Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

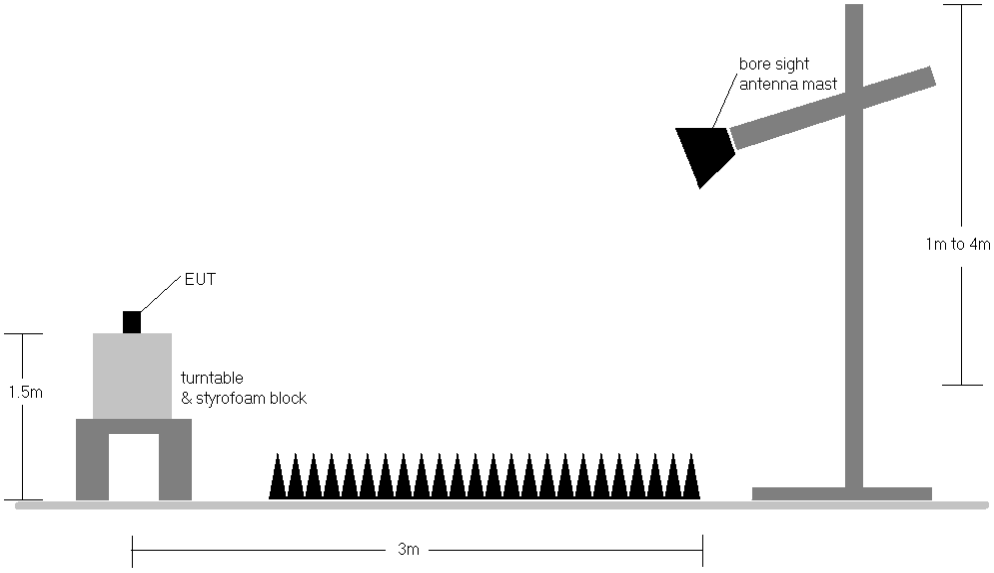

Figure 7-7. Test Instrument & Measurement Setup

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) This unit was tested with its standard battery.

3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Band 71

OPERATING FREQUENCY:	668.00	MHz
CHANNEL:	133222	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1336.00	V	150	7	-57.73	3.88	-53.84	-40.8
2004.00	V	-	-	-65.66	4.74	-60.92	-47.9

Table 7-10. Radiated Spurious Data (Band 71 – Low Channel)

OPERATING FREQUENCY:	680.50	MHz
CHANNEL:	133297	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	V	150	0	-57.14	3.90	-53.24	-40.2
2041.50	V	-	-	-66.24	4.78	-61.47	-48.5

Table 7-11. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY:	693.00	MHz
CHANNEL:	133372	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1386.00	V	150	9	-57.64	3.82	-53.83	-40.8
2079.00	V	-	-	-67.22	4.80	-62.42	-49.4

Table 7-12. Radiated Spurious Data (Band 71 – High Channel)

Band 12

OPERATING FREQUENCY:	704.00	MHz
CHANNEL:	23060	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1408.00	V	-	-	-54.83	3.84	-50.99	-38.0
2112.00	V	-	-	-53.91	4.79	-49.11	-36.1

Table 7-13. Radiated Spurious Data (Band 12 – Low Channel)

OPERATING FREQUENCY:	707.50	MHz
CHANNEL:	23095	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	V	-	-	-58.26	3.90	-54.35	-41.4
2122.50	V	-	-	-53.94	4.78	-49.16	-36.2
2830.00	V	-	-	-62.05	5.73	-56.32	-43.3

Table 7-14. Radiated Spurious Data (Band 12 – Mid Channel)

OPERATING FREQUENCY:	711.00	MHz
CHANNEL:	23130	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1422.00	V	-	-	-56.12	3.97	-52.15	-39.2
2133.00	V	-	-	-57.28	4.78	-52.51	-39.5
2844.00	V	-	-	-62.96	5.77	-57.19	-44.2

Table 7-15. Radiated Spurious Data (Band 12 – High Channel)

Band 13

OPERATING FREQUENCY:	782.00	MHz
CHANNEL:	23230	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	V	-	-	-58.25	4.88	-53.37	-40.4
3128.00	V	-	-	-55.93	6.02	-49.91	-36.9
3910.00	V	-	-	-56.77	7.25	-49.52	-36.5

Table 7-16. Radiated Spurious Data (Band 13 – Mid Channel)

MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1564.00	V	-	-	-59.71	4.50	-55.22	-15.2

Table 7-17. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

Band 5

OPERATING FREQUENCY:	829.00	MHz
CHANNEL:	20450	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	V	-	-	-56.25	4.83	-51.42	-38.4
2487.00	V	-	-	-56.93	5.02	-51.90	-38.9

Table 7-18. Radiated Spurious Data (Band 5 – Low Channel)

OPERATING FREQUENCY:	836.50	MHz
CHANNEL:	20525	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	V	-	-	-55.79	4.86	-50.92	-37.9
2509.50	V	-	-	-57.29	5.10	-52.19	-39.2

Table 7-19. Radiated Spurious Data (Band 5 – Mid Channel)

OPERATING FREQUENCY:	844.00	MHz
CHANNEL:	20600	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	V	-	-	-59.84	4.89	-54.95	-41.9
2532.00	V	-	-	-56.39	5.21	-51.18	-38.2

Table 7-20. Radiated Spurious Data (Band 5 – High Channel)

Band 4/66

OPERATING FREQUENCY:	1715.00	MHz
CHANNEL:	132022	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3430.00	H	150	21	-58.00	6.49	-51.51	-38.5
5145.00	H	-	-	-62.50	8.43	-54.06	-41.1

Table 7-21. Radiated Spurious Data (Band 4/66 – Low Channel)

OPERATING FREQUENCY:	1745.00	MHz
CHANNEL:	132322	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	H	150	28	-56.90	6.56	-50.34	-37.3
5235.00	H	-	-	-63.89	8.45	-55.43	-42.4

Table 7-22. Radiated Spurious Data (Band 4/66 – Mid Channel)

OPERATING FREQUENCY:	1775.00	MHz
CHANNEL:	132622	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3550.00	H	150	17	-56.02	6.60	-49.42	-36.4
5325.00	H	-	-	-61.36	8.41	-52.95	-39.9

Table 7-23. Radiated Spurious Data (Band 4/66 – High Channel)

Band 2

OPERATING FREQUENCY:	1855.00	MHz
CHANNEL:	18650	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3710.00	H	150	249	-63.25	6.77	-56.48	-43.5
5565.00	H	-	-	-62.99	8.44	-54.55	-41.6

Table 7-24. Radiated Spurious Data (Band 2 – Low Channel)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	18900	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	H	150	315	-52.89	6.84	-46.05	-33.0
5640.00	H	-	-	-61.67	8.52	-53.16	-40.2

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

OPERATING FREQUENCY:	1905.00	MHz
CHANNEL:	19150	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3810.00	H	150	311	-56.38	6.97	-49.42	-36.4
5715.00	H	-	-	-63.93	8.57	-55.36	-42.4

Table 7-26. Radiated Spurious Data (Band 2 – High Channel)

Band 41

OPERATING FREQUENCY:	2505.00	MHz
CHANNEL:	39740	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5010.00	H	150	104	-50.97	8.34	-42.63	-17.6
7515.00	H	-	-	-53.34	8.44	-44.90	-19.9
10020.00	H	150	241	-52.68	9.87	-42.81	-17.8
12525.00	H	-	-	-48.57	9.34	-39.23	-14.2

Table 7-27. Radiated Spurious Data (Band 41 – Low Channel)

OPERATING FREQUENCY:	2593.00	MHz
CHANNEL:	40620	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	H	-	-	-55.46	8.45	-47.01	-22.0
7779.00	H	-	-	-53.32	8.75	-44.57	-19.6
10372.00	H	-	-	-50.54	9.73	-40.81	-15.8

Table 7-28. Radiated Spurious Data (Band 41 – Mid Channel)

OPERATING FREQUENCY:	2685.00	MHz
CHANNEL:	41540	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5370.00	H	150	259	-48.06	8.40	-39.65	-14.7
8055.00	H	-	-	-52.90	9.21	-43.69	-18.7
10740.00	H	-	-	-50.74	9.51	-41.23	-16.2

Table 7-29. Radiated Spurious Data (Band 41 – High Channel)

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.

For Part 22, RSS-132, RSS-133, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, Part 27, RSS-130, RSS-139, RSS-199, 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

Band 71 Frequency Stability Measurements

OPERATING FREQUENCY:	680,500,000	Hz
CHANNEL:	133297	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	680,499,644	-356	-0.0000523
100 %		- 30	680,500,143	143	0.0000210
100 %		- 20	680,500,186	186	0.0000273
100 %		- 10	680,500,022	22	0.0000032
100 %		0	680,499,724	-276	-0.0000406
100 %		+ 10	680,500,229	229	0.0000337
100 %		+ 20	680,499,907	-93	-0.0000137
100 %		+ 30	680,499,798	-202	-0.0000297
100 %		+ 40	680,500,239	239	0.0000351
100 %		+ 50	680,499,942	-58	-0.0000085
BATT. ENDPOINT	3.40	+ 20	680,499,948	-52	-0.0000076

Table 7-30. Frequency Stability Data (Band 71)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 71 Frequency Stability Measurements

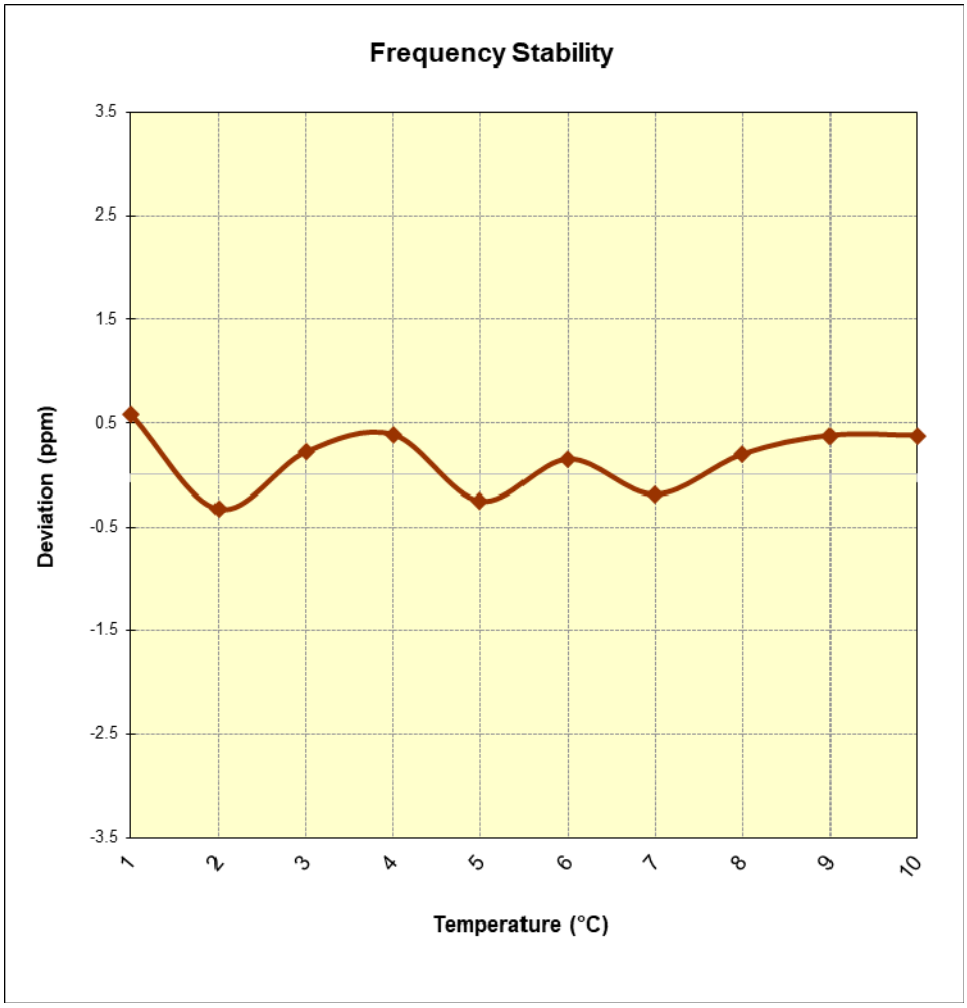

Figure 7-8. Frequency Stability Graph (Band 71)

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY:	707,500,000	Hz
CHANNEL:	23790	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	707,500,412	412	0.0000582
100 %		- 30	707,499,769	-231	-0.0000327
100 %		- 20	707,500,157	157	0.0000222
100 %		- 10	707,500,274	274	0.0000387
100 %		0	707,499,823	-177	-0.0000250
100 %		+ 10	707,500,107	107	0.0000151
100 %		+ 20	707,499,869	-131	-0.0000185
100 %		+ 30	707,500,141	141	0.0000199
100 %		+ 40	707,500,269	269	0.0000380
100 %		+ 50	707,500,269	269	0.0000380
BATT. ENDPOINT	3.40	+ 20	707,500,089	89	0.0000126

Table 7-31. Frequency Stability Data (Band 12)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 12 Frequency Stability Measurements

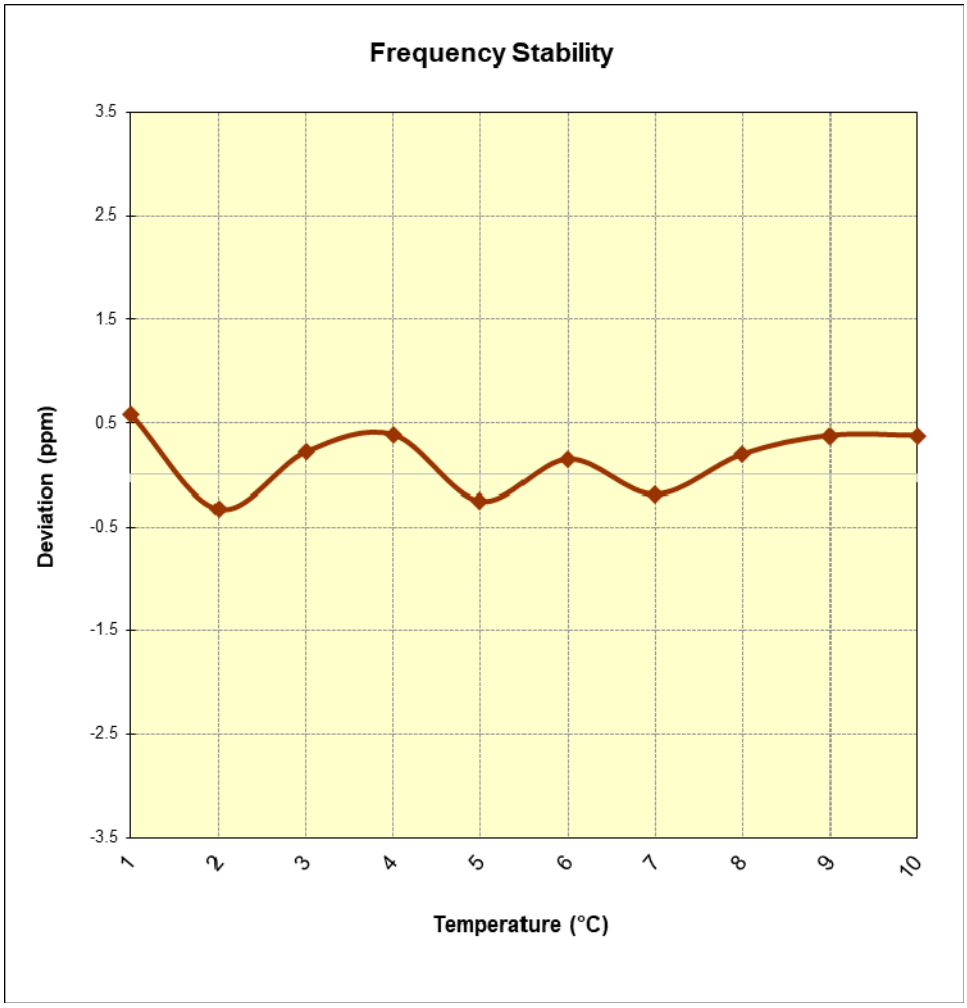

Figure 7-9. Frequency Stability Graph (Band 12)

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY:	782,000,000	Hz
CHANNEL:	23230	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	782,000,021	21	0.0000027
100 %		- 30	781,999,735	-265	-0.0000339
100 %		- 20	781,999,925	-75	-0.0000096
100 %		- 10	782,000,280	280	0.0000358
100 %		0	782,000,043	43	0.0000055
100 %		+ 10	781,999,620	-380	-0.0000486
100 %		+ 20	782,000,207	207	0.0000265
100 %		+ 30	781,999,931	-69	-0.0000088
100 %		+ 40	782,000,042	42	0.0000054
100 %		+ 50	781,999,706	-294	-0.0000376
BATT. ENDPOINT	3.40	+ 20	781,999,781	-219	-0.0000280

Table 7-32. Frequency Stability Data (Band 13)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 13 Frequency Stability Measurements

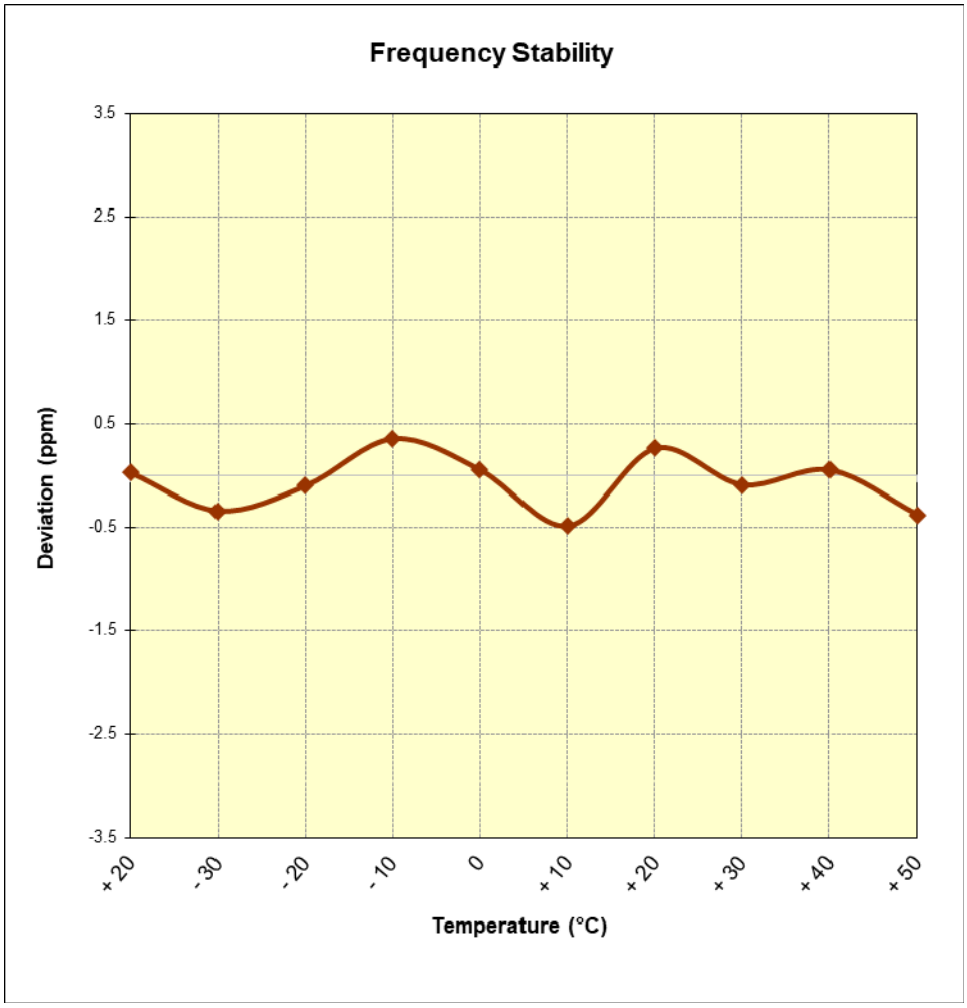

Figure 7-10. Frequency Stability Graph (Band 13)

Band 5 Frequency Stability Measurements

OPERATING FREQUENCY:	836,500,000	Hz
CHANNEL:	20525	
REFERENCE VOLTAGE:	3.85	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	836,500,200	200	0.0000239
100 %		- 30	836,499,569	-431	-0.0000515
100 %		- 20	836,500,059	59	0.0000071
100 %		- 10	836,500,084	84	0.0000100
100 %		0	836,499,781	-219	-0.0000262
100 %		+ 10	836,500,288	288	0.0000344
100 %		+ 20	836,500,291	291	0.0000348
100 %		+ 30	836,499,729	-271	-0.0000324
100 %		+ 40	836,499,974	-26	-0.0000031
100 %		+ 50	836,499,799	-201	-0.0000240
BATT. ENDPOINT	3.40	+ 20	836,500,026	26	0.0000031

Table 7-33. Frequency Stability Data (Band 5)

Band 5 Frequency Stability Measurements

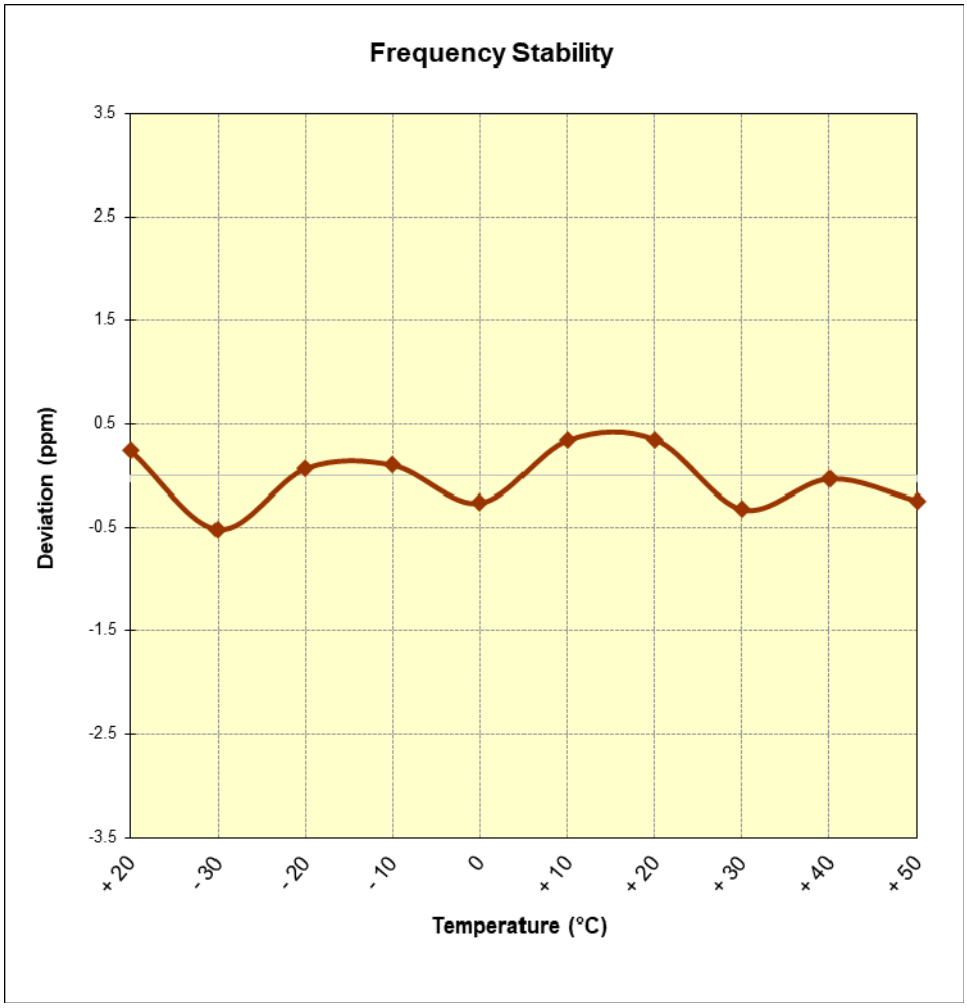

Figure 7-11. Frequency Stability Graph (Band 5)

Band 4/66 Frequency Stability Measurements

OPERATING FREQUENCY:	1,745,000,000	Hz
CHANNEL:	132322	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,744,999,900	-100	-0.0000057
100 %		- 30	1,744,999,951	-49	-0.0000028
100 %		- 20	1,744,999,981	-19	-0.0000011
100 %		- 10	1,744,999,937	-63	-0.0000036
100 %		0	1,745,000,441	441	0.0000253
100 %		+ 10	1,745,000,112	112	0.0000064
100 %		+ 20	1,745,000,088	88	0.0000050
100 %		+ 30	1,745,000,356	356	0.0000204
100 %		+ 40	1,745,000,082	82	0.0000047
100 %		+ 50	1,744,999,993	-7	-0.0000004
BATT. ENDPOINT	3.40	+ 20	1,744,999,816	-184	-0.0000105

Table 7-34. Frequency Stability Data (Band 4/66)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 4/66 Frequency Stability Measurements

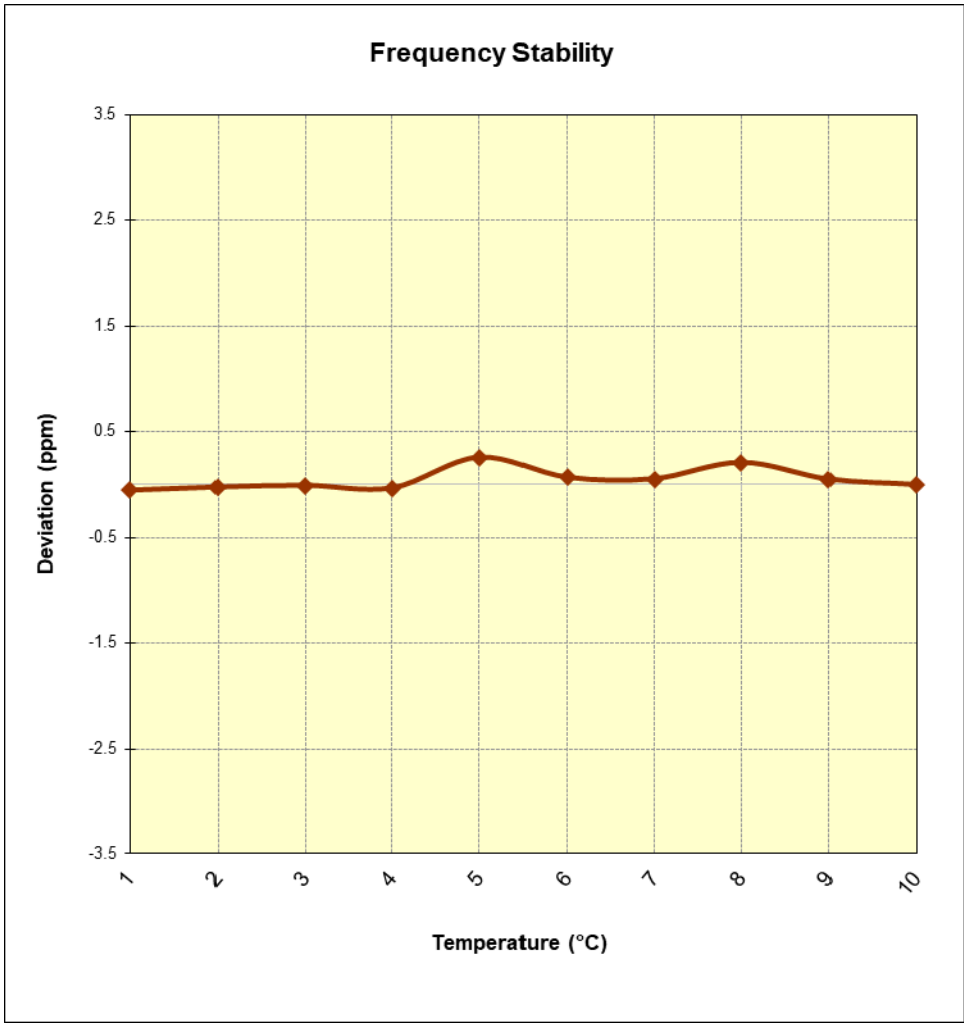

Figure 7-12. Frequency Stability Graph (Band 4/66)

Band 2 Frequency Stability Measurements

OPERATING FREQUENCY:	1,880,000,000	Hz
CHANNEL:	18900	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,879,999,947	-53	-0.0000028
100 %		- 30	1,879,999,767	-233	-0.0000124
100 %		- 20	1,880,000,083	83	0.0000044
100 %		- 10	1,880,000,095	95	0.0000051
100 %		0	1,880,000,005	5	0.0000003
100 %		+ 10	1,880,000,059	59	0.0000031
100 %		+ 20	1,879,999,896	-104	-0.0000055
100 %		+ 30	1,880,000,188	188	0.0000100
100 %		+ 40	1,879,999,967	-33	-0.0000018
100 %		+ 50	1,880,000,440	440	0.0000234
BATT. ENDPOINT	3.40	+ 20	1,880,000,316	316	0.0000168

Table 7-35. Frequency Stability Data (Band 2)

Band 2 Frequency Stability Measurements

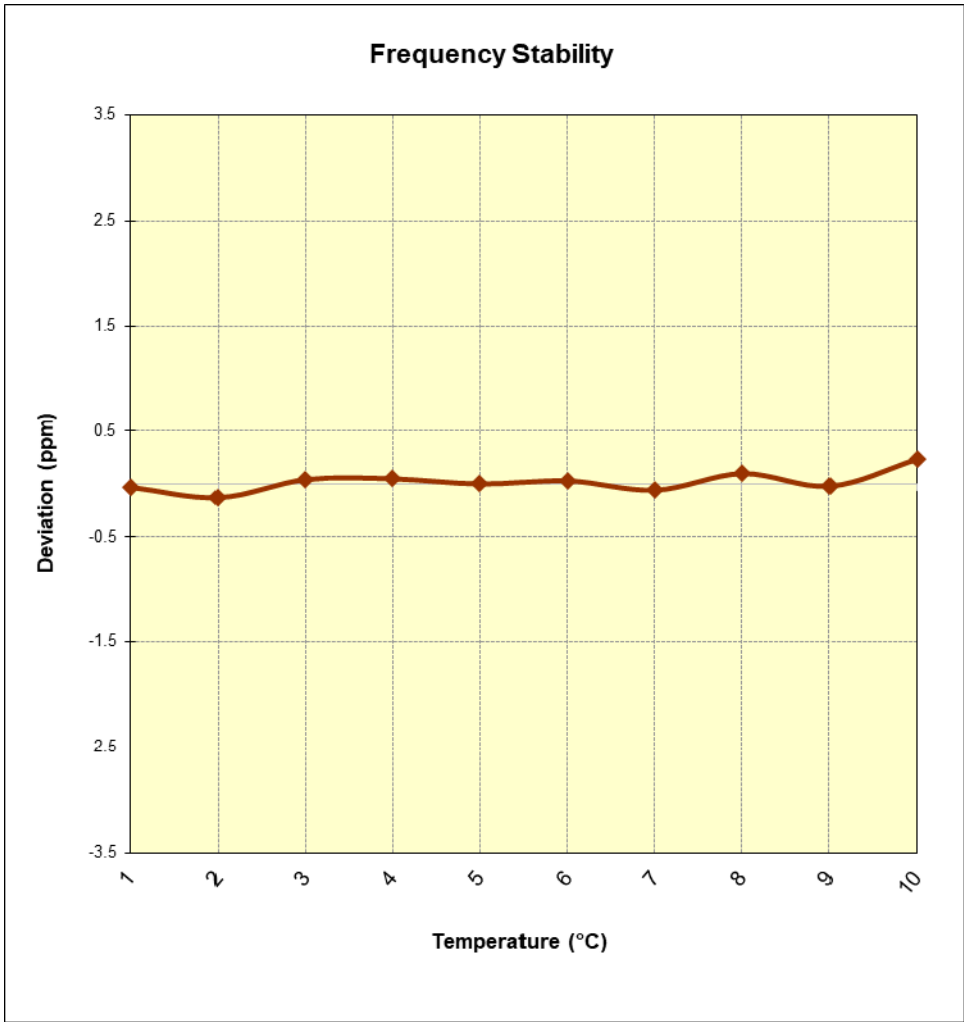

Figure 7-13. Frequency Stability Graph (Band 2)

Band 41 Frequency Stability Measurements

OPERATING FREQUENCY:	2,593,000,000	Hz
CHANNEL:	40620	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	2,593,000,215	215	0.0000083
100 %		- 30	2,592,999,946	-54	-0.0000021
100 %		- 20	2,592,999,998	-2	-0.0000001
100 %		- 10	2,593,000,334	334	0.0000129
100 %		0	2,593,000,213	213	0.0000082
100 %		+ 10	2,593,000,238	238	0.0000092
100 %		+ 20	2,592,999,936	-64	-0.0000025
100 %		+ 30	2,592,999,819	-181	-0.0000070
100 %		+ 40	2,592,999,619	-381	-0.0000147
100 %		+ 50	2,592,999,766	-234	-0.0000090
BATT. ENDPOINT	3.40	+ 20	2,592,999,939	-61	-0.0000024

Table 7-36. Frequency Stability Data (Band 41)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 41 Frequency Stability Measurements

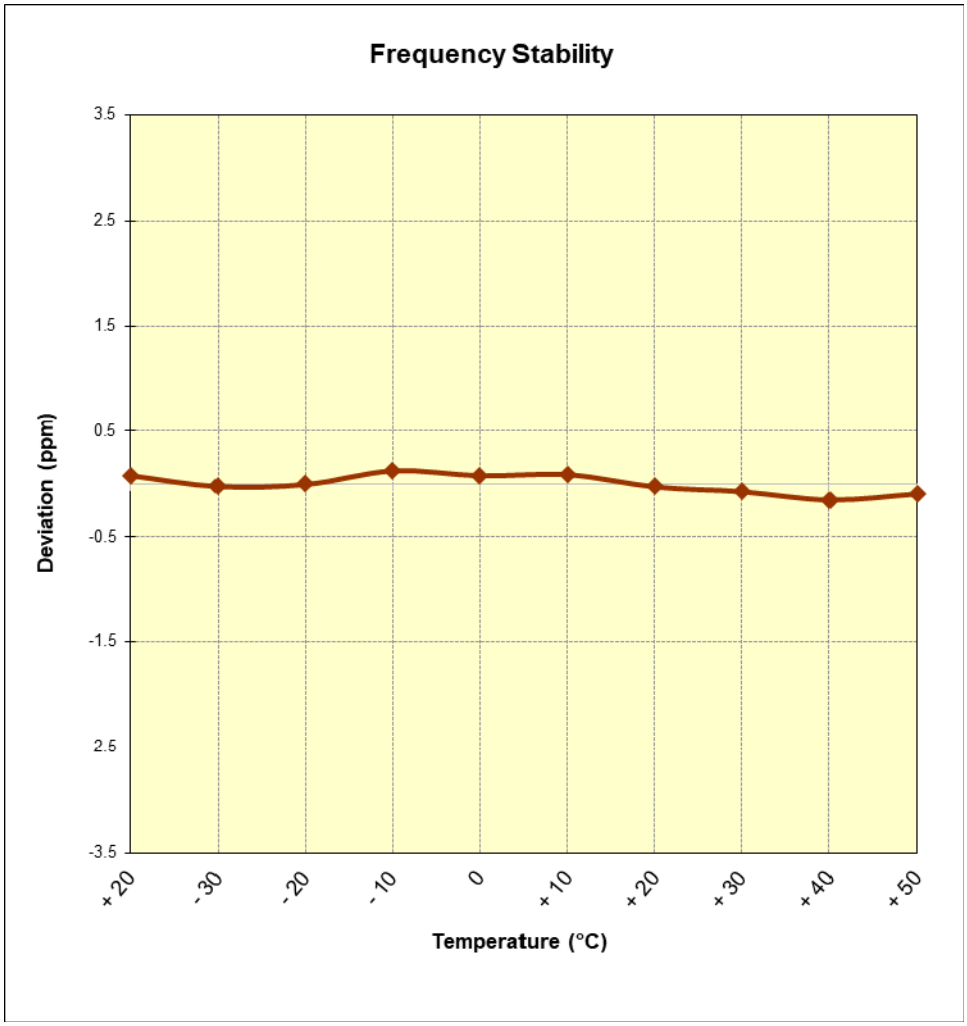

Figure 7-14. Frequency Stability Graph (Band 41)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFQ710TS** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.