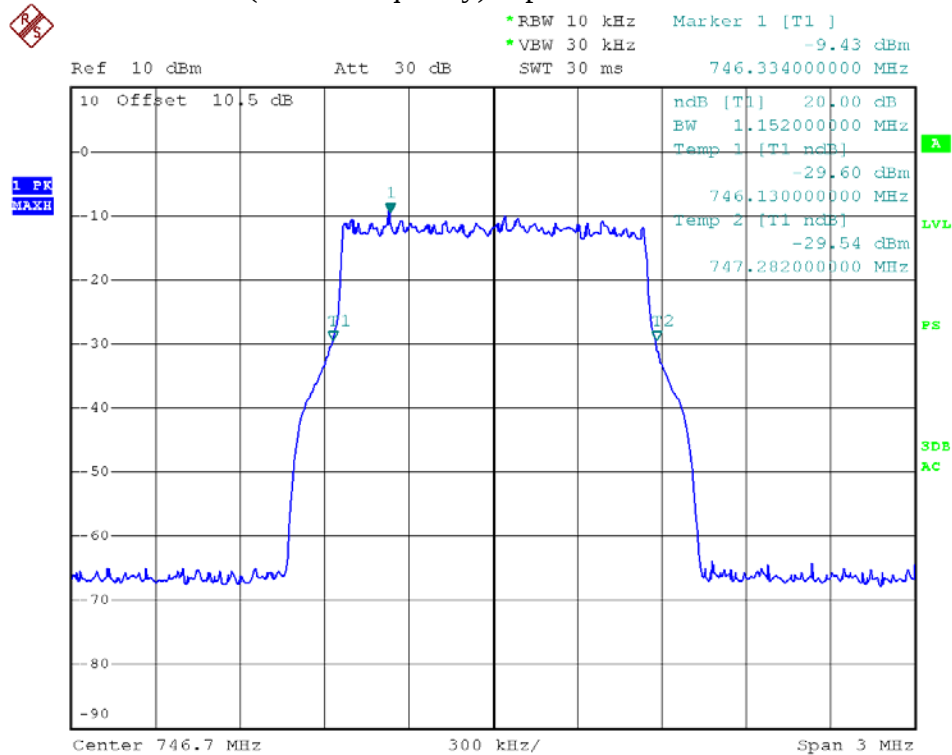


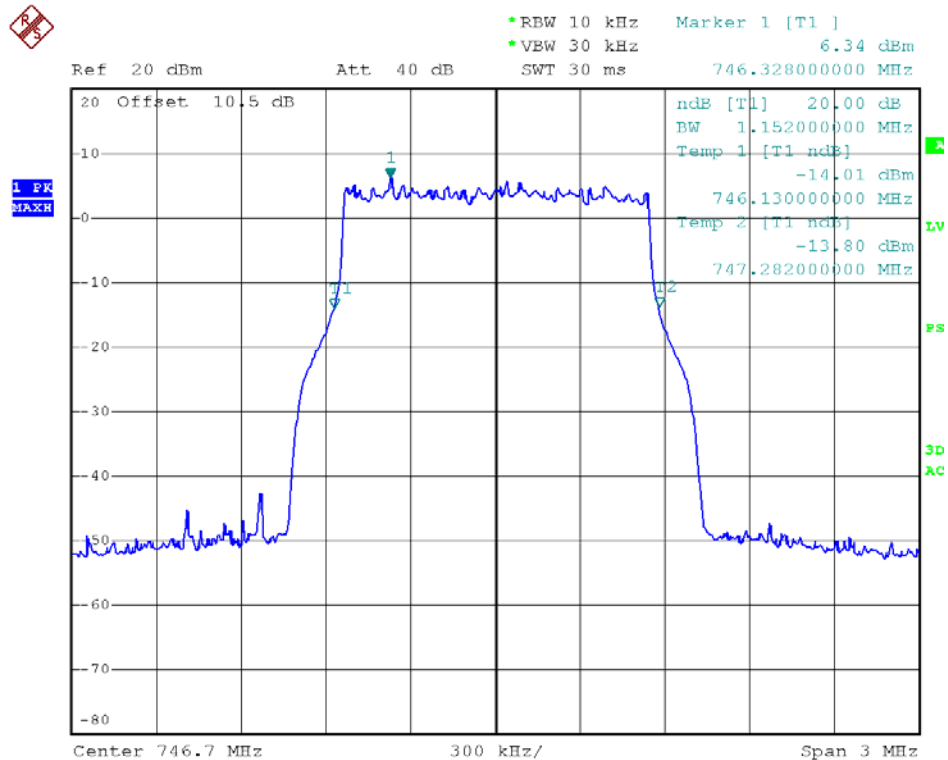
4.2.5.1 MEASUREMENT RECORD

700MHz Band:

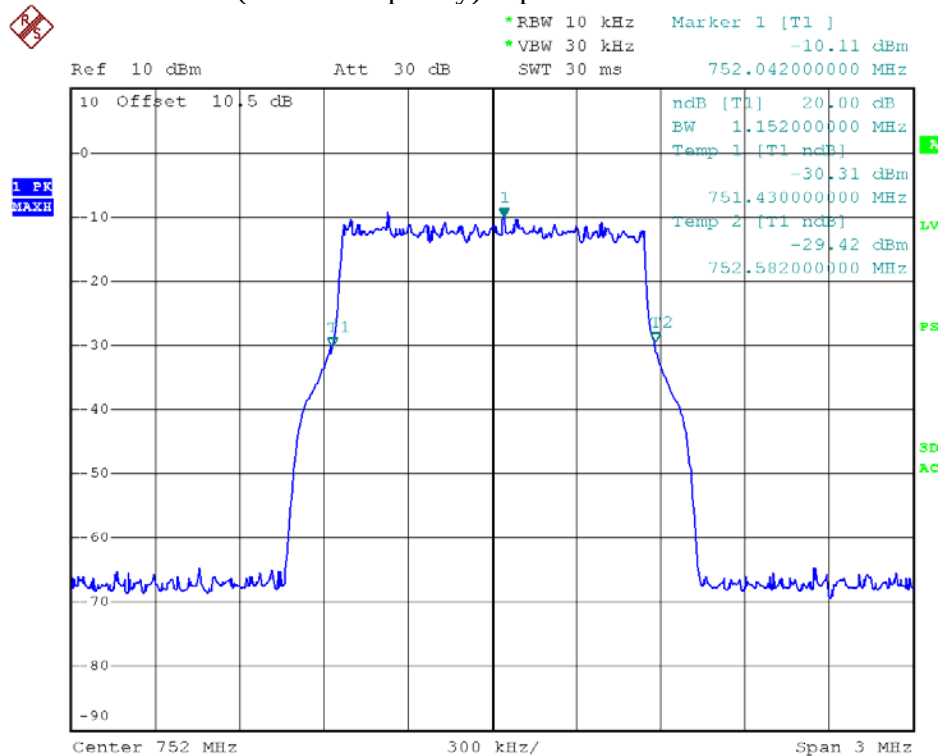
700MHz-LTE-1.4M downlink (lowest frequency)-Input



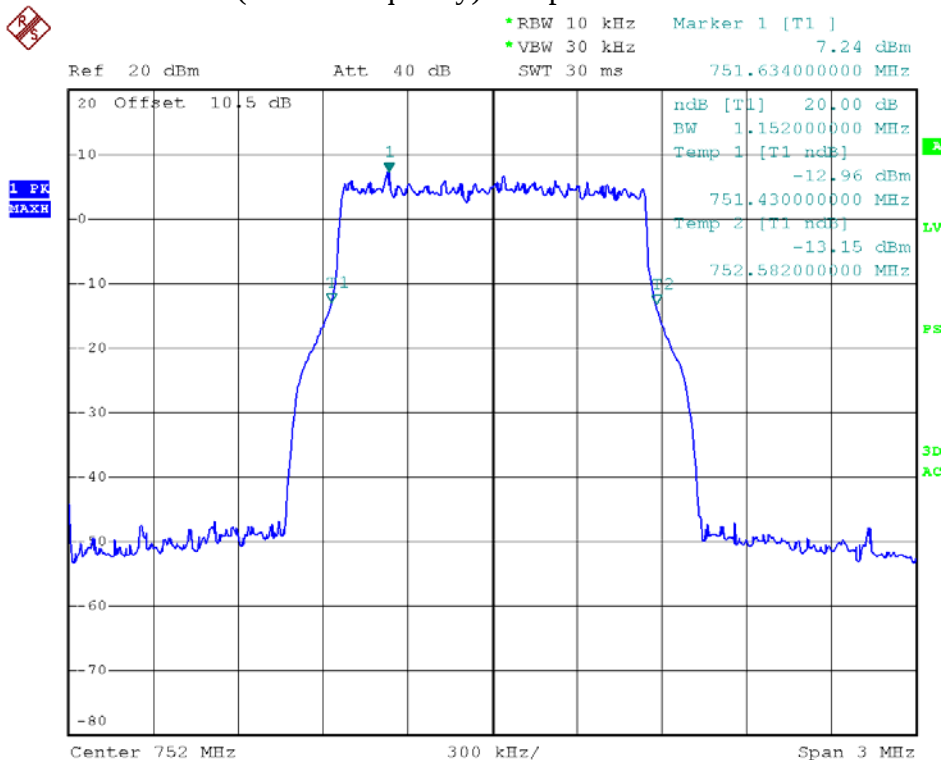
700MHz-LTE-1.4M downlink (lowest frequency)-Output



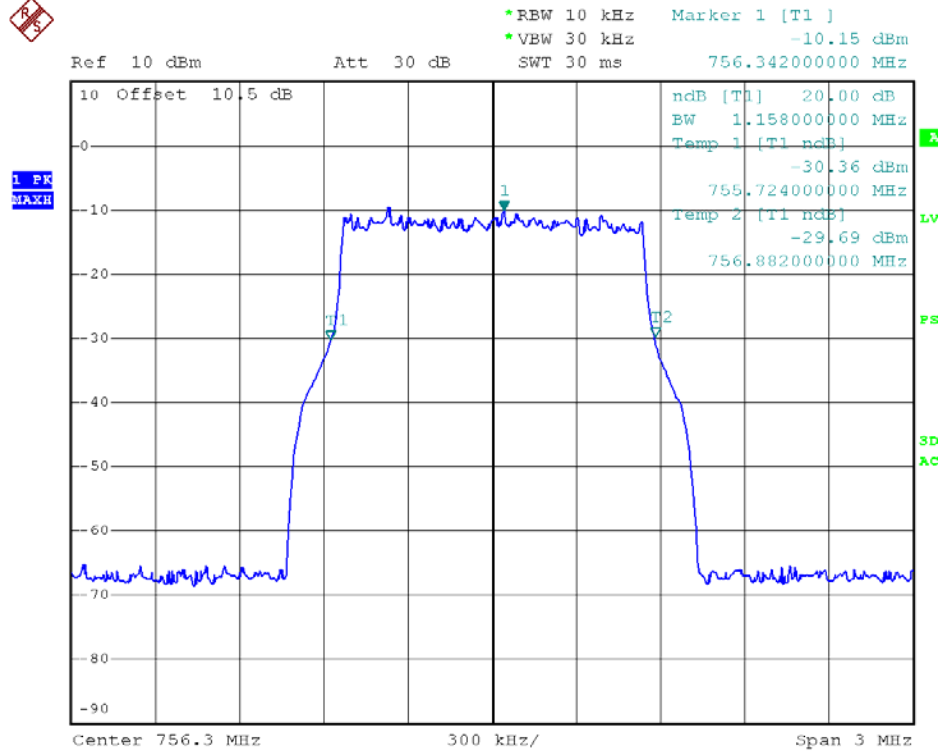
700MHz-LTE-1.4M downlink (middle frequency)-Input



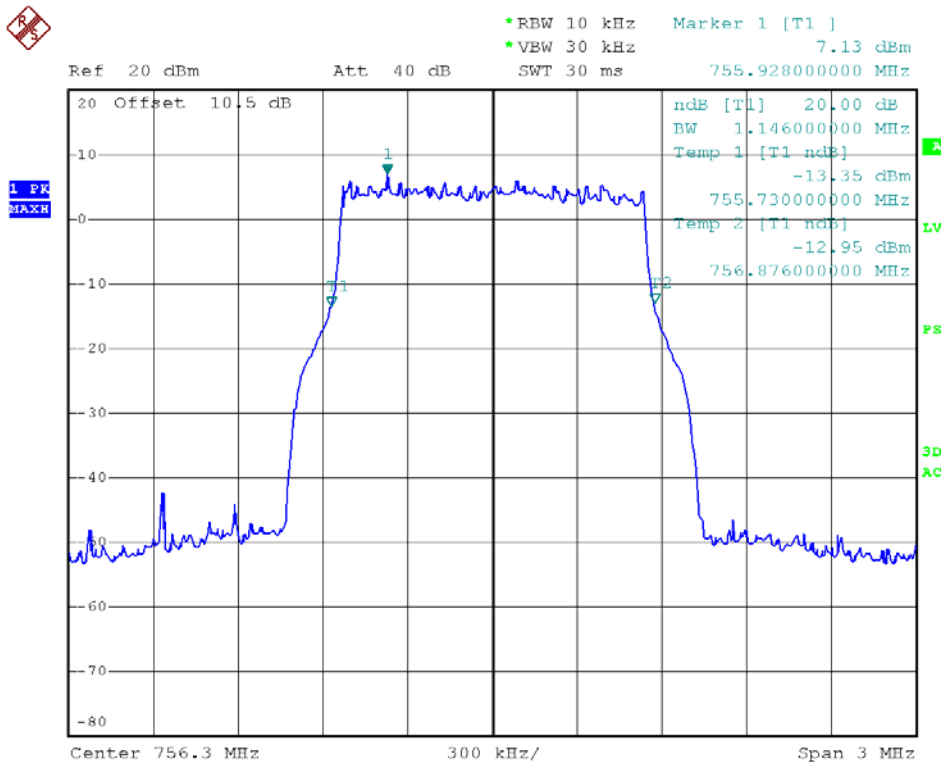
700MHz-LTE-1.4M downlink (middle frequency)- Output



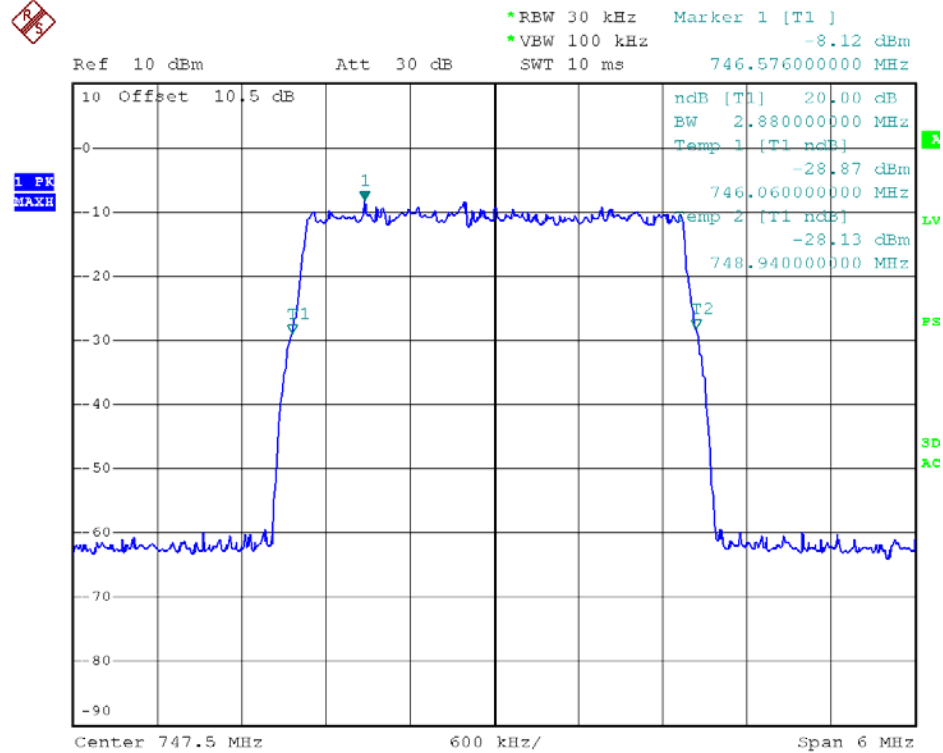
700MHz-LTE -1.4M downlink (highest frequency)-Input



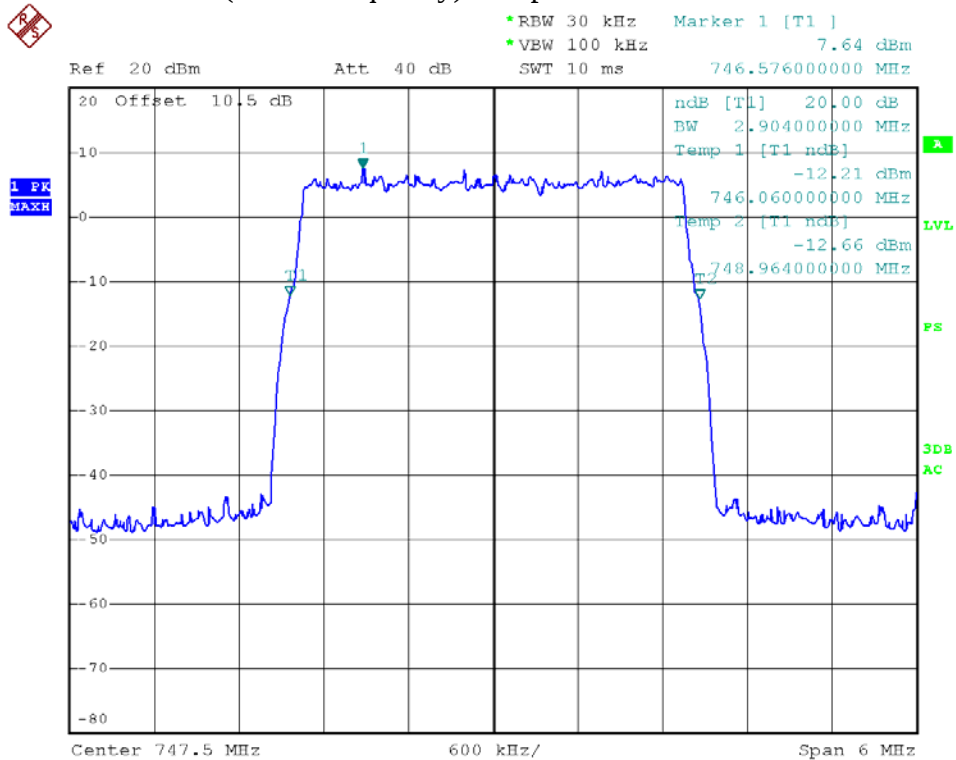
700MHz-LTE-1.4 downlink (highest frequency)- Output



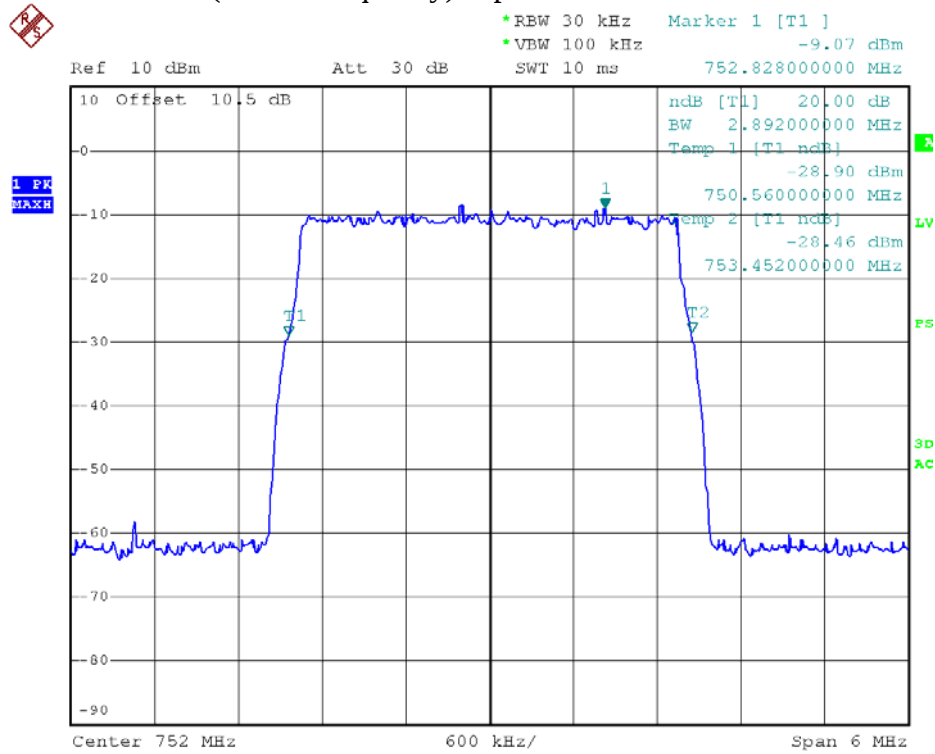
700MHz-LTE-3M downlink (lowest frequency)-Input



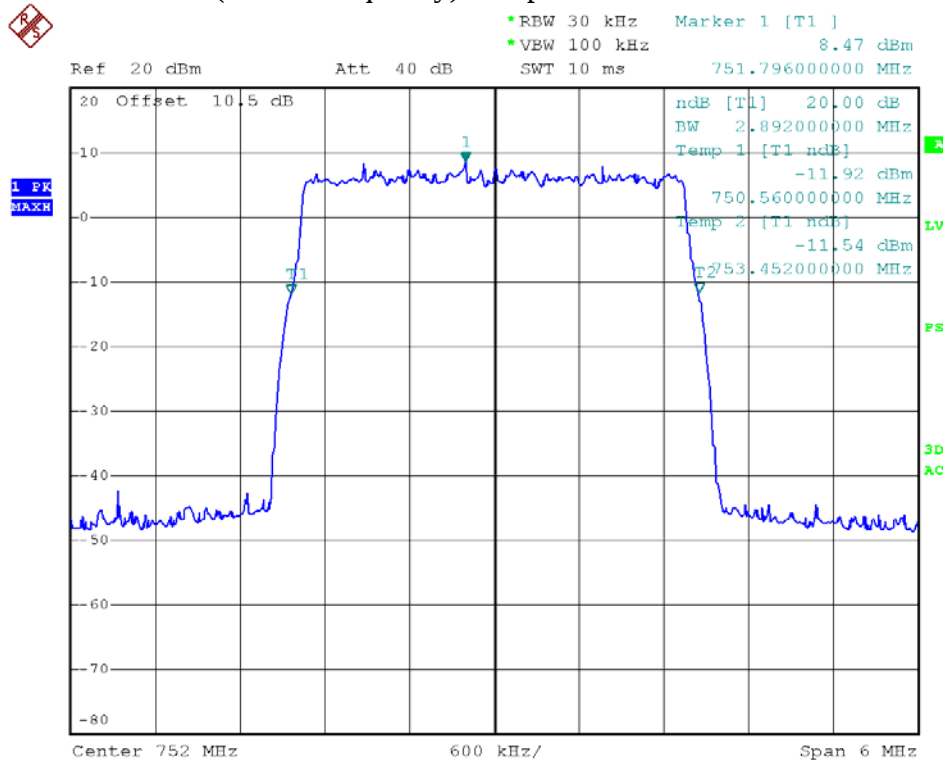
700MHz-LTE-3M downlink (lowest frequency)- Output



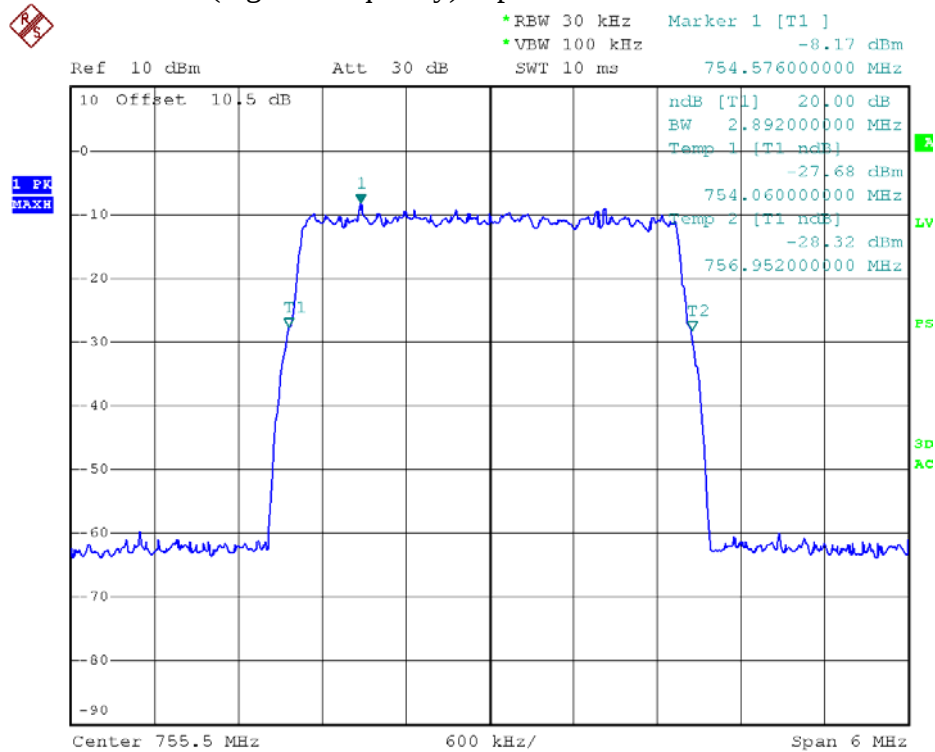
700MHz-LTE-3M downlink (middle frequency)-Input



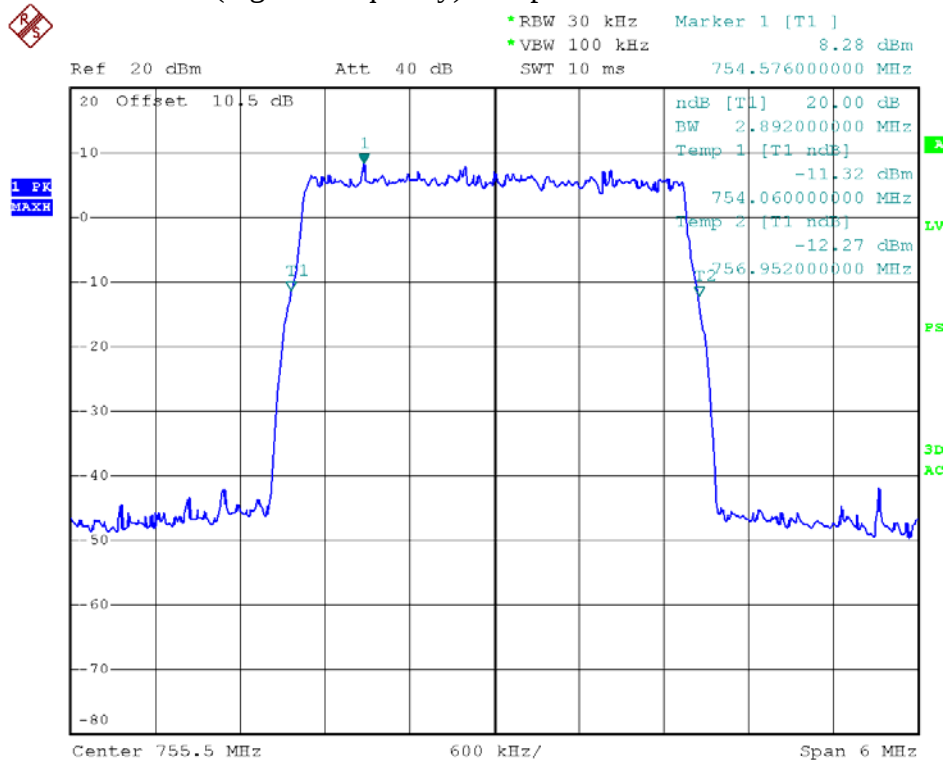
700MHz-LTE-3M downlink (middle frequency)- Output



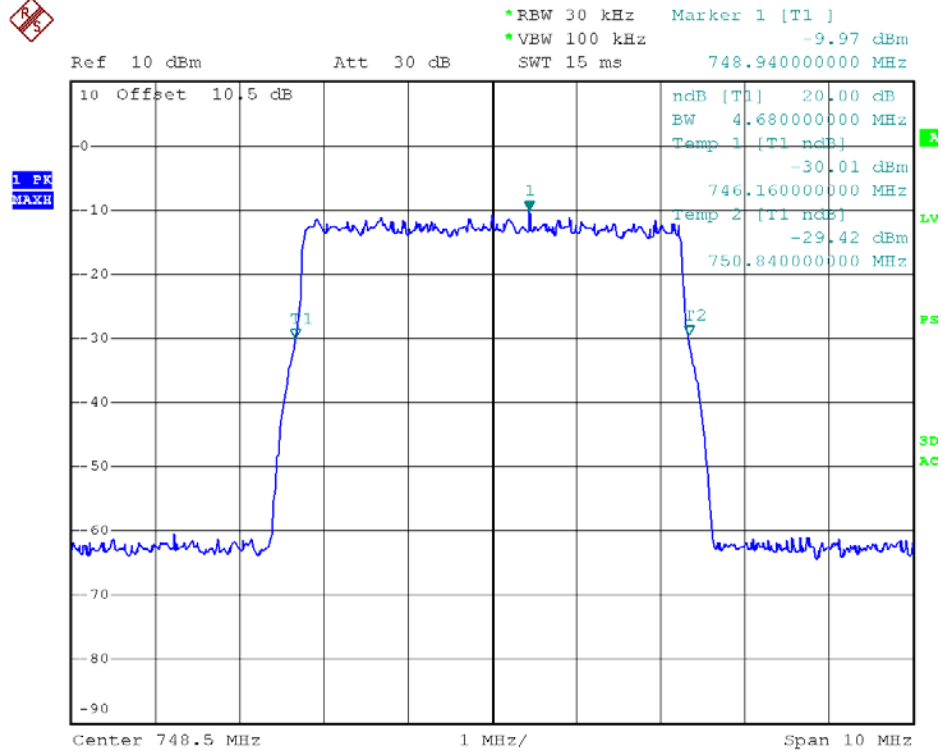
700MHz-LTE-3M downlink (highest frequency)-Input



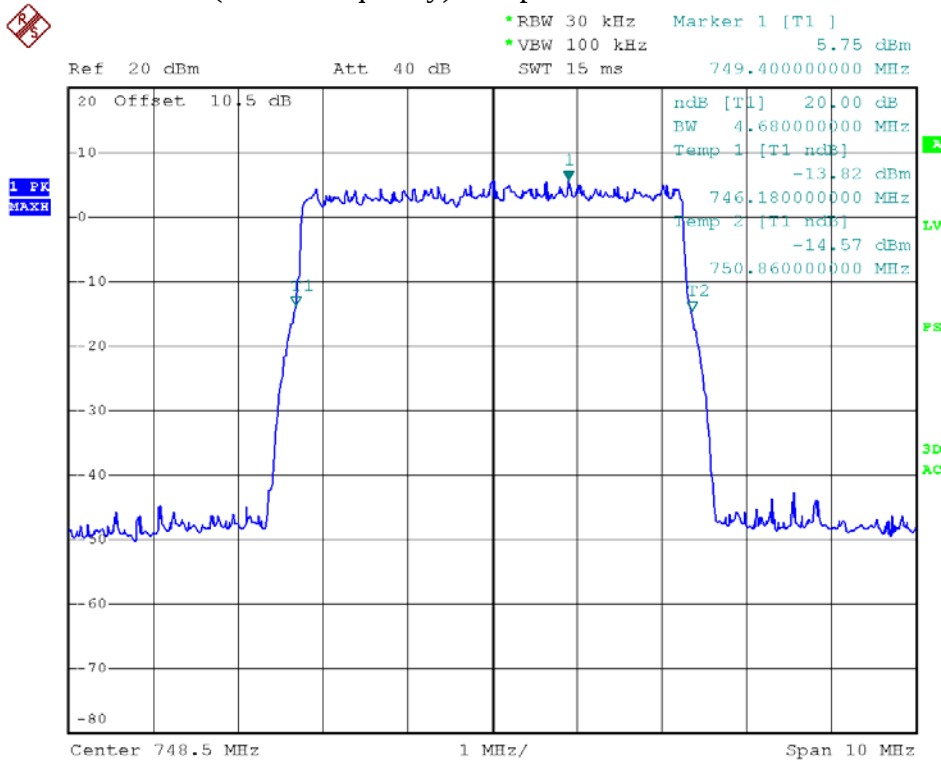
700MHz-LTE-3M downlink (highest frequency)- Output



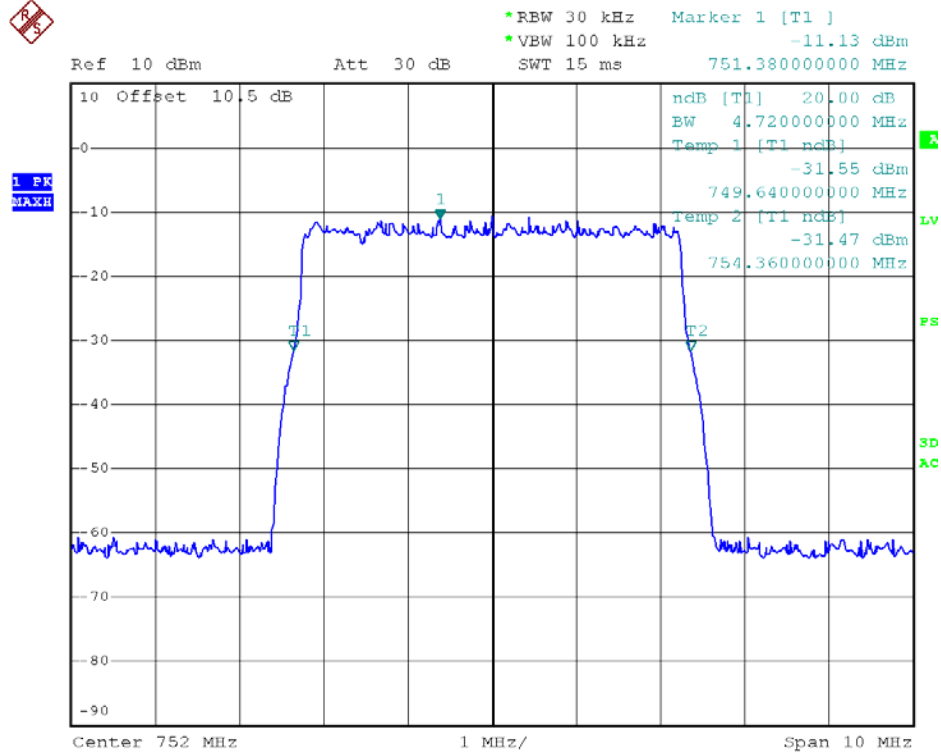
700MHz-LTE-5M downlink (lowest frequency)-Input



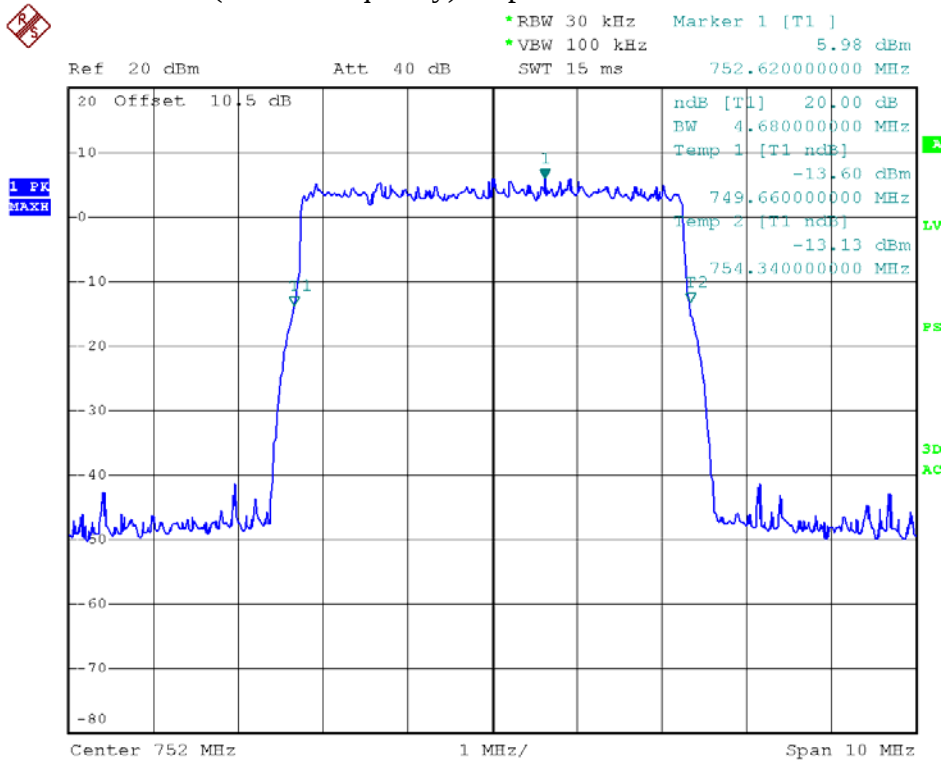
700MHz-LTE-5M downlink (lowest frequency)- Output



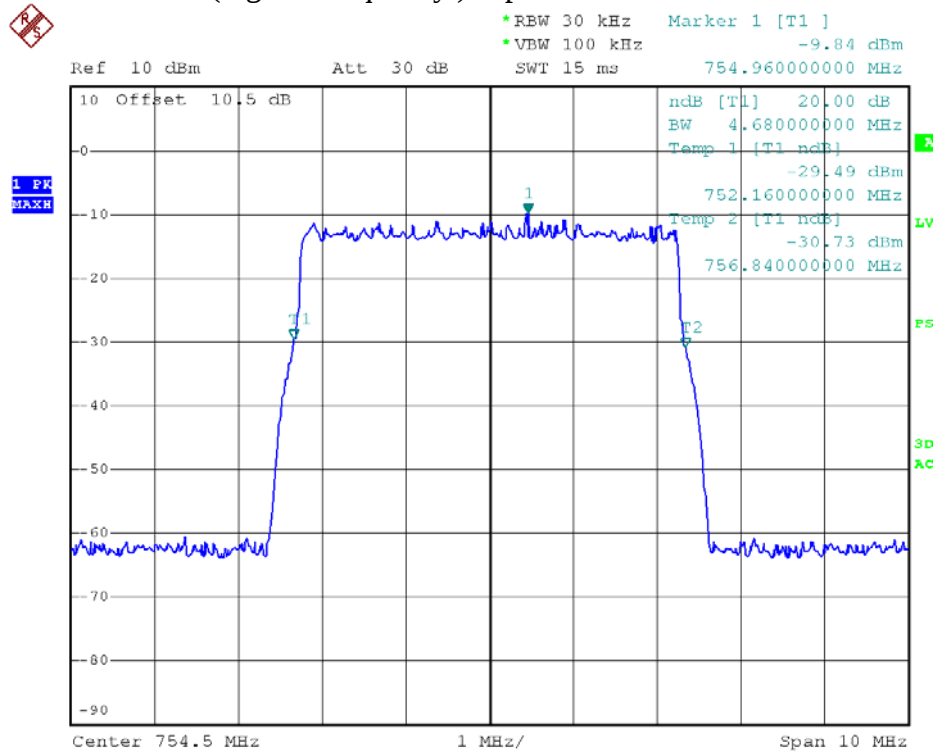
700MHz-LTE-5M downlink (middle frequency)-Input



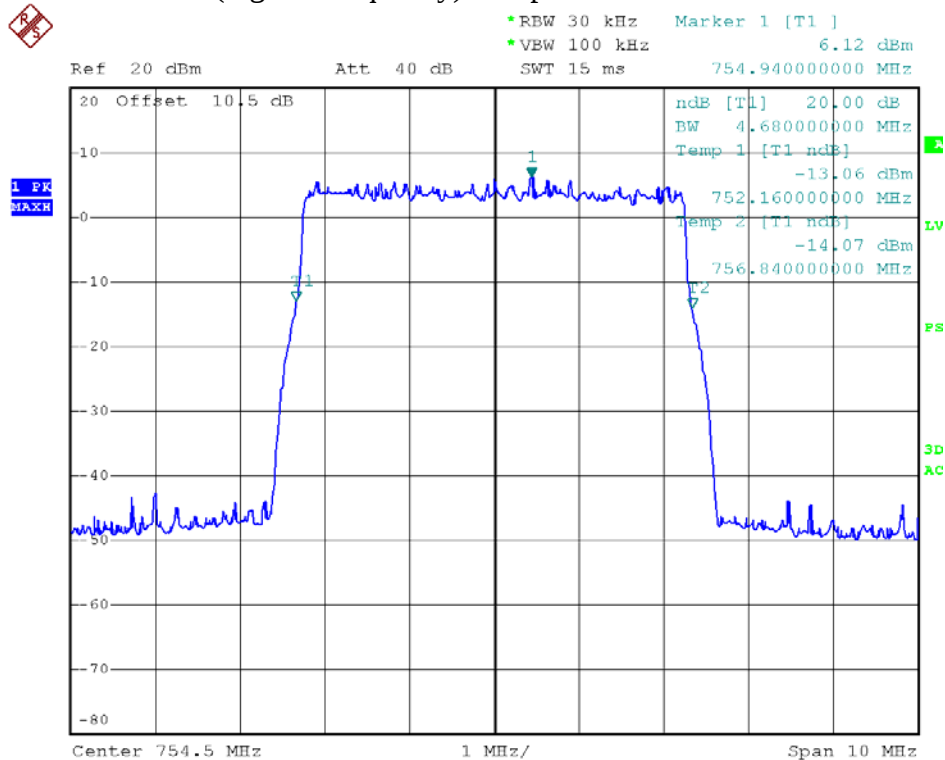
700MHz-LTE-5M downlink (middle frequency)-Output



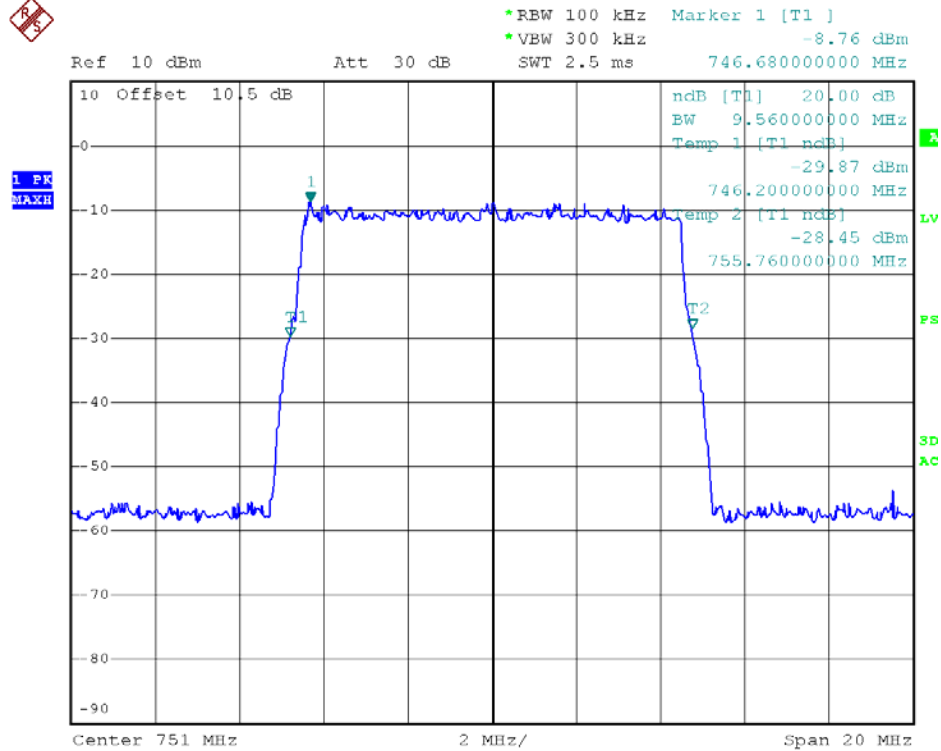
700MHz-LTE-5M downlink (highest frequency)-Input



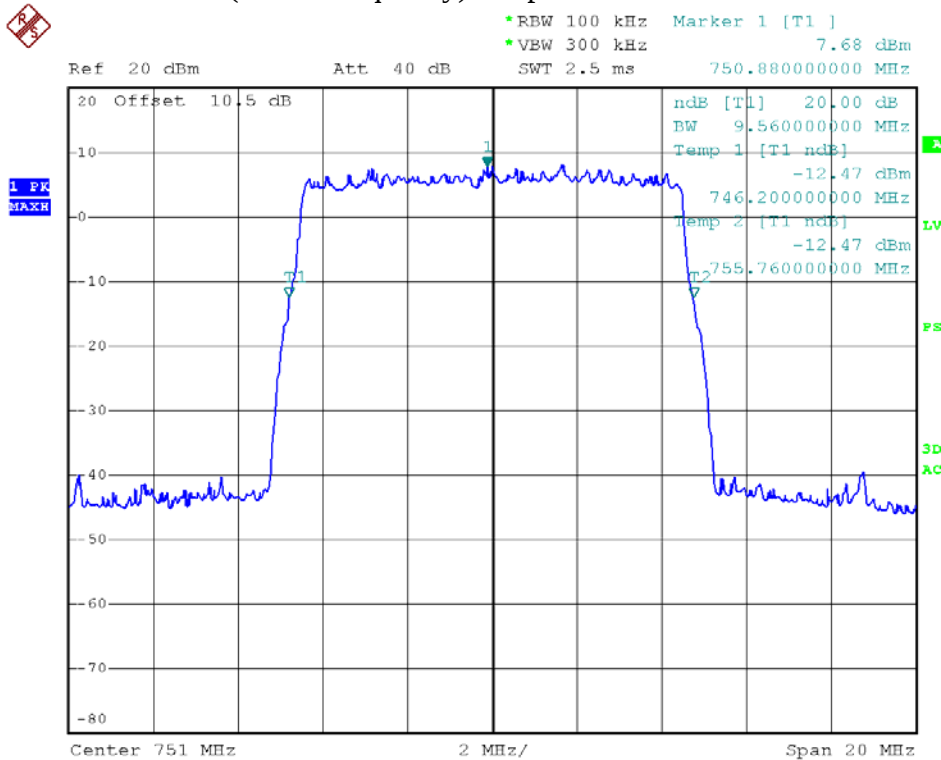
700MHz-LTE-5M downlink (highest frequency)- Output



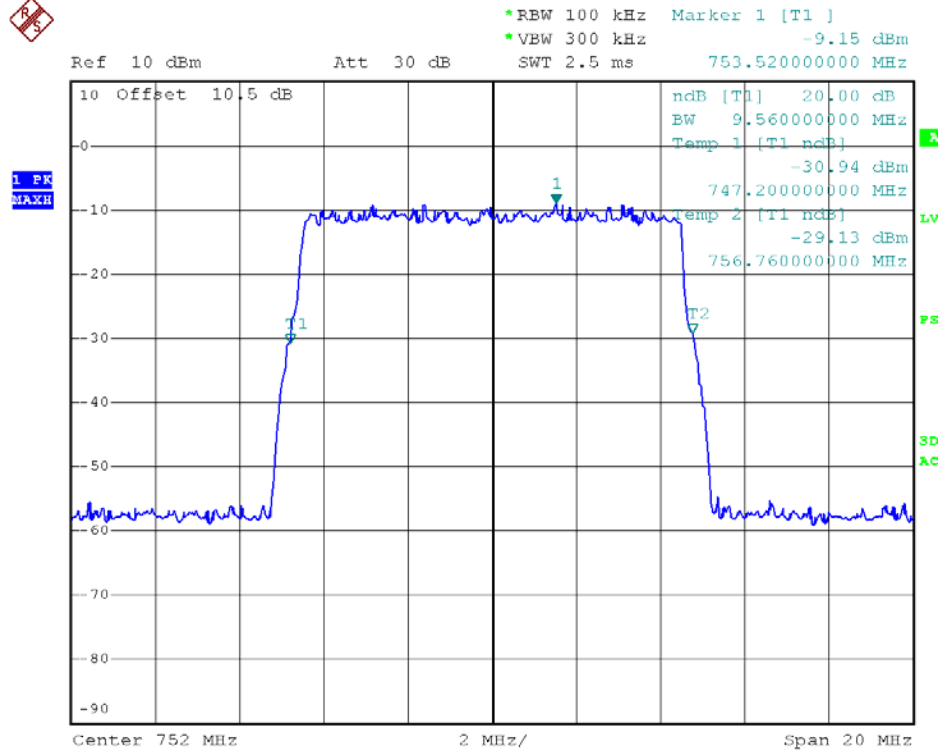
700MHz-LTE-10M downlink (lowest frequency)-Input



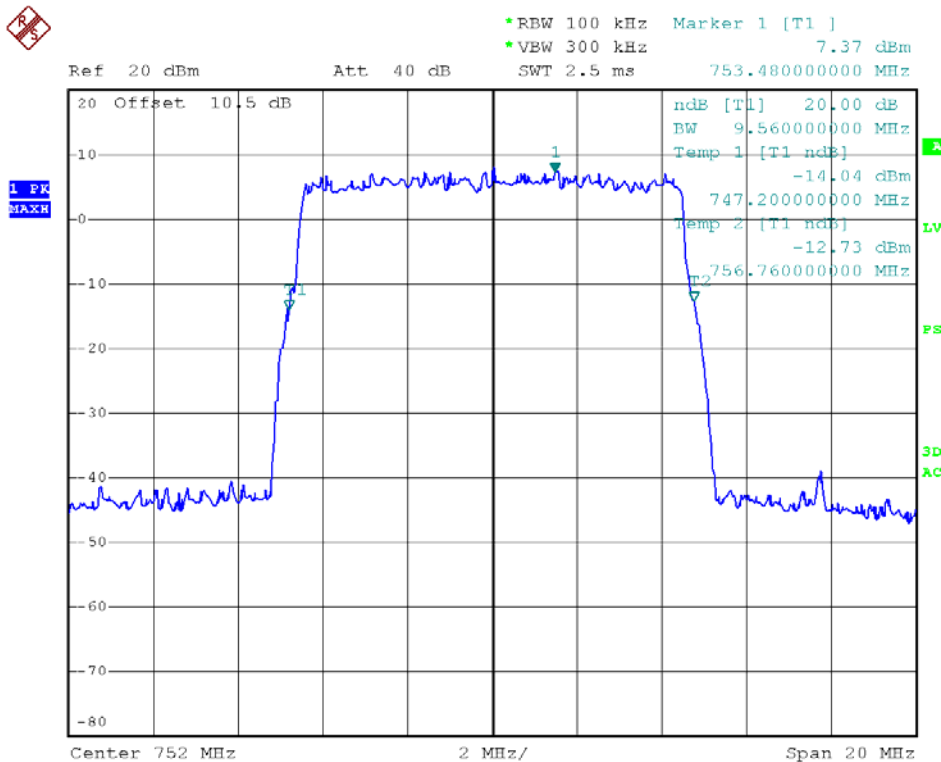
700MHz-LTE-10M downlink (lowest frequency)-Output



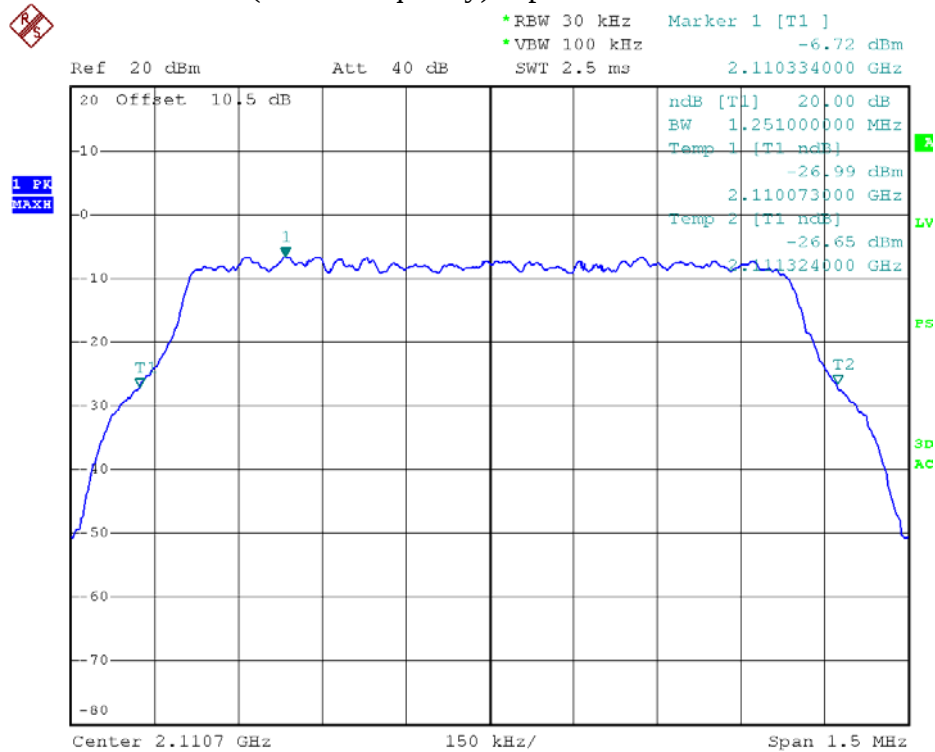
700MHz-LTE-10M downlink (highest frequency)-Input



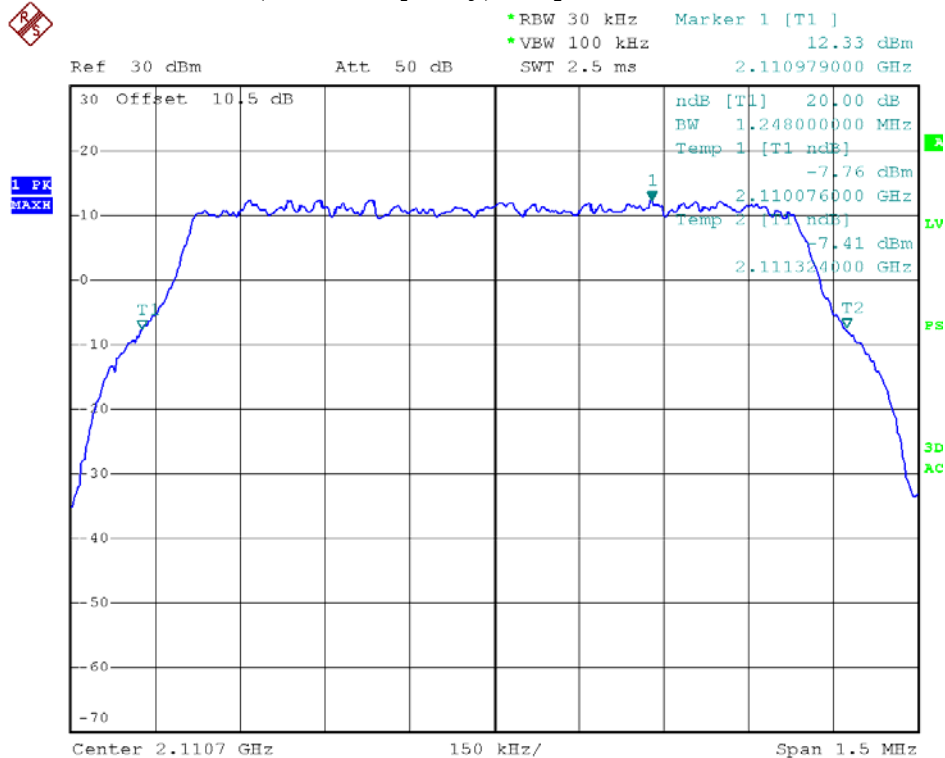
700MHz-LTE-10M downlink (highest frequency)- Output



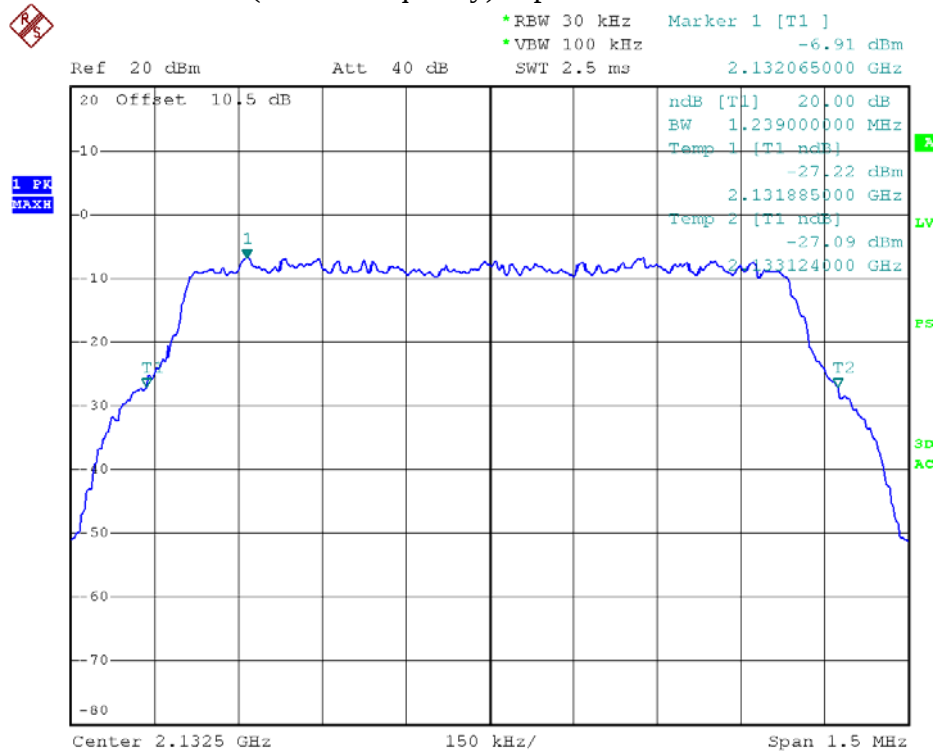
2100MHz-LTE-1.4M downlink (lowest frequency)-Input



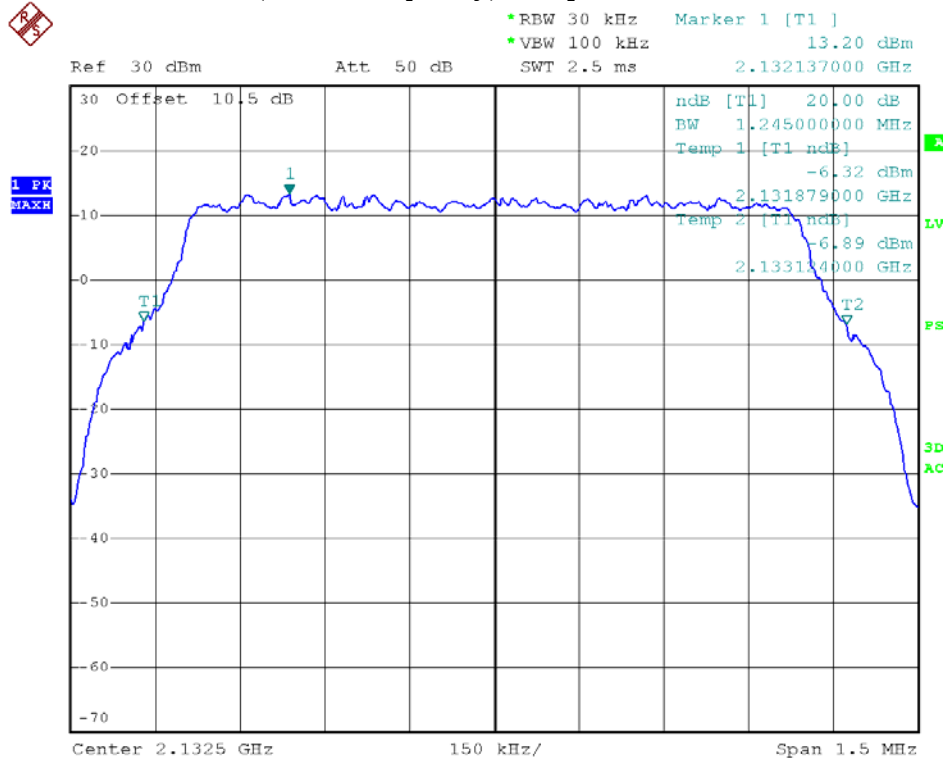
2100MHz-LTE-1.4M downlink (lowest frequency)-Output



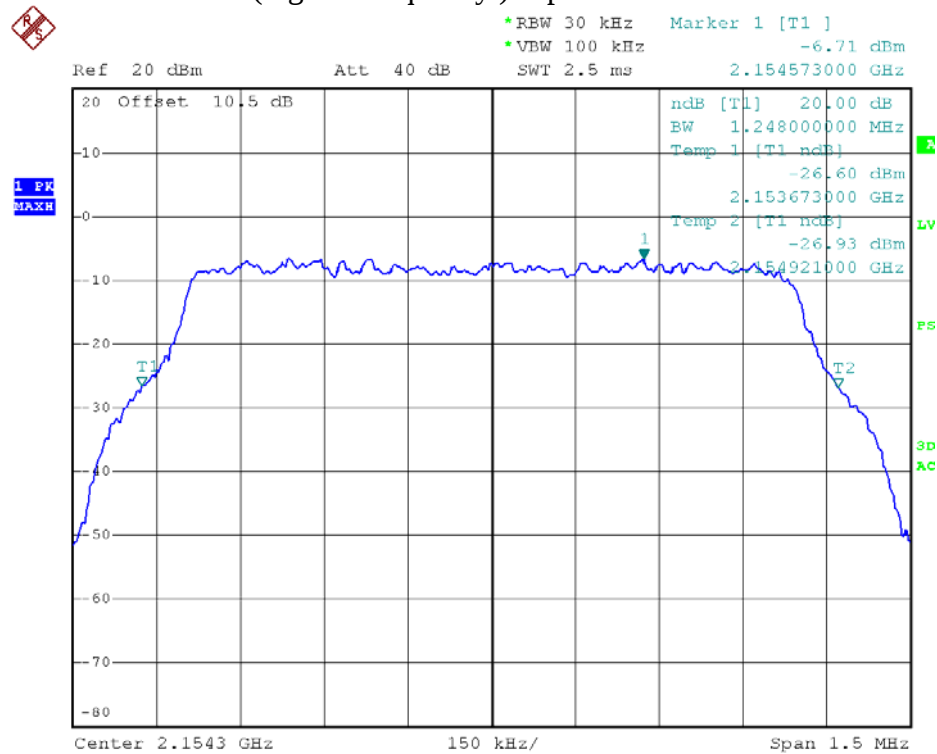
2100MHz-LTE-1.4M downlink (middle frequency)-Input



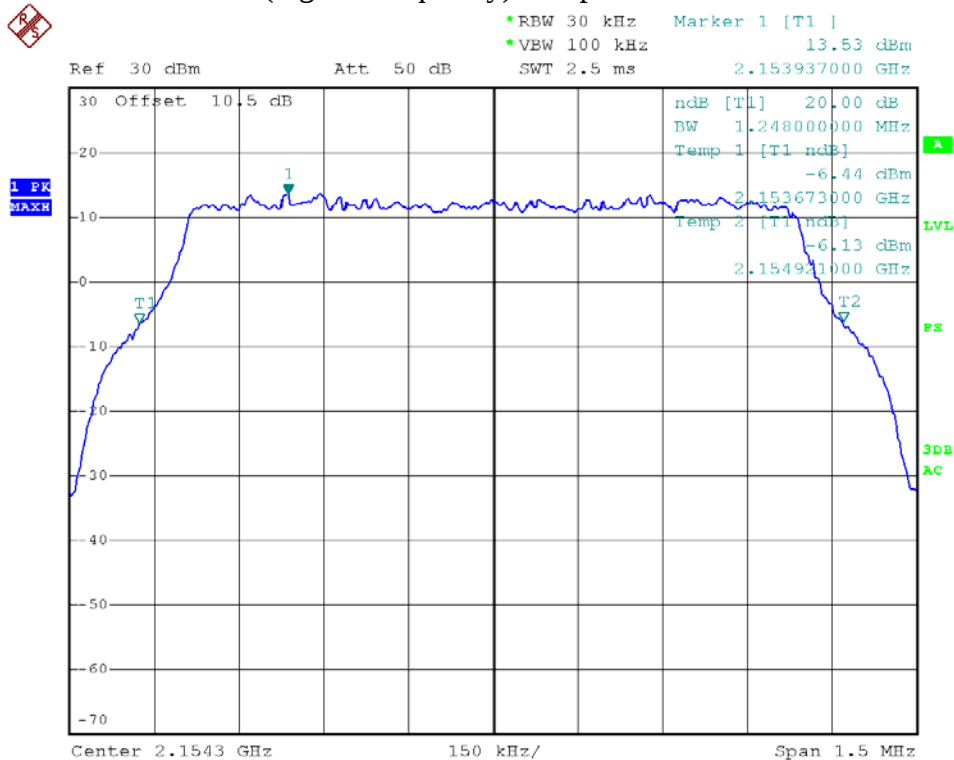
2100MHz-LTE-1.4M downlink (middle frequency)- Output



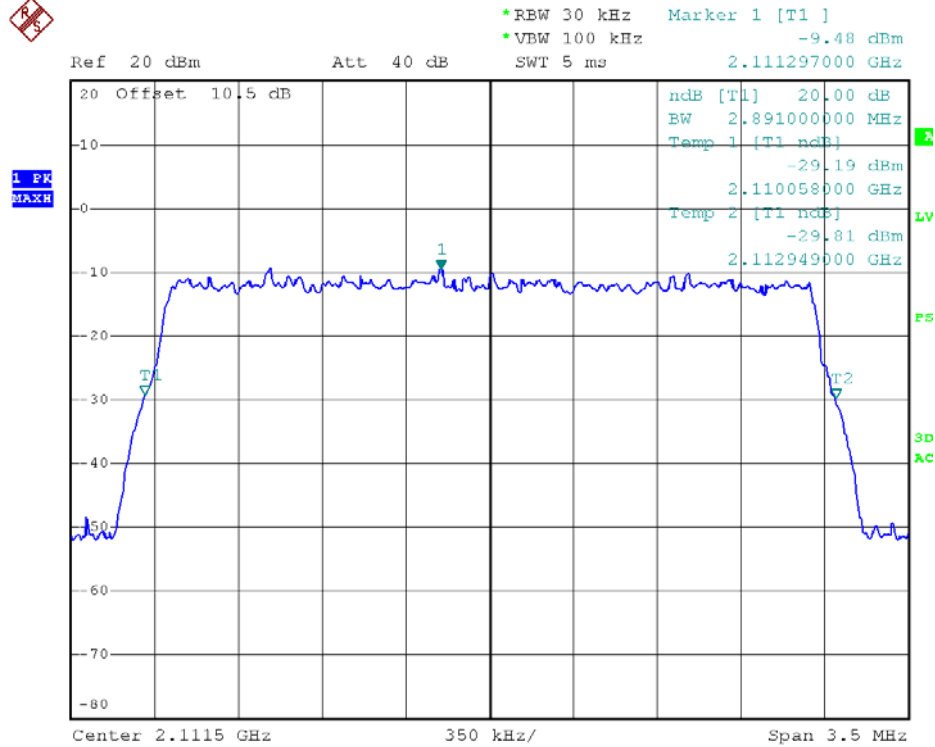
2100MHz-LTE-1.4M downlink (highest frequency)-Input



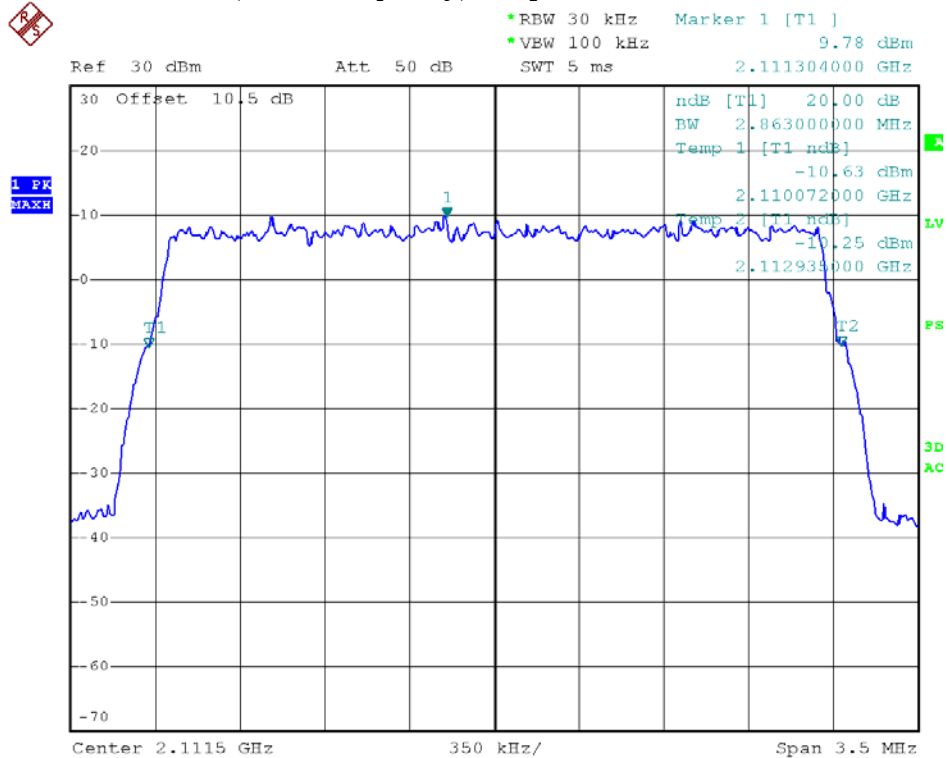
2100MHz-LTE-1.4M downlink (highest frequency)- Output



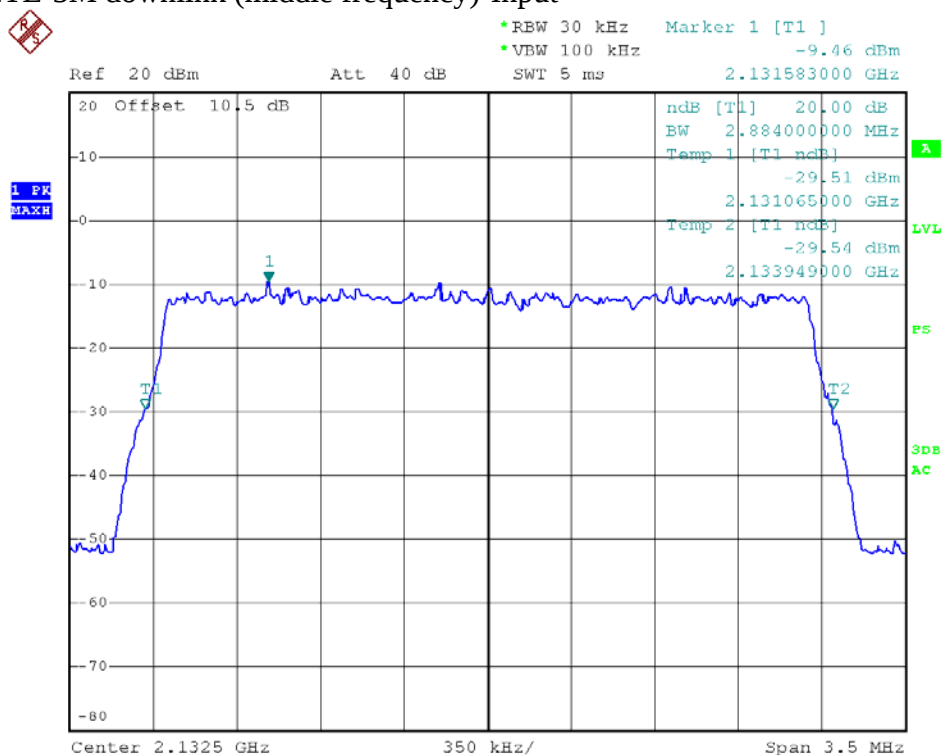
2100MHz-LTE-3M downlink (lowest frequency)-Input



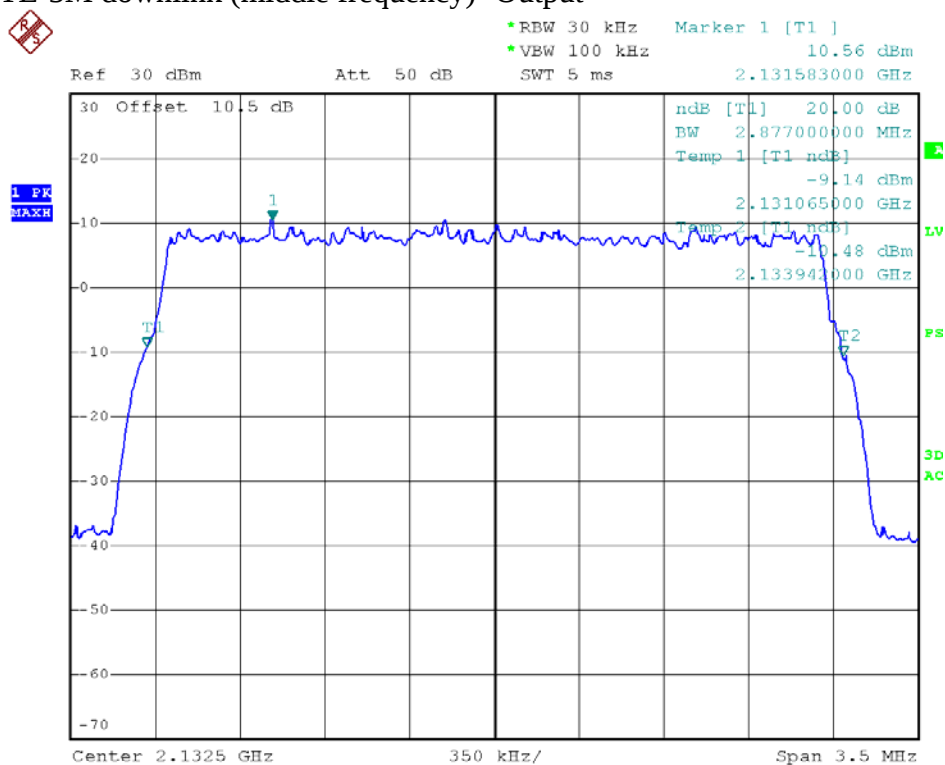
2100MHz-LTE-3M downlink (lowest frequency)-Output



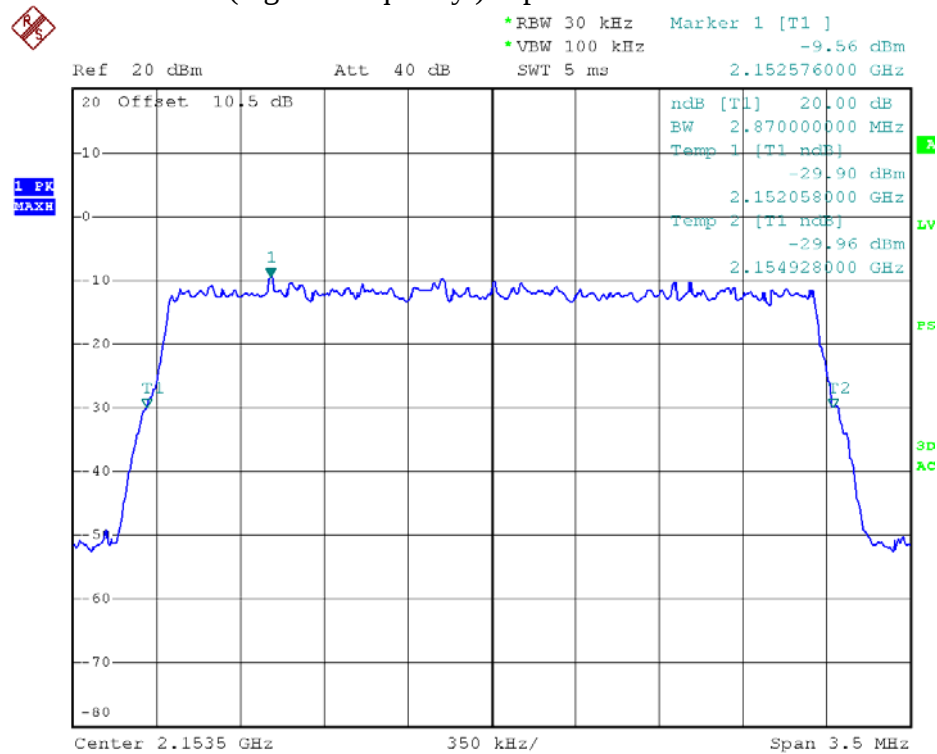
2100MHz-LTE-3M downlink (middle frequency)-Input



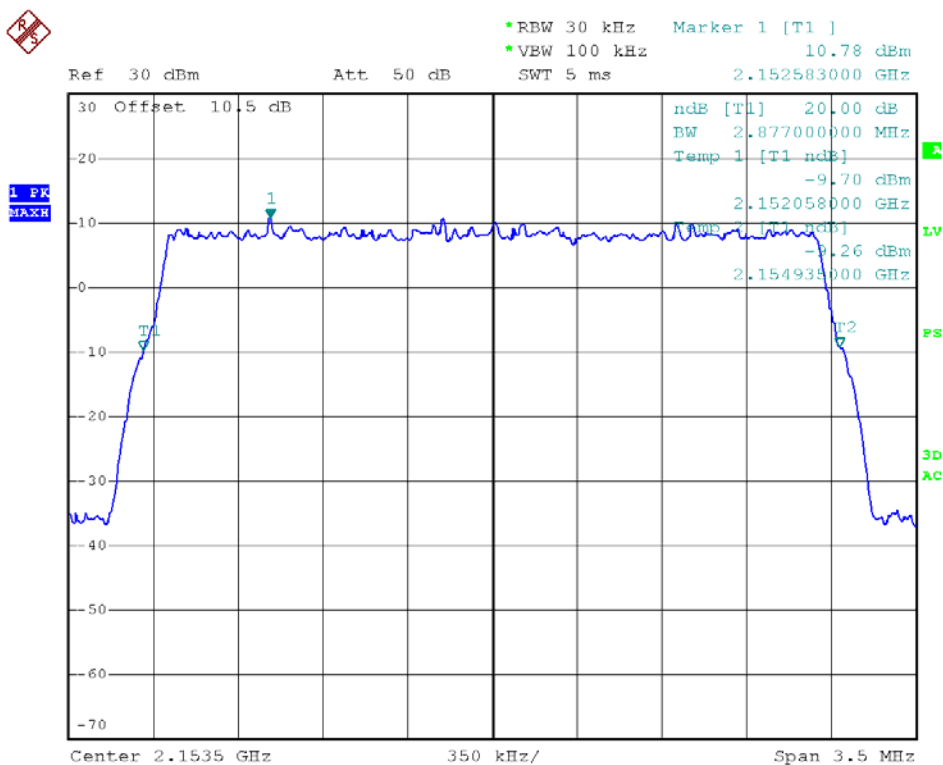
2100MHz-LTE-3M downlink (middle frequency)- Output



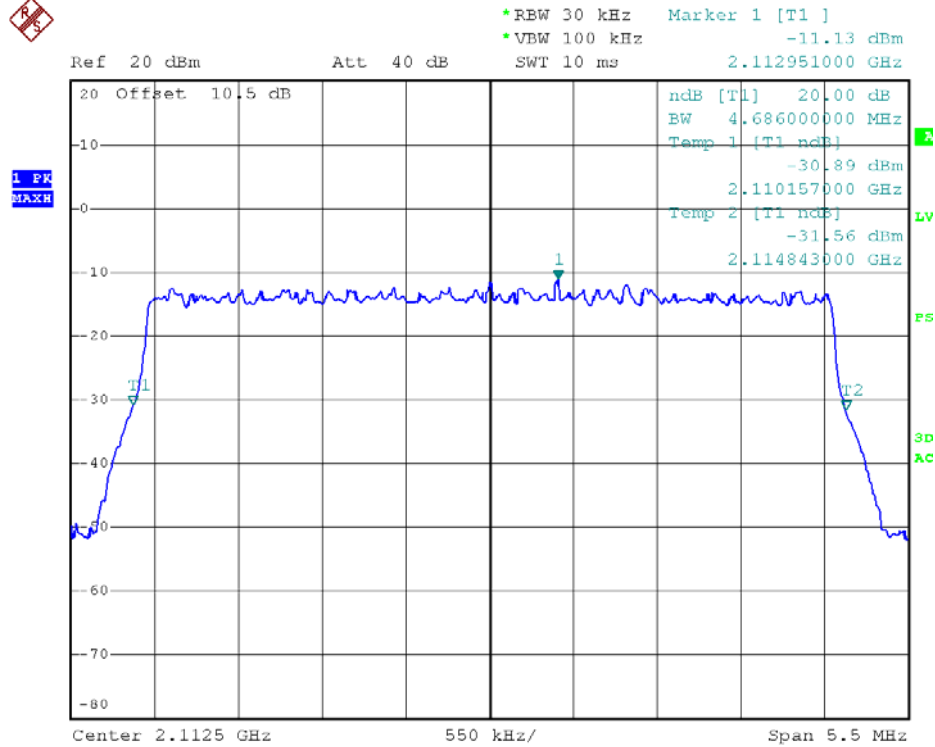
2100MHz-LTE-3M downlink (highest frequency)-Input



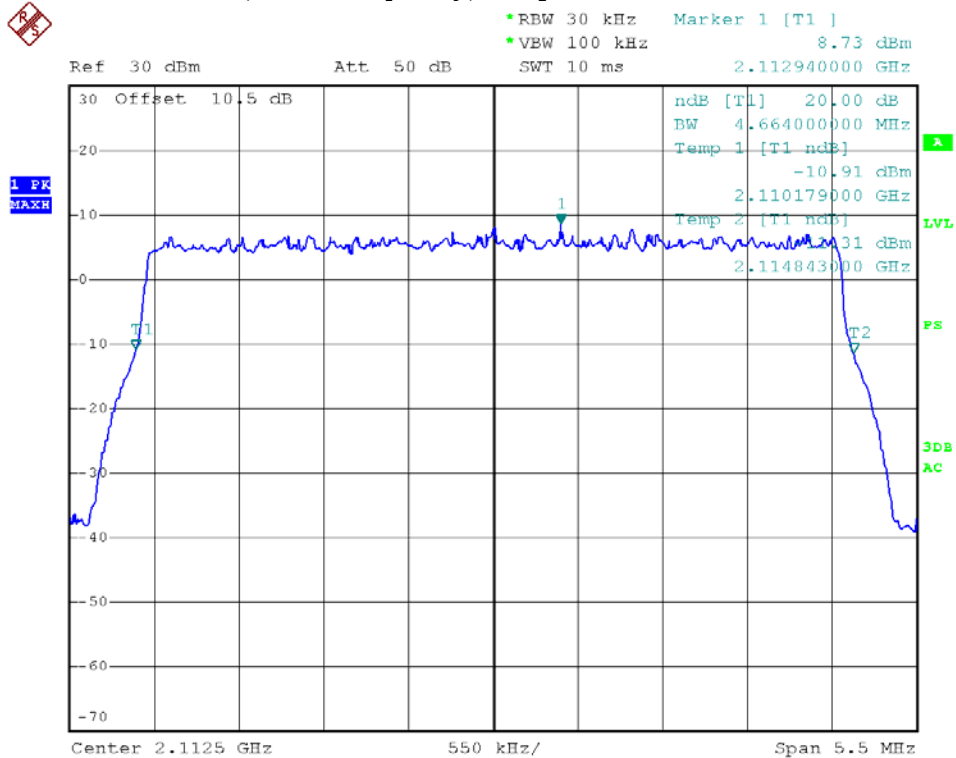
2100MHz-LTE-3M downlink (highest frequency)- Output



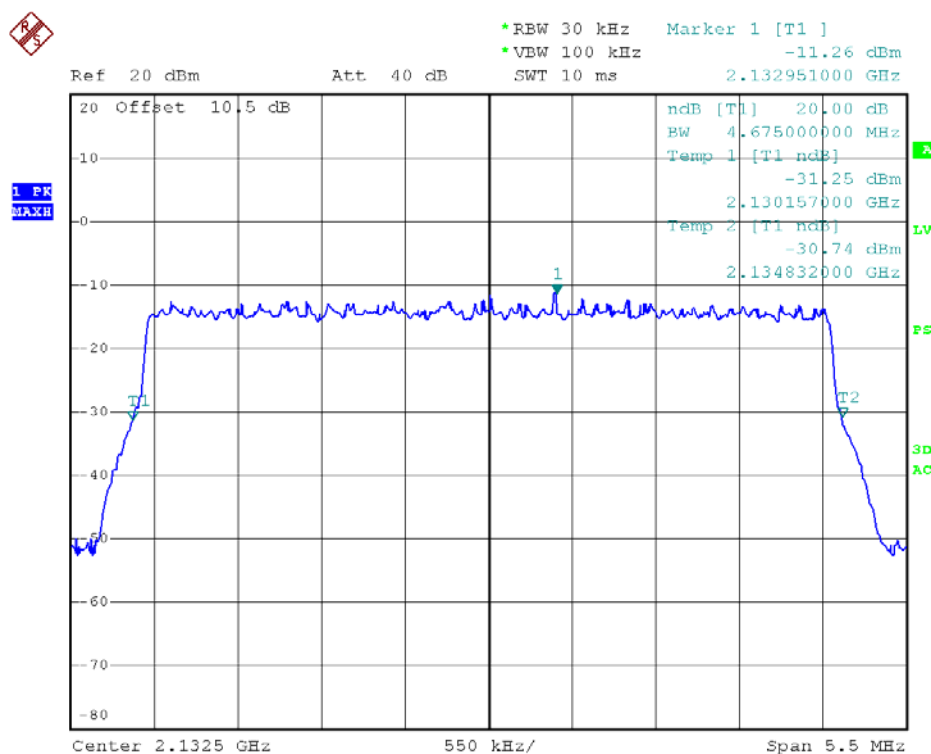
2100MHz-LTE-5M downlink (lowest frequency)-Input



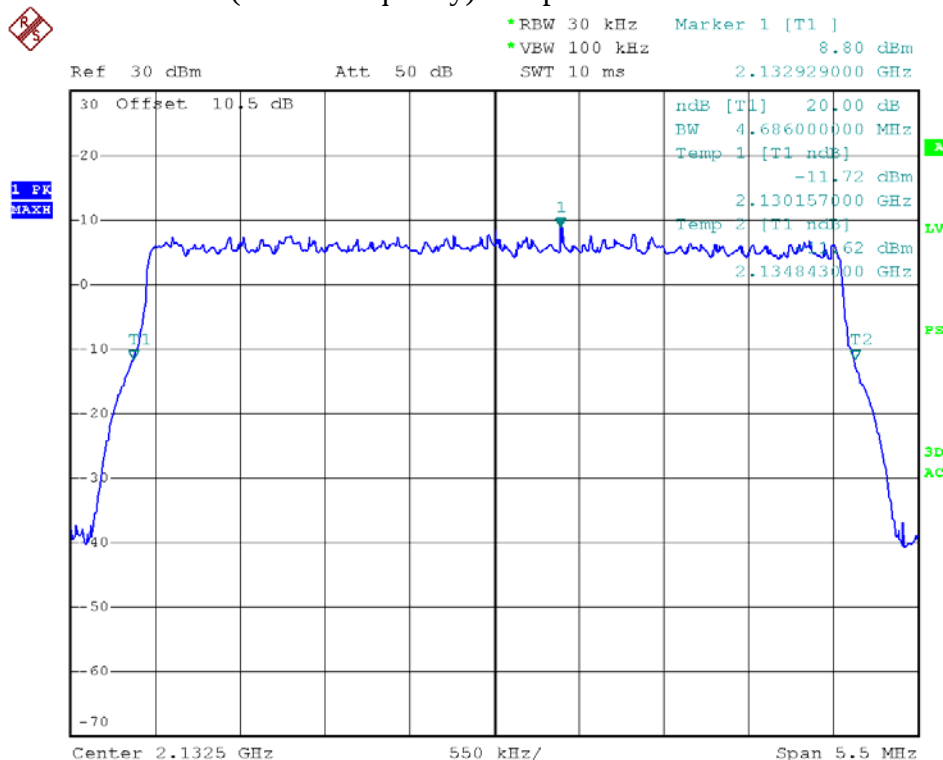
2100MHz-LTE-5M downlink (lowest frequency)-Output



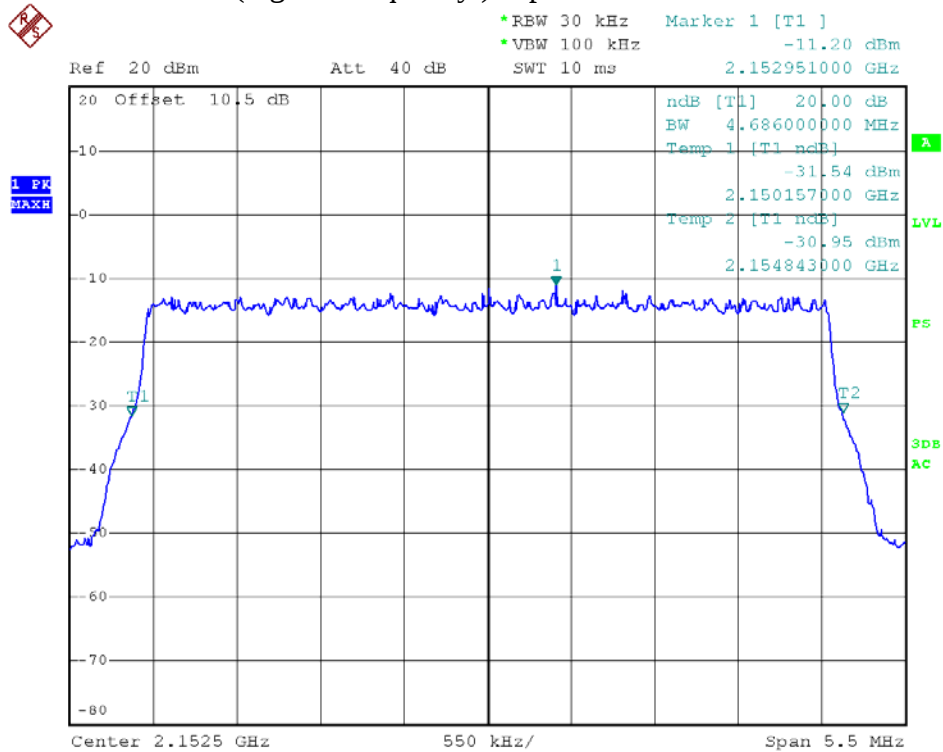
2100MHz-LTE-5M downlink (middle frequency)-Input



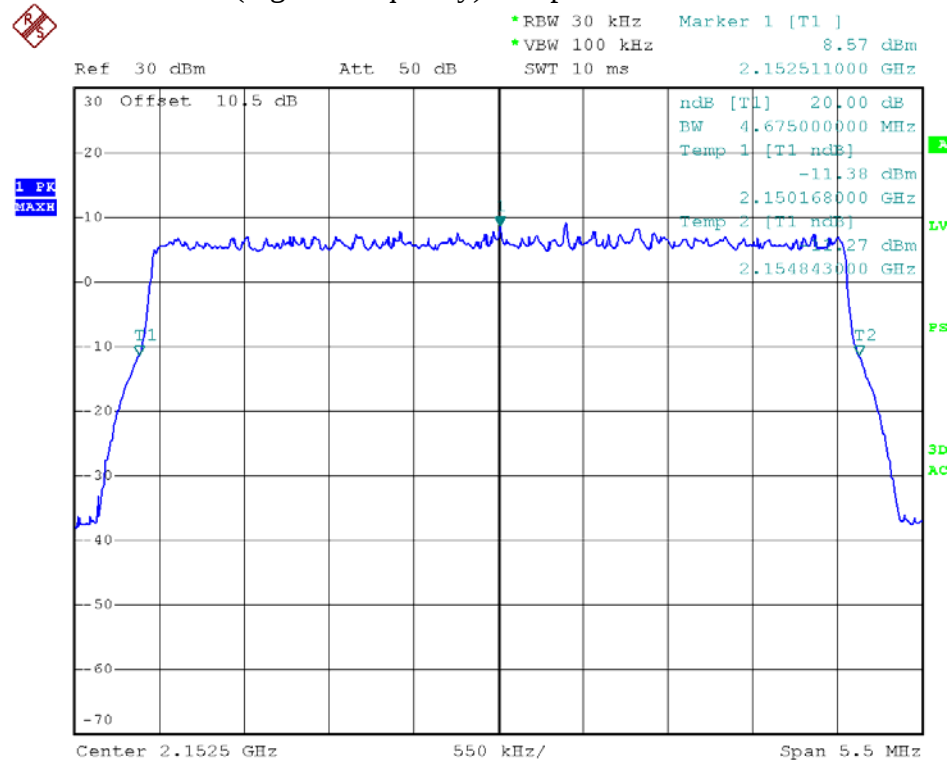
2100MHz-LTE-5M downlink (middle frequency)- Output



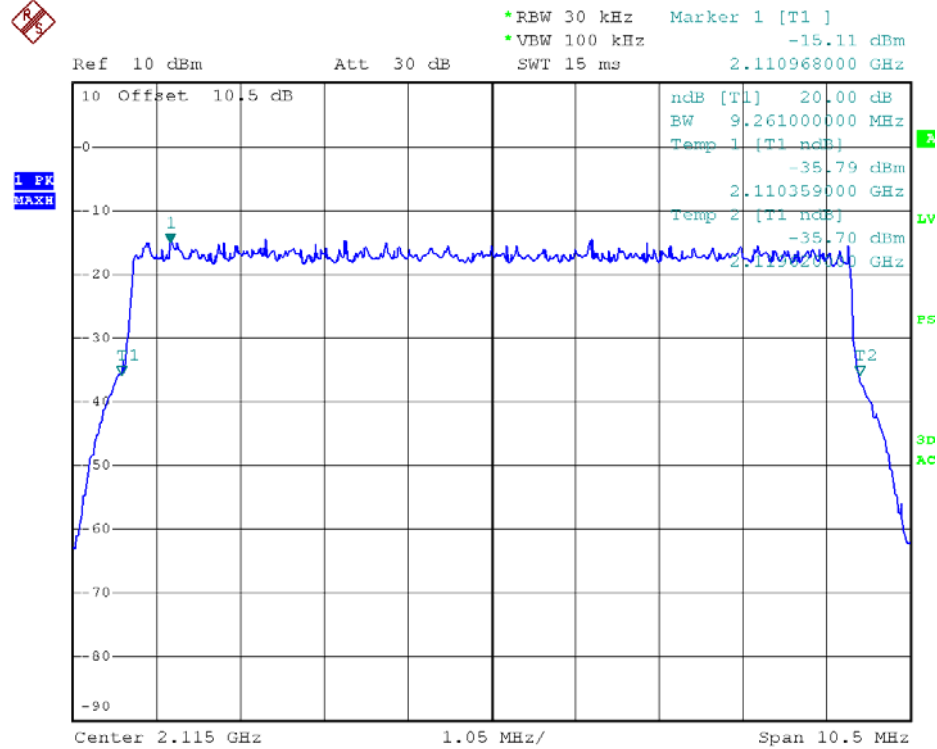
2100MHz-LTE-5M downlink (highest frequency)-Input



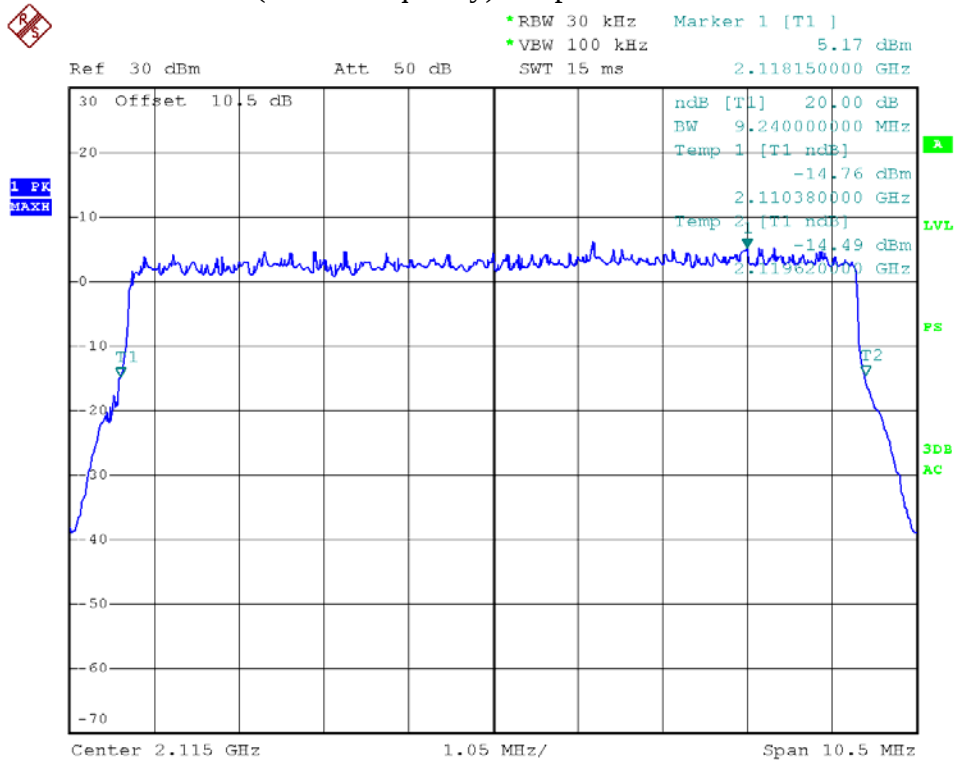
2100MHz-LTE-5M downlink (highest frequency)- Output



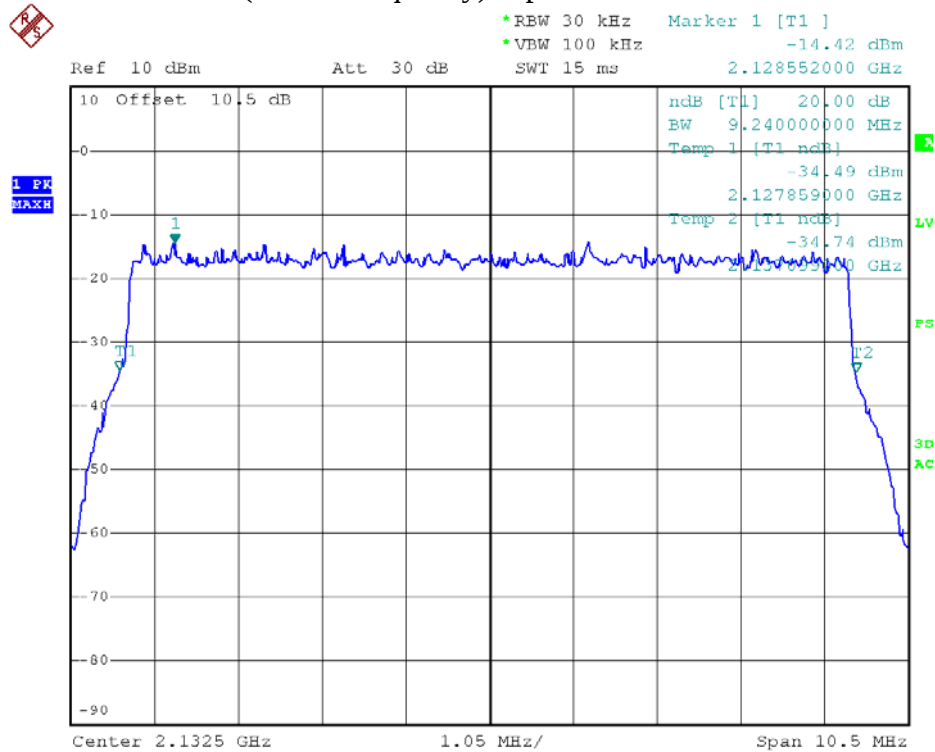
2100MHz-LTE-10M downlink (lowest frequency)-Input



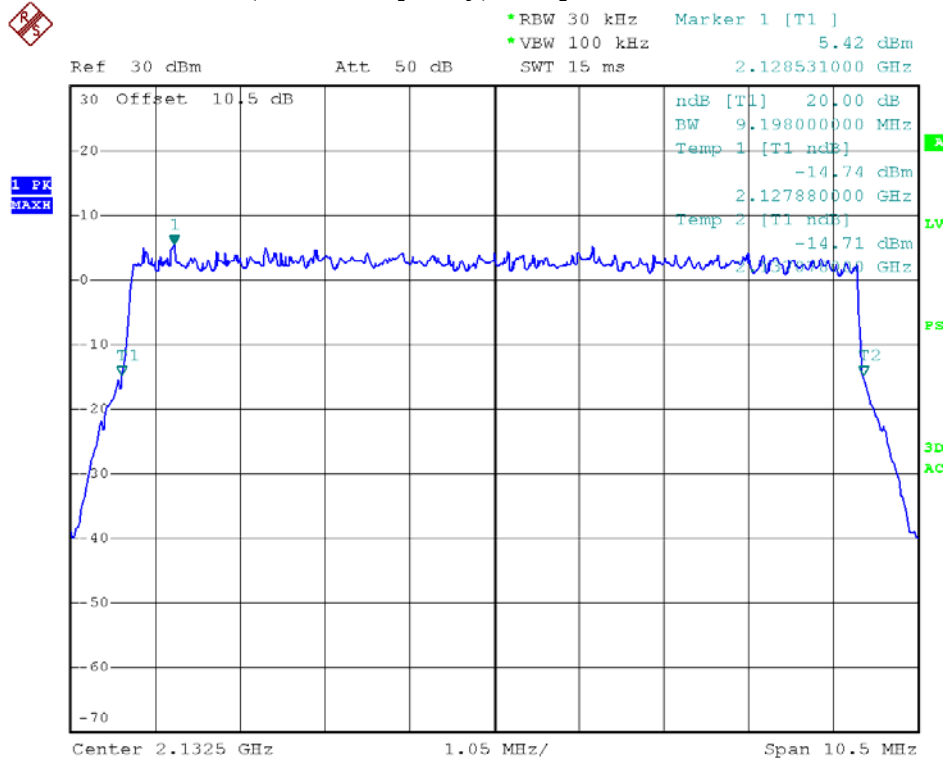
2100MHz-LTE-10M downlink (lowest frequency)-Output



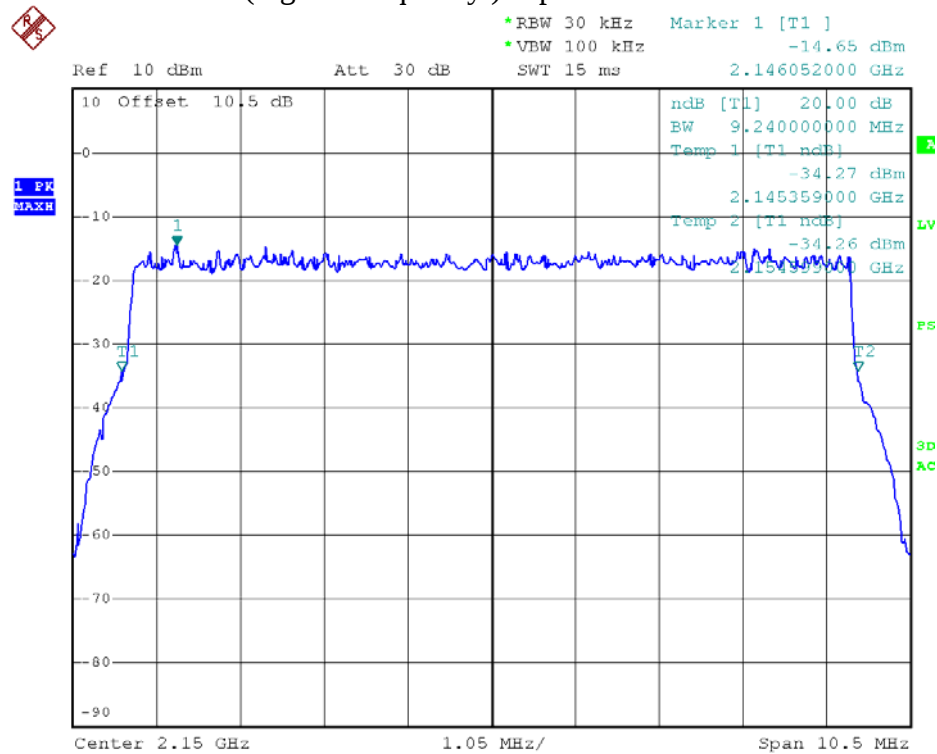
2100MHz-LTE-10M downlink (middle frequency)-Input



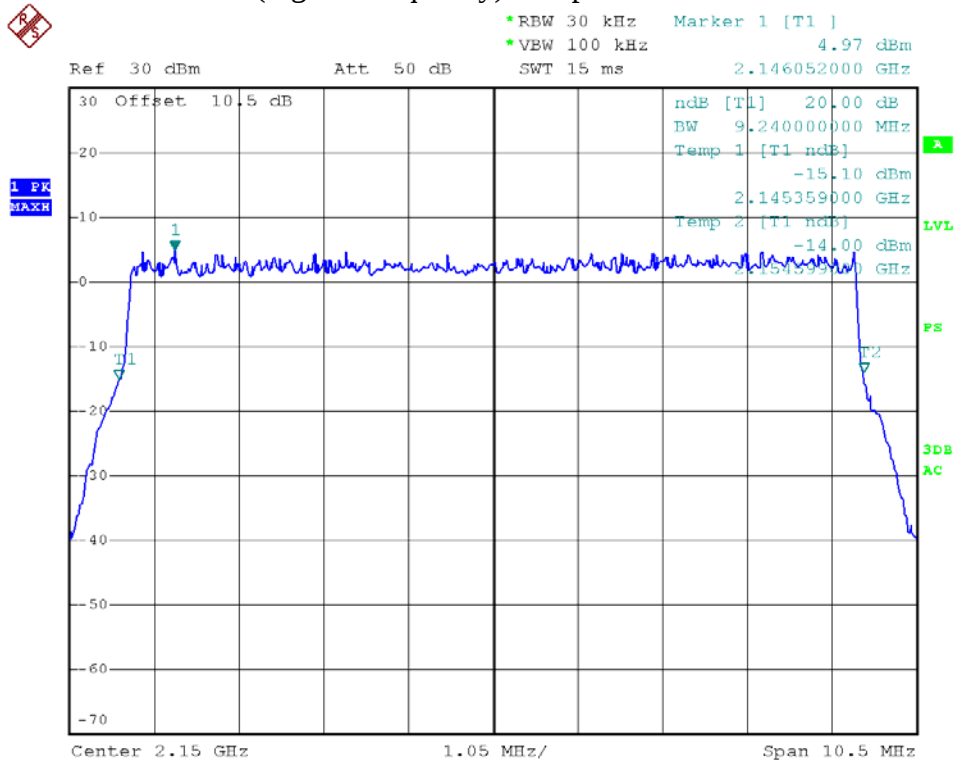
2100MHz-LTE-10M downlink (middle frequency)- Output

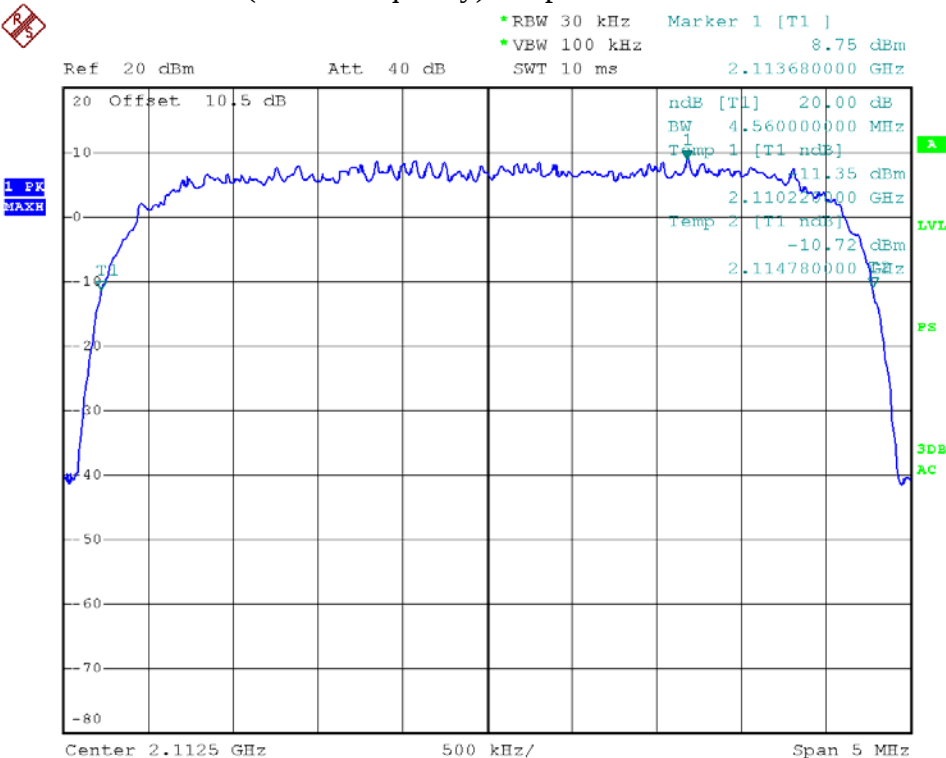


2100MHz-LTE-10M downlink (highest frequency)-Input

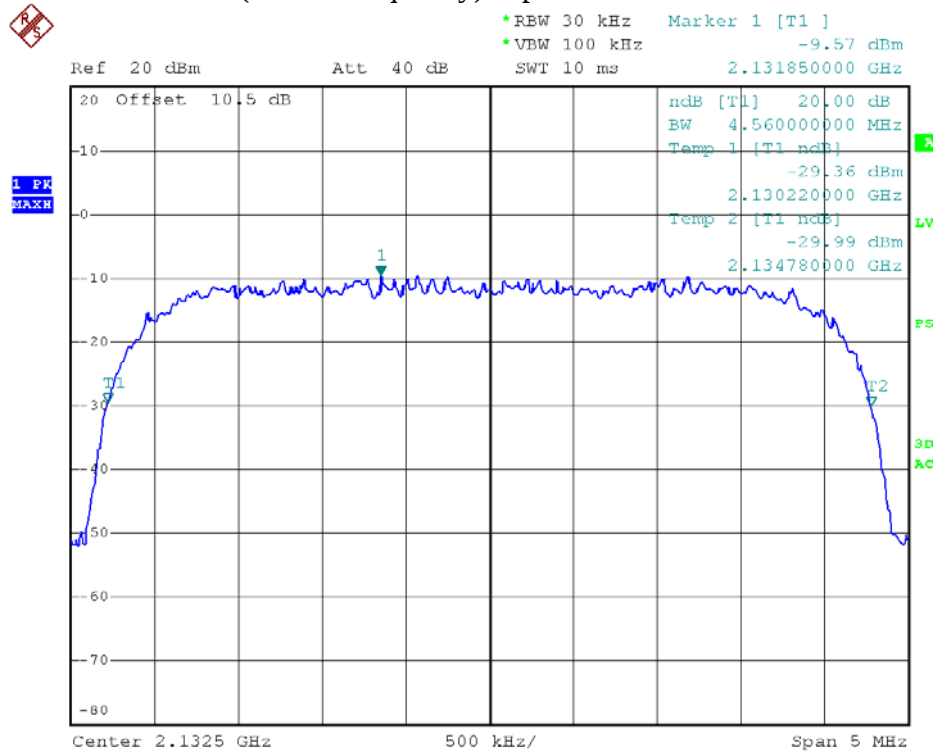


2100MHz-LTE-10M downlink (highest frequency)- Output

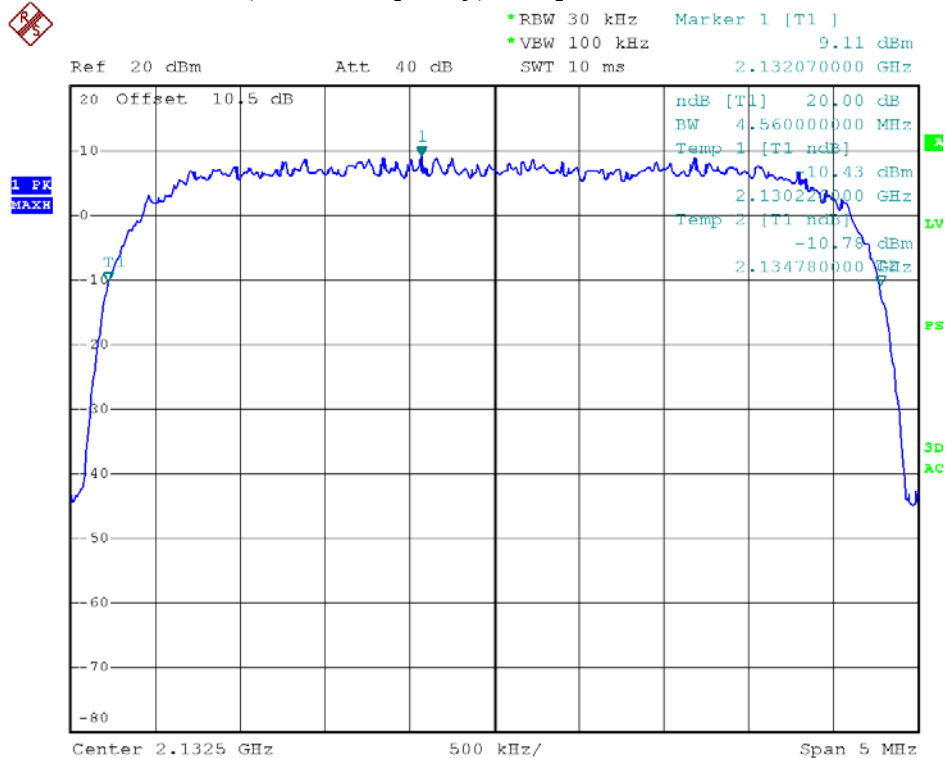




2100MHz-WCDMA downlink (middle frequency)-Input



2100MHz-WCDMA downlink (middle frequency)- Output





4.2.6 INTERMODULATION

Test Date: 31 January, 2013

Test Method: 2-11-04/EAB/RF

Test Requirement: The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.

Status The output power of EUT be set to maximum value, the gain of EUT be set to maximum value by software through the manufacture

Conditions Normal

Test configuration

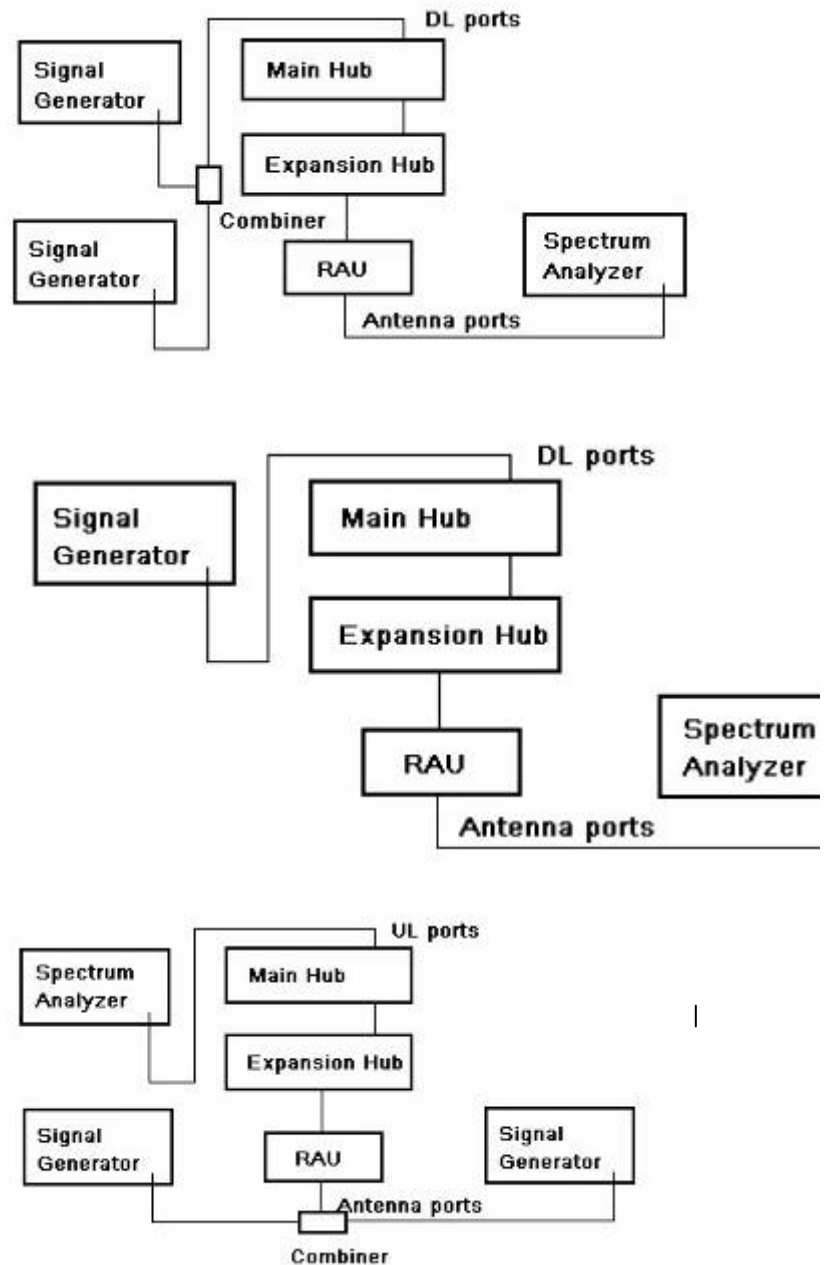


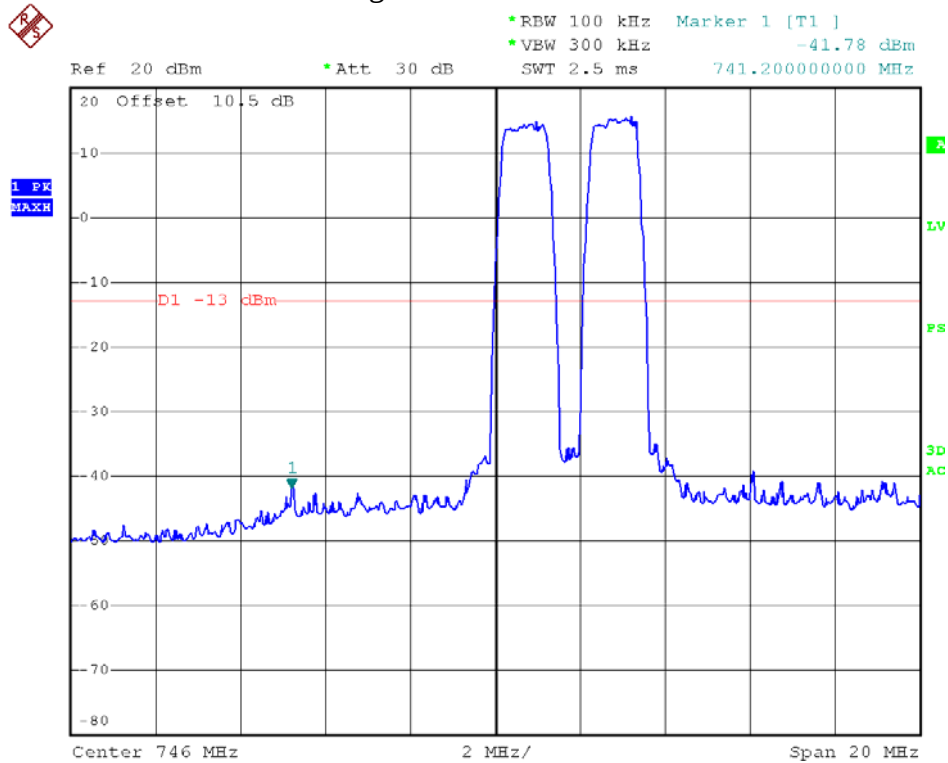
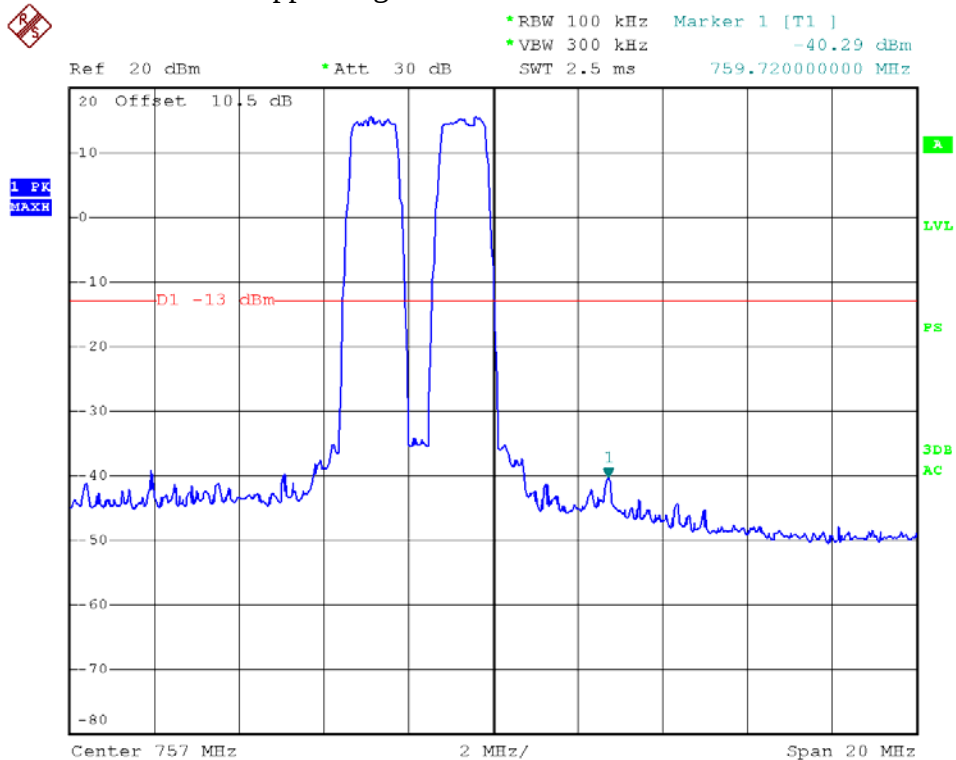
Fig.2 Up Link Intermodulation

Test Procedure:

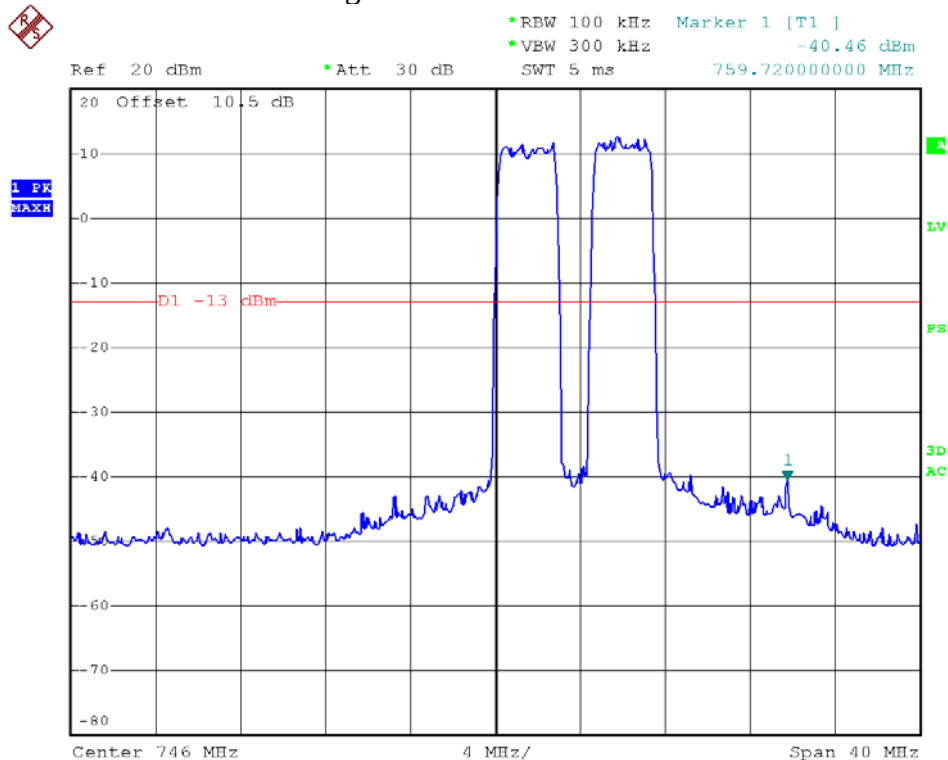
1. Connect the equipment as illustrated,
2. Test the background noise level with all the test facilities
3. Keep one transmitting path, all other connectors shall be connected by normal power or RF leads
4. Select the attenuator to avoid the test receiver or spectrum analyzer being destroyed
5. Keep the EUT continuously transmitting in max power
6. Keep two signal generator produce two signal are same in modulation type and level
7. Measurement the 3 order intermodulated produced by the EUT

(the sum of the two unwanted signal should be rated power)

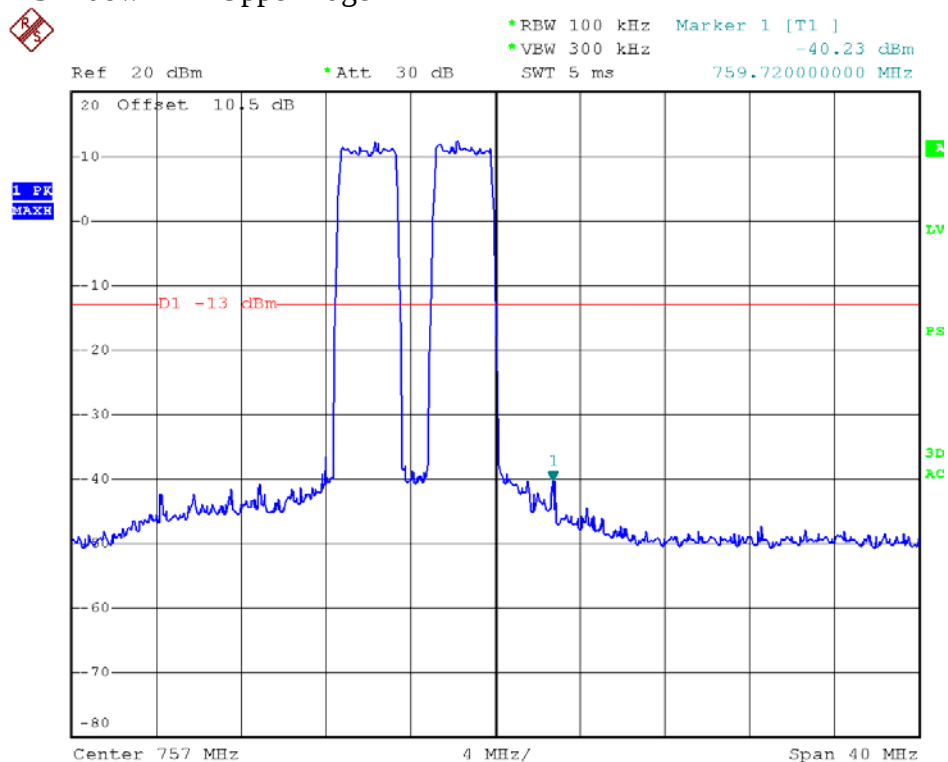
8. Correct for all losses in the RF path
9. Read the conducted spurious emission of the EUT antenna port.
CW signal rather than typical signal is acceptable(for FM)
At maximum drive level, for each modulation :one test with three
tones, or two tests(high, low-band edge)with two tones
Limit usually is -13dBm conducted
Not need for signal channel systems
Combination of modulation types not needed

4.2.6.1 MEASUREMENT RECORD**700MHz-LTE-1.4M downlink-Lower Edge****700MHz-LTE-1.4M downlink-Upper Edge**

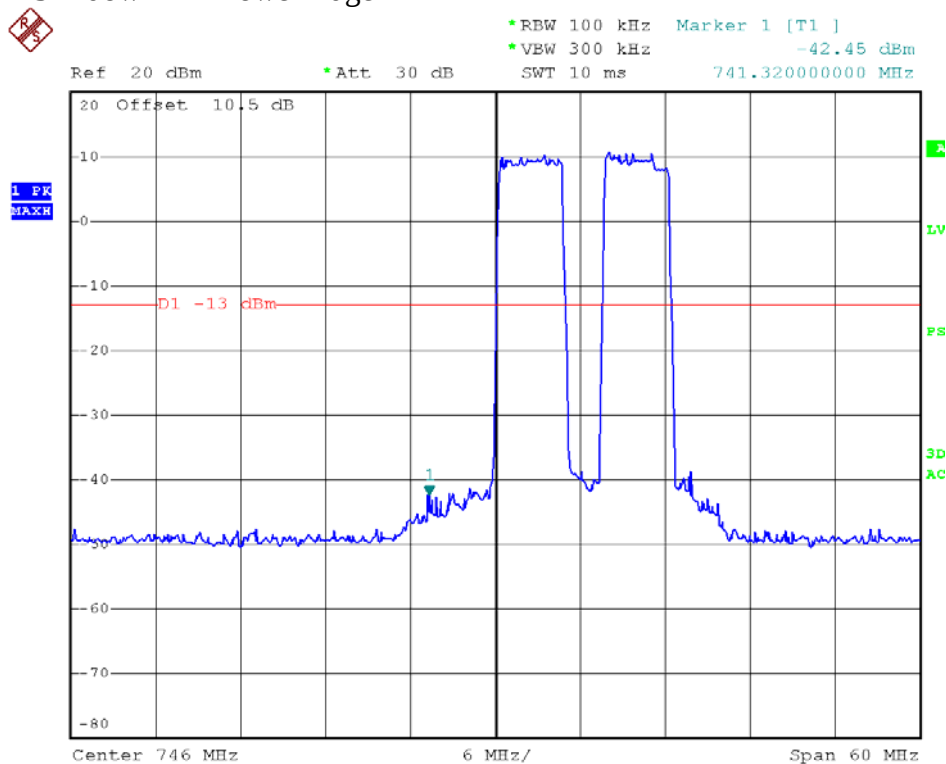
700MHz-LTE-3M downlink-Lower Edge



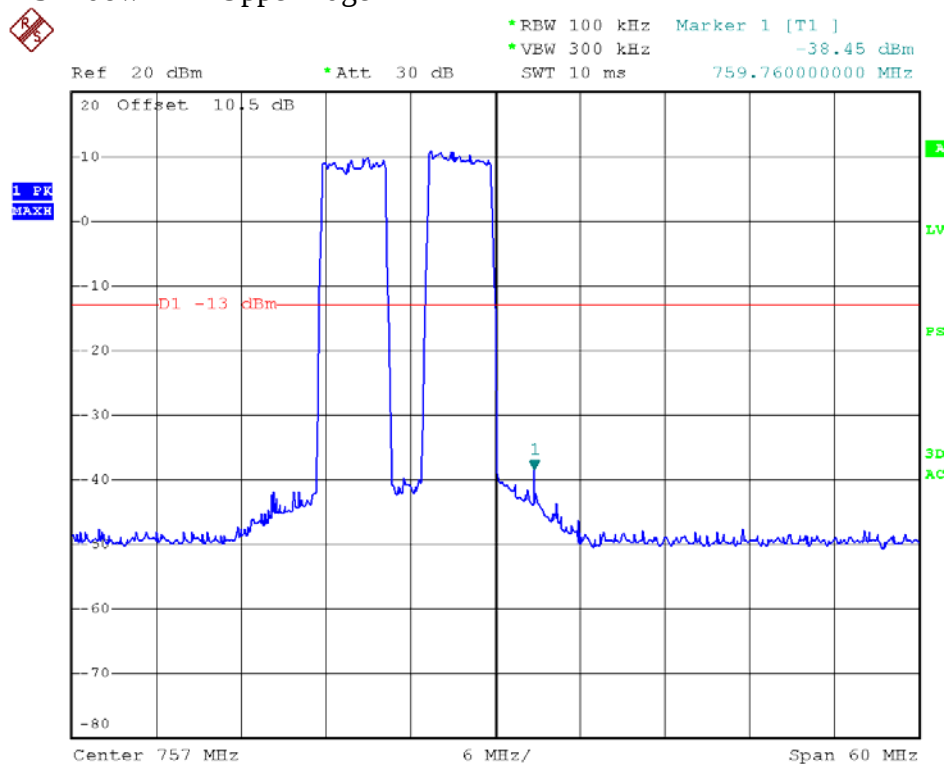
700MHz-LTE-3M downlink-Upper Edge



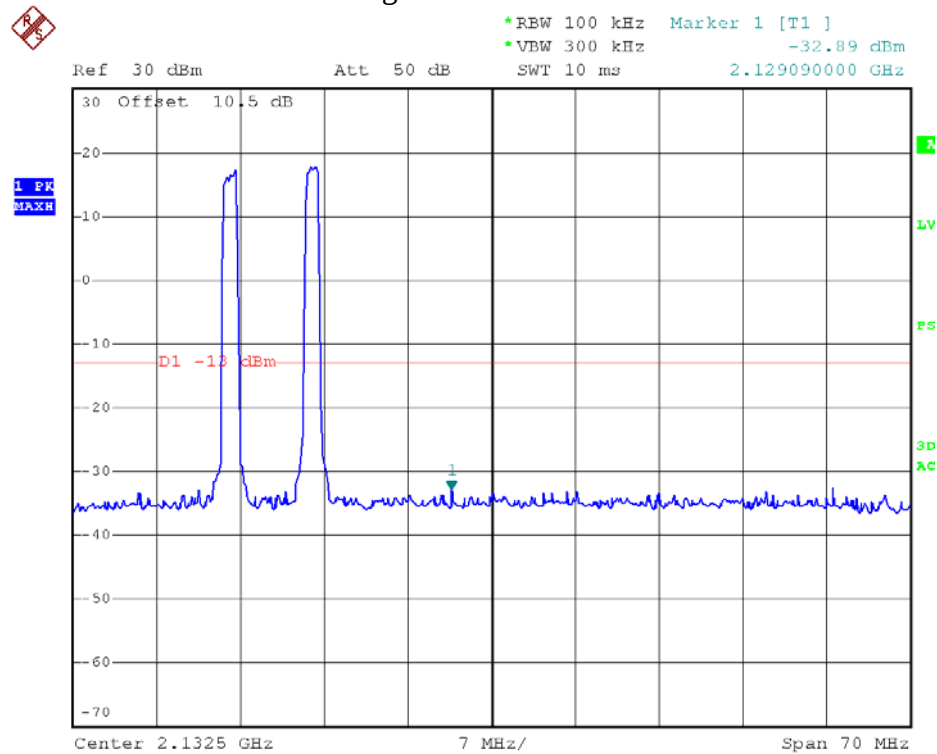
700MHz-LTE-5M downlink-Lower Edge



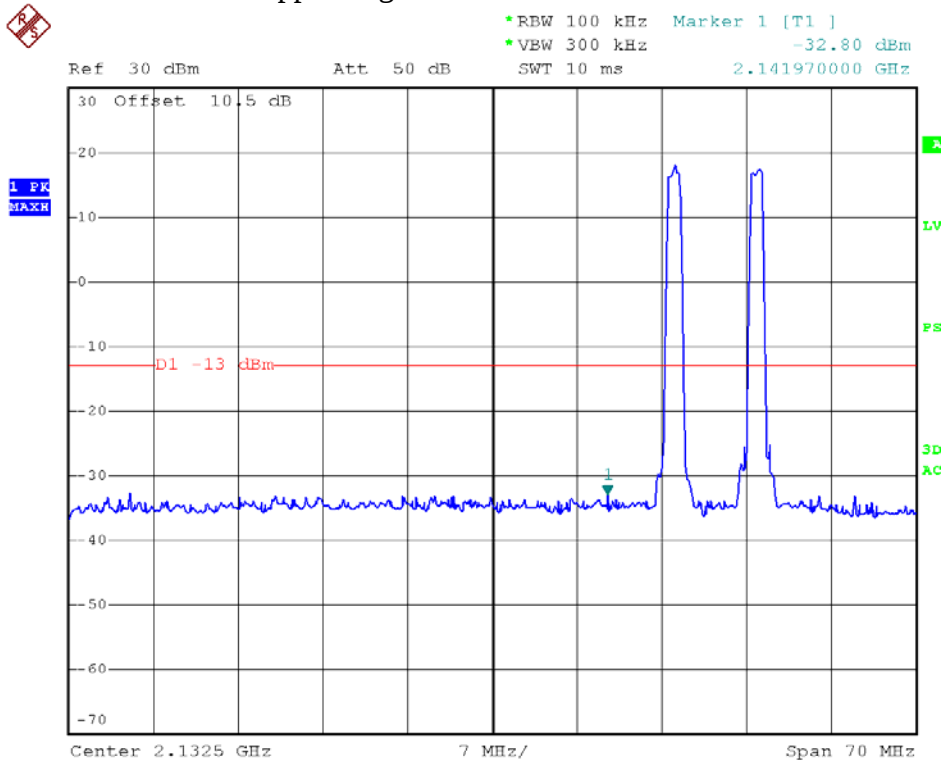
700MHz-LTE-5M downlink-Upper Edge



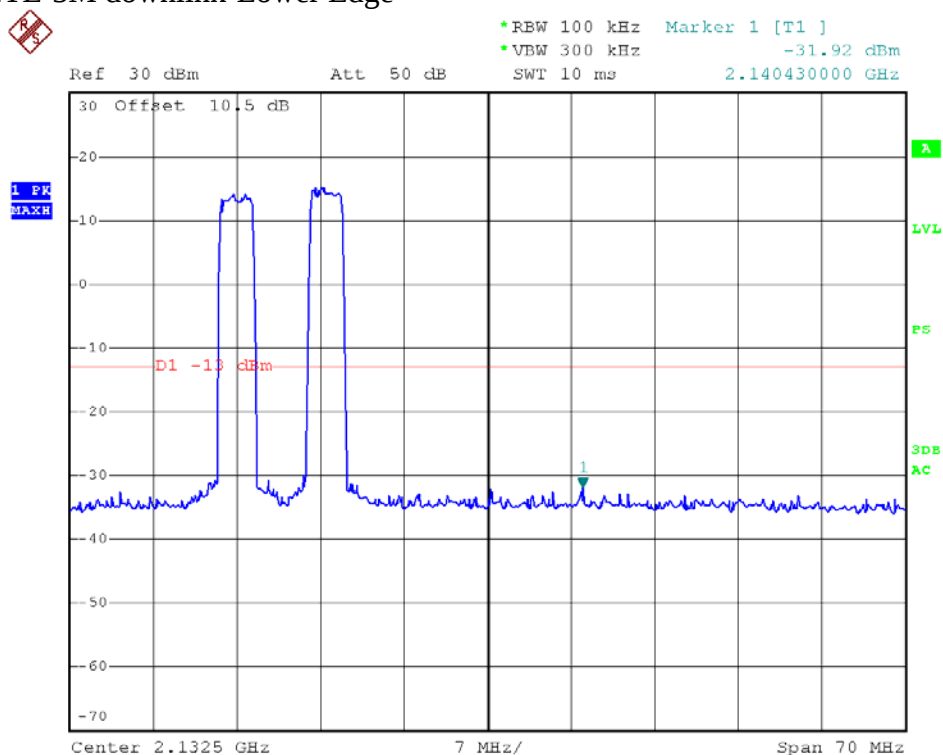
2100MHz-LTE-1.4M downlink-Lower Edge



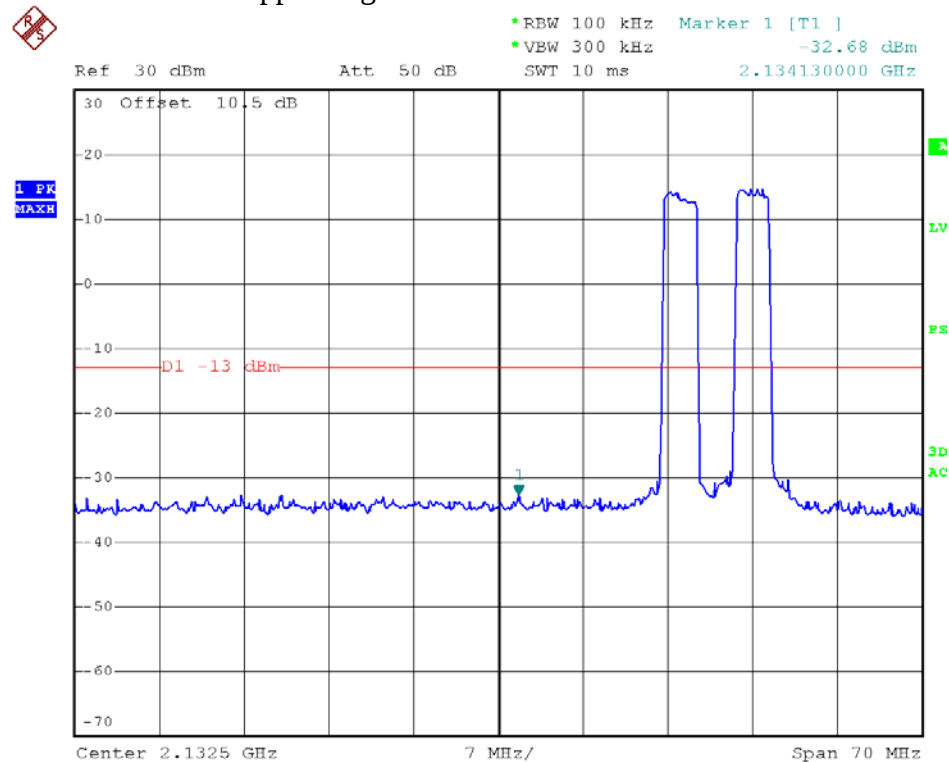
2100MHz-LTE-1.4M downlink-Upper Edge



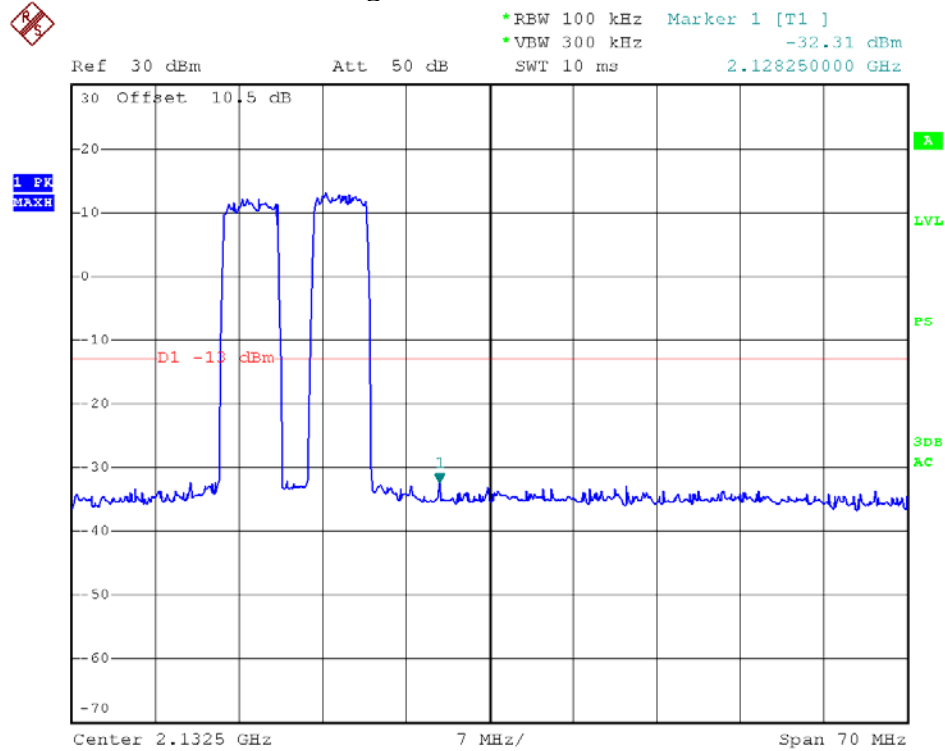
2100MHz-LTE-3M downlink-Lower Edge



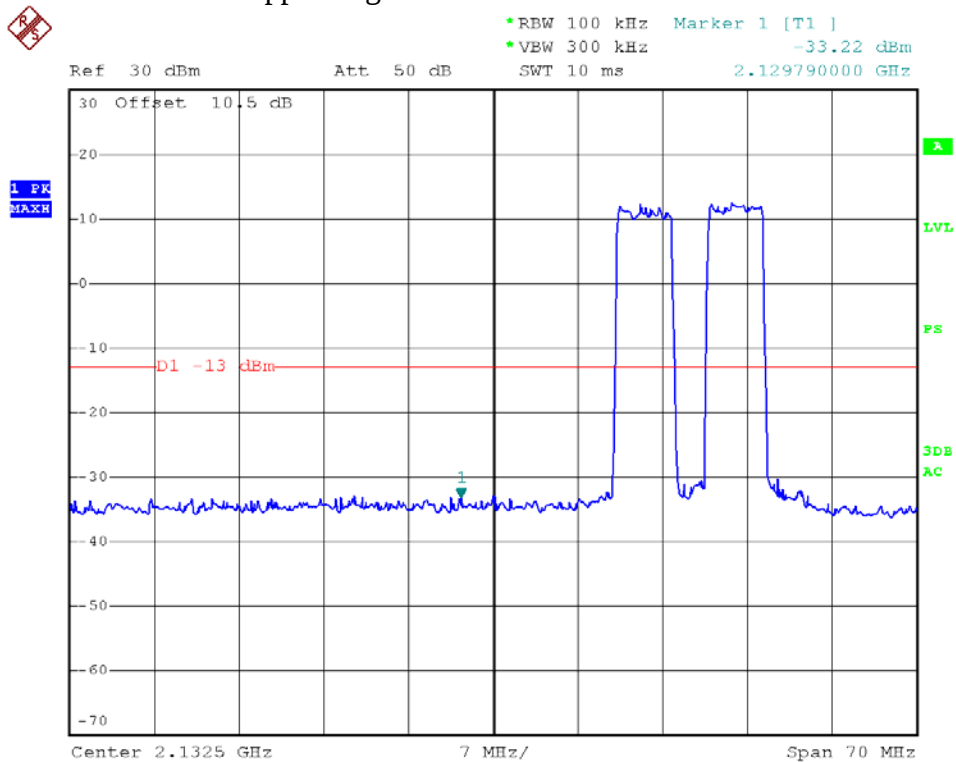
2100MHz-LTE-3M downlink-Upper Edge



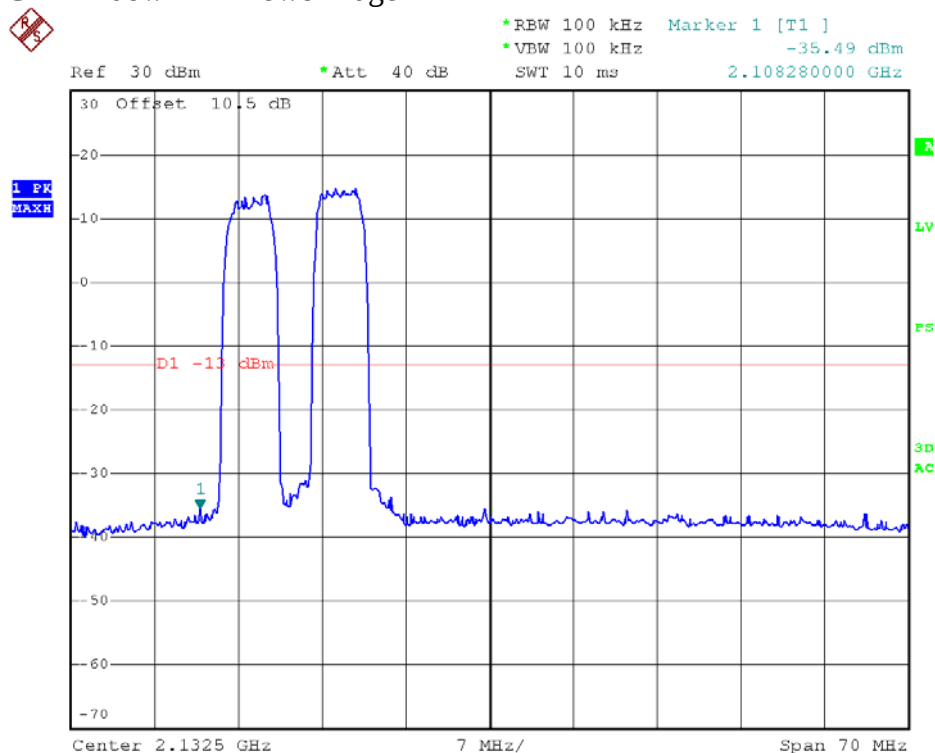
2100MHz-LTE-5M downlink-Lower Edge



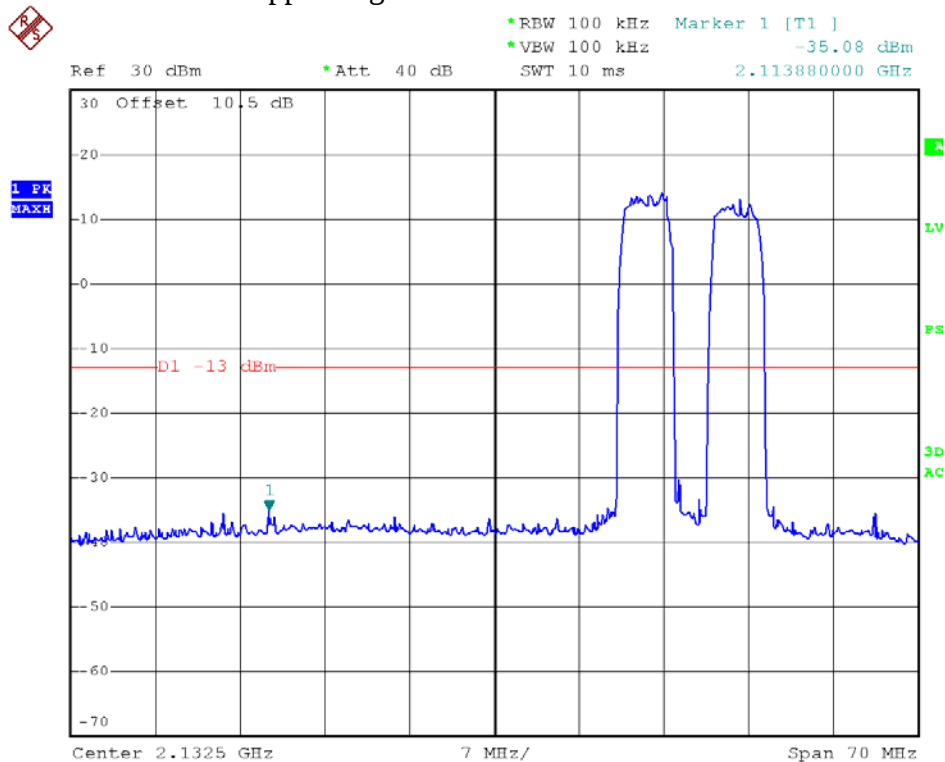
2100MHz-LTE-5M downlink-Upper Edge



2100MHz-WCDMA downlink-Lower Edge



2100MHz-WCDMA downlink-Upper Edge



Remark:

For the test in two signal input or intermodulation ,test input signal f1 and f2 will consider as follows conditions:

7)EUT frequency band span and the amount of channels;

8)f1 is the frequency lower,f2 is the frequency higher , f is the channel spacing;

9)in lower edge test, f1 is the lower frequency+1 channel frequency ,and f2 is+2 channel frequency;

10) in higher edge test, f1 is the higher frequency-2 channel frequency ,and f2 is-1 channel frequency;

11)according to the amplifier characteristic ,the 3rd product will appear when two signals input;

12)base the 3rd product frequency $F1=2f1-f2$,and $F2=2f2-f1$,when the f1 and f2 frequency select above,

a)in lower edge test , $F1=2f1-(f1+f)=f1-f$ f=lower dege frequency;

b) in higher edge test , $F2=2f2-(f1-f)=f1+f$ f=higher dege frequency

4.2.7 FREQUENCY STABILITY

Test Date: 01 February, 2013

Test Method: FCC part 2.1055

Test Requirement: FCC 27.54

Specification The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block ,The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency

Status The output power of EUT be set to maximum value,the gain of EUT be set to maximum value by software through the manufacture

Conditions Temperature condition, Voltage condition

Test procedure

1. Temperature conditions:
 - a)record the 20 and normal voltage frequency value as reference point;
 - b)vary the temperature from -30 to 60 with step 10
 - c)when reach a temperature point ,keep the temperature banlance at least 1 hour to make the product working in this status;
 - d)record the frequency at the relative temperature.
2. Voltage condition :
 - a)record the 20 and normal voltage frequency value as reference point;
 - b)vary the voltage from -15% norminal voltage to +15% voltage
 - c)read the frequency at the relative voltage.

4.2.7.1 MEASUREMENT RECORD

1. Frequency Stability vs temperature

700MHz

Temperature()	Frequency(MHz)	Tolerance(ppm)
60	752.000490	0.652
50	752.000478	0.636
40	752.000465	0.618
30	752.000446	0.593
20	752.000482	0.641
10	752.000467	0.621
0	752.000449	0.597
-10	752.000487	0.648
-20	752.000456	0.606
-30	752.000468	0.622

2100MHz

Temperature()	Frequency(MHz)	Tolerance(ppm)
60	2132.500483	0.226
50	2132.500465	0.218
40	2132.500472	0.221
30	2132.500462	0.217
20	2132.500454	0.213
10	2132.500501	0.235
0	2132.500489	0.229
-10	2132.500287	0.135
-20	2132.500398	0.187
-30	2132.500380	0.178

2.Frequency Stability vs voltage

700MHz

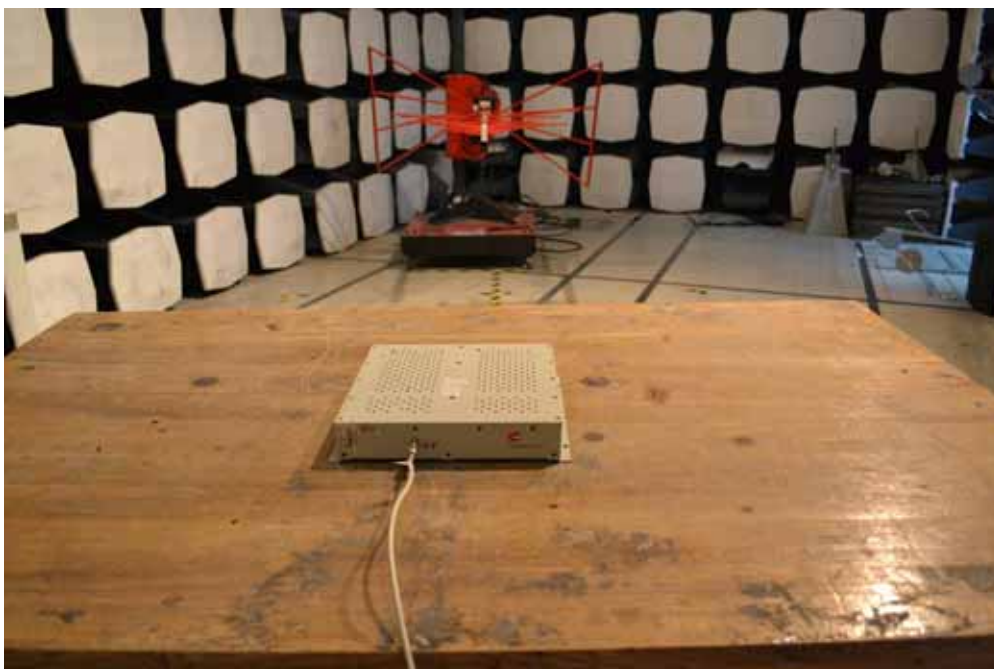
Voltage(V)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	752.000468	0.622
120	752.000455	0.605
138(120*1.15)	752.000433	0.576

1900MHz

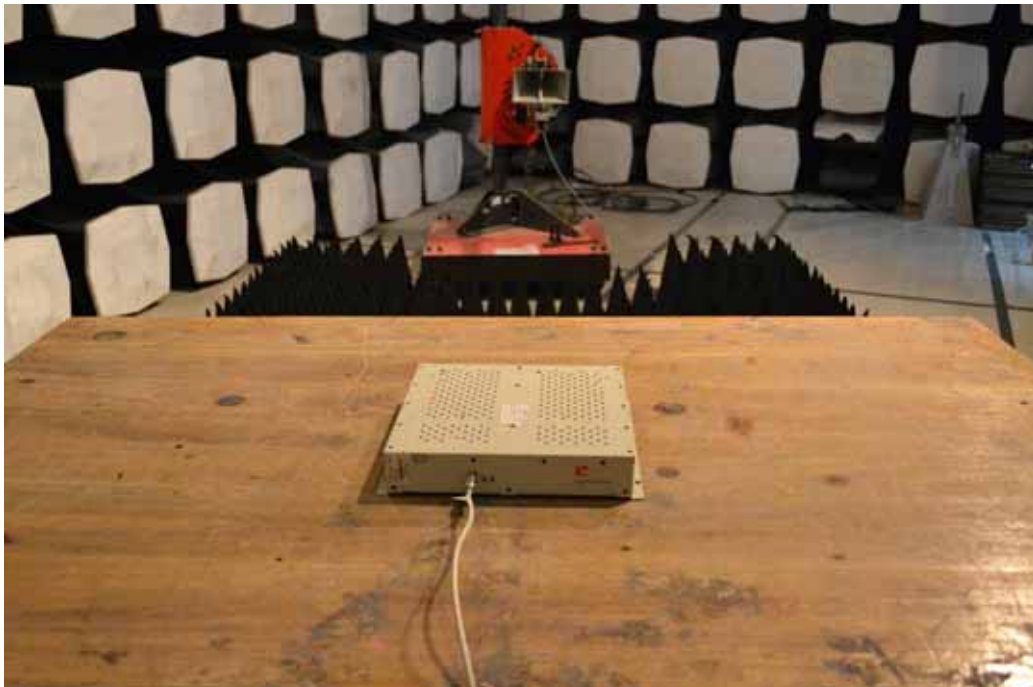
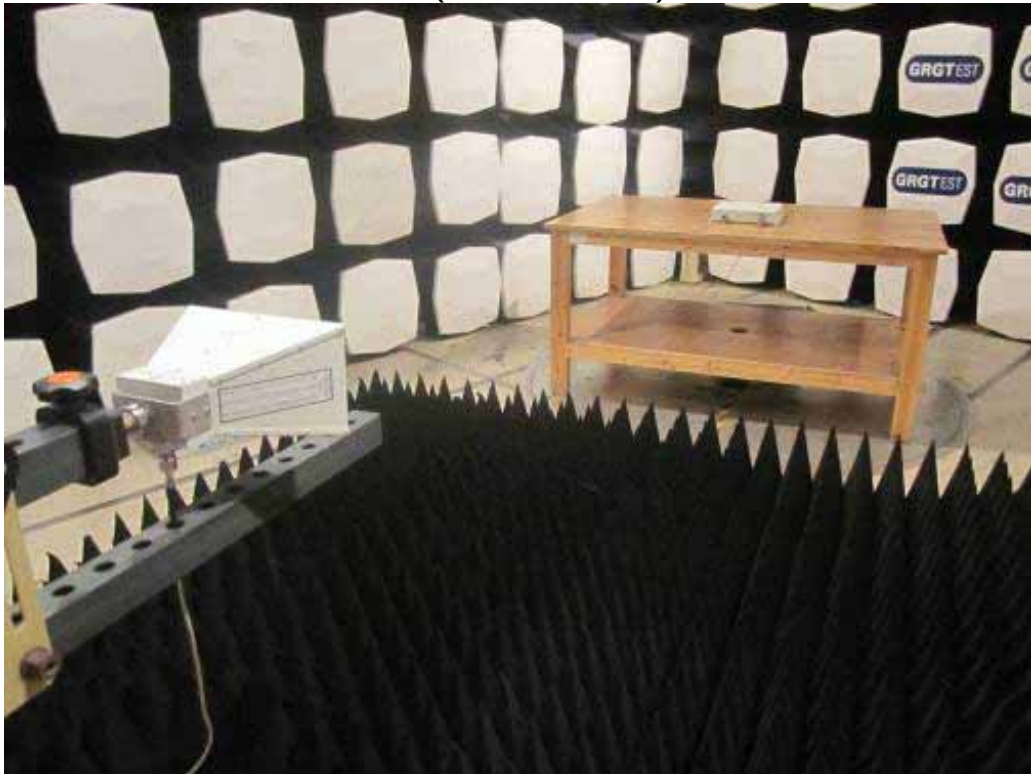
Voltage(V)	Frequency(MHz)	Tolerance(ppm)
102 (120*0.85)	2132.500477	0.224
120	2132.500454	0.213
138(120*1.15)	2132.500469	0.220

APPENDIX A:PHOTOGRAPH OF THE TEST CONFIGURATION

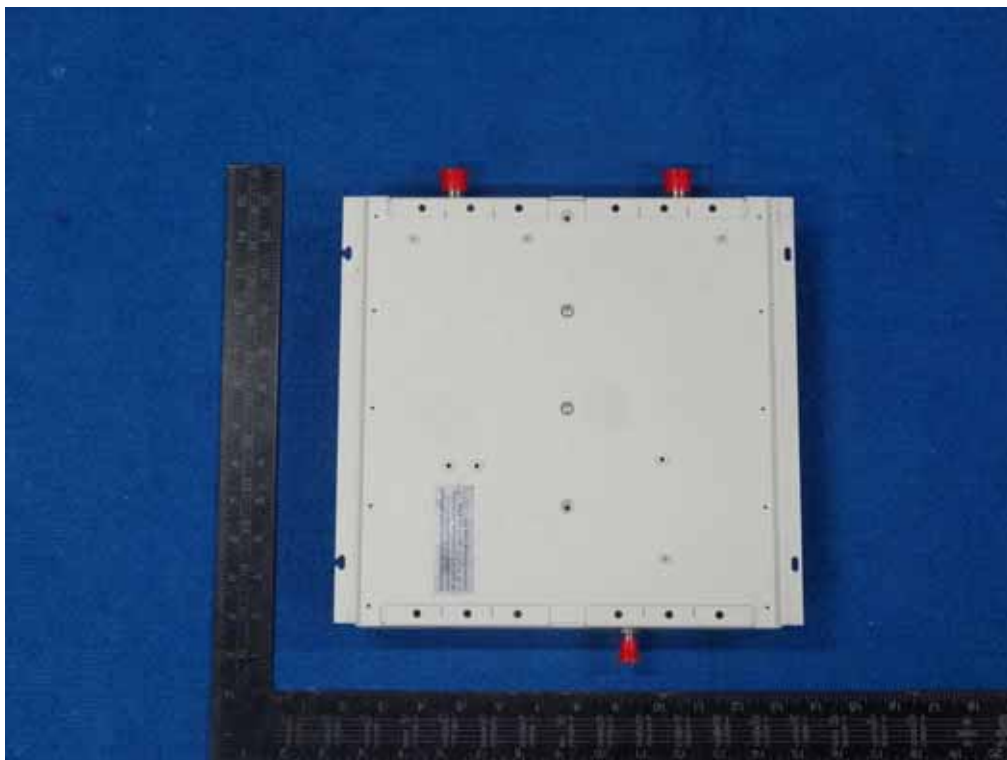
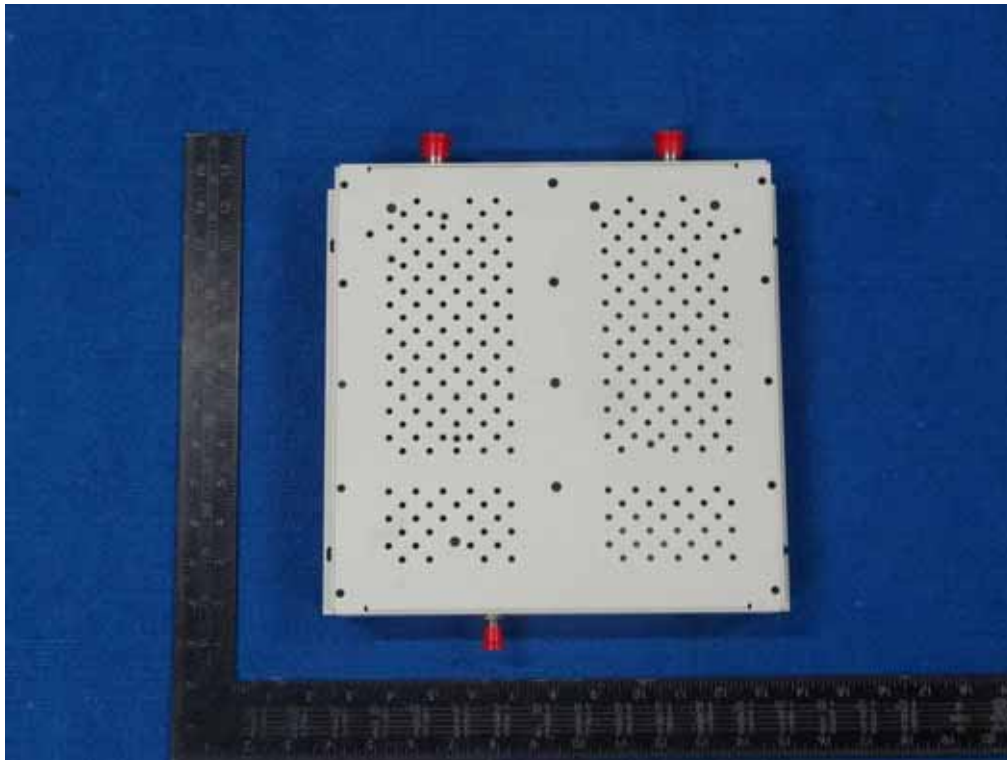
RE (Below 1GHz)

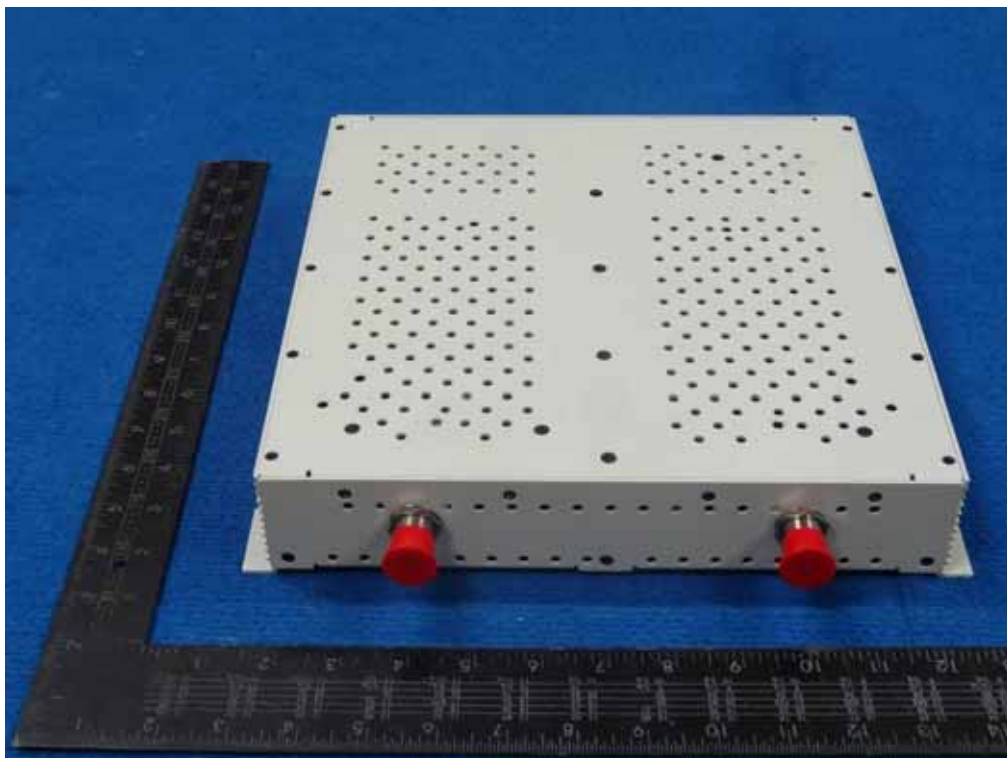


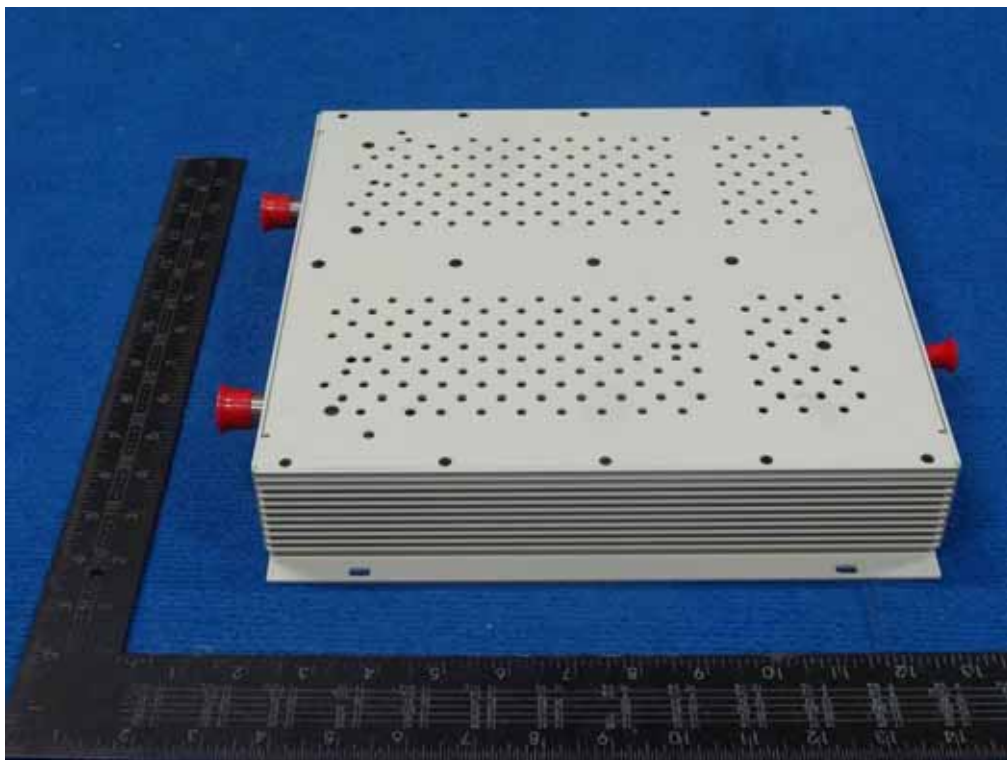
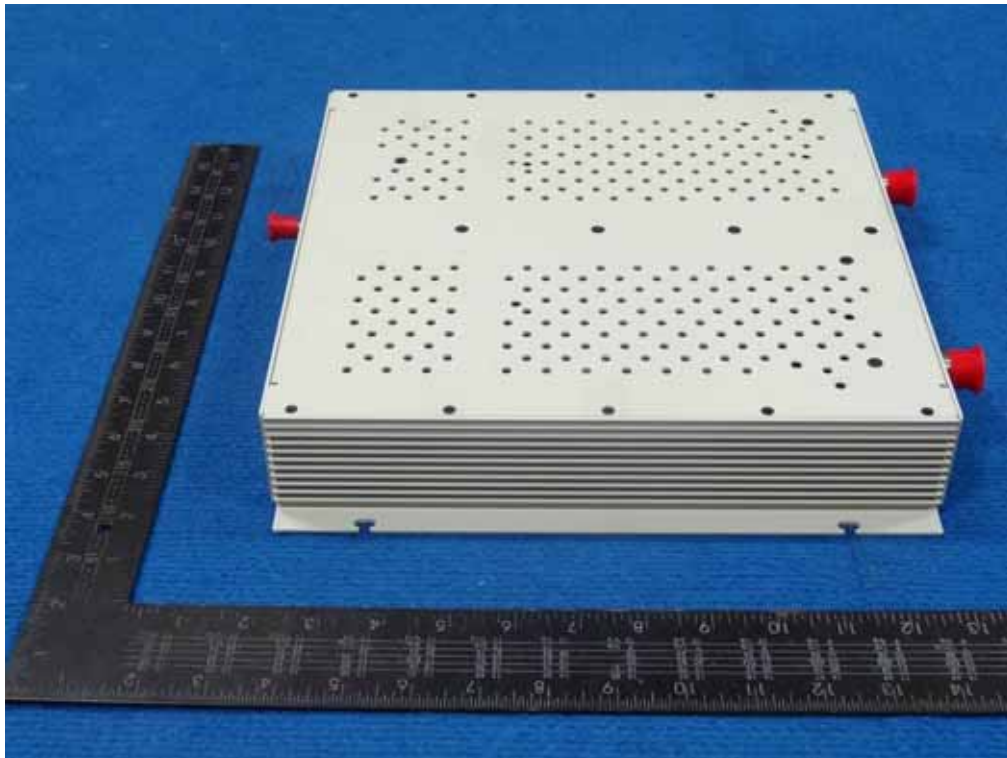
RE (Above 1GHz)



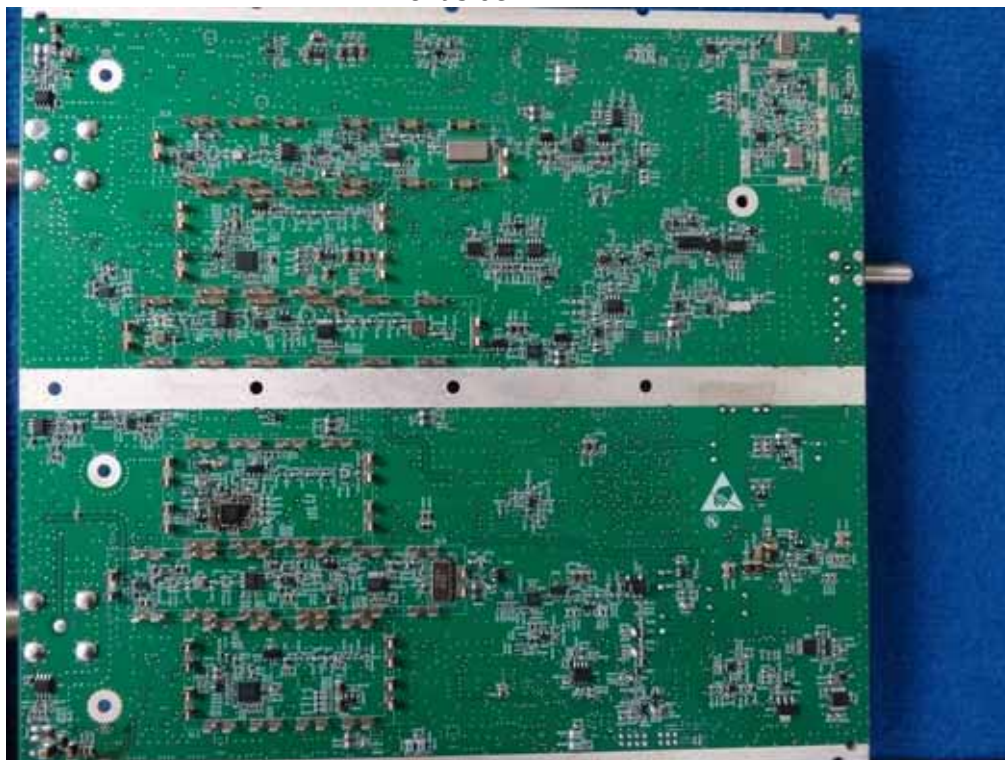
APPENDIX B: PHOTOGRAPHS OF EUT







Front side



Rear side



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