

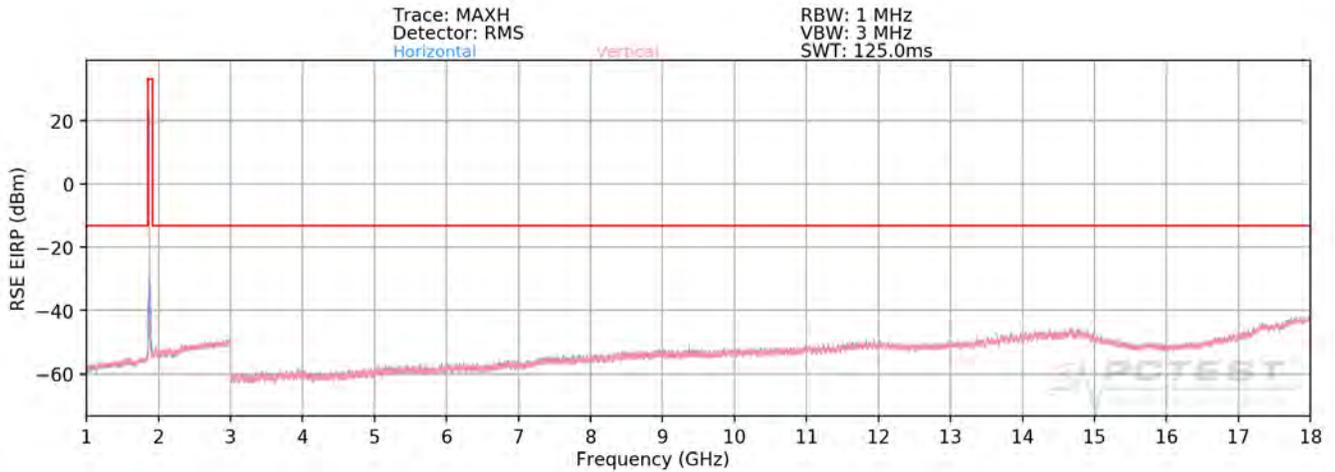
OPERATING FREQUENCY: 1717.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3435.00	V	141	176	-67.35	9.84	-57.51	-44.5
5152.50	V	207	255	-66.16	10.70	-55.46	-42.5
6870.00	V	265	331	-61.39	11.67	-49.72	-36.7
8587.50	V	-	-	-65.22	11.10	-54.12	-41.1

Table 7-47. Radiated Spurious Data with WCP (Band 66/4 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 315 of 374	

Band 25/2



Plot 7-494. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY: 1857.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 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]
3715.00	V	129	250	-62.63	9.51	-53.12	-40.1
5572.50	V	121	48	-59.29	10.99	-48.30	-35.3
7430.00	V	-	-	-67.27	10.99	-56.28	-43.3
9287.50	V	-	-	-65.67	11.61	-54.07	-41.1

Table 7-48. Radiated Spurious Data (Band 25/2 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 316 of 374	

OPERATING FREQUENCY: 1882.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	V	113	285	-60.89	9.36	-51.54	-38.5
5647.50	V	113	35	-57.61	11.19	-46.41	-33.4
7530.00	V	-	-	-66.04	11.13	-54.91	-41.9
9412.50	V	-	-	-64.89	11.57	-53.32	-40.3

Table 7-49. Radiated Spurious Data (Band 25/2 – Mid Channel)

OPERATING FREQUENCY: 1907.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 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]
3815.00	V	129	256	-55.57	6.98	-48.59	-35.6
5722.50	V	144	36	-53.25	8.58	-44.68	-31.7
7630.00	V	-	-	-61.03	8.55	-52.48	-39.5
9537.50	V	-	-	-61.42	9.81	-51.61	-38.6

Table 7-50. Radiated Spurious Data (Band 25/2 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 317 of 374	

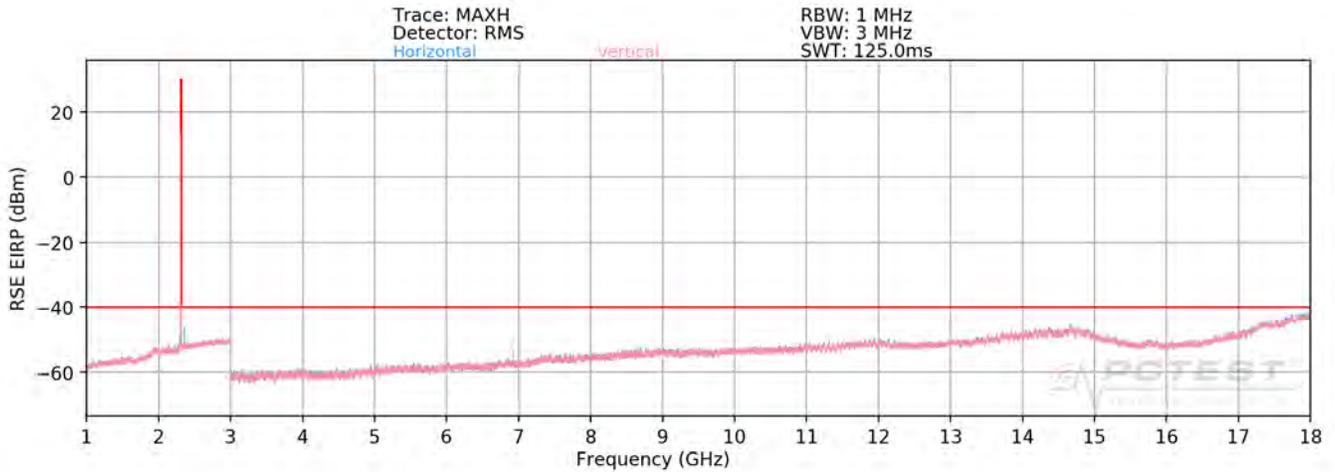
OPERATING FREQUENCY: 1907.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3815.00	V	159	271	-55.57	6.98	-48.59	-35.6
5722.50	V	134	45	-53.25	8.58	-44.68	-31.7
7630.00	V	-	-	-61.03	8.55	-52.48	-39.5
9537.50	V	-	-	-61.42	9.81	-51.61	-38.6

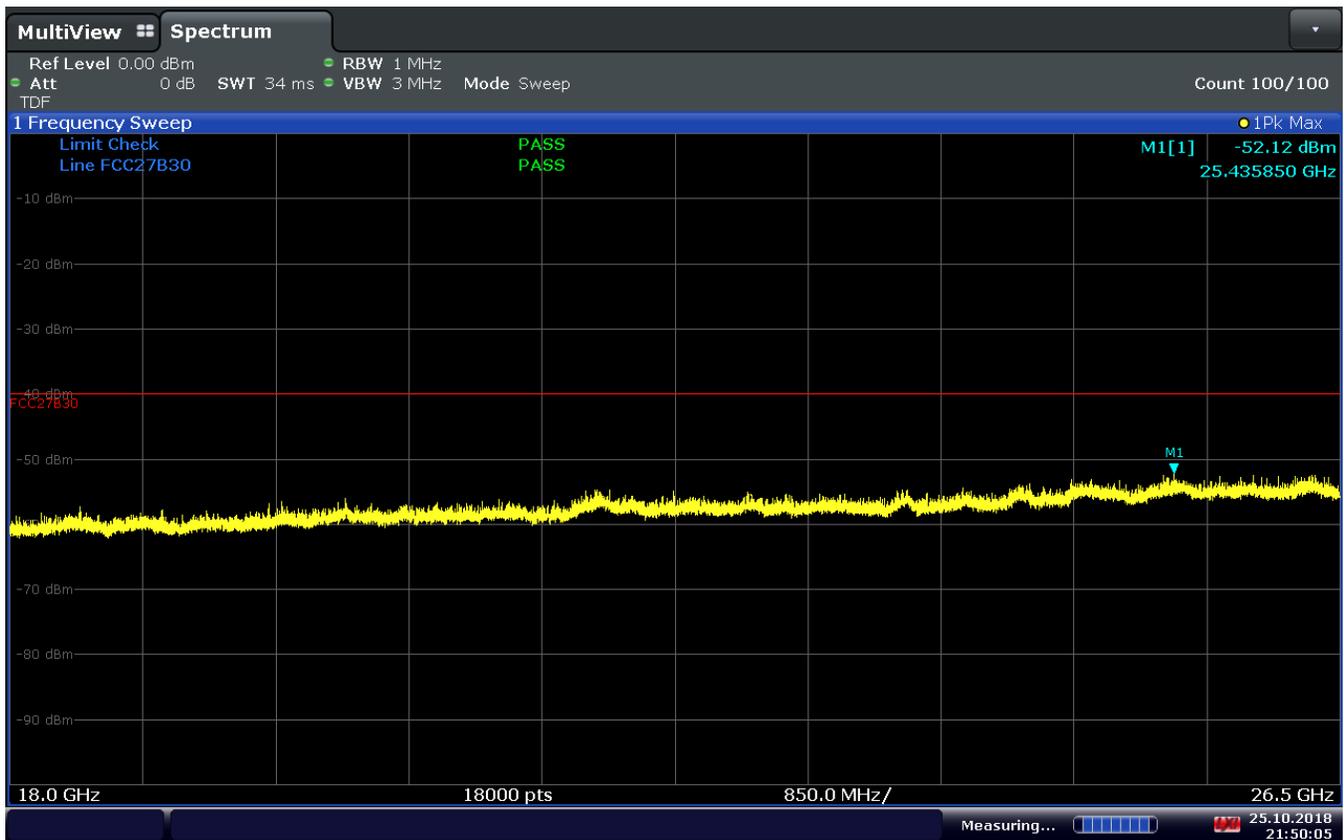
Table 7-51. Radiated Spurious Data with WCP (Band 25/2 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 318 of 374	

Band 30

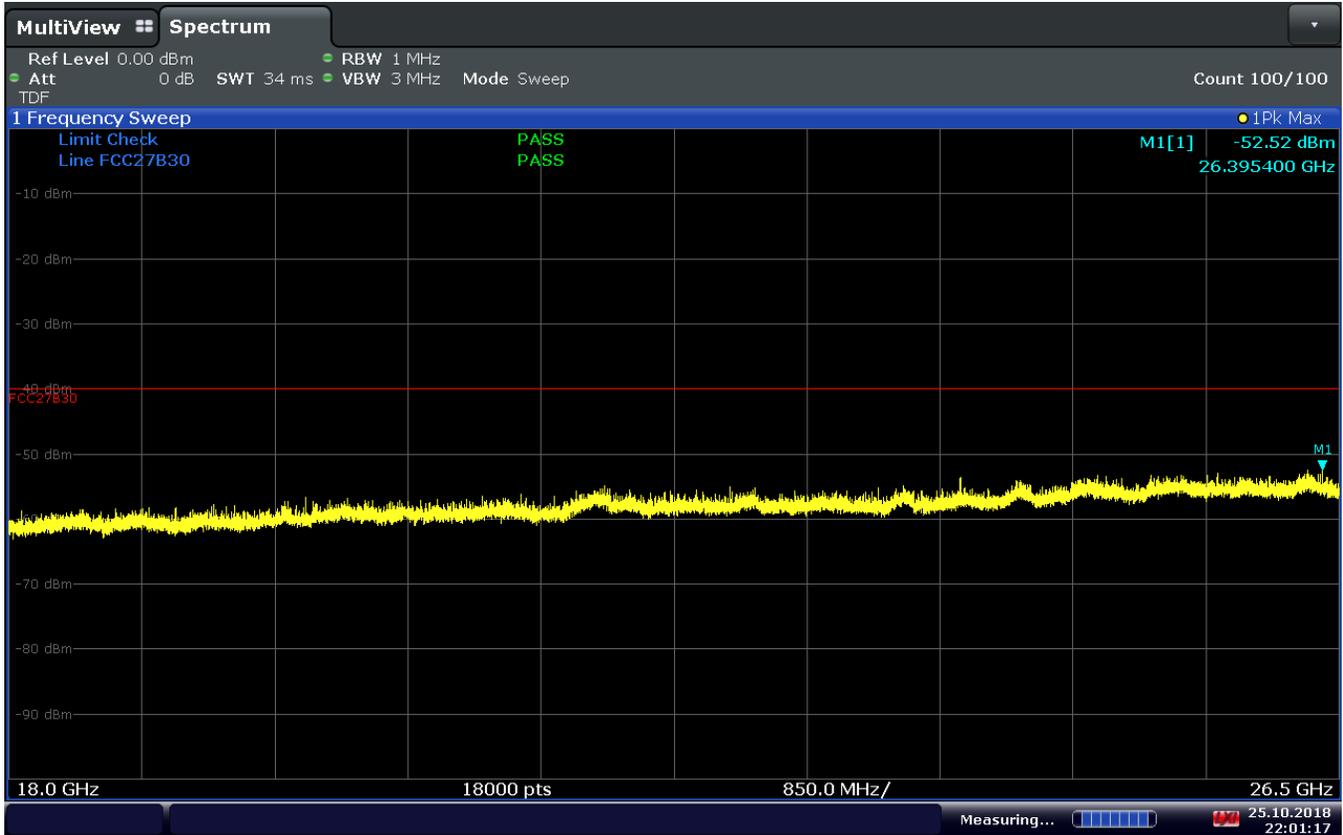


Plot 7-495. Radiated Spurious Plot 1GHz - 18GHz (Band 30)



Plot 7-496. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30 - H)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 319 of 374



Plot 7-497. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30 - V)

OPERATING FREQUENCY: 2307.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -40 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4615.00	V	-	-	-69.03	8.41	-60.62	-20.6
6922.50	V	349	188	-61.95	9.39	-52.56	-12.6
9230.00	H	165	318	-60.17	9.47	-50.69	-10.7
11537.50	V	-	-	-60.76	9.47	-51.29	-11.3
13845.00	V	-	-	-56.71	8.77	-47.94	-7.9

Table 7-52. Radiated Spurious Data (Band 30 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 320 of 374

OPERATING FREQUENCY: 2310.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -40 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4620.00	V	-	-	-69.91	8.42	-61.49	-21.5
6930.00	V	150	172	-60.30	9.38	-50.92	-10.9
9240.00	H	-	-	-63.53	9.46	-54.08	-14.1
11550.00	V	-	-	-62.33	9.46	-52.88	-12.9
13860.00	V	-	-	-57.32	8.73	-48.59	-8.6
16170.00	V	-	-	-53.57	8.41	-45.16	-5.2

Table 7-53. Radiated Spurious Data (Band 30 – Mid Channel)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4625.00	V	-	-	-69.78	8.43	-61.35	-21.3
6937.50	V	109	267	-59.87	9.38	-50.49	-10.5
9250.00	H	-	-	-64.67	9.46	-55.20	-15.2
11562.50	V	-	-	-61.81	9.48	-52.33	-12.3
13875.00	V	-	-	-58.15	8.75	-49.40	-9.4

Table 7-54. Radiated Spurious Data (Band 30 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 321 of 374	

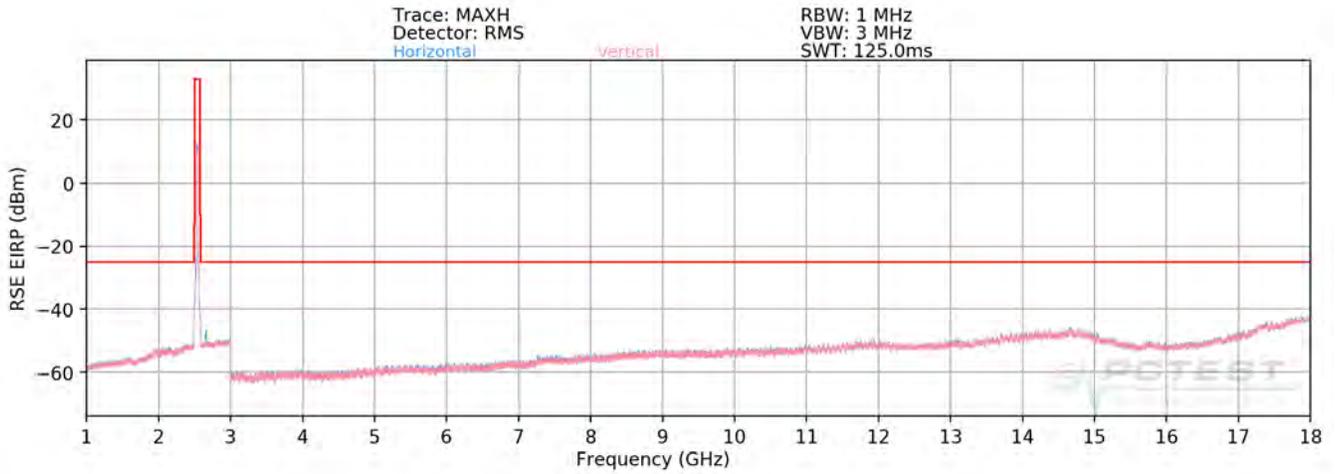
OPERATING FREQUENCY: 2312.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -40 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4625.00	V	-	-	-69.91	8.43	-61.48	-21.5
6937.50	V	151	232	-61.92	9.38	-52.54	-12.5
9250.00	V	-	-	-64.70	9.46	-55.23	-15.2
11562.50	V	-	-	-61.91	9.48	-52.43	-12.4
13875.00	V	-	-	-58.07	8.75	-49.32	-9.3

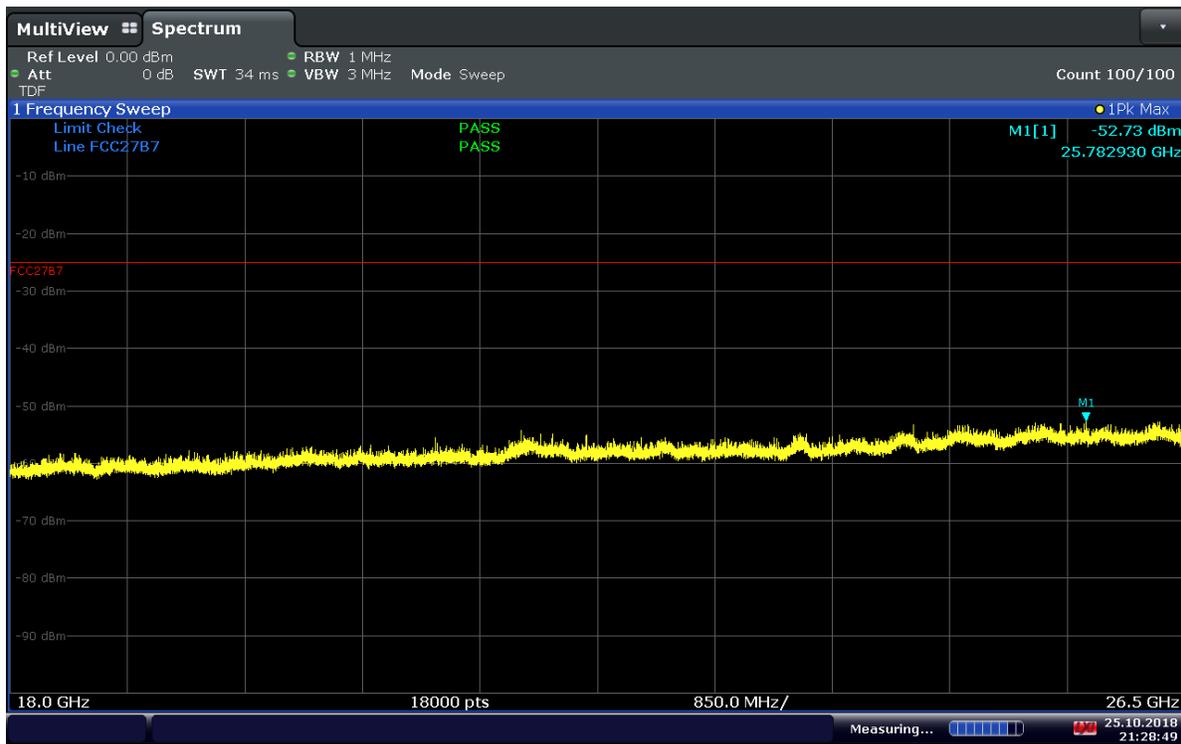
Table 7-55. Radiated Spurious Data with WCP (Band 30 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 322 of 374	

Band 7

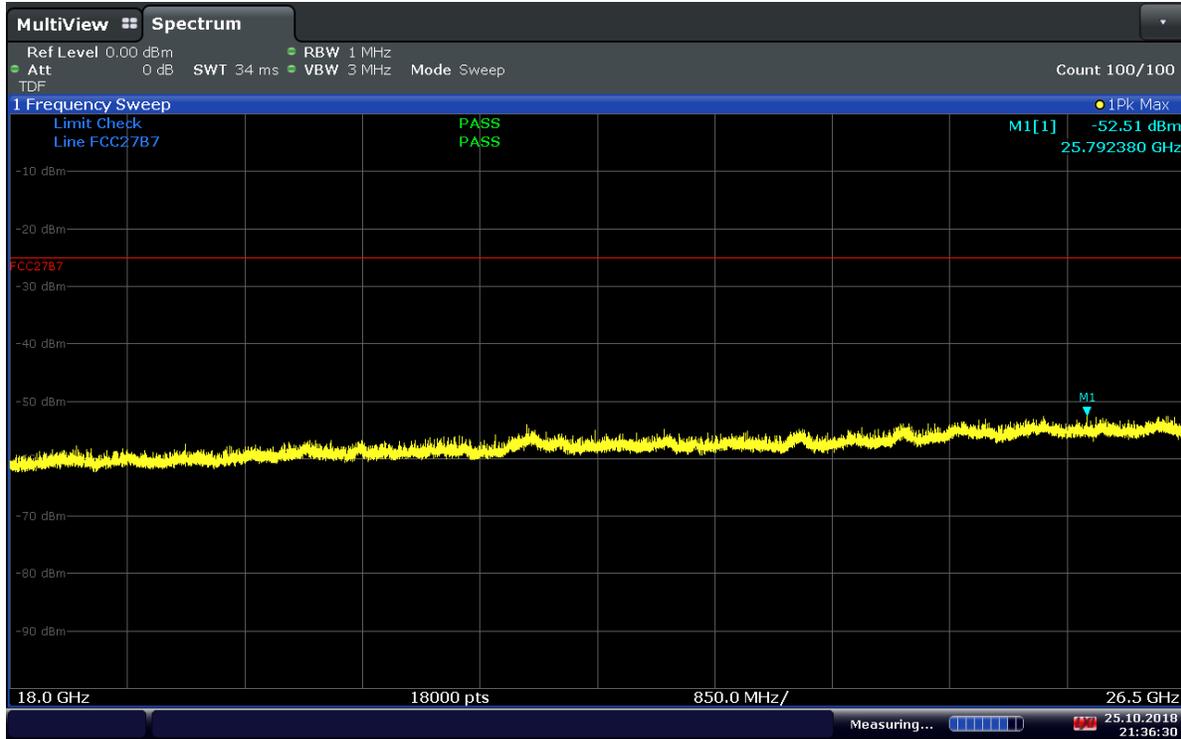


Plot 7-498. Radiated Spurious Plot 1GHz - 18GHz (Band 7)



Plot 7-499. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 - H)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 323 of 374



Plot 7-500. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 - V)

OPERATING FREQUENCY: 2510.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	H	-	-	-60.72	8.56	-52.16	-27.2
7530.00	H	-	-	-56.66	8.46	-48.21	-23.2

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

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset			Page 324 of 374

OPERATING FREQUENCY: 2535.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	H	-	-	-61.33	8.60	-52.73	-27.7
7605.00	H	-	-	-56.70	8.48	-48.22	-23.2

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

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	H	-	-	-61.06	8.66	-52.40	-27.4
7680.00	H	-	-	-57.05	8.58	-48.47	-23.5

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

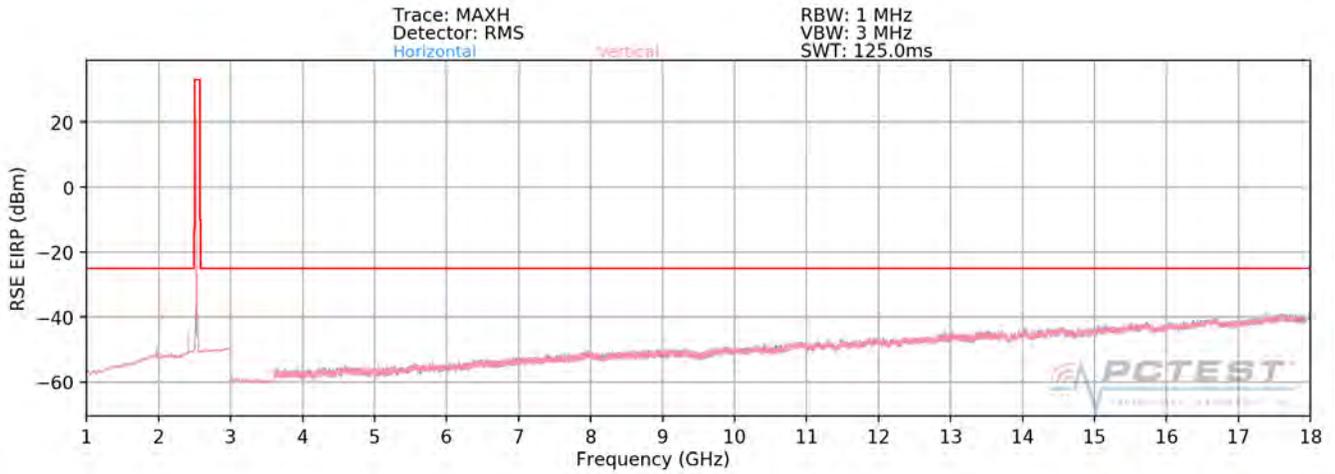
OPERATING FREQUENCY: 2510.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	H	-	-	-61.12	8.56	-52.56	-27.6
7530.00	H	-	-	-56.58	8.46	-48.13	-23.1

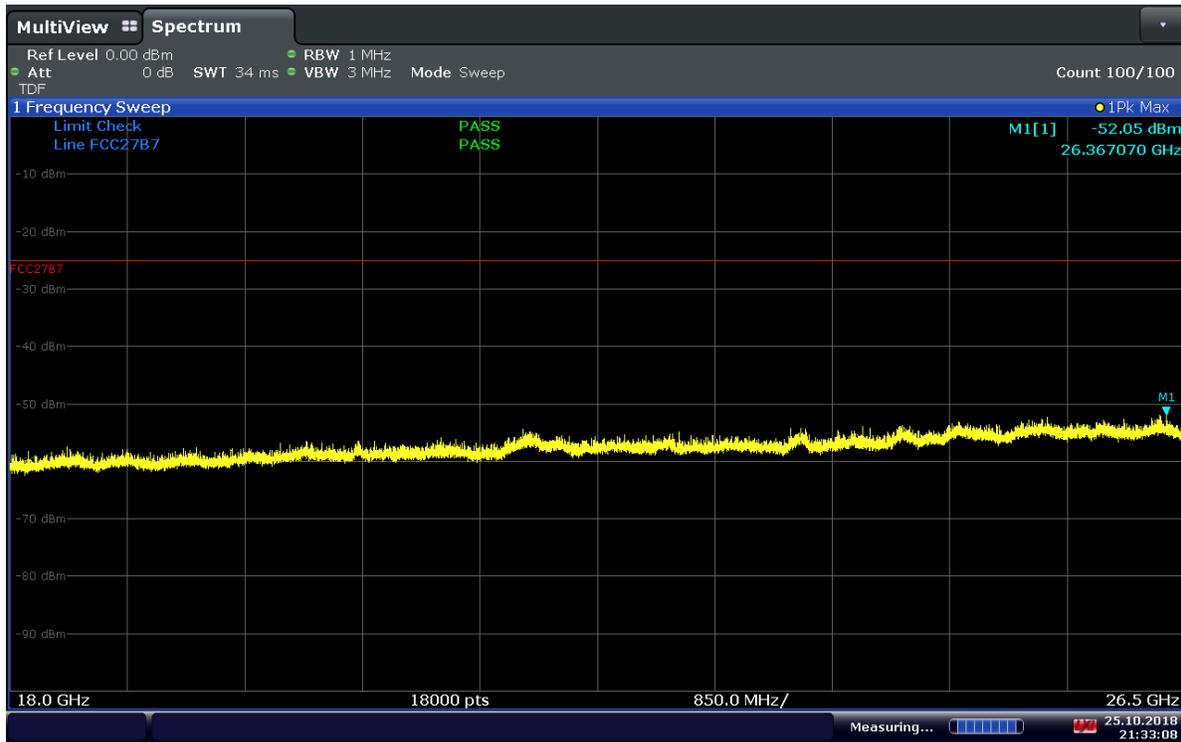
Table 7-59. Radiated Spurious Data with WCP (Band 7 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 325 of 374	

Band 7 - ANT A

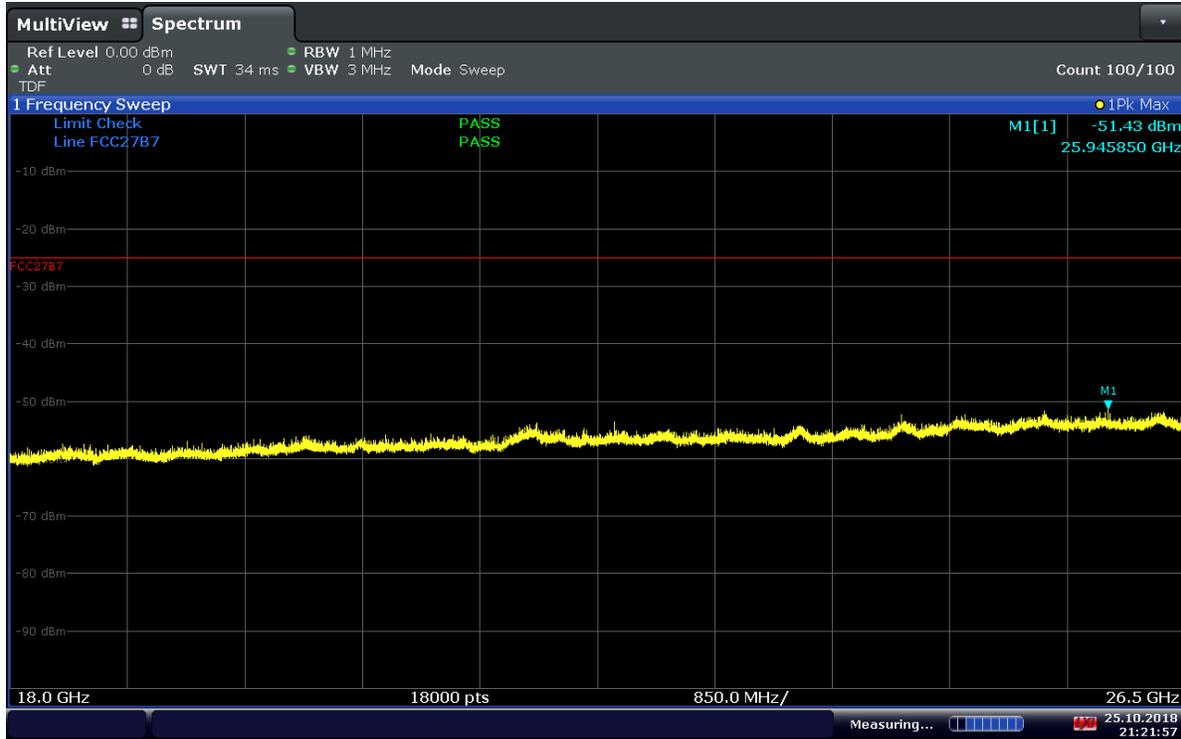


Plot 7-501. Radiated Spurious Plot 1GHz - 18GHz (Band 7 - ANT A)



Plot 7-502. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 - ANT A - H)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 326 of 374



Plot 7-503. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7 - ANT A - V)

OPERATING FREQUENCY: 2507.50 MHz
 CHANNEL: 20825
 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]
5015.00	V	100	348	-66.46	8.76	-57.69	-32.7
7525.00	V	249	356	-55.98	9.31	-46.67	-21.7
10035.00	V	212	78	-60.54	9.79	-50.75	-25.8
12545.00	V	-	-	-59.76	8.82	-50.95	-25.9
15055.00	V	-	-	-57.41	8.88	-48.53	-23.5

Table 7-60. Radiated Spurious Data (Band 7 - ANT A – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 327 of 374	

OPERATING FREQUENCY: 2535.00 MHz
 CHANNEL: 21100
 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]
5070.00	V	242	302	-69.41	8.89	-60.52	-35.5
7605.00	V	232	12	-57.23	9.25	-47.97	-23.0
10140.00	V	-	-	-63.15	9.75	-53.40	-28.4
12675.00	V	-	-	-60.33	8.89	-51.44	-26.4

Table 7-61. Radiated Spurious Data (Band 7 - ANT A – Mid Channel)

OPERATING FREQUENCY: 2562.50 MHz
 CHANNEL: 21375
 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]
5125.00	V	244	353	-65.00	8.92	-56.08	-31.1
7685.00	V	230	30	-60.20	9.27	-50.93	-25.9
10245.00	V	-	-	-62.65	9.65	-53.00	-28.0
12805.00	V	-	-	-58.63	8.89	-49.74	-24.7

Table 7-62. Radiated Spurious Data (Band 7 - ANT A – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 328 of 374	

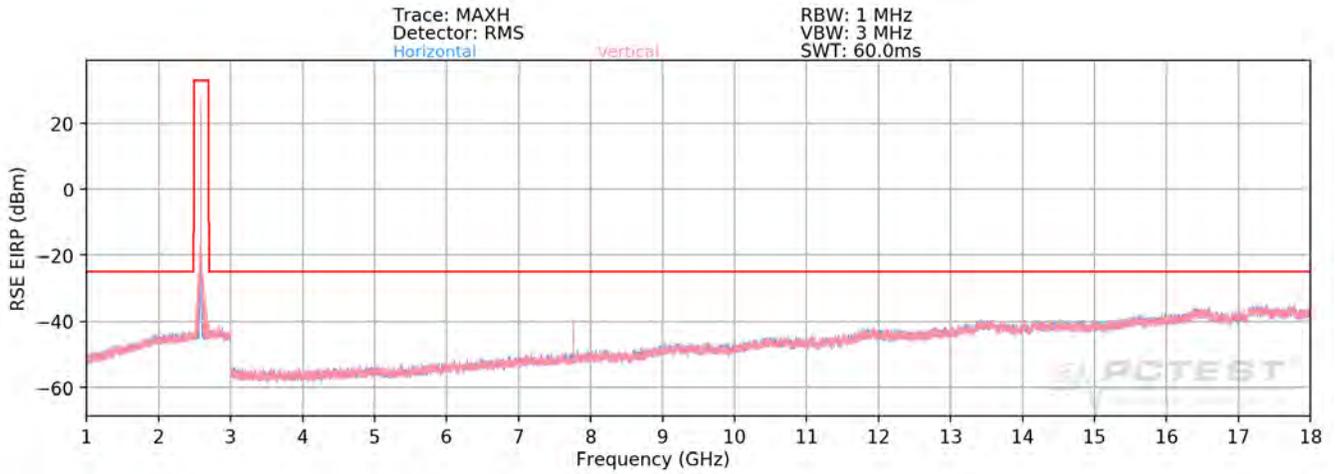
OPERATING FREQUENCY: 2507.50 MHz
 CHANNEL: 20825
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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]
5015.00	V	-	-	-67.69	8.76	-58.92	-33.9
7525.00	V	223	14	-58.51	9.31	-49.20	-24.2
10035.00	V	-	-	-62.65	9.79	-52.86	-27.9
12545.00	V	-	-	-59.07	8.82	-50.26	-25.3
15055.00	V	-	-	-57.13	8.88	-48.25	-23.3

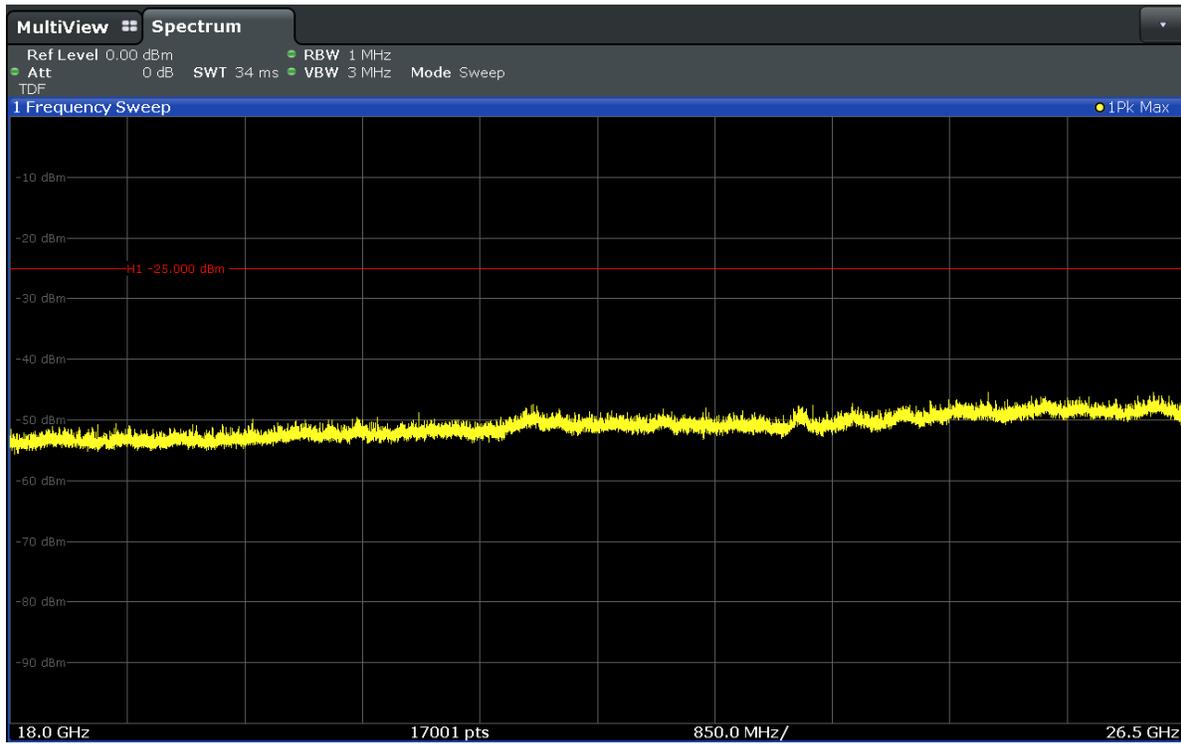
Table 7-63. Radiated Spurious Data with WCP (Band 7 - ANT A – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 329 of 374	

Band 41 – PC2

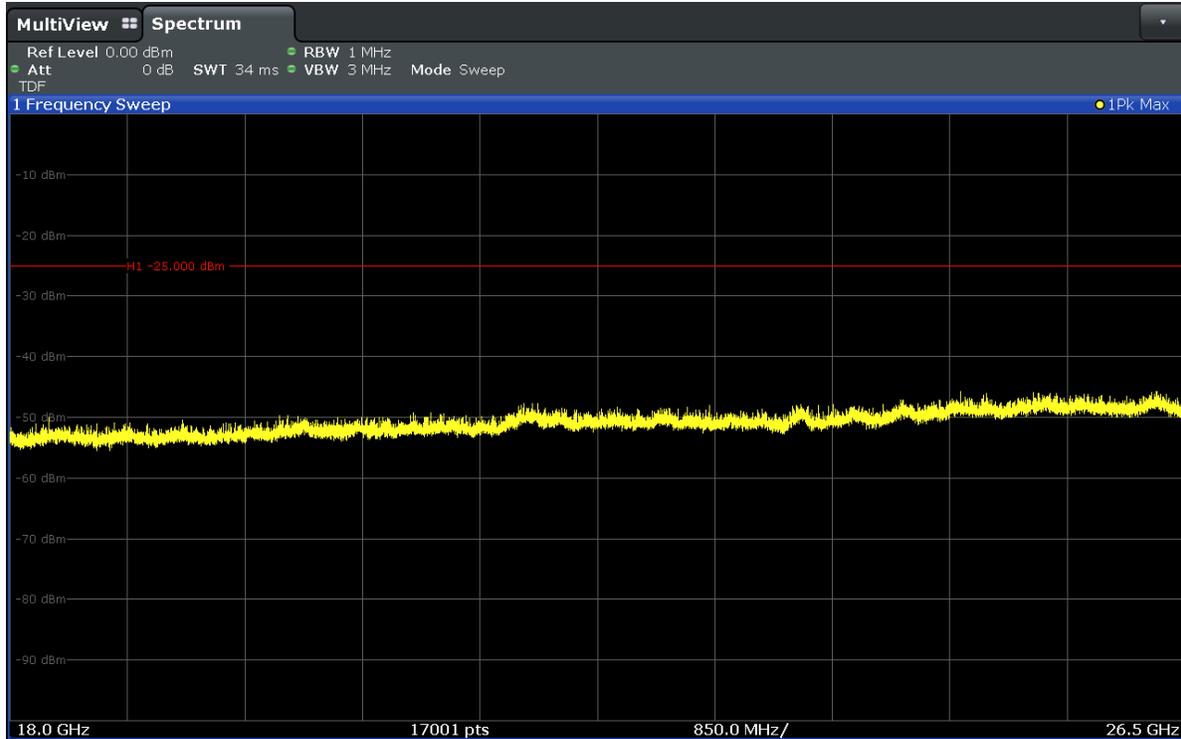


Plot 7-504. Radiated Spurious Plot 1GHz - 18GHz (Band 41 –PC2)



Plot 7-505. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 –PC2 - H)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 330 of 374



Plot 7-506. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 –PC2 - V)

OPERATING FREQUENCY: 2507.50 MHz
 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]
5015.00	H	130	356	-54.39	8.56	-45.83	-20.8
7522.50	H	199	27	-50.00	8.46	-41.55	-16.5
10030.00	H	-	-	-54.50	9.85	-44.65	-19.6

Table 7-64. Radiated Spurious Data (Band 41 –PC2 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 331 of 374	

OPERATING FREQUENCY: 2593.00 MHz
 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	H	124	311	-54.24	8.70	-45.54	-20.5
7779.00	H	360	278	-48.38	8.69	-39.70	-14.7
10372.00	H	-	-	-53.03	9.62	-43.40	-18.4

Table 7-65. Radiated Spurious Data (Band 41 –PC2 – Mid Channel)

OPERATING FREQUENCY: 2682.50 MHz
 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]
5365.00	H	131	122	-50.84	8.70	-42.14	-17.1
8047.50	H	-	-	-55.49	8.95	-46.53	-21.5
10730.00	H	-	-	-52.22	9.32	-42.90	-17.9

Table 7-66. Radiated Spurious Data (Band 41 –PC2 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 332 of 374	

OPERATING FREQUENCY: 2593.00 MHz
 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	H	133	22	-55.74	8.70	-47.04	-22.0
7779.00	H	151	69	-50.12	8.69	-41.44	-16.4
10372.00	H	-	-	-53.12	9.62	-43.49	-18.5

Table 7-67. Radiated Spurious Data with WCP (Band 41 –PC2 – Mid Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 333 of 374	

7.10 Uplink Carrier Aggregation Radiated Measurements

§2.1053, §27.53(m)

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-D-2010 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW \geq 3 x RBW
3. No. of sweep points \geq 2 x 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 334 of 374	

Test Setup

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

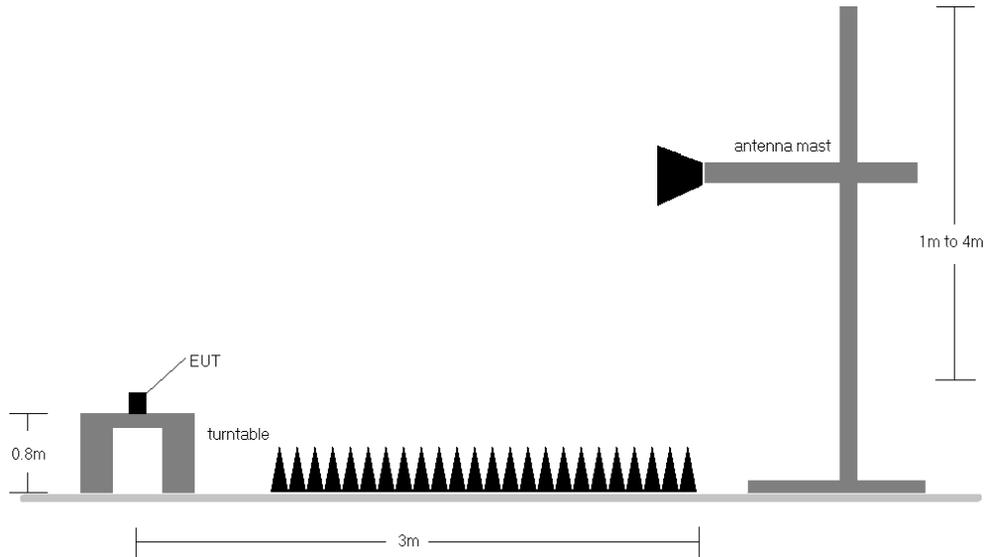


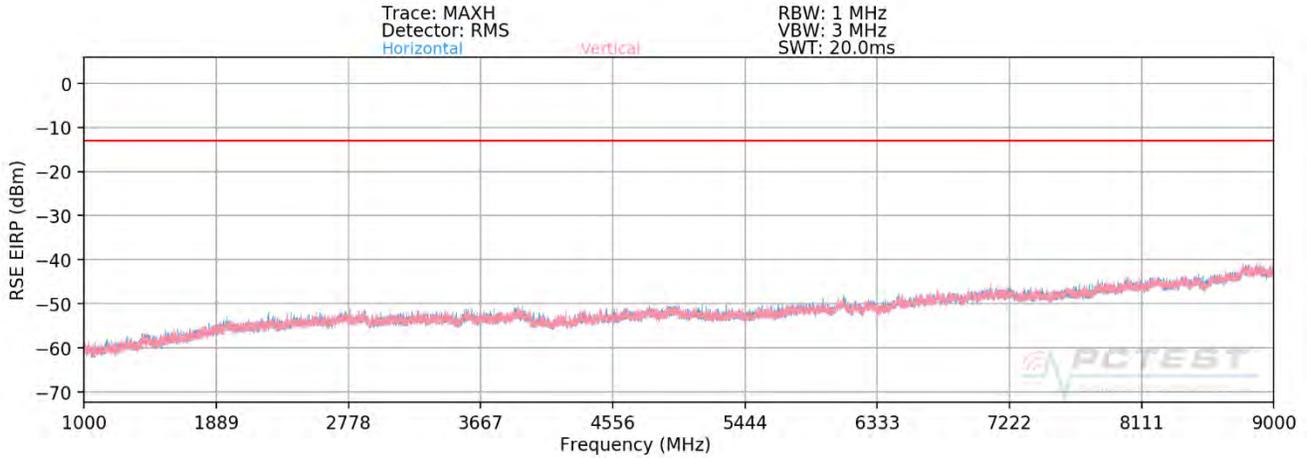
Figure 7-10. Test Instrument & Measurement Setup

Test Notes

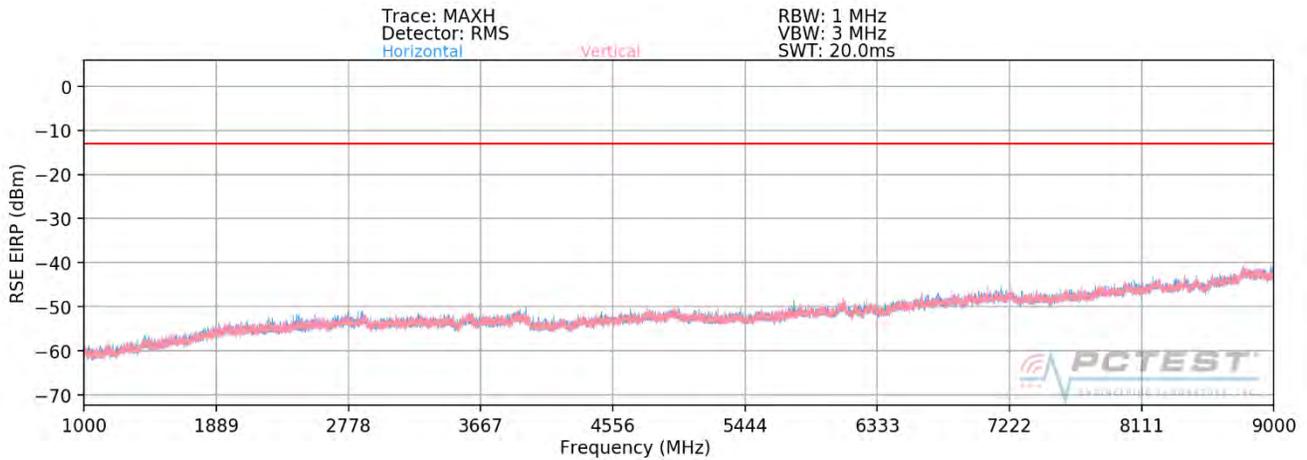
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 335 of 374

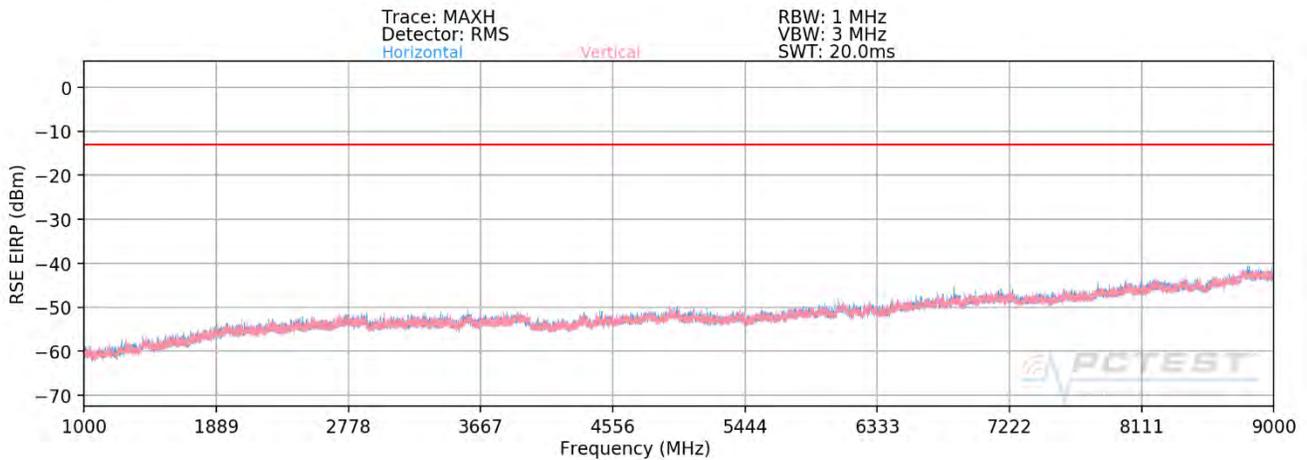
Uplink CA Configuration 5B



Plot 7-507. Radiated Spurious Plot (ULCA 5B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

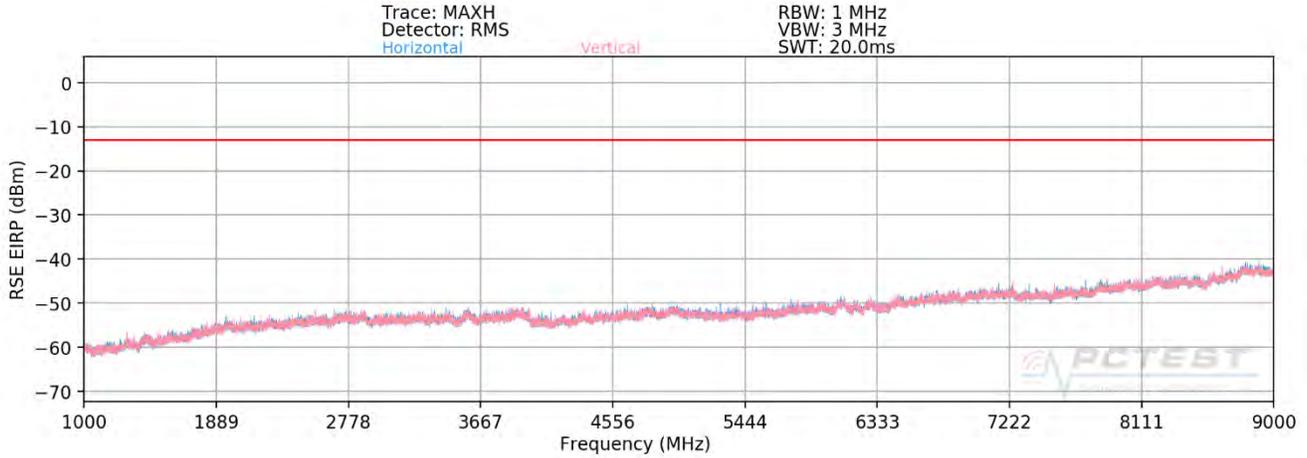


Plot 7-508. Radiated Spurious Plot (ULCA 5B PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)



Plot 7-509. Radiated Spurious Plot (ULCA 5B PCC: RB 50 Offset 0, SCC: RB 50 Offset 0 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 336 of 374



Plot 7-510. Radiated Spurious Plot (ULCA 5B 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: 20450
 CHANNEL: 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	-	-	-70.45	3.12	-67.33	-54.3
2487.00	H	-	-	-68.48	3.87	-64.61	-51.6

Table 7-68. Radiated Spurious Data (ULCA 5B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 337 of 374	

OPERATING FREQUENCY: 844.00 MHz
 OPERATING FREQUENCY: 834.10 MHz
 CHANNEL: 20600
 CHANNEL: 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	-	-	-70.58	3.18	-67.41	-54.4
2532.00	H	-	-	-68.75	4.10	-64.66	-51.7

Table 7-69. Radiated Spurious Data (ULCA 5B PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)

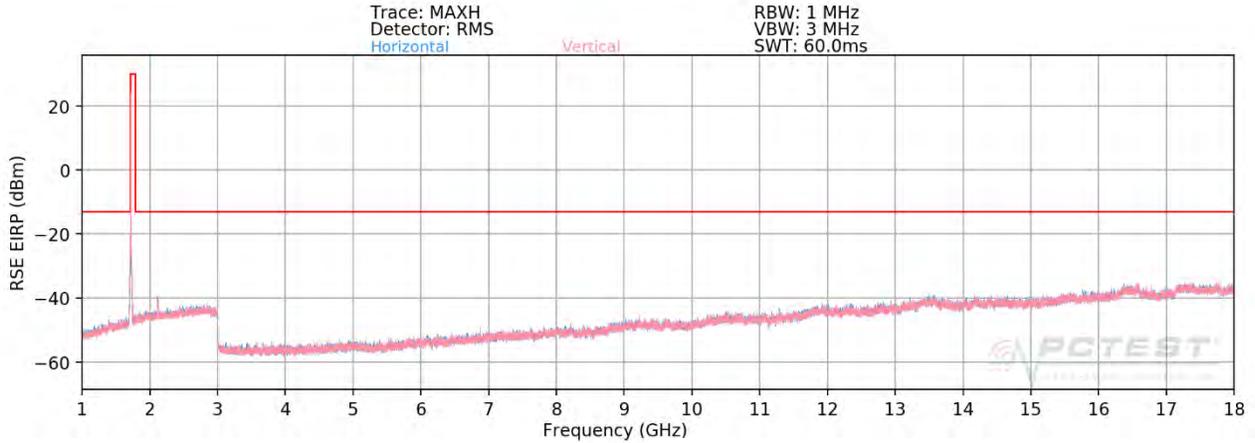
OPERATING FREQUENCY: 844.00 MHz
 OPERATING FREQUENCY: 829.00 MHz
 CHANNEL: 20600
 CHANNEL: 20501
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	-	-	-71.02	3.18	-67.85	-54.8
2532.00	H	-	-	-68.96	4.10	-64.87	-51.9

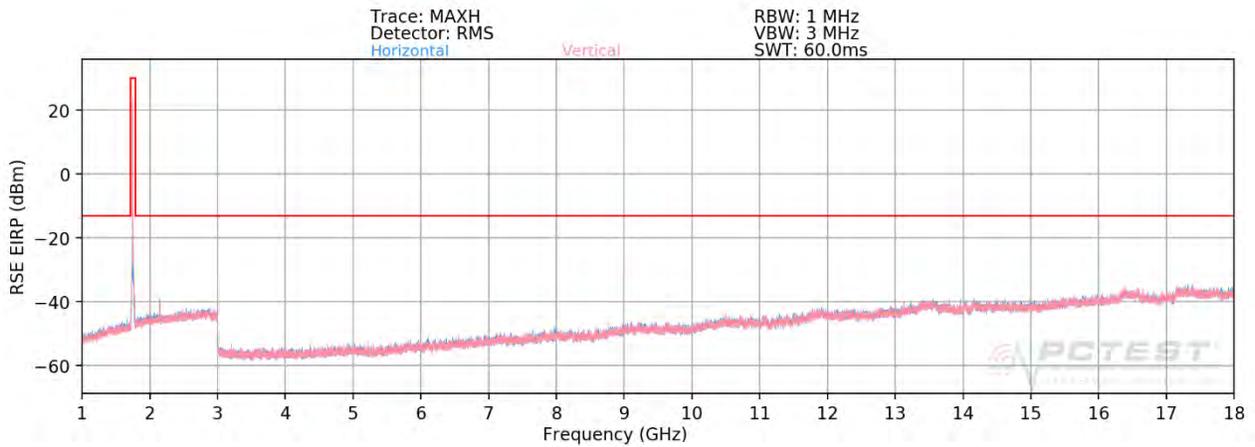
Table 7-70. Radiated Spurious Data with WCP (ULCA 5B PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 338 of 374	

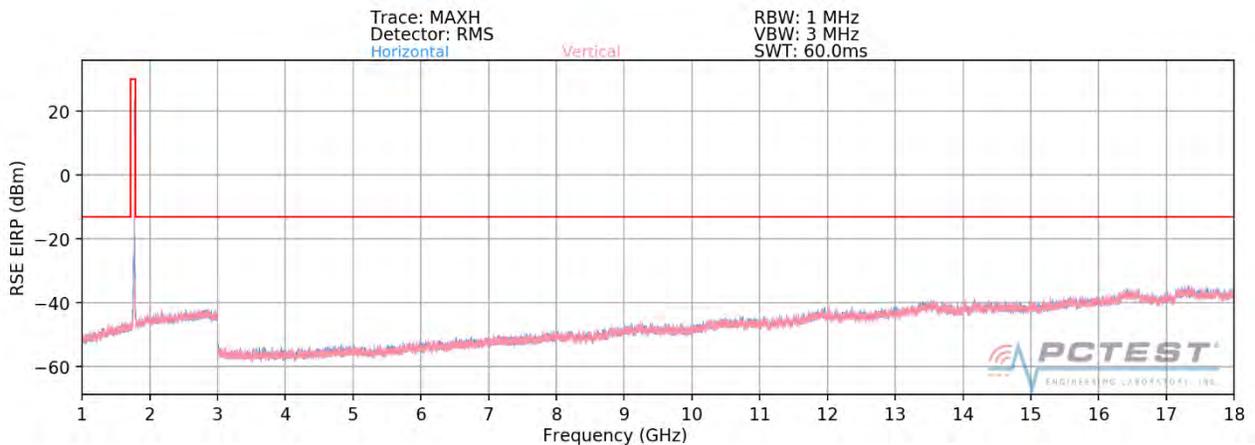
Uplink CA Configuration 66B



Plot 7-511. Radiated Spurious Plot (ULCA 66B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

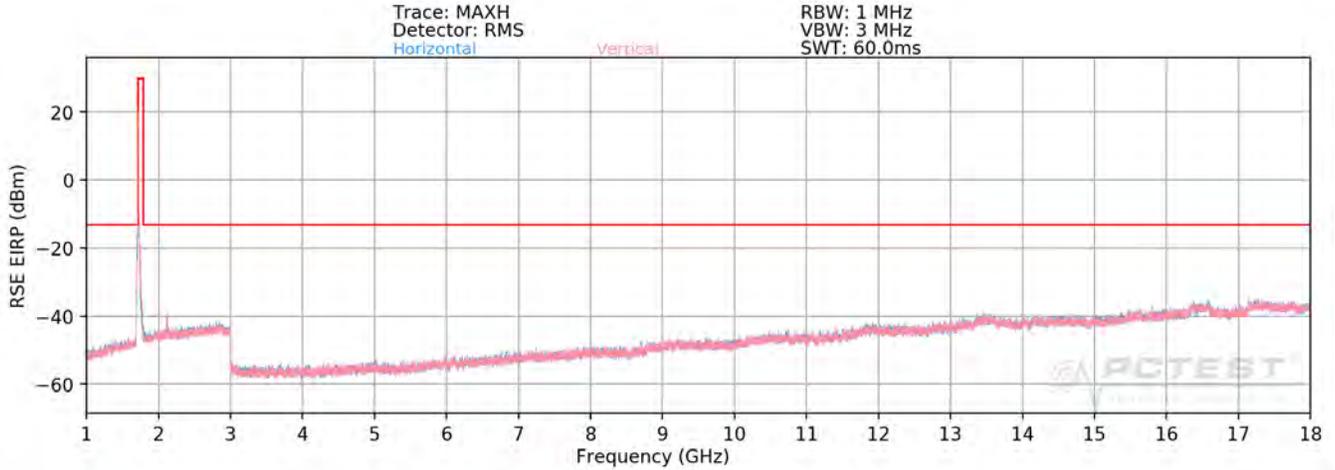


Plot 7-512. Radiated Spurious Plot (ULCA 66B PCC: RB 1 Offset 74, SCC: RB 1 Offset 0 – Mid Channel)

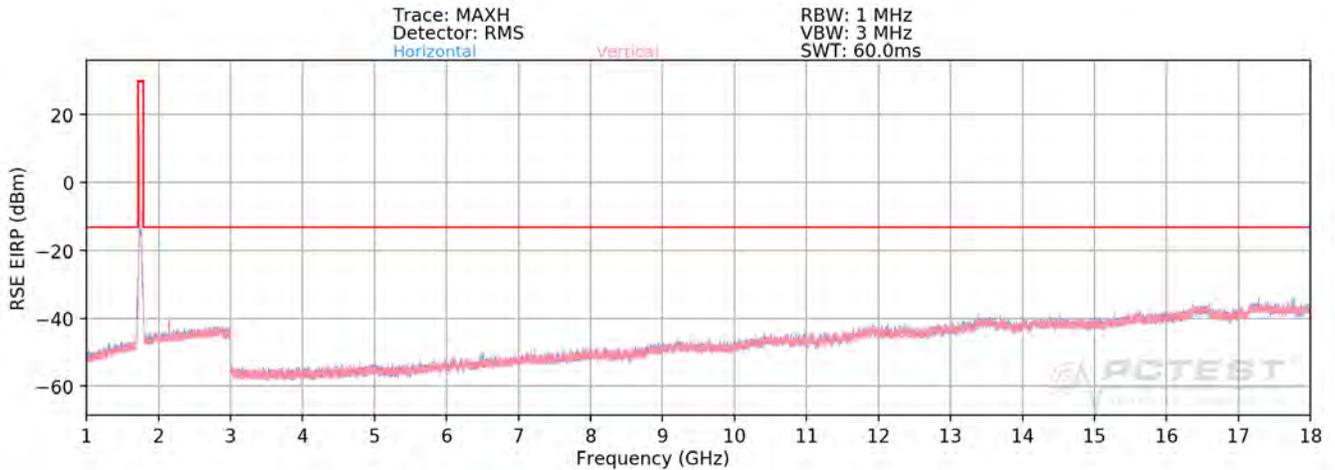


Plot 7-513. Radiated Spurious Plot (ULCA 66B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – High Channel)

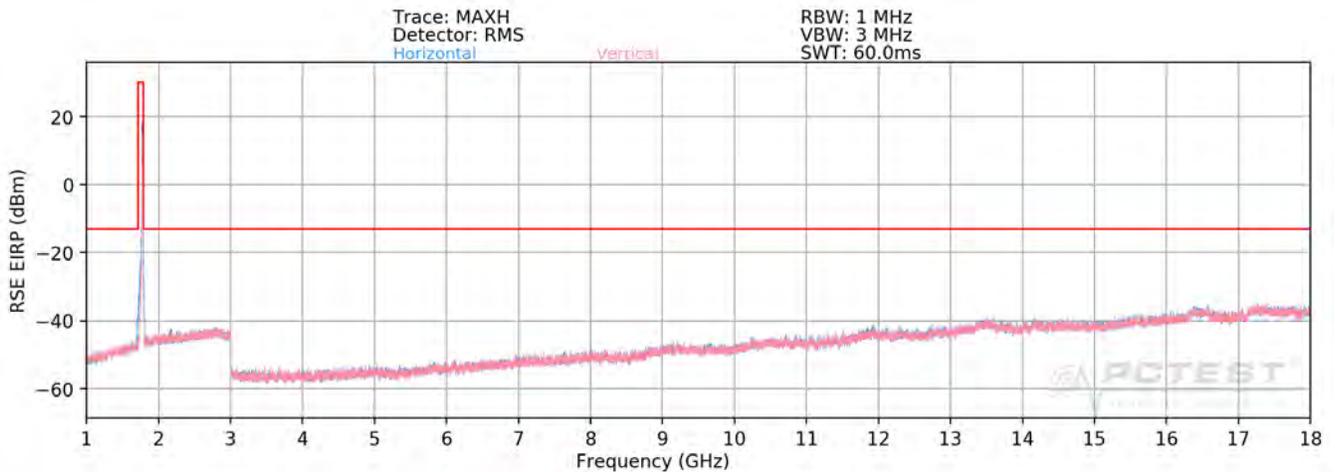
FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 339 of 374



Plot 7-514. Radiated Spurious Plot (ULCA 66B PCC: RB 50 Offset 0, SCC: RB 50 Offset 0 – Low Channel)



Plot 7-515. Radiated Spurious Plot (ULCA 66B PCC: RB 75 Offset 0, SCC: RB 75 Offset 0 – Mid Channel)



Plot 7-516. Radiated Spurious Plot (ULCA 66B PCC: RB 50 Offset 0, SCC: RB 50 Offset 0 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 340 of 374

OPERATING FREQUENCY: 1715.00 MHz
 OPERATING FREQUENCY: 1724.90 MHz
 CHANNEL: 132022
 CHANNEL: 132121
 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]
3430.00	V	-	-	-67.08	6.28	-60.80	-47.8
5150.00	V	-	-	-69.09	8.97	-60.13	-47.1
6870.00	V	100	348	-62.32	9.43	-52.90	-39.9
8590.00	V	-	-	-64.64	9.61	-55.03	-42.0
10310.00	V	-	-	-62.64	9.57	-53.06	-40.1

Table 7-71. Radiated Spurious Data (ULCA 66B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY: 1745.00 MHz
 OPERATING FREQUENCY: 1754.30 MHz
 CHANNEL: 132322
 CHANNEL: 132415
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 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	-	-	-68.25	6.47	-61.79	-48.8
5235.00	V	-	-	-69.78	8.97	-60.82	-47.8
6980.00	V	157	364	-62.82	9.23	-53.59	-40.6
8725.00	V	-	-	-64.65	9.59	-55.05	-42.1
10470.00	V	-	-	-61.80	9.43	-52.37	-39.4

Table 7-72. Radiated Spurious Data (ULCA 66B PCC: RB 1 Offset 74, SCC: RB 1 Offset 0 – Mid Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 341 of 374	

OPERATING FREQUENCY: 1775.00 MHz
 OPERATING FREQUENCY: 1765.10 MHz
 CHANNEL: 132622
 CHANNEL: 132523
 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]
3550.00	V	-	-	-67.56	6.43	-61.13	-48.1
5320.00	V	-	-	-69.77	9.07	-60.70	-47.7
7090.00	V	238	364	-63.19	9.16	-54.03	-41.0
8860.00	V	-	-	-64.49	9.56	-54.93	-41.9
10630.00	V	-	-	-61.54	9.56	-51.98	-39.0

Table 7-73. Radiated Spurious Data (ULCA 66B PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)

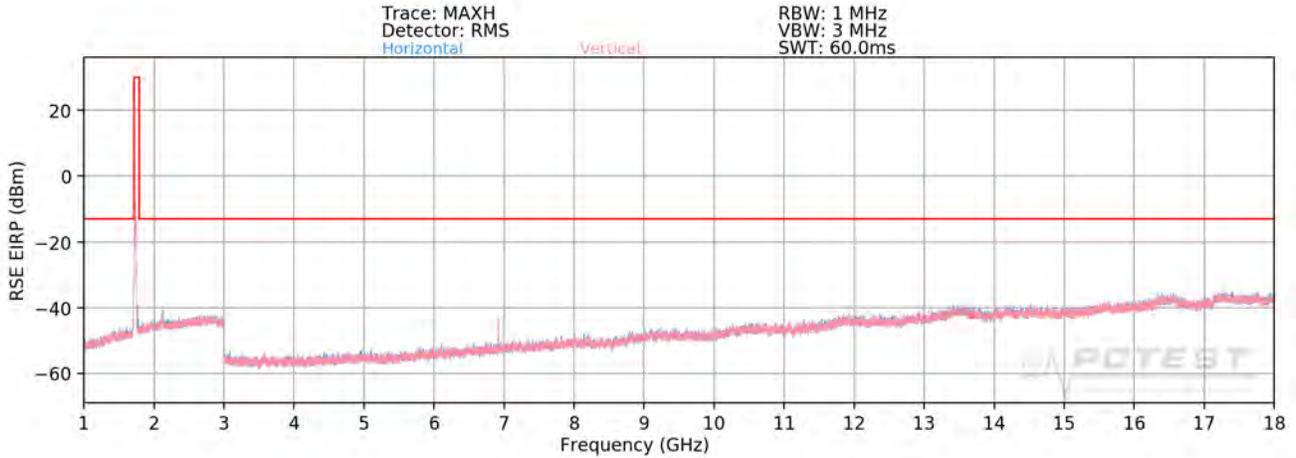
OPERATING FREQUENCY: 1715.00 MHz
 OPERATING FREQUENCY: 1724.90 MHz
 CHANNEL: 132022
 CHANNEL: 132121
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3430.00	V	106	274	-66.05	6.28	-59.77	-46.8
5202.50	V	108	41	-70.89	8.97	-61.93	-48.9
6975.00	V	245	83	-68.28	9.43	-58.85	-45.9
8747.50	V	-	-	-66.49	9.61	-56.88	-43.9
10520.00	V	-	-	-62.52	9.57	-52.94	-39.9

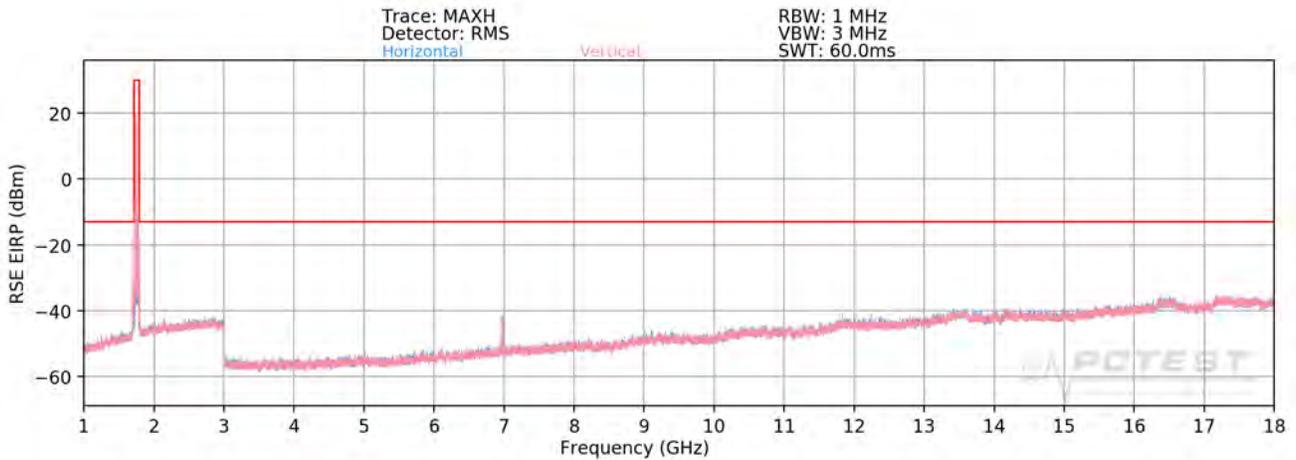
Table 7-74. Radiated Spurious Data with WCP (ULCA 66B PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 342 of 374	

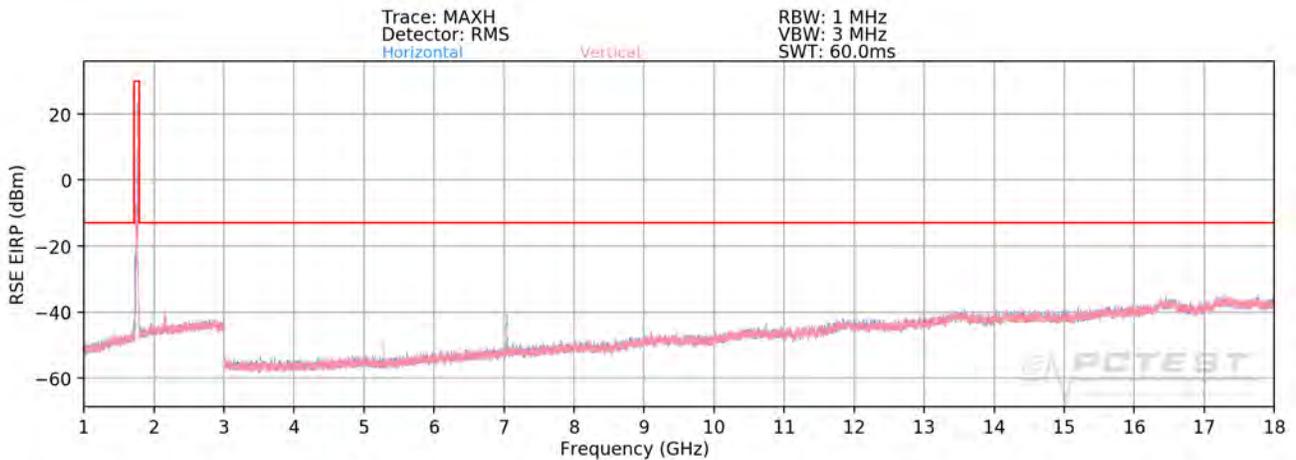
Uplink CA Configuration 66C



Plot 7-517. Radiated Spurious Plot (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

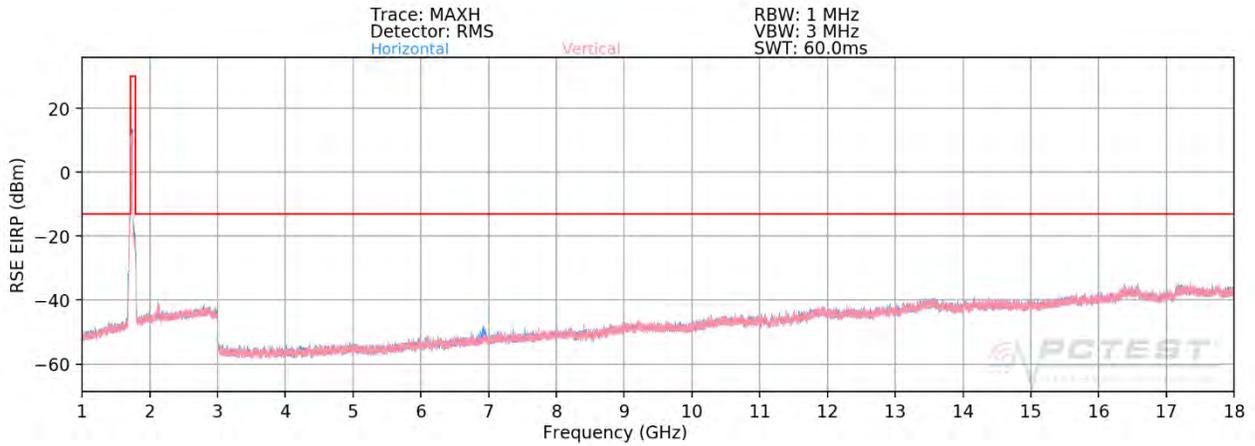


Plot 7-518. Radiated Spurious Plot (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

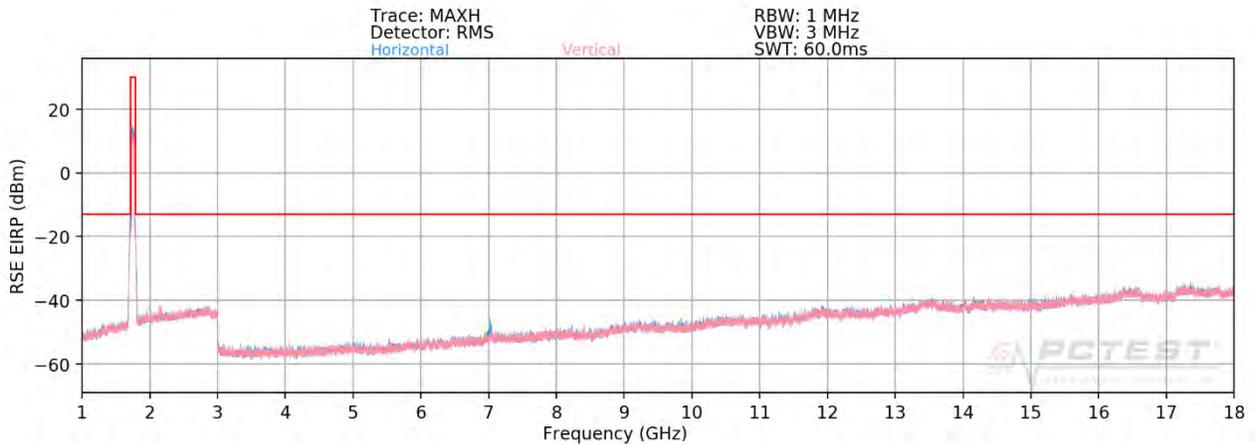


Plot 7-519. Radiated Spurious Plot (ULCA 66C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

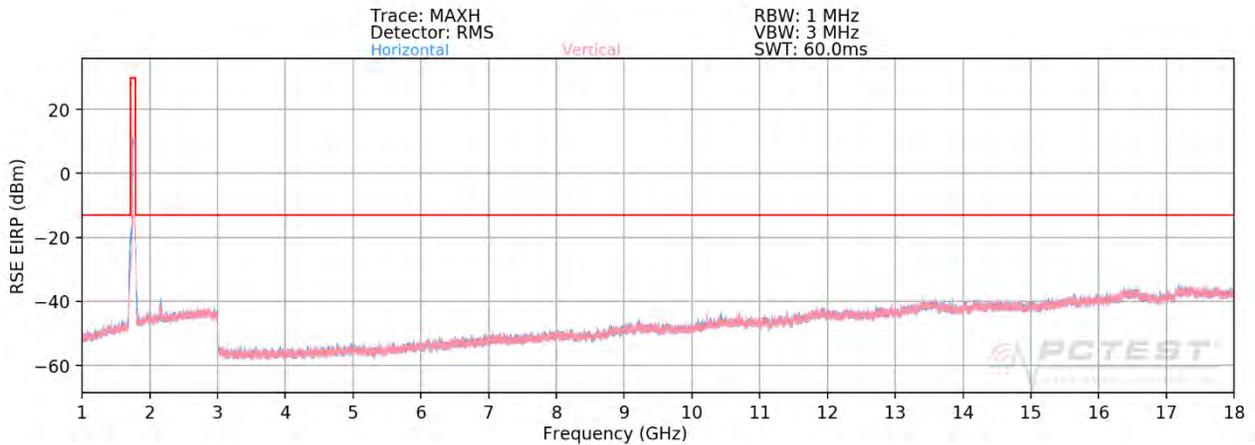
FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 343 of 374



Plot 7-520. Radiated Spurious Plot (ULCA 66C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)



Plot 7-521. Radiated Spurious Plot (ULCA 66C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel)



Plot 7-522. Radiated Spurious Plot (ULCA 66C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 344 of 374

OPERATING FREQUENCY: 1720.00 MHz
 OPERATING FREQUENCY: 1739.80 MHz
 CHANNEL: 132072
 CHANNEL: 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	H	115	221	-66.18	6.28	-59.90	-46.9
5160.00	H	119	41	-65.25	8.97	-56.29	-43.3
6880.00	H	101	22	-50.70	9.43	-41.28	-28.3
8600.00	H	-	-	-65.17	9.61	-55.56	-42.6
10320.00	H	-	-	-63.19	9.57	-53.61	-40.6

Table 7-75. Radiated Spurious Data (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY: 1745.00 MHz
 OPERATING FREQUENCY: 1764.80 MHz
 CHANNEL: 132322
 CHANNEL: 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	H	111	221	-63.75	6.47	-57.29	-44.3
5235.00	H	106	47	-63.34	8.97	-54.38	-41.4
6980.00	H	100	24	-55.71	9.23	-46.48	-33.5
8725.00	H	-	-	-64.63	9.59	-55.03	-42.0
10470.00	H	-	-	-61.75	9.43	-52.32	-39.3

Table 7-76. Radiated Spurious Data (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 345 of 374	

OPERATING FREQUENCY: 1770.00 MHz
 OPERATING FREQUENCY: 1750.20 MHz
 CHANNEL: 132572
 CHANNEL: 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	H	106	323	-65.97	6.45	-59.52	-46.5
5310.00	H	117	46	-63.75	9.09	-54.66	-41.7
7080.00	H	104	34	-51.08	9.17	-41.91	-28.9
8850.00	H	-	-	-64.45	9.57	-54.88	-41.9
10620.00	H	-	-	-61.72	9.55	-52.17	-39.2

Table 7-77. Radiated Spurious Data (ULCA 66C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

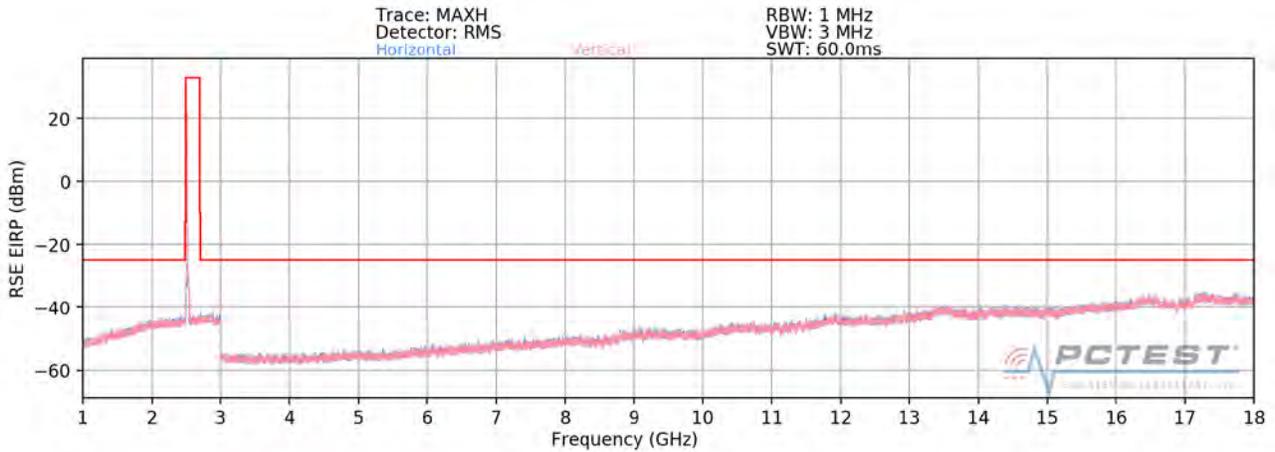
OPERATING FREQUENCY: 1720.00 MHz
 OPERATING FREQUENCY: 1739.80 MHz
 CHANNEL: 132072
 CHANNEL: 132270
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	156	254	-62.75	6.28	-56.47	-43.5
5160.00	H	283	37	-63.48	8.97	-54.52	-41.5
6880.00	H	240	338	-52.00	9.43	-42.57	-29.6
8600.00	H	-	-	-65.16	9.61	-55.55	-42.6
10320.00	H	-	-	-61.42	9.57	-51.85	-38.9

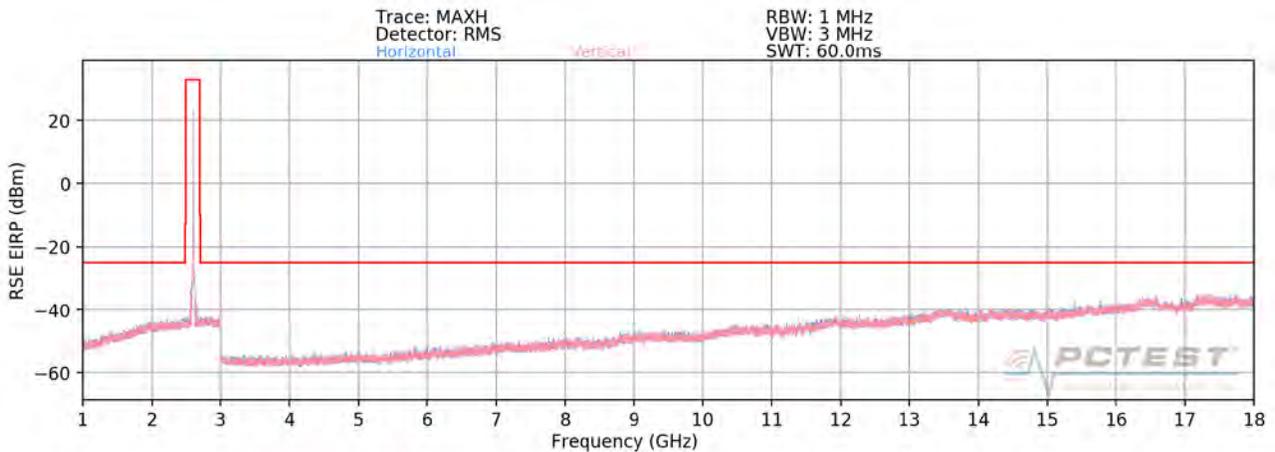
Table 7-78. Radiated Spurious Data with WCP (ULCA 66C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 346 of 374	

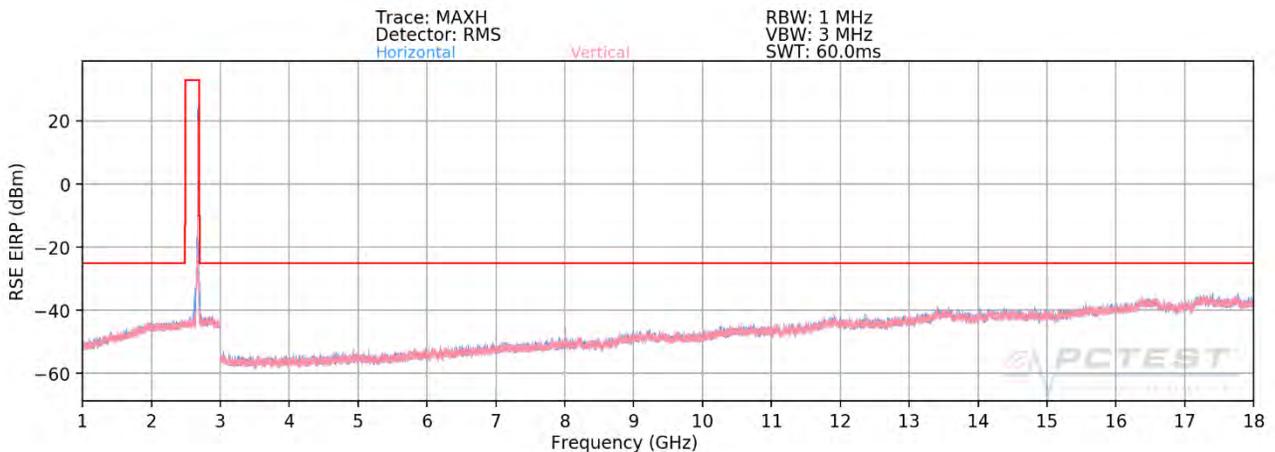
Uplink CA Configuration 41C (PC3)



Plot 7-523. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

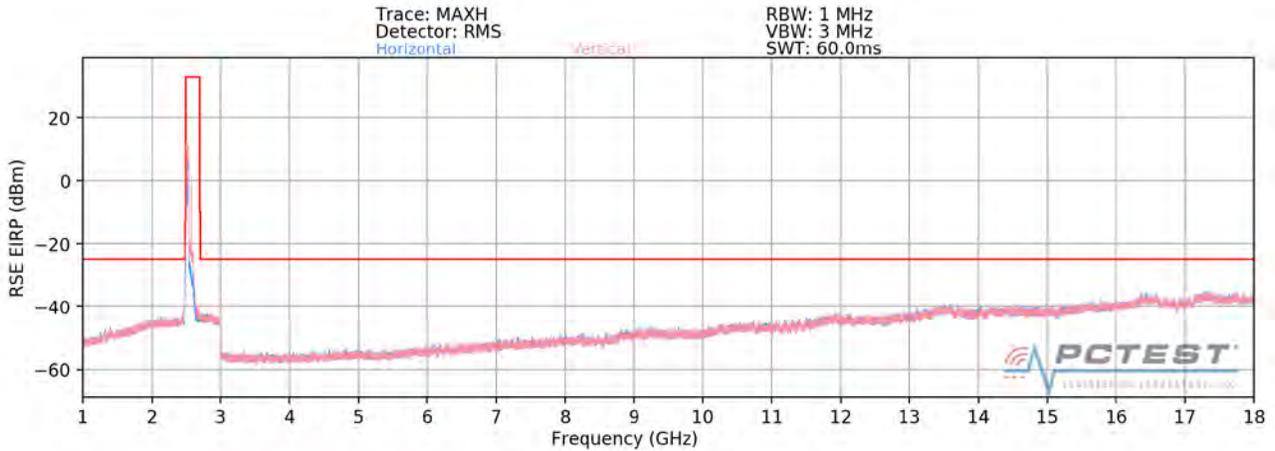


Plot 7-524. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

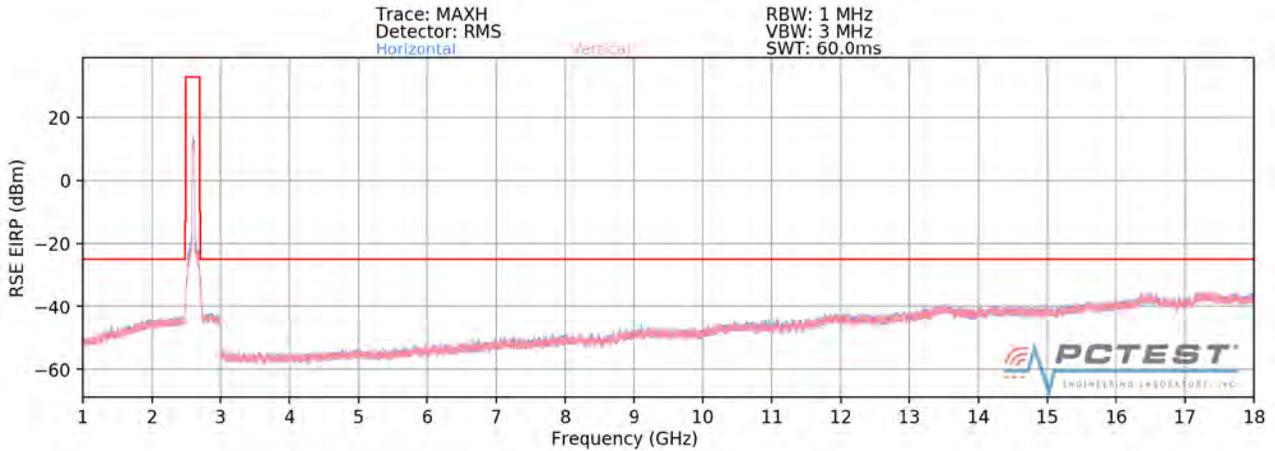


Plot 7-525. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

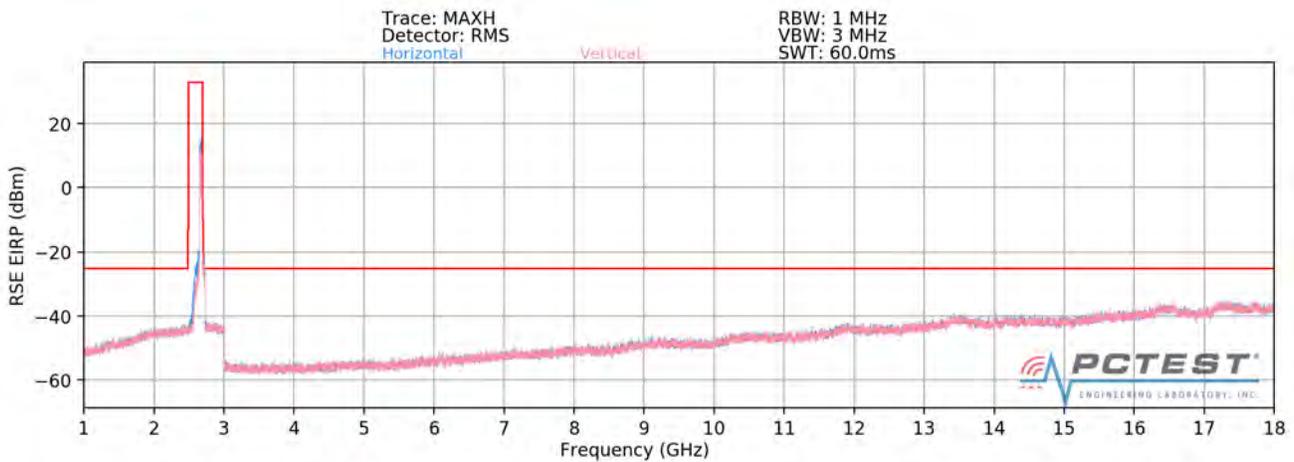
FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 347 of 374



Plot 7-526. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)



Plot 7-527. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel)



Plot 7-528. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 348 of 374

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	V	-	-	-58.47	8.75	-49.72	-24.7
7518.00	V	103	23	-53.28	9.32	-43.96	-19.0
10024.00	V	-	-	-54.24	9.80	-44.44	-19.4
12530.00	V	-	-	-49.55	8.87	-40.69	-15.7

Table 7-79. Radiated Spurious Data (ULCA 41C - PC3 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY (PCC): 2593.00 MHz
 OPERATING FREQUENCY (SCC): 2612.80 MHz
 CHANNEL (PCC): 40620
 CHANNEL (SCC): 40818
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -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	-	-	-60.21	9.03	-51.19	-26.2
7779.00	V	107	25	-55.66	9.29	-46.37	-21.4
10372.00	V	-	-	-54.14	9.50	-44.64	-19.6
12965.00	V	-	-	-49.47	8.75	-40.72	-15.7

Table 7-80. Radiated Spurious Data (ULCA 41C - PC3 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 349 of 374	

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	V	-	-	-59.48	8.99	-50.49	-25.5
8040.00	V	106	19	-49.68	9.35	-40.33	-15.3
10720.00	V	-	-	-51.64	9.39	-42.25	-17.3
13400.00	V	-	-	-47.18	8.67	-38.51	-13.5

Table 7-81. Radiated Spurious Data (ULCA 41C- PC3 - PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

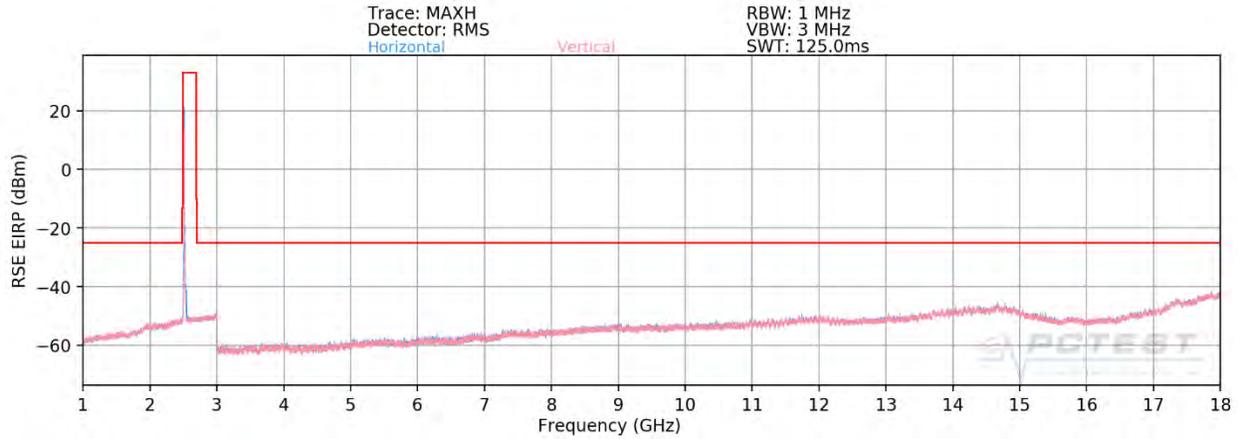
OPERATING FREQUENCY: 2680.00 MHz
 OPERATING FREQUENCY: 2660.20 MHz
 CHANNEL: 41490
 CHANNEL: 41292
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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	V	-	-	-61.98	8.99	-52.99	-28.0
8040.00	V	247	71	-58.21	9.35	-48.86	-23.9
10720.00	V	-	-	-55.92	9.39	-46.53	-21.5
13400.00	V	-	-	-52.09	8.67	-43.42	-18.4

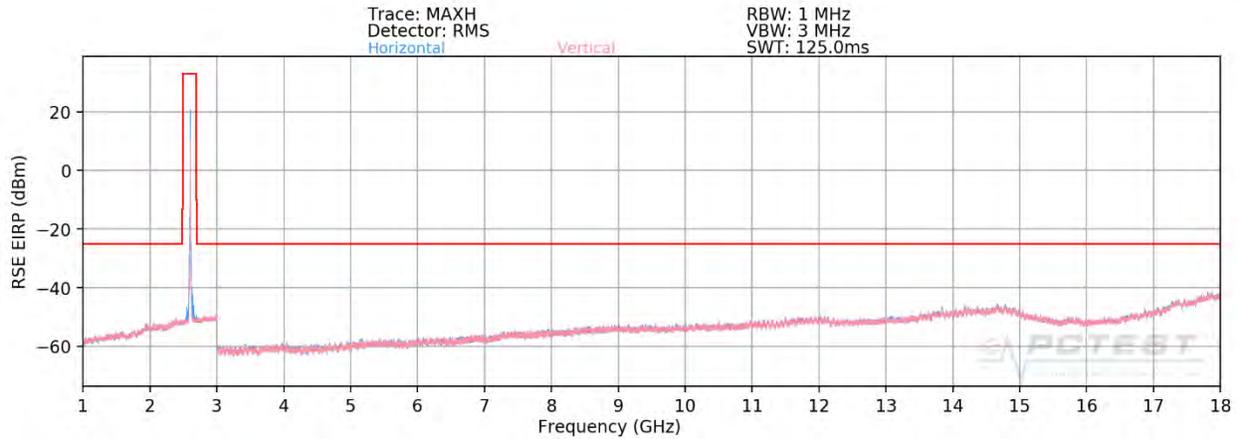
Table 7-82. Radiated Spurious Data with WCP (ULCA 41C - PC3 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 350 of 374	

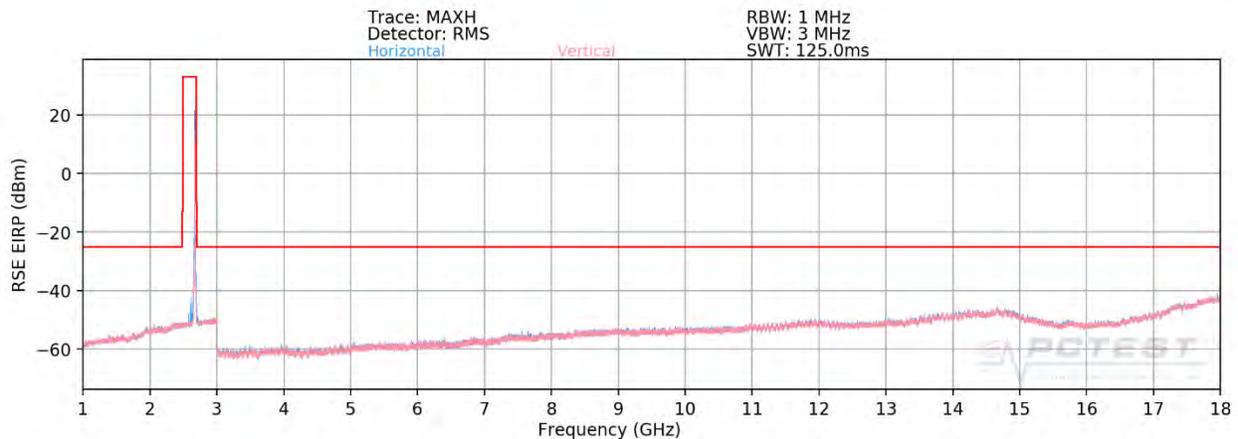
Uplink CA Configuration 41C (PC2)



Plot 7-529. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

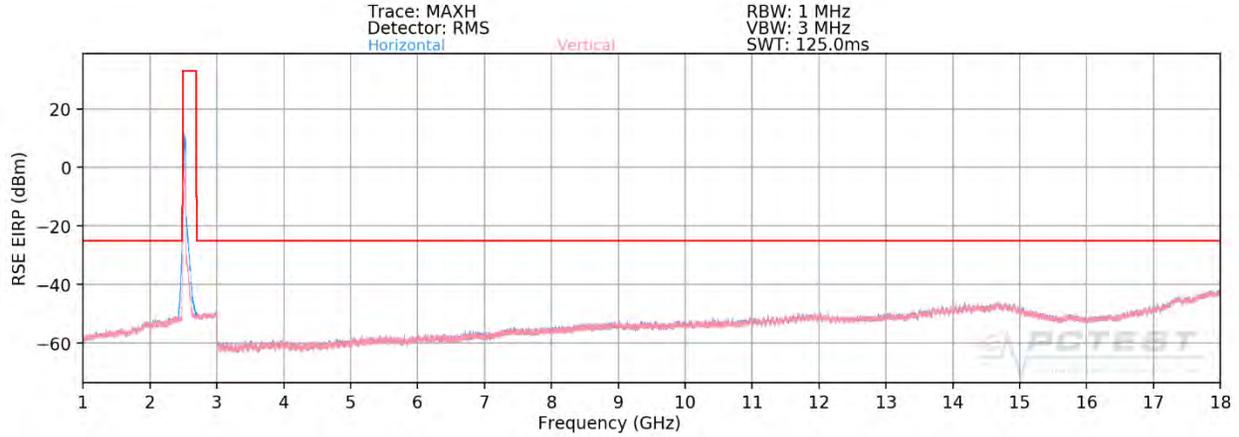


Plot 7-530. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

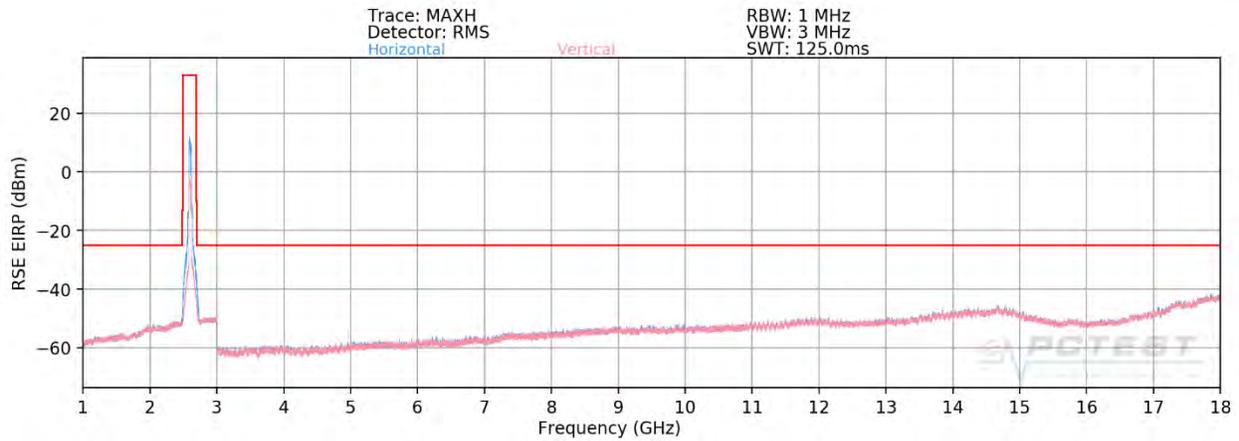


Plot 7-531. Radiated Spurious Plot (ULCA 41C PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

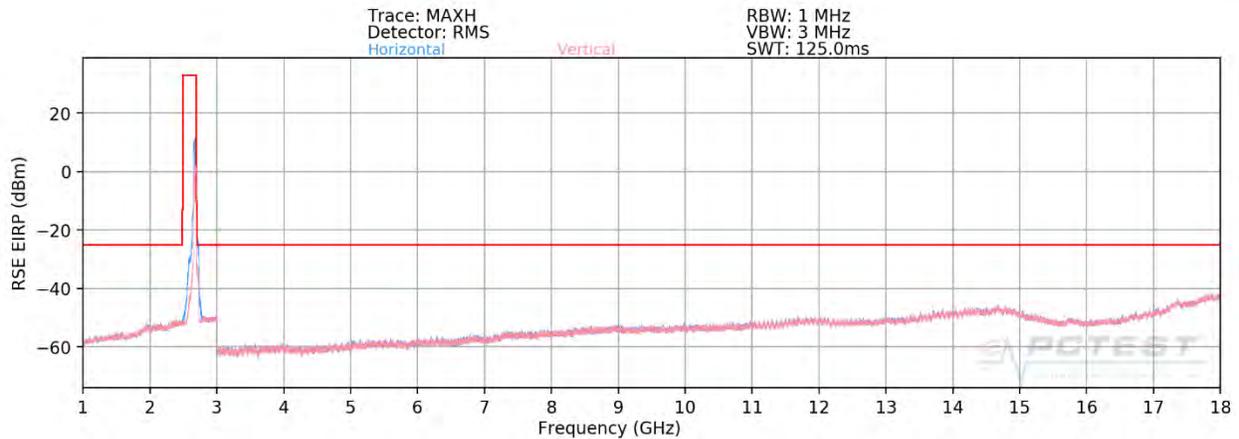
FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 351 of 374



Plot 7-532. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)



Plot 7-533. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel)



Plot 7-534. Radiated Spurious Plot (ULCA 41C PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 352 of 374

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	V	121	335	-69.49	10.90	-58.59	-33.6
7518.00	V	-	-	-69.09	11.11	-57.99	-33.0
10024.00	V	-	-	-67.48	11.99	-55.49	-30.5

Table 7-83. Radiated Spurious Data (ULCA 41C- PC2 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY (PCC): 2593.00 MHz
 OPERATING FREQUENCY (SCC): 2612.80 MHz
 CHANNEL (PCC): 40620
 CHANNEL (SCC): 40818
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -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	-	-	-71.02	10.74	-60.28	-35.3
7779.00	V	-	-	-67.55	11.44	-56.11	-31.1
10372.00	V	-	-	-67.80	12.42	-55.37	-30.4

Table 7-84. Radiated Spurious Data (ULCA 41C- PC2 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 353 of 374	

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	V	379	334	-70.44	10.70	-59.74	-34.7
8040.00	V	-	-	-68.78	11.16	-57.62	-32.6
10720.00	V	-	-	-67.52	12.59	-54.92	-29.9

Table 7-85. Radiated Spurious Data (ULCA 41C - PC2 - PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High 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	V	112	125	-67.58	10.90	-56.68	-31.7
7518.00	V	-	-	-68.81	11.11	-57.71	-32.7
10024.00	V	-	-	-67.66	11.99	-55.67	-30.7

Table 7-86. Radiated Spurious Data with WCP (ULCA 41C- PC2 - PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – High Channel)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 354 of 374	

7.11 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 355 of 374

Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz
 CHANNEL: 133297
 REFERENCE VOLTAGE: 4.31 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	680,499,876	-124	-0.0000182
100 %		- 20	680,499,982	-18	-0.0000026
100 %		- 10	680,499,918	-82	-0.0000120
100 %		0	680,500,191	191	0.0000281
100 %		+ 10	680,499,945	-55	-0.0000081
100 %		+ 20	680,499,721	-279	-0.0000410
100 %		+ 30	680,499,895	-105	-0.0000154
100 %		+ 40	680,499,956	-44	-0.0000065
100 %		+ 50	680,500,097	97	0.0000143
BATT. ENDPOINT		3.48	+ 20	680,499,768	-232

Table 7-87. 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 356 of 374	

Band 71 Frequency Stability Measurements

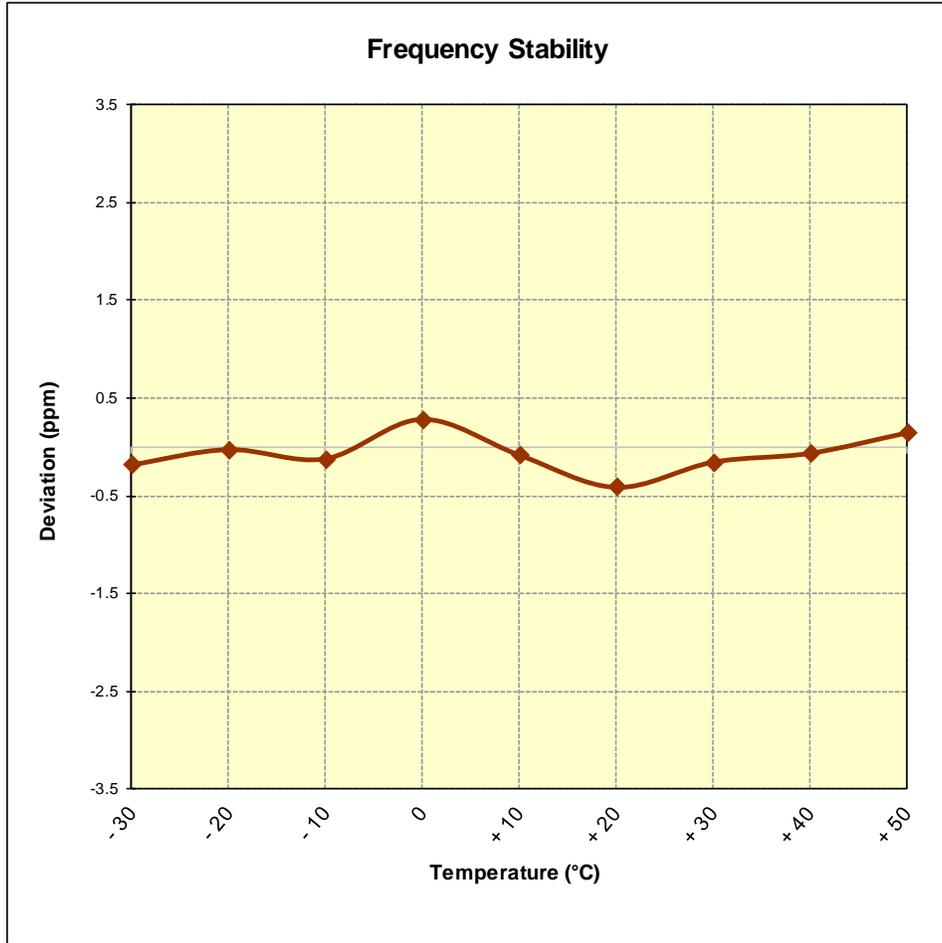


Figure 7-11. Frequency Stability Graph (Band 71)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 357 of 374

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 4.31 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	707,499,702	-298	-0.0000421
100 %		- 20	707,500,360	360	0.0000509
100 %		- 10	707,500,150	150	0.0000212
100 %		0	707,500,444	444	0.0000628
100 %		+ 10	707,499,839	-161	-0.0000228
100 %		+ 20	707,499,949	-51	-0.0000072
100 %		+ 30	707,500,097	97	0.0000137
100 %		+ 40	707,500,000	0	0.0000000
100 %		+ 50	707,499,617	-383	-0.0000541
BATT. ENDPOINT		3.48	+ 20	707,499,989	-11

Table 7-88. 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 358 of 374	

Band 12 Frequency Stability Measurements

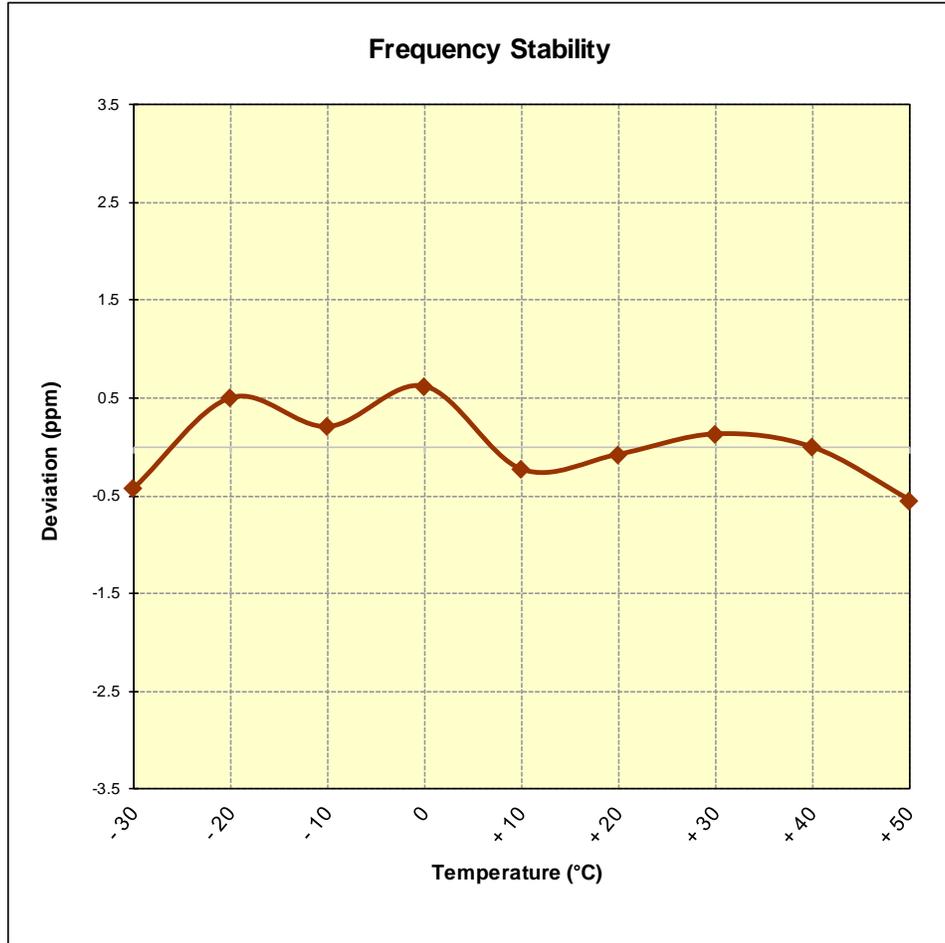


Figure 7-12. Frequency Stability Graph (Band 12)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 359 of 374

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 4.31 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	782,000,125	125	0.0000160
100 %		- 20	781,999,878	-122	-0.0000156
100 %		- 10	781,999,620	-380	-0.0000486
100 %		0	782,000,311	311	0.0000398
100 %		+ 10	781,999,838	-162	-0.0000207
100 %		+ 20	782,000,341	341	0.0000436
100 %		+ 30	782,000,077	77	0.0000098
100 %		+ 40	781,999,939	-61	-0.0000078
100 %		+ 50	781,999,970	-30	-0.0000038
BATT. ENDPOINT		3.48	+ 20	782,000,379	379

Table 7-89. 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 360 of 374	

Band 13 Frequency Stability Measurements

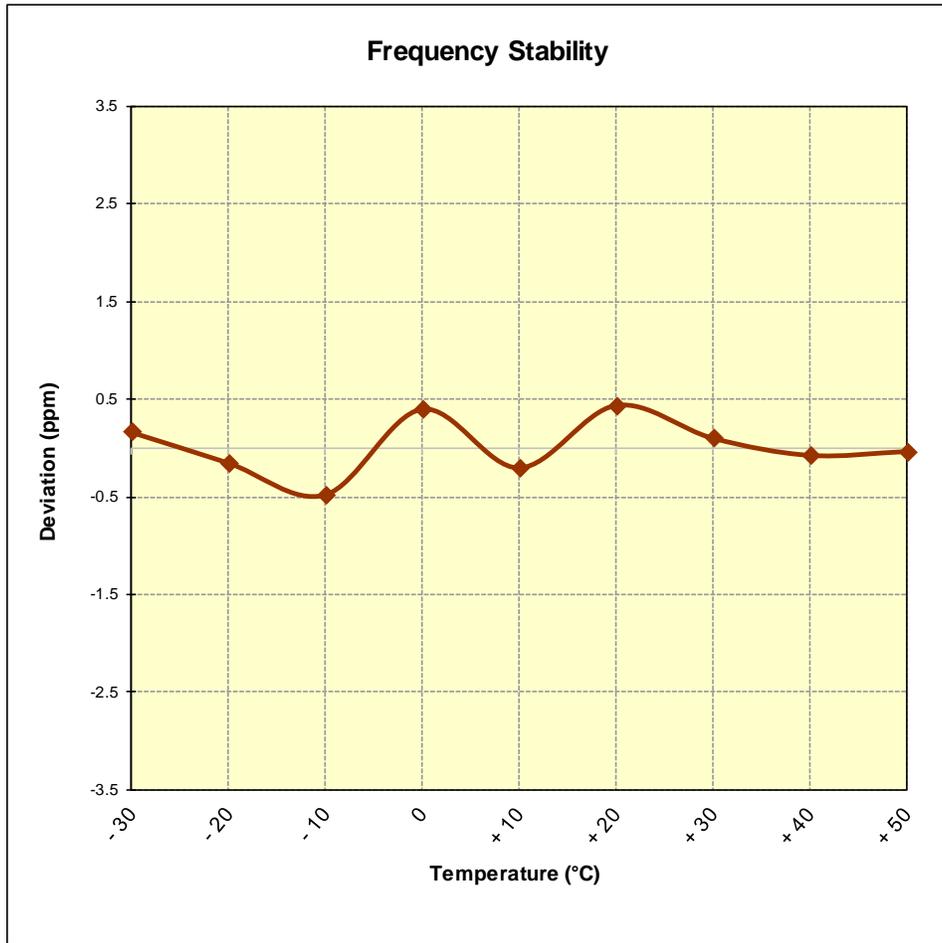


Figure 7-13. Frequency Stability Graph (Band 13)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 361 of 374

Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 831,500,000 Hz
 CHANNEL: 26865
 REFERENCE VOLTAGE: 4.31 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	831,500,130	130	0.0000156
100 %		- 20	831,499,972	-28	-0.0000034
100 %		- 10	831,500,009	9	0.0000011
100 %		0	831,499,582	-418	-0.0000503
100 %		+ 10	831,499,992	-8	-0.0000010
100 %		+ 20	831,500,046	46	0.0000055
100 %		+ 30	831,499,918	-82	-0.0000099
100 %		+ 40	831,500,168	168	0.0000202
100 %		+ 50	831,500,189	189	0.0000227
BATT. ENDPOINT		3.48	+ 20	831,500,045	45

Table 7-90. Frequency Stability Data (Band 26/5)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 362 of 374	

Band 26/5 Frequency Stability Measurements

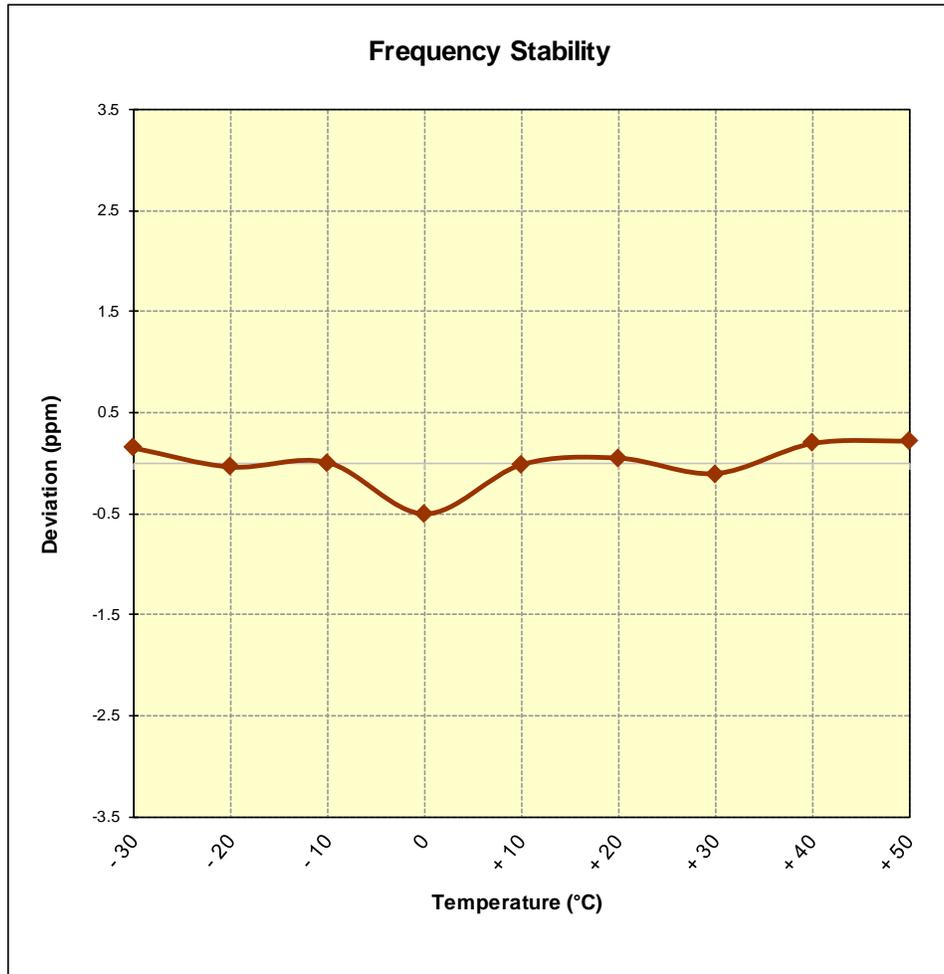


Figure 7-14. Frequency Stability Graph (Band 26/5)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 363 of 374

Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz
 CHANNEL: 132322
 REFERENCE VOLTAGE: 4.31 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	1,744,999,891	-109	-0.0000062
100 %		- 20	1,744,999,856	-144	-0.0000083
100 %		- 10	1,744,999,972	-28	-0.0000016
100 %		0	1,745,000,261	261	0.0000150
100 %		+ 10	1,744,999,694	-306	-0.0000175
100 %		+ 20	1,745,000,100	100	0.0000057
100 %		+ 30	1,745,000,022	22	0.0000013
100 %		+ 40	1,745,000,313	313	0.0000179
100 %		+ 50	1,745,000,137	137	0.0000079
BATT. ENDPOINT		3.48	+ 20	1,744,999,893	-107

Table 7-91. 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 364 of 374	

Band 66/4 Frequency Stability Measurements

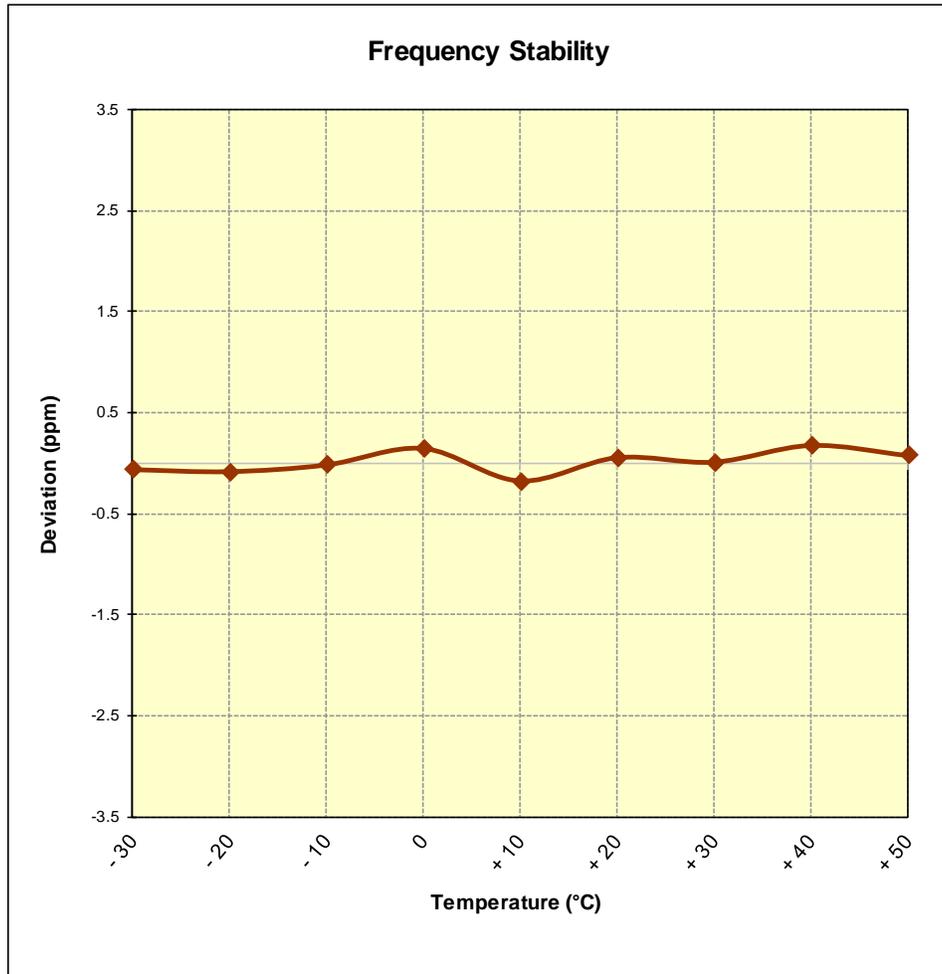


Figure 7-15. Frequency Stability Graph (Band 66/4)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 365 of 374

Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz
 CHANNEL: 26365
 REFERENCE VOLTAGE: 4.31 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	1,882,499,698	-302	-0.0000160
100 %		- 20	1,882,500,282	282	0.0000150
100 %		- 10	1,882,499,961	-39	-0.0000021
100 %		0	1,882,500,306	306	0.0000163
100 %		+ 10	1,882,499,999	-1	-0.0000001
100 %		+ 20	1,882,499,972	-28	-0.0000015
100 %		+ 30	1,882,499,973	-27	-0.0000014
100 %		+ 40	1,882,499,735	-265	-0.0000141
100 %		+ 50	1,882,499,956	-44	-0.0000023
BATT. ENDPOINT		3.48	+ 20	1,882,500,081	81

Table 7-92. Frequency Stability Data (Band 25)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 366 of 374	

Band 25/2 Frequency Stability Measurements

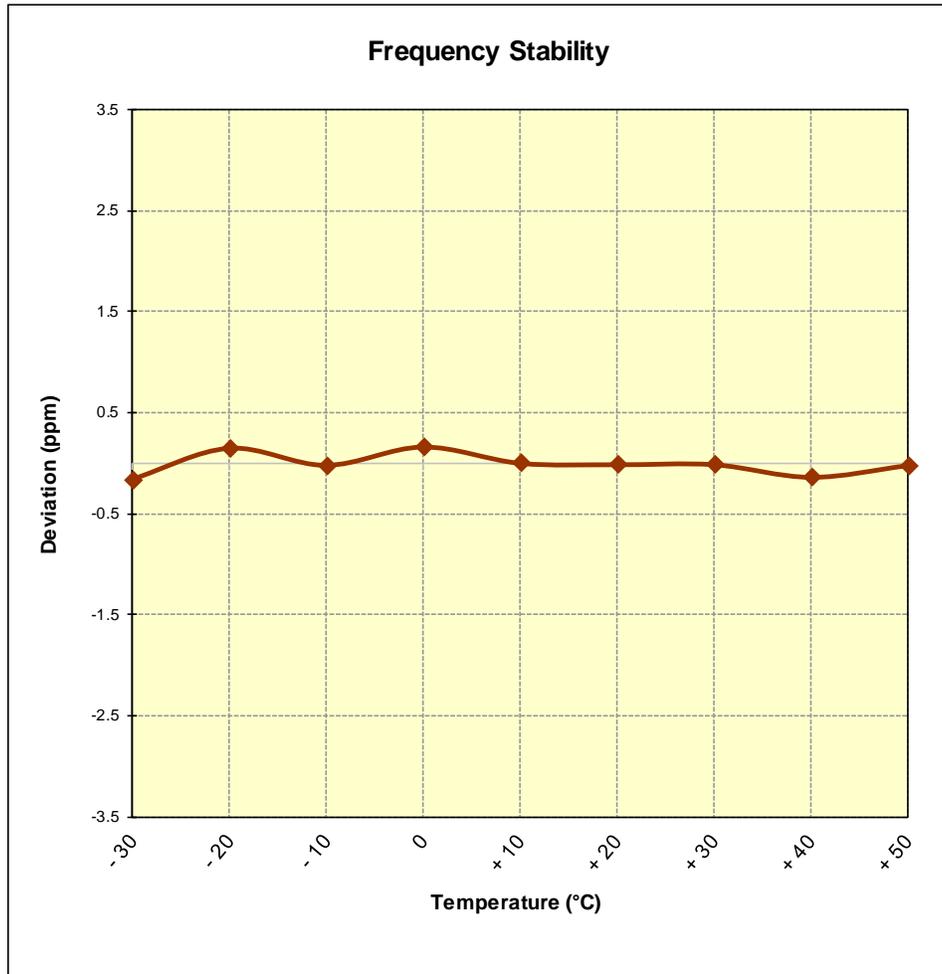


Figure 7-16. Frequency Stability Graph (Band 25/2)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 367 of 374

Band 30 Frequency Stability Measurements

OPERATING FREQUENCY: 2,310,000,000 Hz
 CHANNEL: 27710
 REFERENCE VOLTAGE: 4.31 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	2,310,000,067	67	0.0000029
100 %		- 20	2,310,000,163	163	0.0000071
100 %		- 10	2,310,000,094	94	0.0000041
100 %		0	2,310,000,087	87	0.0000038
100 %		+ 10	2,309,999,836	-164	-0.0000071
100 %		+ 20	2,310,000,078	78	0.0000034
100 %		+ 30	2,310,000,047	47	0.0000020
100 %		+ 40	2,309,999,881	-119	-0.0000052
100 %		+ 50	2,309,999,882	-118	-0.0000051
BATT. ENDPOINT		3.48	+ 20	2,309,999,930	-70

Table 7-93. 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 368 of 374	

Band 30 Frequency Stability Measurements

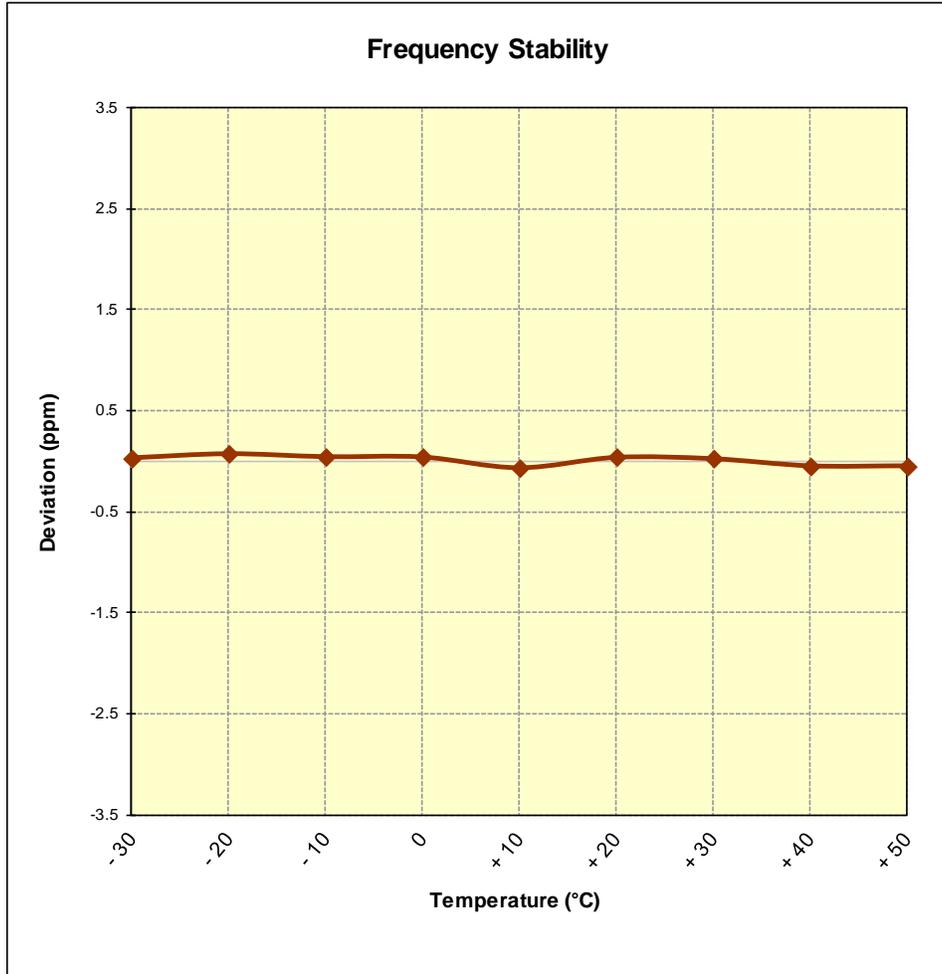


Figure 7-17. Frequency Stability Graph (Band 30)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 369 of 374

Band 7 Frequency Stability Measurements

OPERATING FREQUENCY: 2,535,000,000 Hz
 CHANNEL: 21100
 REFERENCE VOLTAGE: 4.31 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	2,535,000,365	365	0.0000144
100 %		- 20	2,535,000,313	313	0.0000123
100 %		- 10	2,535,000,334	334	0.0000132
100 %		0	2,535,000,128	128	0.0000050
100 %		+ 10	2,535,000,148	148	0.0000058
100 %		+ 20	2,535,000,179	179	0.0000071
100 %		+ 30	2,534,999,683	-317	-0.0000125
100 %		+ 40	2,535,000,046	46	0.0000018
100 %		+ 50	2,535,000,166	166	0.0000065
BATT. ENDPOINT		3.48	+ 20	2,535,000,213	213

Table 7-94. 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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 370 of 374	

Band 7 Frequency Stability Measurements

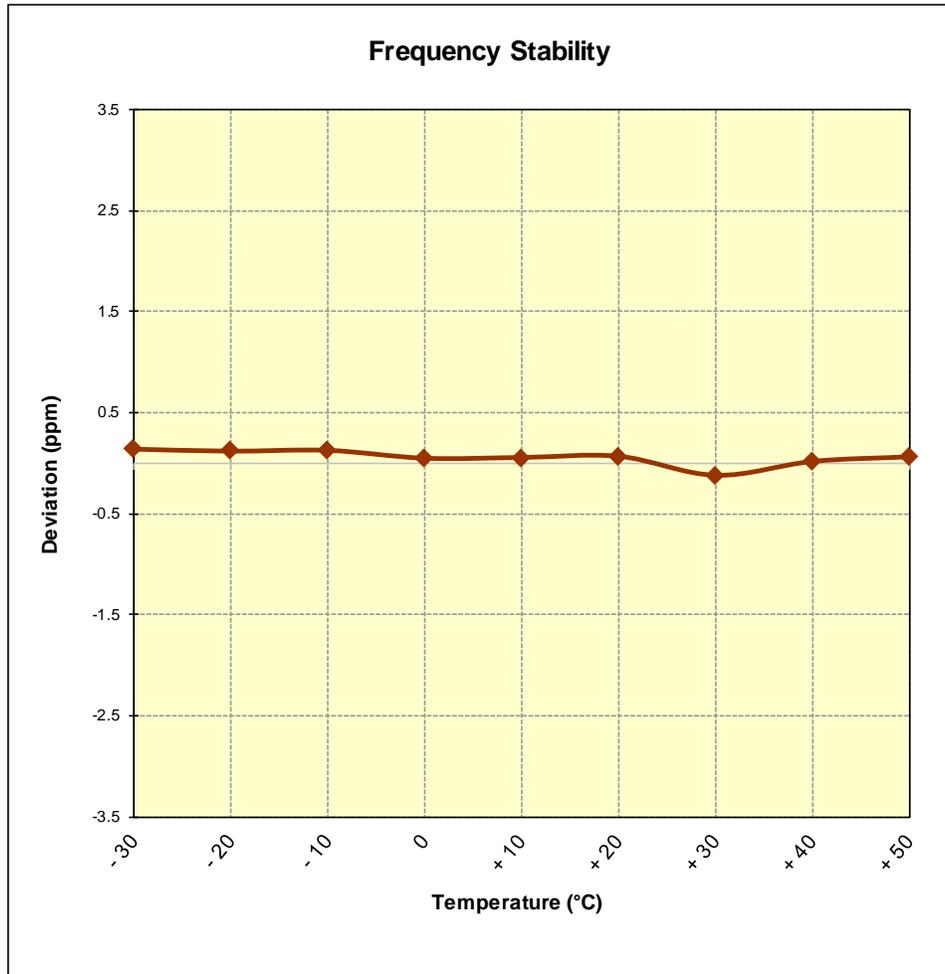


Figure 7-18. Frequency Stability Graph (Band 7)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 371 of 374

Band 41/38 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz
 CHANNEL: 40620
 REFERENCE VOLTAGE: 4.31 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	2,592,999,567	-433	-0.0000167
100 %		- 20	2,592,999,833	-167	-0.0000064
100 %		- 10	2,592,999,963	-37	-0.0000014
100 %		0	2,592,999,935	-65	-0.0000025
100 %		+ 10	2,592,999,895	-105	-0.0000040
100 %		+ 20	2,593,000,074	74	0.0000029
100 %		+ 30	2,592,999,957	-43	-0.0000017
100 %		+ 40	2,592,999,926	-74	-0.0000029
100 %		+ 50	2,593,000,409	409	0.0000158
BATT. ENDPOINT		3.48	+ 20	2,592,999,660	-340

Table 7-95. Frequency Stability Data (Band 41/38)

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: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset	Page 372 of 374	

Band 41/38 Frequency Stability Measurements

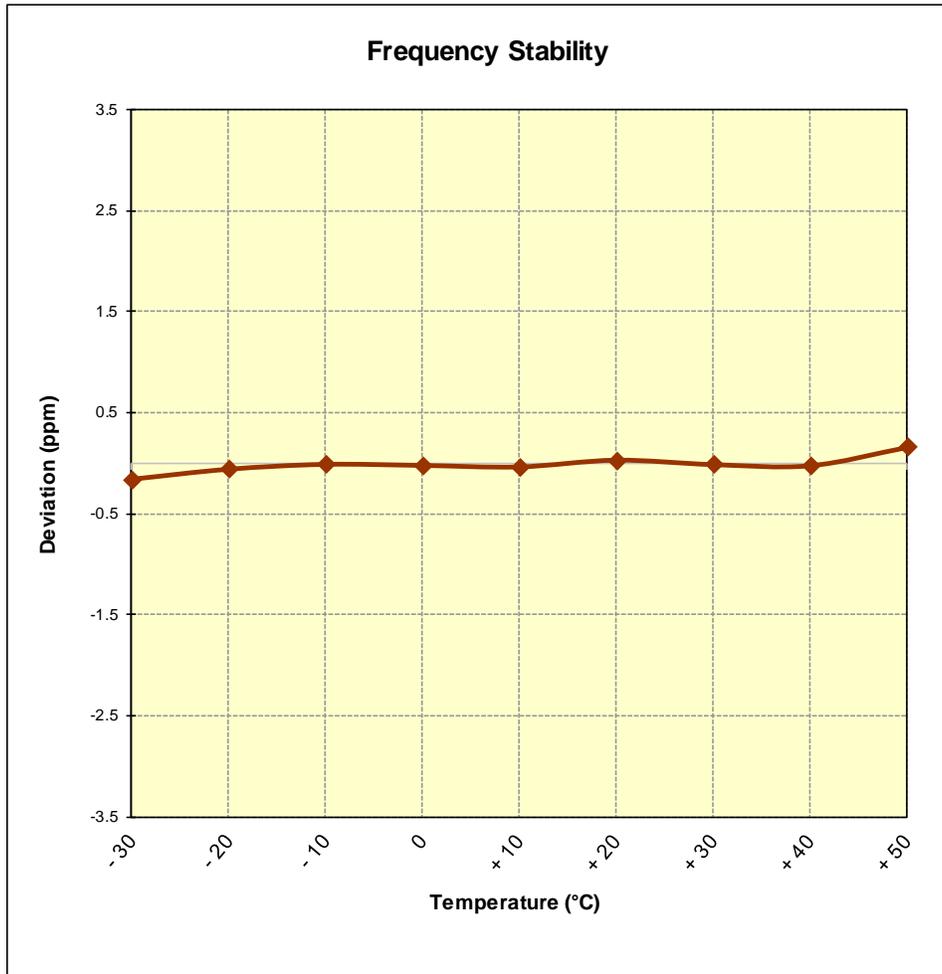


Figure 7-19. Frequency Stability Graph (Band 41/38)

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 373 of 374

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG973U** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

FCC ID: A3LSMG973U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1810250195-03.A3L	Test Dates: 10/23/2018 - 1/09/2019	EUT Type: Portable Handset		Page 374 of 374