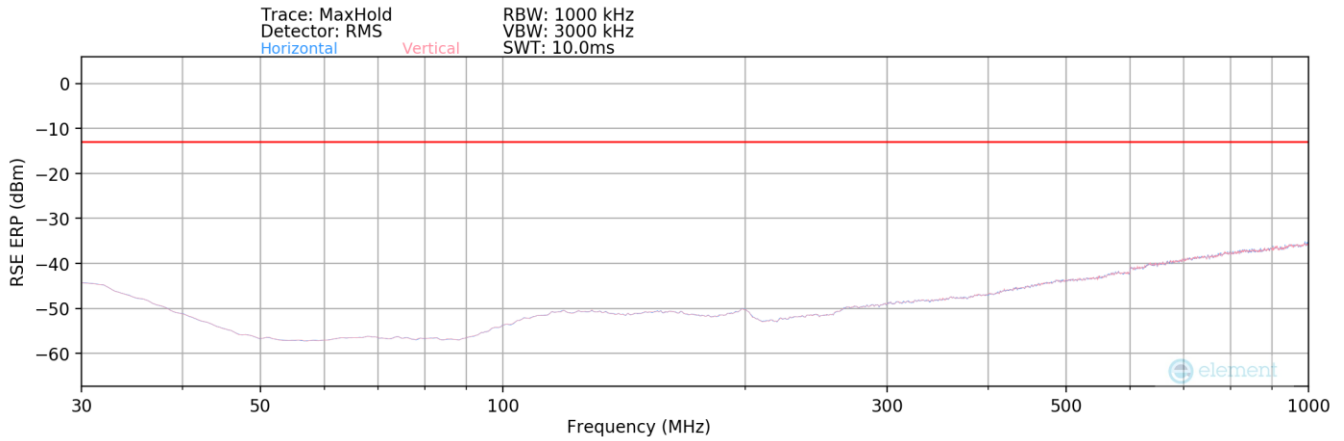
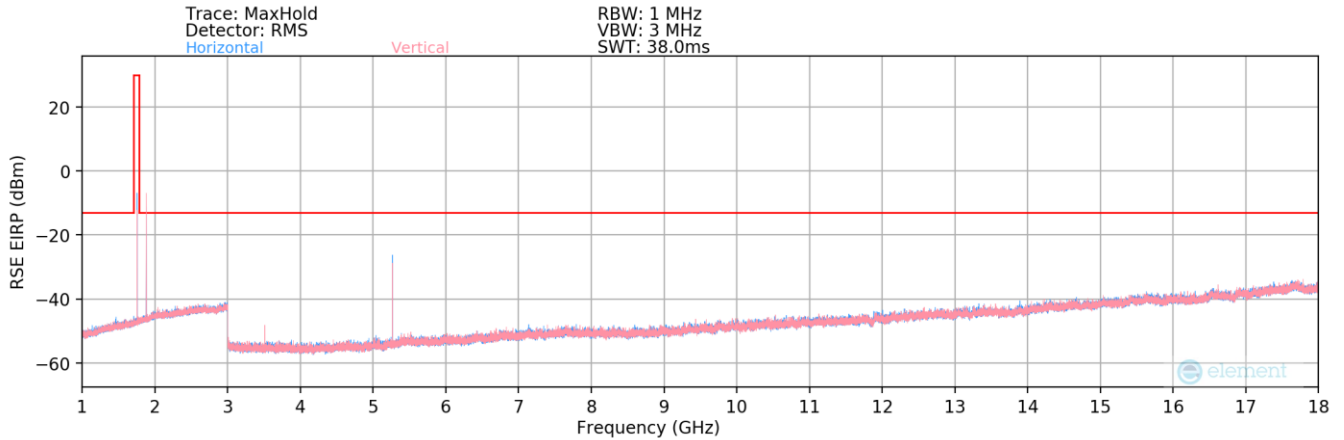


## EN-DC: NR Band n66 (ANT F) – LTE Band 2



**Plot 7-510. Radiated Spurious Plot 30MHz-1GHz (EN-DC: NR Band n66 (ANT F) – LTE Band 2)**



**Plot 7-511. Radiated Spurious Plot 1-18GHz (EN-DC: NR Band n66 (ANT F) – LTE Band 2)**

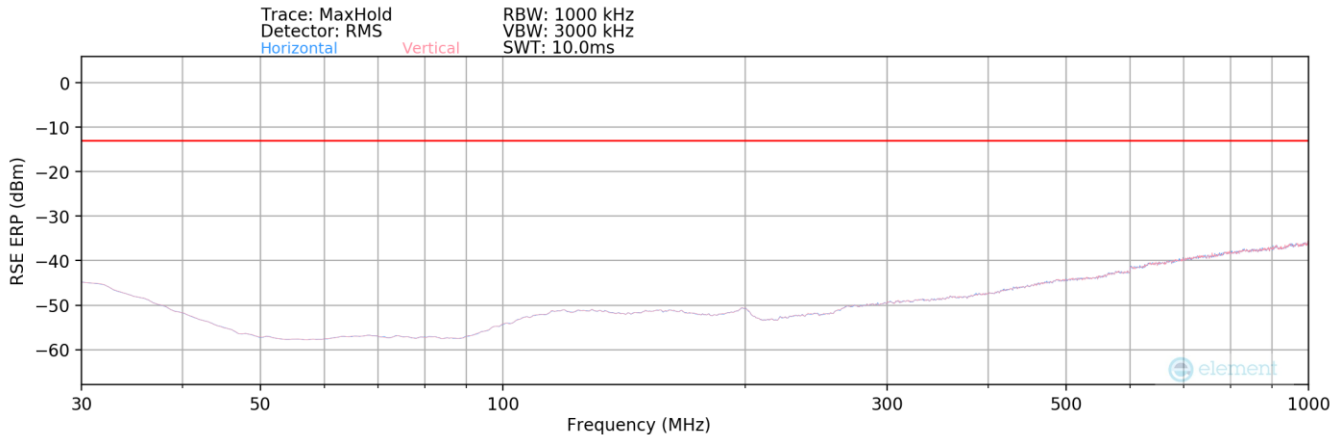
Bandwidth (MHz):	40 & 20
Frequency (MHz):	1745 & 1880
RB / Offset:	1/53 & 1/50
Mode:	EN-DC
Anchor Band:	2

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]
270.00	V	-	-	-89.97	20.63	37.66	-57.60	-13.00	-44.60
2825.00	V	-	-	-72.46	12.76	47.30	-47.95	-13.00	-34.95
2960.00	V	-	-	-70.01	13.70	50.69	-44.57	-13.00	-31.57
3510.00	V	382	179	-69.35	5.47	43.11	-52.14	-13.00	-39.14
5265.00	H	120	274	-49.56	7.71	65.15	-30.10	-13.00	-17.10
5507.00	H	-	-	-74.56	9.30	41.74	-53.52	-13.00	-40.52
5793.00	H	-	-	-74.36	9.14	41.78	-53.48	-13.00	-40.48

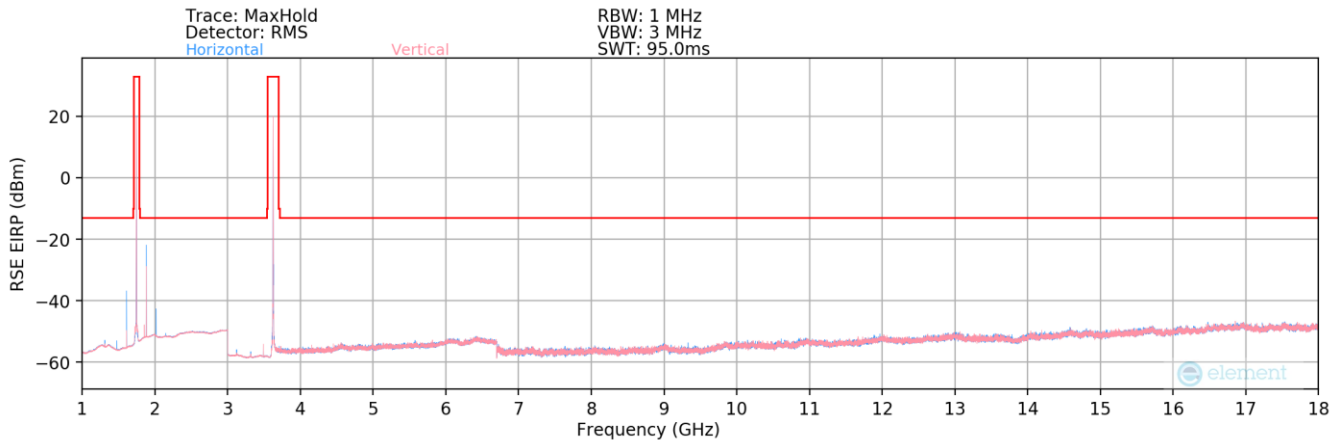
**Plot 7-512. Radiated Spurious Plot (EN-DC: NR Band n66 (ANT F) – LTE Band 2)**

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### EN-DC: NR Band n66 (ANT F) – LTE Band 30



**Plot 7-513. Radiated Spurious Plot 30MHz-1GHz (EN-DC: NR Band n66 (ANT F) – LTE Band 30)**



**Plot 7-514. Radiated Spurious Plot 1-18GHz (EN-DC: NR Band n66 (ANT F) – LTE Band 30)**

Bandwidth (MHz):	40 & 10
Frequency (MHz):	1745 & 2310
RB / Offset:	1/53 & 1/25
Mode:	EN-DC
Anchor 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]
515.00	H	-	-	-108.34	26.13	24.79	-70.47	-13.00	-57.47
5205.50	H	107	55	-72.14	19.31	54.17	-41.09	-13.00	-28.09
6930.00	V	173	19	-74.75	13.75	46.00	-49.26	-13.00	-36.26
8675.00	V	-	-	-83.46	16.85	40.39	-54.86	-13.00	-41.86
12680.00	V	-	-	-84.85	23.28	45.43	-49.83	-13.00	-36.83
14525.00	V	-	-	-84.62	26.69	49.07	-46.19	-13.00	-33.19

**Plot 7-515. Radiated Spurious Plot (EN-DC: NR Band n66 (ANT F) – LTE Band 30)**

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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 C63.26-2015. 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 C63.26-2015 – Section 5.6

### 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

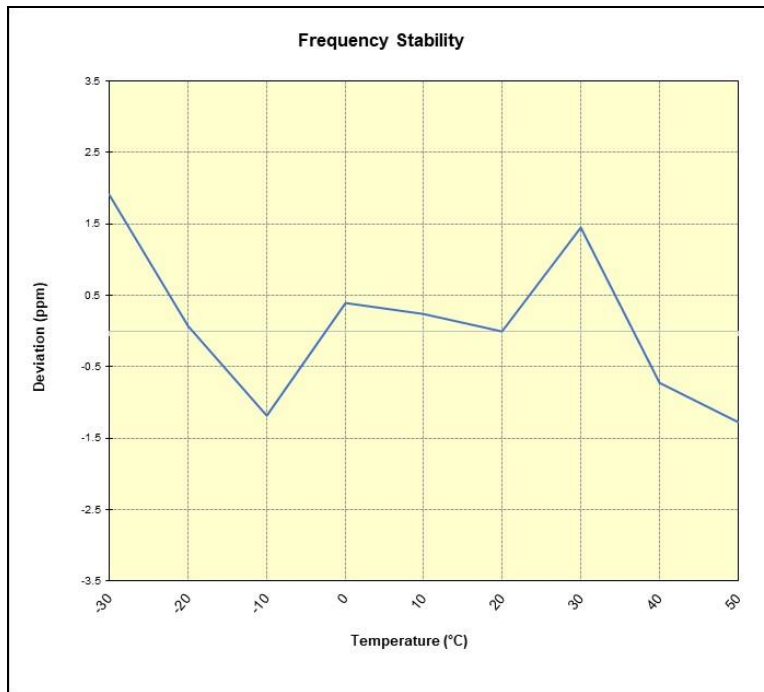
None

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## Frequency Stability / Temperature Variation

LTE Band 71					
Operating Frequency (Hz):		680,500,000			
Ref. Voltage (VDC):		4.35			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	680,592,441	1,299	0.0001909
		- 20	680,591,192	50	0.0000073
		- 10	680,590,333	-809	-0.0001188
		0	680,591,407	265	0.0000390
		+ 10	680,591,311	169	0.0000248
		+ 20 (Ref)	680,591,142	0	0.0000000
		+ 30	680,592,124	982	0.0001443
		+ 40	680,590,650	-492	-0.0000723
		+ 50	680,590,276	-866	-0.0001272
Battery Endpoint	3.69	+ 20	680,591,177	35	0.0000052

Table 7-80. LTE Band 71 Frequency Stability Data



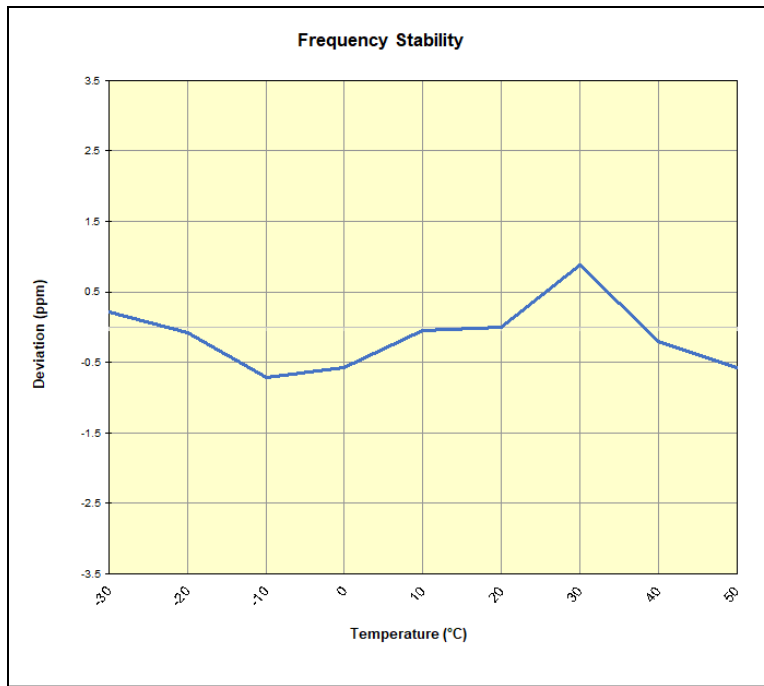
Plot 7-516. LTE Band 71 Frequency Stability Chart

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## Frequency Stability / Temperature Variation

LTE Band 12					
		Operating Frequency (Hz):		707,500,000	
		Ref. Voltage (VDC):		4.35	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	707,594,687	158	0.0000223
		- 20	707,594,473	-56	-0.0000079
		- 10	707,594,024	-505	-0.0000714
		0	707,594,127	-402	-0.0000568
		+ 10	707,594,501	-29	-0.0000040
		+ 20 (Ref)	707,594,529	0	0.0000000
		+ 30	707,595,150	621	0.0000878
		+ 40	707,594,392	-137	-0.0000194
Battery Endpoint	3.69	+ 20	707,594,152	-377	-0.0000533

Table 7-81. LTE Band 12 Frequency Stability Data



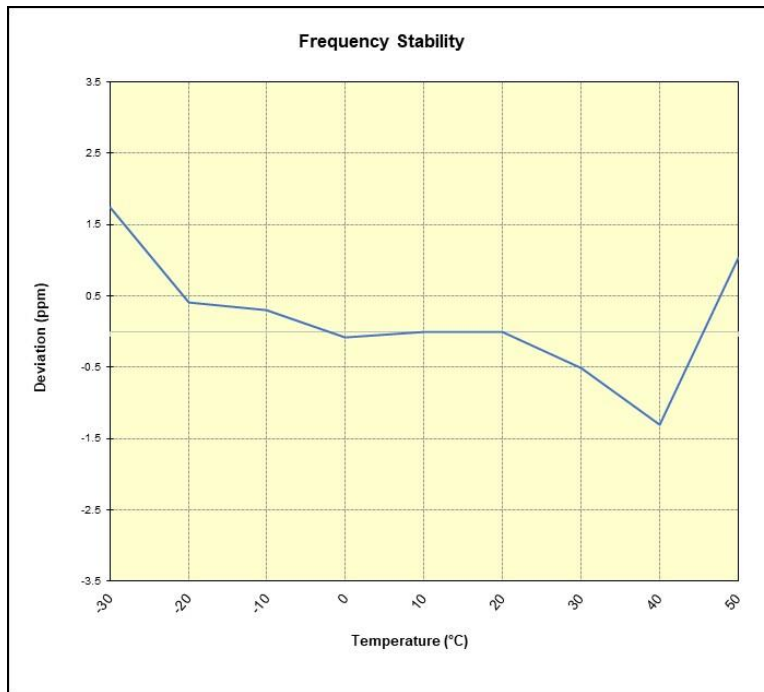
Plot 7-517. LTE Band 12 Frequency Stability Chart

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## Frequency Stability / Temperature Variation

LTE Band 13					
		Operating Frequency (Hz):		782,000,000	
		Ref. Voltage (VDC):		4.35	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	782,095,643	1,360	0.0001739
		- 20	782,094,599	316	0.0000404
		- 10	782,094,520	237	0.0000303
		0	782,094,217	-66	-0.0000084
		+ 10	782,094,285	3	0.0000003
		+ 20 (Ref)	782,094,283	0	0.0000000
		+ 30	782,093,880	-403	-0.0000516
		+ 40	782,093,263	-1,020	-0.0001305
Battery Endpoint	3.69	+ 20	782,094,462	179	0.0000229

Table 7-82. LTE Band 13 Frequency Stability Data



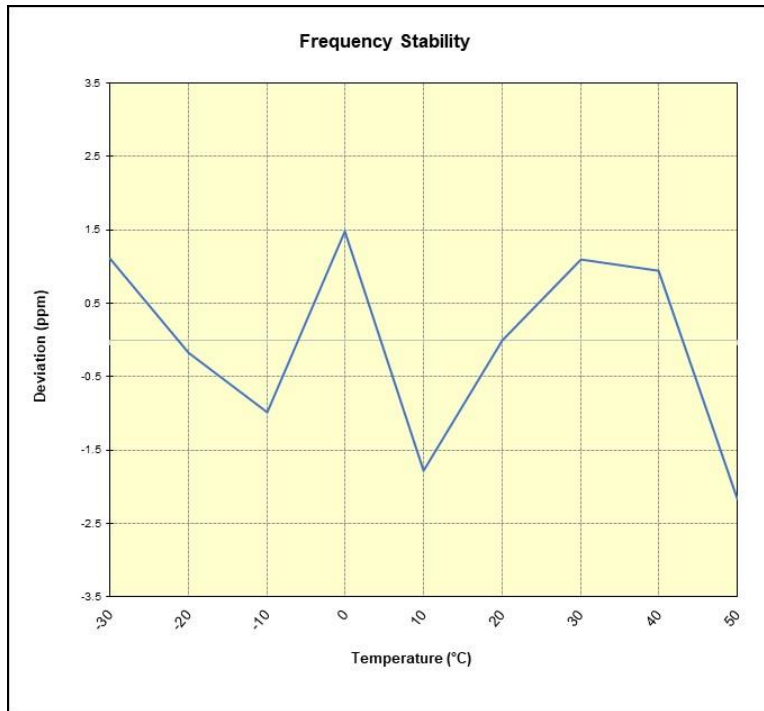
Plot 7-518. LTE Band 13 Frequency Stability Chart

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## Frequency Stability / Temperature Variation

NR Band n71					
Operating Frequency (Hz):		680,500,000			
Ref. Voltage (VDC):		4.35			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	680,562,978	754	0.0001108
		- 20	680,562,109	-115	-0.0000169
		- 10	680,561,560	-664	-0.0000976
		0	680,563,237	1,013	0.0001488
		+ 10	680,561,010	-1,214	-0.0001784
		+ 20 (Ref)	680,562,224	0	0.0000000
		+ 30	680,562,972	748	0.0001099
		+ 40	680,562,869	645	0.0000948
Battery Endpoint	3.69	+ 20	680,563,488	1,264	0.0001857

**Table 7-83. NR Band n71 Frequency Stability Data**



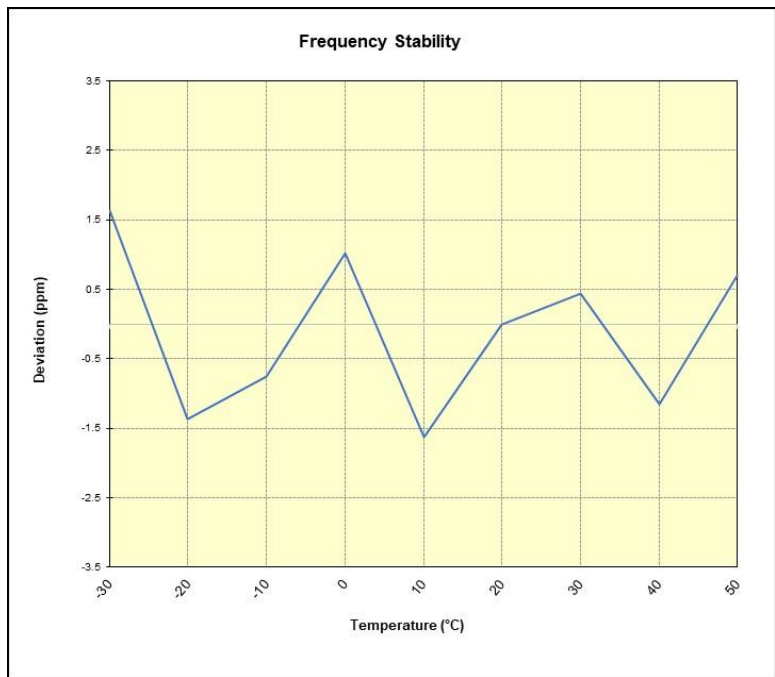
**Plot 7-519. NR Band n71 Frequency Stability Chart**

FCC ID: A3LSMS916U	 PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
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## Frequency Stability / Temperature Variation

NR Band n12					
Operating Frequency (Hz):		707,500,000			
Ref. Voltage (VDC):		4.35			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	707,490,106	1,153	0.0001630
		- 20	707,487,984	-969	-0.0001370
		- 10	707,488,423	-530	-0.0000749
		0	707,489,679	726	0.0001026
		+ 10	707,487,805	-1,148	-0.0001623
		+ 20 (Ref)	707,488,953	0	0.0000000
		+ 30	707,489,265	312	0.0000441
		+ 40	707,488,137	-816	-0.0001153
Battery Endpoint	3.69	+ 20	707,488,416	-537	-0.0000759

**Table 7-84. NR Band n12 Frequency Stability Data**



**Plot 7-520. NR Band n12 Frequency Stability Chart**

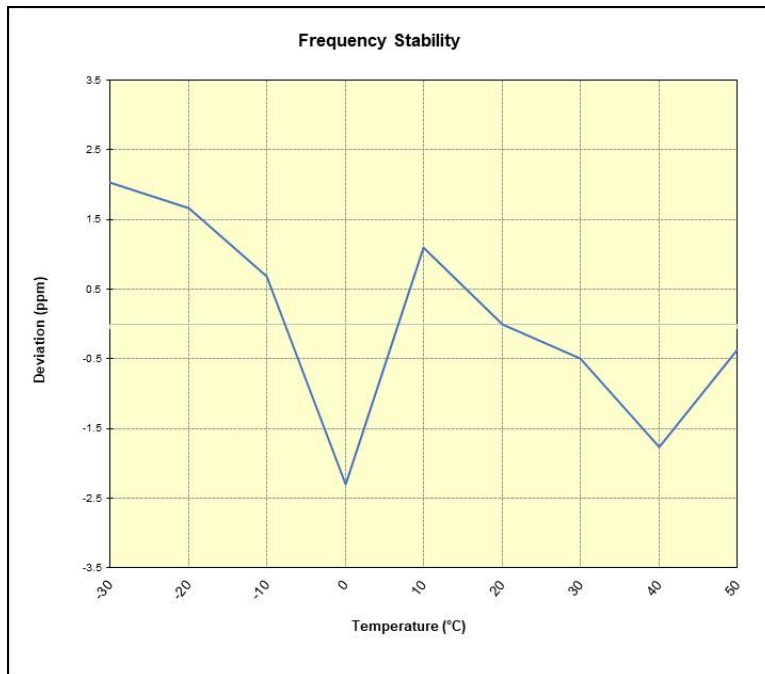
FCC ID: A3LSMS916U	 PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
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## Frequency Stability / Temperature Variation

		Operating Frequency (Hz):		1,732,600,000	
		Ref. Voltage (VDC):		4.35	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	1,732,451,853	3,525	0.0002035
		- 20	1,732,451,214	2,886	0.0001666
		- 10	1,732,449,503	1,175	0.0000678
		0	1,732,444,352	-3,976	-0.0002295
		+ 10	1,732,450,230	1,902	0.0001098
		+ 20 (Ref)	1,732,448,328	0	0.0000000
		+ 30	1,732,447,484	-844	-0.0000487
		+ 40	1,732,445,285	-3,043	-0.0001756
		+ 50	1,732,447,689	-639	-0.0000369
Battery Endpoint	3.69	+ 20	1,732,444,314	-4,014	-0.0002317

**Table 7-85. WCDMA AWS Frequency Stability Data**



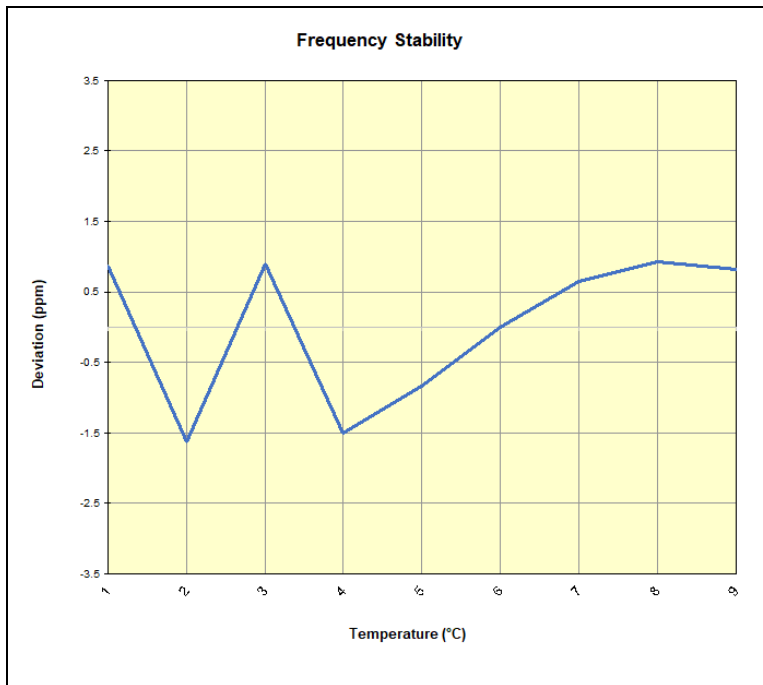
**Plot 7-521. WCDMA AWS Frequency Stability Chart**

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## Frequency Stability / Temperature Variation

LTE Band 66/4					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.35			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	1,745,091,652	1,512	0.0000866
		- 20	1,745,087,296	-2,845	-0.0001630
		- 10	1,745,091,707	1,566	0.0000897
		0	1,745,087,523	-2,617	-0.0001500
		+ 10	1,745,088,686	-1,455	-0.0000834
		+ 20 (Ref)	1,745,090,141	0	0.0000000
		+ 30	1,745,091,264	1,123	0.0000644
		+ 40	1,745,091,768	1,627	0.0000932
		+ 50	1,745,091,570	1,429	0.0000819
Battery Endpoint	3.69	+ 20	1,745,089,799	-342	-0.0000196

Table 7-86. LTE Band 66/4 (ANT A) Frequency Stability Data



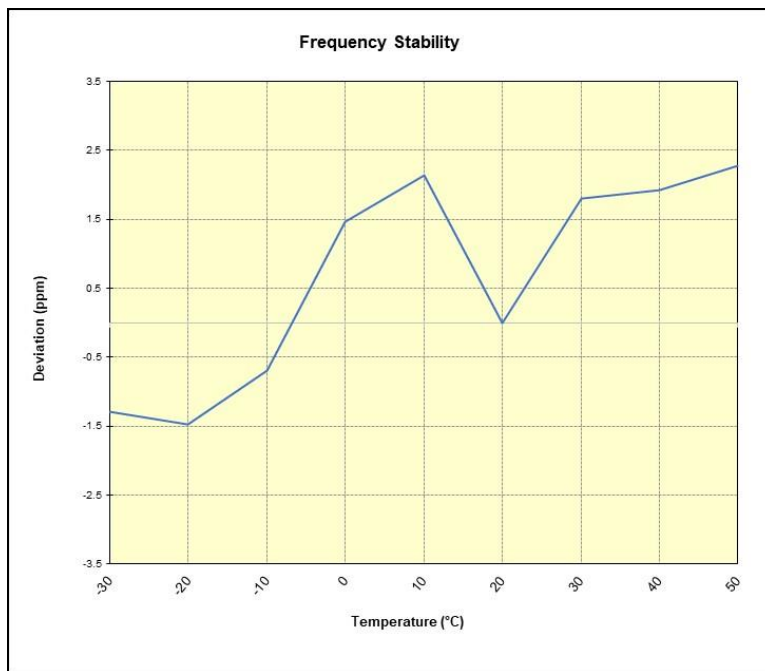
Plot 7-522. LTE Band 66/4 Frequency Stability Chart

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## Frequency Stability / Temperature Variation

NR Band n66					
Operating Frequency (Hz):		1,745,000,000			
Ref. Voltage (VDC):		4.35			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	- 30	1,745,110,153	-2,254	-0.0001292
		- 20	1,745,109,843	-2,564	-0.0001469
		- 10	1,745,111,198	-1,209	-0.0000693
		0	1,745,114,967	2,560	0.0001467
		+ 10	1,745,116,134	3,727	0.0002136
		+ 20 (Ref)	1,745,112,407	0	0.0000000
		+ 30	1,745,115,547	3,140	0.0001799
		+ 40	1,745,115,756	3,349	0.0001919
		+ 50	1,745,116,380	3,973	0.0002277
Battery Endpoint	3.69	+ 20	1,745,113,362	955	0.0000547

Table 7-87. NR Band n66 Frequency Stability Data




Plot 7-523. NR Band n66 Frequency Stability Chart

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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: A3LSMS916U** complies with all the requirements of Part 27 of the FCC rules.

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