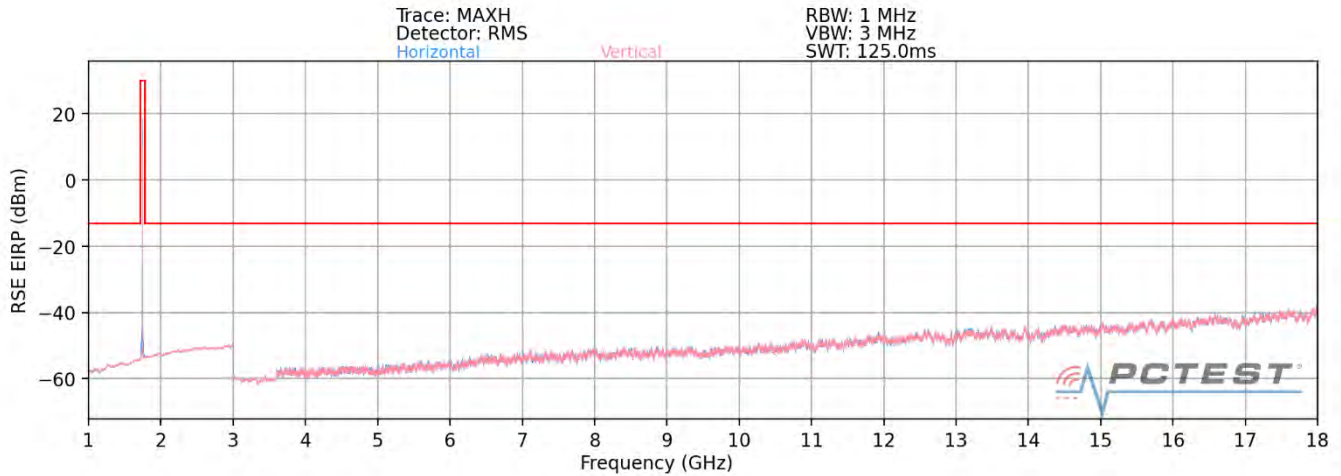
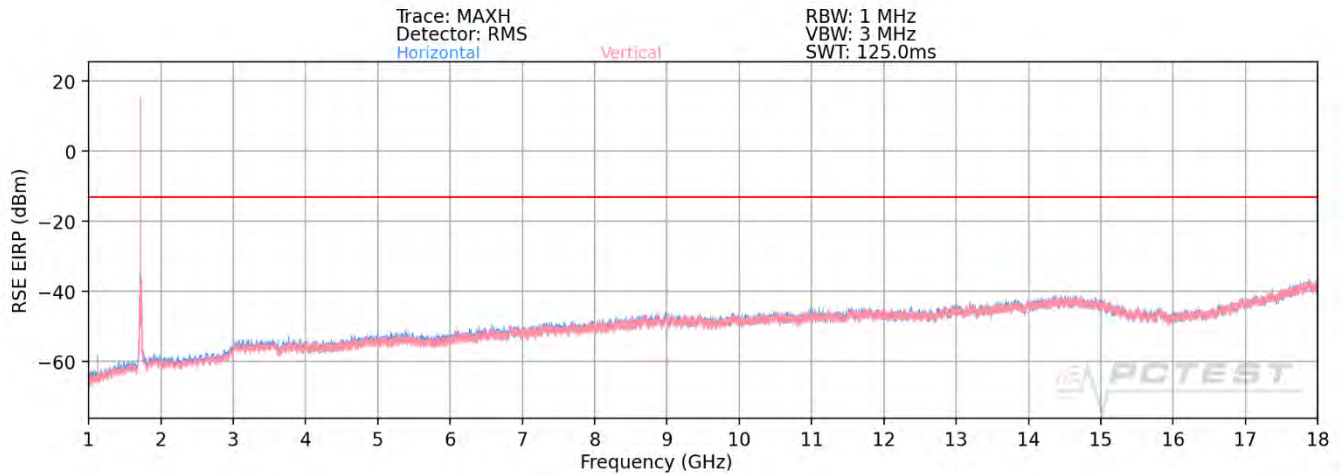


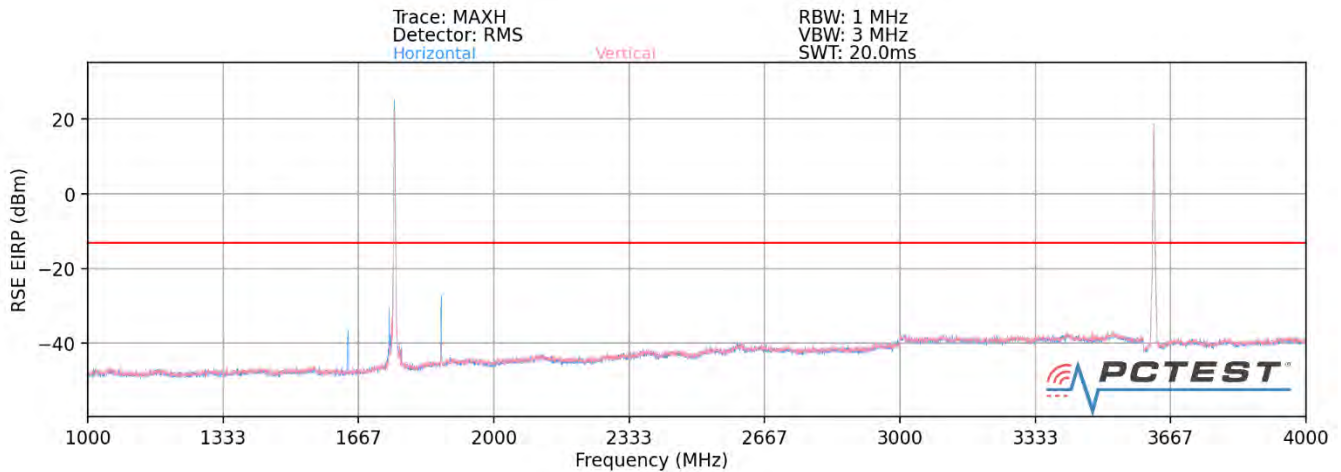
NR Band n66



Plot 7-722. Radiated Spurious Plot above 1GHz (n66 Standalone)

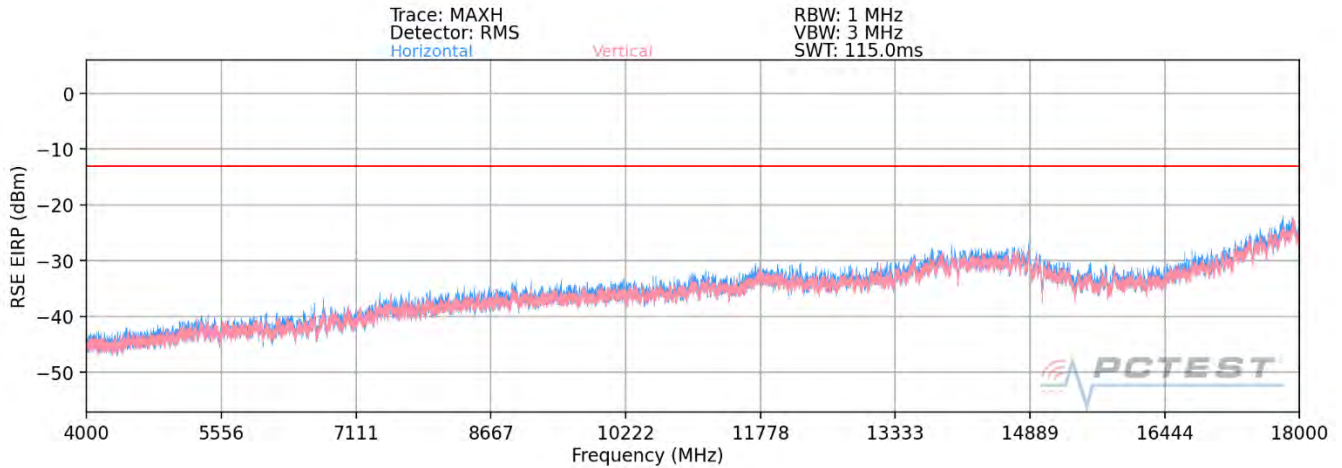


Plot 7-723. Radiated Spurious Plot above 1GHz (n66+ Anchor B12 EN-DC)



Plot 7-724. Radiated Spurious Plot above 1GHz (n66+ Anchor B48 EN-DC 1GHz - 4GHz)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 420 of 466



Plot 7-725. Radiated Spurious Plot above 1GHz (n66+ Anchor B48 EN-DC 4GHz – 18GHz)

Bandwidth (MHz):	20								
Frequency (MHz):	1720.0								
RB / Offset:	1 / 50								
Mode:	Standalone								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3440.0	V	-	-	-74.21	2.58	35.37	-59.89	-13.00	-46.89
5160.0	V	-	-	-74.66	6.00	38.34	-56.92	-13.00	-43.92
6880.0	V	-	-	-75.01	7.78	39.77	-55.49	-13.00	-42.49

Table 7-44. Radiated Spurious Data (n66 – Low Channel)

Bandwidth (MHz):	20								
Frequency (MHz):	1745.0								
RB / Offset:	1 / 50								
Mode:	Standalone								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3490.0	V	-	-	-73.75	2.58	35.83	-59.43	-13.00	-46.43
5235.0	V	-	-	-74.21	6.00	38.79	-56.47	-13.00	-43.47
6980.0	V	-	-	-74.16	7.78	40.62	-54.64	-13.00	-41.64

Table 7-45. Radiated Spurious Data (n66 – Mid Channel)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 421 of 466

Bandwidth (MHz):	20								
Frequency (MHz):	1770.0								
RB / Offset:	1 / 50								
Mode:	Standalone								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3540.0	V	-	-	-72.98	3.06	37.08	-58.18	-13.00	-45.18
5310.0	V	-	-	-74.69	5.77	38.08	-57.18	-13.00	-44.18
7080.0	V	-	-	-75.24	8.04	39.80	-55.46	-13.00	-42.46

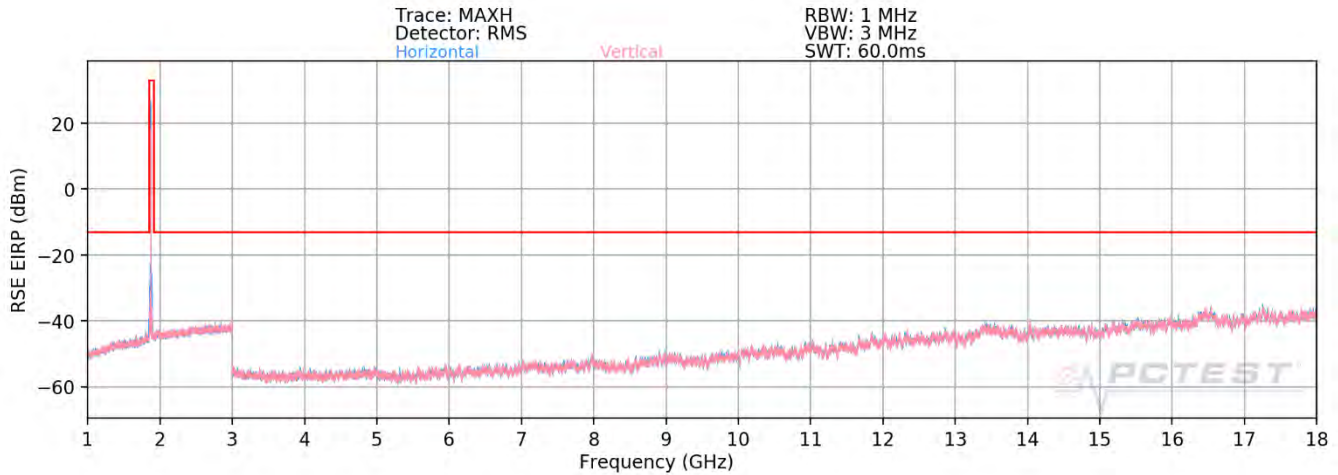
Table 7-46. Radiated Spurious Data (n66 – High Channel)

Bandwidth (MHz):	20								
Frequency (MHz):	1770.0								
RB / Offset:	1 / 50								
Mode:	EN-DC								
Anchor Band:	LTE Band 30								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1367.0	V	-	-	-71.46	-2.54	33.00	-62.25	-13.00	-49.25
2405.0	V	-	-	-72.01	2.94	37.93	-57.33	-13.00	-44.33
2782.5	V	-	-	-72.46	4.23	38.77	-56.49	-13.00	-43.49

Table 7-47. Radiated Spurious Data (n66 – Mid Channel)

FCC ID: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset	Page 422 of 466

Band 25/2



Plot 7-726. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY: 1860.00 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3720.00	H	-	-	-68.97	9.54	-59.43	-46.4
5580.00	H	-	-	-68.19	11.02	-57.18	-44.2
7440.00	H	-	-	-64.85	11.01	-53.83	-40.8

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

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 423 of 466

OPERATING FREQUENCY: 1882.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	H	-	-	-69.25	9.39	-59.86	-46.9
5647.50	H	-	-	-69.13	11.22	-57.90	-44.9
7530.00	H	-	-	-65.16	11.16	-54.00	-41.0

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

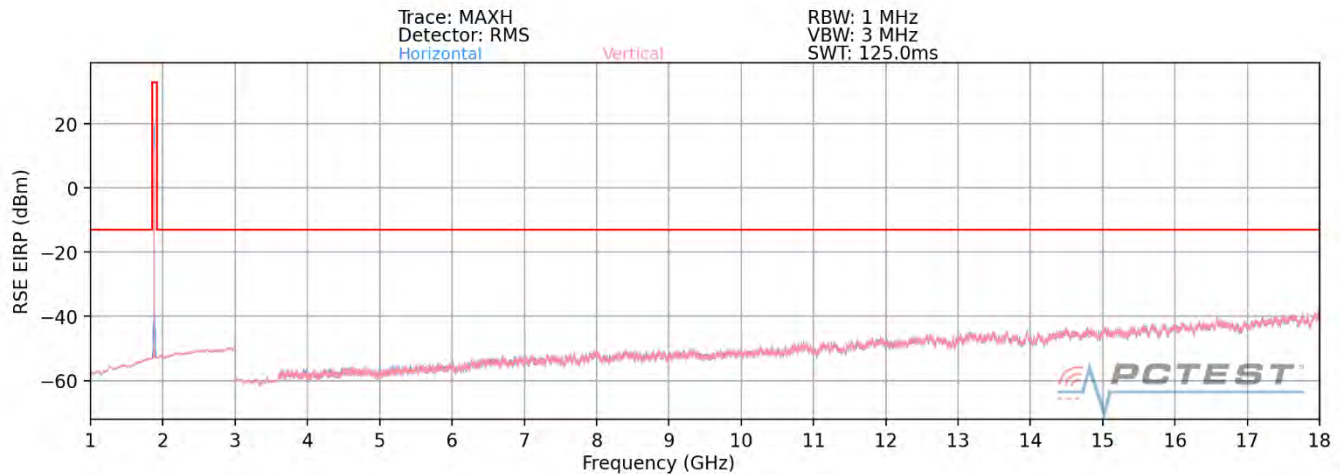
OPERATING FREQUENCY: 1905.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3810.00	H	-	-	-68.79	9.32	-59.47	-46.5
5715.00	H	-	-	-68.80	11.38	-57.43	-44.4

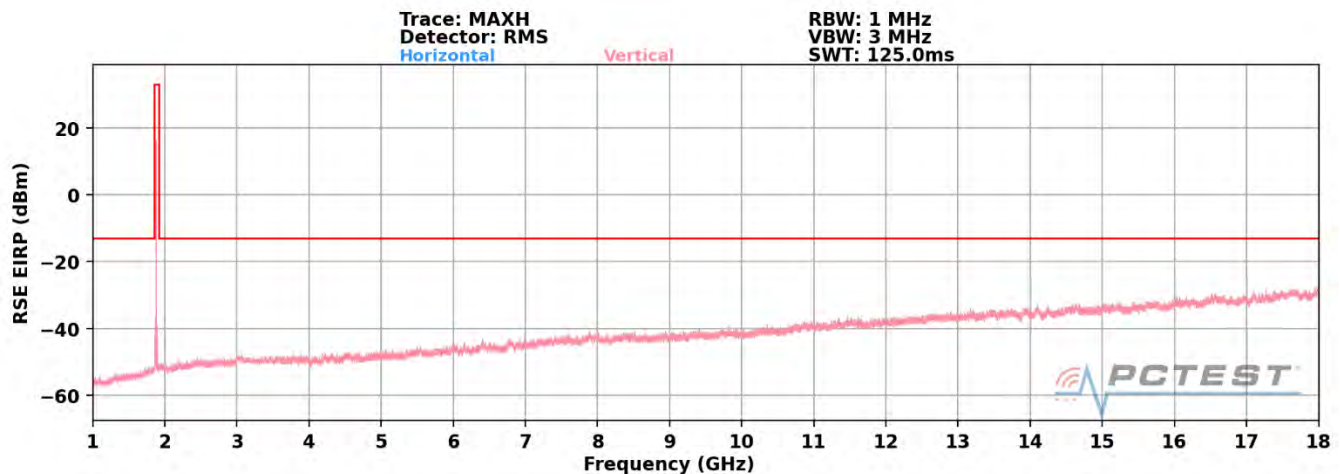
Table 7-50. Radiated Spurious Data (Band 25/2 – High Channel)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 424 of 466

NR Band n25/2



Plot 7-727. Radiated Spurious Plot above 1GHz (n25/2 Standalone)



Plot 7-728. Radiated Spurious Plot above 1GHz (n25/2 + Anchor B12 EN-DC)

Bandwidth (MHz):		20							
Frequency (MHz):		1860.0							
RB / Offset:		1 / 50							
Mode:		Standalone							
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3720.0	V	-	-	-75.07	3.77	35.70	-59.56	-13.00	-46.56
5580.0	V	-	-	-75.52	6.28	37.76	-57.50	-13.00	-44.50
7440.0	V	-	-	-75.55	9.97	41.42	-53.83	-13.00	-40.83

Table 7-51. Radiated Spurious Data (n25/2 – Low Channel)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 425 of 466

Bandwidth (MHz):	20								
Frequency (MHz):	1880.0								
RB / Offset:	1 / 50								
Mode:	Standalone								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3760.0	V	-	-	-74.67	3.58	35.91	-59.35	-13.00	-46.35
5640.0	V	-	-	-75.24	6.08	37.84	-57.42	-13.00	-44.42
7520.0	V	-	-	-74.69	9.88	42.19	-53.07	-13.00	-40.07

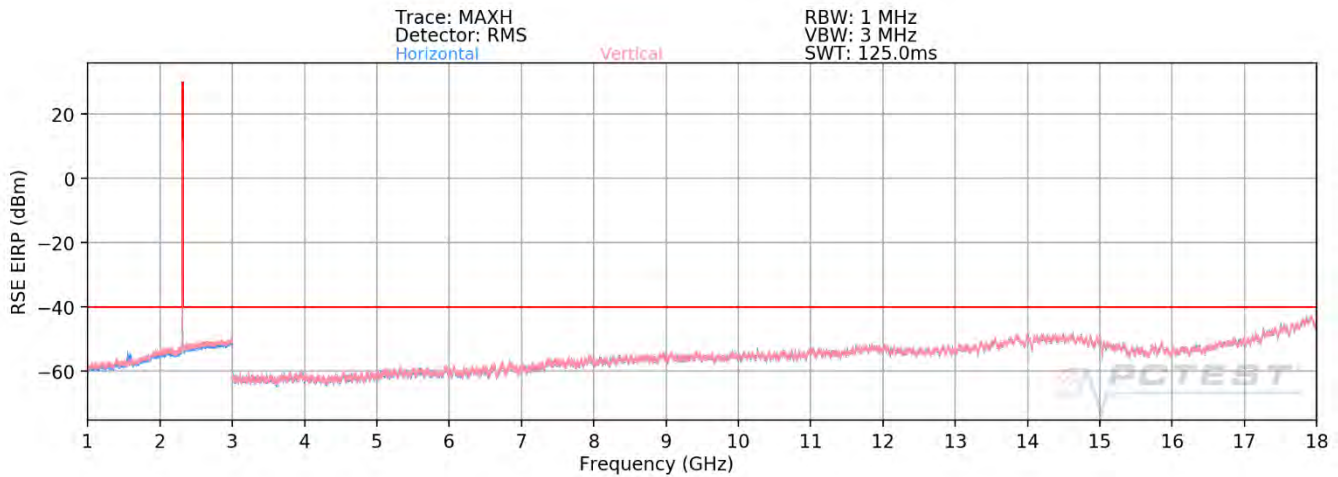
Table 7-52. Radiated Spurious Data (n25/2 – Mid Channel)

Bandwidth (MHz):	20								
Frequency (MHz):	1900.0								
RB / Offset:	1 / 50								
Mode:	Standalone								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3800.0	V	-	-	-74.86	3.75	35.89	-59.36	-13.00	-46.36
5700.0	V	-	-	-75.42	6.05	37.63	-57.63	-13.00	-44.63
7600.0	V	-	-	-75.88	9.76	40.88	-54.38	-13.00	-41.38

Table 7-53. Radiated Spurious Data (n25/2 – High Channel)

FCC ID: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset	Page 426 of 466

Band 30



Plot 7-729. Radiated Spurious Plot above 1GHz (Band 30)

OPERATING FREQUENCY: 2310.00 MHz

MODULATION SIGNAL: QPSK

BANDWIDTH: 10.0 MHz

DISTANCE: 3 meters

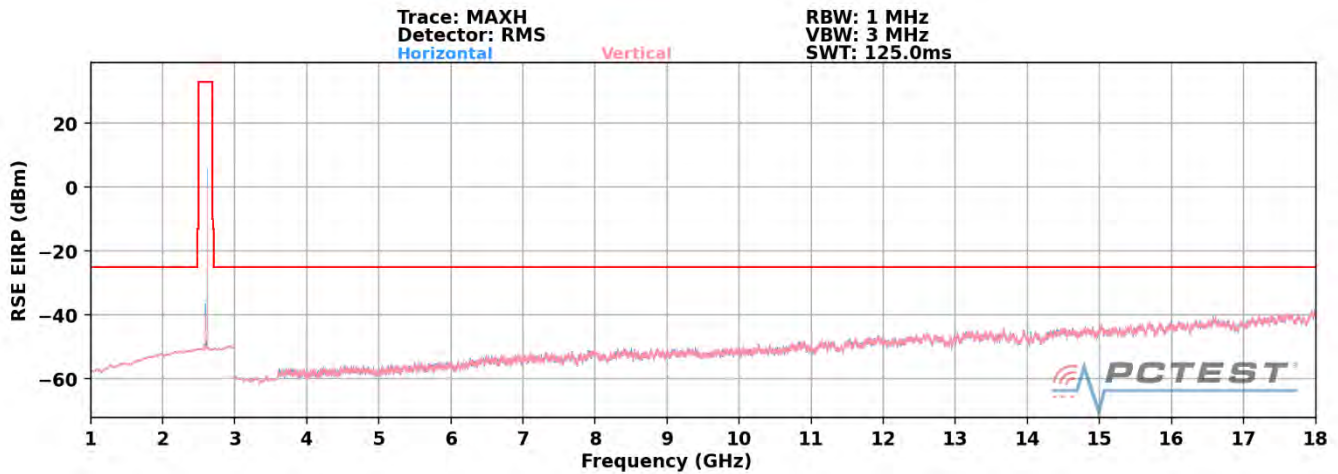
LIMIT: -40 dBm

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	H	-	-	-76.09	10.95	-65.14	-25.1
6930.00	H	-	-	-72.14	11.77	-60.37	-20.4
9240.00	H	145	20	-69.93	11.65	-58.28	-18.3
11550.00	H	132	340	-57.77	12.76	-45.01	-5.0
13860.00	H	400	33	-62.85	12.04	-50.80	-10.8
16170.00	H	156	320	-63.81	16.64	-47.17	-7.2

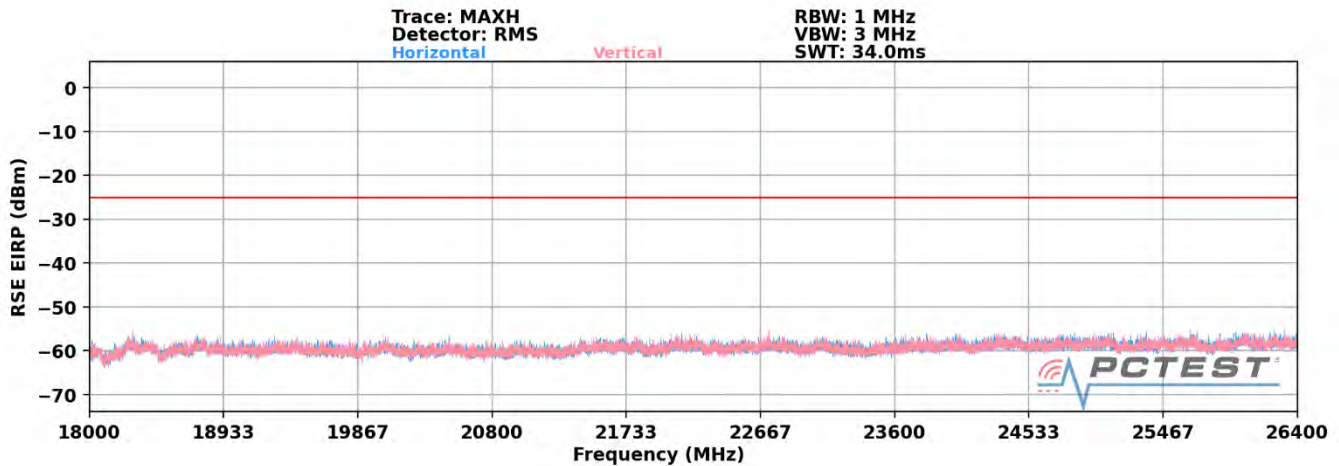
Table 7-54. Radiated Spurious Data (Band 30)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 427 of 466

Band 41/38



Plot 7-730. Radiated Spurious Plot above 1GHz (Band 41/38)



Plot 7-731. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41/38)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 428 of 466

OPERATING FREQUENCY: 2506.00 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]
5012.00	H	351	58	-56.37	8.56	-47.81	-22.8
7518.00	H	345	67	-45.75	8.49	-37.25	-12.3
10024.00	H	287	327	-56.10	9.85	-46.25	-21.2
12530.00	H	170	75	-49.72	9.07	-40.65	-15.7
15036.00	H	-	-	-49.60	8.77	-40.83	-15.8
17542.00	H	-	-	-45.84	7.64	-38.20	-13.2

Table 7-55. Radiated Spurious Data (Band 41/38 – Low Channel)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	H	183	7	-58.28	8.70	-49.58	-24.6
7779.00	H	197	356	-43.81	8.69	-35.12	-10.1
10372.00	H	184	356	-55.55	9.62	-45.93	-20.9
12965.00	H	125	305	-52.52	8.99	-43.53	-18.5
15558.00	H	-	-	-48.43	8.32	-40.11	-15.1

Table 7-56. Radiated Spurious Data (Band 41/38 – Mid Channel)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 429 of 466

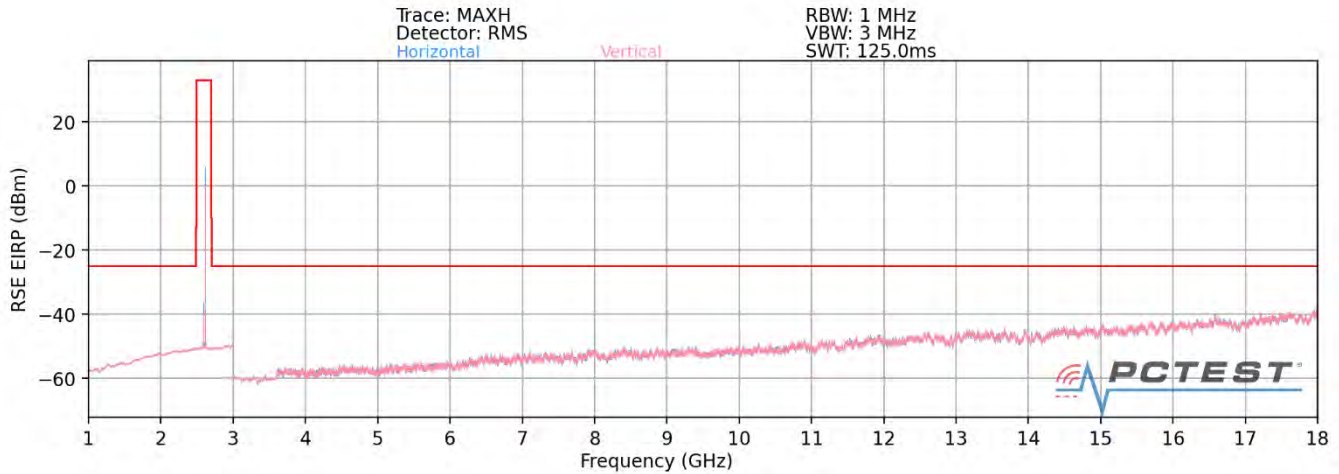
OPERATING FREQUENCY: 2680.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	H	112	264	-58.67	8.70	-49.98	-25.0
8040.00	H	109	334	-44.96	8.95	-36.01	-11.0
10720.00	H	154	347	-55.78	9.32	-46.46	-21.5
13400.00	H	128	355	-51.68	8.77	-42.90	-17.9
16080.00	H	-	-	-48.22	8.01	-40.22	-15.2

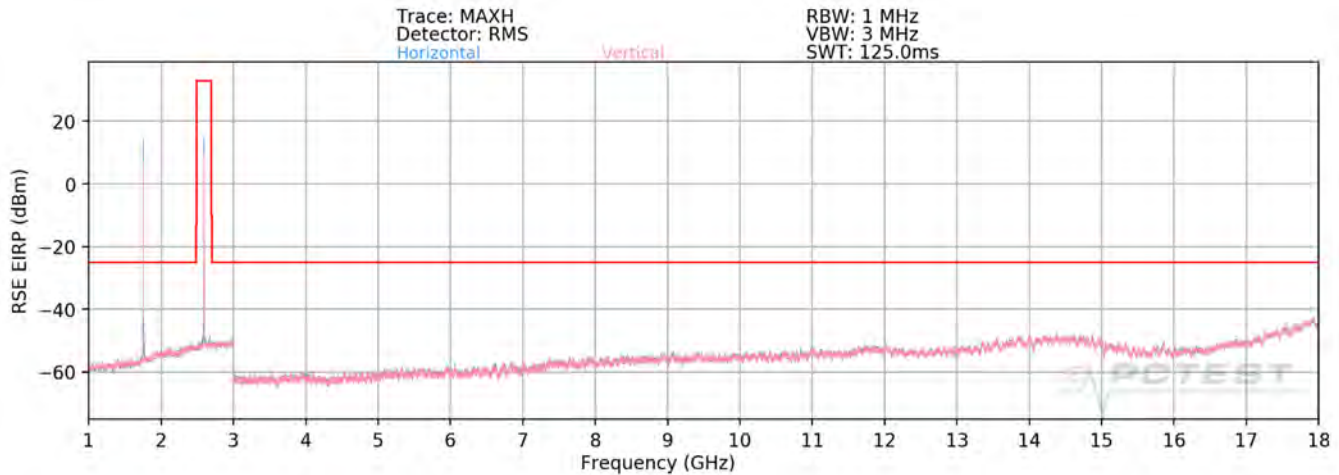
Table 7-57. Radiated Spurious Data (Band 41/38 – High Channel)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 430 of 466

NR Band n41



Plot 7-732. Radiated Spurious Plot above 1GHz (n41 Standalone)



Plot 7-733. Radiated Spurious Plot above 1GHz (n41 + Anchor B66 EN-DC)

Bandwidth (MHz):	100
Frequency (MHz):	2546.0
Mode:	EN-DC
Anchor Band:	LTE Band 66

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5092.0	H	133	58	-70.67	5.88	42.21	-62.59	-25.00	-37.59
7638.0	H	113	356	-70.80	9.83	46.03	-58.77	-25.00	-33.77
10184.0	H	-	-	-75.66	13.18	44.52	-60.28	-25.00	-35.28
12730.0	H	-	-	-75.26	15.42	47.16	-57.64	-25.00	-32.64
15276.0	H	-	-	-75.32	16.03	47.71	-57.09	-25.00	-32.09

Table 7-58. Radiated Spurious Data (Band n41 – Low Channel)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 431 of 466

Bandwidth (MHz):	100								
Frequency (MHz):	2593.0								
Mode:	EN-DC								
Anchor Band:	LTE Band 66								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.0	H	398	62	-63.27	6.12	49.85	-54.95	-25.00	-29.95
7779.0	H	400	343	-59.35	9.45	57.10	-47.70	-25.00	-22.70
10372.0	H	118	320	-69.83	13.07	50.24	-54.56	-25.00	-29.56
12965.0	H	359	24	-70.87	15.60	51.73	-53.07	-25.00	-28.07
15558.0	H	-	-	-75.28	14.58	46.30	-58.50	-25.00	-33.50

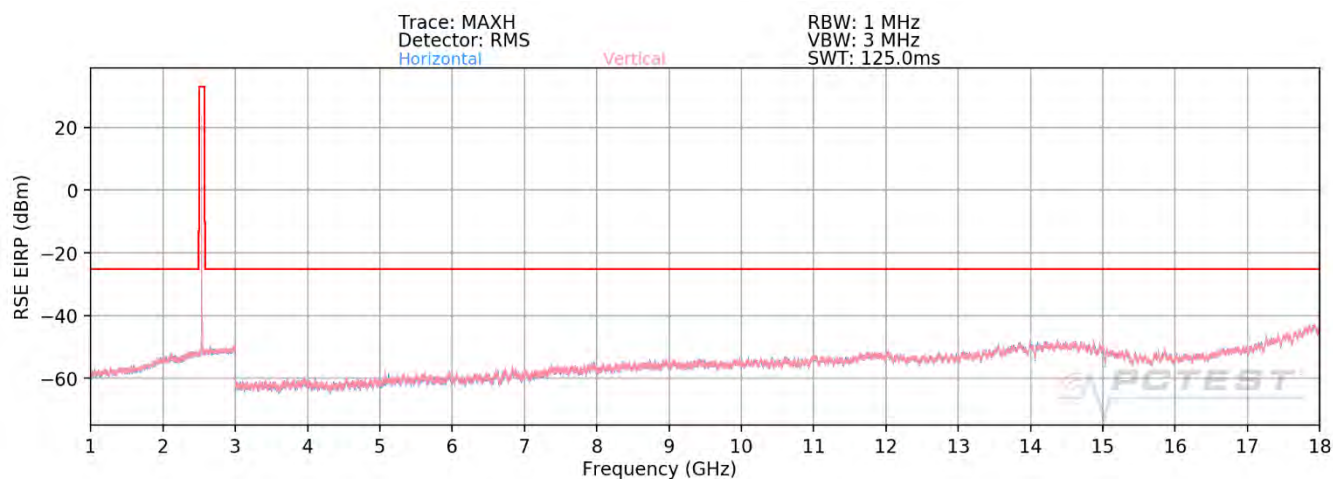
Table 7-59. Radiated Spurious Data (Band n41 – Mid Channel)

Bandwidth (MHz):	100								
Frequency (MHz):	2640.0								
Mode:	EN-DC								
Anchor Band:	LTE Band 66								
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5280.0	H	-	-	-75.12	5.51	37.39	-67.41	-25.00	-42.41
7920.0	H	-	-	-75.77	10.84	42.07	-62.73	-25.00	-37.73
10560.0	H	-	-	-75.44	13.41	44.97	-59.83	-25.00	-34.83
13200.0	H	-	-	-75.16	16.22	48.06	-56.74	-25.00	-31.74
15840.0	H	-	-	-76.25	16.07	46.82	-57.98	-25.00	-32.98

Table 7-60. Radiated Spurious Data (Band n41 – High Channel)

FCC ID: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset	Page 432 of 466

Band 7



Plot 7-734. Radiated Spurious Plot above 1GHz (Band 7)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	V	-	-	-68.63	8.56	-60.07	-35.1
7530.00	V	-	-	-63.45	8.46	-54.99	-30.0
10040.00	V	-	-	-62.30	9.85	-52.45	-27.4

Table 7-61. Radiated Spurious Data (Band 7 – Low Channel)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 433 of 466

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	V	-	-	-66.30	8.60	-57.70	-32.7
7605.00	V	-	-	-62.57	8.48	-54.09	-29.1
10140.00	V	-	-	-61.34	9.78	-51.56	-26.6

Table 7-62. 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

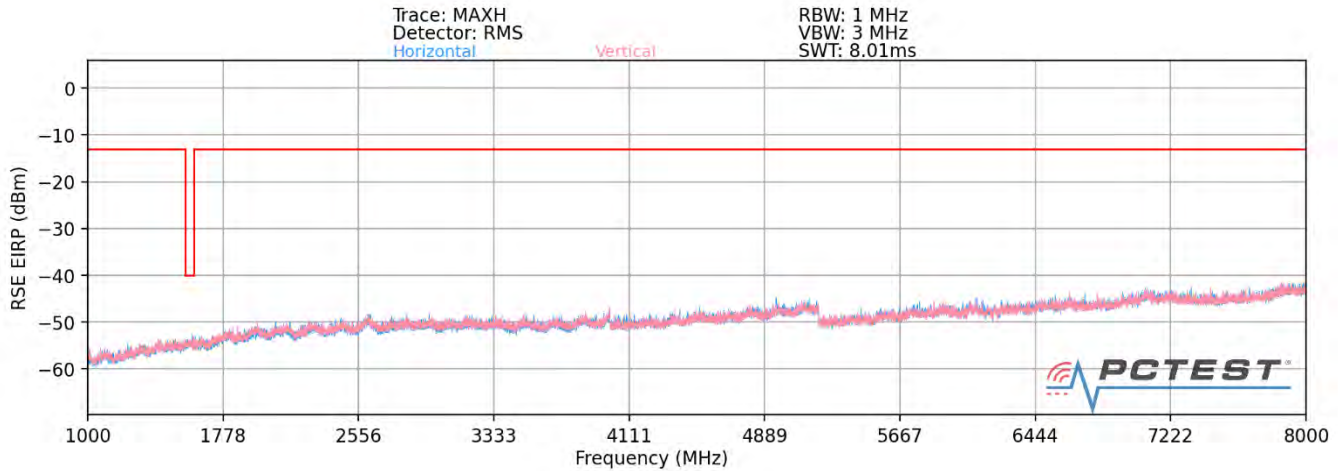
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	V	-	-	-66.67	8.66	-58.02	-33.0
7680.00	V	-	-	-61.60	8.58	-53.02	-28.0
10240.00	V	-	-	-61.77	9.65	-52.11	-27.1

Table 7-63. Radiated Spurious Data (Band 7 – High Channel)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 434 of 466

7.8.2 Antenna-1 Radiated Spurious Emissions Measurements

Band 13



Plot 7-735. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY: 782.00 MHz
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]
2346.00	V	-	-	-60.48	3.64	-56.84	-43.8
3128.00	V	-	-	-61.56	5.73	-55.82	-42.8
3910.00	V	-	-	-63.95	7.25	-56.70	-43.7

Table 7-64. Radiated Spurious Data (Band 13 – Mid Channel)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 435 of 466

MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

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]
1564.00	V	-	-	-62.88	2.93	-59.95	-19.9

Table 7-65. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

FCC ID: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION) 	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset
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7.9 Uplink Carrier Aggregation Radiated Measurements

§2.1053,

Test Overview

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

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-D-2010 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. No. of sweep points $\geq 2 \times$ span / RBW
4. Detector = RMS
5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
6. The trace was allowed to stabilize

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 437 of 466

Test Setup

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

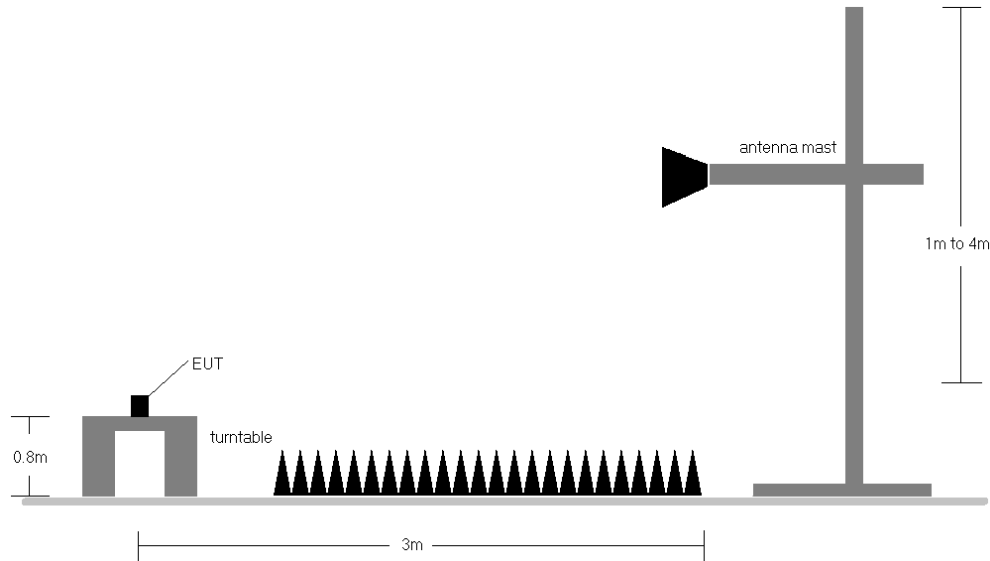


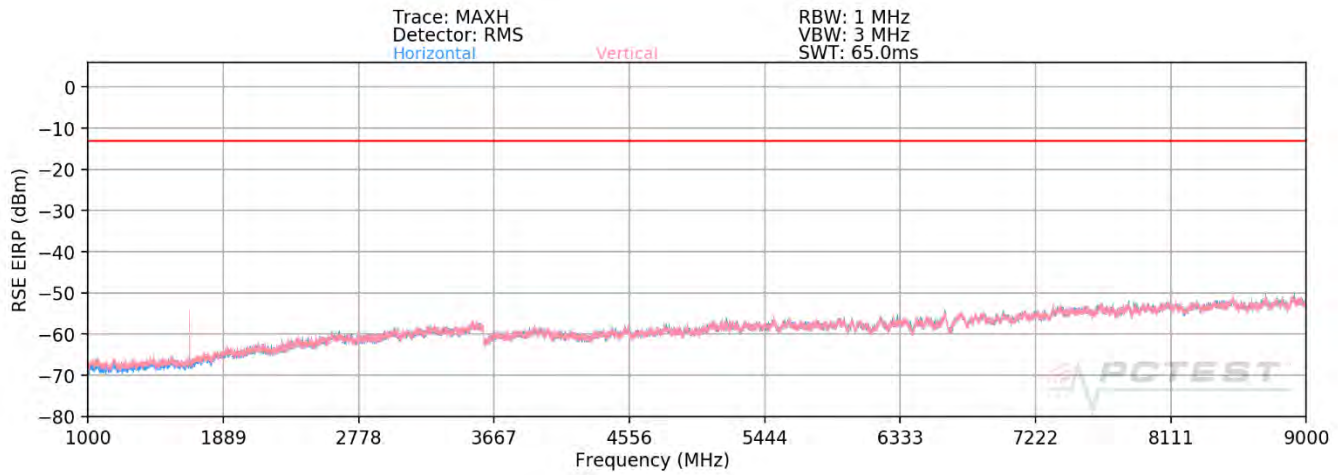
Figure 7-9. Test Instrument & Measurement Setup

Test Notes

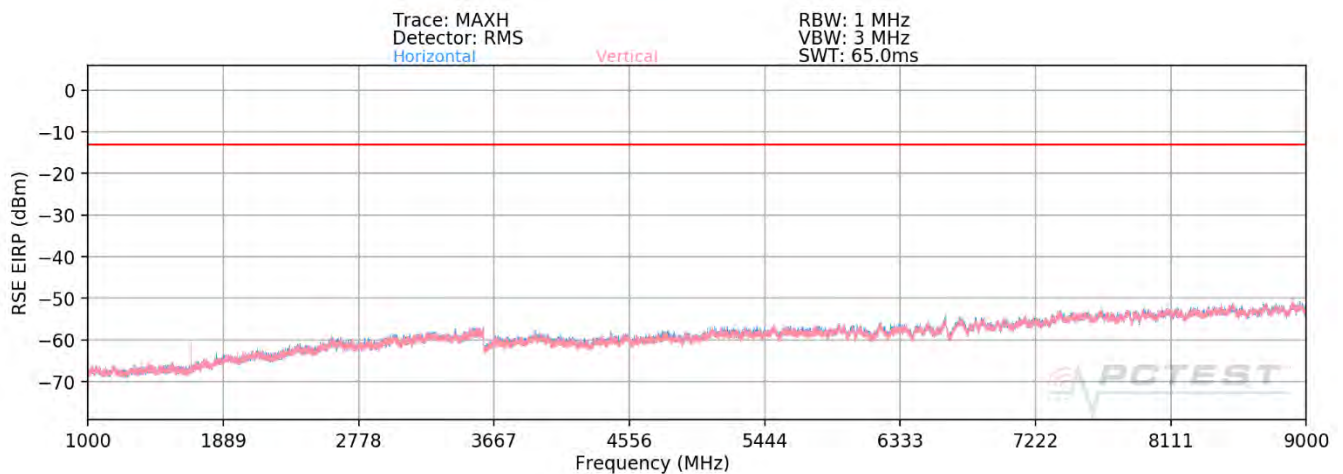
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) Radiated spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. The worst case (highest) emissions were found while operating with QPSK modulation with both carriers set to transmit using 1RB.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 6) No significant emissions were found as a result of two uplink carriers operating contiguously.

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 438 of 466

ULCA Band 5



Plot 7-736. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 5 Low Channel – PCC/SCC: 1RB)



Plot 7-737. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 5 High Channel – PCC/SCC: 1RB)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 439 of 466

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	-	-	-65.58	3.61	-61.97	-49.0
2487.00	H	-	-	-62.25	4.25	-58.00	-45.0
3316.00	H	-	-	-62.68	5.83	-56.85	-43.9

Plot 7-66. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 49, SCC: RB 1 Offset 0 – Low Channel)

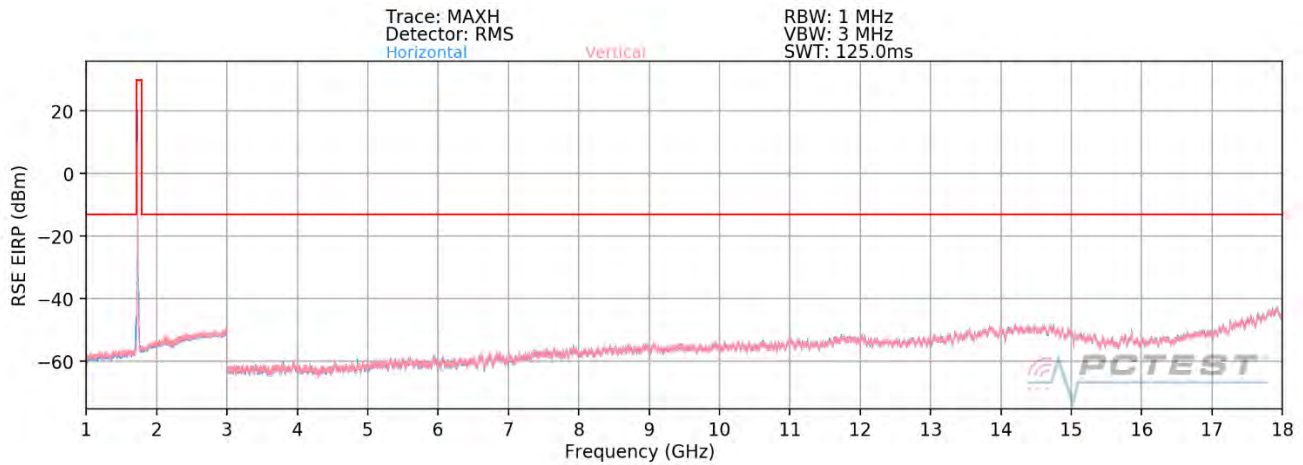
OPERATING FREQUENCY (PCC): 844.00 MHz
 OPERATING FREQUENCY (SCC): 834.10 MHz
 CHANNEL (PCC): 20600
 CHANNEL (SCC): 20501
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	-	-	-65.67	3.63	-62.04	-49.0
2532.00	H	-	-	-62.23	4.47	-57.76	-44.8
3376.00	H	-	-	-63.73	6.05	-57.69	-44.7

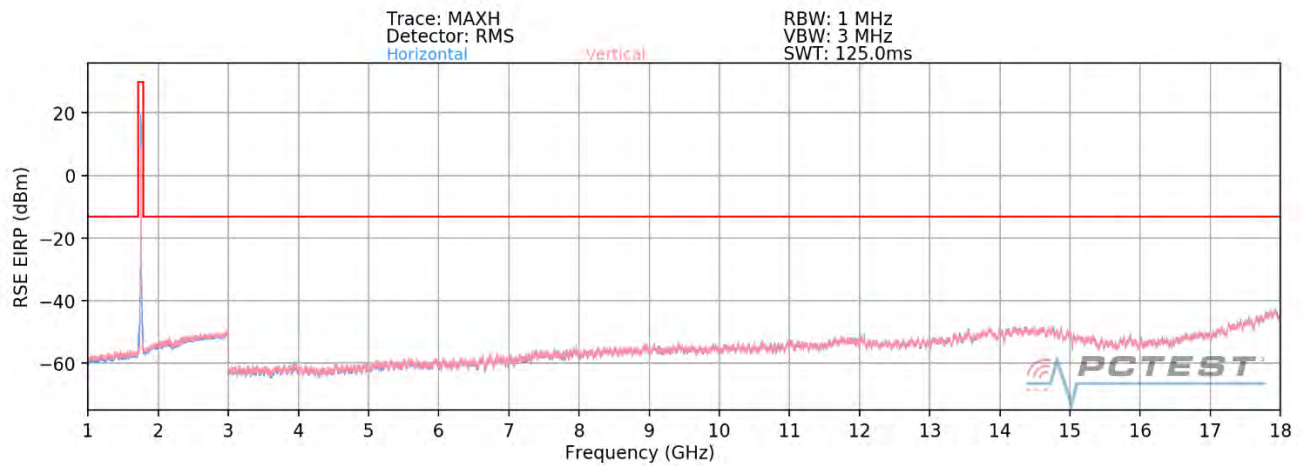
Plot 7-67. Radiated Spurious Data (ULCA B5 PCC: RB 1 Offset 0, SCC: RB 1 Offset 49 – High Channel)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 440 of 466

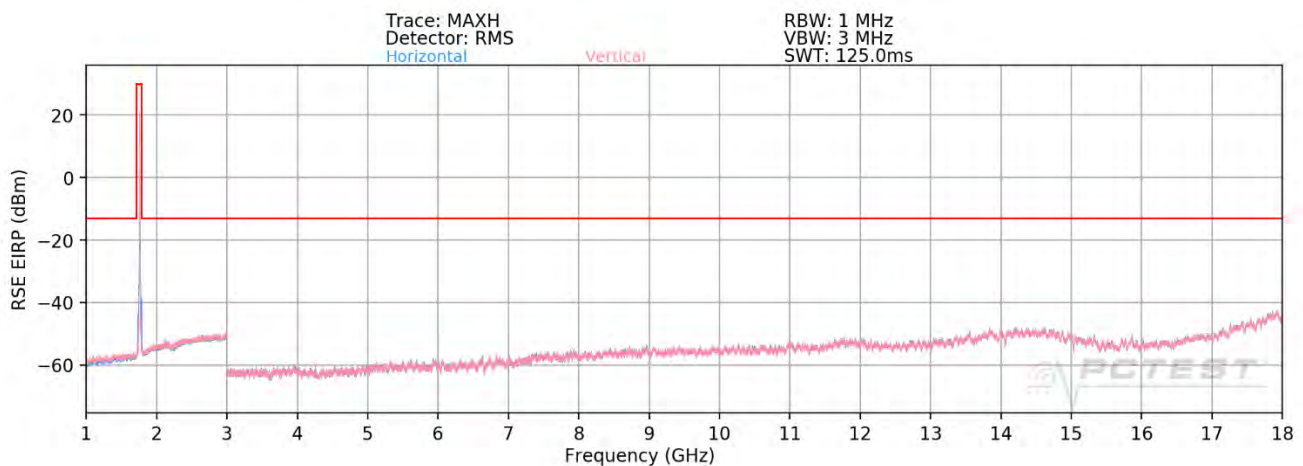
ULCA Band 66



Plot 7-738. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 66 Low Channel – PCC/SCC: 1RB)



Plot 7-739. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 66 Mid Channel – PCC/SCC: 1RB)



Plot 7-740. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 66 High Channel – PCC/SCC: 1RB)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 441 of 466

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	H	-	-	-63.65	6.22	-57.43	-44.4
5160.00	H	114	73	-66.34	8.68	-57.67	-44.7
6880.00	H	-	-	-62.11	8.76	-53.35	-40.4

Plot 7-68. 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	H	-	-	-64.58	6.32	-58.26	-45.3
5235.00	H	-	-	-66.92	8.71	-58.21	-45.2
6980.00	H	-	-	-63.94	8.74	-55.20	-42.2

Plot 7-69. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 442 of 466

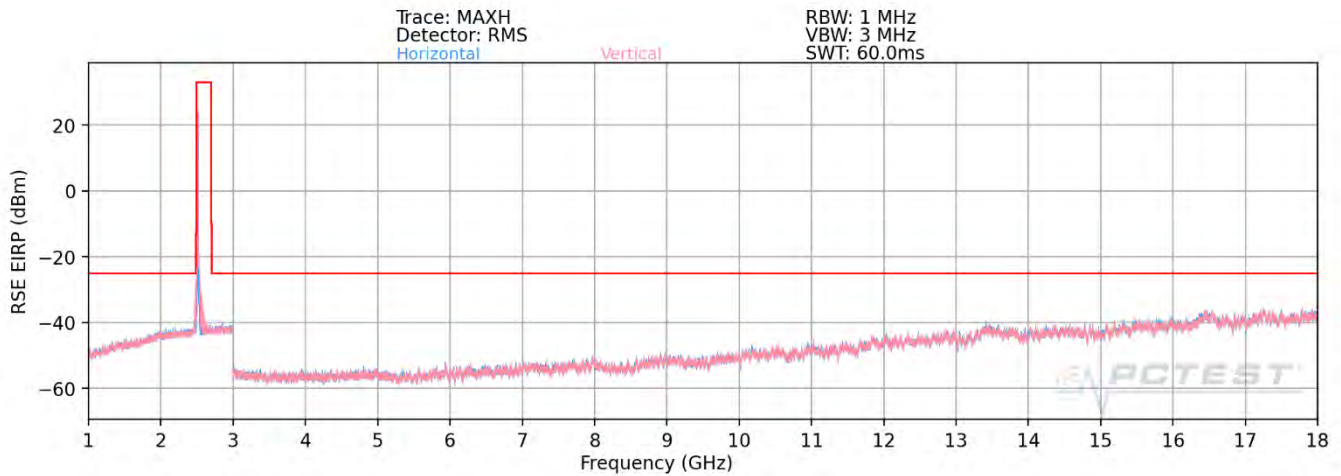
OPERATING FREQUENCY (PCC): 1770.00 MHz
 OPERATING FREQUENCY (SCC): 1750.20 MHz
 CHANNEL (PCC): 132572
 CHANNEL (SCC): 132374
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-64.82	6.31	-58.52	-45.5
5310.00	H	-	-	-67.43	8.74	-58.69	-45.7
7080.00	H	-	-	-62.69	8.66	-54.02	-41.0

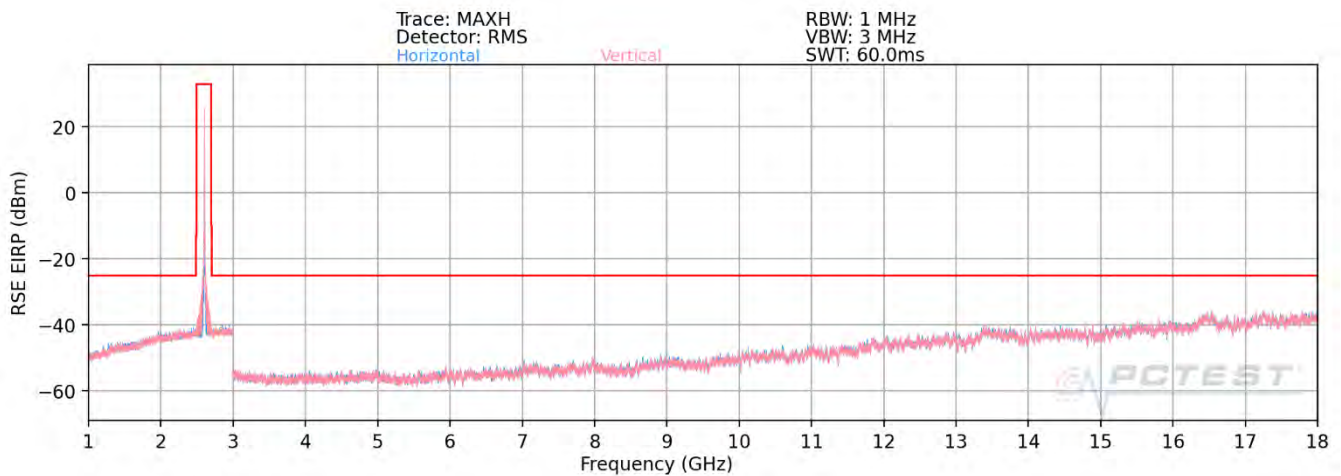
Plot 7-70. Radiated Spurious Data (ULCA B66 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

FCC ID: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION) 	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset
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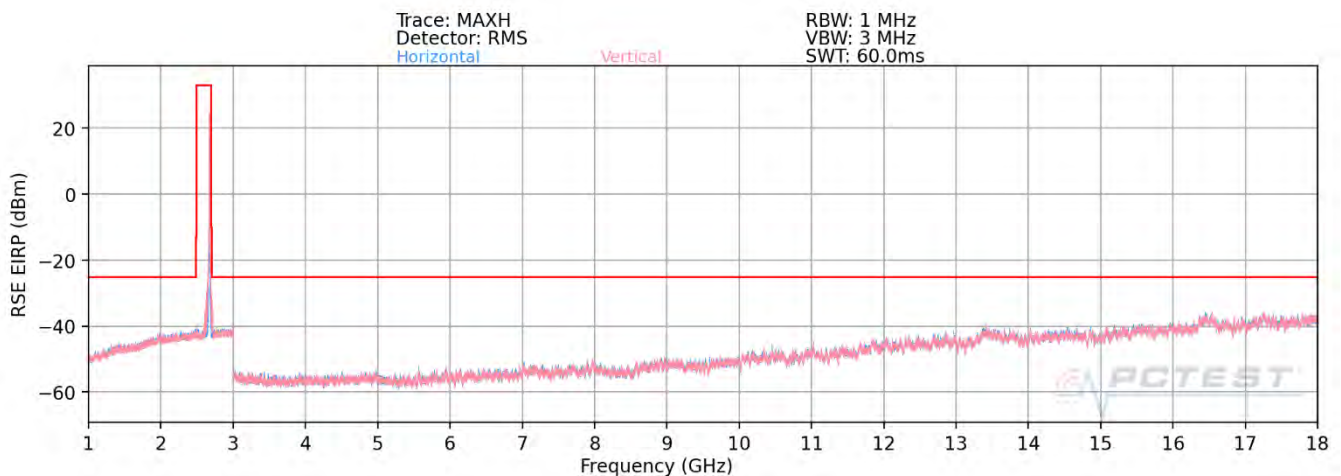
ULCA Band 41



Plot 7-741. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 Low Channel – PCC/SCC: 1RB)



Plot 7-742. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 Mid Channel – PCC/SCC: 1RB)



Plot 7-743. Radiated Spurious Plot 1GHz - 18GHz (ULCA Band 41 High Channel – PCC/SCC: 1RB)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 444 of 466

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	233	339	-56.61	8.56	-48.05	-23.0
7518.00	V	123	353	-43.27	8.49	-34.77	-9.8
10024.00	V	200	358	-61.79	9.85	-51.94	-26.9
12530.00	V	211	347	-50.24	9.07	-41.17	-16.2
15036.00	V	-	-	-54.45	8.77	-45.68	-20.7
17542.00	V	-	-	-50.38	7.64	-42.74	-17.7

Plot 7-71. Radiated Spurious Plot (ULCA B41 Left Carrier: RB 1 Offset 99, Right Carrier: RB 1 Offset 0)

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	219	334	-58.08	8.70	-49.38	-24.4
7779.00	V	115	345	-43.51	8.69	-34.82	-9.8
10372.00	V	208	336	-58.36	9.62	-48.74	-23.7
12965.00	V	200	349	-53.02	8.99	-44.03	-19.0
15558.00	V	-	-	-53.72	8.32	-45.40	-20.4

Plot 7-72. Radiated Spurious Plot (ULCA B41 Left Carrier: RB 100 Offset 0, Right Carrier: RB 100 Offset 0)

FCC ID: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION) 	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset
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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	230	355	-59.89	8.70	-51.20	-26.2
8040.00	V	101	342	-45.28	8.95	-36.33	-11.3
10720.00	V	190	338	-53.40	9.32	-44.08	-19.1
13400.00	V	200	330	-55.23	8.77	-46.45	-21.5
16080.00	V	-	-	-53.39	8.01	-45.39	-20.4

Plot 7-73. Radiated Spurious Data (ULCA B41 Left Carrier: RB 1 Offset 0, Right Carrier: RB 1 Offset 99)

FCC ID: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset	Page 446 of 466

7.10 Frequency Stability / Temperature Variation

Test Overview and Limit

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

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

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 447 of 466

Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz
CHANNEL: 133297
REFERENCE VOLTAGE: 4.21 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	680,500,014	14	0.0000021
100 %		- 30	680,500,068	68	0.0000100
100 %		- 20	680,500,081	81	0.0000119
100 %		- 10	680,499,839	-161	-0.0000237
100 %		0	680,499,876	-124	-0.0000182
100 %		+ 10	680,499,635	-365	-0.0000536
100 %		+ 20	680,499,814	-186	-0.0000273
100 %		+ 30	680,500,335	335	0.0000492
100 %		+ 40	680,500,301	301	0.0000442
100 %		+ 50	680,500,069	69	0.0000101
BATT. ENDPOINT	3.85	+ 20	680,500,077	77	0.0000113

Table 7-74. 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: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset	Page 448 of 466	

Band 71 Frequency Stability Measurements

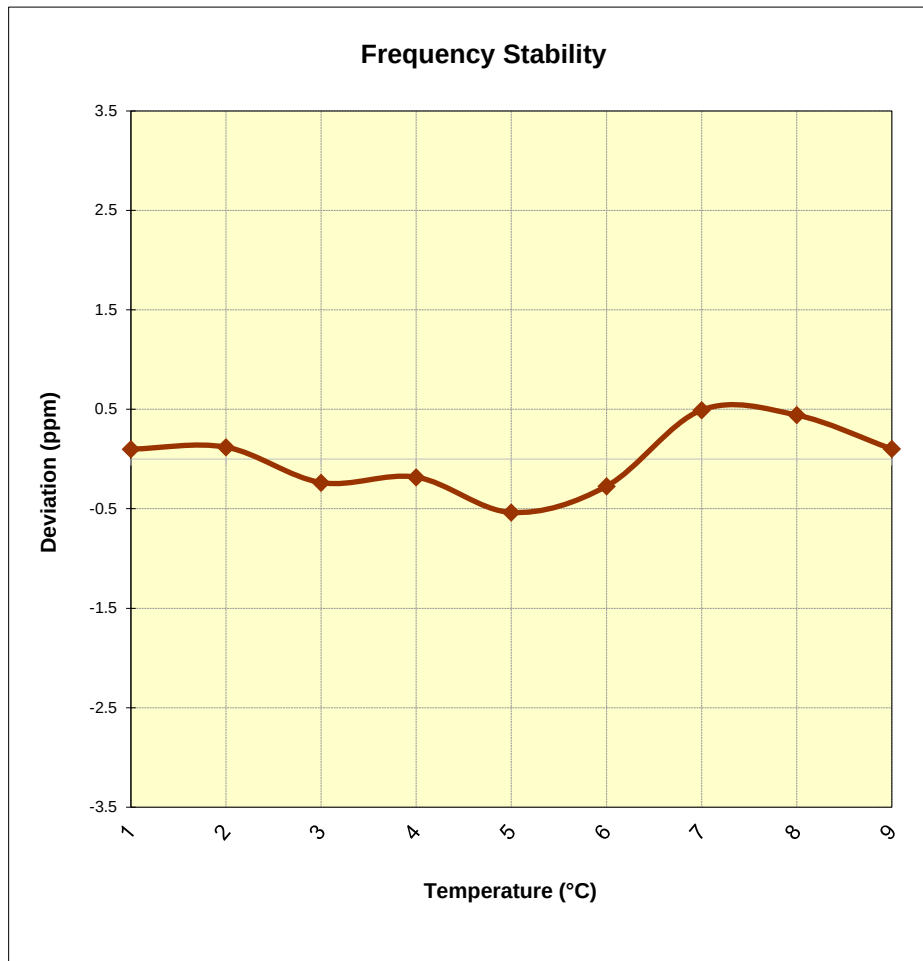


Figure 7-10. Frequency Stability Graph (Band 71)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 449 of 466

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 4.21 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	707,500,007	7	0.0000010
100 %		- 30	707,499,999	-1	-0.0000001
100 %		- 20	707,500,175	175	0.0000247
100 %		- 10	707,500,116	116	0.0000164
100 %		0	707,499,985	-15	-0.0000021
100 %		+ 10	707,500,203	203	0.0000287
100 %		+ 20	707,499,943	-57	-0.0000081
100 %		+ 30	707,499,911	-89	-0.0000126
100 %		+ 40	707,499,835	-165	-0.0000233
100 %		+ 50	707,500,182	182	0.0000257
BATT. ENDPOINT	3.85	+ 20	707,499,726	-274	-0.0000387

Table 7-75. 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: A3LSMF916U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset	Page 450 of 466

Band 12 Frequency Stability Measurements

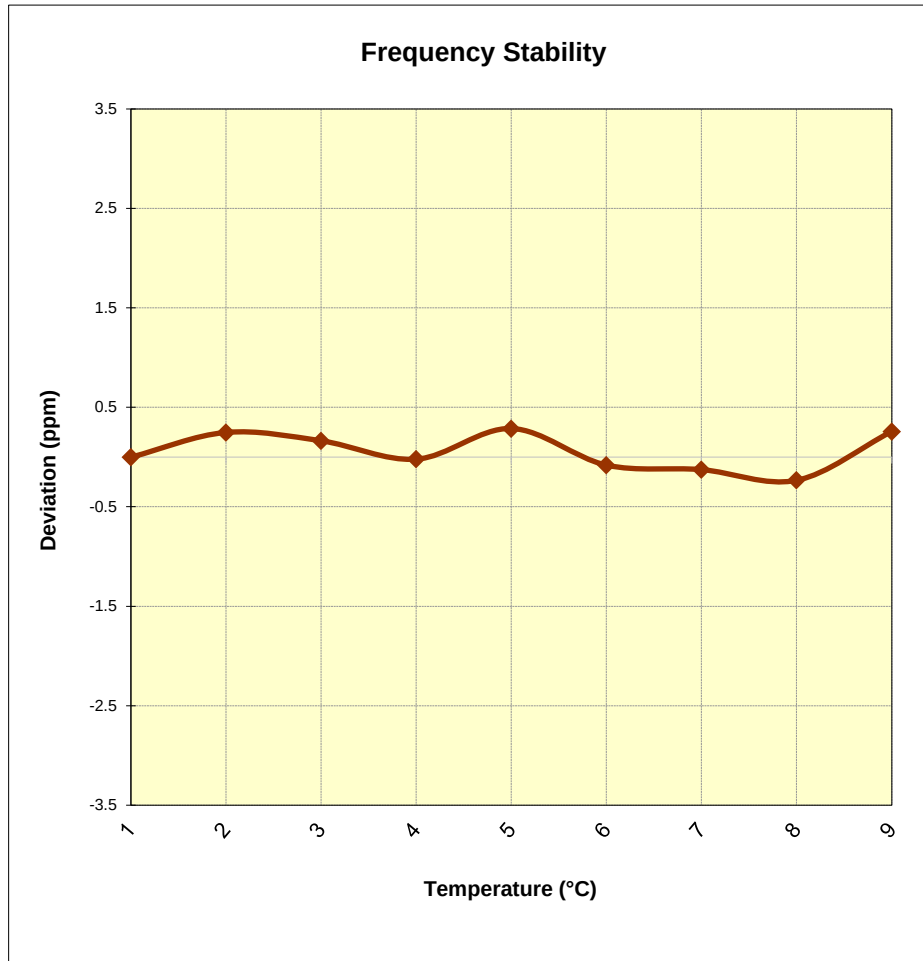


Figure 7-11. Frequency Stability Graph (Band 12)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2005200087-03.A3L	Test Dates: 6/11 - 8/19/2020	EUT Type: Portable Handset		Page 451 of 466

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz
CHANNEL: 23230
REFERENCE VOLTAGE: 4.21 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	781,999,826	-174	-0.0000223
100 %		- 30	782,000,117	117	0.0000150
100 %		- 20	782,000,135	135	0.0000173
100 %		- 10	782,000,147	147	0.0000188
100 %		0	781,999,838	-162	-0.0000207
100 %		+ 10	782,000,120	120	0.0000153
100 %		+ 20	782,000,016	16	0.0000020
100 %		+ 30	782,000,006	6	0.0000008
100 %		+ 40	781,999,966	-34	-0.0000043
100 %		+ 50	781,999,946	-54	-0.0000069
BATT. ENDPOINT	3.85	+ 20	782,000,014	14	0.0000018

Table 7-76. 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: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 13 Frequency Stability Measurements

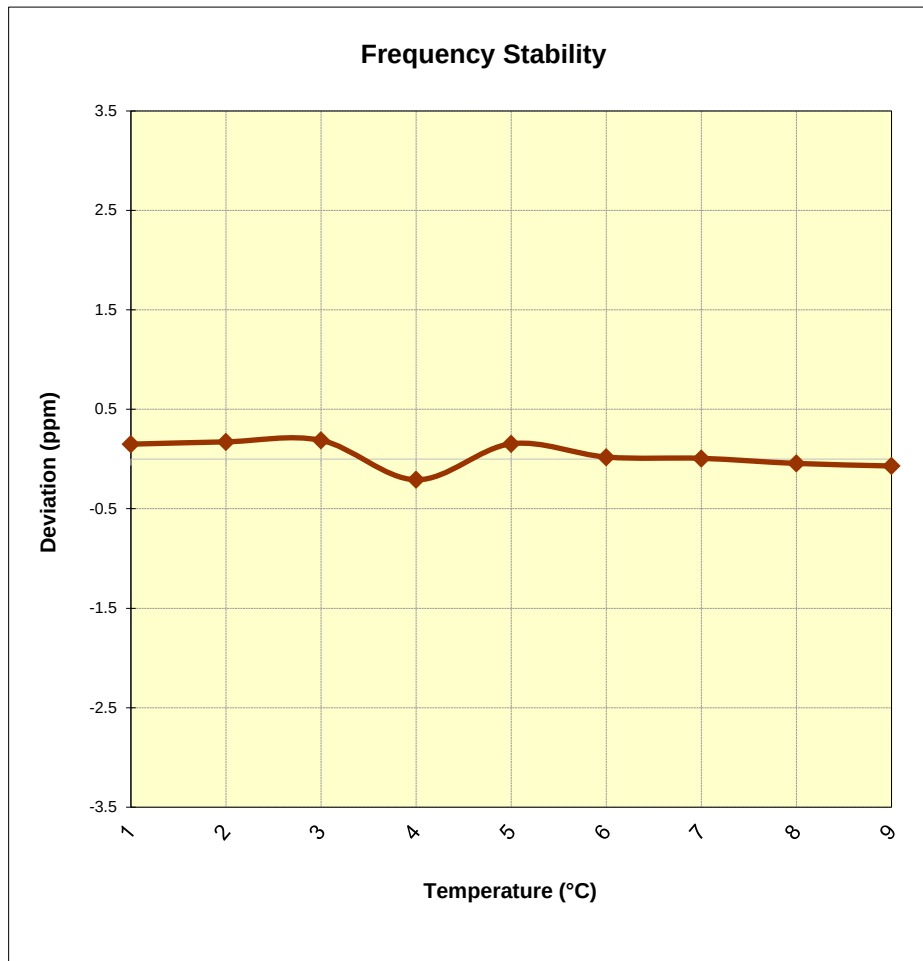


Figure 7-12. Frequency Stability Graph (Band 13)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 831,500,000 Hz
 CHANNEL: 26865
 REFERENCE VOLTAGE: 4.21 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	831,499,998	-2	-0.0000002
100 %		- 30	831,499,680	-320	-0.0000385
100 %		- 20	831,499,915	-85	-0.0000102
100 %		- 10	831,499,671	-329	-0.0000396
100 %		0	831,499,739	-261	-0.0000314
100 %		+ 10	831,500,190	190	0.0000229
100 %		+ 20	831,499,793	-207	-0.0000249
100 %		+ 30	831,500,319	319	0.0000384
100 %		+ 40	831,500,190	190	0.0000229
100 %		+ 50	831,500,102	102	0.0000123
BATT. ENDPOINT	3.85	+ 20	831,499,872	-128	-0.0000154

Table 7-77. Frequency Stability Data (Band 26/5)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 26/5 Frequency Stability Measurements

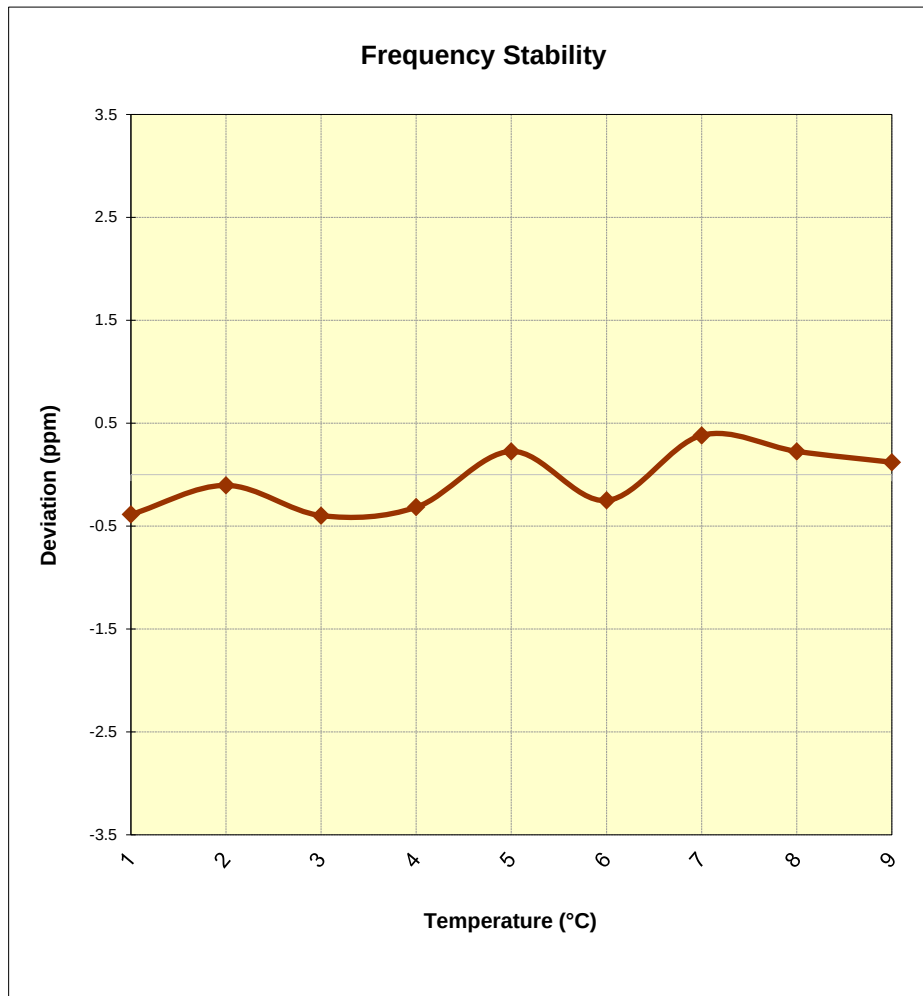


Figure 7-13. Frequency Stability Graph (Band 26/5)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	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: 4.21 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	1,745,000,243	243	0.0000139
100 %		- 30	1,745,000,114	114	0.0000065
100 %		- 20	1,745,000,026	26	0.0000015
100 %		- 10	1,744,999,656	-344	-0.0000197
100 %		0	1,745,000,127	127	0.0000073
100 %		+ 10	1,744,999,619	-381	-0.0000218
100 %		+ 20	1,745,000,099	99	0.0000057
100 %		+ 30	1,744,999,848	-152	-0.0000087
100 %		+ 40	1,744,999,858	-142	-0.0000081
100 %		+ 50	1,745,000,126	126	0.0000072
BATT. ENDPOINT	3.85	+ 20	1,745,000,294	294	0.0000168

Table 7-78. 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: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

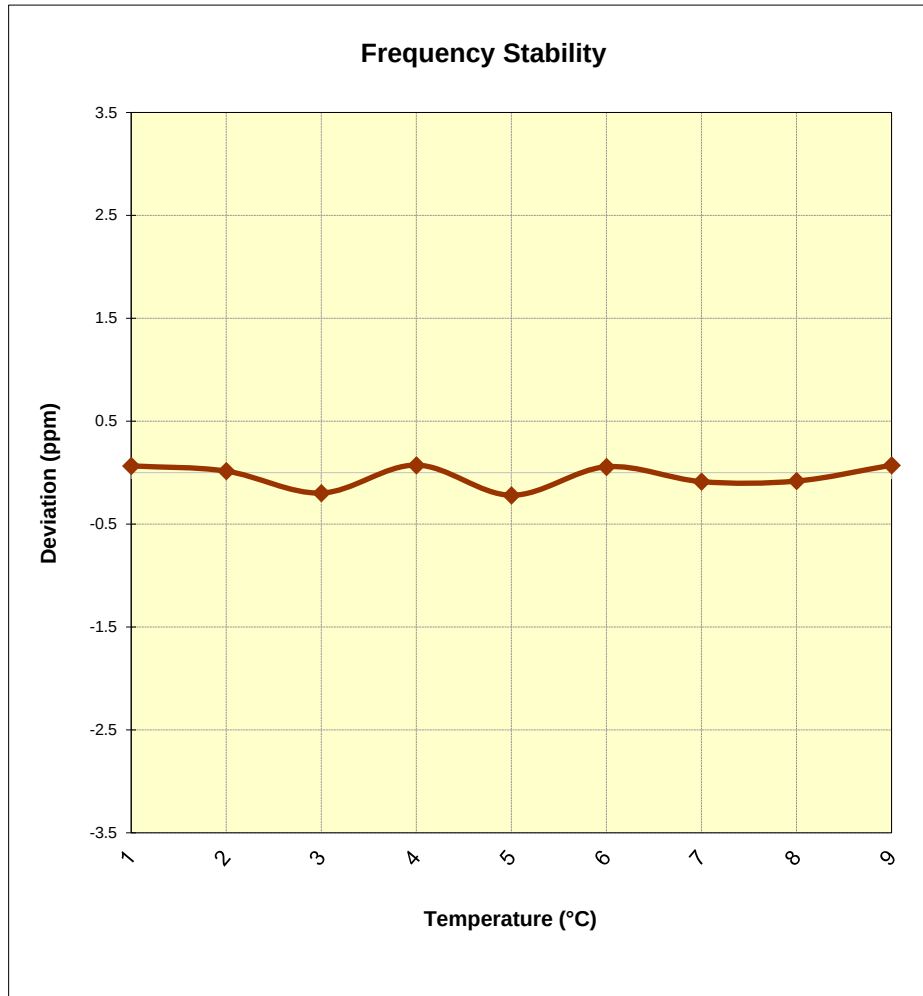


Figure 7-14. Frequency Stability Graph (Band 66/4)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz
 CHANNEL: 26365
 REFERENCE VOLTAGE: 4.21 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	1,882,499,693	-307	-0.0000163
100 %		- 30	1,882,499,890	-110	-0.0000058
100 %		- 20	1,882,499,807	-193	-0.0000103
100 %		- 10	1,882,499,991	-9	-0.0000005
100 %		0	1,882,500,107	107	0.0000057
100 %		+ 10	1,882,500,175	175	0.0000093
100 %		+ 20	1,882,499,998	-2	-0.0000001
100 %		+ 30	1,882,499,928	-72	-0.0000038
100 %		+ 40	1,882,500,261	261	0.0000139
100 %		+ 50	1,882,500,031	31	0.0000016
BATT. ENDPOINT	3.85	+ 20	1,882,500,178	178	0.0000095

Table 7-79. Frequency Stability Data (Band 25/2)

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 25/2 Frequency Stability Measurements

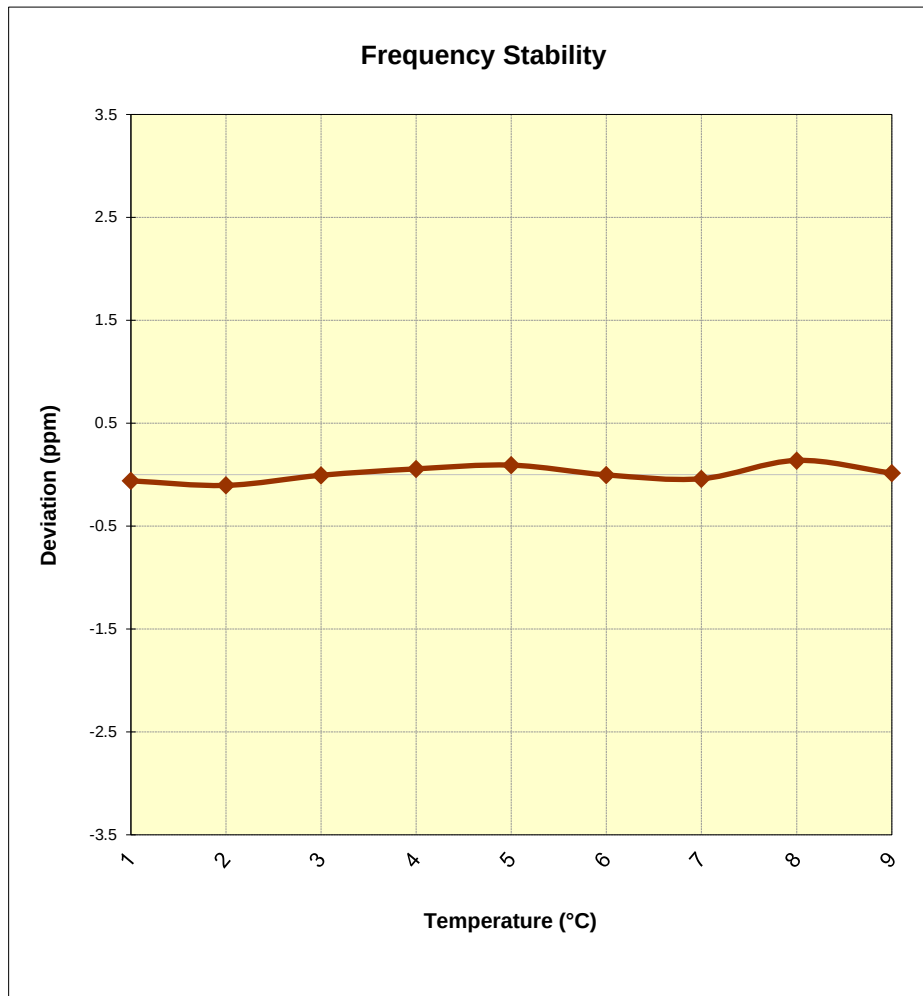


Figure 7-15. Frequency Stability Graph (Band 25/2)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Band 30 Frequency Stability Measurements

OPERATING FREQUENCY: 2,310,000,000 Hz
 CHANNEL: 27710
 REFERENCE VOLTAGE: 4.21 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	2,309,999,989	-11	-0.0000005
100 %		- 30	2,309,999,907	-93	-0.0000040
100 %		- 20	2,309,999,997	-3	-0.0000001
100 %		- 10	2,309,999,881	-119	-0.0000052
100 %		0	2,309,999,932	-68	-0.0000029
100 %		+ 10	2,309,999,795	-205	-0.0000089
100 %		+ 20	2,310,000,278	278	0.0000120
100 %		+ 30	2,309,999,871	-129	-0.0000056
100 %		+ 40	2,310,000,046	46	0.0000020
100 %		+ 50	2,309,999,982	-18	-0.0000008
BATT. ENDPOINT	3.85	+ 20	2,309,999,916	-84	-0.0000036

Table 7-80. 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: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 30 Frequency Stability Measurements

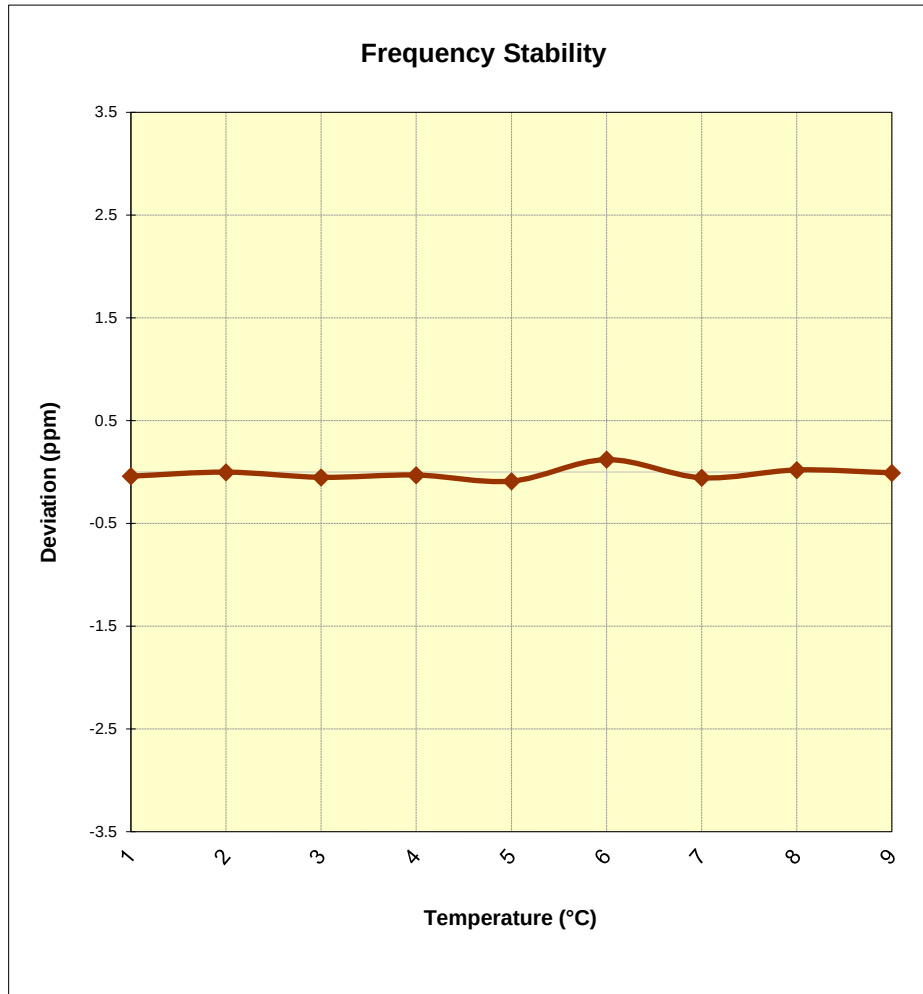


Figure 7-16. Frequency Stability Graph (Band 30)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz
CHANNEL: 40620
REFERENCE VOLTAGE: 4.21 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	2,592,999,994	-6	-0.0000002
100 %		- 30	2,593,000,040	40	0.0000015
100 %		- 20	2,592,999,780	-220	-0.0000085
100 %		- 10	2,593,000,058	58	0.0000022
100 %		0	2,593,000,017	17	0.0000007
100 %		+ 10	2,592,999,969	-31	-0.0000012
100 %		+ 20	2,593,000,035	35	0.0000013
100 %		+ 30	2,593,000,039	39	0.0000015
100 %		+ 40	2,592,999,967	-33	-0.0000013
100 %		+ 50	2,592,999,921	-79	-0.0000030
BATT. ENDPOINT	3.85	+ 20	2,592,999,655	-345	-0.0000133

Table 7-81. 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: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

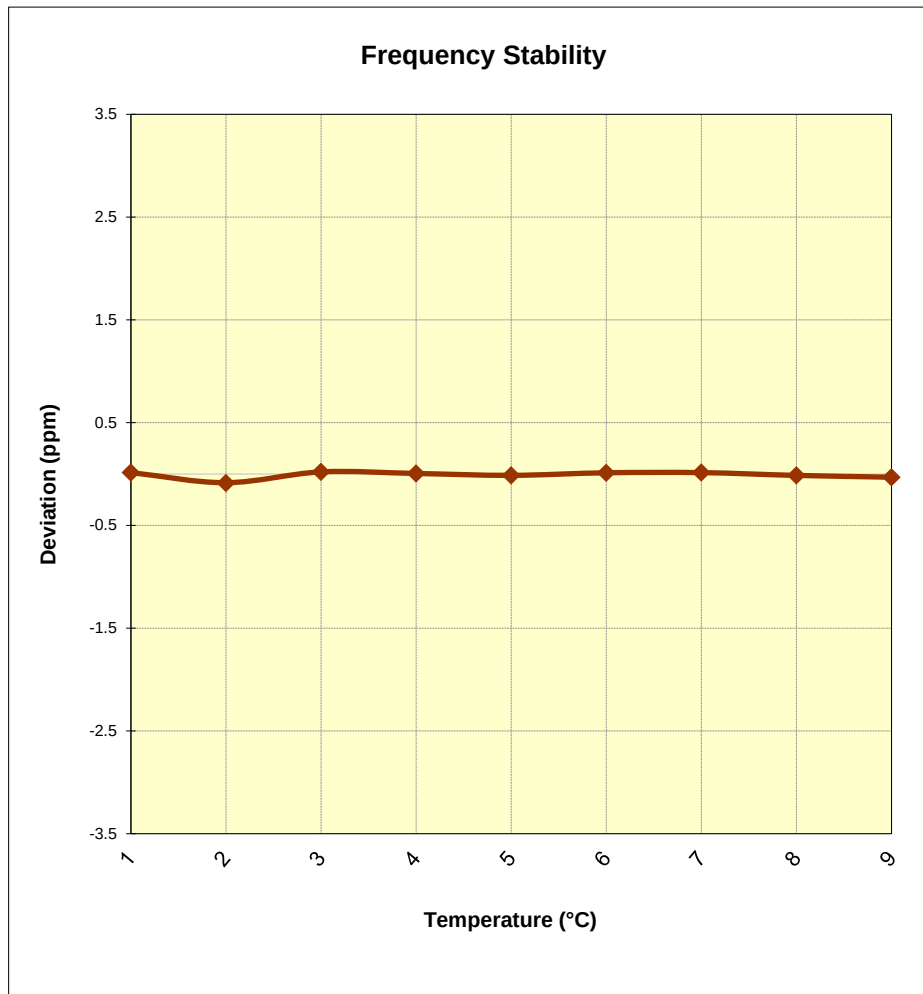


Figure 7-17. Frequency Stability Graph (Band 41)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Band 7 Frequency Stability Measurements

OPERATING FREQUENCY: 2,535,000,000 Hz
CHANNEL: 21100
REFERENCE VOLTAGE: 4.21 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	+ 20 (Ref)	2,535,000,188	188	0.0000074
100 %		- 30	2,535,000,233	233	0.0000092
100 %		- 20	2,535,000,024	24	0.0000009
100 %		- 10	2,535,000,218	218	0.0000086
100 %		0	2,535,000,036	36	0.0000014
100 %		+ 10	2,534,999,965	-35	-0.0000014
100 %		+ 20	2,535,000,211	211	0.0000083
100 %		+ 30	2,535,000,243	243	0.0000096
100 %		+ 40	2,535,000,144	144	0.0000057
100 %		+ 50	2,534,999,942	-58	-0.0000023
BATT. ENDPOINT	3.85	+ 20	2,535,000,191	191	0.0000075

Table 7-82. 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: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 7 Frequency Stability Measurements

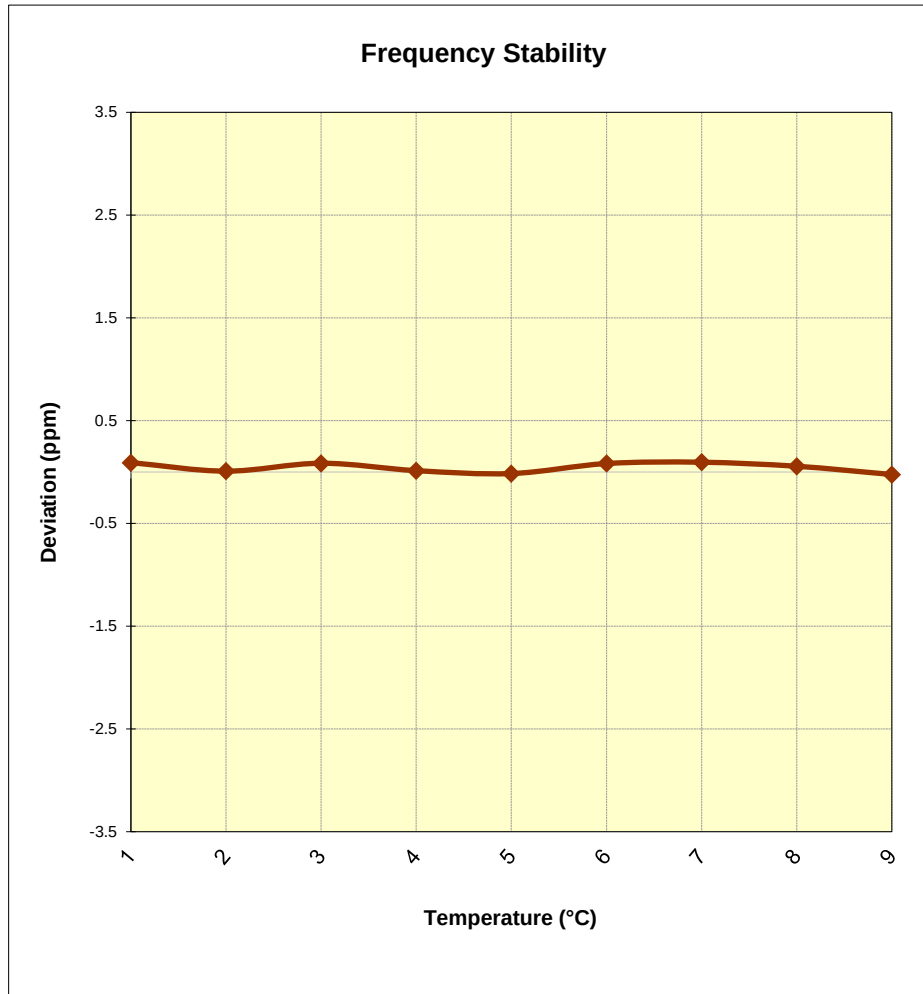


Figure 7-18. Frequency Stability Graph (Band 7)

FCC ID: A3LSMF916U	PCTEST Proud to be part of element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	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: A3LSMF916U** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

FCC ID: A3LSMF916U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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