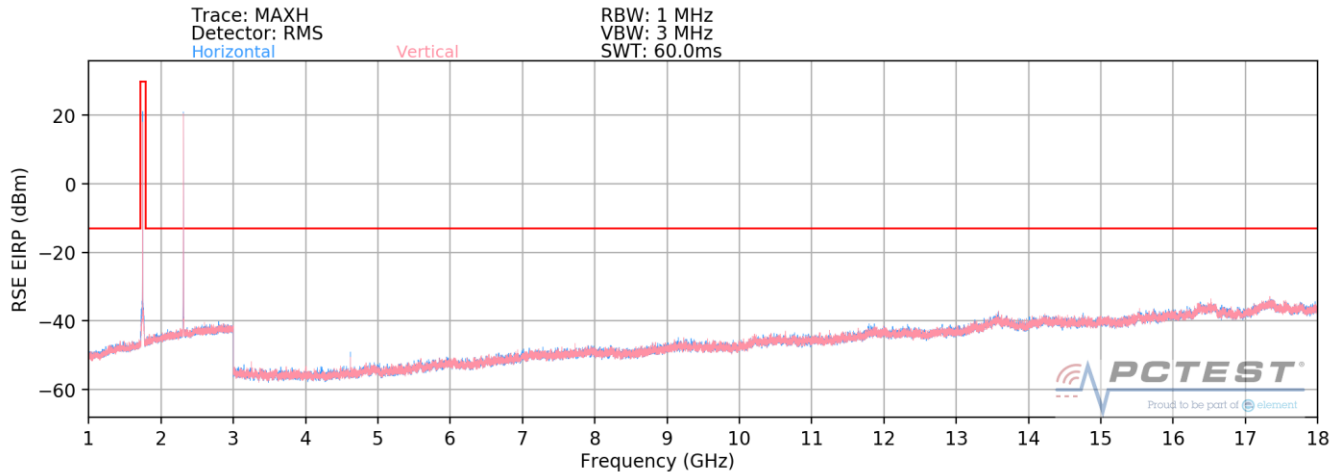


## NR Band n66(Ant J) - B30





Plot 7-304. Radiated Spurious Plot (NR Band n66(Ant J) - B30)

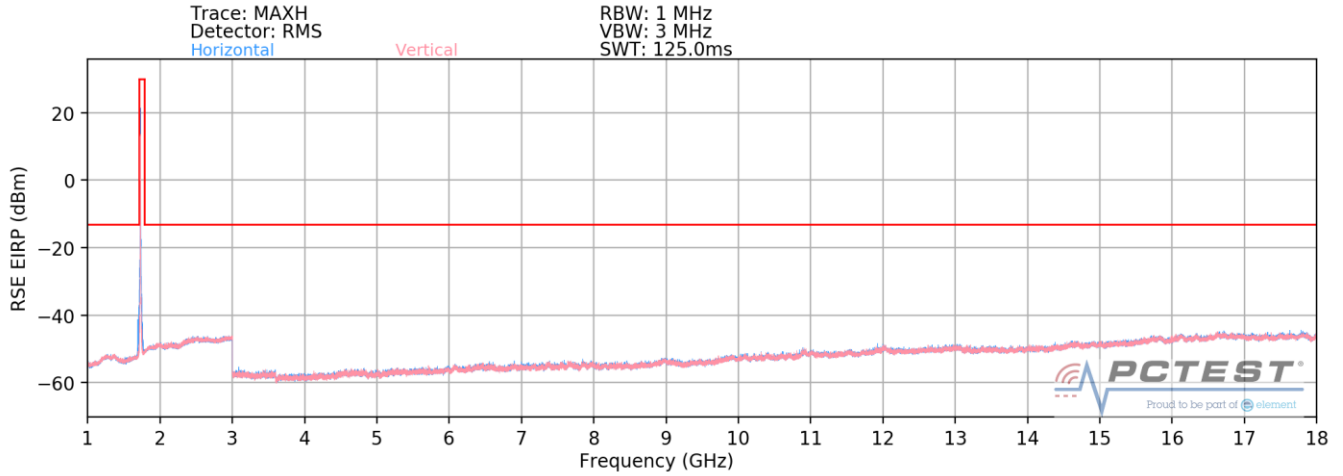
Bandwidth (MHz):	40 / 10
Frequency (MHz):	1745 / 2310
RB / Offset:	1/108 / 1/25
Mode:	EN-DC
Anchor Band:	LTE Band 30

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]
1180.00	H	-	-	-75.19	8.17	39.98	-55.28	-13.00	-42.28
2875.00	H	-	-	-77.08	15.98	45.90	-49.36	-13.00	-36.36
3146.00	H	-	-	-76.08	8.24	39.16	-56.09	-13.00	-43.09
3440.00	H	-	-	-77.29	8.09	37.80	-57.46	-13.00	-44.46
4005.00	H	-	-	-76.71	8.65	38.94	-56.31	-13.00	-43.31
4570.00	H	-	-	-77.80	9.56	38.76	-56.50	-13.00	-43.50
4620.00	H	136.00	322.00	-70.32	9.73	46.41	-48.85	-13.00	-35.85

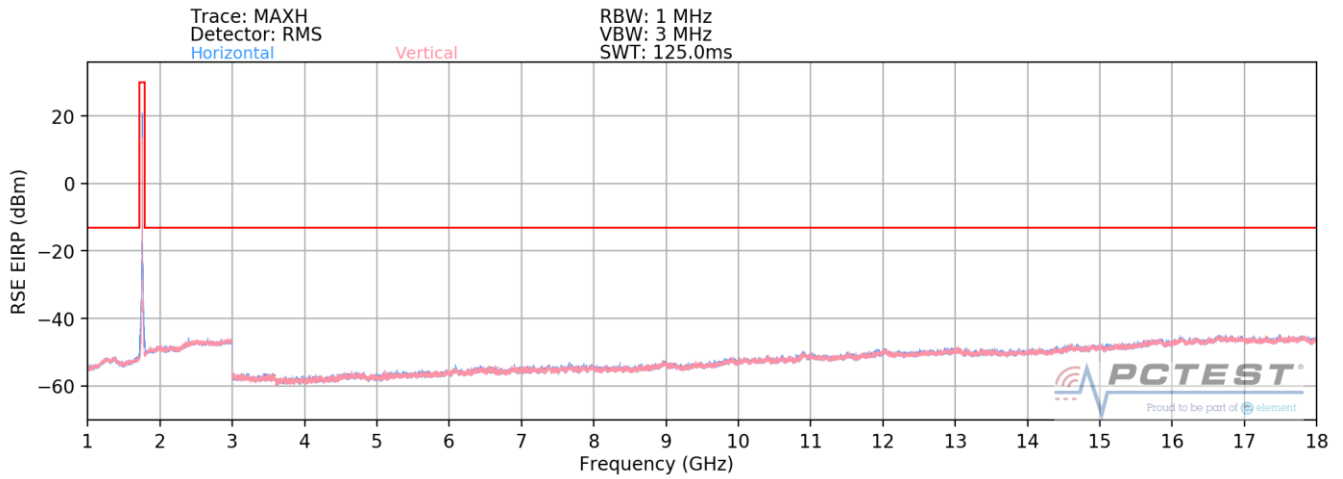
Table 7-44. Radiated Spurious Data (NR Band n66(Ant J) - B30)

FCC ID: A3LSMS908U	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset	Page 202 of 214

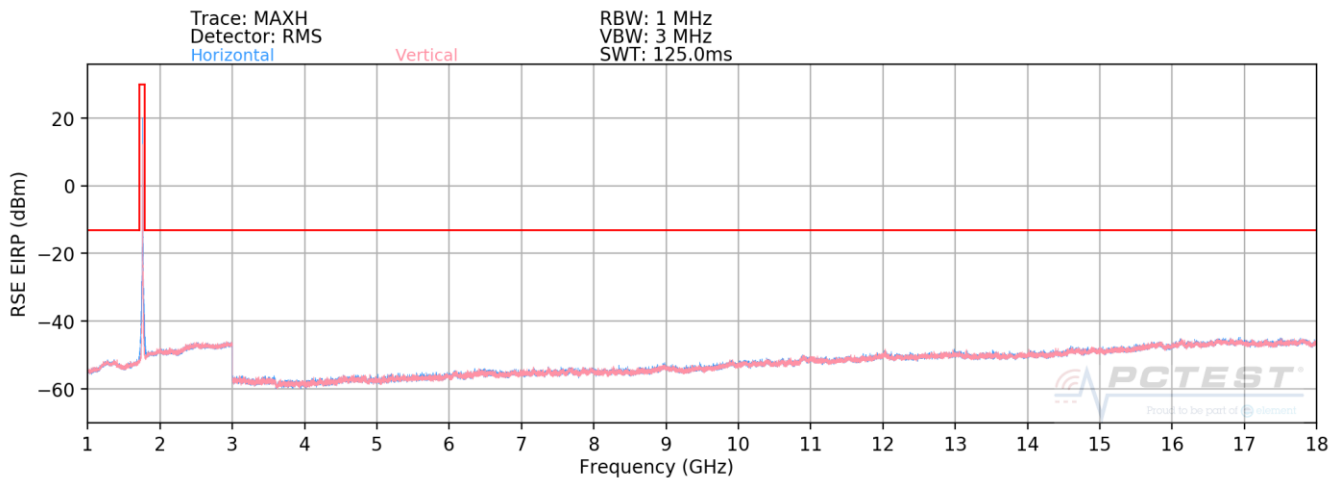
## Uplink CA LTE Band 66B/C



**Plot 7-305. Radiated Spurious Plot (ULCA LTE Band 66 - Low)**



**Plot 7-306. Radiated Spurious Plot (ULCA LTE Band 66 - Mid)**



**Plot 7-307. Radiated Spurious Plot (ULCA LTE Band 66 - High)**

FCC ID: A3LSMS908U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset	Page 203 of 214	

PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	1720.0
PCC RB / Offset:	1 / 99
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	1739.8
SCC RB / Offset:	1 / 0

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]
3459.80	H	-	-	-77.71	3.71	33.00	-62.26	-13.00	-49.26
5189.70	H	-	-	-78.87	6.62	34.75	-60.50	-13.00	-47.50
6919.60	H	-	-	-79.39	8.45	36.06	-59.20	-13.00	-46.20
8649.50	H	-	-	-80.51	9.56	36.05	-59.21	-13.00	-46.21
10379.40	H	-	-	-80.82	12.31	38.49	-56.77	-13.00	-43.77
12109.30	H	-	-	-80.67	13.90	40.23	-55.03	-13.00	-42.03

Table 7-45. Radiated Spurious Data (ULCA LTE66 - Low Channel)

PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	1745.0
PCC RB / Offset:	1 / 99
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	1764.8
SCC RB / Offset:	1 / 0



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]
3509.80	H	-	-	-77.49	3.84	33.35	-61.91	-13.00	-48.91
5264.70	H	127	344	-78.48	6.09	34.61	-60.65	-13.00	-47.65
7019.60	H	-	-	-78.95	8.00	36.05	-59.21	-13.00	-46.21
8774.50	H	-	-	-79.61	9.20	36.59	-58.66	-13.00	-45.66
10529.40	H	-	-	-80.86	11.97	38.11	-57.15	-13.00	-44.15
12284.30	H	-	-	-80.63	13.78	40.15	-55.11	-13.00	-42.11

Table 7-46. Radiated Spurious Data (ULCA LTE66 - Mid Channel)

PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	1770.0
PCC RB / Offset:	1 / 0
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	1750.2
SCC RB / Offset:	1 / 99

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]
3520.20	H	-	-	-77.67	3.84	33.17	-62.08	-13.00	-49.08
5280.30	H	-	-	-78.79	6.30	34.51	-60.74	-13.00	-47.74
7040.40	H	-	-	-79.35	8.29	35.94	-59.32	-13.00	-46.32
8800.50	H	-	-	-79.47	8.98	36.51	-58.75	-13.00	-45.75
10560.60	H	-	-	-81.08	12.33	38.25	-57.01	-13.00	-44.01
12320.70	H	-	-	-80.79	13.87	40.08	-55.18	-13.00	-42.18

Table 7-47. Radiated Spurious Data (ULCA LTE66 - High Channel)

FCC ID: A3LSMS908U	 PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset	Page 204 of 214	

## 7.9 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 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

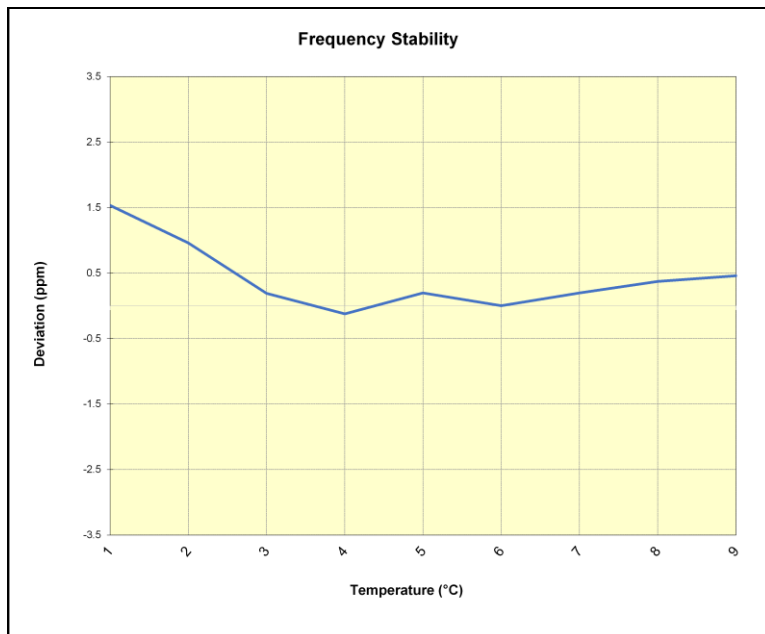
None

FCC ID: A3LSMS908U	 <b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2109090102-04-R1.A3L	<b>Test Dates:</b> 9/9/2021 - 11/16/2021	<b>EUT Type:</b> Portable Handset	Page 205 of 214	

## Frequency Stability / Temperature Variation

LTE Band 66/4					
		Operating Frequency (Hz):		1,745,000,000	
		Ref. Voltage (VDC):		4.44	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	1,745,014,230	2,672	0.0001531
		- 20	1,745,013,234	1,676	0.0000960
		- 10	1,745,011,888	330	0.0000189
		0	1,745,011,344	-214	-0.0000123
		+ 10	1,745,011,899	341	0.0000195
		+ 20 (Ref)	1,745,011,558	0	0.0000000
		+ 30	1,745,011,899	341	0.0000195
		+ 40	1,745,012,207	649	0.0000372
		+ 50	1,745,012,360	802	0.0000460
Battery Endpoint	3.36	+ 20	1,745,011,893	335	0.0000192

**Table 7-48. LTE Band 66/4 Frequency Stability Data**



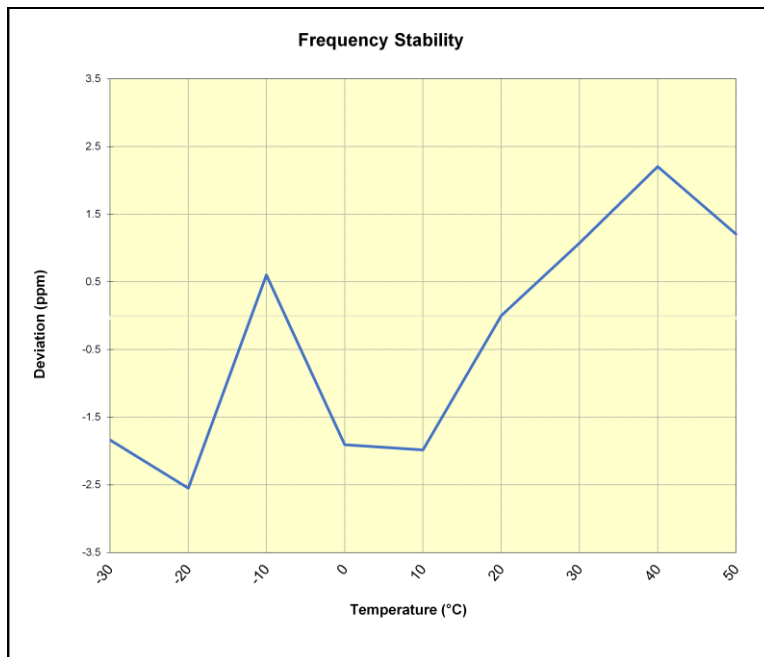
**Plot 7-308. LTE Band 66/4 Frequency Stability Chart**

FCC ID: A3LSMS908U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset		Page 206 of 214



## Frequency Stability / Temperature Variation

LTE Band 12					
Operating Frequency (Hz):		707,500,000			
Ref. Voltage (VDC):		4.44			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	707,512,368	-1,300	-0.0001837
		- 20	707,511,863	-1,805	-0.0002551
		- 10	707,514,093	425	0.0000601
		0	707,512,318	-1,350	-0.0001908
		+ 10	707,512,264	-1,404	-0.0001984
		+ 20 (Ref)	707,513,668	0	0.0000000
		+ 30	707,514,429	761	0.0001076
		+ 40	707,515,228	1,560	0.0002205
		+ 50	707,514,521	853	0.0001206
Battery Endpoint	3.36	+ 20	707,513,228	-440	-0.0000622

Table 7-49. LTE Band 12 Frequency Stability Data



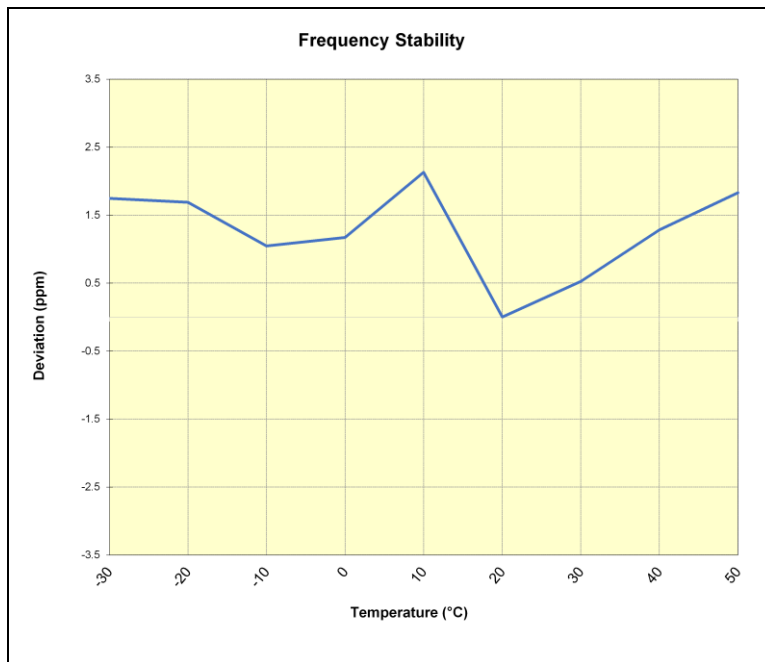
Plot 7-309. LTE Band 12 Frequency Stability Chart

FCC ID: A3LSMS908U		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset	Page 207 of 214	



## Frequency Stability / Temperature Variation

LTE Band 13					
			Operating Frequency (Hz):	782,000,000	
			Ref. Voltage (VDC):	4.44	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	782,007,814	1,365	0.0001746
		- 20	782,007,771	1,322	0.0001691
		- 10	782,007,268	819	0.0001047
		0	782,007,364	915	0.0001170
		+ 10	782,008,116	1,667	0.0002132
		+ 20 (Ref)	782,006,449	0	0.0000000
		+ 30	782,006,861	412	0.0000527
		+ 40	782,007,452	1,003	0.0001283
		+ 50	782,007,881	1,432	0.0001831
Battery Endpoint	3.36	+ 20	782,006,829	380	0.0000486

Table 7-50. LTE Band 13 Frequency Stability Data



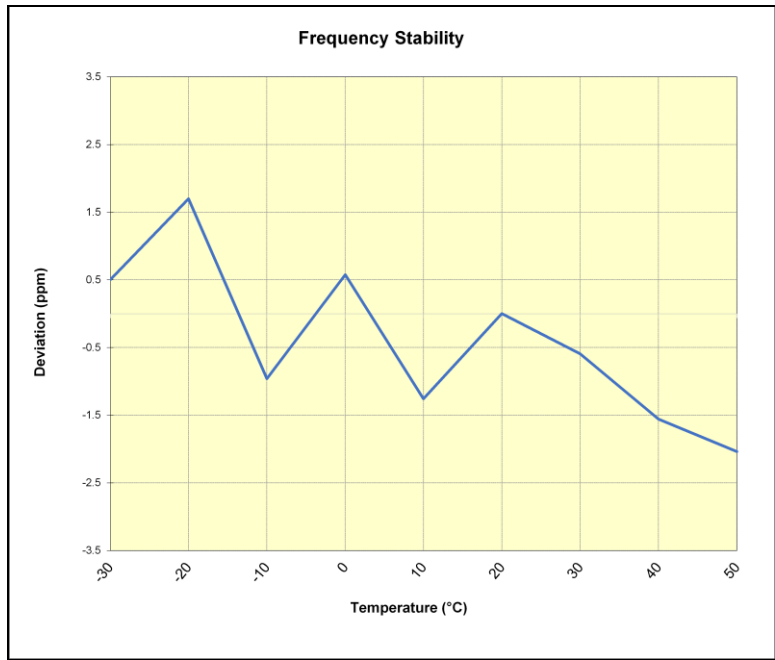
Plot 7-310. LTE Band 13 Frequency Stability Chart

FCC ID: A3LSMS908U		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset		Page 208 of 214

## Frequency Stability / Temperature Variation

LTE Band 71					
		Operating Frequency (Hz):		680,500,000	
		Ref. Voltage (VDC):		4.44	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	680,518,063	340	0.0000500
		- 20	680,518,879	1,156	0.0001699
		- 10	680,517,069	-654	-0.0000961
		0	680,518,116	393	0.0000578
		+ 10	680,516,867	-856	-0.0001258
		+ 20 (Ref)	680,517,723	0	0.0000000
		+ 30	680,517,319	-404	-0.0000594
		+ 40	680,516,663	-1,060	-0.0001558
		+ 50	680,516,335	-1,388	-0.0002040
Battery Endpoint	3.36	+ 20	680,517,591	-132	-0.0000194

**Table 7-51. LTE Band 71 Frequency Stability Data**



**Plot 7-311. LTE Band 71 Frequency Stability Chart**

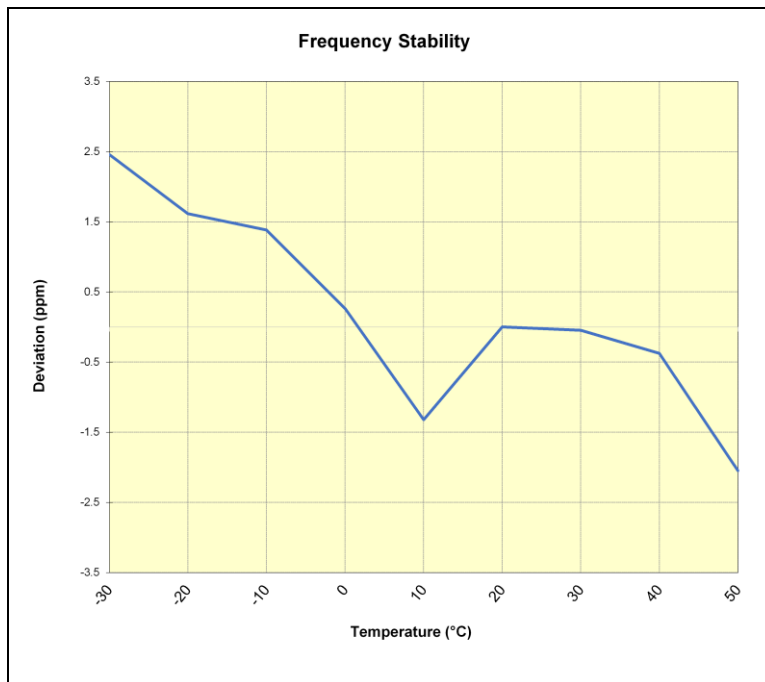
FCC ID: A3LSMS908U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset		Page 209 of 214



## Frequency Stability / Temperature Variation

NR Band n66					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.44			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	1,745,084,654	4,294	0.0002461
		- 20	1,745,083,182	2,822	0.0001617
		- 10	1,745,082,775	2,415	0.0001384
		0	1,745,080,821	461	0.0000264
		+ 10	1,745,078,055	-2,305	-0.0001321
		+ 20 (Ref)	1,745,080,360	0	0.0000000
		+ 30	1,745,080,281	-79	-0.0000045
		+ 40	1,745,079,706	-654	-0.0000375
		+ 50	1,745,076,784	-3,576	-0.0002049
Battery Endpoint	3.36	+ 20	1,745,079,964	-396	-0.0000227

**Table 7-52. NR Band n66 Frequency Stability Data**



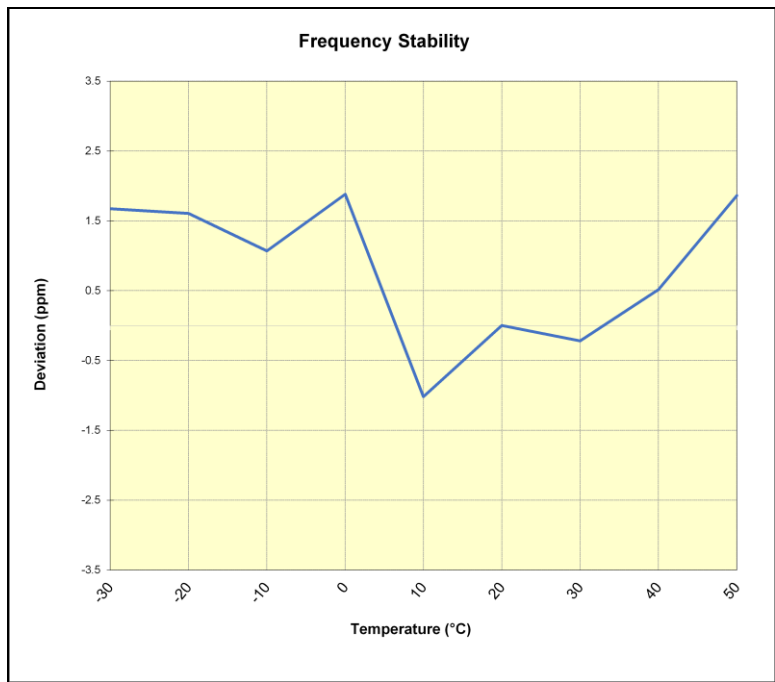
**Plot 7-312. NR Band n66 Frequency Stability Chart**

FCC ID: A3LSMS908U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset		Page 210 of 214

## Frequency Stability / Temperature Variation

NR Band n71					
Operating Frequency (Hz):		680,500,000			
Ref. Voltage (VDC):		4.44			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	680,585,822	1,139	0.0001674
		- 20	680,585,777	1,094	0.0001607
		- 10	680,585,410	727	0.0001068
		0	680,585,963	1,280	0.0001881
		+ 10	680,583,990	-693	-0.0001018
		+ 20 (Ref)	680,584,683	0	0.0000000
		+ 30	680,584,534	-149	-0.0000219
		+ 40	680,585,034	351	0.0000516
		+ 50	680,585,951	1,268	0.0001863
Battery Endpoint	3.36	+ 20	680,584,491	-192	-0.0000282

**Table 7-53. NR Band n71 Frequency Stability Data**



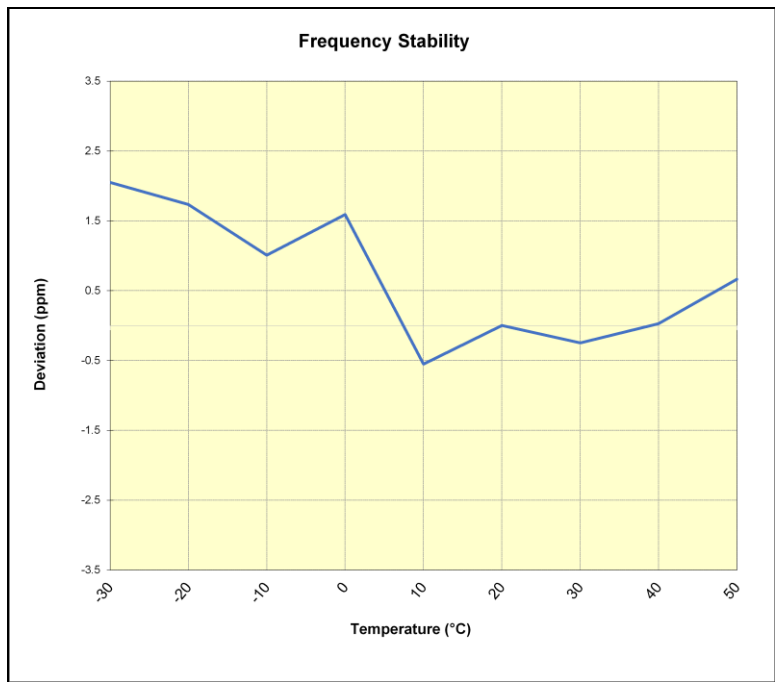
**Plot 7-313. NR Band n71 Frequency Stability Chart**

FCC ID: A3LSMS908U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset		Page 211 of 214

## Frequency Stability / Temperature Variation

NR Band n12					
Operating Frequency (Hz):		707,500,000			
Ref. Voltage (VDC):		4.44			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	707,503,442	1,450	0.0002049
		- 20	707,503,218	1,226	0.0001733
		- 10	707,502,706	714	0.0001009
		0	707,503,118	1,126	0.0001592
		+ 10	707,501,601	-391	-0.0000553
		+ 20 (Ref)	707,501,992	0	0.0000000
		+ 30	707,501,816	-176	-0.0000249
		+ 40	707,502,011	19	0.0000027
		+ 50	707,502,461	469	0.0000663
Battery Endpoint	3.36	+ 20	707,501,843	-149	-0.0000211

**Table 7-54. NR Band n12 Frequency Stability Data**



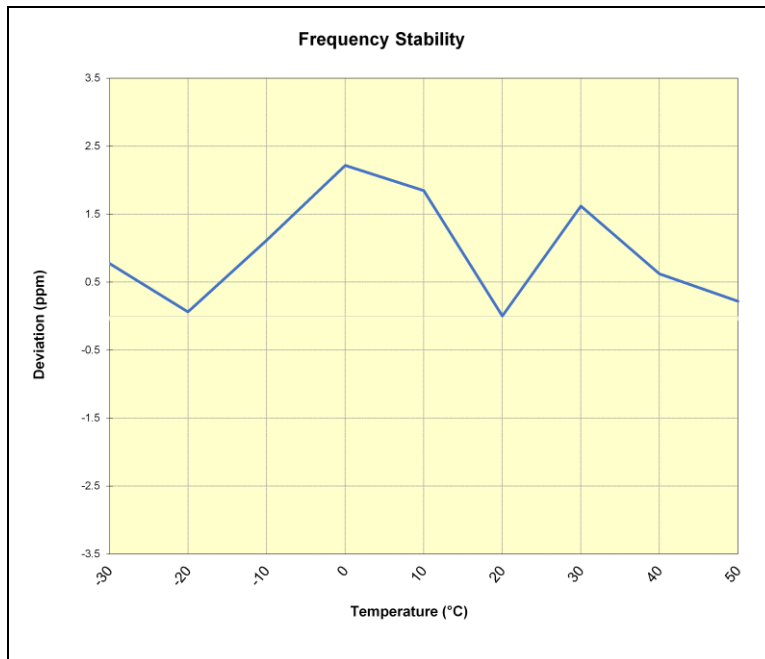
**Plot 7-314. NR Band n12 Frequency Stability Chart**

FCC ID: A3LSMS908U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset		Page 212 of 214

## Frequency Stability / Temperature Variation

WCDMA AWS					
		Operating Frequency (Hz):		1,732,600,000	
		Ref. Voltage (VDC):		4.44	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.44	- 30	1,732,602,651	1,344	0.0000775
		- 20	1,732,601,416	109	0.0000063
		- 10	1,732,603,235	1,927	0.0001112
		0	1,732,605,146	3,839	0.0002216
		+ 10	1,732,604,504	3,197	0.0001845
		+ 20 (Ref)	1,732,601,307	0	0.0000000
		+ 30	1,732,604,112	2,805	0.0001619
		+ 40	1,732,602,385	1,077	0.0000622
		+ 50	1,732,601,687	380	0.0000219
Battery Endpoint	3.36	+ 20	1,732,601,701	393	0.0000227

**Table 7-55. WCDMA AWS Frequency Stability Data**





**Plot 7-315. WCDMA AWS Frequency Stability Chart**

FCC ID: A3LSMS908U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2109090102-04-R1.A3L	Test Dates: 9/9/2021 - 11/16/2021	EUT Type: Portable Handset		Page 213 of 214

## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS908U** complies with all the requirements of Part 27 of the FCC rules.

FCC ID: A3LSMS908U		<b>PART 27 MEASUREMENT REPORT</b> 	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2109090102-04-R1.A3L	<b>Test Dates:</b> 9/9/2021 - 11/16/2021	<b>EUT Type:</b> Portable Handset	Page 214 of 214