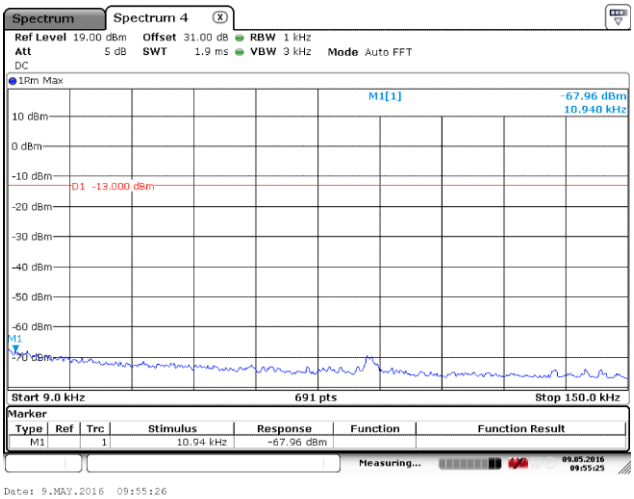
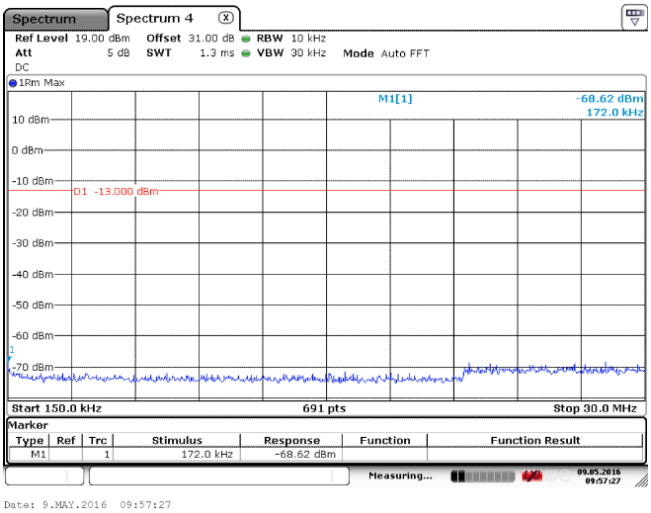
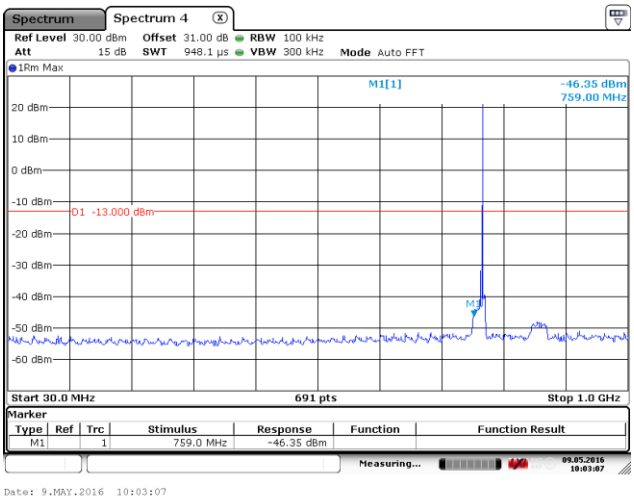
(1.2) Mid Frequency: 772.0125MHz



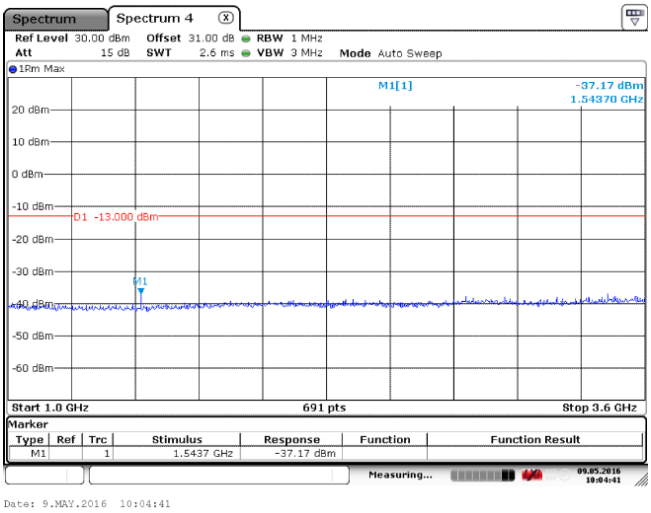
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

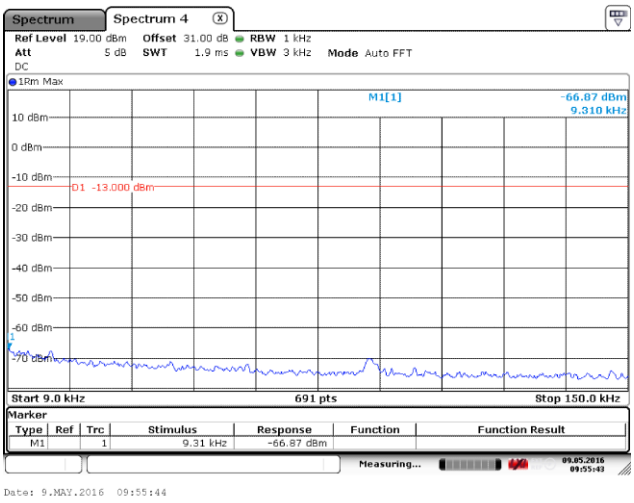


30 MHz ~1.0 GHz

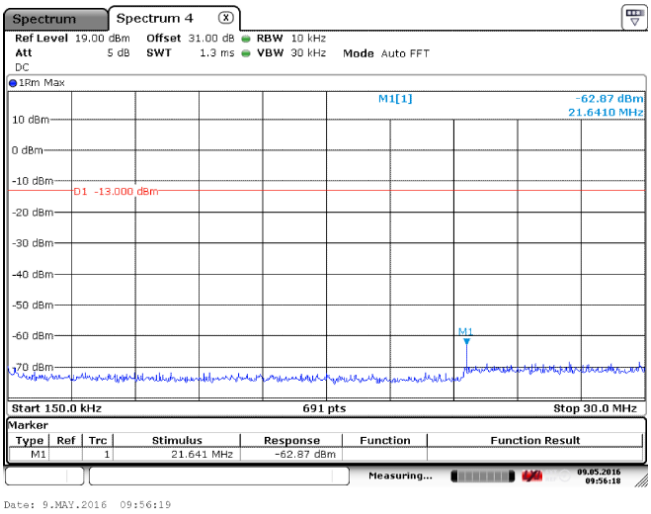


1.0 GHz ~3.6 GHz

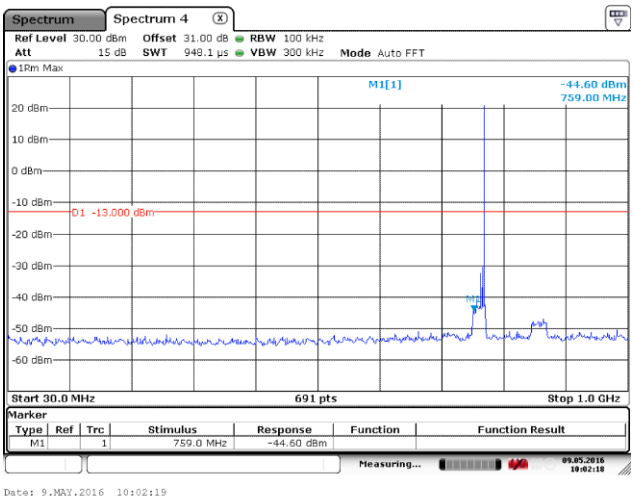
(1.3) High Frequency: Frequency: 774.9875MHz



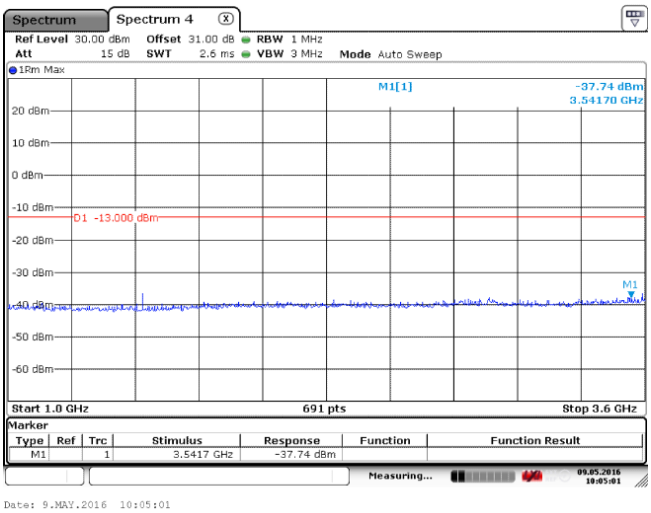
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



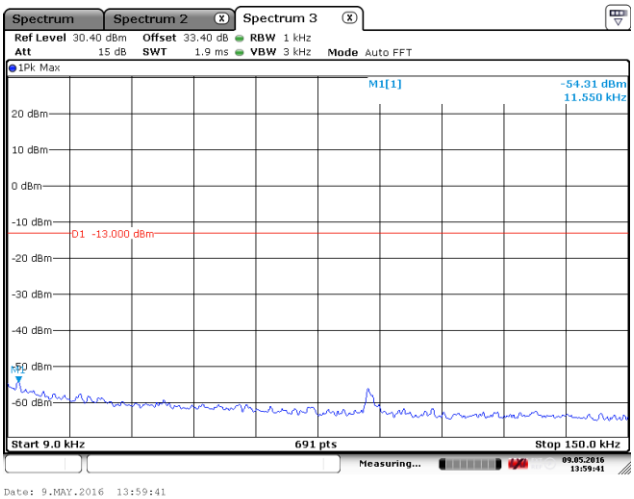
30 MHz ~1.0 GHz



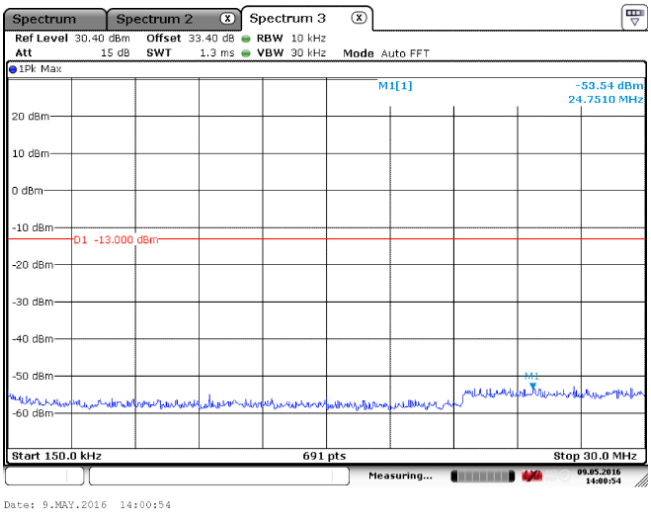
1.0 GHz ~3.6 GHz

(2) Uplink

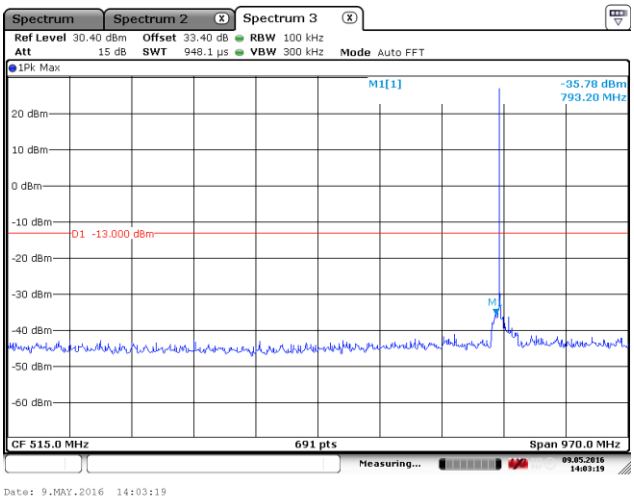
(2.1) Low frequency 799.0125MHz



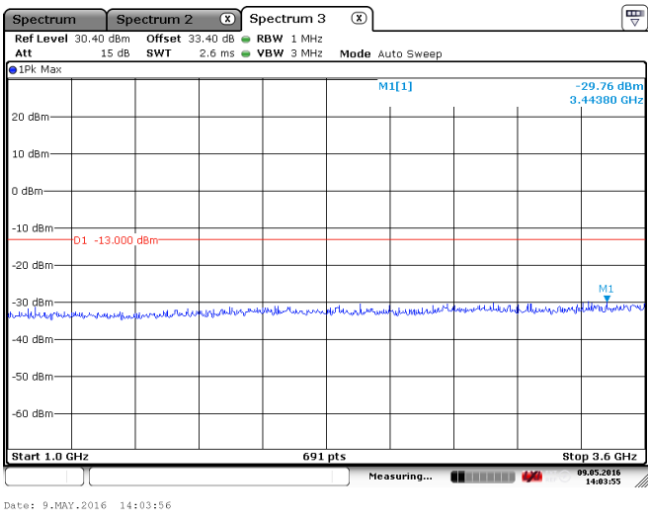
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

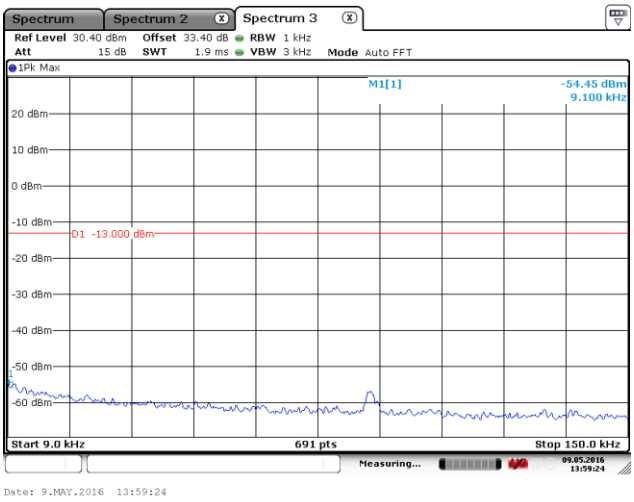


30 MHz ~1.0 GHz

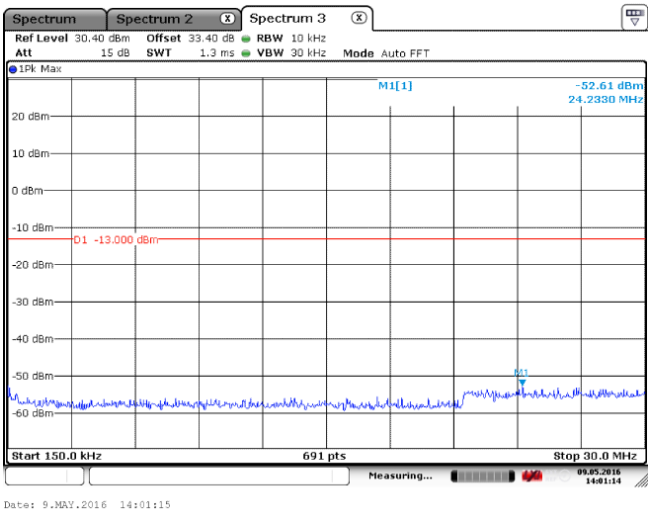


1.0 GHz ~3.6 GHz

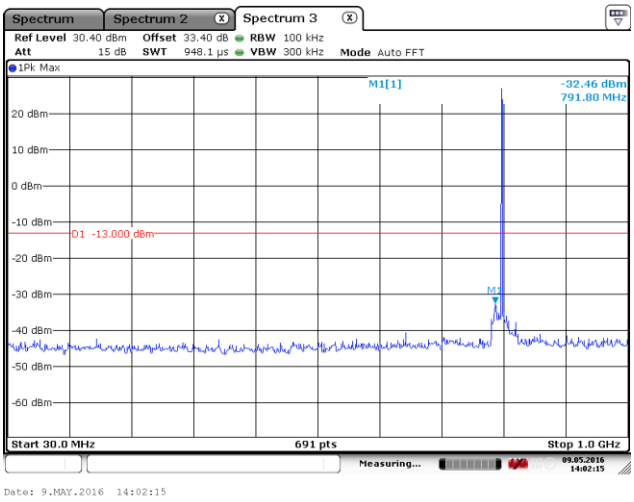
(2.2) Mid Frequency: 802.0125MHz



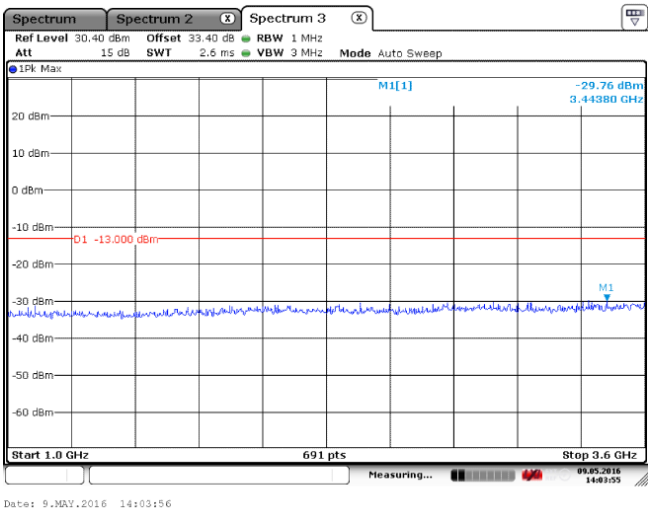
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

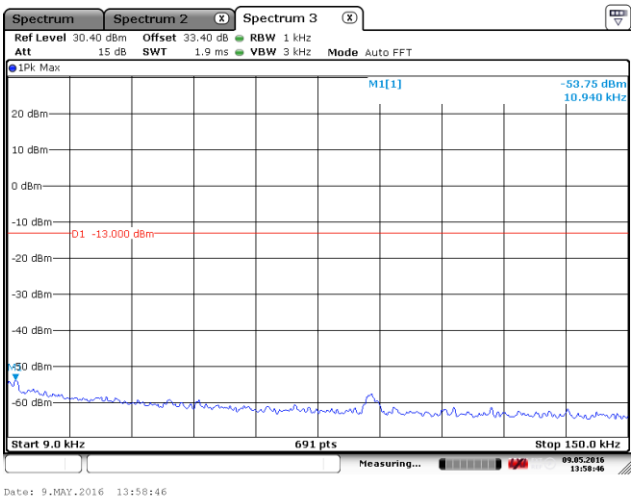


30 MHz ~1.0 GHz

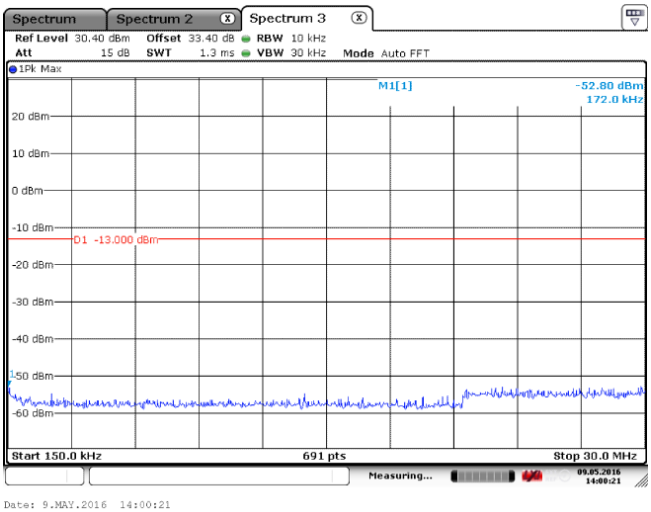


1.0 GHz ~3.6 GHz

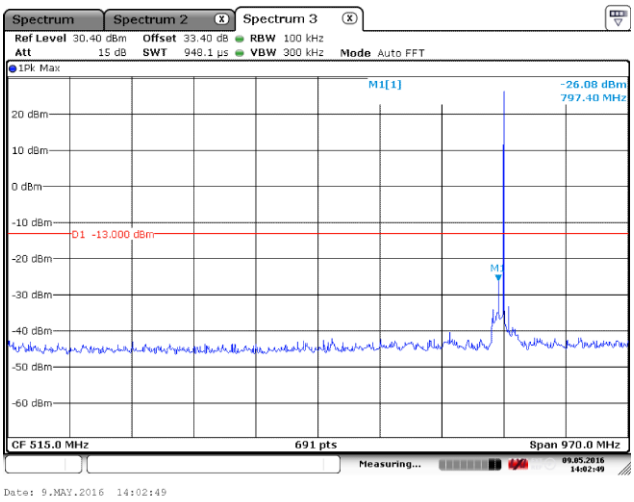
(2.3) High Frequency: Frequency: 804.9875MHz



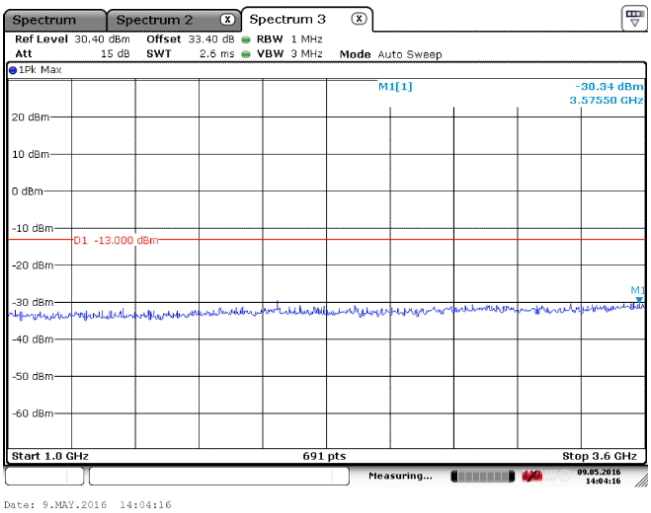
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~1.0 GHz



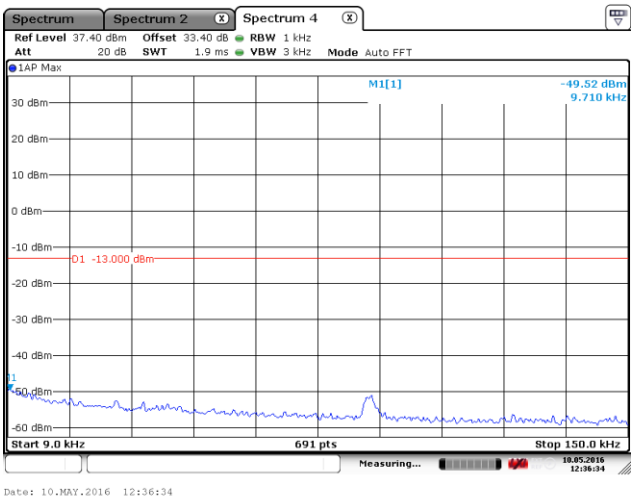
1.0 GHz ~3.6 GHz

6.4.5.2 800MHz Band

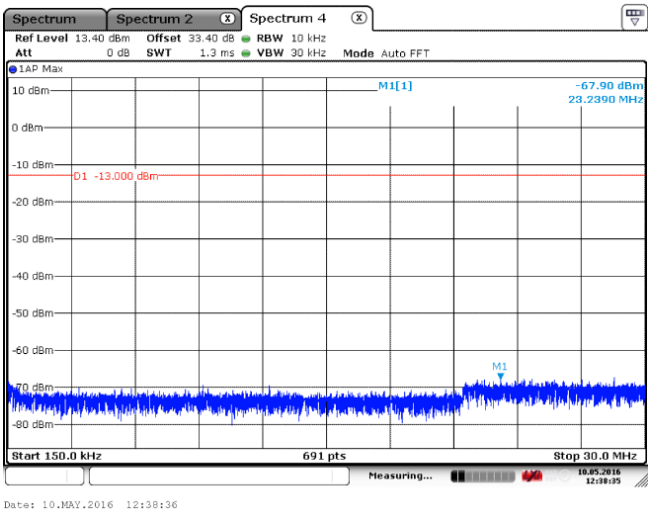
6.4.5.2.1 Modulation signal: C4FM

(1) Downlink

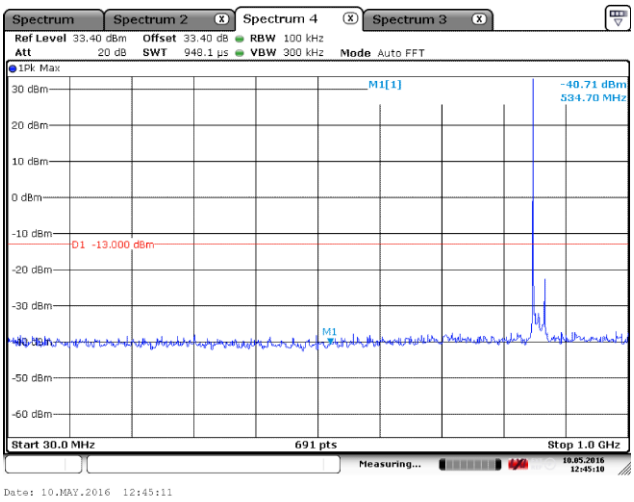
(1.1) Low frequency 851.00625MHz



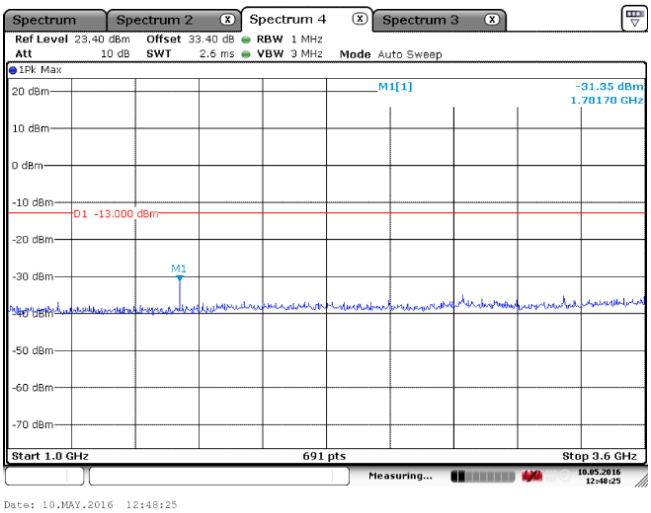
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

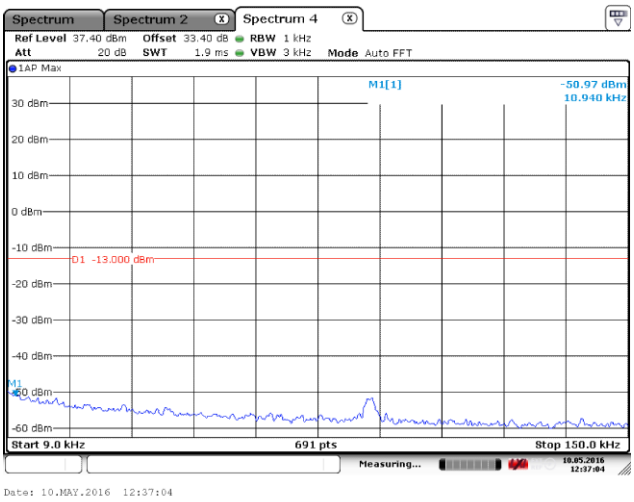


30 MHz ~1.0 GHz

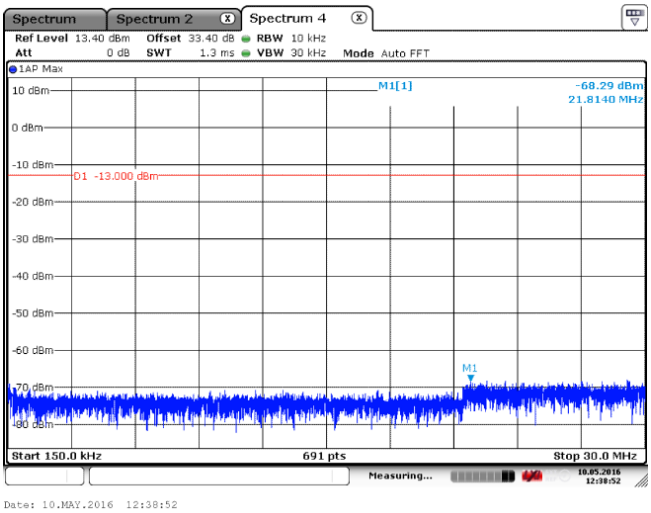


1.0 GHz ~3.6 GHz

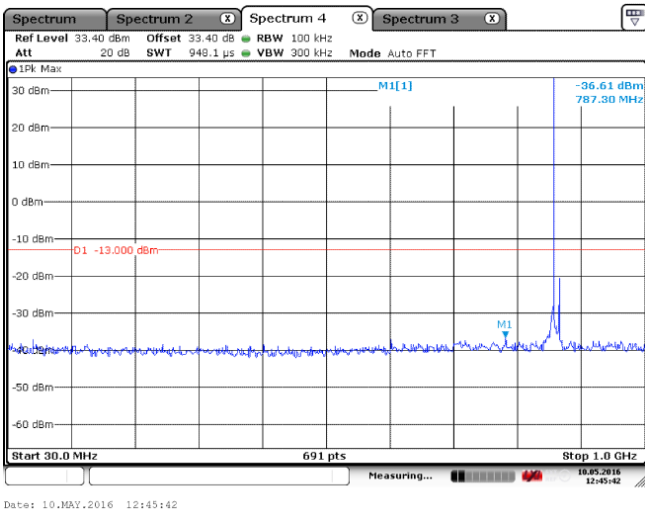
(1.2) Mid Frequency: 860.00625MHz



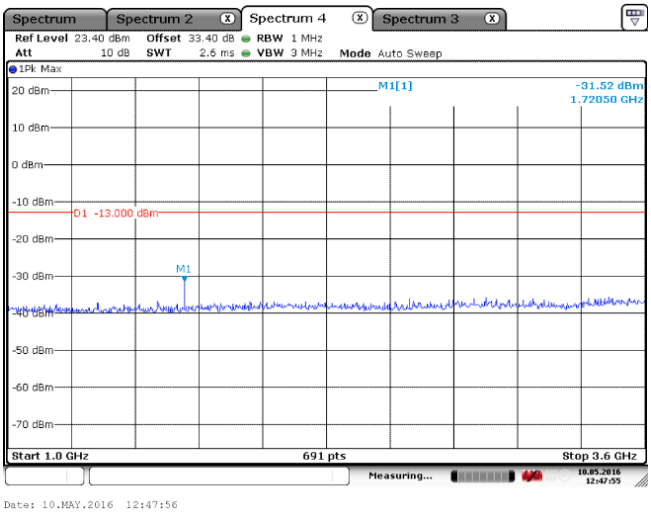
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

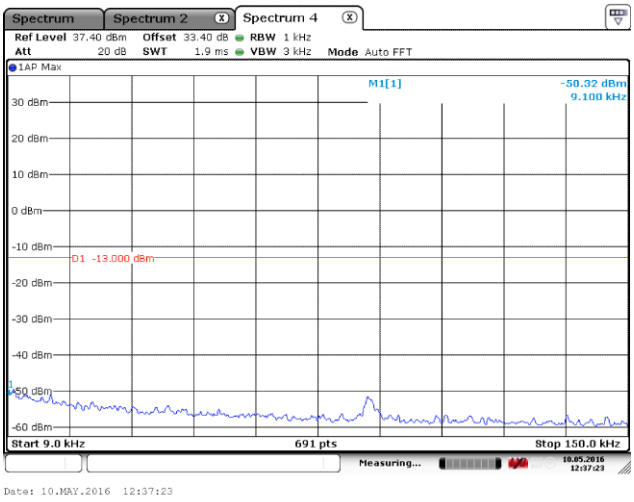


30 MHz ~1.0 GHz

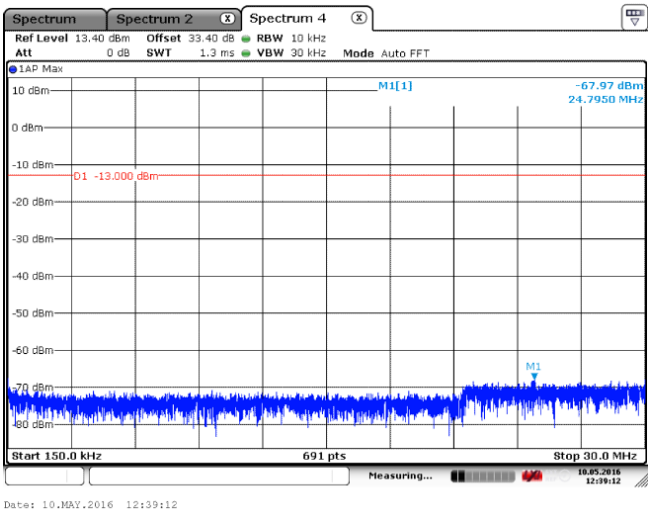


1.0 GHz ~3.6 GHz

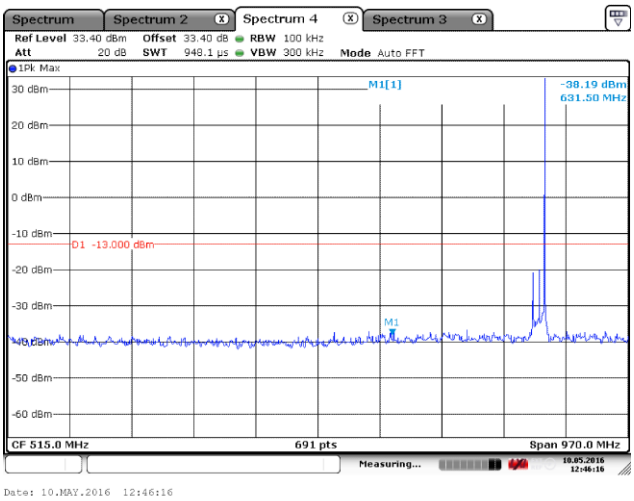
(1.3) High Frequency: Frequency: 868.99375MHz



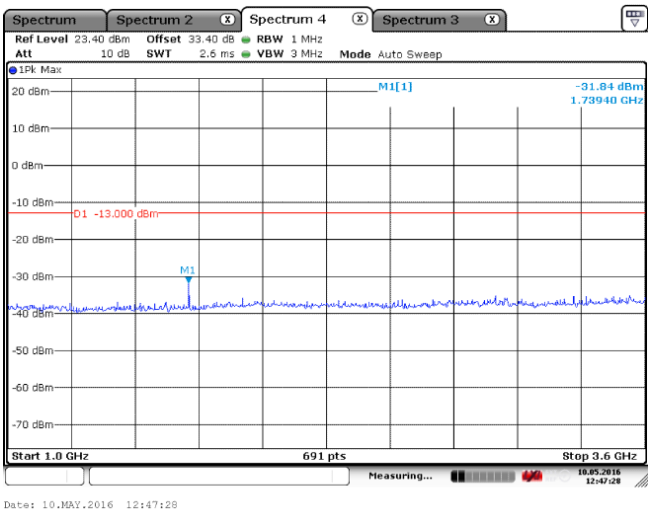
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



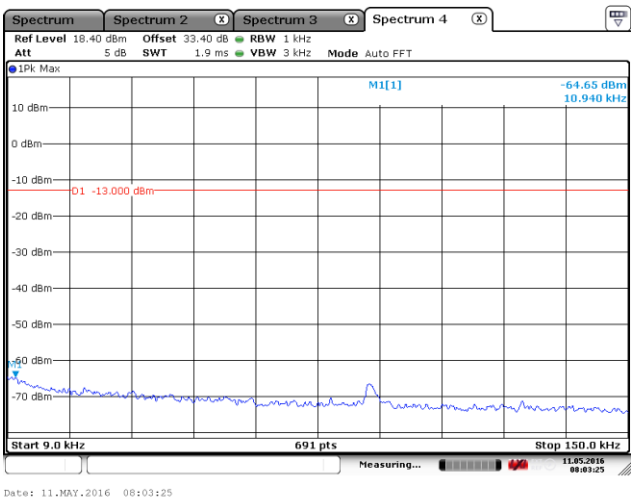
30 MHz ~1.0 GHz



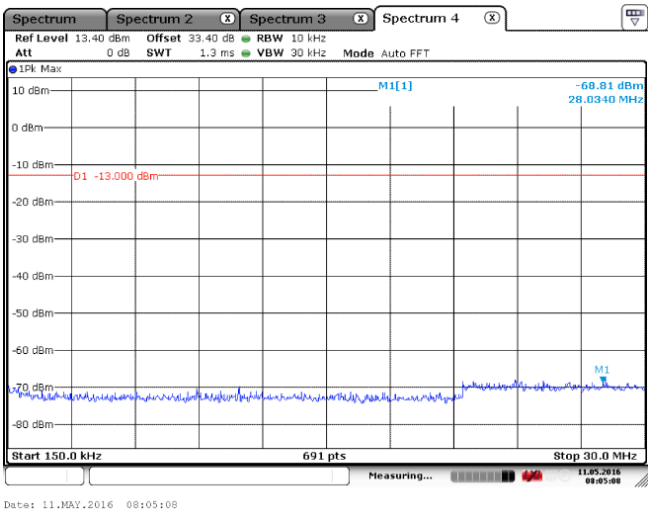
1.0 GHz ~3.6 GHz

(2) Uplink

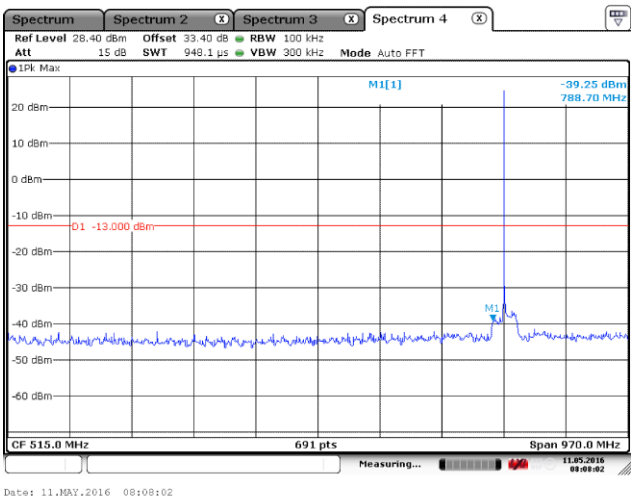
(2.1) Low frequency 806.00625MHz



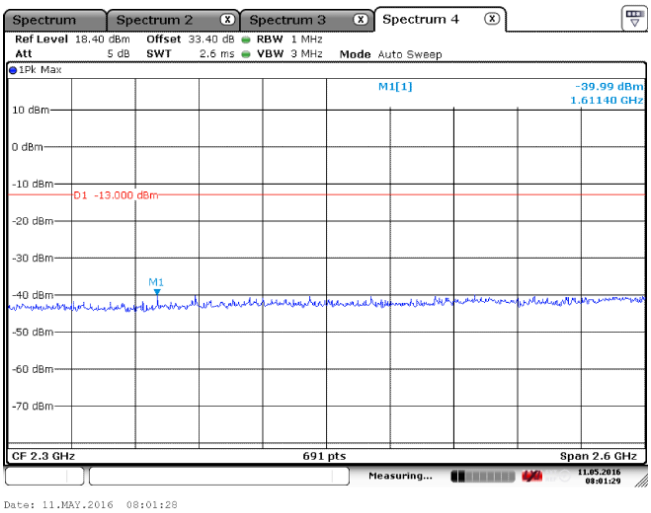
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

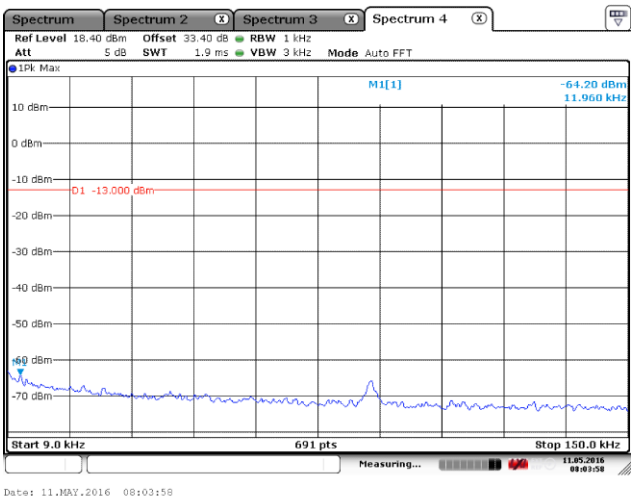


30 MHz ~1.0 GHz

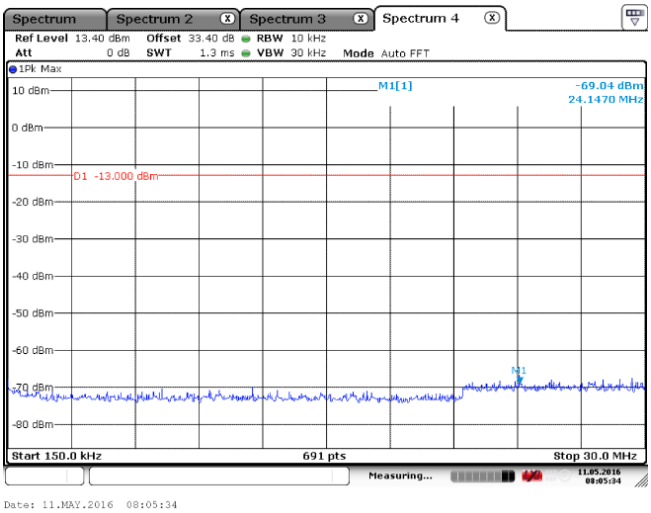


1.0 GHz ~3.6 GHz

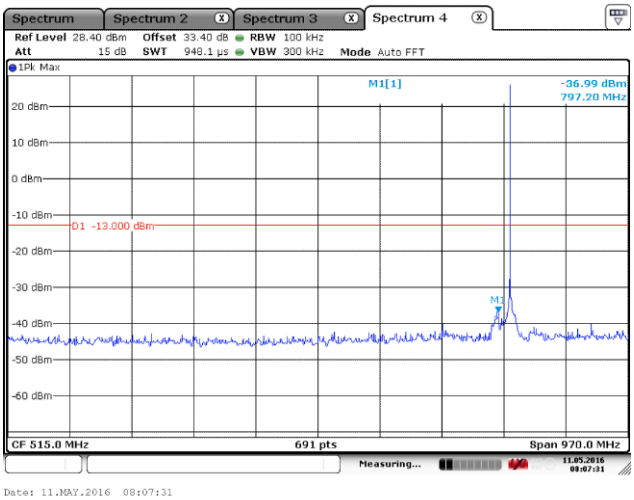
(2.2) Mid Frequency: 815.00625MHz



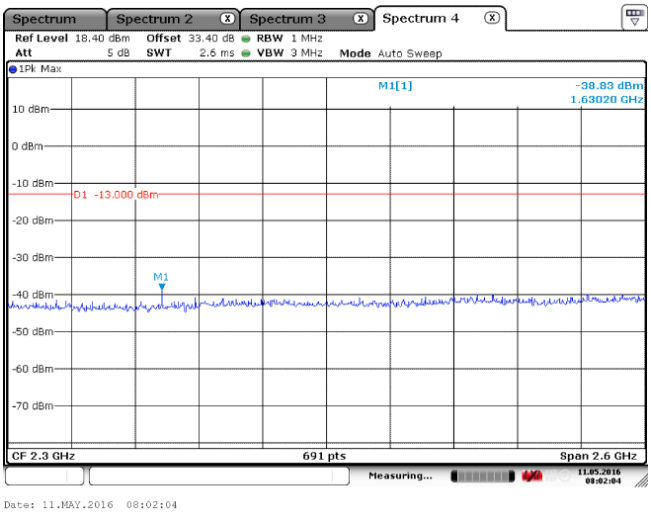
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

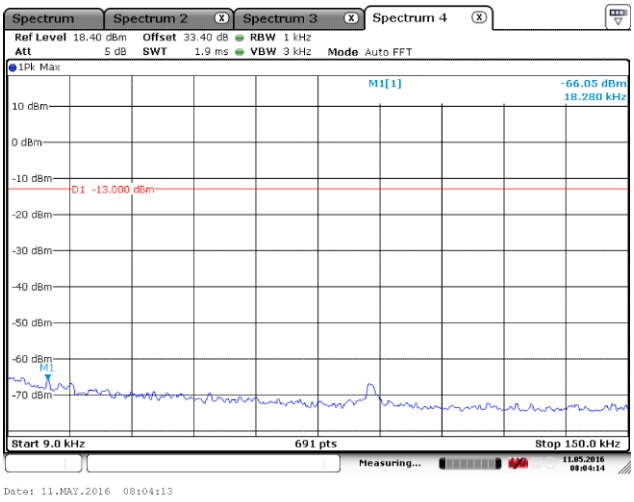


30 MHz ~1.0 GHz

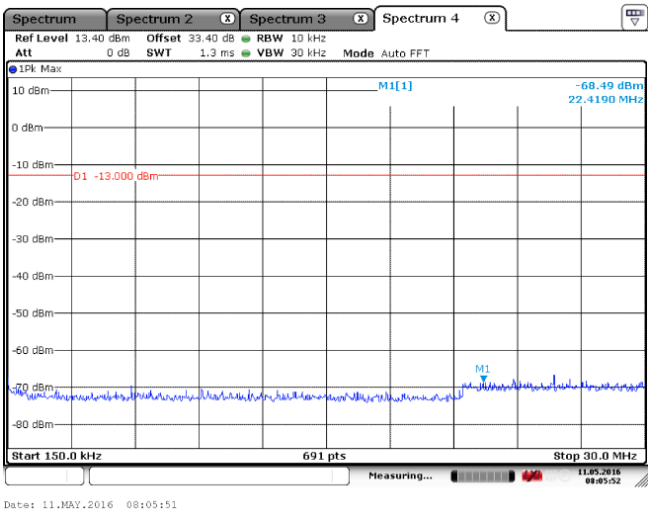


1.0 GHz ~3.6 GHz

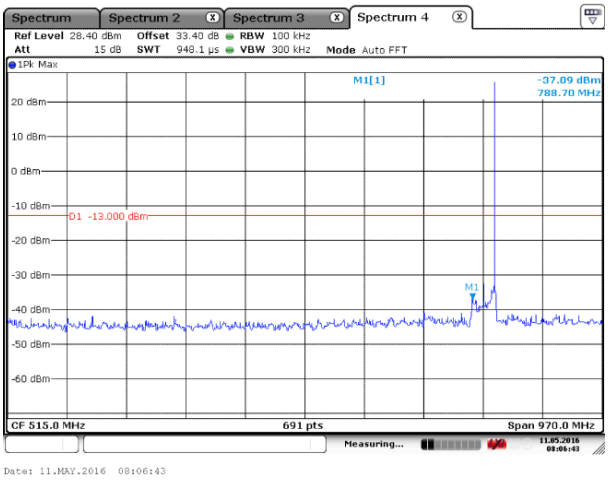
(2.3) High Frequency: Frequency: 823.99375MHz



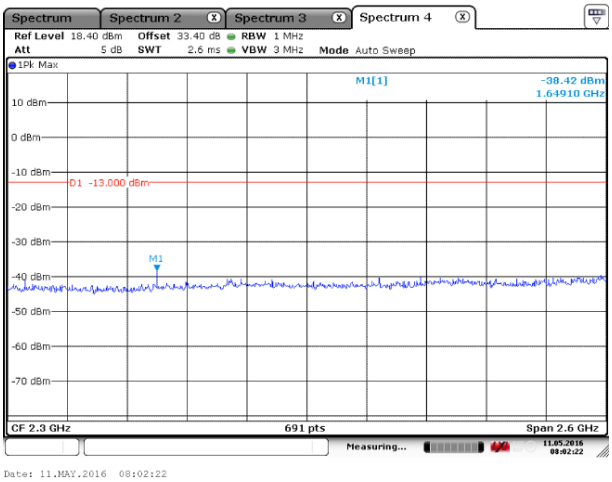
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~1.0 GHz

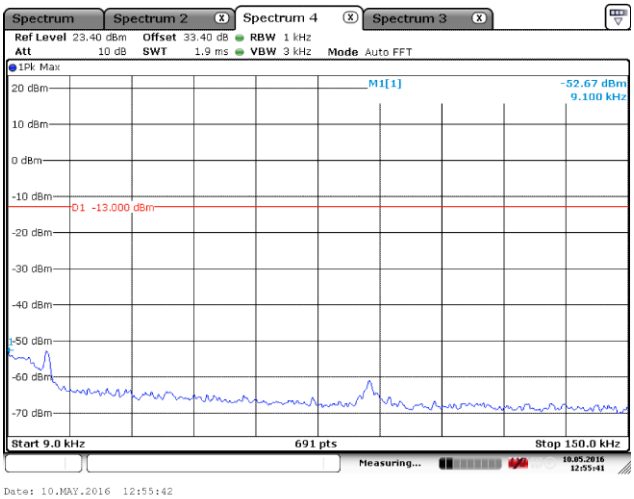


1.0 GHz ~3.6 GHz

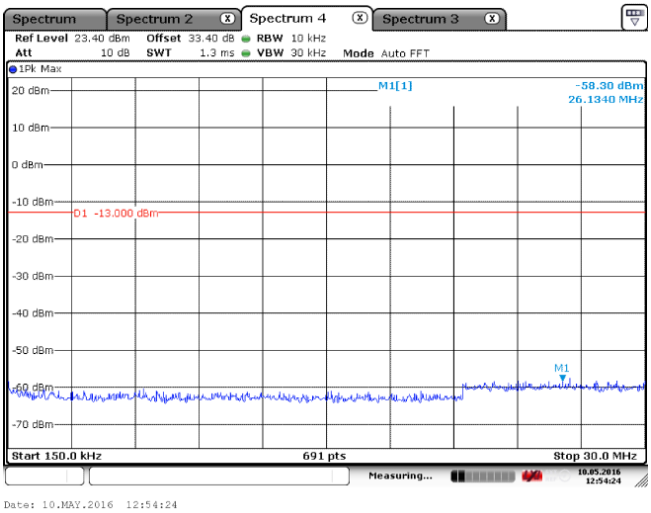
6.4.5.2.2 Modulation signal: Tetra

(1) Downlink

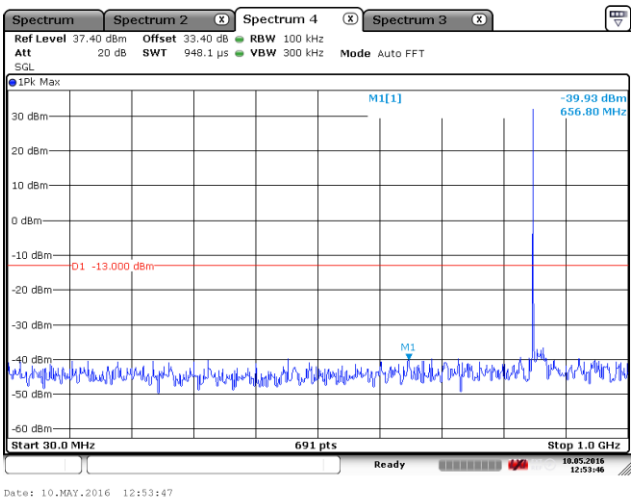
(1.1) Low frequency 851.0125MHz



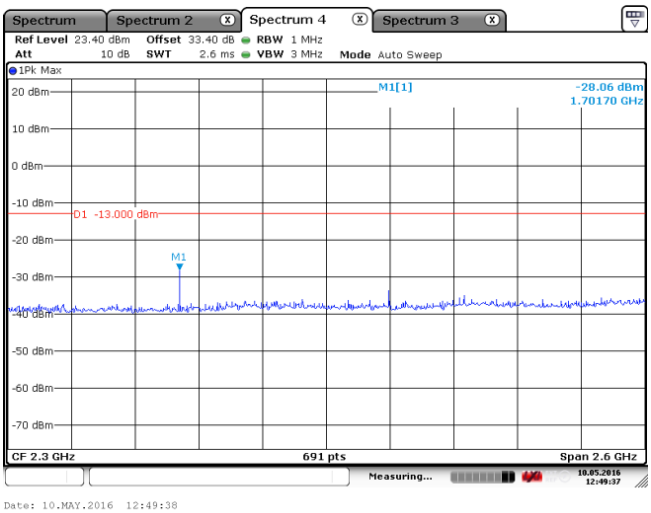
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

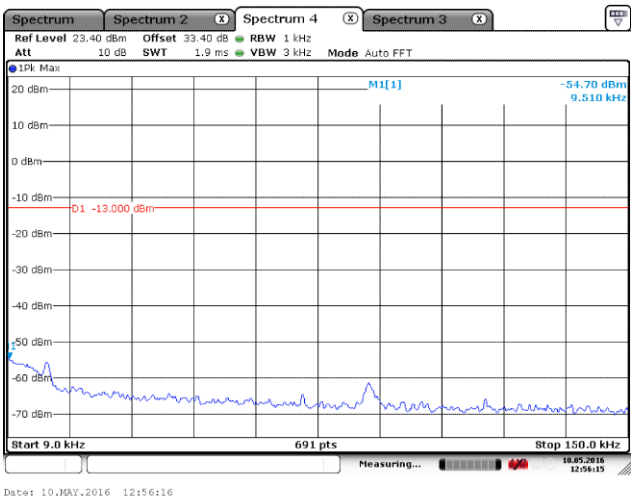


30 MHz ~1.0 GHz

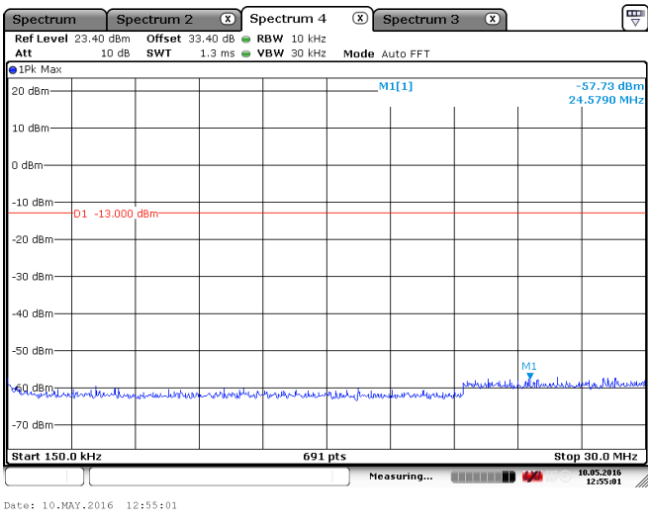


1.0 GHz ~3.6 GHz

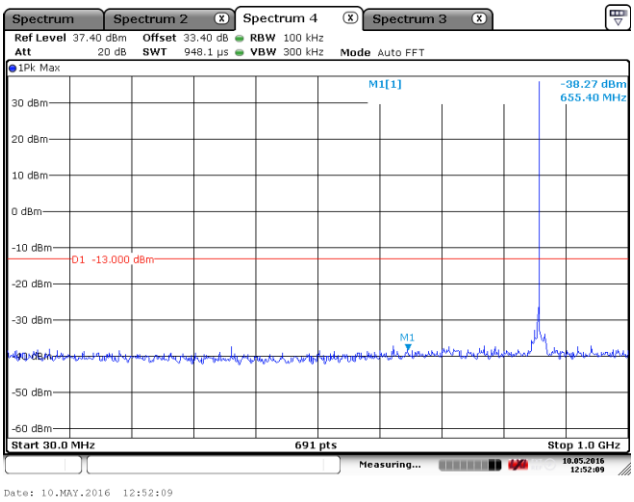
(1.2) Mid Frequency: 860.0125MHz



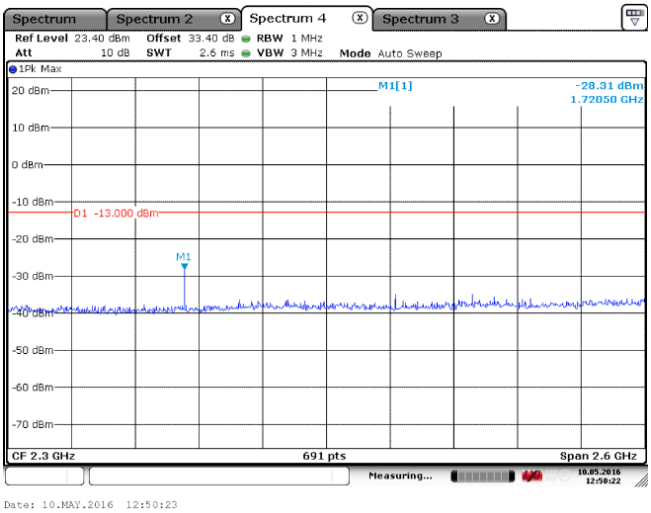
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

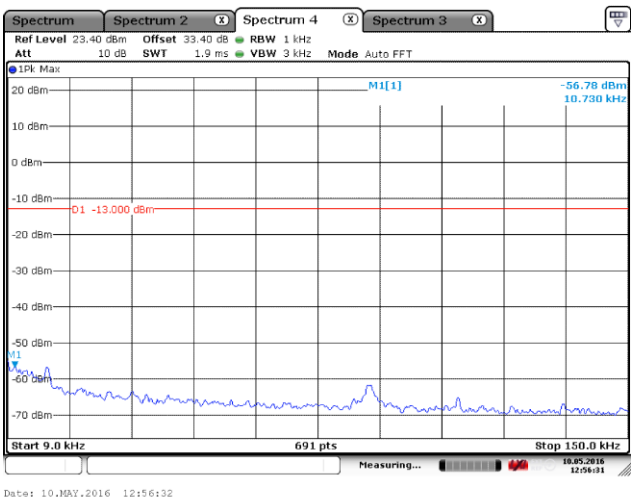


30 MHz ~1.0 GHz

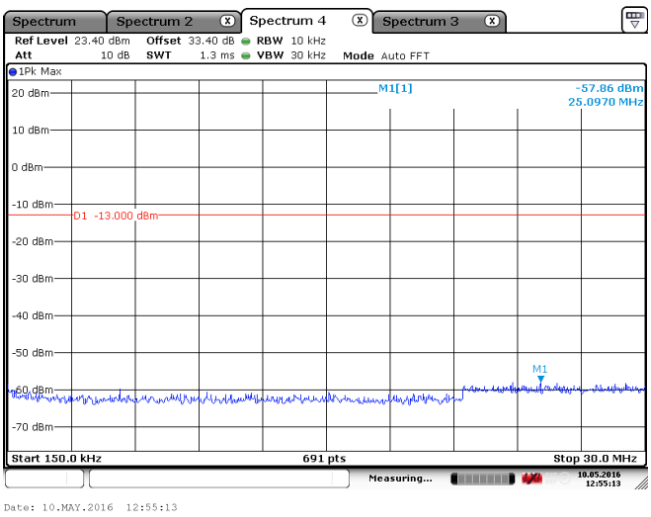


1.0 GHz ~3.6 GHz

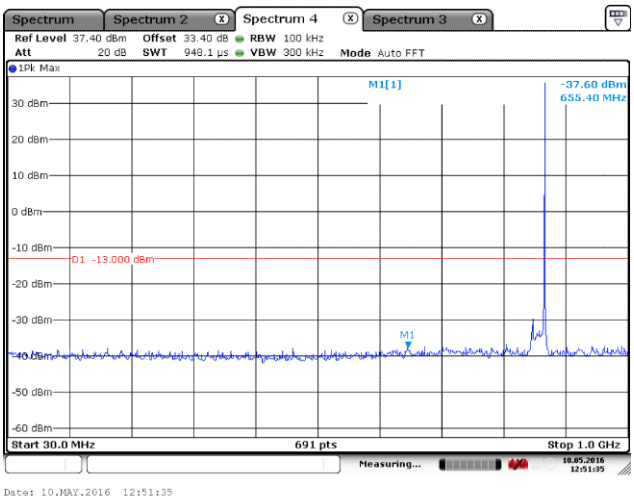
(1.3) High Frequency: Frequency: 868.9875MHz



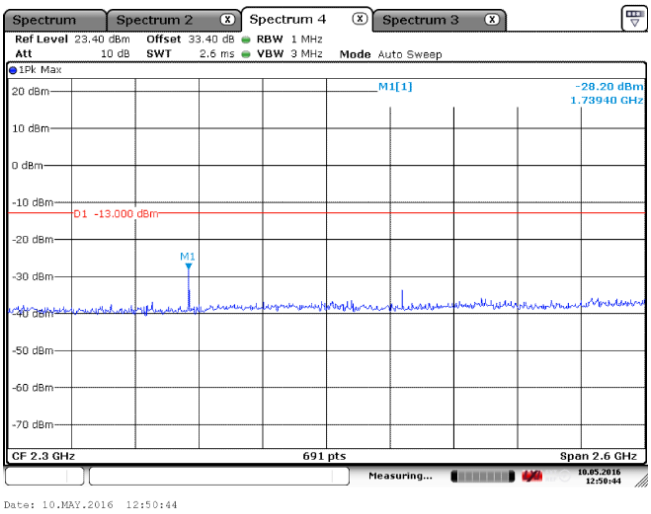
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



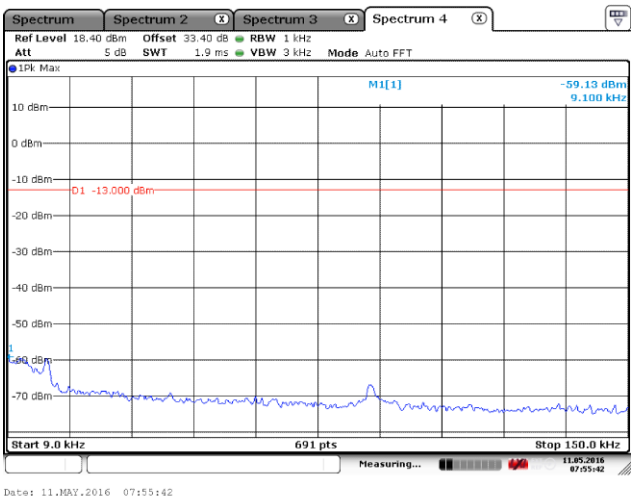
30 MHz ~1.0 GHz



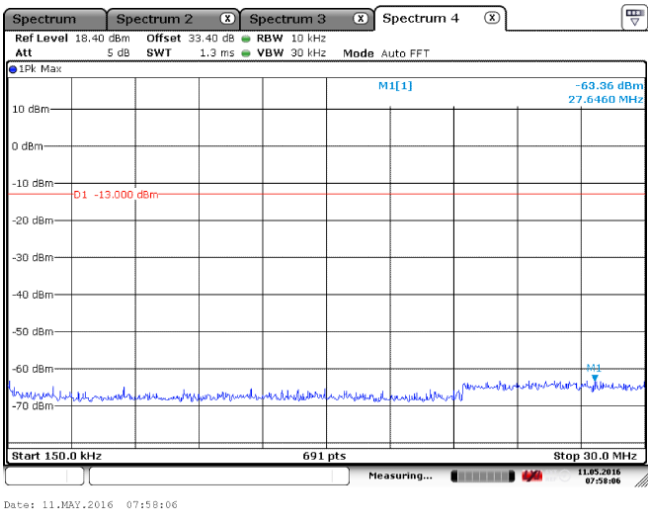
1.0 GHz ~3.6 GHz

(2) Uplink

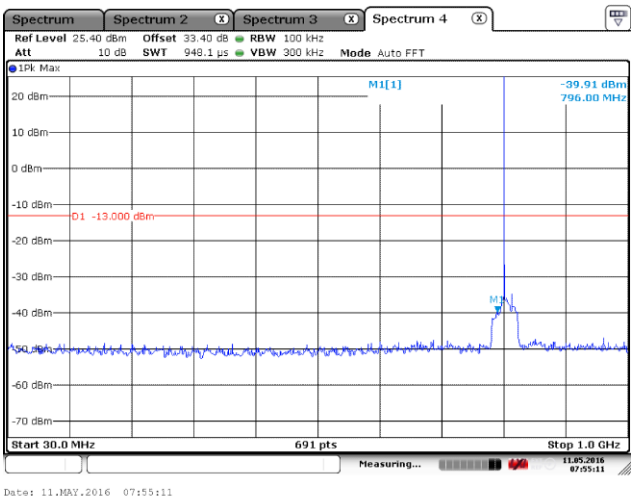
(2.1) Low frequency 806.0125MHz



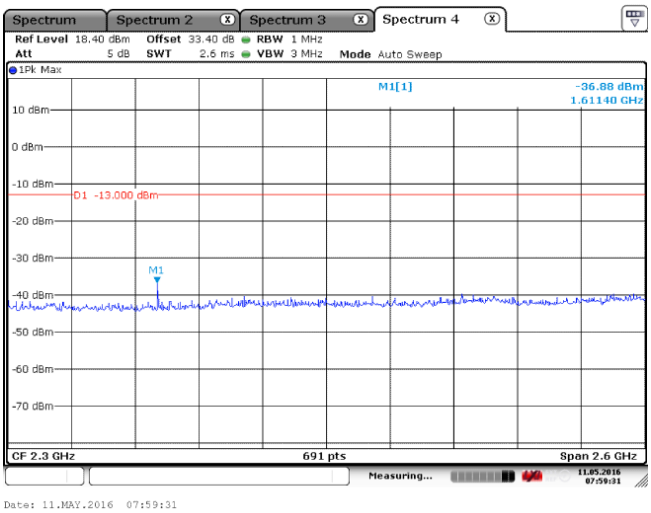
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

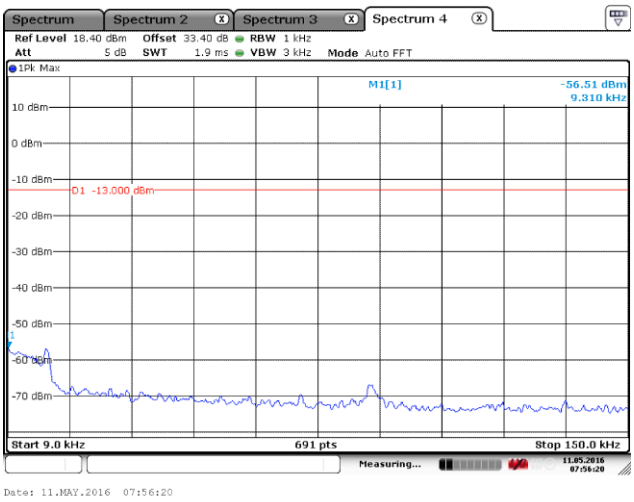


30 MHz ~1.0 GHz

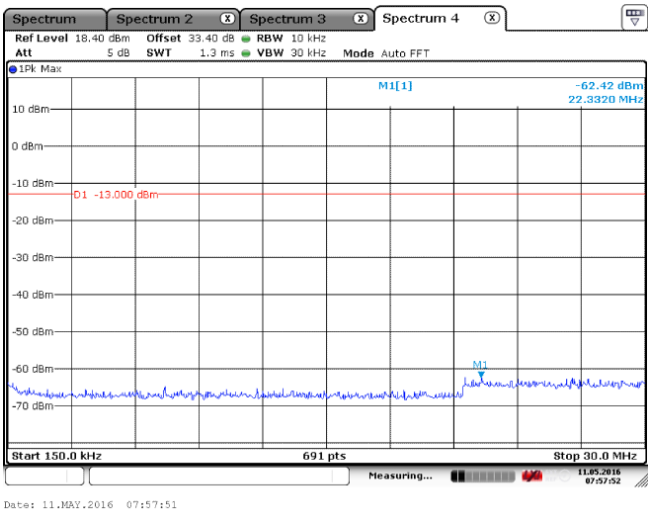


1.0 GHz ~3.6 GHz

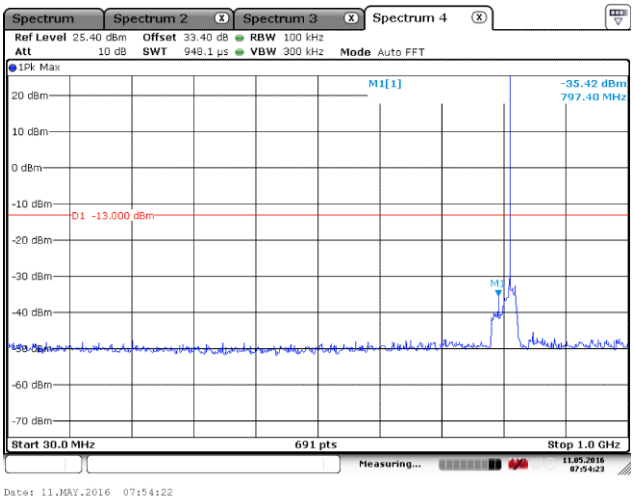
(2.2) Mid Frequency: 815.0125MHz



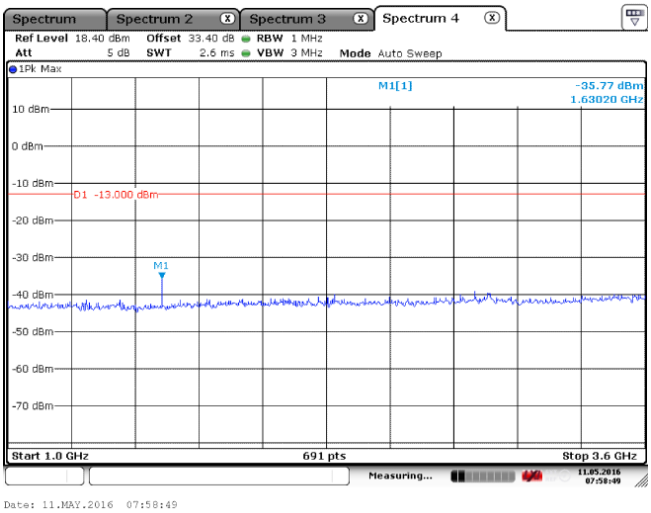
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

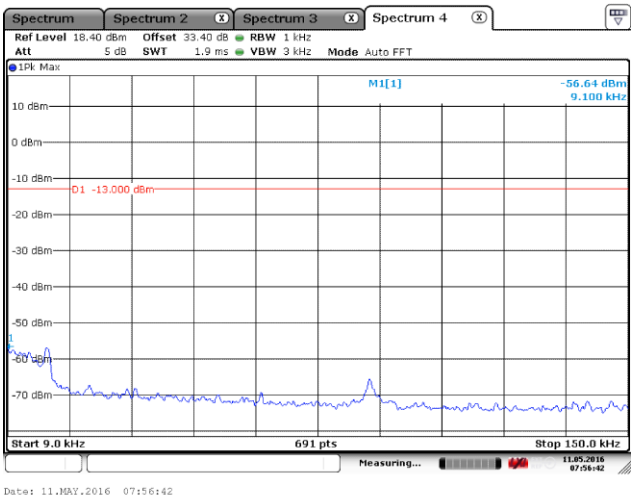


30 MHz ~1.0 GHz

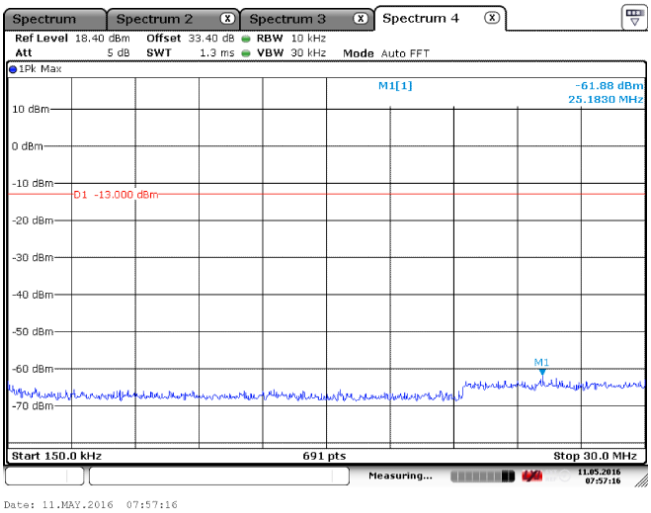


1.0 GHz ~3.6 GHz

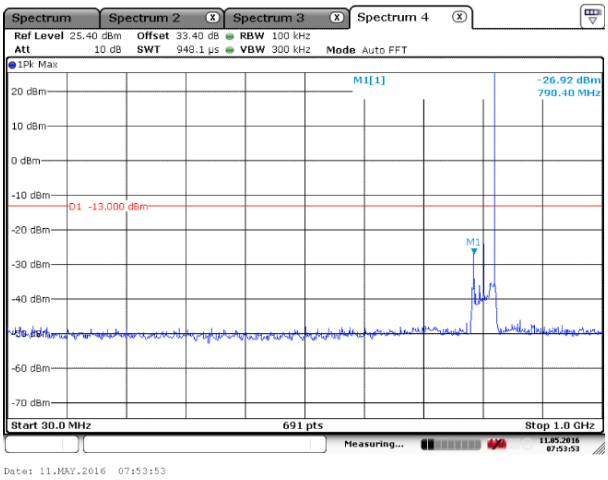
(2.3) High Frequency: Frequency: 823.9875MHz



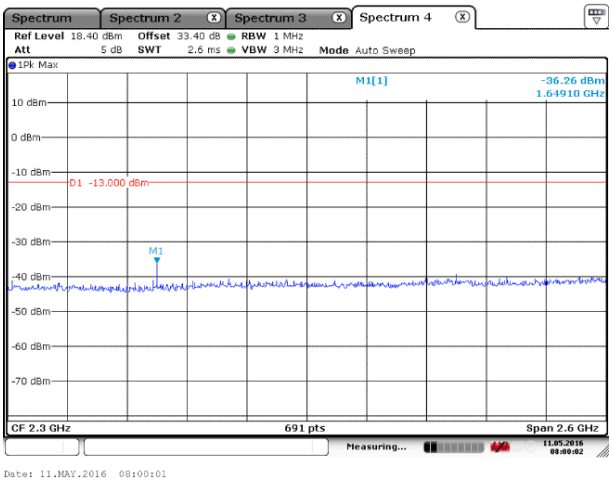
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~1.0 GHz

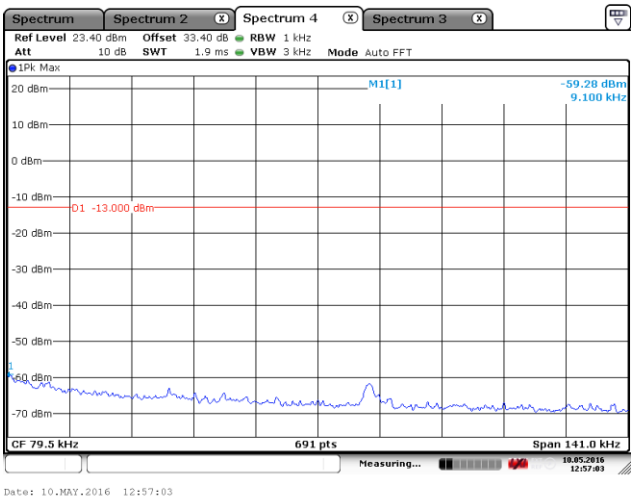


1.0 GHz ~3.6 GHz

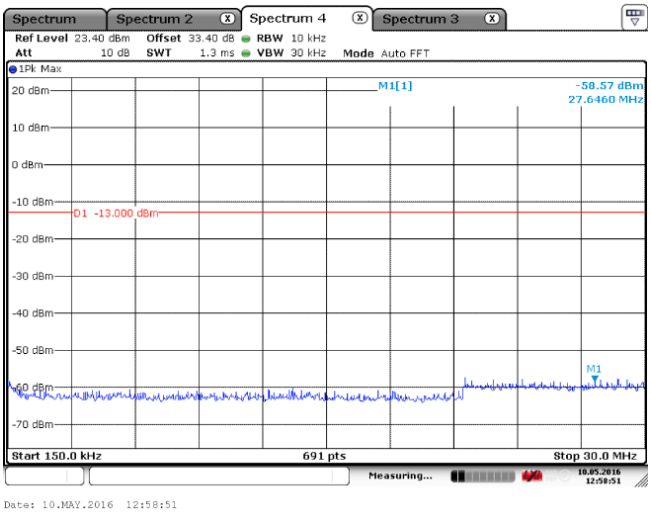
6.4.5.2.3 Modulation signal: Analog FM(10kHz/1kHz)

(1) Downlink

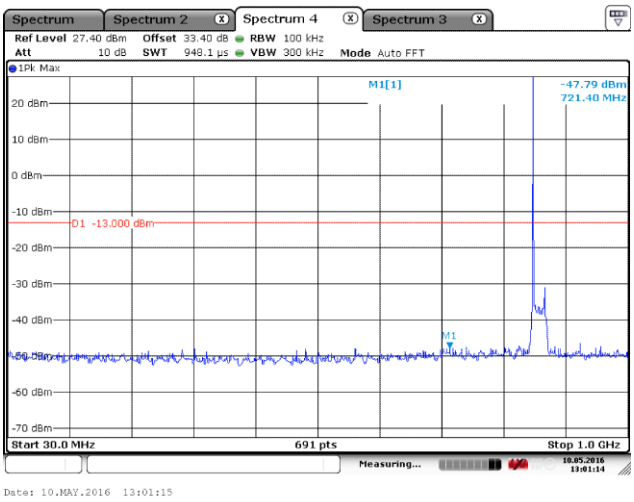
(1.1) Low frequency 851.0125MHz



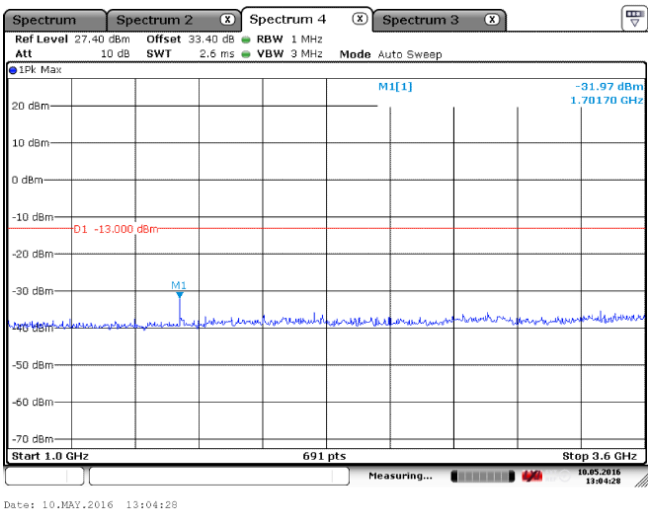
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

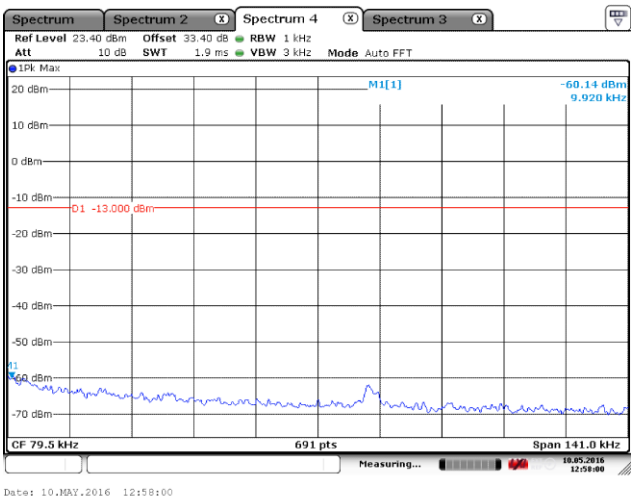


30 MHz ~1.0 GHz

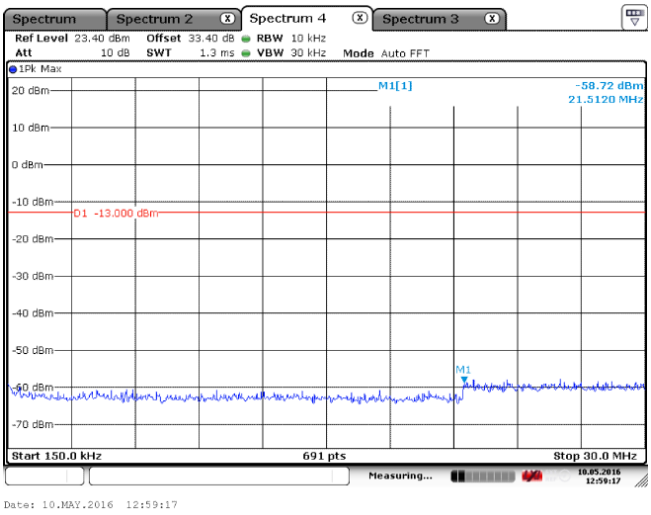


1.0 GHz ~3.6 GHz

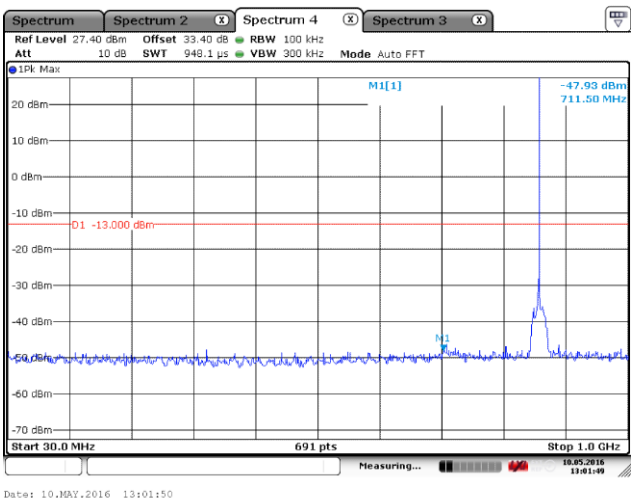
(1.2) Mid Frequency: 860.0125MHz



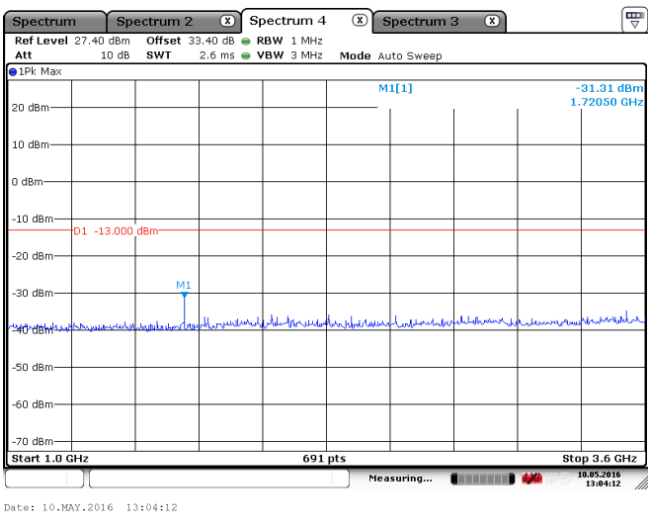
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

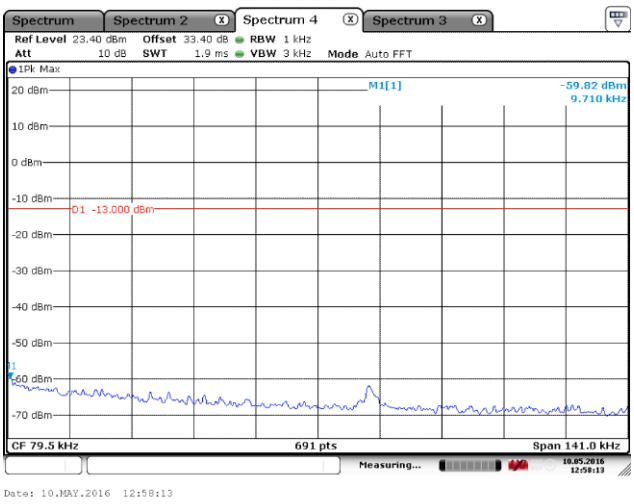


30 MHz ~1.0 GHz

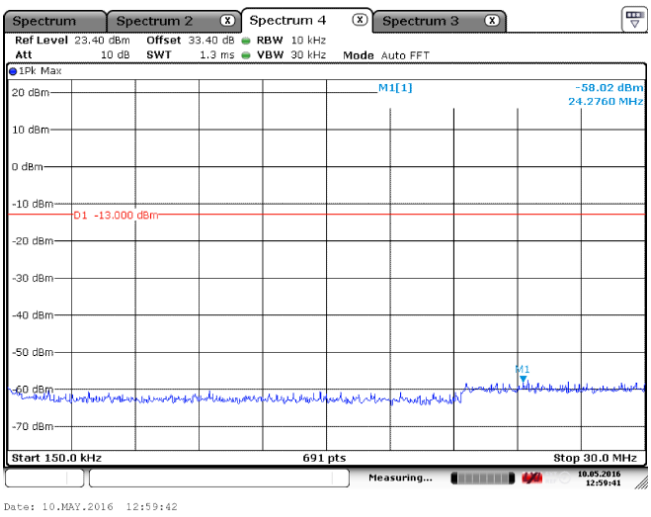


1.0 GHz ~3.6 GHz

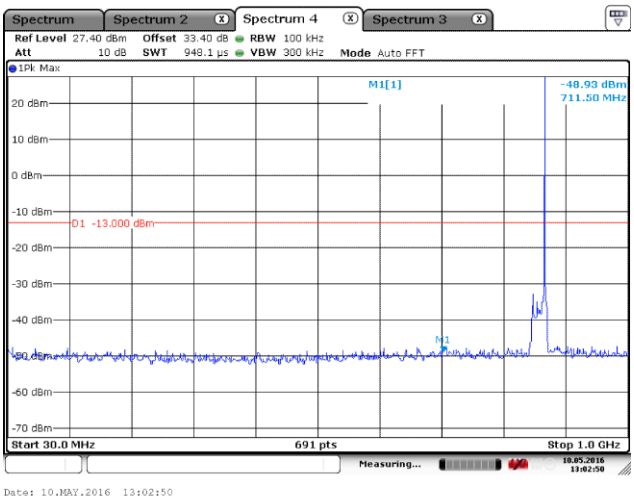
(1.3) High Frequency: Frequency: 868.9875MHz



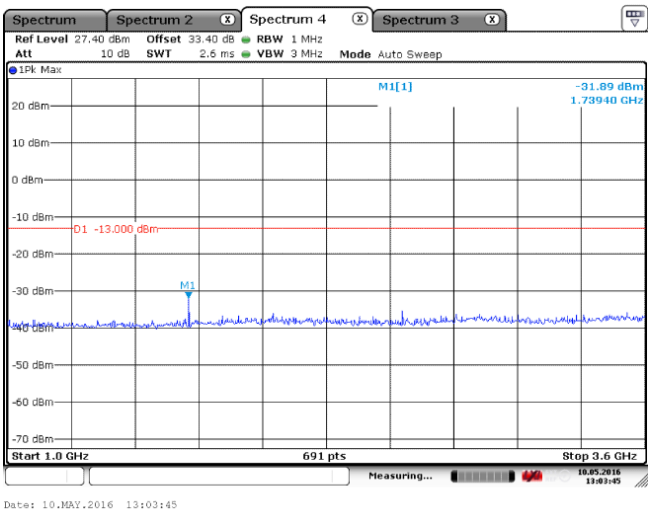
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



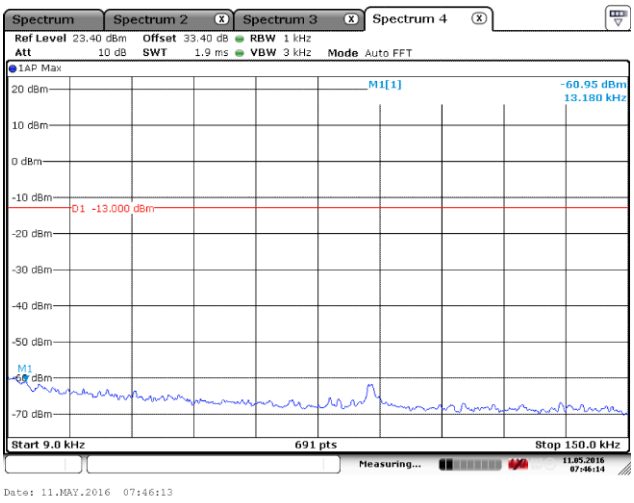
30 MHz ~1.0 GHz



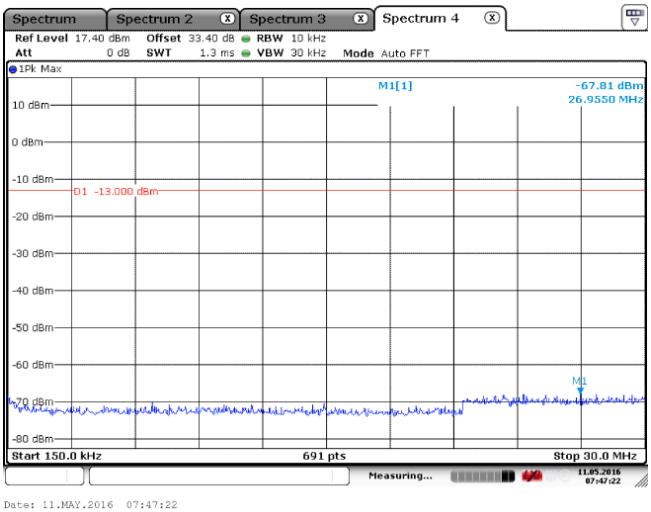
1.0 GHz ~3.6 GHz

(2) Uplink

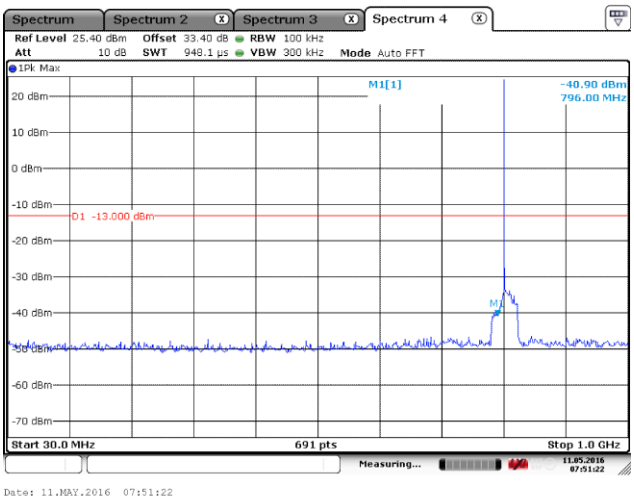
(2.1) Low frequency 806.0125MHz



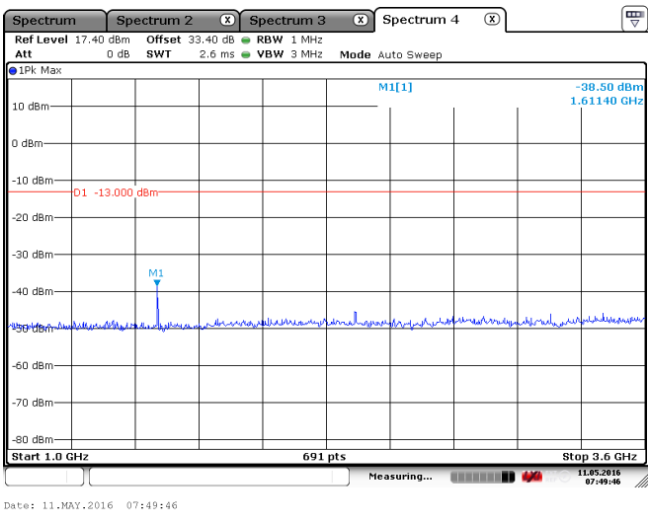
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

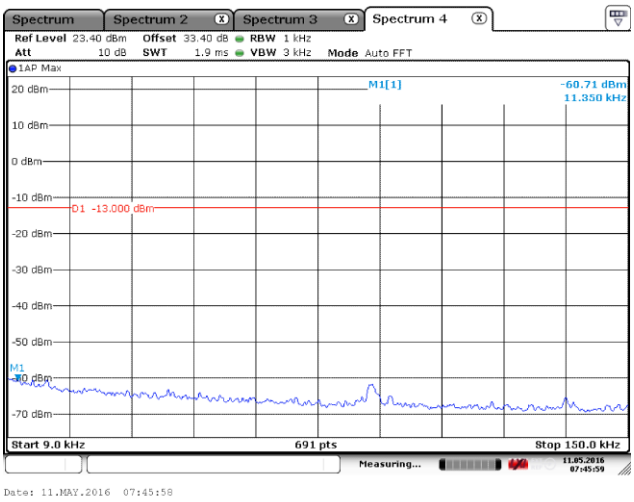


30 MHz ~1.0 GHz

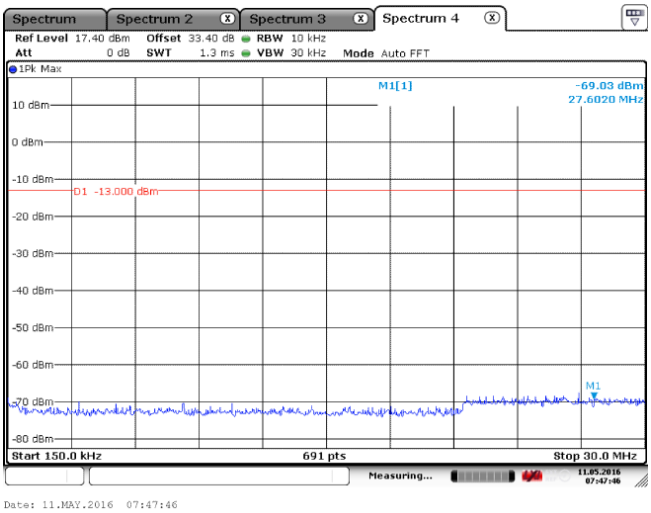


1.0 GHz ~3.6 GHz

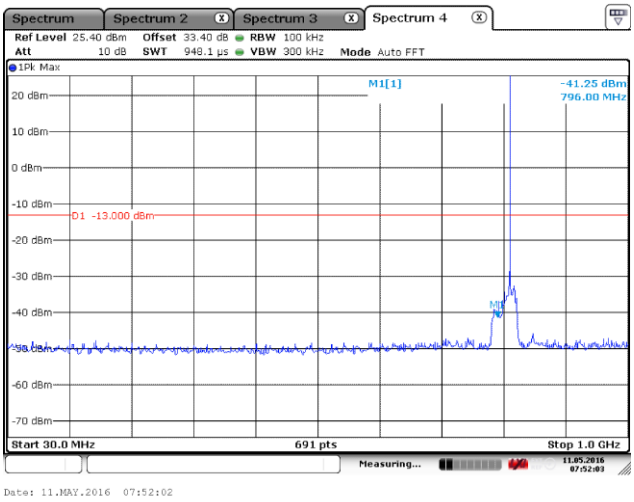
(2.2) Mid Frequency: 815.0125MHz



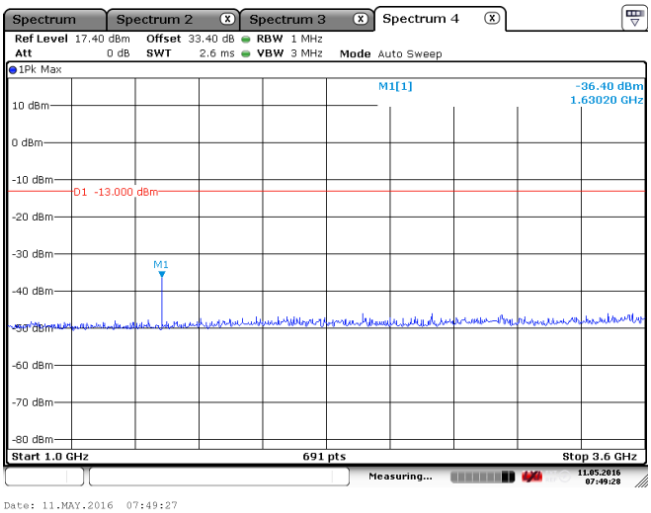
9kHz ~ 150 kHz



150 kHz ~ 30 MHz

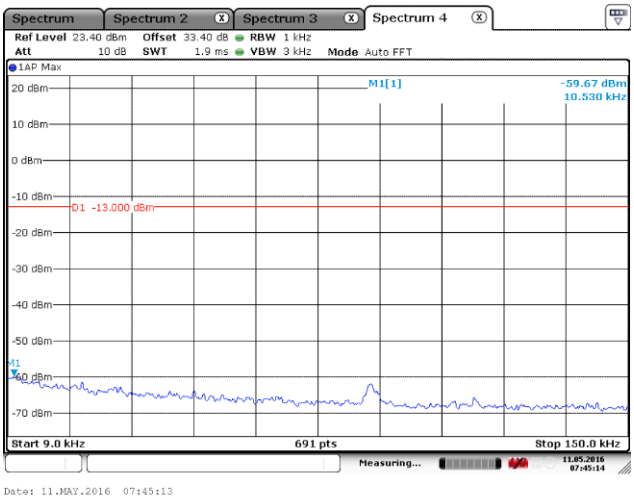


30 MHz ~1.0 GHz

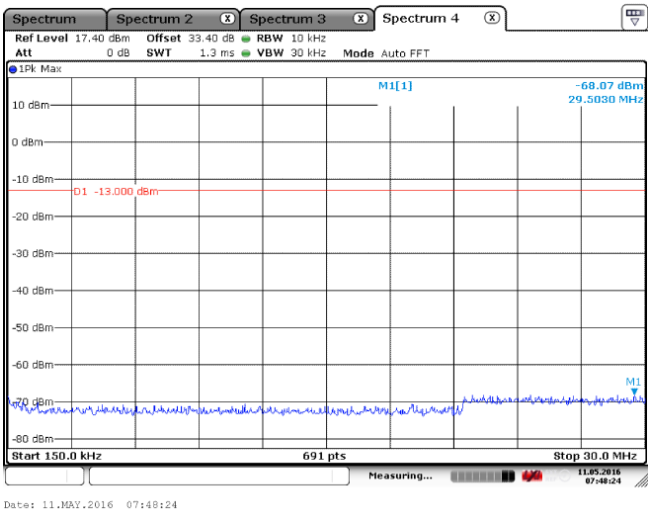


1.0 GHz ~3.6 GHz

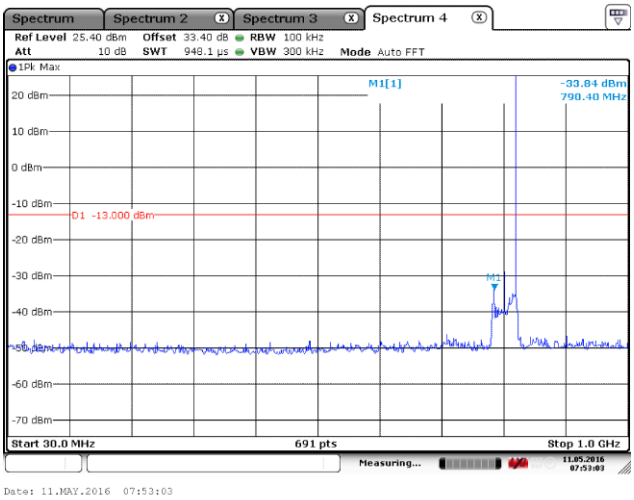
(2.3) High Frequency: Frequency: 823.9875MHz



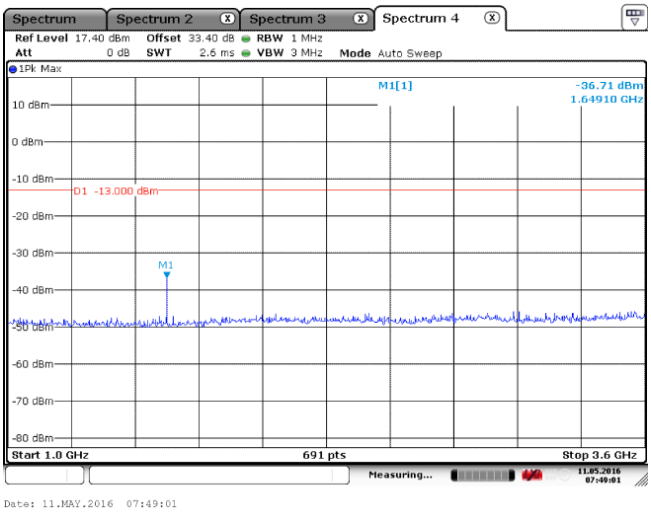
9kHz ~ 150 kHz



150 kHz ~ 30 MHz



30 MHz ~1.0 GHz



1.0 GHz ~3.6 GHz

6.5 Frequency stability

Test Date (yy-mm-dd): 2016-05-06 to 2016-05-15

Test environment: Normal

Ambient Temp 24.5℃~26.3℃, Humid 49%~65%, Atmospheric Pressure 101kpa

Power supply: AC 120V 50/60Hz

Test Method: KDB 935210 D05 Indus Booster Basic Meas v01r01

Test Requirement: FCC part 90.213 & part 90.539

6.5.1 Limit

Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table 9.

Table 9 Frequency stability limits

frequency range(MHz)	Minimum Frequency Stability(ppm)
769-775	±1.5(Channel Bandwidth 12.5kHz) ±2.5(Channel Bandwidth 25kHz)
799-805	±1.5(Channel Bandwidth 12.5kHz) ±2.5(Channel Bandwidth 25kHz)
806-809	±1.0
809-824	±1.5
851-854	±1.0
854-869	±1.5

6.5.2 Test configuration

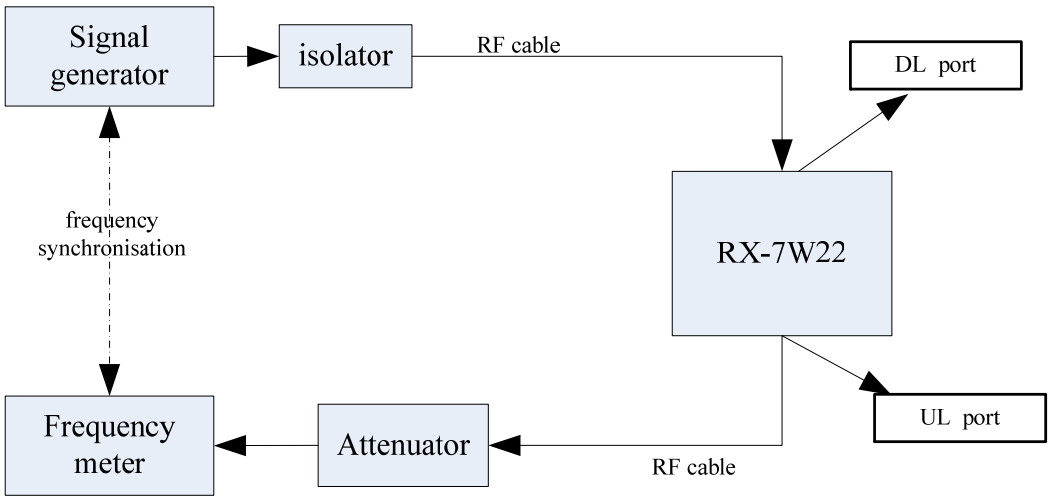


Figure 9: Frequency stability arrangement for Downlink

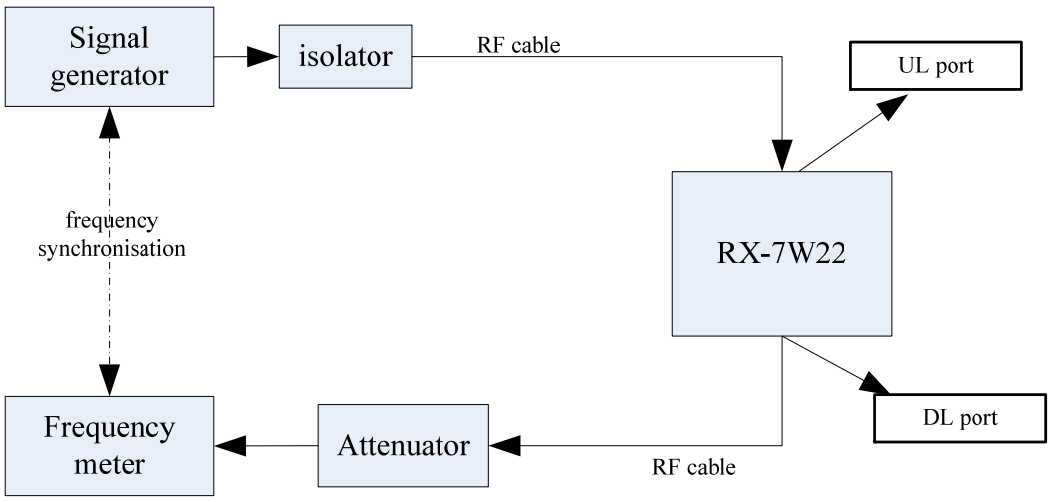


Figure 10: Frequency stability arrangement for Uplink

6.5.3 Test procedures

(1) Connect the equipment as illustrated Figure 9 and Figure 10, when the output power is over the maximum value of the Spectrum Analyzer, add the attenuator to avoid destroying;

(2) The signal generator should initially be configured to produce CW signals;

(3) Set the signal generator frequency to the center frequency of the EUT operating band;

(4) Keep signal source and frequency meter synchronization;

(5) Record Output frequency value when level as the ALC threshold level;

(6) Read the frequency at the relative temperature;

(7) Vary the voltage from -15% norminal voltage to +15% voltage;

(8) Repeat RF channels to be tested for single-carrier: Low frequency and High frequency;

6.5.4 Test Results

6.5.4.1 700MHz Band

6.5.4.1.1 Downlink

Voltage	Output carrier frequency(MHz)	Limit(ppm)	Frequency stability((ppm))	Result
AC 102V(120*85%)	772.0125001	±1.5	+0.0001	pass
AC 120V	772.0125001	±1.5	+0.0001	pass
AC 138V(120*115%)	772.0125001	±1.5	+0.0001	pass

6.5.4.1.2 Uplink

Voltage	Output carrier frequency(MHz)	Limit(ppm)	Frequency stability((ppm))	Result
AC 102V(120*85%)	802.0125004	±1.5	+0.0005	pass
AC 120V	802.0125004	±1.5	+0.0005	pass
AC 138V(120*115%)	802.0125004	±1.5	+0.0005	pass

6.5.4.2 800MHz Band

6.5.4.2.1 Downlink

Voltage	Output carrier frequency(MHz)	Limit(ppm)	Frequency stability((ppm))	Result
AC 102V(120*85%)	860.0125002	±1.5	+0.0002	pass
AC 120V	860.0125002	±1.5	+0.0002	pass
AC 138V(120*115%)	860.0125002	±1.5	+0.0002	pass

6.5.4.2.2 Uplink

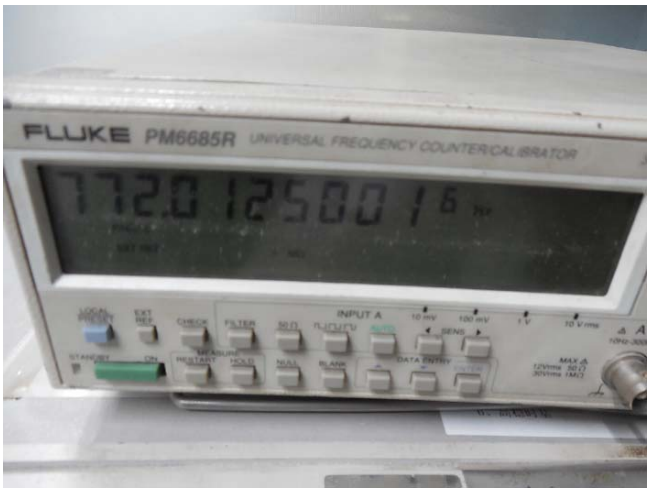
Voltage	Output carrier frequency(MHz)	Limit(ppm)	Frequency stability((ppm))	Result
AC 102V(120*85%)	815.0124994	±1.5	-0.0007	pass
AC 120V	815.0124994	±1.5	-0.0007	pass
AC 138V(120*115%)	815.0124994	±1.5	-0.0007	pass

6.5.5 Test screenshot

6.5.5.1 700MHz Band

(1) Downlink

Mid Frequency: 772.00625MHz



Mid Frequency: 772.0125MHz

(2) Uplink

Mid Frequency: 802.00625MHz

Mid Frequency: 802.0125MHz

6.5.5.2 800MHz Band (Only provide normal voltage and temperature)

(1) Downlink

Mid Frequency: 860.0125MHz

(2) Uplink

Mid Frequency: 815.0125MHz

6.6 Noise figure

Test Date (yy-mm-dd): 2016-05-06 to 2016-05-15

Test environment: Normal

Ambient Temp 24.5℃~26.3℃, Humid 49%~65%, Atmospheric Pressure 101kpa

Power supply: AC 120V 50/60Hz

Test Method: KDB 935210 D05 Indus Booster Basic Meas v01r01

Test Requirement: FCC part 90.213 & part 90.539

6.6.1 Limit

The noise figure limit of a signal booster must are given in table 10.

Table 10 Noise figure limits

frequency range(MHz)	Max. Noise figure limit(dB)
769-775	9
799-805	9
806-824	9
851-869	9

6.6.2 Test configuration

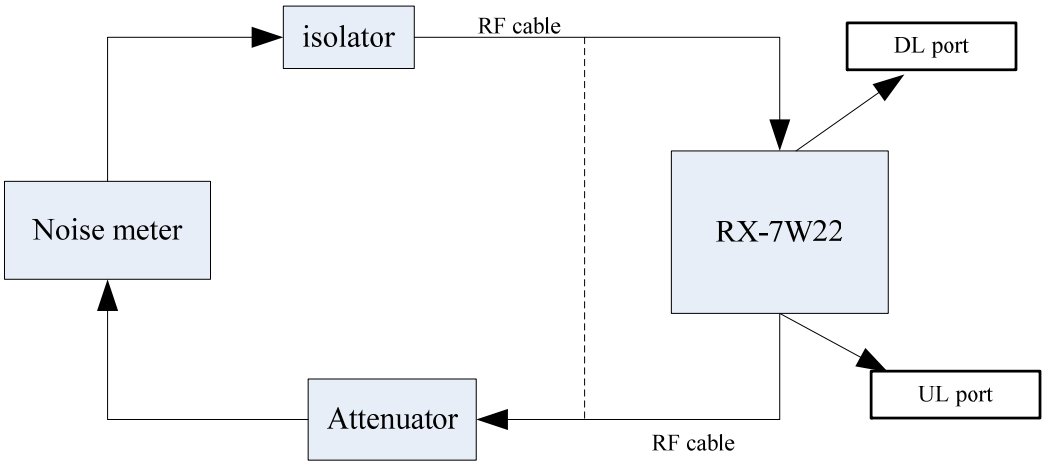


Figure 11: Noise figure arrangement for Downlink

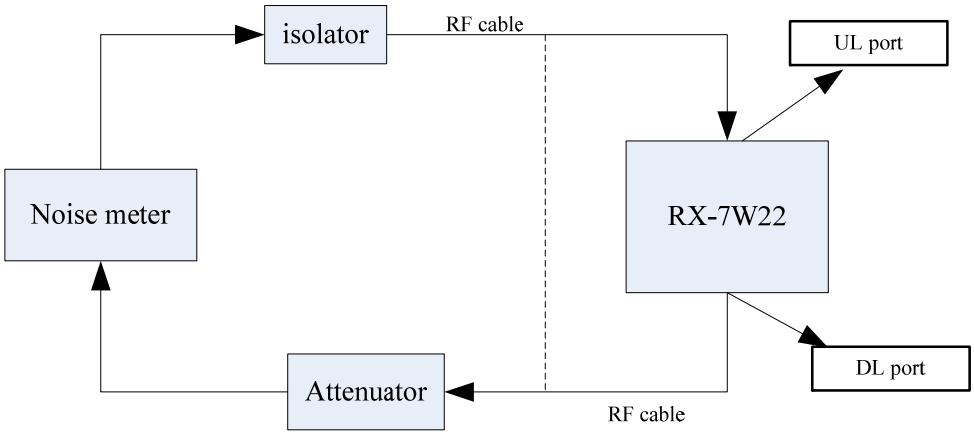


Figure 12: Noise figure arrangement for Uplink

6.6.3 Test procedures

(1) Connect the equipment as illustrated Figure 9 and Figure 10, when the output power is over the maximum value of the Noise meter, add the attenuator to avoid destroying;

(2) Set the signal generator frequency to the center frequency of the EUT operating band and maximum gain;

(3) Set the relevant parameters and connect the dotted line to calibrate;

(4) After calibrating , According to the solid line connecting and testing Noise figure and record data;

(5) Repeat RF channels to be tested for single-carrier: Low frequency and High frequency Repeat steps (2) to (4);

6.6.4 Test Results

6.6.4.1 700MHz Band

Frequency(MHz)	Max.Limit(dB)	Noise figure data (dB)	Margin(dB)	Result
Downlink (Max. channel bandwidth 25kHz)				
769.0125	9	4.04	-4.96	pass
772.0125	9	4.38	-4.62	pass
774.9875	9	3.71	-5.29	pass
Uplink (Max. channel bandwidth 25kHz)				
799.0125	9	2.56	-6.44	pass
802.0125	9	2.62	-6.38	pass
804.9875	9	2.53	-6.47	pass

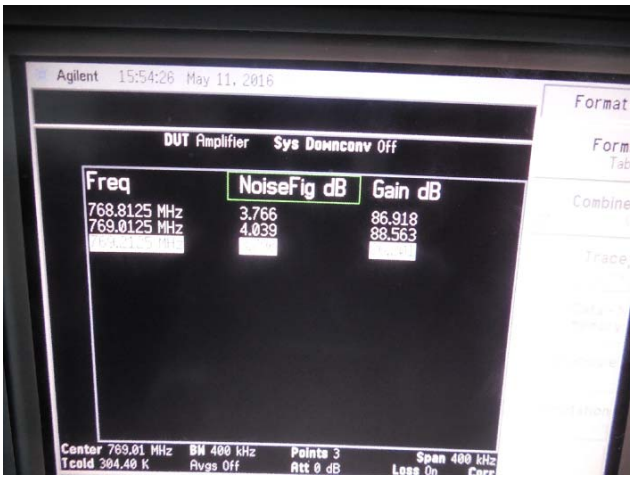
6.6.4.2 800MHz Band

Frequency(MHz)	Max.Limit(dB)	Noise figure data (dB)	Margin(dB)	Result
Downlink (Max. channel bandwidth 25kHz)				
851.0125	9	3.51	-5.49	pass
860.0125	9	2.88	-6.12	pass
868.9875	9	3.68	-5.32	pass
Uplink (Max. channel bandwidth 25kHz)				
806.0125	9	2.65	-6.35	pass
815.0125	9	2.46	-6.54	pass
823.9875	9	2.51	-6.49	pass

6.6.5 Test screenshot

6.6.5.1 700MHz Band

(1) Downlink



Low Frequency: 769.0125MHz

Mid Frequency: 772.0125MHz

High Frequency: 774.9875MHz

(2) Uplink

Low Frequency: 799.0125MHz

Mid Frequency: 802.0125MHz

High Frequency: 804.9875MHz

6.6.5.2 800MHz Band

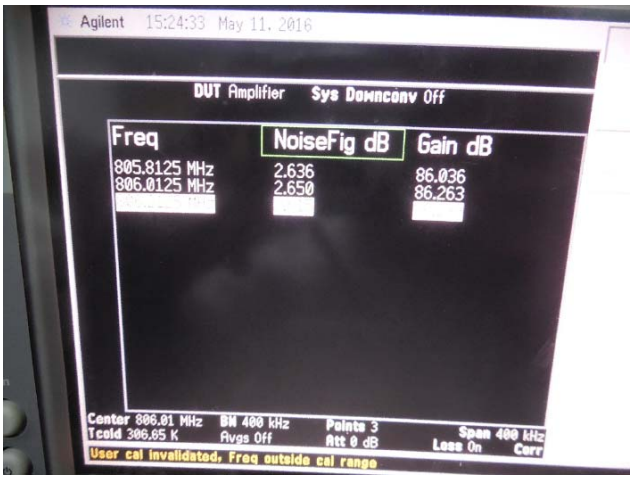
(1) Downlink

Low Frequency: 851.0125MHz

Mid Frequency: 860.0125MHz

High Frequency: 868.9875MHz

(2) Uplink



Low Frequency: 806.0125MHz

Mid Frequency: 815.0125MHz

High Frequency: 823.9875MHz

6.7 Intermodulation product

Test Date (yy-mm-dd): 2016-05-06 to 2016-05-15

Test environment: Normal

Ambient Temp 24.5℃~26.3℃, Humid 49%~65%, Atmospheric Pressure 101kpa

Power supply: AC 120V 50/60Hz

Test Method: KDB 935210 D05 Indus Booster Basic Meas v01r01

Test Requirement: FCC part 90.210(b)

6.7.1 Limit

Specification test limits of intermodulation products are given in table 11

Table 11 Intermodulation product limits

frequency range(MHz)	Max. intermodulation product limit(dBm)
769-775	-13.0
799-805	-13.0
806-824	-13.0
851-869	-13.0

NOTE: RF channels to be tested for single-carrier: Low frequency, Mid frequency and High frequency;

6.7.2 Test configuration

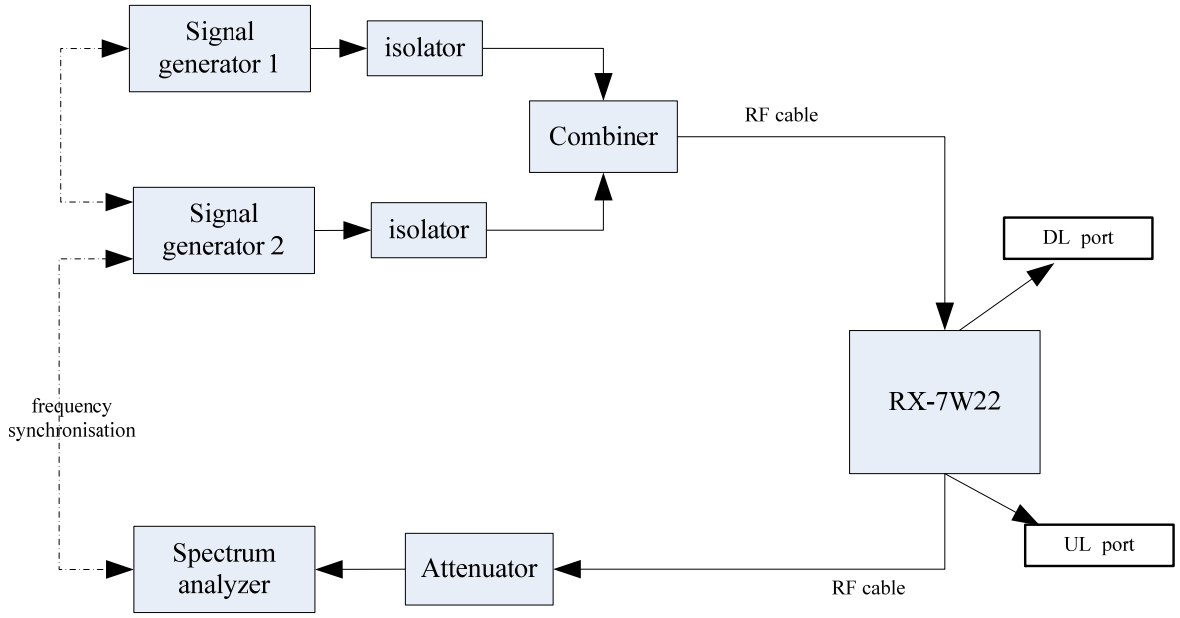


Figure 13: Conducted spurious emissions arrangement for Downlink

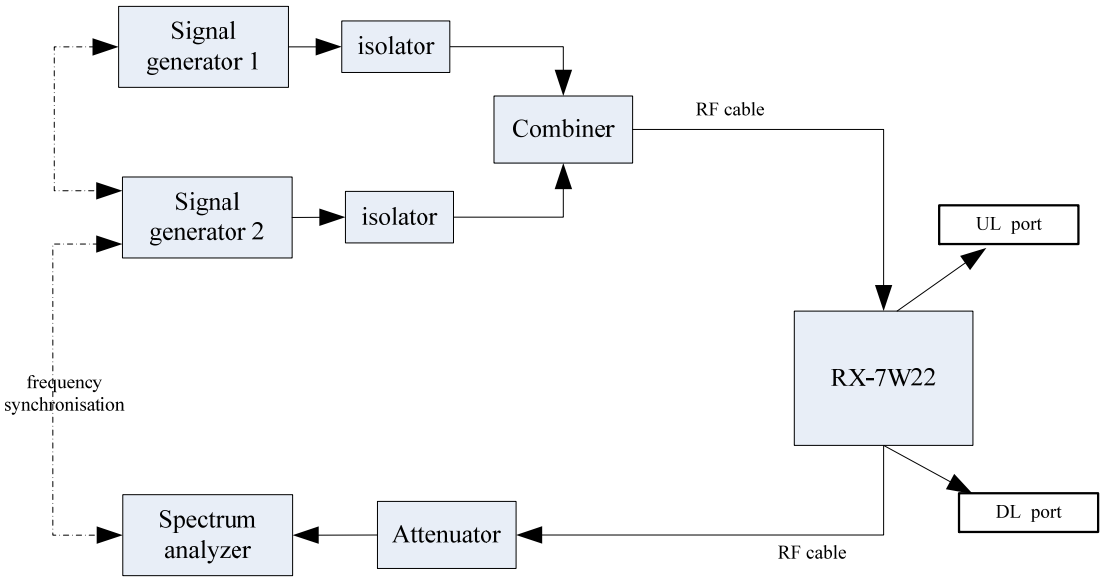


Figure 14: Conducted spurious emissions arrangement for Uplink

6.7.3 Test procedures

(1) Connect the equipment as illustrated Figure 13 and Figure 14, when the output power is over the maximum value of the Spectrum Analyzer, add the attenuator to avoid destroying;

(2) If the signal generator is not capable of producing two independent modulated carriers simultaneously, then two discrete signal generators can be connected, with an appropriate combining network to support the two-signal test;

(3) Set the signal generator frequency to the center frequency of the EUT operating band;

(4) Configure the two signal generator to produce CW on frequencies space consistent with 12.5kHz and 25kHz, with amplitude levels set to just below the AGC threshold and maximum gain;

(5) Connect a spectrum analyzer to the EUT output;

(6) Set the RBW = 1 kHz.;

(7) Set the VBW = 3 × RBW;

(8) Set the detector to power averaging (rms);

(9) Place a marker on highest intermodulation product amplitude;

(10) Capture the plot for inclusion in the test report;

(11) Repeat step (3) to (10) with the composite input power level set to 3 dB above the AGC threshold;

(12) Repeat steps (2) to (11) for all operational bands;

6.7.4 Test Results

6.7.4.1 700MHz Band

(1) Downlink transmit mode

Frequency range		Intermodulaiton product Limit (dBm)	Max. intermodulation product(dBm)	Margin(dB)	Result
With the AGC threshold level					
Channel Bandwidth: 12.5kHz	Low frequency: f1:769.00625MHz f2:769.01875MHz	-13dBm	-16.44	-3.44	pass
	Mid frequency: f1:772.0MHz f2:772.0125MHz	-13dBm	-17.00	-4.00	pass
	High frequency: f1:774.98125MHz f2:774.99375MHz	-13dBm	-17.62	-4.62	pass
Channel Bandwidth: 25kHz	Low frequency: f1:769.0125MHz f2:769.0375MHz	-13dBm	-16.93	-3.93	pass
	Mid frequency: f1:772.0MHz f2:772.025MHz	-13dBm	-20.30	-7.30	pass
	High frequency: f1:774.9625MHz f2:774.9875MHz	-13dBm	-19.96	-6.96	pass
With the input signal amplitude set 3 dB above the ALC threshold					
Channel Bandwidth: 12.5kHz	Low frequency: f1:769.00625MHz f2:769.01875MHz	-13dBm	-16.64	-3.64	pass
	Mid frequency: f1:772.0MHz f2:772.0125MHz	-13dBm	-17.60	-4.60	pass
	High frequency: f1:769.00625MHz f2:774.99375MHz	-13dBm	-18.33	-5.33	pass
Channel Bandwidth: 25kHz	Low frequency: f1:769.0125MHz f2:769.0375MHz	-13dBm	-16.77	-3.77	pass
	Mid frequency: f1:772.0MHz f2:772.025MHz	-13dBm	-21.09	-8.09	pass
	High frequency: f1:774.9625MHz f2:774.9875MHz	-13dBm	-19.34	-6.34	pass
Note: 1*--Margin= Maximum mark level- specification limit.					