Frequency Stability Test Setup

FCC Part 24.135
FCC Part 90.213

MOBI_EVT4

Test Conditions:

MOBI_EVT4 was placed in the environmental test chamber and cabled into the spectrum analyzer through an SMA 30dB PAD. The temperature chamber was programmed for a temperature between -30ºC and +60ºC in 10ºC steps. Once the desired temperature was reached, the MOBI_EVT4 board was left to soak for 30 minutes before any measurements were carried out. At temperature, the MOBI_EVT4 board was set to transmit constant carrier, and the deviation from the desired carrier frequency was measured on the spectrum analyzer. All measurements were conducted with a 5 kHz spectrum analyzer span and a 10 Hz resolution bandwidth.

FCC Part 90:
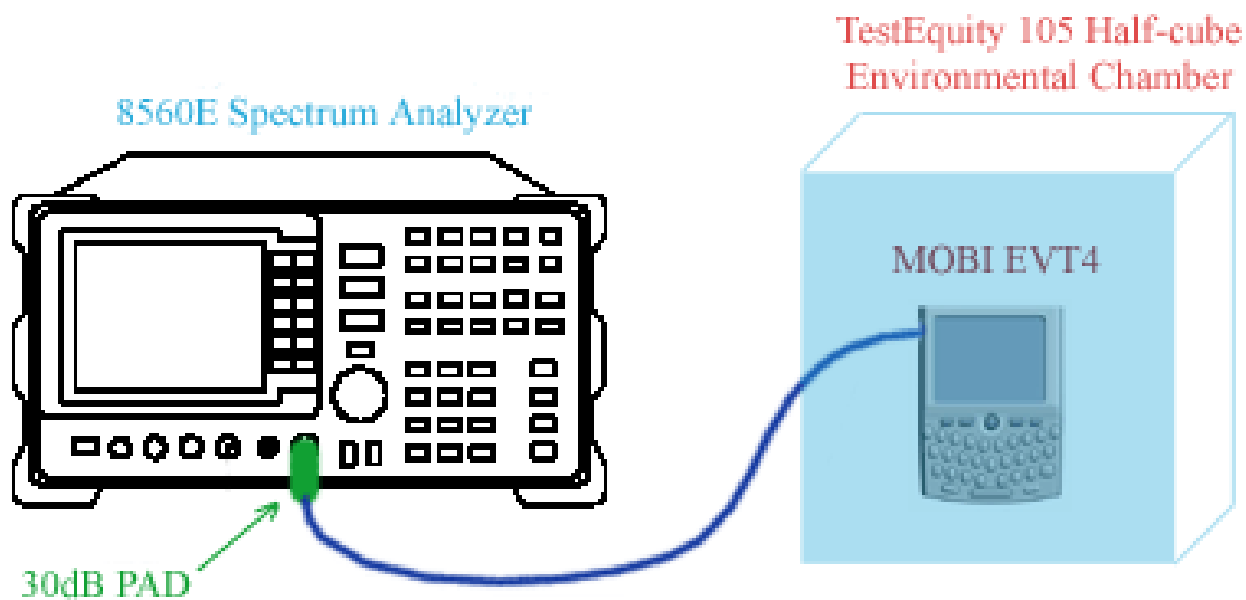The frequency error was measured at 898.5 MHz.

FCC Part 24:
The frequency error was measured at 901.5 MHz.

Test Equipment:

1. Spectrum Analyzer, Agilent, Model No: 8650E.

2. 30dB SMA Coaxial Attenuator, Mini-circuits, Model No: BW-S30W2.

3. Environmental Test Chamber, TestEquity, Model No: 105 Half-cube, Benchtop.
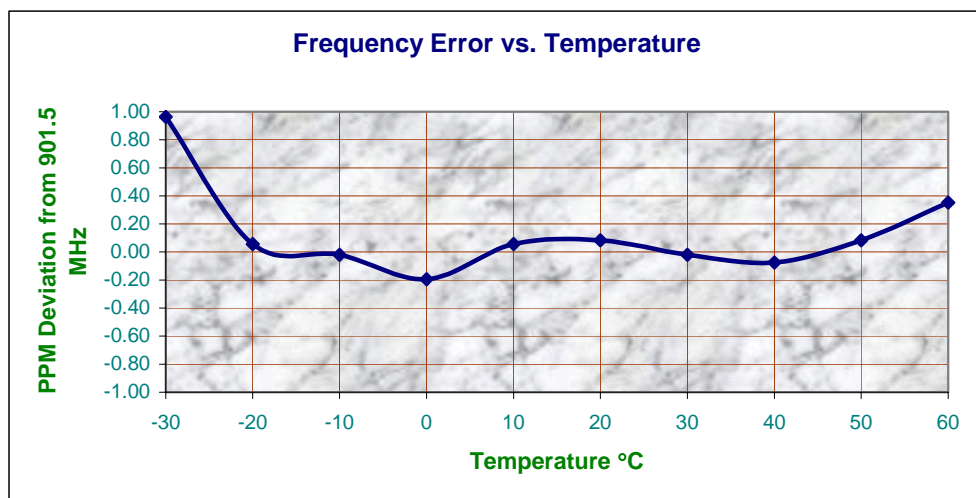
Test Setup:

FCC Part 24.135

Frequency Stability

MOBI_EVT4

S/N: *JW020800123*

°C Temp	Hz Dev	PPM Dev
-30	867	0.96
-20	50	0.06
-10	-17	-0.02
0	-175	-0.19
10	50	0.06
20	75	0.08
30	-17	-0.02
40	-67	-0.07
50	75	0.08
60	317	0.35

Frequency Error vs. Temperature

FCC Part 90.213

Frequency Stability

MOBI_EVT4

S/N: JW020800123

°C Temp	Hz Dev	PPM Dev
-30	867	0.96
-20	50	0.06
-10	-17	-0.02
0	-167	-0.19
10	50	0.06
20	75	0.08
30	-17	-0.02
40	-67	-0.07
50	75	0.08
60	317	0.35

Frequency Error vs. Temperature

PPM Deviation from 898.5 MHz vs. Temperature °C