

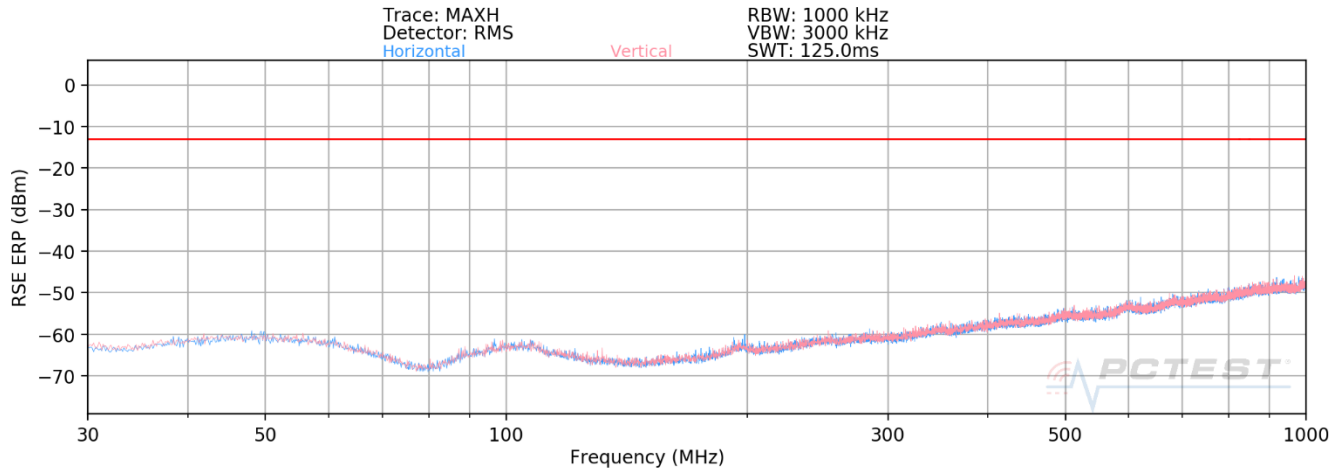
Plot 7-299. Radiated Spurious Plot Above 1GHz (NR Band n2 – B30) – CLOSE

Bandwidth (MHz):	10 / 20
Frequency (MHz):	2310 / 1880
RB / Offset:	1/25 / 1/53
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]
1450.00	H	-	-	-76.15	2.06	32.91	-62.35	-40.00	-22.35
2740.00	H	-	-	-79.37	9.67	37.30	-57.96	-40.00	-17.96
3170.00	H	-	-	-77.06	-0.64	29.30	-65.96	-40.00	-25.96
3600.00	H	-	-	-77.33	0.20	29.87	-65.39	-40.00	-25.39
6070.00	H	-	-	-79.25	5.63	33.38	-61.88	-40.00	-21.88
6500.00	H	-	-	-79.35	5.90	33.55	-61.70	-40.00	-21.70

Table 7-36. Radiated Spurious Data (NR Band n2 – B30) – OPEN

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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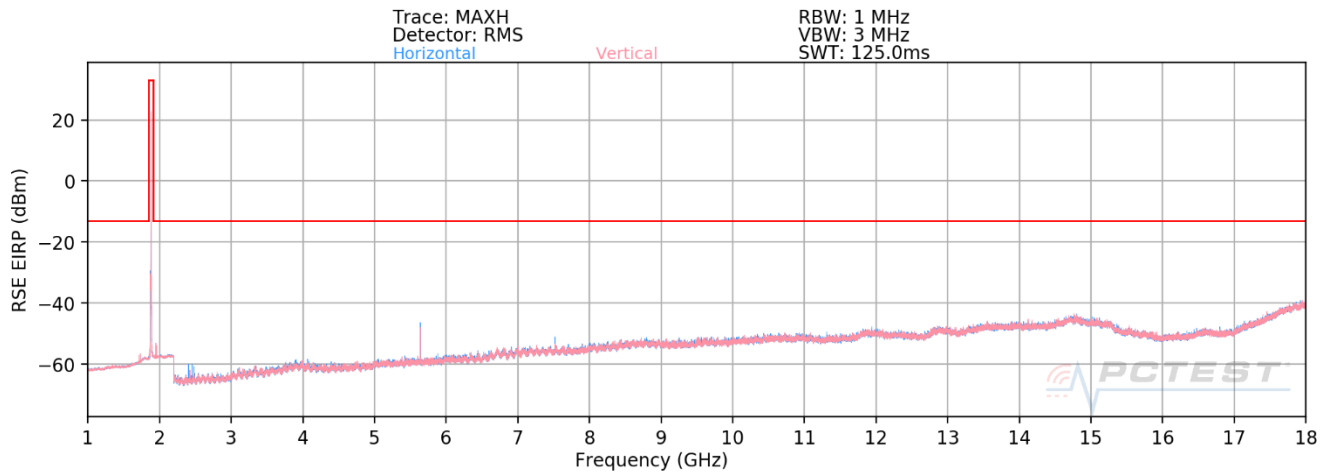


Plot 7-300. Radiated Spurious Plot Below 1GHz (GPRS PCS) – HALF OPEN

Mode:	GPRS 1 Tx Slot
Channel:	661
Frequency (MHz):	1880

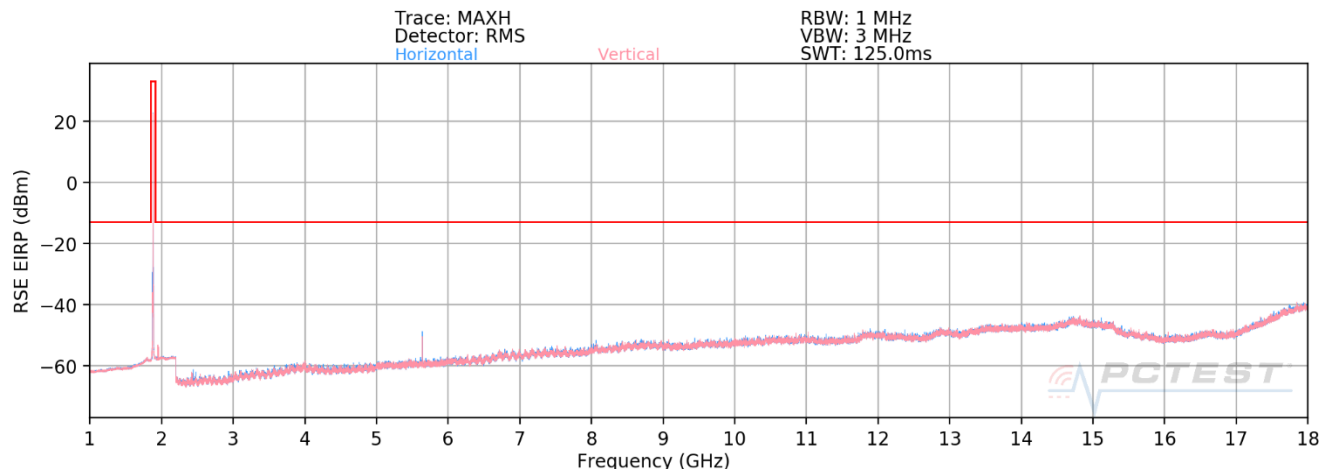
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
925.61	V	-	-	-68.97	25.25	63.28	-31.98	-13.00	-18.98

Table 7-37. Radiated Spurious Data (GPRS PCS) – HALF OPEN



Plot 7-301. Radiated Spurious Plot Above 1GHz (GPRS PCS) – HALF OPEN

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204080051-03.A3L	Test Dates: 04/01 - 06/02/2022	EUT Type: Portable Handset	Page 190 of 201



Plot 7-302. Radiated Spurious Plot Above 1GHz (GPRS PCS) – OPEN

Mode:	GPRS 1 Tx Slot
Channel:	512
Frequency (MHz):	1850.2

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]
3700.40	H	108	251	-66.28	0.10	40.82	-54.43	-13.00	-41.43
5550.60	H	107	229	-60.12	4.26	51.14	-44.12	-13.00	-31.12
7400.80	H	103	222	-71.87	9.20	44.33	-50.93	-13.00	-37.93
9251.00	H	-	-	-73.78	12.61	45.83	-49.43	-13.00	-36.43
11101.20	H	-	-	-73.88	14.47	47.59	-47.67	-13.00	-34.67
12951.40	H	-	-	-73.81	17.10	50.29	-44.97	-13.00	-31.97
14801.60	H	-	-	-74.10	20.80	53.70	-41.56	-13.00	-28.56

Table 7-38. Radiated Spurious Data (GPRS PCS – Low Channel) – HALF OPEN

Mode:	GPRS 1 Tx Slot
Channel:	661
Frequency (MHz):	1880

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]
3760.00	H	123	261	-67.04	0.72	40.68	-54.57	-13.00	-41.57
5640.00	H	122	258	-60.84	3.76	49.92	-45.33	-13.00	-32.33
7520.00	H	123	256	-71.14	9.04	44.90	-50.36	-13.00	-37.36
9400.00	H	113	279	-72.17	12.04	46.87	-48.39	-13.00	-35.39
11280.00	H	-	-	-72.95	14.48	48.53	-46.72	-13.00	-33.72
13160.00	H	-	-	-74.12	16.72	49.60	-45.66	-13.00	-32.66
15040.00	H	-	-	-72.94	19.78	53.84	-41.42	-13.00	-28.42

Table 7-39. Radiated Spurious Data (GPRS PCS – Mid Channel) – HALF OPEN

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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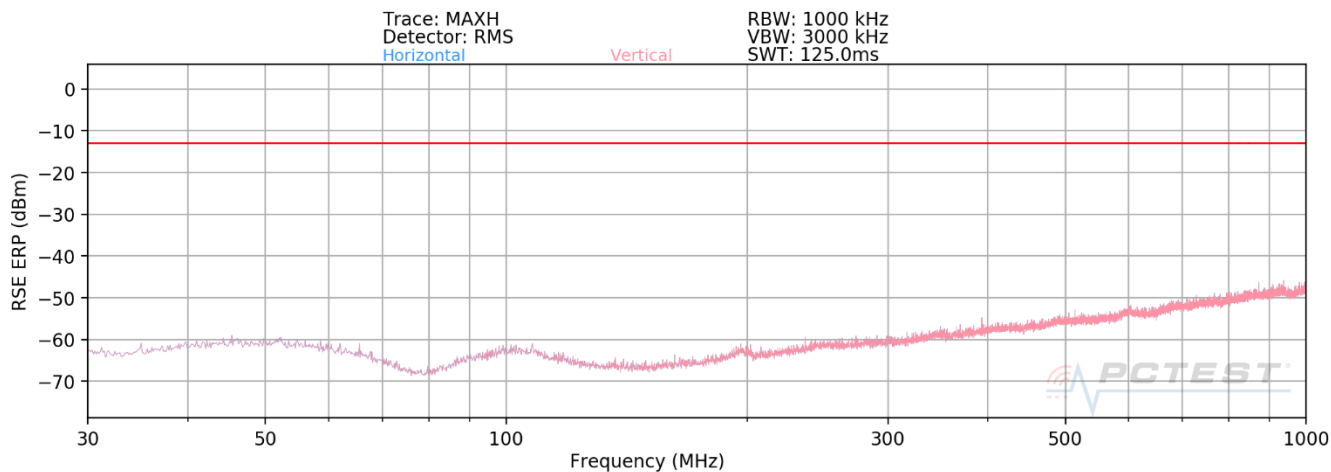
Mode:	GPRS 1 Tx Slot
Channel:	810
Frequency (MHz):	1909.8

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]
3819.60	H	101	265	-68.76	1.49	39.73	-55.53	-13.00	-42.53
5729.40	H	106	251	-62.04	4.42	49.38	-45.88	-13.00	-32.88
7639.20	H	131	294	-70.30	8.94	45.64	-49.61	-13.00	-36.61
9549.00	H	-	-	-73.07	12.29	46.22	-49.04	-13.00	-36.04
11458.80	H	-	-	-74.21	14.31	47.10	-48.16	-13.00	-35.16
13368.60	H	-	-	-73.92	17.80	50.88	-44.38	-13.00	-31.38
15278.40	H	-	-	-74.24	19.14	51.90	-43.36	-13.00	-30.36

Table 7-40. Radiated Spurious Data (GPRS PCS – High Channel) – HALF OPEN

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204080051-03.A3L	Test Dates: 04/01 - 06/02/2022	EUT Type: Portable Handset	Page 192 of 201

WCDMA PCS

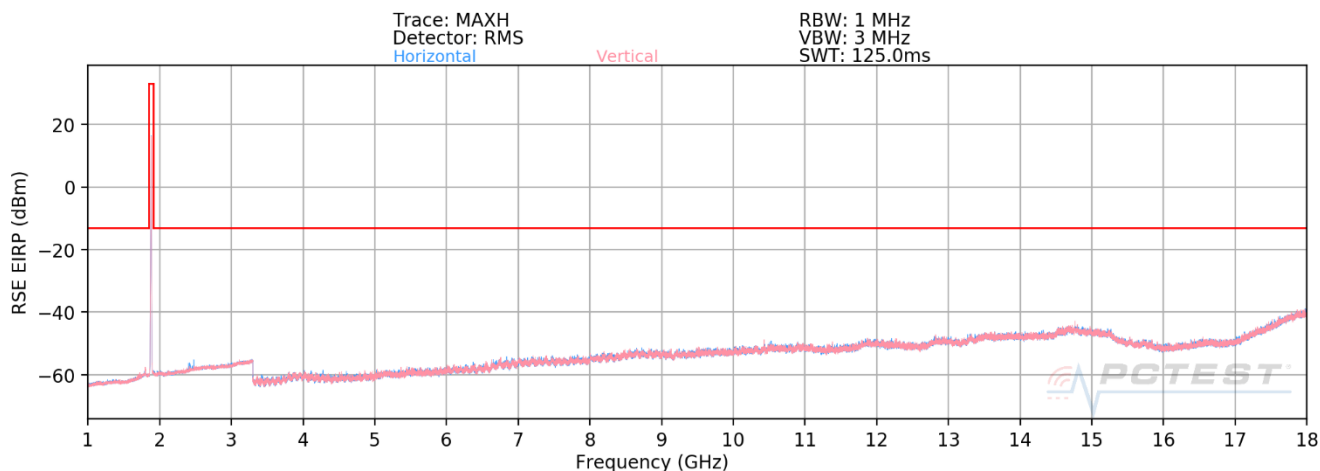


Plot 7-303. Radiated Spurious Plot Below 1GHz (WCDMA PCS) – HALF OPEN

Mode:	WCDMA RMC
Channel:	9400
Frequency (MHz):	1880

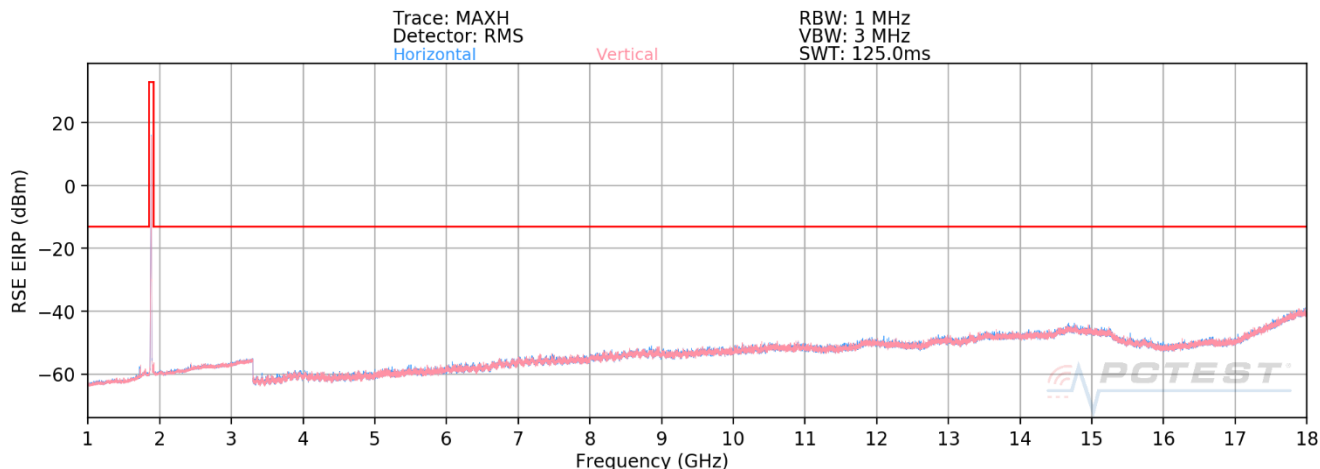
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
937.50	H	-	-	-78.87	25.27	53.40	-41.86	-13.00	-28.86

Table 7-41. Radiated Spurious Data (WCDMA PCS) – HALF OPEN



Plot 7-304. Radiated Spurious Plot Above 1GHz (WCDMA PCS) – HALF OPEN

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-305. Radiated Spurious Plot Above 1GHz (WCDMA PCS) – OPEN

Mode:	WCDMA RMC
Channel:	9262
Frequency (MHz):	1852.4

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]
3704.80	V	-	-	-77.10	0.14	30.04	-65.22	-13.00	-52.22
5557.20	V	248	46	-77.75	4.18	33.43	-61.82	-13.00	-48.82
7409.60	V	266	47	-80.38	9.20	35.82	-59.44	-13.00	-46.44
9262.00	V	-	-	-82.04	12.18	37.14	-58.12	-13.00	-45.12
11114.40	V	-	-	-81.90	14.25	39.35	-55.91	-13.00	-42.91
12966.80	V	-	-	-82.70	17.04	41.34	-53.92	-13.00	-40.92

Table 7-42. Radiated Spurious Data (WCDMA PCS – Low Channel) – HALF OPEN

Mode:	WCDMA RMC
Channel:	9400
Frequency (MHz):	1880

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]
3760.00	V	-	-	-77.57	0.72	30.15	-65.10	-13.00	-52.10
5640.00	V	278	69	-76.96	3.76	33.80	-61.45	-13.00	-48.45
7520.00	V	254	50	-80.62	9.04	35.42	-59.84	-13.00	-46.84
9400.00	V	-	-	-81.26	12.04	37.78	-57.48	-13.00	-44.48
11280.00	V	-	-	-82.31	14.48	39.17	-56.08	-13.00	-43.08
13160.00	V	-	-	-82.86	16.72	40.86	-54.40	-13.00	-41.40

Table 7-43. Radiated Spurious Data (WCDMA PCS – Mid Channel) – HALF OPEN

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode:	WCDMA RMC
Channel:	9538
Frequency (MHz):	1907.6

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]
3815.20	V	-	-	-77.57	1.50	30.93	-64.33	-13.00	-51.33
5722.80	V	300	81	-77.08	4.36	34.28	-60.98	-13.00	-47.98
7630.40	V	316	59	-79.89	8.91	36.02	-59.24	-13.00	-46.24
9538.00	V	-	-	-81.71	12.49	37.78	-57.47	-13.00	-44.47
11445.60	V	-	-	-82.53	14.97	39.44	-55.82	-13.00	-42.82
13353.20	V	-	-	-83.47	17.92	41.45	-53.81	-13.00	-40.81

Table 7-44. Radiated Spurious Data (WCDMA PCS – High Channel) – HALF OPEN

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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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.

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

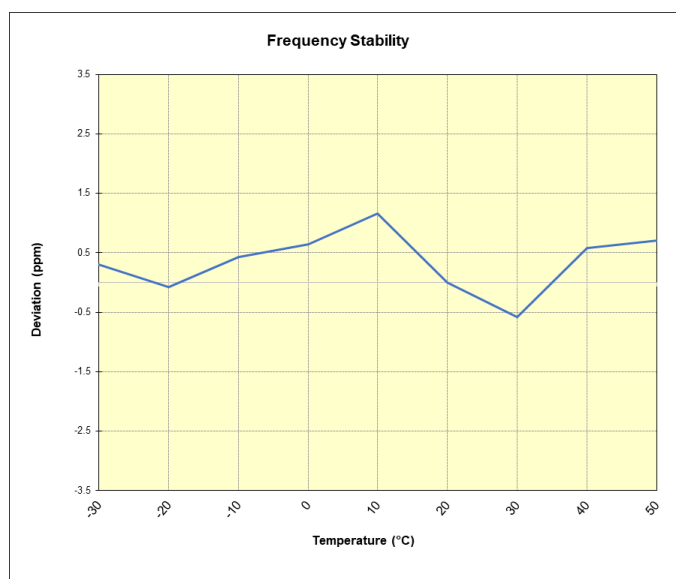
None

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 25/2

LTE Band 25/2					
		Operating Frequency (Hz):		1,882,500,000	
		Ref. Voltage (VDC):		4.25	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,882,499,465	562	0.0000299
		- 20	1,882,498,772	-131	-0.0000070
		- 10	1,882,499,715	812	0.0000431
		0	1,882,500,117	1,214	0.0000645
		+ 10	1,882,501,097	2,194	0.0001165
		+ 20 (Ref)	1,882,498,903	0	0.0000000
		+ 30	1,882,497,817	-1,086	-0.0000577
		+ 40	1,882,500,003	1,100	0.0000584
		+ 50	1,882,500,239	1,336	0.0000710
Battery Endpoint	3.58	+ 20	1,882,499,755	852	0.0000453

Table 7-45. LTE Band 25/2 Frequency Stability Data



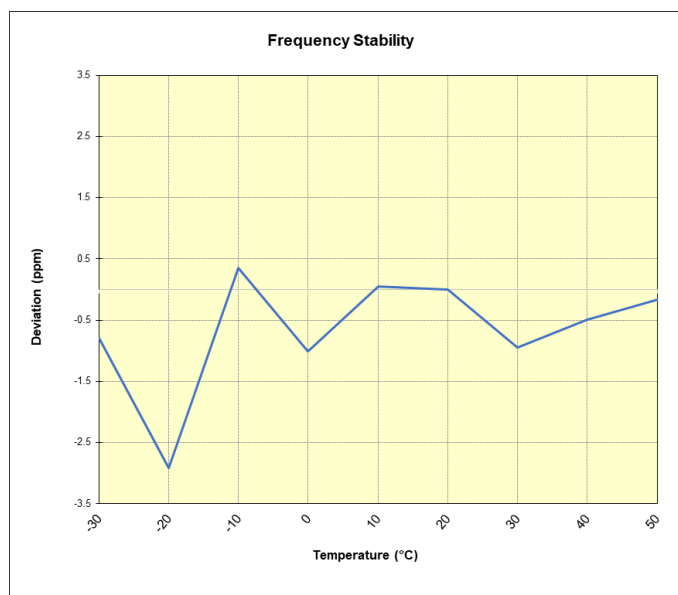
Plot 7-306. LTE Band 25/2 Frequency Stability Chart

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n25/2

NR Band n25/2					
		Operating Frequency (Hz):		1,882,500,000	
		Ref. Voltage (VDC):		4.25	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,882,486,107	-1,488	-0.0000790
		- 20	1,882,482,117	-5,478	-0.0002910
		- 10	1,882,488,269	674	0.0000358
		0	1,882,485,689	-1,906	-0.0001012
		+ 10	1,882,487,686	91	0.0000048
		+ 20 (Ref)	1,882,487,595	0	0.0000000
		+ 30	1,882,485,812	-1,783	-0.0000947
		+ 40	1,882,486,672	-923	-0.0000490
		+ 50	1,882,487,290	-305	-0.0000162
Battery Endpoint	3.58	+ 20	1,882,488,361	766	0.0000407

Table 7-46. NR Band n25/2 Frequency Stability Data

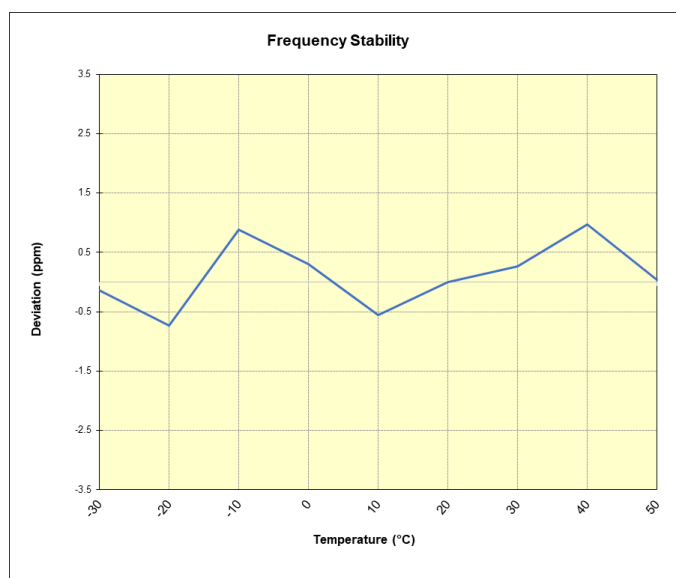


Plot 7-307. NR Band n25/2 Frequency Stability Chart

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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GSM/GPRS PCS					
		Operating Frequency (Hz):		1,880,000,000	
		Ref. Voltage (VDC):		4.25	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,879,999,300	-250	-0.0000133
		- 20	1,879,998,166	-1,383	-0.0000736
		- 10	1,880,001,220	1,671	0.0000889
		0	1,880,000,110	561	0.0000298
		+ 10	1,879,998,510	-1,039	-0.0000553
		+ 20 (Ref)	1,879,999,549	0	0.0000000
		+ 30	1,880,000,049	500	0.0000266
		+ 40	1,880,001,379	1,830	0.0000973
		+ 50	1,879,999,630	81	0.0000043
Battery Endpoint	3.58	+ 20	1,879,999,299	-250	-0.0000133

Table 7-47. GSM/GPRS PCS Frequency Stability Data



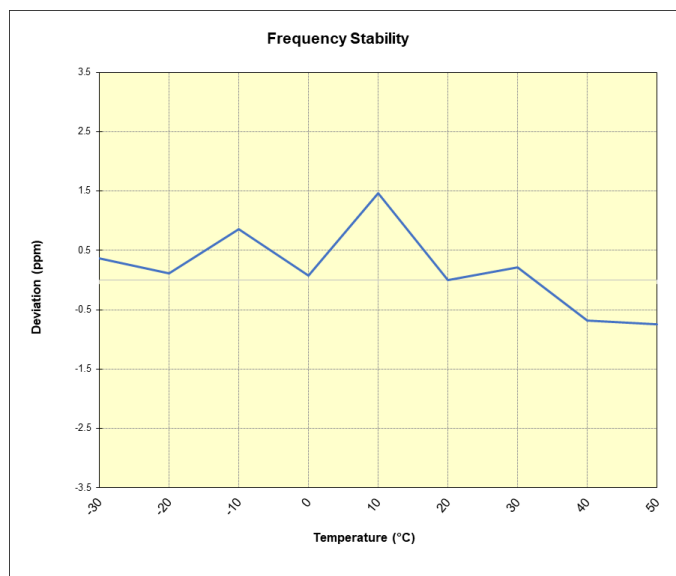
Plot 7-308. GSM/GPRS PCS Frequency Stability Chart

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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WCDMA PCS

WCDMA PCS					
		Operating Frequency (Hz):		1,880,000,000	
		Ref. Voltage (VDC):		4.25	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.25	- 30	1,880,002,136	700	0.0000372
		- 20	1,880,001,657	221	0.0000118
		- 10	1,880,003,062	1,626	0.0000865
		0	1,880,001,587	151	0.0000080
		+ 10	1,880,004,195	2,759	0.0001468
		+ 20 (Ref)	1,880,001,436	0	0.0000000
		+ 30	1,880,001,843	407	0.0000216
		+ 40	1,880,000,156	-1,280	-0.0000681
		+ 50	1,880,000,045	-1,391	-0.0000740
Battery Endpoint	3.58	+ 20	1,880,002,760	1,324	0.0000704

Table 7-48. WCDMA PCS Frequency Stability Data



Plot 7-309. WCDMA PCS Frequency Stability Chart

FCC ID: A3LSMF721U	PART 24 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: A3LSMF721U** complies with all the requirements of Part 24 of the FCC rules.

FCC ID: A3LSMF721U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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