

B.2.3 Peak to average ratio

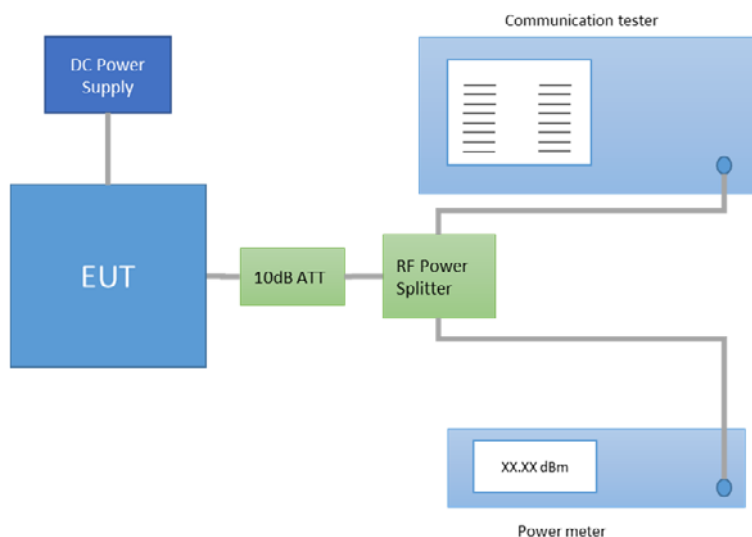
Standard references

BAND	FCC part	RSS part	Peak to average ratio limit
LTE 2	24.232	133-ch.6.4	< 13 dB
LTE 4	-	139-ch.6.4	< 13 dB
LTE 5	-	132-ch.5.4	< 13 dB
LTE 17	-	130-ch.4.4	< 13 dB

Test procedure

The setup below was used to measure the transmitted peak power. The antenna terminal of the EUT is connected to the peak power meter and the communication tester through an attenuator and a power splitter. This test was performed according to the KDB 971168 D01 § 5.1. Then the Peak to average power ratio is computed from the average power measured previously.

The transmitted peak power was measured on the worst case configuration selected from the chapter B.2.1 and on the middle channel.



Results table

Results Screenshot

Band	Channel	Modulation	Bandwidth [MHz]	Channel Number	Frequency [MHz]	#RB	Result [dB]		
LTE 2	Mid	QPSK	1.4	18900	1880.0	1	4.83		
						3	4.99		
						6	5.63		
			3			1	4.63		
						8	5.47		
						15	5.46		
			5			1	4.77		
						12	5.71		
						25	5.86		
			10			1	4.83		
						25	5.68		
						50	5.57		
		15	1			5.04			
			36			5.85			
			75			5.69			
		20	1			5.01			
			50			5.62			
			100			5.45			
		16QAM					1.4	1	5.43
								3	5.83
								6	6.37
							3	1	5.42
								8	6.40
								15	6.50
5	1			5.62					
	12			6.51					
	25			6.46					
10	1			5.54					
	25			6.62					
	50			6.63					
15	1	5.53							
	36	6.58							
	75	6.58							
20	1	6.00							
	50	6.55							
	100	6.50							

Band	Channel	Modulation	Bandwidth [MHz]	Channel Number	Frequency [MHz]	#RB	Result [dB]
LTE 4	Mid	QPSK	1.4	20175	1732.5	1	4.97
						3	5.55
			6			5.67	
			1			5.02	
			8			5.72	
			15			5.76	
			1			5.00	
			12			5.92	
			25			5.92	
			1			4.86	
			25			5.89	
			50			6.06	
			1			5.25	
			36			6.16	
		75	6.04				
		1	5.49				
		20	5.95				
		100	6.09				
		1	5.69				
		3	6.34				
		6	6.85				
		1	5.83				
		8	6.69				
		15	6.77				
		1	6.01				
		12	6.94				
		25	6.97				
		1	5.58				
25	7.12						
50	6.85						
1	5.84						
36	6.89						
75	6.85						
1	6.32						
50	6.83						
100	6.87						
16QAM			1.4			1	5.69
						3	6.34
			6			6.85	
			1			5.83	
			8			6.69	
			15			6.77	
			1			6.01	
			12			6.94	
			25			6.97	
			1			5.58	
			25			7.12	
			50			6.85	
			1			5.84	
			36			6.89	
75	6.85						
1	6.32						
50	6.83						
100	6.87						

Band	Channel	Modulation	Bandwidth [MHz]	Channel Number	Frequency [MHz]	#RB	Result [dB]	
LTE 5	Mid	QPSK	1.4	20525	836.5	1	4.21	
						3	4.19	
			6			4.42		
			3			1	4.23	
						8	4.40	
			15			4.31		
			5			1	4.68	
						12	4.66	
			25			4.62		
			10			1	5.20	
		25				4.99		
		50	4.99					
		16QAM	1.4			16QAM	1	4.89
							3	5.17
			6				5.22	
			3				1	5.05
							8	5.21
			15				5.25	
			5				1	5.25
							12	5.49
25	5.44							
10	1		6.31					
	25	5.83						
50	5.85							

Band	Channel	Modulation	Bandwidth [MHz]	Channel Number	Frequency [MHz]	#RB	Result [dB]
LTE 17	Mid	QPSK	5	23790	710.0	1	5.02
						12	5.38
						25	5.00
			10			1	4.77
						25	5.24
						50	5.04
		16QAM	5			1	5.79
						12	6.29
			25			6.14	
			10			1	5.64
						25	6.22
			50			6.03	

B.2.4 Conducted band-edge and spurious emission

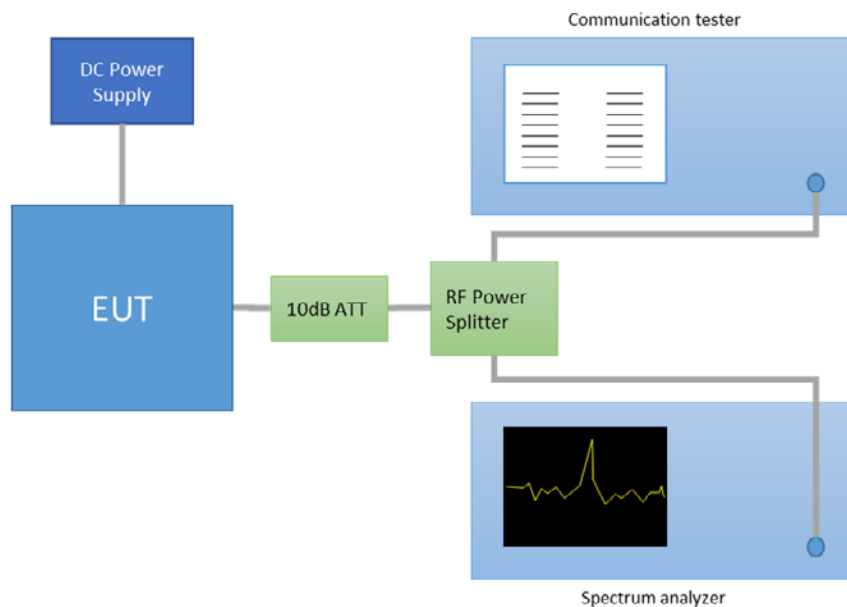
Standard references

BAND	FCC part	RSS part	Limits
LTE 2	2. 1051, 24.238	133-ch6.5.1	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.
LTE 4	2. 1051, 27.53	139-ch.6.5	The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.
LTE 5	2. 1051, 22.917	132-ch.5.5	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.
LTE 17	2. 1051, 22.53	130-ch.4.6	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.

Test procedure

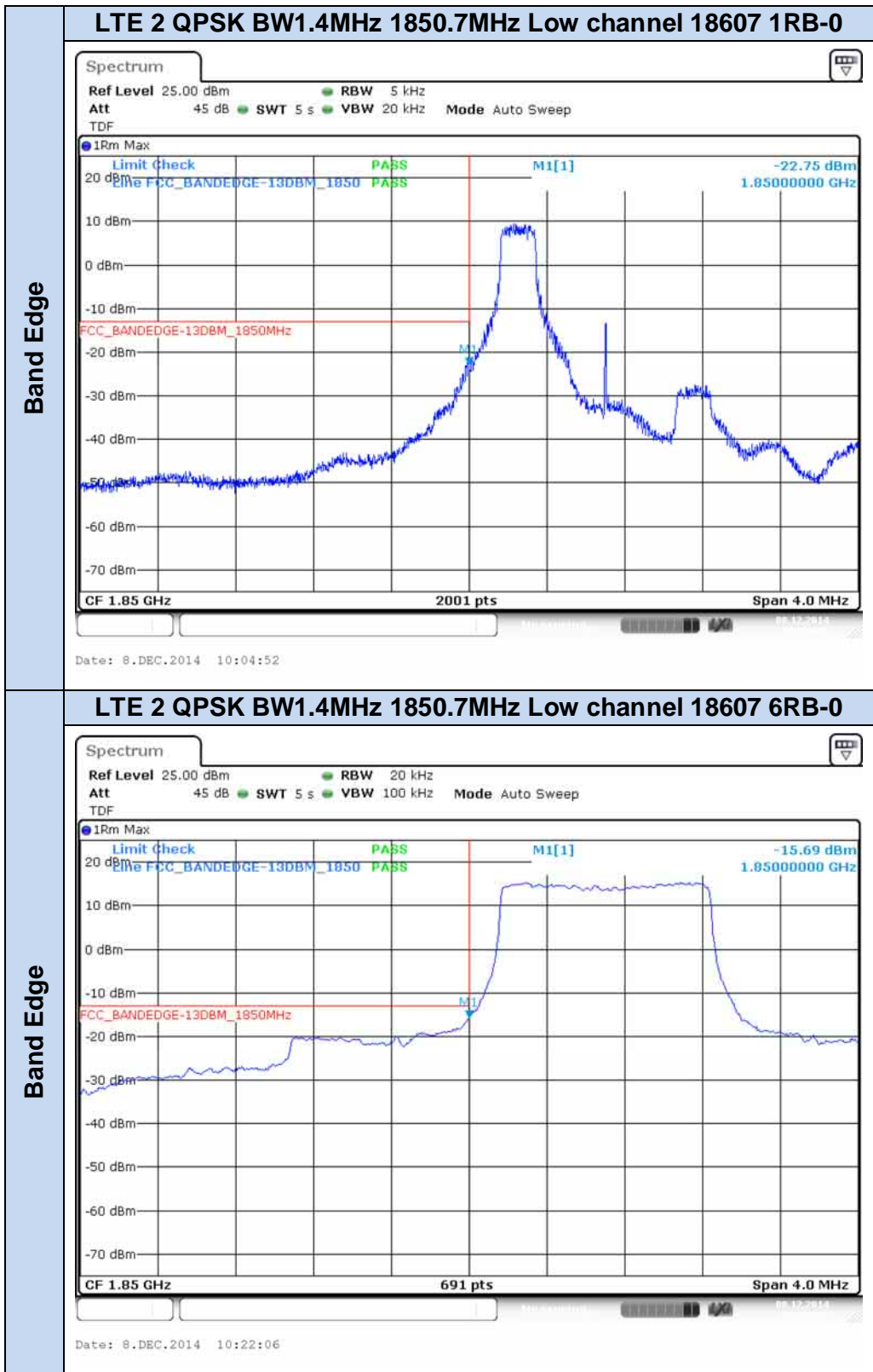
The setup below was used to measure the band-edge and the conducted spurious. The antenna terminal of the EUT is connected to the spectrum analyzer and the communication tester through an attenuator and a power splitter. According to the standard reference, at 1 MHz immediately outside and adjacent to the authorized operating frequency range, a resolution bandwidth of at least 1% has been applied. The video bandwidth was set to three times the resolution bandwidth.

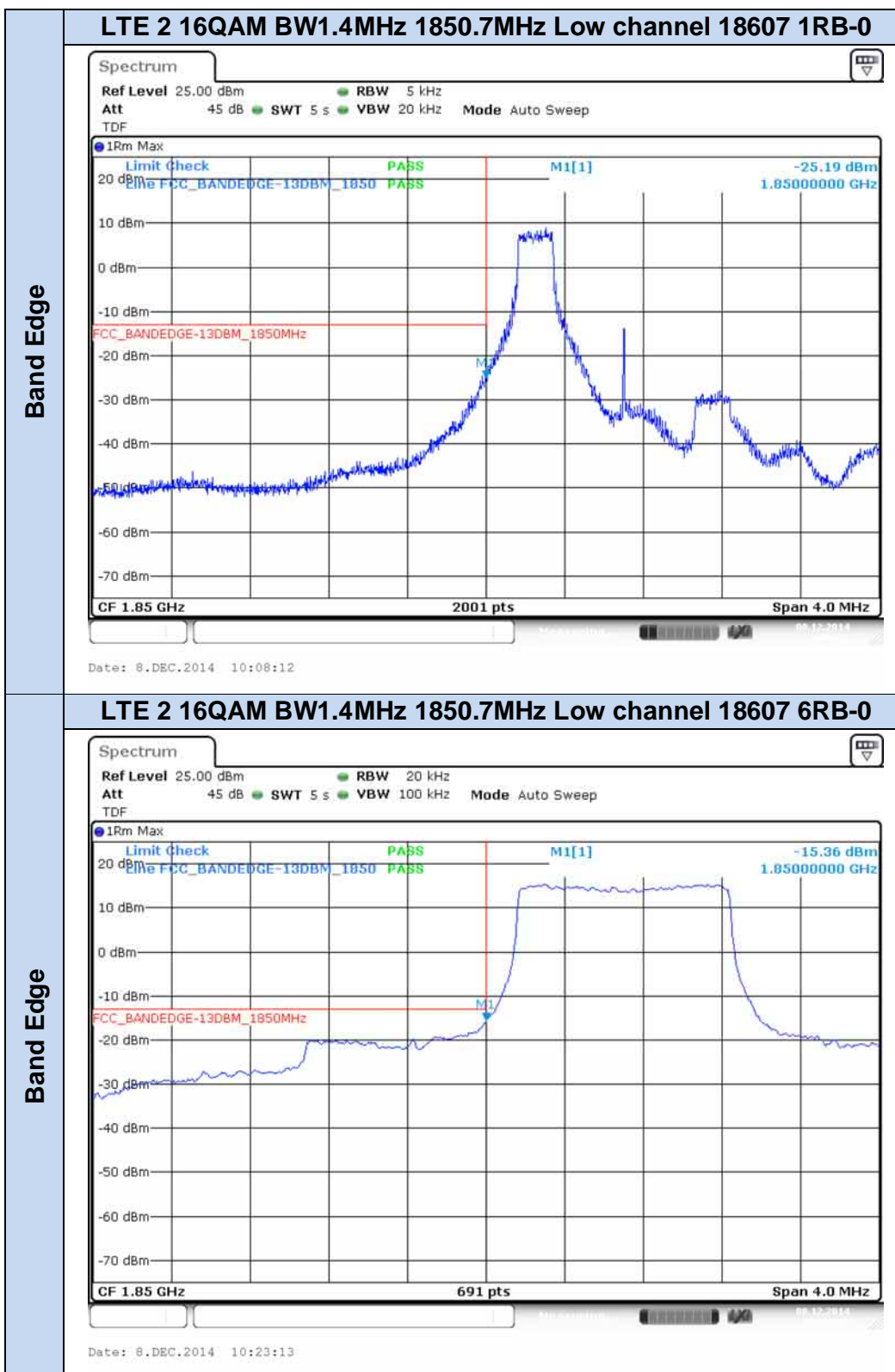
Setup used to measure the transmitted peak power:

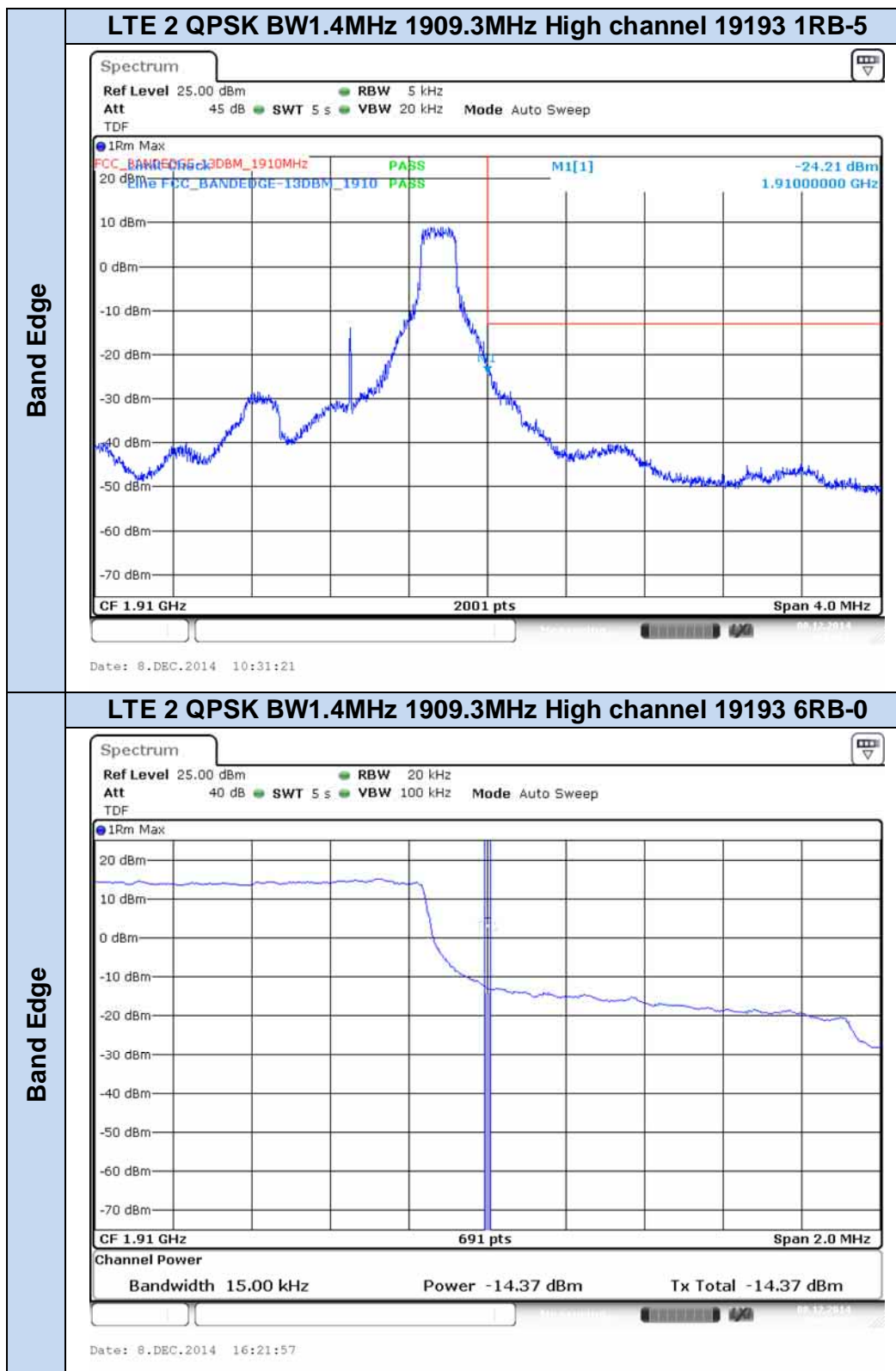


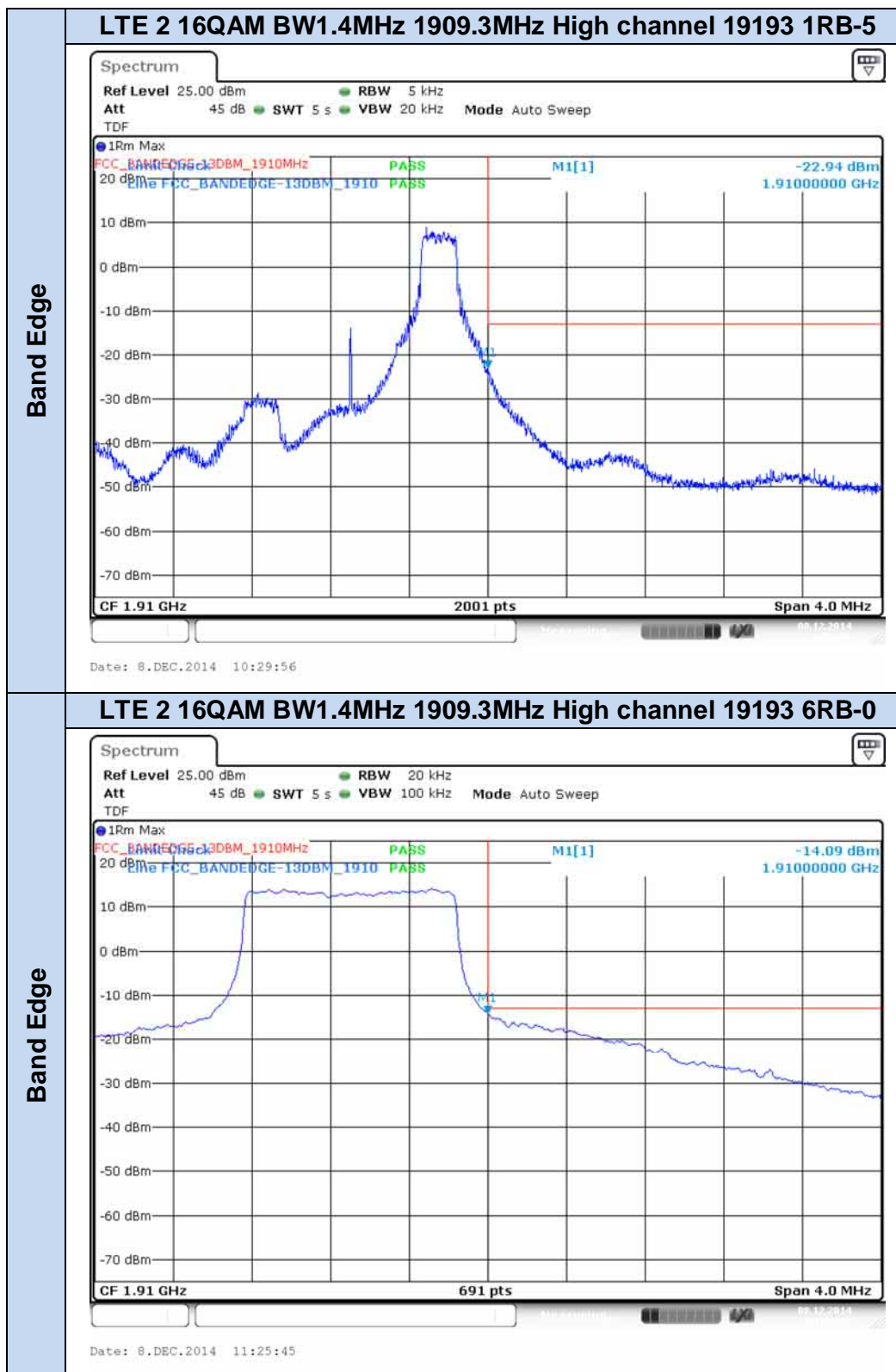
Band edge screenshot results

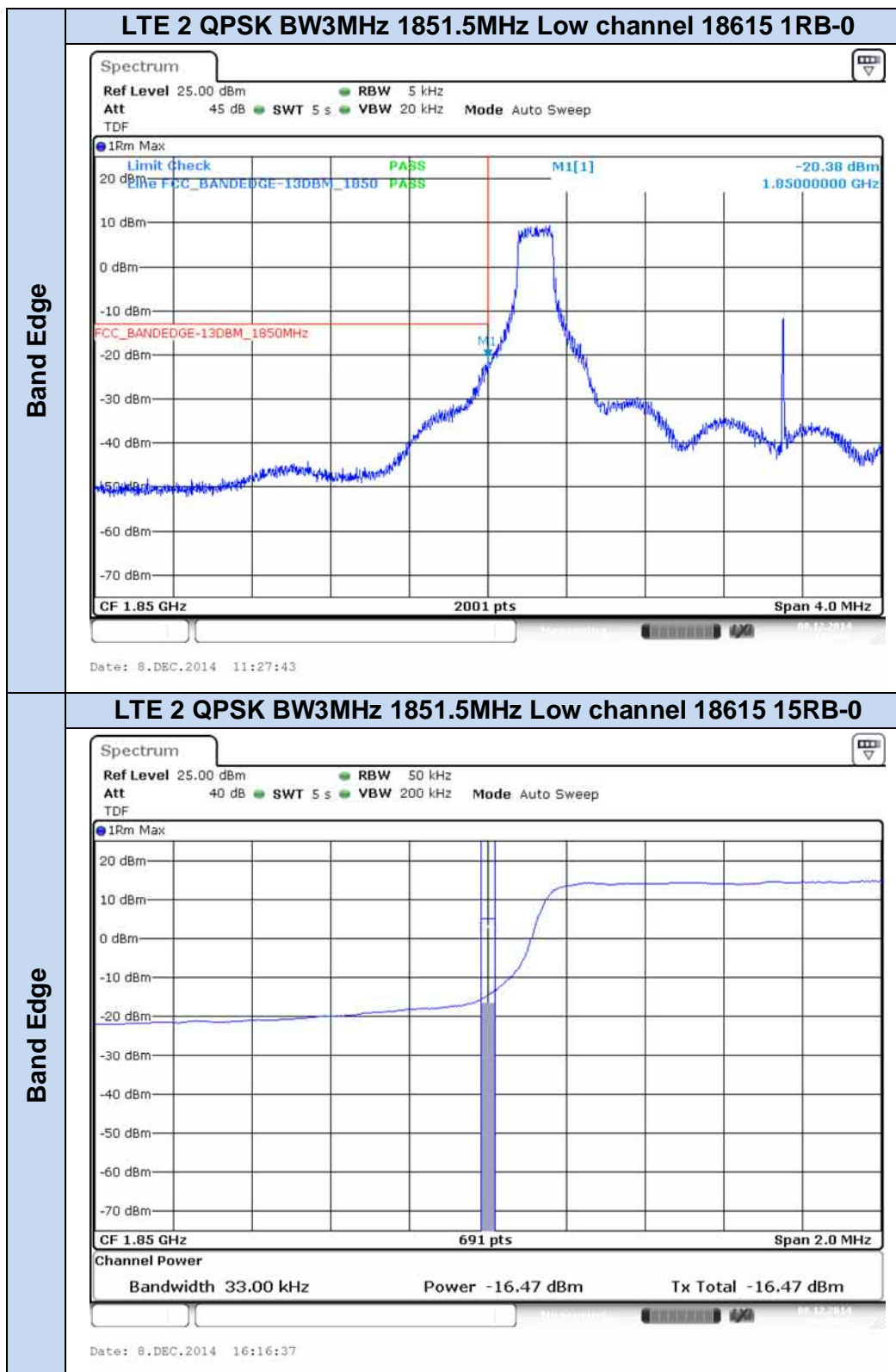
LTE Band 2

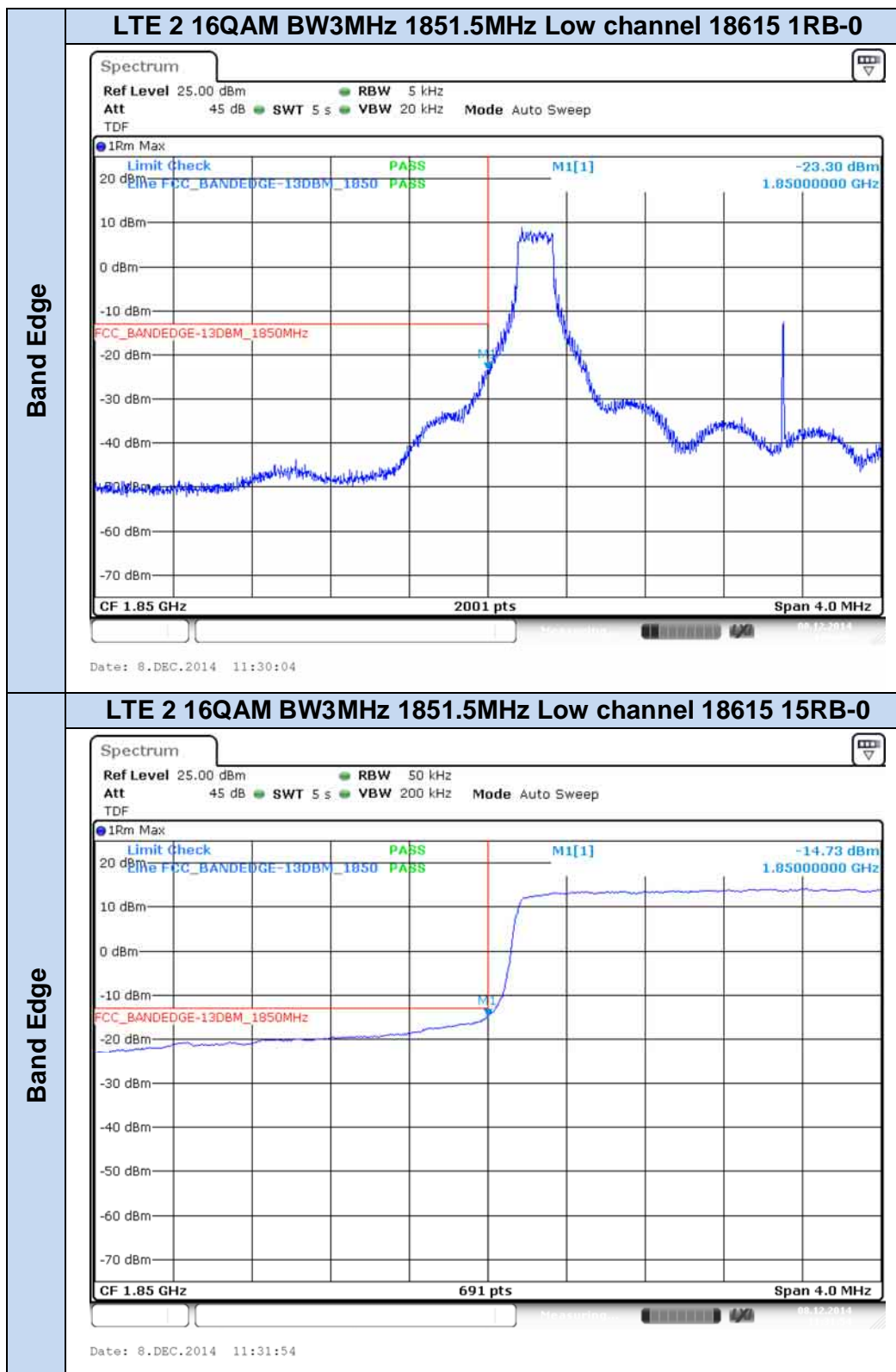


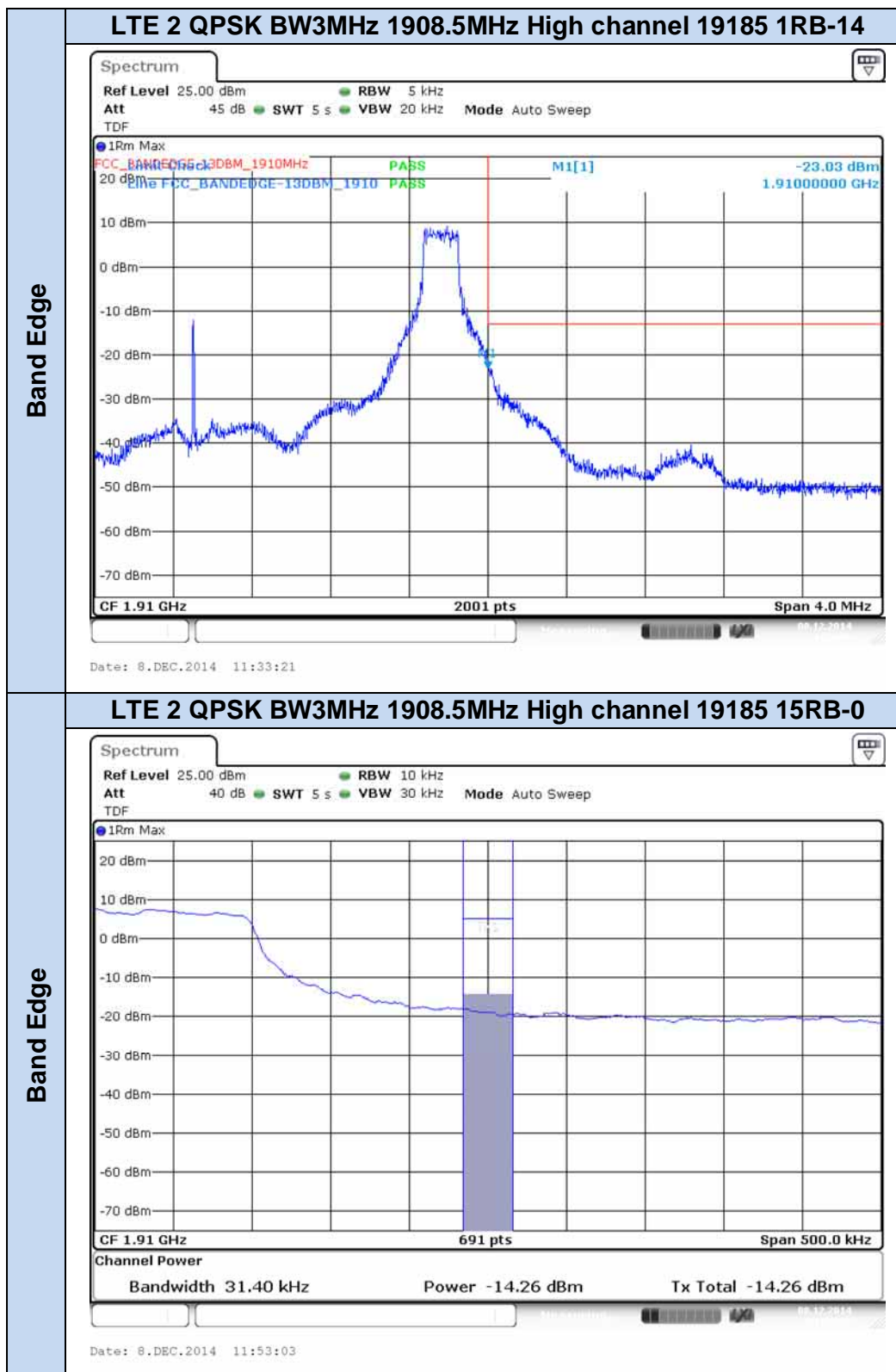


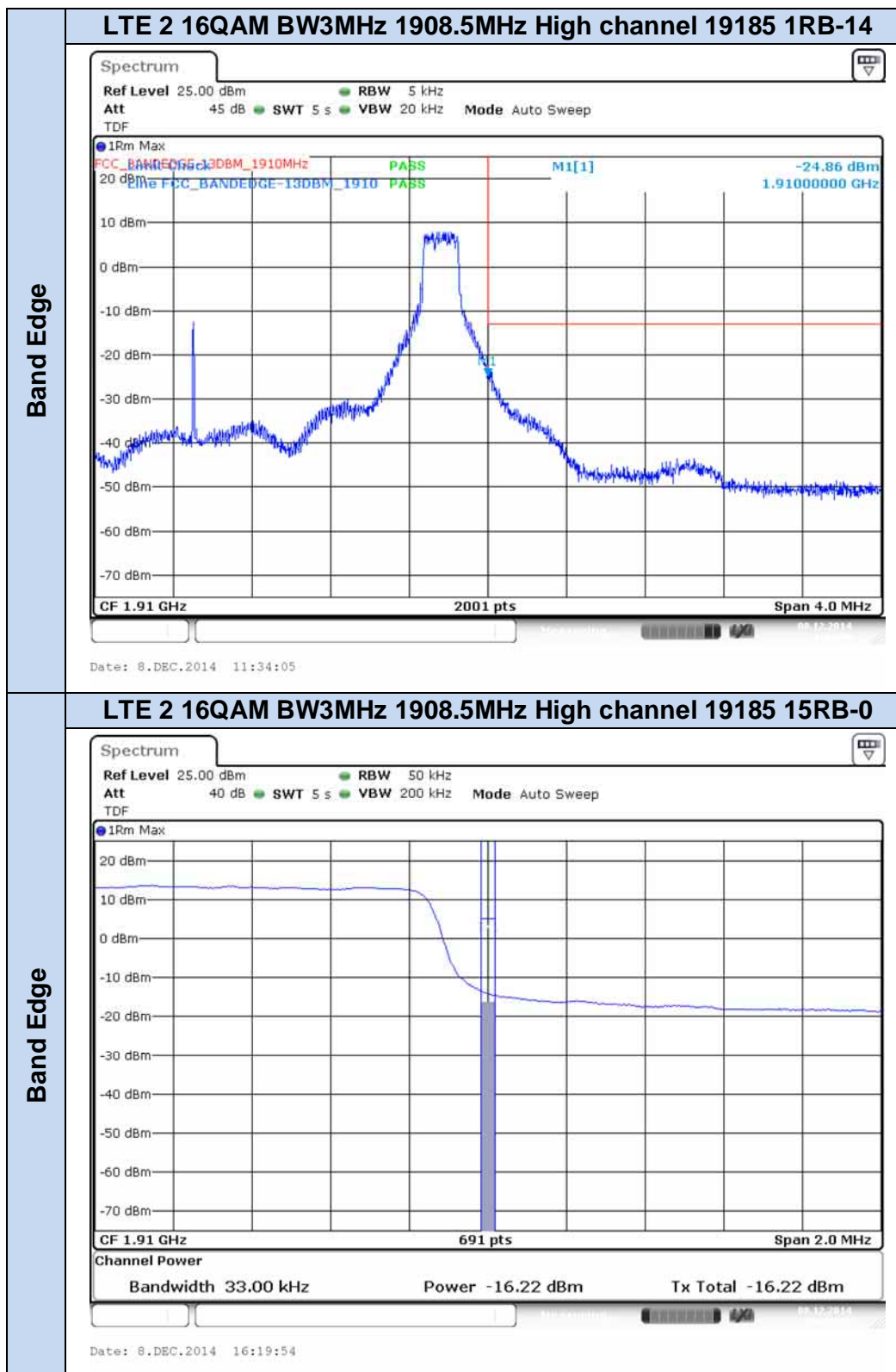


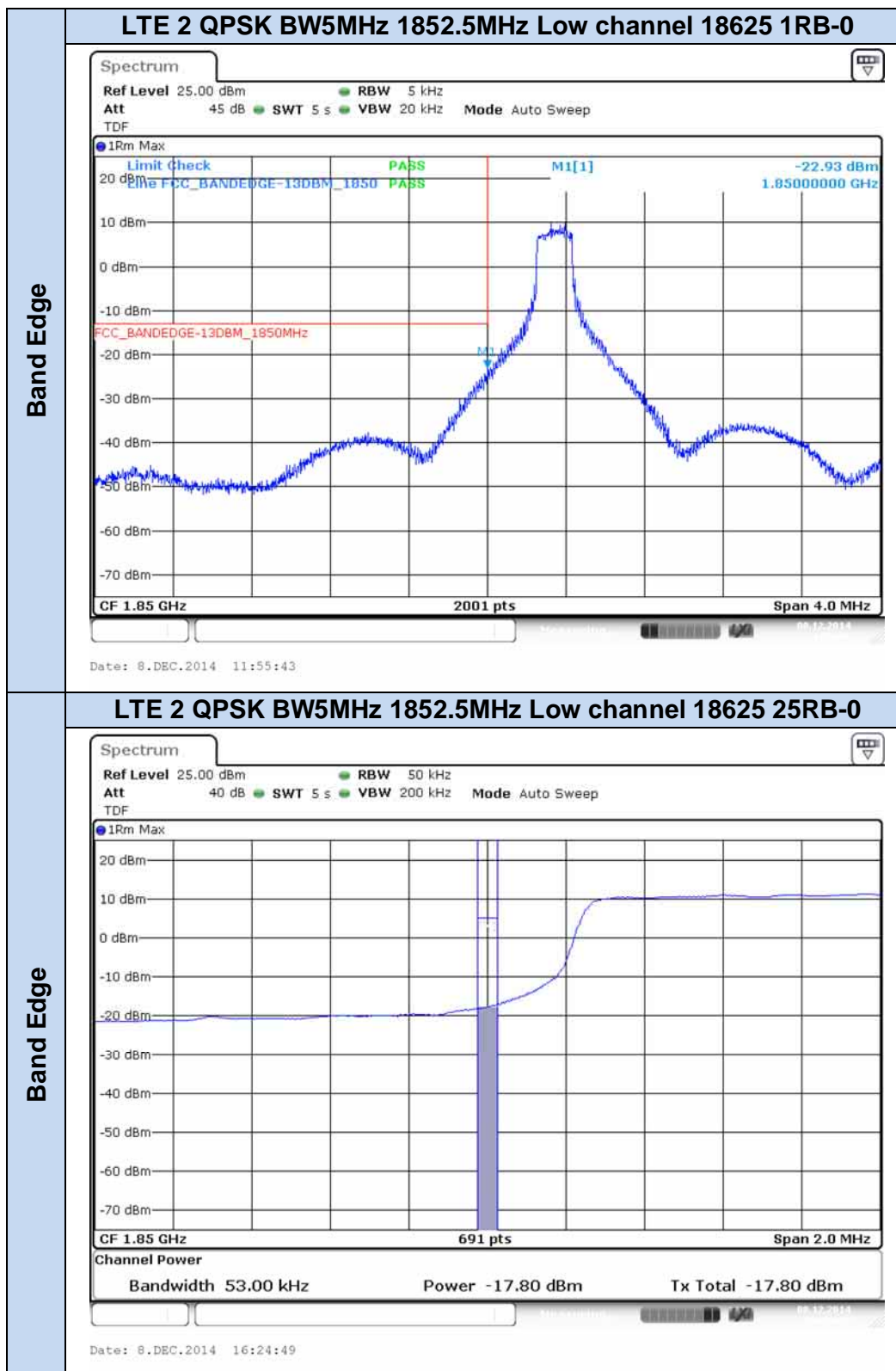


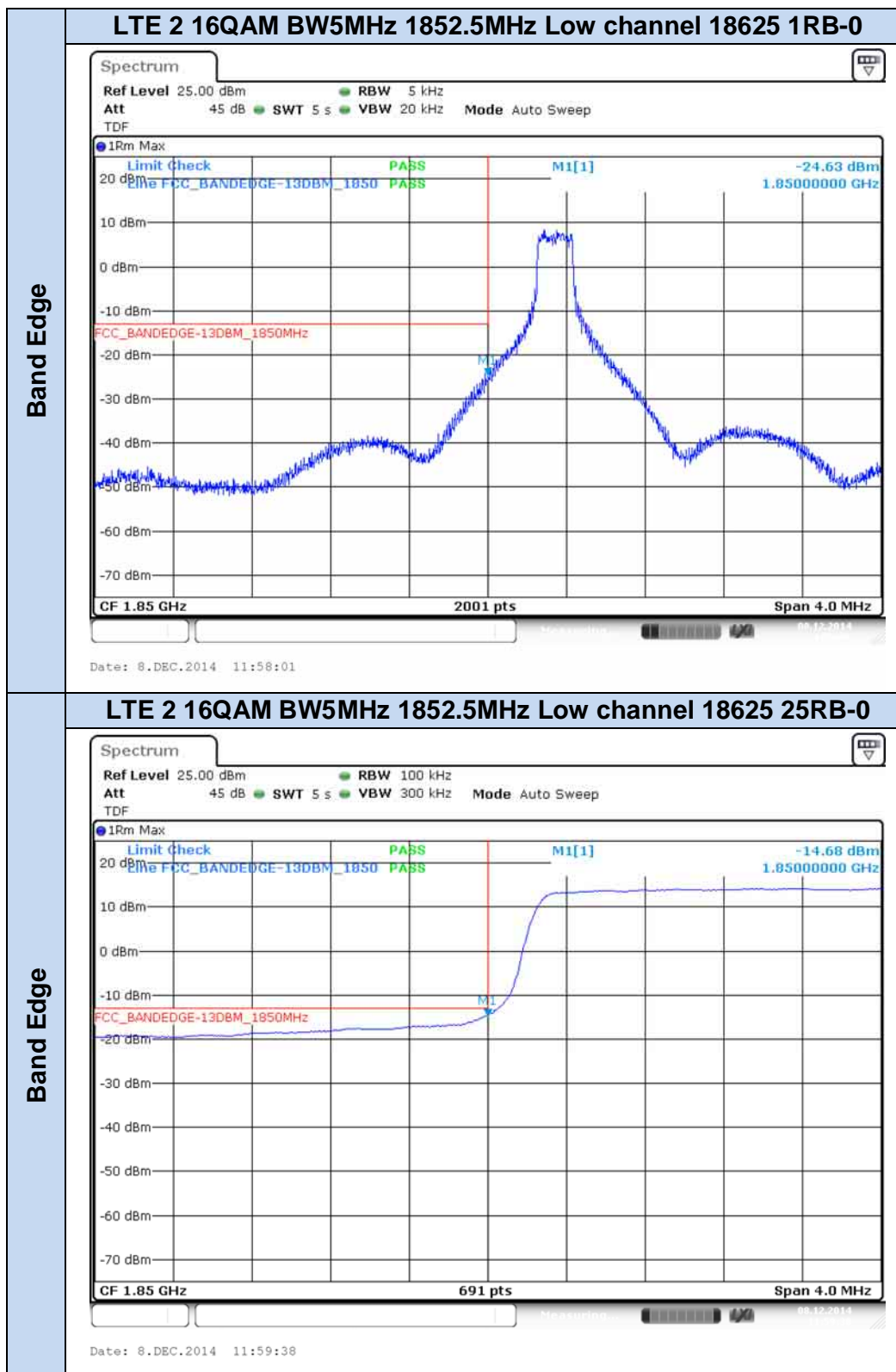


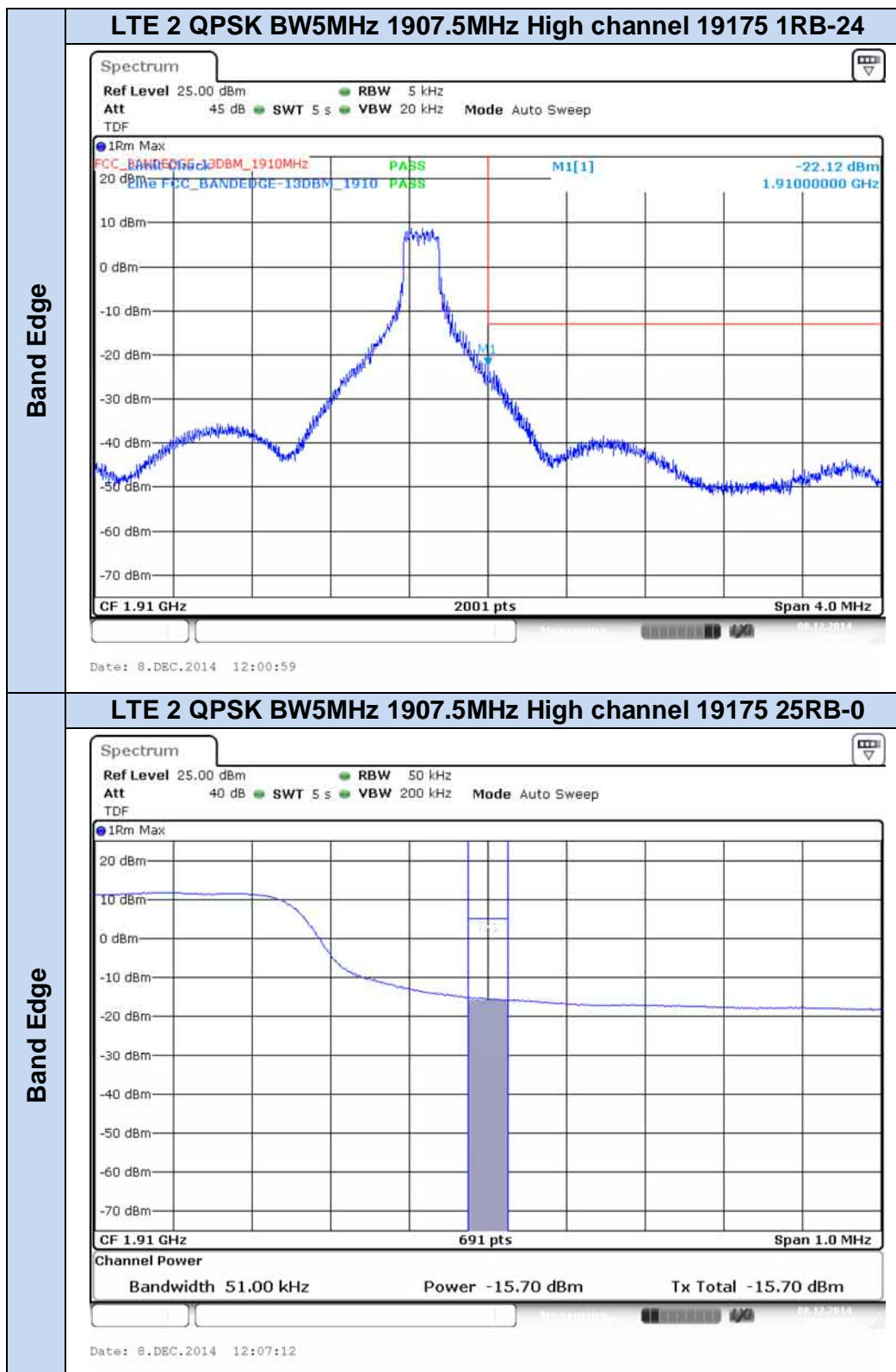


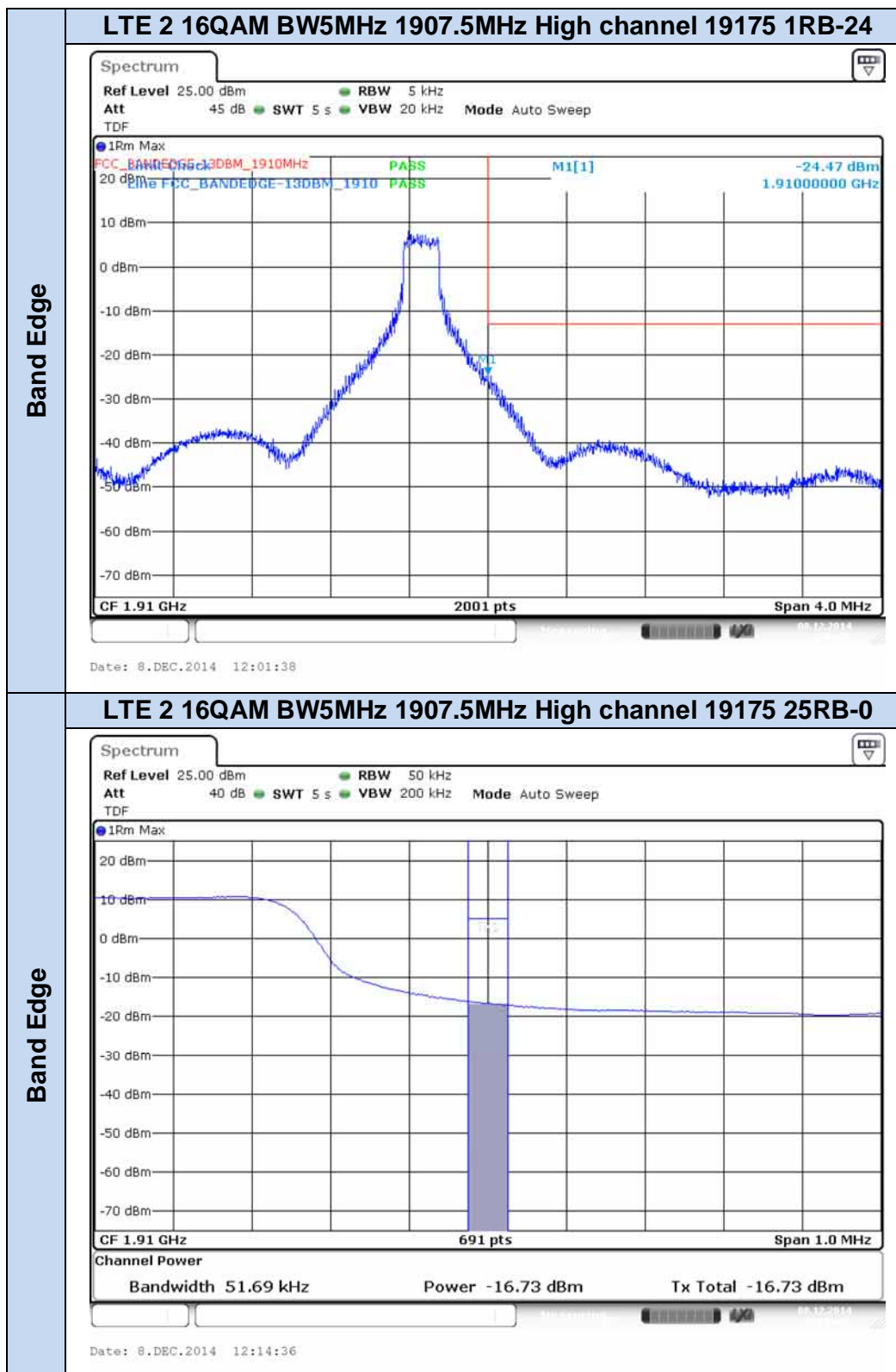


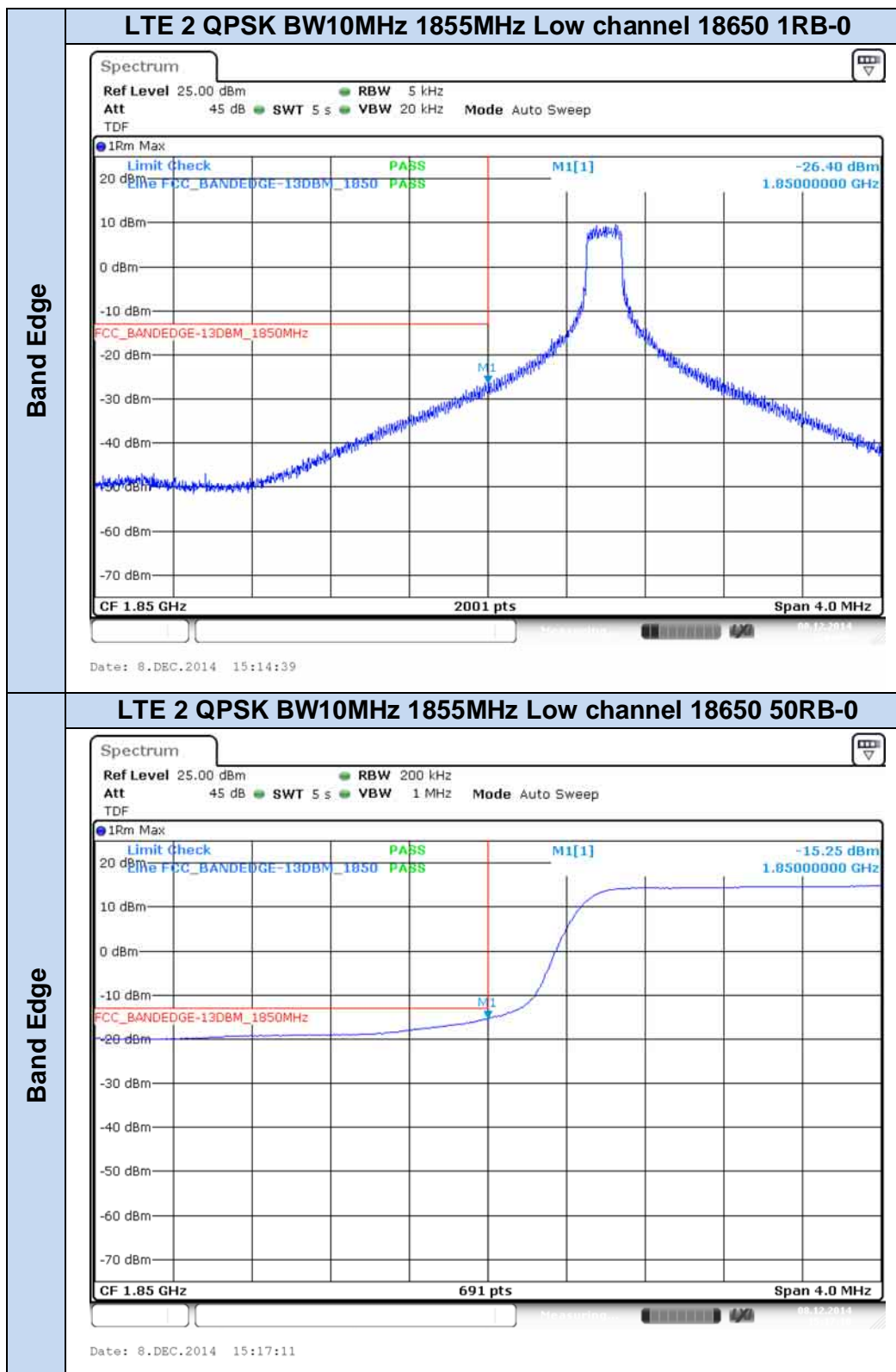


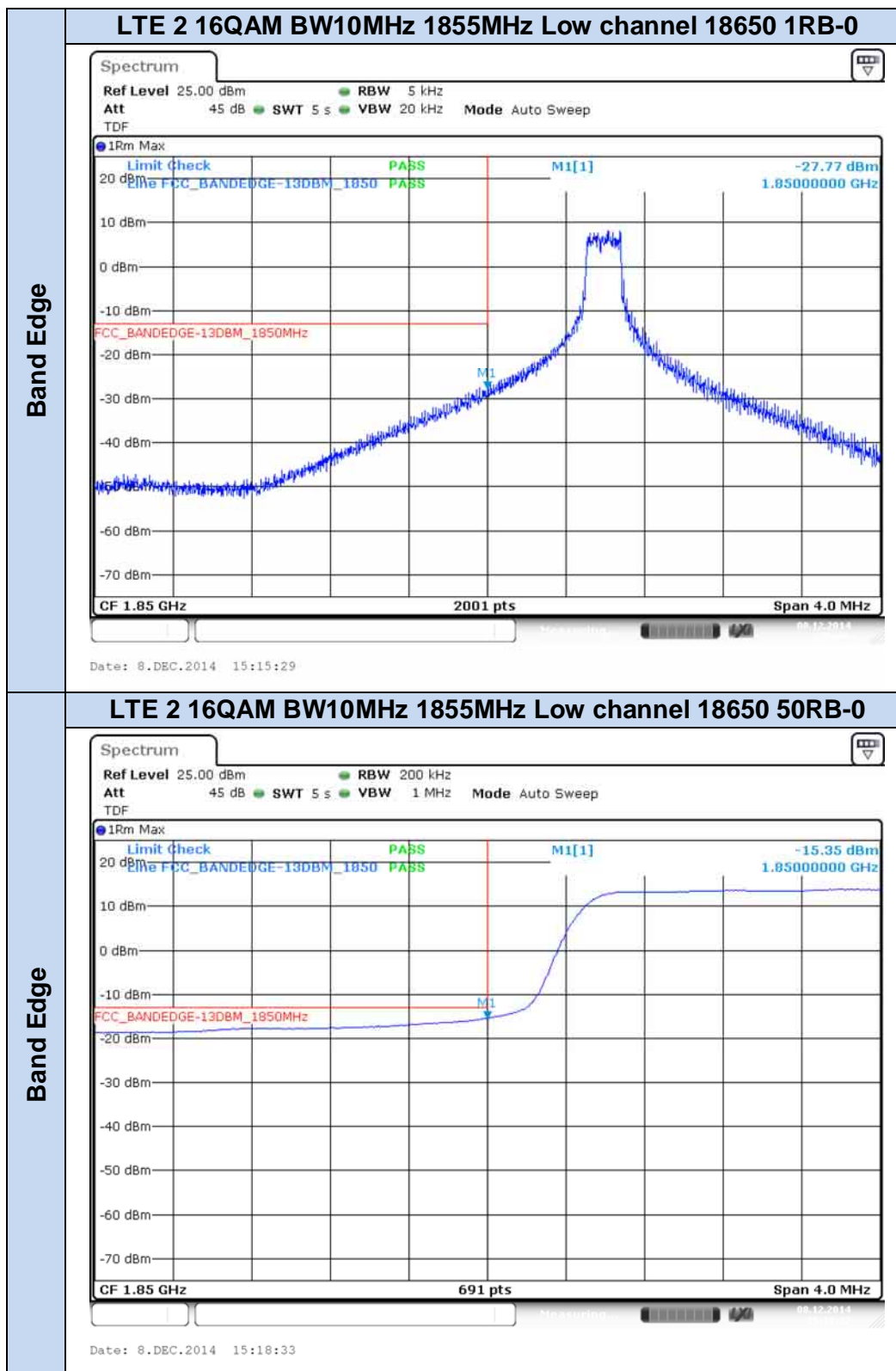


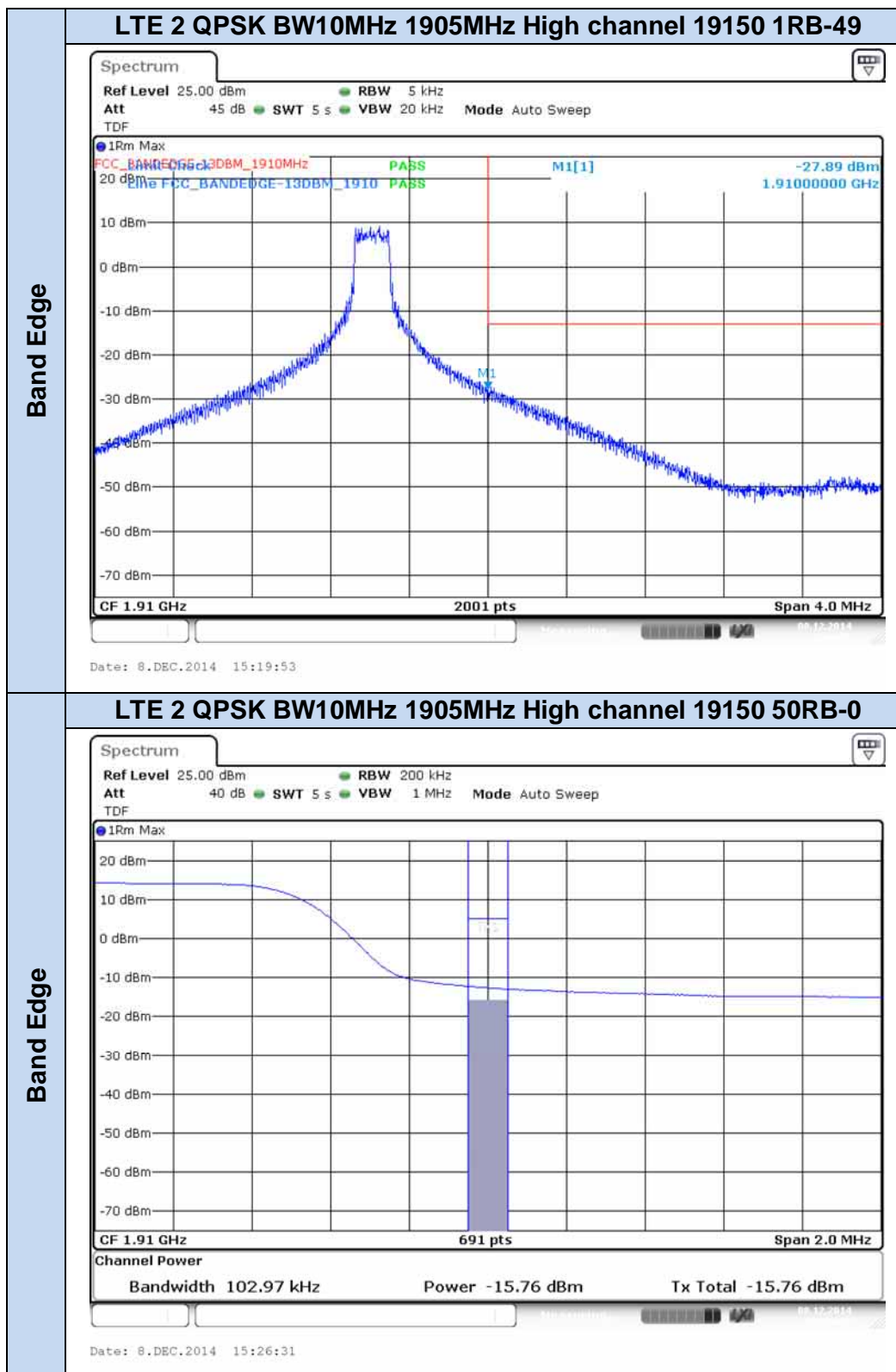


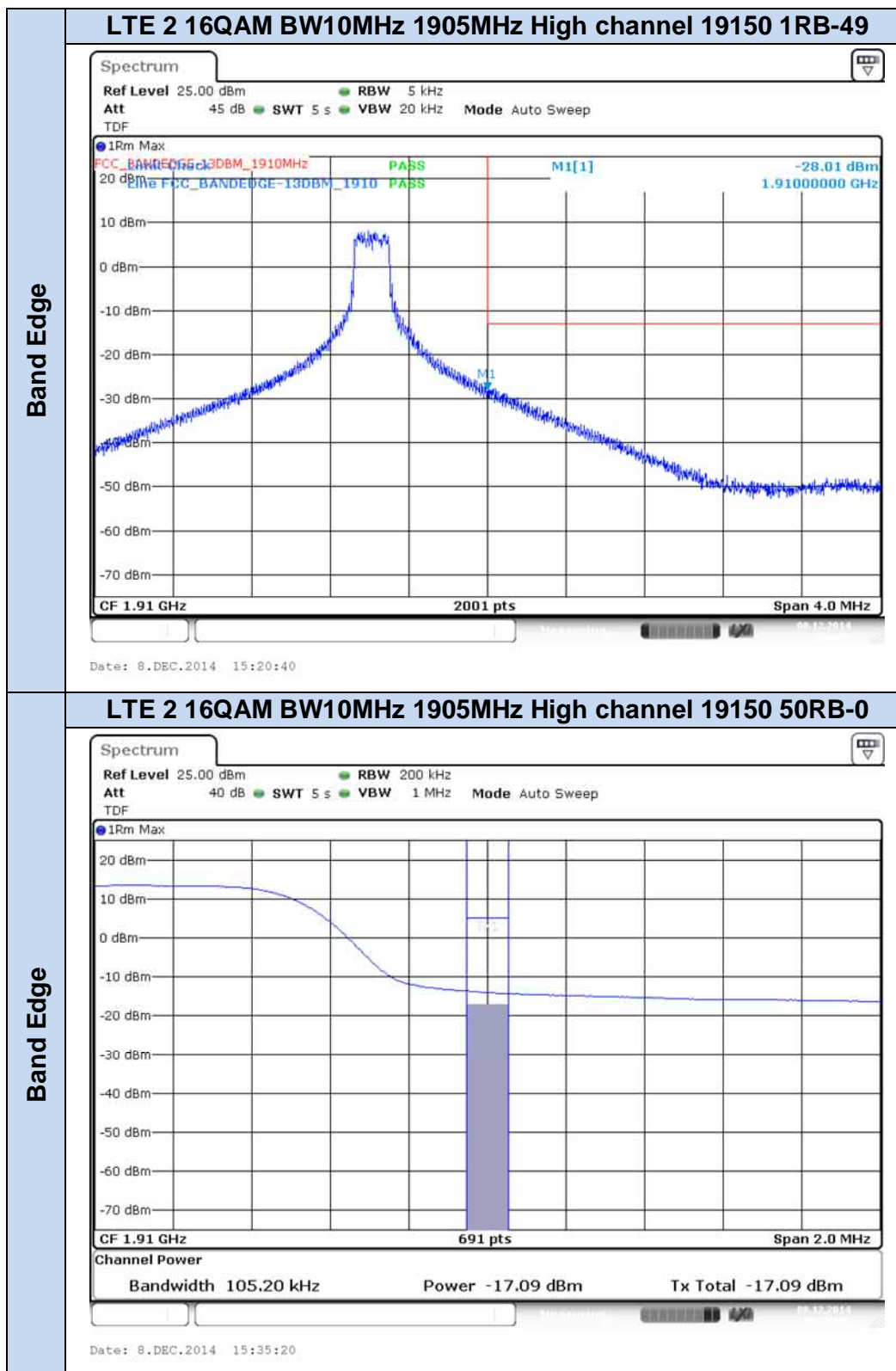


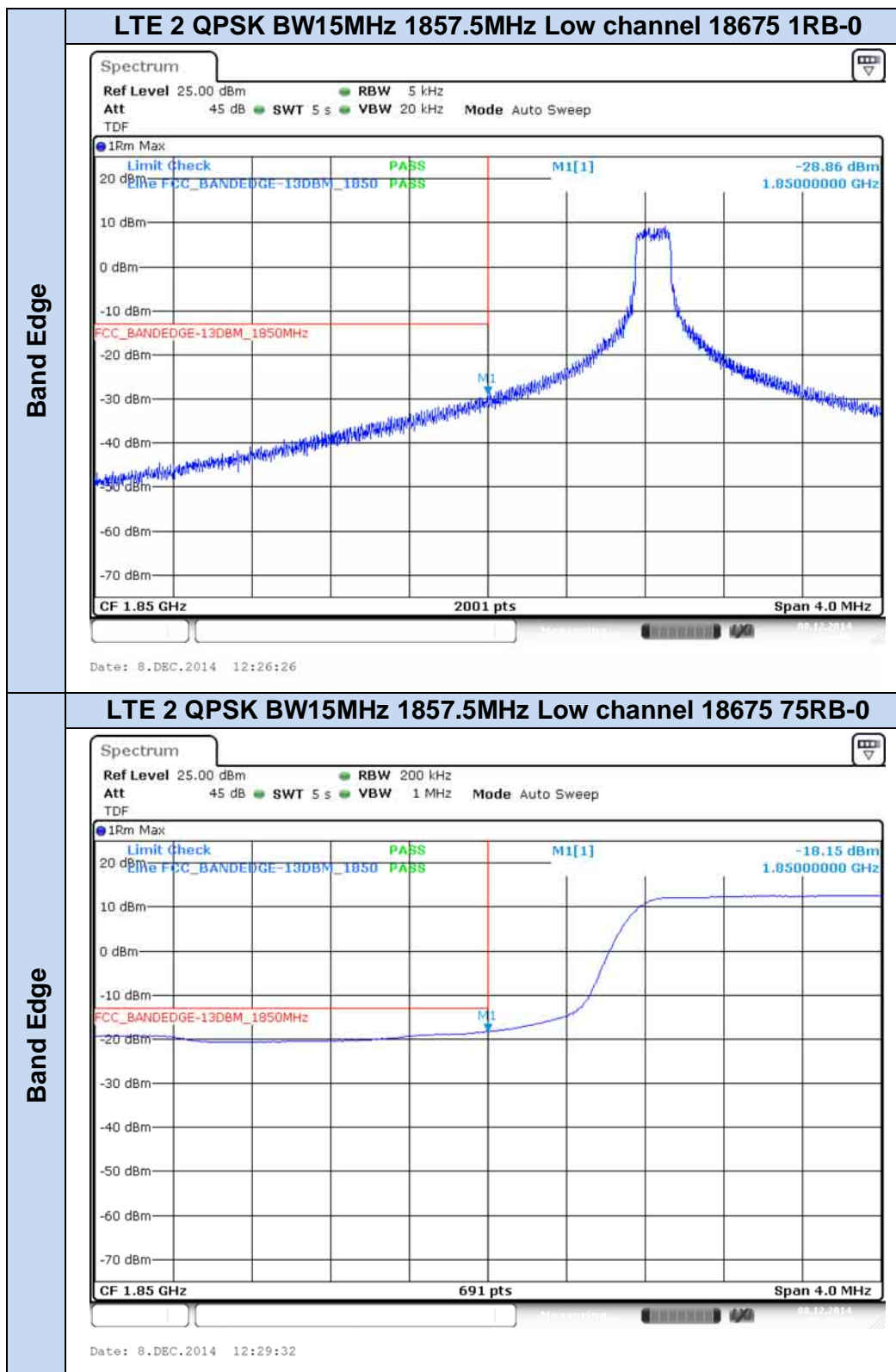


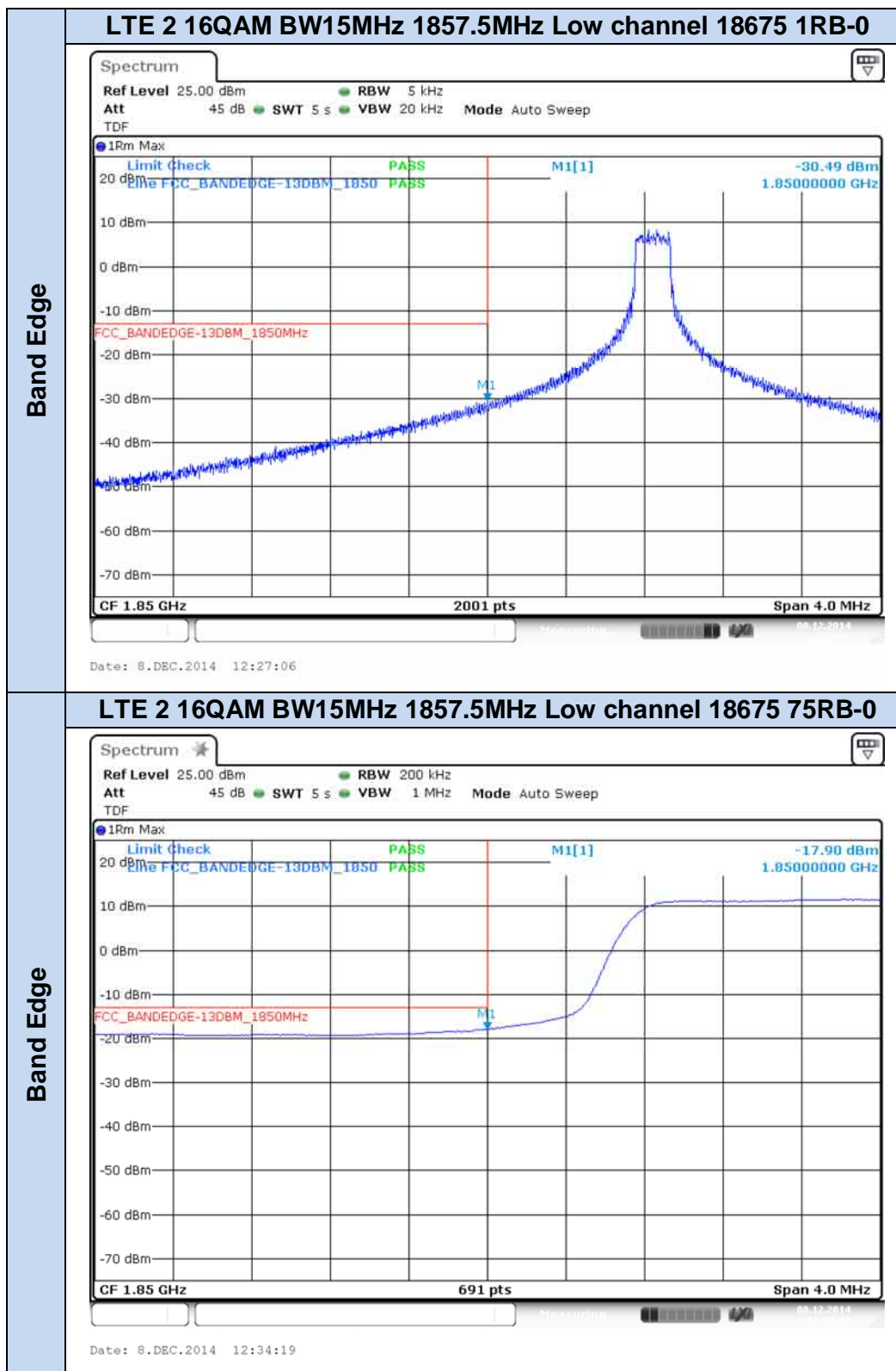


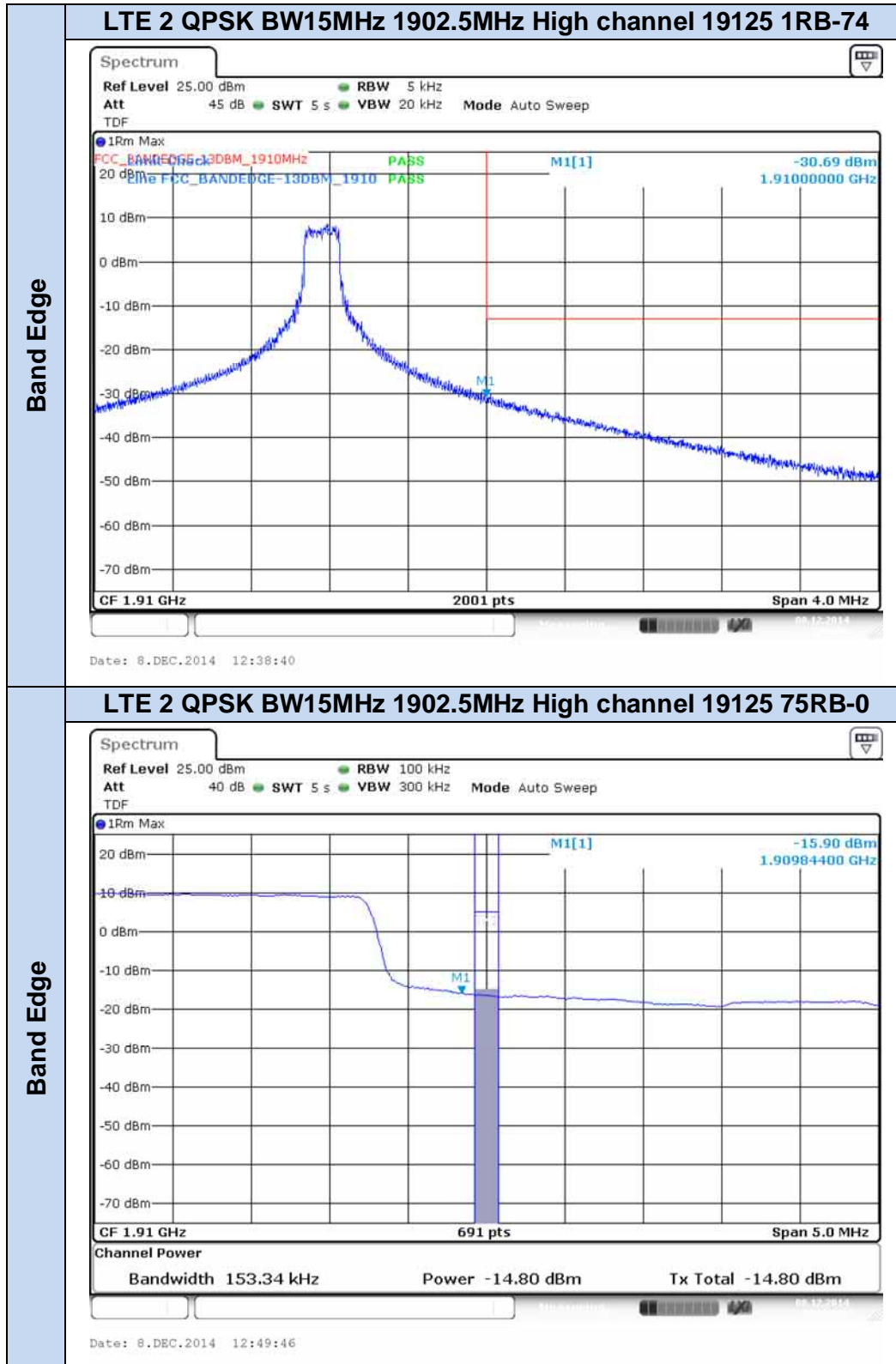


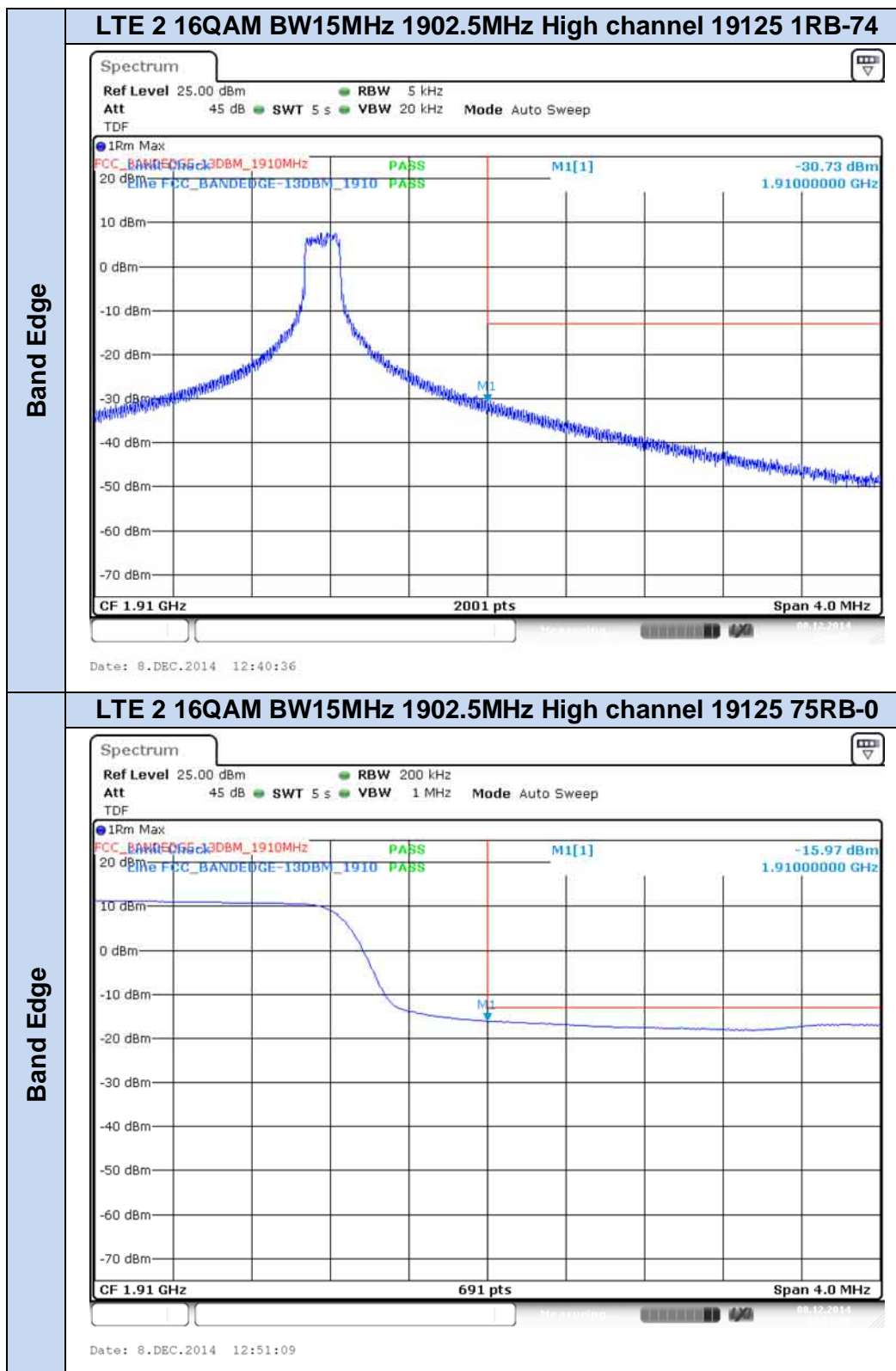


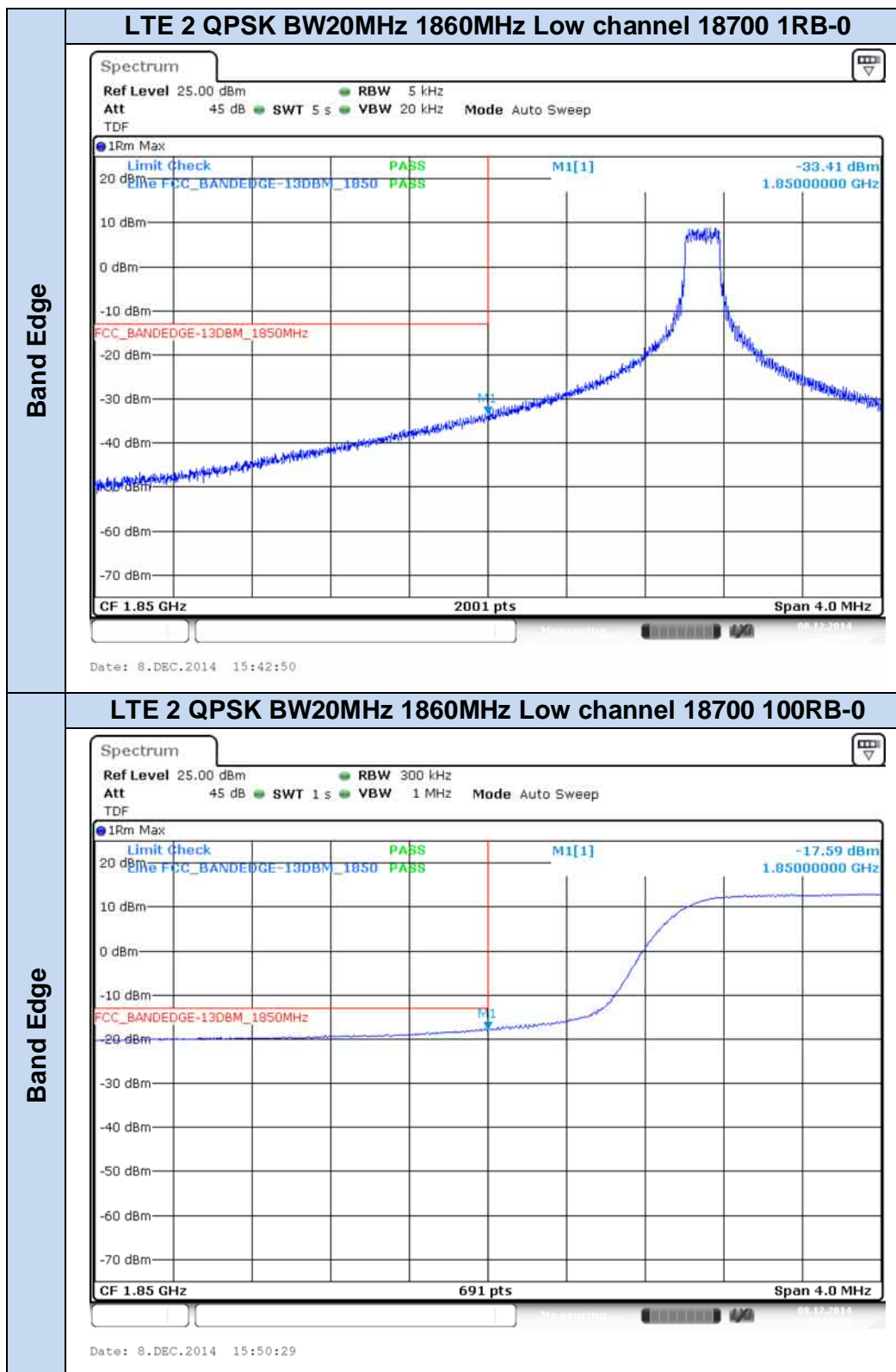


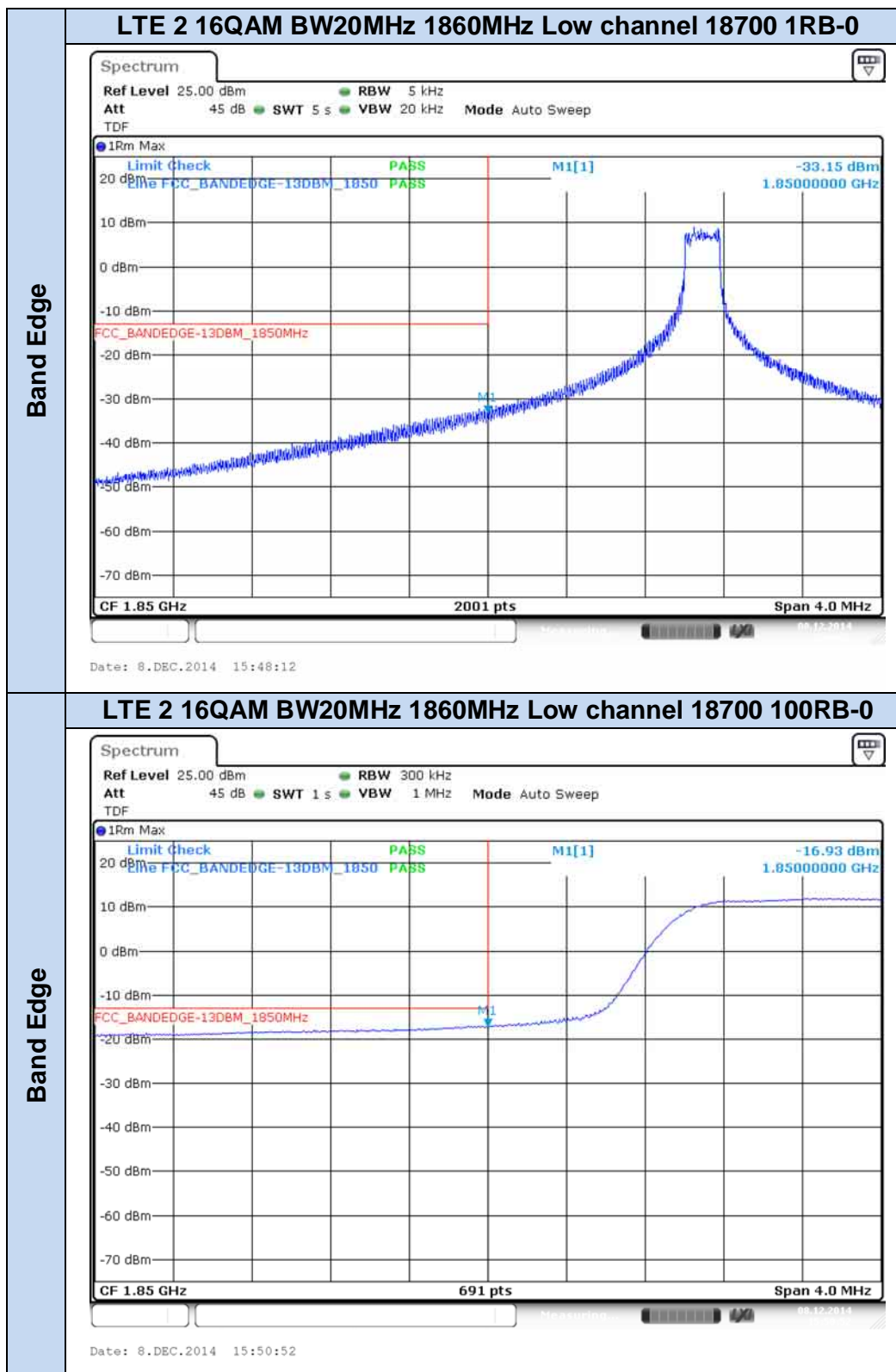


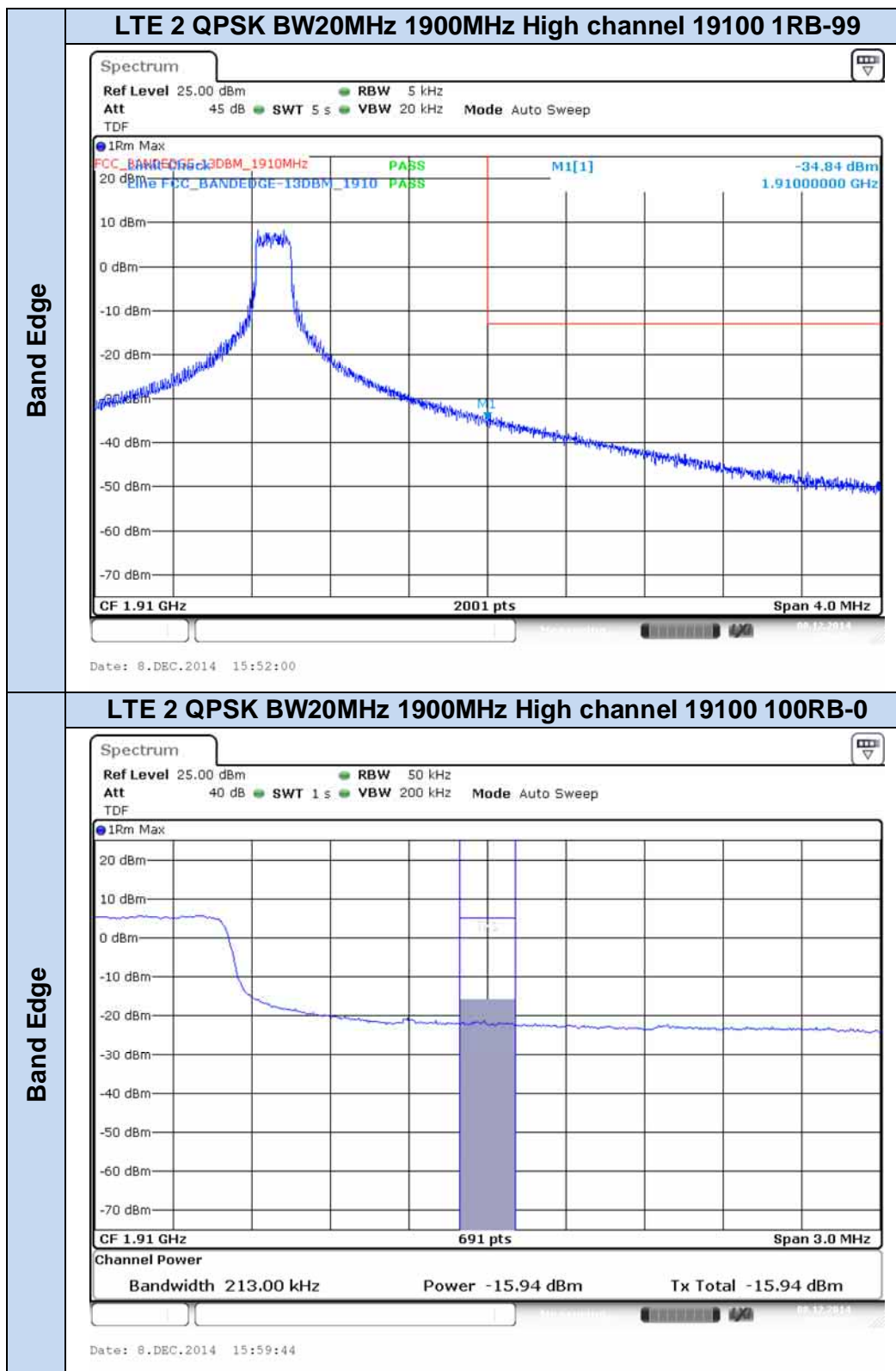


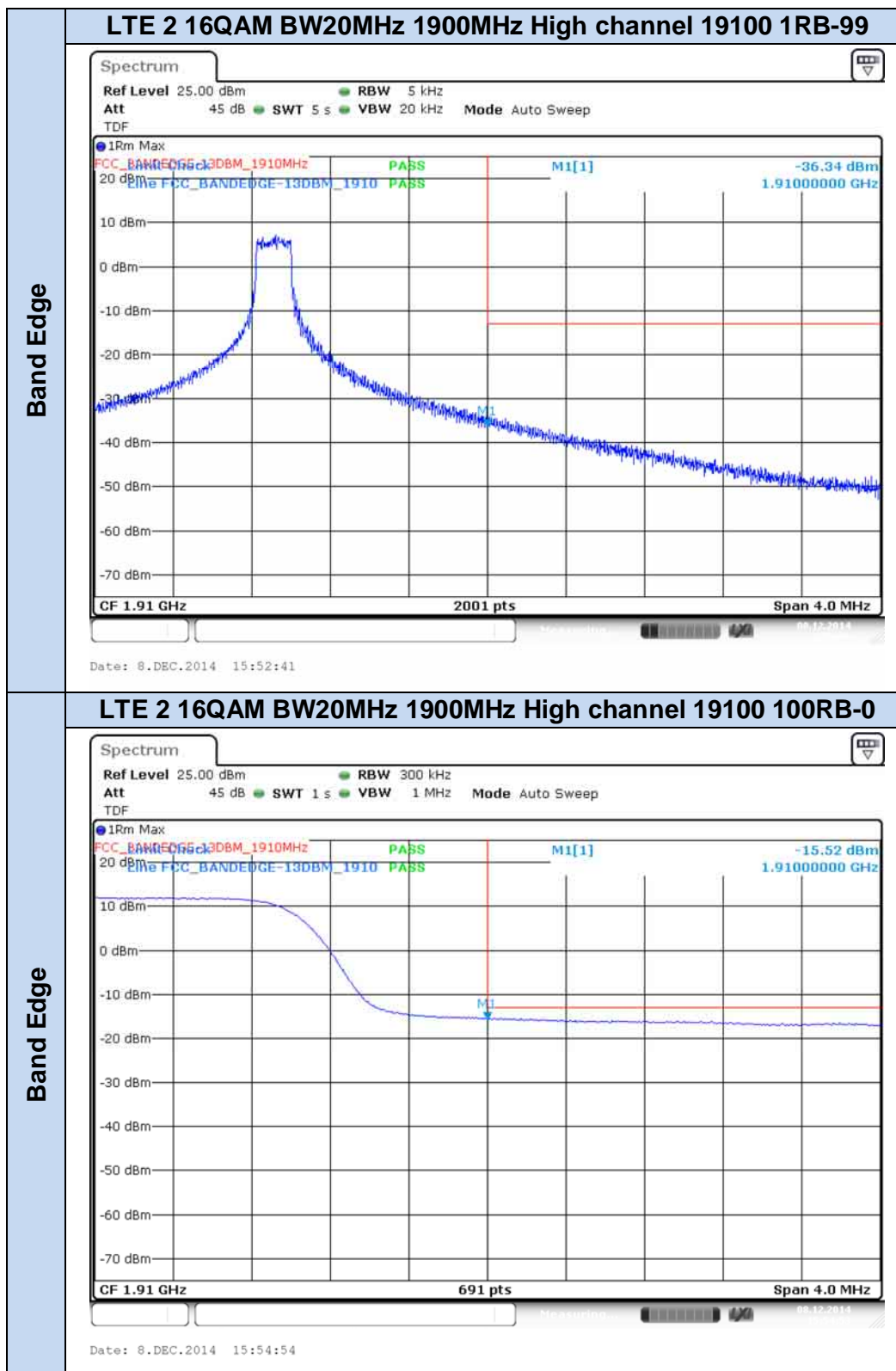




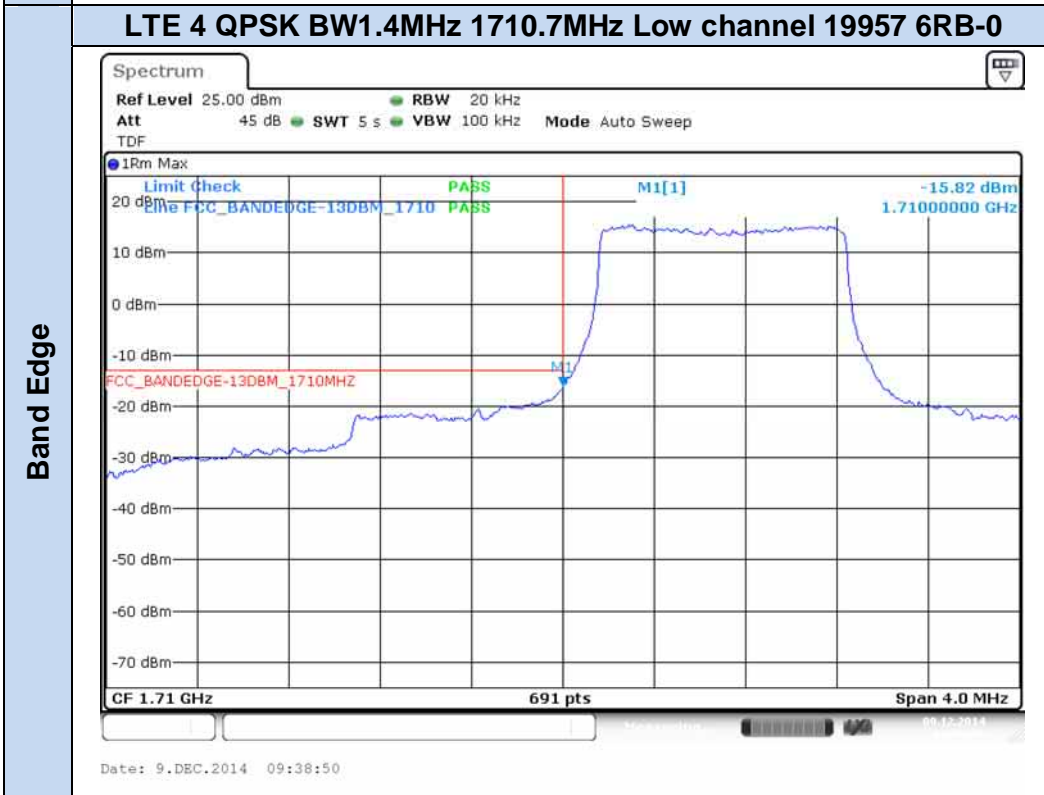
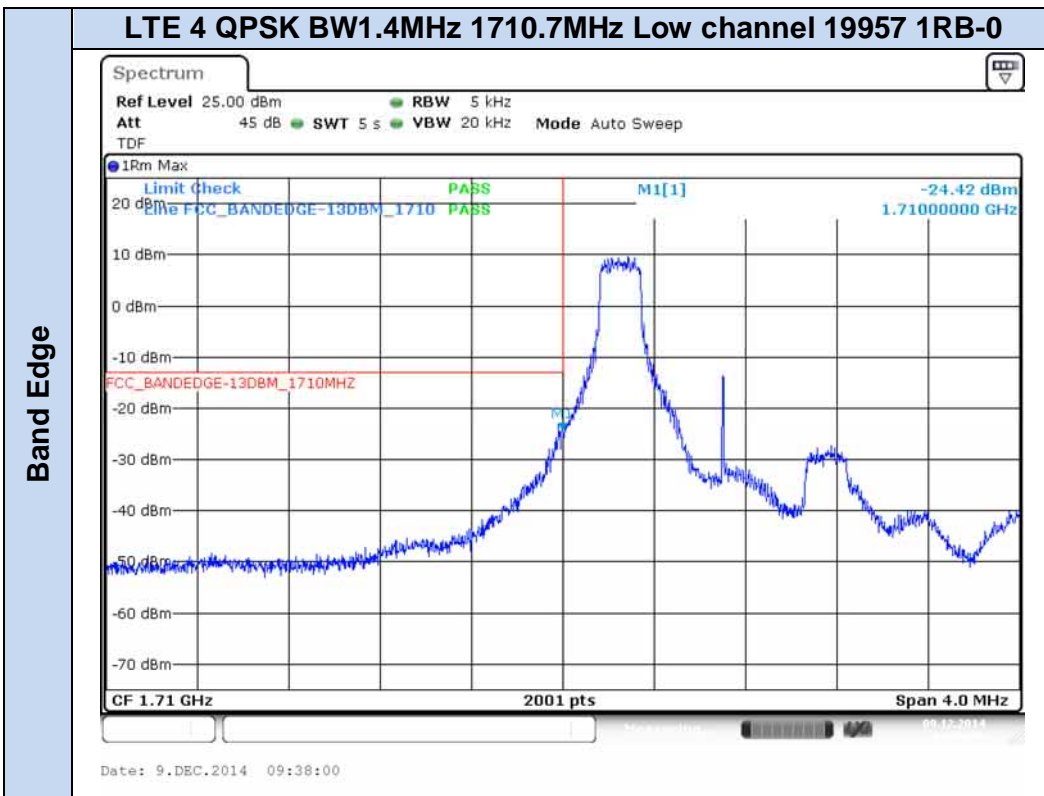


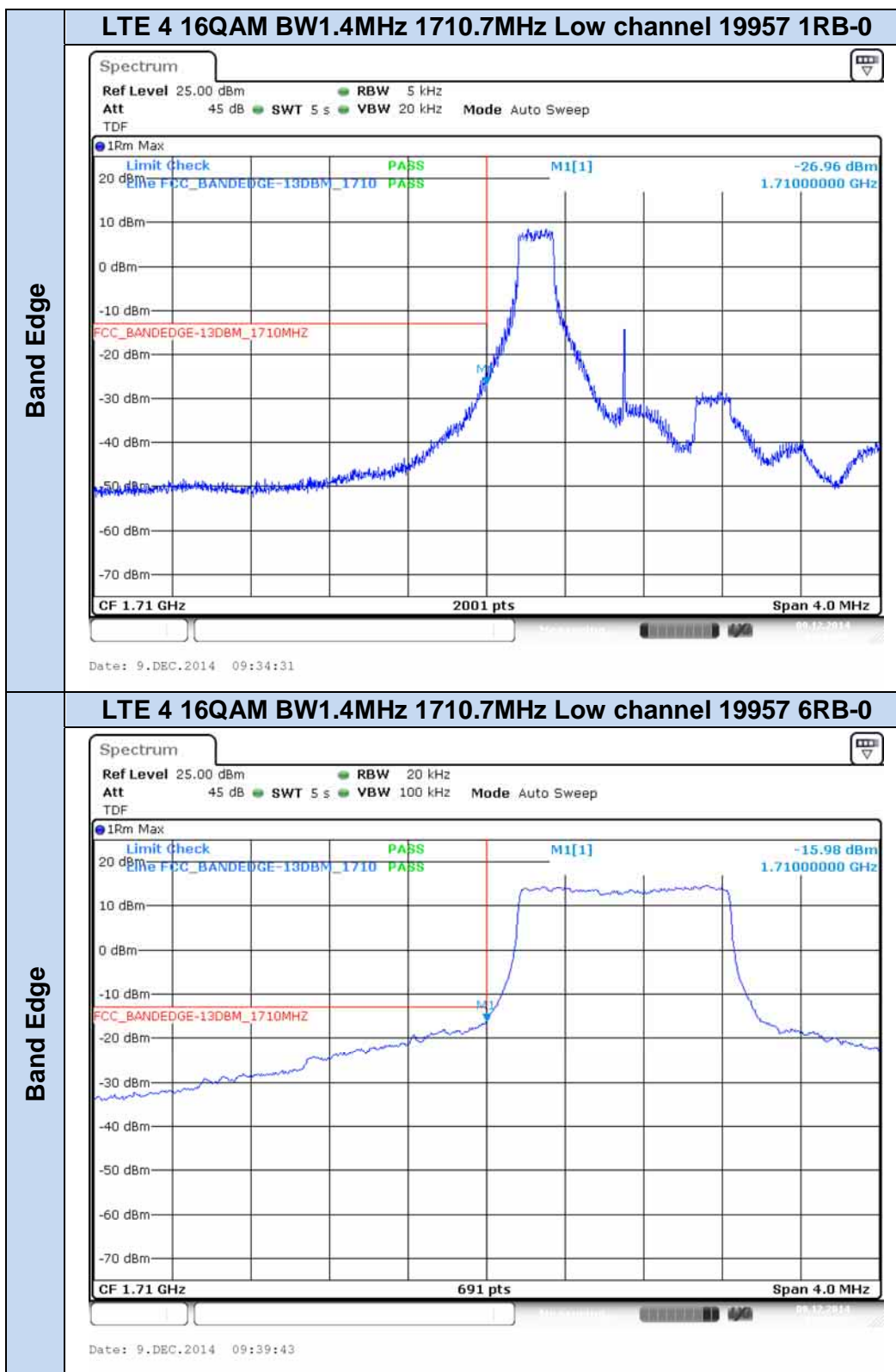


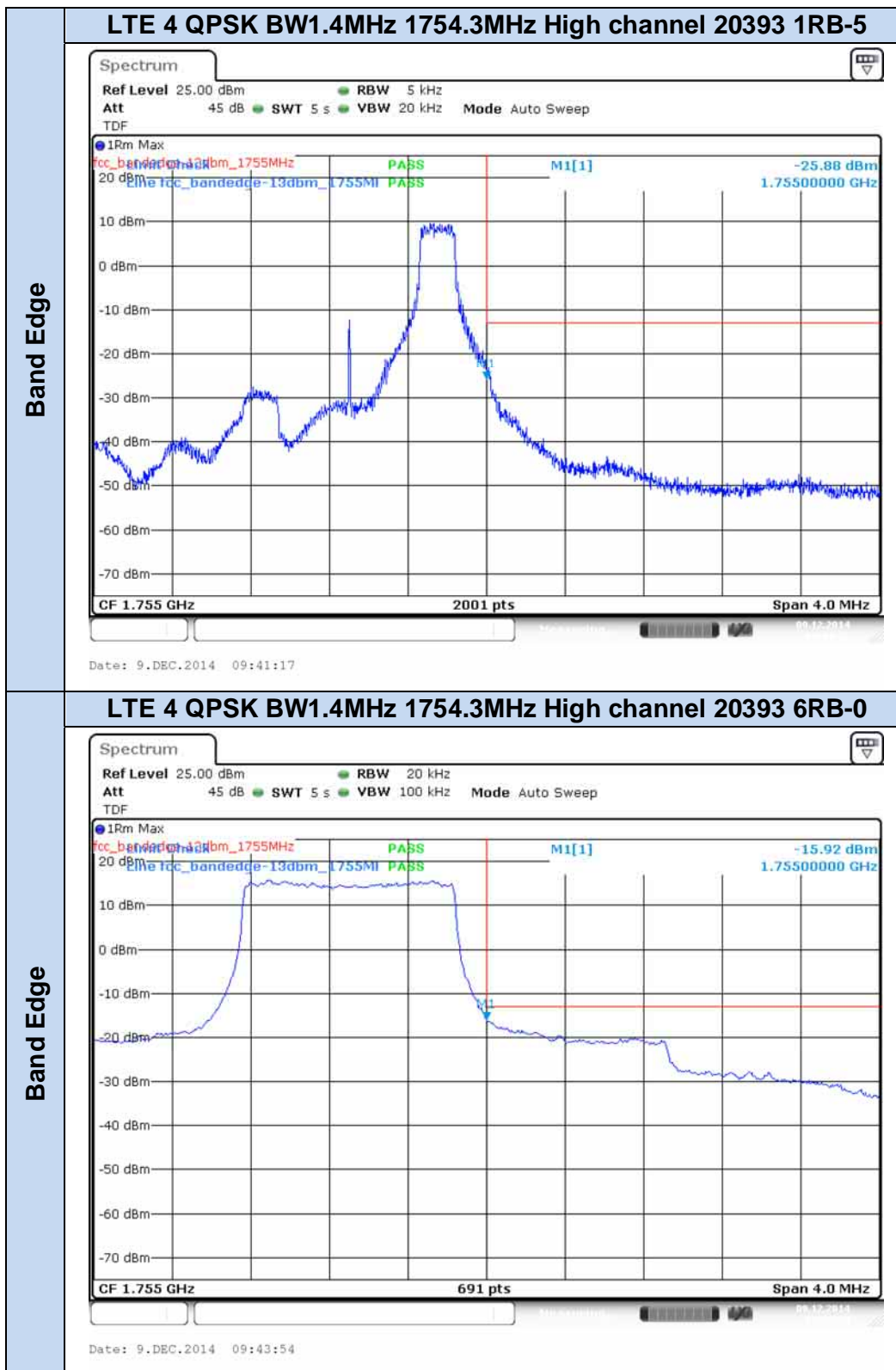


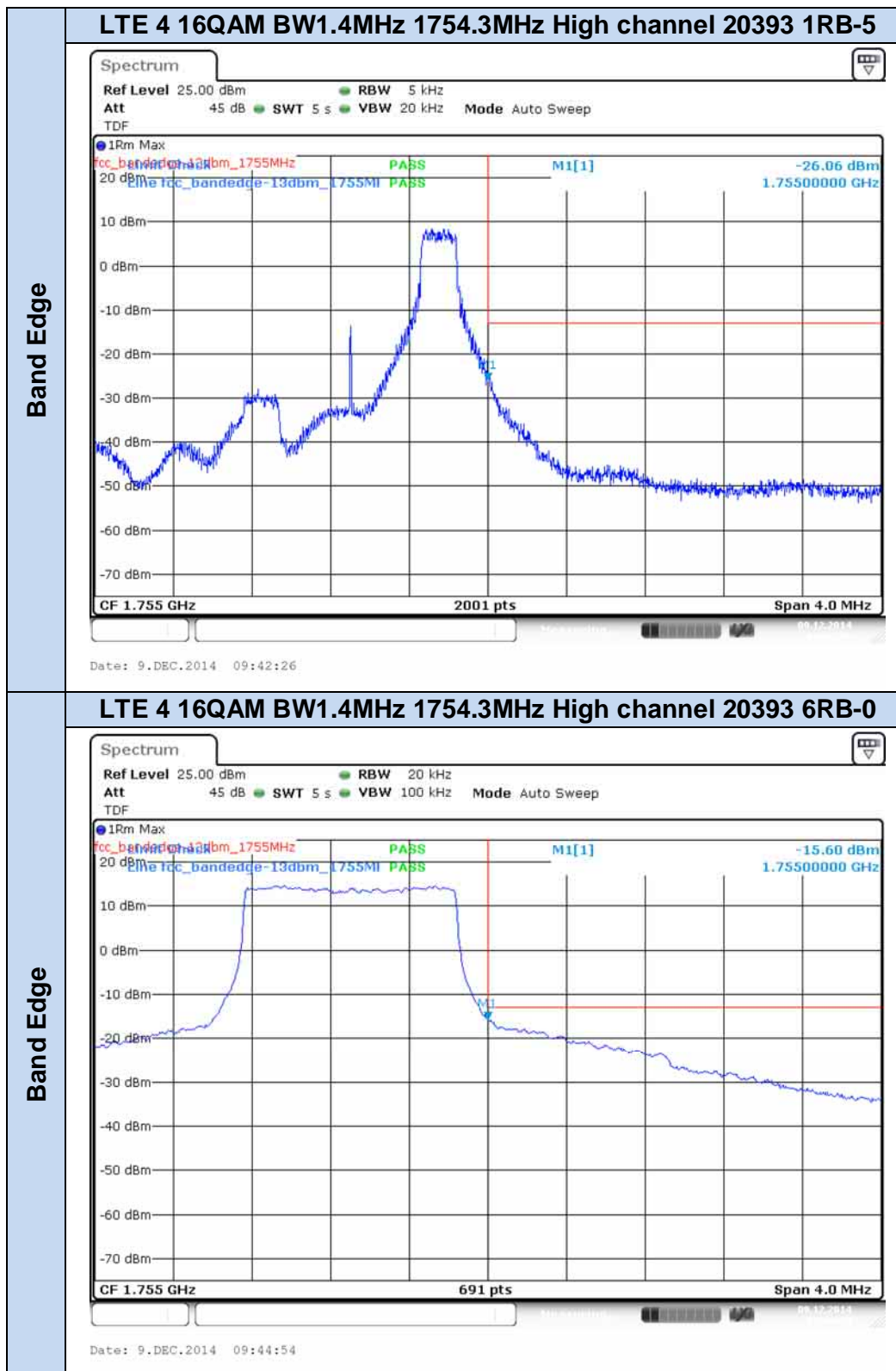


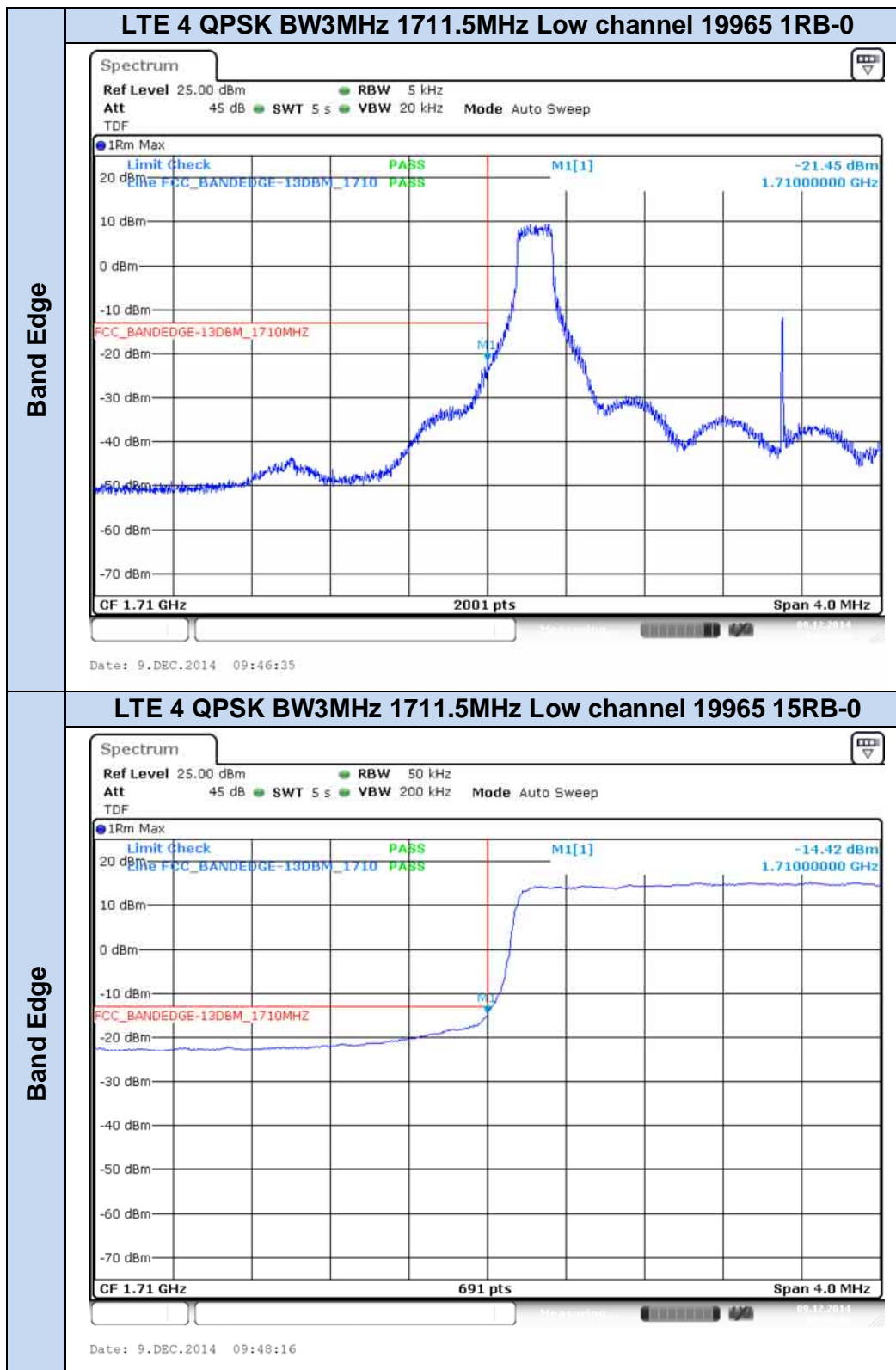
LTE Band 4

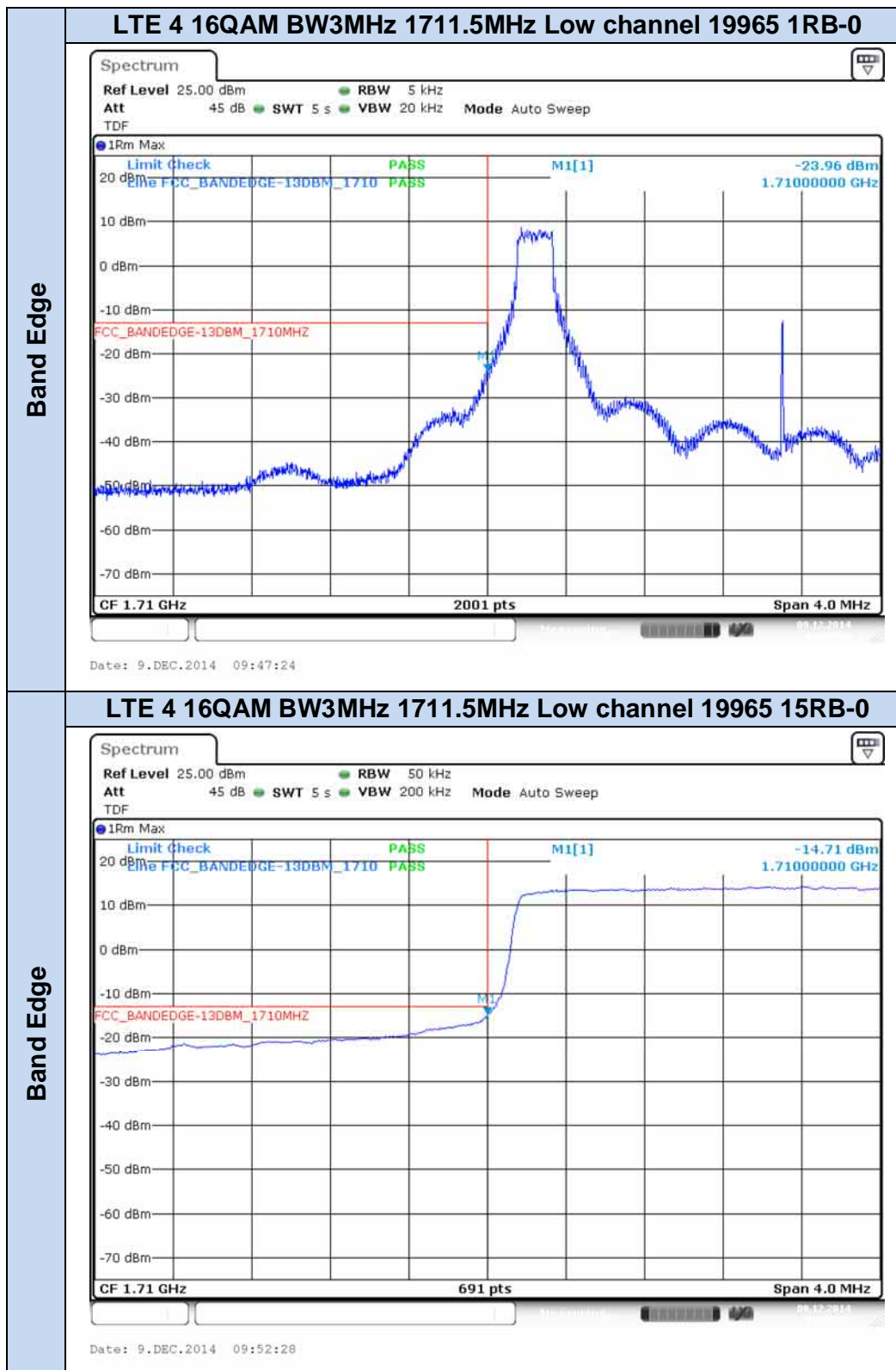


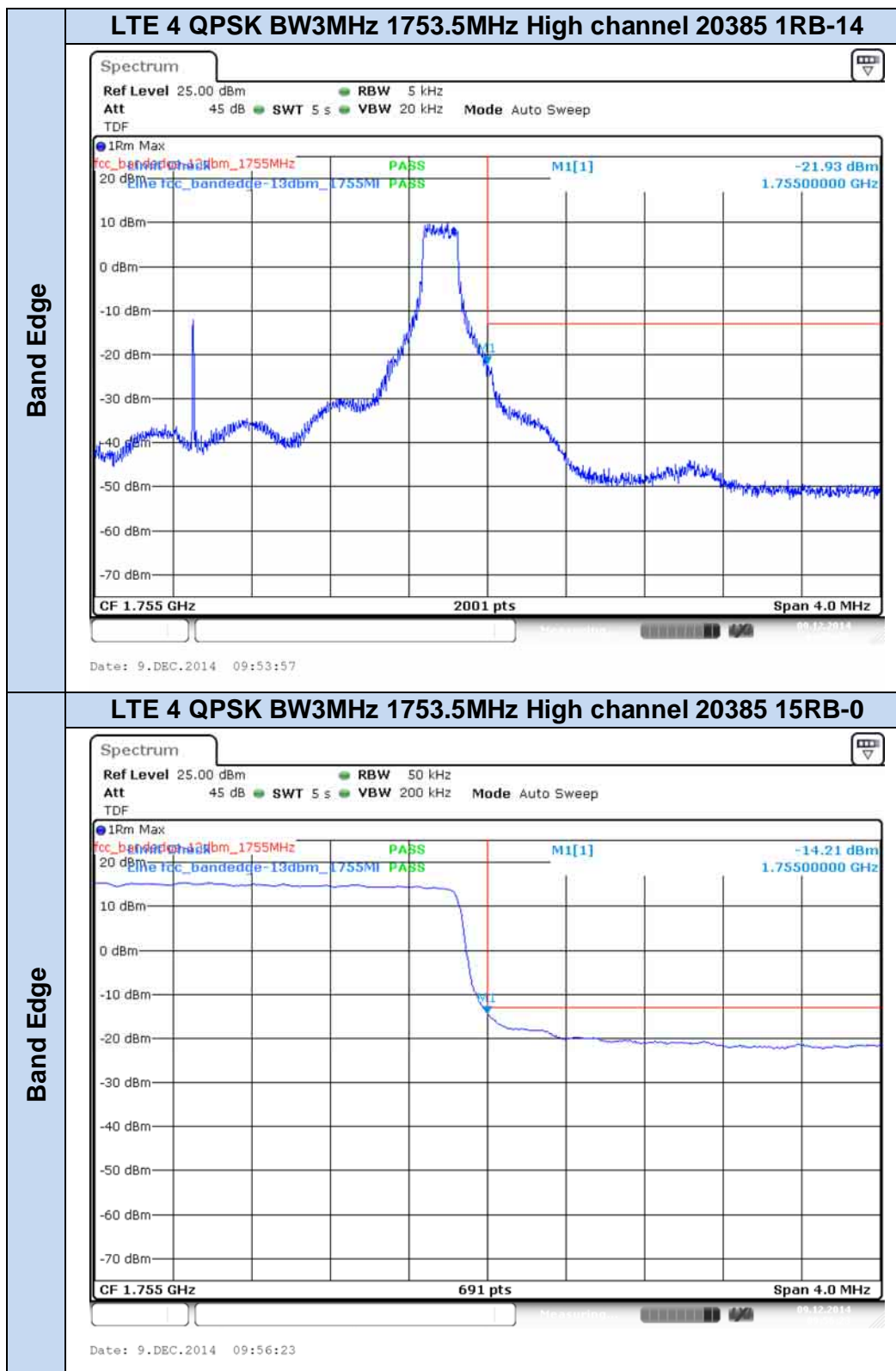


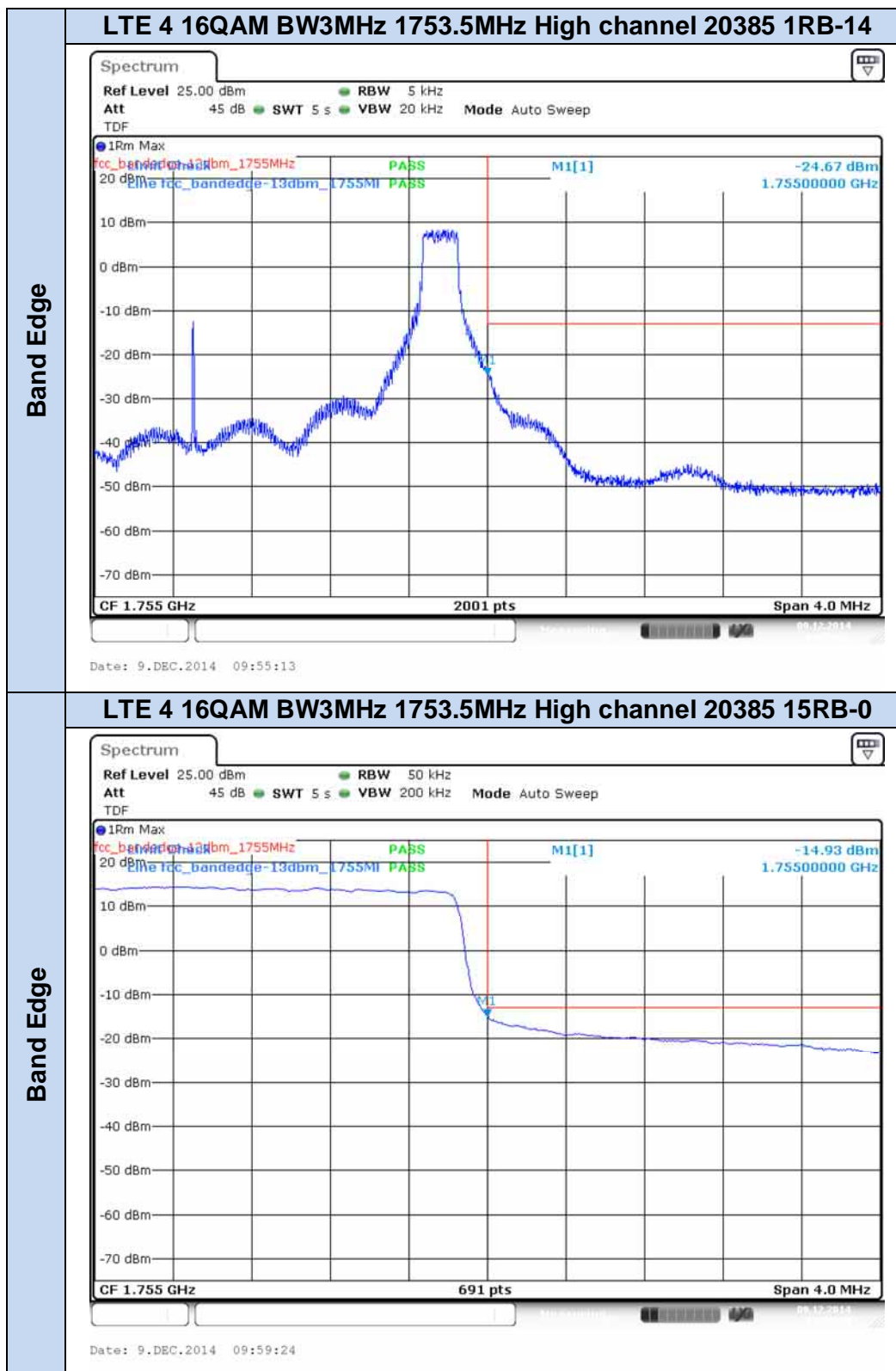


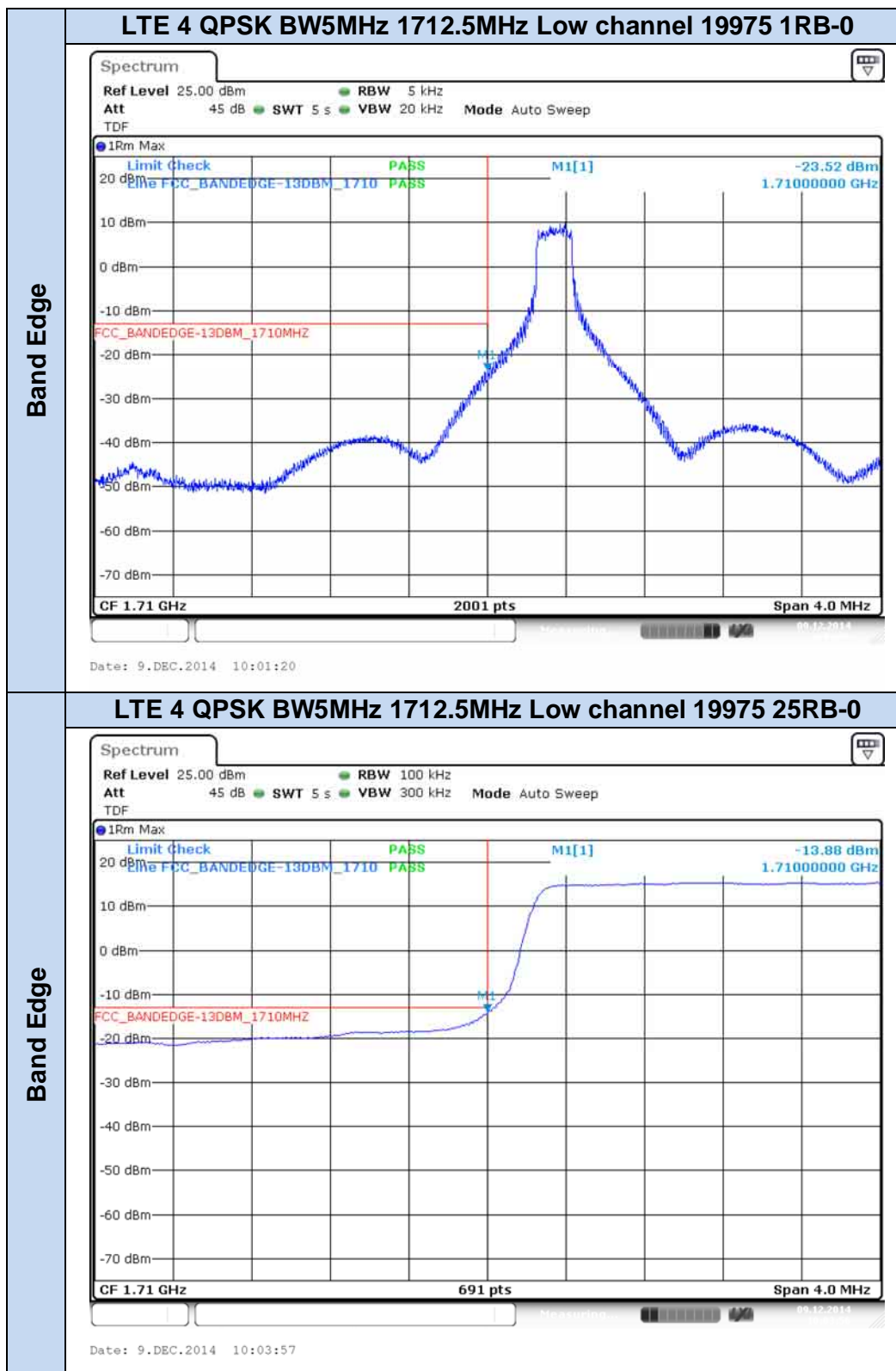


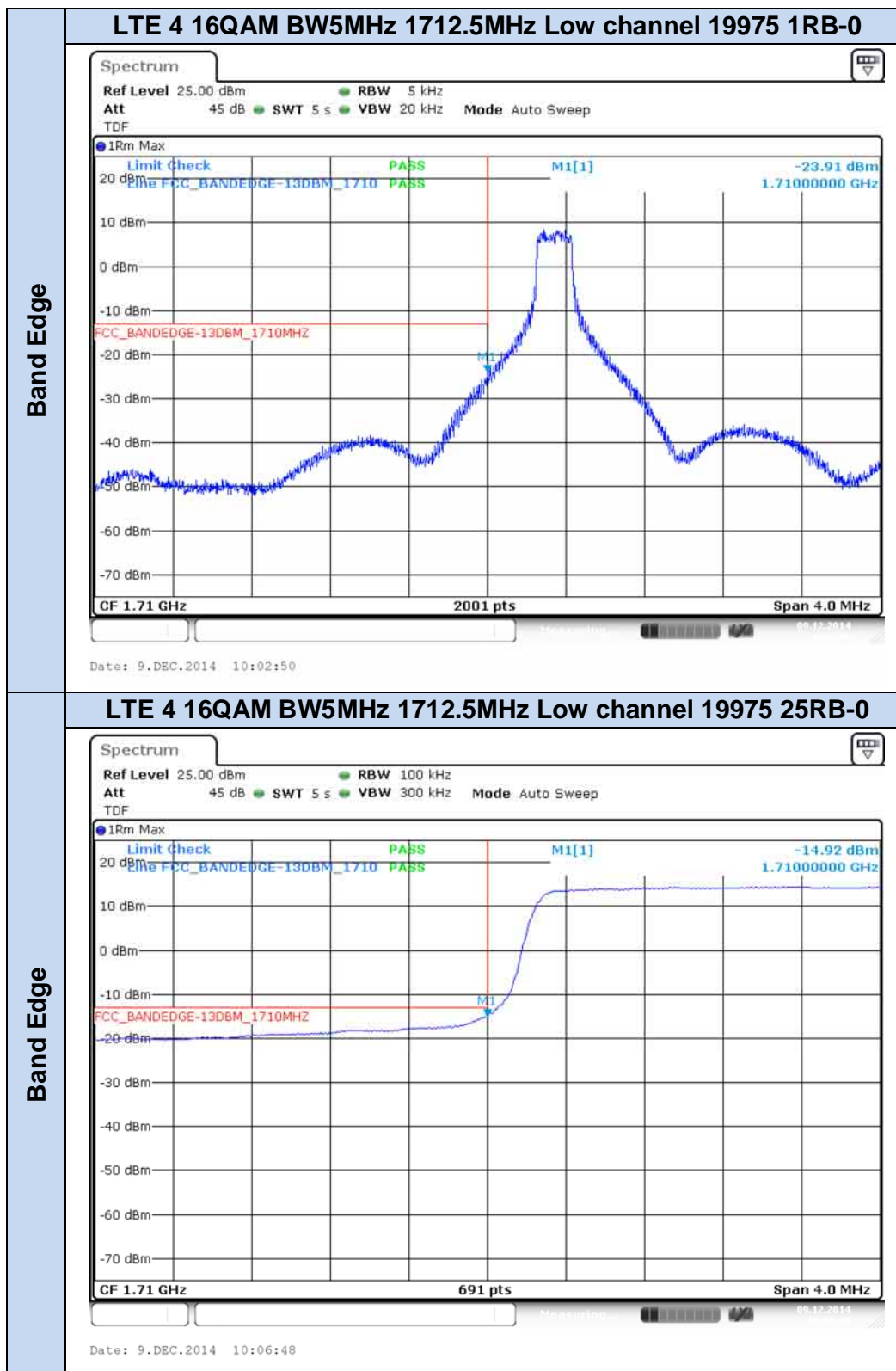


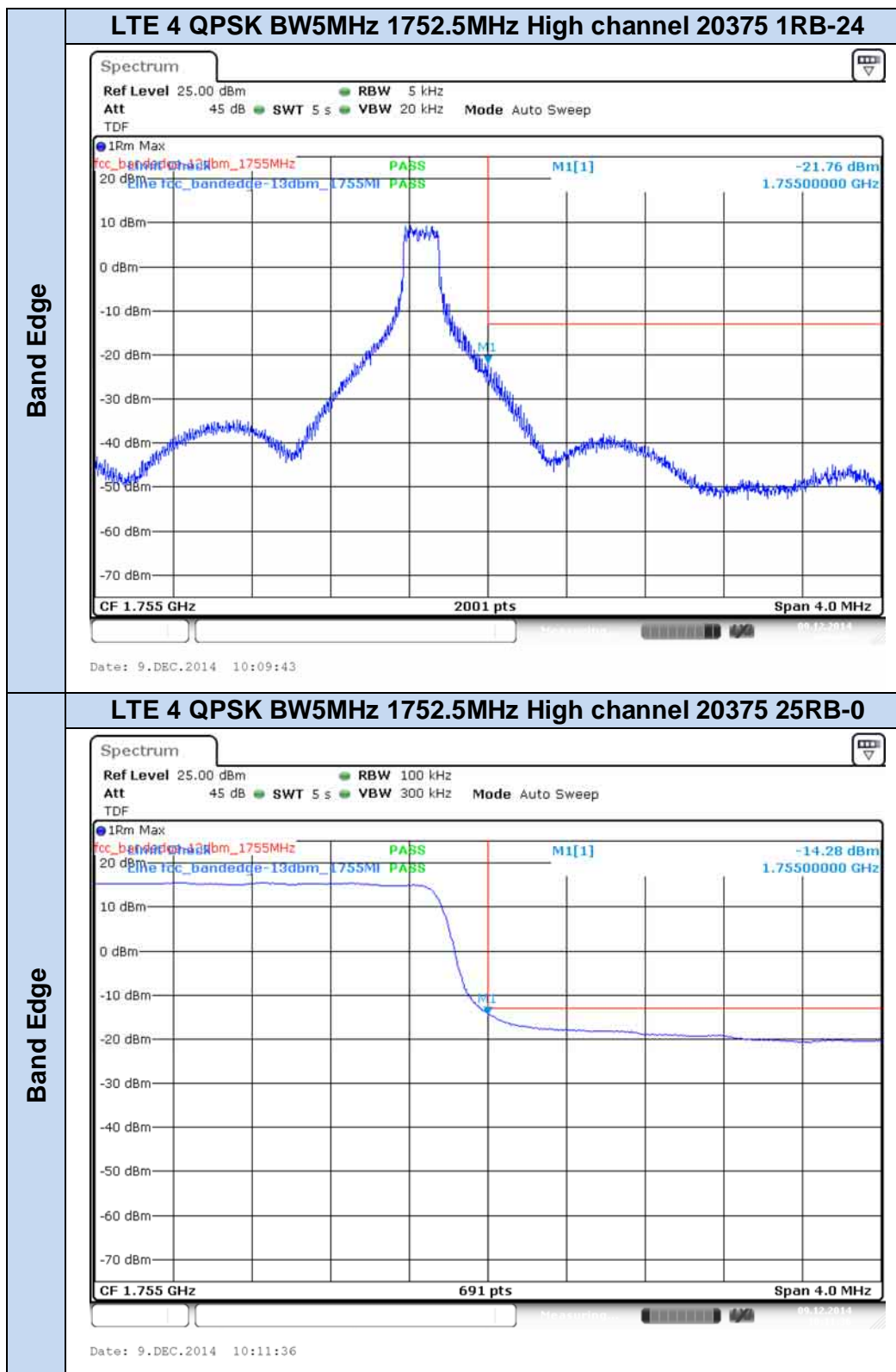


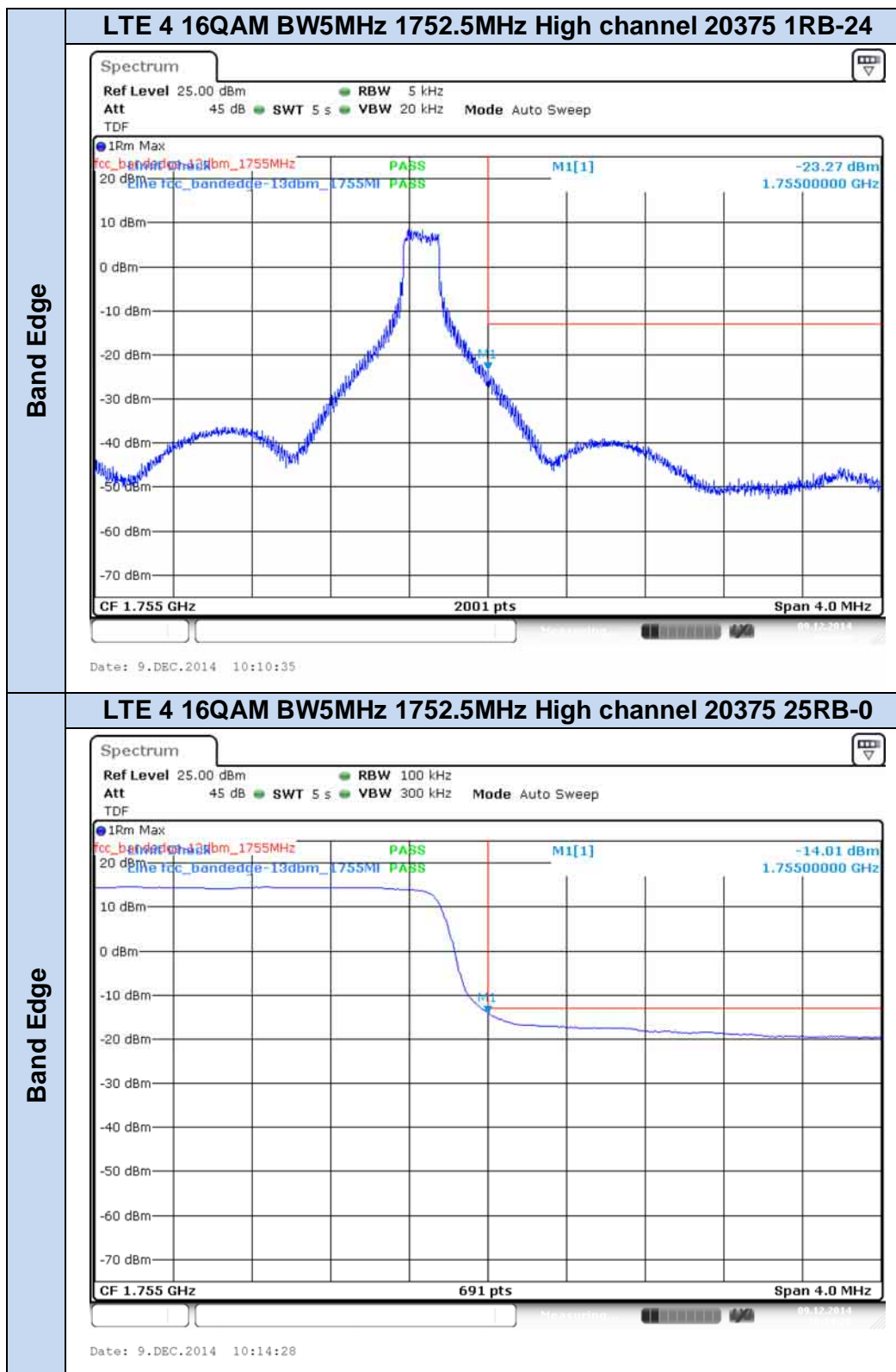


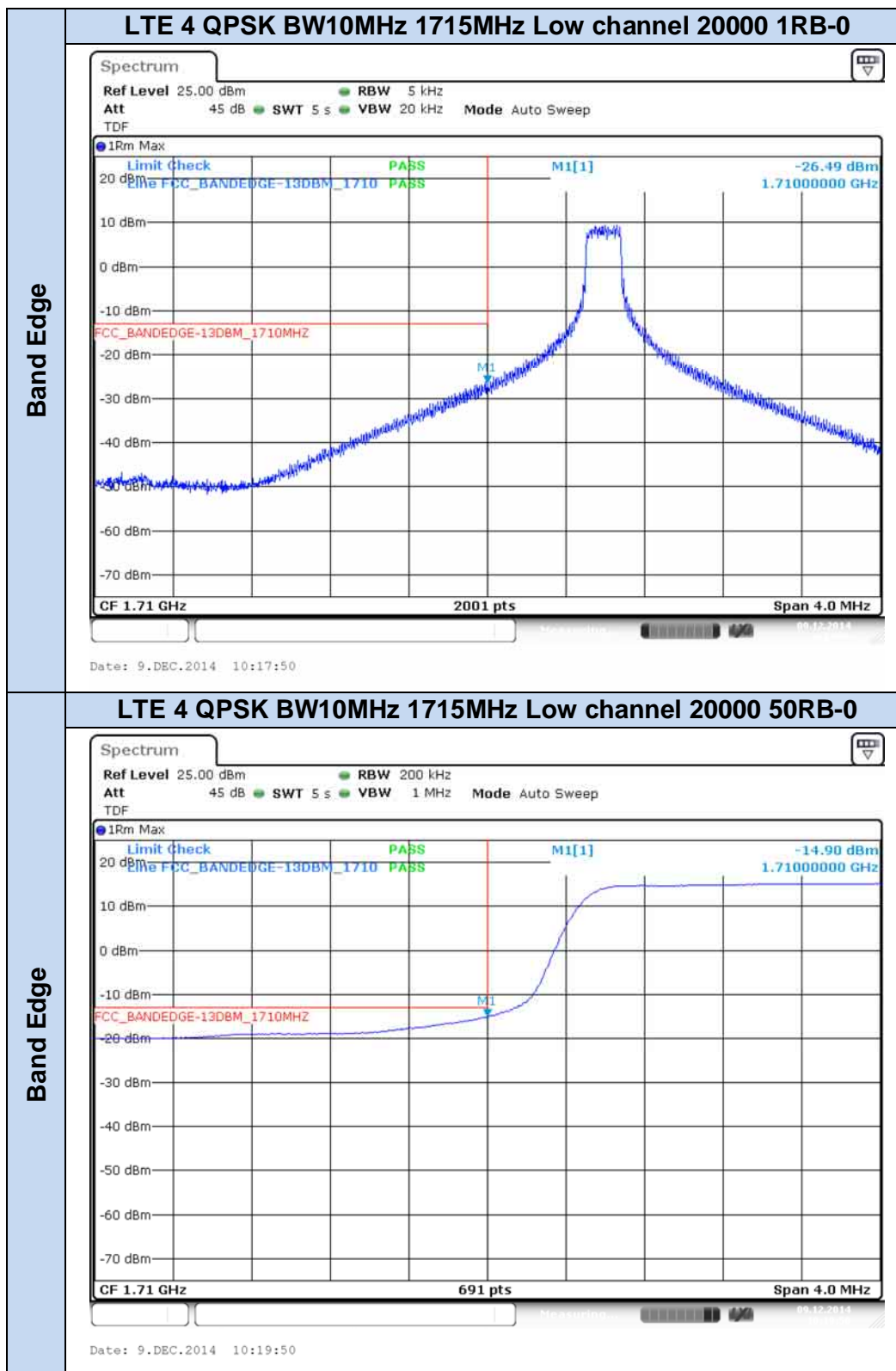


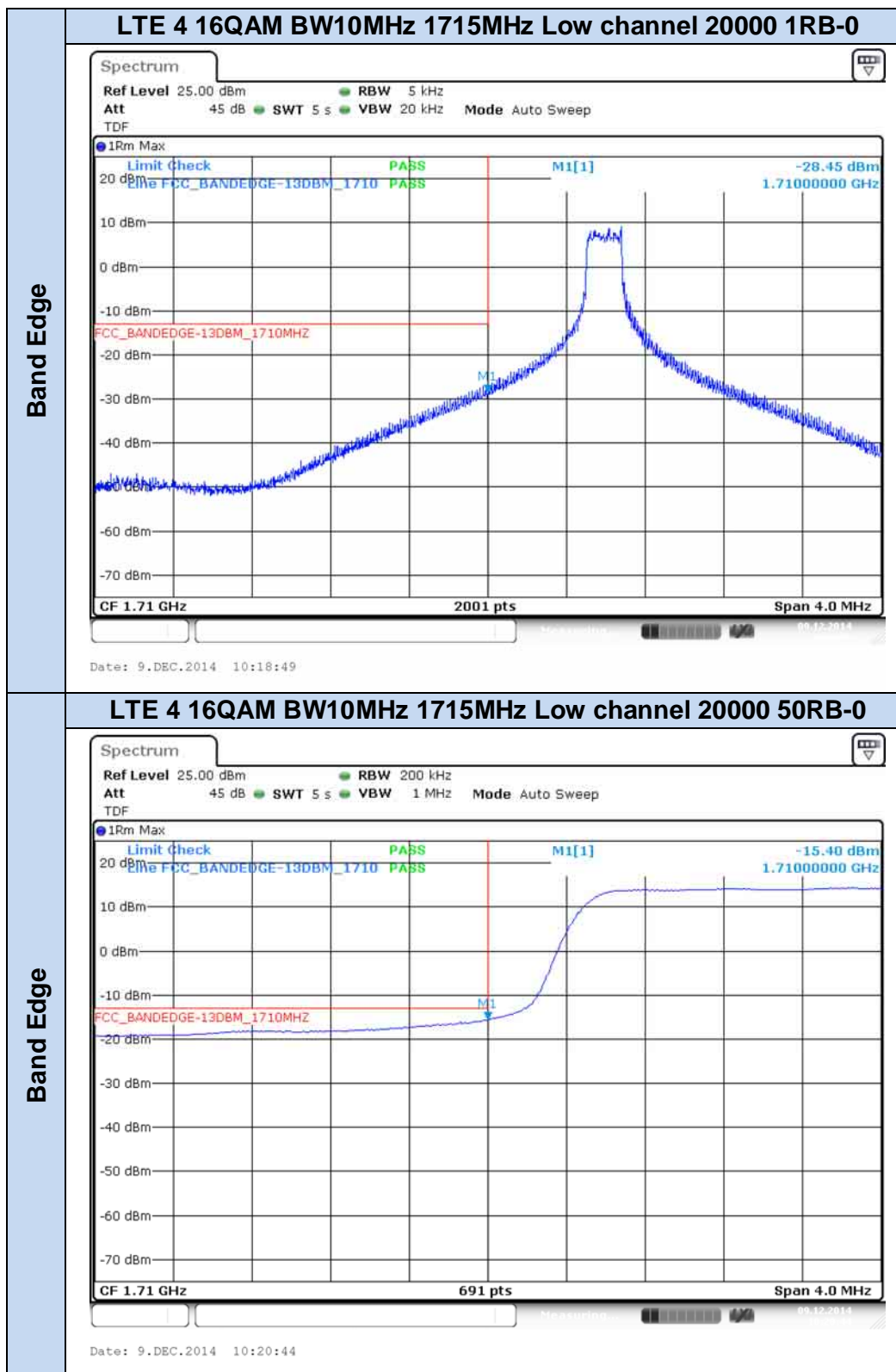


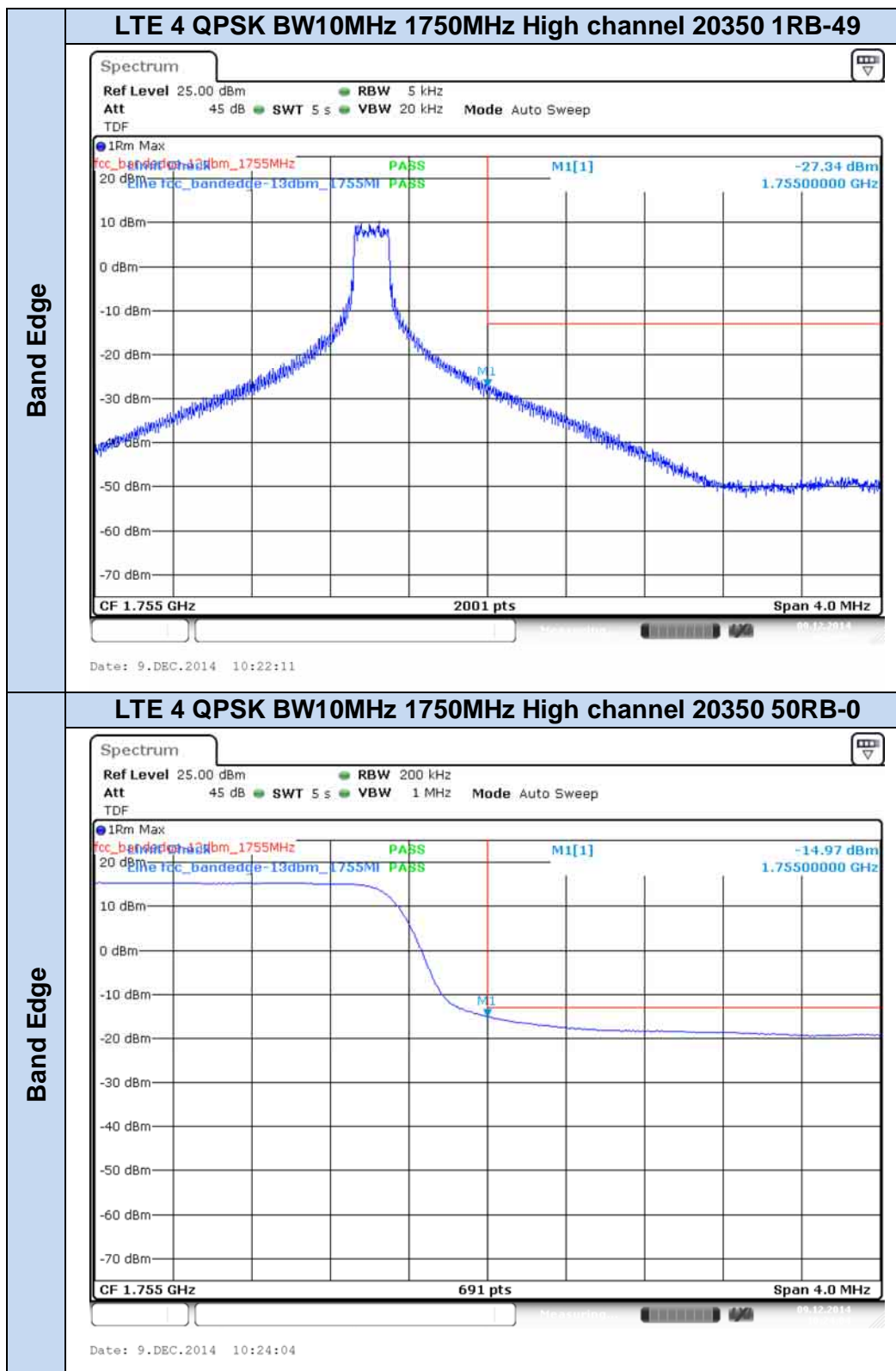


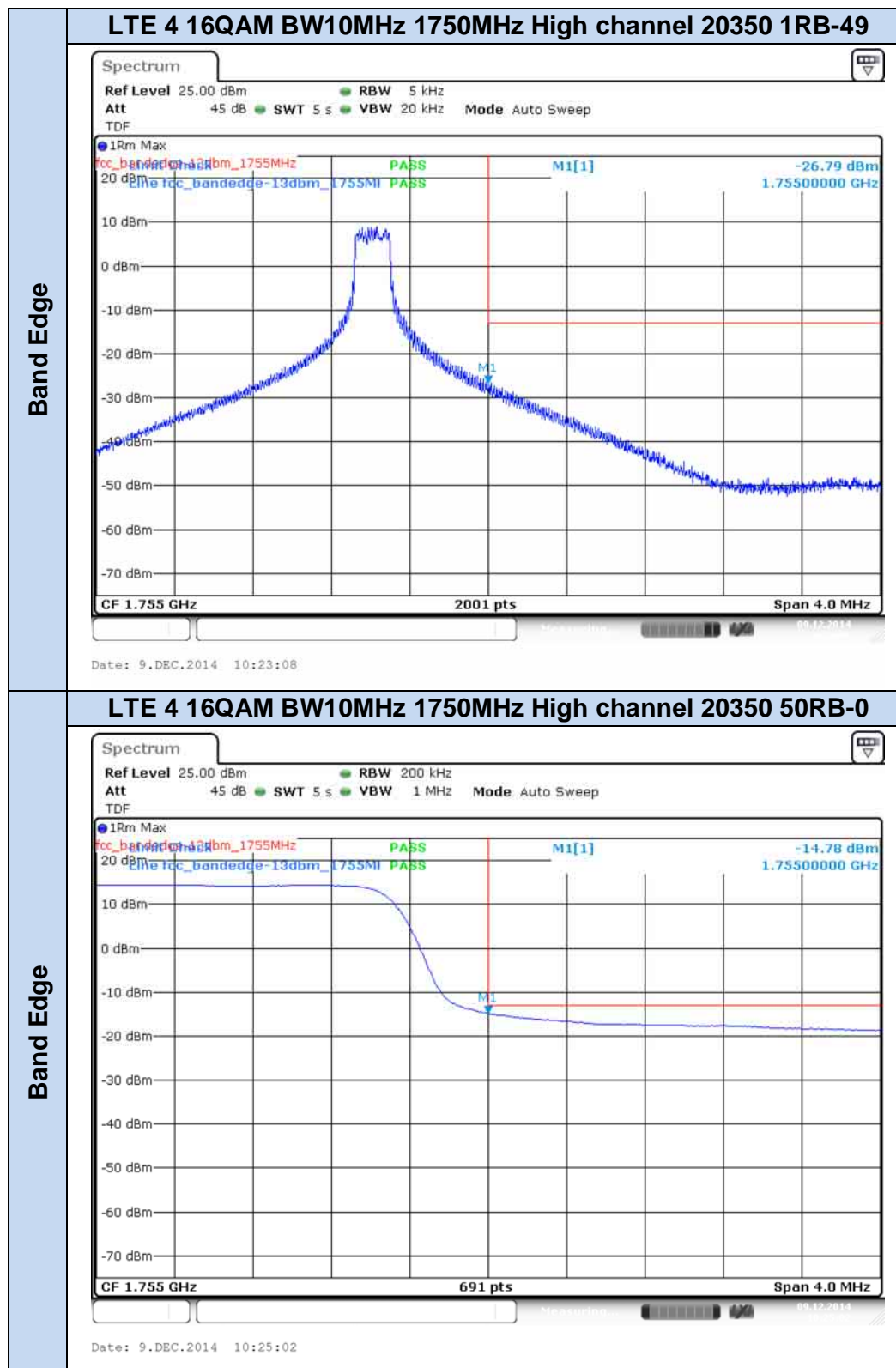


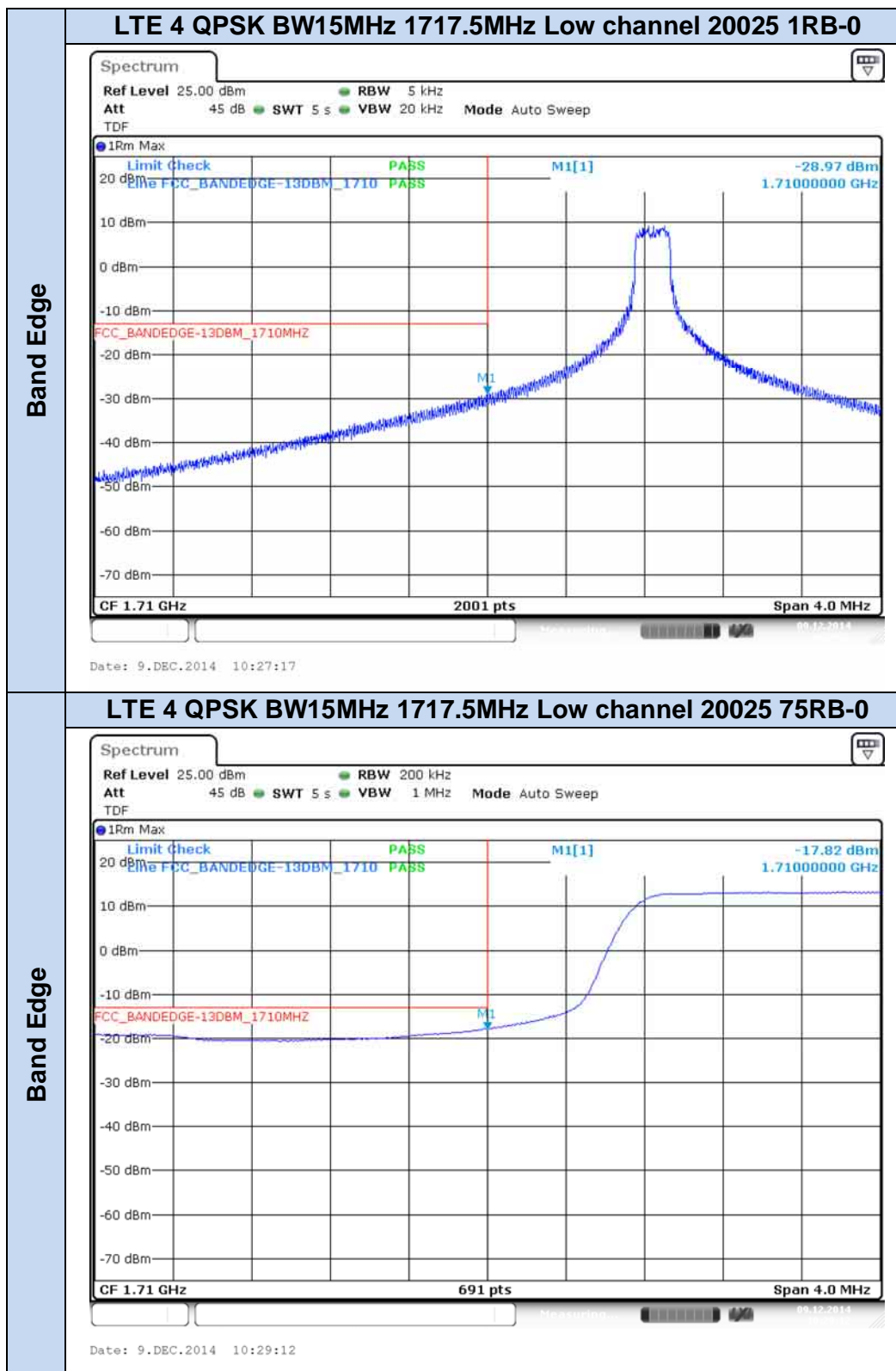


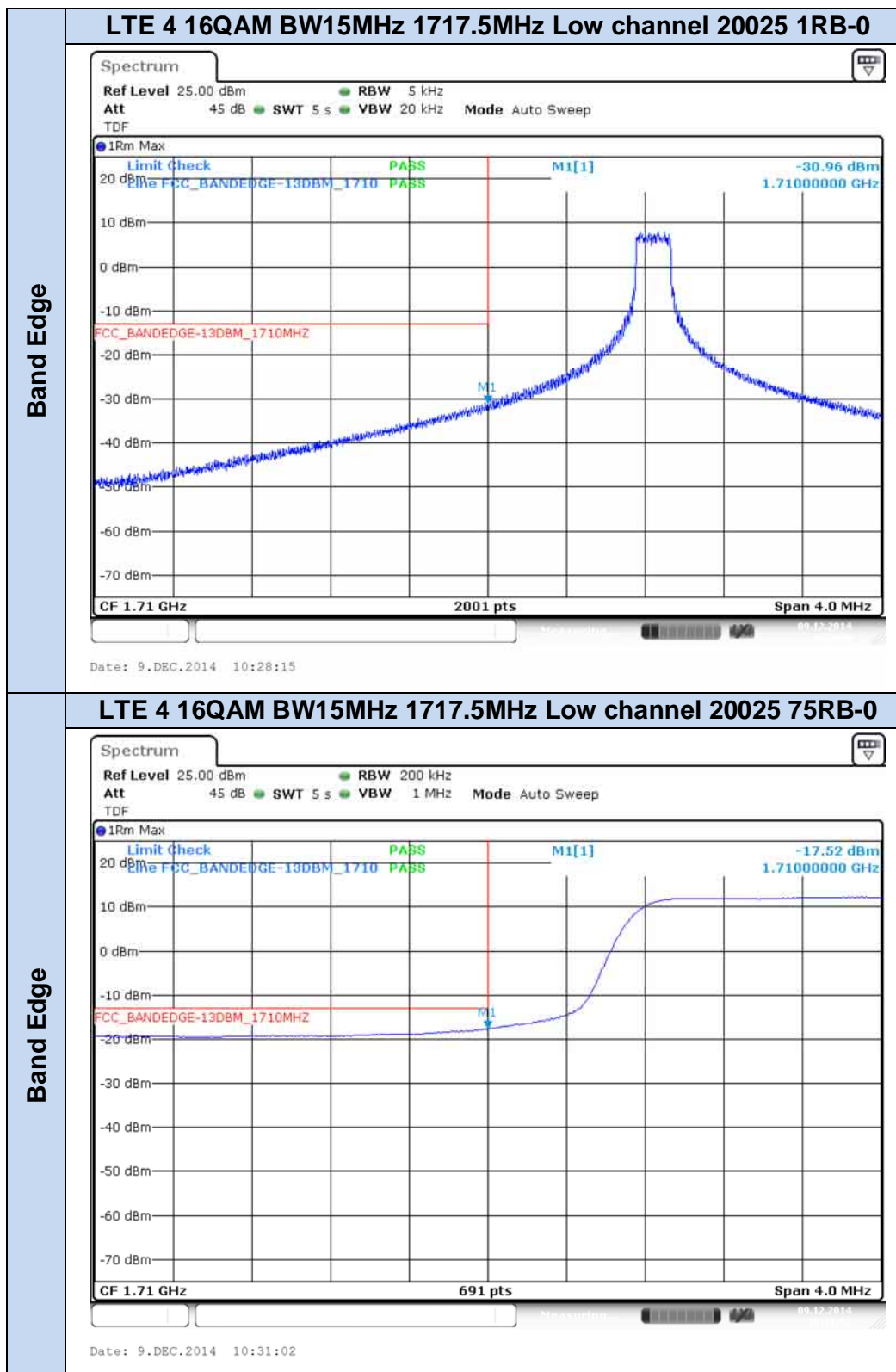


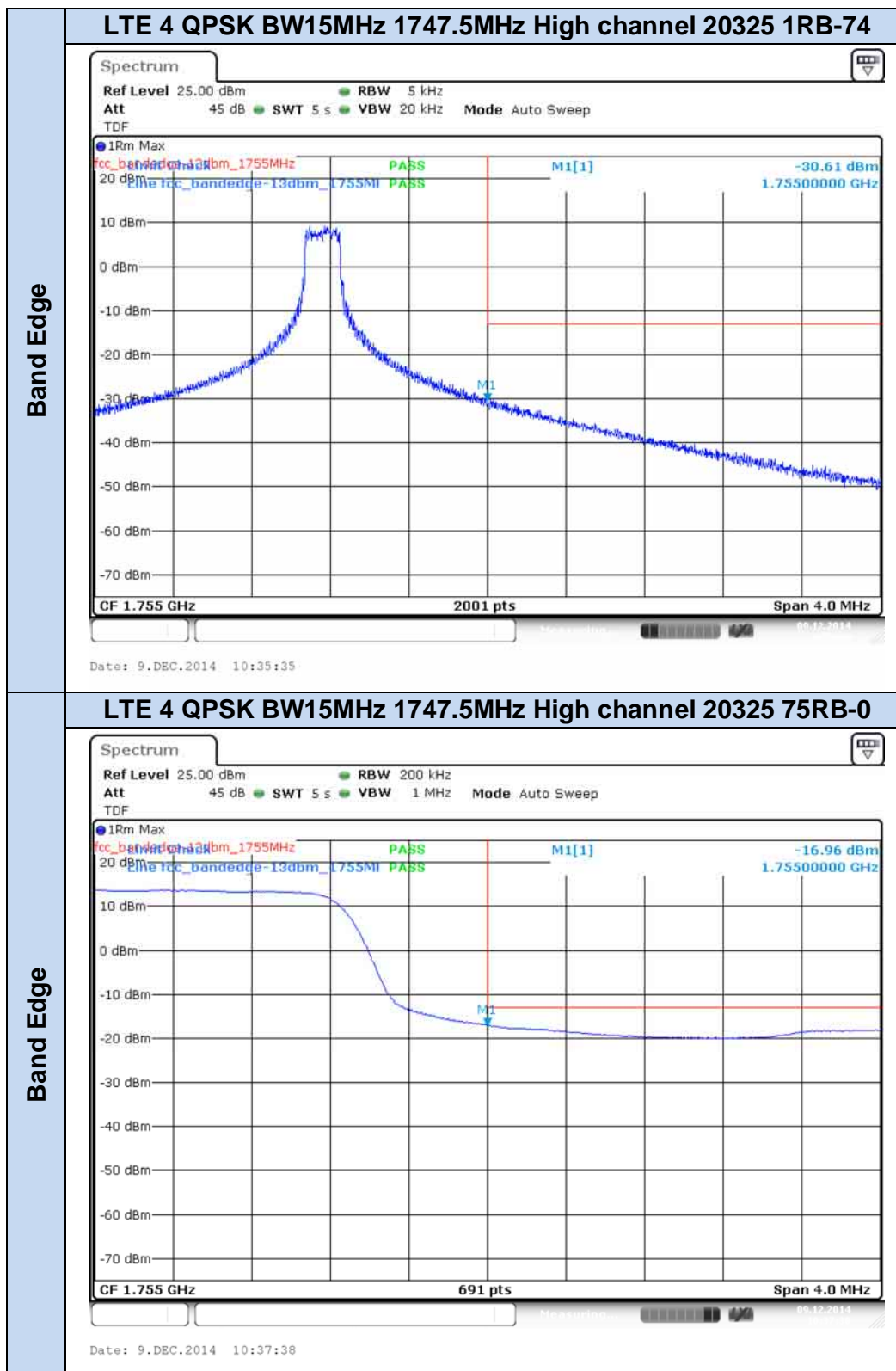


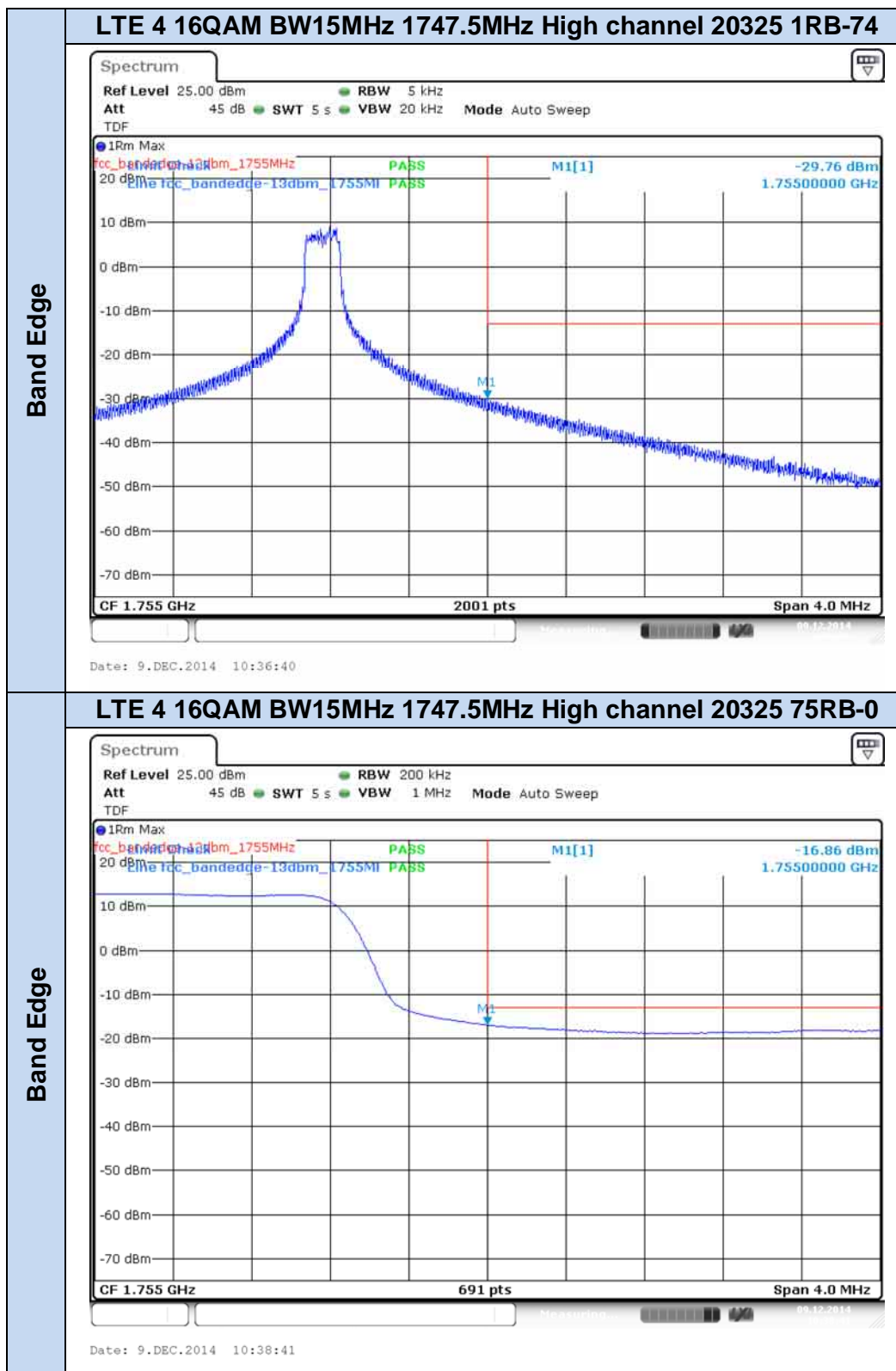


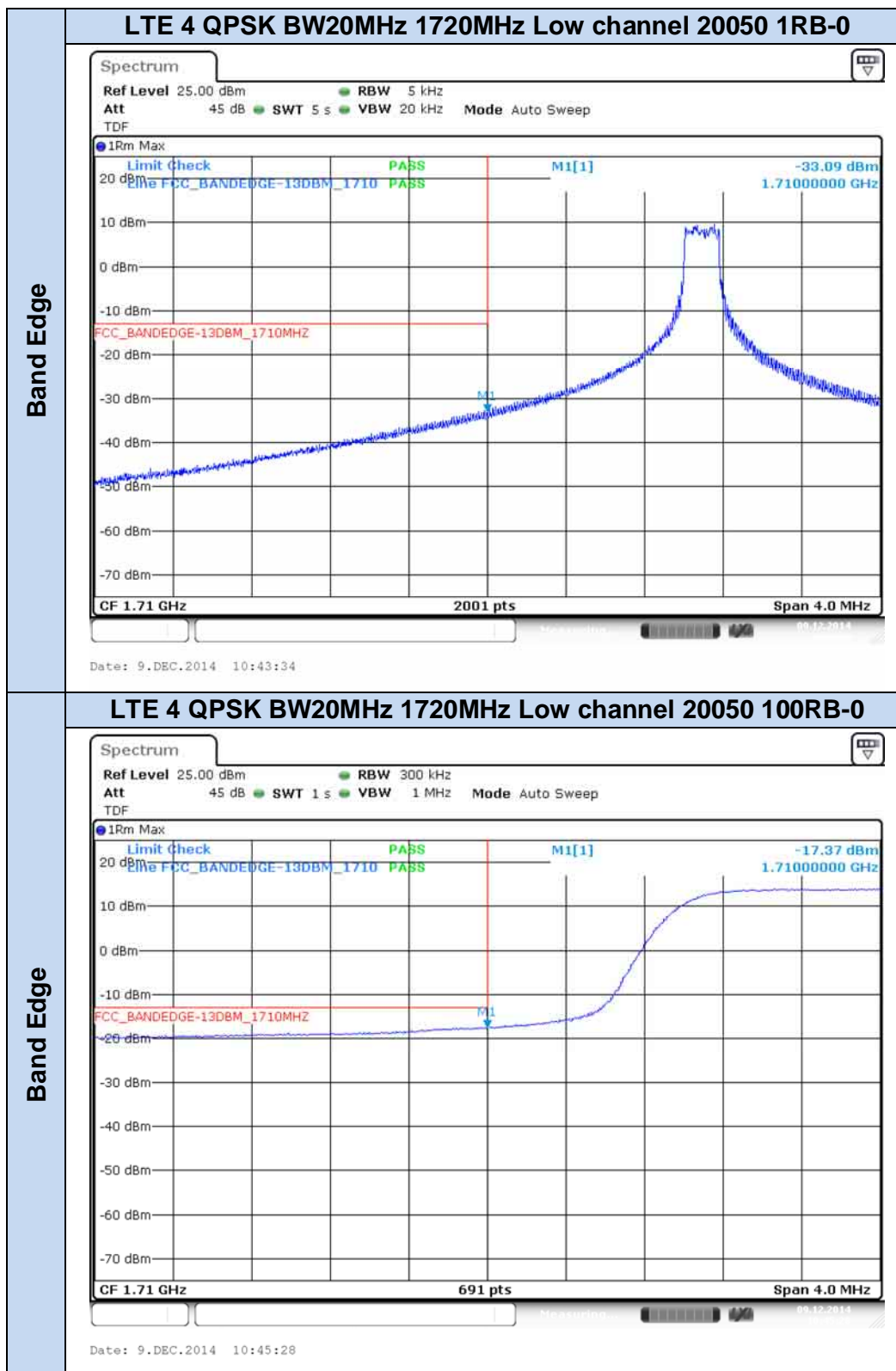


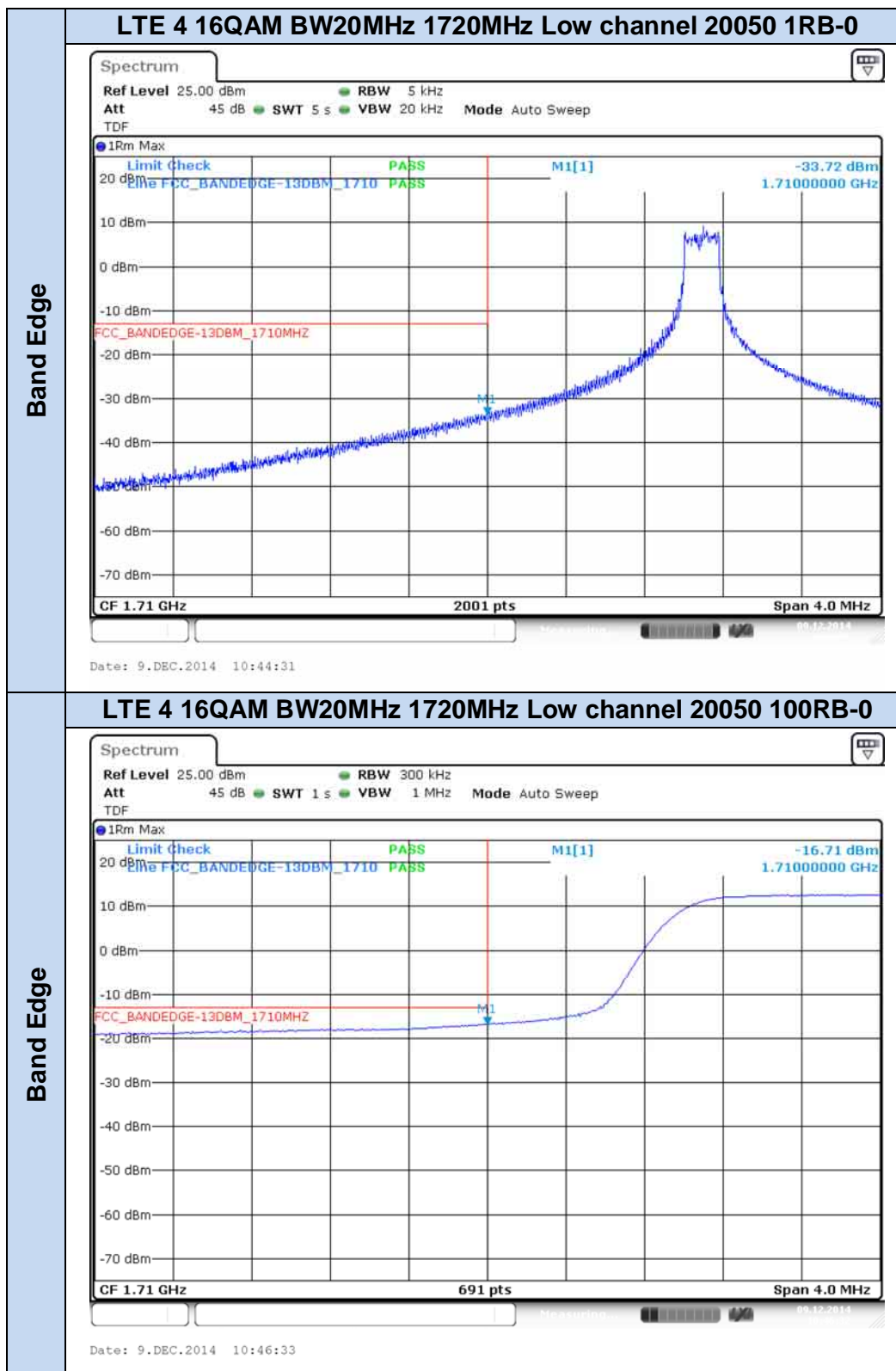


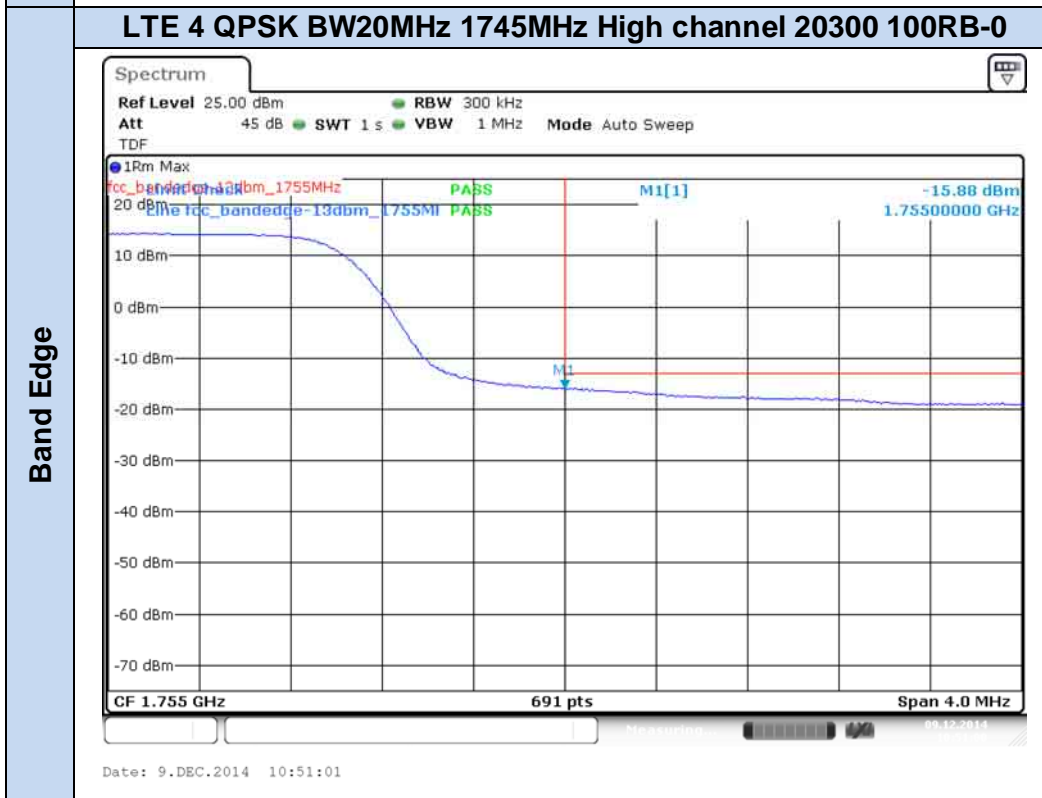
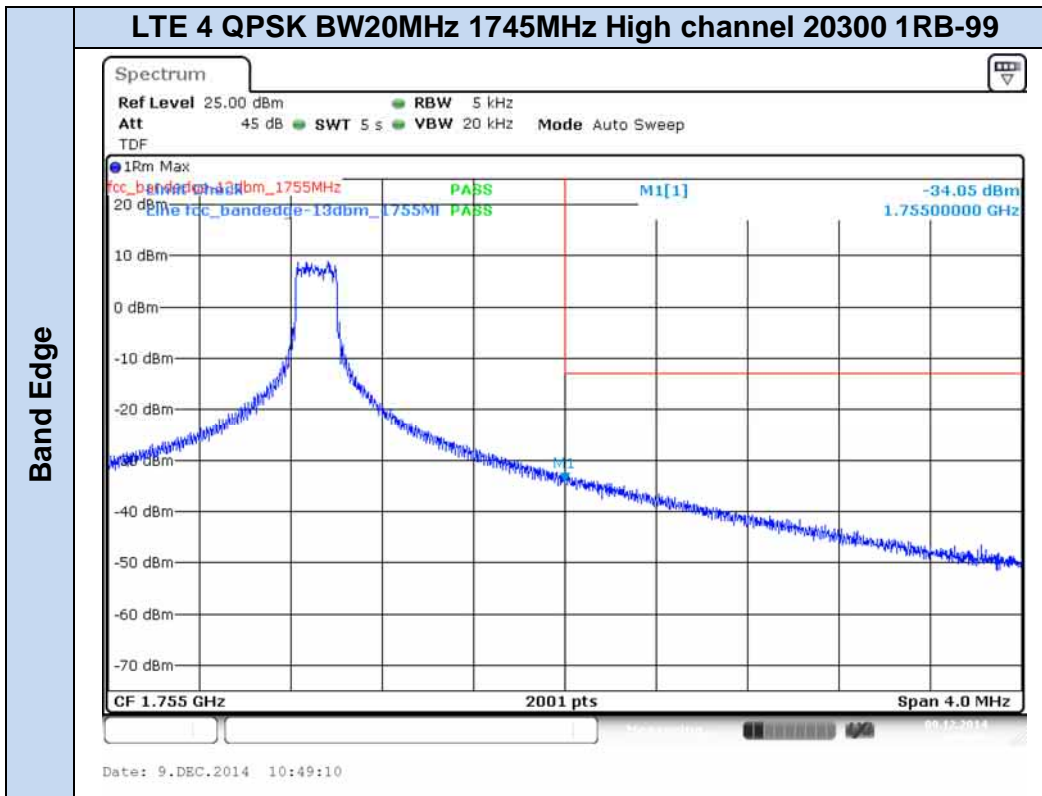


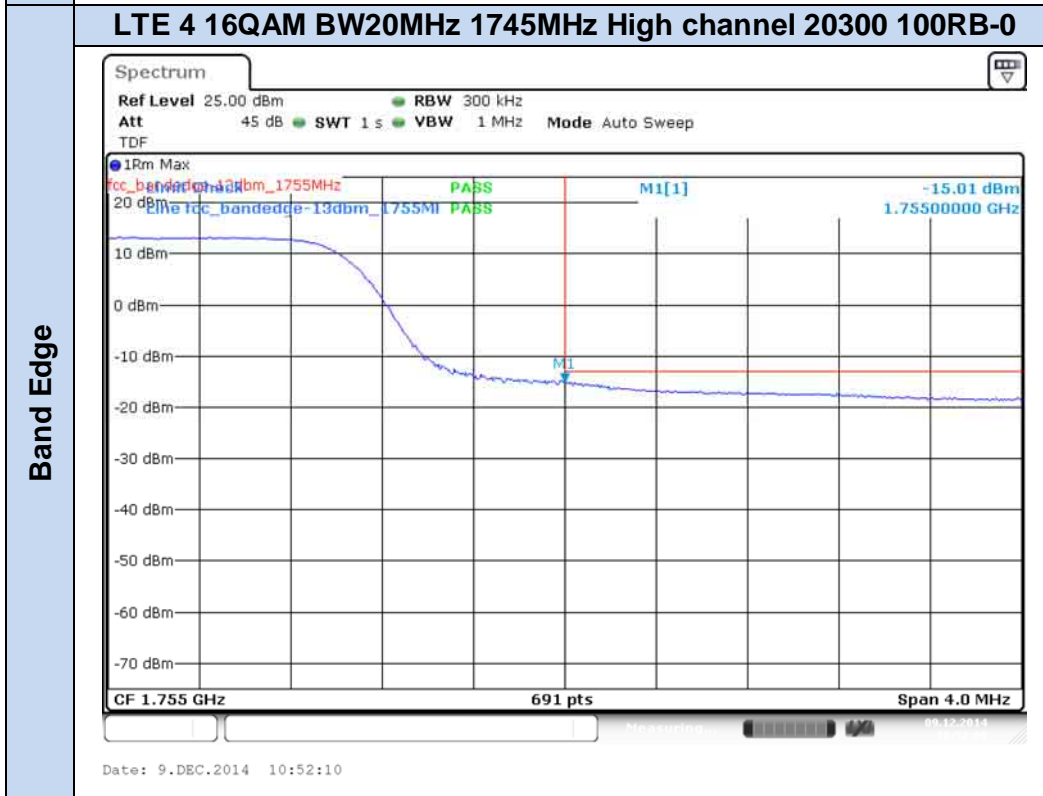
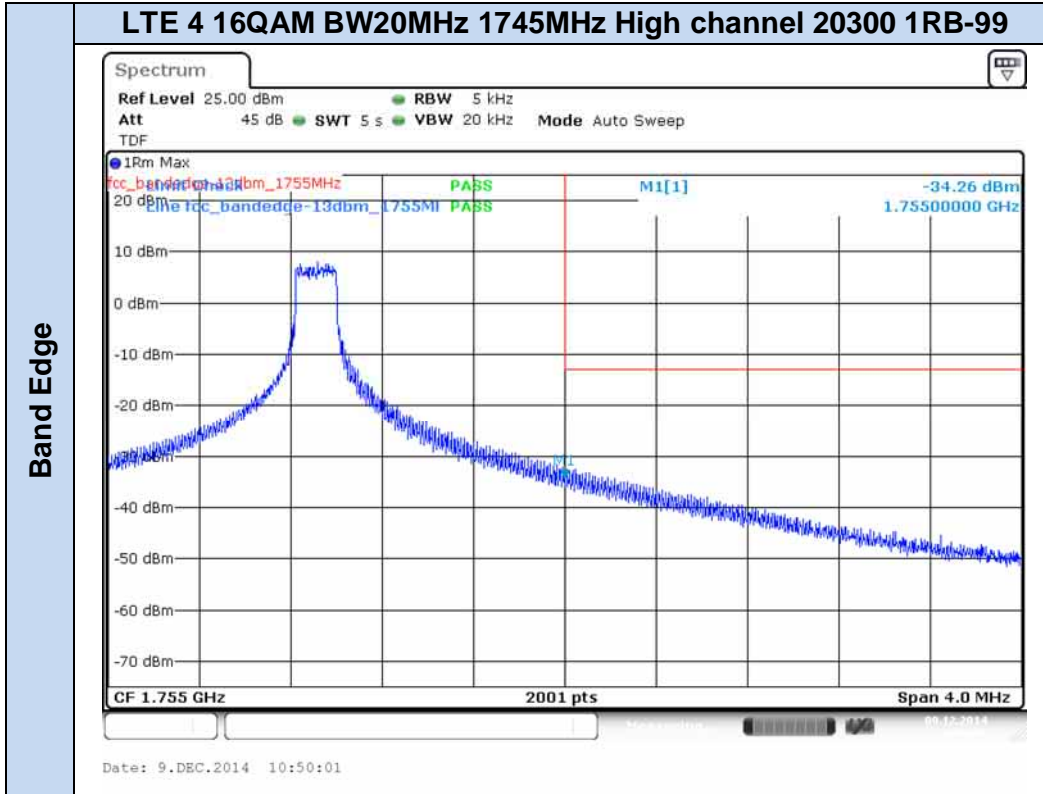




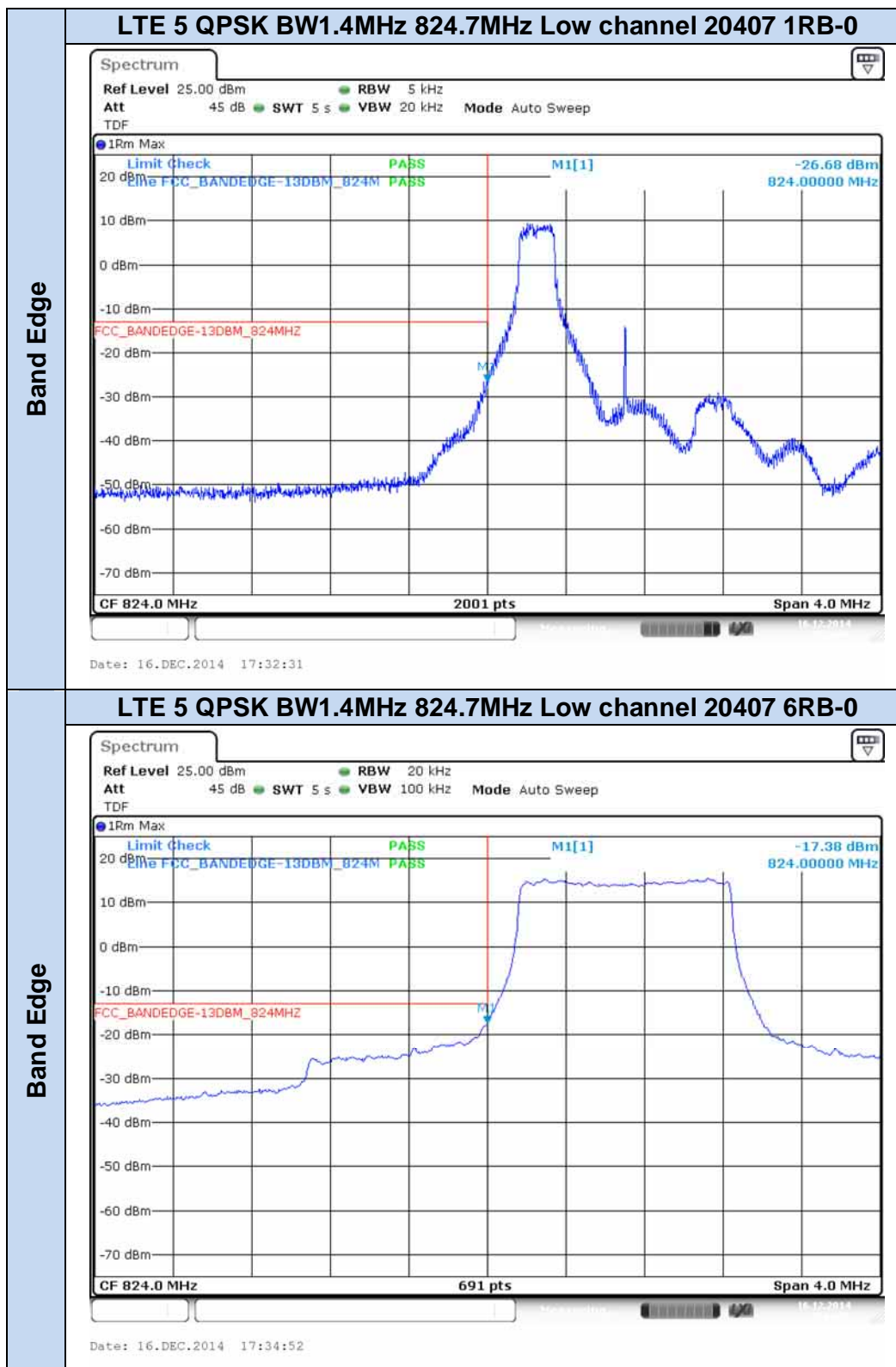


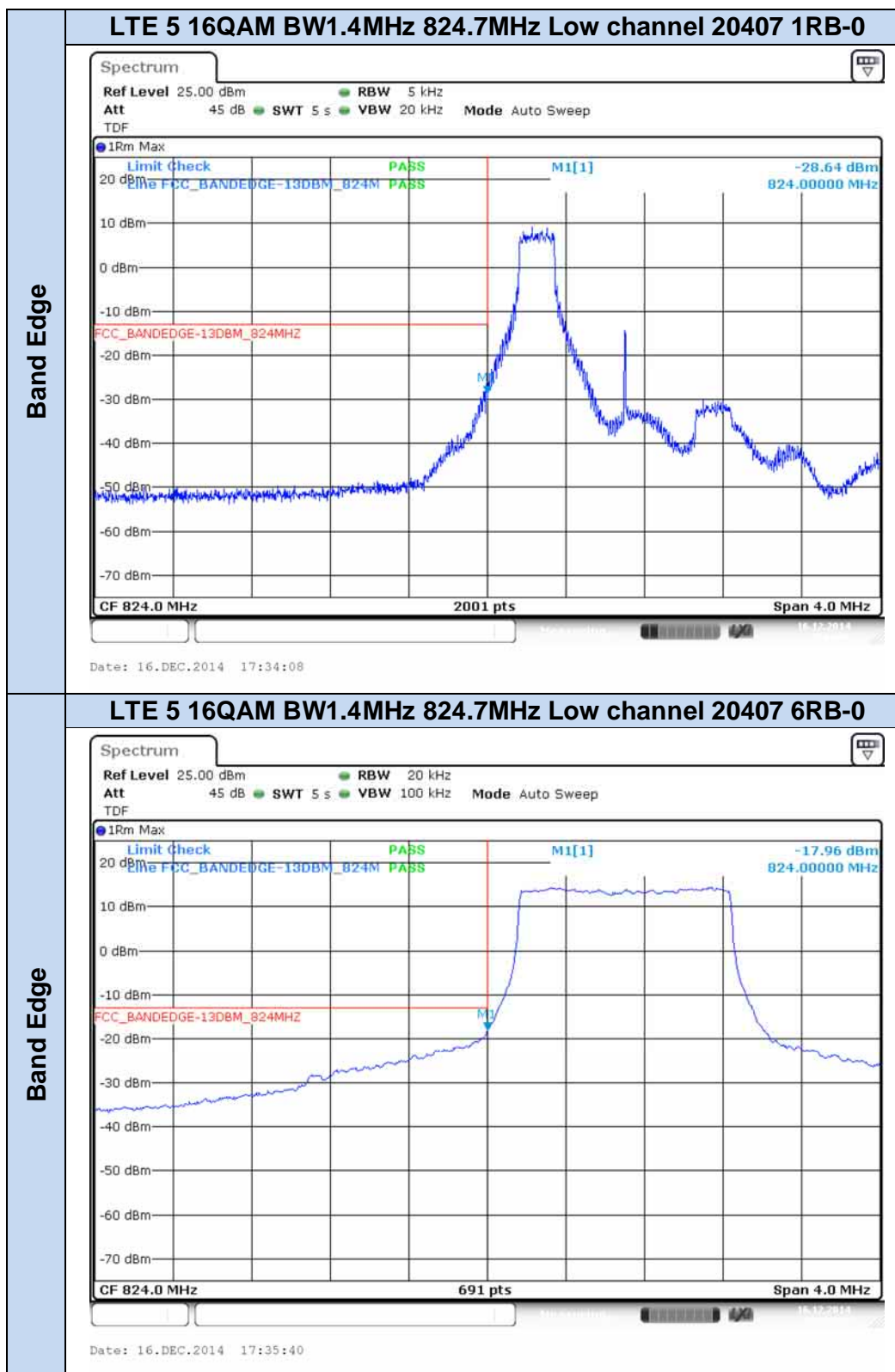


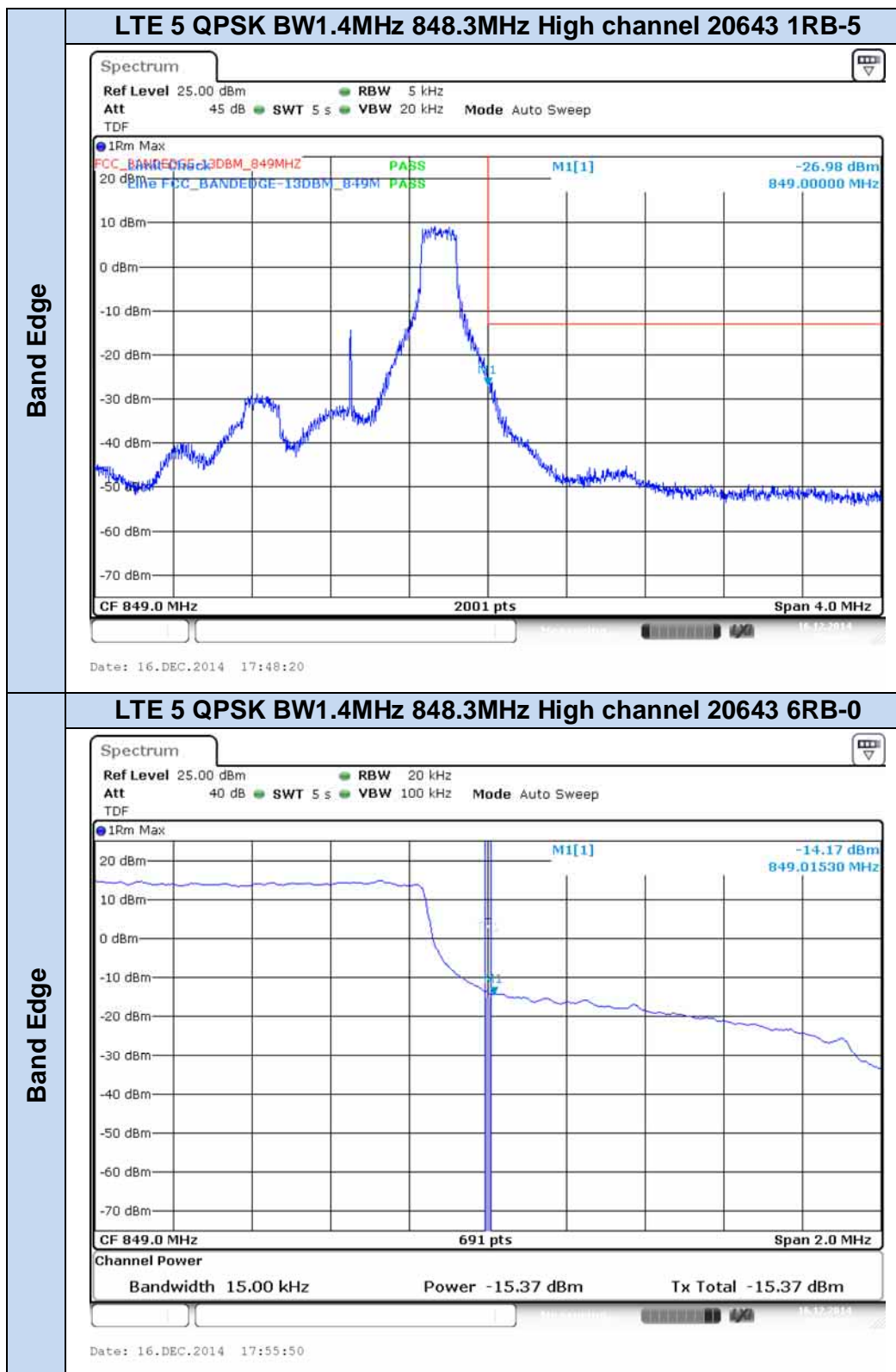


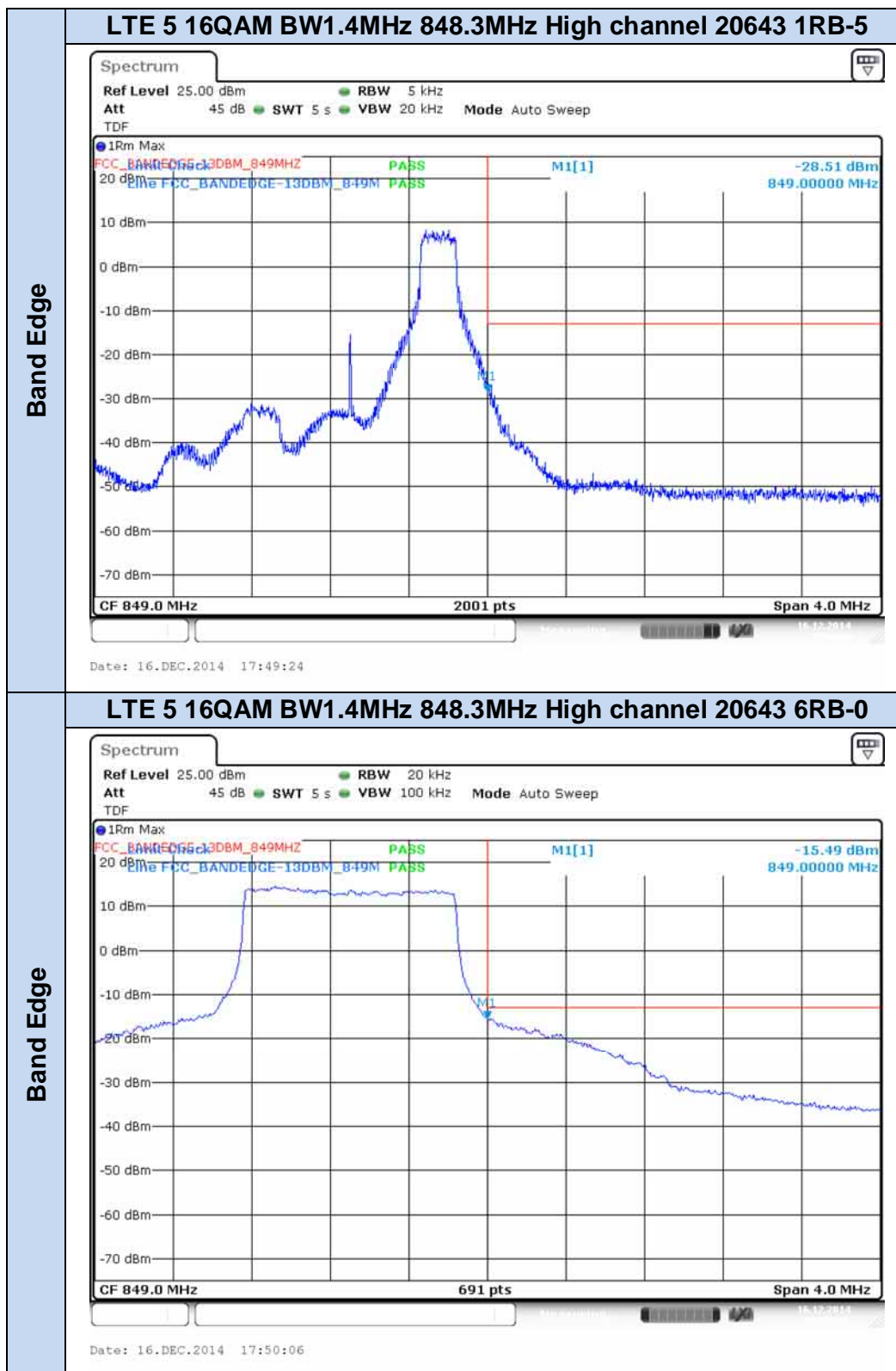


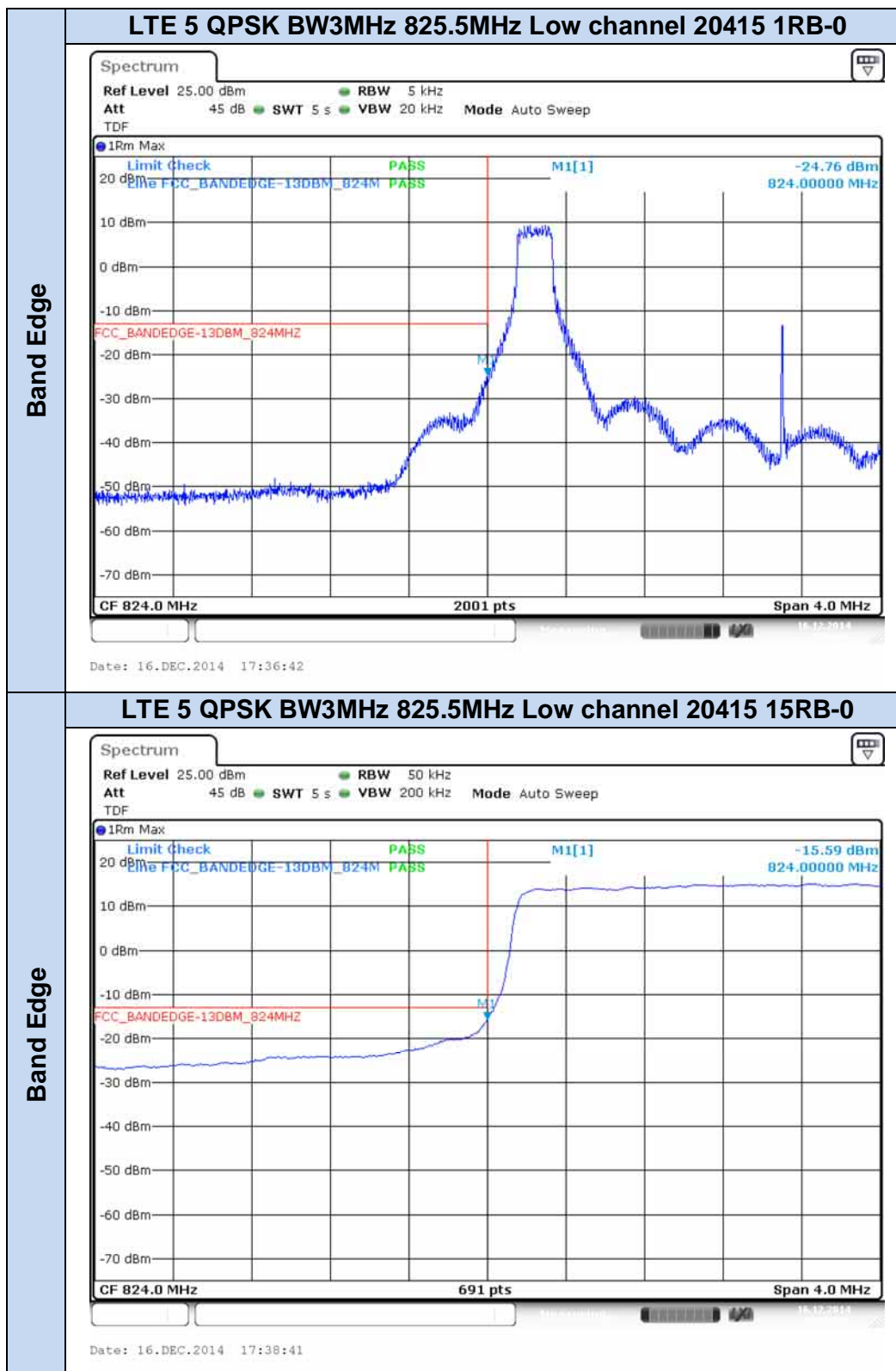
LTE Band 5

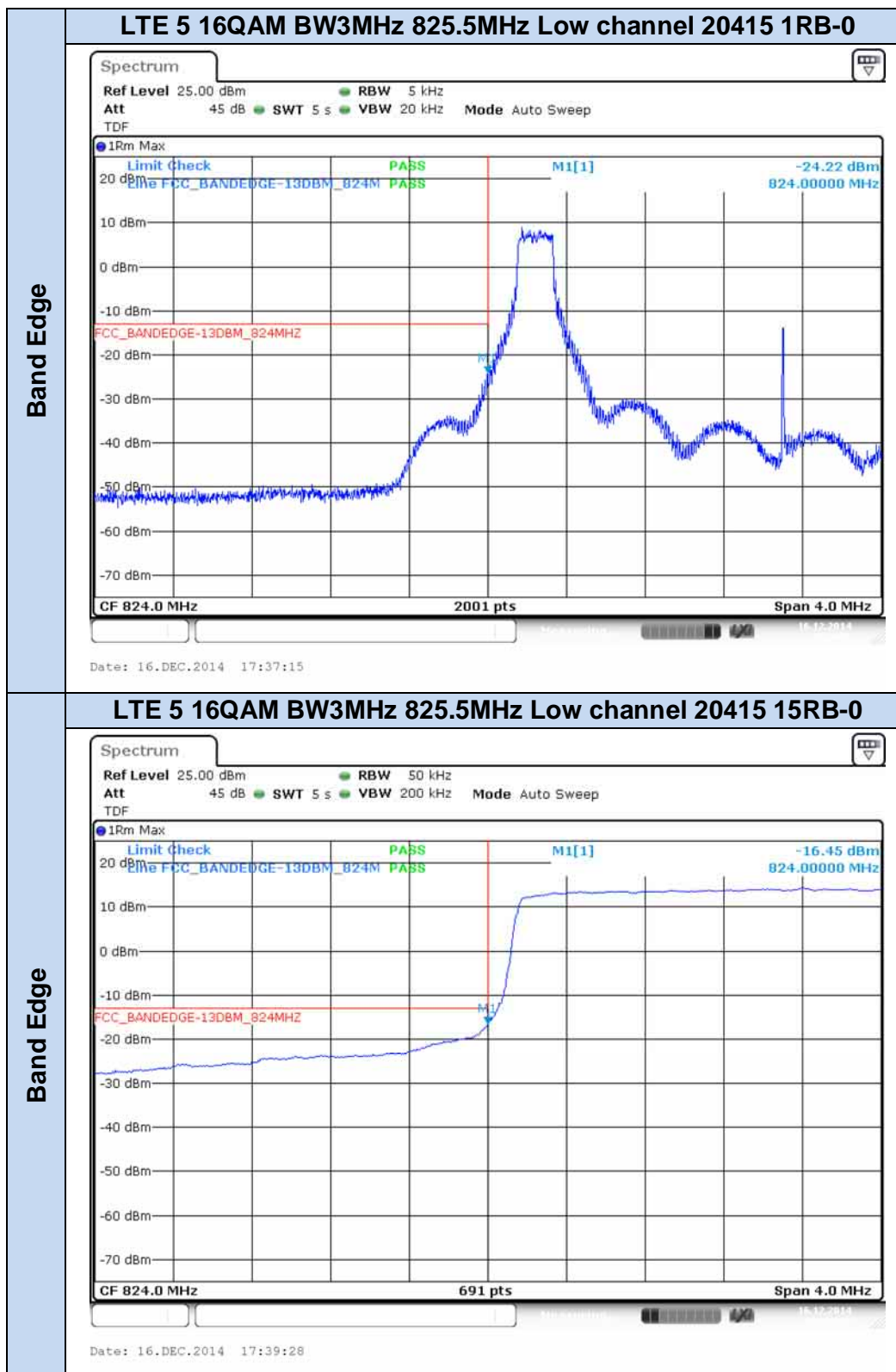


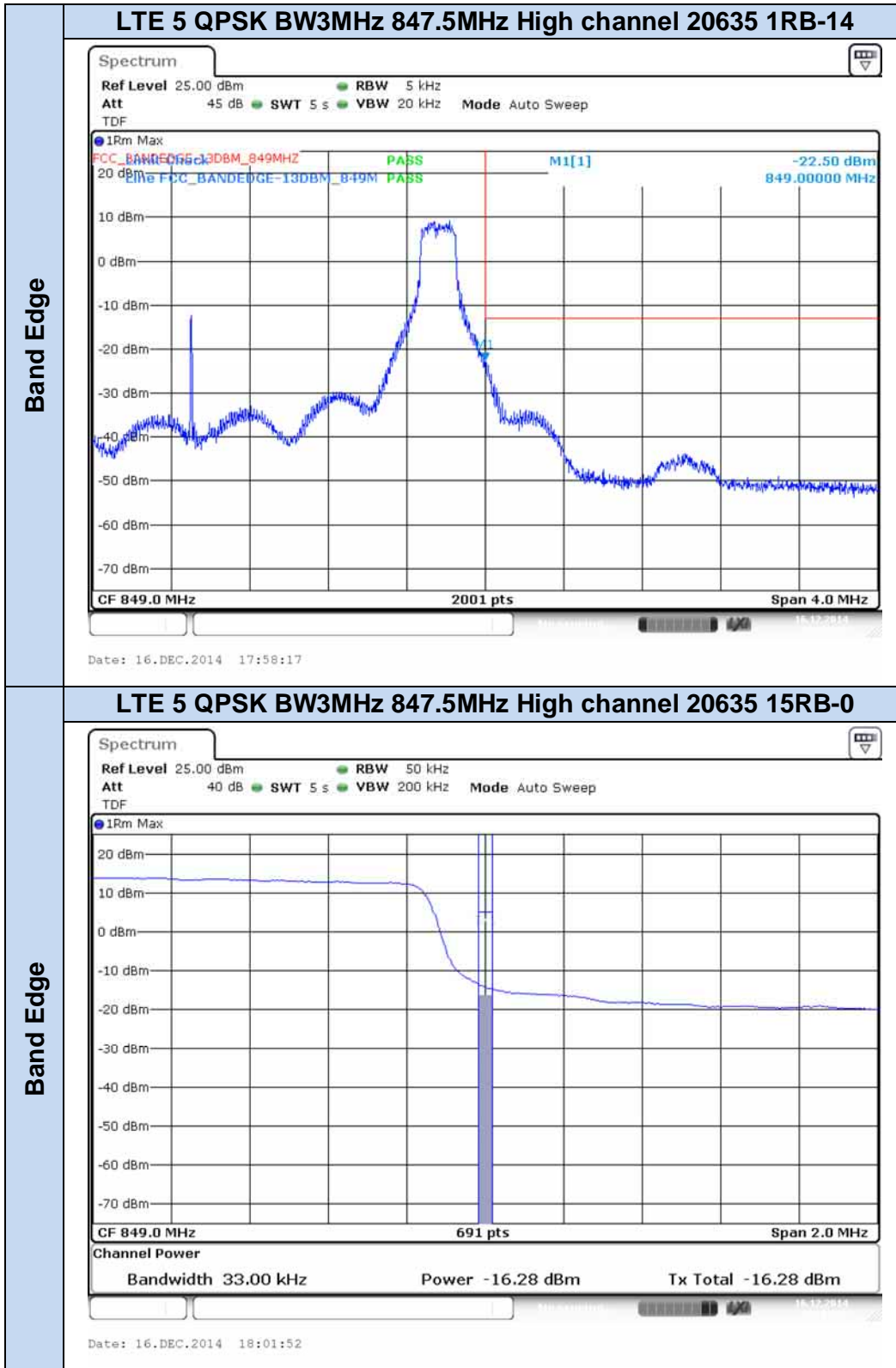


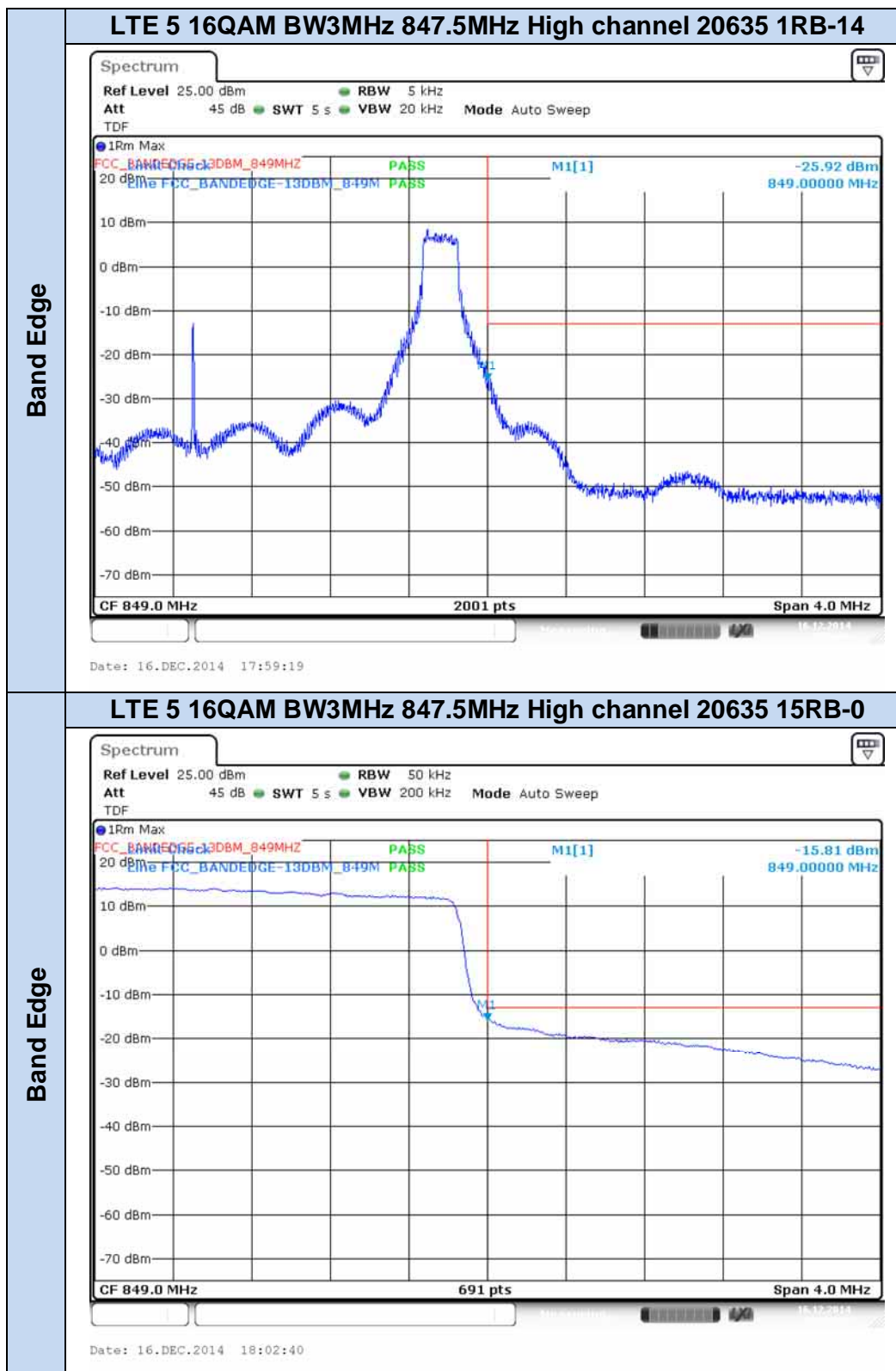


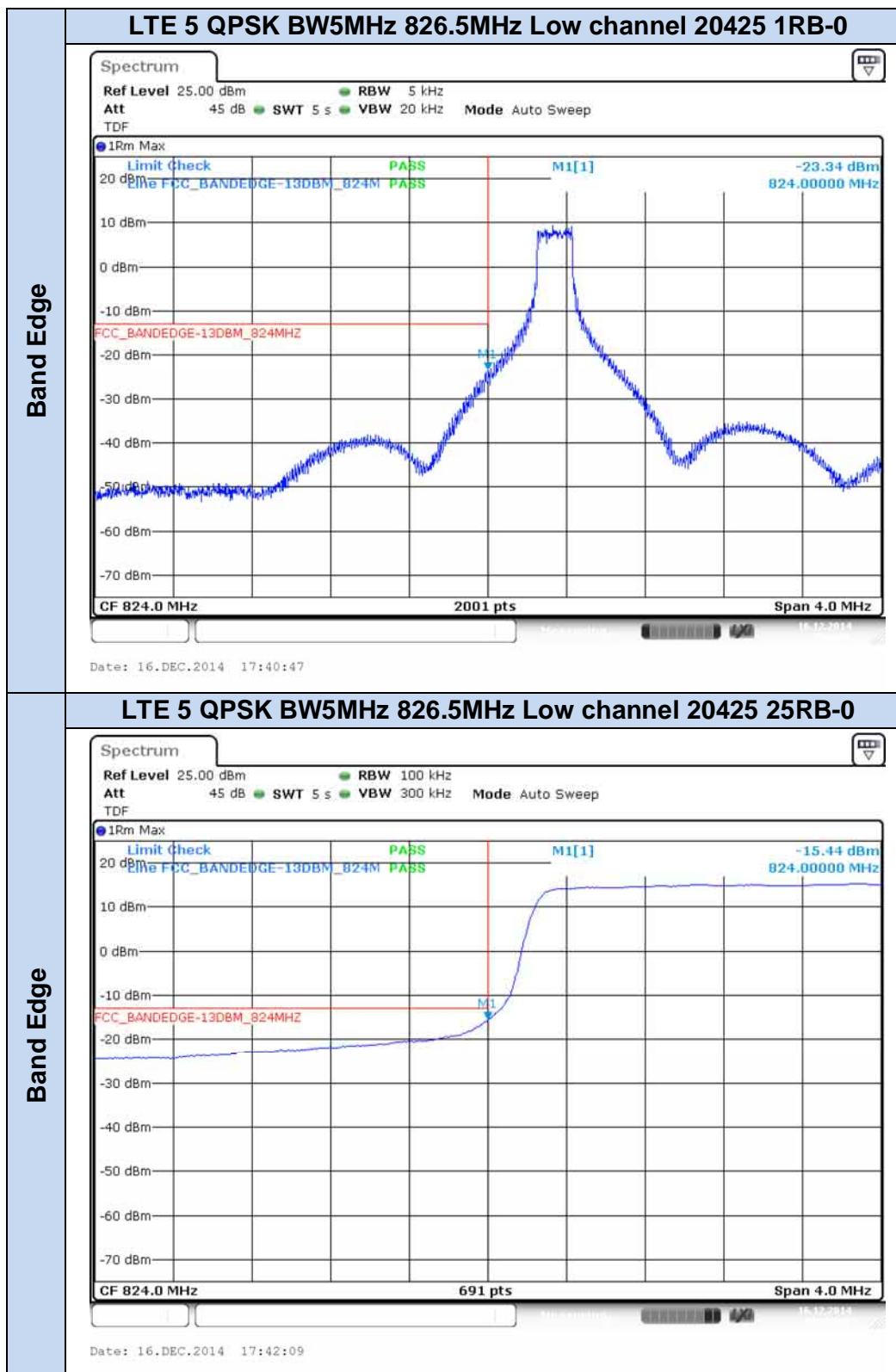


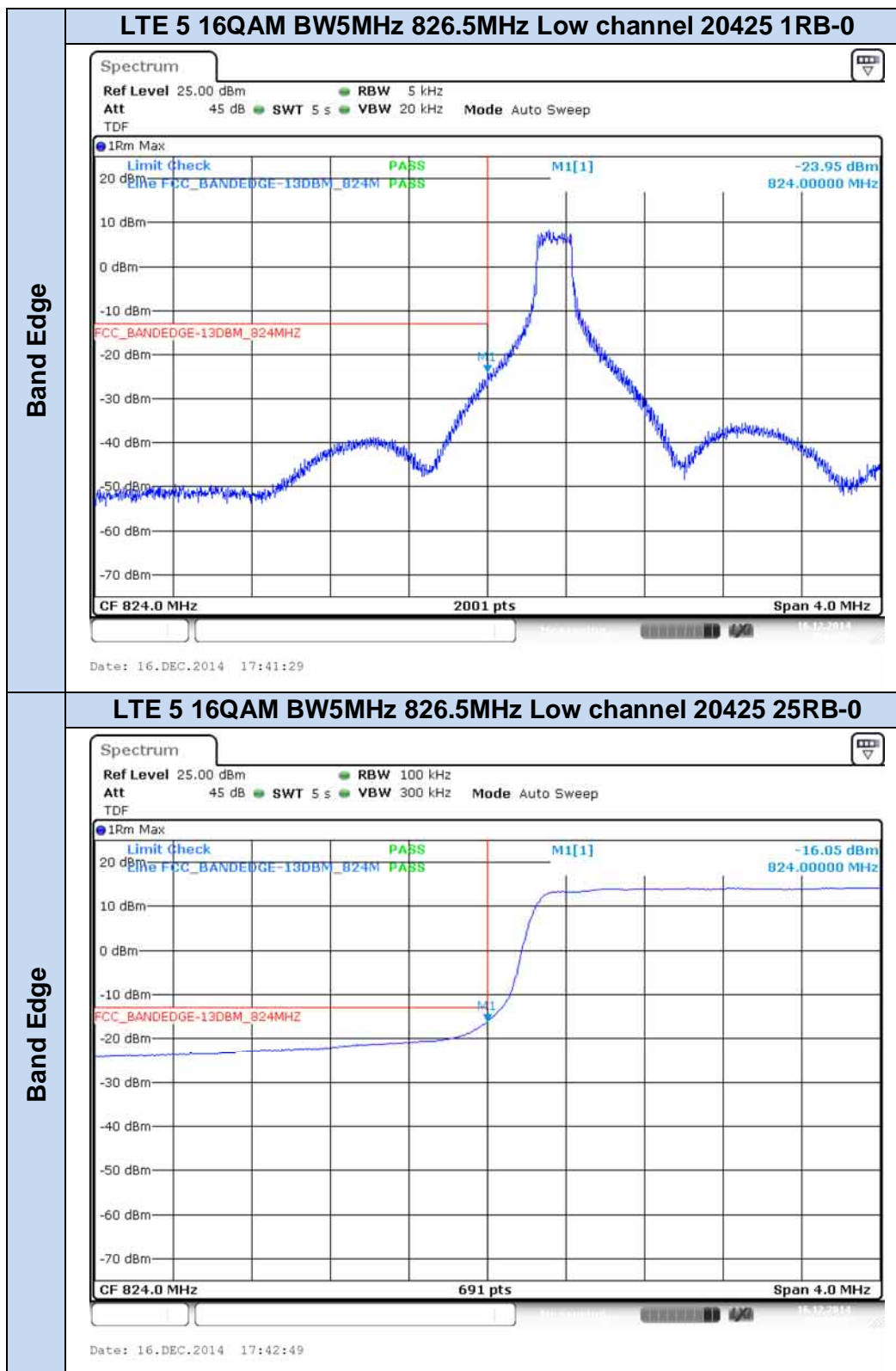


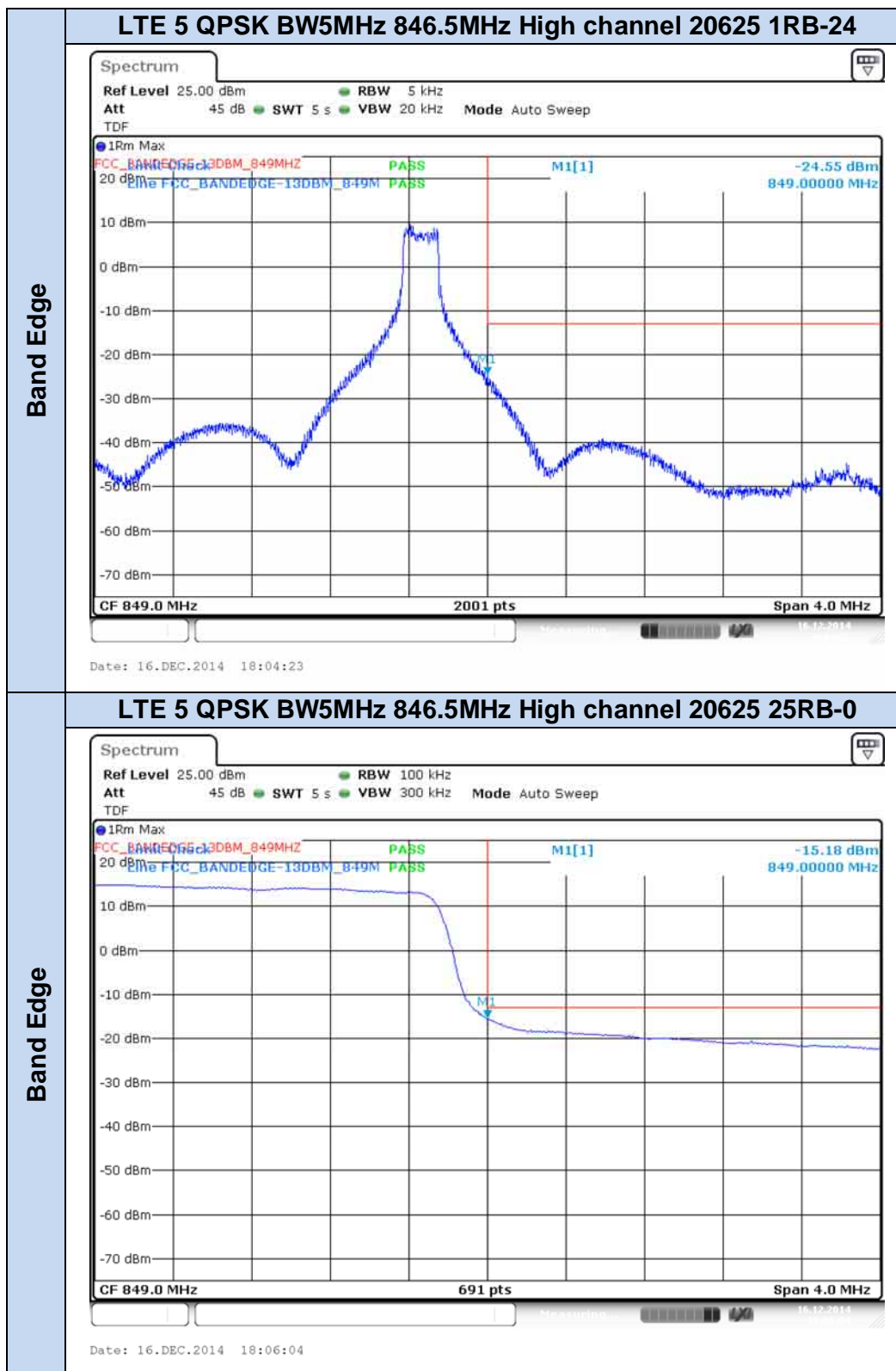


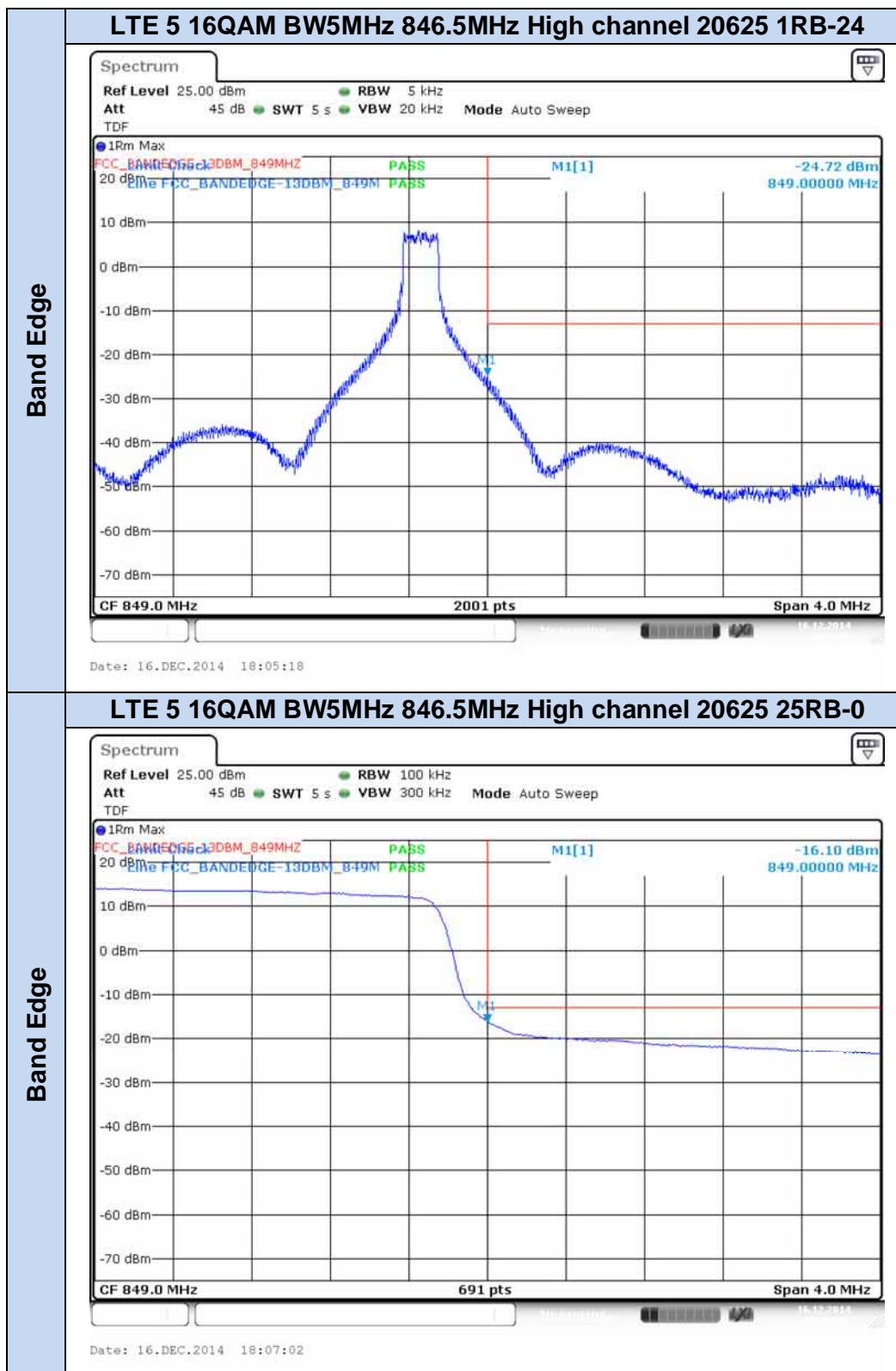


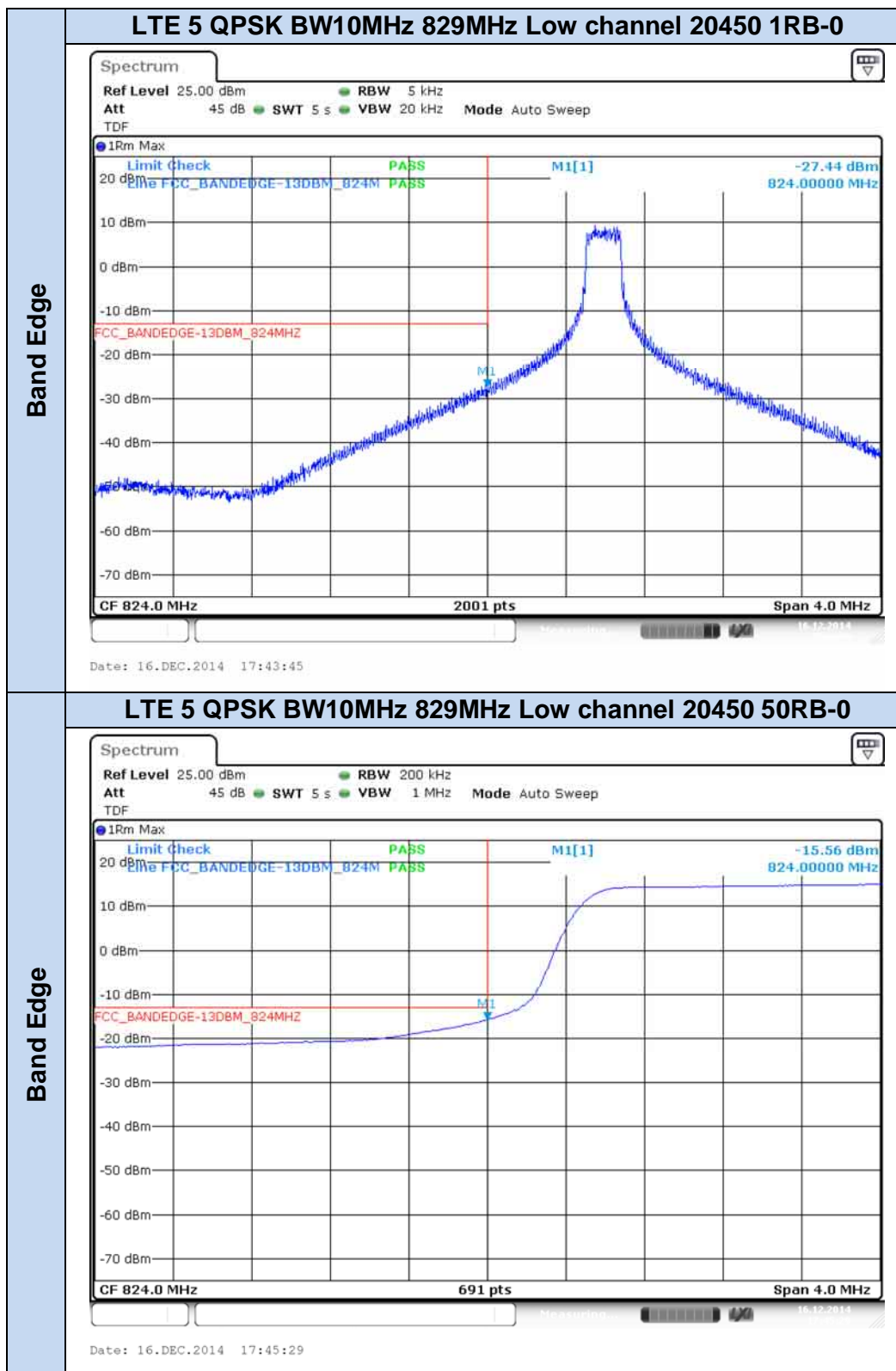


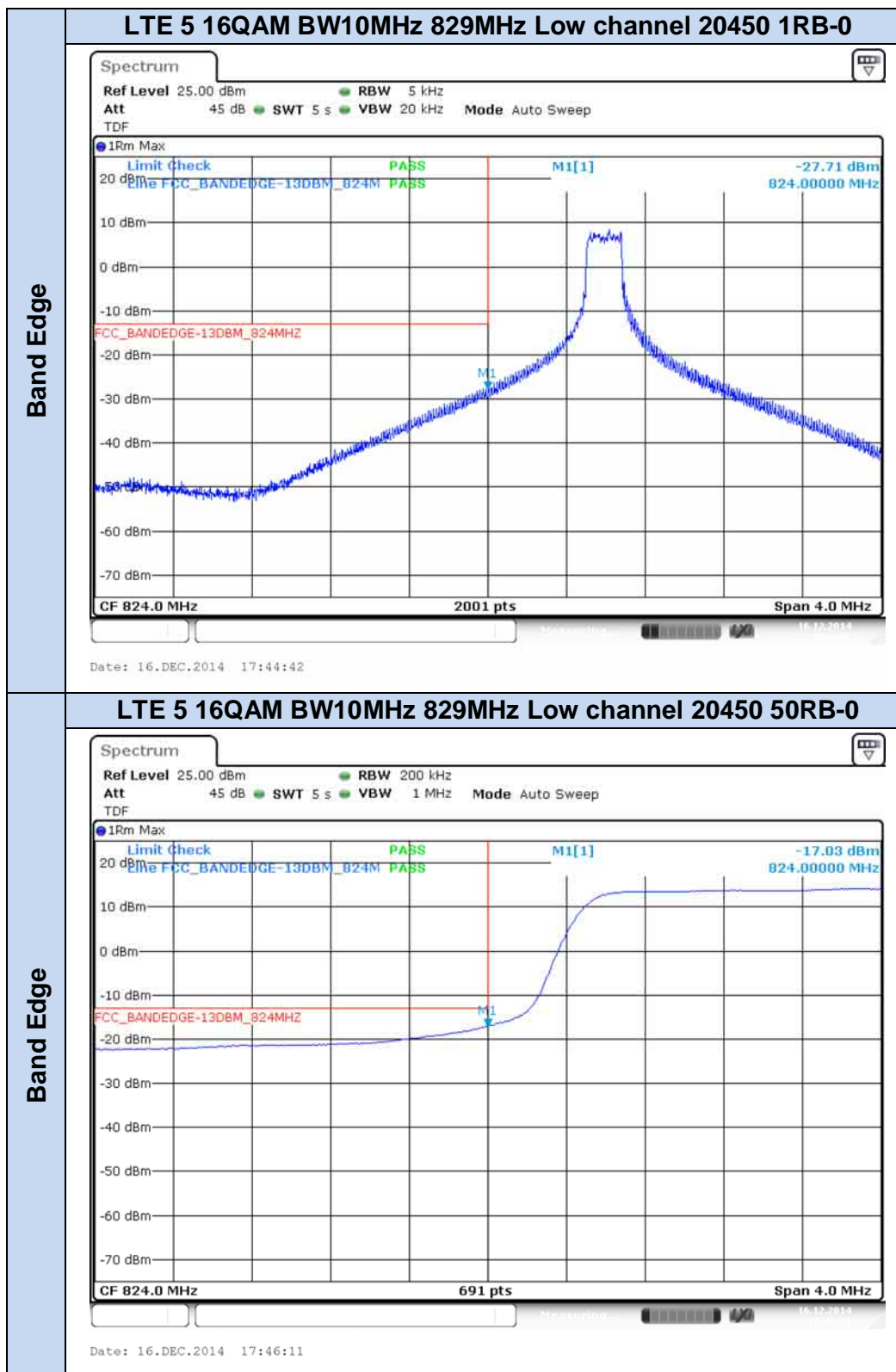


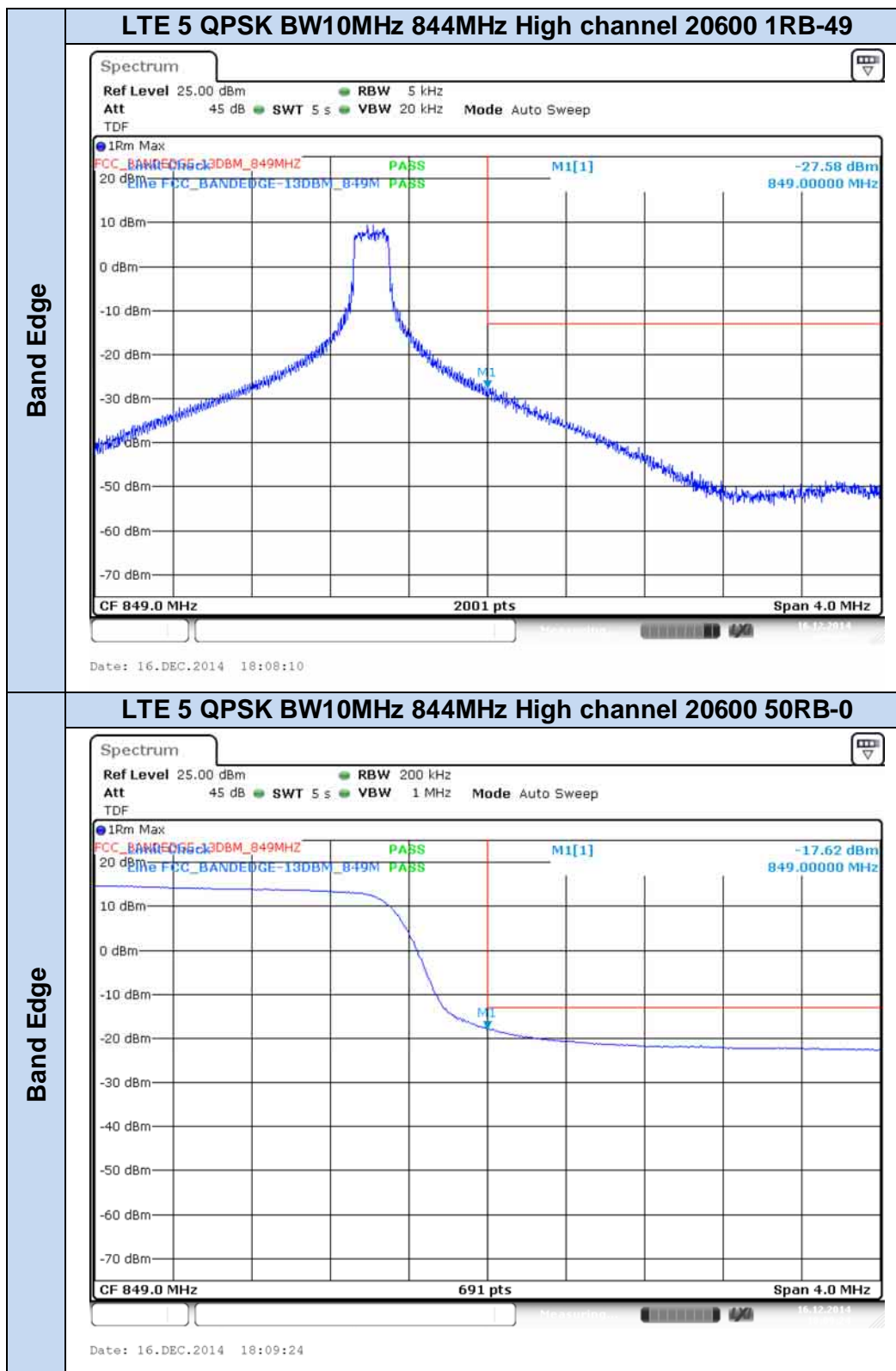


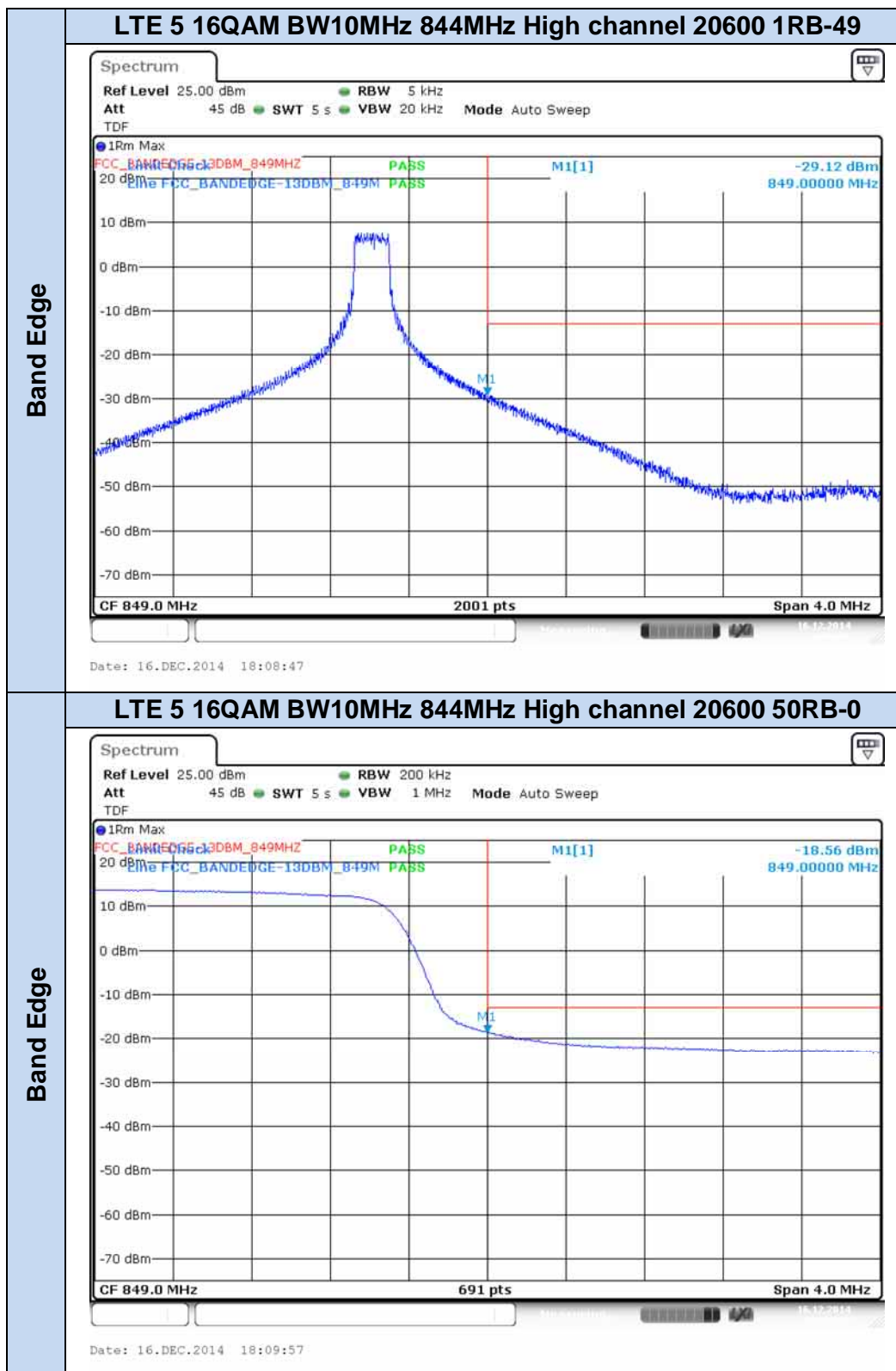












LTE Band 17

