

0 ~10.0	0
10.0 ~ 50.0	$50+10*\log P(W)$
More than 50.0	$43+10\log P(W)$
Note: fd mean to Frequency displacement from carrier.	

Note : This equipment is a equipment with audio low pass filter.

- (1) RF channels to be tested for single-carrier: B, M and T;
- (2) Modulation types are C4FM, Tetra and Analog FM(10kHz/1kHz);
- (3) Modulation envelope reference points are provided in terms of attenuation below the unmodulated carrier.

6.3.2 Test configuration

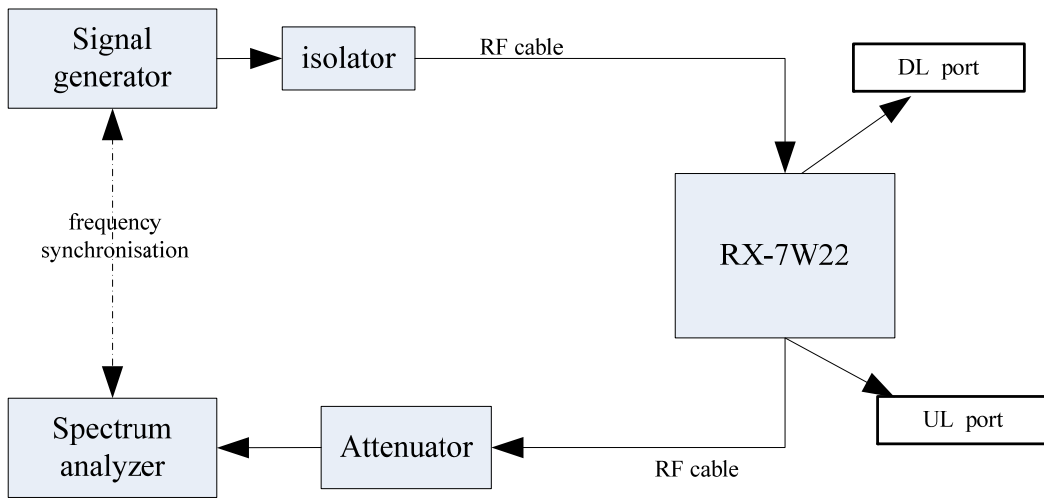


Figure 5: Emission mask arrangement for Downlink

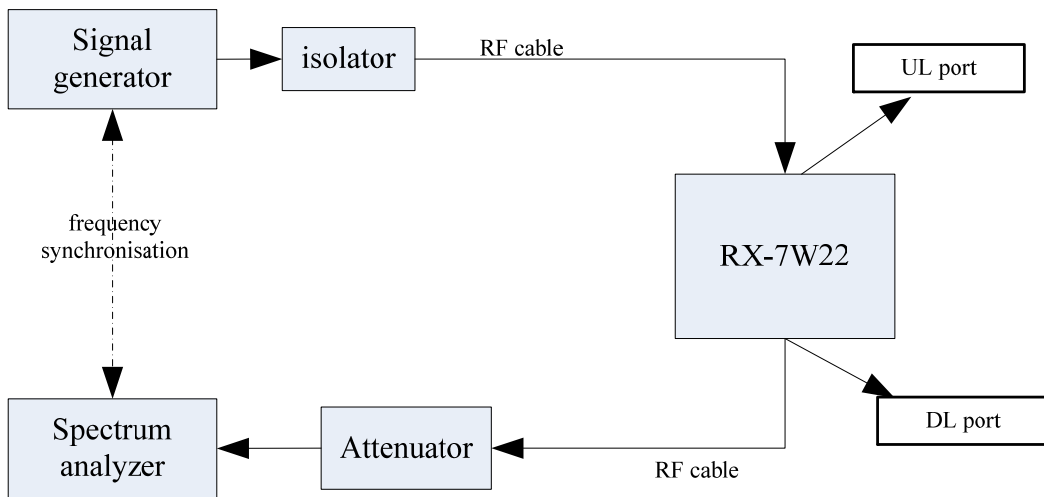


Figure 6: Emission mask arrangement for Uplink

6.3.3 Test procedures

- (1) Connect the equipment as illustrated Figure 5 and Figure 6, when the output power is over the maximum value of the Spectrum Analyzer, add the attenuator to avoid destroying;
- (2) Configure the signal generator to transmit the appropriate test signal associated with the public safety emission designation;
- (3) Configure the signal frequency to centre frequency and the signal level to be just below the ALC threshold and maximum gain;
- (4) Connect a spectrum analyzer to the output of the EUT using appropriate attenuation as necessary;
- (5) Set the spectrum analyzer center frequency to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between 2 times to 5 times the OBW;
- (6) The nominal RBW shall be 300 Hz for 25kHz and 100 Hz for all other emissions types;
- (7) Set the reference level of the spectrum analyzer to accommodate the maximum input amplitude level;
- (8) Set spectrum analyzer detection mode to Peak, and trace mode to Avg;
- (9) Confirm that the signal is contained within the appropriate emissions mask;
- (10) Measure the emission Mask according to Table 3 at the specified frequencies with specified measurement bandwidth and note that the measured value does not exceed the specified value;
- (11) Repeat RF channels to be tested for single-carrier: Low and High frequency;

6.3.4 Test Results

6.3.4.1 700MHz Band

6.3.4.1.1 Modulation signal: C4FM

Resolution Bandwidth: 100 Hz
 Video Bandwidth: 300 Hz
 Detector mode: Peak
 Trace mode: Average
 Symbol Rate: 4.8ksps
 Configuration: Single Band
 Operating frequency range: Downlink: 769MHz~775MHz
 Uplink:799MHz~805MHz

Carrier frequency(MHz)	Limit	Result
Downlink transmit mode		
Low frequency: 769.00625	Mask B & C	pass
Mid frequency: 772.00625	Mask B & C	pass
High frequency: 774.99375	Mask B & C	pass
Uplink transmit mode		
Low frequency: 799.00625	Mask B & C	pass
Mid frequency: 802.00625	Mask B & C	pass
High frequency: 804.99375	Mask B & C	pass

6.3.4.1.2 Modulation signal: Tetra

Resolution Bandwidth: 300 Hz
 Video Bandwidth: 1 kHz
 Detector mode: Peak
 Trace mode: Average
 Symbol Rate: 18ksps
 Configuration: Single Band
 Operating frequency range: Downlink: 769MHz~775MHz
 Uplink:799MHz~805MHz

Carrier frequency(MHz)	Limit	Result
Downlink transmit mode		
Low frequency: 769.0125	Mask B	pass

Mid frequency: 772.0125	Mask B	pass
High frequency: 774.9875	Mask B	pass
Uplink transmit mode		
Low frequency: 799.0125	Mask B	pass
Mid frequency: 802.0125	Mask B	pass
High frequency: 804.9875	Mask B	pass

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

Resolution Bandwidth:	300 Hz
Video Bandwidth:	1 kHz
Detector mode:	Peak
Trace mode:	Average
Symbol Rate:	1ksps
Frequency Dev:	10kHz
Configuration:	Single Band
Operating frequency range:	Downlink: 769MHz~775MHz Uplink:799MHz~805MHz

Carrier frequency(MHz)	Limit	Result
Downlink transmit mode		
Low frequency: 769.0125	Mask B	pass
Mid frequency: 772.0125	Mask B	pass
High frequency: 774.9875	Mask B	pass
Uplink transmit mode		
Low frequency: 799.0125	Mask B	pass
Mid frequency: 802.0125	Mask B	pass
High frequency: 804.9875	Mask B	pass

6.3.4.2 800MHz Band

6.3.4.2.1 Modulation signal: C4FM

Resolution Bandwidth: 100 Hz
 Video Bandwidth: 300 Hz
 Detector mode: Peak
 Trace mode: Average
 Symbol Rate: 4.8ksps
 Configuration: Single Band
 Operating frequency range: Downlink: 851MHz~869MHz
 Uplink:806MHz~824MHz

Carrier frequency(MHz)		Limit	Result
Downlink transmit mode			
851~854	Low frequency: 851.00625	Mask B & H	pass
	Mid frequency: 852.50625	Mask B & H	pass
	High frequency: 853.99375	Mask B & H	pass
Uplink transmit mode			
806~809	Low frequency: 806.00625	Mask B & H	pass
	Mid frequency: 807.50625	Mask B & H	pass
	High frequency: 808.99375	Mask B & H	pass

6.3.4.2.2 Modulation signal: Tetra

Resolution Bandwidth: 300 Hz
 Video Bandwidth: 1 kHz
 Detector mode: Peak
 Trace mode: Average
 Symbol Rate: 18ksps
 Configuration: Single Band
 Operating frequency range: Downlink: 851MHz~869MHz
 Uplink:806MHz~824MHz

Carrier frequency(MHz)		Limit	Result
Downlink transmit mode			
854~869	Low frequency: 854.0125	Mask B & G	pass
	Mid frequency: 861.5125	Mask B & G	pass

	High frequency: 868.9875	Mask B & G	pass
Uplink transmit mode			
809~824	Low frequency: 809.0125	Mask B & G	pass
	Mid frequency: 816.5125	Mask B & G	pass
	High frequency: 823.9875	Mask B & G	pass

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

Resolution Bandwidth: 300 Hz
 Video Bandwidth: 1 kHz
 Detector mode: Peak
 Trace mode: Average
 Symbol Rate: 1ksps
 Frequency Dev: 10kHz
 Configuration: Single Band
 Operating frequency range: Downlink: 851MHz~869MHz
 Uplink:806MHz~824MHz

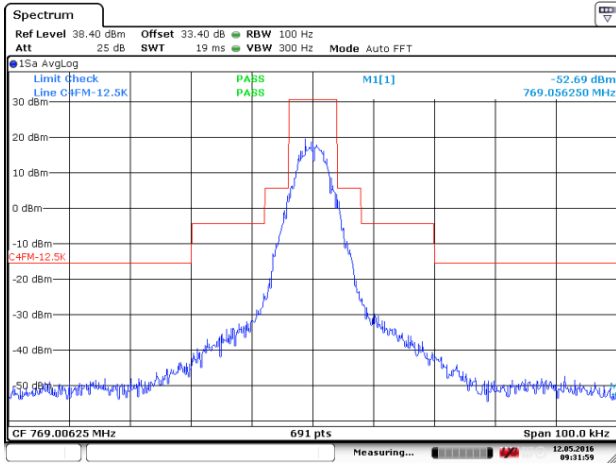
Carrier frequency(MHz)		Limit	Result
Downlink transmit mode			
854~869	Low frequency: 854.0125	Mask B & G	pass
	Mid frequency: 861.5125	Mask B & G	pass
	High frequency: 868.9875	Mask B & G	pass
Uplink transmit mode			
809~824	Low frequency: 809.0125	Mask B & G	pass
	Mid frequency: 816.5125	Mask B & G	pass
	High frequency: 823.9875	Mask B & G	pass

6.3.5 Test screenshot

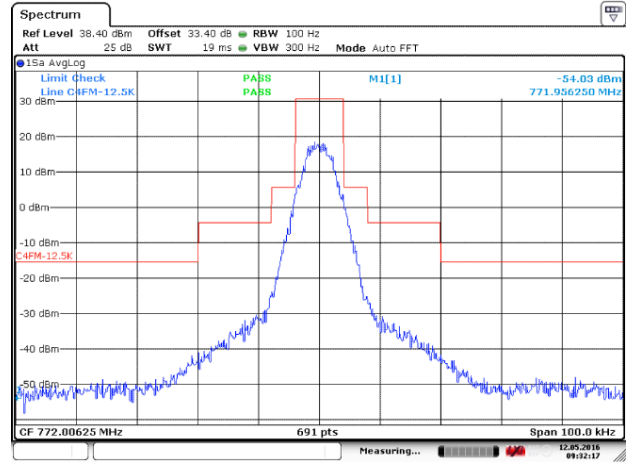
6.3.5.1 700MHz Band

6.3.5.1.1 Modulation signal: C4FM

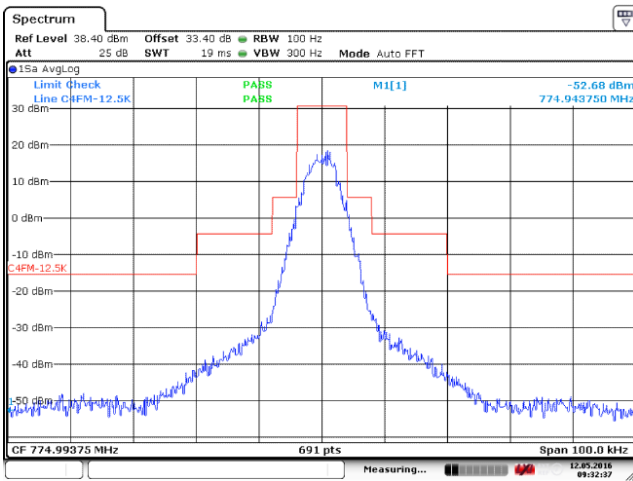
(1) Downlink



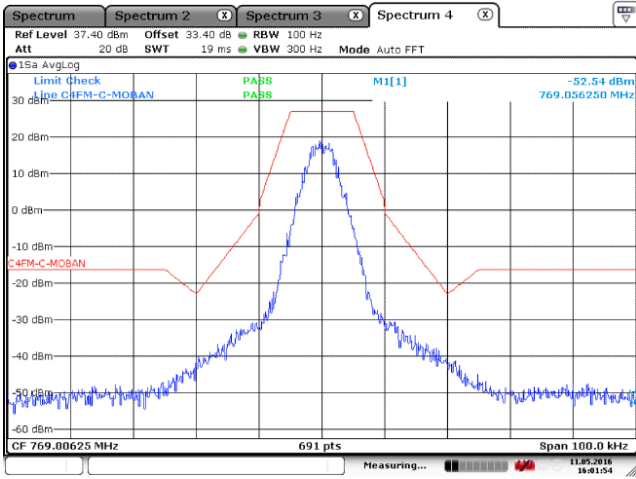
Low Frequency: 769.00625MHz (Mask B)



Mid Frequency: 772.00625MHz (Mask B)

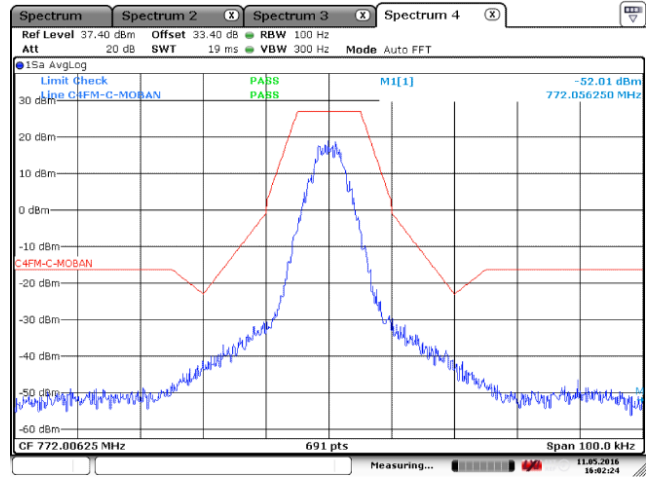


High Frequency: 774.99375MHz (Mask B)



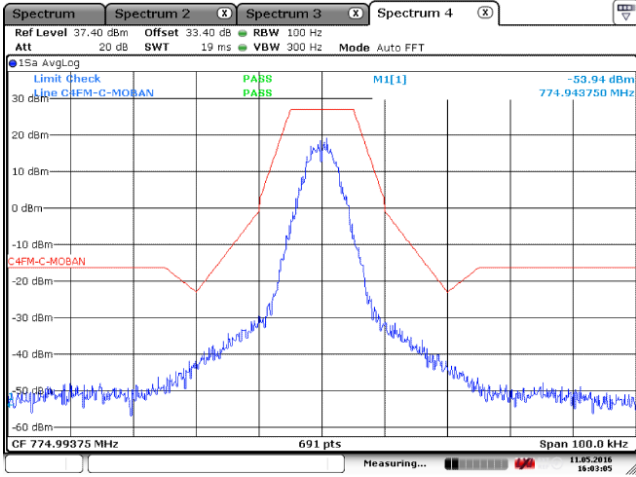
Date: 11.MAY.2016 16:01:54

Low Frequency: 769.00625MHz (Mask C)



Date: 11.MAY.2016 16:02:24

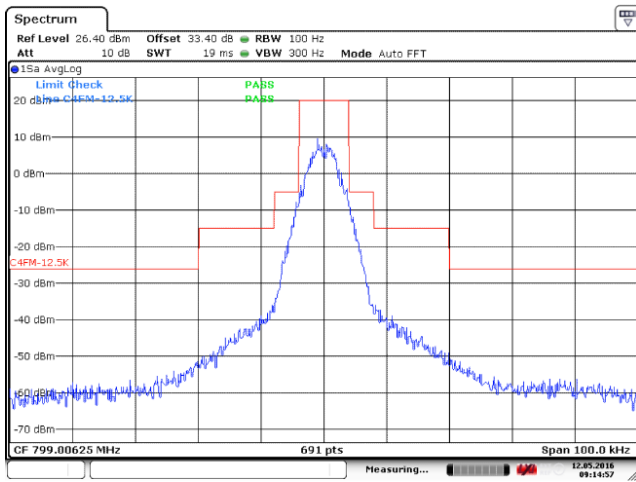
Mid Frequency: 772.00625MHz (Mask C)



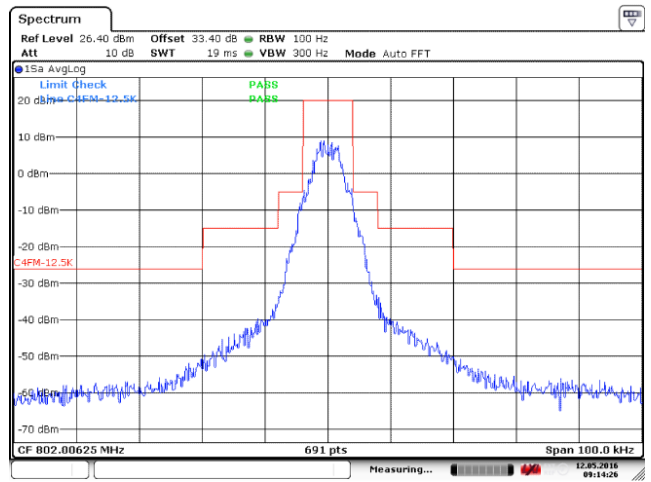
Date: 11.MAY.2016 16:03:05

High Frequency: 774.99375MHz (Mask C)

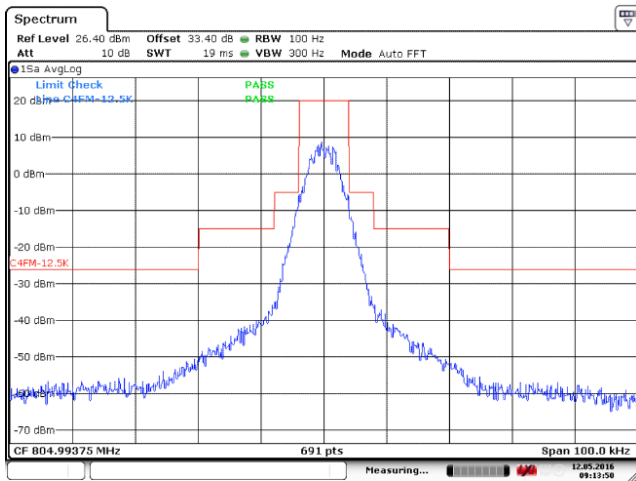
(2) Uplink



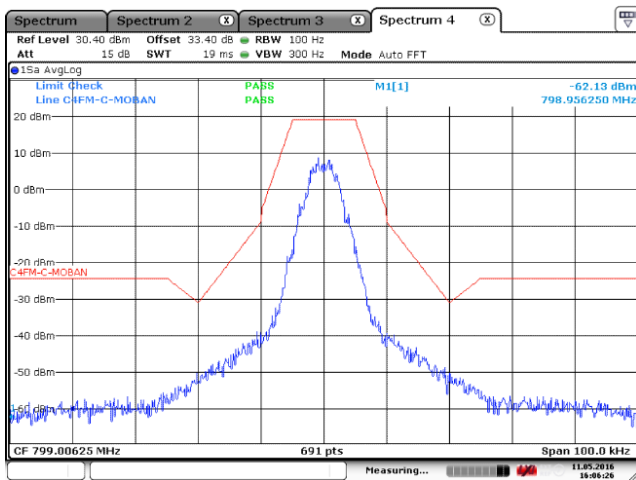
Low Frequency: 799.00625MHz (Mask B)



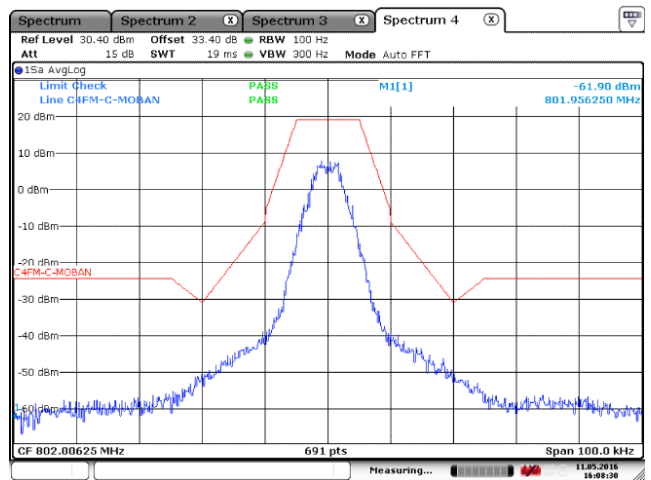
Mid Frequency: 802.00625MHz (Mask B)



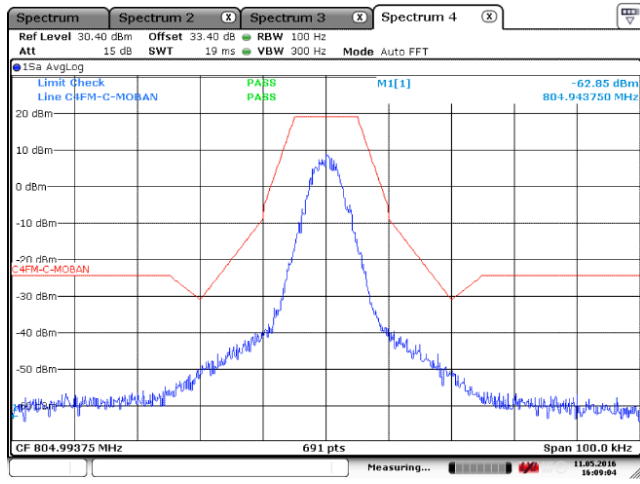
High Frequency: 804.99375MHz (Mask B)



Low Frequency: 799.00625MHz (Mask C)



Mid Frequency: 802.00625MHz (Mask C)

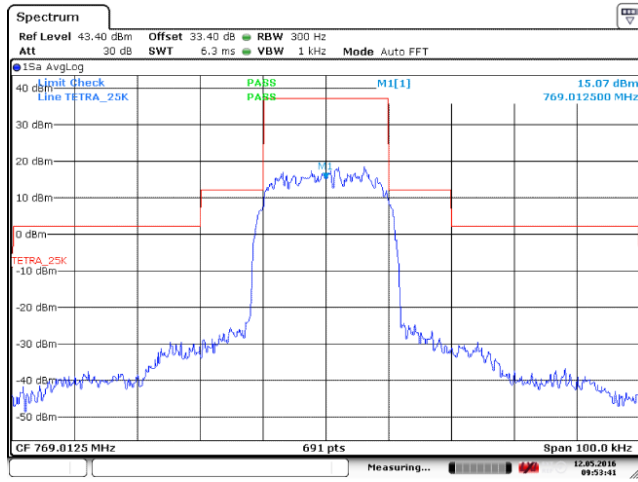


Date: 11.MAY.2016 16:09:04

High Frequency: 804.99375MHz (Mask C)

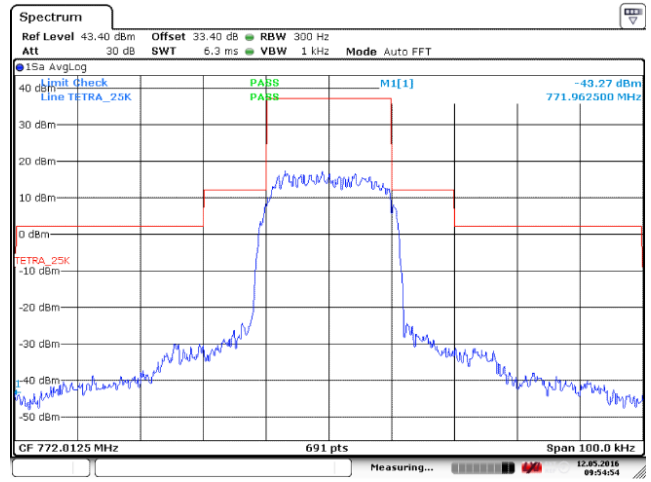
6.3.5.1.2 Modulation signal: Tetra

(1) Downlink



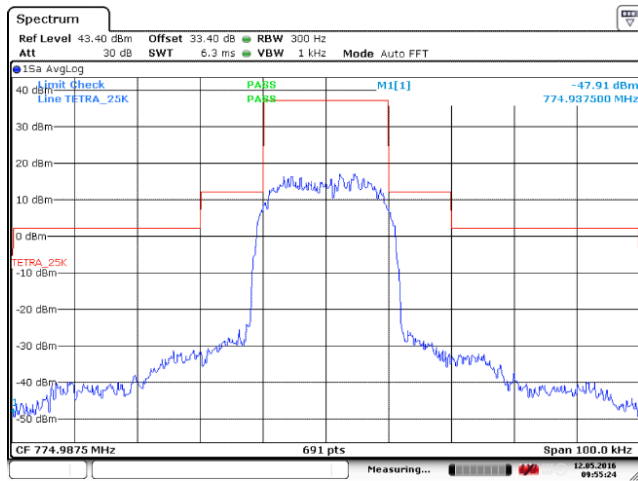
Date: 12.MAY.2016 09:53:42

Low Frequency: 769.0125MHz (Mask B)



Date: 12.MAY.2016 09:54:54

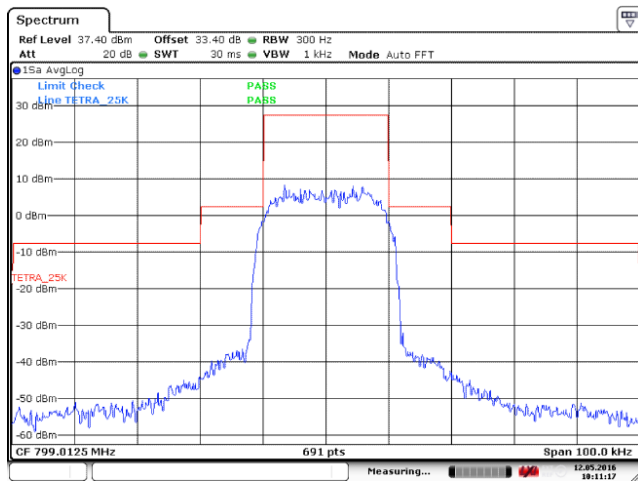
Mid Frequency: 772.0125MHz (Mask B)



Date: 12.MAY.2016 09:55:25

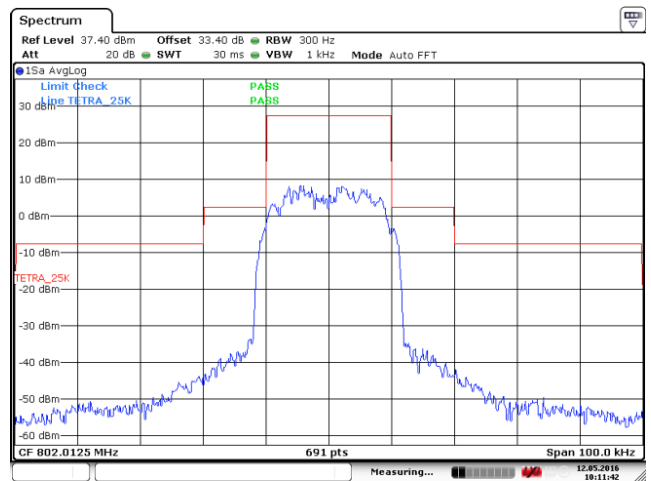
High Frequency: 774.9875MHz (Mask B)

(2) Uplink



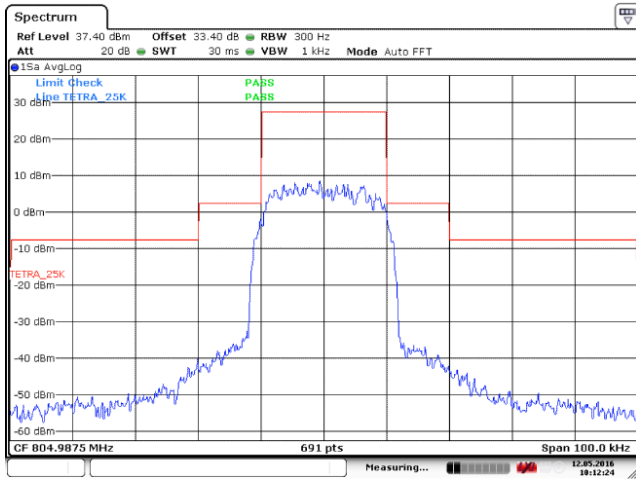
Date: 12.MAY.2016 10:11:17

Low Frequency: 799.0125MHz (Mask B)



Date: 12.MAY.2016 10:11:43

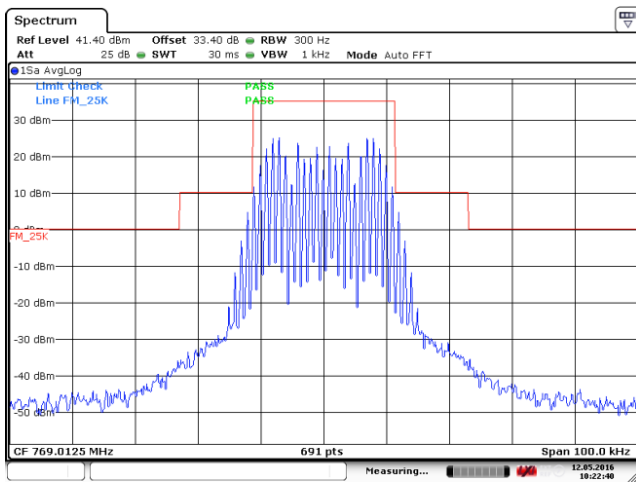
Mid Frequency: 802.0125MHz (Mask B)



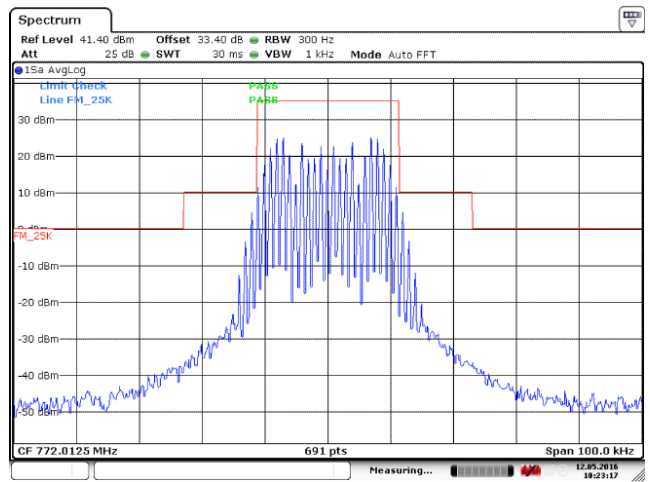
High Frequency: 804.9875MHz(Mask B)

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

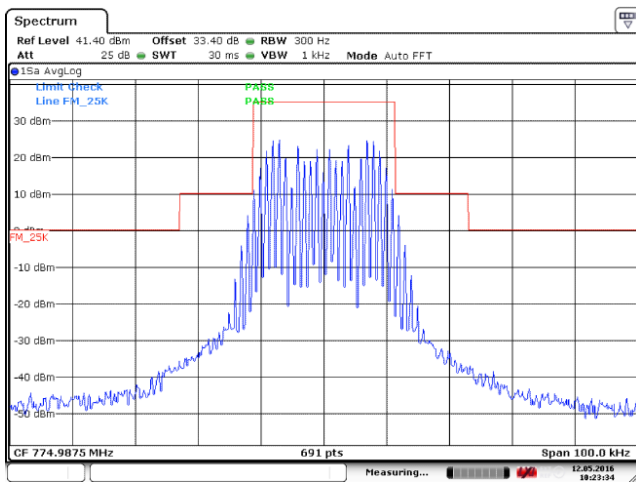
(1) Downlink



Low Frequency: 769.0125MHz(Mask B)

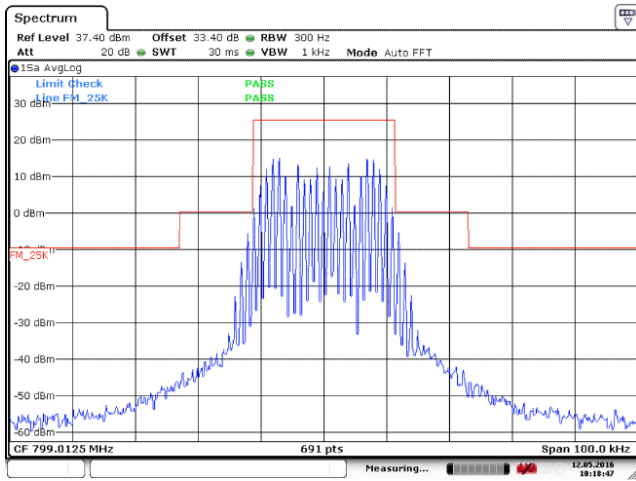


Mid Frequency: 772.0125MHz(Mask B)

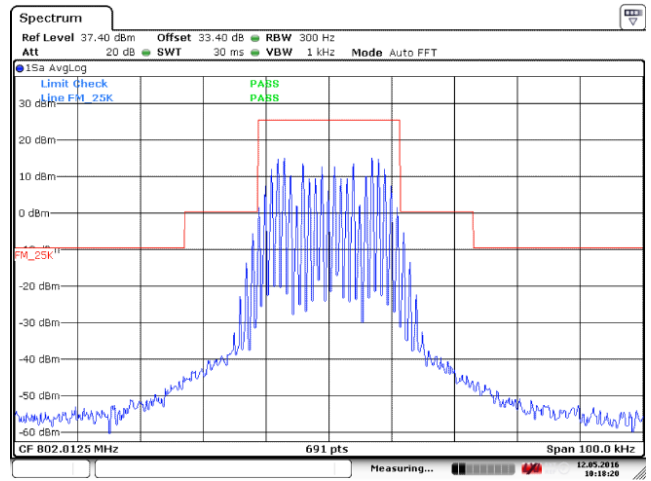


High Frequency: 774.9875MHz(Mask B)

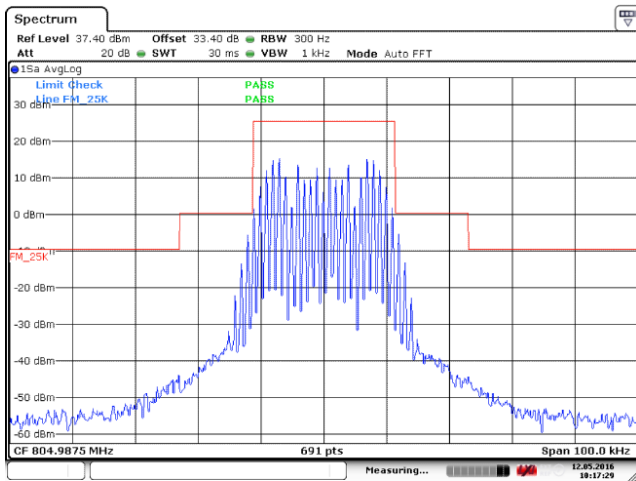
(2) Uplink



Low Frequency: 799.0125MHz(Mask B)



Mid Frequency: 802.0125MHz(Mask B)

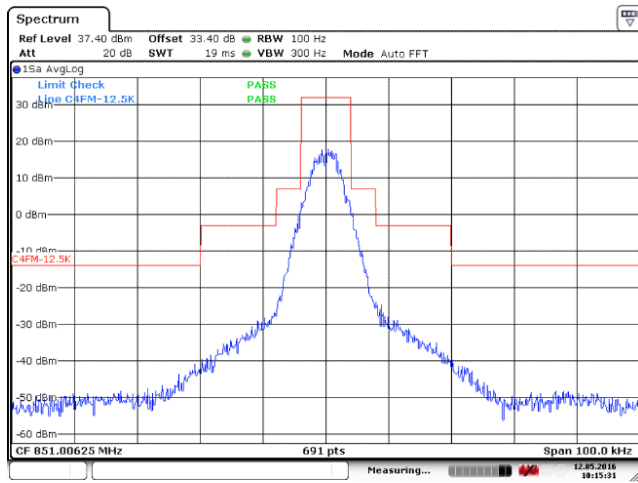


High Frequency: 804.9875MHz(Mask B)

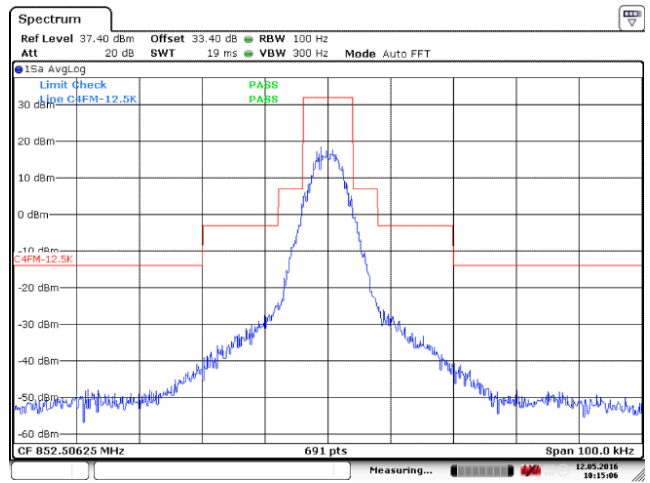
6.3.5.2 800MHz Band

6.3.5.2.1 Modulation signal: C4FM

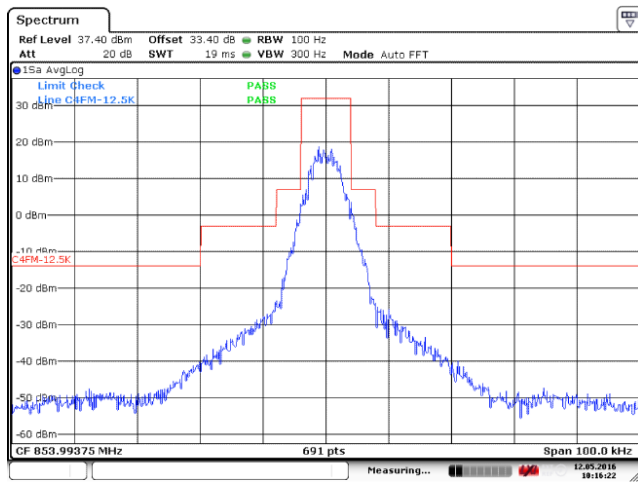
(1) Downlink



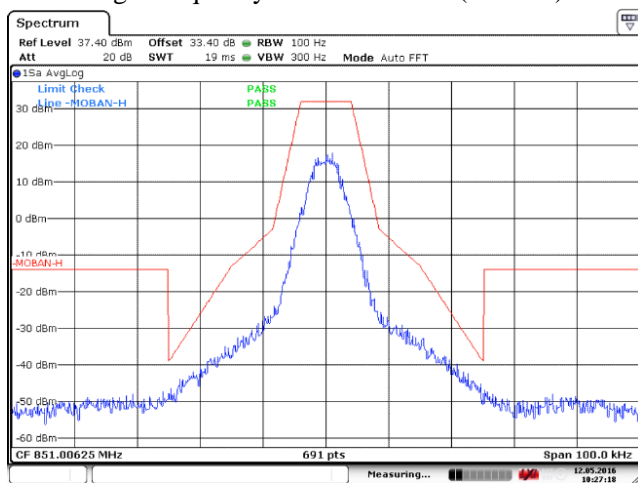
Low Frequency: 851.00625MHz (Mask B)



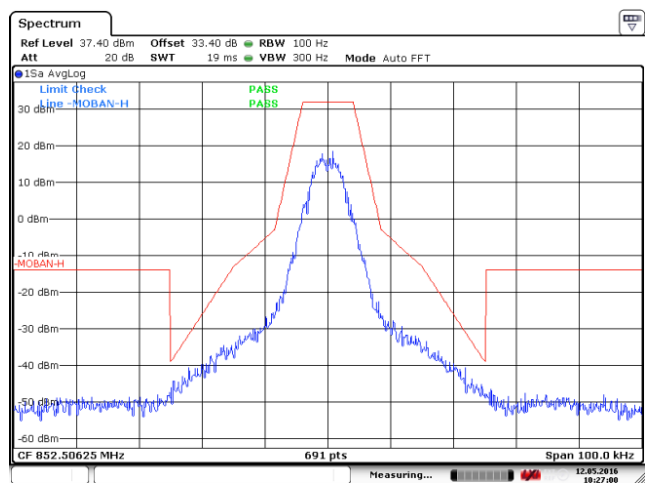
Mid Frequency: 852.50625MHz (Mask B)



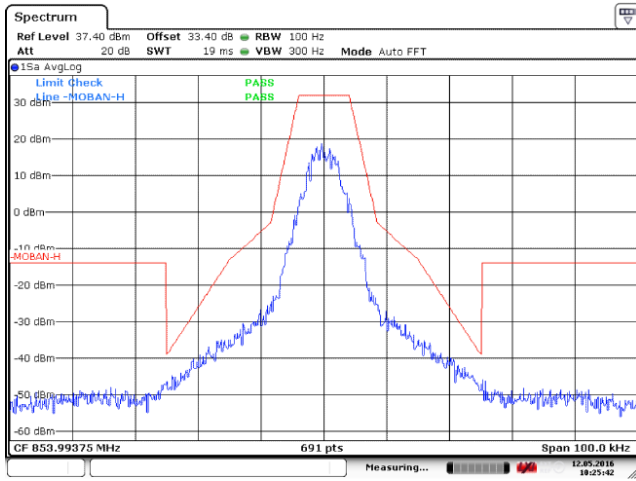
High Frequency: 853.99375MHz (Mask B)



Low Frequency: 851.00625MHz (Mask H)

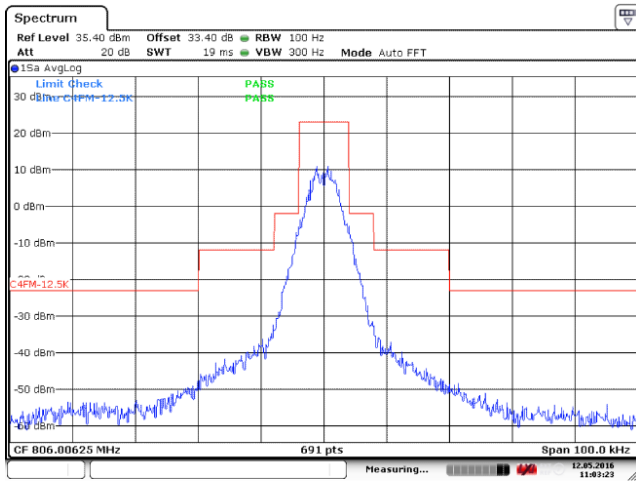


Mid Frequency: 852.50625MHz (Mask H)

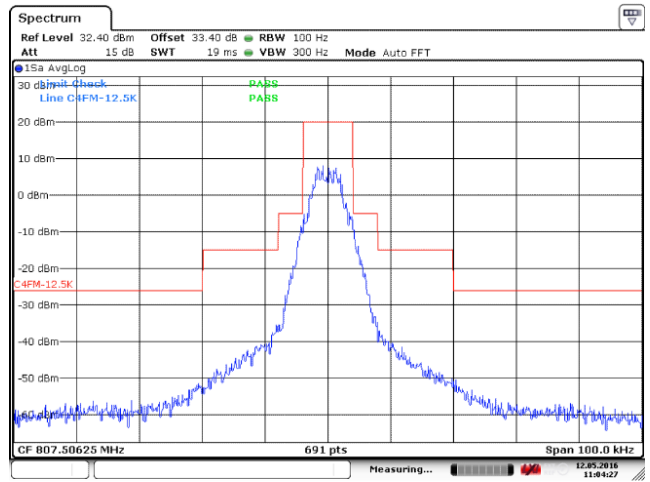


High Frequency: 853.99375MHz (Mask H)

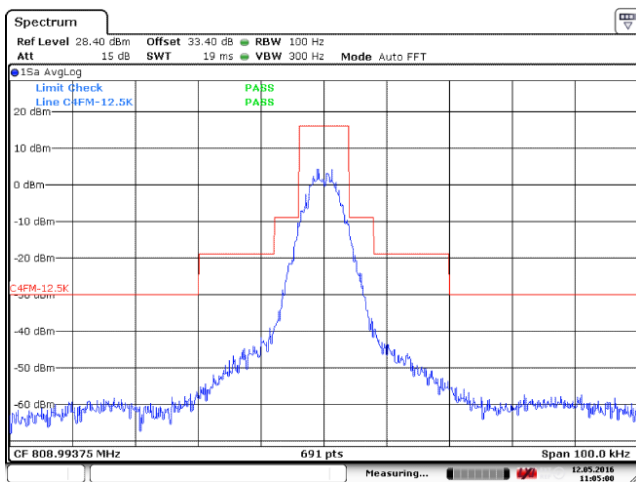
(2) Uplink



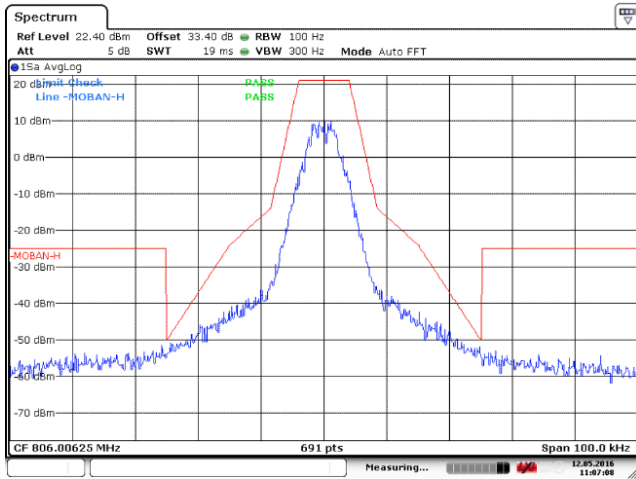
Low Frequency: 806.00625MHz (Mask B)



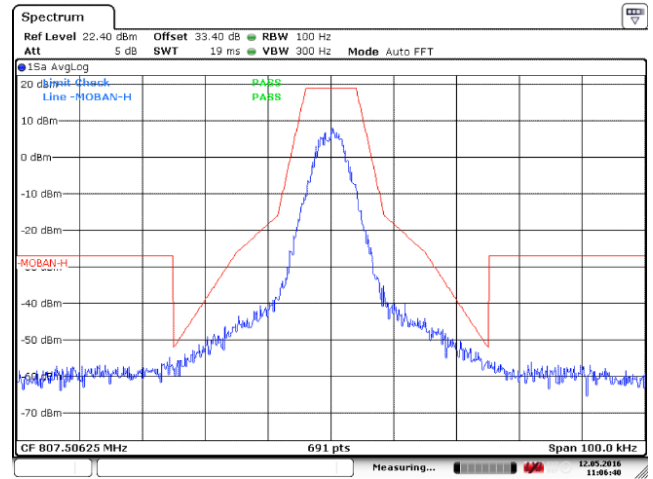
Mid Frequency: 807.50625MHz (Mask B)



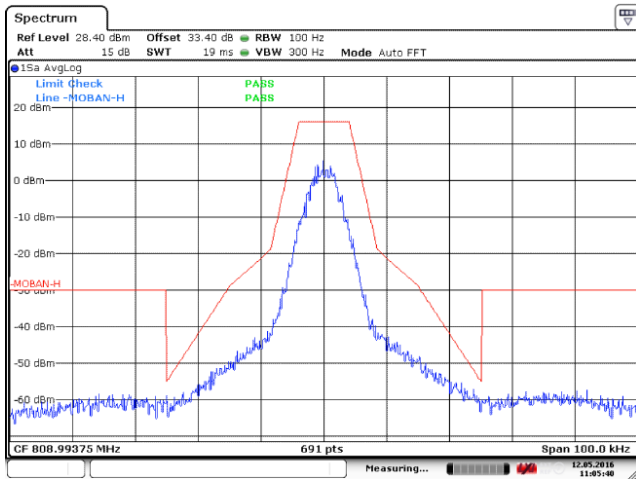
High Frequency: 808.99375MHz (Mask B)



Low Frequency: 806.00625MHz (Mask H)



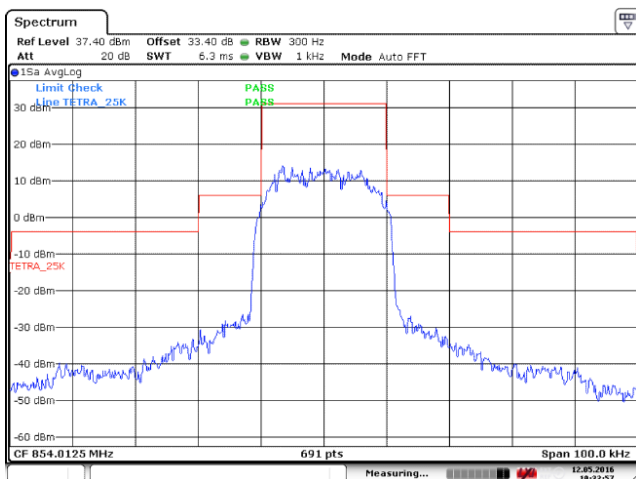
Mid Frequency: 807.50625MHz (Mask H)



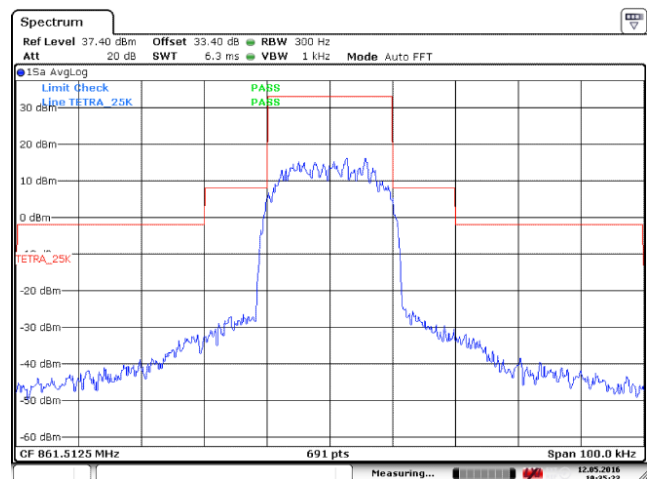
High Frequency: 808.99375MHz (Mask H)

6.3.5.2.2 Modulation signal: Tetra

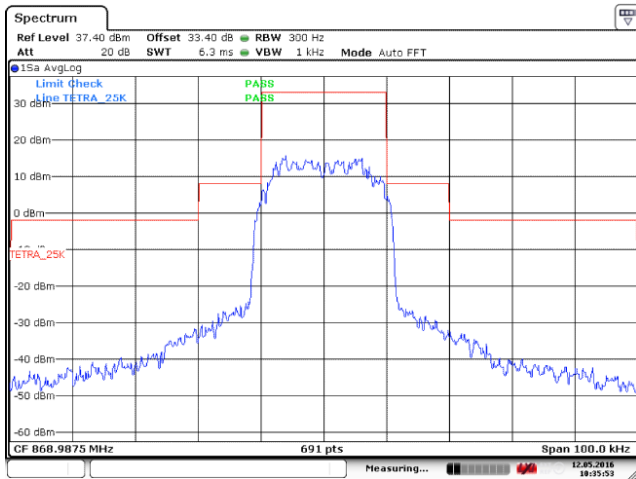
(1) Downlink



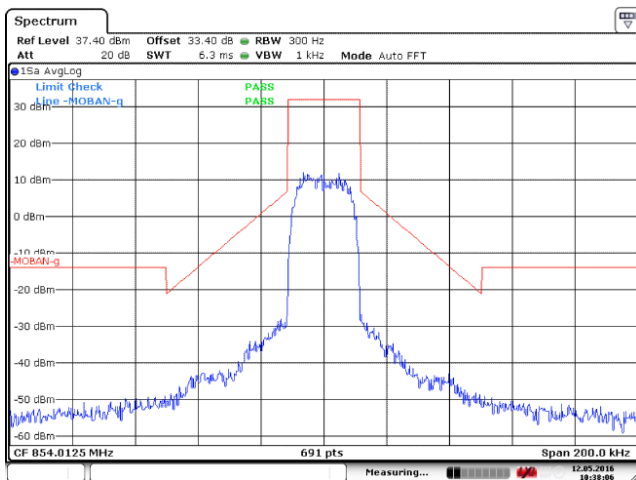
Low Frequency: 854.0125MHz (Mask B)



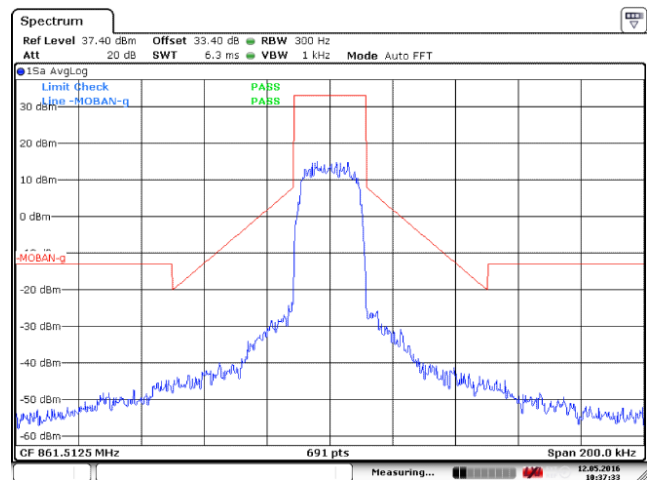
Mid Frequency: 861.5125MHz (Mask B)



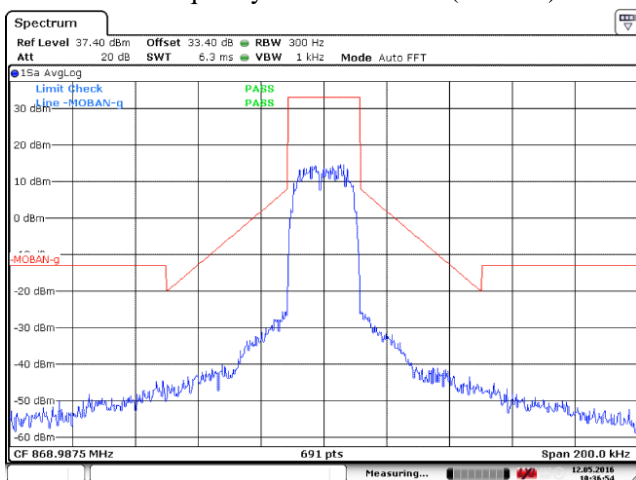
High Frequency: 868.9875MHz (Mask B)



Low Frequency: 854.0125MHz (Mask G)

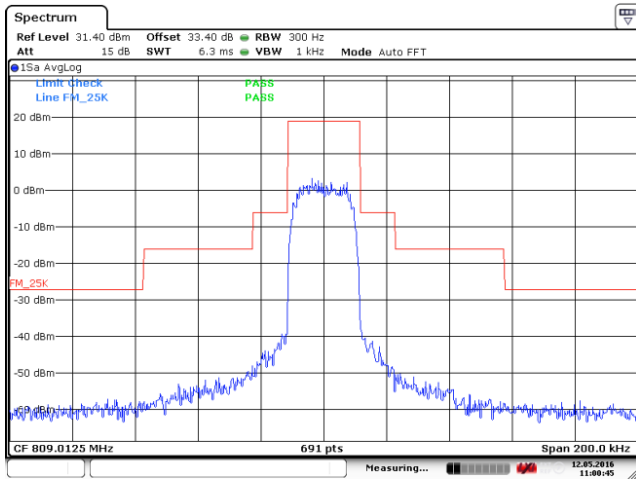


Mid Frequency: 861.5125MHz (Mask G)

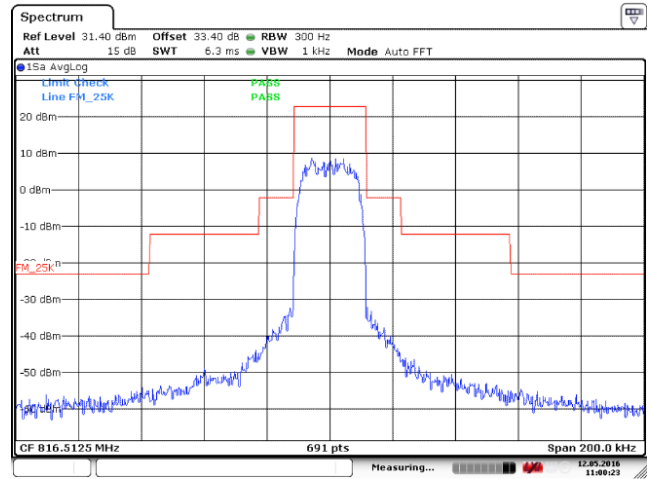


High Frequency: 868.9875MHz (Mask G)

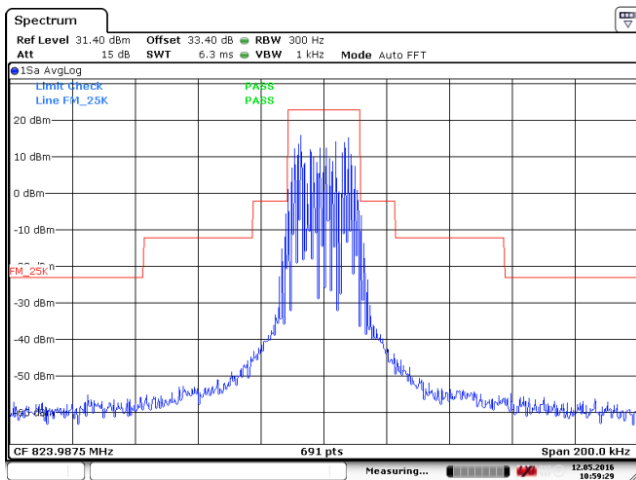
(2) Uplink



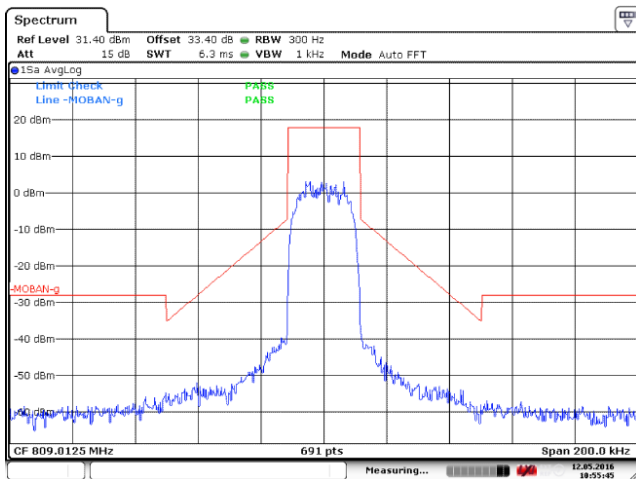
Low Frequency: 809.0125MHz (Mask B)



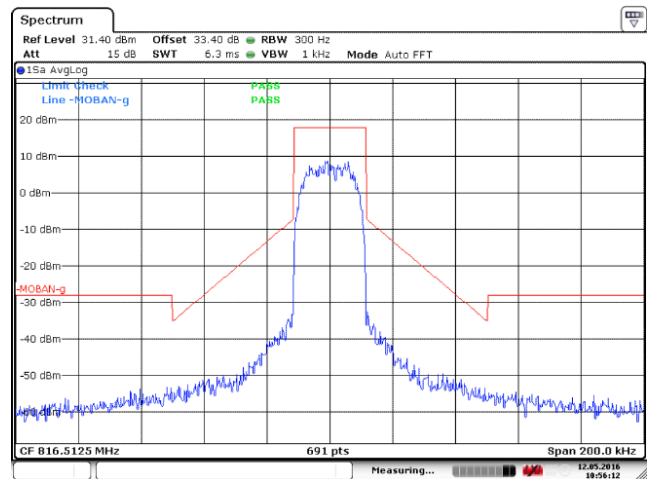
Mid Frequency: 816.5125MHz (Mask B)



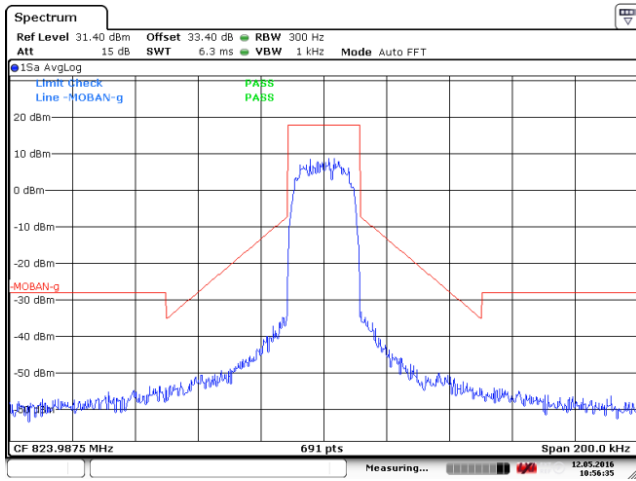
High Frequency: 823.9875MHz (Mask B)



Low Frequency: 809.0125MHz (Mask G)



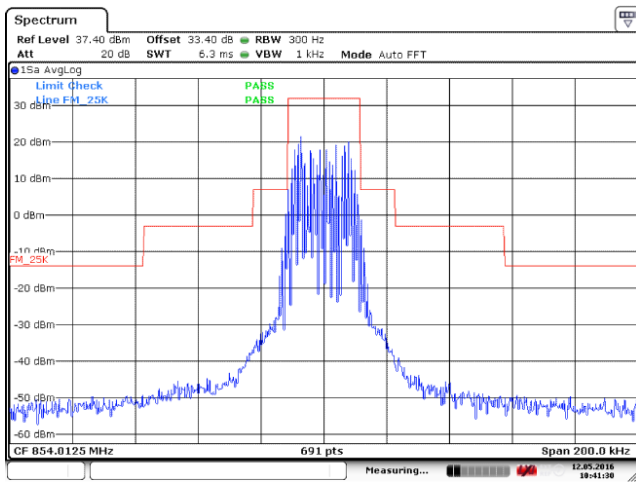
Mid Frequency: 816.5125MHz (Mask G)



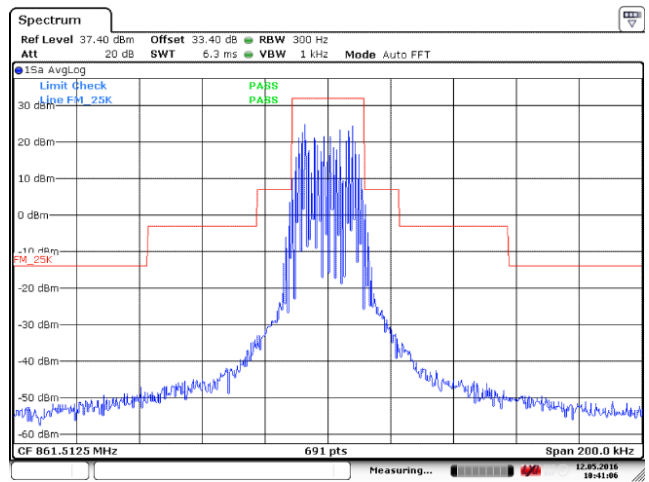
High Frequency: 823.9875MHz (Mask G)

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

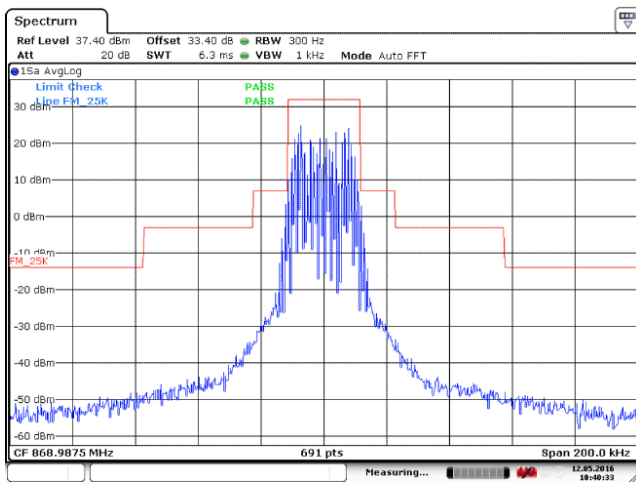
(1) Downlink



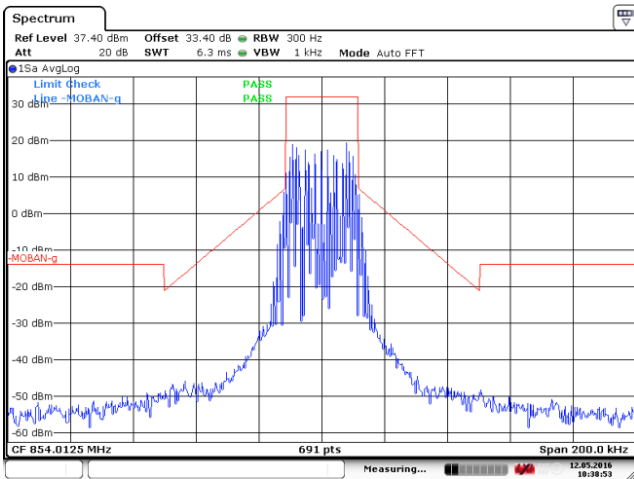
Low Frequency: 854.0125MHz (Mask B)



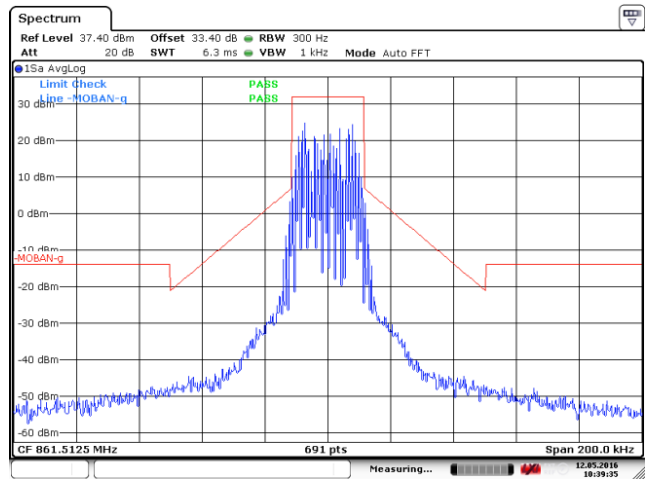
Mid Frequency: 861.5125MHz (Mask B)



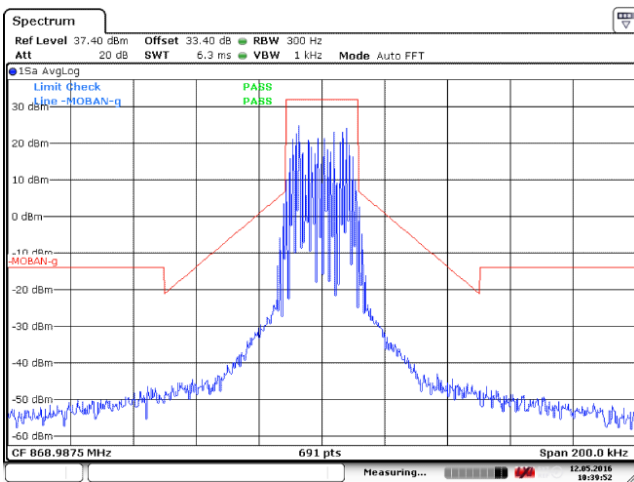
High Frequency: 868.9875MHz (Mask B)



Low Frequency: 854.0125MHz (Mask G)

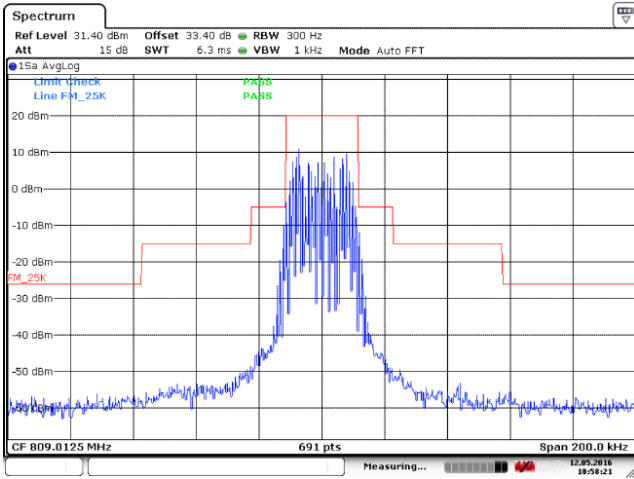


Mid Frequency: 861.5125MHz (Mask G)

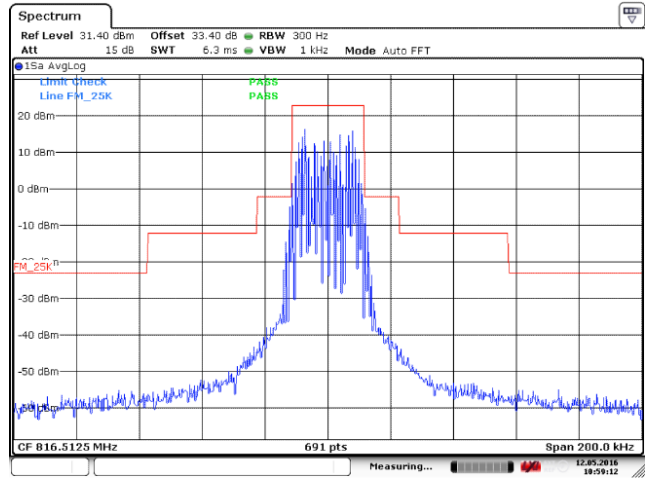


High Frequency: 868.9875MHz (Mask G)

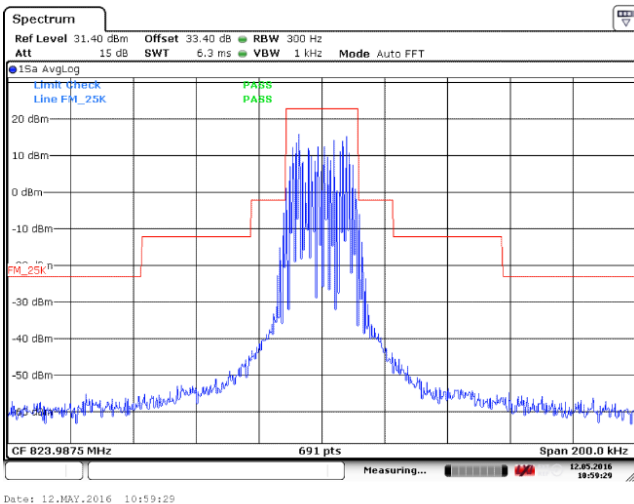
(2) Uplink



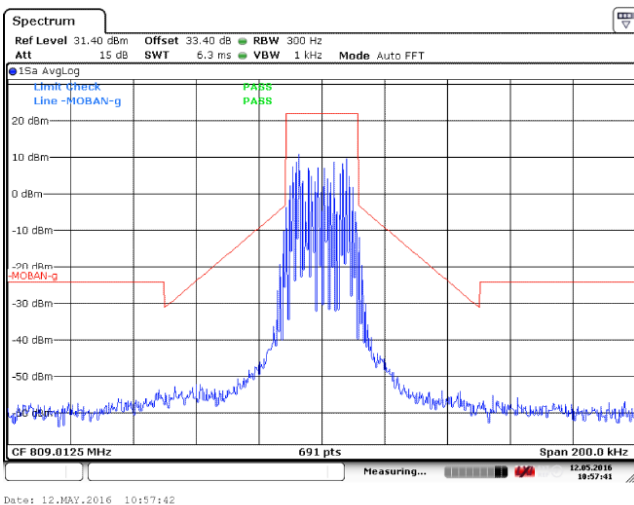
Low Frequency: 809.0125MHz (Mask B)



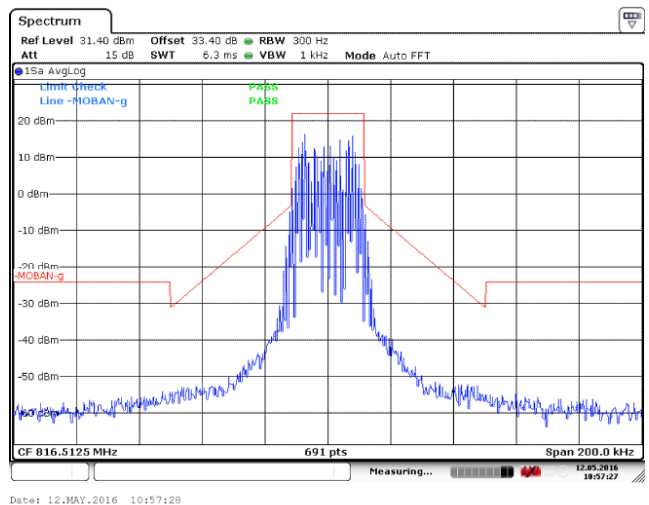
Mid Frequency: 816.5125MHz (Mask B)



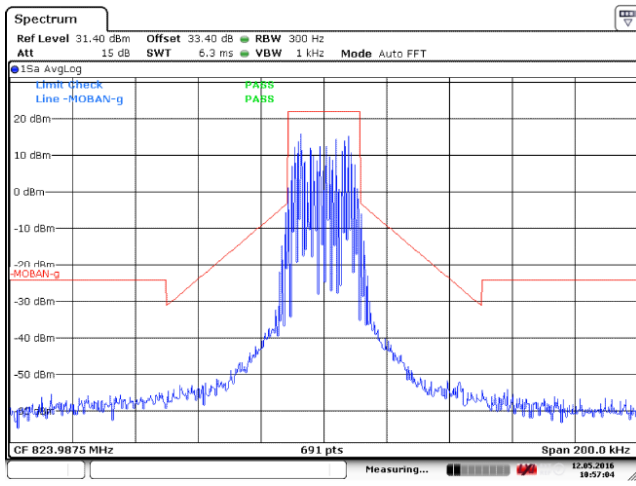
High Frequency: 823.9875MHz (Mask B)



Low Frequency: 809.0125MHz (Mask G)



Mid Frequency: 816.5125MHz (Mask G)



High Frequency: 823.9875MHz (Mask G)