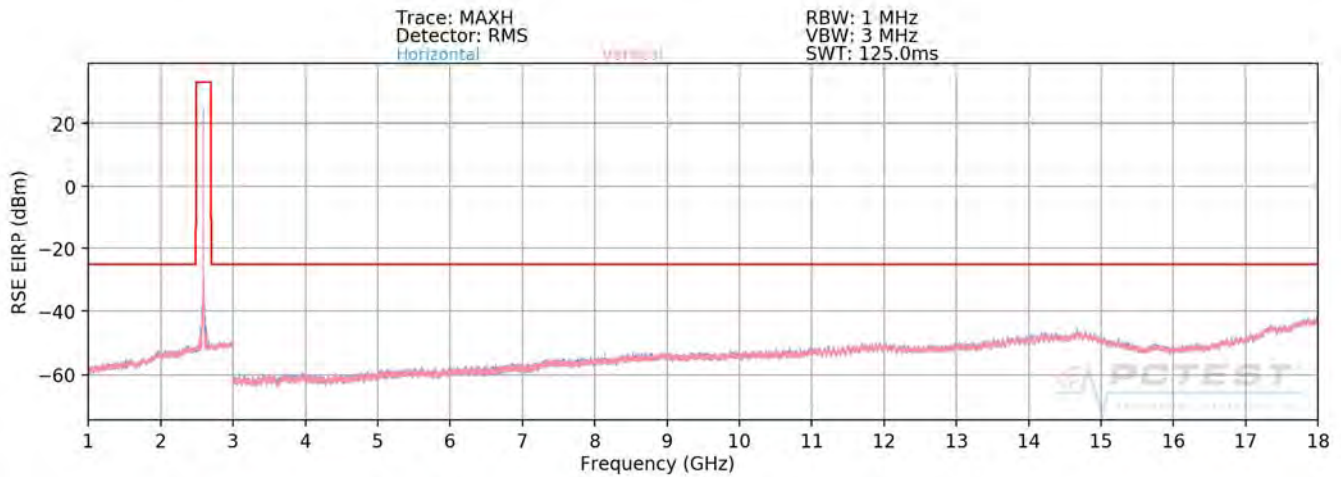


Band 41 (PC3)



Plot 7-395. Radiated Spurious Plot above 1GHz (Band 41 PC3)

OPERATING FREQUENCY: 2510.00 MHz
 CHANNEL: 39790
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 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	100	347	-49.67	8.78	-40.89	-15.9
7530.00	V	108	71	-44.67	9.31	-35.36	-10.4
10040.00	V	-	-	-50.10	9.78	-40.32	-15.3
12550.00	V	-	-	-43.76	8.80	-34.96	-10.0

Table 7-51. Radiated Spurious Data (Band 41 PC3 – Low Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 260 of 289	

OPERATING FREQUENCY: 2593.00 MHz
 CHANNEL: 40620
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 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	112	18	-51.44	9.03	-42.42	-17.4
7779.00	V	181	346	-50.06	9.29	-40.77	-15.8
10372.00	V	-	-	-49.32	9.50	-39.82	-14.8
12965.00	V	-	-	-43.96	8.75	-35.21	-10.2

Table 7-52. Radiated Spurious Data (Band 41 PC3 – Mid Channel)

OPERATING FREQUENCY: 2680.00 MHz
 CHANNEL: 41490
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 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	104	24	-52.62	8.99	-43.63	-18.6
8040.00	V	184	17	-52.48	9.35	-43.13	-18.1
10720.00	V	-	-	-47.38	9.39	-37.99	-13.0
13400.00	V	-	-	-41.86	8.67	-33.19	-8.2

Table 7-53. Radiated Spurious Data (Band 41 PC3 – High Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 261 of 289	

OPERATING FREQUENCY: 2510.00 MHz
 CHANNEL: 39790
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 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	171	30	-50.30	8.78	-41.52	-16.5
7530.00	V	175	29	-45.01	9.31	-35.70	-10.7
10040.00	V	-	-	-50.89	9.78	-41.11	-16.1
12550.00	V	-	-	-44.47	8.80	-35.67	-10.7

Table 7-54. Radiated Spurious Data with WCP (Band 41 PC3 – Low Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 262 of 289	

7.9 Uplink Carrier Aggregation Radiated Measurements

§22.917(a) §27.53(h)

Test Overview

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

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ 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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 263 of 289

Test Setup

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

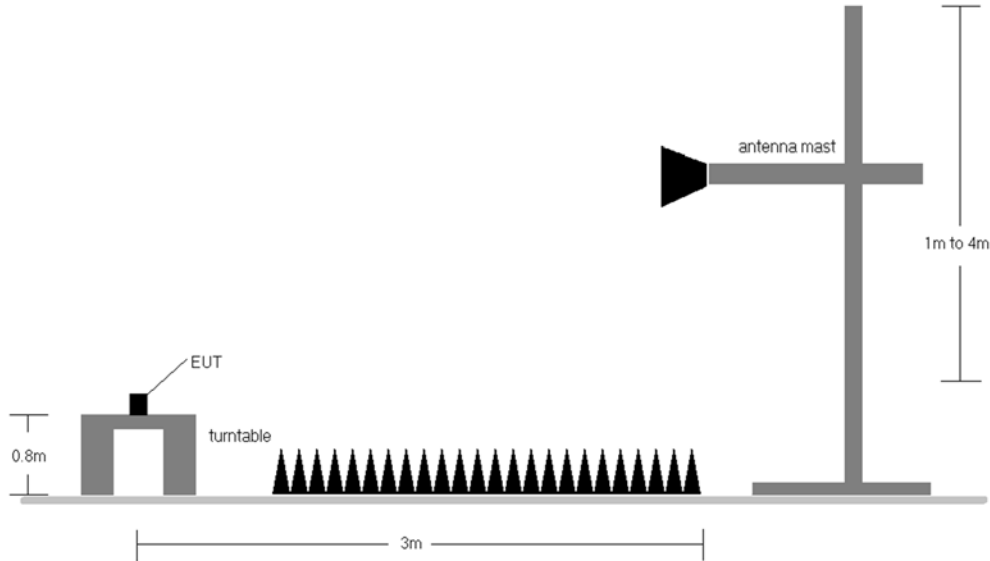


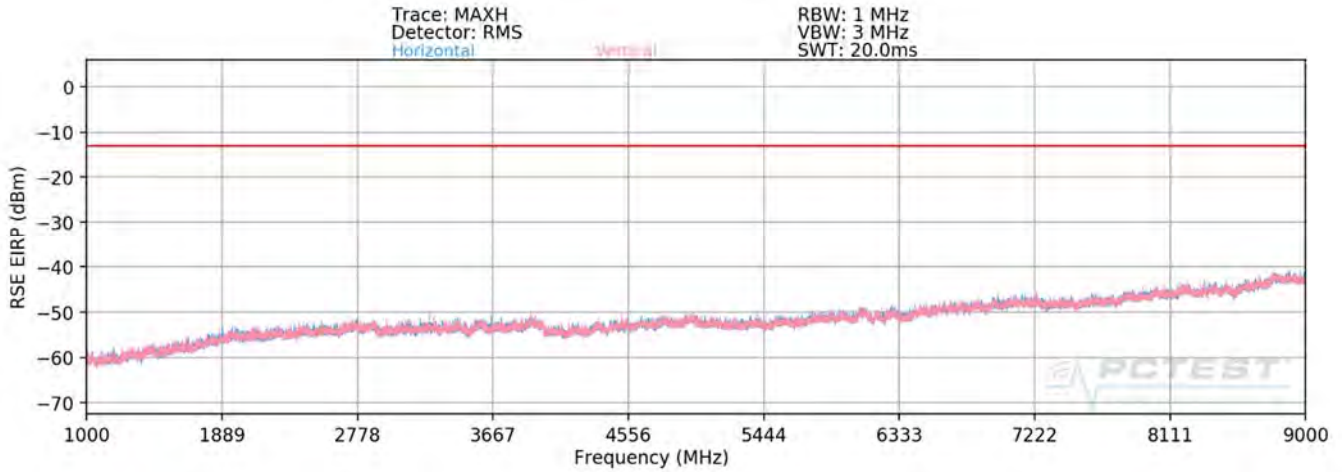
Figure 7-9. Test Instrument & Measurement Setup

Test Notes

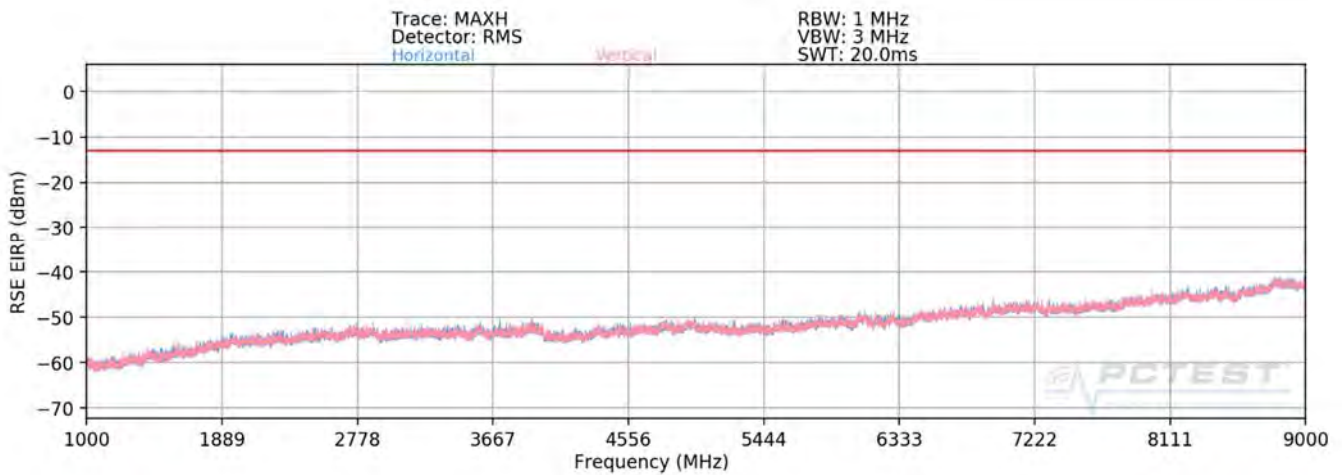
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with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

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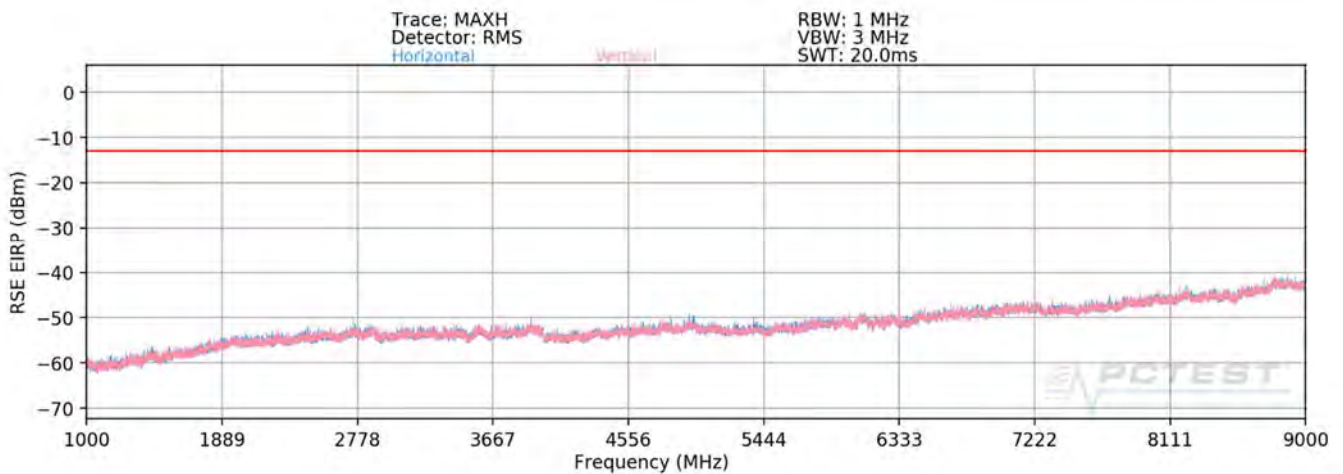
Uplink CA Configuration 5B



Plot 7-396. Radiated Spurious Plot (ULCA B5 PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

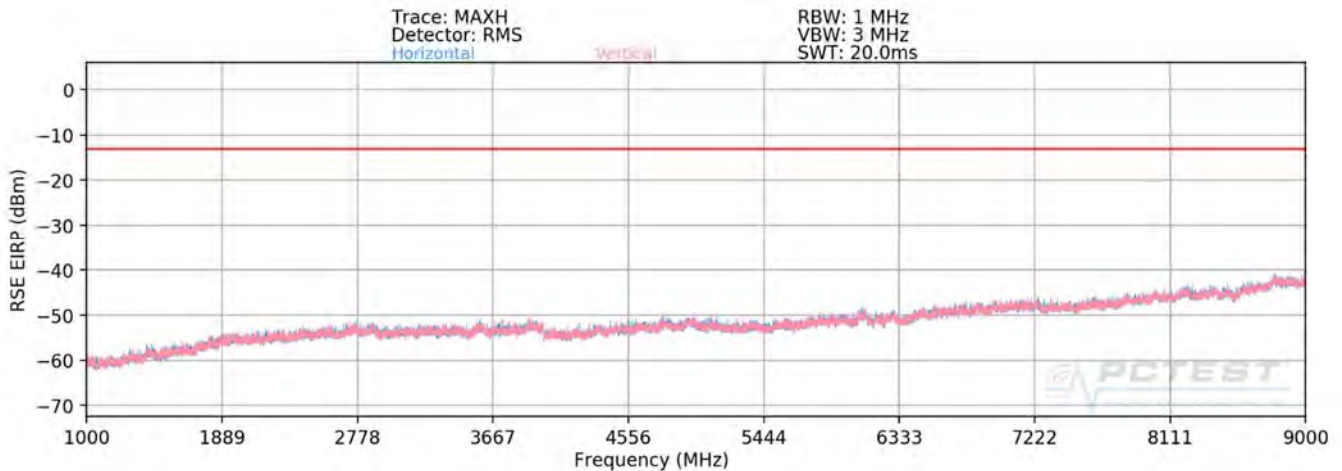


Plot 7-397. Radiated Spurious Plot (ULCA B5 PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)



Plot 7-398. Radiated Spurious Plot (ULCA B5 PCC: RB 50 Offset 0, SCC: RB 50 Offset 0 – Low Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 265 of 289



Plot 7-399. Radiated Spurious Plot (ULCA B5 PCC: RB 50 Offset 0, SCC: RB 50 Offset 0 – High Channel)

OPERATING FREQUENCY (PCC): 829.00 MHz
 OPERATING FREQUENCY (SCC): 838.90 MHz
 CHANNEL (PCC): 20450
 CHANNEL (SCC): 20549
 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	136	180	-65.83	3.61	-62.22	-49.2
2487.00	H	-	-	-67.50	4.25	-63.25	-50.2
3316.00	H	-	-	-68.66	5.83	-62.83	-49.8

Table 7-55. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

FCC ID: A3LSMG977U			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 266 of 289	

OPERATING FREQUENCY (PCC): 844.00 MHz
 OPERATING FREQUENCY (SCC): 834.10 MHz
 CHANNEL (PCC): 20600
 CHANNEL (SCC): 20501
 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	-	-	-69.67	3.63	-66.05	-53.0
2532.00	H	-	-	-67.40	4.47	-62.93	-49.9
3376.00	H	-	-	-68.59	6.05	-62.54	-49.5

Table 7-56. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)

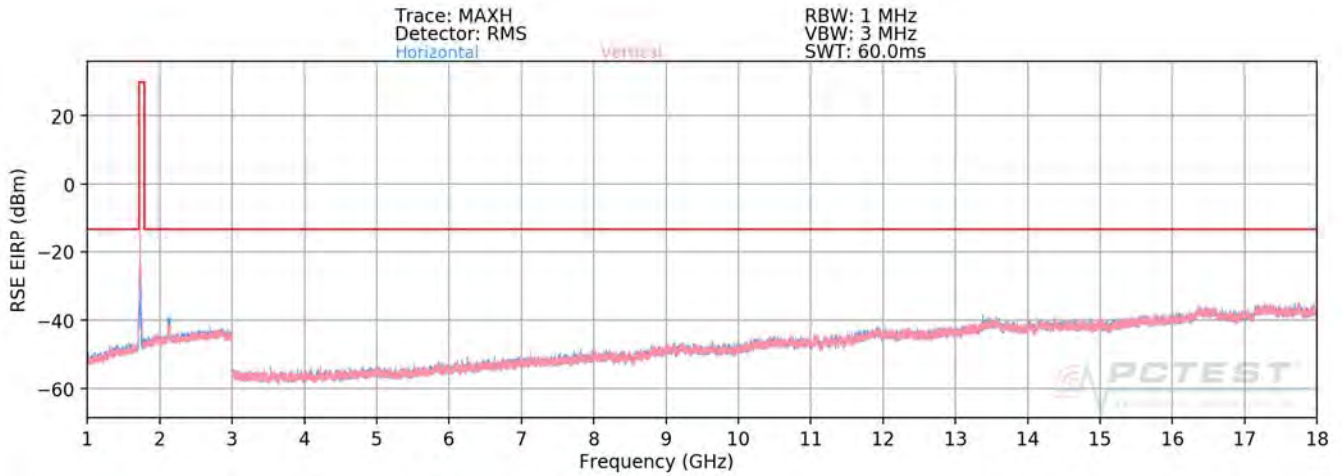
OPERATING FREQUENCY (PCC): 829.00 MHz
 OPERATING FREQUENCY (SCC): 838.90 MHz
 CHANNEL (PCC): 20450
 CHANNEL (SCC): 20549
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
1658.00	H	111	355	-66.74	3.61	-63.13	-50.1
2487.00	H	-	-	-67.65	4.25	-63.40	-50.4
3316.00	H	-	-	-68.56	5.83	-62.73	-49.7

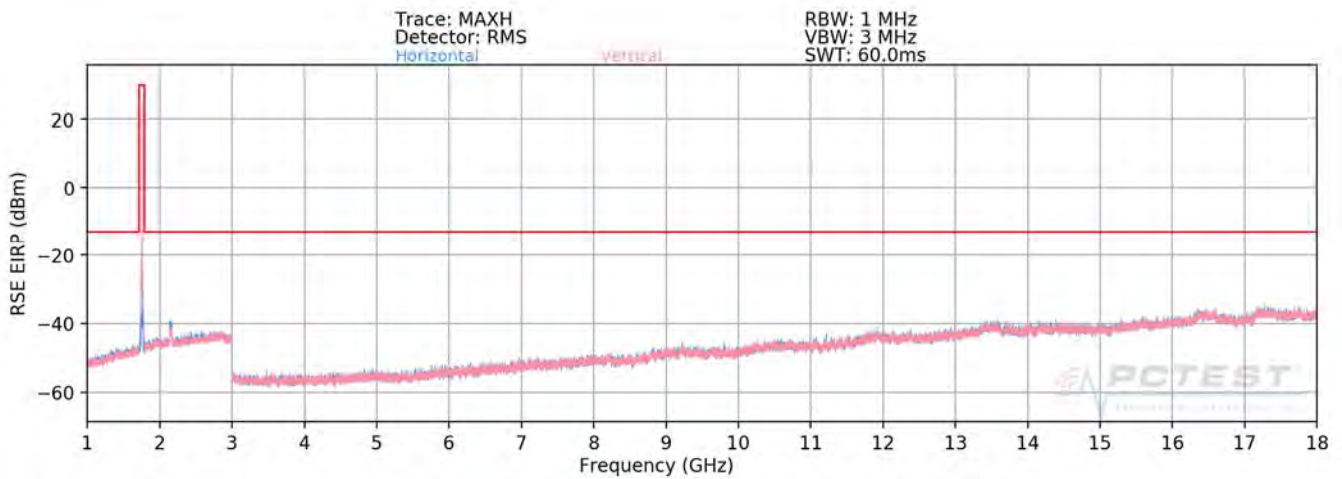
Table 7-57. Radiated Spurious Data with WCP (ULCA B5 PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
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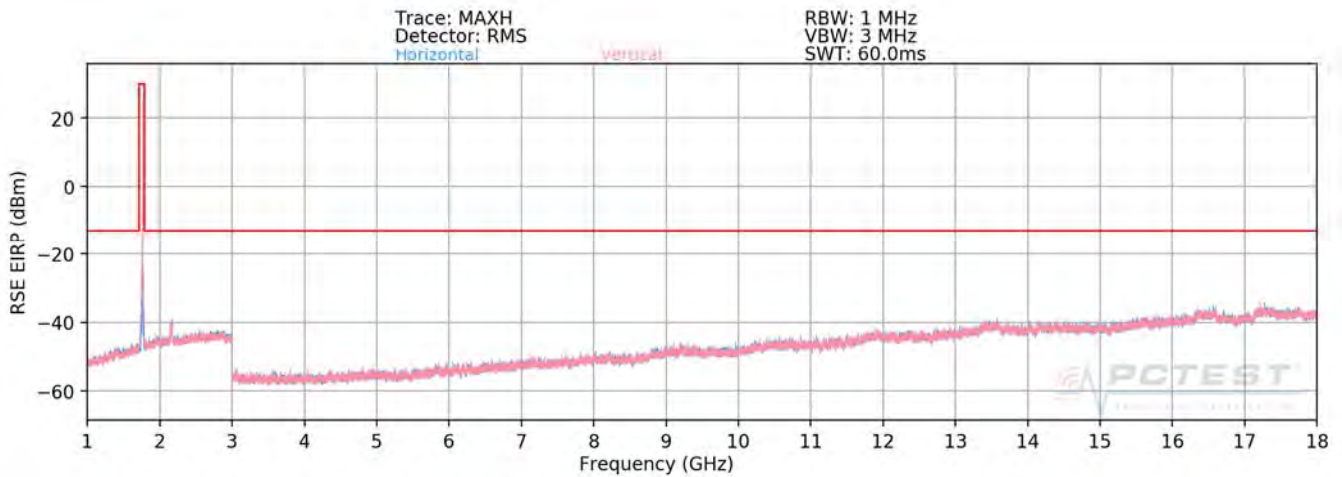
Uplink CA Configuration 66B/C



Plot 7-400. Radiated Spurious Plot (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

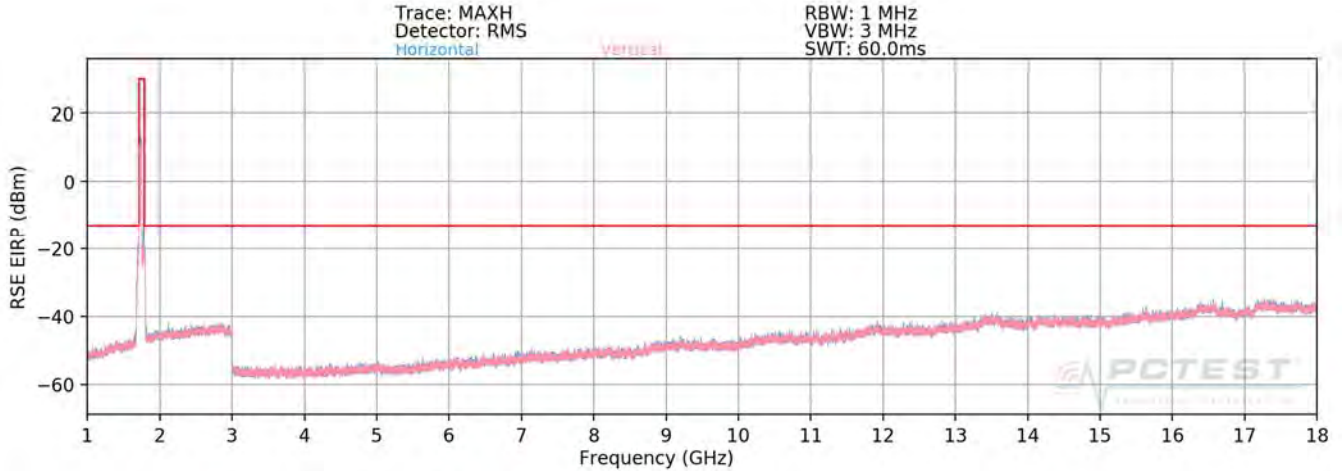


Plot 7-401. Radiated Spurious Plot (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

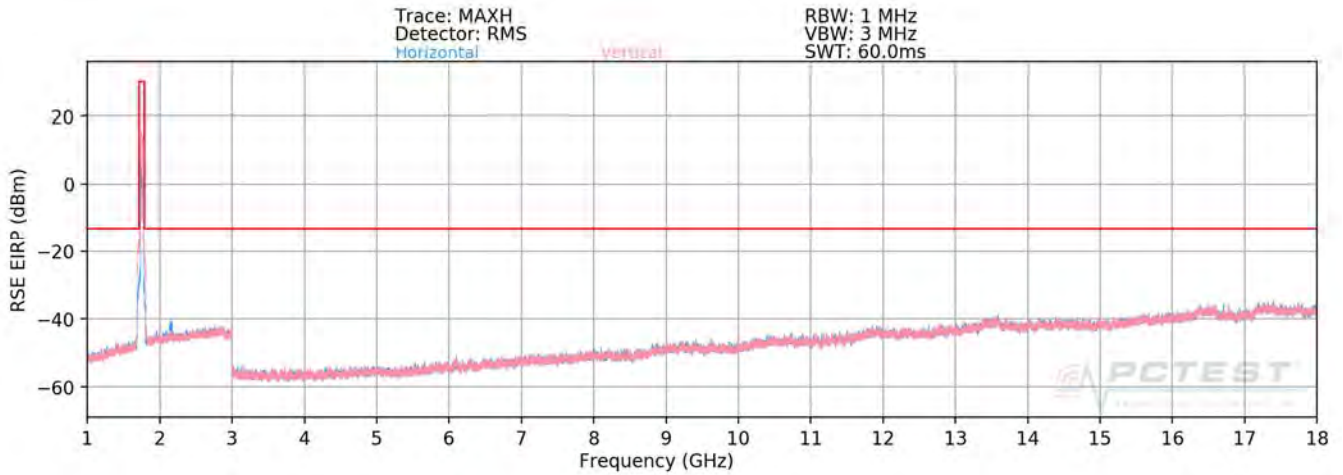


Plot 7-402. Radiated Spurious Plot (ULCA B66 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

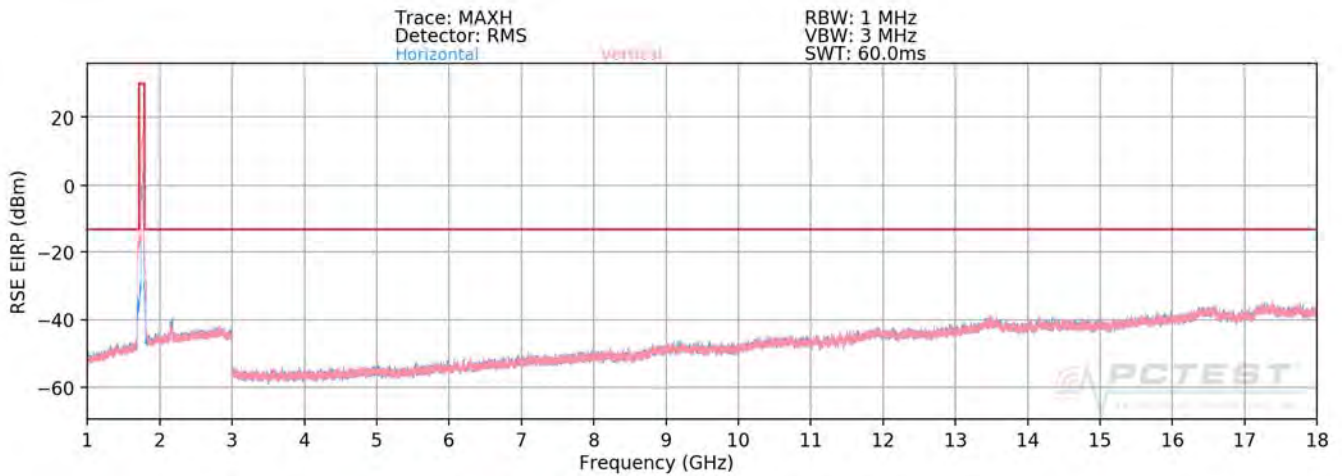
FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 268 of 289



Plot 7-403. Radiated Spurious Plot (ULCA B66 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)



Plot 7-404. Radiated Spurious Plot (ULCA B66 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel)



Plot 7-405. Radiated Spurious Plot (ULCA B66 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY (PCC): _____ 1720.00 _____ MHz
 OPERATING FREQUENCY (SCC): _____ 1739.80 _____ MHz
 CHANNEL (PCC): _____ 132072 _____
 CHANNEL (SCC): _____ 132270 _____
 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	V	329	310	-70.66	9.84	-60.81	-47.8
5160.00	V	-	-	-71.25	10.71	-60.54	-47.5
6880.00	V	-	-	-70.96	11.68	-59.28	-46.3

Table 7-58. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY (PCC): _____ 1745.00 _____ MHz
 OPERATING FREQUENCY (SCC): _____ 1764.80 _____ MHz
 CHANNEL (PCC): _____ 132322 _____
 CHANNEL (SCC): _____ 132520 _____
 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	V	124	222	-70.98	9.91	-61.07	-48.1
5235.00	V	-	-	-71.65	10.73	-60.92	-47.9
6980.00	V	-	-	-69.80	11.82	-57.97	-45.0

Table 7-59. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
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OPERATING FREQUENCY (PCC): _____ 1770.00 MHz
 OPERATING FREQUENCY (SCC): _____ 1750.20 MHz
 CHANNEL (PCC): _____ 132572
 CHANNEL (SCC): _____ 132374
 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	V	-	-	-71.67	9.89	-61.78	-48.8
5310.00	V	-	-	-71.34	10.69	-60.65	-47.7

Table 7-60. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – High Channel)

OPERATING FREQUENCY (PCC): _____ 1720.00 MHz
 OPERATING FREQUENCY (SCC): _____ 1739.80 MHz
 CHANNEL (PCC): _____ 132072
 CHANNEL (SCC): _____ 132270
 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	V	101	253	-66.26	9.84	-56.41	-43.4
5160.00	V	-	-	-71.07	10.71	-60.36	-47.4
6880.00	V	-	-	-69.45	11.68	-57.77	-44.8

Table 7-61. Radiated Spurious Data with WCP (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
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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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 4.33 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	707,500,055	55	0.0000078
100 %		- 20	707,500,318	318	0.0000449
100 %		- 10	707,500,051	51	0.0000072
100 %		0	707,499,848	-152	-0.0000215
100 %		+ 10	707,500,004	4	0.0000006
100 %		+ 20	707,500,086	86	0.0000122
100 %		+ 30	707,500,057	57	0.0000081
100 %		+ 40	707,499,880	-120	-0.0000170
100 %		+ 50	707,500,157	157	0.0000222
BATT. ENDPOINT		3.46	+ 20	707,500,034	34

Table 7-62. 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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12 Frequency Stability Measurements

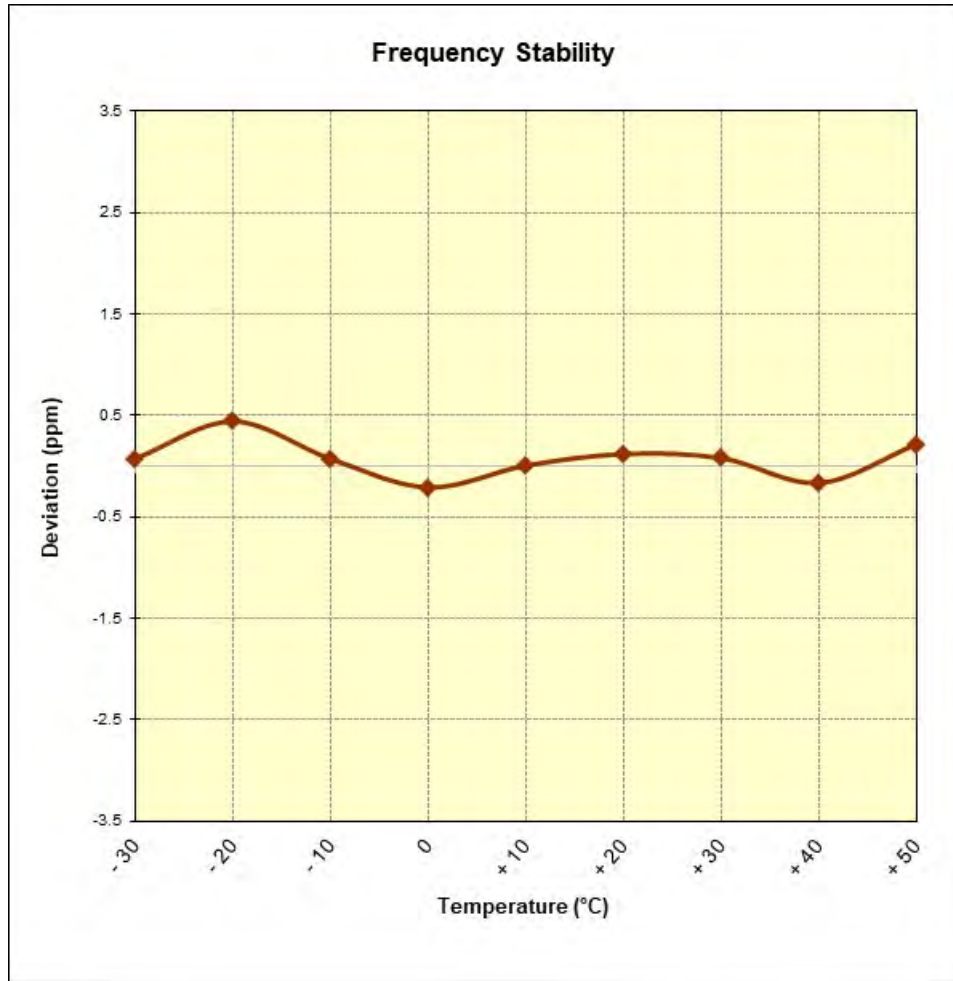


Figure 7-10. Frequency Stability Graph (Band 12)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 274 of 289

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 4.33 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	781,999,824	-176	-0.0000225
100 %		- 20	781,999,962	-38	-0.0000049
100 %		- 10	782,000,049	49	0.0000063
100 %		0	781,999,987	-13	-0.0000017
100 %		+ 10	782,000,163	163	0.0000208
100 %		+ 20	781,999,622	-378	-0.0000483
100 %		+ 30	782,000,060	60	0.0000077
100 %		+ 40	782,000,102	102	0.0000130
100 %		+ 50	782,000,264	264	0.0000338
BATT. ENDPOINT		3.46	+ 20	781,999,826	-174

Table 7-63. 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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 13 Frequency Stability Measurements

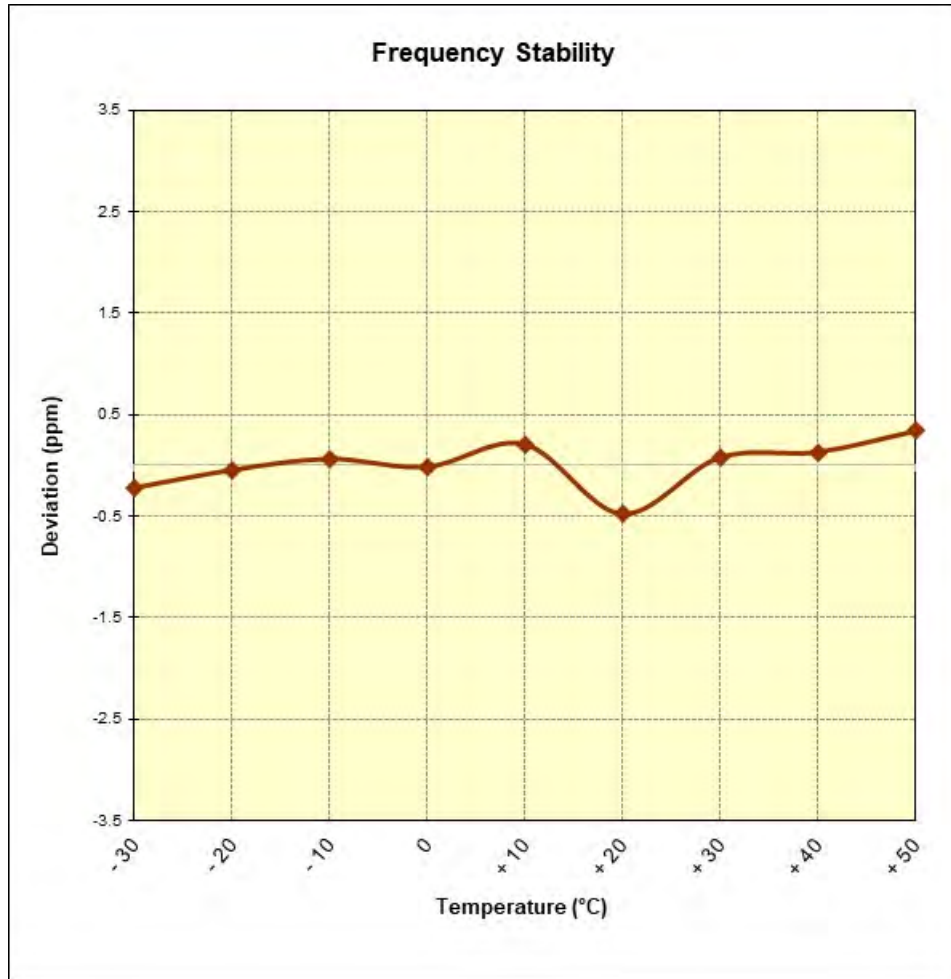


Figure 7-11. Frequency Stability Graph (Band 13)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset		Page 276 of 289

Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 836,500,000 Hz
 CHANNEL: 20525
 REFERENCE VOLTAGE: 4.33 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	836,500,179	179	0.0000214
100 %		- 20	836,499,905	-95	-0.0000114
100 %		- 10	836,500,054	54	0.0000065
100 %		0	836,499,812	-188	-0.0000225
100 %		+ 10	836,499,682	-318	-0.0000380
100 %		+ 20	836,500,003	3	0.0000004
100 %		+ 30	836,499,965	-35	-0.0000042
100 %		+ 40	836,500,281	281	0.0000336
100 %		+ 50	836,500,309	309	0.0000369
BATT. ENDPOINT		3.46	+ 20	836,499,880	-120

Table 7-64. Frequency Stability Data (Band 26/5)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
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Band 26/5 Frequency Stability Measurements

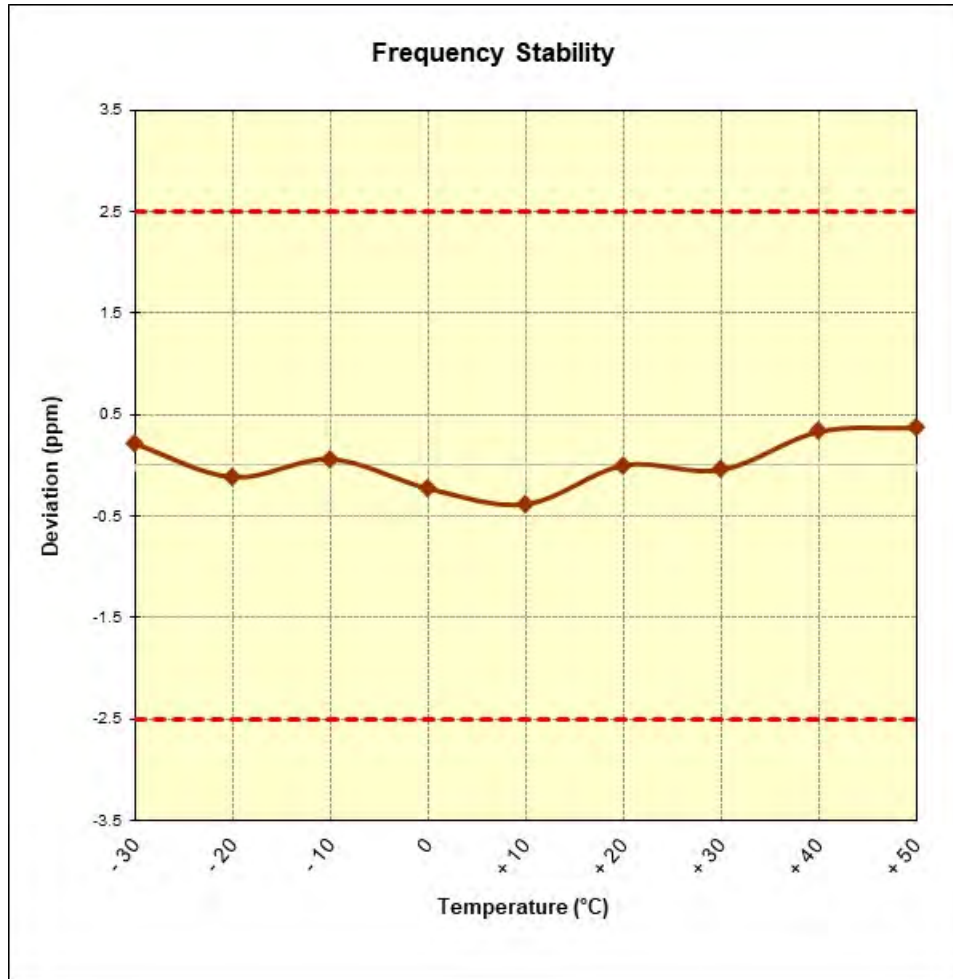


Figure 7-12. Frequency Stability Graph (Band 26/5)

FCC ID: A3LSMG977U		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: 4.33 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	1,744,999,951	-49	-0.0000028
100 %		- 20	1,745,000,003	3	0.0000002
100 %		- 10	1,744,999,762	-238	-0.0000136
100 %		0	1,744,999,983	-17	-0.0000010
100 %		+ 10	1,745,000,003	3	0.0000002
100 %		+ 20	1,744,999,765	-235	-0.0000135
100 %		+ 30	1,745,000,102	102	0.0000058
100 %		+ 40	1,744,999,769	-231	-0.0000132
100 %		+ 50	1,745,000,042	42	0.0000024
BATT. ENDPOINT		3.46	+ 20	1,744,999,770	-230

Table 7-65. 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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager	
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Band 66/4 Frequency Stability Measurements

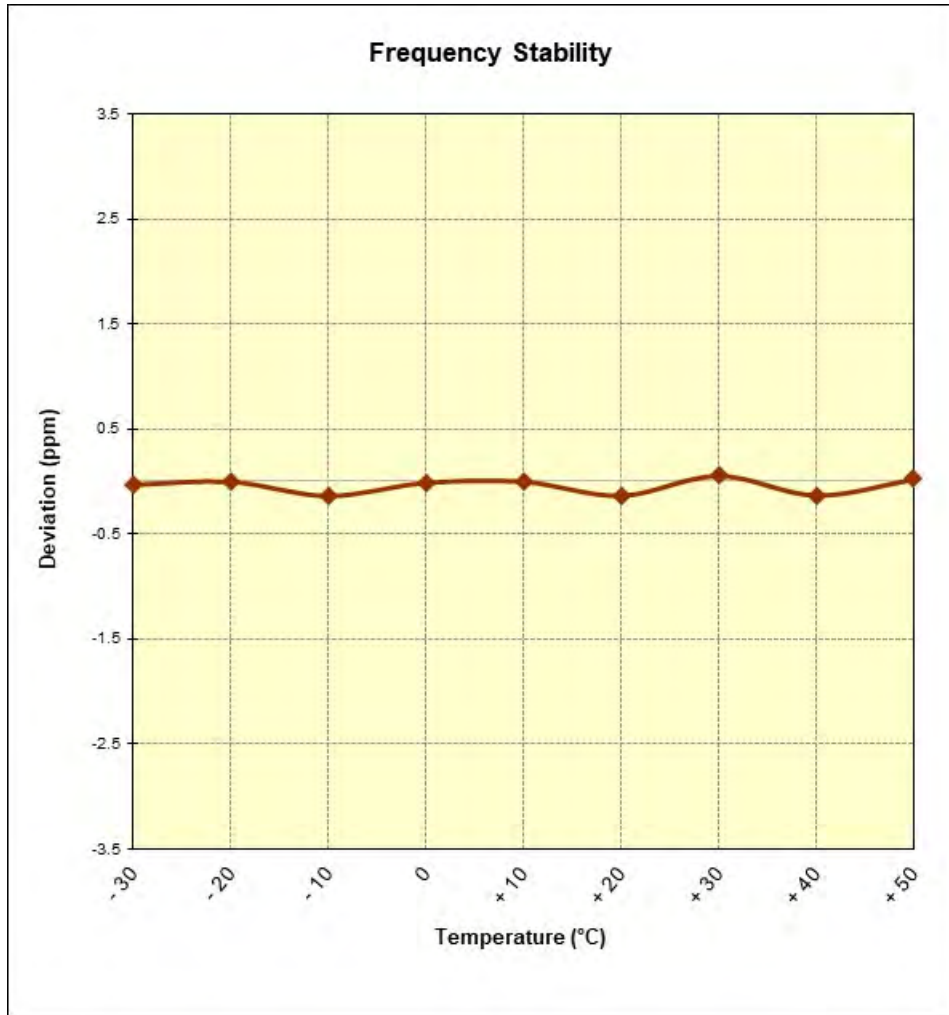


Figure 7-13. Frequency Stability Graph (Band 66/4)

FCC ID: A3LSMG977U		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: 4.33 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	1,879,999,895	-105	-0.0000056
100 %		- 20	1,880,000,021	21	0.0000011
100 %		- 10	1,879,999,976	-24	-0.0000013
100 %		0	1,880,000,200	200	0.0000106
100 %		+ 10	1,879,999,764	-236	-0.0000126
100 %		+ 20	1,880,000,116	116	0.0000062
100 %		+ 30	1,880,000,124	124	0.0000066
100 %		+ 40	1,880,000,334	334	0.0000178
100 %		+ 50	1,879,999,908	-92	-0.0000049
BATT. ENDPOINT		3.46	+ 20	1,879,999,797	-203

Table 7-66. 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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 2 Frequency Stability Measurements

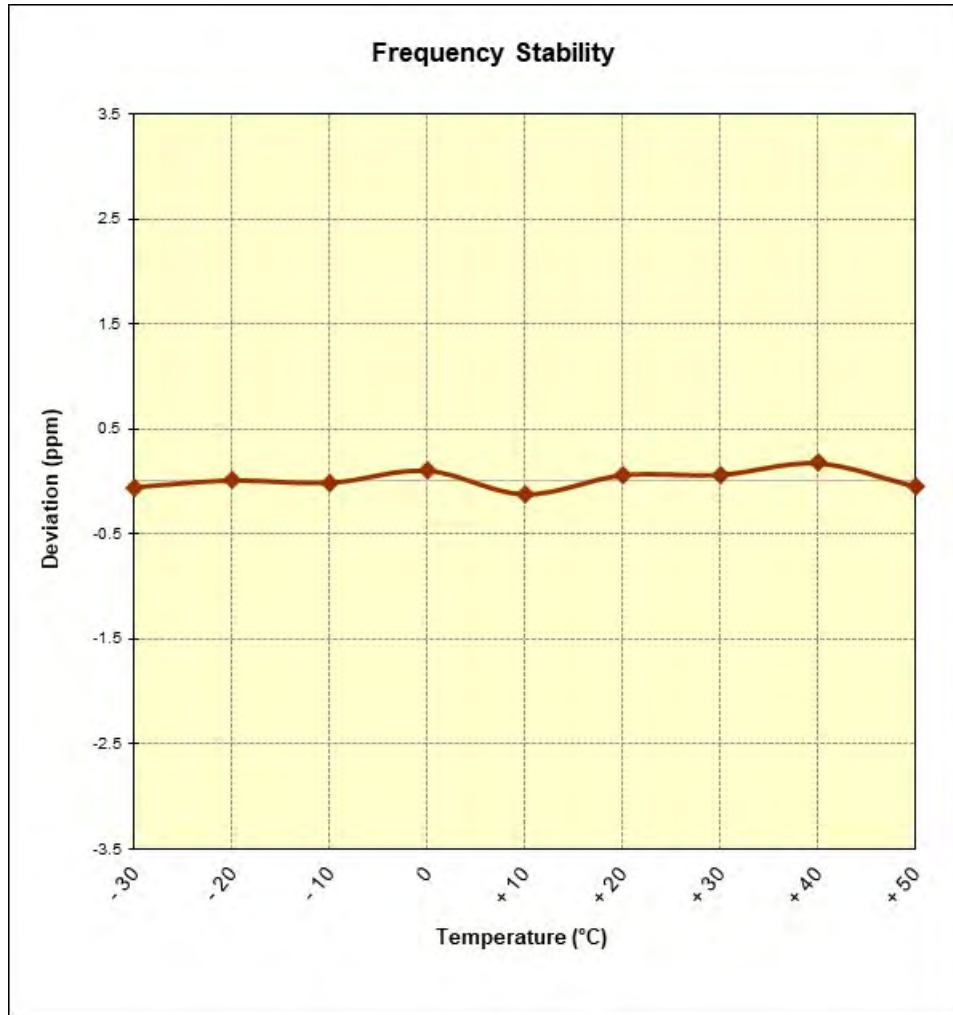


Figure 7-14. Frequency Stability Graph (Band 2)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 7 Frequency Stability Measurements

OPERATING FREQUENCY: 2,535,000,000 Hz
 CHANNEL: 21100
 REFERENCE VOLTAGE: 4.33 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	2,534,999,946	-54	-0.0000021
100 %		- 20	2,535,000,150	150	0.0000059
100 %		- 10	2,534,999,997	-3	-0.0000001
100 %		0	2,534,999,958	-42	-0.0000017
100 %		+ 10	2,535,000,013	13	0.0000005
100 %		+ 20	2,534,999,986	-14	-0.0000006
100 %		+ 30	2,535,000,341	341	0.0000135
100 %		+ 40	2,535,000,112	112	0.0000044
100 %		+ 50	2,535,000,344	344	0.0000136
BATT. ENDPOINT		3.46	+ 20	2,535,000,001	1

Table 7-67. 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.

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 7 Frequency Stability Measurements

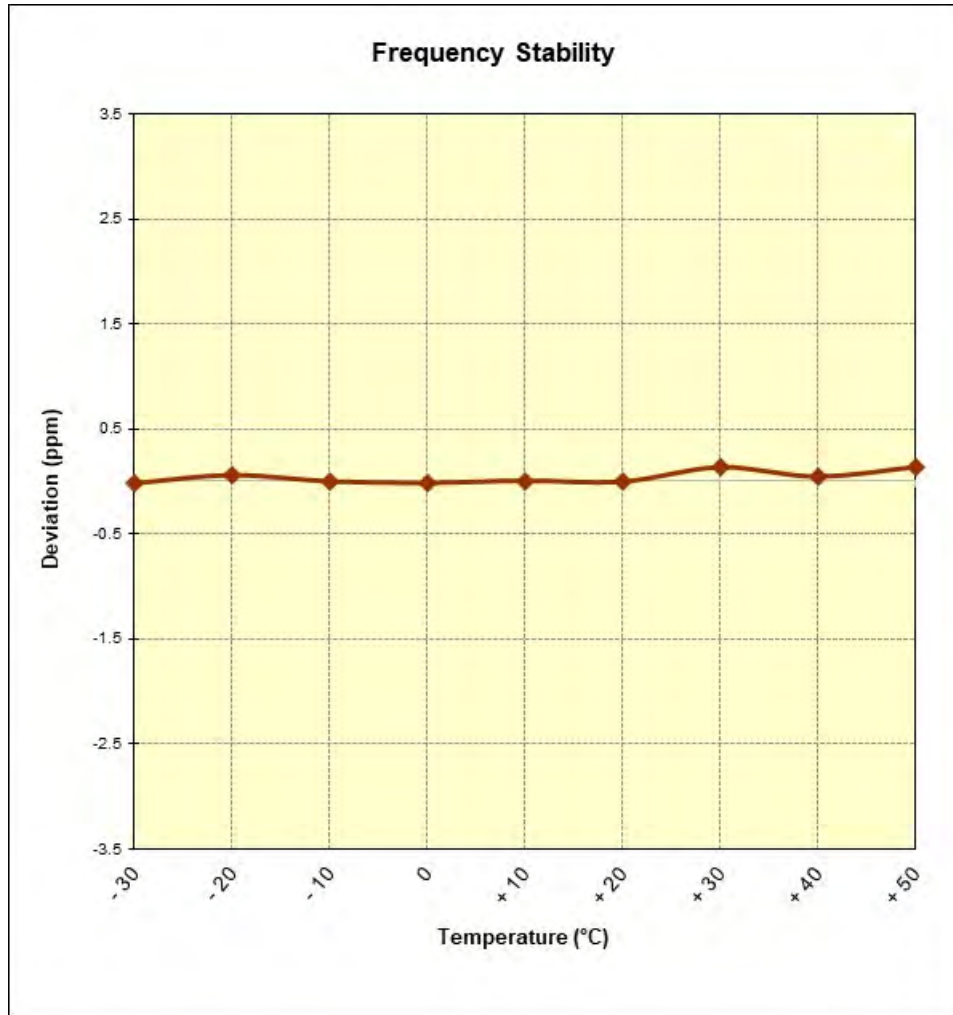


Figure 7-15. Frequency Stability Graph (Band 7)

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 30 Frequency Stability Measurements

OPERATING FREQUENCY: 2,310,000,000 Hz
 CHANNEL: 27710
 REFERENCE VOLTAGE: 4.33 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	2,310,000,410	410	0.0000177
100 %		- 20	2,310,000,135	135	0.0000058
100 %		- 10	2,310,000,096	96	0.0000042
100 %		0	2,310,000,205	205	0.0000089
100 %		+ 10	2,309,999,845	-155	-0.0000067
100 %		+ 20	2,309,999,984	-16	-0.0000007
100 %		+ 30	2,310,000,037	37	0.0000016
100 %		+ 40	2,309,999,909	-91	-0.0000039
100 %		+ 50	2,309,999,860	-140	-0.0000061
BATT. ENDPOINT		3.46	+ 20	2,309,999,751	-249

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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 30 Frequency Stability Measurements

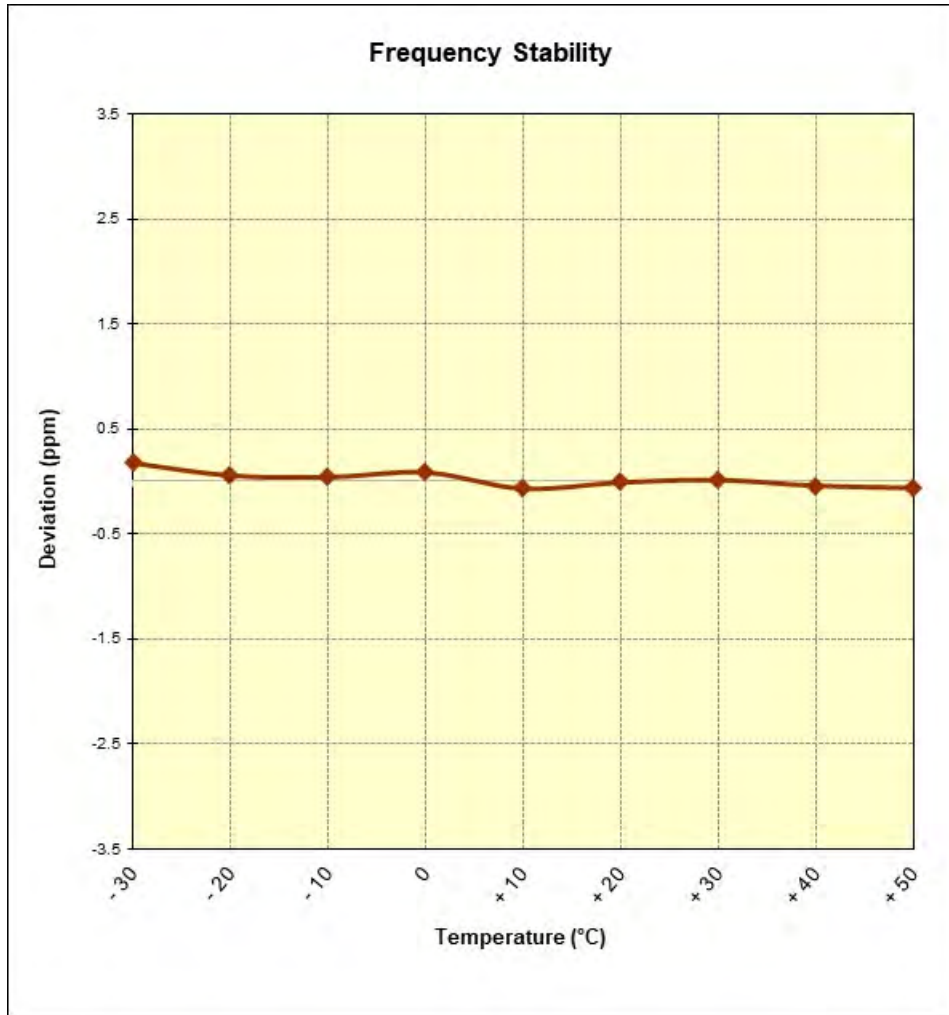


Figure 7-16. Frequency Stability Graph (Band 30)

FCC ID: A3LSMG977U		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: 4.33 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.33	- 30	2,592,999,905	-95	-0.0000037
100 %		- 20	2,592,999,837	-163	-0.0000063
100 %		- 10	2,592,999,962	-38	-0.0000015
100 %		0	2,593,000,079	79	0.0000030
100 %		+ 10	2,592,999,834	-166	-0.0000064
100 %		+ 20	2,593,000,148	148	0.0000057
100 %		+ 30	2,592,999,986	-14	-0.0000005
100 %		+ 40	2,592,999,904	-96	-0.0000037
100 %		+ 50	2,593,000,054	54	0.0000021
BATT. ENDPOINT		3.46	+ 20	2,592,999,981	-19

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: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

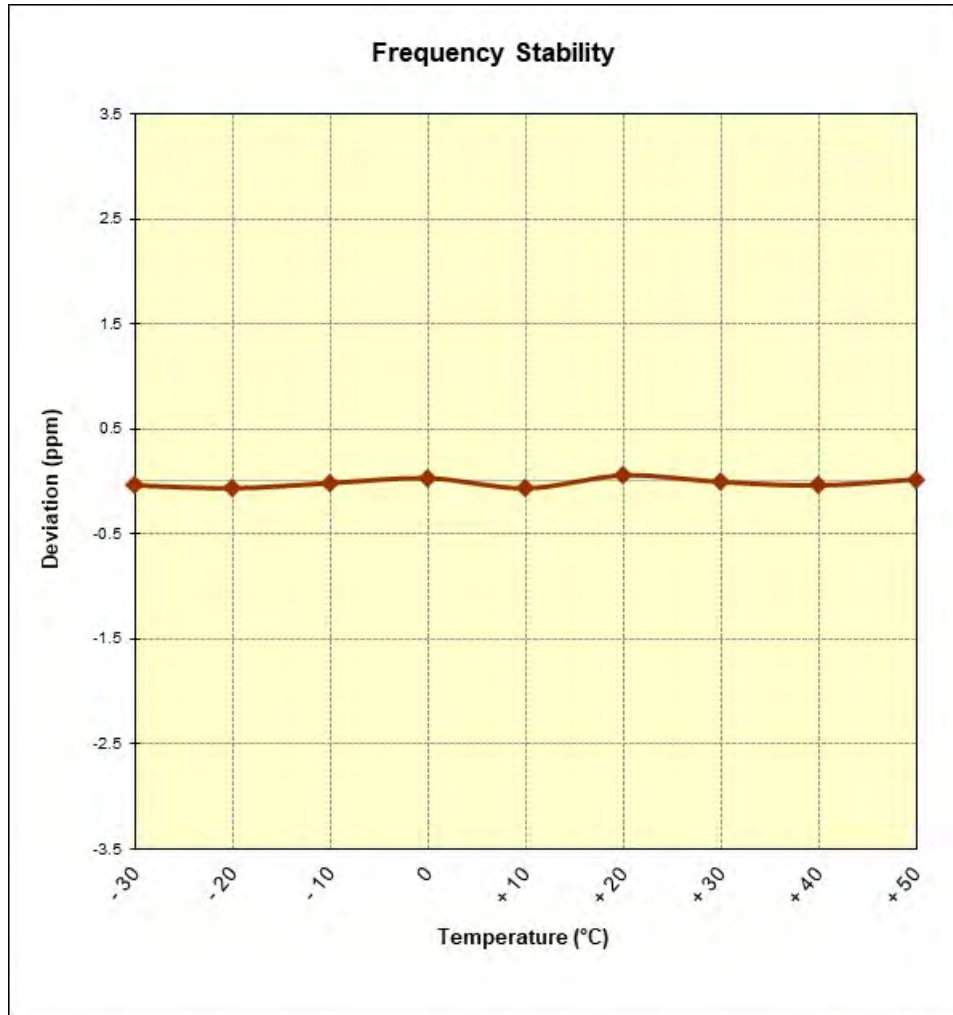


Figure 7-17. Frequency Stability Graph (Band 41)

FCC ID: A3LSMG977U		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 **Samsung Portable Handset FCC ID: A3LSMG977U** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

FCC ID: A3LSMG977U		MEASUREMENT REPORT (CERTIFICATION)	 Approved by: Quality Manager
Test Report S/N: 1M1901100003-03.A3L	Test Dates: 01/22/2019 - 03/25/2019	EUT Type: Portable Handset	Page 289 of 289