

- RSS-199 Issue 3

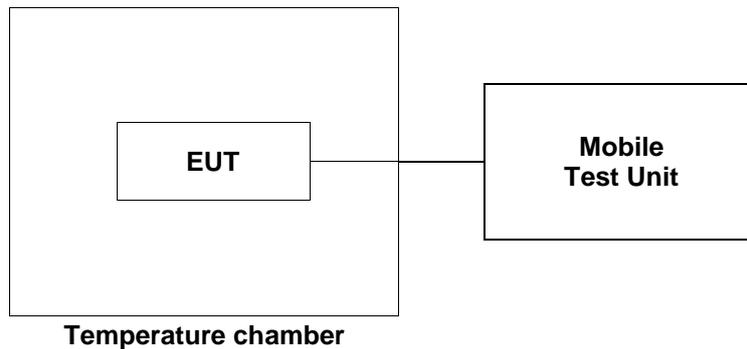
4.3, the transmitter frequency stability limit shall be determined as follows:

- (a) the frequency offset shall be measured according to the procedure described in RSS-Gen and recorded.
- (b) using a resolution bandwidth equal to that permitted within the 1 MHz band immediately outside the channel edge, as found in section 4.5, reference points will be selected at the unwanted emission limits, which comply with the attenuation specified in section 4.5 for the type of device under test, on the emission mask of the lowest and highest channels. The frequency at these points shall be recorded as  $f_L$  and  $f_H$  respectively.

The applicant shall ensure compliance with frequency stability requirements by showing that  $f_L$  minus the frequency offset and  $f_H$  plus the frequency offset is within the frequency range in which the equipment is designed to operate.

### 8.2. Test Procedure

1. Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a Mobile Test Unit via feed-through attenuators.
2. The EUT was placed inside the temperature chamber.
3. After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from Mobile Test Unit.



### 8.3. Test Results

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

#### LTE band 2 at middle channel

Operating Frequency: 1 880.0 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.0	1.24	-0.000 16
40		0.06	-0.000 79
30		-1.10	-0.001 40
20 (Ref.)		1.54	-
10		0.87	-0.000 36
0		2.07	0.000 28
-10		1.70	0.000 09
-20		1.99	0.000 24
-30		-0.30	-0.000 98
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	13.8	0.73	-0.000 43
	10.2	-0.90	-0.001 30

**LTE band 4 at middle channel**

<b>Operating Frequency: 1 732.5 MHz</b>			
<b>Frequency Stability versus Temperature</b>			
<b>Environment Temperature (°C)</b>	<b>Power Supplied (V)</b>	<b>Frequency Measure with Time Elapse</b>	
		<b>Frequency Error (Hz)</b>	<b>ppm</b>
50	12.0	0.23	-0.000 12
40		0.96	0.000 31
30		-0.11	-0.000 31
20 (Ref.)		0.43	-
10		0.90	0.000 27
0		0.31	-0.000 07
-10		0.92	0.000 28
-20		1.69	0.000 73
-30		0.21	-0.000 13
<b>Frequency Stability versus Power Supply</b>			
<b>Environment Temperature (°C)</b>	<b>Power Supplied (V)</b>	<b>Frequency Measure with Time Elapse</b>	
		<b>Frequency Error (Hz)</b>	<b>ppm</b>
20	13.8	0.72	0.000 17
	10.2	0.13	-0.000 17

**LTE band 7 at middle channel**

Operating Frequency: 2 535.0 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.0	-4.31	-0.000 69
40		-4.02	-0.000 58
30		-4.72	-0.000 86
20 (Ref.)		-2.55	-
10		-3.15	-0.000 24
0		-3.02	-0.000 19
-10		-1.26	0.000 51
-20		-1.87	0.000 27
-30		-3.36	-0.000 32
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	13.8	-4.65	-0.000 83
	10.2	-3.38	-0.000 33

**LTE band 12 at middle channel**

<b>Operating Frequency: 707.5 MHz</b>			
<b>Frequency Stability versus Temperature</b>			
<b>Environment Temperature (°C)</b>	<b>Power Supplied (V)</b>	<b>Frequency Measure with Time Elapse</b>	
		<b>Frequency Error (Hz)</b>	<b>ppm</b>
50	12.0	-0.35	0.003 21
40		-0.59	0.002 87
30		-1.13	0.002 11
20 (Ref.)		-2.62	-
10		1.33	0.005 58
0		-0.99	0.002 30
-10		-1.39	0.001 74
-20		-0.53	0.002 95
-30		-0.41	0.003 12
<b>Frequency Stability versus Power Supply</b>			
<b>Environment Temperature (°C)</b>	<b>Power Supplied (V)</b>	<b>Frequency Measure with Time Elapse</b>	
		<b>Frequency Error (Hz)</b>	<b>ppm</b>
20	13.8	-1.32	0.001 84
	10.2	-1.60	0.001 44

**LTE band 26/5 at middle channel**

Operating Frequency: 836.5 MHz			
Frequency Stability versus Temperature			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
50	12.0	-1.27	-0.002 13
40		-1.63	-0.002 56
30		0.13	-0.000 45
20 (Ref.)		0.51	-
10		2.03	0.001 82
0		2.12	0.001 92
-10		2.29	0.002 13
-20		1.33	0.000 98
-30		-0.96	-0.001 76
Frequency Stability versus Power Supply			
Environment Temperature (°C)	Power Supplied (V)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20	13.8	1.27	0.000 91
	10.2	-1.49	-0.002 39

**- End of the Test Report -**