

OPERATING FREQUENCY: 836.52 MHz
 CHANNEL: 384
 MODULATION SIGNAL: CDMA
 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]
1673.04	H	104	16	-79.82	9.38	-70.43	-57.4
2509.56	H	288	330	-73.31	10.16	-63.15	-50.2
3346.08	H	200	319	-73.95	10.77	-63.18	-50.2
4182.60	H	-	-	-72.41	10.41	-62.00	-49.0

Table 7-13. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)

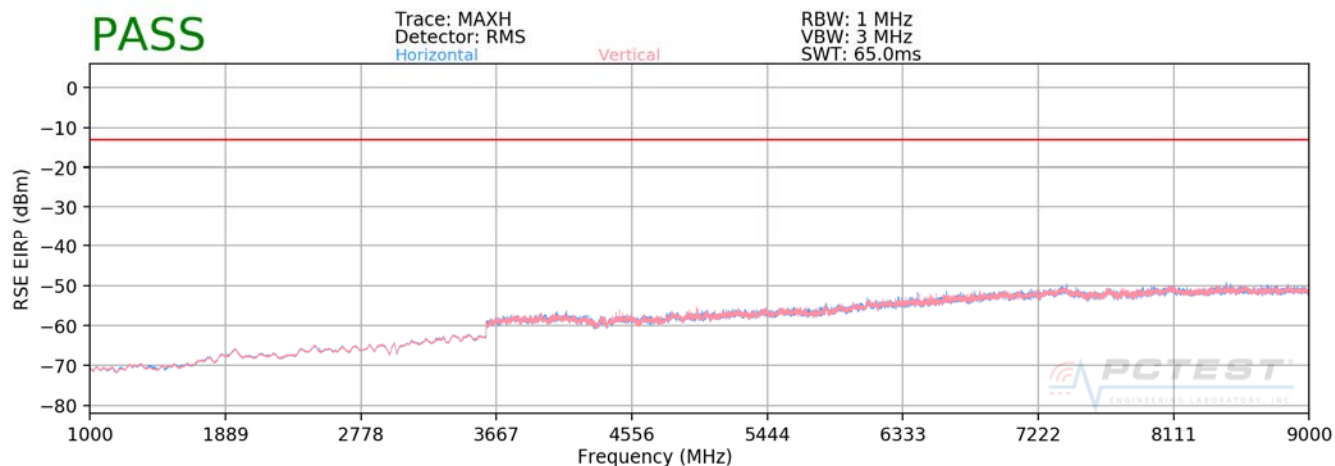
OPERATING FREQUENCY: 848.31 MHz
 CHANNEL: 777
 MODULATION SIGNAL: CDMA
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
1696.62	H	144	7	-78.73	9.56	-69.17	-56.2
2544.93	H	363	336	-67.79	10.14	-57.65	-44.6
3393.24	H	227	311	-71.09	10.81	-60.27	-47.3
4241.55	H	-	-	-72.60	10.69	-61.91	-48.9

Table 7-14. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 81 of 107

Cellular WCDMA Mode



Plot 7-103. Radiated Spurious Plot Above 1GHz (Cellular WCDMA Mode)

OPERATING FREQUENCY: 826.40 MHz
CHANNEL: 4132
MODULATION SIGNAL: WCDMA
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]
1652.80	H	-	-	-67.84	4.82	-63.03	-50.0
2479.20	H	-	-	-64.63	5.01	-59.62	-46.6

Table 7-15. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)

OPERATING FREQUENCY: 836.60 MHz
CHANNEL: 4183
MODULATION SIGNAL: WCDMA
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]
1673.20	H	-	-	-67.86	4.86	-63.00	-50.0
2509.80	H	-	-	-64.60	5.10	-59.50	-46.5

Table 7-16. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 82 of 107

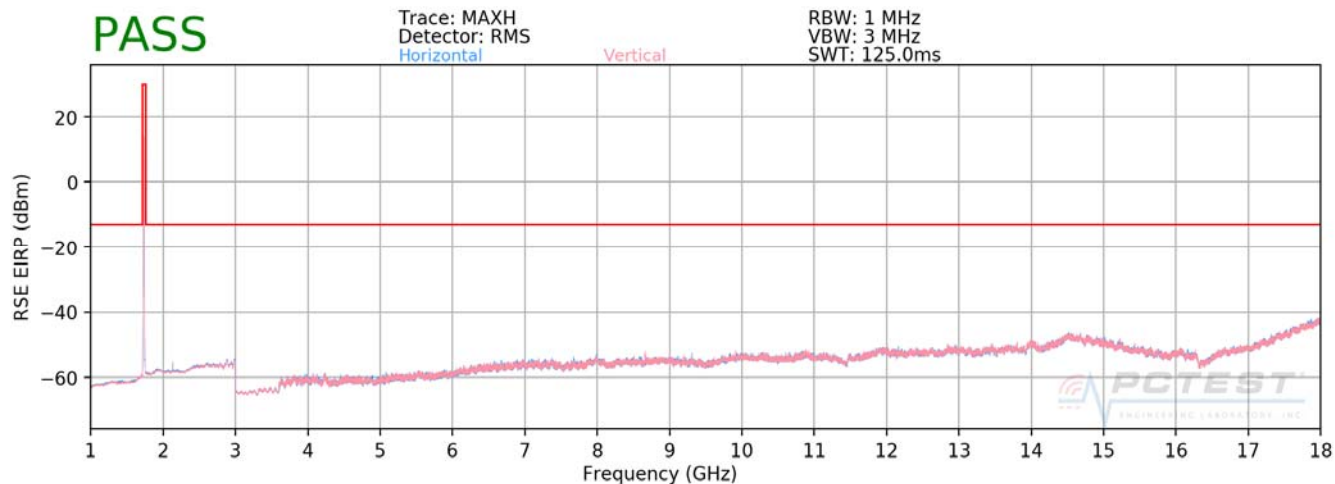
OPERATING FREQUENCY: 846.60 MHz
 CHANNEL: 4233
 MODULATION SIGNAL: WCDMA
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
1693.20	H	-	-	-68.28	4.90	-63.38	-50.4
2539.80	H	-	-	-64.88	5.25	-59.63	-46.6

Table 7-17. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 83 of 107

AWS WCDMA Mode



Plot 7-104. Radiated Spurious Plot Above 1GHz (AWS WCDMA Mode)

OPERATING FREQUENCY: 1712.40 MHz
CHANNEL: 1312
MODULATION SIGNAL: WCDMA
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]
3424.80	H	-	-	-65.56	6.47	-59.09	-46.1
5137.20	H	-	-	-64.95	8.43	-56.52	-43.5

Table 7-18. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1312)

OPERATING FREQUENCY: 1732.60 MHz
CHANNEL: 1413
MODULATION SIGNAL: WCDMA
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]
3465.20	H	-	-	-65.68	6.56	-59.12	-46.1
5197.80	H	-	-	-64.61	8.46	-56.16	-43.2

Table 7-19. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1413)

FCC ID: ZNFQ710AL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 84 of 107

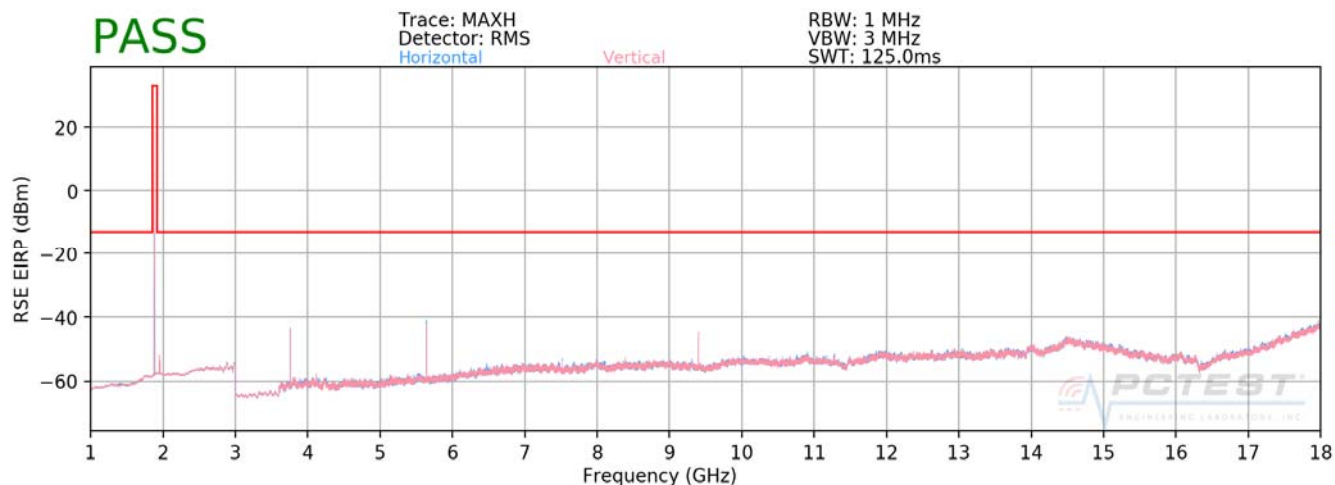
OPERATING FREQUENCY: 1752.60 MHz
 CHANNEL: 1513
 MODULATION SIGNAL: WCDMA
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3505.20	H	-	-	-65.65	6.59	-59.05	-46.1
5257.80	H	-	-	-64.06	8.41	-55.65	-42.6

Table 7-20. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1513)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 85 of 107

PCS GPRS Mode



Plot 7-105. Radiated Spurious Plot Above 1GHz (PCS GPRS Mode)

OPERATING FREQUENCY: 1850.20 MHz

CHANNEL: 512

MODULATION SIGNAL: GPRS (GMSK)

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]
3700.40	V	150	178	-49.82	6.76	-43.06	-30.1
5550.60	V	150	311	-47.10	8.43	-38.66	-25.7
7400.80	V	150	301	-52.79	8.26	-44.53	-31.5
9251.00	V	150	347	-50.21	9.88	-40.33	-27.3
11101.20	V	-	-	-50.48	9.30	-41.18	-28.2

Table 7-21. Radiated Spurious Data (PCS GPRS Mode – Ch. 512)

FCC ID: ZNFQ710AL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 86 of 107

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 661
 MODULATION SIGNAL: GPRS (GMSK)
 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]
3760.00	V	150	126	-48.50	6.84	-41.66	-28.7
5640.00	V	150	303	-44.92	8.52	-36.40	-23.4
7520.00	V	150	267	-51.17	8.44	-42.72	-29.7
9400.00	V	150	302	-48.38	9.79	-38.59	-25.6
11280.00	V	-	-	-48.29	9.13	-39.16	-26.2

Table 7-22. Radiated Spurious Data (PCS GPRS Mode – Ch. 661)

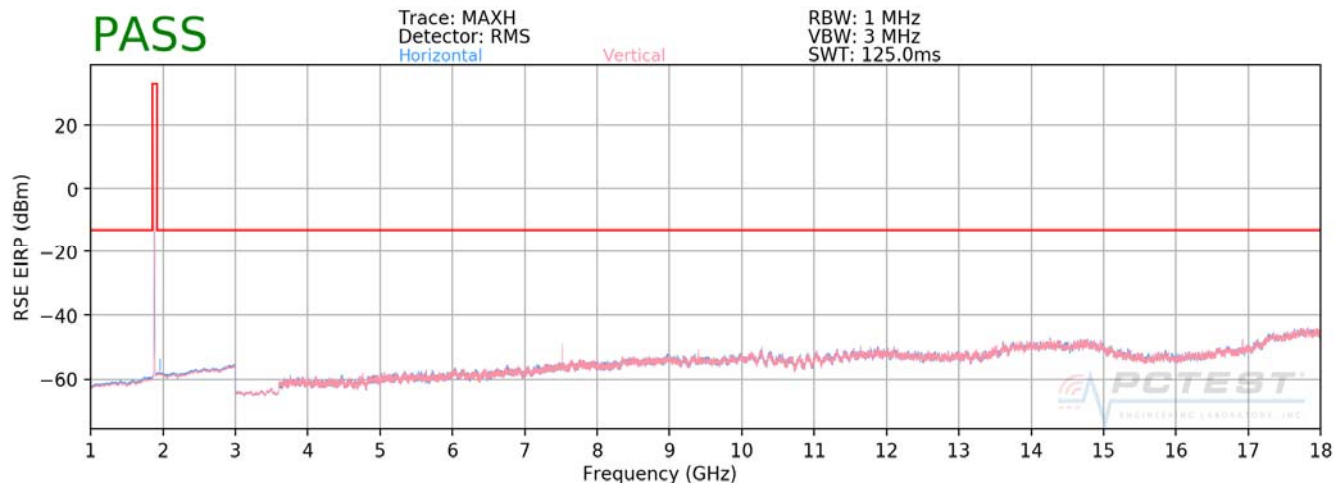
OPERATING FREQUENCY: 1909.80 MHz
 CHANNEL: 810
 MODULATION SIGNAL: GPRS (GMSK)
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3819.60	V	150	161	-49.53	7.00	-42.53	-29.5
5729.40	V	150	248	-45.46	8.58	-36.88	-23.9
7639.20	V	150	281	-53.16	8.56	-44.59	-31.6
9549.00	V	150	311	-50.08	9.82	-40.26	-27.3
11458.80	V	-	-	-49.95	9.09	-40.87	-27.9

Table 7-23. Radiated Spurious Data (PCS GPRS Mode – Ch. 810)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 87 of 107

PCS CDMA Mode



Plot 7-106. Radiated Spurious Plot Above 1GHz (PCS CDMA Mode)

OPERATING FREQUENCY: 1851.25 MHz
CHANNEL: 25
MODULATION SIGNAL: CDMA
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]
3702.50	V	150	215	-63.66	8.31	-55.35	-42.4
5553.75	V	-	-	-68.85	10.53	-58.32	-45.3
7405.00	V	150	41	-64.64	11.92	-52.73	-39.7
9256.25	V	150	0	-65.50	13.41	-52.09	-39.1
11107.50	V	-	-	-68.01	13.37	-54.64	-41.6

Table 7-24. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)

FCC ID: ZNFQ710AL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 88 of 107

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 600
 MODULATION SIGNAL: CDMA
 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]
3760.00	V	-	-	-68.55	8.46	-60.09	-47.1
5640.00	V	-	-	-68.72	10.60	-58.12	-45.1
7520.00	V	150	48	-53.83	12.11	-41.73	-28.7
9400.00	V	150	300	-66.29	13.35	-52.94	-39.9
11280.00	V	-	-	-68.28	13.43	-54.85	-41.8

Table 7-25. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)

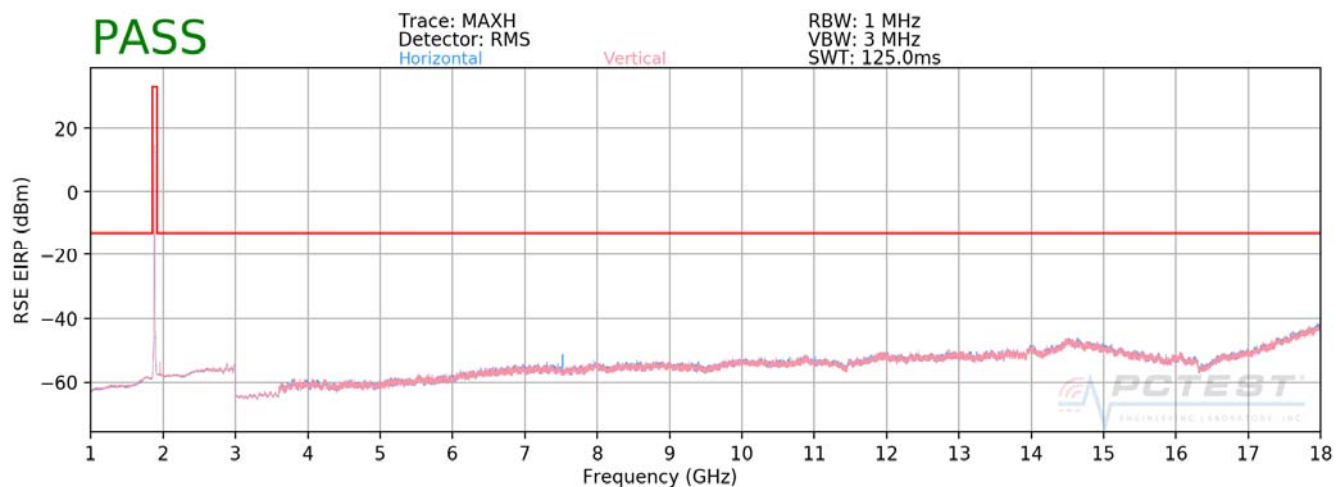
OPERATING FREQUENCY: 1908.75 MHz
 CHANNEL: 1175
 MODULATION SIGNAL: CDMA
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3817.50	V	150	223	-67.79	8.56	-59.23	-46.2
5726.25	V	-	-	-68.55	10.64	-57.92	-44.9
7635.00	V	150	41	-63.97	12.19	-51.78	-38.8
9543.75	V	150	289	-66.22	13.30	-52.93	-39.9
11452.50	V	-	-	-67.96	13.46	-54.50	-41.5

Table 7-26. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 89 of 107

PCS WCDMA Mode



Plot 7-107. Radiated Spurious Plot Above 1GHz (PCS WCDMA Mode)

OPERATING FREQUENCY: 1852.40 MHz
CHANNEL: 9262
MODULATION SIGNAL: WCDMA
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]
3704.80	H	-	-	-65.12	6.77	-58.36	-45.4
5557.20	H	-	-	-64.84	8.44	-56.41	-43.4

Table 7-27. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9262)

FCC ID: ZNFQ710AL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 90 of 107

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 9400
 MODULATION SIGNAL: WCDMA
 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]
3760.00	H	-	-	-65.32	6.84	-58.48	-45.5
5640.00	H	-	-	-64.44	8.52	-55.93	-42.9

Table 7-28. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9400)

OPERATING FREQUENCY: 1907.60 MHz
 CHANNEL: 9538
 MODULATION SIGNAL: WCDMA
 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]
3815.20	H	-	-	-64.78	6.98	-57.80	-44.8
5722.80	H	-	-	-64.18	8.58	-55.60	-42.6

Table 7-29. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 91 of 107

7.8 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, RSS-132, and RSS-133, 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, and RSS-139, 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

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 836,600,000 Hz

CHANNEL: 190

REFERENCE VOLTAGE: 3.85 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	836,600,009	9	0.0000011
100 %		- 30	836,599,854	-146	-0.0000175
100 %		- 20	836,599,955	-45	-0.0000054
100 %		- 10	836,599,867	-133	-0.0000159
100 %		0	836,599,934	-66	-0.0000079
100 %		+ 10	836,599,909	-91	-0.0000109
100 %		+ 20	836,599,895	-105	-0.0000126
100 %		+ 30	836,599,966	-34	-0.0000041
100 %		+ 40	836,599,792	-208	-0.0000249
100 %		+ 50	836,600,151	151	0.0000180
BATT. ENDPOINT	3.45	+ 20	836,599,987	-13	-0.0000016

Table 7-30. Frequency Stability Data (Cellular GPRS Mode – Ch. 190)

FCC ID: ZNFQ710AL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset	Page 93 of 107

Frequency Stability / Temperature Variation

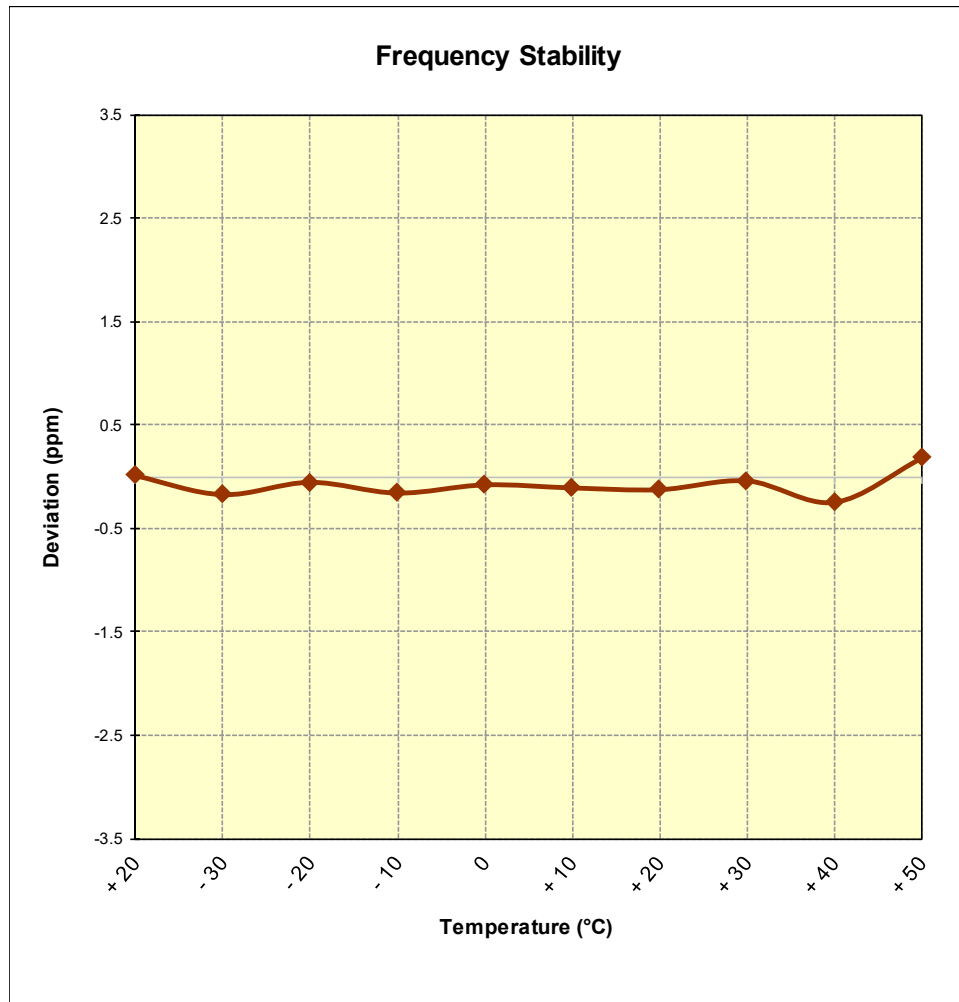


Figure 7-8. Frequency Stability Graph (Cellular GPRS Mode – Ch. 190)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 94 of 107

Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 836,520,000 Hz

CHANNEL: 384

REFERENCE VOLTAGE: 3.85 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	836,519,647	-353	-0.0000422
100 %		- 30	836,519,973	-27	-0.0000032
100 %		- 20	836,519,966	-34	-0.0000041
100 %		- 10	836,519,885	-115	-0.0000137
100 %		0	836,519,741	-259	-0.0000310
100 %		+ 10	836,520,003	3	0.0000004
100 %		+ 20	836,519,795	-205	-0.0000245
100 %		+ 30	836,519,844	-156	-0.0000186
100 %		+ 40	836,520,338	338	0.0000404
100 %		+ 50	836,520,061	61	0.0000073
BATT. ENDPOINT	3.45	+ 20	836,519,656	-344	-0.0000411

Table 7-31. Frequency Stability Data (Cellular CDMA Mode – Ch. 384)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 95 of 107

Frequency Stability / Temperature Variation

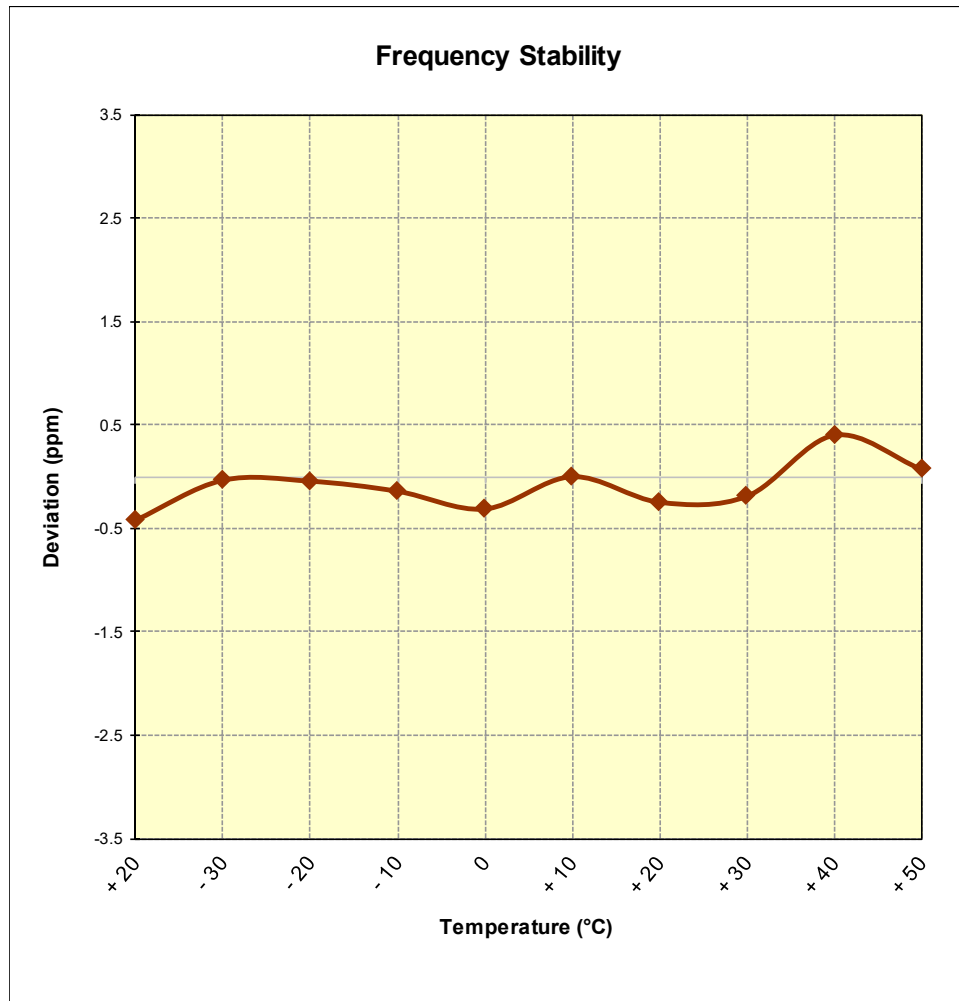


Figure 7-9. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)

FCC ID: ZNFQ710AL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset	Page 96 of 107

Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 836,600,000 Hz

CHANNEL: 4183

REFERENCE VOLTAGE: 3.85 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	836,600,090	90	0.0000108
100 %		- 30	836,600,153	153	0.0000183
100 %		- 20	836,599,672	-328	-0.0000392
100 %		- 10	836,599,837	-163	-0.0000195
100 %		0	836,600,371	371	0.0000443
100 %		+ 10	836,600,087	87	0.0000104
100 %		+ 20	836,600,193	193	0.0000231
100 %		+ 30	836,600,219	219	0.0000262
100 %		+ 40	836,600,129	129	0.0000154
100 %		+ 50	836,600,039	39	0.0000047
BATT. ENDPOINT	3.45	+ 20	836,599,649	-351	-0.0000420

Table 7-32. Frequency Stability Data (Cellular WCDMA Mode – Ch. 4183)

FCC ID: ZNFQ710AL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset	Page 97 of 107

Frequency Stability / Temperature Variation

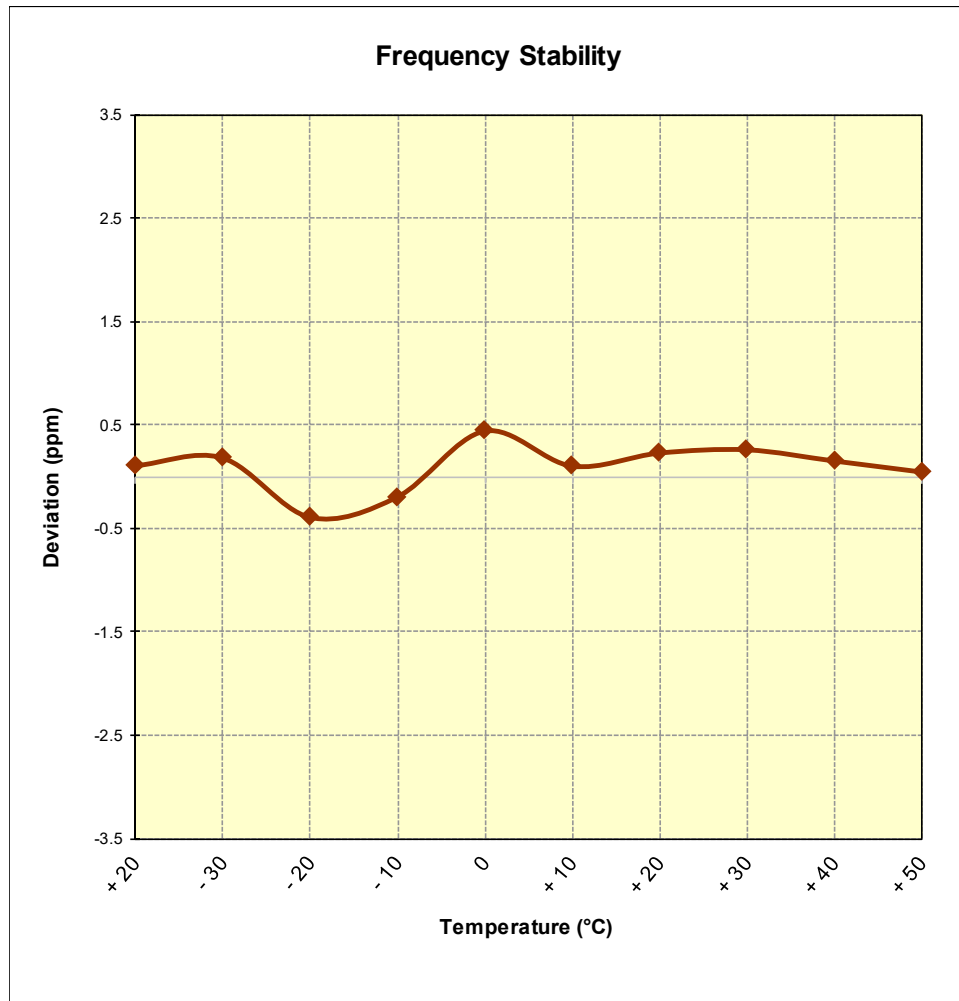


Figure 7-10. Frequency Stability Graph (Cellular WCDMA Mode – Ch. 4183)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 98 of 107

Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 1,732,600,000 Hz
CHANNEL: 1413
REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,732,600,131	131	0.0000076
100 %		- 30	1,732,599,965	-35	-0.0000020
100 %		- 20	1,732,600,108	108	0.0000062
100 %		- 10	1,732,600,355	355	0.0000205
100 %		0	1,732,599,971	-29	-0.0000017
100 %		+ 10	1,732,599,996	-4	-0.0000002
100 %		+ 20	1,732,600,056	56	0.0000032
100 %		+ 30	1,732,599,945	-55	-0.0000032
100 %		+ 40	1,732,600,229	229	0.0000132
100 %		+ 50	1,732,600,198	198	0.0000114
BATT. ENDPOINT	3.45	+ 20	1,732,600,158	158	0.0000091

Table 7-33. Frequency Stability Data (AWS WCDMA Mode – Ch. 1413)

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: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 99 of 107

Frequency Stability / Temperature Variation

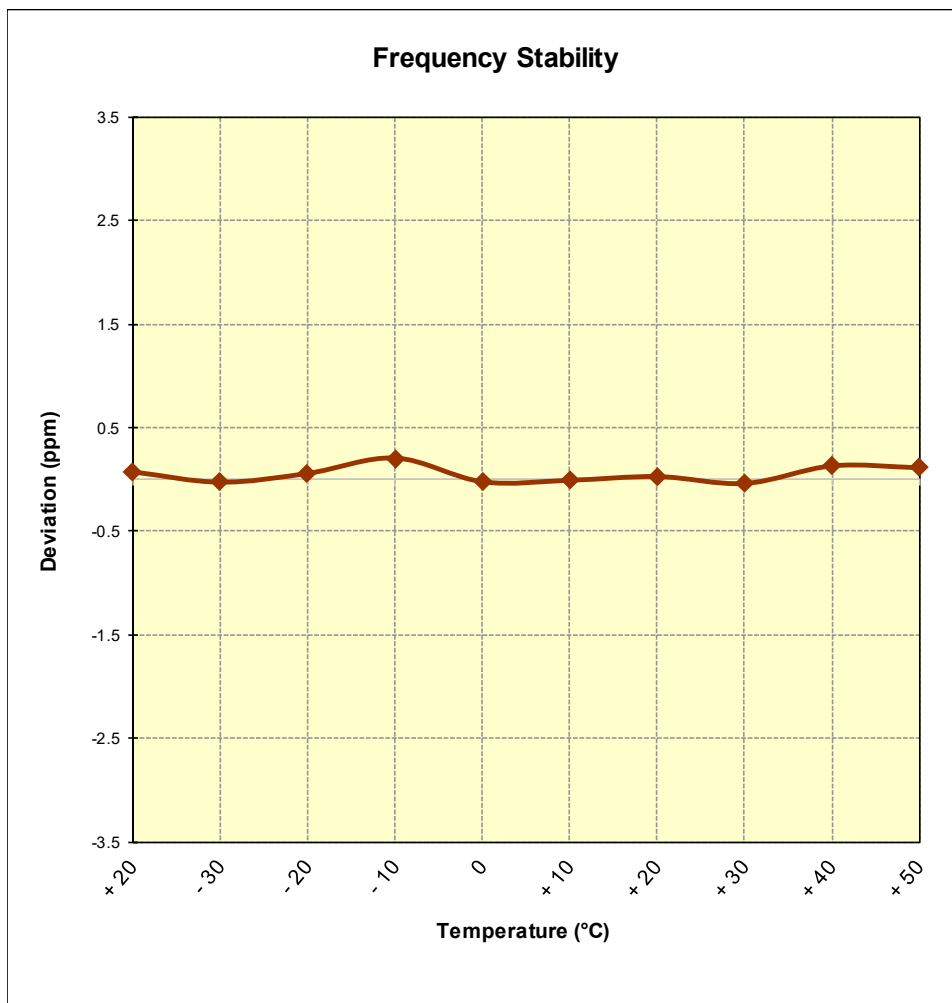


Figure 7-11. Frequency Stability Graph (AWS WCDMA Mode – Ch. 1413)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 100 of 107

Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 1,880,000,000 Hz
 CHANNEL: 661
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,879,999,867	-133	-0.0000071
100 %		- 30	1,879,999,614	-386	-0.0000205
100 %		- 20	1,880,000,364	364	0.0000194
100 %		- 10	1,879,999,921	-79	-0.0000042
100 %		0	1,879,999,781	-219	-0.0000116
100 %		+ 10	1,879,999,922	-78	-0.0000041
100 %		+ 20	1,880,000,129	129	0.0000069
100 %		+ 30	1,879,999,969	-31	-0.0000016
100 %		+ 40	1,879,999,902	-98	-0.0000052
100 %		+ 50	1,879,999,953	-47	-0.0000025
BATT. ENDPOINT	3.45	+ 20	1,880,000,061	61	0.0000032

Table 7-34. Frequency Stability Data (PCS GPRS Mode – Ch. 661)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 101 of 107

Frequency Stability / Temperature Variation

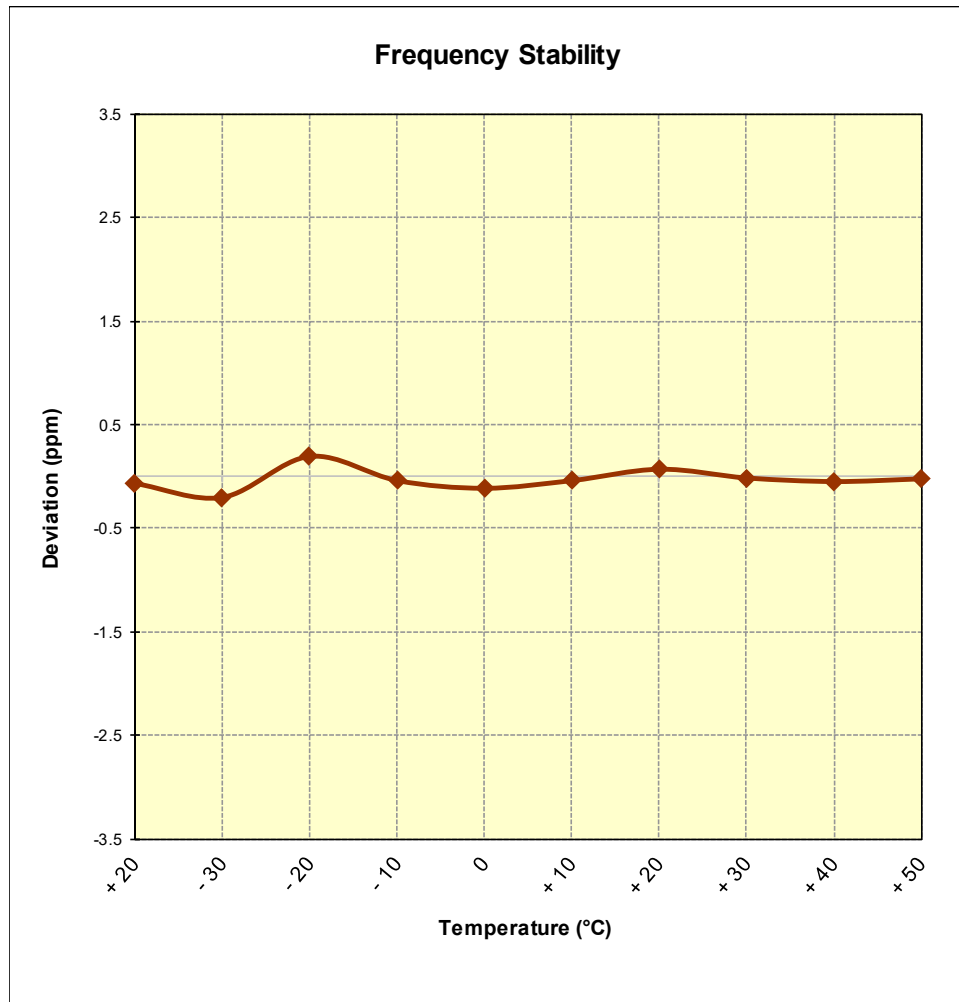


Figure 7-12. Frequency Stability Graph (PCS GPRS Mode – Ch. 661)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 102 of 107

Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 1,880,000,000 Hz
 CHANNEL: 600
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,880,000,197	197	0.0000105
100 %		- 30	1,879,999,782	-218	-0.0000116
100 %		- 20	1,879,999,989	-11	-0.0000006
100 %		- 10	1,879,999,968	-32	-0.0000017
100 %		0	1,880,000,153	153	0.0000081
100 %		+ 10	1,879,999,975	-25	-0.0000013
100 %		+ 20	1,879,999,859	-141	-0.0000075
100 %		+ 30	1,879,999,924	-76	-0.0000040
100 %		+ 40	1,879,999,795	-205	-0.0000109
100 %		+ 50	1,880,000,115	115	0.0000061
BATT. ENDPOINT	3.45	+ 20	1,880,000,121	121	0.0000064

Table 7-35. Frequency Stability Data (PCS CDMA Mode – Ch. 600)

FCC ID: ZNFQ710AL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Frequency Stability / Temperature Variation

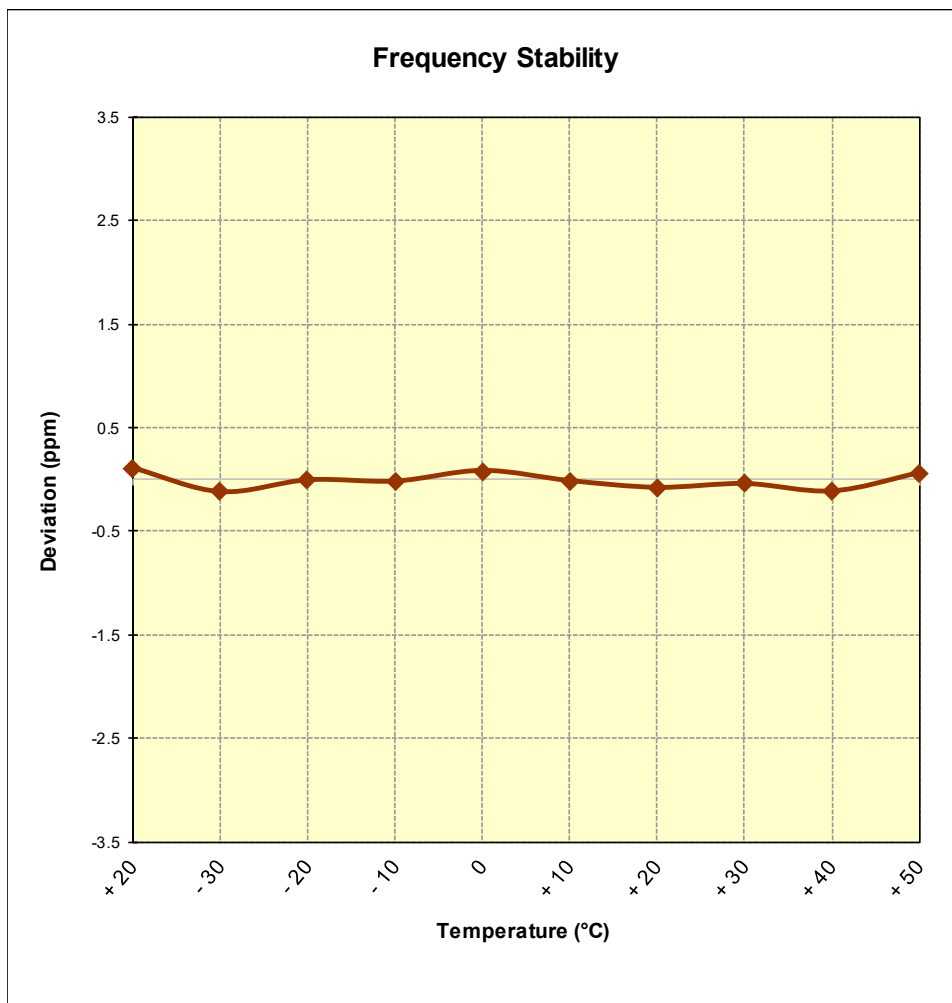


Figure 7-13. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 104 of 107

Frequency Stability / Temperature Variation

OPERATING FREQUENCY: 1,880,000,000 Hz
 CHANNEL: 9400
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,879,999,967	-33	-0.0000018
100 %		- 30	1,880,000,247	247	0.0000131
100 %		- 20	1,880,000,054	54	0.0000029
100 %		- 10	1,880,000,017	17	0.0000009
100 %		0	1,880,000,143	143	0.0000076
100 %		+ 10	1,880,000,296	296	0.0000157
100 %		+ 20	1,880,000,132	132	0.0000070
100 %		+ 30	1,879,999,987	-13	-0.0000007
100 %		+ 40	1,879,999,879	-121	-0.0000064
100 %		+ 50	1,880,000,087	87	0.0000046
BATT. ENDPOINT	3.45	+ 20	1,880,000,103	103	0.0000055

Table 7-36. Frequency Stability Data (PCS WCDMA Mode – Ch. 9400)

FCC ID: ZNFQ710AL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Frequency Stability / Temperature Variation

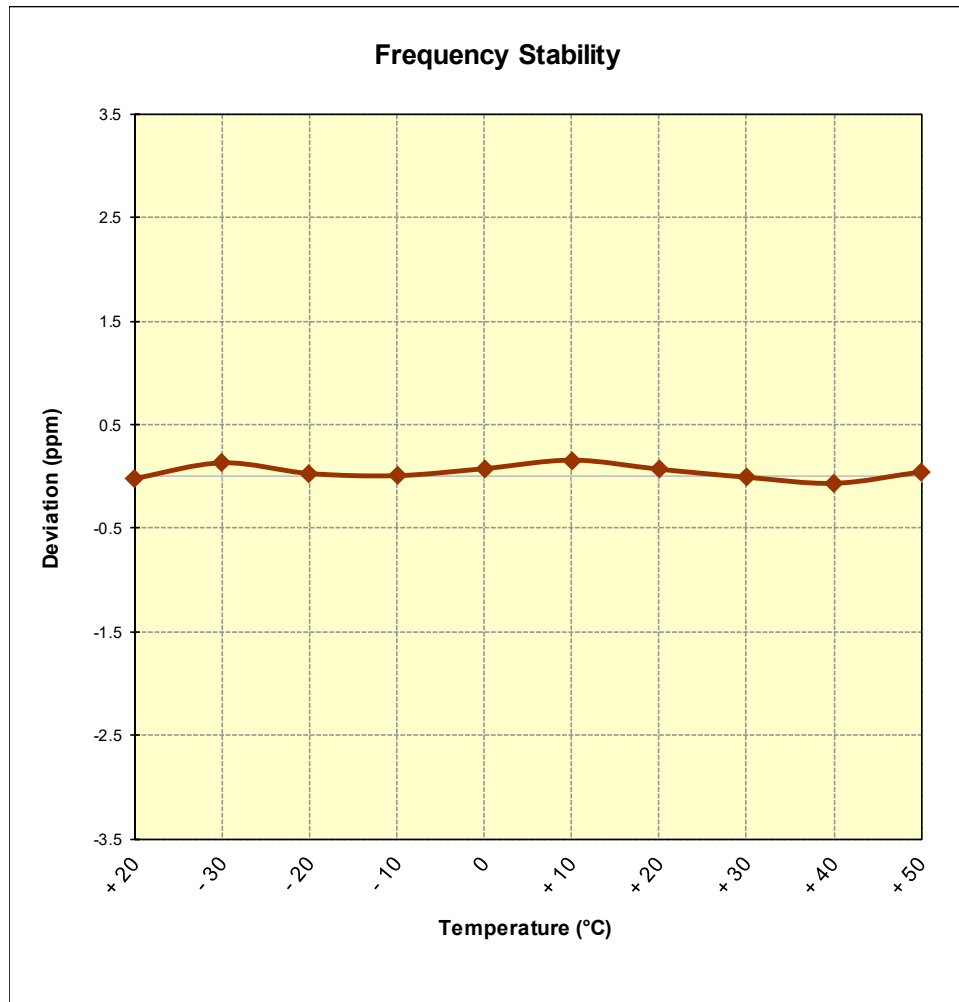


Figure 7-14. Frequency Stability Graph (PCS WCDMA Mode – Ch. 9400)

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 106 of 107

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset** **FCC ID: ZNFQ710AL** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules.

FCC ID: ZNFQ710AL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1804240083-02-R1.ZNF	Test Dates: 3/22-5/25/2018	EUT Type: Portable Handset		Page 107 of 107