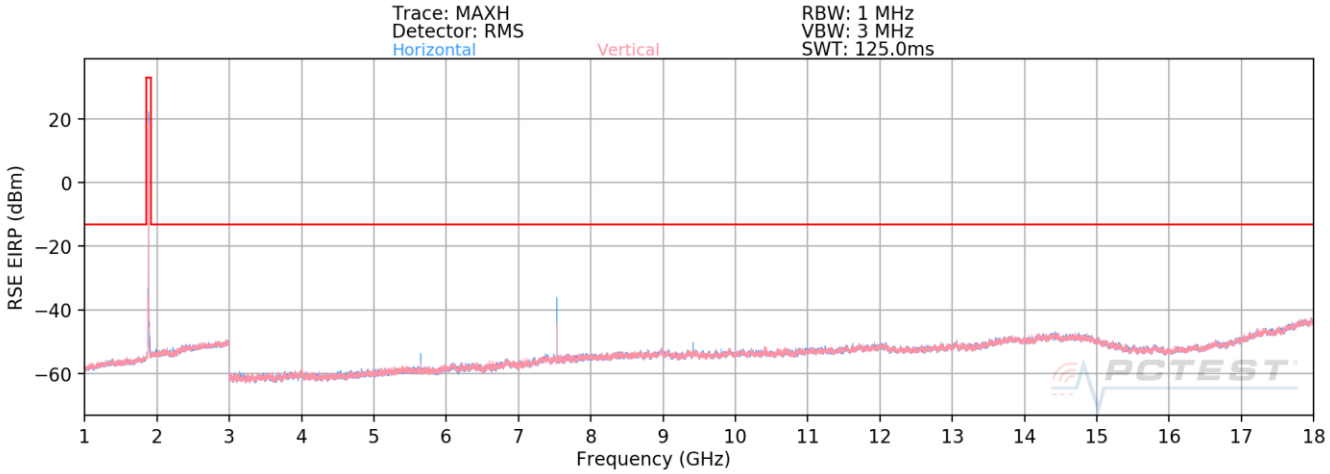
LTE Band 25/2



Plot 7-203. Radiated Spurious Plot (LTE Band 25/2)

Bandwidth (MHz):	20
Frequency (MHz):	1860.0
RB / Offset:	1 / 50

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	H	321	332	-77.15	2.45	32.30	-62.96	-13.00	-49.96
5580.0	H	131	340	-76.64	5.06	35.42	-59.83	-13.00	-46.83
7440.0	H	259	27	-61.56	8.98	54.42	-40.84	-13.00	-27.84
9300.0	H	185	333	-73.89	10.94	44.05	-51.21	-13.00	-38.21
11160.0	H	132	1	-80.07	12.64	39.57	-55.68	-13.00	-42.68
13020.0	H	-	-	-81.30	15.04	40.74	-54.52	-13.00	-41.52
14880.0	H	-	-	-81.07	17.67	43.60	-51.66	-13.00	-38.66

Table 7-16. Radiated Spurious Data (LTE Band 25/2 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	1882.5
RB / Offset:	1 / 50

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]
3765.0	H	302	320	-77.19	2.86	32.67	-62.59	-13.00	-49.59
5647.5	H	211	330	-74.65	5.01	37.36	-57.90	-13.00	-44.90
7530.0	H	130	25	-56.87	9.39	59.52	-35.74	-13.00	-22.74
9412.5	H	279	34	-76.58	11.98	42.40	-52.86	-13.00	-39.86
11295.0	H	151	54	-79.24	12.95	40.71	-54.55	-13.00	-41.55
13177.5	H	-	-	-81.11	14.73	40.62	-54.64	-13.00	-41.64
15060.0	H	138	341	-80.65	15.81	42.16	-53.09	-13.00	-40.09
16942.5	H	-	-	-81.37	16.92	42.55	-52.70	-13.00	-39.70

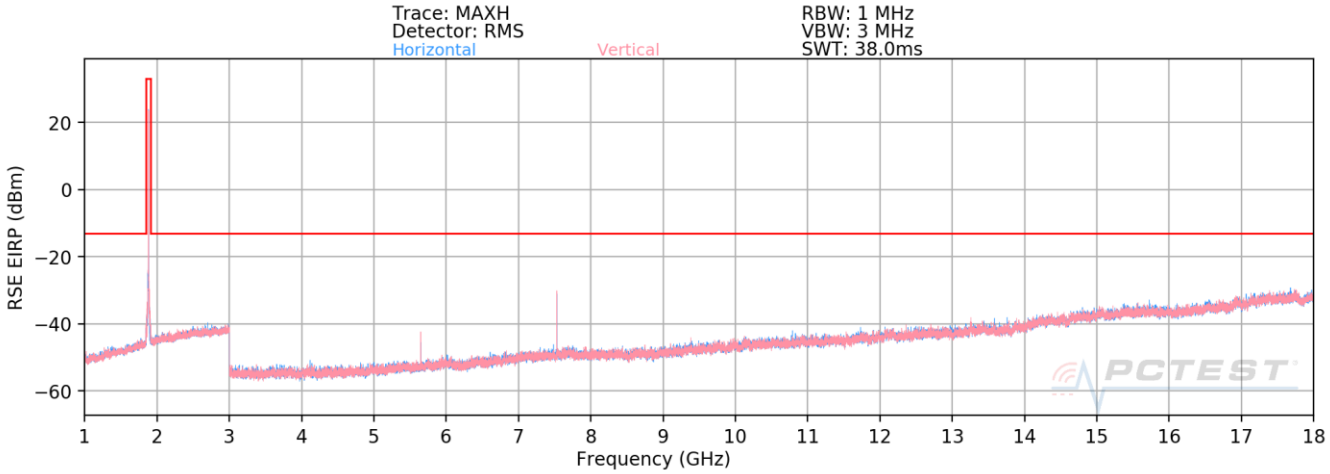
Table 7-17. Radiated Spurious Data (LTE Band 25/2 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	1905.0
RB / Offset:	1 / 50

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]
3810.00	H	199	343	-77.00	2.47	32.47	-62.79	-13.00	-49.79
5715.00	H	162	330	-74.16	4.83	37.67	-57.59	-13.00	-44.59
7620.00	H	135	18	-57.70	9.42	58.72	-36.53	-13.00	-23.53
9525.00	H	164	28	-76.44	11.34	41.90	-53.35	-13.00	-40.35
11430.00	H	120	358	-77.96	13.42	42.46	-52.80	-13.00	-39.80
13335.00	H	-	-	-80.73	14.76	41.03	-54.23	-13.00	-41.23
15240.00	H	127	349	-79.39	14.88	42.49	-52.76	-13.00	-39.76
17145.00	H	-	-	-81.40	18.33	43.93	-51.33	-13.00	-38.33

Table 7-18. Radiated Spurious Data (LTE Band 25/2 – High Channel)

NR Band n25/n2



Plot 7-204. Radiated Spurious Plot (NR Band n25/n2)

Bandwidth (MHz):	20
Frequency (MHz):	1860.0
RB / Offset:	1 / 104
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]
5580.0	H	120	14	-75.65	11.90	43.25	-52.01	-13.00	-39.01
7440.0	H	295	299	-65.09	16.00	57.91	-37.35	-13.00	-24.35
9300.0	H	-	-	-84.31	18.79	41.48	-53.78	-13.00	-40.78

Table 7-19. Radiated Spurious Data (NR Band n25/n2 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	1882.5
RB / Offset:	1 / 104
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]
3765.0	H	-	-	-80.88	8.39	34.51	-60.75	-13.00	-47.75
5647.5	H	103	21	-72.98	11.24	45.26	-50.00	-13.00	-37.00
7530.0	H	272	345	-61.92	16.04	61.12	-34.14	-13.00	-21.14
9412.5	H	103	0	-81.74	18.81	44.07	-51.19	-13.00	-38.19
11295.0	H	245	87	-84.18	21.39	44.21	-51.04	-13.00	-38.04
13177.5	H	-	-	-84.92	24.54	46.62	-48.63	-13.00	-35.63

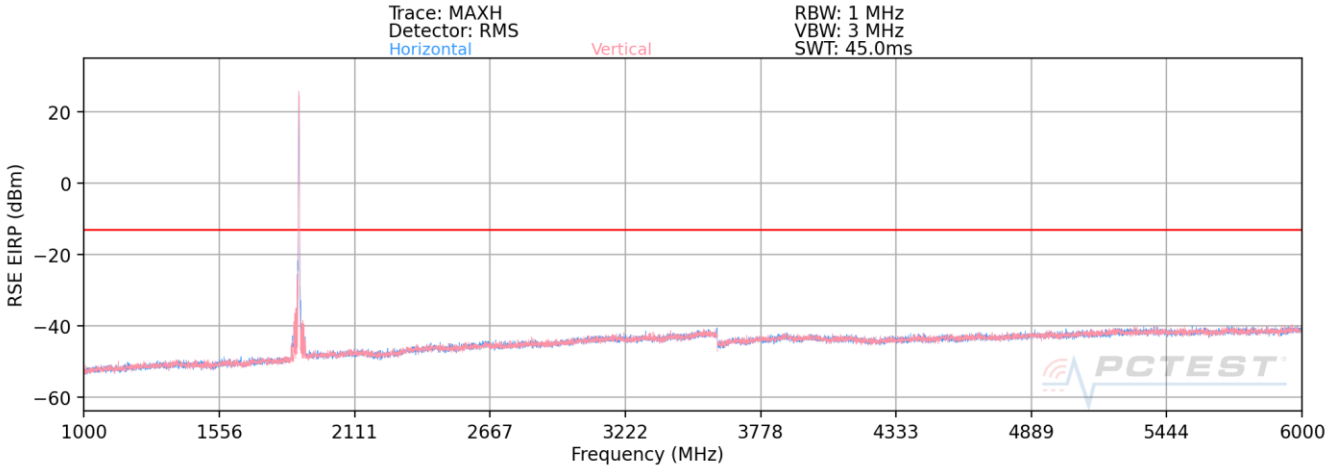
Table 7-20. Radiated Spurious Data (NR Band n25/n2 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	1905.0
RB / Offset:	1 / 104
Mode:	Standalone

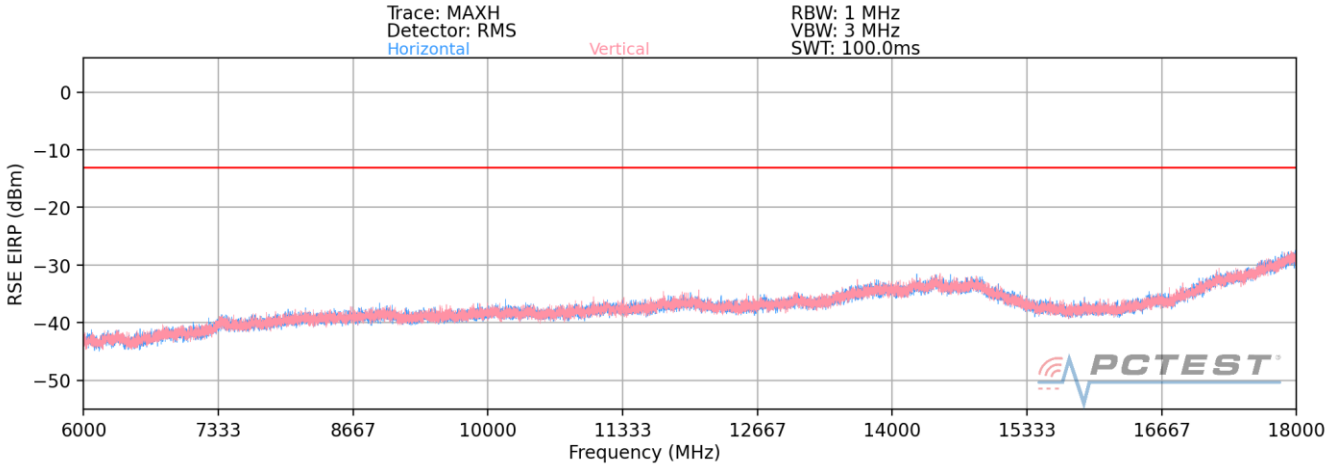
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3810.0	H	-	-	-80.52	8.37	34.85	-60.40	-13.00	-47.40
5715.0	H	101	30	-70.33	11.57	48.24	-47.02	-13.00	-34.02
7620.0	H	100	342	-59.37	16.56	64.19	-31.07	-13.00	-18.07
9525.0	H	265	71	-82.84	18.75	42.91	-52.35	-13.00	-39.35

Table 7-21. Radiated Spurious Data (NR Band n25/n2 – High Channel)

NR Band n2 – B13



Plot 7-205. Radiated Spurious Plot (NR Band n2-B13)



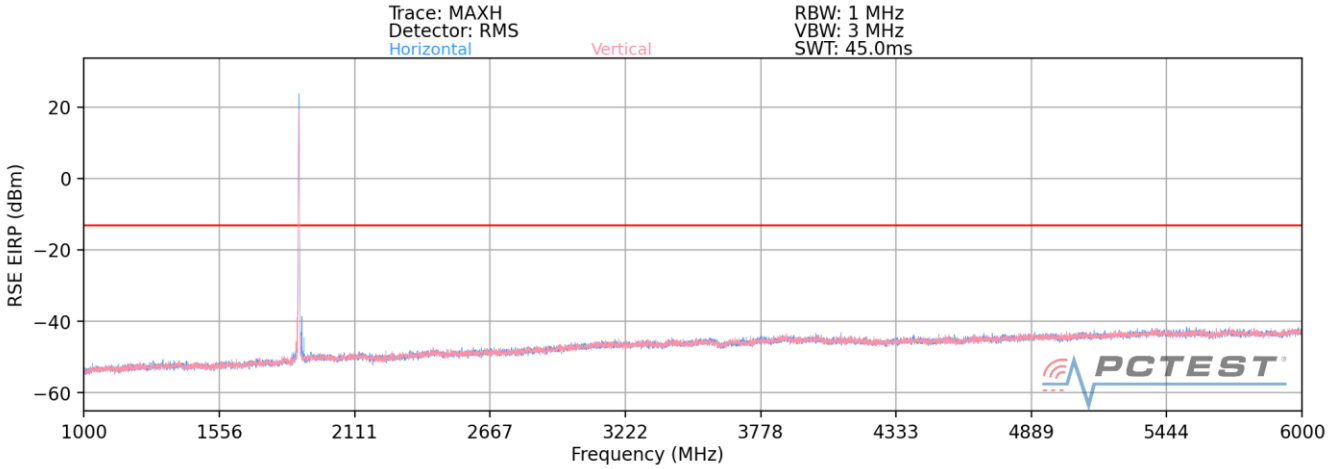
Plot 7-206. Radiated Spurious Plot (NR Band n2-B13)

Case:	ENDC
Bandwidth (MHz):	20/10
Frequency (MHz):	1882.5 / 782
RB / Offset:	1-53 / 1-25
Mode:	EN-DC
Anchor Band:	B13

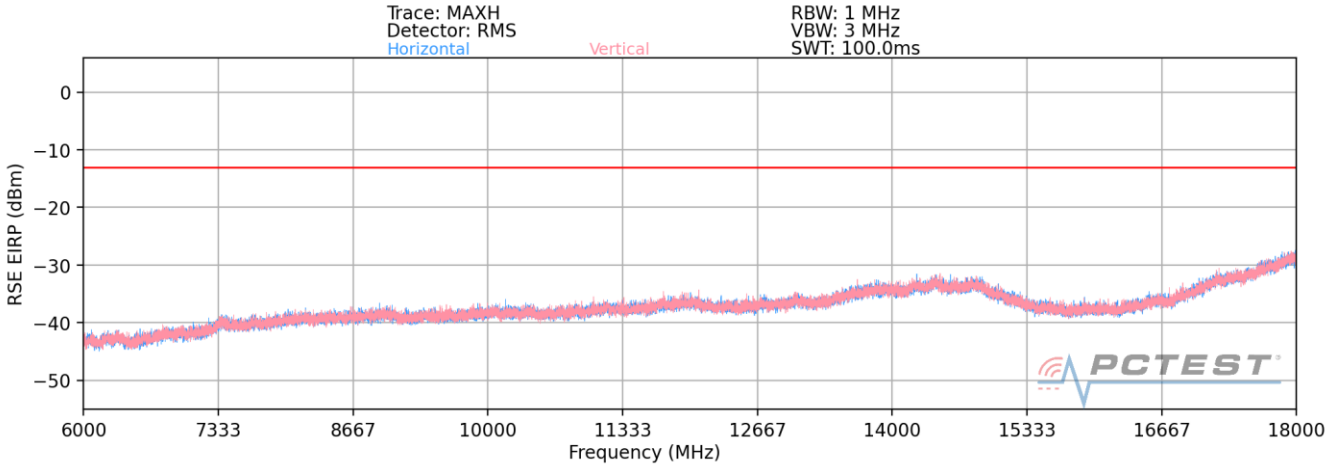
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1419.0	V	-	-	-73.90	3.01	36.11	-59.14	-13.00	-46.14
2519.5	V	-	-	-74.15	6.85	39.70	-55.55	-13.00	-42.55
2983.0	V	-	-	-75.04	8.89	40.85	-54.41	-13.00	-41.41
3620.0	V	-	-	-75.11	10.63	42.52	-52.73	-13.00	-39.73
4083.0	V	-	-	-76.01	11.64	42.63	-52.63	-13.00	-39.63

Table 7-22. Radiated Spurious Data (NR Band n2-B13)

NR Band n25 – B12



Plot 7-207. Radiated Spurious Plot (NR Band n25-B12)



Plot 7-208. Radiated Spurious Plot (NR Band n25-B12)

Case:	EN-DC
Bandwidth (MHz):	20/10
Frequency (MHz):	1882.5 / 707.5
RB / Offset:	1-53 / 1-25
Mode:	EN-DC
Anchor Band:	B12

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]
1642.5	V	-	-	-74.32	3.46	36.14	-59.12	-13.00	-46.12
2817.5	V	-	-	-75.01	7.81	39.80	-55.46	-13.00	-42.46
3057.5	V	-	-	-75.14	9.22	41.08	-54.18	-13.00	-41.18
3992.5	V	-	-	-76.21	12.00	42.79	-52.46	-13.00	-39.46

Table 7-23. Radiated Spurious Data (NR Band n25-B12)

7.8 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

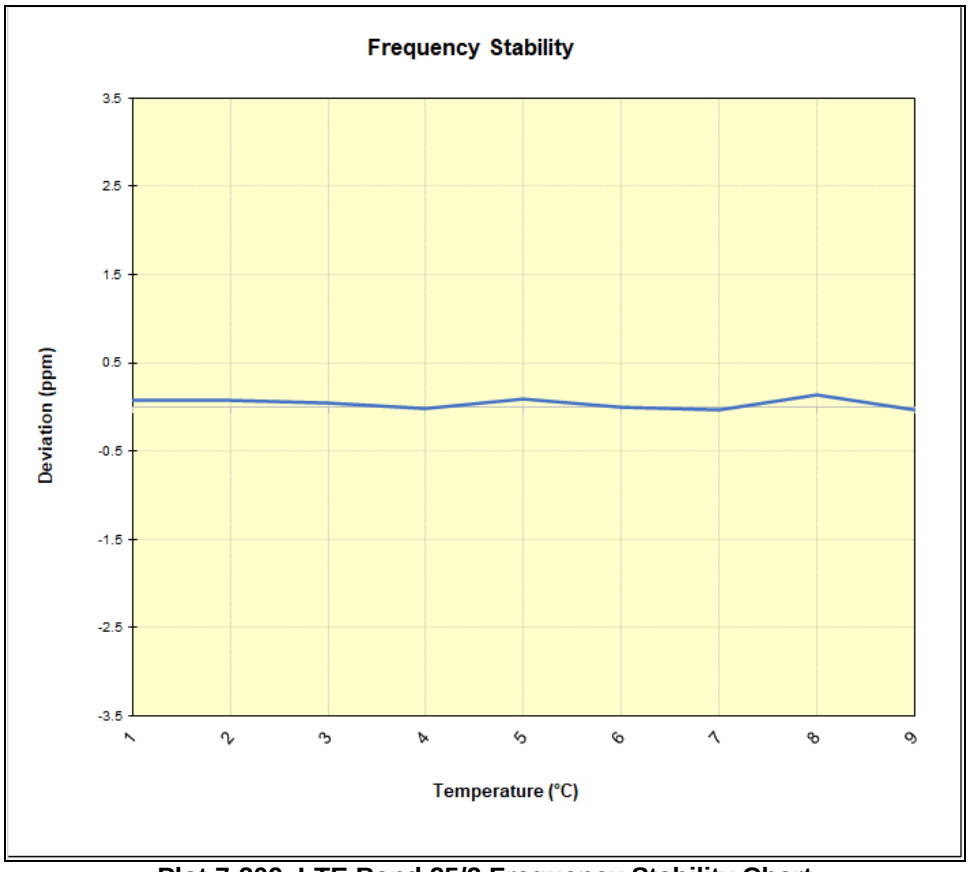
None

LTE Band 25/2

Operating Frequency (Hz):	1,882,500,000
Ref. Voltage (VDC):	4.31

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	1,882,500,141	138	0.0000073
		- 20	1,882,500,139	136	0.0000072
		- 10	1,882,500,100	97	0.0000052
		0	1,882,499,977	-26	-0.0000014
		+ 10	1,882,500,174	171	0.0000091
		+ 20 (Ref)	1,882,500,003	0	0.0000000
		+ 30	1,882,499,939	-64	-0.0000034
		+ 40	1,882,500,276	273	0.0000145
		+ 50	1,882,499,944	-59	-0.0000031
Battery Endpoint	3.51	+ 20	1,882,500,247	244	0.0000130

Table 7-24. LTE Band 25/2 Frequency Stability Data



Plot 7-209. LTE Band 25/2 Frequency Stability Chart

NR Band n25/n2

Operating Frequency (Hz):	1,882,500,000
Ref. Voltage (VDC):	4.31

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	1,882,499,898	-95	-0.0000050
		- 20	1,882,499,921	-72	-0.0000038
		- 10	1,882,500,170	177	0.0000094
		0	1,882,500,251	258	0.0000137
		+ 10	1,882,500,282	289	0.0000154
		+ 20 (Ref)	1,882,499,993	0	0.0000000
		+ 30	1,882,500,094	101	0.0000054
		+ 40	1,882,500,431	438	0.0000233
		+ 50	1,882,500,246	253	0.0000134
Battery Endpoint	3.51	+ 20	1,882,500,221	228	0.0000121

Table 7-25. NR Band n25/n2 Frequency Stability Data

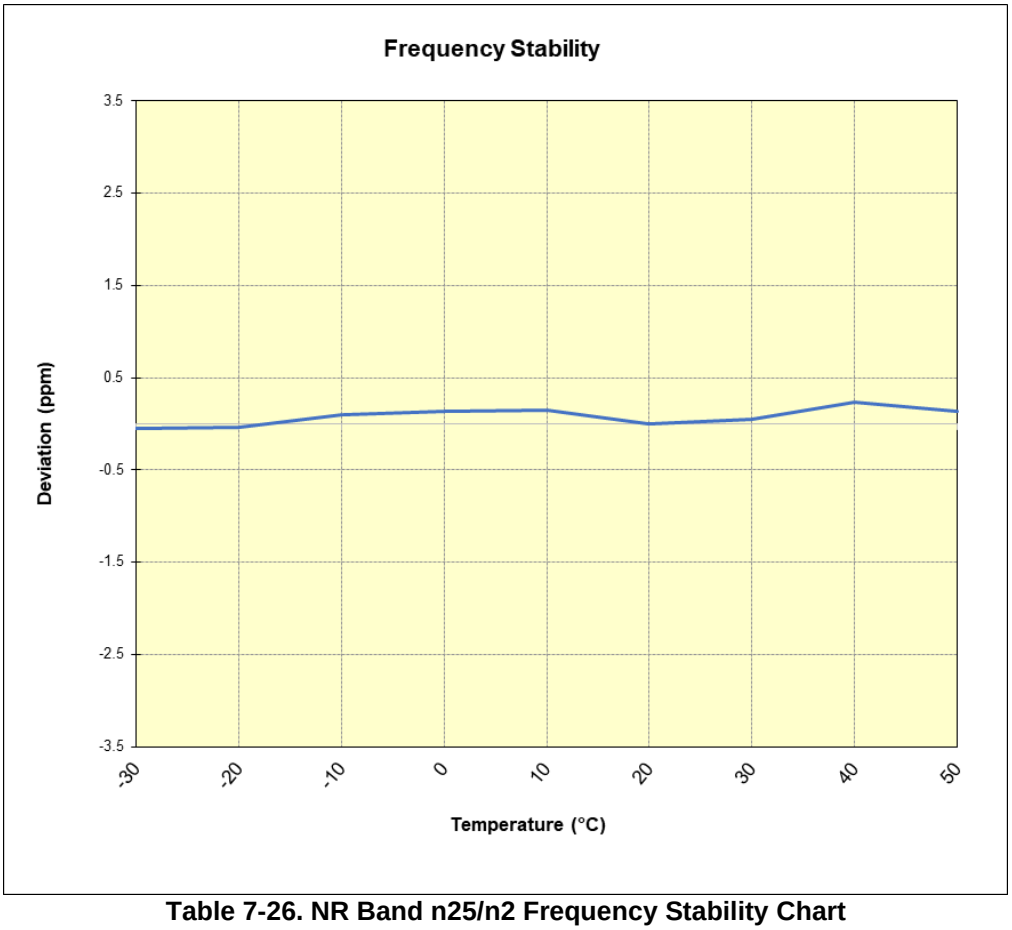


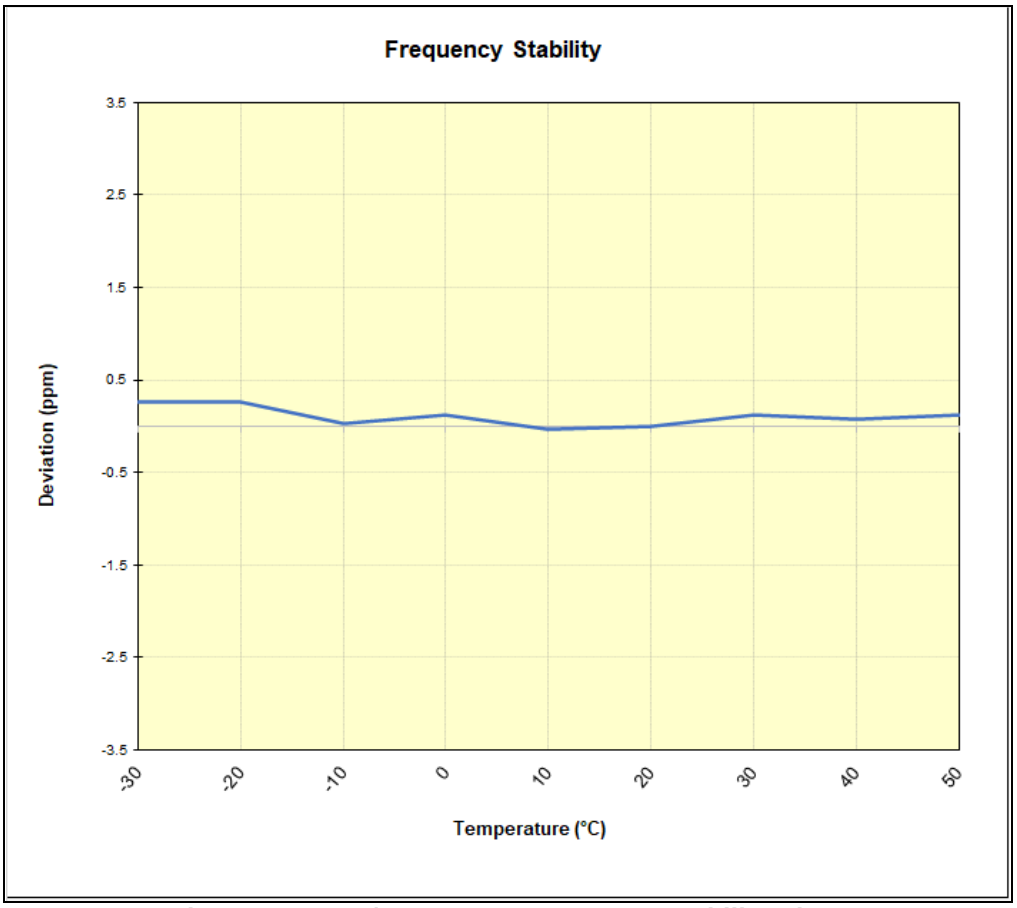
Table 7-26. NR Band n25/n2 Frequency Stability Chart

GSM/GPRS PCS

Operating Frequency (Hz):	1,880,000,000
Ref. Voltage (VDC):	4.31

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	1,880,000,300	489	0.0000260
		- 20	1,880,000,293	482	0.0000256
		- 10	1,879,999,870	59	0.0000031
		0	1,880,000,046	235	0.0000125
		+ 10	1,879,999,753	-58	-0.0000031
		+ 20 (Ref)	1,879,999,811	0	0.0000000
		+ 30	1,880,000,057	246	0.0000131
		+ 40	1,879,999,951	140	0.0000074
		+ 50	1,880,000,057	246	0.0000131
Battery Endpoint	3.51	+ 20	1,880,000,067	256	0.0000136

Table 7-27. GSM/GPRS PCS Frequency Stability Data



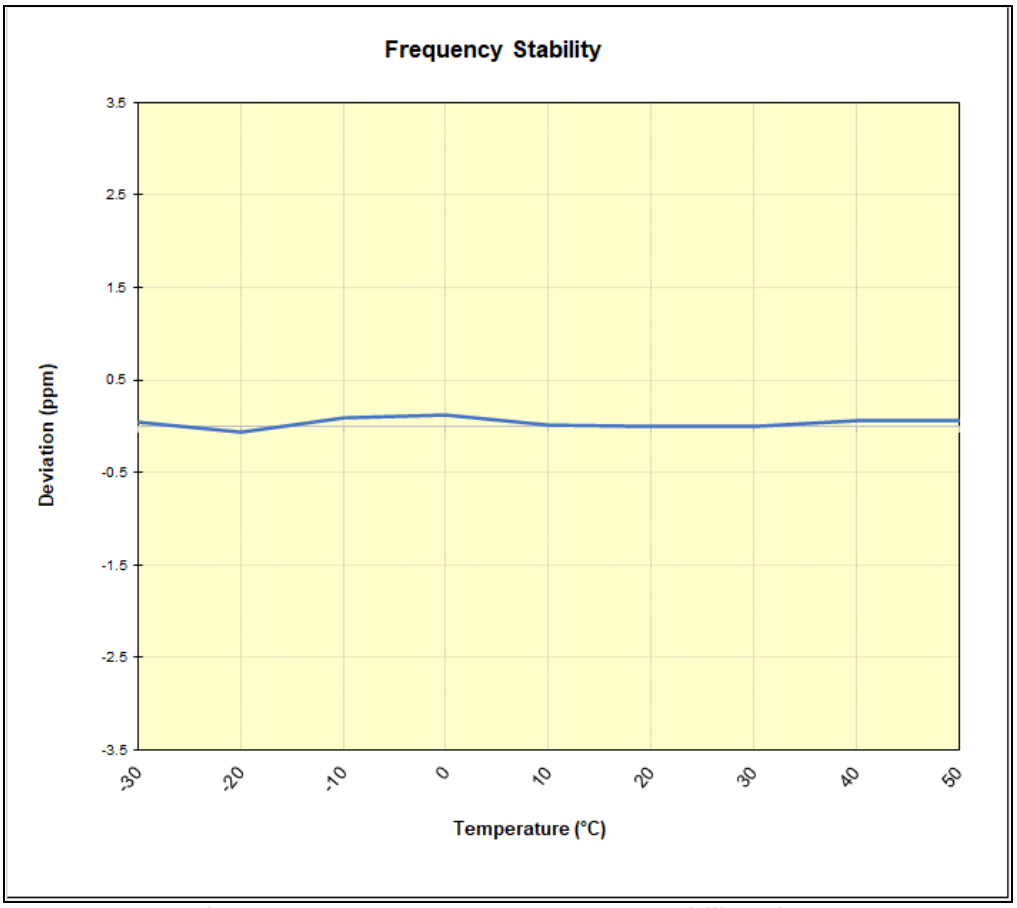
Plot 7-210. GSM/GPRS PCS Frequency Stability Chart

WCDMA PCS

Operating Frequency (Hz):	1,880,000,000
Ref. Voltage (VDC):	4.31

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	1,879,999,952	75	0.0000040
		- 20	1,879,999,756	-121	-0.0000064
		- 10	1,880,000,053	176	0.0000094
		0	1,880,000,117	240	0.0000128
		+ 10	1,879,999,906	29	0.0000015
		+ 20 (Ref)	1,879,999,877	0	0.0000000
		+ 30	1,879,999,881	4	0.0000002
		+ 40	1,879,999,981	104	0.0000055
		+ 50	1,879,999,983	106	0.0000056
Battery Endpoint	3.51	+ 20	1,879,999,896	19	0.0000010

Table 7-28. WCDMA PCS Frequency Stability Data



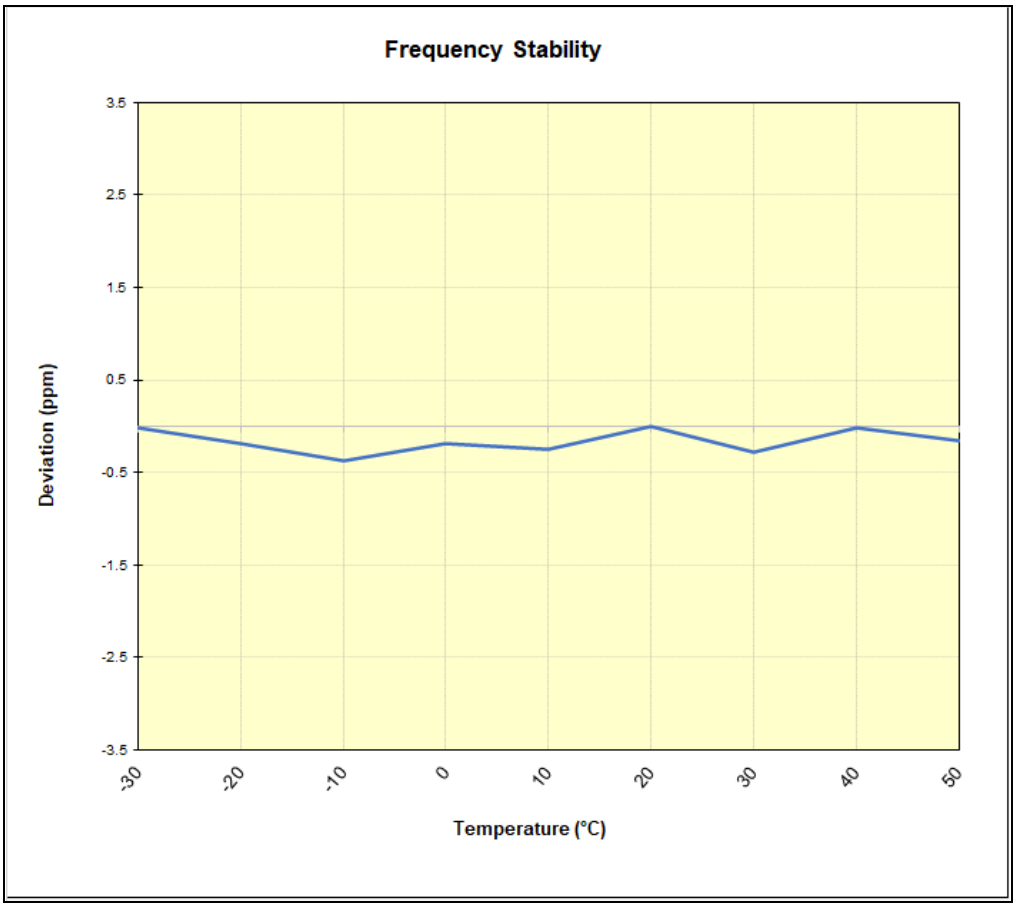
Plot 7-211. WCDMA PCS Frequency Stability Chart

CDMA PCS

Operating Frequency (Hz):	1,880,000,000
Ref. Voltage (VDC):	4.31

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	1,880,000,276	-43	-0.0000023
		- 20	1,879,999,963	-356	-0.0000189
		- 10	1,879,999,634	-685	-0.0000364
		0	1,879,999,962	-357	-0.0000190
		+ 10	1,879,999,860	-459	-0.0000244
		+ 20 (Ref)	1,880,000,319	0	0.0000000
		+ 30	1,879,999,784	-535	-0.0000285
		+ 40	1,880,000,281	-38	-0.0000020
		+ 50	1,880,000,031	-288	-0.0000153
Battery Endpoint	3.51	+ 20	1,880,000,017	-302	-0.0000161

Table 7-29. CDMA PCS Frequency Stability Data



Plot 7-212. CDMA PCS Frequency Stability Chart

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the Samsung **Portable Handset FCC ID: A3LSMA426U** complies with all the requirements of Part 24 of the FCC rules.