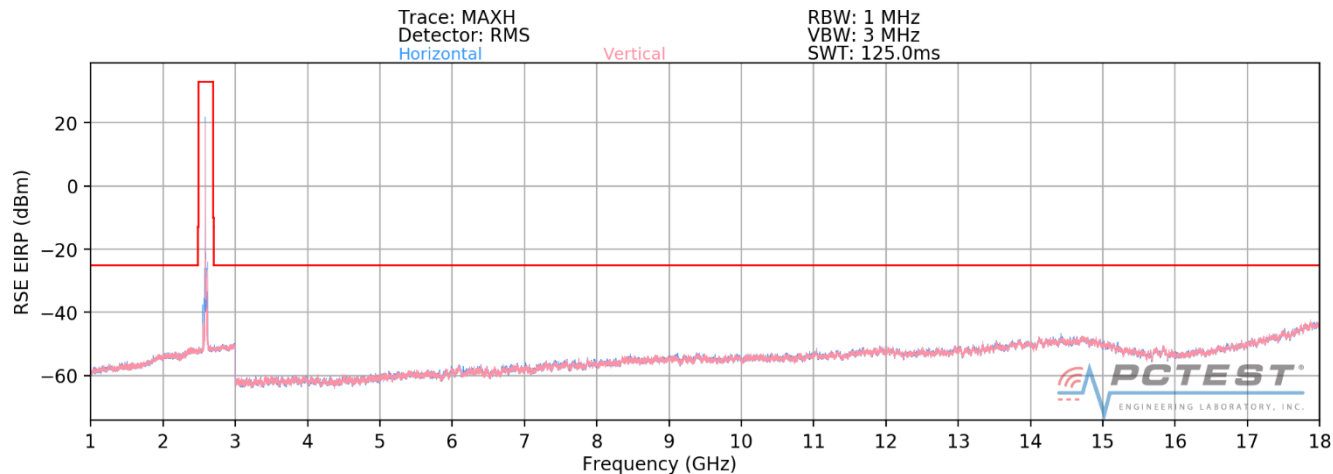
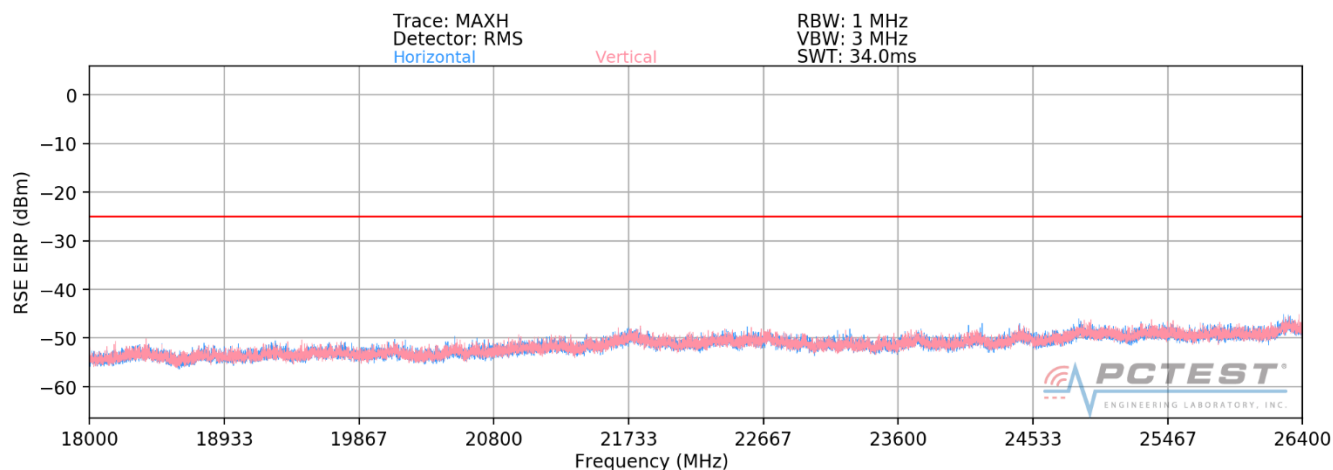


Band 41 PC2



Plot 7-365. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC2)



Plot 7-366. Radiated Spurious Plot 18GHz - 26.5GHz (Band 41 PC2)

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	V	-	-	-69.66	8.56	-61.09	-36.1
7530.00	V	-	-	-63.99	8.46	-55.53	-30.5

Table 7-33. Radiated Spurious Data (Band 41 PC2 - Low Channel)

FCC ID: ZNFL555DL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)					Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset				Page 233 of 259	

OPERATING FREQUENCY: 2593.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	-	-	-68.20	8.70	-59.50	-34.5
7779.00	V	-	-	-66.85	8.69	-58.17	-33.2

Table 7-34. Radiated Spurious Data (Band 41 PC2 – Mid Channel)

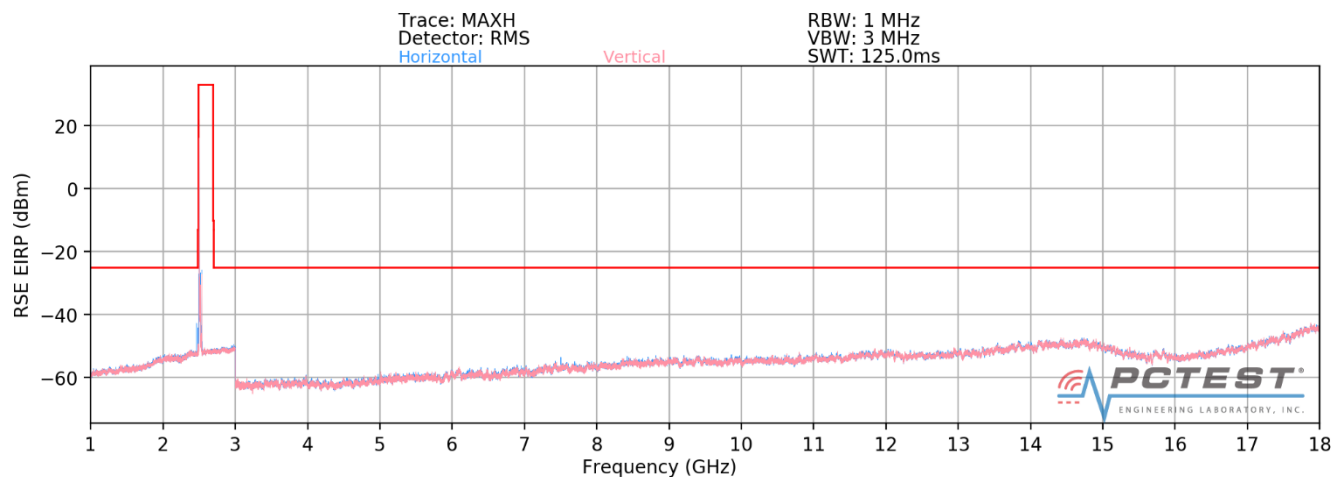
OPERATING FREQUENCY: 2680.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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	V	-	-	-69.16	8.70	-60.46	-35.5
8040.00	V	-	-	-66.58	8.95	-57.63	-32.6

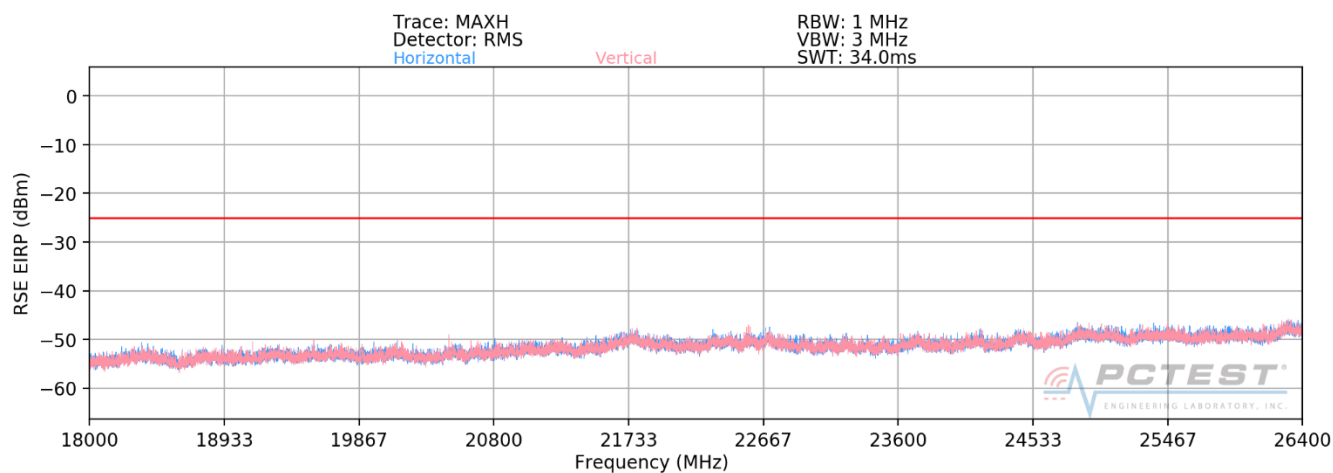
Table 7-35. Radiated Spurious Data (Band 41 PC2 – High Channel)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 234 of 259

Band 41 PC3



Plot 7-367. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC3)



Plot 7-368. Radiated Spurious Plot 18GHz - 26.5GHz (Band 41 PC3)

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	V	-	-	-69.40	8.56	-60.83	-35.8
7530.00	V	-	-	-65.56	8.46	-57.10	-32.1

Table 7-36. Radiated Spurious Data (Band 41 PC3 - Low Channel)

FCC ID: ZNFL555DL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 235 of 259

OPERATING FREQUENCY: 2593.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	-	-	-69.01	8.70	-60.31	-35.3
7779.00	V	-	-	-66.48	8.69	-57.80	-32.8

Table 7-37. Radiated Spurious Data (Band 41 PC3 – 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	V	-	-	-69.60	8.70	-60.90	-35.9
8040.00	V	-	-	-66.88	8.95	-57.93	-32.9

Table 7-38. Radiated Spurious Data (Band 41 PC3 – High Channel)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 236 of 259

7.9 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: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 237 of 259

Test Setup

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

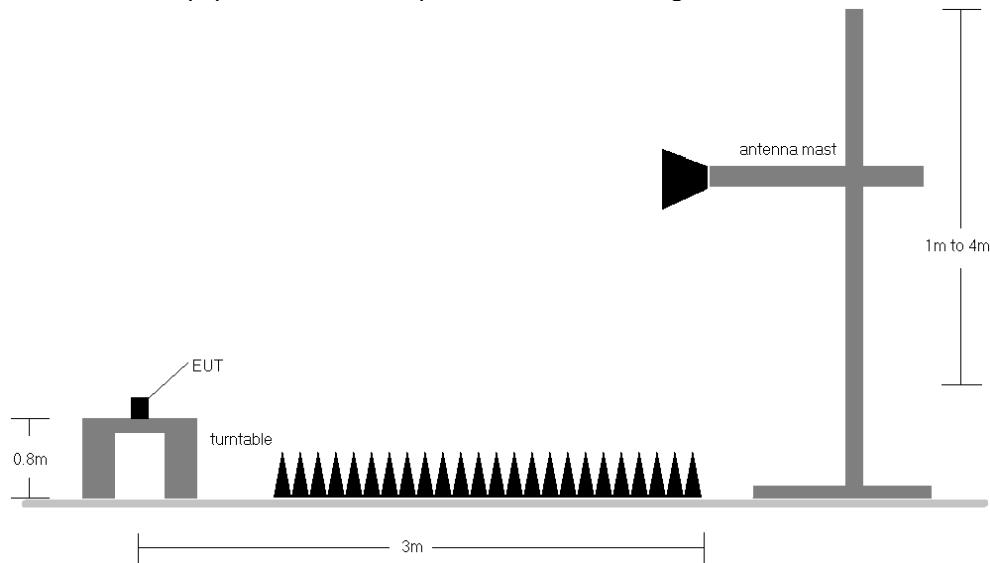


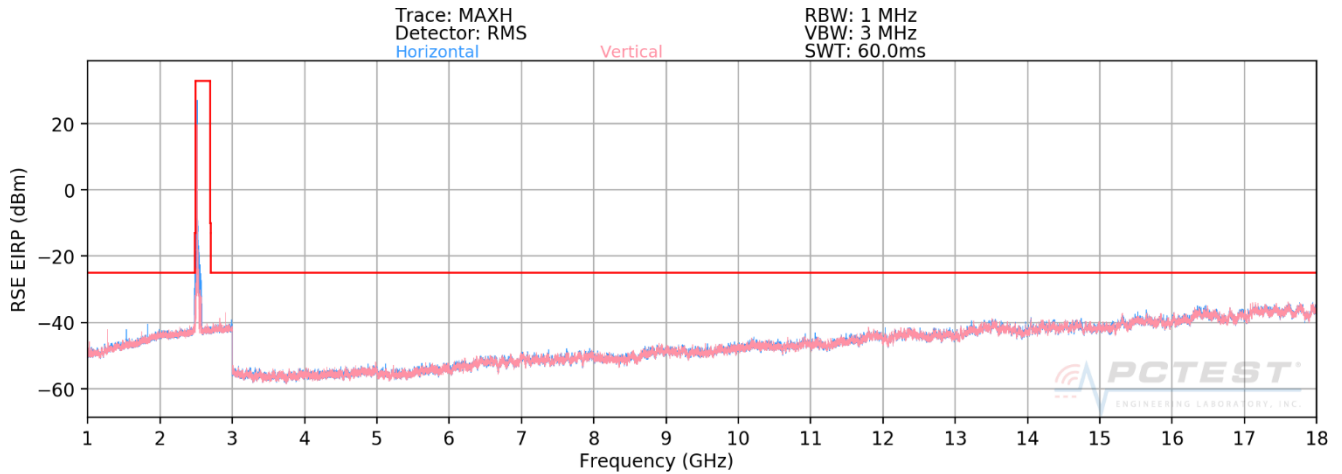
Figure 7-9. Test Instrument & Measurement Setup

Test Notes

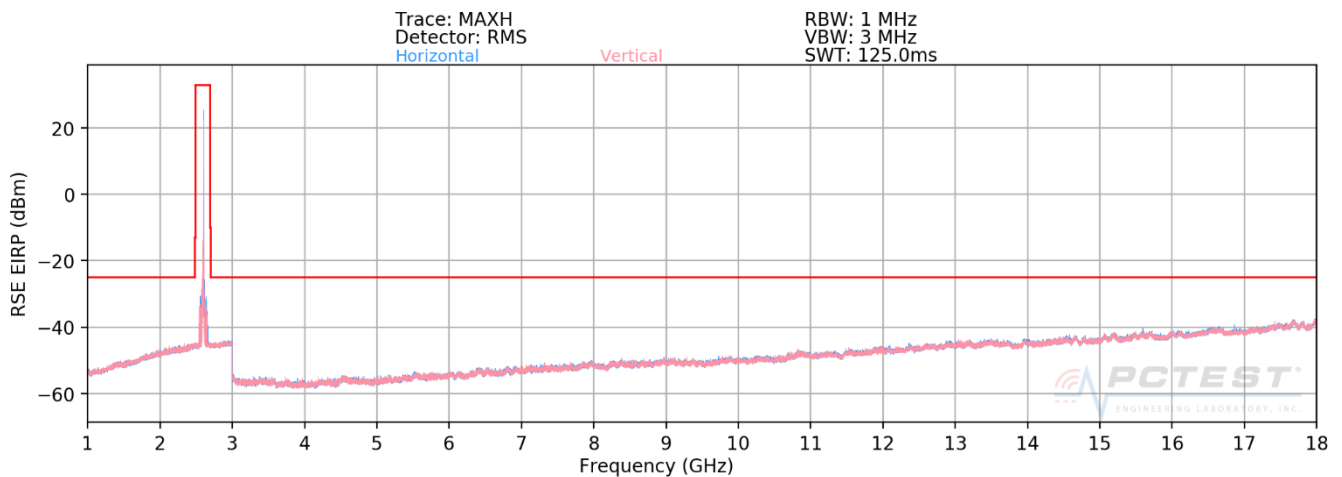
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with 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.

FCC ID: ZNFL555DL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 238 of 259

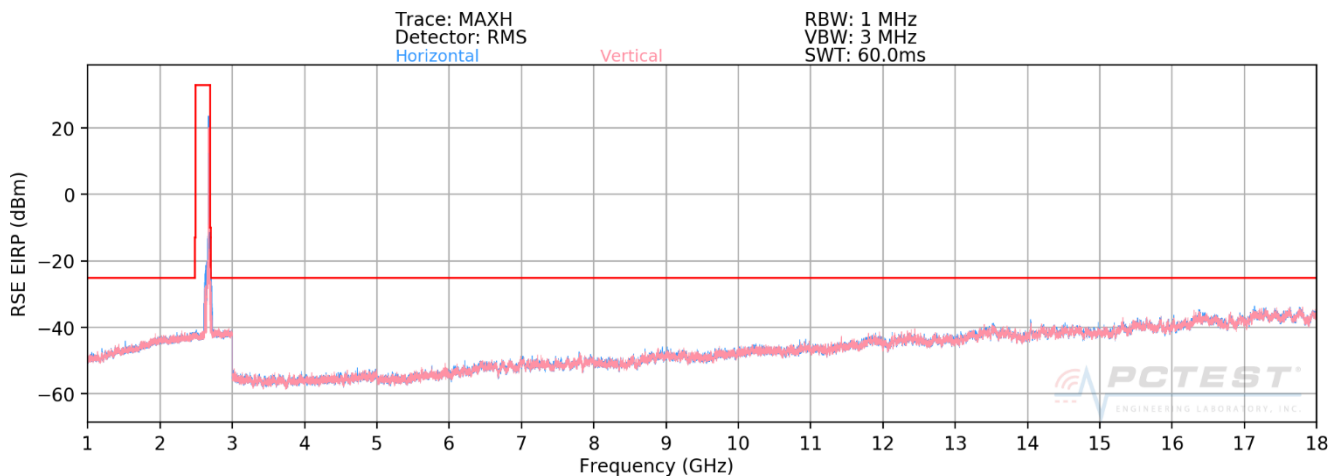
Band 41 PC2



Plot 7-39. Radiated Spurious Plot (ULCA B41 PC2 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – Low Channel)

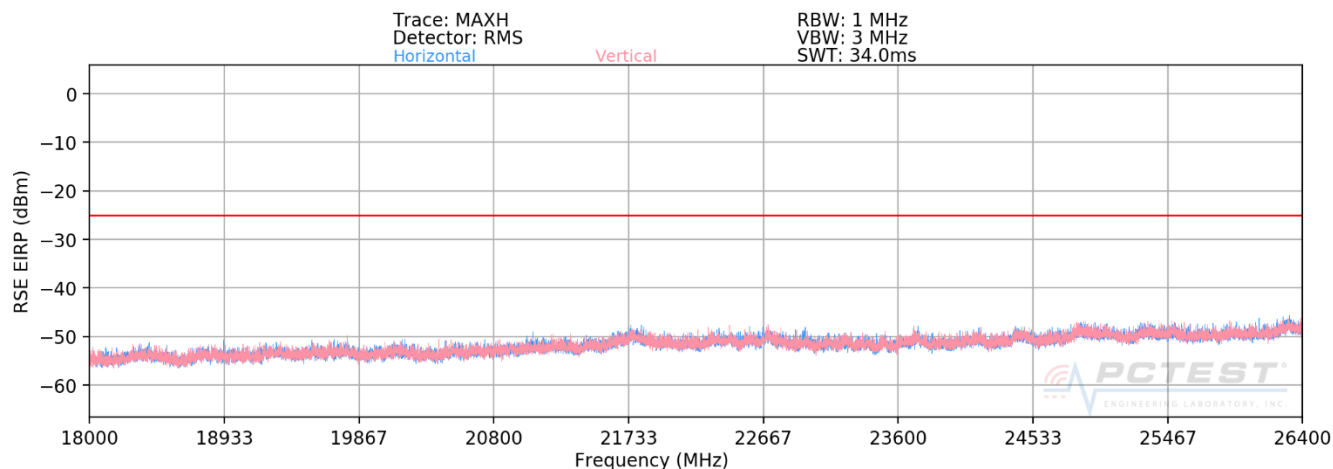


Plot 7-40. Radiated Spurious Plot (ULCA B41 PC2 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – Mid Channel)



Plot 7-41. Radiated Spurious Plot (ULCA B41 PC2 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – High Channel)

FCC ID: ZNFL555DL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 239 of 259



Plot 7-42. Radiated Spurious Plot 18GHz – 26.5GHz (ULCA B41 PC2 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0)

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	170	51	-64.71	8.56	-56.15	-31.2
7518.00	H	107	303	-58.88	8.49	-50.39	-25.4
10024.00	H	-	-	-59.20	9.85	-49.35	-24.3
12530.00	H	-	-	-54.92	9.07	-45.85	-20.8

Table 7-43. Radiated Spurious Data (ULCA B41 PC2 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – Low Channel)

FCC ID: ZNFL555DL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 240 of 259

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: -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	386	207	-64.12	8.70	-55.42	-30.4
7779.00	H	101	69	-59.90	8.69	-51.21	-26.2
10372.00	H	-	-	-58.98	9.62	-49.35	-24.4
12965.00	H	-	-	-53.95	8.99	-44.96	-20.0

Table 7-44. Radiated Spurious Data (ULCA B41 PC2 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – Mid Channel)

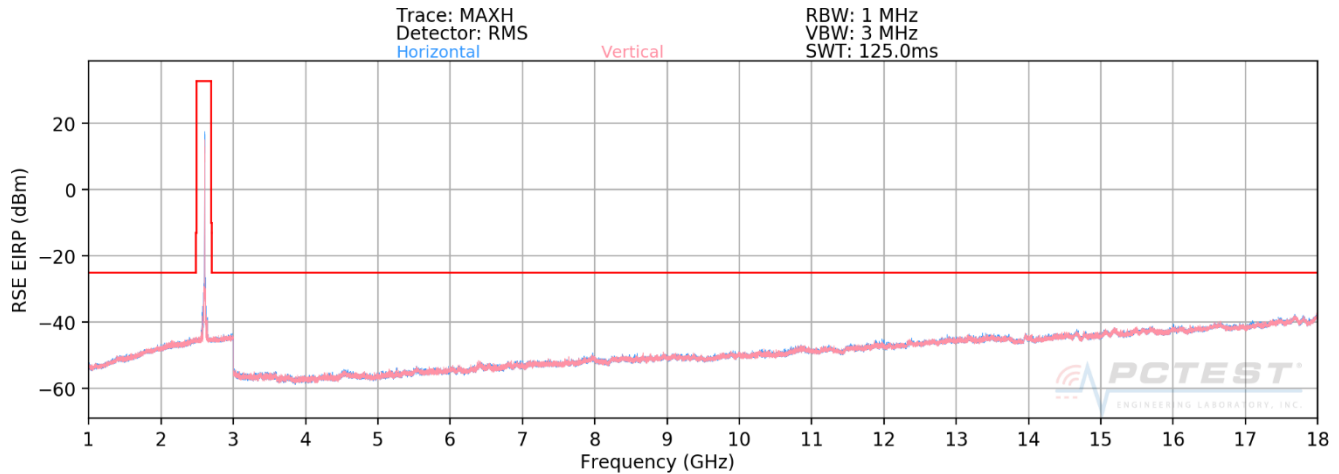
OPERATING FREQUENCY (PCC): 2680.00 MHz
 OPERATING FREQUENCY (SCC): 2660.20 MHz
 CHANNEL (PCC): 41490
 CHANNEL (SCC): 41292
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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	278	120	-63.65	8.70	-54.95	-30.0
8040.00	H	117	296	-58.40	8.95	-49.44	-24.4
10720.00	H	-	-	-57.44	9.32	-48.12	-23.1
13400.00	H	-	-	-53.49	8.77	-44.71	-19.7

Table 7-45. Radiated Spurious Data (ULCA B41 PC2 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – High Channel)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 241 of 259

Band 41 PC3



Plot 7-46. Radiated Spurious Plot (ULCA B41 PC3 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – Mid Channel)

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	-	-	-64.98	8.56	-56.42	-31.4
7518.00	H	-	-	-60.33	8.49	-51.84	-26.8

Table 7-47. Radiated Spurious Data (ULCA B41 PC3 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – Low Channel)

FCC ID: ZNFL555DL	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 242 of 259

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: -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	-	-	-65.13	8.70	-56.43	-31.4
7779.00	H	-	-	-60.71	8.69	-52.02	-27.0

Table 7-48. Radiated Spurious Data (ULCA B41 PC3 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – Mid Channel)

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	-	-	-63.62	8.70	-54.92	-29.9
8040.00	H	-	-	-60.09	8.95	-51.13	-26.1

Table 7-49. Radiated Spurious Data (ULCA B41 PC3 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0 – High Channel)

FCC ID: ZNFL555DL			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset			Page 243 of 259

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.

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

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 244 of 259

Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz
 CHANNEL: 133297
 REFERENCE VOLTAGE: 4.18 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.18	- 30	680,500,043	43	0.0000063
100 %		- 20	680,500,028	28	0.0000041
100 %		- 10	680,500,122	122	0.0000179
100 %		0	680,499,765	-235	-0.0000345
100 %		+ 10	680,499,779	-221	-0.0000325
100 %		+ 20	680,500,102	102	0.0000150
100 %		+ 30	680,500,459	459	0.0000675
100 %		+ 40	680,499,993	-7	-0.0000010
100 %		+ 50	680,499,974	-26	-0.0000038
BATT. ENDPOINT	3.45	+ 20	680,499,986	-14	-0.0000021

Table 7-50. Frequency Stability Data (Band 71)

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: ZNFL555DL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 71 Frequency Stability Measurements

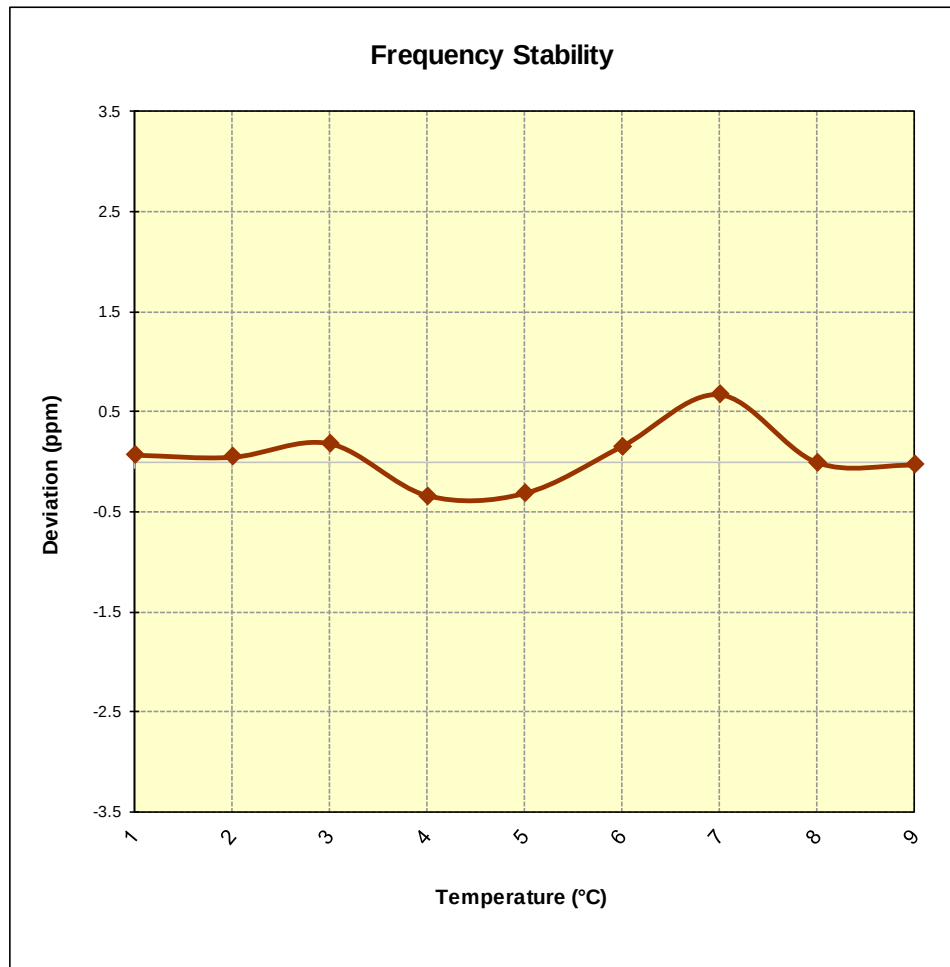


Figure 7-10. Frequency Stability Graph (Band 71)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 246 of 259

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 4.18 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.18	- 30	707,499,745	-255	-0.0000360
100 %		- 20	707,499,896	-104	-0.0000147
100 %		- 10	707,499,990	-10	-0.0000014
100 %		0	707,500,088	88	0.0000124
100 %		+ 10	707,500,024	24	0.0000034
100 %		+ 20	707,500,109	109	0.0000154
100 %		+ 30	707,500,014	14	0.0000020
100 %		+ 40	707,500,172	172	0.0000243
100 %		+ 50	707,499,912	-88	-0.0000124
BATT. ENDPOINT	3.45	+ 20	707,499,862	-138	-0.0000195

Table 7-51. 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: ZNFL555DL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset	Page 247 of 259

Band 12 Frequency Stability Measurements

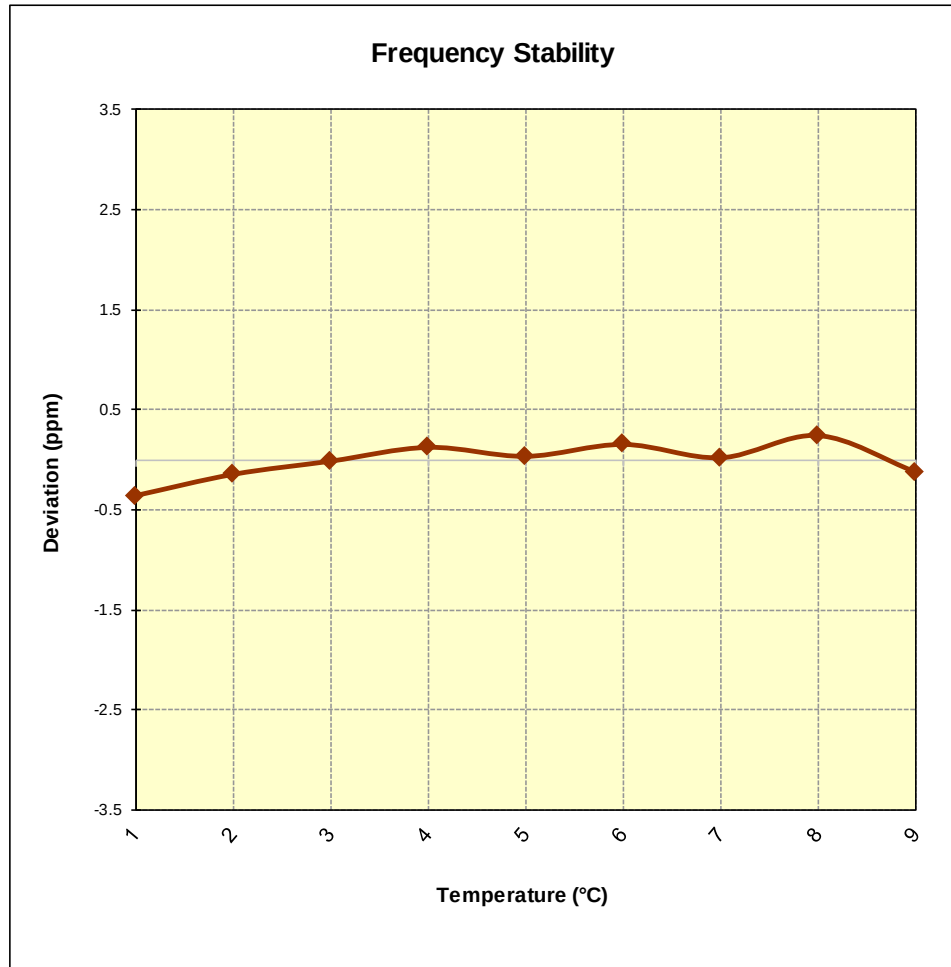


Figure 7-11. Frequency Stability Graph (Band 12)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 248 of 259

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 4.18 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.18	- 30	781,999,915	-85	-0.0000109
100 %		- 20	782,000,169	169	0.0000216
100 %		- 10	782,000,223	223	0.0000285
100 %		0	781,999,944	-56	-0.0000072
100 %		+ 10	781,999,913	-87	-0.0000111
100 %		+ 20	781,999,977	-23	-0.0000029
100 %		+ 30	781,999,951	-49	-0.0000063
100 %		+ 40	782,000,106	106	0.0000136
100 %		+ 50	781,999,994	-6	-0.0000008
BATT. ENDPOINT	3.45	+ 20	781,999,985	-15	-0.0000019

Table 7-52. 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: ZNFL555DL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset	Page 249 of 259

Band 13 Frequency Stability Measurements

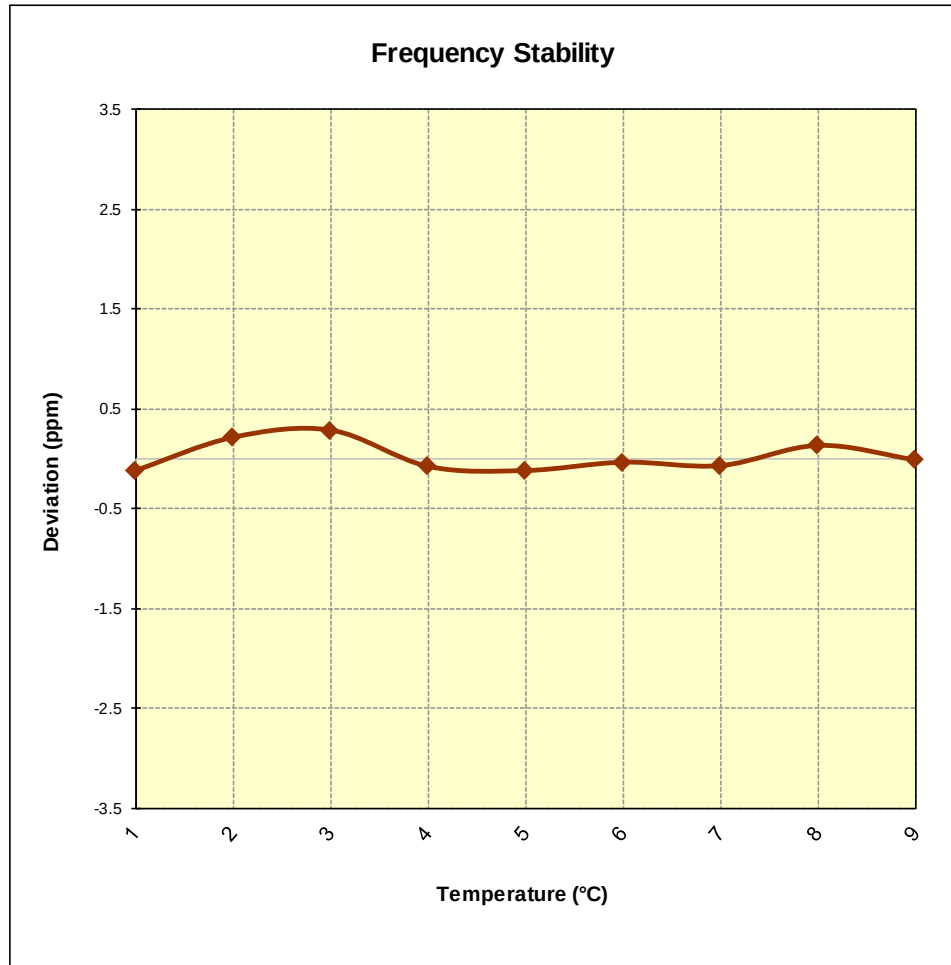


Figure 7-12. Frequency Stability Graph (Band 13)

FCC ID: ZNFL555DL		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: 4.18 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.18	- 30	831,500,056	56	0.0000067
100 %		- 20	831,499,805	-195	-0.0000235
100 %		- 10	831,500,050	50	0.0000060
100 %		0	831,499,949	-51	-0.0000061
100 %		+ 10	831,499,953	-47	-0.0000057
100 %		+ 20	831,500,080	80	0.0000096
100 %		+ 30	831,499,710	-290	-0.0000349
100 %		+ 40	831,499,734	-266	-0.0000320
100 %		+ 50	831,500,083	83	0.0000100
BATT. ENDPOINT	3.45	+ 20	831,500,390	390	0.0000469

Table 7-53. Frequency Stability Data (Band 26/5)

FCC ID: ZNFL555DL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 26/5 Frequency Stability Measurements

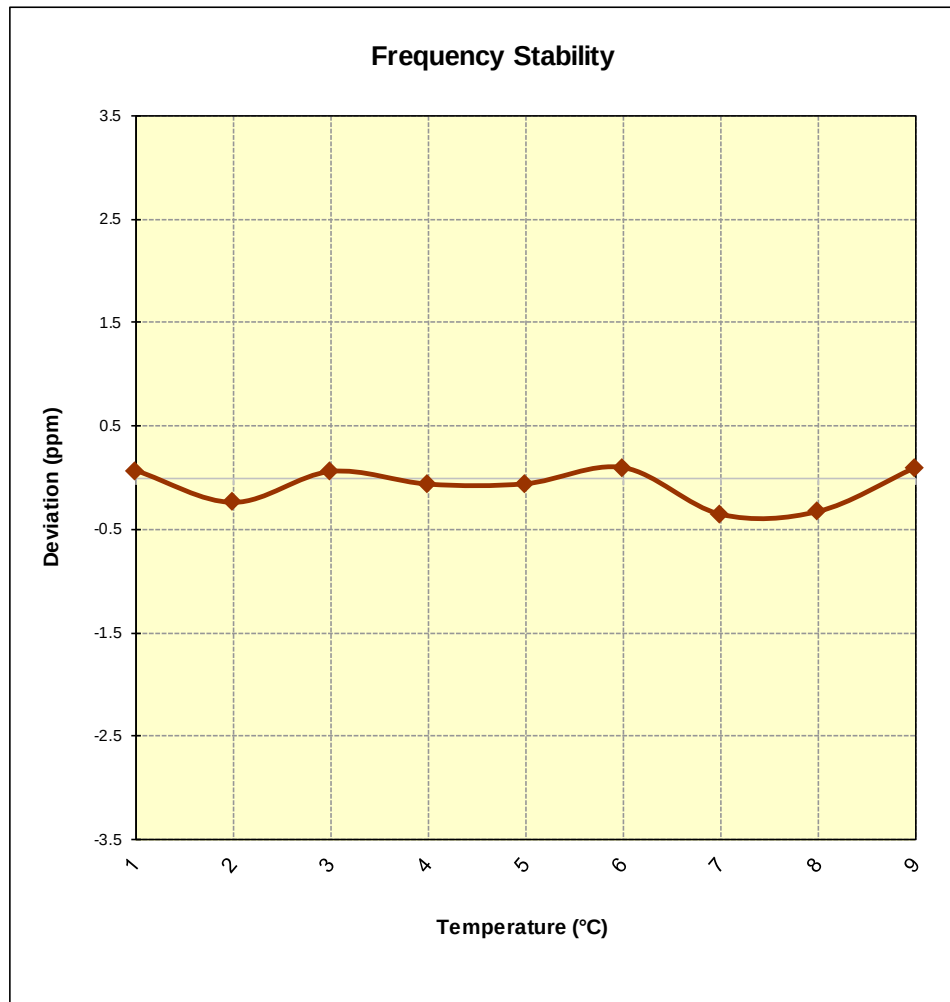


Figure 7-13. Frequency Stability Graph (Band 26/5)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 252 of 259

Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz
 CHANNEL: 132322
 REFERENCE VOLTAGE: 4.18 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.18	- 30	1,745,000,081	81	0.0000046
100 %		- 20	1,744,999,932	-68	-0.0000039
100 %		- 10	1,744,999,955	-45	-0.0000026
100 %		0	1,745,000,079	79	0.0000045
100 %		+ 10	1,744,999,976	-24	-0.0000014
100 %		+ 20	1,744,999,973	-27	-0.0000015
100 %		+ 30	1,744,999,988	-12	-0.0000007
100 %		+ 40	1,745,000,126	126	0.0000072
100 %		+ 50	1,744,999,730	-270	-0.0000155
BATT. ENDPOINT	3.45	+ 20	1,745,000,329	329	0.0000189

Table 7-54. 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: ZNFL555DL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

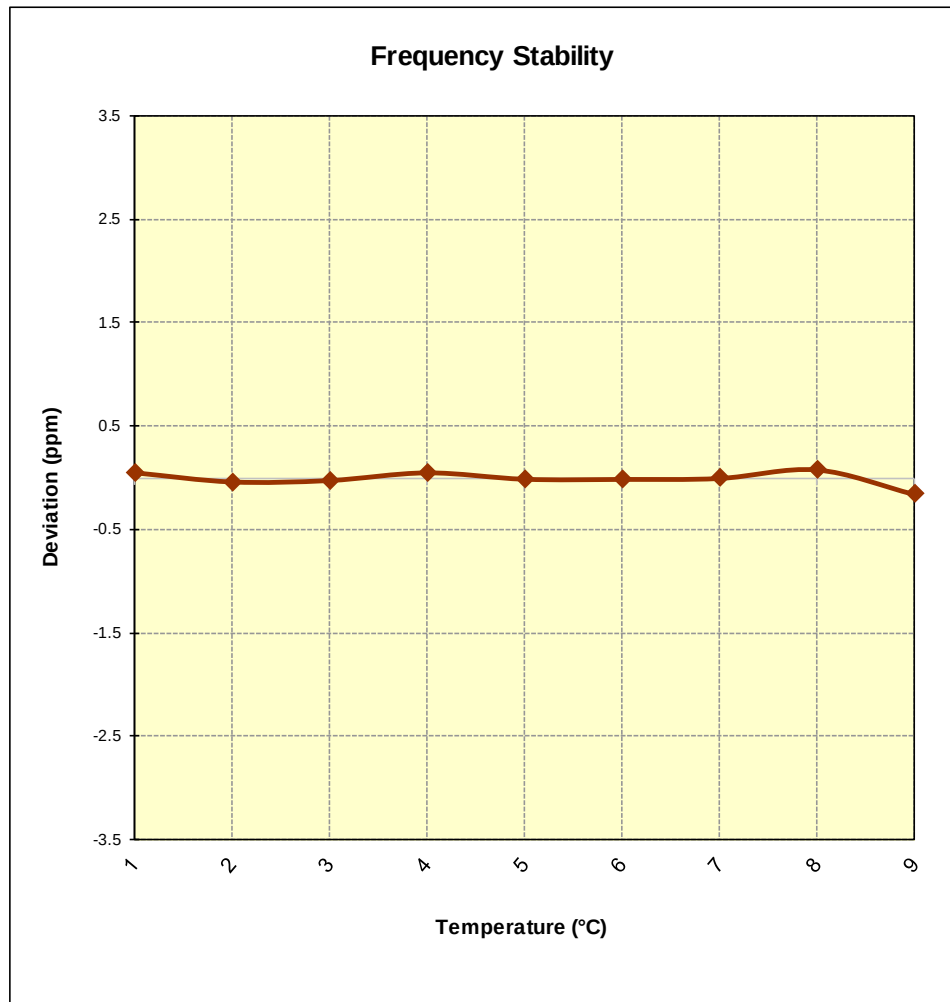


Figure 7-14. Frequency Stability Graph (Band 66/4)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz
 CHANNEL: 26365
 REFERENCE VOLTAGE: 4.18 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.18	- 30	1,882,499,951	-49	-0.0000026
100 %		- 20	1,882,500,140	140	0.0000074
100 %		- 10	1,882,500,048	48	0.0000025
100 %		0	1,882,499,948	-52	-0.0000028
100 %		+ 10	1,882,500,006	6	0.0000003
100 %		+ 20	1,882,500,051	51	0.0000027
100 %		+ 30	1,882,499,693	-307	-0.0000163
100 %		+ 40	1,882,500,301	301	0.0000160
100 %		+ 50	1,882,499,877	-123	-0.0000065
BATT. ENDPOINT	3.45	+ 20	1,882,500,021	21	0.0000011

Table 7-55. Frequency Stability Data (Band 25/2)

FCC ID: ZNFL555DL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 25/2 Frequency Stability Measurements

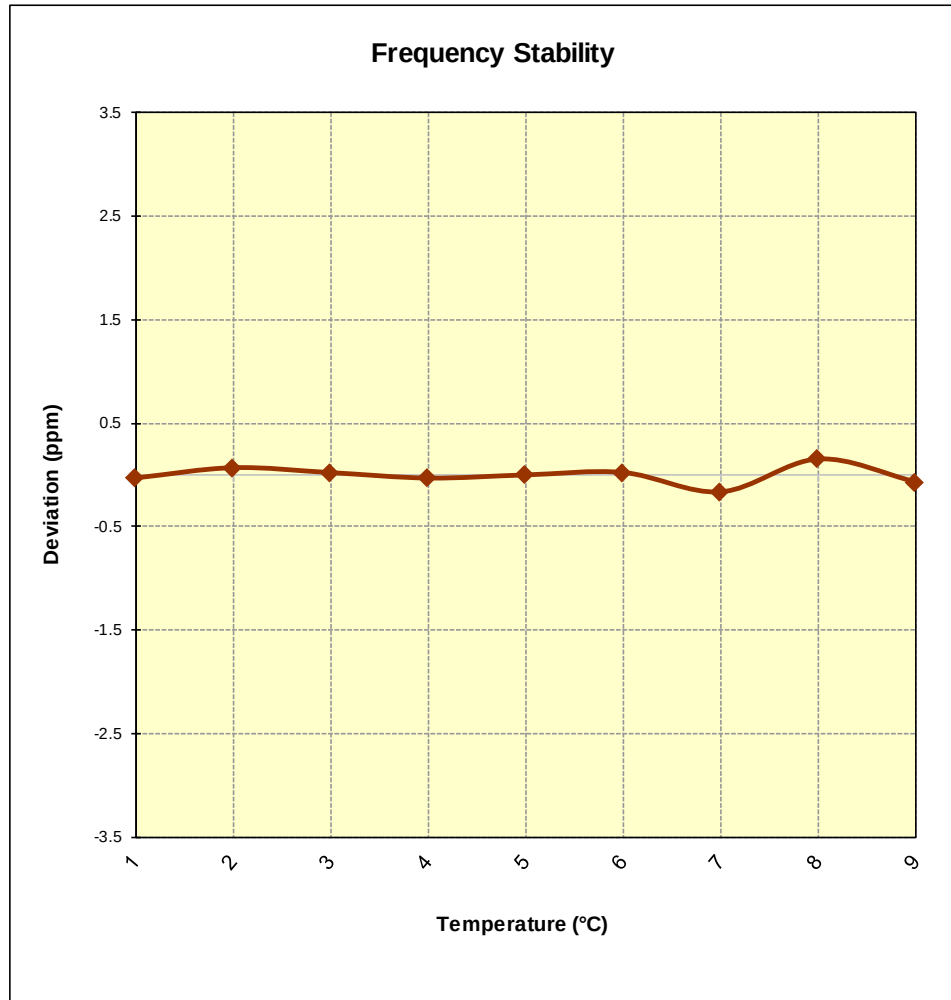


Figure 7-15. Frequency Stability Graph (Band 25/2)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz
 CHANNEL: 40620
 REFERENCE VOLTAGE: 4.18 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.18	- 30	2,593,000,031	31	0.0000012
100 %		- 20	2,592,999,783	-217	-0.0000084
100 %		- 10	2,592,999,616	-384	-0.0000148
100 %		0	2,593,000,232	232	0.0000089
100 %		+ 10	2,592,999,995	-5	-0.0000002
100 %		+ 20	2,592,999,762	-238	-0.0000092
100 %		+ 30	2,593,000,135	135	0.0000052
100 %		+ 40	2,593,000,034	34	0.0000013
100 %		+ 50	2,592,999,807	-193	-0.0000074
BATT. ENDPOINT	3.45	+ 20	2,592,999,902	-98	-0.0000038

Table 7-56. 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: ZNFL555DL	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

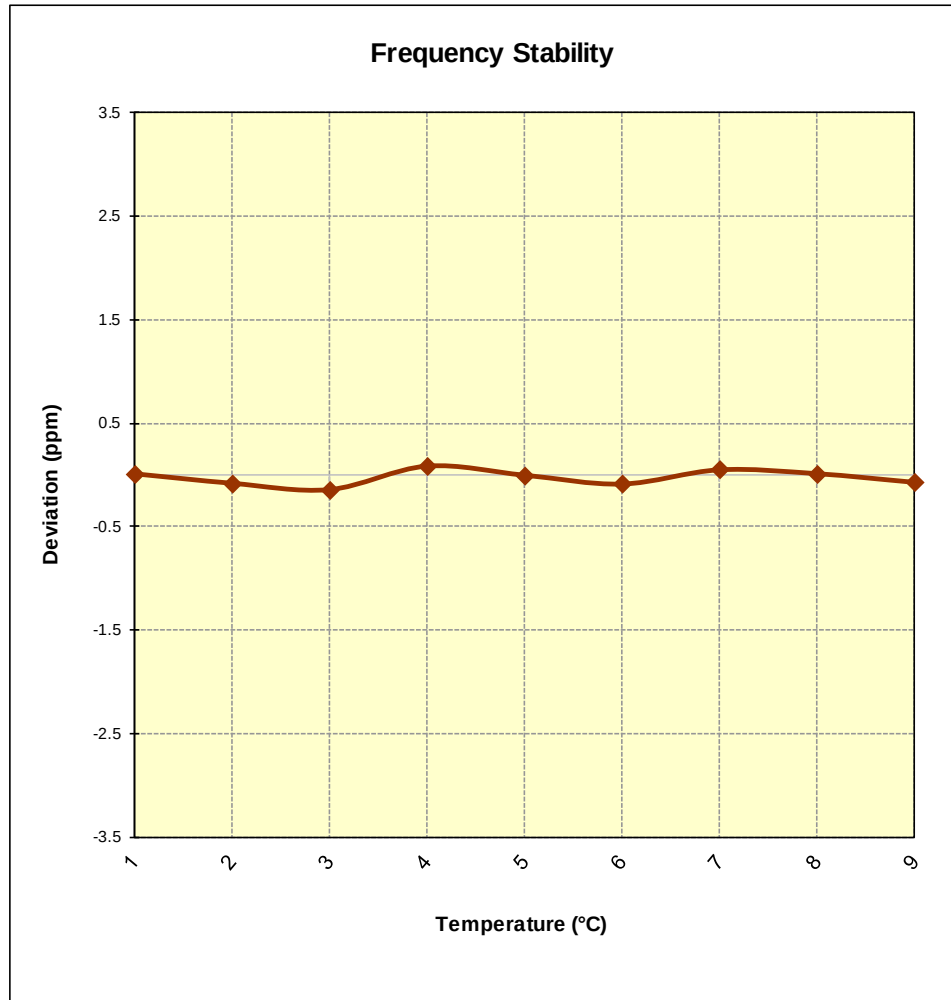


Figure 7-16. Frequency Stability Graph (Band 41)

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 258 of 259

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFL555DL** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

FCC ID: ZNFL555DL		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1910250170-03.ZNF	Test Dates: 10/30 - 12/04/2019	EUT Type: Portable Handset		Page 259 of 259