.38	0.345	33.01	-7.63

## Table 7-26. EIRP Data (Band 7)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 262 of 241
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	1 / 24	27.00	1.40	28.40	0.692	33.01	-4.61
2593.00	5	QPSK	1/0	26.90	1.70	28.60	0.724	33.01	-4.41
2687.50	5	QPSK	1/0	26.95	1.70	28.65	0.733	33.01	-4.36
2593.00	5	16-QAM	1/0	26.28	1.70	27.98	0.628	33.01	-5.03
2593.00	5	64-QAM	1 / 24	25.29	1.70	26.99	0.500	33.01	-6.02
2501.00	10	QPSK	1 / 49	27.00	1.40	28.40	0.692	33.01	-4.61
2593.00	10	QPSK	1 / 49	26.99	1.70	28.69	0.740	33.01	-4.32
2685.00	10	QPSK	1/0	27.00	1.70	28.70	0.741	33.01	-4.31
2685.00	10	16-QAM	1/0	26.30	1.70	28.00	0.631	33.01	-5.01
2593.00	10	64-QAM	1 / 49	25.15	1.70	26.85	0.484	33.01	-6.16
2503.50	15	QPSK	1 / 74	27.00	1.40	28.40	0.692	33.01	-4.61
2593.00	15	QPSK	1 / 74	26.92	1.70	28.62	0.728	33.01	-4.39
2682.50	15	QPSK	1/0	26.98	1.70	28.68	0.738	33.01	-4.33
2593.00	15	16-QAM	1/0	26.29	1.70	27.99	0.630	33.01	-5.02
2682.50	15	64-QAM	1 / 74	25.15	1.70	26.85	0.484	33.01	-6.16
2506.00	20	QPSK	1 / 99	26.59	1.40	27.99	0.630	33.01	-5.02
2593.00	20	QPSK	1 / 99	26.96	1.70	28.66	0.735	33.01	-4.35
2680.00	20	QPSK	1/0	27.00	1.70	28.70	0.741	33.01	-4.31
2680.00	20	16-QAM	1/0	26.21	1.70	27.91	0.618	33.01	-5.10
2680.00	20	64-QAM	1 / 99	25.25	1.70	26.95	0.495	33.01	-6.06

Table 7-27. EIRP Data (Band 41)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 264 of 241
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#### Port B Radiated Power (ERP/EIRP) 7.8.2

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
707.50	1.4	QPSK	1/5	24.46	-0.70	21.61	0.145	34.77	-13.16	23.76	0.238	36.99	-13.23
715.30	1.4	QPSK	3/2	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
715.30	1.4	16-QAM	1/0	23.99	-0.70	21.14	0.130	34.77	-13.63	23.29	0.213	36.99	-13.70
715.30	1.4	64-QAM	1/5	22.98	-0.70	20.13	0.103	34.77	-14.64	22.28	0.169	36.99	-14.71
700.50	3	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
707.50	3	QPSK	1 / 14	24.46	-0.70	21.61	0.145	34.77	-13.16	23.76	0.238	36.99	-13.23
714.50	3	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
700.50	3	16-QAM	1/0	23.91	-0.70	21.06	0.128	34.77	-13.72	23.21	0.209	36.99	-13.78
714.50	3	64-QAM	1 / 14	22.85	-0.70	20.00	0.100	34.77	-14.77	22.15	0.164	36.99	-14.84
701.50	5	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
707.50	5	QPSK	1 / 24	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
713.50	5	QPSK	1 / 24	24.47	-0.70	21.62	0.145	34.77	-13.15	23.77	0.238	36.99	-13.22
713.50	5	16-QAM	1 / 24	23.99	-0.70	21.14	0.130	34.77	-13.63	23.29	0.213	36.99	-13.70
713.50	5	64-QAM	1 / 24	23.00	-0.70	20.15	0.104	34.77	-14.62	22.30	0.170	36.99	-14.69
704.00	10	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
707.50	10	QPSK	1 / 49	24.48	-0.70	21.63	0.146	34.77	-13.14	23.78	0.239	36.99	-13.21
711.00	10	QPSK	1 / 49	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
704.00	10	16-QAM	1 / 49	23.88	-0.70	21.03	0.127	34.77	-13.74	23.18	0.208	36.99	-13.81
711.00	10	64-QAM	1 / 49	22.99	-0.70	20.14	0.103	34.77	-14.63	22.29	0.169	36.99	-14.70

### Table 7-28. ERP Data (Band 12)

							•	,					
Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
706.50	5	QPSK	1 / 24	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
710.00	5	QPSK	1 / 24	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
713.50	5	QPSK	1 / 24	24.47	-0.70	21.62	0.145	34.77	-13.15	23.77	0.238	36.99	-13.22
713.50	5	16-QAM	1 / 24	24.04	-0.70	21.19	0.132	34.77	-13.58	23.34	0.216	36.99	-13.65
713.50	5	64-QAM	1 / 24	22.97	-0.70	20.12	0.103	34.77	-14.65	22.27	0.169	36.99	-14.72
709.00	10	QPSK	1 / 49	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
710.00	10	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
711.00	10	QPSK	1 / 49	24.49	-0.70	21.64	0.146	34.77	-13.13	23.79	0.239	36.99	-13.20
709.00	10	16-QAM	1 / 49	23.97	-0.70	21.12	0.130	34.77	-13.65	23.27	0.213	36.99	-13.72
710.00	10	64-QAM	1 / 49	22.97	-0.70	20.12	0.103	34.77	-14.65	22.27	0.169	36.99	-14.72

## Table 7-29. ERP Data (Band 17)

FCC ID: BCGA2198	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 265 of 341
1C1901280004-03.BCG	05/01/2019-08/08/2019	Tablet Device	Fage 205 01 541



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
782.00	5	QPSK	1/0	24.47	-0.70	21.62	0.145	34.77	-13.16	23.77	0.238	36.99	-13.22
784.50	5	QPSK	1 / 24	24.22	-0.70	21.37	0.137	34.77	-13.40	23.52	0.225	36.99	-13.47
779.50	5	16-QAM	1/0	24.10	-0.70	21.25	0.133	34.77	-13.52	23.40	0.219	36.99	-13.59
779.50	5	64-QAM	1/0	23.09	-0.70	20.24	0.106	34.77	-14.53	22.39	0.173	36.99	-14.60
782.00	10	QPSK	1/0	24.50	-0.70	21.65	0.146	34.77	-13.12	23.80	0.240	36.99	-13.19
782.00	10	16-QAM	1/0	24.00	-0.70	21.15	0.130	34.77	-13.62	23.30	0.214	36.99	-13.69
782.00	10	64-QAM	1/0	22.92	-0.70	20.07	0.102	34.77	-14.70	22.22	0.167	36.99	-14.77

## Table 7-30. ERP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	1/0	24.41	-0.60	21.66	0.147	38.45	-16.79	23.81	0.240	40.61	-16.80
836.50	1.4	QPSK	3/2	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
848.30	1.4	QPSK	1/0	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	1.4	16-QAM	1/0	23.87	-0.60	21.12	0.129	38.45	-17.33	23.27	0.212	40.61	-17.33
848.30	1.4	64-QAM	1/5	22.78	-0.60	20.03	0.101	38.45	-18.42	22.18	0.165	40.61	-18.43
825.50	3	QPSK	1/0	24.33	-0.60	21.58	0.144	38.45	-16.87	23.73	0.236	40.61	-16.87
836.50	3	QPSK	1 / 14	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
847.50	3	QPSK	1 / 14	24.44	-0.60	21.69	0.148	38.45	-16.76	23.84	0.242	40.61	-16.77
836.50	3	16-QAM	1 / 14	23.90	-0.60	21.15	0.130	38.45	-17.30	23.30	0.214	40.61	-17.31
847.50	3	64-QAM	1 / 14	22.86	-0.60	20.11	0.103	38.45	-18.34	22.26	0.168	40.61	-18.35
826.50	5	QPSK	1/0	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	5	QPSK	1 / 24	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
846.50	5	QPSK	1 / 24	24.42	-0.60	21.67	0.147	38.45	-16.78	23.82	0.241	40.61	-16.78
846.50	5	16-QAM	1 / 24	23.86	-0.60	21.11	0.129	38.45	-17.34	23.26	0.212	40.61	-17.35
836.50	5	64-QAM	1 / 24	22.82	-0.60	20.07	0.102	38.45	-18.38	22.22	0.167	40.61	-18.39
829.00	10	QPSK	1 / 49	24.41	-0.60	21.66	0.146	38.45	-16.79	23.81	0.240	40.61	-16.80
836.50	10	QPSK	1 / 49	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
844.00	10	QPSK	1/0	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	10	16-QAM	1 / 49	24.00	-0.60	21.25	0.133	38.45	-17.20	23.40	0.219	40.61	-17.21
829.00	10	64-QAM	1 / 49	22.73	-0.60	19.98	0.100	38.45	-18.47	22.13	0.163	40.61	-18.48

## Table 7-31. ERP Data (Band 5)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 266 of 341
1C1901280004-03.BCG	05/01/2019-08/08/2019	Tablet Device	rage 200 01 341



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	1/0	24.43	-0.60	21.68	0.147	38.45	-16.77	23.83	0.242	40.61	-16.78
836.50	1.4	QPSK	1/5	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
848.30	1.4	QPSK	1/0	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	1.4	16-QAM	1/5	23.85	-0.60	21.10	0.129	38.45	-17.35	23.25	0.212	40.61	-17.35
848.30	1.4	64-QAM	1/0	22.85	-0.60	20.10	0.102	38.45	-18.35	22.25	0.168	40.61	-18.36
825.50	3	QPSK	1/0	24.34	-0.60	21.59	0.144	38.45	-16.86	23.74	0.237	40.61	-16.86
836.50	3	QPSK	1 / 14	24.48	-0.60	21.73	0.149	38.45	-16.72	23.88	0.244	40.61	-16.73
847.50	3	QPSK	1 / 14	24.44	-0.60	21.69	0.147	38.45	-16.76	23.84	0.242	40.61	-16.77
836.50	3	16-QAM	1 / 14	23.81	-0.60	21.06	0.128	38.45	-17.39	23.21	0.210	40.61	-17.39
847.50	3	64-QAM	1 / 14	22.79	-0.60	20.04	0.101	38.45	-18.41	22.19	0.166	40.61	-18.42
826.50	5	QPSK	1/0	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.246	40.61	-16.70
836.50	5	QPSK	1 / 24	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
846.50	5	QPSK	1 / 24	24.43	-0.60	21.68	0.147	38.45	-16.77	23.83	0.241	40.61	-16.78
836.50	5	16-QAM	1 / 24	23.99	-0.60	21.24	0.133	38.45	-17.21	23.39	0.218	40.61	-17.22
836.50	5	64-QAM	1 / 24	22.84	-0.60	20.09	0.102	38.45	-18.36	22.24	0.167	40.61	-18.37
829.00	10	QPSK	1 / 49	24.42	-0.60	21.67	0.147	38.45	-16.78	23.82	0.241	40.61	-16.78
836.50	10	QPSK	1 / 49	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
844.00	10	QPSK	1/0	24.50	-0.60	21.75	0.150	38.45	-16.70	23.90	0.245	40.61	-16.71
836.50	10	16-QAM	1 / 49	23.93	-0.60	21.18	0.131	38.45	-17.27	23.33	0.215	40.61	-17.28
836.50	10	64-QAM	1 / 49	22.79	-0.60	20.04	0.101	38.45	-18.41	22.19	0.166	40.61	-18.42

Table 7-32. ERP Data (Band 26)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 267 of 244
1C1901280004-03.BCG	05/01/2019-08/08/2019	Tablet Device	Page 267 of 341



Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	3/2	23.49	2.00	25.49	0.354	30.00	-4.51
1732.50	1.4	QPSK	1/5	23.50	2.00	25.50	0.355	30.00	-4.50
1754.30	1.4	QPSK	1/5	23.35	2.00	25.35	0.343	30.00	-4.65
1732.50	1.4	16-QAM	1/5	22.89	2.00	24.89	0.308	30.00	-5.11
1732.50	1.4	64-QAM	1/0	21.62	2.00	23.62	0.230	30.00	-6.38
1711.50	3	QPSK	1/0	23.38	2.00	25.38	0.345	30.00	-4.62
1732.50	3	QPSK	1 / 14	23.46	2.00	25.46	0.351	30.00	-4.54
1753.50	3	QPSK	1 / 14	23.31	2.00	25.31	0.339	30.00	-4.69
1732.50	3	16-QAM	1/0	22.82	2.00	24.82	0.303	30.00	-5.18
1732.50	3	64-QAM	1/0	21.48	2.00	23.48	0.223	30.00	-6.52
1712.50	5	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1732.50	5	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1752.50	5	QPSK	1 / 24	23.34	2.00	25.34	0.342	30.00	-4.66
1732.50	5	16-QAM	1/0	22.78	2.00	24.78	0.301	30.00	-5.22
1732.50	5	64-QAM	1 / 24	21.64	2.00	23.64	0.231	30.00	-6.36
1715.00	10	QPSK	1 / 49	23.29	2.00	25.29	0.338	30.00	-4.71
1732.50	10	QPSK	1 / 49	23.47	2.00	25.47	0.352	30.00	-4.53
1750.00	10	QPSK	1/0	23.35	2.00	25.35	0.343	30.00	-4.65
1732.50	10	16-QAM	1 / 49	22.82	2.00	24.82	0.304	30.00	-5.18
1750.00	10	64-QAM	1/0	21.39	2.00	23.39	0.218	30.00	-6.61
1717.50	15	QPSK	1/0	23.42	2.00	25.42	0.348	30.00	-4.59
1732.50	15	QPSK	1 / 74	23.48	2.00	25.48	0.353	30.00	-4.52
1747.50	15	QPSK	1/0	23.43	2.00	25.43	0.349	30.00	-4.57
1732.50	15	16-QAM	1 / 74	22.77	2.00	24.77	0.300	30.00	-5.23
1747.50	15	64-QAM	1/0	21.32	2.00	23.32	0.215	30.00	-6.68
1720.00	20	QPSK	1/0	23.44	2.00	25.44	0.350	30.00	-4.56
1732.50	20	QPSK	1 / 99	23.47	2.00	25.47	0.352	30.00	-4.53
1745.00	20	QPSK	1/0	23.48	2.00	25.48	0.353	30.00	-4.52
1732.50	20	16-QAM	1 / 99	22.95	2.00	24.95	0.312	30.00	-5.05
1720.00	20	64-QAM	1 / 99	21.54	2.00	23.54	0.226	30.00	-6.46

### Table 7-33. EIRP Data (Band 4)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 269 of 241
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	3/2	23.50	2.00	25.50	0.355	30.00	-4.50
1745.00	1.4	QPSK	1/5	23.48	2.00	25.48	0.353	30.00	-4.52
1779.30	1.4	QPSK	1/0	23.38	2.00	25.38	0.345	30.00	-4.62
1710.70	1.4	16-QAM	1/5	22.82	2.00	24.82	0.304	30.00	-5.18
1745.00	1.4	64-QAM	1/0	21.58	2.00	23.58	0.228	30.00	-6.42
1711.50	3	QPSK	1/0	23.48	2.00	25.48	0.353	30.00	-4.52
1745.00	3	QPSK	1/0	23.45	2.00	25.45	0.351	30.00	-4.55
1778.50	3	QPSK	1 / 14	23.31	2.00	25.31	0.340	30.00	-4.69
1745.00	3	16-QAM	1/0	22.72	2.00	24.72	0.297	30.00	-5.28
1711.50	3	64-QAM	1/0	21.46	2.00	23.46	0.222	30.00	-6.54
1712.50	5	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1745.00	5	QPSK	1/0	23.49	2.00	25.49	0.354	30.00	-4.51
1777.50	5	QPSK	1/0	23.36	2.00	25.36	0.344	30.00	-4.64
1712.50	5	16-QAM	1/0	22.83	2.00	24.83	0.304	30.00	-5.17
1712.50	5	64-QAM	1/0	21.62	2.00	23.62	0.230	30.00	-6.38
1715.00	10	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1745.00	10	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1775.00	10	QPSK	1/0	23.45	2.00	25.45	0.351	30.00	-4.55
1745.00	10	16-QAM	1/0	22.82	2.00	24.82	0.303	30.00	-5.18
1715.00	10	64-QAM	1/0	21.64	2.00	23.64	0.231	30.00	-6.36
1717.50	15	QPSK	1/0	23.48	2.00	25.48	0.353	30.00	-4.52
1745.00	15	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1772.50	15	QPSK	1/0	23.44	2.00	25.44	0.350	30.00	-4.56
1745.00	15	16-QAM	1/0	22.76	2.00	24.76	0.299	30.00	-5.24
1717.50	15	64-QAM	1/0	21.81	2.00	23.81	0.240	30.00	-6.19
1720.00	20	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1745.00	20	QPSK	1/0	23.50	2.00	25.50	0.355	30.00	-4.50
1770.00	20	QPSK	1/0	23.45	2.00	25.45	0.351	30.00	-4.55
1745.00	20	16-QAM	1/0	22.80	2.00	24.80	0.302	30.00	-5.20
1720.00	20	64-QAM	1/0	21.81	2.00	23.81	0.240	30.00	-6.19

### Table 7-34. EIRP Data (Band 66)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 260 of 241
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	1/0	23.50	2.60	26.10	0.407	33.01	-6.91
1880.00	1.4	QPSK	1/5	23.20	2.60	25.80	0.380	33.01	-7.21
1909.30	1.4	QPSK	1/5	23.29	2.60	25.89	0.388	33.01	-7.12
1850.70	1.4	16-QAM	1/5	22.65	2.60	25.25	0.335	33.01	-7.76
1850.70	1.4	64-QAM	1/5	21.57	2.60	24.17	0.261	33.01	-8.84
1851.50	3	QPSK	1/0	23.21	2.60	25.81	0.381	33.01	-7.20
1880.00	3	QPSK	1 / 14	23.36	2.60	25.96	0.394	33.01	-7.05
1908.50	3	QPSK	1/0	23.27	2.60	25.87	0.386	33.01	-7.14
1851.50	3	16-QAM	1/0	22.68	2.60	25.28	0.337	33.01	-7.73
1851.50	3	64-QAM	1/0	21.64	2.60	24.24	0.265	33.01	-8.77
1852.50	5	QPSK	1/0	23.35	2.60	25.95	0.394	33.01	-7.06
1880.00	5	QPSK	1 / 24	23.23	2.60	25.83	0.383	33.01	-7.18
1907.50	5	QPSK	1/0	23.25	2.60	25.85	0.385	33.01	-7.16
1852.50	5	16-QAM	1/0	22.67	2.60	25.27	0.337	33.01	-7.74
1852.50	5	64-QAM	1/0	21.63	2.60	24.23	0.265	33.01	-8.78
1855.00	10	QPSK	1/0	23.32	2.60	25.92	0.391	33.01	-7.09
1880.00	10	QPSK	1 / 49	23.20	2.60	25.80	0.380	33.01	-7.21
1905.00	10	QPSK	1/0	23.28	2.60	25.88	0.387	33.01	-7.13
1855.00	10	16-QAM	1/0	22.67	2.60	25.27	0.337	33.01	-7.74
1905.00	10	64-QAM	1/0	21.52	2.60	24.12	0.258	33.01	-8.89
1857.50	15	QPSK	1/0	23.25	2.60	25.85	0.385	33.01	-7.16
1880.00	15	QPSK	1/0	23.21	2.60	25.81	0.381	33.01	-7.20
1902.50	15	QPSK	1/0	23.35	2.60	25.95	0.394	33.01	-7.06
1902.50	15	16-QAM	1/0	22.52	2.60	25.12	0.325	33.01	-7.89
1902.50	15	64-QAM	1/0	21.76	2.60	24.36	0.273	33.01	-8.65
1860.00	20	QPSK	1 / 99	23.33	2.60	25.93	0.392	33.01	-7.08
1880.00	20	QPSK	1/0	23.33	2.60	25.93	0.392	33.01	-7.08
1900.00	20	QPSK	1/0	23.30	2.60	25.90	0.389	33.01	-7.11
1880.00	20	16-QAM	1/0	22.51	2.60	25.11	0.324	33.01	-7.90
1860.00	20	64-QAM	1/0	21.77	2.60	24.37	0.274	33.01	-8.64

### Table 7-35. EIRP Data (Band 2)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	1/5	23.34	2.60	25.94	0.393	33.01	-7.07
1882.50	1.4	QPSK	1/0	23.20	2.60	25.80	0.380	33.01	-7.21
1914.30	1.4	QPSK	1/5	23.30	2.60	25.90	0.389	33.01	-7.11
1914.30	1.4	16-QAM	1/0	22.61	2.60	25.21	0.332	33.01	-7.80
1850.70	1.4	64-QAM	1/0	21.62	2.60	24.22	0.264	33.01	-8.79
1851.50	3	QPSK	1/0	23.31	2.60	25.91	0.390	33.01	-7.10
1882.50	3	QPSK	1 / 14	23.20	2.60	25.80	0.380	33.01	-7.21
1913.50	3	QPSK	1 / 14	23.23	2.60	25.83	0.383	33.01	-7.18
1851.50	3	16-QAM	1/0	22.72	2.60	25.32	0.340	33.01	-7.69
1851.50	3	64-QAM	1/0	21.58	2.60	24.18	0.262	33.01	-8.83
1852.50	5	QPSK	1/0	23.40	2.60	26.00	0.398	33.01	-7.01
1882.50	5	QPSK	1 / 24	23.22	2.60	25.82	0.382	33.01	-7.19
1912.50	5	QPSK	1 / 24	23.27	2.60	25.87	0.386	33.01	-7.14
1852.50	5	16-QAM	1/0	22.60	2.60	25.20	0.331	33.01	-7.81
1852.50	5	64-QAM	1/0	21.81	2.60	24.41	0.276	33.01	-8.60
1855.00	10	QPSK	1/0	23.42	2.60	26.02	0.400	33.01	-6.99
1882.50	10	QPSK	1 / 49	23.23	2.60	25.83	0.383	33.01	-7.18
1910.00	10	QPSK	1 / 49	23.30	2.60	25.90	0.389	33.01	-7.11
1855.00	10	16-QAM	1/0	22.72	2.60	25.32	0.340	33.01	-7.69
1855.00	10	64-QAM	1/0	21.66	2.60	24.26	0.267	33.01	-8.75
1857.50	15	QPSK	1/0	23.35	2.60	25.95	0.394	33.01	-7.06
1882.50	15	QPSK	1 / 74	23.20	2.60	25.80	0.380	33.01	-7.21
1907.50	15	QPSK	1 / 74	23.27	2.60	25.87	0.386	33.01	-7.14
1857.50	15	16-QAM	1/0	22.70	2.60	25.30	0.339	33.01	-7.71
1882.50	15	64-QAM	1 / 74	21.61	2.60	24.21	0.264	33.01	-8.80
1860.00	20	QPSK	1/0	23.33	2.60	25.93	0.392	33.01	-7.08
1882.50	20	QPSK	1 / 99	23.25	2.60	25.85	0.385	33.01	-7.16
1905.00	20	QPSK	1/0	23.32	2.60	25.92	0.391	33.01	-7.09
1860.00	20	16-QAM	1/0	22.82	2.60	25.42	0.348	33.01	-7.59
1905.00	20	64-QAM	1/0	21.76	2.60	24.36	0.273	33.01	-8.65

### Table 7-36. EIRP Data (Band 25)

FCC ID: BCGA2198	PCTEST	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2307.50	5	QPSK	1/0	21.28	1.90	23.18	0.208	23.98	-0.80
2312.50	5	QPSK	1/0	21.12	1.90	23.02	0.200	23.98	-0.96
2312.50	5	16-QAM	1/0	20.59	1.90	22.49	0.177	23.98	-1.49
2307.50	5	64-QAM	1/0	19.62	1.90	21.52	0.142	23.98	-2.46
2310.00	10	QPSK	1/0	21.17	1.90	23.07	0.203	23.98	-0.91
2310.00	10	16-QAM	1/0	20.64	1.90	22.54	0.179	23.98	-1.44
2310.00	10	64-QAM	1/0	19.51	1.90	21.41	0.138	23.98	-2.57

Table 7-37. EIRP Data (Band 30)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	1 / 24	23.25	1.90	25.15	0.327	33.01	-7.86
2535.00	5	QPSK	1 / 24	23.25	2.00	25.25	0.335	33.01	-7.76
2567.50	5	QPSK	1 / 24	23.11	2.00	25.11	0.324	33.01	-7.90
2535.00	5	16-QAM	1/0	22.77	2.00	24.77	0.300	33.01	-8.24
2502.50	5	64-QAM	1/0	21.85	1.90	23.75	0.237	33.01	-9.26
2505.00	10	QPSK	1/0	23.25	1.90	25.15	0.327	33.01	-7.86
2535.00	10	QPSK	1/0	23.25	2.00	25.25	0.335	33.01	-7.76
2565.00	10	QPSK	1 / 49	23.16	2.00	25.16	0.328	33.01	-7.85
2505.00	10	16-QAM	1/0	22.71	1.90	24.61	0.289	33.01	-8.40
2505.00	10	64-QAM	1/0	21.78	1.90	23.68	0.233	33.01	-9.33
2507.50	15	QPSK	1/0	23.25	1.90	25.15	0.327	33.01	-7.86
2535.00	15	QPSK	1 / 74	23.24	2.00	25.24	0.334	33.01	-7.77
2562.50	15	QPSK	1/0	23.11	2.00	25.11	0.324	33.01	-7.90
2507.50	15	16-QAM	1/0	22.66	1.90	24.56	0.286	33.01	-8.45
2507.50	15	64-QAM	1/0	21.70	1.90	23.60	0.229	33.01	-9.41
2510.00	20	QPSK	1/0	23.25	1.90	25.15	0.327	33.01	-7.86
2535.00	20	QPSK	1 / 99	23.25	2.00	25.25	0.335	33.01	-7.76
2560.00	20	QPSK	1/0	23.11	2.00	25.11	0.324	33.01	-7.90
2510.00	20	16-QAM	1/0	22.78	1.90	24.68	0.294	33.01	-8.33
2510.00	20	64-QAM	1/0	21.74	1.90	23.64	0.231	33.01	-9.37

## Table 7-38. EIRP Data (Band 7)

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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	1/0	24.51	1.90	26.41	0.438	33.01	-6.60
2593.00	5	QPSK	1/0	24.49	2.00	26.49	0.446	33.01	-6.52
2687.50	5	QPSK	1/0	24.65	2.00	26.65	0.462	33.01	-6.36
2687.50	5	16-QAM	1/0	23.61	2.00	25.61	0.364	33.01	-7.40
2687.50	5	64-QAM	1/0	22.76	2.00	24.76	0.299	33.01	-8.25
2501.00	10	QPSK	1/0	24.45	1.90	26.35	0.432	33.01	-6.66
2593.00	10	QPSK	1/0	24.51	2.00	26.51	0.448	33.01	-6.50
2685.00	10	QPSK	1/0	24.75	2.00	26.75	0.473	33.01	-6.26
2685.00	10	16-QAM	1 / 49	23.75	2.00	25.75	0.376	33.01	-7.26
2685.00	10	64-QAM	1/0	22.60	2.00	24.60	0.288	33.01	-8.41
2503.50	15	QPSK	1/0	24.50	1.90	26.40	0.437	33.01	-6.61
2593.00	15	QPSK	1/0	24.45	2.00	26.45	0.442	33.01	-6.56
2682.50	15	QPSK	1/0	24.58	2.00	26.58	0.455	33.01	-6.43
2682.50	15	16-QAM	1/0	23.78	2.00	25.78	0.378	33.01	-7.23
2682.50	15	64-QAM	1/0	22.61	2.00	24.61	0.289	33.01	-8.40
2506.00	20	QPSK	1 / 99	24.48	1.90	26.38	0.435	33.01	-6.63
2593.00	20	QPSK	1/0	24.45	2.00	26.45	0.442	33.01	-6.56
2680.00	20	QPSK	1/0	24.65	2.00	26.65	0.462	33.01	-6.36
2680.00	20	16-QAM	1 / 99	23.57	2.00	25.57	0.361	33.01	-7.44
2680.00	20	64-QAM	1/0	22.65	2.00	24.65	0.292	33.01	-8.36

Table 7-39. EIRP Data (Band 41)

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### 7.9 Radiated Spurious Emissions Measurements

#### **Test Overview**

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

#### **Test Procedures Used**

KDB 971168 D01 v03r01 - Section 5.8

ANSI/TIA-603-E-2016 - Section 2.2.12

#### **Test Settings**

- 1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 2. VBW ≥ 3 x RBW
- 3. Span = 1.5 times the OBW
- 4. No. of sweep points  $\geq 2 \times \text{span} / \text{RBW}$
- 5. Detector = RMS
- 6. Trace mode = Average (Max Hold for pulsed emissions)
- 7. The trace was allowed to stabilize

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## Test Setup

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

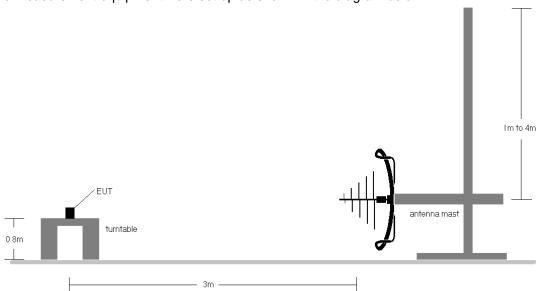


Figure 7-8. Test Instrument & Measurement Setup < 1GHz

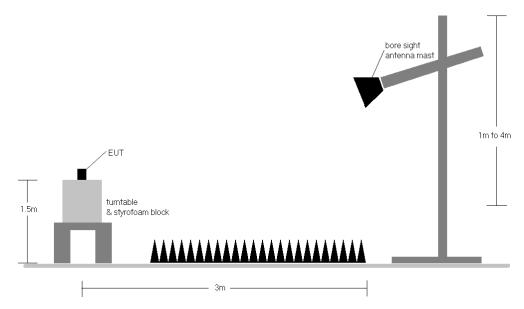


Figure 7-9. Test Instrument & Measurement Setup

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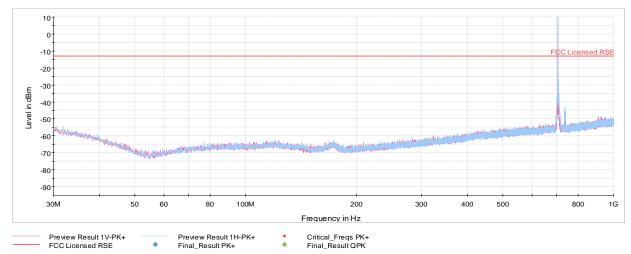
#### Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 6) For LTE Band 30 pre-scans above 1GHz, the RBW is set to 1MHz and VBW to 30kHz. For final measurements above 1GHz, the RBW is set to 1MHz and VBW to 3MHz when measuring with an RMS detector and trace averaging.
- 7) Below 1GHz pre-scan plot shows no significant emissions.

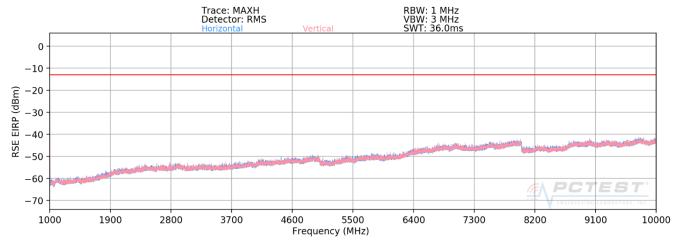
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# 7.9.1 Port A Radiated Spurious Emissions Measurements Band 12/17



Plot 7-425. Radiated Spurious Plot below 1GHz with AC/DC Adapter (Band 12/17)



Plot 7-426. Radiated Spurious Plot above 1GHz (Band 12/17)

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OPERATING FREQUENCY: 704.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1408.00	Н	276	38	-71.42	4.35	-67.07	-54.1
2112.00	Η	-	-	-69.27	5.05	-64.22	-51.2
2816.00	Н	-	-	-70.21	6.90	-63.31	-50.3
3520.00	Н	-	-	-71.25	8.03	-63.22	-50.2
4224.00	Н	-	-	-71.48	9.19	-62.29	-49.3

Table 7-40. Radiated Spurious Data (Band 12/17 - Low Channel)

OPERATING FREQUENCY: 707.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	Η	182	54	-70.87	4.42	-66.44	-53.4
2122.50	Η	-	-	-69.08	5.22	-63.86	-50.9
2830.00	Н	-	-	-70.18	7.01	-63.18	-50.2
3537.50	Η	-	-	-71.28	8.00	-63.28	-50.3
4245.00	Н	-	-	-71.44	9.21	-62.24	-49.2

Table 7-41. Radiated Spurious Data (Band 12/17 - Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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OPERATING FREQUENCY: 711.00 MHz

MODULATION SIGNAL: **QPSK** 

> BANDWIDTH: 10.0 MHzDISTANCE: 3 meters LIMIT: -13 dBm

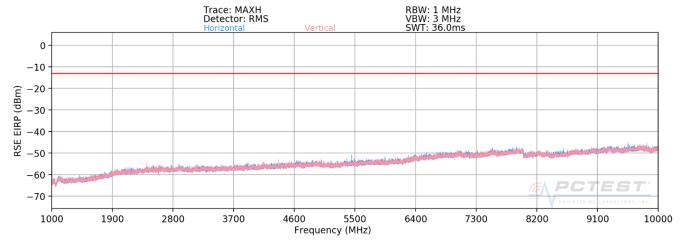
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1422.00	Н	-	-	-71.82	4.50	-67.32	-54.3
2133.00	Н	-	-	-69.51	5.34	-64.17	-51.2
2844.00	Н	-	-	-70.32	7.06	-63.26	-50.3
3555.00	Н	-	-	-71.00	7.98	-63.01	-50.0

Table 7-42. Radiated Spurious Data (Band 12/17 – High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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#### Band 13



Plot 7-427. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY: 779.50 MHz

MODULATION SIGNAL: **QPSK** 

> BANDWIDTH: 5.0 MHz DISTANCE: 3 meters LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2338.50	Н	-	-	-70.25	6.21	-64.04	-51.0
3118.00	Н	-	-	-70.77	7.46	-63.31	-50.3
3897.50	Н	-	-	-71.36	8.89	-62.46	-49.5

Table 7-43. Radiated Spurious Data (Band 13 - Low Channel)

FCC ID: BCGA2198	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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OPERATING FREQUENCY: 782.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	Н	-	-	-70.26	6.22	-64.03	-51.0
3128.00	Н	-	-	-70.83	7.50	-63.33	-50.3
3910.00	Н	-	-	-71.44	8.92	-62.52	-49.5

Table 7-44. Radiated Spurious Data (Band 13 - Mid Channel)

OPERATING FREQUENCY: 784.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 5.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2353.50	Н	-	-	-70.30	6.22	-64.08	-51.1
3138.00	Η	-	-	-70.54	7.54	-63.00	-50.0
3922.50	Н	-	-	-71.61	8.95	-62.66	-49.7

Table 7-45. Radiated Spurious Data (Band 13 – High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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MODULATION SIGNAL: QPSK

BANDWIDTH: 5.00 MHz

DISTANCE: 3 meters

NARROWBAND EMISSION LIMIT: -50 dBm

WIDEBAND EMISSION LIMIT: -40 dBm/MHz

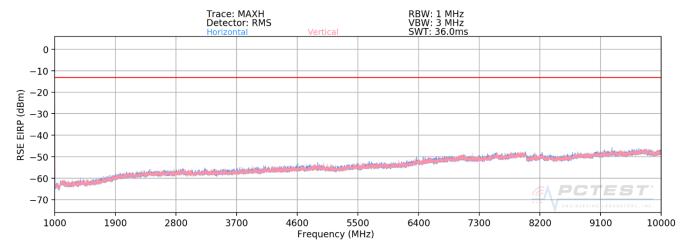
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	Н	-	-	-73.43	5.80	-67.63	-27.6
1564.00	Η	-	-	-73.18	5.82	-67.37	-27.4
1569.00	Ι	ı	-	-73.02	5.82	-67.20	-27.2

Table 7-46. Radiated Spurious Data (Band 13 - 1559-1610MHz Band)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 202 of 241
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#### **Band 26/5**



Plot 7-428. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY: 829.00 MHzMODULATION SIGNAL: **QPSK** BANDWIDTH: MHz 10.0 DISTANCE: 3 meters

> LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	Н	-	-	-72.52	5.50	-67.02	-54.0
2487.00	Η	-	-	-69.66	5.92	-63.75	-50.7
3316.00	Η	-	-	-71.37	7.87	-63.50	-50.5
4145.00	Н	-	-	-71.02	9.02	-61.99	-49.0

Table 7-47. Radiated Spurious Data (Band 26/5 - Low Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 202 of 241
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OPERATING FREQUENCY: 836.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters

LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	Н	-	-	-72.36	5.60	-66.75	-53.8
2509.50	Н	-	-	-69.36	5.90	-63.46	-50.5
3346.00	Н	-	-	-71.20	7.95	-63.25	-50.3
4182.50	Н	-	-	-71.58	9.13	-62.45	-49.4

Table 7-48. Radiated Spurious Data (Band 26/5 - Mid Channel)

OPERATING FREQUENCY: 844.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

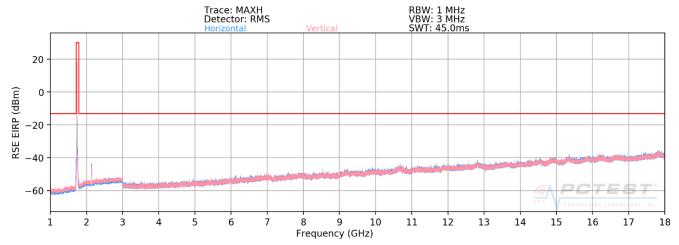
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	Н	-	-	-72.56	5.65	-66.91	-53.9
2532.00	Н	-	-	-69.47	5.93	-63.54	-50.5
3376.00	Н	-	-	-70.78	8.04	-62.74	-49.7
4220.00	Н	-	-	-71.24	9.19	-62.05	-49.0

Table 7-49. Radiated Spurious Data (Band 26/5 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 204 of 241
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#### **Band 66/4**



Plot 7-429. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY: 1720.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	Н	358	9	-73.16	8.12	-65.04	-52.0
5160.00	Η	284	197	-75.28	10.14	-65.14	-52.1
6880.00	Η	-	-	-74.04	11.38	-62.66	-49.7
8600.00	Н	-	-	-76.78	13.02	-63.76	-50.8
10320.00	Н	-	-	-73.87	13.10	-60.77	-47.8

Table 7-50. Radiated Spurious Data (Band 66/4 - Low Channel)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 205 of 241
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OPERATING FREQUENCY: 1745.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	Н	160	28	-69.25	8.09	-61.17	-48.2
5235.00	Н	-	-	-71.78	10.26	-61.52	-48.5
6980.00	Н	-	-	-70.72	11.47	-59.25	-46.2
8725.00	Н	-	-	-72.73	13.18	-59.55	-46.6

Table 7-51. Radiated Spurious Data (Band 66/4 - Mid Channel)

OPERATING FREQUENCY: 1770.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

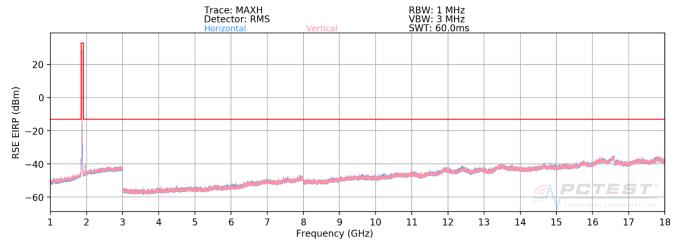
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	Ι	199	104	-73.31	7.99	-65.32	-52.3
5310.00	Н	-	-	-74.80	10.28	-64.51	-51.5
7080.00	Η	-	-	-74.79	11.58	-63.21	-50.2
8850.00	Н	-	-	-75.82	13.14	-62.68	-49.7

Table 7-52. Radiated Spurious Data (Band 66/4 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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#### **Band 25/2**



Plot 7-430. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY: 1860.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz

DISTANCE: 3 meters

LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3720.00	Н	-	-	-70.49	8.43	-62.06	-49.1
5580.00	Н	-	-	-71.20	10.72	-60.48	-47.5
7440.00	Н	-	-	-69.13	11.90	-57.23	-44.2

Table 7-53. Radiated Spurious Data (Band 25/2 - Low Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dags 207 of 244
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OPERATING FREQUENCY: 1882.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	Н	-	•	-71.35	8.48	-62.87	-49.9
5647.50	Н	-	-	-71.40	10.69	-60.71	-47.7
7530.00	Н	-	-	-69.23	11.99	-57.25	-44.2

Table 7-54. Radiated Spurious Data (Band 25/2 - Mid Channel)

OPERATING FREQUENCY: 1905.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

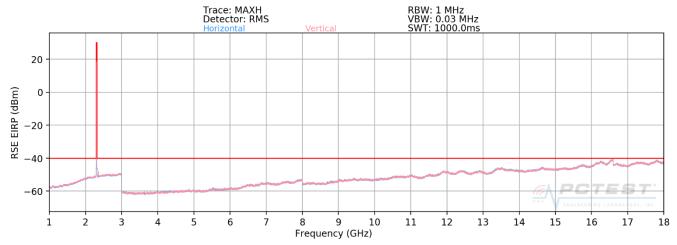
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3810.00	Н	-	-	-70.86	8.59	-62.27	-49.3
5715.00	Н	-	-	-71.43	10.66	-60.77	-47.8
7620.00	Н	-	-	-69.27	12.16	-57.12	-44.1

Table 7-55. Radiated Spurious Data (Band 25/2 - High Channel)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 200 of 241
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#### Band 30



Plot 7-431. Radiated Spurious Plot 1GHz - 18GHz (Band 30)

OPERATING FREQUENCY: 2307.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 5.0 MHz
DISTANCE: 3 meters
LIMIT: -40 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4615.00	V	-	-	-70.34	9.49	-60.85	-20.9
6922.50	V	-	-	-68.98	11.40	-57.57	-17.6
9230.00	V	-	-	-67.88	13.29	-54.59	-14.6

Table 7-56. Radiated Spurious Data (Band 30 - Low Channel)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogg 200 of 244
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OPERATING FREQUENCY: 2310.00 MHz

MODULATION SIGNAL: **QPSK** 

> BANDWIDTH: 10.0 MHz DISTANCE: 3 meters LIMIT: -40 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4620.00	V	-	-	-71.14	9.51	-61.63	-21.6
6930.00	V	-	-	-69.49	11.41	-58.08	-18.1
9240.00	V	-	-	-68.49	13.30	-55.19	-15.2

Table 7-57. Radiated Spurious Data (Band 30 - Mid Channel)

**OPERATING FREQUENCY:** 2312.50 MHz

MODULATION SIGNAL: **QPSK** 

> BANDWIDTH: 5.0 MHz DISTANCE: 3 meters LIMIT: -40 dBm

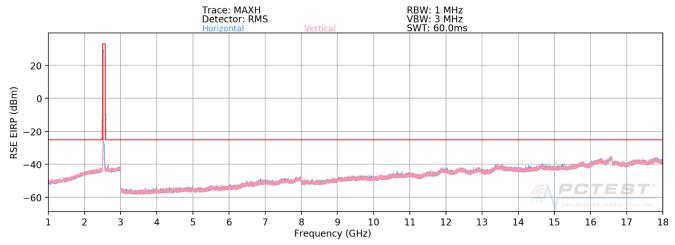
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4625.00	V	-	-	-70.16	9.54	-60.63	-20.6
6937.50	V	-	-	-69.51	11.41	-58.09	-18.1
9250.00	V	-	-	-68.38	13.31	-55.07	-15.1

Table 7-58. Radiated Spurious Data (Band 30 - High Channel)

FCC ID: BCGA2198	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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#### Band 7



Plot 7-432. Radiated Spurious Plot 1GHz - 18GHz (Band 7)

OPERATING FREQUENCY: 2510.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	Ι	•	•	-70.57	10.00	-60.56	-35.6
7530.00	Ι	•	•	-69.36	11.99	-57.38	-32.4
10040.00	Н	-	-	-68.11	13.11	-55.00	-30.0

Table 7-59. Radiated Spurious Data (Band 7 - Low Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: Test Dates:		EUT Type:	Dogo 201 of 244
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OPERATING FREQUENCY: 2535.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	Н	-	-	-69.62	10.07	-59.55	-34.6
7605.00	Н	-	-	-68.60	12.15	-56.45	-31.4
10140.00	Ι	•	-	-66.07	13.10	-52.98	-28.0
12675.00	Н	-	-	-61.94	13.15	-48.79	-23.8
15210.00	Н	-	-	-59.86	14.00	-45.86	-20.9
17745.00	Н	-	-	-56.87	14.13	-42.73	-17.7

Table 7-60. Radiated Spurious Data (Band 7 - Mid Channel)

OPERATING FREQUENCY: 2560.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

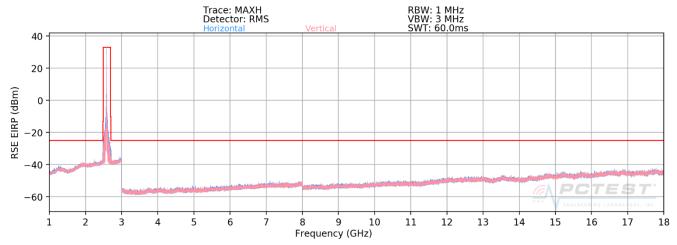
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	Η	-	-	-71.16	10.10	-61.06	-36.1
7680.00	Η	-	-	-69.31	12.15	-57.16	-32.2
10240.00	Н	-	-	-68.06	13.10	-54.96	-30.0

Table 7-61. Radiated Spurious Data (Band 7 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: Test Dates:		EUT Type:	Page 292 of 341
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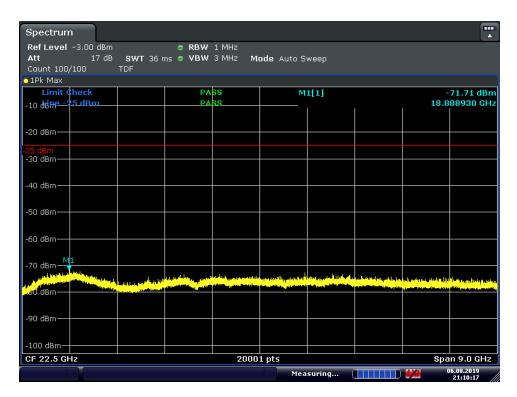
#### Band 41



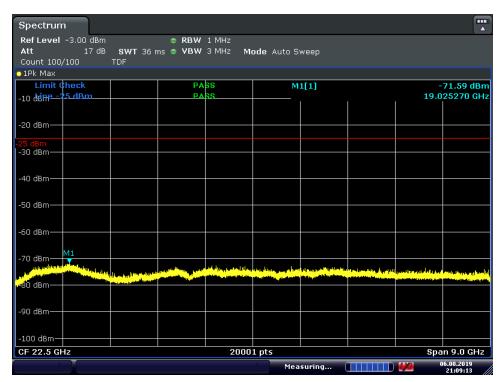
Plot 7-433. Radiated Spurious Plot 1GHz - 18GHz (Band 41)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 202 of 244
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Plot 7-434. Radiated Spurious Plot 18GHz - 27GHz (Band 41, Pol. H)



Plot 7-435. Radiated Spurious Plot 18GHz - 27GHz (Band 41, Pol. V)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: Test Dates:		EUT Type:	Dogo 204 of 241
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OPERATING FREQUENCY: 2506.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	V	-	-	-62.86	9.99	-52.87	-27.9
7518.00	Н	115	21	-61.18	11.99	-49.20	-24.2
10024.00	<b>V</b>	237	91	-61.21	13.11	-48.09	-23.1
12530.00	V	-	-	-59.80	13.15	-46.66	-21.7
15036.00	٧	-	-	-59.00	14.06	-44.94	-19.9
17542.00	V	-	-	-57.58	14.14	-43.44	-18.4

Table 7-62. Radiated Spurious Data (Band 41 - Low Channel)

OPERATING FREQUENCY: 2593.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	-	-	-62.68	10.20	-52.47	-27.5
7779.00	V	-	-	-62.21	12.20	-50.01	-25.0
10372.00	V	268	95	-61.49	13.07	-48.42	-23.4
12965.00	٧	-	-	-60.89	13.25	-47.64	-22.6
15558.00	V	-	-	-59.15	14.01	-45.14	-20.1

Table 7-63. Radiated Spurious Data (Band 41 - Mid Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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OPERATING FREQUENCY: 2680.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

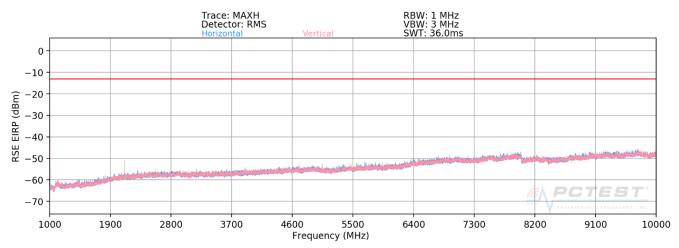
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	Н	102	36	-65.19	10.37	-54.82	-29.8
8040.00	V	256	188	-62.46	12.53	-49.93	-24.9
10720.00	V	-	-	-64.34	13.07	-51.28	-26.3
13400.00	V	-	-	-62.84	13.78	-49.07	-24.1
16080.00	V	-	-	-58.90	13.63	-45.27	-20.3

Table 7-64. Radiated Spurious Data (Band 41 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 206 of 241
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## **7.9.2** Port B Radiated Spurious Emissions Measurements Band 12/17



Plot 7-436. Radiated Spurious Plot above 1GHz (Band 12/17)

OPERATING FREQUENCY: 704.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters

LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1408.00	Η	-	-	-71.86	4.35	-67.51	-54.5
2112.00	Н	326	230	-62.84	5.05	-57.79	-44.8
2816.00	Н	-	-	-70.33	6.90	-63.43	-50.4
3520.00	Н	-	-	-70.91	8.03	-62.88	-49.9
4224.00	Н	-	-	-71.51	9.19	-62.32	-49.3

Table 7-65. Radiated Spurious Data (Band 12/17 - Low Channel)

FCC ID: BCGA2198	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: Test Dates:		EUT Type:	Page 297 of 341
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OPERATING FREQUENCY: 707.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	Ι		-	-71.70	4.42	-67.27	-54.3
2122.50	Ι	280	301	-61.91	5.22	-56.69	-43.7
2830.00	Н	-	-	-69.99	7.01	-62.99	-50.0
3537.50	Η	-	-	-70.79	8.00	-62.79	-49.8
4245.00	Н	-	-	-71.43	9.21	-62.23	-49.2

Table 7-66. Radiated Spurious Data (Band 12/17 - Mid Channel)

OPERATING FREQUENCY: 711.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

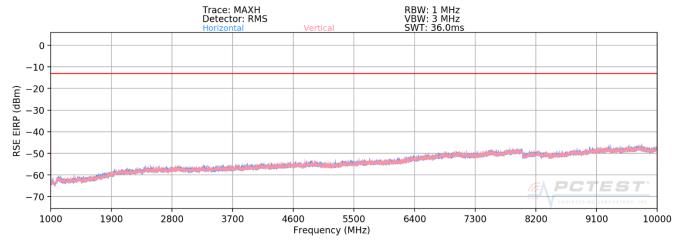
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1422.00	Н	-	-	-71.73	4.50	-67.23	-54.2
2133.00	Н	272	296	-62.78	5.34	-57.44	-44.4
2844.00	Η	-	-	-69.74	7.06	-62.68	-49.7
3555.00	Н	-	-	-70.71	7.98	-62.72	-49.7
4266.00	Н	-	-	-71.01	9.23	-61.79	-48.8

Table 7-67. Radiated Spurious Data (Band 12/17 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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### Band 13



Plot 7-437. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY: 779.50 MHz

MODULATION SIGNAL: **QPSK** 

> BANDWIDTH: 5.0 MHz DISTANCE: 3 meters LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2338.50	Н	-	-	-70.18	6.21	-63.97	-51.0
3118.00	Н	-	-	-70.98	7.46	-63.52	-50.5
3897.50	Н	-	-	-71.45	8.89	-62.55	-49.6

Table 7-68. Radiated Spurious Data (Band 13 - Low Channel)

FCC ID: BCGA2198	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 200 of 241
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OPERATING FREQUENCY: 782.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	Н	-	-	-70.34	6.22	-64.11	-51.1
3128.00	Н	-	-	-70.54	7.50	-63.04	-50.0
3910.00	Н	-	-	-71.70	8.92	-62.78	-49.8
4692.00	Н	-	-	-71.30	9.87	-61.43	-48.4

Table 7-69. Radiated Spurious Data (Band 13 - Mid Channel)

OPERATING FREQUENCY: 784.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 5.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2353.50	Н	-	-	-70.03	6.22	-63.81	-50.8
3138.00	Н	-	-	-70.83	7.54	-63.29	-50.3
3922.50	Н	-	-	-71.66	8.95	-62.71	-49.7

Table 7-70. Radiated Spurious Data (Band 13 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 300 of 341
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MODULATION SIGNAL: QPSK

BANDWIDTH: 5.00 MHz

DISTANCE: 3 meters

NARROWBAND EMISSION LIMIT: -50 dBm

WIDEBAND EMISSION LIMIT: -40 dBm/MHz

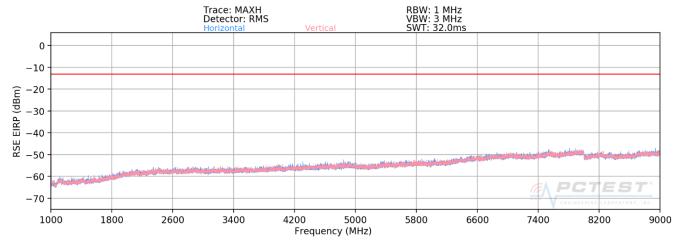
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	Н	-	-	-73.21	5.80	-67.41	-27.4
1564.00	Н	-	-	-73.91	5.82	-68.10	-28.1
1569.00	Ι	ı	-	-73.15	5.82	-67.33	-27.3

Table 7-71. Radiated Spurious Data (Band 13 - 1559-1610MHz Band)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 201 of 241
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### **Band 26/5**



Plot 7-438. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY: 829.00 MHz

MODULATION SIGNAL: **QPSK** 

> **BANDWIDTH:** 15.0 MHz DISTANCE: 3 meters LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	٧	337	351	-69.42	5.50	-63.92	-50.9
2487.00	V	224	12	-68.72	5.92	-62.81	-49.8
3316.00	V	-	-	-70.84	7.87	-62.97	-50.0
4145.00	٧	-	-	-70.60	9.02	-61.57	-48.6
4974.00	V	-	-	-71.54	10.01	-61.53	-48.5

Table 7-72. Radiated Spurious Data (Band 26/5 - Low Channel)

FCC ID: BCGA2198	PETEST ENGINEERING LABORATORY, INC.	Approved by: Quality Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogg 202 of 244
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OPERATING FREQUENCY: 831.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 15.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1663.00	V	382	79	-70.81	5.55	-65.26	-52.3
2499.50	V	-	-	-69.62	5.93	-63.69	-50.7
3336.00	V	-	-	-71.19	7.92	-63.27	-50.3
4172.50	V	-	-	-71.18	9.10	-62.08	-49.1

Table 7-73. Radiated Spurious Data (Band 26/5 - Mid Channel)

OPERATING FREQUENCY: 844.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 15.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

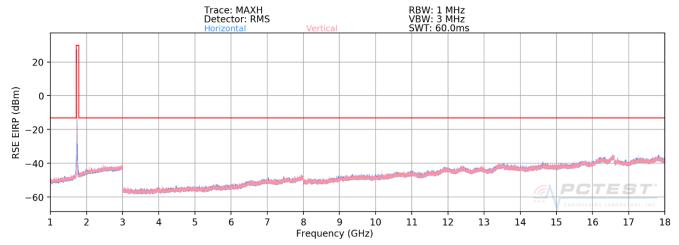
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	V	106	348	-71.35	5.65	-65.70	-52.7
2532.00	V	-	-	-69.38	5.93	-63.45	-50.5
3376.00	V	-	-	-71.10	8.04	-63.06	-50.1
4220.00	V	-	-	-71.58	9.19	-62.39	-49.4

Table 7-74. Radiated Spurious Data (Band 26/5 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 202 of 241
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### **Band 66/4**



Plot 7-439. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY: 1720.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	Н	394	200	-73.04	8.12	-64.92	-51.9
5160.00	Н	-	-	-75.14	10.14	-65.00	-52.0
6880.00	Н	-	-	-73.84	11.38	-62.46	-49.5
8600.00	Н	-	-	-76.47	13.02	-63.45	-50.4

Table 7-75. Radiated Spurious Data (Band 66/4 - Low Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 204 of 241
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OPERATING FREQUENCY: 1745.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	Н	138	344	-72.81	8.09	-64.73	-51.7
5235.00	Н	-	-	-74.98	10.26	-64.72	-51.7
6980.00	Н	-	-	-74.12	11.47	-62.65	-49.6
8725.00	Н	-	-	-76.68	13.18	-63.50	-50.5

Table 7-76. Radiated Spurious Data (Band 66/4 - Mid Channel)

OPERATING FREQUENCY: 1770.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

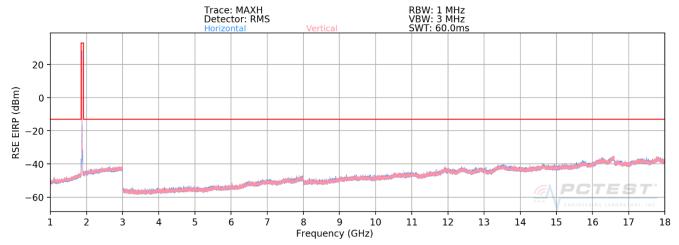
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	Н	-	-	-73.16	7.99	-65.17	-52.2
5310.00	Н	-	-	-74.92	10.28	-64.63	-51.6
7080.00	Н	-	-	-74.60	11.58	-63.02	-50.0

Table 7-77. Radiated Spurious Data (Band 66/4 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 205 of 241
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### **Band 25/2**



Plot 7-440. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY: 1860.00 MHz

MODULATION SIGNAL: **QPSK** 

> **BANDWIDTH:** 20.0 MHz DISTANCE: 3 meters LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3720.00	Η	117	334	-68.66	8.43	-60.23	-47.2
5580.00	Η	178	271	-70.35	10.72	-59.63	-46.6
7440.00	Ι	•	-	-68.59	11.90	-56.69	-43.7
9300.00	Η	334	290	-65.69	13.27	-52.42	-39.4
11160.00	Н	-	-	-65.95	13.20	-52.75	-39.7

Table 7-78. Radiated Spurious Data (Band 25/2 - Low Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 306 of 341
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OPERATING FREQUENCY: 1882.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	Η	207	329	-69.10	8.48	-60.62	-47.6
5647.50	Ι	117	342	-70.91	10.69	-60.22	-47.2
7530.00	Н	-	-	-69.04	11.99	-57.06	-44.1
9412.50	Η	354	344	-67.29	13.36	-53.93	-40.9
11295.00	Н	-	-	-66.69	13.24	-53.46	-40.5

Table 7-79. Radiated Spurious Data (Band 25/2 - Mid Channel)

OPERATING FREQUENCY: 1905.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

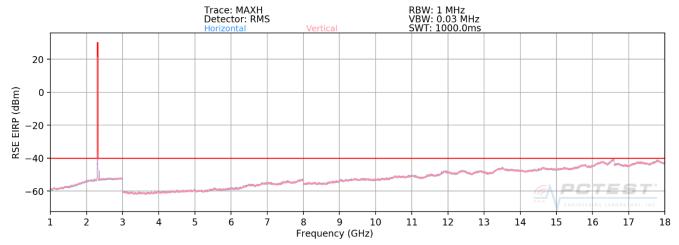
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3810.00	Η	158	331	-69.10	8.59	-60.51	-47.5
5715.00	Н	-	-	-71.16	10.66	-60.50	-47.5
7620.00	Н	-	-	-68.89	12.16	-56.74	-43.7
9525.00	Н	-	-	-67.87	13.23	-54.64	-41.6

Table 7-80. Radiated Spurious Data (Band 25/2 - High Channel)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 307 of 341
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### Band 30



Plot 7-441. Radiated Spurious Plot 1GHz - 18GHz (Band 30)

OPERATING FREQUENCY: 2307.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 5.0 MHz
DISTANCE: 3 meters
LIMIT: -40 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4615.00	Η	-	-	-70.79	9.49	-61.30	-21.3
6922.50	Η	-	-	-69.33	11.40	-57.92	-17.9
9230.00	Н	-	-	-69.08	13.29	-55.79	-15.8

Table 7-81. Radiated Spurious Data (Band 30 - Low Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 308 of 341
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OPERATING FREQUENCY: 2310.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -40 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4620.00	Н	-	-	-71.03	9.51	-61.52	-21.5
6930.00	Н	-	-	-69.74	11.41	-58.33	-18.3
9240.00	Н	-	-	-69.18	13.30	-55.88	-15.9

Table 7-82. Radiated Spurious Data (Band 30 - Mid Channel)

OPERATING FREQUENCY: 2312.50 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 5.0 MHz
DISTANCE: 3 meters
LIMIT: -40 dBm

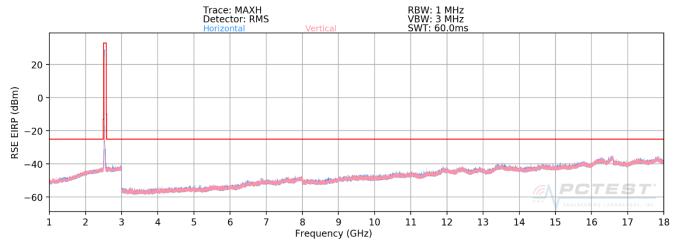
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4625.00	Ι	1	-	-70.80	9.54	-61.27	-21.3
6937.50	Η	-	-	-69.45	11.41	-58.03	-18.0
9250.00	Н	-	-	-69.21	13.31	-55.90	-15.9

Table 7-83. Radiated Spurious Data (Band 30 - High Channel)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 200 of 241
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### Band 7



Plot 7-442. Radiated Spurious Plot 1GHz - 18GHz (Band 7)

OPERATING FREQUENCY: 2510.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	Н	-	-	-72.06	10.00	-62.05	-37.1
7530.00	Η	-	-	-69.08	11.99	-57.10	-32.1
10040.00	Н	-	-	-67.94	13.11	-54.83	-29.8

Table 7-84. Radiated Spurious Data (Band 7 - Low Channel)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 240 of 244
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OPERATING FREQUENCY: 2535.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	Η	-	-	-70.69	10.07	-60.62	-35.6
7605.00	Ι	130	38	-68.33	12.15	-56.18	-31.2
10140.00	Ι	-	-	-67.54	13.10	-54.45	-29.4
12675.00	Η	-	-	-63.50	13.15	-50.35	-25.3
15210.00	Н	-	-	-62.03	14.00	-48.03	-23.0

Table 7-85. Radiated Spurious Data (Band 7 - Mid Channel)

OPERATING FREQUENCY: 2560.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

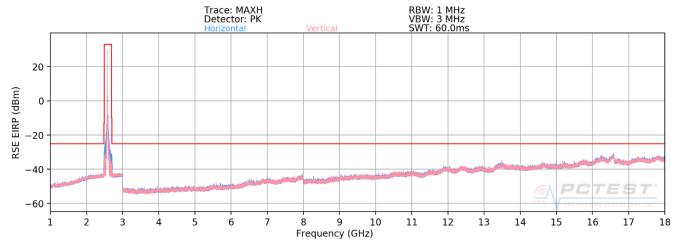
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	Η	-	•	-70.76	10.10	-60.66	-35.7
7680.00	Η	-	•	-69.26	12.15	-57.11	-32.1
10240.00	Н	-	-	-66.94	13.10	-53.84	-28.8

Table 7-86. Radiated Spurious Data (Band 7 - High Channel)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 211 of 241
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### Band 41



Plot 7-443. Radiated Spurious Plot 1GHz - 18GHz (Band 41)

OPERATING FREQUENCY: 2506.00 MHz

MODULATION SIGNAL: QPSK

LIMIT:

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	Н	-	-	-64.85	9.99	-54.86	-29.9
7518.00	Н	-	-	-66.39	11.99	-54.41	-29.4
10024.00	Н	-	-	-65.97	13.11	-52.85	-27.9

-25

dBm

Table 7-87. Radiated Spurious Data (Band 41 – Low Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 242 of 244
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OPERATING FREQUENCY: 2593.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	Η	106	51	-66.22	10.20	-56.01	-31.0
7779.00	Ι	106	62	-61.04	12.20	-48.84	-23.8
10372.00	Η	1	-	-64.70	13.07	-51.63	-26.6
12965.00	Η	-	-	-62.45	13.25	-49.20	-24.2
15558.00	Н	-	-	-60.90	14.01	-46.89	-21.9

Table 7-88. Radiated Spurious Data (Band 41 - Mid Channel)

OPERATING FREQUENCY: 2680.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	Η	114	50	-64.59	10.37	-54.22	-29.2
8040.00	Η	114	294	-65.04	12.53	-52.51	-27.5
10720.00	Ι	1	-	-64.37	13.07	-51.31	-26.3
13400.00	Ι	1	-	-62.91	13.78	-49.14	-24.1
16080.00	Н	-	-	-59.24	13.63	-45.61	-20.6

Table 7-89. Radiated Spurious Data (Band 41 – High Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 212 of 241
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#### **Uplink Carrier Aggregation Radiated Measurements** 7.10 §2.1053, §27.53(m)

### **Test Overview**

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

### **Test Procedures Used**

KDB 971168 D01 v02r02 - Section 5.8

ANSI/TIA-603-E-2016 - Section 2.2.12

### **Test Settings**

- 1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
- 2. VBW  $\geq$  3 x RBW
- 3. No. of sweep points  $\geq 2 \times \text{span} / \text{RBW}$
- 4. Detector = RMS
- 5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- The trace was allowed to stabilize

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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#### **Test Setup**

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

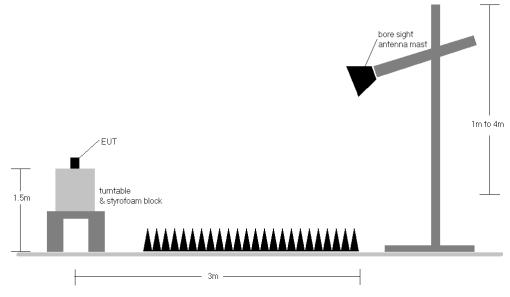


Figure 7-10. Test Instrument & Measurement Setup

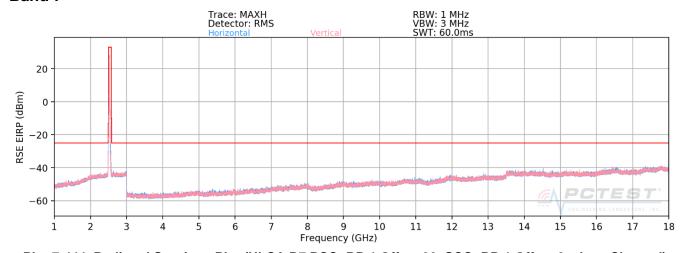
### **Test Notes**

- The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The
  worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and
  channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) Radiated 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) emissions were found while operating with QPSK modulation with both carriers set to transmit using 1RB.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 6) No significant emissions were found as a result of two uplink carriers operating contiguously.
- 7) All ports were tested and only the worst case data were reported.
- 8) Refer to Table 2-1 Section 2.3 of this test report for correlation between Antennas and Ports.

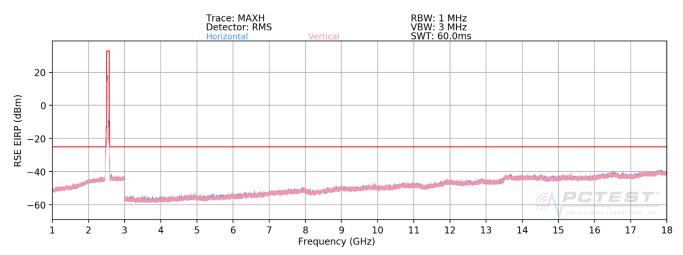
FCC ID: BCGA2198	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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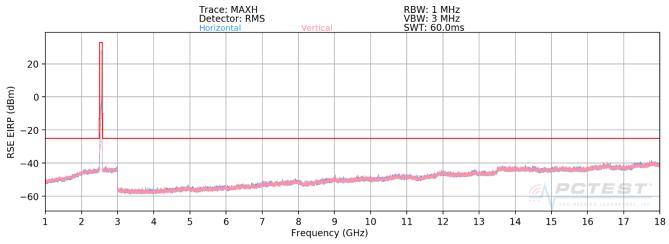
### Band 7



Plot 7-444. Radiated Spurious Plot (ULCA B7 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 - Low Channel)



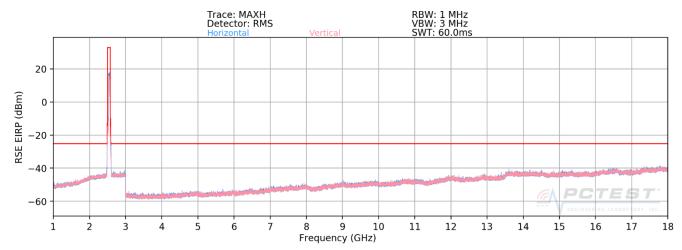
Plot 7-445. Radiated Spurious Plot (ULCA B7 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)



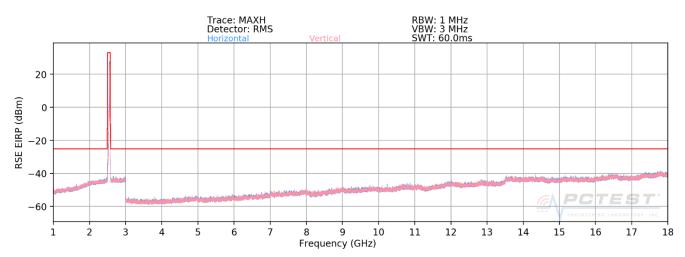
Plot 7-446. Radiated Spurious Plot (ULCA B7 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 - Mid Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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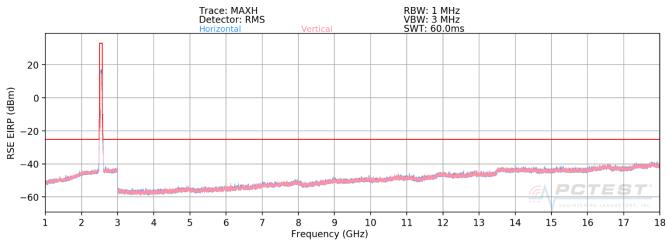




Plot 7-447. Radiated Spurious Plot (ULCA B7 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 - Mid Channel)



Plot 7-448. Radiated Spurious Plot (ULCA B7 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 - High Channel)



Plot 7-449. Radiated Spurious Plot (ULCA B7 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 - High Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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V 9.0 02/01/2019



OPERATING FREQUENCY (PCC): 2510.00 MHz
OPERATING FREQUENCY (SCC): 2529.80 MHz

MODULATION SIGNAL: QPSK

 BANDWIDTH:
 20.0
 MHz

 DISTANCE:
 3
 meters

 LIMIT:
 -25
 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	Н	-	-	-70.59	10.00	-60.59	-35.6
7530.00	Н	-	-	-69.15	11.99	-57.16	-32.2
10040.00	Н	-	-	-68.26	13.11	-55.14	-30.1
12550.00	Н	-	-	-65.36	13.13	-52.23	-27.2

Table 7-90. Radiated Spurious Data (ULCA B7 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 - Low Channel)

OPERATING FREQUENCY (PCC): 2535.00 MHz
OPERATING FREQUENCY (SCC): 2554.80 MHz

MODULATION SIGNAL: QPSK

 BANDWIDTH:
 20.0
 MHz

 DISTANCE:
 3
 meters

 LIMIT:
 -25
 dBm

F	requency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
	5070.00	Н	-	ı	-70.55	10.07	-60.49	-35.5
	7605.00	Η	-	•	-69.08	12.15	-56.93	-31.9
•	10140.00	Н	-	•	-68.07	13.10	-54.97	-30.0
•	12675.00	Н	-	-	-64.94	13.15	-51.79	-26.8

Table 7-91. Radiated Spurious Data (ULCA B7 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 - Mid Channel)

FCC ID: BCGA2198	ENGINEERING LABORATORY, INC.		
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OPERATING FREQUENCY (PCC): 2560.00 MHz OPERATING FREQUENCY (SCC): 2540.20 MHz

> MODULATION SIGNAL: **QPSK**

> > **BANDWIDTH:** 20.0 MHz DISTANCE: 3 meters LIMIT: -25 dBm

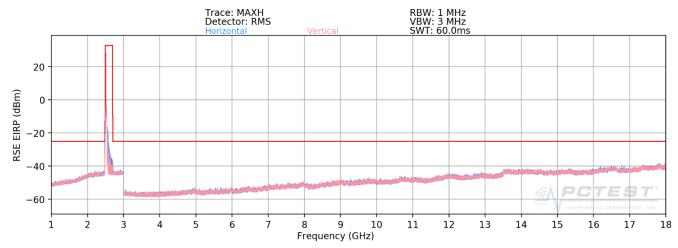
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	Н	-	-	-71.24	10.10	-61.14	-36.1
7680.00	Н	-	-	-69.87	12.15	-57.72	-32.7
10240.00	Н	-	•	-67.99	13.10	-54.89	-29.9
12800.00	Н	-	-	-64.29	13.17	-51.12	-26.1

Table 7-92. Radiated Spurious Data (ULCA B7 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

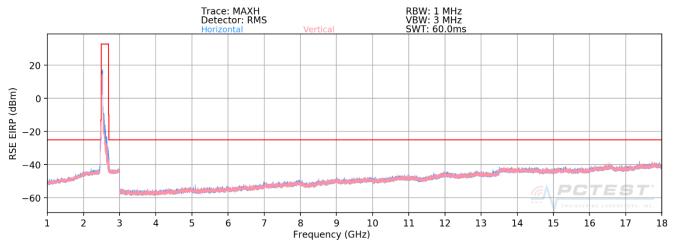
FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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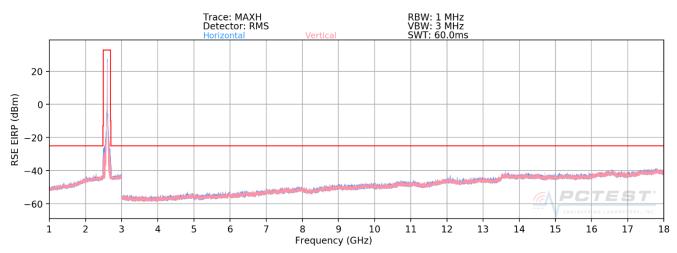
### Band 41



Plot 7-450. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 - Low Channel)



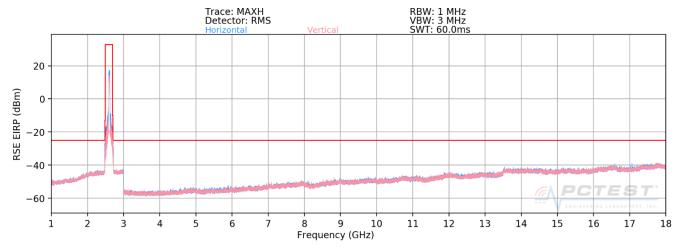
Plot 7-451. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 - Low Channel)



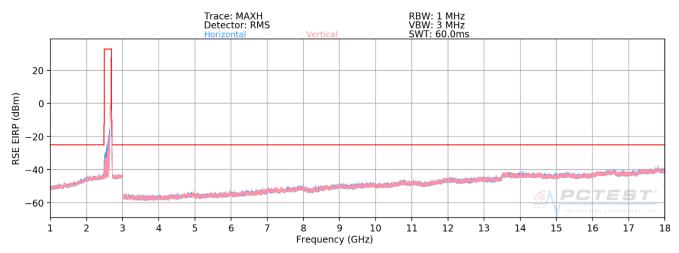
Plot 7-452. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 - Mid Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 220 of 241
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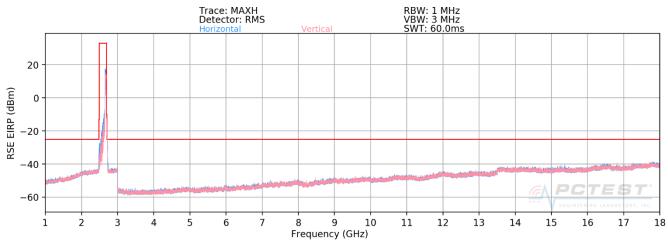




Plot 7-453. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 - Mid Channel)



Plot 7-454. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 - High Channel)



Plot 7-455. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 - High Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY (PCC): 2506.00 MHz
OPERATING FREQUENCY (SCC): 2525.80 MHz

MODULATION SIGNAL: QPSK

 BANDWIDTH:
 20.0
 MHz

 DISTANCE:
 3
 meters

 LIMIT:
 -25
 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	Н	-	-	-61.49	10.00	-51.49	-26.5
7518.00	Н	-	ı	-59.47	11.99	-47.48	-22.5
10024.00	Н	-	-	-58.94	13.11	-45.82	-20.8
12530.00	Н	-	-	-56.59	13.13	-43.46	-18.5

Table 7-93. Radiated Spurious Data (ULCA B41 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 - Low Channel)

OPERATING FREQUENCY (PCC): 2593.00 MHz
OPERATING FREQUENCY (SCC): 2612.80 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	Н	-	-	-62.51	10.20	-52.31	-27.3
7779.00	Н	-	-	-60.18	12.20	-47.98	-23.0
10372.00	Н	-	-	-58.62	13.07	-45.55	-20.5
12965.00	Н	-	-	-55.59	13.25	-42.34	-17.3

Table 7-94. Radiated Spurious Data (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 - Mid Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY (PCC): 2680.00 MHz OPERATING FREQUENCY (SCC): 2660.20 MHz

> MODULATION SIGNAL: **QPSK**

> > BANDWIDTH: 20.0 MHz DISTANCE: 3 meters

LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	Н	-	-	-61.19	10.37	-50.81	-25.8
8040.00	Н	-	-	-60.73	12.53	-48.19	-23.2
10720.00	Н	-	-	-57.87	13.07	-44.81	-19.8
13400.00	Н	-	-	-56.09	13.78	-42.31	-17.3

Table 7-95. Radiated Spurious Data (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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### 7.11 Frequency Stability / Temperature Variation

#### **Test Overview and Limit**

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5$  ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

#### **Test Procedure Used**

ANSI/TIA-603-E-2016

### **Test Settings**

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

#### **Test Setup**

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

### **Test Notes**

None

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### **Band 12/17 Frequency Stability Measurements**

OPERATING FREQUENCY: 707,500,000 Hz

> CHANNEL: 23790

REFERENCE VOLTAGE: 3.80 **VDC** 

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	707,500,007	7	0.0000010
100 %		- 20	707,500,008	8	0.0000011
100 %		- 10	707,500,008	8	0.0000011
100 %		0	707,500,009	9	0.0000013
100 %		+ 10	707,500,008	8	0.0000012
100 %		+ 20	707,500,009	9	0.0000013
100 %		+ 30	707,500,008	8	0.0000011
100 %		+ 40	707,500,007	7	0.0000010
100 %		+ 50	707,500,007	7	0.0000010
BATT. ENDPOINT	3.40	+ 20	707,500,009	9	0.0000013

Table 7-96. Frequency Stability Data (Band 12/17)

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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# **Band 12/17 Frequency Stability Measurements**

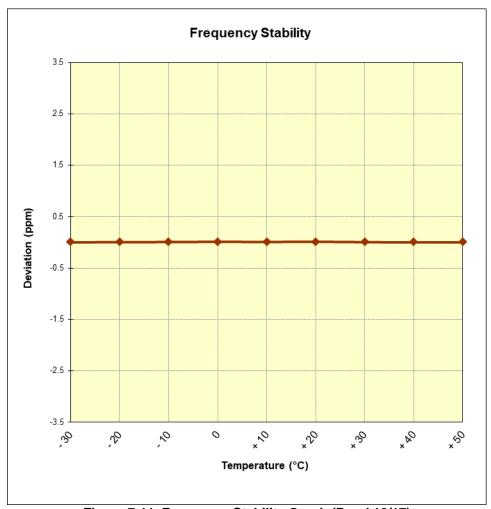


Figure 7-11. Frequency Stability Graph (Band 12/17)

FCC ID: BCGA2198	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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## **Band 13 Frequency Stability Measurements**

OPERATING FREQUENCY: 782,000,000 Hz

> CHANNEL: 23230

REFERENCE VOLTAGE: \_\_\_\_\_ 3.80 **VDC** 

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	782,000,008	8	0.0000010
100 %		- 20	782,000,009	9	0.0000011
100 %		- 10	782,000,007	7	0.0000009
100 %		0	782,000,008	8	0.0000010
100 %		+ 10	782,000,007	7	0.0000009
100 %		+ 20	782,000,008	8	0.0000010
100 %		+ 30	782,000,009	9	0.0000011
100 %		+ 40	782,000,009	9	0.0000011
100 %		+ 50	782,000,008	8	0.0000010
BATT. ENDPOINT	3.40	+ 20	782,000,009	9	0.0000012

Table 7-97. Frequency Stability Data (Band 13)

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: BCGA2198	PCTEST: ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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# **Band 13 Frequency Stability Measurements**

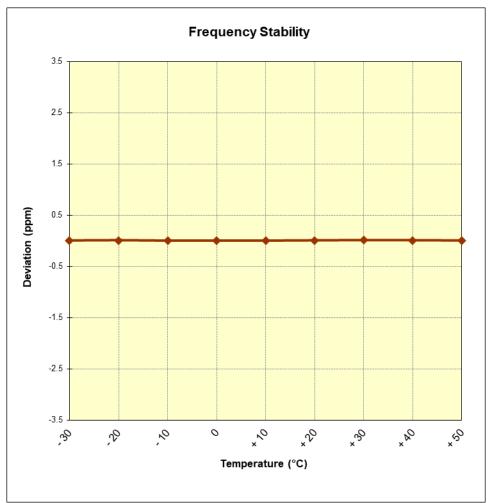


Figure 7-12. Frequency Stability Graph (Band 13)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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# **Band 26/5 Frequency Stability Measurements**

OPERATING FREQUENCY: 831,500,000 Hz

> CHANNEL: 26865

3.80 **VDC** REFERENCE VOLTAGE:

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	831,500,008	8	0.0000009
100 %		- 20	831,500,008	8	0.000010
100 %		- 10	831,500,010	10	0.0000011
100 %		0	831,500,008	8	0.0000010
100 %		+ 10	831,500,009	9	0.000010
100 %		+ 20	831,500,008	8	0.000010
100 %		+ 30	831,500,008	8	0.0000009
100 %		+ 40	831,500,009	9	0.0000011
100 %		+ 50	831,500,007	7	0.000009
BATT. ENDPOINT	3.40	+ 20	831,500,008	8	0.0000010

Table 7-98. Frequency Stability Data (Band 26/5)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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# **Band 26/5 Frequency Stability Measurements**

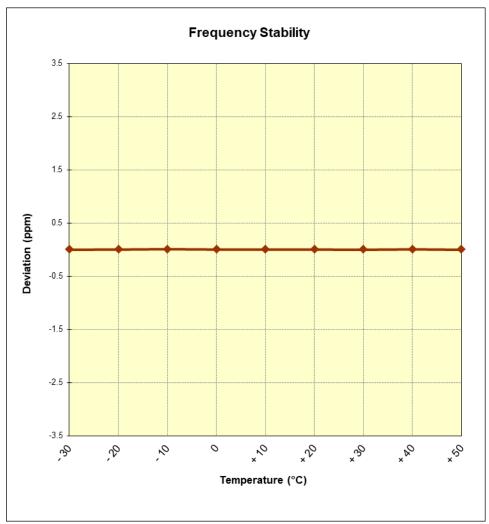


Figure 7-13. Frequency Stability Graph (Band 26/5)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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## **Band 66/4 Frequency Stability Measurements**

OPERATING FREQUENCY: 1,745,000,000 Hz

> CHANNEL: 132322

REFERENCE VOLTAGE: \_\_\_\_\_ 3.80 **VDC** 

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	1,745,000,007	7	0.000004
100 %		- 20	1,745,000,010	10	0.0000006
100 %		- 10	1,745,000,008	8	0.000005
100 %		0	1,745,000,009	9	0.000005
100 %		+ 10	1,745,000,006	6	0.000004
100 %		+ 20	1,745,000,007	7	0.000004
100 %		+ 30	1,745,000,008	8	0.000005
100 %		+ 40	1,745,000,007	7	0.000004
100 %		+ 50	1,745,000,007	7	0.000004
BATT. ENDPOINT	3.40	+ 20	1,745,000,008	8	0.0000005

Table 7-99. Frequency Stability Data (Band 66/4)

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: BCGA2198	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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# **Band 66/4 Frequency Stability Measurements**

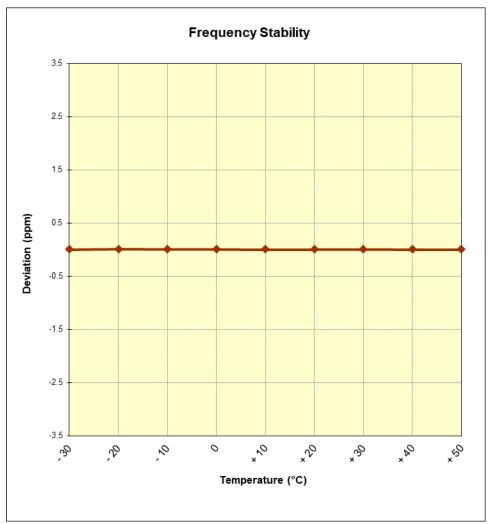


Figure 7-14. Frequency Stability Graph (Band 66/4)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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# **Band 25/2 Frequency Stability Measurements**

OPERATING FREQUENCY: 1,882,500,000 Hz

> CHANNEL: 26365

3.80 **VDC** REFERENCE VOLTAGE:

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	1,882,500,008	8	0.000004
100 %		- 20	1,882,500,008	8	0.000004
100 %		- 10	1,882,500,009	9	0.000005
100 %		0	1,882,500,008	8	0.000004
100 %		+ 10	1,882,500,007	7	0.000004
100 %		+ 20	1,882,500,009	9	0.000005
100 %		+ 30	1,882,500,008	8	0.000004
100 %		+ 40	1,882,500,008	8	0.000004
100 %		+ 50	1,882,500,007	7	0.000004
BATT. ENDPOINT	3.40	+ 20	1,882,500,008	8	0.0000004

Table 7-100. Frequency Stability Data (Band 25/2)

FCC ID: BCGA2198	ENGINESHING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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# **Band 25/2 Frequency Stability Measurements**

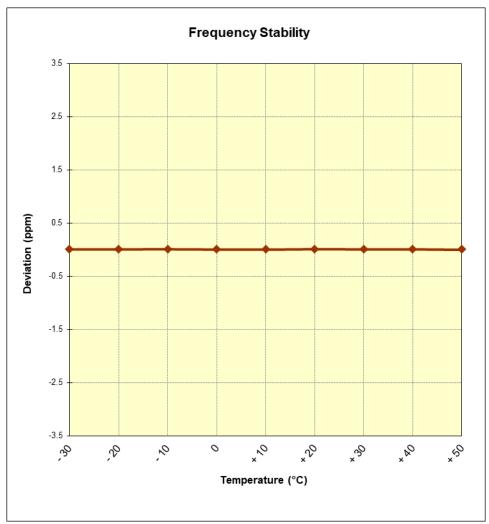


Figure 7-15. Frequency Stability Graph (Band 25/2)

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### **Band 30 Frequency Stability Measurements**

OPERATING FREQUENCY: 2,310,000,000 Hz

> CHANNEL: 27710

REFERENCE VOLTAGE: \_\_\_\_\_ 3.80 **VDC** 

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	2,310,000,010	10	0.000004
100 %		- 20	2,310,000,009	9	0.000004
100 %		- 10	2,310,000,009	9	0.000004
100 %		0	2,310,000,009	9	0.000004
100 %		+ 10	2,310,000,008	8	0.000003
100 %		+ 20	2,310,000,011	11	0.000005
100 %		+ 30	2,310,000,010	10	0.000004
100 %		+ 40	2,310,000,010	10	0.000005
100 %		+ 50	2,310,000,012	12	0.000005
BATT. ENDPOINT	3.40	+ 20	2,310,000,011	11	0.000005

Table 7-101. Frequency Stability Data (Band 30)

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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# **Band 30 Frequency Stability Measurements**

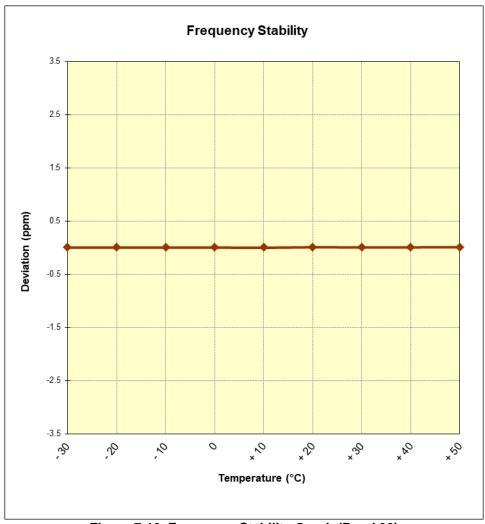


Figure 7-16. Frequency Stability Graph (Band 30)

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### **Band 7 Frequency Stability Measurements**

OPERATING FREQUENCY: 2,535,000,000 Hz

> CHANNEL: 21100

REFERENCE VOLTAGE: 3.80 **VDC** 

VOLTAGE (%)	POWER (VDC)	<b>TEMP</b> (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	2,535,000,010	10	0.000004
100 %		- 20	2,535,000,010	10	0.000004
100 %		- 10	2,535,000,011	11	0.000004
100 %		0	2,535,000,010	10	0.000004
100 %		+ 10	2,535,000,009	9	0.000004
100 %		+ 20	2,535,000,012	12	0.000005
100 %		+ 30	2,535,000,009	9	0.000004
100 %		+ 40	2,535,000,010	10	0.000004
100 %		+ 50	2,535,000,011	11	0.000004
BATT. ENDPOINT	3.40	+ 20	2,535,000,012	12	0.000005

Table 7-102. Frequency Stability Data (Band 7)

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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# **Band 7 Frequency Stability Measurements**

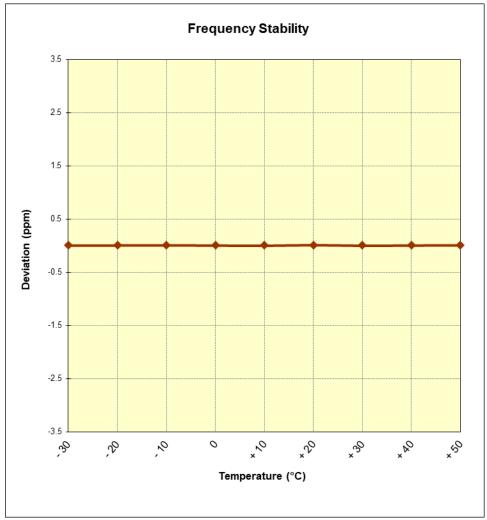


Figure 7-17. Frequency Stability Graph (Band 7)

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### **Band 41 Frequency Stability Measurements**

OPERATING FREQUENCY: 2,593,000,000 Hz

> CHANNEL: 40620

REFERENCE VOLTAGE: 3.80 **VDC** 

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	2,592,999,973	-27	-0.0000010
100 %		- 20	2,592,999,971	-30	-0.0000011
100 %		- 10	2,592,999,974	-26	-0.0000010
100 %		0	2,592,999,976	-24	-0.0000009
100 %		+ 10	2,592,999,975	-25	-0.0000010
100 %		+ 20	2,592,999,973	-27	-0.0000010
100 %		+ 30	2,592,999,974	-26	-0.0000010
100 %		+ 40	2,592,999,975	-25	-0.0000010
100 %		+ 50	2,592,999,974	-26	-0.0000010
BATT. ENDPOINT	3.40	+ 20	2,592,999,973	-27	-0.0000011

Table 7-103. Frequency Stability Data (Band 41)

### Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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# **Band 41 Frequency Stability Measurements**

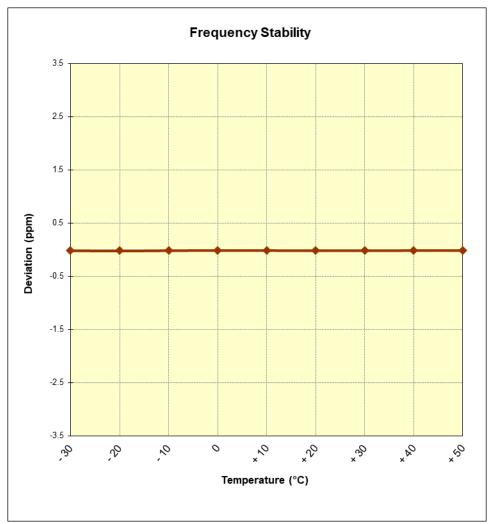


Figure 7-18. Frequency Stability Graph (Band 41)

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#### CONCLUSION 8.0

The data collected relate only to the item(s) tested and show that the Apple Tablet Device FCC ID: BCGA2198 complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

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