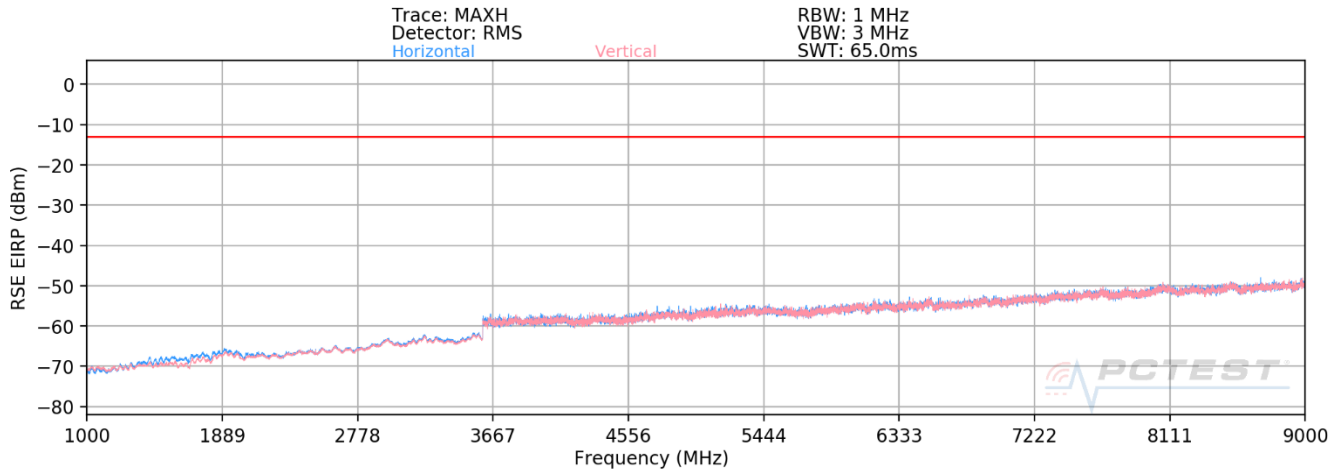
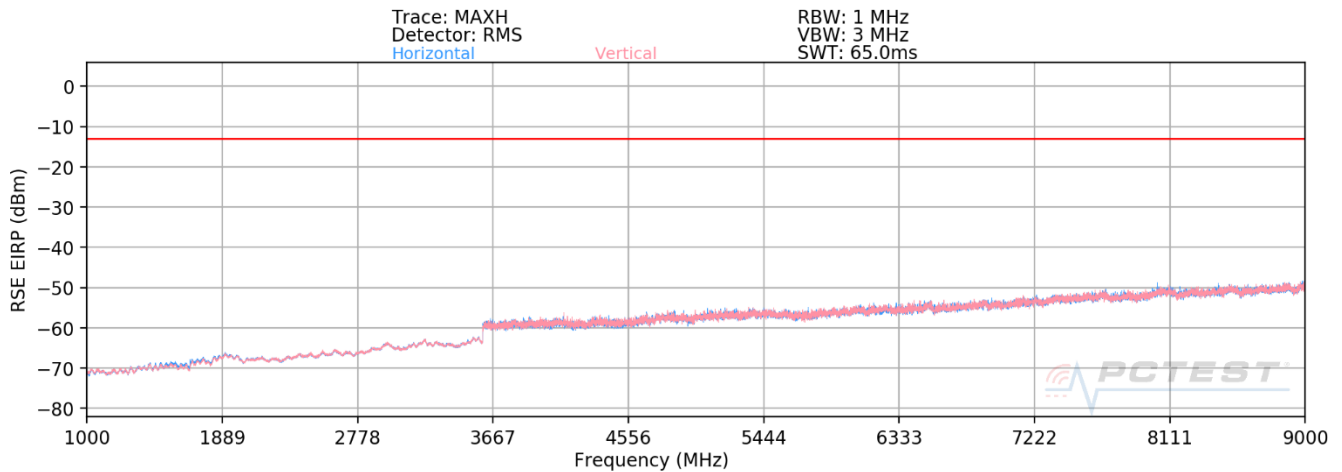


ULCA Band 5



Plot 7-423. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 5 Low Channel – PCC/SCC: 1RB)



Plot 7-424. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 5 High Channel – PCC/SCC: 1RB)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 268 of 301

OPERATING FREQUENCY (PCC): 829.00 MHz
 OPERATING FREQUENCY (SCC): 838.90 MHz
 CHANNEL (PCC): 20450
 CHANNEL (SCC): 20549
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10+10 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	398	325	-78.18	8.98	-69.20	-56.2
2487.00	H	398	354	-78.35	9.73	-68.61	-55.6
3316.00	H	-	-	-75.24	9.62	-65.62	-52.6
4145.00	H	-	-	-74.18	10.24	-63.94	-50.9

Table 7-46. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

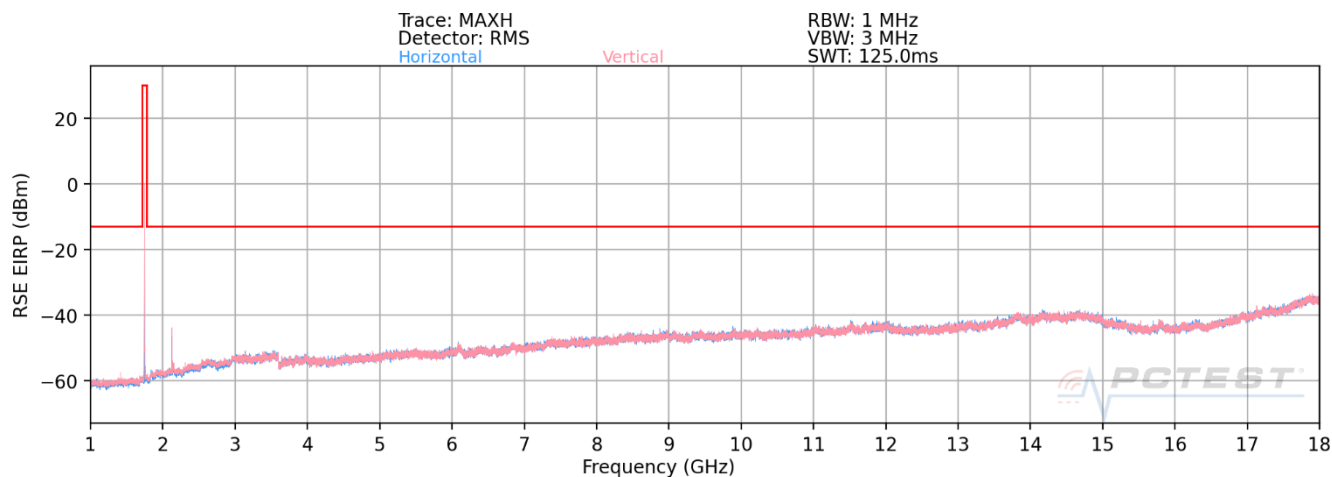
OPERATING FREQUENCY (PCC): 844.00 MHz
 OPERATING FREQUENCY (SCC): 834.10 MHz
 CHANNEL (PCC): 20600
 CHANNEL (SCC): 20501
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10+10 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	383	35	-76.79	8.98	-67.81	-54.8
2532.00	H	400	304	-78.19	9.78	-68.42	-55.4
3376.00	H	-	-	-75.53	9.74	-65.80	-52.8
4220.00	H	-	-	-75.20	10.51	-64.68	-51.7

Table 7-47. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 269 of 301

Inter-band Uplink CA Conducted Powers 12A-66A



Plot 7-425. Radiated Spurious Plot 1GHz - 18GHz (ULCA 12A-66A)

OPERATING FREQUENCY (PCC): 1720.00 MHz
 OPERATING FREQUENCY (SCC): 704.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 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	V	246	342	-78.49	7.57	-70.92	-57.9
2112.00	V	204	191	-65.29	8.88	-56.41	-43.4
2816.00	V	-	-	-77.84	10.15	-67.69	-54.7
3440.00	V	-	-	-74.62	9.87	-64.74	-51.7
5160.00	V	-	-	-73.88	10.74	-63.14	-50.1

Table 7-48. Radiated Spurious Data (ULCA 12A-66A – Low Channel)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 270 of 301

OPERATING FREQUENCY (PCC): 1745.00 MHz
 OPERATING FREQUENCY (SCC): 707.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 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	V	166	57	-75.58	7.66	-67.91	-54.9
2122.50	V	127	328	-64.52	8.89	-55.63	-42.6
2830.00	V	-	-	-77.92	10.12	-67.79	-54.8
3490.00	V	-	-	-74.68	9.94	-64.74	-51.7
5235.00	V	366	193	-69.66	10.76	-58.90	-45.9
6980.00	V	-	-	-73.23	11.85	-61.38	-48.4

Table 7-49. Radiated Spurious Data (ULCA 12A-66A – Mid Channel)

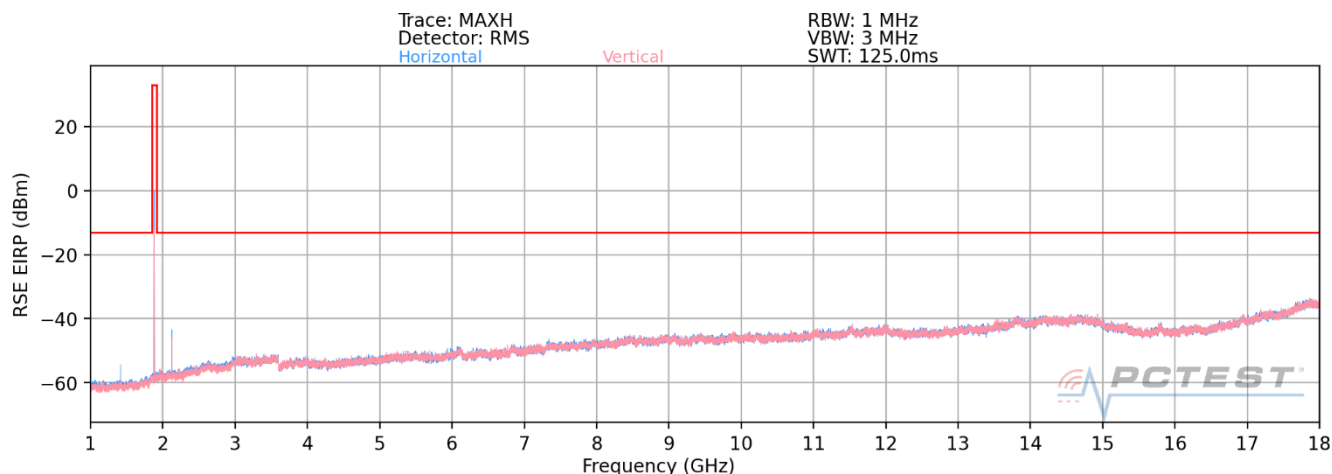
OPERATING FREQUENCY (PCC): 1770.00 MHz
 OPERATING FREQUENCY (SCC): 711.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	V	128	211	-64.73	7.75	-56.98	-44.0
2133.00	V	133	324	-55.68	8.90	-46.78	-33.8
2844.00	V	-	-	-78.46	10.10	-68.36	-55.4
3540.00	V	-	-	-74.50	9.92	-64.58	-51.6
5310.00	V	-	-	-73.57	10.72	-62.85	-49.9

Table 7-50. Radiated Spurious Data (ULCA 12A-66A – High Channel)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 271 of 301

Inter-band Uplink CA Conducted Powers 2A-12A



Plot 7-426. Radiated Spurious Plot 1GHz - 18GHz (ULCA 2A-12A)

OPERATING FREQUENCY (PCC): 1860.00 MHz
 OPERATING FREQUENCY (SCC): 704.00 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]
1408.00	H	-	-	-79.18	7.57	-71.61	-58.6
2112.00	H	356	111	-76.83	8.88	-67.95	-55.0
2816.00	H	-	-	-77.93	10.15	-67.78	-54.8
3720.00	H	115	197	-69.13	9.54	-59.60	-46.6
5580.00	H	364	352	-60.51	11.02	-49.49	-36.5
7440.00	H	-	-	-70.91	11.01	-59.89	-46.9

Table 7-51. Radiated Spurious Data (ULCA 2A-12A – Low Channel)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 272 of 301

OPERATING FREQUENCY (PCC): 1880.00 MHz
 OPERATING FREQUENCY (SCC): 707.50 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]
1415.00	H	153	340	-64.54	7.66	-56.87	-43.9
2122.50	H	129	304	-64.57	8.89	-55.68	-42.7
2830.00	H	-	-	-78.23	10.12	-68.10	-55.1
3760.00	H	-	-	-73.45	9.40	-64.05	-51.1
5640.00	H	-	-	-74.07	11.20	-62.87	-49.9

Table 7-52. Radiated Spurious Data (ULCA 2A-12A – Mid Channel)

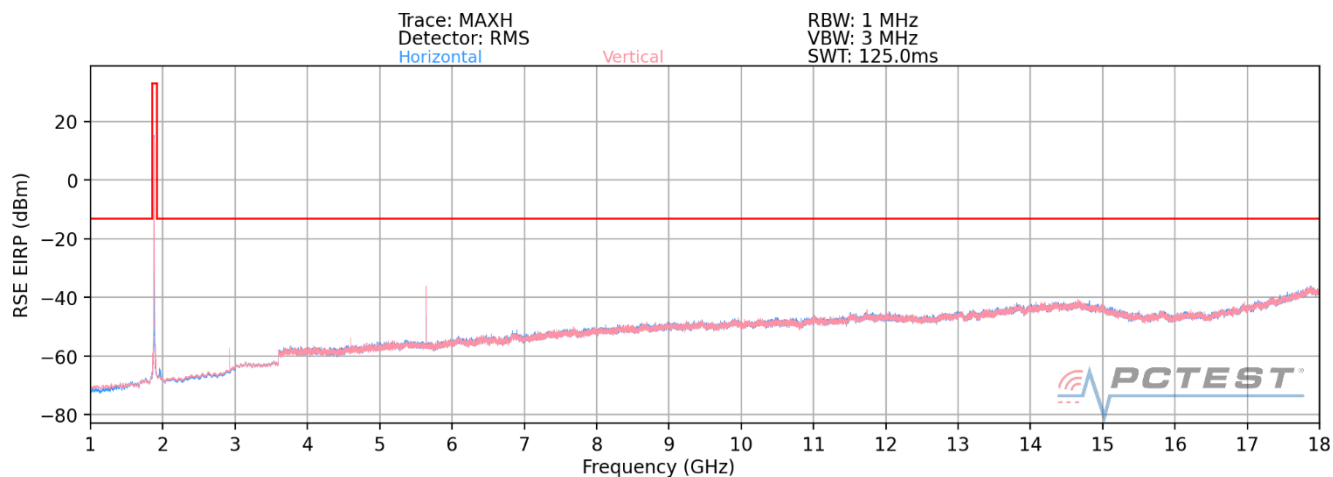
OPERATING FREQUENCY (PCC): 1900.00 MHz
 OPERATING FREQUENCY (SCC): 711.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
1422.00	H	-	-	-79.47	7.75	-71.72	-58.7
2133.00	H	302	137	-78.04	8.90	-69.14	-56.1
2844.00	H	-	-	-77.97	10.10	-67.87	-54.9
3800.00	H	-	-	-74.02	9.31	-64.71	-51.7
5700.00	H	-	-	-74.23	11.34	-62.90	-49.9

Table 7-53. Radiated Spurious Data (ULCA 2A-12A – High Channel)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 273 of 301

Inter-band Uplink CA Conducted Powers 2A-5A



Plot 7-427. Radiated Spurious Plot 1GHz - 18GHz (ULCA 2A-5A)

OPERATING FREQUENCY (PCC): 1860.00 MHz
 OPERATING FREQUENCY (SCC): 829.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 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	V	-	-	-78.31	8.98	-69.33	-56.3
3720.00	V	-	-	-72.87	9.54	-63.33	-50.3
5580.00	V	306	36	-57.37	11.02	-46.36	-33.4
7440.00	V	-	-	-71.27	11.01	-60.25	-47.3

Table 7-54. Radiated Spurious Data (ULCA 2A-5A – Low Channel)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 274 of 301

OPERATING FREQUENCY (PCC): 1880.00 MHz
 OPERATING FREQUENCY (SCC): 836.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 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	V	-	-	-79.21	8.98	-70.22	-57.2
2509.50	V	-	-	-78.71	9.78	-68.93	-55.9
2923.72	V	387	322	-72.38	9.87	-62.51	-49.5
3760.00	V	-	-	-73.35	9.40	-63.95	-51.0
5640.00	V	322	40	-48.76	11.20	-37.56	-24.6
7520.00	V	-	-	-70.80	11.14	-59.66	-46.7

Table 7-55. Radiated Spurious Data (ULCA 2A-5A – Mid Channel)

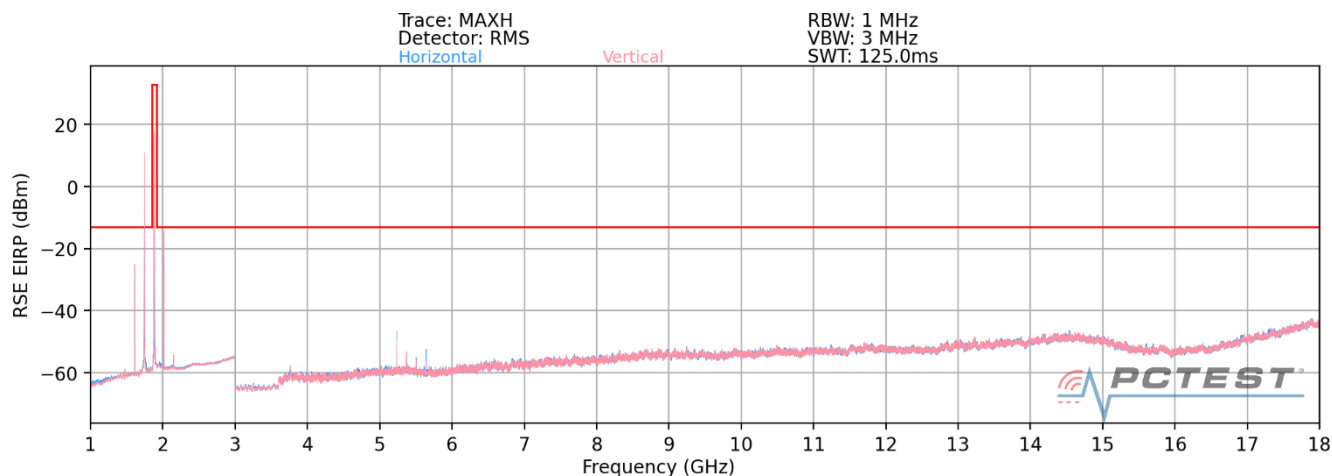
OPERATING FREQUENCY (PCC): 1900.00 MHz
 OPERATING FREQUENCY (SCC): 844.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	-	-	-78.03	8.98	-69.05	-56.0
3800.00	V	-	-	-74.15	9.31	-64.84	-51.8
5700.00	V	318	35	-55.27	11.34	-43.93	-30.9
7600.00	V	-	-	-71.64	11.27	-60.37	-47.4

Table 7-56. Radiated Spurious Data (ULCA 2A-5A – High Channel)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 275 of 301

Inter-band Uplink CA Conducted Powers 2A-66A



Plot 7-428. Radiated Spurious Plot 1GHz - 18GHz (ULCA 2A-66A)

OPERATING FREQUENCY (PCC):	1860.00	MHz
OPERATING FREQUENCY (SCC):	1720.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20+20	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	400	127	-69.06	9.54	-59.52	-46.5
5580.00	H	400	13	-63.61	11.02	-52.60	-39.6
7440.00	H	-	-	-70.52	11.01	-59.50	-46.5
3440.00	H	-	-	-74.31	9.87	-64.44	-51.4
5160.00	H	-	-	-73.61	10.74	-62.87	-49.9

Table 7-57. Radiated Spurious Data (ULCA 2A-66A – Low Channel)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 276 of 301

OPERATING FREQUENCY (PCC): 1880.00 MHz
 OPERATING FREQUENCY (SCC): 1745.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+20 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]
3760.00	H	398	135	-68.58	9.40	-59.18	-46.2
5640.00	H	398	4	-61.63	11.20	-50.43	-37.4
7520.00	H	-	-	-70.07	11.14	-58.93	-45.9
3490.00	H	-	-	-74.28	9.94	-64.34	-51.3
5235.00	H	400	264	-72.12	10.76	-61.36	-48.4
6980.00	H	-	-	-73.46	11.85	-61.61	-48.6

Table 7-58. Radiated Spurious Data (ULCA 2A-66A – Mid Channel)

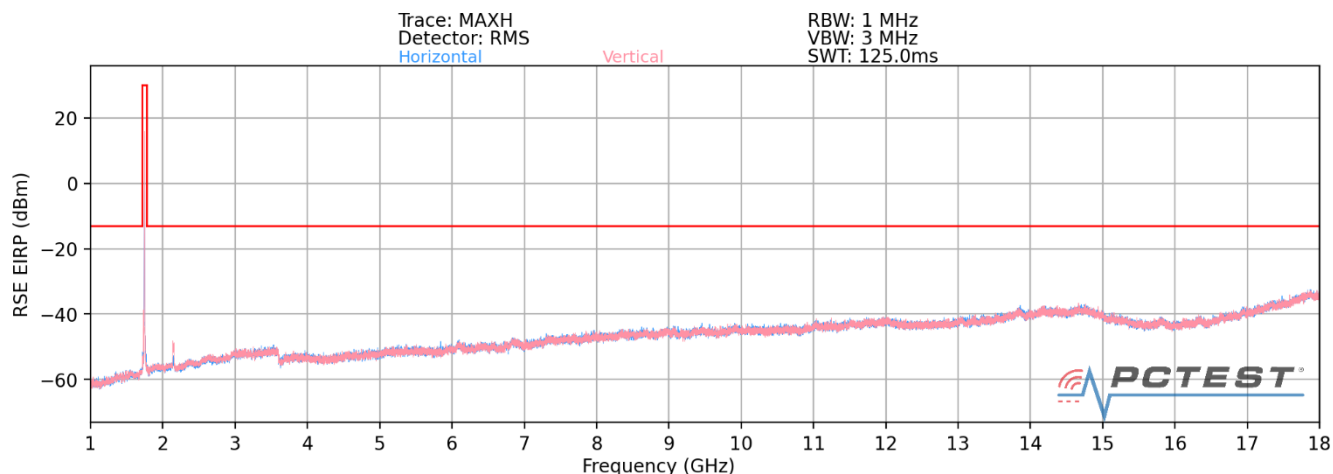
OPERATING FREQUENCY (PCC): 1900.00 MHz
 OPERATING FREQUENCY (SCC): 1770.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+20 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3800.00	H	396	149	-71.32	9.31	-62.01	-49.0
5700.00	H	283	7	-63.65	11.34	-52.31	-39.3
7600.00	H	398	352	-69.37	11.27	-58.10	-45.1
3540.00	H	-	-	-73.57	9.92	-63.65	-50.7
5310.00	H	-	-	-73.58	10.72	-62.87	-49.9

Table 7-59. Radiated Spurious Data (ULCA 2A-66A – High Channel)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 277 of 301

Inter-band Uplink CA Conducted Powers 5A-66A



Plot 7-429. Radiated Spurious Plot 1GHz - 18GHz (ULCA 5A-66A)

OPERATING FREQUENCY (PCC):	1720.00	MHz
OPERATING FREQUENCY (SCC):	829.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20+10	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	228	360	-78.22	8.98	-69.24	-56.2
2487.00	H	-	-	-77.86	9.73	-68.12	-55.1
3440.00	H	400	14	-74.11	9.87	-64.24	-51.2
5160.00	H	111	51	-58.03	10.74	-47.29	-34.3
6880.00	H	-	-	-72.18	11.71	-60.47	-47.5

Table 7-60. Radiated Spurious Data (ULCA 5A-66A – Low Channel)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 278 of 301

OPERATING FREQUENCY (PCC): 1745.00 MHz
 OPERATING FREQUENCY (SCC): 836.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 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	281	356	-76.92	8.98	-67.93	-54.9
2509.50	H	-	-	-77.79	9.78	-68.01	-55.0
3490.00	H	400	23	-72.94	9.94	-63.00	-50.0
5235.00	H	113	70	-62.02	10.76	-51.26	-38.3
6980.00	H	-	-	-72.54	11.45	-61.10	-48.1

Table 7-61. Radiated Spurious Data (ULCA 5A-66A – Mid Channel)

OPERATING FREQUENCY (PCC): 1770.00 MHz
 OPERATING FREQUENCY (SCC): 844.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20+10 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	-	-	-78.55	8.98	-69.57	-56.6
2532.00	H	-	-	-78.35	9.78	-68.58	-55.6
3540.00	H	258	10	-69.16	9.92	-59.24	-46.2
5310.00	H	112	5	-59.66	10.72	-48.95	-35.9
7080.00	H	-	-	-73.34	11.46	-61.88	-48.9

Table 7-62. Radiated Spurious Data (ULCA 5A-66A – High Channel)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 279 of 301

7.10 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.

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: ZNFF100VM	 PCTEST Proud to be part of  element	MEASUREMENT REPORT (CERTIFICATION)	 LG	Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 280 of 301

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
CHANNEL: 23790
REFERENCE VOLTAGE: 4.41 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	+ 20 (Ref)	707,499,909	-91	-0.0000129
100 %		- 30	707,500,049	49	0.0000069
100 %		- 20	707,500,126	126	0.0000178
100 %		- 10	707,500,200	200	0.0000283
100 %		0	707,499,813	-187	-0.0000264
100 %		+ 10	707,499,973	-27	-0.0000038
100 %		+ 20	707,500,199	199	0.0000281
100 %		+ 30	707,500,113	113	0.0000160
100 %		+ 40	707,499,871	-129	-0.0000182
100 %		+ 50	707,500,251	251	0.0000355
85 %		+ 20	707,500,015	15	0.0000021
BATT. ENDPOINT	3.51	+ 20	707,499,869	-131	-0.0000185

Table 7-63. Frequency Stability Data (Band 12)

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: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12 Frequency Stability Measurements

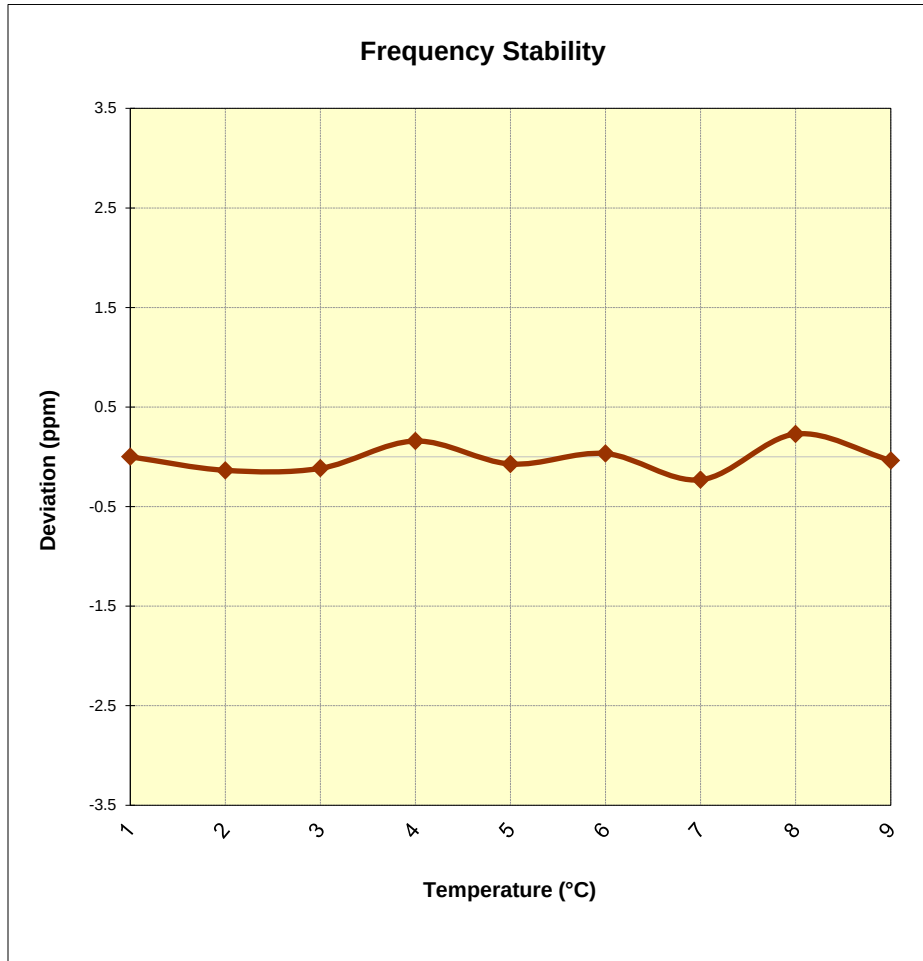


Figure 7-10. Frequency Stability Graph (Band 12)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	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: 4.41 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	+ 20 (Ref)	781,999,772	-228	-0.0000292
100 %		- 30	782,000,086	86	0.0000110
100 %		- 20	781,999,920	-80	-0.0000102
100 %		- 10	781,999,756	-244	-0.0000312
100 %		0	782,000,235	235	0.0000301
100 %		+ 10	782,000,011	11	0.0000014
100 %		+ 20	781,999,962	-38	-0.0000049
100 %		+ 30	781,999,941	-59	-0.0000075
100 %		+ 40	782,000,191	191	0.0000244
100 %		+ 50	782,000,032	32	0.0000041
85 %		+ 20	782,000,379	379	0.0000485
BATT. ENDPOINT	3.51	+ 20	781,999,863	-137	-0.0000175

Table 7-64. Frequency Stability Data (Band 13)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 13 Frequency Stability Measurements

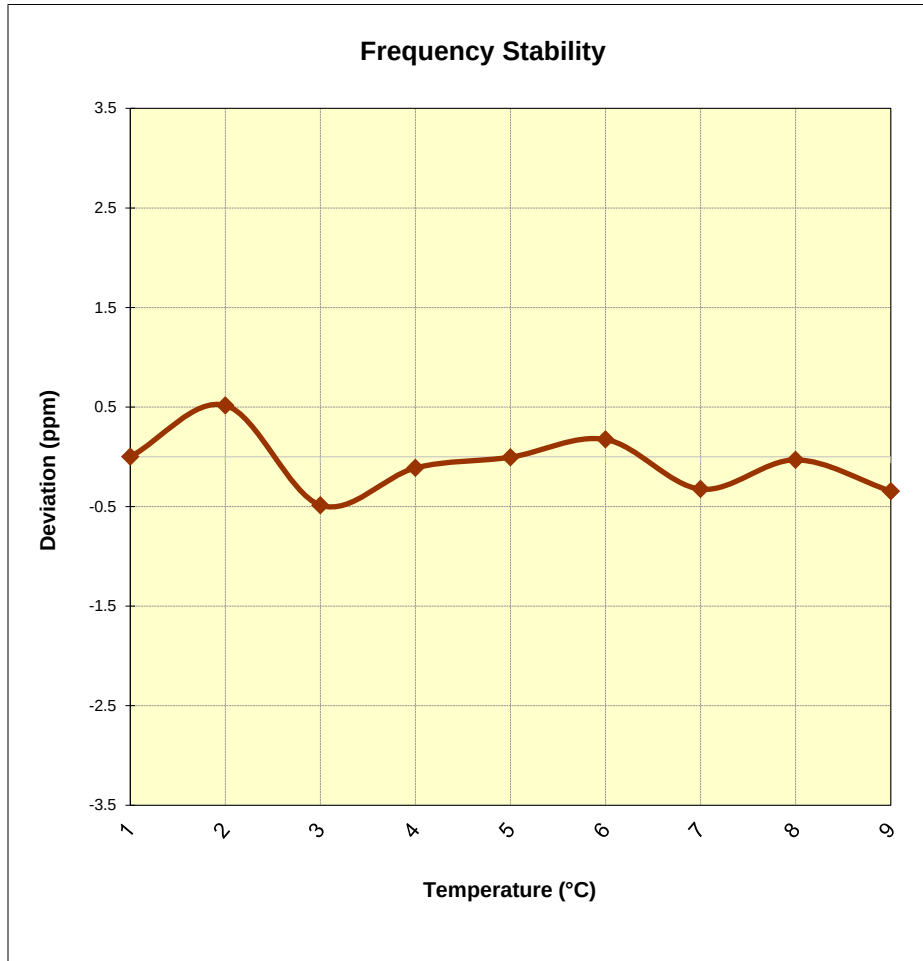


Figure 7-11. Frequency Stability Graph (Band 13)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Band 5 Frequency Stability Measurements

OPERATING FREQUENCY: 836,500,000 Hz

CHANNEL: 20525

REFERENCE VOLTAGE: 4.41 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	+ 20 (Ref)	836,499,625	-375	-0.0000448
100 %		- 30	836,500,082	82	0.0000098
100 %		- 20	836,500,458	458	0.0000548
100 %		- 10	836,500,103	103	0.0000123
100 %		0	836,500,039	39	0.0000047
100 %		+ 10	836,499,937	-63	-0.0000075
100 %		+ 20	836,500,044	44	0.0000053
100 %		+ 30	836,499,958	-42	-0.0000050
100 %		+ 40	836,500,257	257	0.0000307
100 %		+ 50	836,499,905	-95	-0.0000114
85 %		+ 20	836,500,266	266	0.0000318
BATT. ENDPOINT	3.51	+ 20	836,500,076	76	0.0000091

Table 7-65. Frequency Stability Data (Band 5)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 5 Frequency Stability Measurements

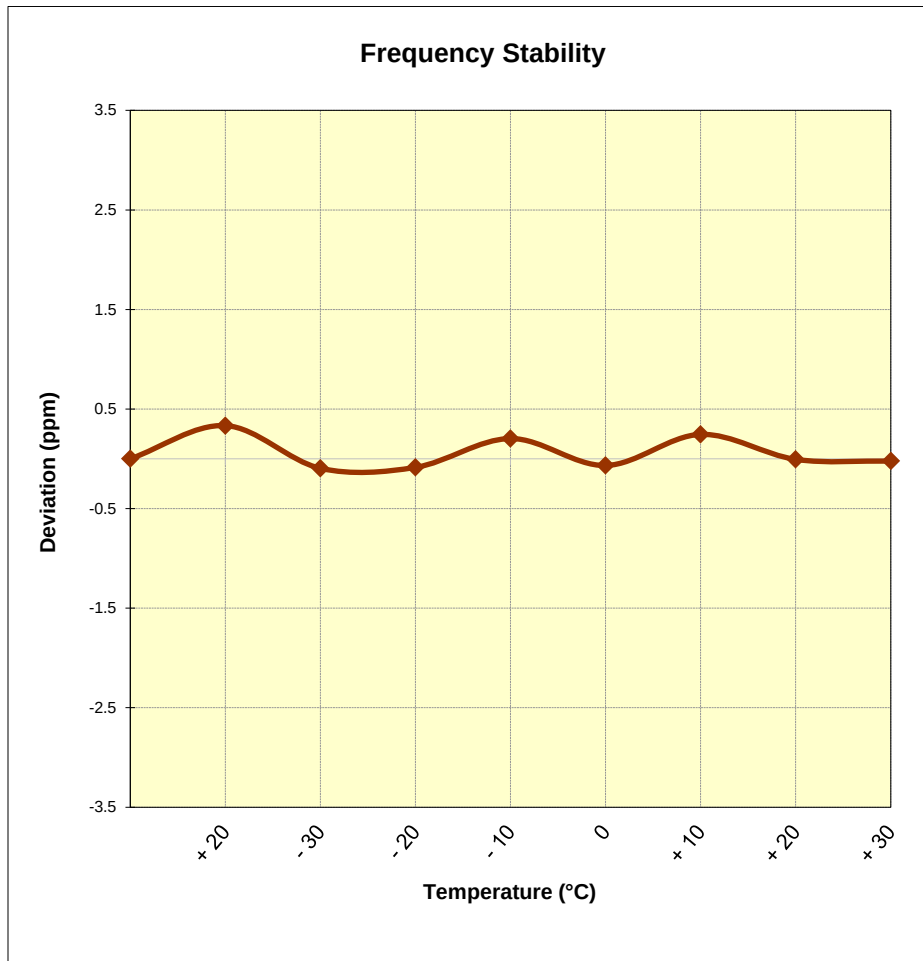


Figure 7-12. Frequency Stability Graph (Band 5)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	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: 4.41 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	+ 20 (Ref)	1,744,999,790	-210	-0.0000120
100 %		- 30	1,744,999,952	-48	-0.0000028
100 %		- 20	1,744,999,677	-323	-0.0000185
100 %		- 10	1,744,999,985	-15	-0.0000009
100 %		0	1,745,000,080	80	0.0000046
100 %		+ 10	1,744,999,968	-32	-0.0000018
100 %		+ 20	1,745,000,289	289	0.0000166
100 %		+ 30	1,745,000,392	392	0.0000225
100 %		+ 40	1,744,999,669	-331	-0.0000190
100 %		+ 50	1,745,000,099	99	0.0000057
85 %		+ 20	1,744,999,958	-42	-0.0000024
BATT. ENDPOINT	3.51	+ 20	1,744,999,984	-16	-0.0000009

Table 7-66. 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: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 LG	Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

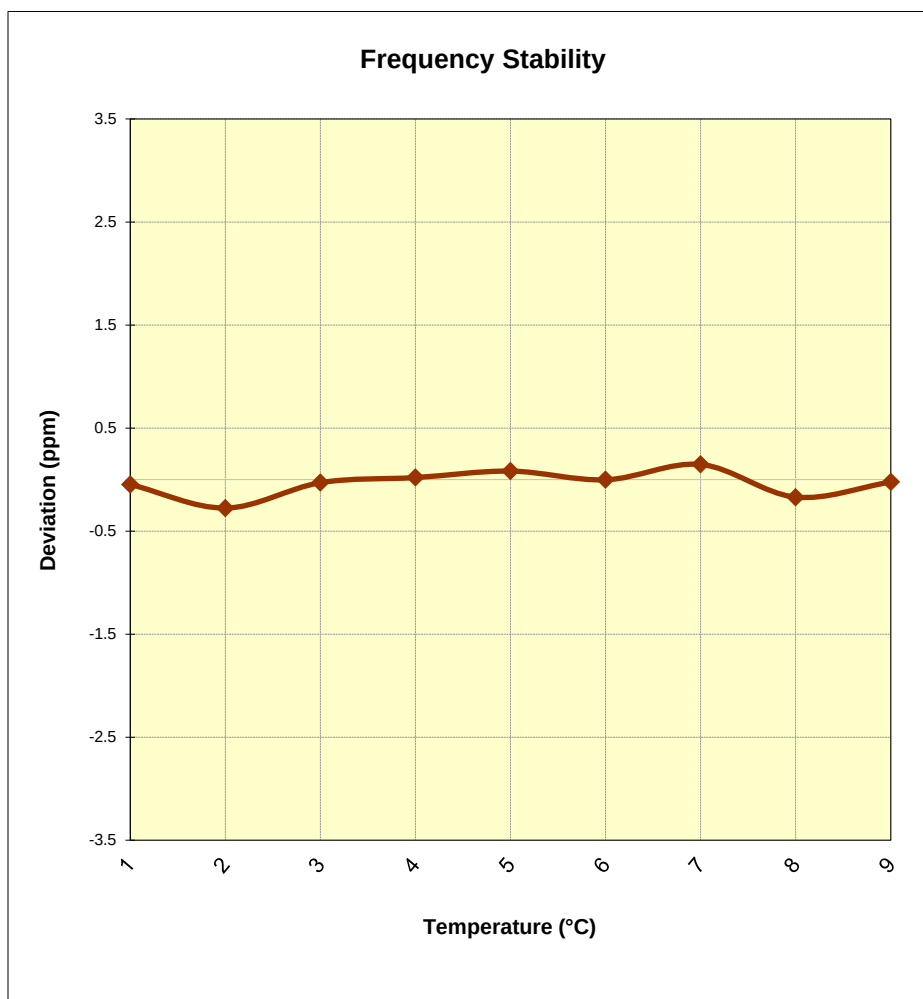


Figure 7-13. Frequency Stability Graph (Band 66/4)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 18900

REFERENCE VOLTAGE: 4.41 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	+ 20 (Ref)	1,879,999,843	-157	-0.0000084
100 %		- 30	1,880,000,127	127	0.0000068
100 %		- 20	1,879,999,739	-261	-0.0000139
100 %		- 10	1,880,000,015	15	0.0000008
100 %		0	1,879,999,675	-325	-0.0000173
100 %		+ 10	1,879,999,976	-24	-0.0000013
100 %		+ 20	1,880,000,127	127	0.0000068
100 %		+ 30	1,879,999,768	-232	-0.0000123
100 %		+ 40	1,880,000,044	44	0.0000023
100 %		+ 50	1,879,999,865	-135	-0.0000072
85 %		+ 20	1,880,000,270	270	0.0000144
BATT. ENDPOINT	3.51	+ 20	1,879,999,994	-6	-0.0000003

Table 7-67. Frequency Stability Data (Band 2)

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: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 2 Frequency Stability Measurements

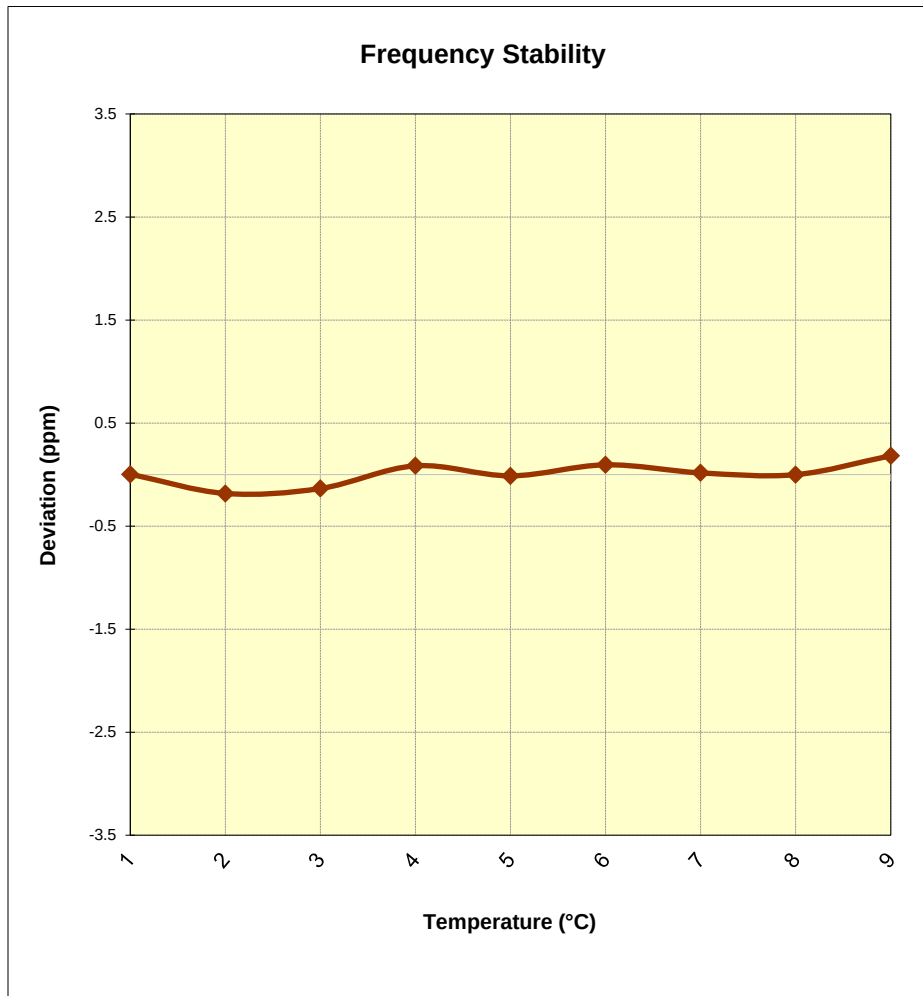


Figure 7-14. Frequency Stability Graph (Band 2)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Band 30 Frequency Stability Measurements

OPERATING FREQUENCY: 2,310,000,000 Hz
CHANNEL: 27710
REFERENCE VOLTAGE: 4.41 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	+ 20 (Ref)	2,309,999,705	-295	-0.0000128
100 %		- 30	2,310,000,124	124	0.0000054
100 %		- 20	2,309,999,848	-152	-0.0000066
100 %		- 10	2,310,000,247	247	0.0000107
100 %		0	2,310,000,245	245	0.0000106
100 %		+ 10	2,310,000,250	250	0.0000108
100 %		+ 20	2,310,000,450	450	0.0000195
100 %		+ 30	2,309,999,857	-143	-0.0000062
100 %		+ 40	2,309,999,834	-166	-0.0000072
100 %		+ 50	2,310,000,131	131	0.0000057
85 %		+ 20	2,310,000,316	316	0.0000137
BATT. ENDPOINT	3.51	+ 20	2,310,000,387	387	0.0000168

Table 7-68. 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.

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 30 Frequency Stability Measurements

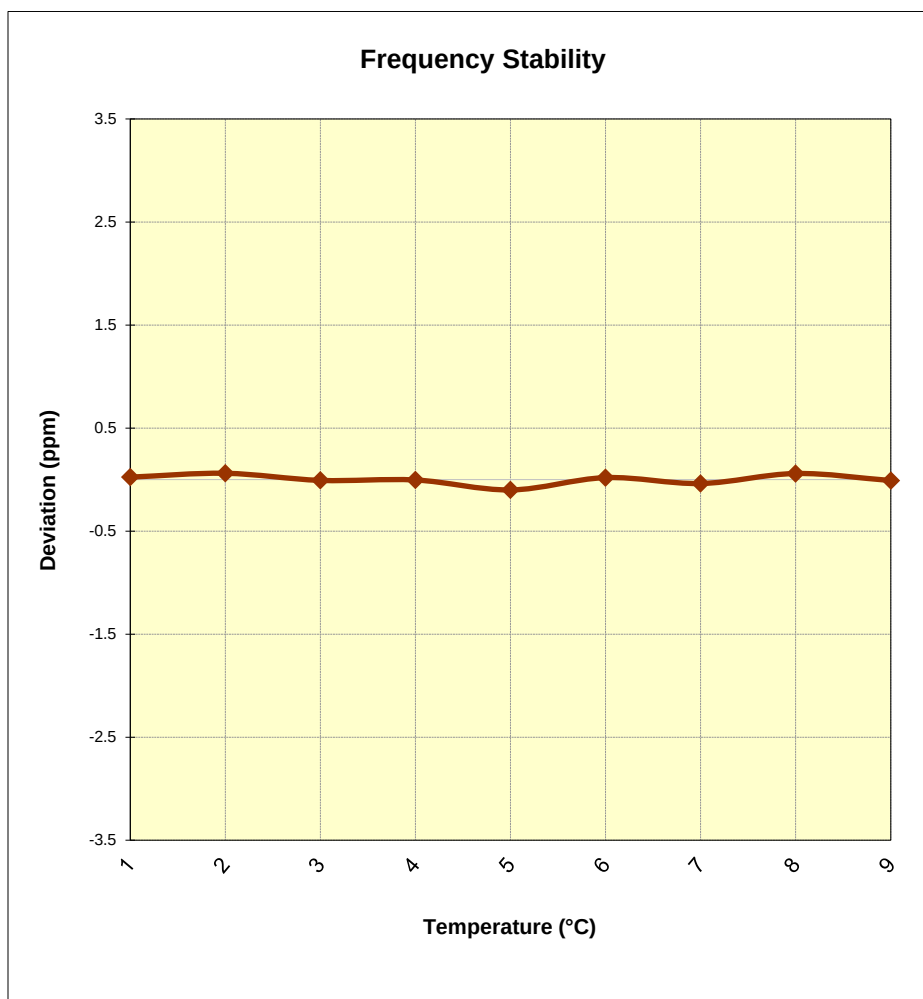


Figure 7-15. Frequency Stability Graph (Band 30)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz
CHANNEL: 40620
REFERENCE VOLTAGE: 4.41 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	+ 20 (Ref)	2,593,000,134	134	0.0000052
100 %		- 30	2,593,000,384	384	0.0000148
100 %		- 20	2,592,999,963	-37	-0.0000014
100 %		- 10	2,593,000,158	158	0.0000061
100 %		0	2,593,000,335	335	0.0000129
100 %		+ 10	2,593,000,239	239	0.0000092
100 %		+ 20	2,592,999,839	-161	-0.0000062
100 %		+ 30	2,592,999,844	-156	-0.0000060
100 %		+ 40	2,592,999,902	-98	-0.0000038
100 %		+ 50	2,593,000,043	43	0.0000017
85 %		+ 20	2,592,999,694	-306	-0.0000118
BATT. ENDPOINT	3.51	+ 20	2,592,999,959	-41	-0.0000016

Table 7-69. 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.

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)	 LG	Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

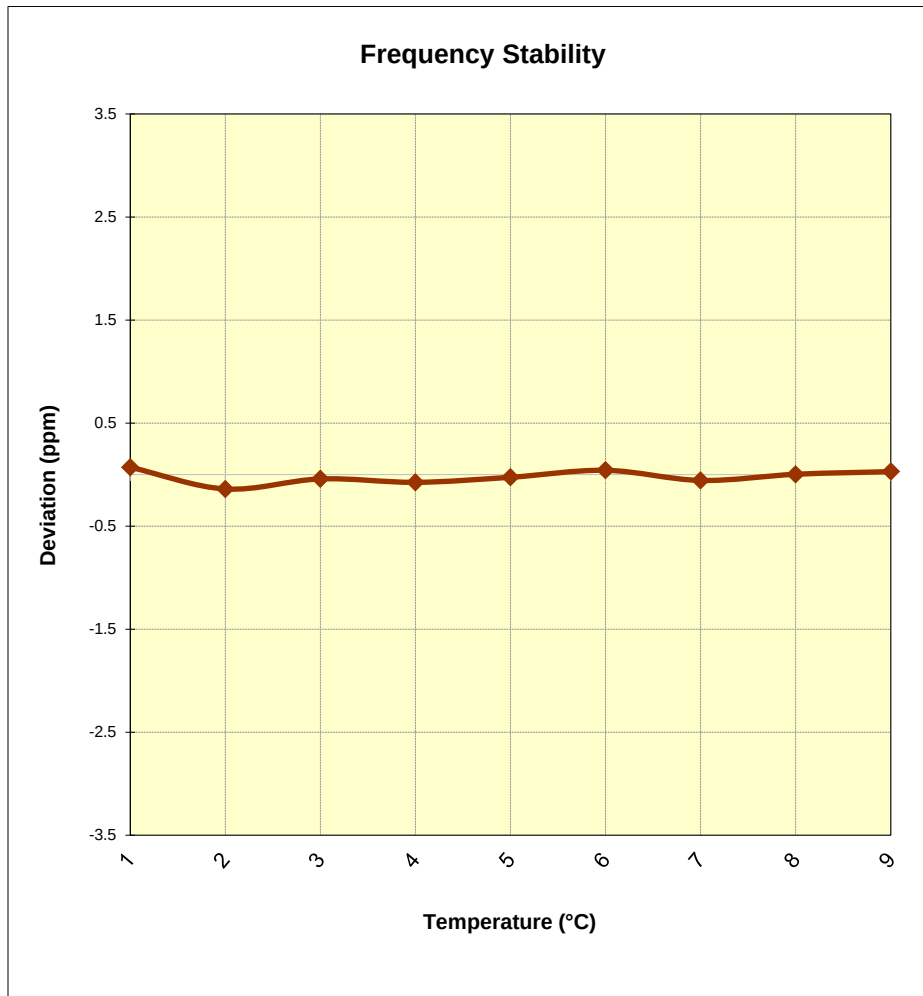


Figure 7-16. Frequency Stability Graph (Band 41)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Band n5 Frequency Stability Measurements

NR Band n5					
		Operating Frequency (Hz):		836,500,000	
		Ref. Voltage (VDC):		4.41	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	- 30	836,500,279	74	0.0000088
		- 20	836,499,920	-285	-0.0000341
		- 10	836,499,928	-277	-0.0000331
		0	836,500,170	-35	-0.0000042
		+ 10	836,499,944	-261	-0.0000312
		+ 20 (Ref)	836,500,205	0	0.0000000
		+ 30	836,499,995	-210	-0.0000251
		+ 40	836,499,981	-224	-0.0000268
		+ 50	836,500,088	-117	-0.0000140
Battery Endpoint	3.51	+ 20	836,500,102	-103	-0.0000123

Table 7-70. Frequency Stability Data (Band n5)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band n5 Frequency Stability Measurements

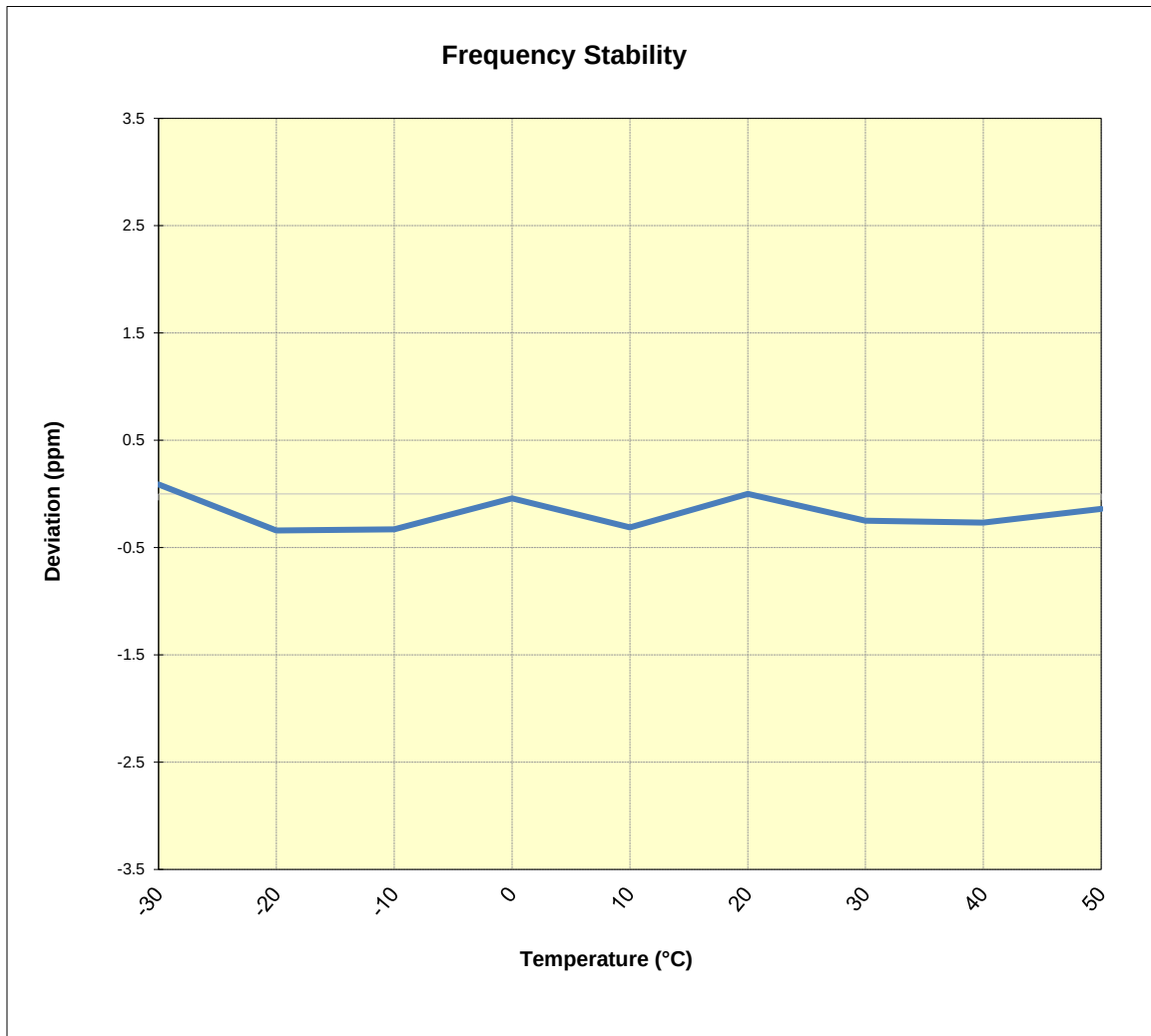


Figure 7-17. Frequency Stability Graph (Band n5)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band n66 Frequency Stability Measurements

LTE Band n66					
		Operating Frequency (Hz):		1,745,000,000	
		Ref. Voltage (VDC):		4.41	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	- 30	1,732,499,981	-92	-0.0000053
		- 20	1,732,499,924	-149	-0.0000086
		- 10	1,732,499,832	-241	-0.0000139
		0	1,732,499,875	-198	-0.0000114
		+ 10	1,732,499,978	-95	-0.0000055
		+ 20 (Ref)	1,732,500,073	0	0.0000000
		+ 30	1,732,499,855	-218	-0.0000126
		+ 40	1,732,500,139	66	0.0000038
		+ 50	1,732,500,346	273	0.0000158
Battery Endpoint	3.51	+ 20	1,732,499,876	-197	-0.0000114

Table 7-71. Frequency Stability Data (Band n66)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band n66 Frequency Stability Measurements

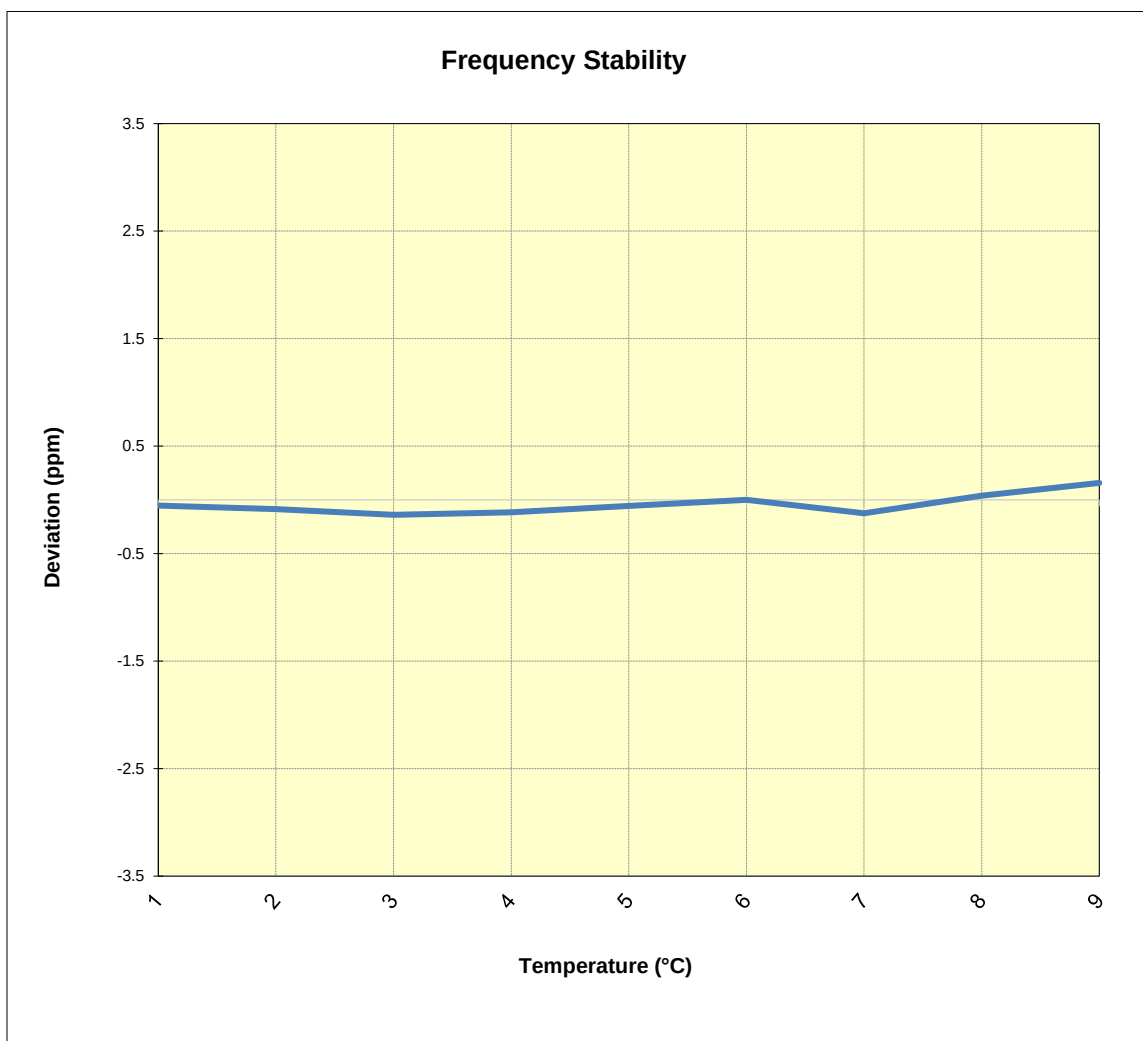


Figure 7-18. Frequency Stability Graph (Band n66)

FCC ID: ZNFF100VM	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Band n2 Frequency Stability Measurements

NR Band n2					
		Operating Frequency (Hz):		1,880,000,000	
		Ref. Voltage (VDC):		4.41	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.41	- 30	1,882,500,145	132	0.0000070
		- 20	1,882,499,914	-99	-0.0000053
		- 10	1,882,500,106	93	0.0000049
		0	1,882,499,967	-46	-0.0000024
		+ 10	1,882,499,718	-295	-0.0000157
		+ 20 (Ref)	1,882,500,013	0	0.0000000
		+ 30	1,882,500,117	104	0.0000055
		+ 40	1,882,500,181	168	0.0000089
		+ 50	1,882,500,038	25	0.0000013
Battery Endpoint	3.51	+ 20	1,882,500,349	336	0.0000178

Table 7-72. Frequency Stability Data (Band n2)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band n2 Frequency Stability Measurements

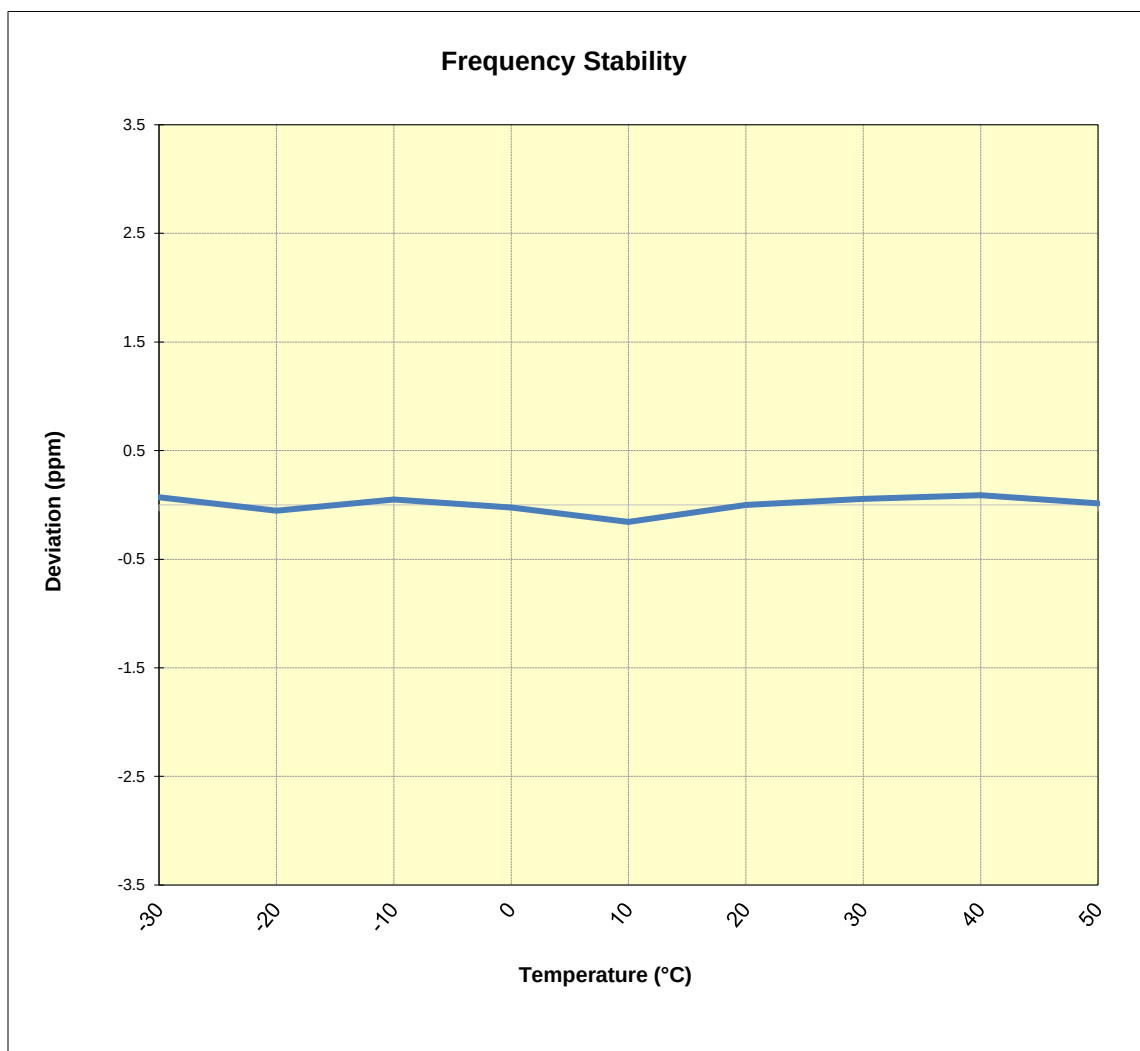


Figure 7-19. Frequency Stability Graph (Band n2)

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFF100VM** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

FCC ID: ZNFF100VM	 PCTEST Proud to be part of 	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2006150096-03.ZNF	Test Dates: 06/26/2020-08/18/2020	EUT Type: Portable Handset		Page 301 of 301