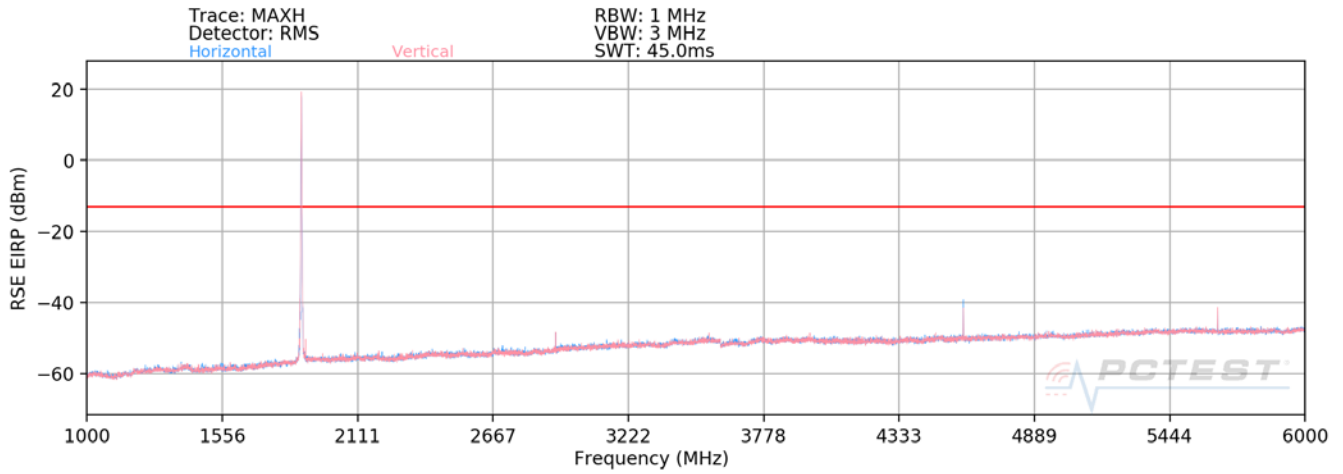
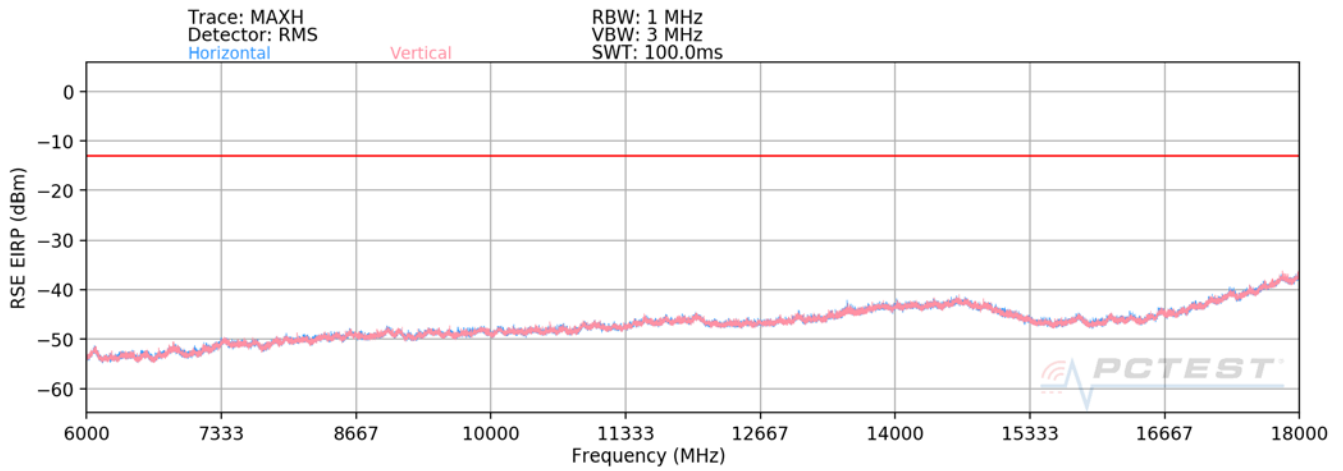


EN-DC n66 + Band 5



Plot 7-181. Radiated Spurious Plot (NR Band n2 – EN-DC Anchor B12 1-6 GHz)





Plot 7-182. Radiated Spurious Plot (NR Band n2 – EN-DC Anchor B12 6-18 GHz)

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Bandwidth (MHz):	10 / 40
Frequency (MHz):	707.5 / 1745
RB / Offset:	1/25 / 1/108
Mode:	EN-DC
Anchor Band:	12

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]
2112.0	V	150	227	-61.24	5.95	51.71	-43.54	-13.00	-30.54
3490.0	V	-	-	-70.94	10.08	46.14	-49.12	-13.00	-36.12
3782.0	V	115	320	-51.02	11.75	67.73	-27.53	-13.00	-14.53
4198.0	V	378	191	-47.09	11.47	71.38	-23.88	-13.00	-10.88
5075.0	V	-	-	-76.25	13.84	44.59	-50.67	-13.00	-37.67
5235.0	V	114	184	-42.79	14.30	78.51	-16.75	-13.00	-3.75
6980.5	V	-	-	-76.86	16.72	46.86	-48.40	-13.00	-35.40

Table 7-20. Radiated Spurious Data (NR Band n2 – EN-DC Anchor B12 – Mid Channel)

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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

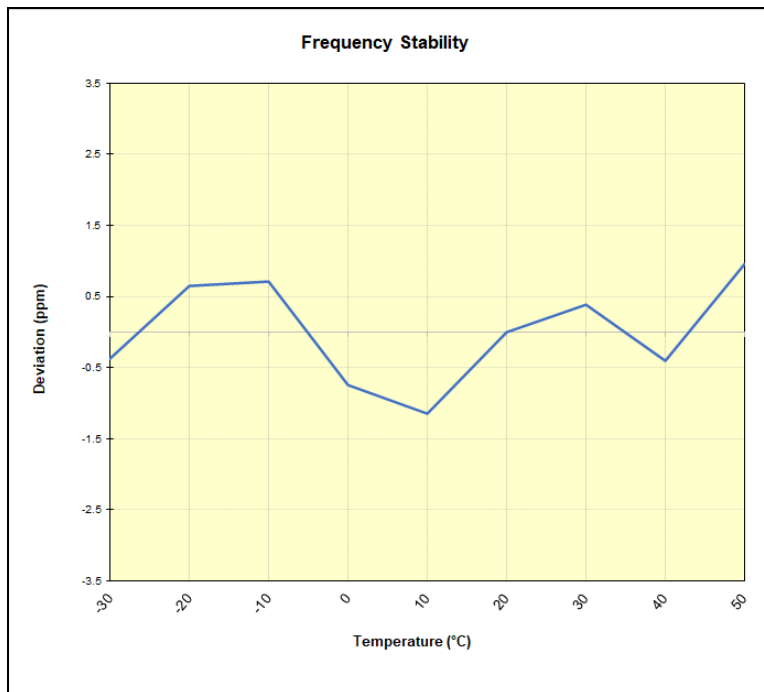
None

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Frequency Stability / Temperature Variation

LTE Band 12/17					
Operating Frequency (Hz):		707,500,000			
Ref. Voltage (VDC):		4.32			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.32	- 30	707,497,850	-259	-0.0000366
		- 20	707,498,567	458	0.0000648
		- 10	707,498,617	508	0.0000718
		0	707,497,579	-530	-0.0000749
		+ 10	707,497,295	-814	-0.0001151
		+ 20 (Ref)	707,498,109	0	0.0000000
		+ 30	707,498,388	279	0.0000394
		+ 40	707,497,828	-281	-0.0000397
Battery Endpoint	3.51	+ 20	707,496,957	-1,152	-0.0001628

Table 7-21. LTE Band 12/17 Frequency Stability Data



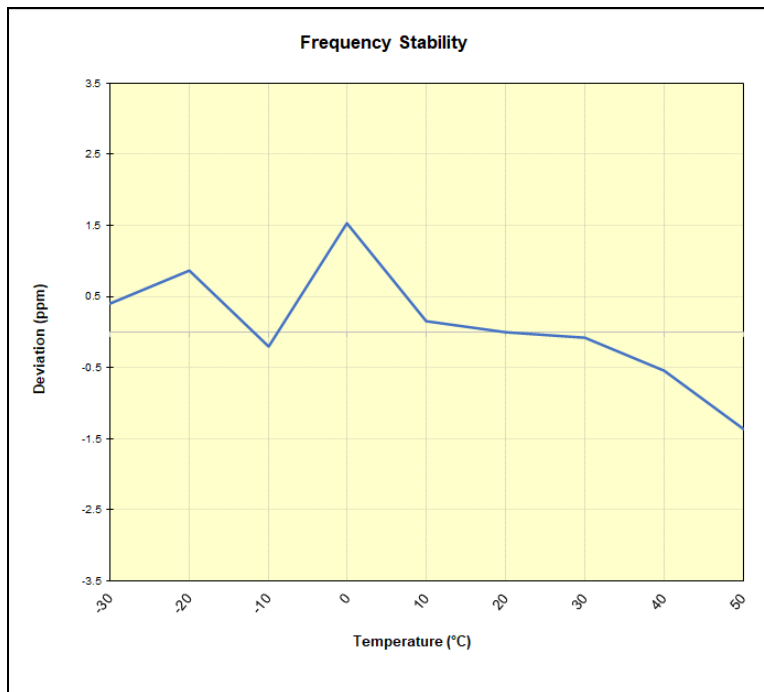
Plot 7-183. LTE Band 12/17 Frequency Stability Chart

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Frequency Stability / Temperature Variation

LTE Band 13					
Operating Frequency (Hz):		782,000,000			
Ref. Voltage (VDC):		4.32			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.32	- 30	782,010,719	311	0.0000398
		- 20	782,011,091	684	0.0000874
		- 10	782,010,251	-156	-0.0000200
		0	782,011,602	1,194	0.0001527
		+ 10	782,010,534	127	0.0000162
		+ 20 (Ref)	782,010,407	0	0.0000000
		+ 30	782,010,351	-57	-0.0000072
		+ 40	782,009,978	-429	-0.0000549
Battery Endpoint	3.51	+ 20	782,010,531	124	0.0000158

Table 7-22. LTE Band 13 Frequency Stability Data



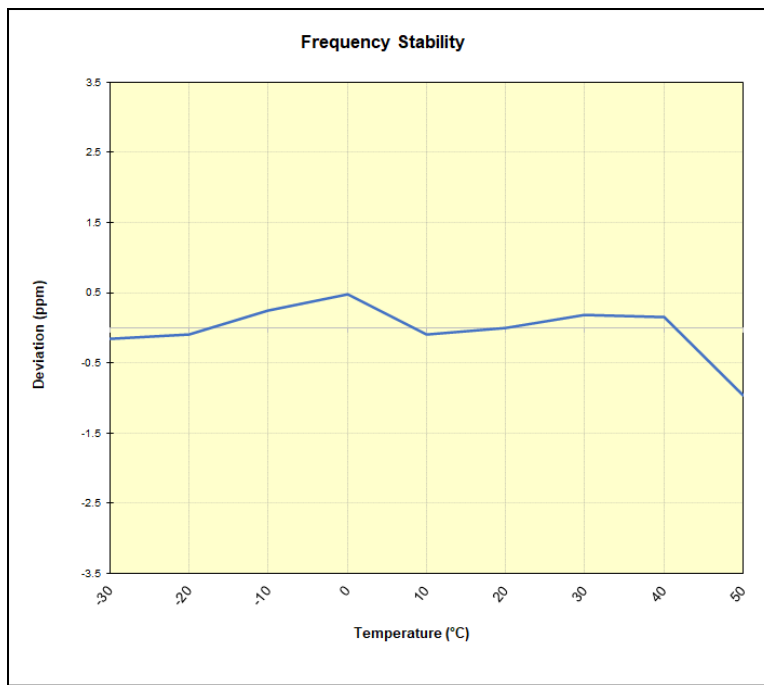
Plot 7-184. LTE Band 13 Frequency Stability Chart

FCC ID: A3LSMF711B		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Frequency Stability / Temperature Variation

WCDMA AWS					
Operating Frequency (Hz):		1,732,600,000			
Ref. Voltage (VDC):		4.32			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.32	- 30	1,732,603,949	-273	-0.0000158
		- 20	1,732,604,050	-173	-0.0000100
		- 10	1,732,604,664	442	0.0000255
		0	1,732,605,067	844	0.0000487
		+ 10	1,732,604,068	-155	-0.0000089
		+ 20 (Ref)	1,732,604,223	0	0.0000000
		+ 30	1,732,604,551	328	0.0000190
		+ 40	1,732,604,479	256	0.0000148
Battery Endpoint	3.51	+ 20	1,732,604,390	168	0.0000097

Table 7-23. WCDMA AWS Frequency Stability Data



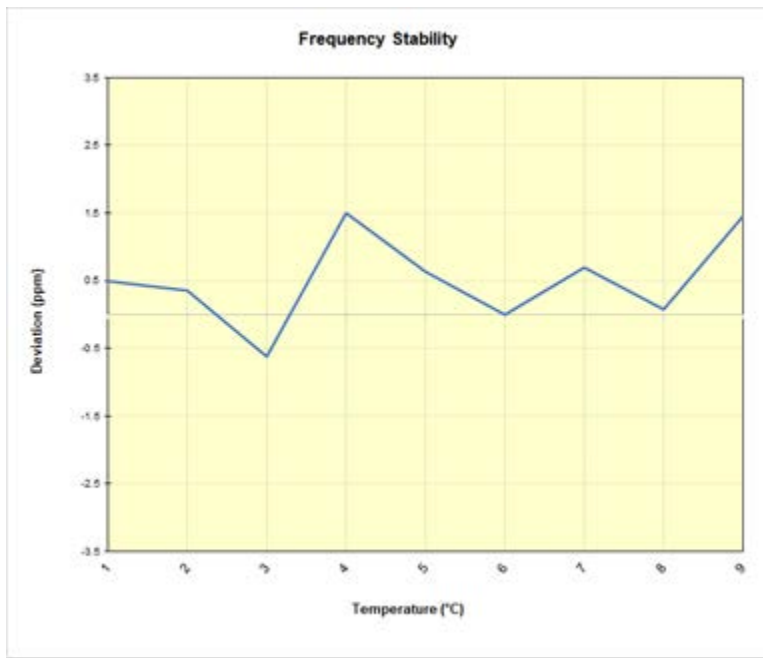
Plot 7-185. WCDMA AWS Frequency Stability Chart

FCC ID: A3LSMF711B		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Frequency Stability / Temperature Variation

LTE Band 66/4					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.32			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.32	- 30	1,744,998,506	859	0.0000492
		- 20	1,744,998,258	610	0.0000350
		- 10	1,744,996,572	-1,076	-0.0000616
		0	1,745,000,258	2,611	0.0001496
		+ 10	1,744,998,749	1,102	0.0000631
		+ 20 (Ref)	1,744,997,647	0	0.0000000
		+ 30	1,744,998,857	1,210	0.0000693
		+ 40	1,744,997,769	122	0.0000070
Battery Endpoint	3.51	+ 20	1,745,000,939	3,291	0.0001886

Table 7-24. LTE Band 66/4 Frequency Stability Data



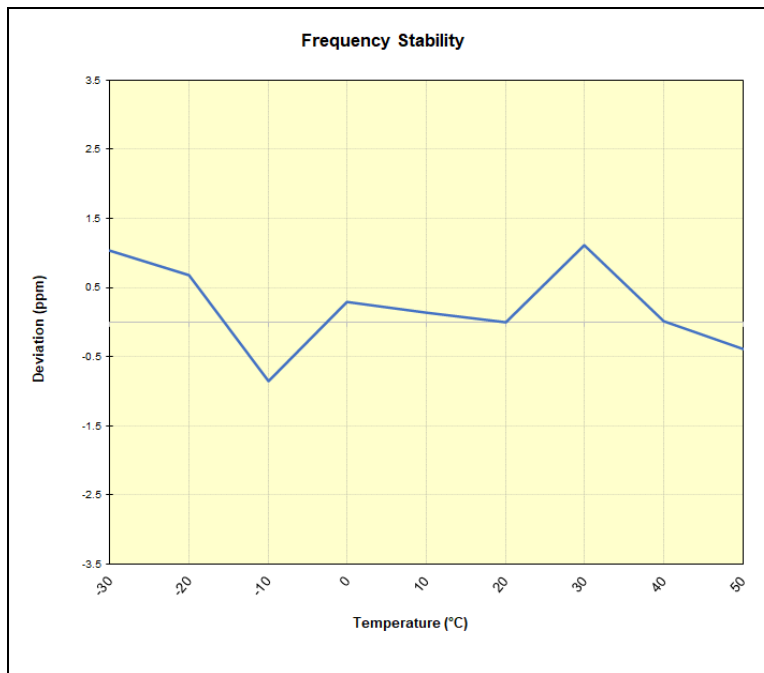
Plot 7-186. LTE Band 66/4 Frequency Stability Chart

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Frequency Stability / Temperature Variation

NR Band n66					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.32			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.32	- 30	1,744,456,684	1,797	0.0001030
		- 20	1,744,456,087	1,200	0.0000688
		- 10	1,744,453,411	-1,476	-0.0000846
		0	1,744,455,397	510	0.0000293
		+ 10	1,744,455,125	238	0.0000137
		+ 20 (Ref)	1,744,454,887	0	0.0000000
		+ 30	1,744,456,841	1,954	0.0001120
		+ 40	1,744,454,920	33	0.0000019
		+ 50	1,744,454,204	-683	-0.0000392
Battery Endpoint	3.51	+ 20	1,744,451,506	-3,381	-0.0001938

Table 7-25. NR Band n66 Frequency Stability Data





Plot 7-187. NR Band n66 Frequency Stability Chart

FCC ID: A3LSMF711B	 PCTEST Proud to be part of elements	PART 27 MEASUREMENT REPORT		Approved by: Technical 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: A3LSMF711B** complies with all the requirements of Part 27 of the FCC rules.

FCC ID: A3LSMF711B	 PART 27 MEASUREMENT REPORT 		Approved by: Technical Manager
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