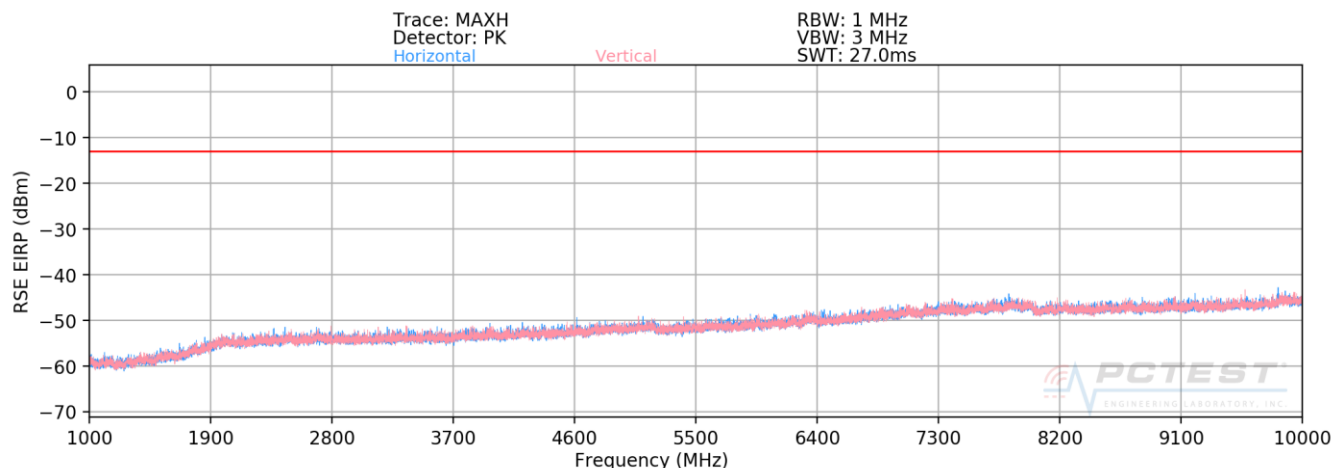


Band 13



Plot 7-422. 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	H	-	-	-69.47	5.47	-64.00	-51.0
3118.00	H	-	-	-70.20	6.63	-63.57	-50.6

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

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	H	-	-	-69.40	5.48	-63.92	-50.9
3128.00	H	-	-	-70.31	6.67	-63.64	-50.6

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 281 of 340

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	H	-	-	-69.50	5.49	-64.02	-51.0
3138.00	H	-	-	-70.41	6.72	-63.69	-50.7

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

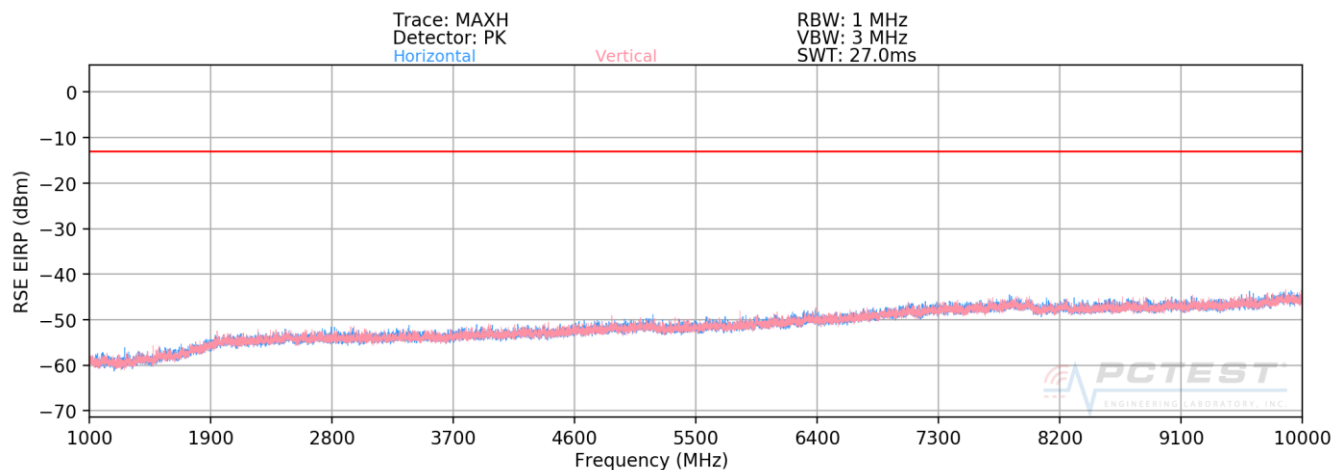
MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.00 MHz
 DISTANCE: 3 meters
 NARROWBAND EMISSION LIMIT: -50 dBm
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

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	H	-	-	-71.77	4.55	-67.22	-27.2
1564.00	H	-	-	-71.86	4.55	-67.31	-27.3
1569.00	H	-	-	-71.54	4.54	-67.00	-27.0

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 282 of 340

Band 26/5



Plot 7-423. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY: 829.00 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]
1658.00	H	-	-	-74.45	4.47	-69.98	-57.0
2487.00	H	-	-	-70.44	5.59	-64.85	-51.8
3316.00	H	-	-	-69.96	7.23	-62.73	-49.7

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 283 of 340

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	H	-	-	-73.87	4.46	-69.41	-56.4
2509.50	H	-	-	-71.03	5.62	-65.42	-52.4
3346.00	H	-	-	-69.66	7.24	-62.42	-49.4

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

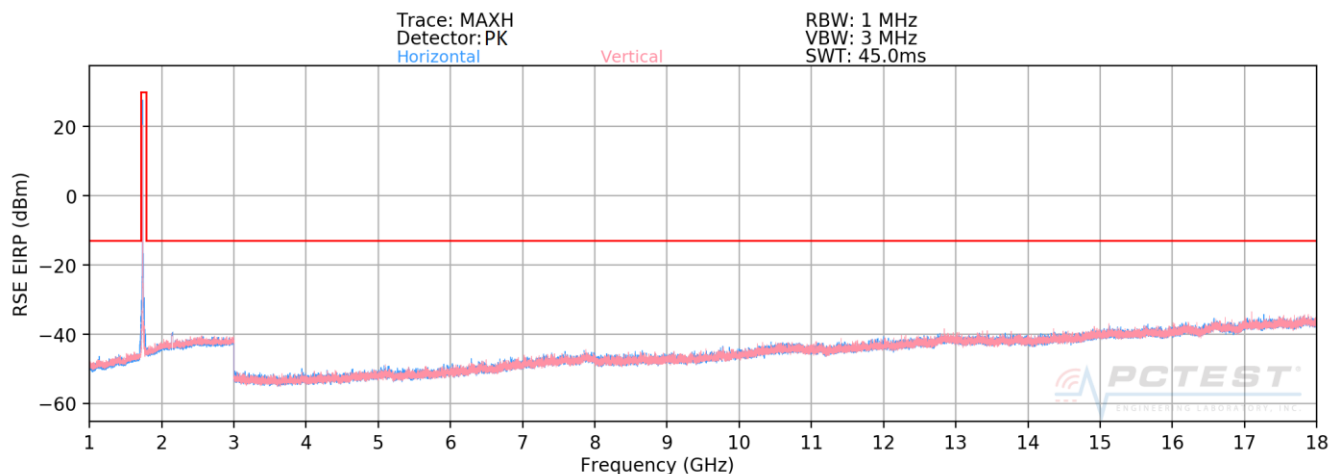
OPERATING FREQUENCY: 844.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-74.10	4.45	-69.65	-56.6
2532.00	H	-	-	-71.58	5.65	-65.92	-52.9
3376.00	H	-	-	-69.70	7.25	-62.45	-49.5

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 284 of 340

Band 66/4



Plot 7-424. 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	H	-	-	-69.41	7.28	-62.14	-49.1
5160.00	H	-	-	-68.90	7.88	-61.03	-48.0
6880.00	H	-	-	-67.31	8.91	-58.39	-45.4

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 285 of 340

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	H	-	-	-69.64	7.30	-62.34	-49.3
5235.00	H	-	-	-68.63	7.73	-60.90	-47.9
6980.00	H	-	-	-67.42	9.15	-58.27	-45.3

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

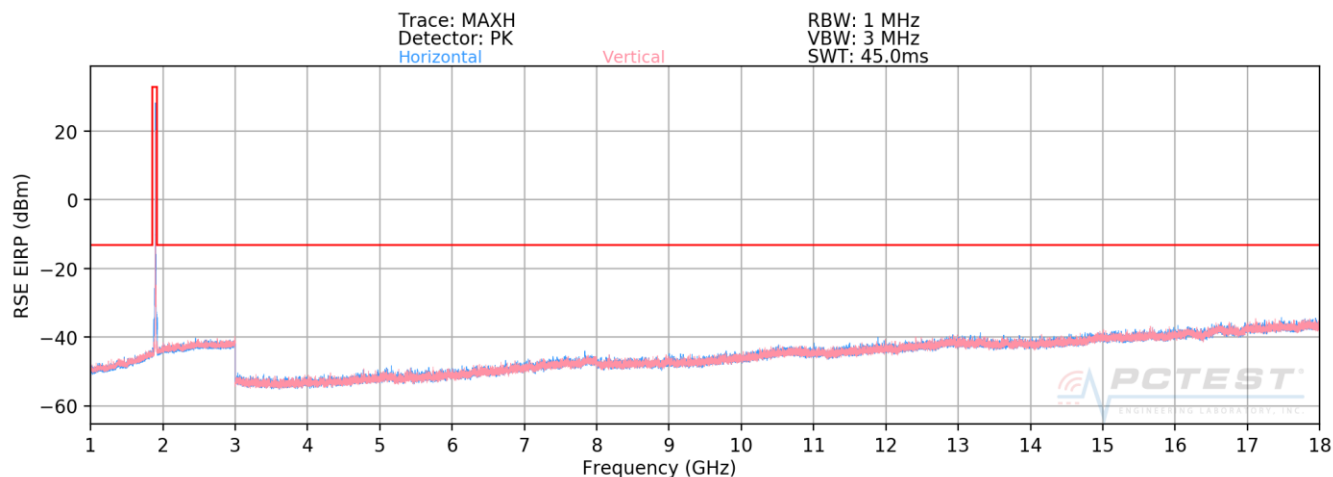
OPERATING FREQUENCY: 1770.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-69.64	7.28	-62.35	-49.4
5310.00	H	-	-	-68.37	7.87	-60.50	-47.5
7080.00	H	-	-	-67.32	9.20	-58.12	-45.1

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 286 of 340

Band 25/2



Plot 7-425. 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	H	-	-	-69.83	7.21	-62.61	-49.6
5580.00	H	-	-	-69.12	8.27	-60.85	-47.8
7440.00	H	-	-	-67.18	9.58	-57.60	-44.6

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 287 of 340

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	H	-	-	-69.93	7.24	-62.68	-49.7
5647.50	H	-	-	-68.77	8.16	-60.61	-47.6
7530.00	H	-	-	-67.15	9.69	-57.46	-44.5

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

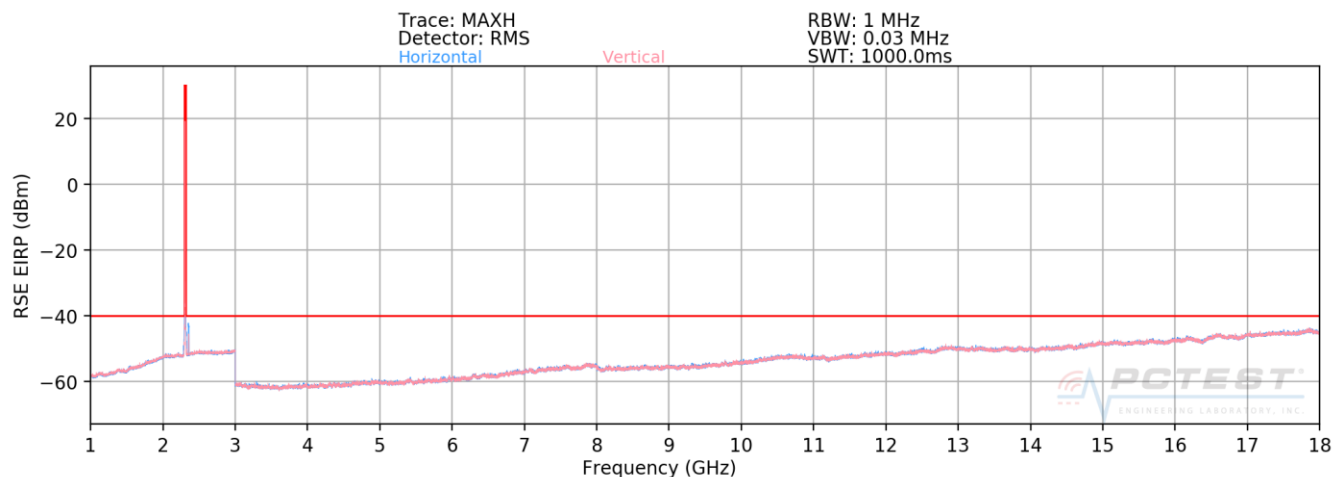
OPERATING FREQUENCY: 1905.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-70.00	7.37	-62.63	-49.6
5715.00	H	-	-	-68.94	8.05	-60.88	-47.9
7620.00	H	-	-	-66.50	9.65	-56.85	-43.8

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 288 of 340

Band 30



Plot 7-426. 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	H	-	-	-68.85	7.81	-61.04	-21.0
6922.50	H	-	-	-67.31	9.02	-58.29	-18.3
9230.00	H	-	-	-66.31	10.50	-55.81	-15.8

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

FCC ID: BCGA2124	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device		Page 289 of 340

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	H	-	-	-68.98	7.80	-61.18	-21.2
6930.00	H	-	-	-67.25	9.03	-58.22	-18.2
9240.00	H	-	-	-66.29	10.50	-55.79	-15.8

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

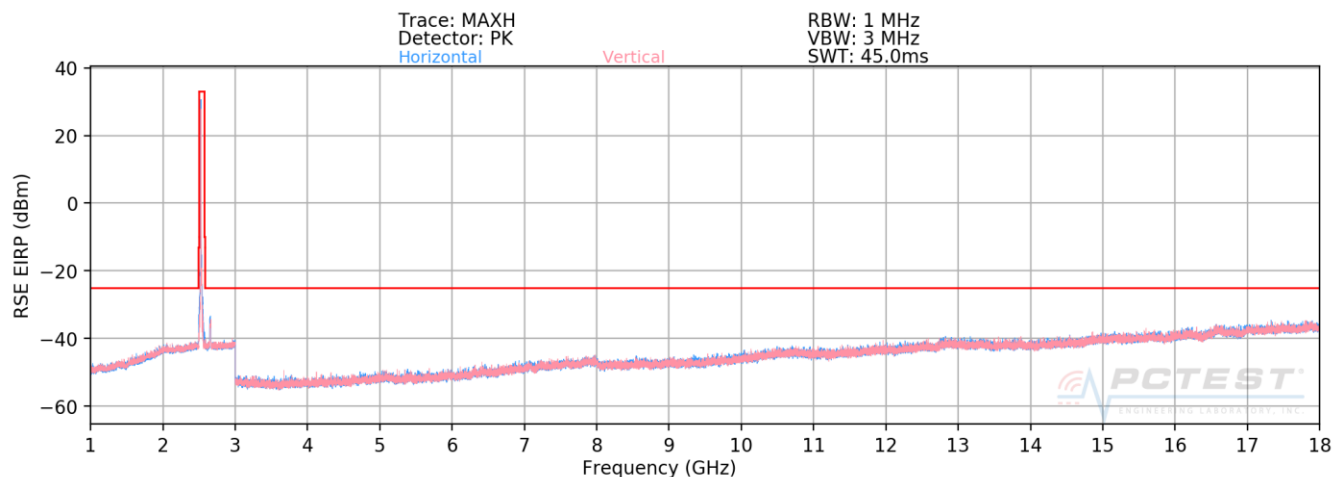
OPERATING FREQUENCY: 2312.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -40 dBm

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	H	-	-	-69.41	7.80	-61.61	-21.6
6937.50	H	-	-	-67.98	9.05	-58.93	-18.9
9250.00	H	-	-	-67.35	10.50	-56.85	-16.8

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 290 of 340

Band 7



Plot 7-427. 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	H	-	-	-69.16	8.16	-61.00	-36.0
7530.00	H	-	-	-67.15	9.69	-57.46	-32.5
10040.00	H	-	-	-66.27	10.48	-55.79	-30.8

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 291 of 340

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	H	-	-	-69.43	8.06	-61.37	-36.4
7605.00	H	-	-	-67.08	9.66	-57.42	-32.4
10140.00	H	-	-	-65.73	10.44	-55.28	-30.3

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

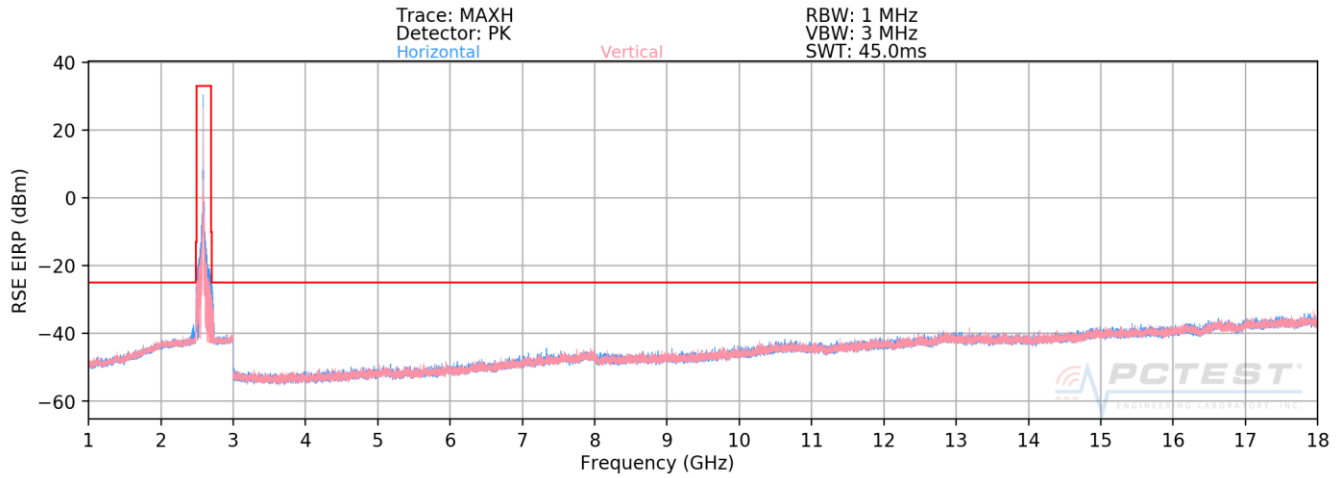
OPERATING FREQUENCY: 2560.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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	H	-	-	-69.64	7.96	-61.68	-36.7
7680.00	H	-	-	-67.42	9.63	-57.79	-32.8
10240.00	H	-	-	-65.82	10.40	-55.41	-30.4

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

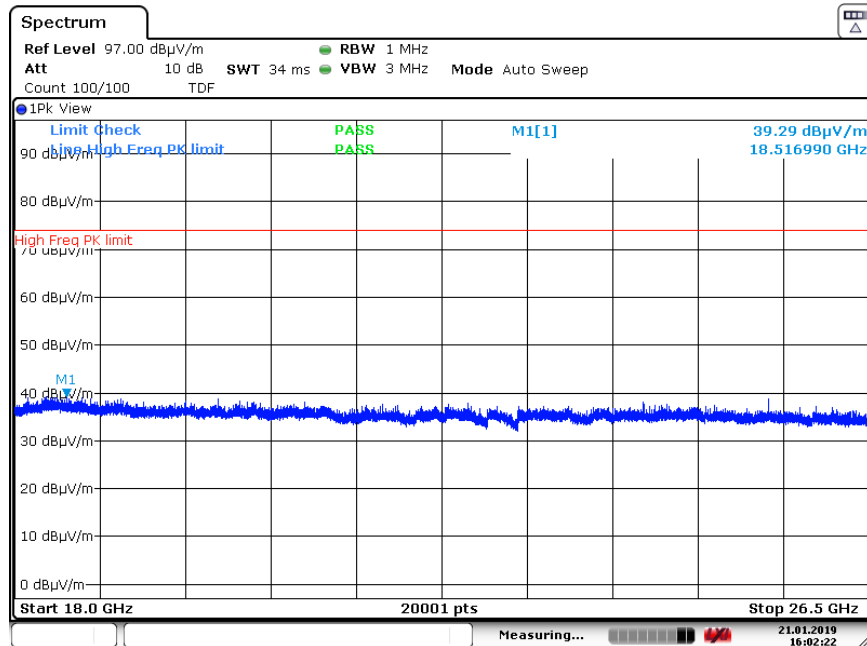
FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 292 of 340

Band 41

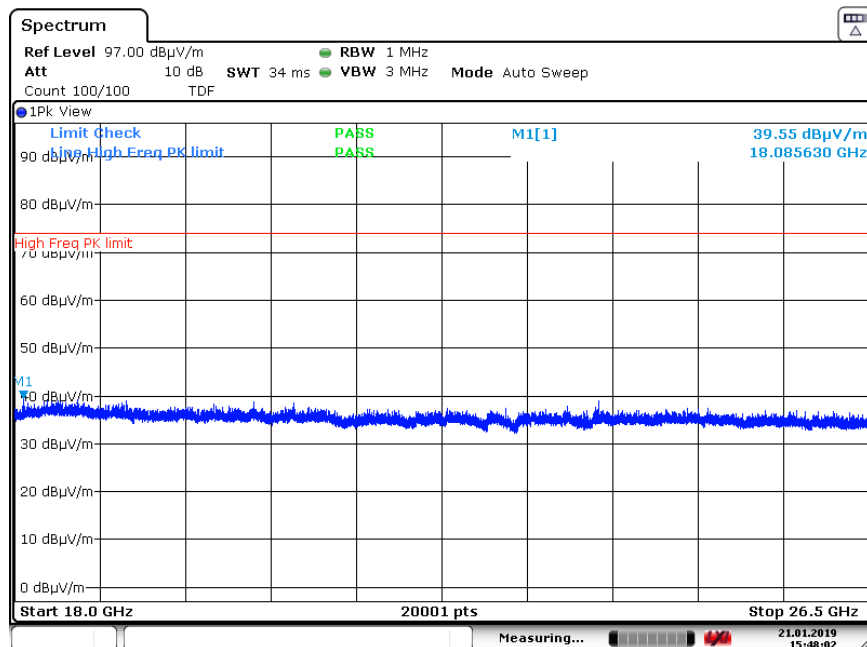


Plot 7-428. Radiated Spurious Plot 1GHz - 18GHz (Band 41)

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 293 of 340



Plot 7-429. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41, Pol. H)



Plot 7-430. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41, Pol. V)

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 294 of 340

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	H	-	-	-59.89	8.18	-51.72	-26.7
7518.00	H	-	-	-57.24	9.69	-47.55	-22.5
10024.00	H	-	-	-56.66	10.49	-46.17	-21.2

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	H	-	-	-59.10	7.83	-51.28	-26.3
7779.00	H	-	-	-56.77	9.66	-47.11	-22.1
10372.00	H	-	-	-54.71	10.30	-44.41	-19.4

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 295 of 340

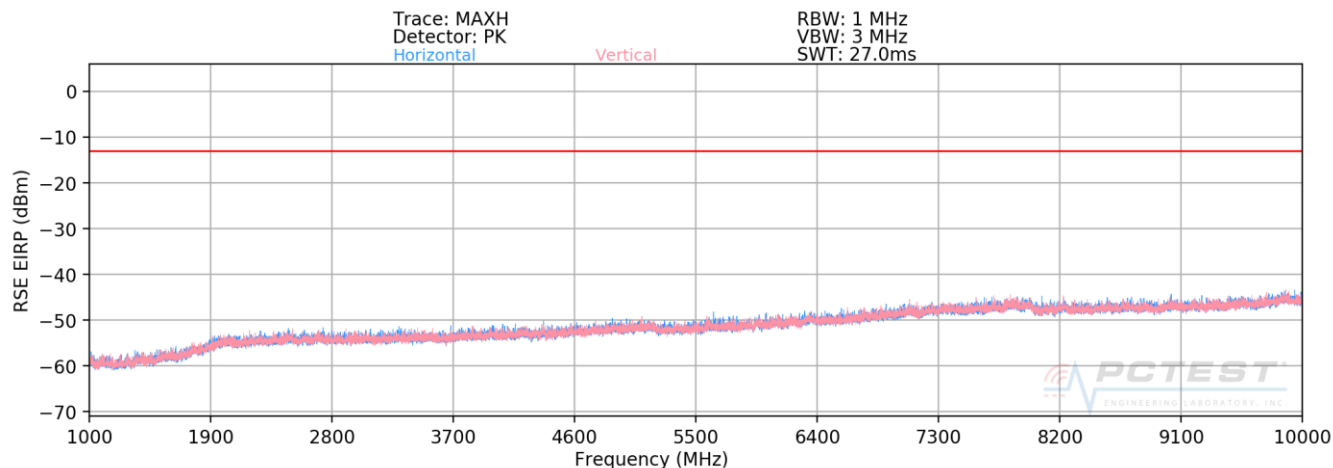
OPERATING FREQUENCY: 2680.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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	H	-	-	-58.94	8.01	-50.93	-25.9
8040.00	H	-	-	-57.81	10.07	-47.74	-22.7
10720.00	H	-	-	-54.76	10.64	-44.12	-19.1

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 296 of 340

7.9.2 ANT WF5 (Port B) Radiated Spurious Emissions Measurements Band 12/17



Plot 7-431. 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	H	-	-	-71.28	3.84	-67.45	-54.4
2112.00	H	-	-	-68.15	4.65	-63.50	-50.5
2816.00	H	-	-	-69.07	6.03	-63.04	-50.0

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 297 of 340

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	H	-	-	-71.34	3.90	-67.45	-54.4
2122.50	H	-	-	-68.05	4.71	-63.34	-50.3
2830.00	H	-	-	-68.95	6.03	-62.92	-49.9

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

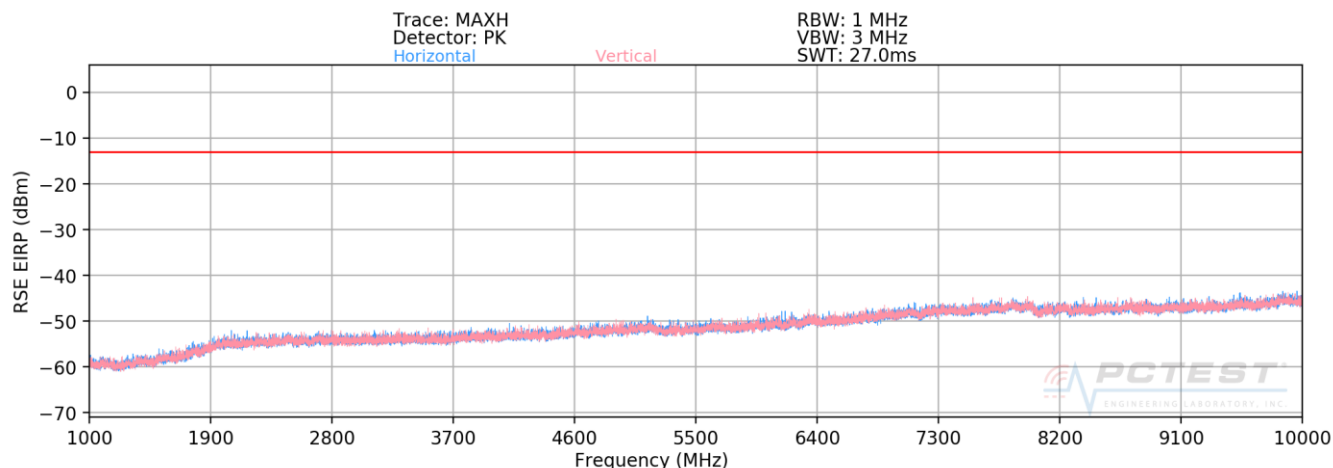
OPERATING FREQUENCY: 711.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-71.38	3.96	-67.42	-54.4
2133.00	H	-	-	-68.13	4.77	-63.37	-50.4
2844.00	H	-	-	-68.95	6.04	-62.91	-49.9

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 298 of 340

Band 13



Plot 7-432. 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	H	-	-	-68.60	5.47	-63.13	-50.1
3118.00	H	-	-	-69.42	6.63	-62.79	-49.8

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

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	H	-	-	-68.63	5.48	-63.15	-50.2
3128.00	H	-	-	-69.59	6.67	-62.92	-49.9

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

FCC ID: BCGA2124	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)				Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device				Page 299 of 340

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	H	-	-	-68.72	5.49	-63.24	-50.2
3138.00	H	-	-	-69.67	6.72	-62.95	-50.0

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

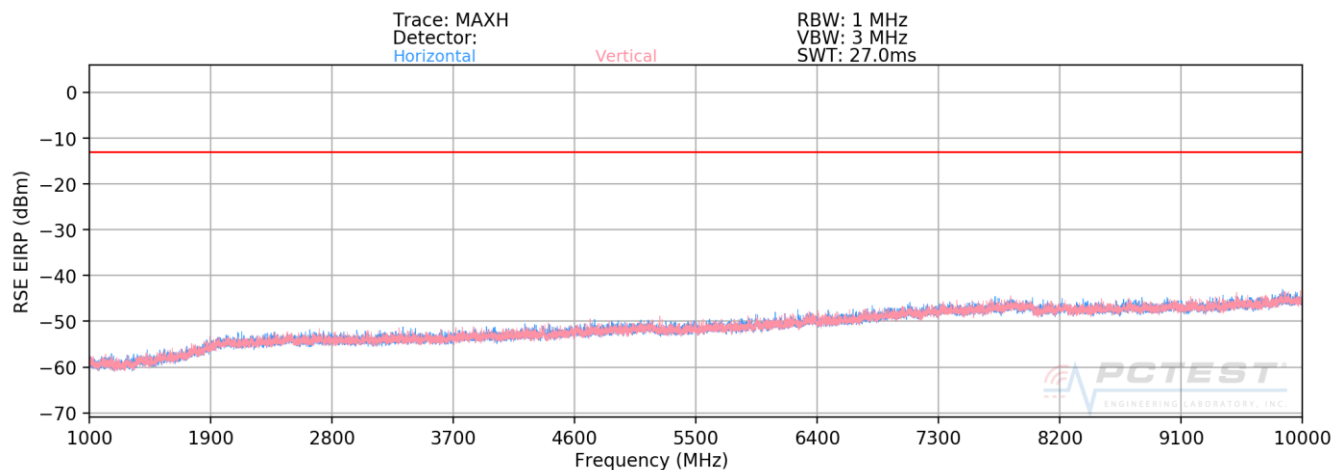
MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.00 MHz
 DISTANCE: 3 meters
 NARROWBAND EMISSION LIMIT: -50 dBm
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

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	H	-	-	-70.47	4.55	-65.92	-25.9
1564.00	H	-	-	-70.49	4.55	-65.94	-25.9
1569.00	H	-	-	-70.57	4.54	-66.03	-26.0

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 300 of 340

Band 26/5



Plot 7-433. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY: 829.00 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]
1658.00	H	-	-	-72.40	4.47	-67.93	-54.9
2487.00	H	-	-	-69.21	5.59	-63.62	-50.6
3316.00	H	-	-	-70.44	7.23	-63.21	-50.2

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 301 of 340

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	H	-	-	-71.09	4.46	-66.63	-53.6
2509.50	H	-	-	-69.37	5.62	-63.76	-50.8
3346.00	H	-	-	-69.97	7.24	-62.73	-49.7

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

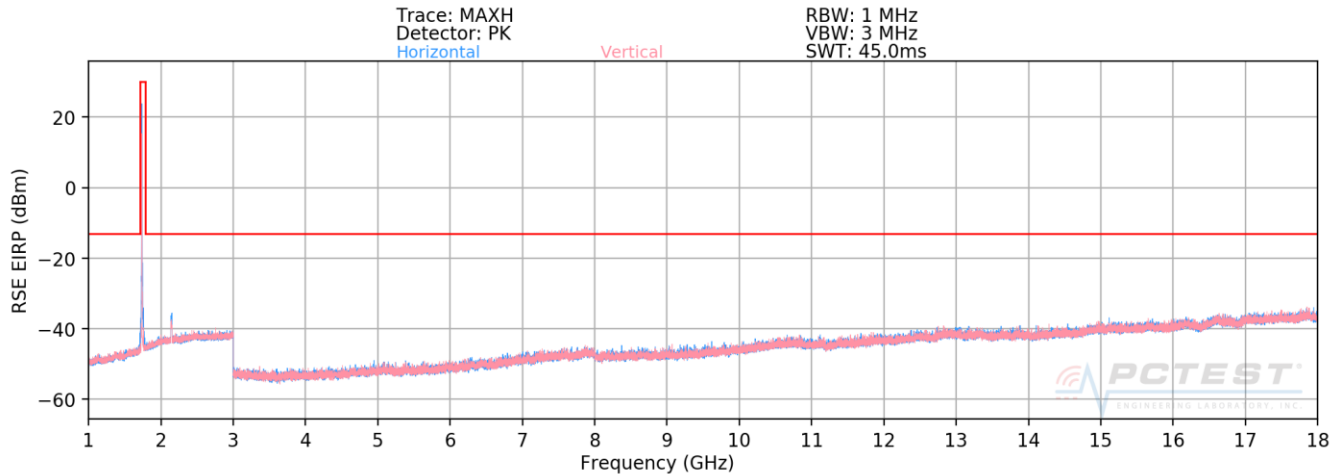
OPERATING FREQUENCY: 844.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-71.01	4.45	-66.56	-53.6
2532.00	H	-	-	-68.80	5.65	-63.14	-50.1
3376.00	H	-	-	-69.97	7.25	-62.72	-49.7

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 302 of 340

Band 66/4



Plot 7-434. 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	H	-	-	-69.81	7.28	-62.54	-49.5
5160.00	H	-	-	-69.36	7.88	-61.49	-48.5
6880.00	H	-	-	-67.79	8.91	-58.87	-45.9

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 303 of 340

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	H	-	-	-70.15	7.30	-62.85	-49.9
5235.00	H	-	-	-69.22	7.73	-61.49	-48.5
6980.00	H	-	-	-68.00	9.15	-58.85	-45.9

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

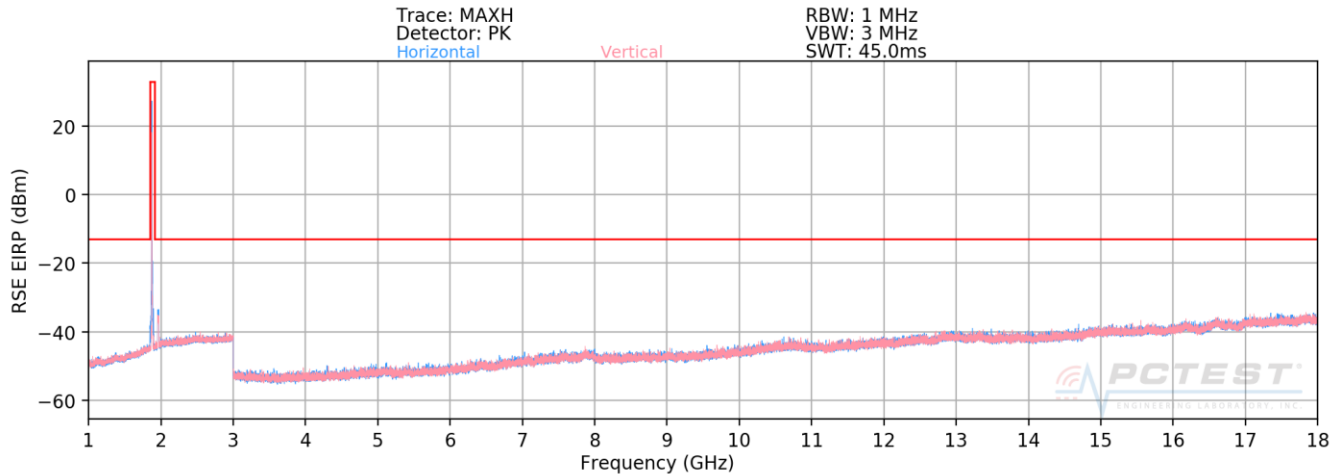
OPERATING FREQUENCY: 1770.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-70.19	7.28	-62.90	-49.9
5310.00	H	-	-	-68.92	7.87	-61.05	-48.0
7080.00	H	-	-	-67.78	9.20	-58.58	-45.6

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 304 of 340

Band 25/2



Plot 7-435. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY: 1860.00 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]
3720.00	H	-	-	-69.98	7.21	-62.76	-49.8
5580.00	H	-	-	-69.28	8.27	-61.01	-48.0
7440.00	H	-	-	-67.46	9.58	-57.88	-44.9

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 305 of 340

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	H	-	-	-69.97	7.24	-62.72	-49.7
5647.50	H	-	-	-69.00	8.16	-60.84	-47.8
7530.00	H	-	-	-67.32	9.69	-57.63	-44.6

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

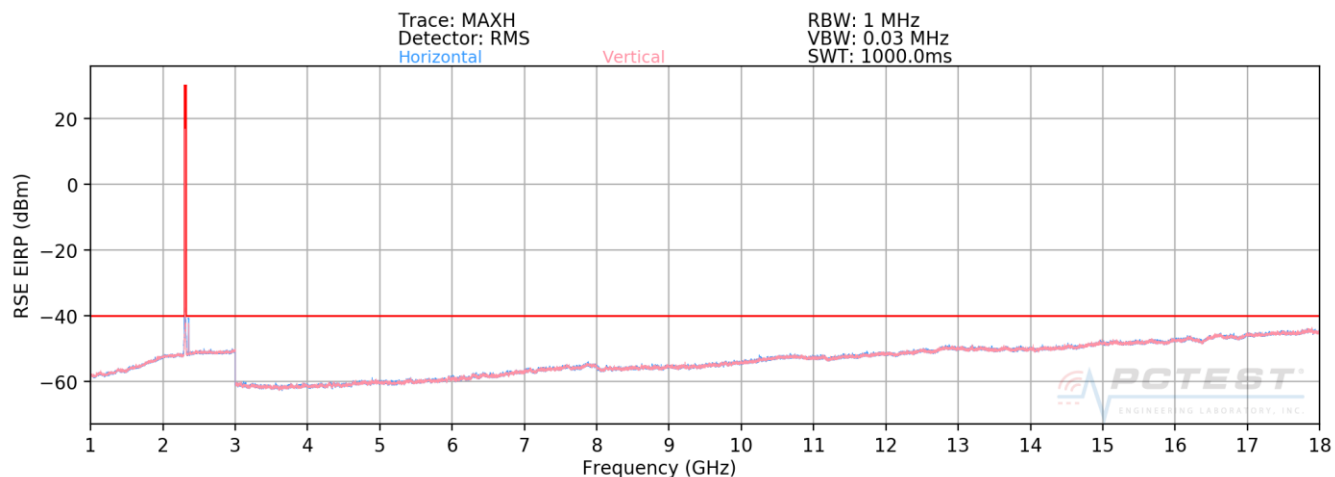
OPERATING FREQUENCY: 1905.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3810.00	H	-	-	-69.95	7.37	-62.58	-49.6
5715.00	H	-	-	-68.95	8.05	-60.89	-47.9
7620.00	H	-	-	-67.42	9.65	-57.77	-44.8

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 306 of 340

Band 30



Plot 7-436. 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	H	-	-	-69.03	7.81	-61.22	-21.2
6922.50	H	-	-	-67.26	9.02	-58.24	-18.2
9230.00	H	-	-	-66.34	10.50	-55.84	-15.8

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 307 of 340

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	H	-	-	-69.03	7.80	-61.23	-21.2
6930.00	H	-	-	-67.30	9.03	-58.27	-18.3
9240.00	H	-	-	-66.00	10.50	-55.50	-15.5

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

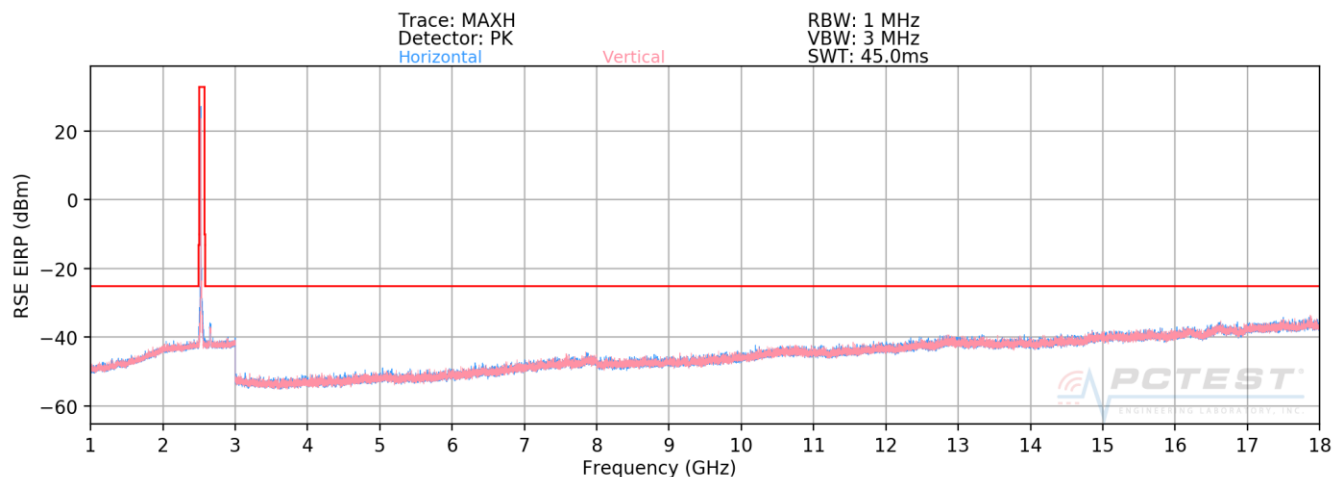
OPERATING FREQUENCY: 2312.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -40 dBm

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	H	-	-	-68.96	7.80	-61.16	-21.2
6937.50	H	-	-	-67.35	9.05	-58.30	-18.3
9250.00	H	-	-	-66.43	10.50	-55.93	-15.9

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 308 of 340

Band 7



Plot 7-437. 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	H	-	-	-69.28	8.16	-61.12	-36.1
7530.00	H	-	-	-67.16	9.69	-57.47	-32.5
10040.00	H	-	-	-66.44	10.48	-55.96	-31.0

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 309 of 340

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	H	-	-	-68.77	8.06	-60.71	-35.7
7605.00	H	-	-	-66.45	9.66	-56.79	-31.8
10140.00	H	-	-	-64.86	10.44	-54.41	-29.4

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

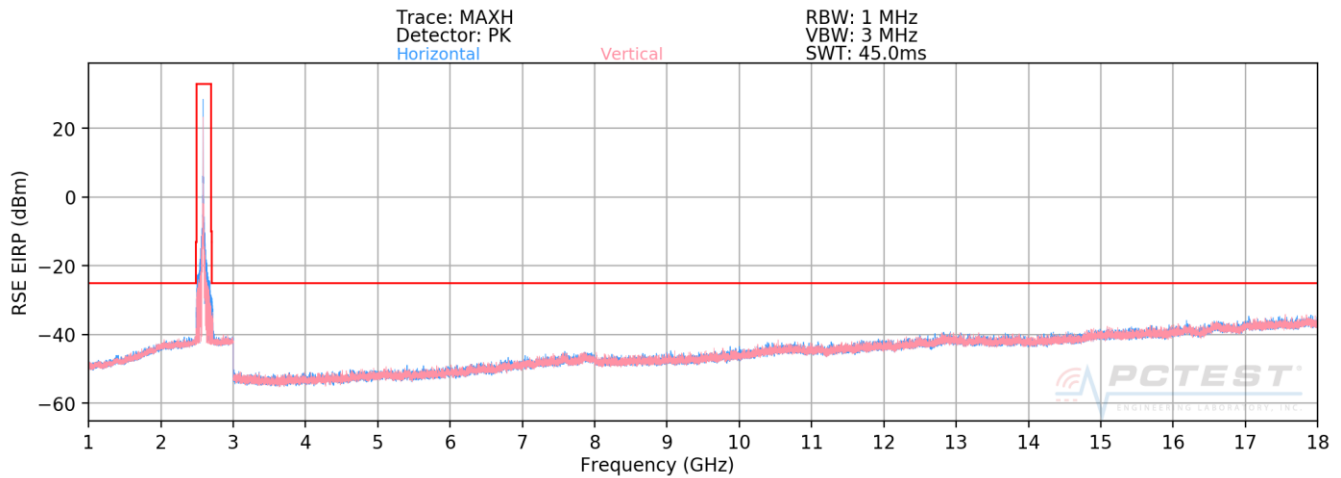
OPERATING FREQUENCY: 2560.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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	H	-	-	-69.60	7.96	-61.64	-36.6
7680.00	H	-	-	-67.51	9.63	-57.88	-32.9
10240.00	H	-	-	-65.82	10.40	-55.41	-30.4

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 310 of 340

Band 41



Plot 7-438. Radiated Spurious Plot 1GHz - 18GHz (Band 41)

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	H	-	-	-60.07	8.18	-51.90	-26.9
7518.00	H	-	-	-57.64	9.69	-47.95	-22.9
10024.00	H	-	-	-56.94	10.49	-46.45	-21.5

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

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 311 of 340

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	H	-	-	-59.07	7.83	-51.25	-26.2
7779.00	H	-	-	-57.50	9.66	-47.84	-22.8
10372.00	H	-	-	-54.63	10.30	-44.33	-19.3

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	H	-	-	-59.16	8.01	-51.15	-26.1
8040.00	H	-	-	-57.19	10.07	-47.12	-22.1
10720.00	H	-	-	-54.43	10.64	-43.79	-18.8

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 312 of 340

7.10 Uplink Carrier Aggregation Radiated Measurements

§2.1053, §27.53(m)

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 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-D-2010 – Section 2.2.12

Test Settings

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 313 of 340

Test Setup

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

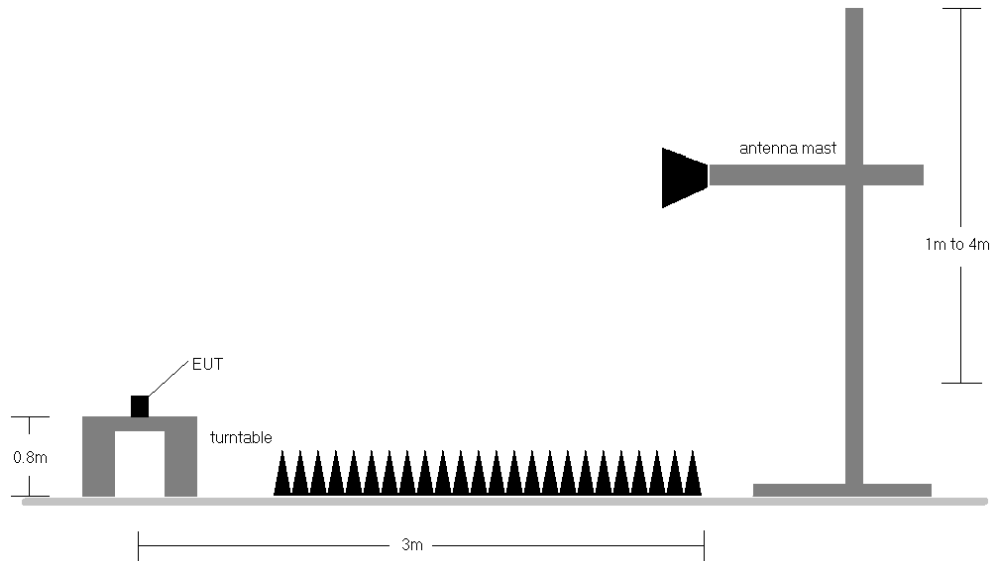


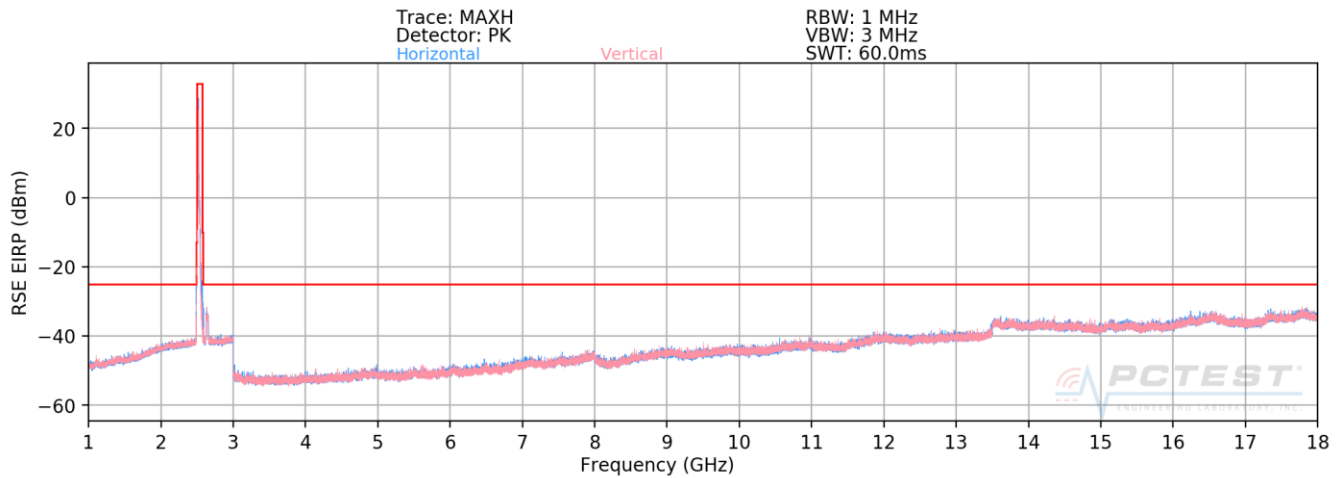
Figure 7-9. Test Instrument & Measurement Setup

Test Notes

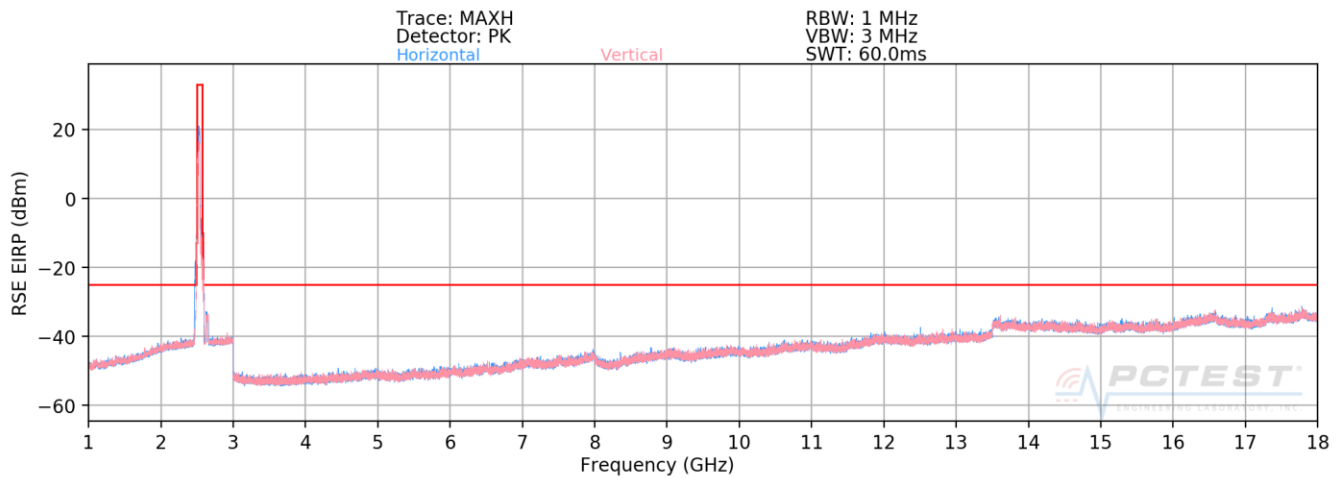
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) 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: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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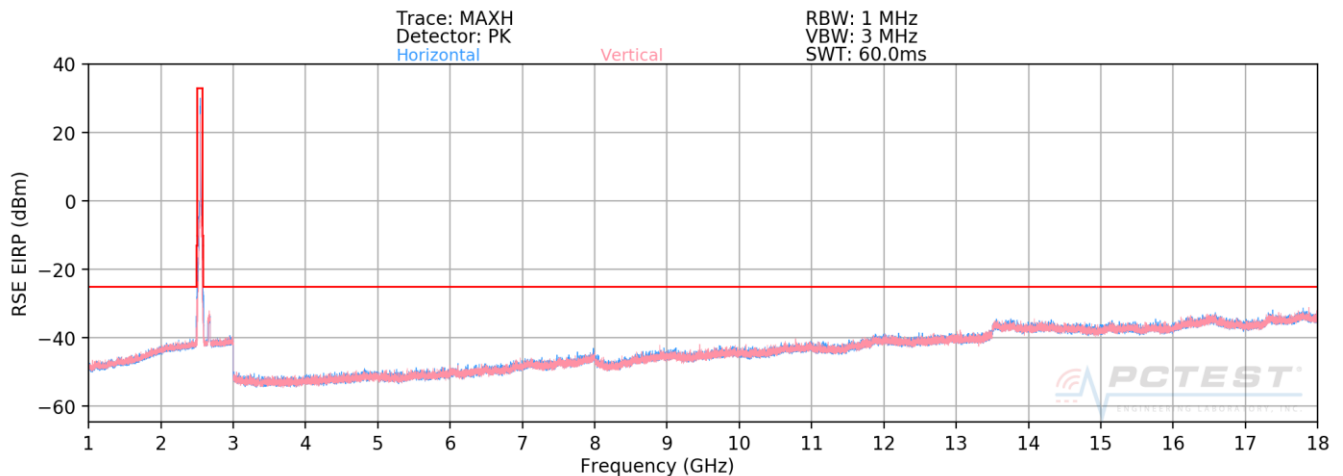
Band 7



Plot 7-439. Radiated Spurious Plot (ULCA B7 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

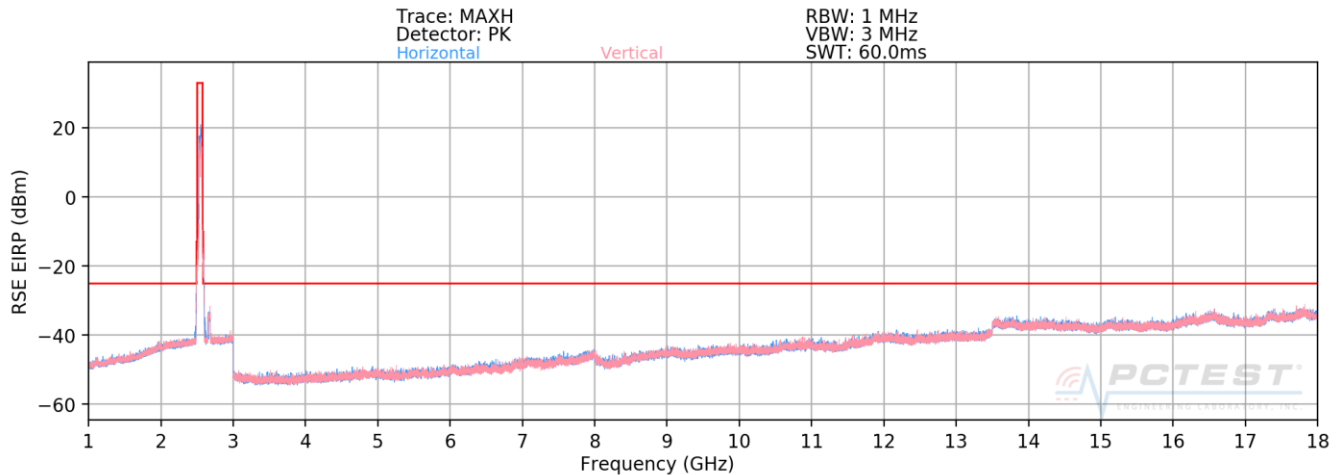


Plot 7-440. Radiated Spurious Plot (ULCA B7 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)

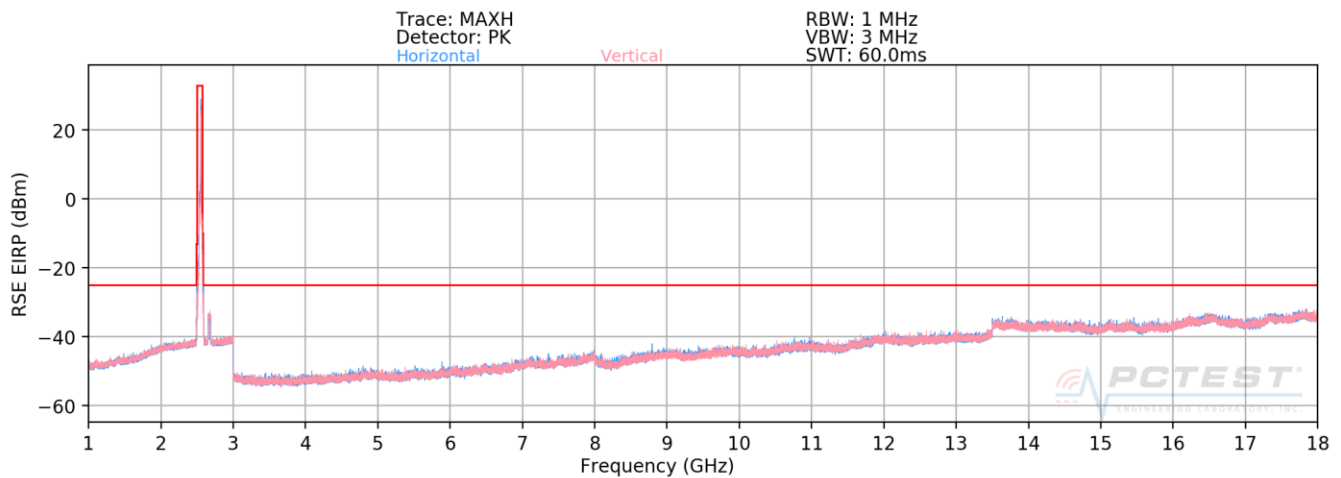


Plot 7-441. Radiated Spurious Plot (ULCA B7 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – Mid Channel)

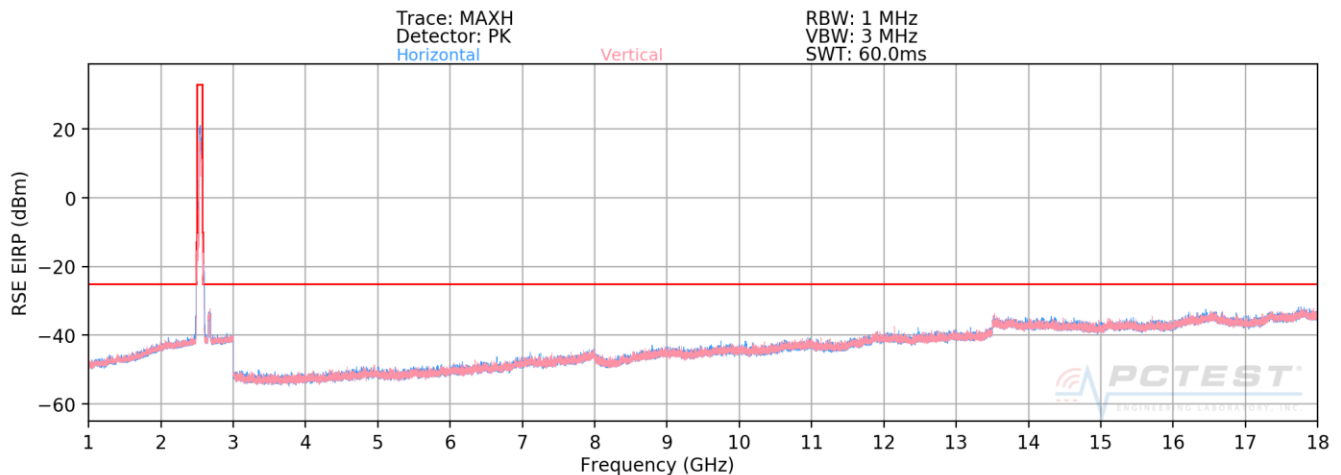
FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 315 of 340



Plot 7-442. Radiated Spurious Plot (ULCA B7 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel)



Plot 7-443. Radiated Spurious Plot (ULCA B7 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)



Plot 7-444. Radiated Spurious Plot (ULCA B7 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel)

FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY (PCC): 2510.00 MHz
 OPERATING FREQUENCY (SCC): 2529.80 MHz
 CHANNEL (PCC): 20850
 CHANNEL (SCC): 21048
 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	H	-	-	-68.36	8.16	-60.20	-60.2
7530.00	H	-	-	-66.22	9.69	-56.53	-56.5
10040.00	H	-	-	-63.87	10.48	-53.38	-53.4

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
 CHANNEL (PCC): 21100
 CHANNEL (SCC): 21298
 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	H	-	-	-68.37	8.06	-60.31	-60.3
7605.00	H	-	-	-66.48	9.66	-56.83	-56.8
10140.00	H	-	-	-64.42	10.44	-53.98	-54.0

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 317 of 340

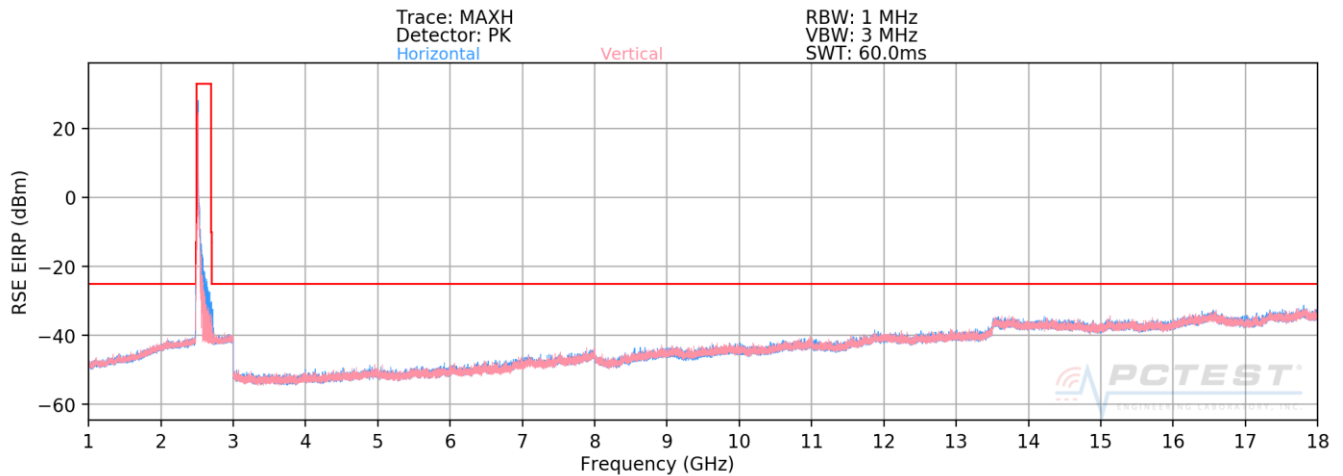
OPERATING FREQUENCY (PCC):	2560.00	MHz
OPERATING FREQUENCY (SCC):	2540.20	MHz
CHANNEL (PCC):	21350	
CHANNEL (SCC):	21152	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

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	H	-	-	-68.51	7.96	-60.55	-60.5
7680.00	H	-	-	-66.36	9.63	-56.73	-56.7
10240.00	H	-	-	-64.20	10.40	-53.79	-53.8

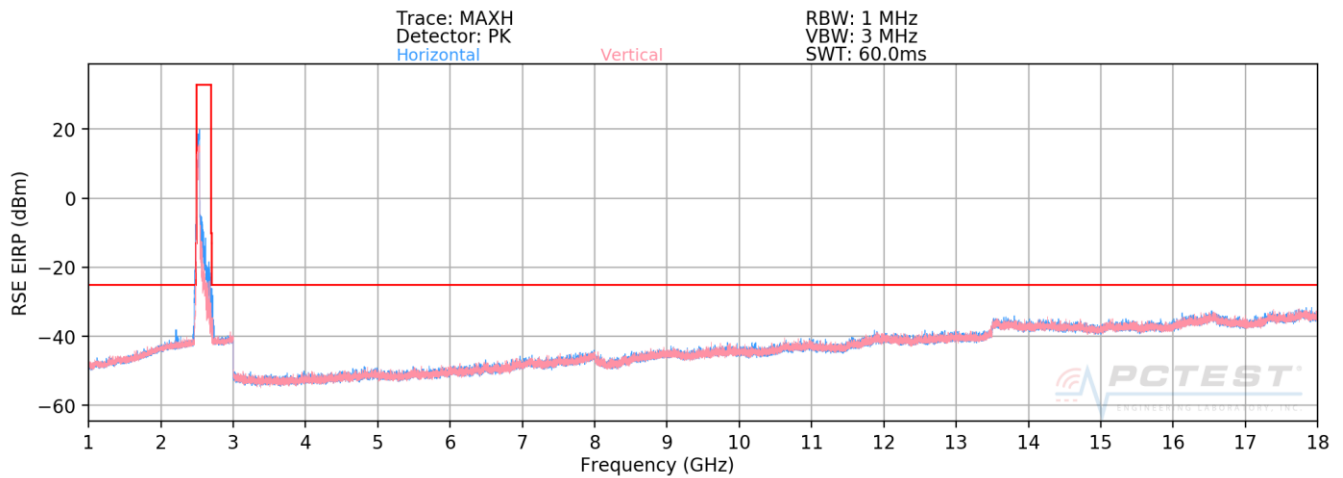
Table 7-92. Radiated Spurious Data (ULCA B7 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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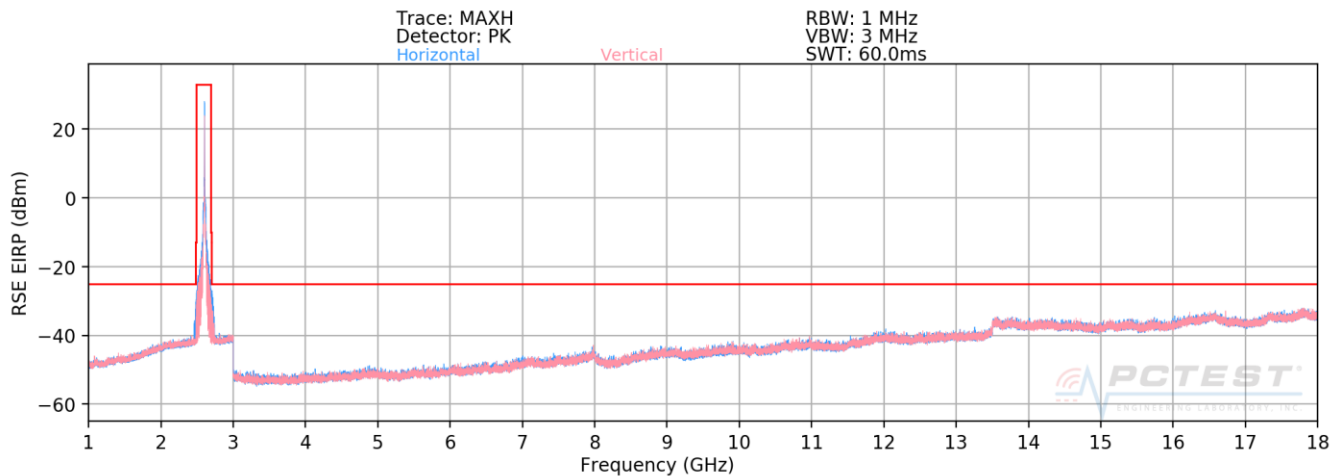
Band 41



Plot 7-445. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

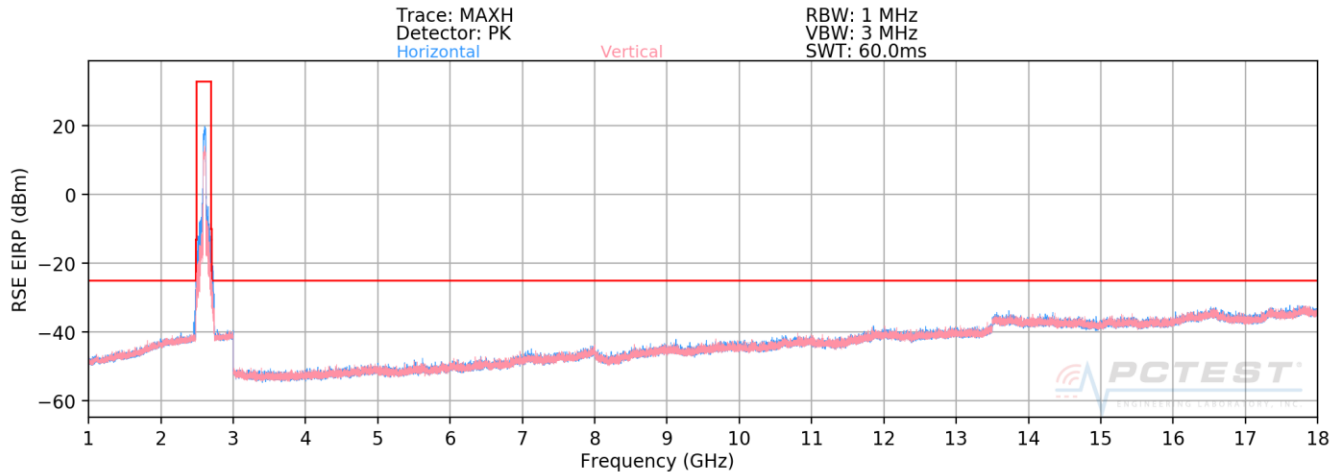


Plot 7-446. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)

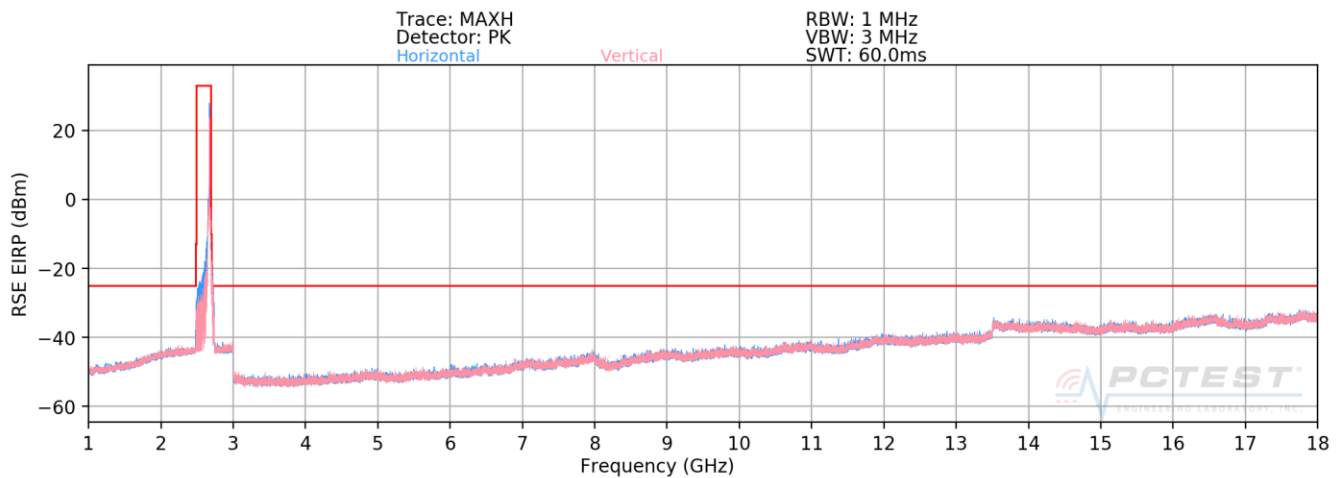


Plot 7-447. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – Mid Channel)

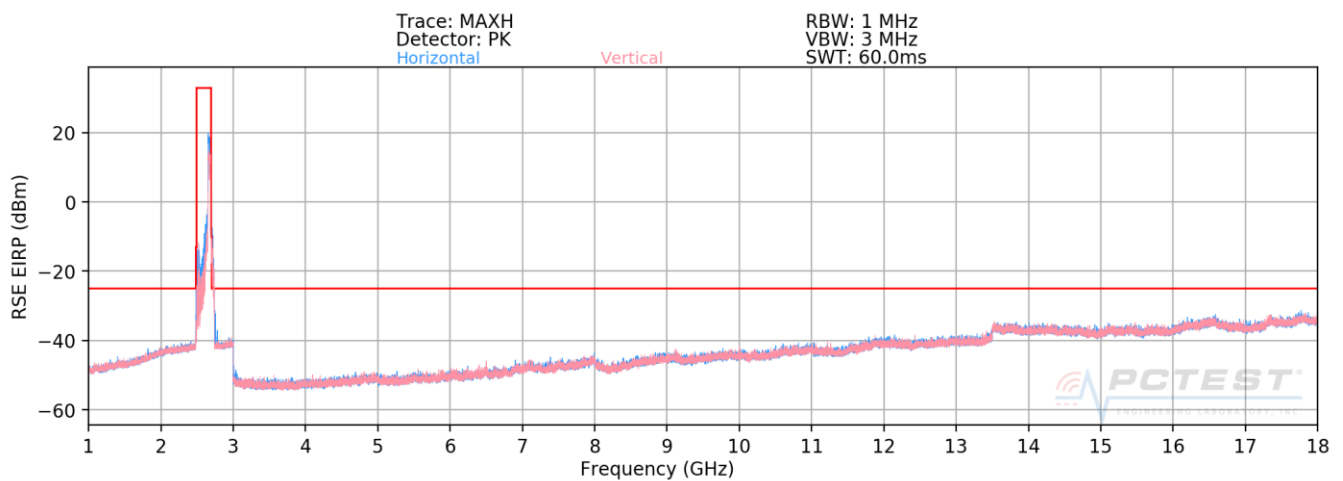
FCC ID: BCGA2124	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Plot 7-448. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel)



Plot 7-449. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)



Plot 7-450. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel)

FCC ID: BCGA2124	PCTEST ENGINEERING LABORATORY, INC.		MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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OPERATING FREQUENCY (PCC): 2506.00 MHz
 OPERATING FREQUENCY (SCC): 2525.80 MHz
 CHANNEL (PCC): 39750
 CHANNEL (SCC): 39948
 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	H	-	-	-58.98	8.18	-50.80	-50.8
7518.00	H	-	-	-56.66	9.69	-46.97	-47.0
10024.00	H	-	-	-54.02	10.49	-43.53	-43.5

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
 CHANNEL (PCC): 40620
 CHANNEL (SCC): 40818
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: 0 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	H	-	-	-58.27	7.83	-50.45	-50.4
7779.00	H	-	-	-56.85	9.61	-47.24	-47.2
10372.00	H	-	-	-54.64	10.40	-44.24	-44.2

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY (PCC):	2680.00	MHz
OPERATING FREQUENCY (SCC):	2660.20	MHz
CHANNEL (PCC):	41490	
CHANNEL (SCC):	41292	
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	H	-	-	-59.33	8.01	-51.32	-51.3
8040.00	H	-	-	-56.27	9.94	-46.33	-46.3
10720.00	H	-	-	-53.44	10.22	-43.22	-43.2

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

FCC ID: BCGA2124	 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 $\pm 0.00025\%$ (± 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	707,500,005	5	0.0000007
100 %		- 20	707,500,004	4	0.0000006
100 %		- 10	707,500,005	5	0.0000008
100 %		0	707,500,005	5	0.0000008
100 %		+ 10	707,500,005	5	0.0000007
100 %		+ 20	707,500,004	4	0.0000006
100 %		+ 30	707,500,005	5	0.0000006
100 %		+ 40	707,500,003	3	0.0000004
100 %		+ 50	707,500,004	4	0.0000005
BATT. ENDPOINT	3.40	+ 20	707,500,003	3	0.0000005

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.

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12 Frequency Stability Measurements

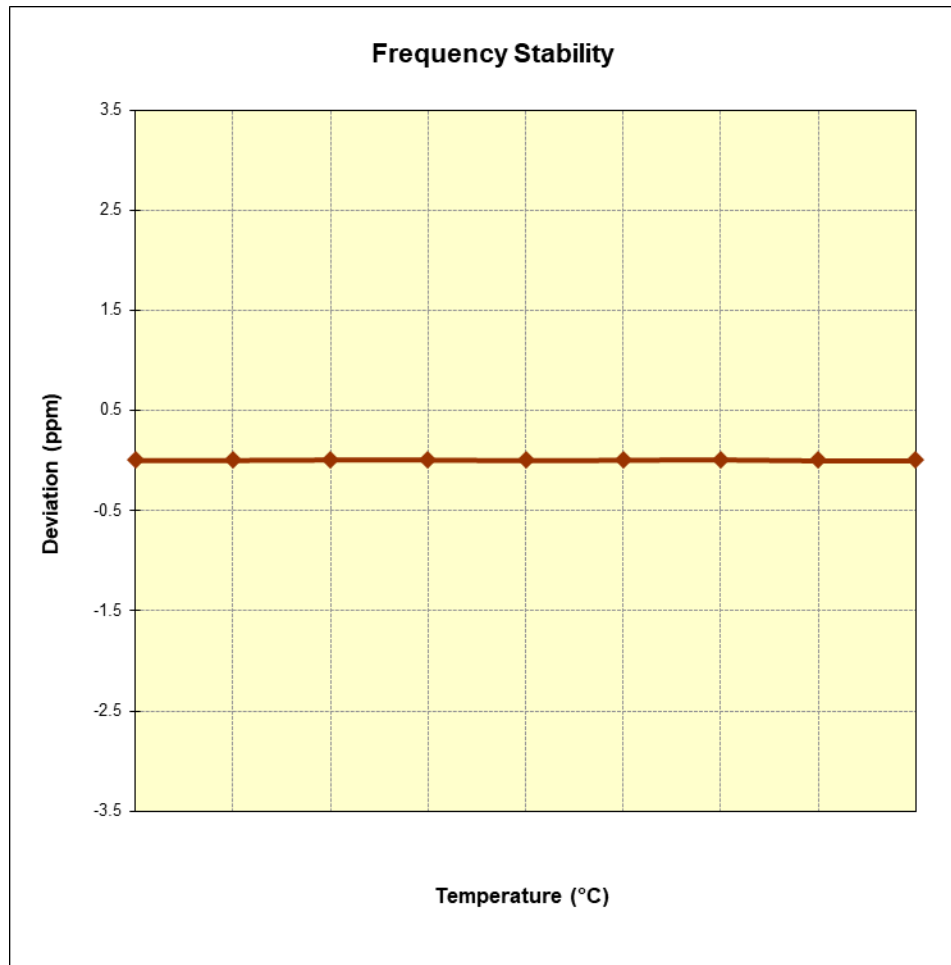


Figure 7-10. Frequency Stability Graph (Band 12/17)

FCC ID: BCGA2124	 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	782,000,005	5	0.0000007
100 %		- 20	782,000,005	5	0.0000007
100 %		- 10	782,000,006	6	0.0000008
100 %		0	782,000,006	6	0.0000008
100 %		+ 10	782,000,005	5	0.0000006
100 %		+ 20	782,000,006	6	0.0000007
100 %		+ 30	782,000,007	7	0.0000008
100 %		+ 40	782,000,004	4	0.0000006
100 %		+ 50	782,000,004	4	0.0000005
BATT. ENDPOINT	3.40	+ 20	782,000,004	4	0.0000005

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: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 13 Frequency Stability Measurements

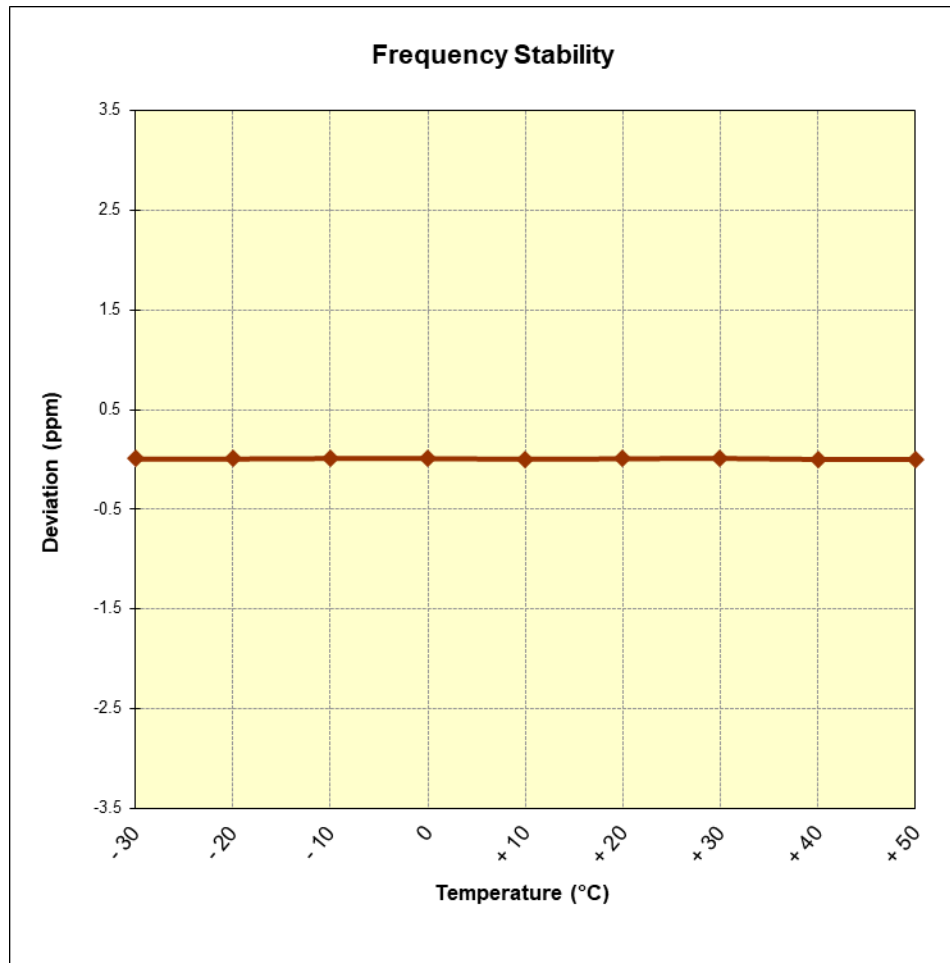


Figure 7-11. Frequency Stability Graph (Band 13)

FCC ID: BCGA2124	 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

REFERENCE VOLTAGE: 3.80 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	831,500,006	6	0.0000007
100 %		- 20	831,500,006	6	0.0000007
100 %		- 10	831,500,005	5	0.0000006
100 %		0	831,500,005	5	0.0000006
100 %		+ 10	831,500,005	5	0.0000006
100 %		+ 20	831,500,006	6	0.0000007
100 %		+ 30	831,500,005	5	0.0000006
100 %		+ 40	831,500,003	3	0.0000004
100 %		+ 50	831,500,003	3	0.0000003
BATT. ENDPOINT	3.40	+ 20	831,500,004	4	0.0000004

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 26/5 Frequency Stability Measurements

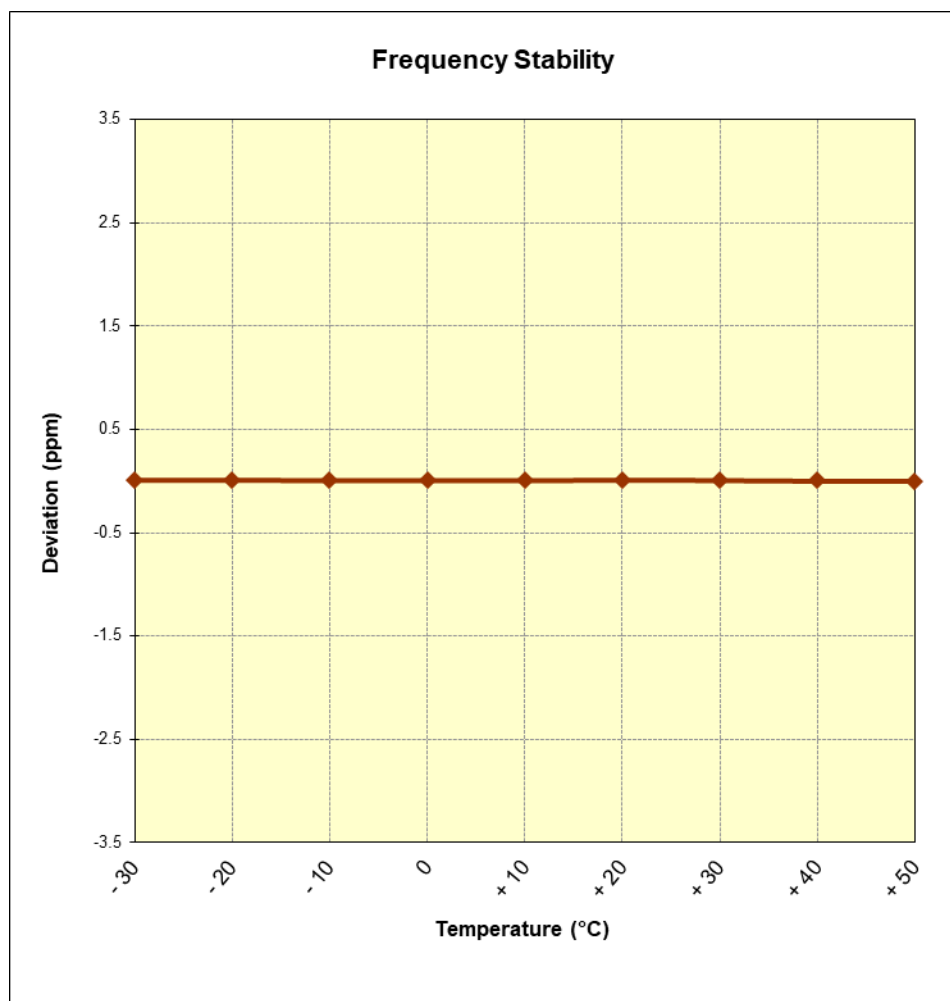


Figure 7-12. Frequency Stability Graph (Band 26/5)

FCC ID: BCGA2124	 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	1,745,000,004	4	0.0000002
100 %		- 20	1,745,000,004	4	0.0000002
100 %		- 10	1,745,000,003	3	0.0000002
100 %		0	1,745,000,004	4	0.0000002
100 %		+ 10	1,745,000,005	5	0.0000003
100 %		+ 20	1,745,000,004	4	0.0000002
100 %		+ 30	1,745,000,004	4	0.0000003
100 %		+ 40	1,745,000,003	3	0.0000002
100 %		+ 50	1,745,000,002	2	0.0000001
BATT. ENDPOINT	3.40	+ 20	1,745,000,002	2	0.0000001

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: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

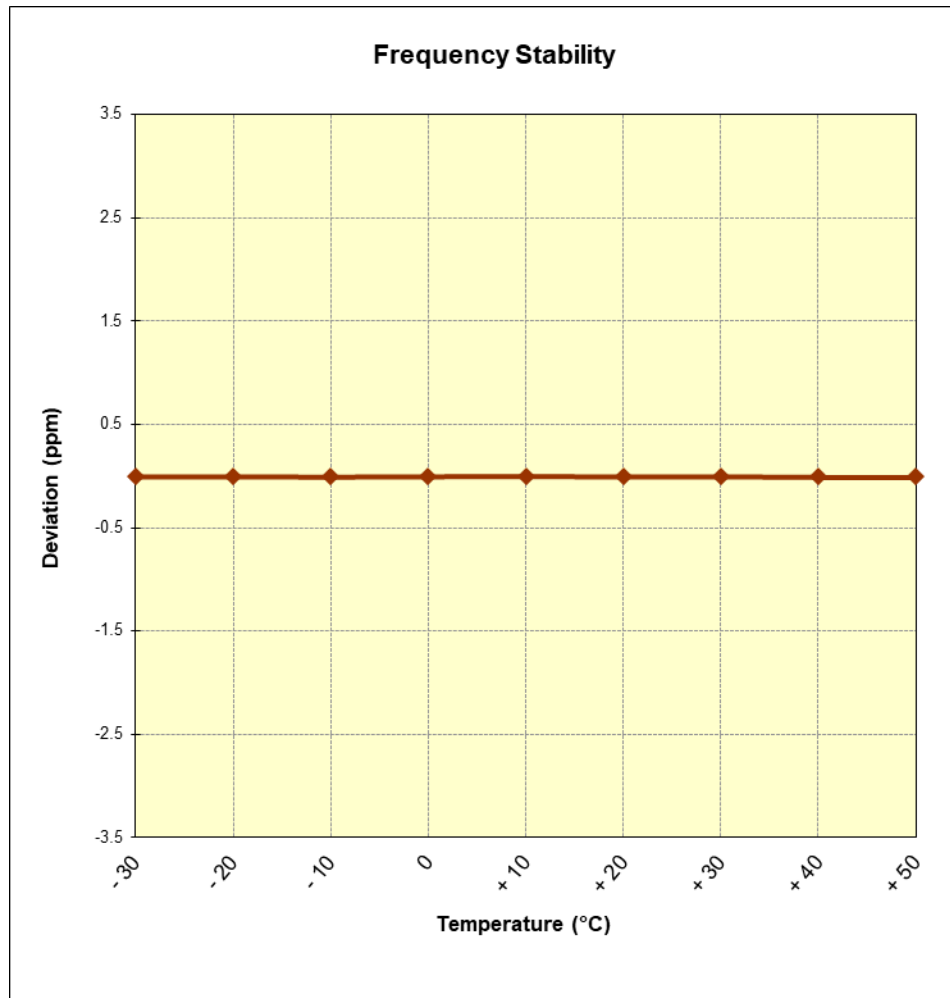


Figure 7-13. Frequency Stability Graph (Band 66/4)

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 331 of 340

Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz

CHANNEL: 26365

REFERENCE VOLTAGE: 3.80 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	1,882,500,004	4	0.0000002
100 %		- 20	1,882,500,006	6	0.0000003
100 %		- 10	1,882,500,005	5	0.0000002
100 %		0	1,882,500,004	4	0.0000002
100 %		+ 10	1,882,500,005	5	0.0000003
100 %		+ 20	1,882,500,004	4	0.0000002
100 %		+ 30	1,882,500,005	5	0.0000003
100 %		+ 40	1,882,500,003	3	0.0000001
100 %		+ 50	1,882,500,004	4	0.0000002
BATT. ENDPOINT	3.40	+ 20	1,882,500,001	1	0.0000000

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

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 25/2 Frequency Stability Measurements

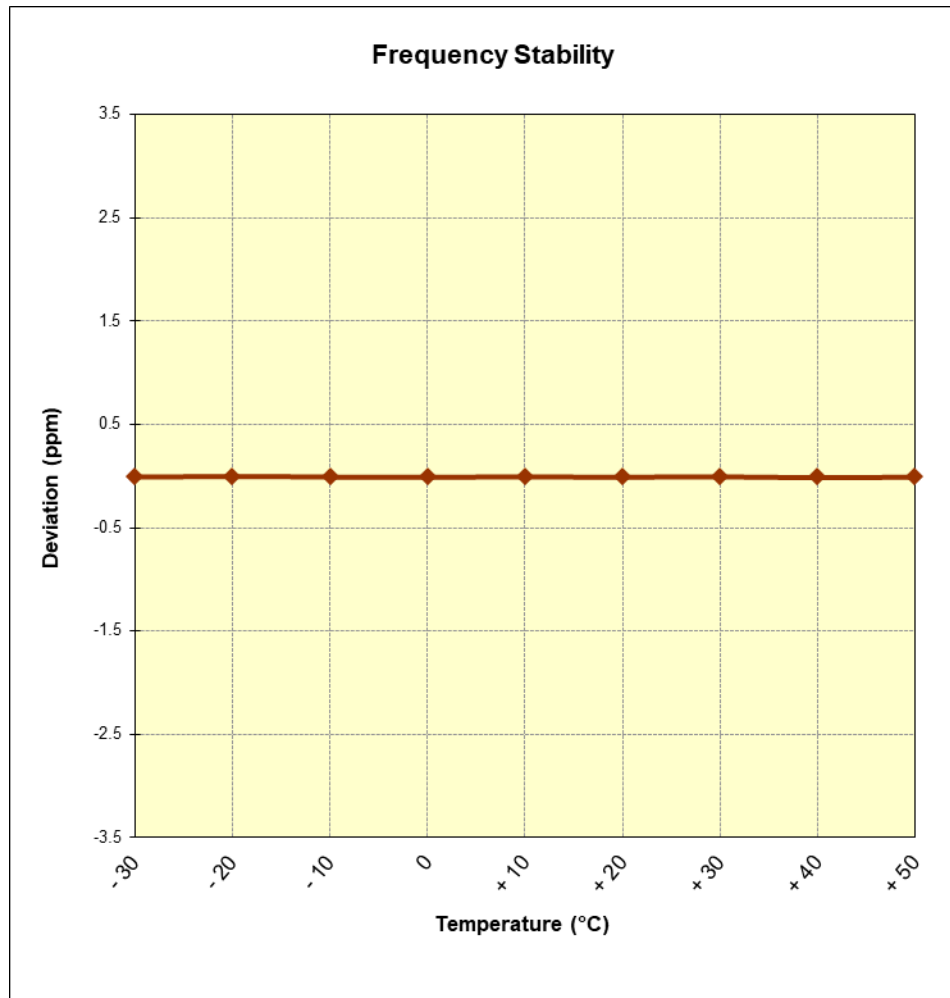


Figure 7-14. Frequency Stability Graph (Band 25/2)

FCC ID: BCGA2124	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1C1811080027-03-R1.BCG	Test Dates: 12/19/2018-02/07/2019	EUT Type: Tablet Device	Page 333 of 340

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	2,310,000,007	7	0.0000003
100 %		- 20	2,310,000,006	6	0.0000003
100 %		- 10	2,310,000,006	6	0.0000003
100 %		0	2,310,000,004	4	0.0000002
100 %		+ 10	2,310,000,005	5	0.0000002
100 %		+ 20	2,310,000,004	4	0.0000002
100 %		+ 30	2,310,000,005	5	0.0000002
100 %		+ 40	2,310,000,004	4	0.0000002
100 %		+ 50	2,310,000,004	4	0.0000002
BATT. ENDPOINT	3.40	+ 20	2,310,000,003	3	0.0000001

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

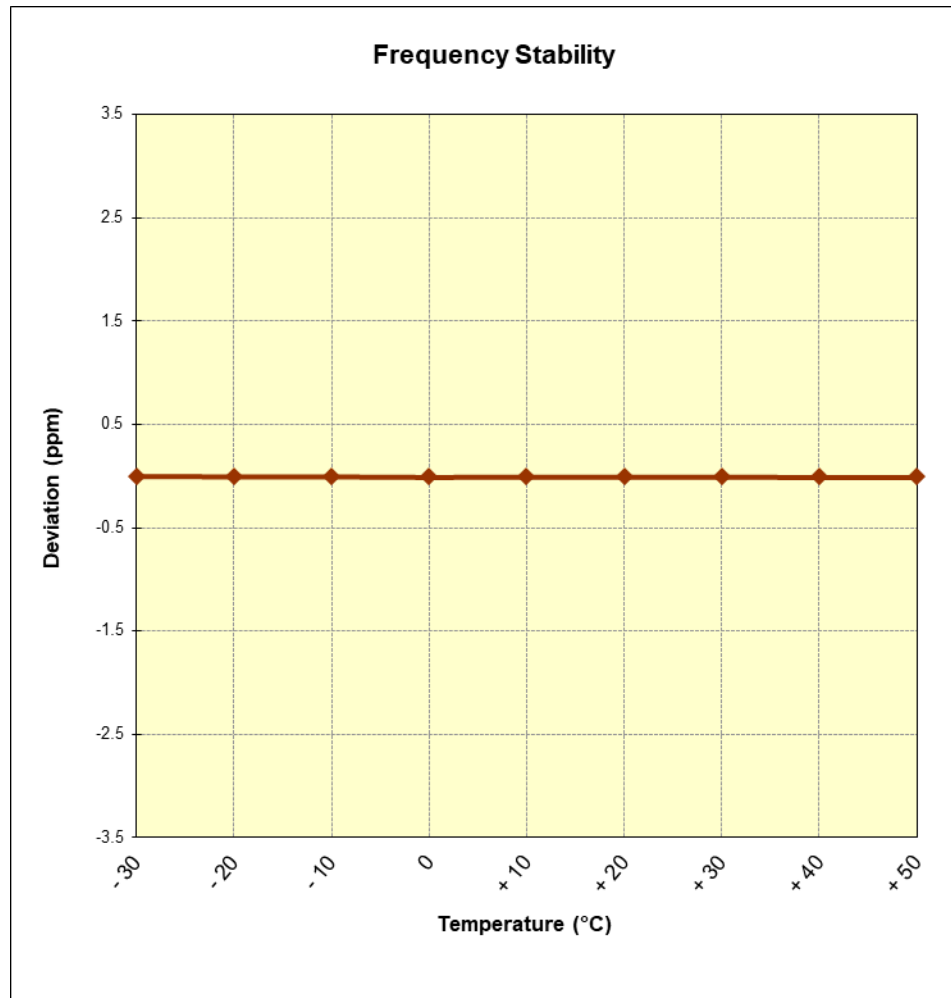


Figure 7-15. Frequency Stability Graph (Band 30)

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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)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	- 30	2,535,000,007	7	0.0000003
100 %		- 20	2,535,000,006	6	0.0000002
100 %		- 10	2,535,000,004	4	0.0000002
100 %		0	2,535,000,005	5	0.0000002
100 %		+ 10	2,535,000,005	5	0.0000002
100 %		+ 20	2,535,000,006	6	0.0000002
100 %		+ 30	2,535,000,004	4	0.0000002
100 %		+ 40	2,535,000,004	4	0.0000002
100 %		+ 50	2,535,000,003	3	0.0000001
BATT. ENDPOINT	3.40	+ 20	2,535,000,001	1	0.0000000

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

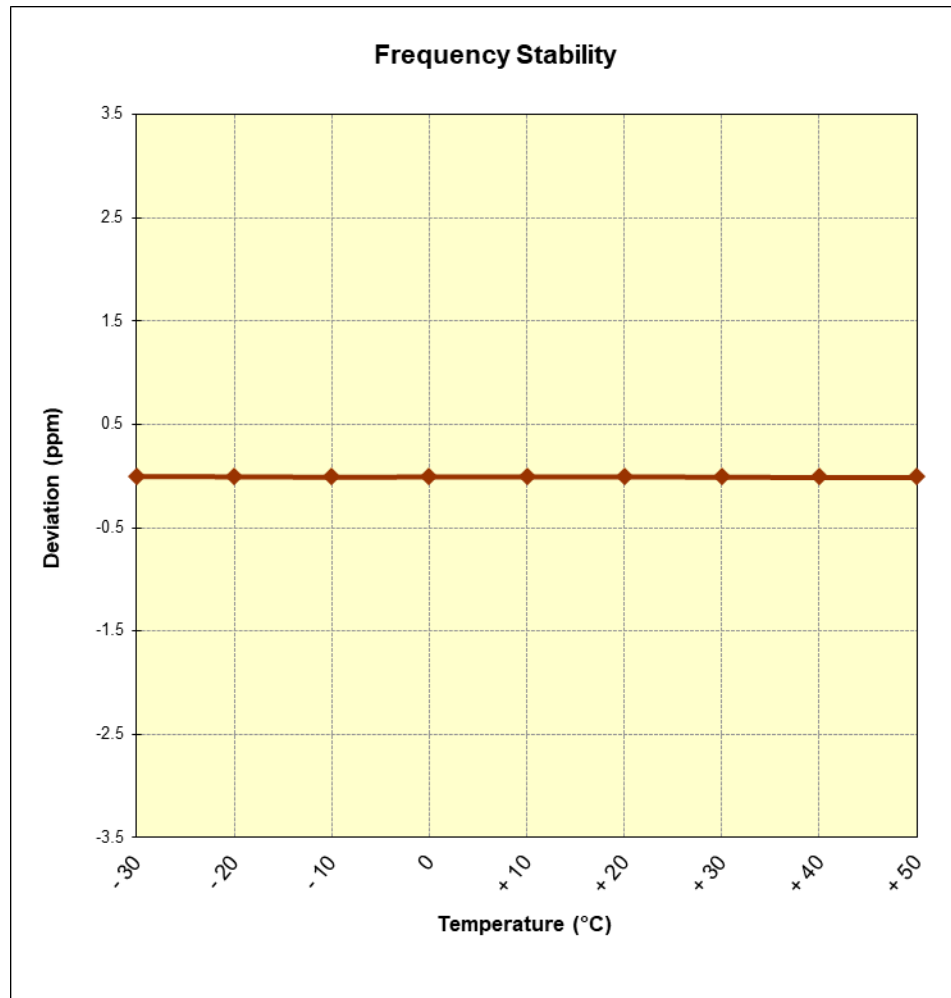


Figure 7-16. Frequency Stability Graph (Band 7)

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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	2,593,000,007	7	0.0000003
100 %		- 20	2,593,000,006	6	0.0000002
100 %		- 10	2,593,000,006	6	0.0000002
100 %		0	2,593,000,005	5	0.0000002
100 %		+ 10	2,593,000,004	4	0.0000002
100 %		+ 20	2,593,000,005	5	0.0000002
100 %		+ 30	2,593,000,006	6	0.0000002
100 %		+ 40	2,593,000,001	1	0.0000000
100 %		+ 50	2,593,000,000	0	0.0000000
BATT. ENDPOINT	3.40	+ 20	2,593,000,002	2	0.0000001

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

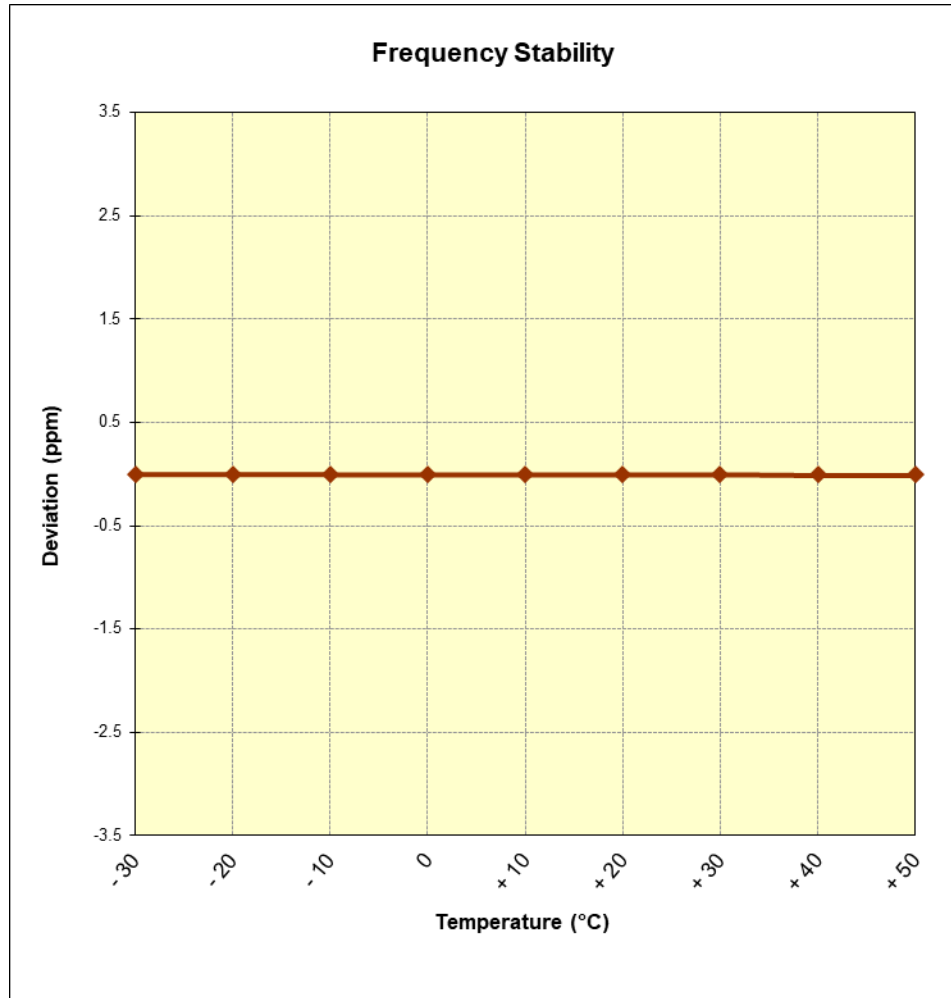


Figure 7-17. Frequency Stability Graph (Band 41)

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Apple Tablet Device FCC ID: BCGA2124** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

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